



ชิ้นส่วนแม่พิมพ์ฉีด

MOLD COMPONENTS

STANDARD & CUSTOMIZABLE

OF "OIL FREE™ standard for mold large and small"

GUIDE PINS & BUSHES	ไกด์พิน และ บุช
EJECTOR COMPONENTS	ชิ้นส่วนการอีเจ็ค
ANGULAR PINS	แองกูล่าพิน
SLIDE CORE UNITS	ชุดสไลด์คอร์
GUIDE RAILS	ไกด์เรล
POSITIONING	ชิ้นส่วนตั้งตำแหน่ง
MOLD COUPLINGS	ข้อต่อน้ำแม่พิมพ์
COOLING SYSTEM	ระบบหล่อเย็น
MOLD CLAMPS	แคลมป์แม่พิมพ์
MOLD ACCESSORIES	ชิ้นส่วนแม่พิมพ์
MOLD SPRINGS	สปริงแม่พิมพ์

LINE @SUNRISEGROUP







ไกด์พิน และ บุช / GUIDE PINS & BUSHES

Page 1-24



ชิ้นส่วนการอีเจ็ค และ รีเทิร์นพิน / EJECTOR SPACE COMPONENTS

Page 25-46



แองกูล่าพิน / ANGULAR PINS

Page 47-58



ชุดสไลด์คอร์ / SLIDE CORE UNITS

Page 59-82



ไกด์เรล / GUIDE RAILS

Page 83-112



ชิ้นส่วนตั้งตำแหน่ง / POSITIONING COMPONENTS

Page 113-124



ข้อต่อน้ำแม่พิมพ์ / MOLD COUPLINGS

Page 125-142



ชิ้นส่วนระบบหล่อเย็น / COOLING SYSTEM

Page 143-154

Pins & Bushes

Ejector Space

Angular Pins

Slide Cores

Guide Rails

Positioning

Couplers

Cooling

แคตตาล็อกชิ้นส่วนแม่พิมพ์ฉีด



แคลมป์แม่พิมพ์ / MOLD CLAMPS

Page 155-162



ชิ้นส่วนแม่พิมพ์ / MOLD ACCESSORIES

Page 163-174



สปริงแม่พิมพ์ / MOLD SPRINGS

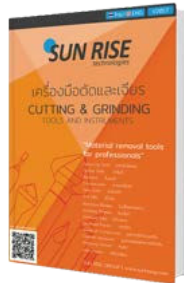
Page 175-215

แคตตาล็อกสินค้าอื่นๆ OTHER CATALOGS

โปรดติดต่อฝ่ายขายหรือตัวแทนสินค้า ซันไรส์ เพื่อรับแคตตาล็อก
To receive catalogs please contact our sales or agents



ชิ้นส่วนแม่พิมพ์ปั๊ม
DIE COMPONENTS



เครื่องมือตัดและเจียร
CUTTING & GRINDING



อุปกรณ์เครื่องจักร
MACHINE SHOP
EQUIPMENTS



การใช้งานแคตตาล็อก – USING THE CATALOG

สัญลักษณ์ และ ความหมาย – Symbol indicators



ข้อมูลน่าสนใจ
Interesting Information



ข้อควรระวัง
Warning Information



ข้อมูลวัสดุ
Material Information

การสอบถามสินค้า และ สั่งซื้อ – Making Inquiry and Ordering

- 1) ทำการสอบถามสินค้าด้วย Order Code ในตาราง หรือผสมโค้ดตามตาราง Order Example เพื่อความรวดเร็วในการค้นหาข้อมูลสินค้าในระบบ และจัดทำใบเสนอราคา
Use Order Code in the table or combine the code from Order Example table when making inquiry for faster quotation.

ORDER	Model	W - L
EXAMPLE	25SGW100-180	

ตัวอย่าง Order Code แบบผสม สินค้าส่วนมากมีขนาดหลากหลายจึงต้องมีการผสม code ซึ่งสามารถดูวิธีผสมได้จากช่อง "Order Example" และนำตัวอักษรมาเรียงตามตัวอย่าง

Example of Combination Order Code. Most products have many combinations, the code needs to be combined to form the Order Code. Look for "Order Example" box on each product page. Plug in each code as example shown.

- 2) ส่วนลดจะปรับตามจำนวนที่สั่งซื้อจริง จึงควรระบุจำนวนที่ต้องการเมื่อทำการขอราคา
Discounts are based on order quantity.
Please state the actual quantity upon making inquiry.

- 3) ช่องทางติดต่อเพื่อ ขอราคาและสั่งซื้อ
Contact channels for sending Inquiries and Purchase Orders



ประเทศไทย
Thailand



ต่างประเทศ
International

Email	sale@sunrisegr.com
Telephone	02-324-3184/ 08-4438-7746(-49)
Fax	02-324-3190 / 02-324-3103
LINE@	@sunrisegroup

Email	export@sunrisegr.com
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การสั่งผลิตตามแบบ – Customization Service

- สินค้าในแคตตาล็อกนี้สามารถสั่งผลิตตามแบบได้ โปรดแจ้งความประสงค์ผ่านทางฝ่ายขายเรา โดยปกติงานตามแบบจะไม่มีขั้นต่ำในการผลิต
Products in this catalog can be customize to your design. Please contact our sale personals for more details.

นโยบายการให้บริการ – Service Policies

- สินค้าทุกชิ้นชั้นรับประกันคุณภาพการใช้งานตามที่ระบุ
Sun Rise guaranteed all of our products meet the declared quality.
- สินค้าทุกชิ้นรับประกันขั้นต่ำ 6 เดือน พบสินค้าเสียหาย* เรายินดีเปลี่ยนหรือแก้ไขสินค้าให้ทันที
Every item is under at least 6 months warranty; In case of faulty products* contact us to make claim
- รูปภาพและสีของสินค้าในแคตตาล็อกอาจจะไม่ตรงกับสินค้าจริง อาจมีการเปลี่ยนแปลงพัฒนาได้โดยไม่ต้องแจ้ง
Product pictures and colors within the catalog may not reflect the actual product.
- ในบางกรณีที่เราไม่สามารถจัดส่งสินค้าด้วยรถจัดส่งให้ได้ จะมีค่าใช้จ่ายเพิ่มเติมแล้วแต่กรณี
In case we can not send your order by our trucks; an extra delivery cost may occur.

*ความเสียหายต้องไม่เกิดจากการใช้งาน อุบัติเหตุ ภัยธรรมชาติ หรือจากการนำไปใช้งานผิดประเภท
Must not be the damage done by usage, accidents, nature disasters, or wrongly operated.



Name	Precision Leader Pin	Precision Leader Pin with Oil Groove	Precision Leader Pin with Spiral Oil Groove	Straight Precision Leader Pin
Model	25GPAL	25GPJL	25GPALSP	25GPLP
Page	3	4	5	5



Name	Leader Pin & Assist Pin for Large Mold		Leader Pin & Assist Pin for Large Mold (Bolt Type)		Support Pin	Support Pin with Oil Groove
Model	25GPXL / 25GPPPL	25GA	25GPPA	25GAT	25SPP / 25SPPZ	25SPP-O / 25SPPZ-O
Page	6	6	7	7	8	9



Name	Support Pin Collar	Precision Leader Bushes (Oil Groove)		Leader Bushes (Plain)		Leader Bushes (Oil Groove)	
Model	25SPS / 25SPD	25GBH	25GBS	25GBAS	25GBBS	25GBHE	25GBSE
Page	9	10	10	11	12	13	14






Name	Leader Bushes (Oil Free™)		Guide Bushes for Large Mold (Oil Free™)		Injection Guide Bushes (Oil Free™)	
Model	25GBHEZ / 25GBHDZ-W	25GBSEZ / 25GBSDZ-W	25RGBD-W / 25RGBTD-W	25RGB-W	25RGBF-W	
Page	15	16	17	18	19	



Name	Die Casting Guide Bushes	Oil Free™ Bush (Universal)	Oil Free™ Washer (Universal)	Oil Free™ Flange Bush (Universal)
Model	25SOST	25SBW	25WSBW / 25WSBW-N	25FSBW
Page	20	21	23	24




ตารางการเลือกไกด์และบุช | Guide & Bush Selecting Chart

Types		Model	Page
ไกด์เรียบ - Plain Guide	Headed Type 	25GPAL	P.3
	Straight Type 	25GPLP	P.5
	Support Pin 	25SPP 25SPPZ	P.8



ใช้ร่วมกันได้
Suitable

Types		Model	Page
Flange + Copper Alloy 	Oil Free Universal	25RGBF-W	P.19
	Oil Free Precision	25GBHDZ-W	P.15
Frange 	Oil Free Precision	25GBHEZ	P.15
	Oil Groove Precision	25GBHE	P.13
	Oil Groove	25GBH	P.10
Straight + Copper Alloy 	Oil Free Universal	25RGB-W	P.18
	Oil Free Precision	25GBSDZ-W	P.16
Straight 	Oil Free Precision	25GBSEZ	P.16
	Oil Groove Precision	25GBSE	P.14
	Oil Groove	25GBS	P.10



บุชมีร่องน้ำมัน - Oil Groove Bush

Types		Model	Page
ไกด์มีร่องน้ำมัน - Oil Groove Guide	Headed Type 	25GPJL	P.4
	Headed Type 	25GPALSP	P.5
	Support Pin 	25SPP-O 25SPPZ-O	P.9



ใช้ร่วมกันได้
Suitable

Types		Model	Page
Flange 	Plain	25GBAS	P.11
	Straight 	Plain	25GBBS

บุชเรียบ - Plain Bush

Types		Model	Page
Large Mold Guide	Joint Type 	25GPXL 25GPPL	P.6
	Bolt Type 	25GPPA	P.7

ใช้ร่วมกันได้
Suitable

Types		Model	Page
Flange + Copper Alloy 	Oil Free Universal	25RGBF-W	P.19
	Oil Free Large Mold	25RGBTD-W	P.17
Straight + Copper Alloy 	Oil Free Universal	25RGB-W	P.18
	Oil Free Large Mold	25RGBD-W	P.17

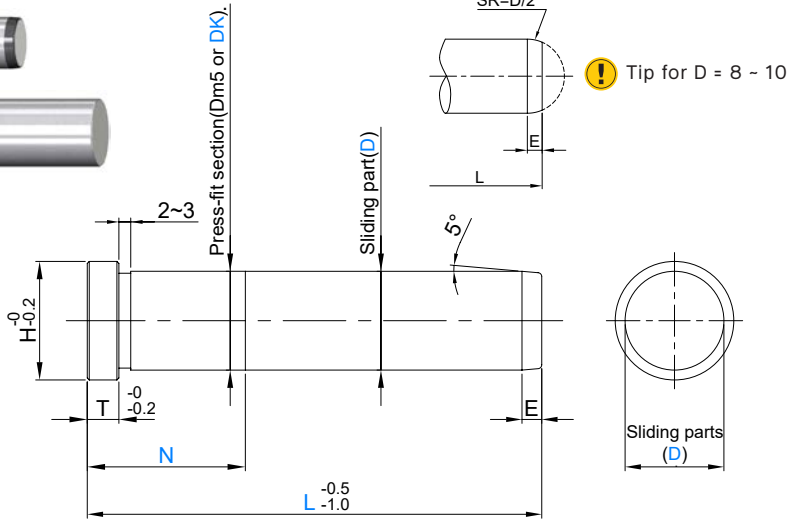
Large Mold Bush

ไคด์พิน และ บุช

Precision Leader Pin - สีสเตอร์พิน

FOIL FREE™

Model: 25GPAL



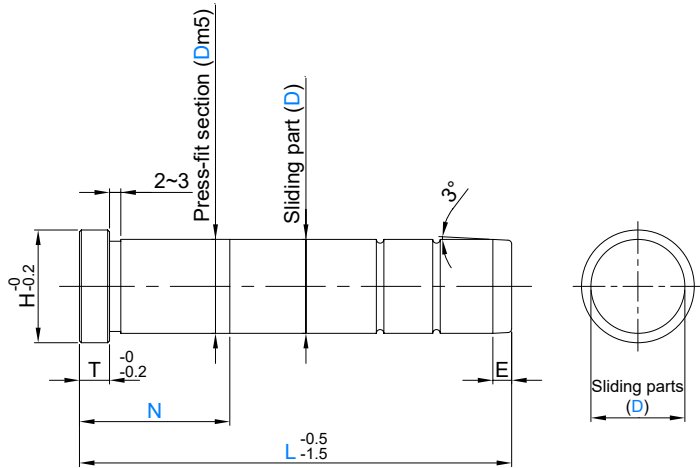
ORDER Model D - L - N
 EXAMPLE 25GPAL20-100-30 SUJ2 58HRC-

Model	D		L		T	H	E	Press-Fit Diameter	
			5mm increment	1mm increment					
25GPAL	8	-0.015 -0.020	30 - 80	5 - 60	5	11	3	8	+0.012 +0.006
	10		30 - 80	5 - 60		13	4	10	
	12	-0.020 -0.025	30 - 200	5 - 80		17	5	12	+0.015 +0.007
	13		30 - 200	5 - 80		18		13	
	16	-0.025 -0.030	30 - 250	8 - 80	8	21		16	+0.017 +0.008
	20		30 - 300	8 - 100		25		20	
	25		40 - 350	8 - 120		30	25		
	28		50 - 300	8 - 120		33	28		
	30	-0.030 -0.035	50 - 400	8 - 130	10	35	30	+0.020 +0.009	
	32		50 - 350	8 - 130		37	32		
	35	60 - 450	8 - 130	40	35				
	40	-0.030 -0.040	80 - 500	10 - 200	12	45	8	40	+0.024 +0.011
	50		100 - 550	12 - 200		55		50	
	60	-0.030 -0.050	200 - 550	15 - 200	15	65	60		

Precision Leader Pin with Oil Groove - สีดเดอร์พิน มีร่องน้ำมัน



Model: 25GPJL



ORDER
EXAMPLE

Model D - L - N
25GPJL20-100-30



SUJ2
58HRC- (Induction Hardened)

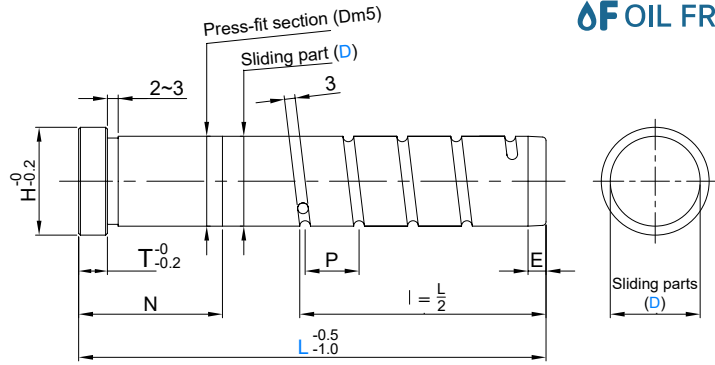
Model	D		L 5mm increment	N 1mm increment	T	H	E	Press-Fit Diameter		
25GPJL	8	-0.015 -0.020	40 - 80	5 - 40	5	11	3	8	$+0.012$ $+0.006$	
	10					13	4	10		
	12	-0.020 -0.025	40 - 200	5 - 80		17	5	12	$+0.015$ $+0.007$	
	13					18				13
	16	-0.025 -0.030	40 - 250	6 - 80	21	8			16	$+0.017$ $+0.008$
	20				25					
	25				30		25			
	28	-0.030 -0.035	50 - 200	8 - 120	33	8	28	$+0.020$ $+0.009$		
	30				35				30	
	32	-0.030 -0.040	70 - 350	8 - 130	37	10	32	$+0.024$ $+0.011$		
	35				40				35	
	40	-0.030 -0.050	100 - 500	10 - 140	10	12	40	$+0.024$ $+0.011$		
	50				12				50	
	60	-0.030 -0.050	200 - 550	15 - 200	15	8	60	$+0.024$ $+0.011$		

โถงพิน และ บุช

Precision Leader Pin with Spiral Oil Groove - ลีดเดอร์พิน มีร่องน้ำมันแบบเกลียว



Model: 25GPALSP



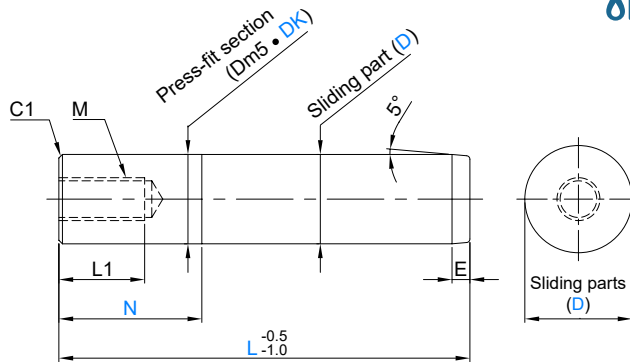
ORDER Model D - L - N
 EXAMPLE 25GPALSP25-100-24 $N \leq L/2$ SUJ2 58HRC- (Induction Hardened)

Model	D		L	N	T	H	E	Press-Fit Diameter	
			10mm increment	1mm increment					
25GPALSP	20	-0.025 -0.030	60 - 210	$8 \leq N < L/2$	8	25	5	20	+0.017 +0.008
	25		60 - 230	$8 \leq N < L/2$		30		25	
	30		130 - 230	$8 \leq N < L/2$		35		30	
	40	-0.030 -0.040	200 - 360	$10 \leq N < L/2$	10	45	8	40	+0.020 +0.009
	50		230 - 350	$12 \leq N < L/2$	12	55		50	

Straight Precision Leader Pin - ลีดเดอร์พิน แบบตรง



Model: 25GPLP



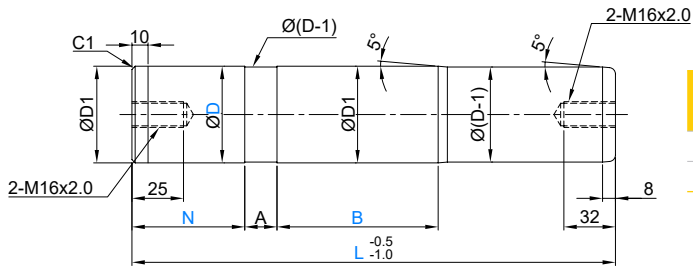
ORDER Model D - L - N
 EXAMPLE 25GPLP32-180-100 $N \leq L - E$ SUJ2 58HRC- (Induction Hardened)

Model	D		L	N	M	L1	E	Press-Fit Diameter				
			5mm increment	1mm increment								
25GPLP	8	-0.015 -0.020	40 - 70	0 - 40	M5x0.8	10	3	8	+0.012 +0.006			
	10		40 - 70	0 - 40			4	10				
	12	-0.020 -0.025	40 - 160	0 - 100	M6x1.0	12	5	12	+0.015 +0.007			
	13		40 - 200	0 - 100				13		13		
	16		40 - 200	0 - 100				16		16		
	20	-0.025 -0.030	40 - 220	0 - 100	M8x1.25	16	5	20	+0.017 +0.008			
	25		50 - 260	0 - 100				25		25		
	28		60 - 260	0 - 100				M12x1.75		24	28	28
	30		70 - 260	0 - 100							30	30
	32	-0.030 -0.035	70 - 260	0 - 120	M16x2.0	32	8	32	+0.020 +0.009			
	35		100 - 300	0 - 120				35		35		
	40		100 - 300	0 - 140				40		40		
	50	-0.030 -0.040	100 - 400	0 - 200	M20xP2.5	40	8	50	+0.024 +0.011			
	60	-0.030 -0.050	150 - 500	0 - 200				60		60		

Leader Pin for Large Mold - สีดเดอร์พิน สำหรับแม่พิมพ์ขนาดใหญ่



Models:
25GPXL
25GPPL



Model	Tolerance	
	D	D1
25GPXL	h6	f6
25GPPL	±0.015	e7

ORDER
EXAMPLE

Model D - L - N - B
25GPXL40-250-N100-B50



S45C
58HRC- (Induction Hardened)



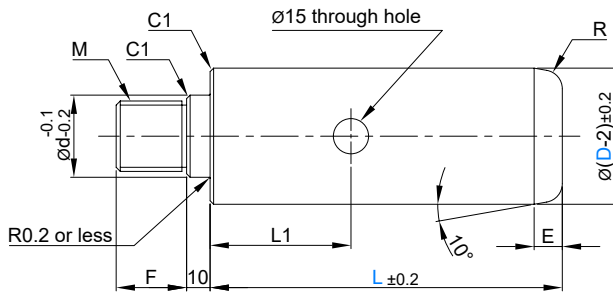
เลือก N = 0 หากไม่ต้องการช่วงสวมอัด
Choose N = 0 when do not want press-fit section

Model	D	D tolerance		L	N	B	A	D1	D1 Tolerance		
		25GPXL (h6)	25GPPL						25GPXL (f6)	25GPPL (e7)	
25GPXL	40	0	±0.015	100 - 360	0 or 5 - 140	0 or 5 - 200	10	40	-0.025	-0.050	
	50	-0.016		100 - 400	0 or 5 - 200			50	-0.041	-0.075	
25GPPL	60	0		150 - 500	0 or 5 - 200			20	60	-0.030	-0.060
	80	-0.019		150 - 400	0 or 5 - 200				80	-0.049	-0.090

Assist Pin for Leader Pin - ส่วนต่อสีดเดอร์พิน สำหรับแม่พิมพ์ขนาดใหญ่



Model: 25GA



ORDER
EXAMPLE

Model D - L
25GA60-500



S45C

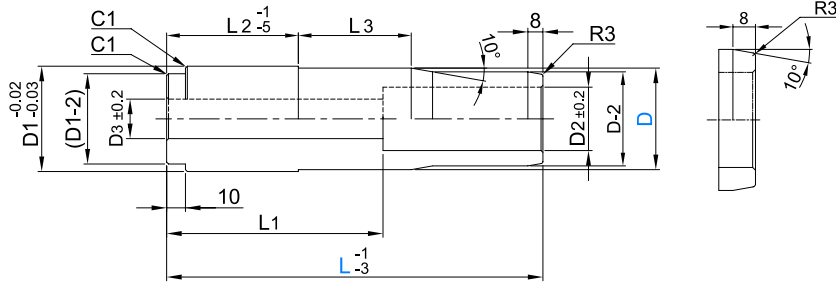
Model	D	L	R	L1	E	d	F	M
25GA	40	60 - 100	5	40	10	28	25	M24
		105 - 150		85				
		155 - 200		135				
	50	80 - 150	5	55	12	35	30	M30
		155 - 200		130				
		205 - 250		180				
	60	100 - 150	8	70	15	40	40	M36
		155 - 200		125				
		205 - 250		175				
	80	120 - 150	10	85	15	40	40	M36
		155 - 200		120				
		205 - 250		170				
255 - 300		220						

โกด์พิน และ บุช

Leader Pin for Large Mold (Bolt Type) - สติเตอร์พิน สำหรับแม่พิมพ์ขนาดใหญ่



Model: 25GPPA



ORDER EXAMPLE Model D - L
25GPPA60-230

M S50C
55 - 65HRC (Induction Hardened)

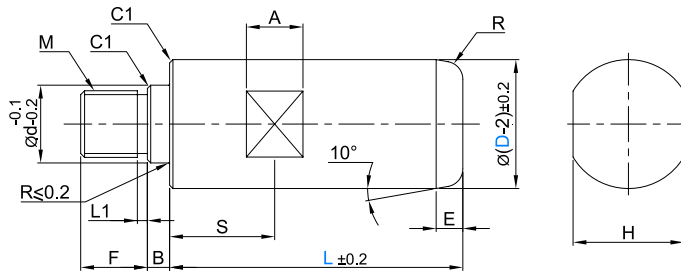
i มีสกรูในชุด
Bolt Included

Model	D		L 10mm increments	D1	D2	D3	L1	L2	L3	Through Bolt
25GPPA	40	-0.004 -0.005	160 - 210	40	17	11	95	80	70	M10x120
	50	-0.006 -0.007	190 - 260	50	20	14	120	100	80	M12x150
	60	-0.007 -0.008	230 - 320	60	26	18	145	120	100	M16x170
	80	-0.008 -0.010	290 - 400	80	32	22	200	160	120	M20x230

Assist Pin for Leader Pin (Bolt Type) - ส่วนต่อสติเตอร์พิน สำหรับแม่พิมพ์ขนาดใหญ่



Model: 25GAT



ORDER EXAMPLE Model D - L
25GAT50-200

M S45C **i** มีสปริงวอชเชอร์ในชุด
Spring Washer Included

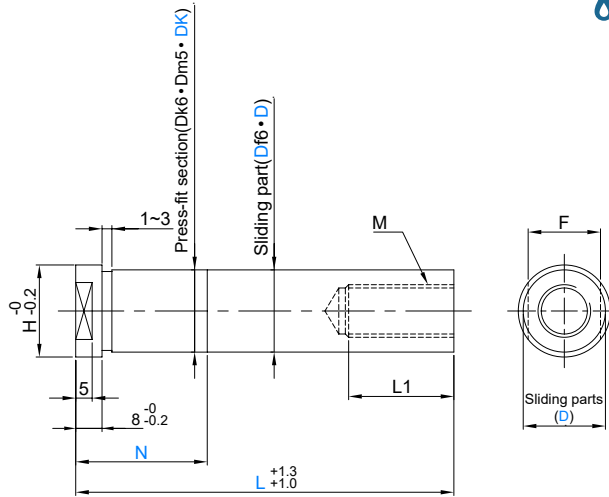
Model	D	L 10mm increments	d	B	M	F	E	L1	H	S	R	A	Spring Washer
25GAT	40	60 - 200	22	14	M20	20	10	4	32	15	5	25	M22
	50	80 - 250	27	16	M24	28	12	5	41	20		30	M27
	60	100 - 250	33	18	M30	30			50	25	8	35	M33
	80	120 - 300	40		M36	40	15	70	30	10	M42		

Support Pin - ชั๊พพอร์ทพิน

Model: 25SPP

Model: 25SPPZ

ความเที่ยงตรงสูง
Precision Type



ORDER EXAMPLE

Model D - L - N
25SPP20-200-50



SUJ2
58HRC- (Induction Hardened)

Model	Sliding Area			L 5mm increment	N 1mm increment	F	H	M	L1	Press-Fit Area		
	D	25SPP	25SPPZ							Dia	25SPP	25SPPZ
25SPP 25SPPZ	13	-0.016	-0.020	60 - 120	8 - 60	12	16	M6x1.00	12	13	+0.012	+0.015
	16	-0.027	-0.025	80 - 210		14	19	M10x1.50	20	16	+0.001	+0.007
	20	-0.020 -0.033	-0.025 -0.030	90 - 250		19	23	M12x1.75	24	20	+0.015 +0.002	+0.017 +0.008
	25			100 - 300		22	28	M16x2.00	32	25		
	28			100 - 300		27	31			28		
	30	-0.025 -0.041	-0.030 -0.035	150 - 350		29	35	M16x2.00	32	30	+0.018 +0.002	+0.020 +0.009
	32			150 - 350		30	35			32		
	35			150 - 350		32	40			35		
	36			150 - 350		36	41			36		
	40		-0.030 -0.040	150 - 350		36	45			40		

โกดพิน และ บุช

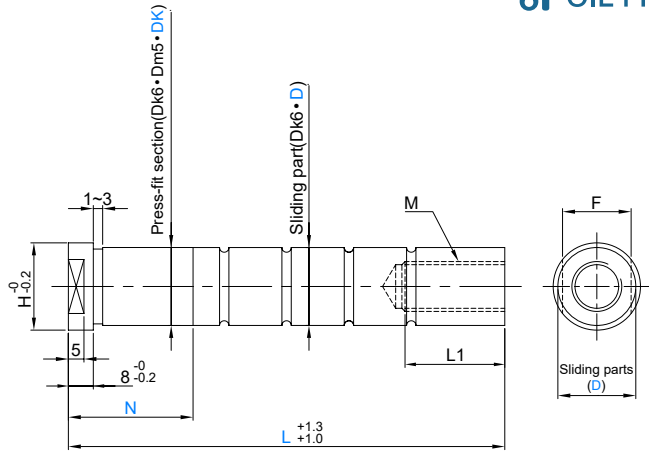
Support Pin with Oil Groove - ซีพพอร์ทพิน แบบมีร่องน้ำมัน

FOIL FREE™

Model: 25SPP-O

Model: 25SPPZ-O

ความเที่ยงตรงสูง
Precision Type



ORDER
EXAMPLE

Model D - L - N
25SPP-O20-200-50



SUJ2
58HRC- (Induction Hardened)

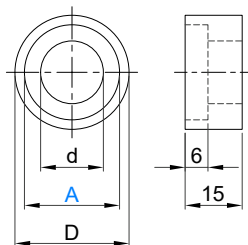
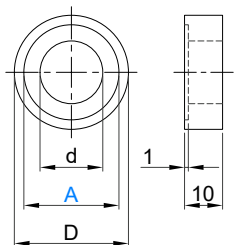
Model	Sliding Area			L 5mm increment	N 1mm increment	F	H	M	L1	Press-Fit Area				
	D	25SPP-O	25SPPZ-O							Dia	25SPP-O	25SPPZ-O		
25SPP-O 25SPPZ-O	13	-0.016	-0.020	60 - 120	8 - 30	12	16	M6x1.00	12	13	+0.012	+0.015		
	16	-0.027	-0.025	80 - 210		14	19	M10x1.50	20	16	+0.001	+0.007		
	20	-0.020 -0.033	-0.025 -0.030	90 - 250		19	23	M12x1.75	24	20	+0.015 +0.002	+0.017 +0.008		
	25			100 - 300	22	28	M16x2.00	25	28					
	28			100 - 300	27	31		30	32					
	30			150 - 350	29	35		35	36					
	32	-0.025 -0.041	-0.030 -0.035	150 - 350	8 - 50	30	35	M16x2.00	32	32	+0.018 +0.002	+0.020 +0.009		
	35			150 - 350		32	40						35	36
	36			150 - 350		36	41						36	40
	40			150 - 350		36	45						36	40

Support Pin Collar - ซีพพอร์ทพินคอลลาร์

Model: 25SPS

Model: 25SPD

FOIL FREE™



ORDER
EXAMPLE

Model A
25SPS30



S45C
34 - 43HRC
(Black Oxide)

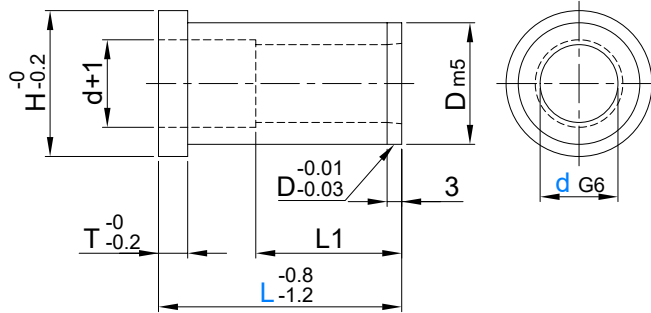
Model	A	D	d	for Support Pin (D)
25SPS 25SPD	13	18	6.5	13
	16	21	10.5	16
	20	25	12.5	20
	25	30	16.5	25
	28	33		28
	30	35		30
	32	37		32
	35	40		35
	36	41		36
	40	45	40	

โถงพิน และ บุช

Plain Leader Bushes (Head Type) - สีสเตอร์บุช แบบมีบ่า ไม่มีร่องน้ำมัน



Model: 25GBAS



ORDER Model d - L
 EXAMPLE 25GBAS8-25 SUJ2 58HRC-

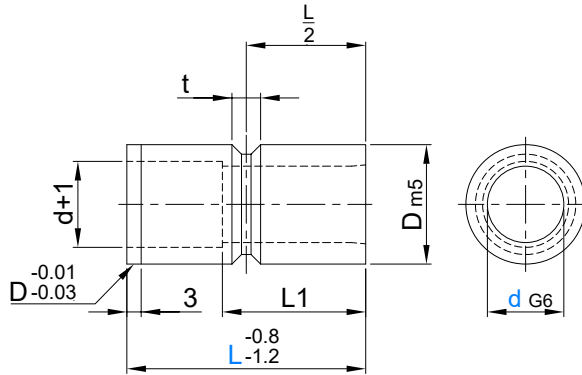
Model	d G6		L														T	D m5		H			
25GBAS	8	+0.014 +0.005	15	20	25														5	12	+0.015 +0.007	14	
	10		15	20	25	30	35	40										14		16			
	12		15	20	25	30	35	40	45	50								18		22			
	13	+0.017 +0.006		15	20	25	30	35	40	45	50								6	20	+0.017 +0.008	25	
	16		15	20	25	30	35	40	45	50	60							25		30			
	20		15	20	25	30	35	40	45	50	60	70	80	90	100				8	30	+0.017 +0.008	35	
	25	+0.020 +0.007		25	30	35	40	45	50	60	70	80	90	100	110	120				35		40	
	28			25	30	35	40	45	50	60	70	80	90	100	110	120				40		45	
	30				30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	10	42	+0.020 +0.009	47
	32				30	35	40	45	50	60	70	80	90	100	110	120	130	140	150		45		50
	35	+0.025 +0.009			30	35	40	45	50	60	70	80	90	100	110	120	130	140	150		48		54
	40				30	35	40	45	50	60	70	80	90	100	110	120	130	140	150	12	55	+0.024 +0.011	61
50				40	45	50	60	70	80	90	100	110	120	130	140	150			70		76		
60	+0.029 +0.010			60	70	80	90	100	110	120	130	140	150						80		86		

d	L1																	
	L 15	L 20	L 25	L 30	L 35	L 40	L 45	L 50	L 60	L 70	L 80	L 90	L 100	L 110	L 120	L 130	L 140	L 150
8	15	15	15															
10	15	20	20	20	20	20												
12	15	20	25	25	25	25	25	25										
13	15	20	25	25	25	25	25	25										
16	15	20	25	30	35	30	30	30										
20		20	25	30	35	40	40	40	40	40	40							
25		20	25	30	35	40	45	50	50	50	50	50	50	50	50			
28		20	25	30	35	40	45	50	50	50	50	50	50	50	50			
30				30	35	40	45	50	60	60	60	60	60	60	60	60	60	60
32				30	35	40	45	50	60	60	60	60	60	60	60	60	60	60
35				30	35	40	45	50	60	70	70	70	70	70	70	70	70	70
40				30	35	40	45	50	60	70	80	80	80	80	80	80	80	80
50				30	35	40	45	50	60	70	80	90	100	100	100	100	100	100
60				30	35	40	45	50	60	70	80	90	100	110	120	120	120	120

Plain Leader Bushes (Straight Type) - สிடเดอร์บุช แบบตรง ไม่มีร่องน้ำมัน



Model: 25GBBS



ORDER EXAMPLE

Model d - L
25GBBS8-25



SUJ2
58HRC-

Model	d G6		L												t	D m5				
25GBBS	8	+0.014 +0.005	15	20	25												4	12	+0.015 +0.007	
	10		15	20	25	30	35	40										14		
	12	15	20	25	30	35	40									18				
	13	+0.017 +0.006	15	20	25	30	35	40	45	50							5	20	+0.017 +0.008	
	16		15	20	25	30	35	40	45	50	60							25		
	20	+0.020 +0.007	15	20	25	30	35	40	45	50	60	70	80				6	30	+0.017 +0.008	
	25		20	25	30	35	40	45	50	60	70	80	90	100				35		
	28		20	25	30	35	40	45	50	60	70	80	90	100			40			
	30	+0.025 +0.009	20	25	30	35	40	45	50	60	70	80	90	100			8	42	+0.020 +0.009	
	32		25	30	35	40	45	50	60	70	80	90	100			45				
	35		25	30	35	40	45	50	60	70	80	90	100			48				
	40	+0.029 +0.010				30	35	40	45	50	60	70	80	90	100	110	120	9	55	+0.024 +0.011
	50					30	35	40	45	50	60	70	80	90	100	110	120		11	
	60									50	60	70	80	90	100	110	120	80		

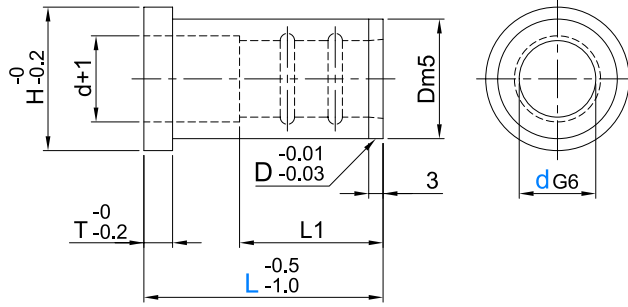
d	L1															
	L 15	L 20	L 25	L 30	L 35	L 40	L 45	L 50	L 60	L 70	L 80	L 90	L 100	L 110	L 120	
8	15	15	15													
10	15	20	20	20	20	20										
12	15	20	25	25	25	25										
13	15	20	25	25	25	25	25	25								
16	15	20	25	30	35	30	30	30	30							
20	15	20	25	30	35	40	40	40	40	40	40					
25		20	25	30	35	40	45	50	50	50	50	50	50			
28		20	25	30	35	40	45	50	56	56	56	56	56			
30		20	25	30	35	40	45	50	60	60	60	60	60			
32			25	30	35	40	45	50	60	60	60	60	60			
35			25	30	35	40	45	50	60	70	70	70	70	70	70	
40				30	35	40	45	50	60	70	80	80	80	80	80	
50				30	35	40	45	50	60	70	80	90	100	100	100	
60								50	60	70	80	90	100	110	120	

โถงพิน และ บุช

Leader Bushes (Head Type) - สีดเตอร์บุช แบบมีป้า



Model: 25GBHE



ORDER Model d - L
 EXAMPLE 25GBHE25-60 SUJ2 58HRC-

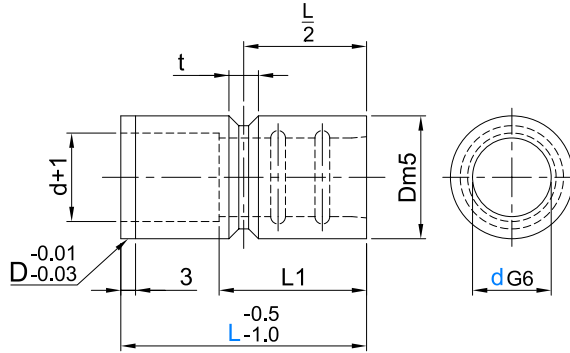
Model	d G6		L															T	D m5		H		
25GBHE	8	+0.014 +0.005	15	20	25															5	12	+0.015 +0.007	14
	10		15	20	25	30	35	40											14		16		
	12		15	20	25	30	35	40	45	50									18		22		
	13	+0.017 +0.006		15	20	25	30	35	40	45	50									6	20	+0.017 +0.008	25
	16		15	20	25	30	35	40	45	50									25		30		
	20	+0.020 +0.007		20	25	30	35	40	45	50	60	70	80							8	30	+0.020 +0.009	35
	25			20	25	30	35	40	45	50	60	70	80	90	100	110	120	130	35		40		
	28				25	30	35	40	45	50	60	70	80								40		45
	30			25	30	35	40	45	50	60	70	80	90	100	110	120	130		42		47		
	32	+0.025 +0.009			25	30	35	40	45	50	60	70	80	90	100	110	120	130		10	45	+0.024 +0.011	50
	35				30	35	40	45	50	60	70	80	90	100	110	120	130		48		54		
	36					30	35	40	45	50	60	70									50	55	
	40	+0.029 +0.010			30	35	40	45	50	60	70	80	90	100	110	120	130			12	55	+0.024 +0.011	60
	50					40	45	50	60	70	80	90	100	110	120	130	140	150			70		75
	60									60	70	80	90	100	110	120	130	140	150	80	86		

d	L1																	
	L 15	L 20	L 25	L 30	L 35	L 40	L 45	L 50	L 60	L 70	L 80	L 90	L 100	L 110	L 120	L 130	L 140	L 150
8	15	15	15															
10	15	20	20	20	20	20												
12	15	20	25	25	25	25	25	25										
13	15	20	25	25	25	25	25	25										
16	15	20	25	30	35	30	30	30										
20		20	25	30	35	40	40	40	40	40	40							
25		20	25	30	35	40	45	50	50	50	50	50	50	50	50	50		
28			25	30	35	40	45	50	56	56	56							
30			25	30	35	40	45	50	60	60	60	60	60	60	60	60		
32			25	30	35	40	45	50	60	60	60	60	60	60	60	60		
35				30	35	40	45	50	60	70	70	70	70	70	70	70	70	
36				30	35	40	45	50	60	70	70							
40				30	35	40	45	50	60	70	80	80	80	80	80	80	80	
50					40	45	50	60	70	80	90	100	100	100	100	100	100	100
60								60	70	80	90	100	110	120	120	120	120	120

Leader Bushes (Straight Type) - สีดเดอ์บุช แบบตรง



Model: 25GBSE



ORDER Model d - L
 EXAMPLE 25GBSE25-50 SUJ2 58HRC-

Model	d G6		L												t	D m5			
25GBSE	8	+0.014 +0.005	15	20	25												6	12	+0.015 +0.007
	10		15	20	25	30	35	40								14			
	12		15	20	25	30	35	40								18			
	13	+0.017 +0.006	15	20	25	30	35	40								20			
	16		15	20	25	30	35	40	45	50						25	+0.017 +0.008		
	20		15	20	25	30	35	40	45	50	60	70	80			30			
	25	+0.020 +0.007	20	25	30	35	40	45	50	60	70	80	90	100		35	+0.020 +0.009		
	28		20	25	30	35	40	45	50	60	70	80	90	100		40			
	30		20	25	30	35	40	45	50	60	70	80	90	100		42			
	32		20	25	30	35	40	45	50	60	70	80	90	100		45			
	35			25	30	35	40	45	50	60	70	80	90	100		48	+0.024 +0.011		
	36	+0.025 +0.009		25	30	35	40	45	50	60	70	80	90	100		50			
	40			25	30	35	40	45	50	60	70	80	90	100	110	120		55	
	50				30	35	40	45	50	60	70	80	90	100	110	120		70	
60	+0.029 +0.010							50	60	70	80	90	100	110	120	80			

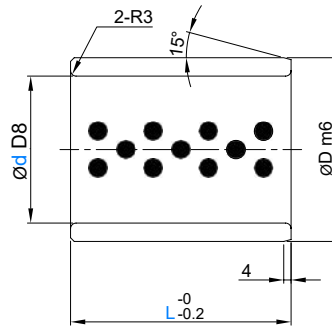
d	L1															
	L 15	L 20	L 25	L 30	L 35	L 40	L 45	L 50	L 60	L 70	L 80	L 90	L 100	L 110	L 120	
8	15	15	15													
10	15	20	20	20	20	20										
12	15	20	25	25	25	25										
13	15	20	25	25	25	25										
16	15	20	25	30	35	30	30	30								
20	15	20	25	30	35	40	40	40	40	40	40					
25	15	20	25	30	35	40	45	50	50	50	50	50	50			
28		20	25	30	35	40	45	50	56	56	56	56	56			
30		20	25	30	35	40	45	50	60	60	60	60	60			
32		20	25	30	35	40	45	50	60	60	60	60	60			
35			25	30	35	40	45	50	60	70	70	70	70			
36			25	30	35	40	45	50	60	70	70	70	70			
40			25	30	35	40	45	50	60	70	80	80	80	80	80	
50				30	35	40	45	50	60	70	80	90	100	100	100	
60								50	60	70	80	90	100	110	120	

โถงพิน และ บุช

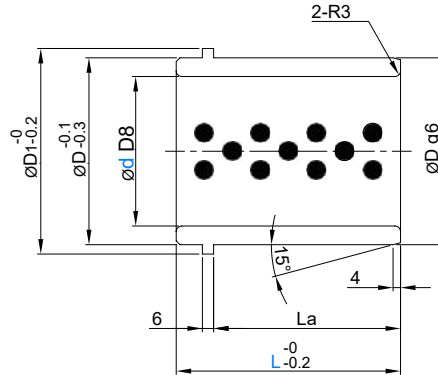
Guide Bushes for Large Mold - โถงบุชสำหรับแม่พิมพ์ขนาดใหญ่



Model: 25RGBD-W
แบบตรง
Straight Type

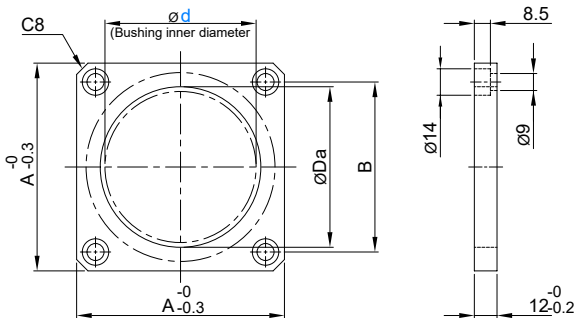


Model: 25RGBTD-W
แบบมีปาก
Flange Type



ORDER EXAMPLE Model d - L
25RGBD-W80-100 Copper Alloy Oil Free™ Solid Lubricant

Model	d D8	L	D	D tolerance		D1	La
				25RGBD-W m6	25RGBTD-W g6		
25RGBD-W	60	+0.146 +0.100	70	80	+0.030	90	53
			90		+0.011		-0.010 -0.029
25RGBTD-W	80		100	100	+0.035	110	80
			120		+0.013		-0.012 -0.034



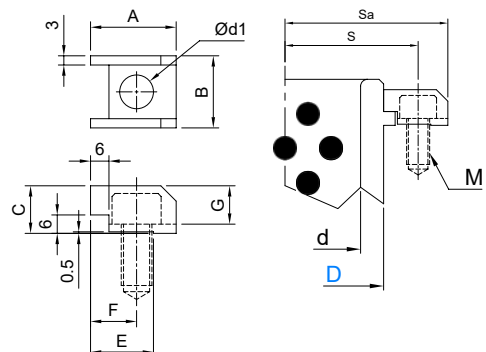
Model: 25GBSP

S45C Black Oxide

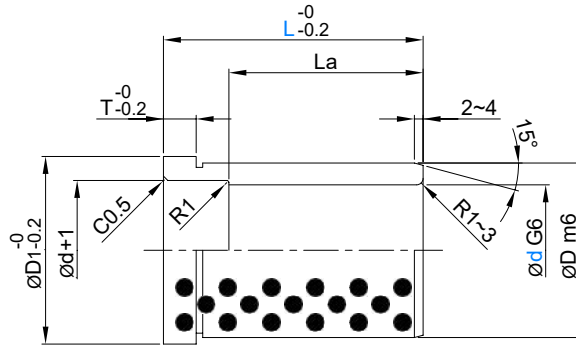
Model	d	A	B	Da	Use with D
25GBSP	60	90	70	65	80
	80	110	90	85	100

Model: 25SNG S45C

Order Code	d	D	M	S	Sa	A	B	d1	C	E	F	G
25SNG720000	60	80	M8	54	65.1	24.6	18.9	9	13	18	13.5	10
	80	100		65	76.1							
25SNG730000	60	80	M10	55.5	68.4	27.9	23.5	11	15.5	20.5	15	12.5
	80	100		66.5	79.4							



Model: 25RGBF-W



ORDER EXAMPLE Model **d - L**
 25RGBF-W50-89 Copper Alloy Oil Free™ Solid Lubricant

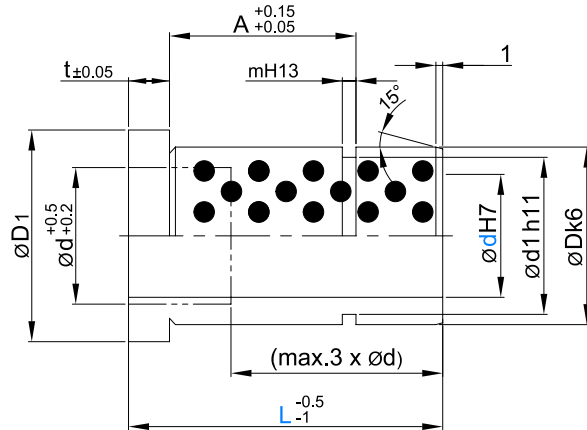
Model	d G6	L	D m6	D1	T	La	
25RGBF-W	12	19	18	25	4	19	
		24				24	
		29				29	
		34				34	
	16	+0.017 +0.006	19	25	30	6	19
			24				24
			29				29
			34				30
			39				30
			49				30
			59				30
			69				30
	20	+0.020 +0.007	24	30	35	8	24
			29				29
			34				34
			39				39
			49				40
			59				40
			69				40
			79				40
	25	+0.020 +0.007	29	35	40	8	29
			34				34
			39				39
			49				49
		59				50	
		69				50	
		79				50	
		89				50	
30	+0.025 +0.009	29	42	47	10	29	
		34				34	
		39				39	
		49				49	
		59				59	
		69				60	
		79				60	
		89				60	

Model	d G6	L	D m6	D1	T	La	
25RGBF-W	35	39	48	54		39	
		49				49	
		59				59	
		69				69	
			79				70
			89				70
			99				70
			109				70
	40	+0.025 +0.009	39	55	61		39
			49				49
			59				59
			69				69
			79				79
			89				80
			99				80
			109				80
	50	+0.030 +0.011	49	70	76	12	49
			59				59
			69				69
			79				79
			89				89
			99				90
			109				90
			119				90
60	+0.029 +0.010	99	80	86	15	99	
		109				109	
		119				110	
		129				110	
		149				110	
		159				110	

Die Casting Guide Bushes - ไกด์บุชสำหรับแม่พิมพ์ไดคาส



Model: 25SOST



ORDER EXAMPLE

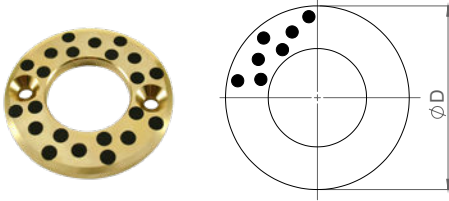
Model d - L
25SOST9-12



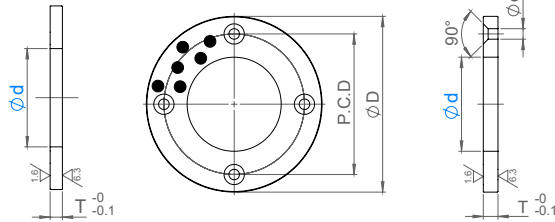
Copper Alloy
Oil Free™ Solid Lubricant

d H7	L	t	D k6	D1	d1 h11	A	m H13	d H7	L	t	D k6	D1	d1 h11	A	m H13							
9	+0.015 +0.000	3	14	-0.032 -0.050	16	13.4	1.1	16	+0.018 +0.000	6	+0.015 +0.002	23	17	-0.000 -0.130	1.3							
																12	17	22	27	36	46	56
																17	22	27	36	46	56	66
																22	27	36	46	56	66	76
																27	36	46	56	66	76	86
10	+0.018 +0.000	3	14	-0.032 -0.050	16	13.4	1.1	18	+0.018 +0.000	6	+0.015 +0.002	23	17	-0.000 -0.130	1.3							
																17	22	27	36	46	56	
																22	27	36	46	56	66	
																27	36	46	56	66	76	
																36	46	56	66	76	86	
12	+0.018 +0.000	6	20	+0.015 +0.002	25	19	-0.000 -0.130	20	+0.021 +0.000	6	+0.015 +0.002	25	19	-0.000 -0.130	1.3							
																17	22	27	36	46	56	
																22	27	36	46	56	66	
																27	36	46	56	66	76	
																36	46	56	66	76	86	
14	+0.018 +0.000	6	20	+0.015 +0.002	25	19	-0.000 -0.130	20	+0.021 +0.000	6	+0.015 +0.002	25	19	-0.000 -0.130	1.3							
																17	22	27	36	46	56	
																22	27	36	46	56	66	
																27	36	46	56	66	76	
																36	46	56	66	76	86	
15	+0.018 +0.000	6	20	+0.015 +0.002	25	19	-0.000 -0.130	20	+0.021 +0.000	6	+0.015 +0.002	25	19	-0.000 -0.130	1.3							
																17	22	27	36	46	56	
																22	27	36	46	56	66	
																27	36	46	56	66	76	
																36	46	56	66	76	86	

ไม่มีรูยึดตกรู
No bolt holes
Model: 25WSBW-N



มีรูยึดตกรู
With bolt holes
Model: 25WSBW



ORDER
EXAMPLE

Model - No.
25WSBW-25

⚠ Temperature Resistance
-40° C - 300°C

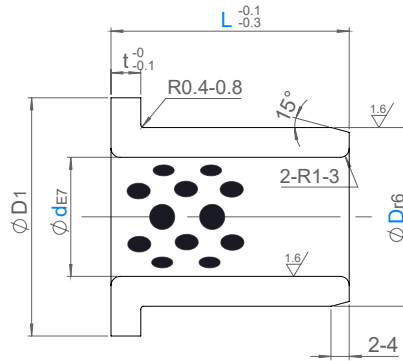
Ⓜ Copper Alloy
Oil Free™ Solid Lubricant

Model	No.	d	D	T	P.C.D	Number of Holes	Flat Head Screw	d1
25WSBW (with holes)	6	6.2	25	3	15	2	M3	3.5
	8	8.2	28		18			
	10	10.2	30		20			
	12	12.2	40		28			
	13	13.2						
	14	14.2						
	15	15.2						
	16	16.2	50	35				
	18	18.2						
	20	20.2						
	25	25.2			55		5	40
	30	30.2	60	45				
25WSBW-N (no holes)	35	35.2	70	7	60	4	M6	7
	40	40.2	80		67.5			
	45	45.3	90	8	75			
	50	50.3	100		85			
	55	55.3	110		90			
	60	60.3	120		95			
	65	65.3	125		100			
	70	70.3	130		110		M8	
	75	75.3	140	120				
	80	80.3	150	140				
90	90.5	170	160	M10	11			
100	100.5	190	175					
120	120.5	200						

Oil Free™ Flange Bush (Universal) - บุชมีปีกออยฟรี™



Model: 25FSBW



ORDER
EXAMPLE

25FSBW d - D - L
25FSBW25-35-50



Temperature Resistance
-40° C - 300°C



Copper Alloy
Oil Free™ Solid Lubricant

d E7		D r6		L										D1	t						
5	+0.032 +0.020	9	+0.028 +0.019	10	12										14	2					
6		10		10	12	15									16						
8	+0.040 +0.025	12	+0.034 +0.023	10	12	15		20							20	3					
10		14		10	12	15		20	25	30					22						
12	+0.050 +0.032	18	+0.041 +0.028	10	12	15		20	25	30					25	5					
13		19		10	12	15	17	20	25	30					26						
14	+0.050 +0.032	20	+0.041 +0.028			15		20	25	30					27	7.5					
15		21		10	12	15		20	25	30					28						
16	+0.061 +0.040	22	+0.050 +0.034		12	15		20	25	30	35	40			29	10					
18		24				15		20	25	30	35	40			32						
20	+0.075 +0.050	30	+0.060 +0.041			15		20	25	30	35	40			40	10					
25		35				15		20	25	30	35	40	50				45				
30	+0.075 +0.050	40	+0.060 +0.041					20	25	30	35	40	50			50					
31.5		45						20	25	30	35	40	50			60					
35	+0.075 +0.050	50	+0.060 +0.041					20	25	30	35	40	50			65					
40		55						20	25	30	35	40	50	60		70					
45	+0.090 +0.060	60	+0.062 +0.043					20	25	30	35	40	50	60		75					
50		65								30	35	40		60		80					
55	+0.090 +0.060	75	+0.073 +0.051										30	35	40	50	60	80			
60		85																50	60	80	
70	+0.107 +0.072	90	+0.076 +0.054															60	80	100	
75		100																	60	80	100
80	+0.107 +0.072	110	+0.088 +0.063																60	80	100
90		120																	60	80	100
100	+0.107 +0.072	140	+0.088 +0.063																80	100	150
120																			80	100	170



Name	Precision Ejector Leader Pins	Precision Ejector Leader Pins with Dowel Hole	Precision Ejector Leader Pins with C Ring	Precision Ejector Leader Pins with Stepped
Model	25ETH	25ETHC / 25ETHN	25ETHR	25EGD / 25EGDP
Page	27	28	29	30



Name	Precision Ejector Leader Pins with Counter Bore	Precision Ejector Leader Pins with Through Hole	Ejector Leader Pins for Large Mold
Model	25ETZA	25ETHA	25EGDX / 25EGDHE / 25EGDHF
Page	31	31	32



Name	Ejector Leader Bush		Ejector Leader Bush Long Type	
Model	25EGBH / 25EGBHZ-I	25EGBZS-W / 25EGBZ-W	25EGB-W / 25EGBK-W	25EGBL-W / 25EGBLH-W
Page	33	34	35	36



Name	Ejector Leader Bush for Die Cast	Ejector & Stripper Plate Leader Bush	Ball Guide with Snap Ring	Ejector Leader Bush for Ball Retainer	Ball Retainer
Model	25SOSG	25SOVM / 25SOEG	25EGBT	25EGBB	25SB-W
Page	37	38	39	40	40



Name	Return Pins	Return Pins for Large Mold	Early Return Units for Ejector Plate	Support Pillars with Tapped	Support Pillars with Dowel Hole
Model	25RT_T(L/V/Z)	25RT_T(XE/XF/SM)	25ERST	25SPL	25SPLG
Page	41	42	43	44	44



Name	Support Pillars with Bolt Hole	Support Pillars with Stepped	Spacer Rings / Stopper Rings / Stopper Pins		
Model	25DSPL	25SPLF	25SPW / 25SPWG / 25SPWD / 25STRT / 25STRB / 25SPPN / 25SPPH		
Page	45	45	46		

ตารางการเลือกชิ้นส่วนการอีเจ็ค | Ejector Components Selecting Chart

Types	Model	Page
Tapped 	25ETH	P.27
Tapped + Dowel 	25ETHC	P.28
Dowel 	25ETHN	
C Ring 	25ETHR	P.29
Stepped Both Ends 	25EGD	P.30
Stepped + Tap Ends 	25EGDP	
Counterbore Hole 	25ETZA	P.31
Through Hole 	25ETHA	


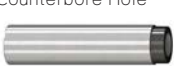
อีเจ็คเตอร์ลีดเดอร์พิน - Ejector Leader Pins

ใช้ร่วมกันได้
Suitable

Types	Model	Page
	Oil Groove	25EGBH
	Oil Free	25EGBHZ-I
	25EGBZS-W 25EGBZ-W	P.34
	Copper Alloy Oil Free	25EGB-W 25EGBK-W
	25SOVM 25TSOEG	P.38
	Copper Alloy Oil Free Long Type	25EGBL-W
	Ball Guide	25EGBT
		P.39


อีเจ็คเตอร์ลีดเดอร์บูช - Ejector Leader Bushes

Ejector Space




Types	Model	Page
Stepped Both Ends 	25EGDX	P.32
Counterbore Hole 	25EGPHE 25EGPHF	

Large Mold





ใช้ร่วมกันได้
Suitable

Types	Model	Page
	Copper Alloy Oil Free	25EGBLH-W
		P.36

Large Mold

Types	Model	Page
Normal Type 	25RT_TL 25RT_TV 25RT_TZ	P.41
Large Mold 	25RT_TXE 25RT_TXF	P.42
Large Mold + Tapped 	25RT_TSM	

Return Pins

Types	Model	Page
Tapped 	25SPL	P.44
Dowel 	25SPLG	
Bolt Hole 	25DSPL	P.45
Stepped 	25SPLF	

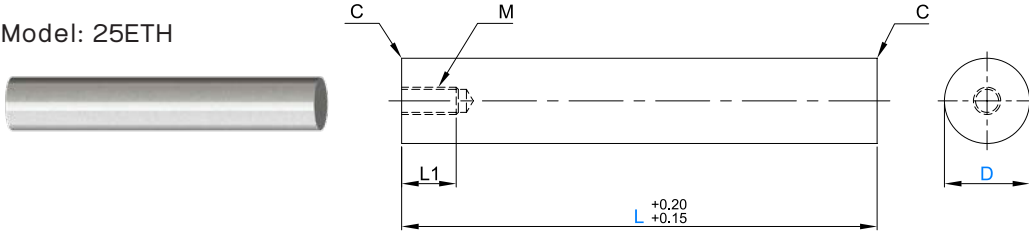
Support Pillars

ชิ้นส่วนการอีเจ็ค

Precision Ejector Leader Pins - อีเจ็คเตอร์ลีดเดอร์พิน

FOIL FREE™

Model: 25ETH



ORDER EXAMPLE Model D - L  SUJ2
25ETH20-100 58HRC-
D30 - 50 (Induction Hardened)

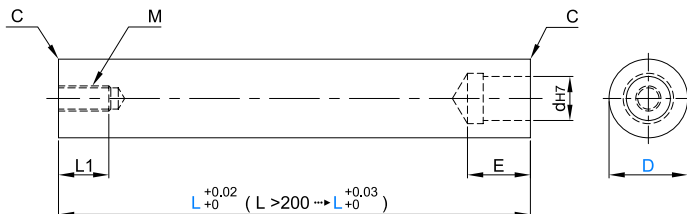
Model	D	L 5mm increment	M	L1	C	
25ETH	6	-0.010 -0.015	30 - 80	M4x0.7	8	0.5
	8	-0.015 -0.020	30 - 100	M5x0.8	10	
	10		30 - 100			
	12	-0.020 -0.025	40 - 100	M6x1.0	12	
	13		40 - 150			
	16		40 - 150			
	20	-0.025 -0.030	40 - 175	M8x1.25	16	1
	25		50 - 250			
	30		50 - 300			
	32		50 - 300			
	35		50 - 300			
	40		50 - 350			
	50		50 - 350			

EJECTOR SPACE COMPONENTS

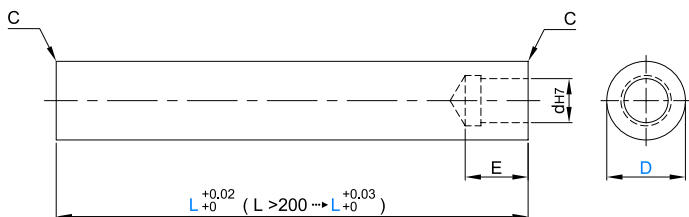
Precision Ejector Leader Pins with Dowel Hole - อีเจ็คเตอร์ลีดเดอร์พิน มีรูโดเวล



Model: 25ETHC
with Tap and Dowel Hole



Model: 25ETHN
with Dowel Hole



ORDER
EXAMPLE

Model D - L
25ETHC20-100



SUJ2
58HRC-
D30 - 50 (Induction Hardened)

Model	D		L 5mm increment	M	L1	d H7		E	C
25ETHC 25ETHN	8	-0.015	40 - 80	M5x0.8	10	5		12	0.5
	10	-0.020	40 - 100						
	12	-0.020 -0.025	40 - 100	M6x1.0	12	6	+0.012 +0.000	15	
	13		40 - 150						
	16		40 - 150						
	20	-0.025 -0.030	50 - 175	M8x1.25	16	8	+0.015 +0.000	20	
	25		50 - 250			10			
	30		50 - 300	M10x1.5	20	13	+0.018 +0.000	25	
	32		50 - 300						
	35		50 - 300						
40	50 - 350								
50	50 - 350				16		1		

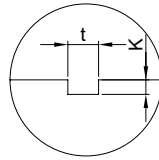
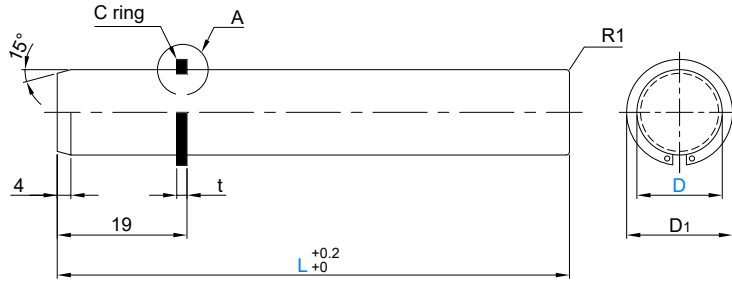
Ejector Space

ชิ้นส่วนการอีเจ็ค

Precision Ejector Leader Pins with C Ring - อีเจ็คเตอร์ลีดเดอร์พิน มีแหวนตัว C

FOIL FREE™

Model: 25ETHR



i ร่องสำหรับแหวนตัว C
Groove for C Ring

ORDER EXAMPLE Model D - L
25ETHR20-100

M SUJ2
58HRC-

M C Ring
S45C

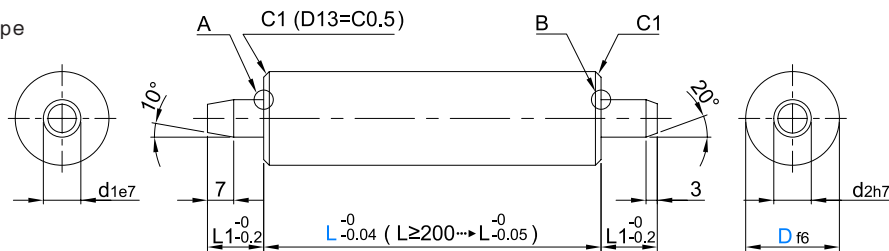
Model	D		L 5mm increment	D1	K	t	C-Ring		
							Internal Dia	External Dia	Thickness
25ETHR	10	-0.015 -0.020	60 - 120	13.3	0.2	1.15	9.3	13.3	1.0
	13	-0.020 -0.025	70 - 170	16.6	0.3		12.0	16.6	1.0
	16		70 - 170	19.7	0.4		14.7	19.7	1.0
	20	-0.025 -0.030	70 - 200	24.3	0.5	1.35	18.5	24.3	1.2
	25		70 - 200	29.8	0.55		23.2	29.8	1.2

EJECTOR SPACE COMPONENTS

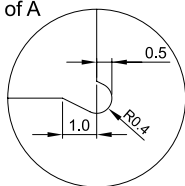
Precision Ejector Leader Pins with Stepped - อีเจ็คเตอร์ลีดเดอร์พิน รุ่นสตีป



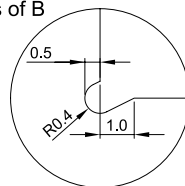
Model: 25EGD
Both Ends Stepped Type



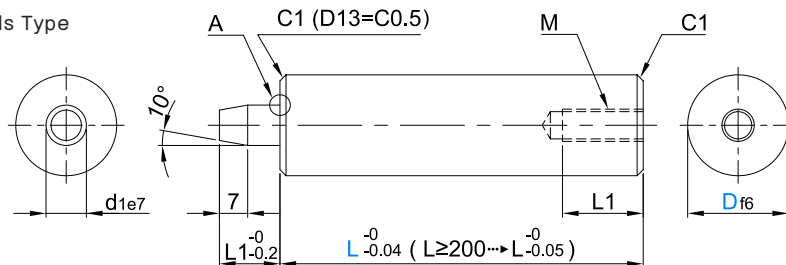
•Details of A



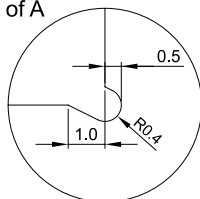
•Details of B



Model: 25EGDP
Stepped + Tapped Ends Type



•Details of A



ORDER
EXAMPLE

Model D - L
25EGD20-100



SUJ2
58HRC- (Induction Hardened)

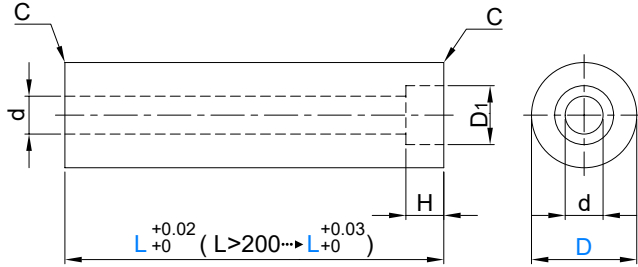
Model	D f6		L 5mm increment	d1 e7	d2 h7		L1	M
25EGD	13	-0.016	40 - 150	8	8	-0.000	12	M6x1.0
	16	-0.027	50 - 150					
	20	-0.020	50 - 150	10	10	-0.015	15	
25EGDP	25	-0.033	50 - 150	20	-0.040	20	-0.000	M8x1.25
30	-0.025	50 - 300						
35	-0.041	50 - 300						
40	-0.025	90 - 300						
25EGD	50	-0.041	90 - 300				20	M10x1.5

ชิ้นส่วนการอีเจ็ค

Precision Ejector Leader Pins with Counter Bore - อีเจ็คเตอร์ลีดเดอร์พิน มีรูบอร์



Model: 25ETZA



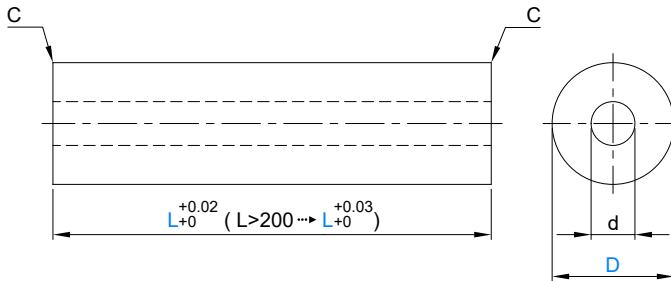
ORDER Model D - L
EXAMPLE 25ETZA20-100 SUJ2 58HRC- (Induction Hardened)

Model	D		L 5mm increment	M	d	D1	H	C
25ETZA	16	-0.020 -0.025	50 - 90	M6	7	11	7	0.5
	20	-0.025 -0.030	50 - 130	M8	9	14	9	
	25		50 - 130					
	30		50 - 190	M10	11	18	13	
	35		50 - 190					
	40	50 - 250	M12	14	20	15	1	

Precision Ejector Leader Pins with Through Hole - อีเจ็คเตอร์ลีดเดอร์พิน มีรูทะลุ



Model: 25ETHA



ORDER Model D - L
EXAMPLE 25ETHA20-100 SUJ2 58HRC- (Induction Hardened)

Model	D		L 5mm increment	M	d
25ETHA	16	-0.020 -0.025	50 - 90	M6	7
	20	-0.025 -0.030	50 - 130	M8	9
	25		50 - 130		
	30		50 - 190	M10	11
	35		50 - 190		
	40	50 - 250	M12	14	

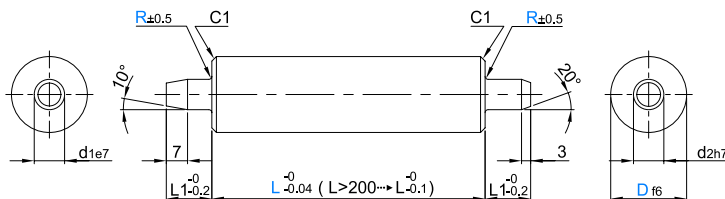
EJECTOR SPACE COMPONENTS

Ejector Leader Pins for Large Mold - อีเจ็คเตอร์ลีดเดอร์พิน สำหรับแม่พิมพ์ขนาดใหญ่

Oil Free™

Model:

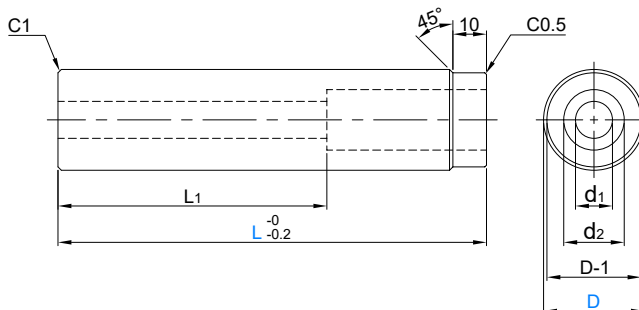
25EGDX (D f6)



Model:

25EGDHE (D e7)

25EGDHF (D f6)



ORDER
EXAMPLE

Model D - L - R
25EGDX40-300-1



SUJ2
58HRC- (Induction Hardened)

Model	D f6		L 5mm increment	R	d1 e7		d2 h7		L1
	30	-0.020 -0.033			20	20	-0.000 -0.021		
25EGDX	40	-0.025 -0.041	150 - 400	1 / 2 / 3	30	-0.040 -0.061	30	-0.025 -0.041	30
	50		150 - 400						

Model	D	D Tolerance		L 5mm increment	d1	d2	L1	Bolt
		e7	f6					
25EGDHE	25	-0.040 -0.061	-0.020 -0.033	150 - 200	9	14	75	24CB8-90
				205 - 250			105	24CB8-120
				255 - 300			135	24CB8-150
25EGDHF	35	-0.050 -0.075	-0.025 -0.041	150 - 200	11	18	80	24CB10-100
				205 - 250			110	24CB10-130
				255 - 300			140	24CB10-160
25EGDHF	40	-0.050 -0.075	-0.025 -0.041	150 - 200	11	18	80	24CB10-100
				205 - 250			110	24CB10-130
				255 - 300			140	24CB10-160
				305 - 350			180	24CB10-200

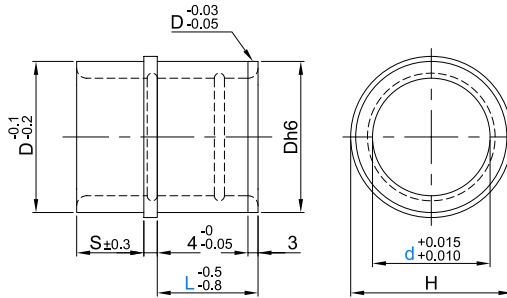
ชิ้นส่วนการอีเจ็ค

Ejector Leader Bush - อีเจ็คเตอร์ลีดเดอร์บู้ช

FOIL FREE™

Model: 25EGBH

M SUJ2
58HRC-

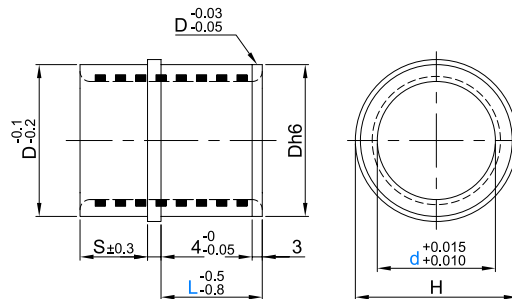


ORDER Model d - L
EXAMPLE 25EGBH20-30

Model	d	L						S	H	D h6	
25EGBH	8	10	13	15				8	19	16	-0.000 -0.011
	10	10	13	15	20			8	21	18	
	12	10	13					10	23	20	-0.000 -0.013
	13	10	13	15	20	25		10	25	22	
	16	10	13	15	20	25		10	28	25	
	20	10	13	15	20	25	30	10	33	30	
	25		13	15	20	25	30	10	38	35	-0.000 -0.016
	30		13	15	20	25	30	15	43	40	
	32			15	20	25	30	15	45	42	
	35				20	25	30	20	48	45	-0.000 -0.019
40				20	25	30	20	55	52		
50					25	30	20	65	62		

Model: 25EGBHZ-I

M SUJ2
58HRC-
Oil Free™ Solid Lubricant



Model	d	L						S	H	D h6	
25EGBHZ-I	13	10	13	15				10	25	22	-0.000 -0.013
	16		13	15	20			10	28	25	
	20		13	15	20			10	33	30	-0.000 -0.016
	25			15	20	25		10	38	35	
	30			15	20	25		15	43	40	
	35				20	25		20	48	45	
	40				20	25	30	20	55	52	-0.000 -0.019
	50					25	30	20	65	62	

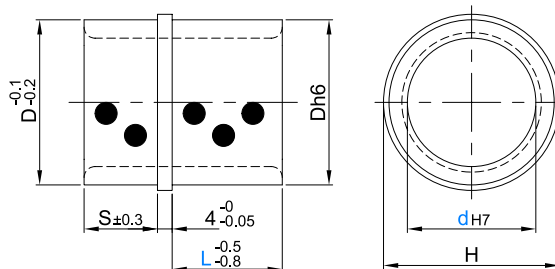
EJECTOR SPACE COMPONENTS

Ejector Leader Bush - อีเจ็คเตอร์ลีตเตอร์บูช



Model: 25EGBZS-W

M Copper Alloy
Oil Free™ Solid Lubricant

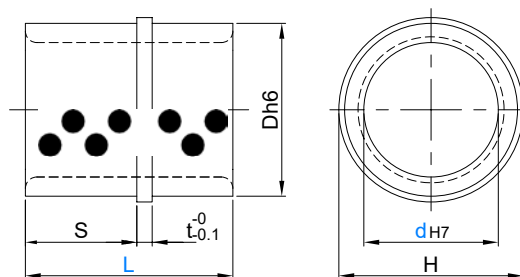


ORDER EXAMPLE Model d - L
25EGBZS-W20-20

Model	d H7		L				H	D h6		S		
25EGBZS-W	13	+0.018 +0.000	10	13	15		25	22	-0.000 -0.013	10		
	16			13	15	20		28		25	10	
	20	+0.021 +0.000		13	15	20		33	30	10		
	25				15	20	25	38	35	10		
	30	+0.025 +0.000			15	20	25	43	40	-0.000 -0.016	15	
	35					20	25	48	45	20		
	40					20	25	30	55	52	-0.000 -0.019	20
	50						25	30	65	62	20	

Model: 25EGBZ-W

M Copper Alloy
Oil Free™ Solid Lubricant



ORDER EXAMPLE Model d - L
25EGBZ-W20-33

Model	d H7		L				t	H	D h6	S								
										L 25	L 33	L 38	L 43	L 53	L 68			
25EGBZ-W	13	+0.018 +0.000	25				4	25	22	-0.000 -0.013	14							
	16			25	33						28	25	14	19				
	20	+0.021 +0.000	25	33	38	43			33	30		14	19	19	24			
	25			25	33	38		43	53	38	35		14	19	19	24	24	
	30	+0.025 +0.000		33	38	43		53		43	40	-0.000 -0.016		19	24	24	29	
	35				38	43		53	68	48	45			24	24	29	39	
	40				43	53		68	8	55	52	-0.000 -0.019				24	29	39
	50					53		68		65	62						29	39

ชิ้นส่วนการอีเจ็ค

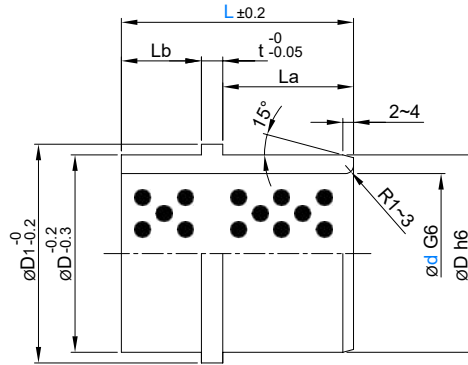
Oil Free Ejector Leader Bush - อีเจ็คเตอร์ลีดเดอร์บุช ออยฟรี



Ejector Space

Model: 25EGB-W
t = 4mm

Model: 25EGBK-W
t = 8mm



ORDER
EXAMPLE Model d - L
25EGB-W30-38

! Temperature Resistance
-40° C ~ 300°C

M Copper Alloy
Oil Free™ Solid Lubricant

Model	d G6	L	D h6	D1	La	Lb	t	Model	d G6	L	D h6	D1	La	Lb	t					
25EGB-W	16	+0.017 +0.008	25	30	12	10	4	25EGBK-W	25	+0.020 +0.007	35	40	19	6	8					
																26	14	40	24	
																28	19	45	29	
																33	24	50	39	
	20	+0.020 +0.007	30	35	12	10	4		25EGBK-W	30	+0.025 +0.009	40	42	15	11	8				
																	26	14	45	24
																	28	19	50	29
																	33	24	55	32
																	38	24	60	42
																	38	24	67	49
	25	+0.020 +0.007	35	40	12	15	4		25EGBK-W	45	+0.025 +0.009	50	50	21	25	8				
																	26	14	55	24
																	28	19	60	29
																	33	24	67	30
	30	+0.025 +0.009	40	45	14	20	4		25EGBK-W	50	+0.029 +0.010	55	55	21	30	8				
																	33	19	60	29
																	38	24	67	39
																	43	24	74	40
	35	+0.025 +0.009	46	50	19	20	4		25EGBK-W	60	+0.029 +0.010	62	62	30	30	8				
																	38	29	67	39
																	43	29	74	40
	40	+0.025 +0.009	52	57	24	20	4		25EGBK-W	60	+0.029 +0.010	74	74	30	30	8				
																	48	29	82	39
																	53	29	87	40
50	+0.025 +0.009	62	67	24	20	4	25EGBK-W	60	+0.029 +0.010	74	74	30	30	8						
															48	29	82	39		
53	29	87	40																	

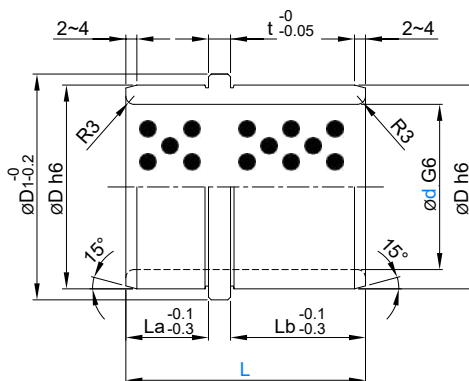
EJECTOR SPACE COMPONENTS

Oil Free Ejector Leader Bush Long Type - อีเจ็คเตอร์ลีดเดอร์บุช ออยฟรี รุ่นยาว



Model: 25EGBL-W

Model: 25EGBLH-W
for Large Mold



Ejector Space

ORDER EXAMPLE

Model d - L
25EGBL-W40-53

! Temperature Resistance
-40° C ~ 300° C

M Copper Alloy
Oil Free™ Solid Lubricant

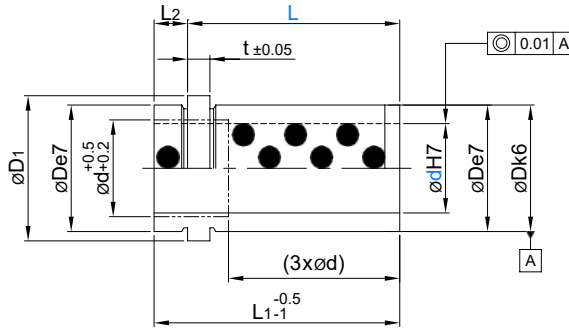
Model	d G6	L	D h6	D1	La	Lb	t			
25EGBL-W	20	33	30	-0.000 -0.013	34	10	19	4		
		37				14				
	25	33	35	-0.000 -0.016	40	10	19			
		37				14				
		42				14			24	
	30	+0.020 +0.007	33	42	-0.000 -0.016	47	10		19	
			37				14			
			42				14		24	
			52				19		29	
	35	+0.025 +0.009	42	48	-0.000 -0.019	53	14		24	
			52				19			29
			68				25			29
40	+0.025 +0.009	43	55	-0.000 -0.019	61	11	24			
		53				16		29		
		68				21		39		
		53				16		29		
50	+0.025 +0.009	53	65	-0.000 -0.019	71	16	29			
		68				21		39		
		53				16		29		
		68				21		39		
25EGBLH-W	40	48	55	-0.000 -0.019	61	16	24	8		
		58				21			29	
	50	58	65	-0.000 -0.019	71	21	29			
		78				31			39	
	60	+0.029 +0.010	78	76	-0.000 -0.019	84	31		39	
			98				41			49

ชิ้นส่วนการอีเจ็ค

Oil Free Ejector Leader Bush for Die Cast - อีเจ็คเตอร์ลีดเดอร์บุช ออยฟรี สำหรับไดคาส



Model: 25SOSG



ORDER EXAMPLE Model d - L 25SOSG20-46

Temperature Resistance -40° C ~ 300° C

Copper Alloy Oil Free™ Solid Lubricant

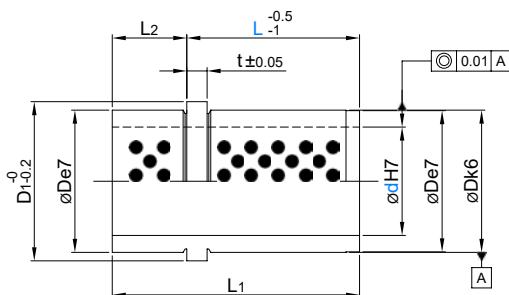
d H7	L	L1	L2	t	D	e7	k6	D1	d H7	L	L1	L2	t	D	e7	k6	D1
9	12	15	3	3	14	-0.032 -0.050	+0.012 +0.001	16	24	17	26	9	6	30	-0.040 -0.061	+0.015 +0.002	31
	17	20								22	31						
	22	25								27	36						
	27	30								36	45						
10	36	39	3	3	14	-0.032 -0.050	+0.012 +0.001	16	24	46	55	9	6	30	-0.040 -0.061	+0.015 +0.002	31
	12	15								56	65						
	17	20								66	75						
	22	25								76	85						
14	27	30	3	3	14	-0.032 -0.050	+0.012 +0.001	16	24	86	95	9	6	30	-0.040 -0.061	+0.015 +0.002	31
	36	39								27	36						
	46	55								46	55						
	56	65								56	65						
15	17	26	9	6	20	-0.040 -0.061	+0.015 +0.002	25	30	76	85	9	6	42	-0.050 -0.075	+0.018 +0.002	47
	22	31								116	125						
	27	36								27	36						
	36	45								36	45						
18	46	55	9	6	20	-0.040 -0.061	+0.015 +0.002	25	30	46	55	9	6	42	-0.050 -0.075	+0.018 +0.002	47
	56	65								56	65						
	66	75								66	75						
	76	85								76	85						
20	17	26	9	6	26	-0.040 -0.061	+0.015 +0.002	31	40	96	105	12	10	54	-0.060 -0.090	+0.021 +0.002	60
	22	31								116	128						
	27	36								136	148						
	36	45								156	168						
22	46	55	9	6	26	-0.040 -0.061	+0.015 +0.002	31	40	56	68	12	10	54	-0.060 -0.090	+0.021 +0.002	60
	56	65								66	78						
	66	75								76	88						
	76	85								86	98						
22	66	75	9	6	30	-0.040 -0.061	+0.015 +0.002	35	42	96	108	12	10	54	-0.060 -0.090	+0.021 +0.002	60
	76	85								116	128						
	86	95								136	148						
	96	105								156	168						

EJECTOR SPACE COMPONENTS

Oil Free Ejector & Stripper Plate Leader Bush - อีเจ็คเตอร์ลีดเดอร์บุช และ สตรีปเปอร์เพลท



Model: 25SOVM



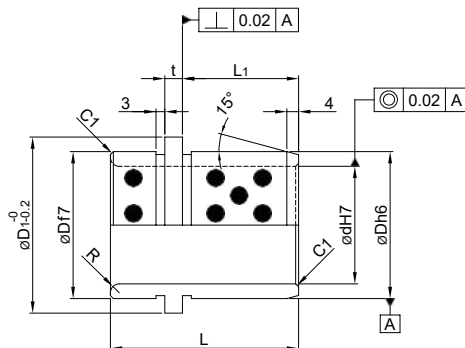
ORDER EXAMPLE Model d - L
25SOVM20-27

⚠ Temperature Resistance
-40° C - 300°C

Ⓜ Copper Alloy
Oil Free™ Solid Lubricant

Model	d H7	L	L1	L2	t	D	e7	k6	D1	
25SOVM	9	+0.015	9	15	6	3	14	-0.032 -0.050	+0.012 +0.001	16
	10	+0.000	17	26	9					
	14	+0.018	17	39	17					
	15	+0.000	22	22	17	6	20	-0.040 -0.061	+0.015 +0.002	25
	18	+0.000	22	39	17					
	20	+0.021	27	49	22					
	22	+0.000	27	63	27					
	24	+0.000	36	63	27	42	30	-0.050 -0.075	+0.018 +0.002	35
	30	+0.025	36	73	27					
32	+0.000	46	73	27						

Model: 25TSOEG



ORDER EXAMPLE Model d - L
25TSOEG40-60

⚠ Temperature Resistance
-40° C - 300°C

Ⓜ Copper Alloy
Oil Free™ Solid Lubricant

Model	d H7	L	L1	t	D	f7	h6	D1	R		
25TSOEG	25	+0.021	43	24	7.5	35	-0.025 -0.050	-0.000 -0.016	40	3	
	30	+0.000	43								42
	40	+0.025	60	35.5	6	50			59.9	4	
			64	39.5							
	50	+0.000	77	44.5	8	63			71.9	4	
			92	55.5							
	60	+0.030	78	49	7.5	80	-0.030 -0.060	-0.000 -0.019	86	3	
			95	55.5							
			63	+0.000	100	62.5	8				89.9
108											

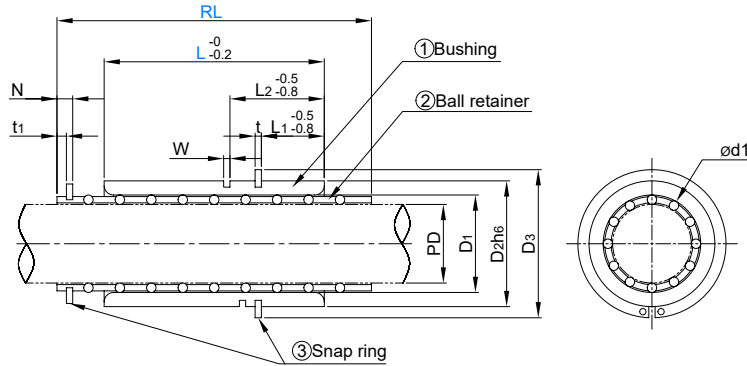
ชิ้นส่วนการอีเจ็ค

Ball Guide with Snap Ring - บอลไกด์ แบบมีแหวน

FOIL FREE™

Model: 25EGBT

Ejector Space



ORDER Model No. - L - RL
EXAMPLE 25EGBT20-38-50

- ① SUJ2 58HRC-
- ② Body : Brass
Ball : 62 - 67HRC
- ③ Snap Ring
Spring Steel

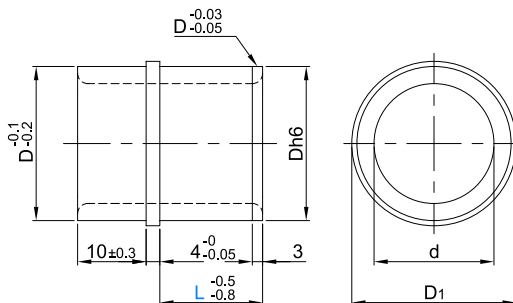
Model	No.	L	RL	PD	Max Stroke S	D1	D2 h6	D3	L1	L2	t	W	N	t1	d1	
25EGBT	10	25	35	10	38	14	19	-0.000 -0.013	23.6	13	-	1.2	1.3	1	2	
			40		48											
	13	28	40	13	40	17	23		28.5	15	20	1.5	1.6	2.5		1.2
			50		60											
	16	32	40	16	32	20	28		34.2	20	25	1.8	1.9	3		1.5
			50		52											
	20	38	50	20	42	26	32	38.4	25	30	2.0	2.1	4	1.8		
			60		62											
	25	45	50	25	29	31	40	-0.000 -0.016	47.1	30	35	2.2	2.3	5	2.0	
			60		49											
			70		69											

EJECTOR SPACE COMPONENTS

Ejector Leader Bush for Ball Retainer - บุชสำหรับบอลรีเทนเนอร์



Model: 25EGBB



ORDER EXAMPLE

Model No. - L
25EGBB20-25

M SUJ2
58HRC-

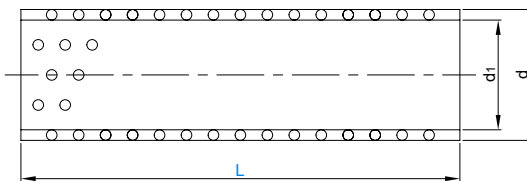
Model	No.	L				D1	D h6		d	
25EGBB	8	13	15			19	16	-0.000	12	-0.025
	10	13	15			21	18	-0.011	14	-0.030
	13	13	15	20	25	25	22	-0.000 -0.013	17	-0.030
	16	13	15	20	25	28	25		20	-0.035
	20	13	15	20	25	33	30		24	
	25	13	15	20	25	38	35	-0.000	29	-0.035
	30	13	15	20	25	43	40	-0.016	34	-0.040

Ball Retainer - บอลรีเทนเนอร์



Model: 25SB-W

M Body : Brass
Ball : 62 - 67HRC



ORDER EXAMPLE

Model PD - L
25SB-W20-35

Model	PD (Post Diameter)	L	d1	d	ball dia	Number of Balls	Model	PD (Post Diameter)	L	d1	d	ball dia	Number of Balls
25SB-W (Brass)	8	25	8.2	11.7	2	45	25SB-W (Brass)	20	35	20.2	23.7		156
		55				40			180				
		65				45			204				
		75				50			228				
	54	55	252										
	66	60	276										
	78	65	300										
	90	70	324										
	104	35	195										
	120	40	225										
	136	45	255										
	152	50	285										
	168	55	315										
	184	60	345										
	200	65	375										
	216	70	405										
	130	30	30.2	33.7		130		234					
	150					270							
	170					306							
	190					342							
210	378												
230	414												
250	450												
270	486												

ชิ้นส่วนการอีเจ็ค

Return Pins - รีเทิร์นพิน

FOIL FREE™

Model:

Head Squareness

25RT_TL

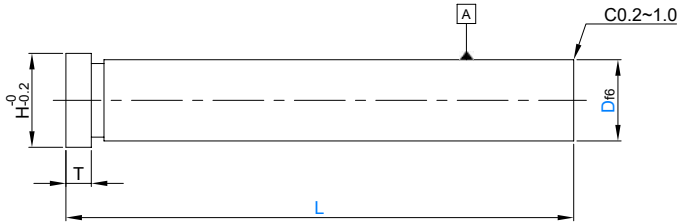
TL 0.10

25RT_TV

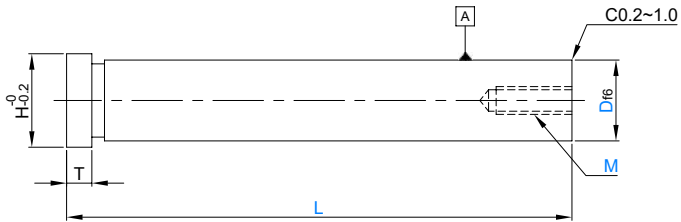
TV 0.05

25RT_TZ

TZ 0.02



i แบบมีรูตัดป
Tapped hole type



ORDER Model T Head Squareness D - L - M
EXAMPLE 25RT4TL20-200-M8



เลือกช่อง M หากต้องการรูตัดป
Choose M size for tapped hole



SUJ2
58HRC- (Induction Hardened)

Model	T	Head Squareness	D		L			M	H
					TL	TV	TZ		
					0.1mm increments		0.01mm increments		
25RT	4	TL (0.10) TV (0.05) TZ (0.02)	8		35.0 - 250.0	35.00 - 250.00	M4	11	
				-0.013 -0.022				15	
			10		35.0 - 300.0	35.00 - 300.00	M4 / M5	17	
	-0.016 -0.027			13	35.0 - 300.0	35.00 - 300.00	M5 / M6	18	
	8		TL (0.10)	15		35.0 - 350.0	35.00 - 350.00	M6 / M8	20
					-0.020 -0.033	16	35.0 - 350.0	35.00 - 350.00	M6 / M8
		10			50.0 - 600.0	50.00 - 600.00	M6 / M8 / M10 / M12	25	
			50.0 - 600.0	50.00 - 600.00	M8 / M10 / M12 / M16	30			
			50.0 - 650.0	50.00 - 650.00		35			
		50.0 - 650.0	50.00 - 650.00	37					
	8	TL (0.10)	35	-0.025 -0.041	100.0 - 700.0	100.00 - 700.00	M8 / M10 / M12 / M16	40	
					40	100.0 - 700.0		100.00 - 700.00	45
50					100.0 - 700.0	100.00 - 700.00		55	

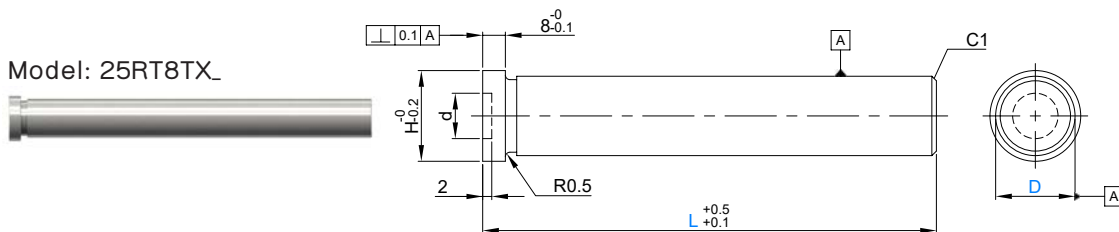
Ejector Space

EJECTOR SPACE COMPONENTS

Return Pins for Large Mold (Counterbore Type) - รีเทิร์นพิน สำหรับแม่พิมพ์ใหญ่



Model: 25RT8TX_



ORDER
EXAMPLE

Model Tolerance D - L
25RT8TXE20-200

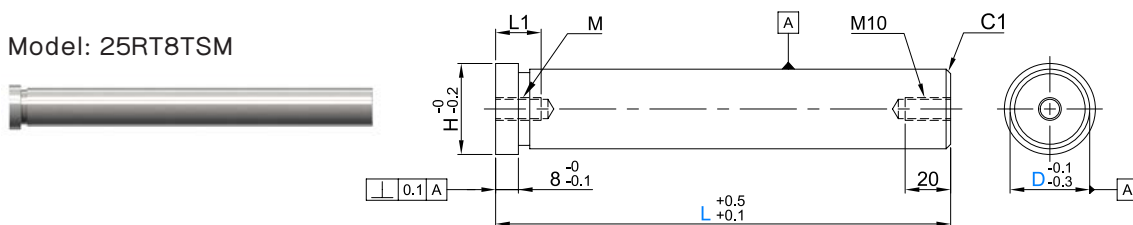
(M) SUJ2
58HRC- (Induction Hardened)

Model	Tolerance	D	e7	f6	L	H	d
					0.1mm increments		
25RT8TX	E (e7) F (f6)	15	-0.032 -0.050	-0.016 -0.027	100.0 - 400.0	20	10.5
		20	-0.040 -0.061	-0.020 -0.033	100.0 - 600.0	25	10.5
		25			100.0 - 700.0	30	15.5
		30	100.0 - 800.0	35	20.5		
		35	-0.050 -0.075	-0.025 -0.041	100.0 - 1000.0	40	25.5

Return Pins for Large Mold (Tapped Type) - รีเทิร์นพิน สำหรับแม่พิมพ์ใหญ่



Model: 25RT8TSM



ORDER
EXAMPLE

Model D - L
25RT8TSM30-200

(M) S45C

Model	D	L	H	M	L1
		1mm increments			
25RT8TSM	25	100 - 700	30	8	15
	30	100 - 800	35	10	20
	32	100 - 800	37		
	40	100 - 800	45		

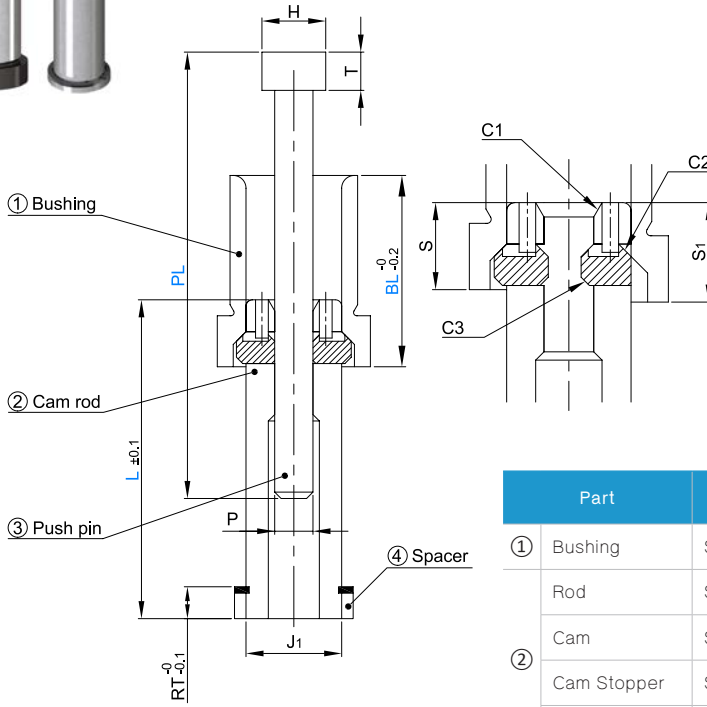
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Early Return Units for Ejector Plate - เเอรี่รีเทิร์นยูนิต

FOIL FREE™

Model: 25ERST

Ejector Space



Part	Materials
① Bushing	SUJ2 58HRC-
Rod	SUJ2 58HRC-
② Cam	SKS3 58HRC-
Cam Stopper	SUS420J 42 - 48HRC
Snap Ring	Spring Steel 45 - 52HRC
③ Push Pin	SKH51 58 - 60HRC (Annealed head)
④ Spacer	S45C

ORDER EXAMPLE

Model No. -BL- L -PL
25ERST10-BL50-L128.5-PL180

Model	No.	Length of Bush	Length of Rod	Length of Pin	P	H	T	J1	RT	S	S1	C1	C2	C3
		BL 1mm increments	L 0.5mm increments	PL 0.01mm increments										
25ERST	6	25 - 60	50 - 125	50 - 200	6	10	6	18.8	4	10.5	12	1.5	1.5	1
	10	35 - 100	60 - 160	50 - 300	10	15	8	24.5			12.5	2	2	1
	16	40 - 100	60 - 160	50 - 350	16	21	8	35.5	8	16.5	19	2.5	2.5	1.5

EJECTOR SPACE COMPONENTS

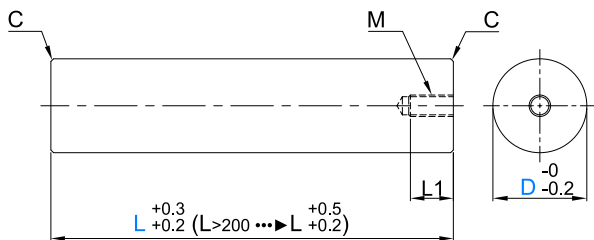
Support Pillars with Tapped - เสาชัฟฟอร์ด มีรูตึ่ปเกลียว

FOIL FREE™



Model: 25SPL

ORDER Model D - L
EXAMPLE 25SPL30-100 S45C (Black Oxide)



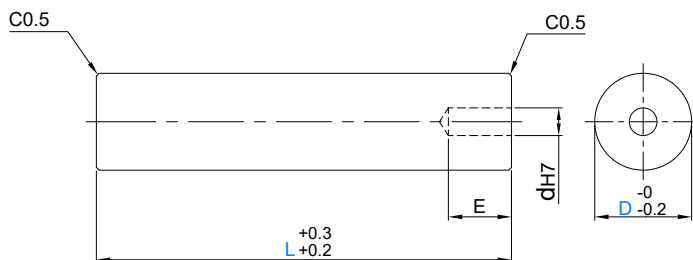
Model	D	L 5mm increments	M	L1	C
25SPL	12	40 - 100	M6 x 1.0	12	0.3
	14	40 - 120			
	16	40 - 120			
	18	40 - 120			
	20	40 - 150	M8 x 1.25	16	0.5
	25	40 - 150			
	30	50 - 300			
	32	50 - 300			
	35	50 - 300	M12 x 1.75	24	0.8
	40	50 - 300			
	50	50 - 400			
	60	70 - 400			
80	70 - 400	M16 x 2.0	32	1.2	
100	100 - 200				
120	100 - 200				

Ejector Space

Support Pillars with Dowel Hole - เสาชัฟฟอร์ด มีรูโดเวล

FOIL FREE™

Model: 25SPLG



ORDER Model D - L
EXAMPLE 25SPLG20-80 S45C (Black Oxide)

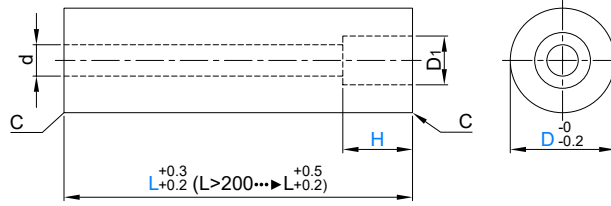
Model	D	L 10mm increments	d H7		E	Dowel Pin
25SPLG	20	40 - 100	8	+0.015 +0.000	15	8x25
	25	50 - 100				
	30	50 - 120	10		20	10x30
	35	50 - 150				
	40	50 - 150				
	50	70 - 200				
					10x35	

ชิ้นส่วนการอีเจ็ค

Support Pillars with Bolt Hole - เสาค้ำพอร์ด มีรูร้อยสกรู



Model: 25DSPL



ORDER Model D - L
EXAMPLE 25DSPL20-100

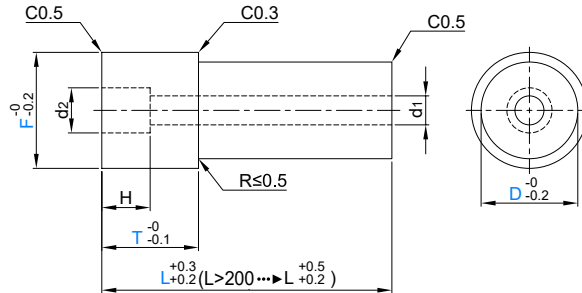
M S45C
(Black Oxide)

Model	D	L 10mm increments	M	H	D1	d	C
25DSPL	16	20 - 100	M6	7	11	7	0.5
	18	20 - 100					
	20	40 - 150					
	25	40 - 150	M8	9	14	9	0.8
	30	40 - 150					
	35	40 - 150	M10	13	18	11	1
	40	40 - 250	M12	15	20	14	
	60	40 - 300	M16	19	26	18	
	80	40 - 300					1.5

Support Pillars with Stepped - เสาค้ำพอร์ด รุ่นสแต็ป



Model: 25SPLF



ORDER Model D - L - F - T
EXAMPLE 25SPLF30-100-35-30.5

M S45C
(Black Oxide)

Model	D	L 0.1mm increments	F	T 0.1mm increments	M	H	d2	d1				
25SPLF	20	45 - 150	25	10 - 45 (L > T)	M6	9	11	7				
			30									
	25	45 - 150	30									
			35									
	30	50 - 200	35						M8	11	14	9
			40									
	35	50 - 250	40		M10	14.5	18	11				
			50									
	40	50 - 250	45		M12	16.5	20	14				
			55									
	50	50 - 250	55		M16	22	25	18				
			65									

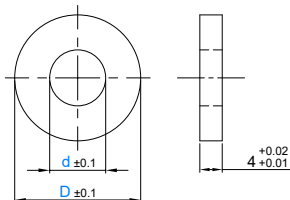
EJECTOR SPACE COMPONENTS

Spacer Rings / Stopper Rings / Stopper Pins - ชิ้นส่วนสเปเซอร์ และ สติ๊อปเปอร์

OF OIL FREE™

Model: 25SPW
Spacer Ring

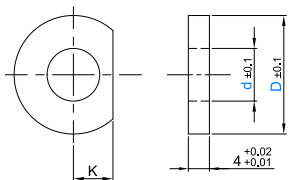
 S45C



ORDER EXAMPLE Model D - d
25SPW20-10.5

Model	D	d
25SPW	13	4.5
		5.5
		6.5
	16	6.5
		8.5
	20	8.5
25	10.5	
	12.5	

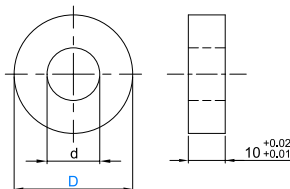
Model: 25SPWG
Segmented Spacer Ring



ORDER EXAMPLE Model D - d
25SPWG13-5.5

Model	D	d	K
25SPWG	13	5.5	5
		6.5	
	16	8.5	6
	20	10.5	7
25	12.5	8	

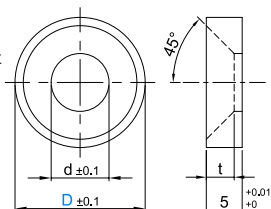
Model: 25SPWD
Die Cast Spacer Ring



ORDER EXAMPLE Model D
25SPWD20

Model	D	d
25SPWD	13	5.5
	16	6.5
	20	8.5
	25	10.5
	30	12.5

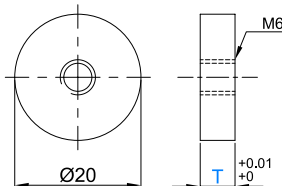
Model: 25STRT
Stopper Ring for Tapered Bolt



ORDER EXAMPLE Model D
25STRT20

Model	D	t	d
25STRT	16	3.0	5.5
	20	3.5	6.5
	25	4.5	8.5

Model: 25STRB
Stopper Ring for Bolt

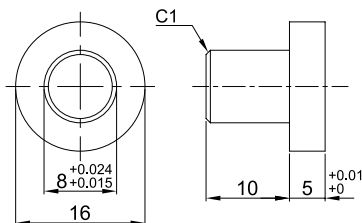


ORDER EXAMPLE Model T
25STRB10

Model	T
25STRB	5
	10
	15


Model: 25SPPN
Stopper Pin (Annealed Steel)

 S45C



ORDER EXAMPLE Model
25SPPN

Model: 25SPPH
Stopper Pin (45 - 50HRC)

 S45C
45 - 50HRC

25SPPN

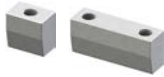
25SPPH



Name	Angular Pins	Angular Pins with Tapped Hole	Angular Pins with Screw
Model	25AGP / 25AGS	25AGU / 25AGUS / 25AGHX / 25AGHXS	25AGM / 25AGMS / 25AGX / 25AGXS
Page	49	50	51



Name	Angular Pins Retainers	Stopper Plate for Angular Pins	Angular Cam	Locking Blocks
Model	25AGRSS / 25AGRWS	25APP	25ANC	25LBCSK / 25LBCSZ / 25LBCSM
Page	52	52	53	53



Name	Locking Blocks Inlay Type	Locking Blocks Side Setting Type	Compact Locking Blocks with Angular Holes
Model	25LBMS / 25LBMD	25LBSS / 25LBSST	25ABPX / 25ABPZS / 25ABPZT
Page	54	55	56






Name	Locking Blocks with Angular Holes	Locking Blocks with Angular Holes (PL Setting)
Model	25ALBMS	25ALBPS
Page	57	58

ตารางการเลือกแองกูล่าพิน | Angular Pins Selecting Chart

Types	Model	Page
Plain Type 	25AGP	P.49
Stepped Type 	25AGS	
Tapped + Wrench Slot 	25AGU	P.50
Tapped + Wrench Slot Stepped Type 	25AGUS	
Tapped + Hex Socket 	25AGHX	
Tapped + Hex Socket Stepped Type 	25AGHXS	P.51
Male Thread + Wrench Slot 	25AGM	
Male Thread + Wrench Slot Stepped Type 	25AGMS	
Cap Bolt 	25AGX	
Cap Bolt Stepped Type 	25AGXS	

ใช้ร่วมกันได้ Suitable

Types	Model	Page
Single Bolt 	25AGRSS	P.52
Double Bolt 	25AGRWS	

Types	Model	Page
Angular Cam Designate Angle 	25ANC	P.53

พิน - Pins

รีเทนเนอร์ - Retainers

แคม - Cam

Angular Pins

Types	SKS3			SKD61	Page
	Plain	Oil Free	Oil Groove	Plain	
Positioning Type 	25LBCKS	25LBKSZ	25LBKSM	-	P.53
Inlay Type 	25LBMS	-	-	25LBMD	P.54
Side Setting Type 	25LBSS 25LBST	-	-	-	P.55
Compact Angular Holes Type 	25ABPX 25ABPZS 25ABPZT	-	-	-	P.56
Angular Holes Type 	25ALBMS	-	-	-	P.57
Angular Holes Type (PL Setting) 	25ALBPS	-	-	-	P.58

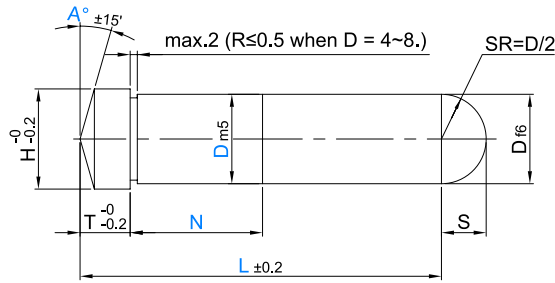
ล็อกกิ้งบล็อก - Locking Blocks

แองกูล่าพิน

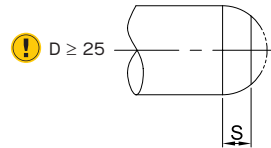
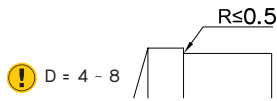
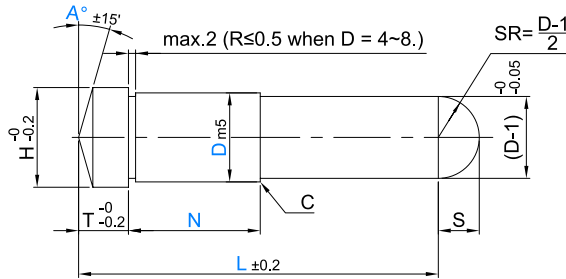
Angular Pins - แองกูล่าพิน



Model: 25AGP



Model: 25AGS
Stepped Type



ORDER EXAMPLE Model D - L - N - A
25AGP25-200-30-15

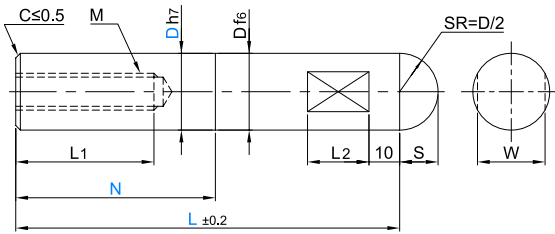
M D4 - 8 : SKD11 (60 - 63HRC)
D10 - 50 : SUJ2 (58HRC- Induction Hardened)

Model	D m5		L	N	A	D f6	T	H	S	
									0.1mm increments	1° increment
25AGP	4	+0.009 +0.004	15 - 90	2 ≤ N N ≤ L-T-1 or N = 0	0 - 30	-0.010 -0.018	5	7	2	1.5
	5		15 - 100					8	2.5	2
	6		15 - 110					9	3	2.5
	8	+0.012 +0.006	20 - 200				10	11	4	3.5
	10	20 - 250	13					5	4.5	
	12	+0.015 +0.007	20 - 250				13	15	6	5.5
	13		20 - 250					16	6.5	6
	15		20 - 250					18	7.5	7
	16		20 - 250					19	8	7.5
	20	+0.017 +0.008	40 - 350				15	23	10	10
25AGS	25		40 - 400	28						
30	60 - 500		35							
32	70 - 500		37							
35	100 - 500		40							
40	+0.020 +0.009		100 - 500	45						
50	200 - 500		20	55						

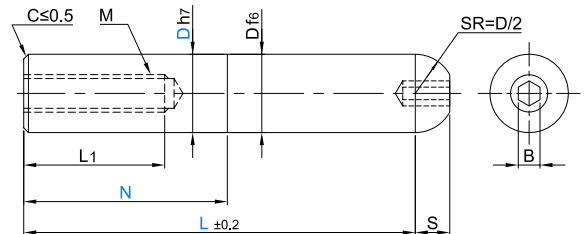
Angular Pins with Tapped Hole - แองกูล่าพิน มีรูต๊ापเกลียว



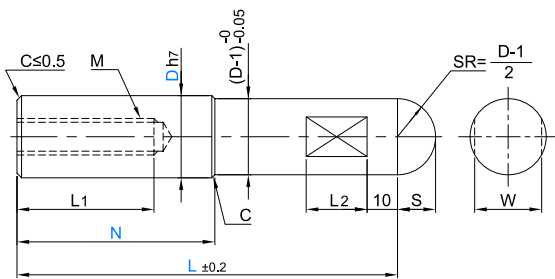
Model: 25AGU
Tapped + Wrench Slot



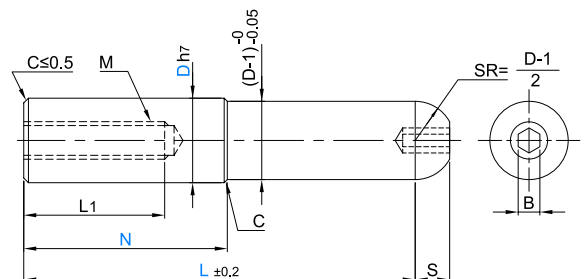
Model: 25AGHX
Tapped + Hex Socket



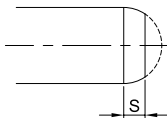
Model: 25AGUS
Tapped + Wrench Slot
Stepped Type



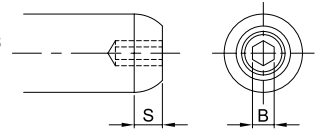
Model: 25AGHXS
Tapped + Hex Socket
Stepped Type



! 25AGU & 25AGUS
D ≥ 25



! 25AGHX & 25AGHXS
D ≥ 20



! D ≤ 16



! D ≥ 20



ORDER
EXAMPLE

Model D - L - N
25AGU25-200-40



SUJ2
58HRC- (Induction Hardened)

Model	D	h7	f6	L		N	M	L1	S				Wrench		Hex		
				0.1mm increments					25AGU	25AGUS	25AGHX	25AGHXS	L2	W	B		
25AGU 25AGHX	10	-0.000 -0.015	-0.013 -0.022	30 - 200	L > N ≥ 0		6	15	5	4.5	3.5	3	8	7			
	13	-0.000 -0.018	-0.016 -0.027	35 - 250			8	20	6.5	6	5	4	10	10		5	
	16			45 - 250			10	25	8	7.5	7	6	10	13			
25AGUS 25AGHXS	20			50 - 350					12	30			6	6	12	17	6
	25	-0.000 -0.021	-0.020 -0.033	50 - 400							10	10			12	22	
	30			60 - 400									10	10		27	
	32			60 - 400					16						18		8
	35	-0.000 -0.025	-0.025 -0.041	60 - 450						40						18	32
	40			60 - 450			20		15	15	15	18		36			

แองกูล่าพิน

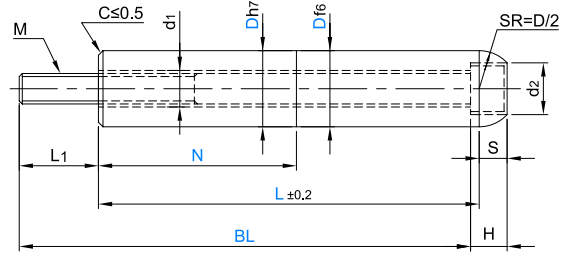
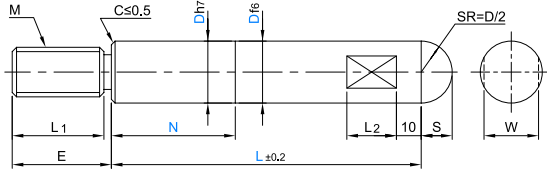
Angular Pins with Screw - แองกูล่าพิน แบบมีสกรู



Model: 25AGM
Male Thread + Wrench Slot



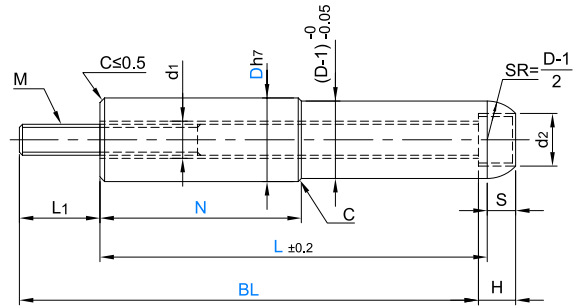
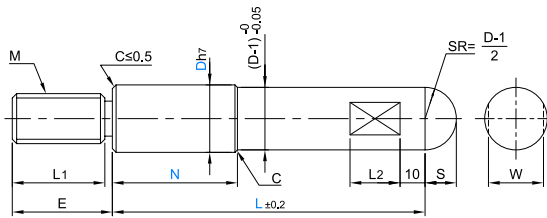
Model: 25AGX
Cap Bolt



Model: 25AGMS
Male Thread + Wrench Slot
Stepped Type



Model: 25AGXS
Cap Bolt
Stepped Type



ORDER MODEL D - L - N - BL
EXAMPLE 25AGX20-200-30-210

① **M** SUJ2
58HRC- (Induction Hardened)

② **M** SCM435
Strength Rank 12.9
class 2 JIS B0205

i L1 = (BL+H) - (L+S)

Model	D h7		D f6	L	N	M	E	L1	S		L2	W		
				0.1mm increments					25AGM	25AGMS		25AGM	25AGMS	
25AGM	8	-0.000	-0.013	40 - 200	L > N ≥ 0	6	12	10	4	3.5	8	7	5.5	
	10	-0.015	-0.022	40 - 200					5	4.5		7	7	
25AGMS	13	-0.000	-0.016	50 - 250		8	22	20	6.5	6	10	10	10	10
	16	-0.018	-0.027	50 - 250									13	13
	20	-0.000	-0.020	50 - 250									17	17

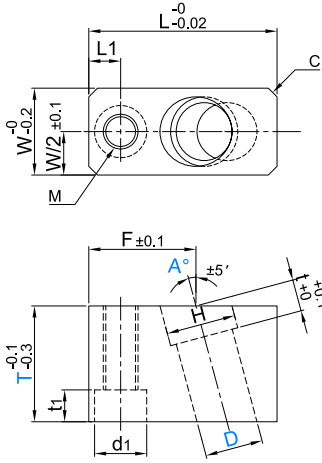
Model	D h7		D f6	L	N	BL		d1	d2	M	H	S
				0.1mm increments		5mm increments	10mm increments					
25AGX	13	-0.000	-0.016	50 - 200	L > N ≥ 0	60 - 95	100 - 210	5.5	9.5	5	5.5	4
	16	-0.018	-0.027	50 - 200				7	11	6	6.5	5
25AGX	20	-0.000	-0.020	50 - 250		60 - 95	100 - 270	9	14	8	9	6
	25	-0.000	-0.033	50 - 250				11	17	10	11	8
25AGXS	30	-0.021	-0.033	60 - 250		60 - 95	100 - 320	14	19	12	13	10
	32	-0.000	-0.025	60 - 250				18	25	16	17	14
	35	-0.000	-0.041	60 - 300								
	40	-0.025	-0.041	60 - 300								

Angular Pins

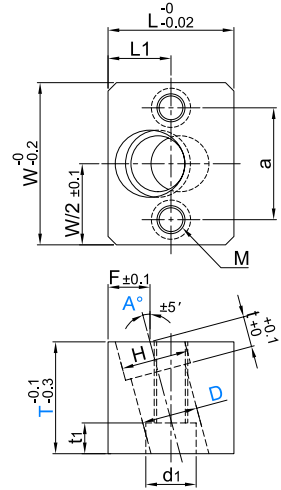
Angular Pins Retainers - รีเทนเนอร์ สำหรับแองกูล่าพิน



Model: 25AGRSS
Single Bolt Type



Model: 25AGRWS
Double Bolt Type



ORDER
EXAMPLE

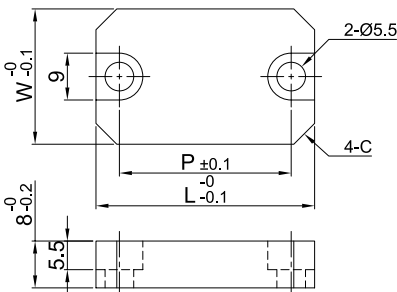
Model D - T - A
25AGRSS20-40-15



Model	D H7		T				A 1° increments	W	L	H	t	F	d1	t1	M	Bolt	L1	a	c				
25AGRSS	8	+0.015 +0.000	20	25			10 - 20	16	35	12	5	19	11	7	8	M6	7	-	3				
	10			25	30				18	40	14			21									
	13	+0.018 +0.000		30	35				22	50	17	10	27	14	9	10	M8			9			
	16				35	40			25	55	20	13	29										
	20	+0.021 +0.000				40		45	30	65	24		35	18	11	12	M10			11			
25AGRWS	8	+0.015 +0.000	20	25			10 - 20	38	24	12	5	8	11	7	8	M6	14	24	8				
	10			25	30				40	28	14	10										16	26
	13	+0.018 +0.000		30	35				44	34	17	12										18	30
	16				35	40			48	40	20	13						21		34			
	20					40		45	58	45	24	13	15	14	9	10	M8	25		40			
	25	+0.021 +0.000				45		50	65	55	29	18										30	46
	30								75	65	36	15	22	18	11	12	M10	35		54			

Stopper Plate for Angular Pins - สต๊อปเพลท สำหรับแองกูล่าพิน

Model: 25APP



ORDER
EXAMPLE

Model No.
25APP10



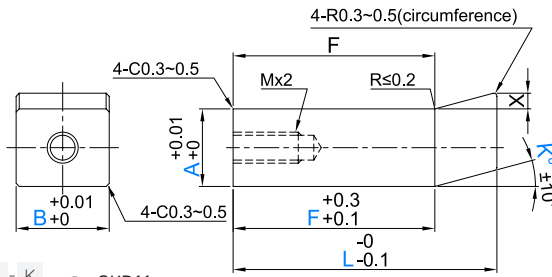
Model	No.	For Model + D	W	L	P	C	
25APP	6	25AGP 25AGS	4 / 5 / 6	13	28	19	2
	10		8 / 10	16	32	23	3
	16		12 / 13 / 15 / 16	22	38	29	5
	20		20	26	42	33	6

แองกูล่าพิน

Angular Cam - แองกูล่าแคม



Model: 25ANC



FOIL FREE™

! $X = (L-F)\tan K^\circ$
 $X < 20$

ORDER EXAMPLE

Model A - B - L - F - K
 25ANC10-20-50-30-20

SKD11
 60 - 63HRC

Model	A	B					0.1mm increments		K 1° increments	M
							L	F		
25ANC	10	10	15	20	25	30	20 - 80	15 ≤ F ≤ L-10	10 - 25	M6x1.00
	15	10	15	20	25	30	20 - 150			M8x1.25
	20		15	20	25	30	20 - 150			
	25		20	25	30	20 - 150				

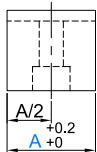
Locking Blocks - ล็อกกิ้งบล็อก

FOIL FREE™

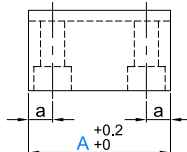
Model: 25LBCSK



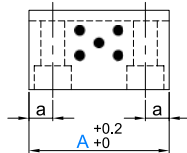
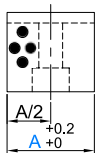
A = 15 - 23



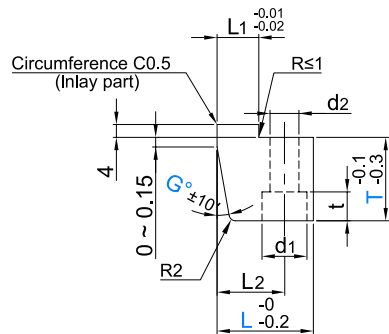
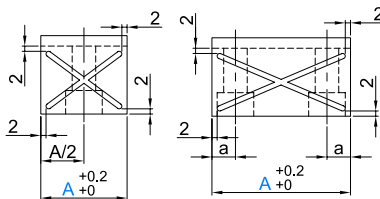
A = 28 - 78



Model: 25LBCSZ
 with Oil Free™
 Solid Lubricant



Model: 25LBCSM
 with Oil Groove



! ร่องน้ำมัน R1.25 Oil Groove

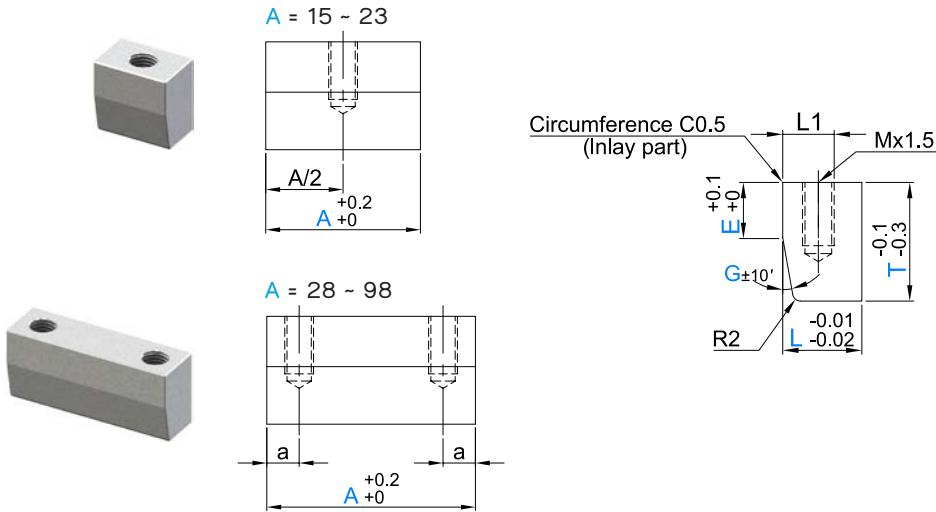
ORDER EXAMPLE

Model L - T - A - G
 25LBCSZ25-20-38-15

SKS3
 53 - 56HRC

Model	L	T	A								G°			a	L1	L2	d1	d2	t				
25LBCSK	20	10	13	15	18	23	28	33	38	48			17	20	22	6	6	13	9.5	5.5	6		
		15	13	15	18	23	28	33	38	48	58			15	17							20	22
		20																					
25LBCSM	25	10			23	28	33	38	48	58			17	20	22	7	10	17	11	6.5	7		
25LBCSZ		15		18	23	28	33	38	48	58	68	78	15	17	20							22	
	30	10														8	13	21	14	9	9		
		15						33	38	48	58	68	78	15	17							20	22
		20																					

Locking Blocks Inlay Type - ล็อกกิ้งบล็อก แบบอินเลย์



Angular Pins

ORDER EXAMPLE

Model L - T - A - E - G
25LBMS20-30-48-20-15

Model: 25LBMS

SKS3
53 - 56HRC

Model: 25LBMD

SKD61
50 - 55HRC

Model	L	T	A								E 1mm increments	G° 1° increments	a	L1	M	
25LBMS 25LBMD	15	20									10 - 13	5 - 33	7	7	6	
		25	15	18	23	28	33	38	48	10 - 15	5 - 33					
		30								10 - 20	5 - 33					
		35				28	33	38	48	58	10 - 25	5 - 28				
		40									10 - 30	5 - 22				
	20	30					33	38	48	58	10 - 20	5 - 33	8	9	8	
		35									10 - 25	5 - 33				
		40									10 - 30	5 - 30				
		50				33	38	48	58	68	78	12 - 40				5 - 24
		60										12 - 50				5 - 22
	25	30									12 - 20	5 - 33	10	12	10	
		35					38	48	58	68	78	12 - 25				5 - 33
40											12 - 30	5 - 33				
50						48	58	68	78	12 - 40	5 - 30					
60											12 - 50	5 - 24				
30	40									12 - 30	5 - 33	12	14	12		
	50								78	88	98				12 - 40	5 - 33
	60														12 - 50	5 - 30

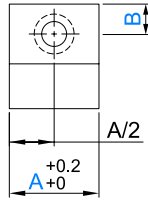
แองกูล่าพิน

Locking Blocks Side Setting Type - ล็อกกิ้งบล็อก แบบเซ็ทด้านข้าง

FOIL FREE™



A = 28

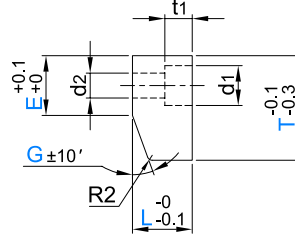


i เลือกรุ่นตามประเภทรูยึด
Choose model from hole types

Model: 25LBSS

รูนูนโบส

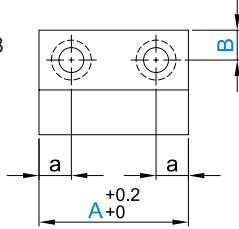
Bolt Hole Type



M	d1	d2	t1
M8	14	9	9
M10	17	11.5	11
M12	19	12.5	13



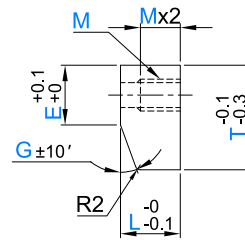
A = 38 - 48



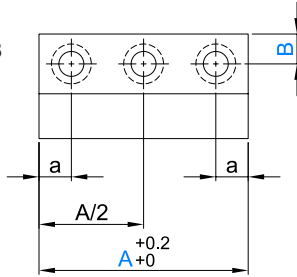
Model: 25LBST

รูนูนตึ๊ป

Tap Hole Type



A = 58 - 78



ORDER Model L - T - A - E - M - B - G
EXAMPLE 25LBSS20-40-38-25-8-13-21

SKS3
53 - 56HRC

Model	L	T	A	E 1mm increments	M	B 1mm increments		G° 1° increments	a	Bolt Hole		
						25LBSS	25LSST					
25LBSS	20	30	28	15 - 25	8	(d1/ 2) + 2 ≤ B B ≤ E - (d1/2) - 2	(M/2)+2 ≤ B B ≤ E - (M/2) - 2	5 - 33	10	1		
			38		8				10	12	10	2
			48		8				10	12	12	2
		35	28	20 - 25	8				10	12	10	1
			38		8				10	12	10	2
			48		8				10	12	12	2
	40	38	25 - 30	8	10				12	10	2	
		48		8	10				12	12	2	
		58		8	10				12	10	3	
	25	50	38	30 - 40	8				10	12	10	2
			48		8				10	12	12	2
			58		8				10	12	10	3
60		38	35 - 45	8	10	12	10	2				
		48		8	10	12	12	2				
		58		8	10	12	10	3				
25LSST	25	35	20 - 25	8	10	12	10	3				
				58	8	10	12	10	3			
				78	8	10	12	15	3			
25LSST	25	40	25 - 30	8	10	12	10	2				
				58	8	10	12	10	3			
				78	8	10	12	12	3			
25LSST	25	50	30 - 40	8	10	12	10	2				
				58	8	10	12	10	3			
				68	8	10	12	12	3			
25LSST	25	60	35 - 45	8	10	12	10	2				
				58	8	10	12	10	3			
				68	8	10	12	12	3			
25LSST	25	78	35 - 45	8	10	12	10	3				
				58	8	10	12	12	3			
				68	8	10	12	15	3			

Angular Pins

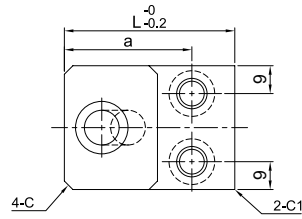
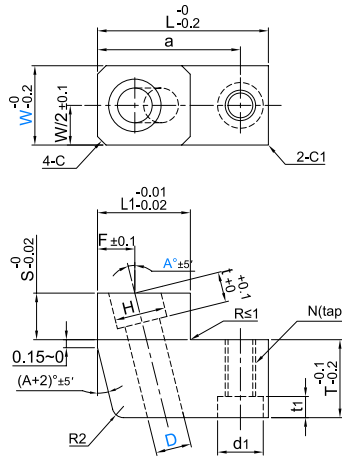
Compact Locking Blocks with Angular Holes - ล็อกกิ้งบล็อก แบบคอมแพ็ค

FOIL FREE™

Model: 25ABPX

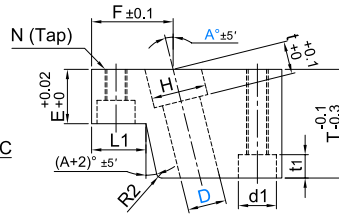
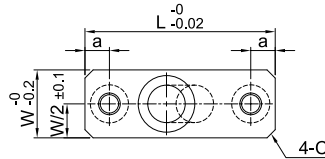
W = 15 - 35

W = 40 - 70



D	a	
	W 15 - 35	W 40 - 70
6	32	-
8	32	-
10	46	40
13	-	46
16	-	46

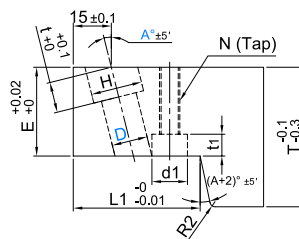
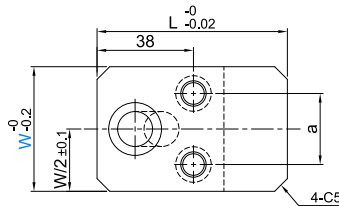
Model: 25ABPZS



W	C
15 / 25	3
25 - 40	5

A	F	
	D = 6 / 8	D = 10
10 / 15	25	35
18 / 20	20	30

Model: 25ABPZT



ORDER EXAMPLE

Model D - W - A
25ABPX10-30-15

SKS3
53 - 56HRC

Model	D H7	W	A°	H	t	Bolt Hole		Bolt	Tap N	L	T	F	L1	S	C						
						d1	t1														
25ABPX	6	+0.012 +0.000	15 20 25	10 15 18 20	11	11	6.5	M6	M8	40	10	10	20	10	3						
	8	+0.015 0.000	15 20 25		5											13	55				
	10		25 30 35		10											16	50	25	12	30	
			40 45																		19
	13		+0.018 0.000		45 50 55 60 65 70											21	13	55	15	35	

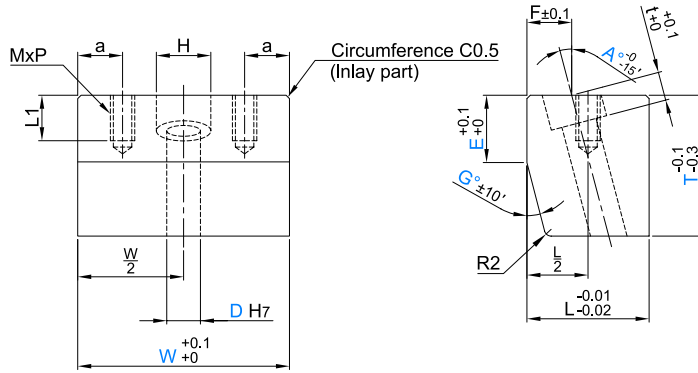
Model	D H7	W	A°	H	t	Bolt Hole		Bolt	Tap N	L	T	L1	E	C	
						d1	t1								
25ABPZS	6	+0.012 +0.000	15 20 25	10	11	11	6.5	M6	M8	55	30	16	15	7	
	8	+0.015 0.000	15 20 25	15	13	10	14	8.6	M8	M10	70	40	20	20	9
	10		25 30 35 40	20	16	10	70	48	48	30	25				
25ABPZT	10	+0.015 0.000	45	10 15 18 20	16	10	14	8.6	M8	M10	75	55	50	35	28
	13		50 55												
		16	+0.018 0.000												

แองกูล่าพิน

Locking Blocks with Angular Holes - ล็อกกิ้งบล็อก แบบรูเอียง



Model: 25ALBMS



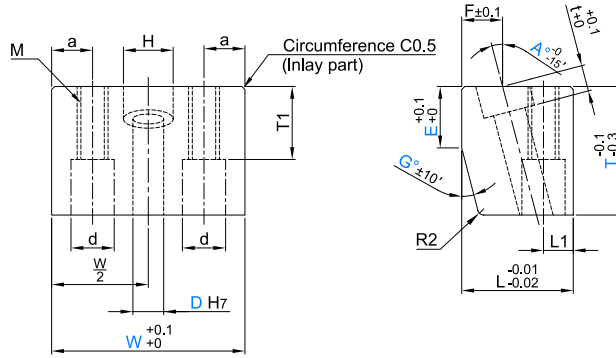
Angular Pins

ORDER Model D - T - W - E - A - G
EXAMPLE 25ALBMS6-25-48-11-15-17

SKS3
53 - 56HRC

Model	D H7		T	W				E 1mm increments	1° increments		H	F	L1	M	t	a	L	
									A°	G°								
25ALBMS	6	$+0.012$ $+0.000$	20					10 - 13	10 - 20	$G \geq A+2$ and $G \leq A+5$	10	6	8	4x0.7	5	5	20	
			25	38	48	58	10 - 15	22										
			30				10 - 20	25										
	8	$+0.015$ 0.000	20					10 - 13			10 - 20	12	8	12	6x1.0	5	6	25
			25	38	48	58	10 - 15	26										
			30				10 - 20	30										
	10	$+0.015$ 0.000	30					10 - 20			10 - 20	14	10	16	8x1.25	10	7	32
			35				10 - 25	35										
			40	38	48	58	68	10 - 30			36							
			50				10 - 40	40										
	13	$+0.018$ 0.000	35					10 - 25			10 - 20	17	12	16	8x1.25	10	8	40
			40				10 - 30	40										
			50	48	58	68	78	10 - 40			45							
			60				10 - 50	50										

Model: 25ALBPS



ORDER EXAMPLE

Model D - T - W - E - A - G
25ALBPS10-30-58-12-15-17

SKS3
53 - 56HRC

Model	D H7		T	W			E 1mm increments		1° increments		H	F	t	T1	d	M	a	L1	L		
									A°	G°											
25ALBPS	10	+0.015 0.000	30	48	58	68	10 - 20		10 - 20	G ≥ A+2 and G ≤ A+5	14	10	10	20	14	10	9	12	32		
			35				35														
			40				36														
			50				40														
	13			35	48	58	68	10 - 25			17	12	10	25	14*	10*	9	14	40		
				40				40													
				50				45													
				60				50													
	16	+0.018 0.000		35	58	68	78	10 - 25			20	15	13	30	25	17*	12*	12	16	40	
				40				45													
				50				50													
				60				55													
20			40	58	68	78	10 - 30		24	15	13	30	17*	12*	12	16	45				
			50				50														
			60				55														

Angular Pins



Name	Slide Core Guide Units (Fixed Type)	Slide Core Guide Units (Adjustable Type)	Compact Slide Core Units (Fixed Type)	Compact Slide Core Guide Units (Adjustable Type)
Model	25SAN	25SAA	25SCN	25SCA
Page	61	62	63	64



Name	Support Guide Pin Slide Core Guide Units (Fixed Type)	Support Guide Pin Slide Core Guide Units (Adjustable Type)	Slide Core Guide Parts	
Model	25DSAN	25DSAA	25SNP	25SAP
Page	65	67	69	70



Name	Slide Core Guide Parts		Slide Unit for Loose Core	Slide Unit for Loose Core (Fixing Type)	Slide Unit for Loose Core (Adjusting Type)
Model	25DSNP	25DSAP	25SOCU-S	25SOCU-F	25SOCU-M
Page	71	72	73	75	76



Name	Compact Slide Unit for Loose Core (Fixing Type)	Compact Slide Unit for Loose Core (Adjusting Type)	Inclined Pin Holders	
Model	25RSCU-F	25RSCU-M	25SPH-F	25RPH-F
Page	77	78	79	



Name	Inclined Pin Holders		Spherical Guide Bushing Set
Model	25SPH-M	25RPH-M	25SGTL / 25SGTR / 25SGTHL / 25SGTHR
Page	80	81	82

การเลือกชุดสไลด์คอร์ | Selecting Slide Core Units

ชุดสไลด์คอร์ **FOIL FREE™** มีให้เลือกใช้สองซีรีส์ตามความต้องการของผู้ใช้งาน ซึ่งสามารถเลือกใช้งานได้ทั้งแบบดั้งเดิมและแบบใหม่
Our slide core units both new and old designs can be chosen and will both be supported.

แบบใหม่ | New Designs

Types	Model	Size D								Page		
		12	16	20	25	30	35	40				
แบบใหม่ - New Designs	Slide Core Units	Fixed Type	25SAN		✓	✓	✓	✓	✓	✓	✓	P.61
		Adjustable Type	25SAA		✓	✓	✓	✓	✓	✓	✓	P.62
	Compact Slide Core Units	Fixed Type	25SCN		✓	✓	-	✓	-	-	-	P.63
		Adjustable Type	25SCA		✓	✓	-	✓	-	-	-	P.64
	Support Guide Pin Slide Core Units	Fixed Type	25DSAN		✓	✓	✓	✓	✓	✓	✓	P.65
		Adjustable Type	25DSAA		✓	✓	✓	✓	✓	✓	✓	P.67

แบบเดิม | Old Designs

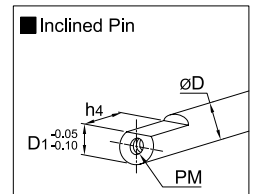
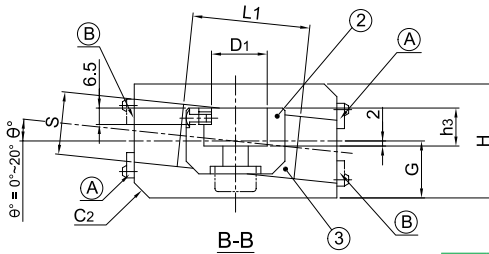
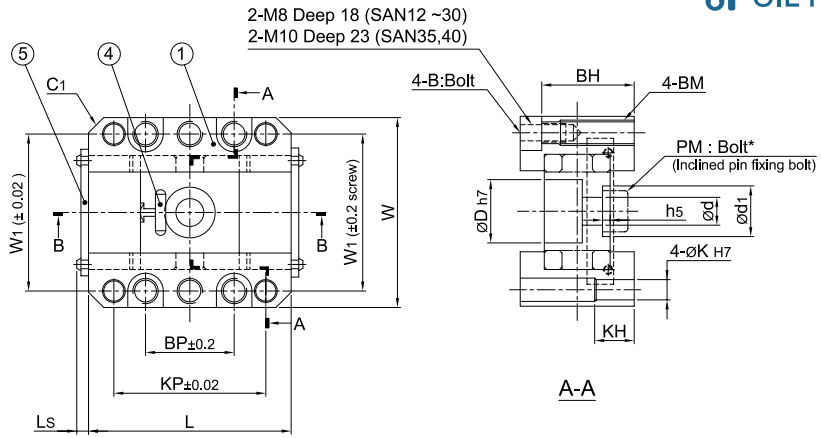
Types	Model	Size D										Page			
		8	10	12	16	20	25	30	35	40	45				
แบบดั้งเดิม - Old Designs	Slide Units for Loose Core	Fixed Type	25SOCU-S		✓	✓	✓	✓	✓	✓	✓	✓	✓	P.73	
		Fixed Type	25SOCU-F		✓	✓	✓	✓	✓	✓	✓	✓	✓	P.75	
		Adjustable Type	25SOCU-M		✓	✓	✓	✓	✓	✓	✓	✓	✓	P.76	
	Compact Slide Units for Loose Core	Fixed Type	25RSCU-F		-	-	-	✓	✓	✓	✓	✓	✓	-	P.77
		Adjustable Type	25RSCU-M		-	-	-	✓	✓	✓	✓	✓	✓	-	P.78

ชุดสไลด์คอร์

Slide Core Guide Units (Fixed Type) - สไลด์คอร์ รุ่นตายตัว



Model: 25SAN



No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Spacer	SS400

ORDER Model D - θ
EXAMPLE 25SAN20-5

Model	D	θ 1° increment	W	W1	L	BP	KP	H			G			h3
								0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°	
25SAN	12	0 - 20	56	45	55	21	42	35	40	46	17.5	20.0	23.0	10
	16		60	48	65	25	46	36	43	49	18.0	21.5	24.5	11
	20		68	55	70	25	50	43	48	55	21.5	24.0	27.5	13
	25		75	62	80	35	60	45	53	61	22.5	26.5	30.5	15
	30		81	68	95	50	75	54	61	71	27.0	30.5	35.5	17
	35		98	81	110	50	85	60	69	81	30.0	34.5	40.5	20
	40		105	88	120	60	95	64	76	89	32.0	38.0	44.5	22

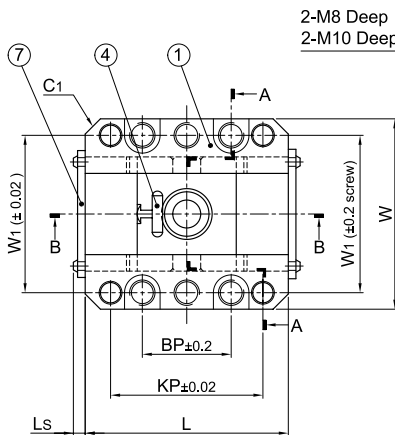
Model	D	θ 1° increment	L1	S	B	BH			BM	K	KH	D1	d	d1	h5
						0 - 10°	11 - 15°	16 - 20°							
25SAN	12	0 - 20	35	20	M6	28.5	33.5	39.5	M8	6	15	11.0	5.5	-	-
	16		40	20		29.5	36.5	42.5				15.0	9	16	3
	20		40	24		34.5	39.5	46.5				18.0	-	-	-
	25		45	26	M8	36.5	44.5	52.5	M10	8	20	22.0	11	20	5.5
	30		55	30		45.5	52.5	62.5				27.5	-	-	3.5
	35		70	34	M10	49.5	58.5	70.5	M12	10	27	32.5	-	-	-
	40		80	38		53.5	65.5	78.5				37.5	13	26	5.5

Model	D	θ 1° increment	C1	C2	Ls	Notch of inclined Pin		Installation position of spacer	
						h4	PM	A	B
25SAN	12	0 - 20	5	-	4.65	13	M5	0 - 20°	-
	16					14	M8		
	20		6	5		16	M10	4 - 20°	0 - 3°
	25					18			
	30					20			
	35		5.2	-		23	M12	0 - 20°	-
	40					25			

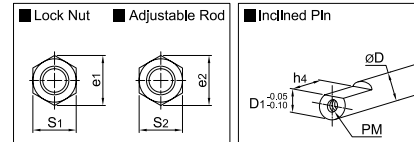
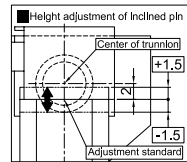
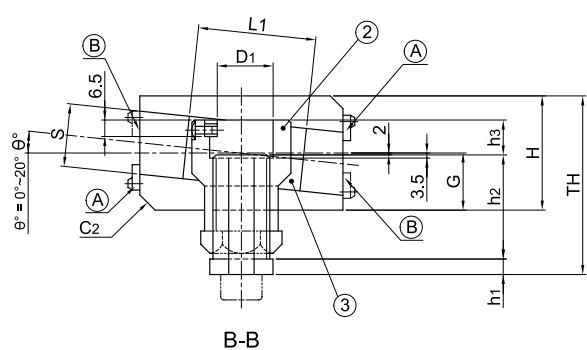
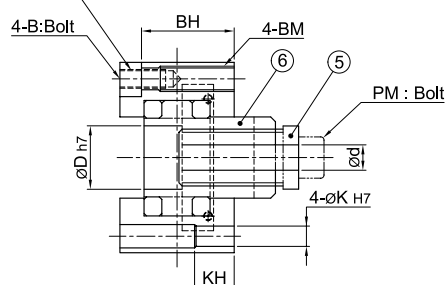
Slide Core Guide Units (Adjustable Type) - สไลด์คอร์ว์ รุ่นปรับได้



Model: 25SAA



2-M8 Deep 18 (SAA12 ~30)
2-M10 Deep 23 (SAA35,40)



No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Adjustable Rod	S45C
6	Lock Nut	S45C
7	Spacer	SS400

ORDER EXAMPLE Model D - θ
25SAA20-5

Model	D	θ 1° increment	W	W1	L	BP	KP	H			h1	h2		
								0 - 10°	11 - 15°	16 - 20°		0 - 10°	11 - 15°	16 - 20°
25SAA	12	0 - 20	56	45	55	21	42	35	40	46	6	33	38	43
	16		60	48	65	25	46	36	43	49			43	48
	20		68	55	70	25	50	43	48	55			46	51
	25		75	62	80	35	60	45	53	61		39	39	39
	30		81	68	95	50	75	54	61	71		41	41	41
	35		98	81	110	50	85	60	69	81		50	50	50
	40		105	88	120	60	95	64	76	89		52	52	52

Model	D	θ 1° increment	TH			G			h3	L1	S	S1	e1	S2	e2
			0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°							
25SAA	12	0 - 20	58.5	66.0	74.0	17.5	20.0	23.0	10	35	20	17	19.6	12	13.9
	16		59.0	72.5	80.5	18.0	21.5	24.5	11	40	20	21	24.2	16	18.5
	20		65.5	78.0	86.5	21.5	24.0	27.5	13	40	24	24	27.7	19	21.9
	25		69.5	73.5	77.5	22.5	26.5	30.5	15	45	26	24	27.7	19	21.9
	30		76.0	79.5	84.5	27.0	30.5	35.5	17	55	30				
	35		88.0	92.5	98.5	30.0	34.5	40.5	20	70	34	27	31.2	21	24.2
	40		92.0	98.0	104.5	32.0	38.0	44.5	22	80	38				

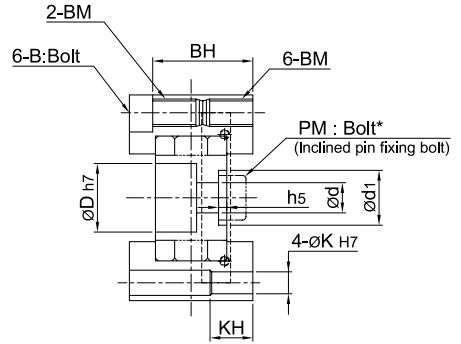
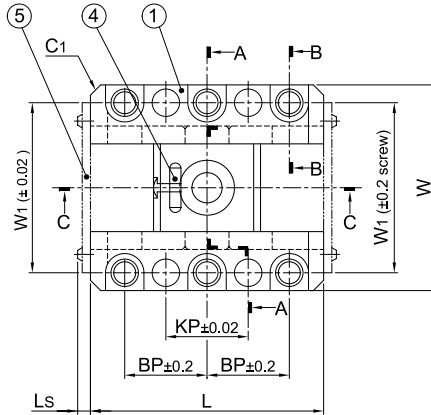
Model	D	θ 1° increment	B	BH			BM	K	KH	D1	d	C1	C2	LS	Notch of inclined Pin		Installation position of spacer	
				0 - 10°	11 - 15°	16 - 20°									h4	PM	A	B
25SAA	12	0 - 20	M6	28.5	33.5	39.5	M8	6	15	11.0	5.5	5	-	4.65	13	M5	0 - 20°	-
	16			29.5	36.5	42.5				15.0	9				14	M8		
	20			34.5	39.5	46.5				18.0	11				16	M10		
	25		36.5	44.5	52.5	M10	8	20	22.0	11	6	6	-	18	M10	4 - 20°	0 - 3°	
	30		45.5	52.5	62.5				27.5					20				
	35		49.5	58.5	70.5				32.5					23				
	40		53.5	65.5	78.5	M12	10	27	37.5	13	6	5.2	-	25	M12	0 - 20°	-	

ชุดสไลด์คอร์

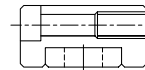
Compact Slide Core Units (Fixed Type) - คอมแพ็คสไลด์คอร์ รุ่นตายตัว



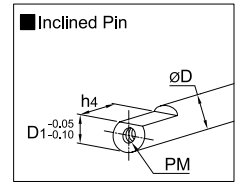
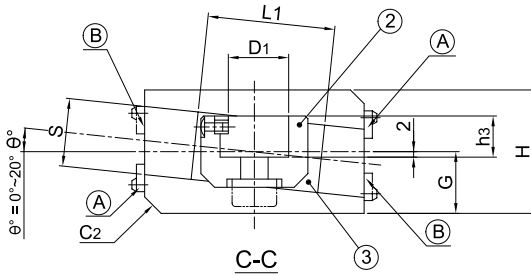
Model: 25SCN



A-A



B-B



No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Spacer (optional)	SS400

ORDER EXAMPLE Model D - θ (-S)
25SCN20-5

เพิ่มเติม -S หากต้องการ Spacer
Add -S for optional Spacer

Model	D	θ 1° increment	W	W1	L	BP	KP	H			G			h3
								0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°	
25SCN	16	0 - 20	56	46	65	25	25	36	43	49	18.0	21.5	24.5	11
	20		64	52	70			40	48	55	20.0	24.0	2.5	13
	25		71	59	80			30	30	45	53	61	22.5	26.5

Model	D	θ 1° increment	L1	S	B	BH			BM	K	KH	D1	d	d1	h5	
						0 - 10°	11 - 15°	16 - 20°								
25SCN	16	0 - 20	40	20	M6	29.5	36.5	42.5	M8	6	15	15	9	16	3	
	20		40	24		34.5	39.5	46.5								18
	25		45	26		36.5	44.5	52.5								

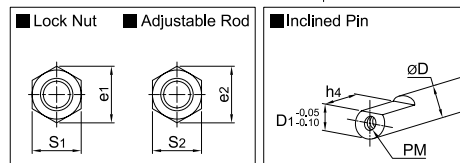
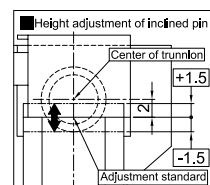
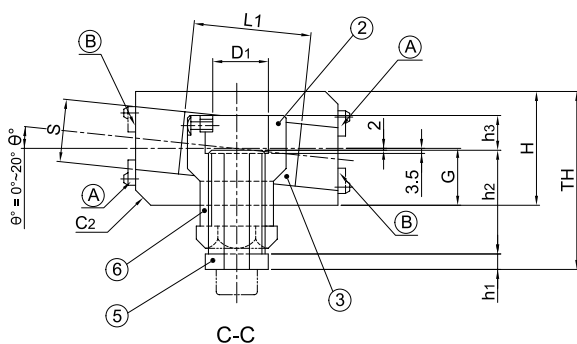
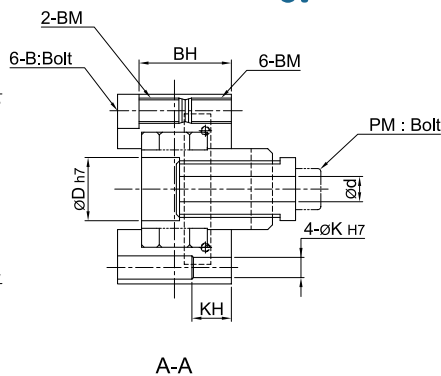
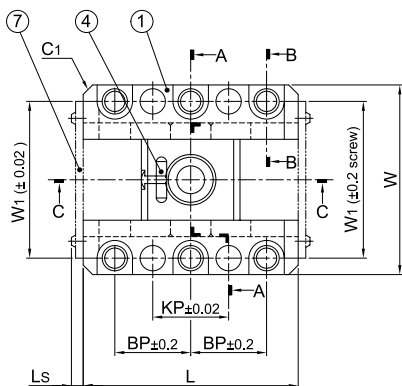
Model	D	θ 1° increment	C1	C2	Ls	Notch of inclined Pin		Installation position of spacer	
						h4	PM	A	B
25SCN	16	0 - 20	4	-	4.65	14	M8	0 - 20°	-
	20		3	4		16	M10	4 - 20°	0 - 3°
	25		5	5		18			

SLIDE CORE UNITS

Compact Slide Core Guide Units (Adjustable Type) - คอมแพ็คสไลด์คอร์ รุ่นปรับได้



Model: 25SCA



No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Adjustable Rod	S45C
6	Lock Nut	S45C
7	Spacer (optional)	SS400

ORDER EXAMPLE Model D - θ (-S) 25SCA20-5

เพิ่มเติม -S หากต้องการ Spacer Add -S for optional Spacer

Model	D	θ 1° increment	W	W1	L	BP	KP	H			h1	h2		
								0 - 10°	11 - 15°	16 - 20°		0 - 10°	11 - 15°	16 - 20°
25SCA	16	0 - 20	56	46	65	25	25	36	43	49	6	33	43	48
	20		64	52	70	25	25	43	48	55		36	46	51
	25		71	59	80	30	30	45	53	61		39	39	39

Model	D	θ 1° increment	TH			G			h3	L1	S	S1	e1	S2	e2
			0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°							
25SCA	16	0 - 20	59.0	72.5	80.5	18.0	21.5	24.5	11	40	20	21	24.2	16	18.5
	20		64.0	78.0	86.5	20.0	24.0	27.5	13	40	24	24	27.7	19	21.9
	25		69.5	73.5	77.5	22.5	26.5	30.5	15	45	26	24	27.7	19	21.9

Model	D	θ 1° increment	B	BH			BM	K	KH	D1	d	C1	C2	LS	Notch of inclined Pin		Installation position of spacer	
				0 - 10°	11 - 15°	16 - 20°									h4	PM	A	B
				25SCA	16	0 - 20									M6	29.5	36.5	42.5
20	33.5	41.5	48.5		8		20	18	11	3	4	16	M10	4 - 20°		0 - 3°		
25	38.5	46.5	54.5		8		20	22	11	5	5	18	M10	4 - 20°		0 - 3°		

ชุดสไลด์คอร์

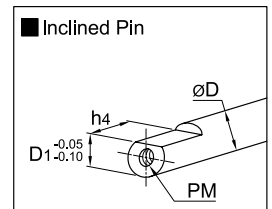
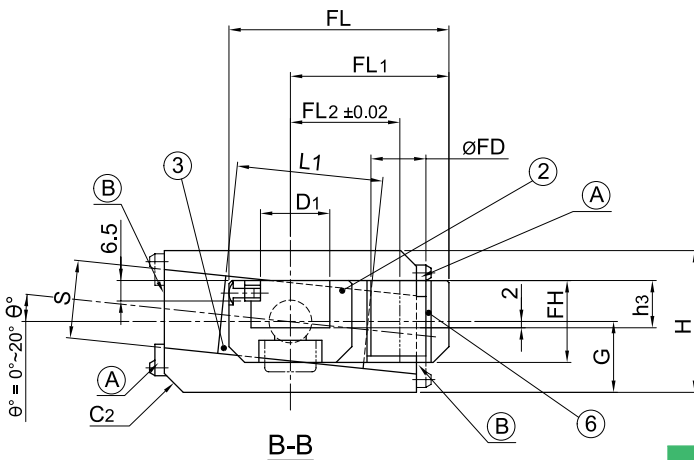
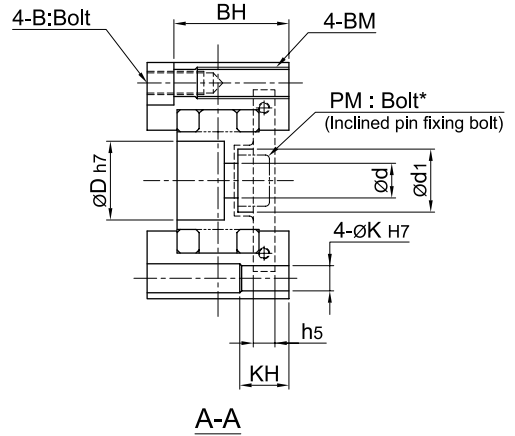
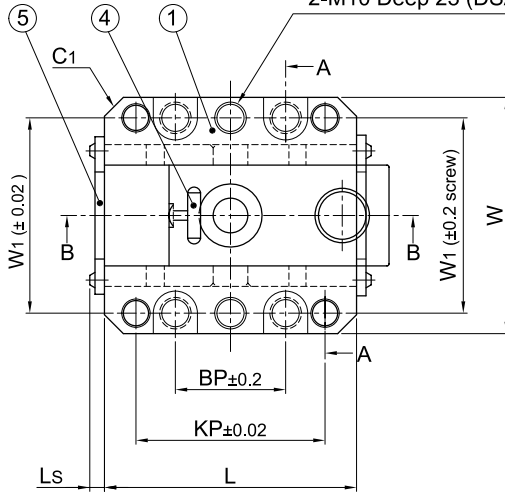
Support Guide Pin Slide Core Guide Units (Fixed Type) - ซัพพอร์ทสไลด์คอร์ รุ่นตายตัว

FOIL FREE™

Model: 25DSAN



2-M8 Deep 18 (DSAN12~30)
2-M10 Deep 23 (DSAN35~40)



No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Spacer	SS400
6	Guide Bush	Metal Polymer Bush

Slide Cores



ORDER EXAMPLE Model D - θ
25DSAN20-5

Model	D	θ 1° increment	FD	W	W1	L	BP	KP	H			G			
									0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°	
25DSAN	12	0 - 20	10	+0.068 +0.000	56	45	55	21	42	35	40	46	17.5	20.0	23.0
	16		12		60	48	65	25	46	36	43	49	18.0	21.5	24.5
	20		16	68	55	70	25	50	43	48	55	21.5	24.0	27.5	
	25		20	+0.081 +0.000	75	62	80	35	60	45	53	61	22.5	26.5	30.5
	30		25	81	68	95	50	75	54	61	71	27.0	30.5	35.5	
	35		30	+0.085 +0.000	98	81	110	50	85	60	69	81	30.0	34.5	40.5
	40		35	105	88	120	60	95	64	76	89	32.0	38.0	44.5	

Model	D	θ 1° increment	h3	L1	S	B	BH			BM	K	KH	D1	d	d1	h5
							0 - 10°	11 - 15°	16 - 20°							
25DSAN	12	0 - 20	10	35	20	M6	28.5	33.5	39.5	M8	6	15	11.0	5.5	-	-
	16		11	40	20		29.5	36.5	42.5				15.0	9	16	3
	20		13	40	24	M8	34.5	39.5	46.5	M10	8	20	18.0	11	20	5.5
	25		15	45	26		36.5	44.5	52.5				22.0			3.5
	30		17	55	30		45.5	52.5	62.5				27.5			
	35		20	70	34	M10	49.5	58.5	70.5	M12	10	27	32.5	13	26	5.5
	40		22	80	38		53.5	65.5	78.5				37.5			

Model	D	θ 1° increment	C1	C2	Ls	Notch of inclined Pin		Installation position of spacer		FL	FL1	FL2	FH	Bush
						h4	PM	A	B					
25DSAN	12	0 - 20	5	-	4.65	13	M5	0 - 20°	-	44	31.5	20	16	10-15
	16		14			M8	54			39.5	25	18	12-15	
	20		16	M10		4 - 20°	0 - 3°	64	47	30	22	16-20		
	25		18		74			55	35	26	20-25			
	30		20	5.2	M12	0 - 20°	-	84	62.5	40	30	25-30		
	35		23					94	70	45	36	30-35		
	40		25		104	77.5	50	40	35-40					

Slide Cores

ชุดสไลด์คอร์

Support Guide Pin Slide Core Guide Units (Adjustable Type) - ซัพพอร์ตสไลด์คอร์ รุ่นปรับได้

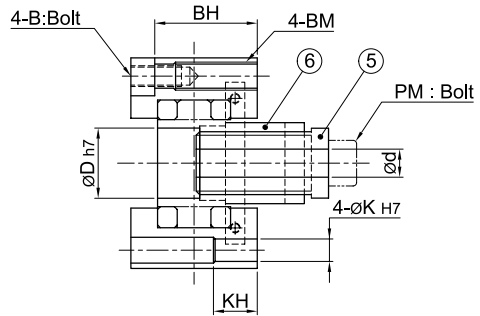
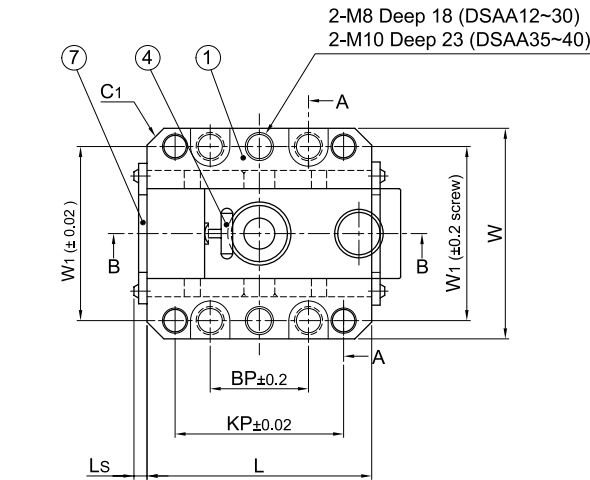
FOIL FREE™

Model: 25DSAA

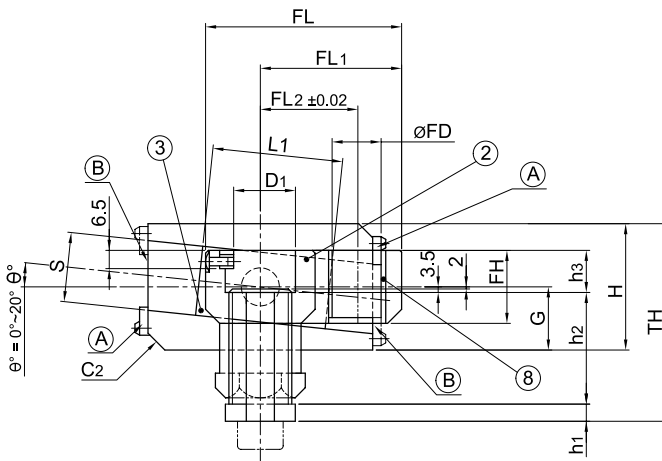
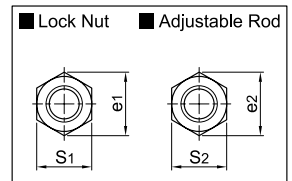
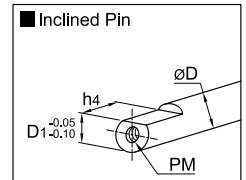
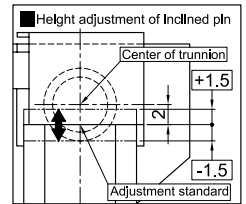


i สามารถขอเพิ่มระยะสโตรกพิเศษได้
โปรดติดต่อฝ่ายเทคนิคของเรา
Customize stroke increase
please contact our technical staff

Slide Cores



A-A



B-B

No.	Part Name	Materials
1	Slide Base	S50C
2	Inclined Pin Holder	SCM440
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Key	S45C
5	Adjustable Rod	S45C
6	Lock Nut	S45C
7	Spacer	SS400
8	Guide Bush	Metal Polymer Bush



i สามารถขอเพิ่มระยะสโตรกพิเศษได้
โปรดติดต่อฝ่ายเทคนิคของเรา
Customize stroke increase
please contact our technical staff

ORDER EXAMPLE Model D - θ
25DSAA20-5

Model	D	θ 1° increment	FD	W	W1	L	BP	KP	H			h1	h2				
									0 - 10°	11 - 15°	16 - 20°		0 - 10°	11 - 15°	16 - 20°		
25DSAA	12	0 - 20	10	+0.068 +0.000	56	45	55	21	42	35	40	46	6	33	38	43	
	16		60		48	65	25	46	36	43	49	43			48		
	20		68		55	70	25	50	43	48	55	36			46	51	
	25		+0.081 +0.000	20	75	62	80	35	60	45	53	61		71	39	39	39
	30			25	81	68	95	50	75	54	61	71		41	41	41	
	35			+0.085 +0.000	30	98	81	110	50	85	60	69		81	50	50	50
	40				35	105	88	120	60	95	64	76		89	52	52	52

Model	D	θ 1° increment	TH			G			h3	L1	S	S1	e1	S2	e2
			0 - 10°	11 - 15°	16 - 20°	0 - 10°	11 - 15°	16 - 20°							
25DSAA	12	0 - 20	58.5	66.0	74.0	17.5	20.0	23.0	10	35	20	17	19.6	12	13.9
	16		59.0	72.5	80.5	18.0	21.5	24.5	11	40	20	21	24.2	16	18.5
	20		65.5	78.0	86.5	21.5	24.0	27.5	13	40	24				
	25		69.5	73.5	77.5	22.5	26.5	30.5	15	45	26	24	27.7	19	21.9
	30		76.0	79.5	84.5	27.0	30.5	35.5	17	55	30				
	35		88.0	92.5	98.5	30.0	34.5	40.5	20	70	34	27	31.2	21	24.2
	40		92.0	98.0	104.5	32.0	38.0	44.5	22	80	38				

Model	D	θ 1° increment	B	BH			BM	K	KH	D1	d	C1	C2	LS	Notch of inclined Pin		Installation position of spacer						
				0 - 10°	11 - 15°	16 - 20°									h4	PM	A	B					
25DSAA	12	0 - 20	M6	28.5	33.5	39.5	M8	6	15	11.0	5.5	5	-	4.65	13	M5	0 - 20°	-					
	16			29.5	36.5	42.5				15.0	9				14	M8							
	20		M8	34.5	39.5	46.5	M10	8	20	18.0	11				6	6	16	M10	4 - 20°	0 - 3°			
	25			36.5	44.5	52.5				22.0							20				18		
	30			45.5	52.5	62.5				27.5							20				20		
	35		M10	49.5	58.5	70.5	M12	10	27	32.5							13	5.2	6	23	M12	0 - 20°	-
	40			53.5	65.5	78.5				37.5										25			

Model	D	θ 1° increment	Notch of inclined Pin		Installation position of spacer		FL	FL1	FL2	FH	Bush
			h4	PM	A	B					
25DSAA	12	0 - 20	13	M5	0 - 20°	-	44	31.5	20	16	10-15
	16		14	M8			54	39.5	25	18	12-15
	20		16	M10	4 - 20°	0 - 3°	64	47	30	22	16-20
	25		18				74	55	35	26	20-25
	30		20				84	62.5	40	30	25-30
	35		23	M12	0 - 20°	-	94	70	45	36	30-35
	40		25				104	77.5	50	40	35-40

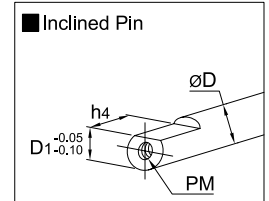
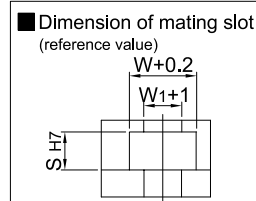
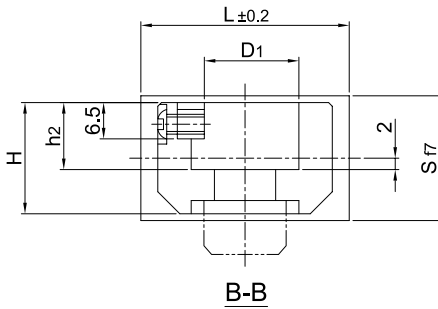
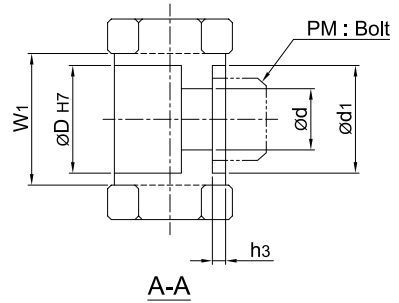
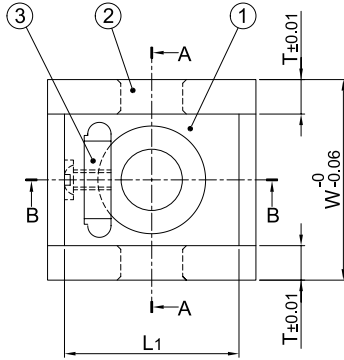
Slide Cores

ชุดสไลด์คอร์

Slide Core Guide Parts - ไกด์สำหรับสไลด์คอร์



Model: 25SNP
for Fixed Type
25SAN & 25SCN



ORDER Model D
EXAMPLE 25SNP20

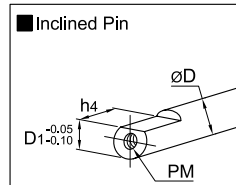
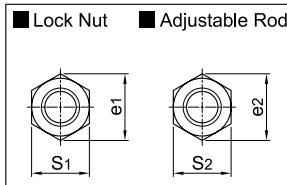
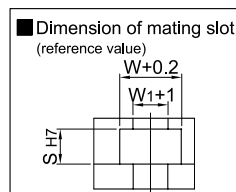
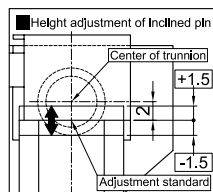
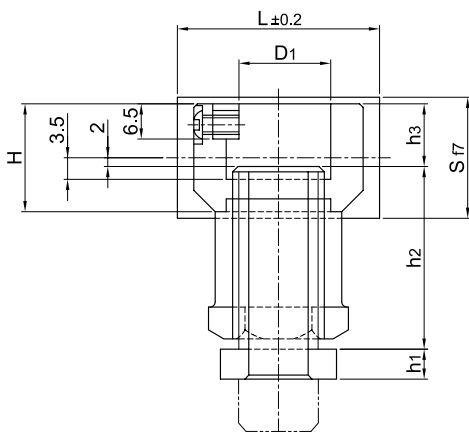
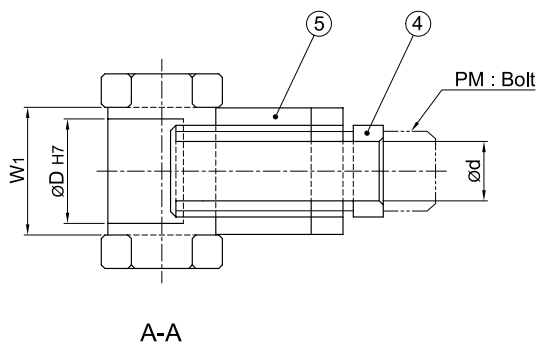
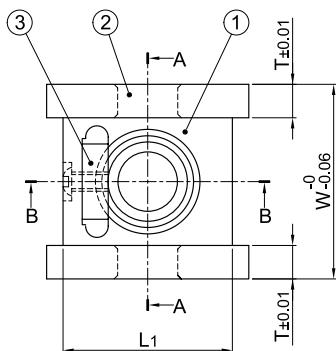
No.	Part Name	Materials
1	Inclined Pin Holder	SCM440
2	Slide Plate	Copper Alloy with Oil Free (™)
3	Key	S45C

Model	D	W	W1	T	L	L1	S f7	H	h2	h3	D1	d	d1	Notch of inclined Pin			
														h4	PM		
25SNP	12	30	17	6.5	35	25	20	-0.020 -0.041	16	10	-	11	5.5	-	13	M5	
	16	33	20		40	29			18	11	3	15	9	16	14	M8	
	20	38	25		34	24			22	13	5.5	18	11	20	16	M10	
	25	45	31	7	45	38	26		22	18							
	30	51	36	7.5	55	43	30		30	17	3.5	27.5	20	M10			
	35	60	42	9	70	48	34		-0.025 -0.050	36	20	5.5	32.5	13	26	23	M12
	40	67	47	10	80	53	38			40	22		37.5			25	

Slide Core Guide Parts - ไกด์สำหรับสไลด์คอร์



Model: 25SAP
for Adjustable Type
25SAA & 25SCA



B-B

No.	Part Name	Materials
1	Inclined Pin Holder	SCM440
2	Slide Plate	Copper Alloy with Oil Free (TM)
3	Key	S45C
4	Adjustable Rod	S45C
5	Lock Nut	S45C

ORDER EXAMPLE Model D
25SAP20

Model	D	W	W1	T	L	L1	S f7	H	h1	h2		
										0 - 10°	11 - 15°	16 - 20°
25SAP	12	30	17	6.5	35	25	20	16	6	33	38	43
	16	33	20		40	29					29	43
	20	38	25	45	34	24	-0.020 -0.041	22		36	46	51
	25	45	31	7	45	38	26	26		39	39	39
	30	51	36	7.5	55	43	30	30		41	41	41
	35	60	42	9	70	48	34	-0.025 -0.050		36	50	50
40	67	47	10	80	53	38	40	52	52	52		

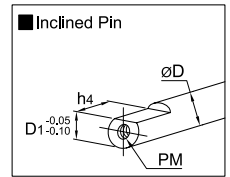
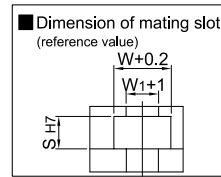
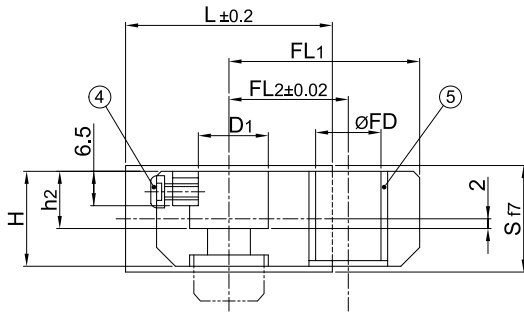
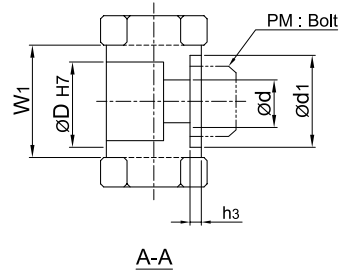
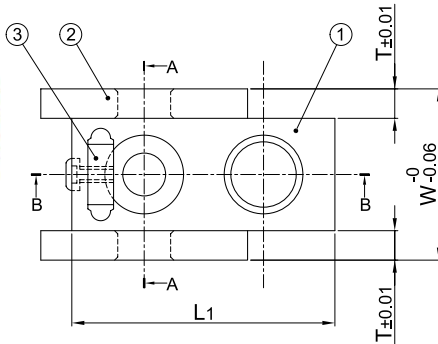
Model	D	h3	S1	e1	S2	e2	D1	d	d1	Notch of inclined Pin	
										h4	PM
25SAP	12	10	17	19.6	12	13.8	11	5.5	-	13	M5
	16	11	21	24.2	16	18.5	15	9	16	14	M8
	20	13	24	27.7	19	21.9	22	11	20	16	M10
	25	15								18	
	30	17	27	31.1	21	24.2	27.5	13	26	23	M12
	35	20								25	
	40	22					37.5				

ชุดสไลด์คอร์

Slide Core Guide Parts - โถงสำหรับสไลด์คอร์



Model: 25DSNP
for Fixed Type
25DSAN



B-B

No.	Part Name	Materials
1	Inclined Pin Holder	SCM440
2	Slide Plate	Copper Alloy with Oil Free (™)
3	Key	S45C
4	Fixed Screw	SCM435
5	Guide Bush	Metal Polymer Bush

ORDER Model D
EXAMPLE 25DSNP20

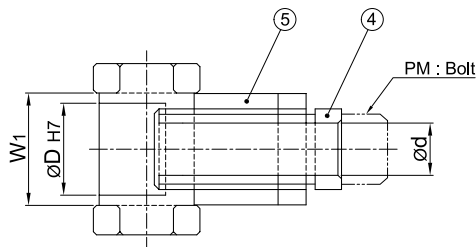
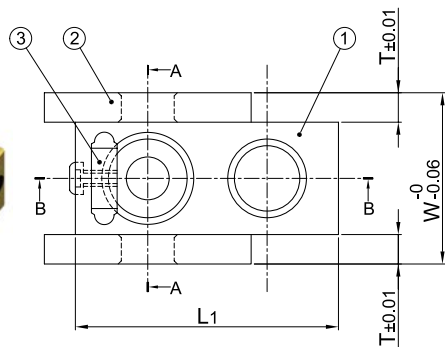
Model	D	FD	W	W1	T	L	L1	S f7	H	h2	h3					
25DSNP	12	10	+0.068 +0.000	30	17	6.5	35	44	20	16	10	-				
	16	12		33	20		40	54		18	11	3				
	20	16	+0.081 +0.000	38	25	7	45	74	26	22	13	5.5				
	25	20		45	31		55	84		30	26		15			
	30	25	+0.085 +0.000	51	36	7.5	60	42	9	70	94	34	-0.025 -0.050	36	20	5.5
	35	30	60	42	9	70	94	34	36	20						
40	35	+0.000	67	47	10	80	104	38	40	22	5.5					

Model	D	D1	d	d1	Notch of inclined Pin		FL1	FL2	Bush
					h4	PM			
25DSNP	12	11	5.5	-	13	M5	31.5	20	10-15
	16	15	9	16	14	M8	39.5	25	12-15
	20	18	11	20	16	M10	47	30	16-20
	25	22			18		55	35	20-25
	30	27.5	20	62.5	40	25-30			
	35	32.5	13	26	23	M12	70	45	30-35
	40	37.5			25		77.5	50	35-40

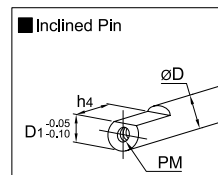
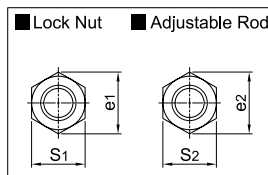
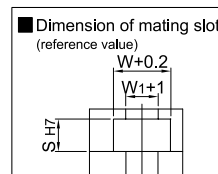
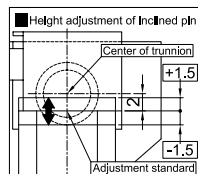
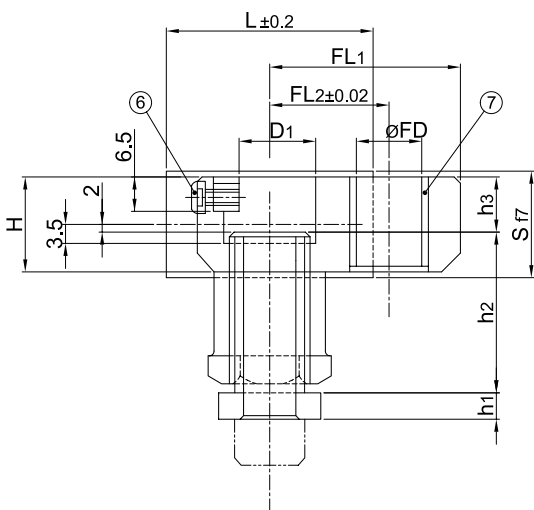
Slide Core Guide Parts - ไกด์สำหรับสไลด์คอร์



Model: 25DSAP
for Adjustable Type
25DSAA



A-A



No.	Part Name	Materials
1	Inclined Pin Holder	SCM440
2	Slide Plate	Copper Alloy with Oil Free (TM)
3	Key	S45C
4	Adjustable Rod	S45C
5	Lock Nut	S45C
6	Fixed Screw	SCM435
7	Guide Bush	Metal Polymer Bush

ORDER EXAMPLE Model D - Ø
25DSAP20-5

Model	D	θ 1° Increment	FD		W	W1	T	L	L1	S f7		H	h1	h2			
														0 - 10°	11 - 15°	16 - 20°	
25DSAP	12	0 - 20	10		30	17		35	44	20		16	6	33	38	43	
	16		+0.068 +0.000	33	20	6.5	40	54				18		43	48		
	20			16		38	25		64	24	-0.020 -0.041	22		36	46	51	
	25		+0.081 +0.000	45	31	7	45	74	26			26		39	39	39	
	30			25		51	36	7.5	55	84	30			30	41	41	41
	35		+0.085 +0.000	60	42	9	70	94	34		-0.025 -0.050	36		50	50	50	
	40			35		67	47	10	80	104	38			40	52	52	52

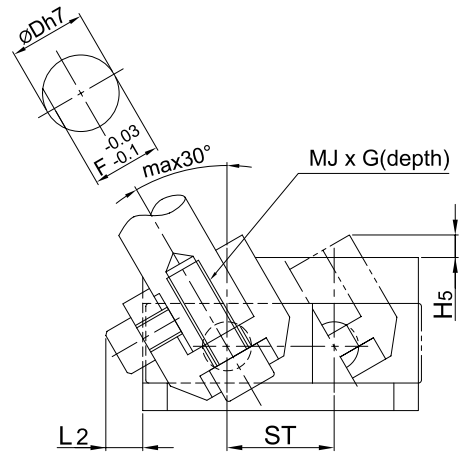
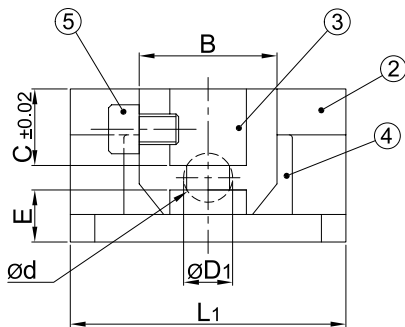
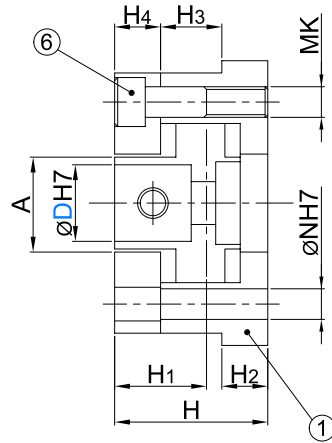
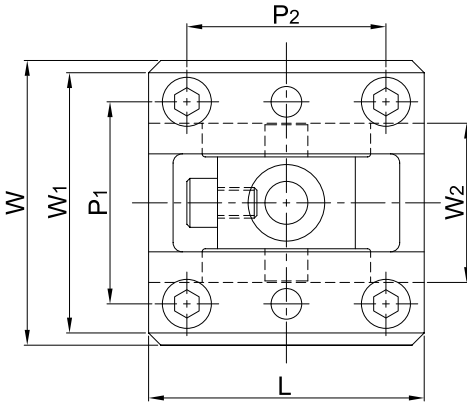
Model	D	h3	S1	e1	S2	e2	D1	d	Notch of inclined Pin		FL1	FL2	Bush
									h4	PM			
25DSAP	12	10	17	19.6	12	13.9	11	5.5	13	M5	31.5	20	10-15
	16	11	21	24.2	16	18.5	15	9	14	M8	39.5	25	12-15
	20	13							16		47	30	16-20
	25	15	24	27.7	19	21.9	22	11	18	M10	55	35	20-25
	30	17					27.5		20		62.5	40	25-30
	35	20					32.5		23		70	45	30-35
	40	22	27	31.2	21	24.2	37.5	13	25	M12	77.5	50	35-40

ชุดสไลด์คอร์

Slide Unit for Loose Core - สไลด์ยูนิต

FOIL FREE™

Model: 25SOCU-S



No.	Part Name	Materials
1	Slide Base	S45C + Tuffride Treatment
2	Upper Plate	S45C + Tuffride Treatment
3	Pin Holder	S45C + Tuffride Treatment
4	Slide Plate	Copper Alloy with Oil Free (™)
5	Socket Head Screw	SCM435
6	Socket Head Screw	SCM435



ORDER Model θ
 EXAMPLE 25SOCU-S20

Model	D	L	L1	L2	W	W1	W2	P1	P2	MK	N	ST
25SOCU-S	8	32	20	3.6	33	30	19	24	20	M3	3	10
	10	45	25	4.5	45	40	25	32	30	M4	4	18
	12	50	30	5	57	51	31	39	35	M6	6	20
	16	65	40	5	65	58	38	46	40	M6	6	25
	20	80	50	5	80	72	44	56	55	M8	8	30
	25	90	55	6	93	85	52	66	65	M10	10	35
	30	100	60	7	101	93	60	74	70	M10	10	40
	35	120	75	8	120	110	70	85	80	M12	10	45
	40	135	85	8	130	120	80	95	90	M12	10	50
	45	150	95	10	140	130	90	105	110	M12	10	55

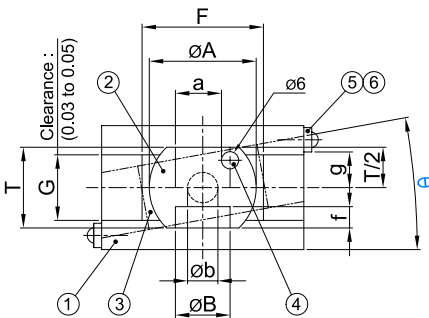
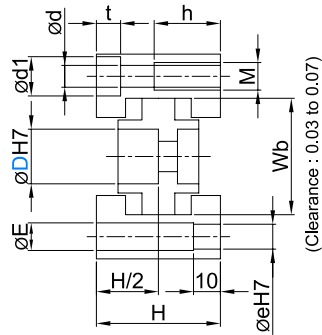
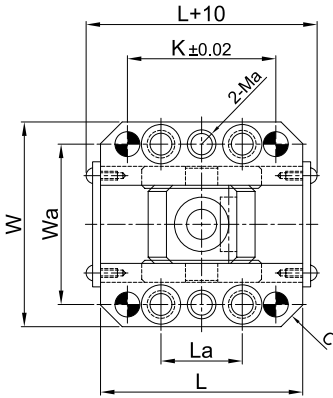
Model	D	d	D1	A	B	C	E	F	MJ	G	H	H1	H2	H3	H4	H5
25SOCU-S	8	7	4.5	11	20	8	10	7	M4	8	22	12.5	5	11	7	10.5
	10	7	5.5	15	25	10	12.5	9	M5	9	27	15.5	5	15	8	11.3
	12	10	7	17	25	12	15	11	M6	10	32	18	7	16	10	4
	16	12	9	22	30	16	15	14.5	M8	12	36	20	8	20	10	5
	20	14	11	26	40	20	16	18	M10	16	42	23	11	22	12	8
	25	16	14	32	45	25	17	22.5	M12	20	50	28	15	26	15	8
	30	18	14	38	50	30	17	27	M12	25	55	30	15	30	15	9
	35	20	14	45	60	35	18	32	M12	30	62	35	15	34	18	10
	40	25	18	55	70	40	19	36	M16	35	70	40	15	44	18	12
	45	30	18	60	80	45	24	40	M16	40	80	45	15	50	20	14

ชุดสไลด์คอร์

Slide Unit for Loose Core (Fixing Type) - สไลด์ยูนิต รุ่นตายตัว



Model: 25SOCU-F



! ถอด Locking Plate (5) ได้ หากจำเป็น
Remove Locking Plate (5)
as required for operation.

No.	Part Name	Materials
1	Guid Rail	S45C
2	Incline Pin Holder	S45C
3	Slide Plate	Copper Alloy + Oil Free (TM)
4	Loosening Lock	SK5M
5	Locking Plate	SS400
6	Socket Head Screw	SCM435

ORDER EXAMPLE Model D - θ
25SOCU-F20-5

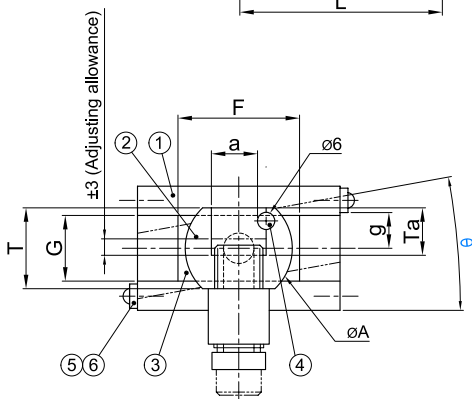
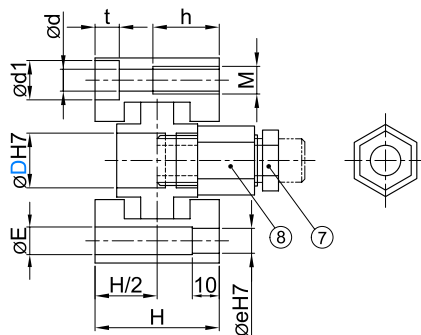
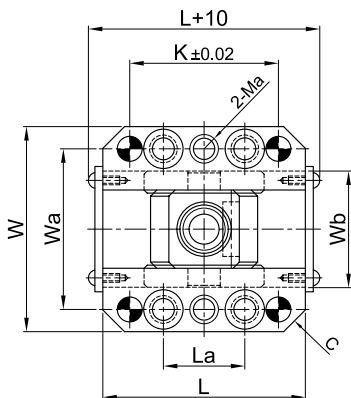
Model	D	θ 1° increment	W	Wa	L	La	K	Ma	C	H	e	E	d	d1	t
25SOCU-F	8	0 - 10	41	33	44	12	25	M4	3	24	4	5	3.4	6	3.4
	10		47	38	50	16	30	M5	3	28	5	5.5	4.5	8	5
	12		53	42	60	20	40	M8	4	36	6	7	6.6	11	4.8
	16		64	50	70	25	50	M8	6	40	6	6.6	6.6	11	6.5
	20		76	60	75	30	55	M10	8	46	8	9	8.6	14	8.5
	25		81	65	85	40	65	M10	8	48	8	9	8.6	14	8.5
	30		88	72	100	50	80	M10	8	54	8	9	8.6	14	8.5
	35		100	80	115	50	85	M12	8	60	10	11	11	18	6.5
	40		108	88	125	50	85	M12	8	65	10	11	11	18	7

Model	D	θ 1° increment	h	M	Wb	A	a	B	b	g	F	f	G	T
25SOCU-F	8	0 - 10	10	M4	24	20	7.5	10	5	6.5	25	5	13	16
	10		15	M5	28	20	8.5	12	6	6.5	32	4	17	16
	12		20	M8	31	25	10	13	7	8.5	40	5	20	20
	16		20	M8	36	30	13	16	9	10	45	6	24	24
	20		25	M10	43	40	17	20	11	13	45	8	24	30
	25		25	M10	48	45	22	25	14	14	50	9.5	26	35
	30		25	M10	55	50	27	25	14	15	60	9	30	38
	35		30	M12	44	55	31	25	14	15	70	10	34	40
	40		30	M12	72	60	36	32	18	16	80	11.5	38	43

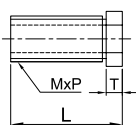
Slide Unit for Loose Core (Adjusting Type) - สไลด์ยูนิต รุ่นปรับได้



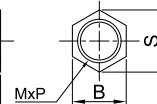
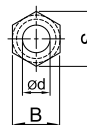
Model: 25SOCU-M



⑦ Adjusting Rod



⑧ Lock Nut



No.	Part Name	Materials
1	Guid Rail	S45C
2	Incline Pin Holder	S45C
3	Slide Plate	Copper Alloy + Oil Free (TM)
4	Loosening Lock	SK5M
5	Locking Plate	SS400
6	Socket Head Screw	SCM435
7	Adjustable Rod	S45C
8	Lock Nut	S45C

ORDER EXAMPLE Model D - θ
25SOCU-M20-5

Model	D	θ 1° increment	W	Wa	L	La	K	Ma	Wb	C	d	d1	t	h
25SOCU-M	16	0 - 10	64	50	70	25	50	M8	36	6	6.6	11	6.5	20
	20		76	60	75	30	55	M10	43	8	8.6	14	8.5	25
	25		81	65	85	40	65	M10	48	8	8.6	14	8.5	25
	30		88	72	100	50	80	M10	55	8	8.6	14	8.5	25
	35		100	80	115	50	85	M12	64	8	11	*18	6.5	30
	40		108	88	125	50	85	M12	72	8	11	*18	7	30

Model	D	θ 1° increment	M	e	E	H	T	G	F	A	a	g	Ta
25SOCU-M	16	0 - 10	M8	6	6.6	40	24	24	45	30	13	10	15
	20		M10	8	9	46	30	24	45	40	17	13	18
	25		M10	8	9	48	35	26	50	45	22	14	20.5
	30		M10	8	9	54	38	30	60	50	27	15	22
	35		M12	10	11	60	40	34	70	55	31	15	23
	40		M12	10	11	65	43	38	80	60	36	16	24.5

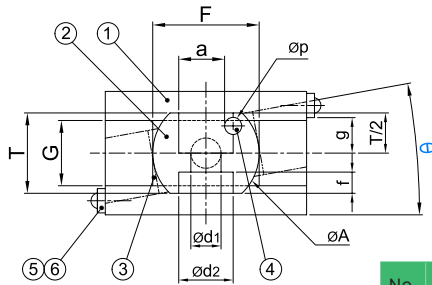
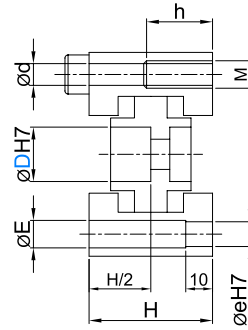
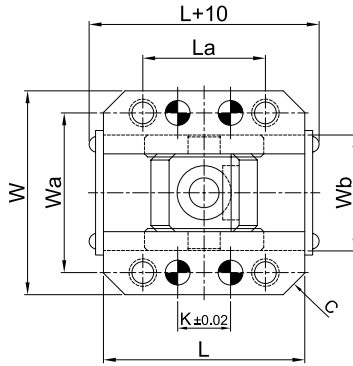
Model	D	θ 1° increment	MxP	7					8		
				L	T	d	S	B	H	S	B
25SOCU-M	16	0 - 10	M14x1.5	42	6	9	16.2	14	21	19.6	17
	20		M18x1.5	45	6	11	21.9	19	21	25.4	22
	25		M22x1.5	49	7	13	25.4	22	21.5	31.2	27
	30		M27x1.5	55	7	13	31.2	27	26	37.0	32
	35		M30x1.5	58	7	13	37	32	28	41.6	36
	40		M35x1.5	60.5	7	17	43.9	38	29	47.4	41

ชุดสไลด์คอร์

Compact Slide Unit for Loose Core (Fixing Type) - คอมแพ็คสไลด์ยูนิต รุ่นตายตัว



Model: 25RSCU-F



No.	Part Name	Materials
1	Guid Rail	S45C
2	Incline Pin Holder	S45C
3	Slide Plate	Copper Alloy with Oil Free (TM)
4	Loosening Lock	SK5M
5	Locking Plate	SS400
6	Socket Head Screw	SCM435

ORDER EXAMPLE Model D - θ
25RSCU-F20-5

⚠️ ถอด Locking Plate (5) ได้ หากจำเป็น
Remove Locking Plate (5)
as required for operation.

Model	D	θ 1° increment	W	Wa	L	K	La	Wb	C	d	M	h	e	E	H
25RSCU-F	10	0 - 5	45	36	50	16	30	26	3	3.5	M5	14	5	6	28
	12		51	40	60	20	40	29	4	6.6	M8	20	6	6.6	35
	16	0 - 20	54	44	65	18	38	33	8	6.6	M8	20	6	6.6	35
	20		64	51	70	18	42	38	8	8.6	M10	25	8	9	40
	25		70	58	80	20	45	45	10	8.6	M10	25	8	9	44
	30		78	64	100	40	70	51	8	8.6	M10	25	8	9	54
	35		92	75	115	50	85	58	8	10.6	M12	30	10	11	60
40	100	82	125	50	85	66	8	10.6	M12	30	10	11	65		

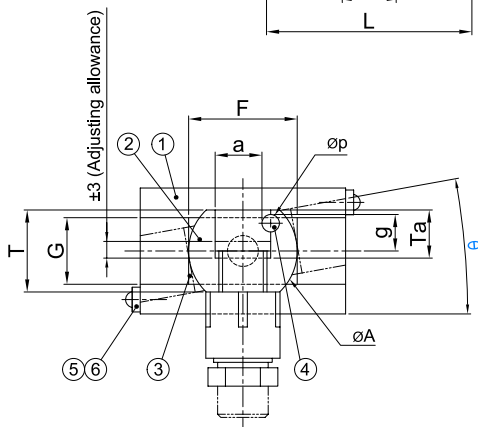
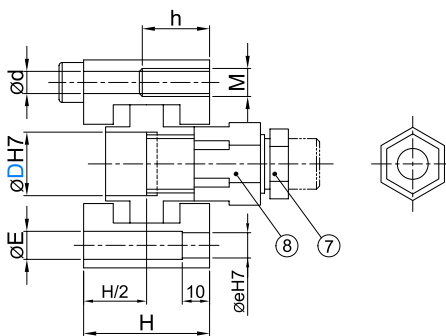
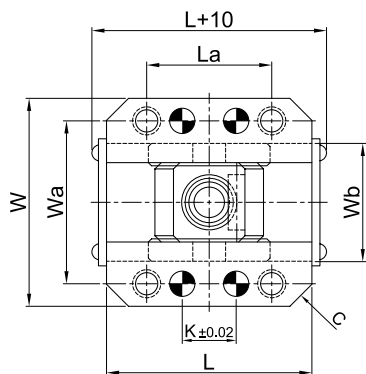
Model	D	θ 1° increment	T	G	F	A	p	a	g	d1	d2	f	H	
													11 - 15°	16 - 20°
25RSCU-F	10	0 - 5	16	17	28	20	3	8.5	6.5	6	10	3	-	-
	12		20	20	36	25	4	10	8	7	12	5	-	-
	16	0 - 20	24	20	40	30	6	13	10	9	16	6	41	48
	20		30	24	40	40	6	17	13	11	20	7	47	55
	25		35	26	45	45	6	22	14	14	25	9.5	52	61
	30		38	30	55	50	6	27	15	14	25	9	62	72
	35		40	34	70	55	8	31	15	14	25	10	70	82
	40		43	38	70	60	8	36	16	18	32	11.5	78	90

SLIDE CORE UNITS

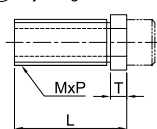
Compact Slide Unit for Loose Core (Adjusting Type) - คอมแพ็คสไลด์ยูนิต รุ่นปรับได้



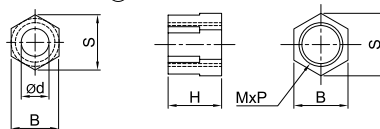
Model: 25RSCU-M



⑦ Adjusting Rod



⑧ Lock Nut



No.	Part Name	Materials
1	Guid Rail	S45C
2	Incline Pin Holder	S45C
3	Slide Plate	Copper Alloy with Oil Free (™)
4	Loosening Lock	SK5M
5	Locking Plate	SS400
6	Socket Head Screw	SCM435
7	Adjustable Rod	S45C
8	Lock Nut	S45C

ORDER EXAMPLE Model D - ø
25RSCU-M20-5

Model	D	ø 1° increment	W	Wa	L	K	La	Wb	C	d	M	h	e	E	H
25RSCU-M	16	0 - 20	54	44	65	18	38	33	8	6.6	M8	20	6	6.6	35
	20		64	51	70	18	42	38	8	8.6	M10	25	8	9	40
	25		70	58	80	20	45	45	10	8.6	M10	25	8	9	44
	30		78	64	100	40	70	51	8	8.6	M10	25	8	9	54
	35		92	75	115	50	85	58	8	10.6	M12	30	10	11	60
	40		100	82	125	50	85	66	8	10.6	M12	30	10	11	65

Model	D	ø 1° increment	T	G	F	A	p	a	g	Ta	H	
											11 - 15°	16 - 20°
25RSCU-M	16	0 - 20	24	20	40	30	6	13	10	15	41	48
	20		30	24	40	40	6	17	13	18	47	55
	25		35	26	45	45	6	22	14	20.5	52	61
	30		38	30	55	50	6	27	15	22	62	72
	35		40	34	70	55	8	31	15	23	70	82
	40		43	38	70	60	8	36	16	24.5	78	90

Model	D	ø 1° increment	MxP	7				8			
				L (A≥11°)	T	d	S	B	H (A≥11°)	S	B
25RSCU-M	16	0 - 20	M14x1.5	42(50)	6	9	16.2	14	21(28)	19.6	17
	20		M18x1.5	45(54)	6	11	21.9	19	21(29)	25.4	22
	25		M22x1.5	49(59)	7	13	25.4	22	21.5(30.5)	31.2	27
	30		M27x1.5	54(64)	7	13	31.2	27	25(35)	37.0	32
	35		M30x1.5	58(68)	7	13	37	32	28(38)	41.6	36
	40		M36x1.5	60.5(70.5)	7	17	43.9	38	29(39)	47.3	41

ชุดสไลด์คอร์

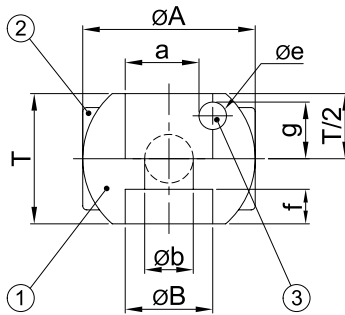
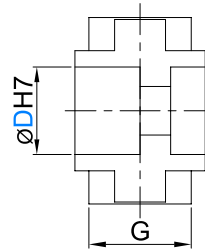
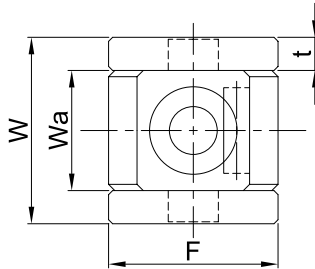
Inclined Pin Holders - พินโฮลเดอร์สำหรับสไลด์คอร์

FOIL FREE™

Model: 25SPH-F
for Fixing Type
25SOCU-F



Model: 25RPH-F
for Fixing Type
25RSCU-F



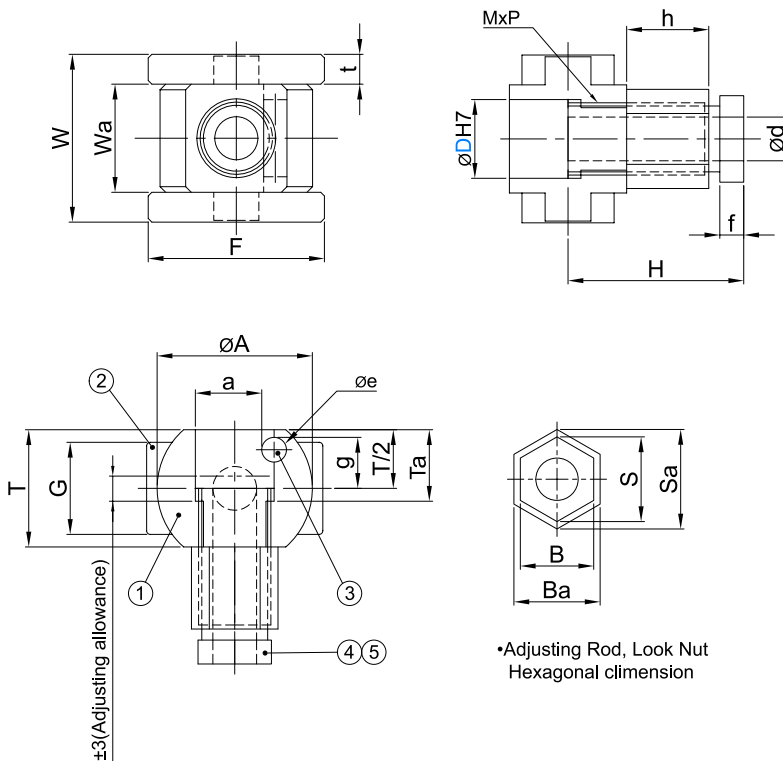
No.	Part Name	Materials
1	Inclined Pin Holder	S45C
2	Slide Plate	Copper Alloy with Oil Free (TM)
3	Loosening Lock	SK5M

ORDER Model D
EXAMPLE 25SPH-F20

Model	D	W	Wa	F	t	G	A	a	T	g	f	B	b	e	Bolt Size
25SPH-F	8	24	12	25	6	13	20	7.5	16	6.5	5	10	5	3	M4x10
	10	28	14	32	7	17	20	8.5	16	6.5	4	12	6	3	M5x12
	12	31	17	40	7	20	25	10	20	8.5	5	13	7	4	M6x14
	16	36	21	45	7.5	24	30	13	24	10	6	16	9	6	M8x20
	20	43	28	45	7.5	24	40	17	30	13	8	20	11	6	M10x25
	25	48	33	50	7.5	26	45	22	35	14	9.5	25	14	6	M12x30
	30	55	38	60	8.5	30	50	27	38	15	9	25	14	6	M12x30
	35	64	44	70	10	34	55	31	40	15	10	25	14	8	M12x30
40	72	50	80	11	38	60	36	43	16	11.5	32	18	8	M16x35	

Model	D	W	Wa	F	t	G	A	a	T	g	e	d	B	f	Bolt Size
25RPH-F	10	26	14	28	6	17	20	8.5	16	6.5	3	6	10	3	M5x12
	12	29	17	36	6	20	25	10	20	8	4	7	12	5	M6x14
	16	33	20	40	6.5	20	30	13	24	10	6	9	16	6	M8x20
	20	38	25	40	6.5	24	40	17	30	13	6	11	20	7	M10x25
	25	45	30	45	7.5	26	45	22	35	14	6	14	25	9.5	M12x30
	30	51	36	55	7.5	30	50	27	38	15	6	14	25	9	M12x30
	35	58	42	70	8	34	55	31	40	15	8	14	25	10	M12x30
40	66	48	70	9	38	60	36	43	16	8	18	32	11.5	M16x35	

Model: 25SPH-M
for Adjusting Type
25SOCU-M



•Adjusting Rod, Lock Nut
Hexagonal dimension

No.	Part Name	Materials
1	Inclined Pin Holder	S45C
2	Slide Plate	Copper Alloy with Oil Free (TM)
3	Loosening Lock	SK5M
4	Adjusting Rod	S45C
5	Lock Nut	S45C

ORDER EXAMPLE Model D
25SPH-M20

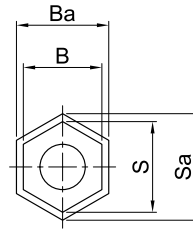
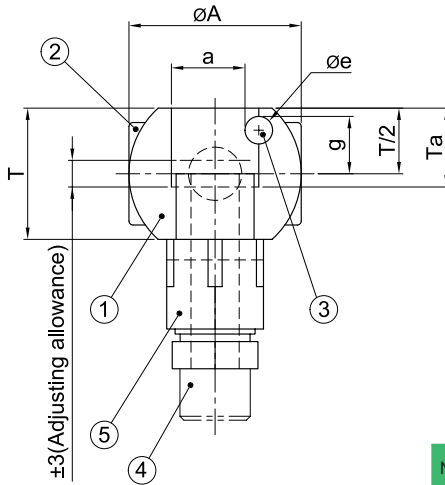
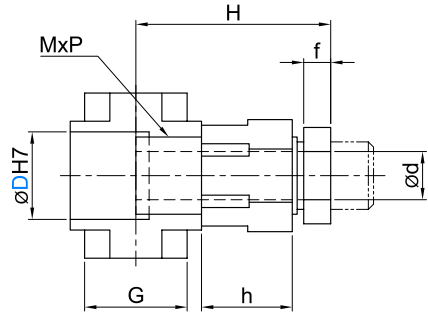
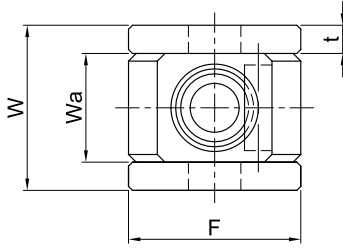
Model	D	W	Wa	F	t	MxP	H	f	h	T	G	A	a	g	Ta	e	S	B	Sa	Ba	Bolt Size
25SPH-M	16	36	21	45	7.5	M14x1.5	42	6	21	24	24	30	13	10	15	6	16.2	14	19.6	17	M8x55
	20	43	28	45	7.5	M18x1.5	45	6	21	30	24	40	17	13	18	6	21.9	19	25.4	22	M10x60
	25	48	33	50	7.5	M22x1.5	49	7	21.5	35	26	45	22	14	20.5	6	25.4	22	31.2	27	M12x70
	30	55	38	60	8.5	M27x1.5	55	7	26	38	30	50	27	15	22	6	31.2	27	37.0	32	M12x75
	35	64	44	70	10	M30x1.5	58	7	28	40	34	55	31	15	23	8	37.0	32	41.6	36	M12x80
	40	72	50	80	11	M36x1.5	60.5	7	29	43	38	60	36	16	24.5	8	43.9	38	47.3	41	M16x85

ชุดสไลด์คอร์

Inclined Pin Holders - พินโฮลเดอร์สำหรับสไลด์คอร์

FOIL FREE™

Model: 25RPH-M
for Adjusting Type
25RSCU-M



•Adjusting Rod, Lock Nut
Hexagonal dimension

No.	Part Name	Materials
1	Inclined Pin Holder	S45C
2	Slide Plate	Copper Alloy with Oil Free (TM)
3	Loosening Lock	SK5M
4	Adjusting Rod	S45C
5	Lock Nut	S45C

ORDER EXAMPLE Model D
25RPH-M20

Model	D	W	Wa	F	t	MxP	H	f	h	G	A	a	T	g	Ta	e	S	B	Sa	Ba	Bolt Size
25RPH-M	16	33	20	40	6.5	M14x1.5	42	6	21	20	30	13	24	10	15	6	16.2	14	19.6	17	M8x55
	20	38	25	40	6.5	M18x1.5	45	6	21	24	40	17	30	13	18	6	21.9	19	25.4	22	M10x60
	25	45	30	45	7.5	M22x1.5	49	7	21.5	26	45	22	35	14	20.5	6	25.4	22	31.2	27	M12x70
	30	51	36	55	7.5	M27x1.5	55	7	26	30	50	27	38	15	22	6	31.2	27	37.0	32	M12x75
	35	58	42	70	8	M30x1.5	58	7	28	34	55	31	40	15	23	8	37.0	32	41.6	36	M12x80
	40	66	48	70	9	M36x1.5	60.5	7	29	38	60	36	43	16	24.5	8	43.9	38	47.3	41	M16x85

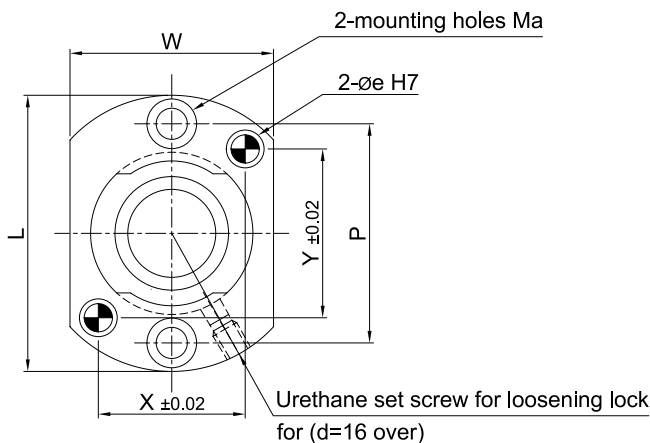
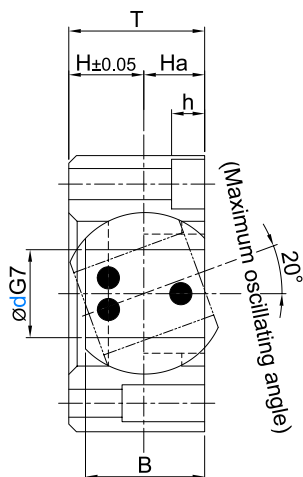
Spherical Guide Bushing Set - ไคด์นูชทรงกลม (ซเฟีย)



Model:
25SGTL (Left Handed)
25SGTR (Right Handed)

Strong Type Model:
25SGTHL (Left Handed)
25SGTHR (Right Handed)

! รูปและแบบเป็นรุ่น 25SGTR
Picture and drawing shown Right Handed type (25SGTR)



Slide Cores

ORDER EXAMPLE Model d 25SGTL20

! Operation Temperature 0° C - 170°C

No.	Part Name	M Materials
1	Inner Wheel	Copper Alloy with Oil Free TM
2	Outer Body	S45C

Model	d	L	W	T	H	Ha	B	Mounting Holes		Dowel Pin Hole		
								Ma	P	e	X	Y
25SGTL 25SGTR	8	44	28	17	9	8	14	M5	32	5	20	28
	10	46	30	20	11	9	16		34		22	28
	12	50	32	22	12	10	18	M6	36	6	22	30
	16	58	45	29	16	13	25		45		30	35
	20	65	50	33	18	15	28	M8	52	8	35	40
	25	78	57	38	21	17	33		62		40	50
25SGTHL 25SGTHR	30	86	65	43	24	19	37	M10	70	8	48	55
	25	85	57	42	21	33	M10		64		8	42
	30	94	65	48	24	37		M10	72	8		48
	35	98	72	54	27	40	M10		78		8	52
	40	106	77	58	29	44		M12	84	10		55
50	124	88	66	33	48	M12	102		10		65	78



Name	Guide Rail
Model	25GRS / 25GRSM / 25GRZ / 25GRSZ
Page	85



Name	Guide Rail with Chamfer
Model	25SGRI / 25SGRIK / 25SGRW / 25SGRWK
Page	87



Name	Heel Guide Rail with Dowel Hole
Model	25FRTL
Page	88



Name	Heel Guide Rail
Model	25GR_S / 25GR_SM / 25GR_Z / 25GR_SZ
Page	89



Name	Heel Guide Rail with Chamfer
Model	25SGRIS / 25SGRWS
Page	91



Name	Guide Rail L-Shaped
Model	25SGRLI / 25SGRLW
Page	92



Name	Double Heel Guide Rail
Model	25GT_S / 25GT_SM
Page	93



Name	Double Heel Guide Rail with Dowel Hole
Model	25SGRTI / 25SGRTW
Page	94



Name	Guide Center Rail
Model	25SCGH / 25SCGD / 25SCGW / 25SCGI
Page	95



Name	Guide Center Rail with Tapped Holes
Model	25CKBF / 25CKBI / 25CKBW
Page	96



Name	Gib Plate
Model	25SCUF / 25SCUI / 25SCUW
Page	97



Name	Gib Plate
Model	25CUPF / 25CUPI / 25CUPW
Page	99



Name	Side Guide
Model	25MSRGF / 25MSRGI / 25MSRGW
Page	100



Name	Copper Alloy Wear Plate (20/10/5mm)
Model	25SWW / 25SWWD 25STWW / 25STWWD 25UTWW
Page	101 102 103

Name	Compact Copper Alloy Wear Plate
Model	25MSTS
Page	104

Name	Copper Alloy Slide Plate (10mm)
Model	25SPMW 25SPLW
Page	104 105



Name	Cast Iron Wear Plate (20mm)
Model	25SWF / 25SWFD
Page	107


Name	Steel Wear Plate (20/10mm)
Model	25SWI 25STWI
Page	108 109

Name	Shims for Wear Plate
Model	25SMP
Page	110

Name	Steel Slide Plate (20mm)
Model	25SLSPH
Page	111

Name	Slide Plate L-Shape
Model	25SOLW
Page	112

ตารางการเลือกไกด์เรล | Guide Rails Selecting Chart

Types	Materials				Page
	Plain SKS3	SKS3 + Oil Groove	Copper Alloy + Oil Free	SKS3 + Oil Free	
Guide Rail	25GRS 	25GRSM 	25GRZ 	25GRSZ 	P.85
Guide Rail with Chamfer	customizable	customizable	25SGLW 25SGLWN 	25SGRI 25SGRIK 	P.87
Heel Guide Rail	25GR_S 	25GR_SM 	25GR_Z 	25GR_SZ 	P.88
Heel Guide Rail with Dowel	customizable	customizable	25FRTL 	customizable	P.89
Heel Guide Rail with Chamfer	customizable	customizable	25SGRWS 	25SGRIS 	P.91
Guide Rail L-Shape	customizable	customizable	25SGRLW 	25SGRLI 	P.92
Double Heel Guide Rail	25GT_S 	25GT_SM 	customizable	customizable	P.93
Double Heel Guide Rail with Dowel	customizable	customizable	25SGRTW 	25SGRTI 	P.94
Guide Center Rail	25SCGH 	25SCGD 	25SCGW 	25SCGI 	P.95
Guide Center Rail with Tapped	customizable	customizable	25CKBW 	25CKBI 	P.96

Model: 25GRS
Plain



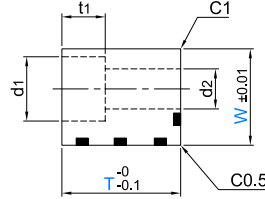
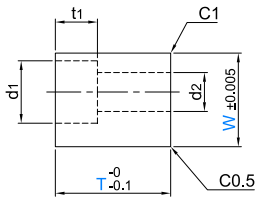
Model: 25GRZ
Oil Free™



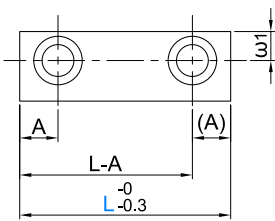
Model: 25GRSM
Oil Groove



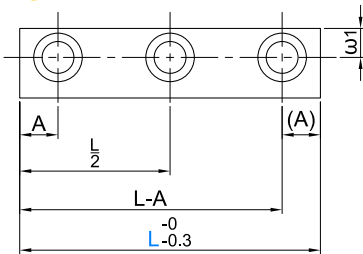
Model: 25GRSZ
Oil Free™



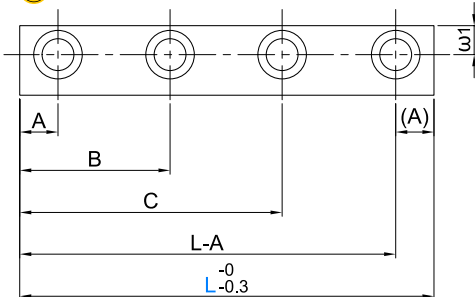
! Mounting Bolt Holes : 2



! Mounting Bolt Holes : 3

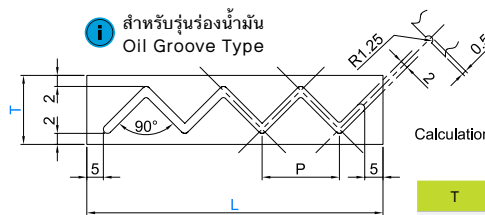


! Mounting Bolt Holes : 4



W	T	d1	d2	t1	w1
10	10 / 15	8	4.5	5	4.5
12.5	10 / 15 / 20	8	4.5	5	5
15	10 / 15 / 20 / 25	9.5	5.5	6	6
	15 / 20	11	6.5	7	9
20	25 / 30	14	9	9	9
	20 / 25 / 30 / 35	14	9	9	10
25	20 / 25 / 30 / 35	14	9	9	10
30	30 / 35	17	11.5	11	11

Model	Materials
25GRS	SKS3 53-56HRC
25GRSM	SKS3 53-56HRC + Oil Groove
25GRZ	Copper Alloy + Oil Free™ Solid Lubricant
25GRSZ	SKS3 + Oil Free™ Solid Lubricant



Calculation method of oil groove pitch
 $P = (T - 6) \times 2$

T	P
10	8
12.5	13
15	18
20	28
25	38
30	48
35	58
40	68

Guide Rail - ไกด์เรล



Model: 25GRS
Plain



Model: 25GRZ
Oil Free™



Model: 25GRSM
Oil Groove



Model: 25GRSZ
Oil Free™



Model	Materials
25GRS	SKS3 53-56HRC
25GRSM	SKS3 53-56HRC + Oil Groove
25GRZ	Copper Alloy + Oil Free™ Solid Lubricant
25GRSZ	SKS3 + Oil Free™ Solid Lubricant

ORDER EXAMPLE	Model	Type	W	T	L
	25GRZ20	-20	-100		

Model	Type	W	T	L											No. Holes	A	B	C				
25GR	S (plain)	10	10	40													2					
				50	60	70												3		-	-	
							80													7.5	30	50
								90														
									100													
	SM (oil groove)	10	15	40													2					
				50	60	70											3		-	-		
							80													7.5	30	50
								90														
									100													
	S (plain)	15	10	40	50	60											2					
							70	80	90	100	110	120					3					
													130							7.5	40	90
														140								
															150							
	SM (oil groove)	15	20	40	50	60	70	80	90							2						
											100	110	120	130	140	150		3				
																160				10	55	105
																	180					
																		200				
Z (Copper Alloy + Oilfree)	20	15	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	20	20	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	20	25	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	20	30	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	20	35	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	30	30	40	50	60	70	80	90							2							
SZ (Steel+Oilfree)	30	35	40	50	60	70	80	90							2							

Guide Rails

Model: 25SGRI



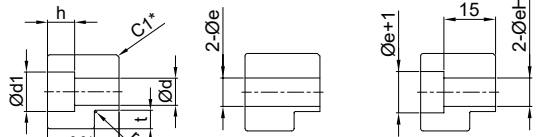
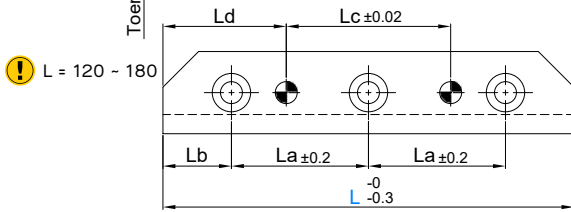
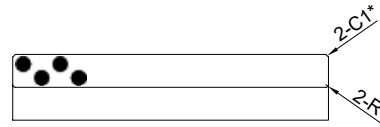
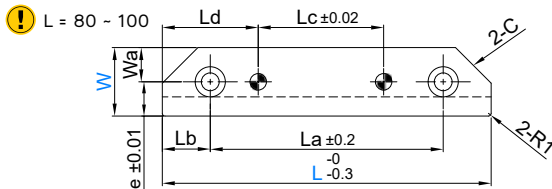
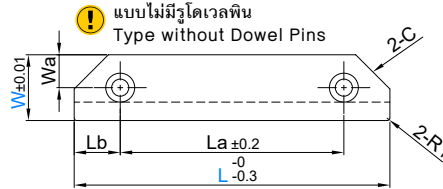
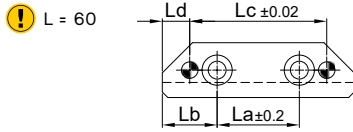
Model: 25SGRW



Model: 25SGRIK



Model: 25SGRWK



Model	Materials	Dowel Pin
25SGRI	SKS3 + Oil Free (™)	-
25SGRIK	(Induction Area 53-56HRC)	✓
25SGRW	Copper Alloy + Oil Free (™)	-
25SGRWK		✓

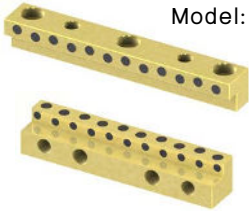
ORDER EXAMPLE	Model	Type	W - L
	25SGRW20-100		

Model	Type	W	L	Wa	La	Lb	Lc	Ld	C	T	H	t	r	d	d1	h	e H7	
25SGR	I (Steel+Oilfree)	15	60	6	20	20	40	10	9	15	8	4.5	0.5	5.5	9.5	6	+0.012 +0.000	
			80		25	12.5	35	22.5										
			100		75	55												
	IK (Steel+Oilfree+Dowel)	20	60	9	20	20	40	10	11	20	8	5.5	0.5	6.5	11	7		
			80		50	20	30											
			100		70	15	40											
	W (Copper Alloy+Oilfree)	25	60	9	20	20	40	10	13	25	10	7.5	0.8	9	14	9		
			80		45	20	30											
			100		65	40												
	WK (Copper Alloy+Oilfree+Dowel)	140	11	60	11	20	20	40	10	16	30	15	11	0.8	11	18	11	+0.015 +0.000
				80		40	40	40										
				120		42.5	60											
140		11	120	11	40	20	40	40	40	16	30	15	11	0.8	11	18	11	
			140		50	60	80											
			160		60	80												
180	11	180	11	70	20	100		40	16	30	15	11	0.8	11	18	11		
		180		70	100													

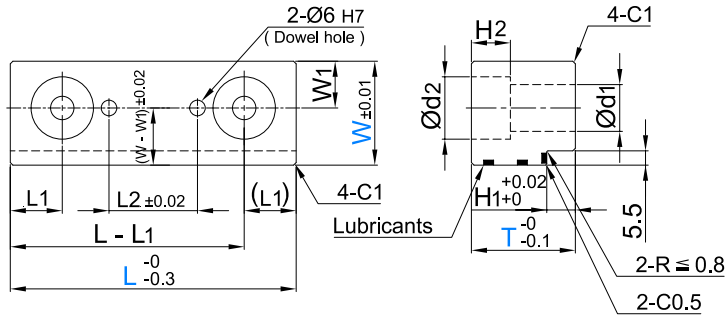
Heel Guide Rail with Dowel Hole - ซีลไกด์เรลมีรูโดเวล



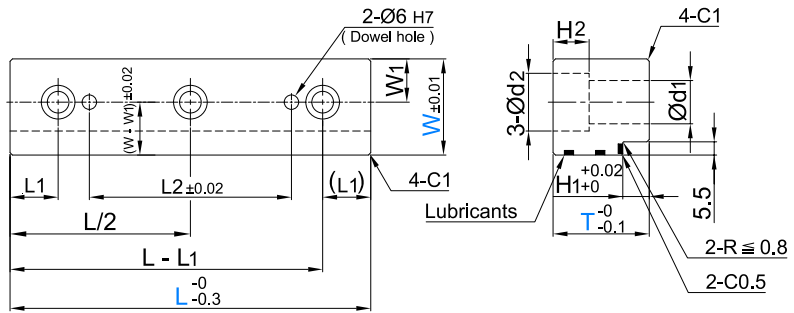
Model: 25FRTL



! Mounting Bolt Holes : 2



! Mounting Bolt Holes : 3



ORDER EXAMPLE Model W - L 25FRTL20-100

Copper Alloy + Oil Free™ Solid Lubricant

Model	W	L	T	W1	L1	L2	d1	d2	H1	H2	No. Holes
25FRTL	15	60	15	6	7.5	20	5.5	9.5	8	6	2
		80				3					
		100				3					
		120									
	20	80	20	8	10	35	9	14	10	9	2
		100				3					
		120				3					
		140									
	25	80	25	9	10	35	9	14	10	9	3
		100									
		120									
		140									
		160				120					

Model: 25GR_S
Plain



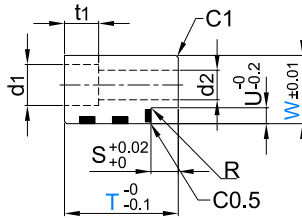
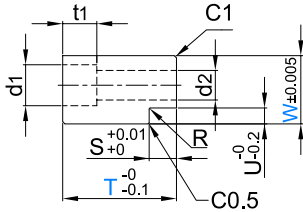
Model: 25GR_Z
Oil Free™



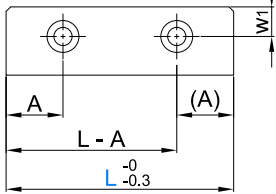
Model: 25GR_SM
Oil Groove



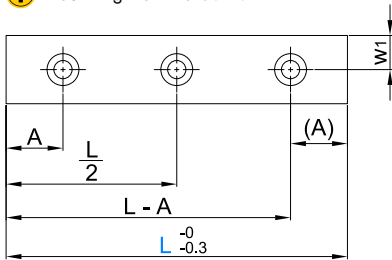
Model: 25GR_SZ
Oil Free™



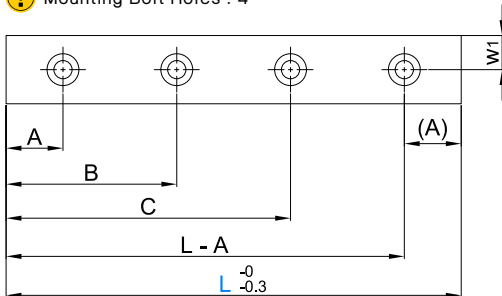
! Mounting Bolt Holes : 2



! Mounting Bolt Holes : 3



! Mounting Bolt Holes : 4

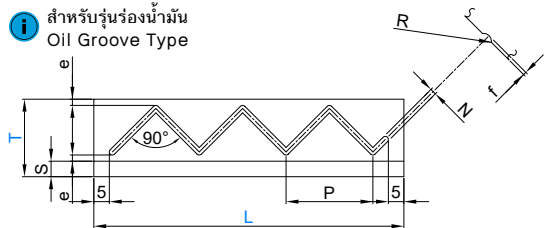


S	W	U	R
5	10	2.5	R ≤ 0.3
	12.5 / 15 / 20 / 25 / 30	3.5	R ≤ 0.8
8	12.5 / 15 / 20 / 25 / 30	4.5	

W	T	d1	d2	t1	w1
10	12.5 / 15	8	4.5	5	4.5
12.5	12.5 / 15 / 20	8	4.5	5	5
15	12.5 / 15 / 20 / 25	9.5	5.5	6	6
20	15 / 20	11	6.5	7	9
	25 / 30	14	9	9	9
25	20 / 25 / 29 / 30 / 34	14	9	9	10
35	34 / 39	17	11.5	11	11

Model	Materials
25GR_S	SKS3 53-56HRC
25GR_SM	SKS3 53-56HRC + Oil Groove
25GR_Z	Copper Alloy + Oil Free™ Solid Lubricant
25GR_SZ	SKS3 + Oil Free™ Solid Lubricant

i สำหรับรุ่นร่องน้ำมัน
Oil Groove Type



T-S	e	N	f	R	T-S	P
T-S ≤ 7.5	1.5	1.5	0.3	1.0	7	2
T-S ≤ 10	2.0	2.0	0.5	1.25	7.5	3
					10	8
					12	12
					014 / 15	18
					17	22
					19 / 20	28
					22	32
					24 / 25	38

Heel Guide Rail - ซีลไกด์เรล



Model: 25GR_S
Plain



Model: 25GR_Z
Oil Free™



Model: 25GR_SM
Oil Groove



Model: 25GR_SZ
Oil Free™



ORDER EXAMPLE Model S Type W - T - L
25GR5Z20-20-100

! * เลือกได้เมื่อ S = 5 เท่านั้น
* Only for S = 5

Model	Materials
25GR_S	SKS3 53-56HRC
25GR_SM	SKS3 53-56HRC + Oil Groove
25GR_Z	Copper Alloy + Oil Free™ Solid Lubricant
25GR_SZ	SKS3 + Oil Free™ Solid Lubricant

Model	Heel S	Type	W	T	L												No. Holes	A	B	C			
25GR	5	SC (plain) SCM (oil groove)	10	15	40													2	7.5	30	50		
					50	60	70											3					
								80														4	
									90														
										100													
25GR	5 8	S (plain) SM (oil groove)	12.5	12.5*	40												2	7.5	30	50			
					50	60	70										3						
								80													4		
									90														
										100													
							12.5*	40	50	60												2	
							15				70	80	90	100	110	120						3	
							20									130						4	
							25										140						
																					150		
				Z (Copper Alloy + Oilfree) SZ (Steel + Oilfree)	20	Z (Copper Alloy + Oilfree)	15*	40	50	60	70	80	90										2
												100	110	120	130	140	150		3				
																		160		4			
																			180				
																				200			
		SZ (Steel + Oilfree)	25			20	40	50	60	70	80	90							2				
													100	110	120	130	140	150		3			
																		160		4			
						30	20																
							25												160				
							35												180				
		SZ (Steel + Oilfree)	30	30																			
35																							

Guide Rails

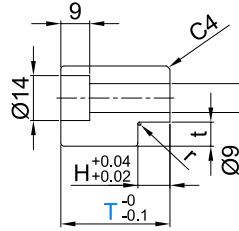
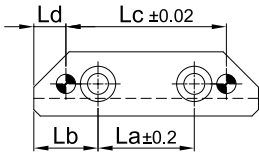


Model: 25SGRIS

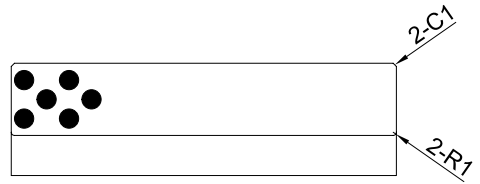
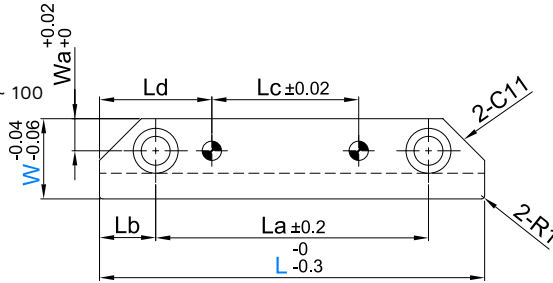


Model: 25SGRWS

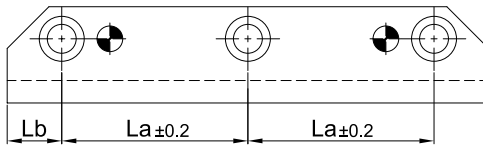
! L = 60



! L = 80 - 100



! L = 120 - 200



W	Dowel Hole
20	Ø6 ^{+0.012} / ₊₀
25 / 30	Ø8 ^{+0.015} / ₊₀

ORDER	Model	Type	W - L - T
EXAMPLE	25SGRWS20-100-23		

Model	Materials
25SGRIS	SKS3 + Oil Free (™) Solid Lubricant
25SGRWS	Copper Alloy + Oil Free (™) Solid Lubricant

Model	Type	W	L	T	Wa	La	Lb	Lc	Ld	H	t	r
25SGR	IS (Steel+Oilfree)	20	60	23	9	20	20	40	10	8	5.5	0.5
			80			20						
			100			40						
			120			60						
			140			80						
			160			100						
	WS (Copper Alloy +Oilfree)	25	80	28	9	45	17.5	20	30	10	7.5	0.8
			100			40						
			120			60						
			140			80						
			160			100						
			180			120						
		30		43	11	60	20	20	40	15	11	0.8
						120		40				
140						60						
160						80						
180						100						
200						120						

Guide Rail L-Shaped - ไกด์เรลตัวแอล

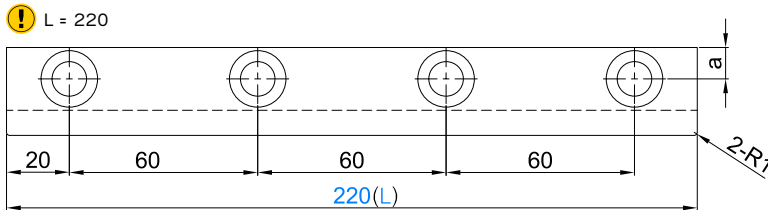
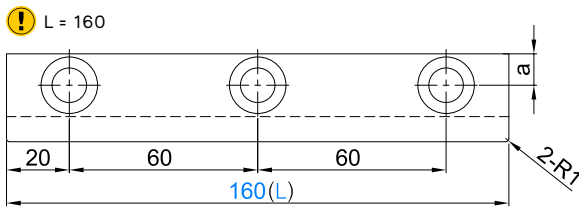
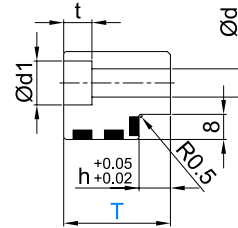
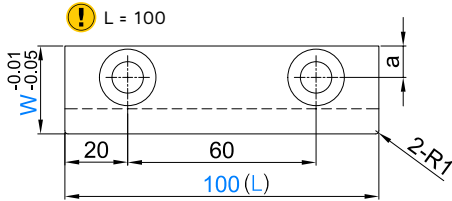
Oil Free™



Model: 25SGRLI



Model: 25SGRLW



ORDER EXAMPLE Model Type W - L - T
25SGRLW23-100-41

Model	Materials
25SGRLI	SKS3 + Oil Free (™) Solid Lubricant
25SGRLW	Copper Alloy + Oil Free (™) Solid Lubricant

Model	Type	W	L	T	a	d	d1	h	t
25SGRL	I (Steel+Oilfree)	23	100	30	7.5	7	11	15	7
			160						
			220						
		28	100	25	10	11	18	10	13
			160						
			220						
	W (Copper Alloy +Oilfree)	23	100	35	10	11	18	15	13
			160						
			220						
		28	100	56	10	11	18	26	13
			160						
			220						

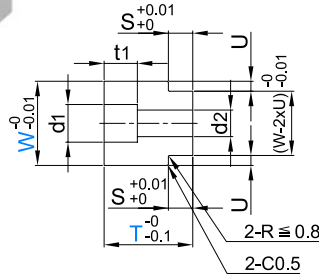
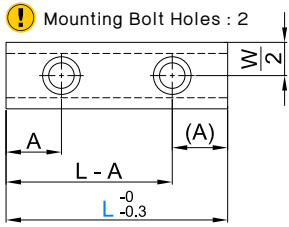
Double Heel Guide Rail - ดับเบิลฮีลไกด์เรล



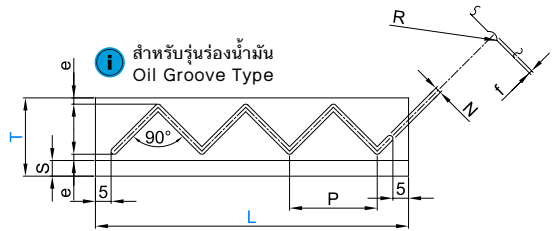
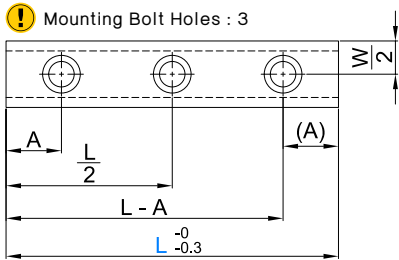
Model: 25GT_S
Plain



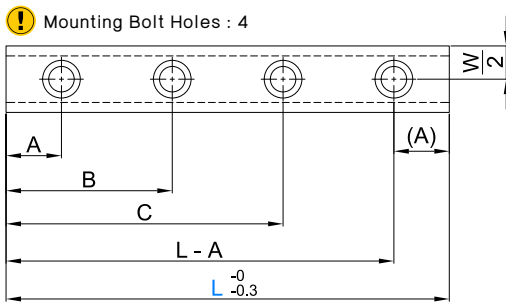
Model: 25GT_SM
Oil Groove



W	T	d1	d2	t1
15	15	8	4.5	5
18	15 / 20	9.5	5.5	6
22 / 26	20	11	6.5	7
	25	14	9	9
32 / 38	25 / 30	17	11.5	11



T-S	e	N	f	R	T-S	P
T-S ≤ 7.5	1.5	1.5	0.3	1.0	9	6
T-S ≤ 10	2.0	2.0	0.5	1.25	10	8
					12	12
					15	18
					18	24
					20	28
					22	32
					25	38



ORDER EXAMPLE Model S Type W - T - L
25GT5Z22-20-100

Model	Materials
25GT_S	SKS3 53-56HRC
25GT_SM	SKS3 53-56HRC + Oil Groove

Model	Heel S	Type	W	T	L	No. Holes	A	B	C
25GT	5	S (plain)	15	15	40	2	7.5	-	-
					50 60 70	3		-	-
					80	4		30	50
					90	4		32.5	57.5
					100	4		35	65
					100	4		35	65
	5	SM (oil groove)	18	15* 20	40	2	7.5	-	-
					50 60 70	3		-	-
					80	4		30	50
					90	4		32.5	57.5
					100	4		35	65
					100	4		35	65
	8	SM (oil groove)	22	20	40 50 60	2	7.5	-	-
					70 80 90 100 110 120	3		-	-
					130	4		40	90
					140	4		45	95
					150	4		53	97
					150	4		53	97
8	SM (oil groove)	26	25	50 60 70 80 90	3	10	-	-	
				100 110 120 130 140 150	3		-	-	
				160	4		55	105	
				180	4		60	120	
				180	4		60	120	
				200	4		70	130	

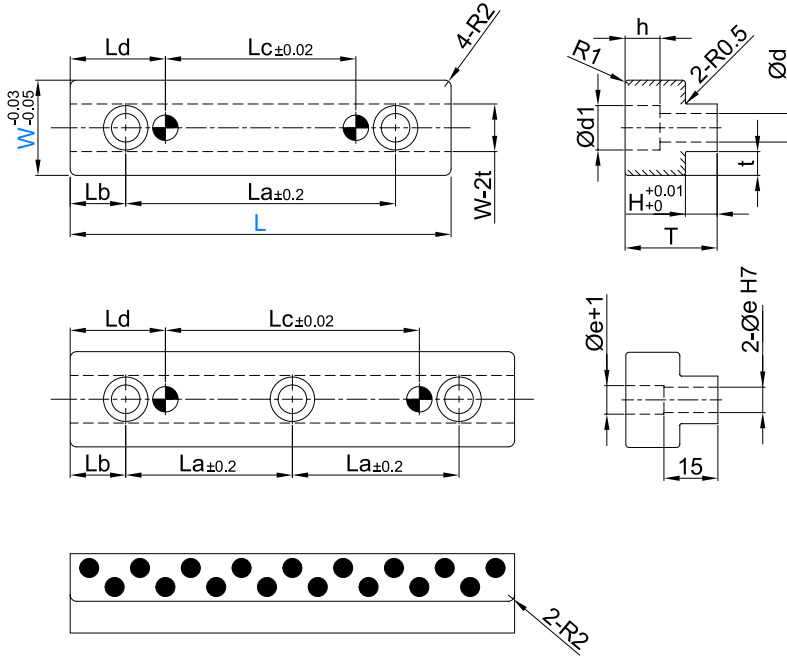
Double Heel Guide Rail with Dowel Hole - ดับเบิลฮีลไกด์เรล มีรูโดเวล



Model: 25SGRTI



Model: 25SGRTW



W	e H7
20 / 25	Ø6 ^{+0.012} ₊₀
30 / 40	Ø8 ^{+0.015} ₊₀

ORDER EXAMPLE	Model	Type	W - L
	25SGRTW30-100		

Model	Materials
25SGRTI	SKS3 + Oil Free (™) Solid Lubricant
25SGRTW	Copper Alloy + Oil Free (™) Solid Lubricant

Model	Type	W	L	La	Lb	Lc	Ld	T	H	t	d	d1	h	e H7
25SGRT	I (Steel+Oilfree)	20	60	35	12.5	15	22.5	15	8	4.5	5.5	9.5	6	6 ^{+0.012} _{+0.000}
			80	55		35								
			100	75		55								
		25	80	50	15	20	30	20	8	5.5	6.5	11	7	
			100	70		40								
			120	45		60								
	W (Copper Alloy +Oilfree)	30	100	65	17.5	40	30	25	10	7.5	9	14	9	8 ^{+0.015} _{+0.000}
			120	42.5		60								
			140	52.5		80								
		40	120	40	20	40	40	30	15	11	11	18	11	
			140	50		60								
			160	60		80								
			180	70		100								

Guide Rails

Model: 25SCGH
Plain



Model: 25SCGW
Oil FreeTM

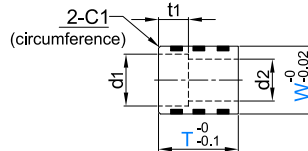
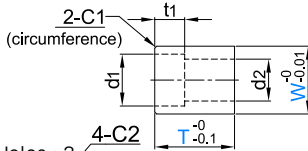


FOIL FREETM

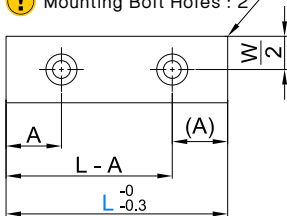
Model: 25SCGD
Oil Groove



Model: 25SCGI
Oil FreeTM

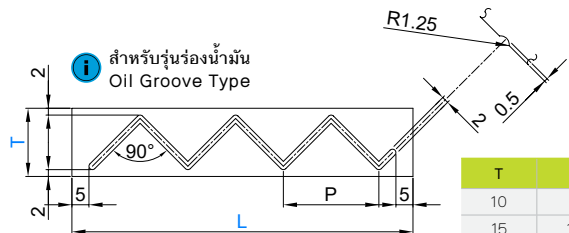
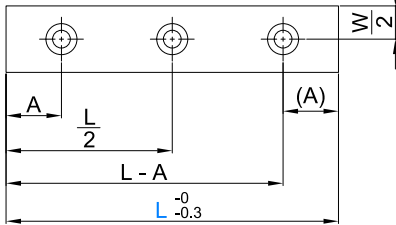


⚠ Mounting Bolt Holes : 2



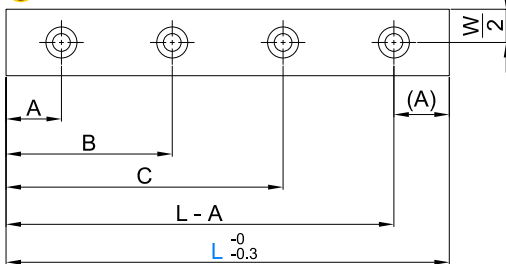
W	T	d1	d2	t1
12	10	8	4.5	5
15	15	9.5	5.5	6
20	15 / 20	11	6.5	7

⚠ Mounting Bolt Holes : 3



T	P
10	8
15	18
20	28

⚠ Mounting Bolt Holes : 4



ORDER	Model	Type	W	T	L
EXAMPLE	25SCGW15-15-50				

Model	Materials
25SCGH	SKS3 53-56HRC
25SCGD	SKS3 53-56HRC + Oil Groove
25SCGW	Copper Alloy + Oil Free TM Solid Lubricant
25SCGI	SKS3 + Oil Free TM Solid Lubricant

Model	Type	W	T	L											No. Holes	A		B	C	
				40	50	60	70	80	90	100	110	120	130	140		150	25SCGW (Copper Alloy)			Others
25SCG	H (plain)	12	10	40												2	7.5	7.5	-	-
				50	60	70									3					
							80									4				
								90								4				
	D (oil groove)	12	10															30	50	
																		32.5	57.5	
	W (Copper Alloy + Oilfree)	15	15	40	50	60									2	7.5	7.5	-	-	
							70	80	90	100					3					
		20	15	50	60	70	80	90						2	10	7.5				
																	3			
I (Steel+Oilfree)	20	20												3	10	10				

Guide Rails

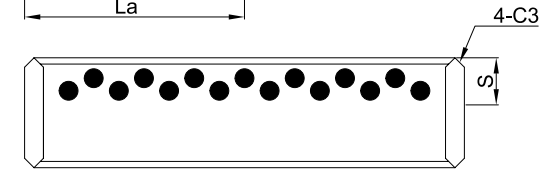
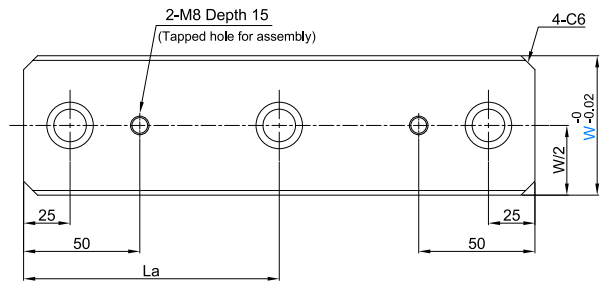
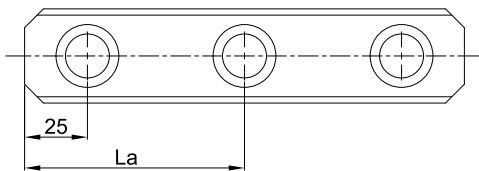
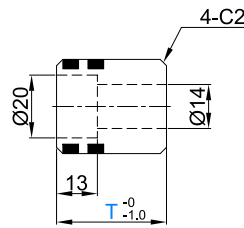
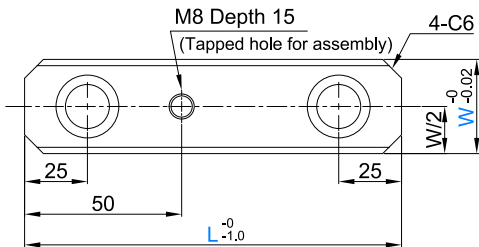
Guide Center Rail with Tapped Holes - ไกด์เซ็นเตอร์เรล มีรูตัวแปเกเลีย



Model: 25CKBF

Model: 25CKBI

Model: 25CKBW



Model	Materials
25CKBF	FC250 + Oil Free (™) Solid Lubricant
25CKBI	S55C + Oil Free (™) Solid Lubricant (Harden Area HRC40 - 45)
25CKBW	Copper Alloy + Oil Free (™) Solid Lubricant

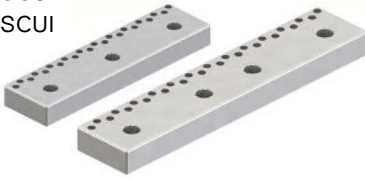
ORDER EXAMPLE	Model	Type	W	L	T
	25CKBW40	-200-40			

Model	Type	W	L	T	La	S
25CKB	F (Cast Iron + Oilfree)	30	100	30	-	15
			150		-	
			200		100	
			250		125	
			300		150	
			350		175	
	I (Steel + Oilfree)	40	100	30	-	15
			150		-	
			200		100	
			250		125	
			300		150	
			350		175	
	W (Copper Alloy + Oilfree)	40	100	40	-	20
			150		-	
			200		100	
			250		125	
			300		150	
			350		175	
		60	100	40	-	25
			250		125	
			300		150	
350			175			

Guide Rails

Model: 25SCUF

Model: 25SCUI

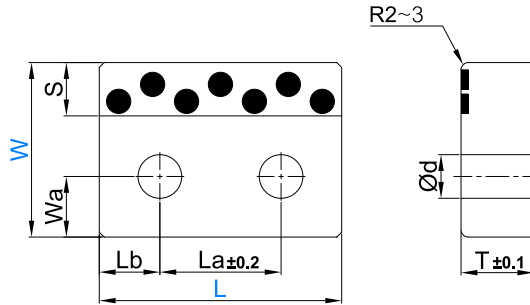


Model: 25SCUW

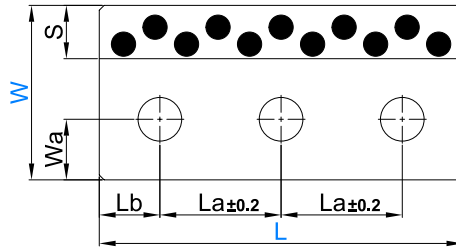


Model	Materials
25SCUF	FC250 + Oil Free (™) Solid Lubricant
25SCUI	S45C + Oil Free (™) Solid Lubricant (Harden Area HRC40 -)
25SCUW	Copper Alloy + Oil Free (™) Solid Lubricant

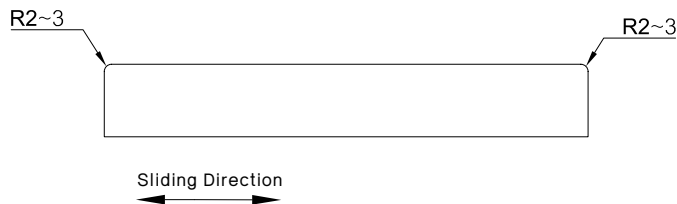
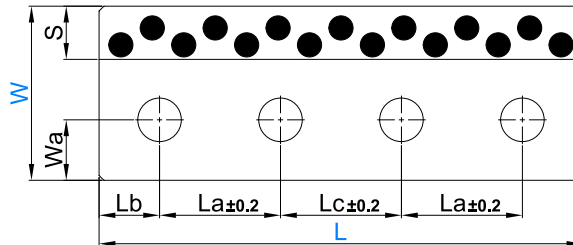
- ! W = 25
- W = 33 and L = 75 - 150
- W = 52 - 72 and L = 100



- ! W = 33 and L = 200
- W ≥ 52 and L = 150 - 200



- ! W = 105 and L = 200
- W ≥ 52 and L = 250

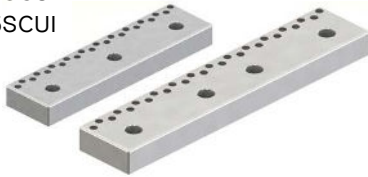


Gib Plate - กีบเหล็ก



Model: 25SCUF

Model: 25SCUI



Model: 25SCUW



ORDER
EXAMPLE

Model	Type	W - L
25SCUW72-100		

Model	Materials
25SCUF	FC250 + Oil Free ^(TM) Solid Lubricant
25SCUI	S45C + Oil Free ^(TM) Solid Lubricant (Harden Area HRC40 -)
25SCUW	Copper Alloy + Oil Free ^(TM) Solid Lubricant

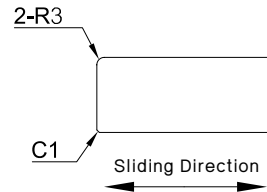
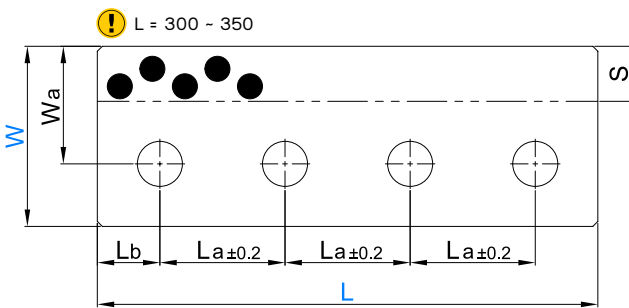
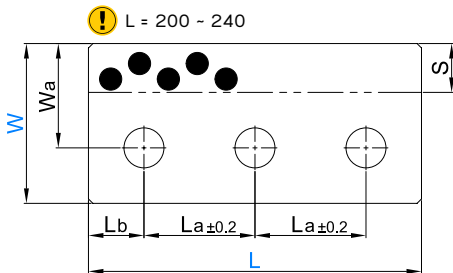
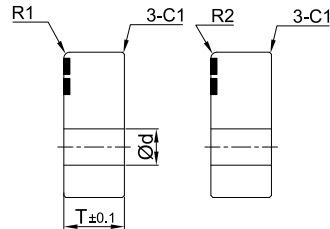
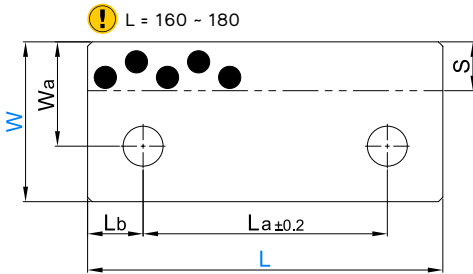
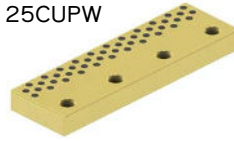
Model	Type	W	L	T	La	Lb	Lc	Wa	S	d	No. Holes							
25SCU	I (Steel +Oilfree)	25	75	10	45	15	-	8	7.5	9	2							
			100		50	25												
			125		75													
		W (Copper Alloy +Oilfree)	33		75	45		15	-	12.5		9	11	3				
					100	50												
					125	75												
	150			100														
	F (Cast Iron +Oilfree)	52	20	100	25	50	-	20	13	13	2							
				150		75												
				200		50												
				250		75												
		I (Steel +Oilfree)	72	30	100	-	50	-	22	-	-	3						
					150		75											
					200		50											
					250		50											
		W (Copper Alloy +Oilfree)	77	35	150	-	50	-	27	-	-	4						
					200		75											
					250		50											
					250		50											
	I (Steel +Oilfree)	82	40	150	-	50	-	32	-	-	3							
				200		75												
				250		50												
		W (Copper Alloy +Oilfree)		105		150						-	50	-	32	-	-	4
						200							75					
250						50												

Guide Rails

Model: 25CUPF

Model: 25CUPI

Model: 25CUPW



Model	Materials
25CUPF	FC250 + Oil Free (™) Solid Lubricant
25CUPI	S45C + Oil Free (™) Solid Lubricant (Harden Area HRC40 -)
25CUPW	Copper Alloy + Oil Free (™) Solid Lubricant

ORDER EXAMPLE	Model	Type	W - L
	25CUPW100-200		

Model	Type	W	L	T	Wa	La	Lb	d	S	No. Holes
25CUP	F (Cast Iron + Oilfree)	55	180	25	37.5	120	30	18	24	2
			160			110	25		25	2
		70	200		75	25	30		3	
			240		90	30	30		3	
	I (Steel + Oilfree)	85	28	200	60	75	25	22	30	3
				240		90	30			4
				300		80	30			3
				350		90	40			4
	W (Copper Alloy + Oilfree)	100	28	200	70	75	25	22	30	3
				240		90	30			3
				300		80	30			4
				350		90	40			4

Side Guide - ไซด์ไกด์

Model: 25MSRGF
Model: 25MSRGI

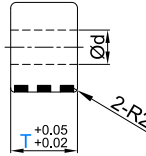
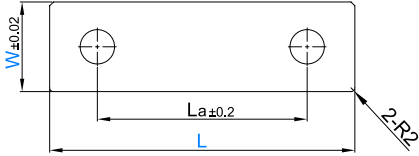


Model: 25MSRGW

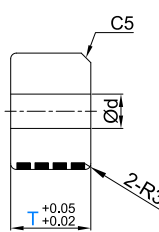
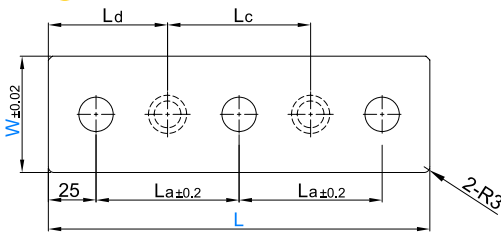


Oil Free™

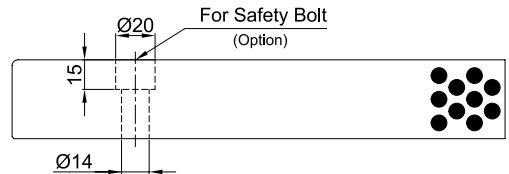
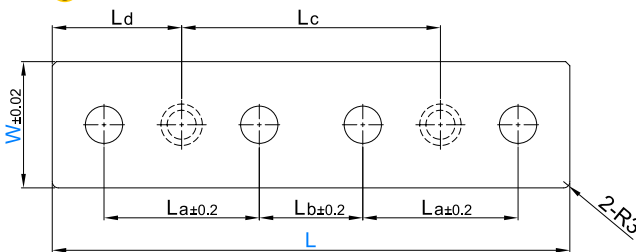
⚠ W = 25
W = 40 - 50 and L = 100



⚠ W ≥ 40 and L = 150 - 200



⚠ W ≥ 40 and L = 250



ORDER EXAMPLE Model Type W - L - T
25MSRGIW40-200-40

Model	Materials
25MSRGF	FC250 + Oil Free™ Solid Lubricant
25MSRGI	S45C + Oil Free™ Solid Lubricant (Harden Area HRC40 -)
25MSRGIW	Copper Alloy + Oil Free™ Solid Lubricant

Model	Type	W	L	T	La	Lb	d	
25MSRGI	F (Cast Iron + Oilfree) I (Steel + Oilfree) W (Copper Alloy + Oilfree)	25	75	25	-	45	-	11
			100			50		
			125			75		
			150			100		
		40	150	30	-	50	14	
			200			75		
			250			50		
			150	40	-	50		
			200			75		
			250			50		
		50	150	45	-	50	20	
			200			75		
			250			50		
			150	55	-	50		
			200			75		
			250			50		
			150	60	-	50		
			200			75		
250	50							
150	70		-	50				
200		75						
250		50						



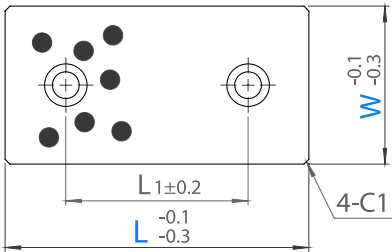
M Copper Alloy
+ Oil Free™ Solid Lubricant

ORDER Model W - L
EXAMPLE 25SWW75-100

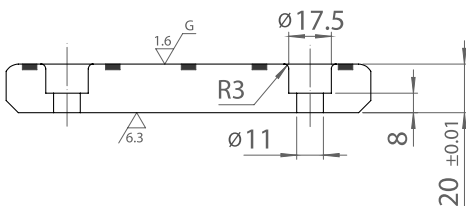
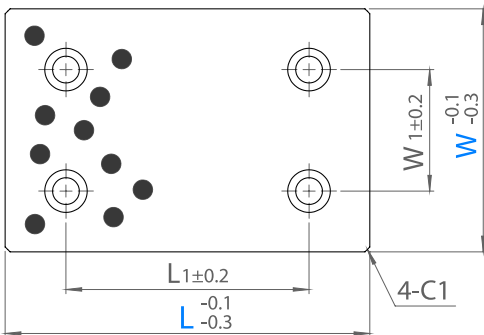
Model	W	L	L1	W1
25SWW	28	75	45	-
		100	50	
		150	100	
	38	75	45	-
		100	50	
		150	100	
	48	75	45	-
		100	50	
		125	75	
		150	100	
		200	150	
	58	75	45	-
100		50		
150		100		
75	75	25	-	
	100	50		
	125	75		
	150	100		
	200	150		
100	100	50	50	
	125	75		
	150	100		
	200	150		
	300	200		
125	125	75	50	
	150	100		
	200	150		
	250	200		
	300	200		
150	150	100	100	
	200	150		
	250	200		

Model: 25SWW **!** W = 28 - 75

25SWWD **!** W = 100 - 150



Model: 25SWW **!** W = 100 - 150



Copper Alloy Wear Plate (10mm) - แวร์เพลททองเหลืองคอปเปอร์อัลลอย (รุ่นหนา 10 มม)

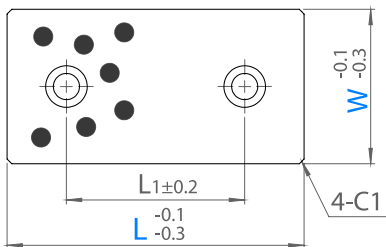


M Copper Alloy
+ Oil Free™ Solid Lubricant

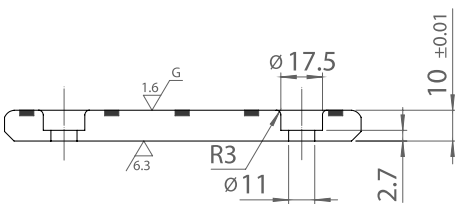
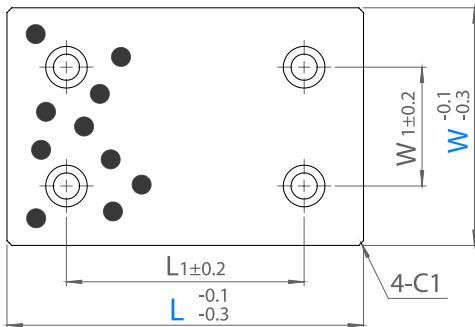
i มีสกรูในชุด
Mounting Bolts Included

ORDER Model W - L
EXAMPLE 25STWW75-100

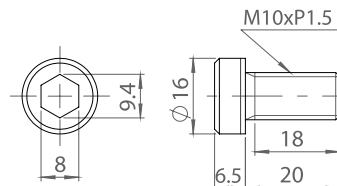
Model: 25STWW ⚠ W = 28 - 75
25STWWD ⚠ W = 100 - 150



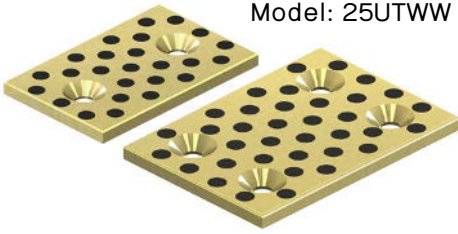
Model: 25STWW ⚠ W = 100 - 150



Model	W	L	L1	W1
25STWW	28	75	45	-
		100	50	
		125	75	
		150	100	
	38	75	45	-
		100	50	
		125	75	
		150	100	
	48	75	45	-
		100	50	
		125	75	
		150	100	
58	75	45	-	
	100	50		
	150	100		
75	75	25	-	
	100	50		
	125	75		
	150	100		
100	100	50	50	
	125	75		
	150	100		
	200	150		
125	150	100	50	
	200	150		
	250	200		
150	150	100	100	
	200	150		



Model: 25UTWW

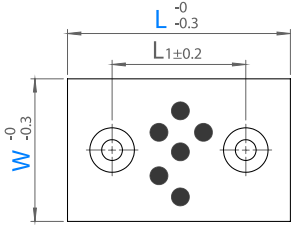


M Copper Alloy
+ Oil Free™ Solid Lubricant

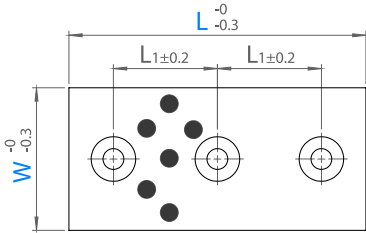
ORDER
EXAMPLE Model W - L
25UTWW75-100

i มีสกรูในชุด
Mounting Bolts Included

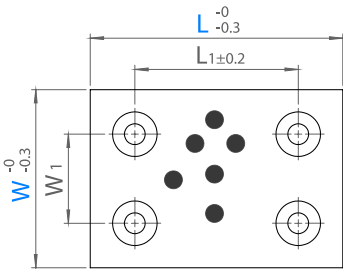
! W = 18 - 38 L = 50 - 100
 W = 48 L = 75 - 125



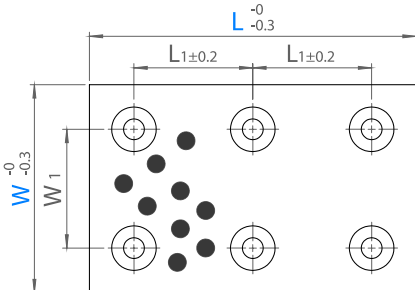
! W = 18 - 48 L = 150



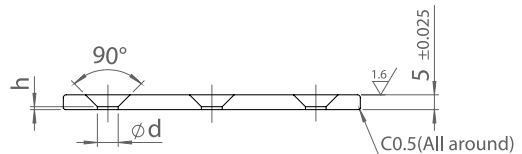
! W = 75 L = 75 - 125
 W = 100 L = 100 - 125



! W = 75 - 100 L = 150



Model	W	L	L1	W1	d	h	Mounting Bolts
25UTWW	18	50	20	-	6.5	1.5	M6
		75	45				
		100	70				
		150	60				
	28	50	20	-	10	0.8	M8
		75	45				
		100	70				
	38	50	20	-	10	0.8	M8
		75	45				
		100	70				
		150	60				
	48	75	45	-	10	0.8	M8
100		70					
125		95					
150		60					
75	75	45	45	10	0.8	M8	
	100	70					
	125	95					
	150	60					
100	100	70	70	10	0.8	M8	
	125	95					
	150	60					

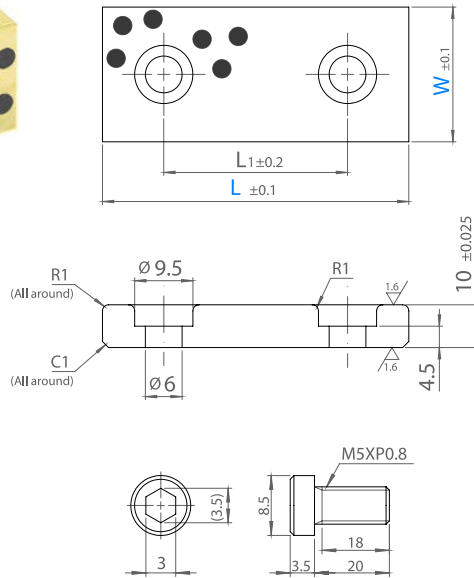


Guide Rails

Compact Copper Alloy Wear Plate - แวร์เพลทคอปเปอร์อัลลอย ขนาดคอมแพ็ค



Model: 25MSTS



M Copper Alloy
+ Oil Free™ Solid Lubricant

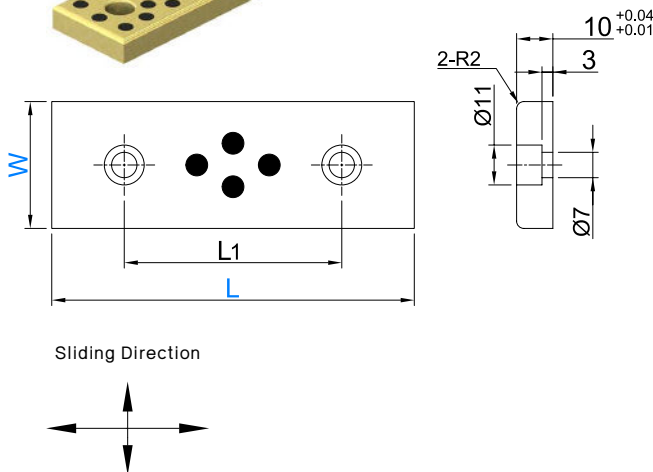
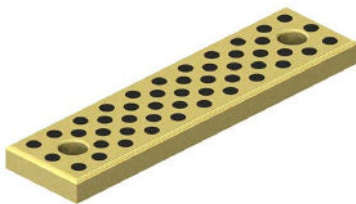
ORDER Model W - L
EXAMPLE 25MSTS18-50

Model	W	L	L1
25MSTS	15	30	14
		40	20
		50	30
		75	50
25MSTS	18	30	14
		40	20
		50	30
25MSTS	22	30	14
		40	20
		50	30
		75	50

Copper Alloy Slide Plate (10mm) - สไลด์เพลททองเหลืองคอปเปอร์อัลลอย (รุ่นหนา 10 มม)



Model: 25SPMW



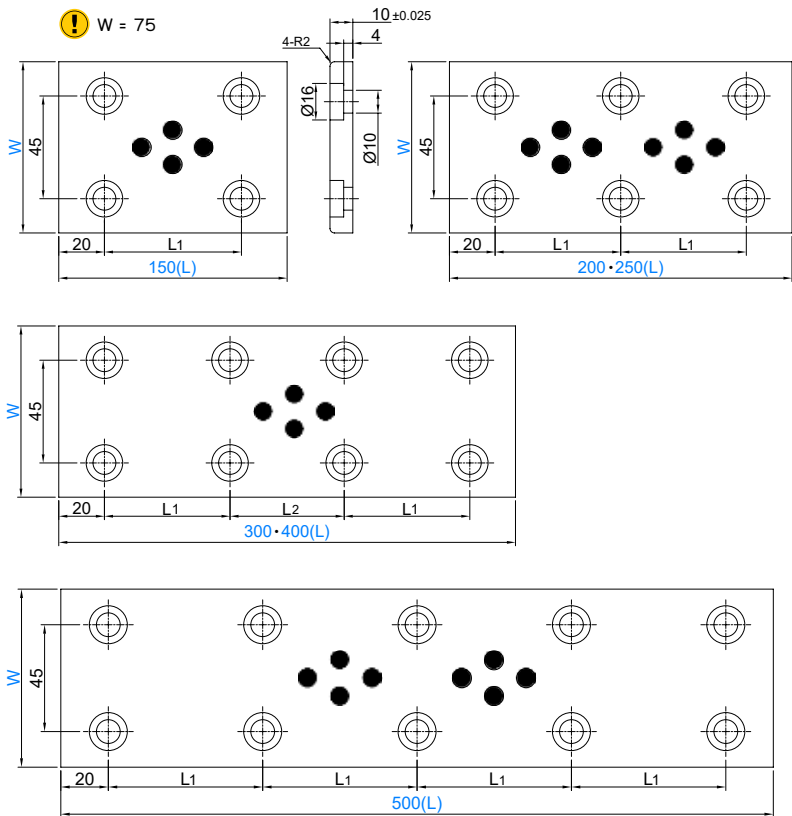
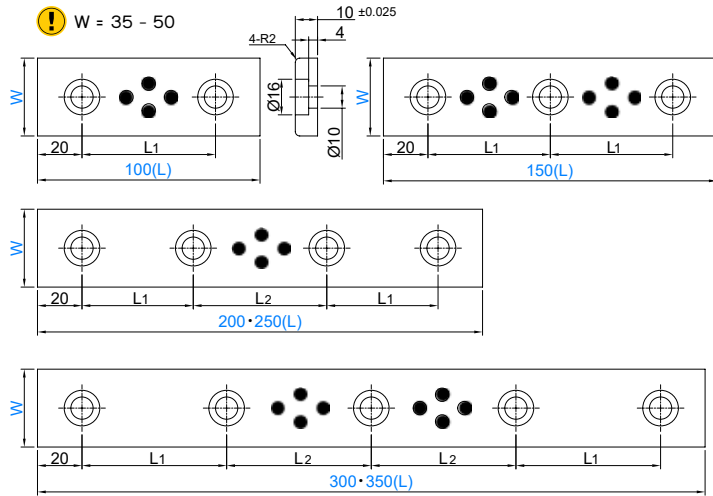
M Copper Alloy
+ Oil Free™ Solid Lubricant

i มีสกรูในชุด
Mounting Bolts Included

ORDER Model W - L
EXAMPLE 25SPMW28-100

Model	W	L	L1
25SPMW	18	75	45
		100	50
		125	75
		150	100
25SPMW	28	75	45
		100	50
		125	75
25SPMW	38	150	100
		75	45
		100	50
25SPMW	48	125	75
		150	100
		75	45
		100	50
		125	75
		150	100

Model: 25SPLW



M Copper Alloy
+ Oil Free™ Solid Lubricant

i มีสกรูในชุด
Mounting Bolts Included

ORDER Model W - L
EXAMPLE 25SPLW50-100

Sliding Direction
← →

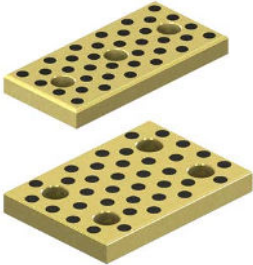
Copper Alloy Slide Plate (10mm) - สไลด์เพลททองเหลืองคอปเปอร์อัลลอย (รูนหนา 10มม)



M Copper Alloy
+ Oil Free™ Solid Lubricant

i มีสกรูในชุด
Mounting Bolts Included

ORDER Model W - L
EXAMPLE 25SPLW50-100



Model	W	L	L1	L2	No. Bolts
25SPLW	35	100	60	-	2
		150	55	-	3
		200	55	50	4
		250	70	70	
		300	65	65	5
		350	80	75	
	50	100	60	-	2
		150	55	-	3
		200	55	50	4
		250	70	70	
		300	65	65	5
		350	80	75	
	75	150	110	-	4
		200	80	-	6
		250	105	-	
		300	85	90	8
		400	120	120	
		500	115	-	10

✂ สไลด์เพลททุกรุ่นเปลี่ยนวัสดุจาก ทองเหลืองคอปเปอร์อัลลอย เป็น ซินเตอร์อัลลอยได้ All Slide Plates can switch material from Copper Alloy to Sintered Alloy

สามารถเลือกเปลี่ยนสเปคแวร์เพลทจากวัสดุทองเหลืองคอปเปอร์อัลลอย ผัง เม็ดกราไฟต์ออยฟรี เป็น วัสดุพิเศษ ซินเตอร์อัลลอยที่มี การรวมสารหล่อลื่นออยฟรีเอาไว้แล้วบนหน้าสไลด์ได้ โปรดสอบถามฝ่ายขายของเรา

Wearplates with Copper Alloy and Oil Free™ solid lubricant material can be switched to special Sintered Alloy material. For the Sintered Alloy material wearplates, please ask our sale personals.

Copper Alloy
Wear Plate



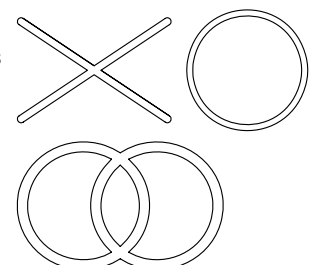
Sintered Alloy
Wear Plate

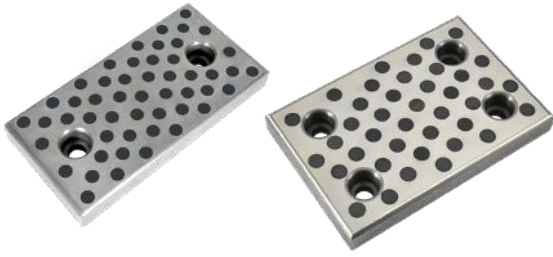


✂ เพิ่มรอยบาก / ร่องน้ำมัน Adding oil grooves

หากท่านอาจต้องการเพิ่มรอยบากเพื่อบ่งบอกการสึก หรือ ร่องน้ำมัน บนแผ่นแวร์เพลท เราสามารถทำได้ โปรดสอบถามฝ่ายขายของเรา We can add oil grooves and wear indication grooves to the wear plates. Please ask our sale personals for more details.

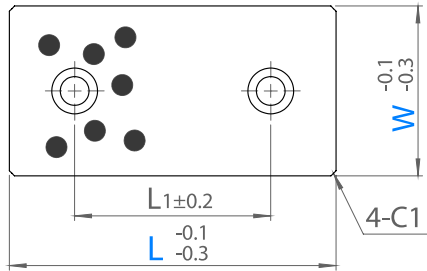
Example of
Oil-Grooves



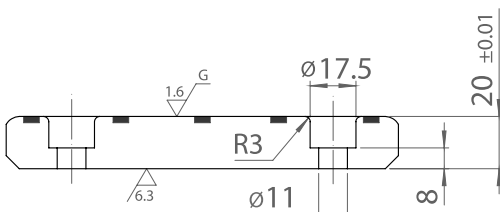
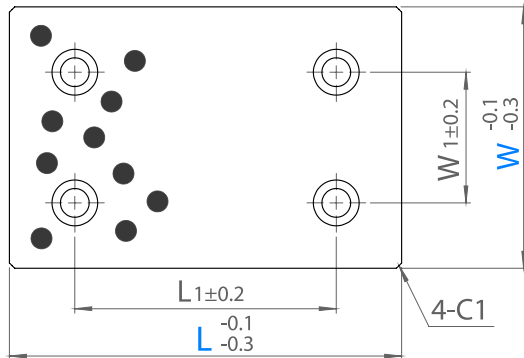


ORDER Model W - L
 EXAMPLE 25SWF75-100 FC250 + Oil Free™ Solid Lubricant

Model: 25SWF W = 28 - 75
 25SWFD W = 100 - 150



Model: 25SWF W = 100 - 200



Model	W	L	L1	W1
25SWF	28	75	45	-
		100	50	
		125	75	
		150	100	
	38	200	150	-
		75	45	
		100	50	
		125	75	
	48	150	100	-
		200	150	
		75	45	
		100	50	
	58	125	75	-
		150	100	
		75	25	
		100	50	
75	125	75	-	
	150	100		
	200	150		
	250	200		
	300	250		
	100	50		50
100	125	75		
	150	100		
	200	150		
	250	200		
	300	200		
125	125	75	50	
	150	100		
	200	150		
	250	200		
150	300	200	100	
	150	100		
	200	150		
	250	200		
200	150	100	100	
	200	150		
	250	200		
25SWF	200	200	150	150
		250	200	
		300	250	

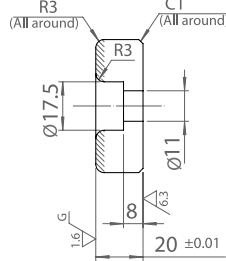
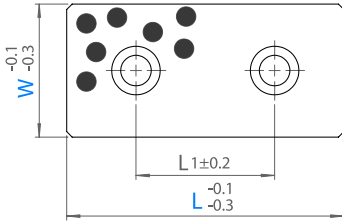
Steel Wear Plate (20mm) - แวร์เพลทเหล็กกล้า (รุ่นหนา 20 มม)

Oil Free™

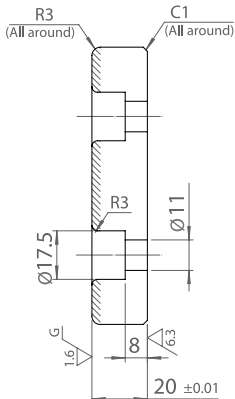
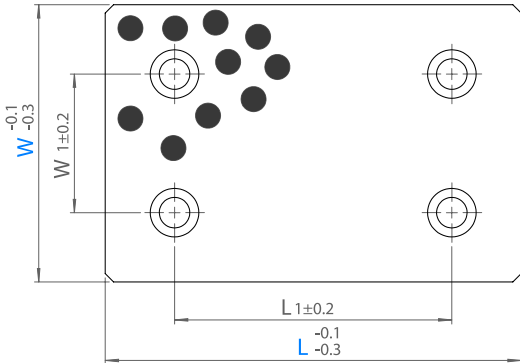
Model: 25SWI



! W = 48 - 75



! W ≥ 100



M S45C
+ Oil Free™ Solid Lubricant
45-50HRC (Induction Harden)

ORDER Model W - L
EXAMPLE 25SWI75-100

Model	W	L	L1	W1
25SWI	48	75	45	-
		100	50	
		125	75	
		150	100	
25SWI	75	75	25	-
		100	50	
		125	75	
		150	100	
25SWI	100	100	50	50
		125	75	
		150	100	
		200	150	
25SWI	125	125	75	50
		150	100	
		200	150	
		250	200	
25SWI	150	150	100	100
		200	150	
		250	200	

Guide Rails

Model: 25STWI



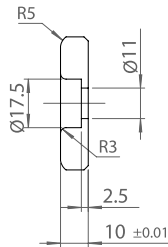
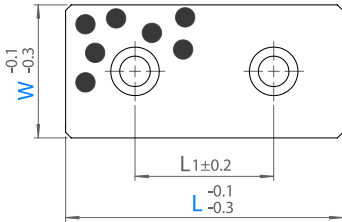
- SKS3 (HRC45 - 55)
+ Oil Free™ Solid Lubricant
- มีสกรูในชุด
Mounting Bolts Included

ORDER Model W - L
EXAMPLE 25STWI75-100

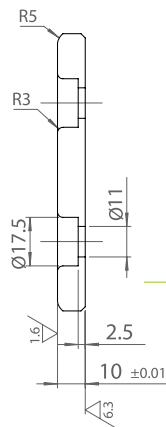
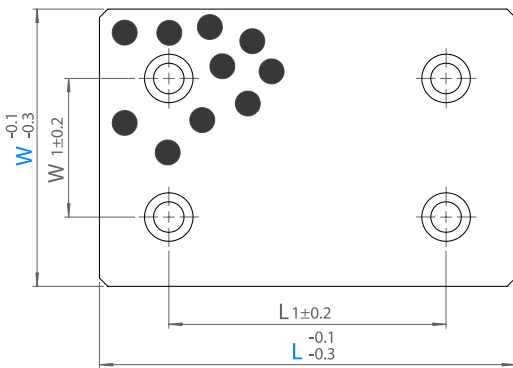
Model	W	L	L1	W1
25STWI	28	75	45	-
		100	50	
		125	75	
		150	100	
	38	75	45	-
		100	50	
		125	75	
		150	100	
	48	75	45	-
		100	50	
		125	75	
		150	100	
75	75	25	-	
	100	50		
	125	75		
	150	100		
100	100	50	50	
	125	75		
	150	100		
	200	150		
125	125	75	50	
	150	100		

W = 28 - 75

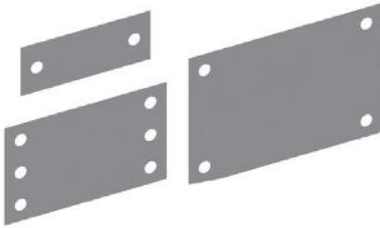
R2 สำหรับ W = 28 เท่านั้น
R2 only for W = 28



W ≥ 100

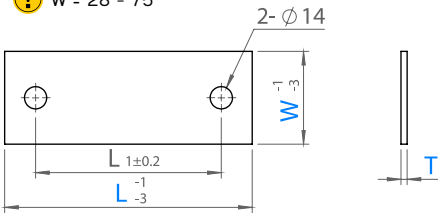


Shims for Wear Plate - แผ่นซิม สำหรับแบริ่งเพลท

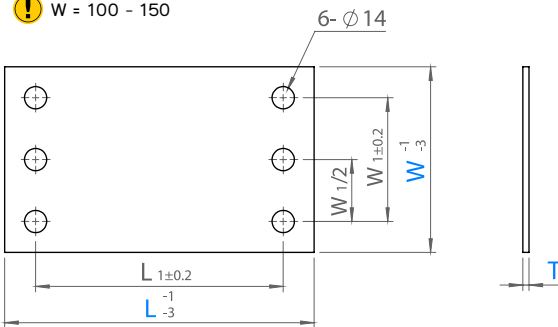


Model: 25SMP

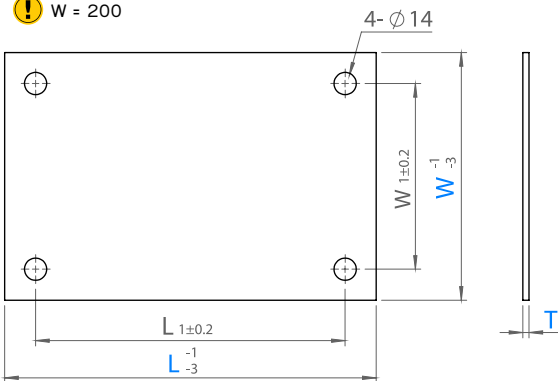
! W = 28 - 75



! W = 100 - 150



! W = 200



ORDER Model W - L - T
 EXAMPLE 25SMP75-100-0.10 Stainless Steel (Shim Grade)

Model	W	L	T	L1	W1				
28		75		45	-				
		100		50					
		125		75					
		150		100					
		200		150					
38		75		45	-				
		100		50					
		125		75					
		150		100					
		200		150					
48		75		45	-				
		100		50					
		125		75					
		150		100					
		200		150					
58		75		45	-				
		100		50					
		150		100					
		75				75	0.05	45	-
						100		50	
125	75								
150	100								
200	150								
100		100	2.00	50	50				
		125		75					
		150		100					
		200		150					
		250		200					
125		125		75	50				
		150		100					
		200		150					
		250		200					
		300		200					
150		150		100	100				
		200		150					
		250		200					
		300		250					
		200				200		150	150
250	200								
300	250								

Guide Rails

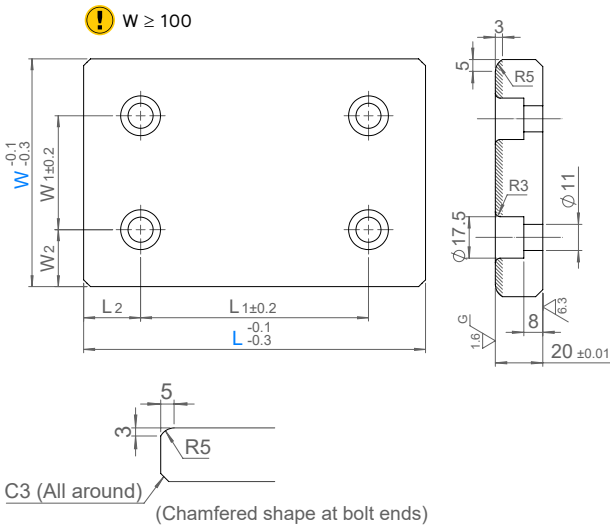
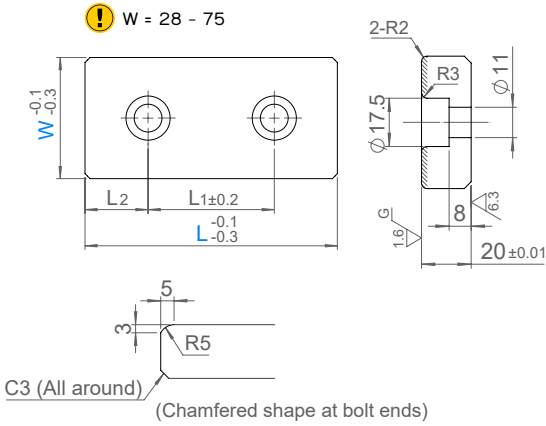
Model: 25SLSPH



M S45C (HRC55 or more)

58-62HRC (Induction Harden)

ORDER Model W - L
EXAMPLE 25SLSPH75-100



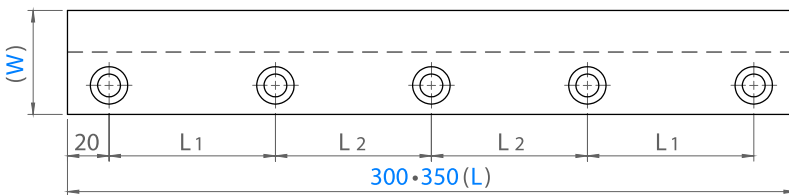
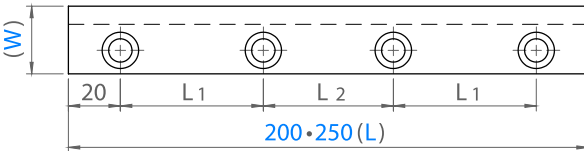
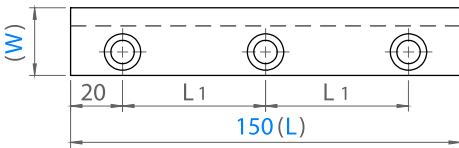
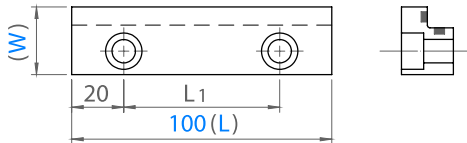
Model	W	L	W1	W2	L1	L2
25SLSPH	28	75			45	15
		100	-	-	50	25
		150			100	
	38	75			45	15
		100	-	-	50	25
		150			100	
	48	75			45	25
		100			50	
		125	-	-	75	
		150			100	
		200			150	
	58	75			45	25
		100	-	-	50	
		150			100	
	75	75			45	25
		100			50	
		125	-	-	75	
		150			100	
		200			150	
	100	100			50	25
125				75		
150		50	25	100		
200				150		
250				200		
125	125			75	25	
	150			100		
	200	50	37.5	150		
	250			200		
	300			200		
150	150			100	25	
	200	100	25	150		
	250			200		

Slide Plate L-Shape - สไลด์เพลทตัวแอล

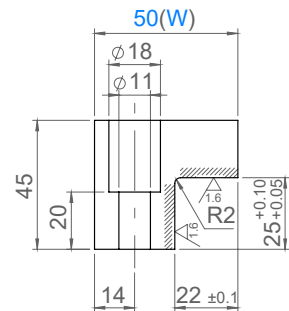
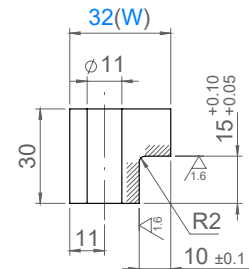
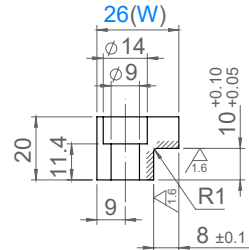
Model: 25SOLW



! แบบตามด้านยาว (L)
Drawing for each length (L)



! แบบตามด้านกว้าง (W)
Drawing for each width (W)



ORDER EXAMPLE Model W - L Copper Alloy + Oil Free™ Solid Lubricant

25SOLW32-100

Model	W	L	L1	L2	Mounting Bolts	
					Size	No.
25SOLW	26	100	60	-	M8	2
		150	55	-		3
		200	55	50		4
	32	100	60	-	M10	2
		150	55	-		3
		200	55	50		4
		250	70	70		
	50	200	55	50	M10	4
		250	70	70		
		300	65	65		5
		350	80	75		



Name	Parting Lock Set	Tapered Pin Set	Tapered Block Set (Short)	Tapered Block Set (Long)	Positioning Straight Block Set
Model	21GPLA	21TAP	21GTBS	21GTBL	21TBF
Page	115	115	116	116	117



Name	Locating Block Set	Side Straight Block Set	Locking Block Set	Compact Slide Block Sets
Model	21TN	21PL / 21PLG	21GLM	21HAS-Z50
Page	118	119	119	120



Name	Slide Block Set	Slide Block Set Oil Free™	Square Guide Bar Oil Free™	Square Guide Retainer	Square Guide Bar	Square Guide Jaws
Model	21HAS-Z46	21HAS-Z48	21HAS-Z07	21HAS-Z17	21HAS-Z18	21HAS-Z19
Page	121	122	123	123	124	124

ตารางการเลือกชิ้นส่วนตั้งตำแหน่ง | Positioning Components Selecting Chart

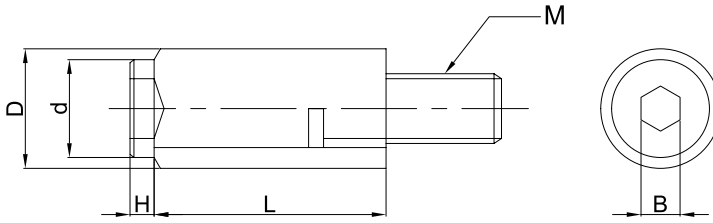
Shapes		Model			Page
Rounds		Parting Lock Set ชุดพาร์ทตั้งล็อก	21GPLA	Resin + Screw Set	P.115
		Tapered Pin Set ชุดเทเปอร์พิน	21TAP	-	P.115
Squares		Tapered Block Set ชุดเทเปอร์บล็อก	21GTBS	-	P.116
			21GTBL	-	P.116
		Positioning Straight Block Set ชุดสเตรทบล็อก หารตำแหน่ง	21TBF	-	P.117
		Locating Block Set ชุดบล็อก หารตำแหน่ง	21TN	Oil Groove	P.118
		Side Straight Block Set ชุดไซด์บล็อก	21PL 21PLG	-	P.119
		Locking Block Set ชุดล็อกบล็อก	21GLM	-	P.119
		Slide Block Set ชุดสไลด์บล็อก	21HAS-Z50	Oil Groove	P.120
			21HAS-Z46	Oil Groove	P.121
			21HAS-48	Oil Free™	P.122
			21HAS-Z07 21HAS-Z17	Oil Free™	P.123
	21HAS-Z18 21HAS-Z19		Oil Groove	P.124	

ชิ้นส่วนตั้งตำแหน่ง

Parting Lock Set - ชุดพาร์ทตั้งลิ้อค

Model: 21GPLA

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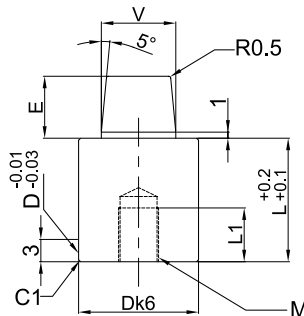
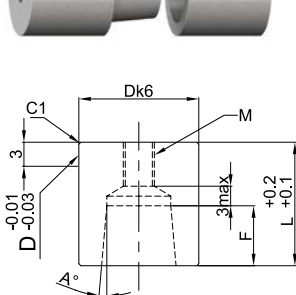
ORDER EXAMPLE Model D 21GPLA16 Screw : SCM435 Max. Temp 120°C
Housing : Nylon

Model	D	d	H	L	M	B
21GPLA	10	8.5	3	18	M5	4
	12	11	3.5	20	M6	5
	13	11	3.5	20	M6	5
	16	14	4	25	M8	6
	20	16	5	30	M10	8

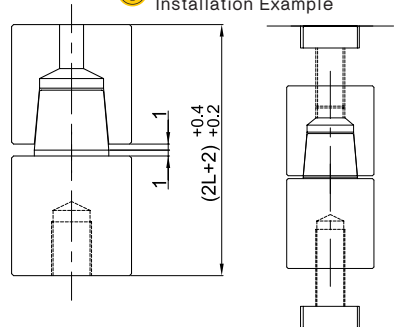
Tapered Pin Set - ชุดเทเปอร์พิน

Model: 21TAP

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ตัวอย่างการประกอบ
Installation Example



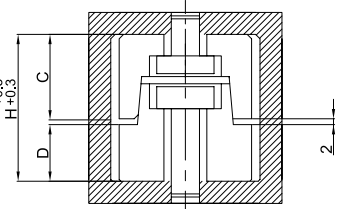
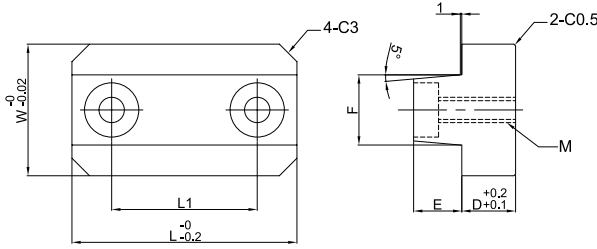
ORDER EXAMPLE Model D - A 21TAP20-5 SCM440 (HRC58-60)

Model	D k6	A°	L	V	E	F	M Bolt	L1	
21TAP	13	+0.012 +0.001	5	14	8.5	6	5	M4	10
	16			14	10	6	5	M5	10
	20			19	13	9	8	M6	12
	25			24	16	12	11	M8	16
	30	29		20	15	14	M10	20	
	32	29		20	15	14	M10	20	
	35	+0.018 +0.002		34	24	18	17	M12	24
	42			39	30	24	23	M12	24

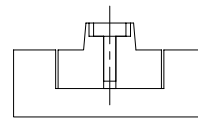
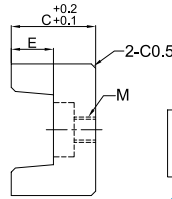
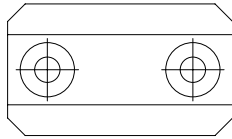
Positioning

Tapered Block Set (Short) - ชุดเทเปอร์บล็อก (แบบสั้น)

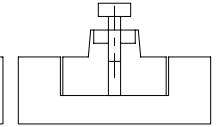
Model: 21GTBS



ตัวอย่างการประกอบ
Installation Example



การยึดด้วยสกรู
Fixate with Bolt



การถอดด้วยขนาดสกรู
Extract with bolt

ORDER EXAMPLE

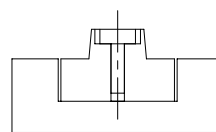
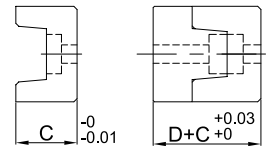
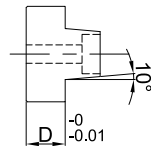
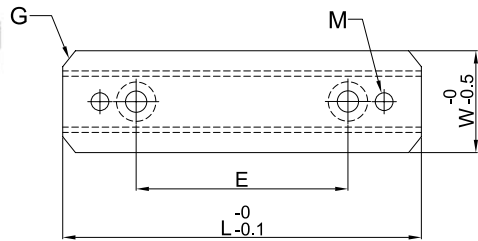
Model W - L
21GTBS35-50

SCM440 (HRC58-60)

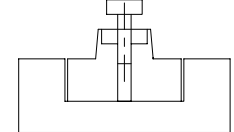
Model	W	L	C	D	E	F	H	Installation Bolt	M Extract Tap Hole	L1	No. Holes		
21GTBS	25	25	17	9	8	15	28	M4	M5	0	1		
		30								15	2		
		40								20	2		
	35	40	22	11	10	20	35			M6	M8	20	2
		50										30	2
		45										50	29

Tapered Block Set (Long) - ชุดเทเปอร์บล็อก (แบบยาว)

Model: 21GTBL



การยึดด้วยสกรู
Fixate with Bolt



การถอดด้วยขนาดสกรู
Extract with bolt

ORDER EXAMPLE

Model L
21GTBL100

SCM440 (HRC58-60)

Model	L	W	C	D	G	Installation Bolt	No. Holes	E	M Extract Tap Hole
21GTBL	50	25	17.5	8	5	M5	1	0	M5
	100	30	22	10	5	M6	2	60	M6
	150	40	25	13	5	M8	2	100	M8

ชิ้นส่วนตั้งตำแหน่ง

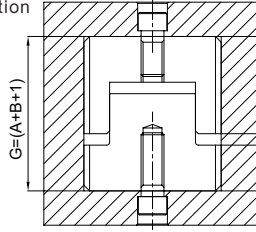
Positioning Straight Block Set - ชุดสเตรทบล็อก หารตำแหน่ง

Model: 21TBF

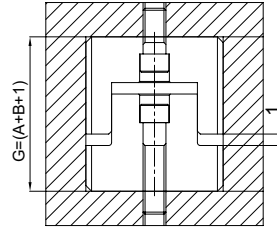


การติดตั้ง
Installation

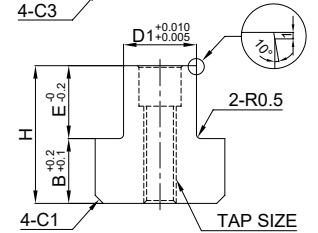
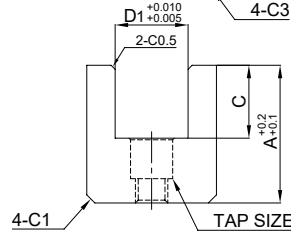
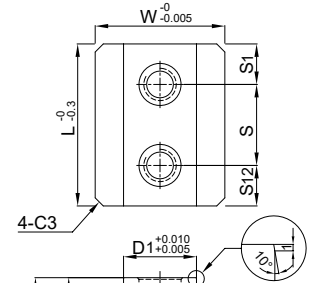
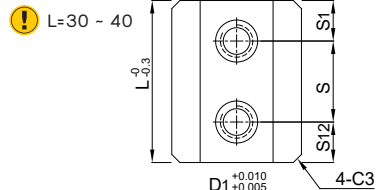
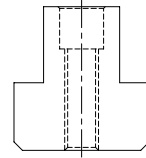
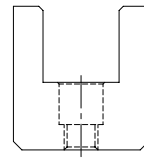
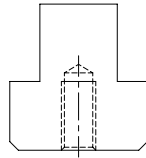
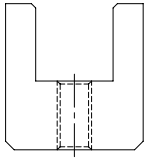
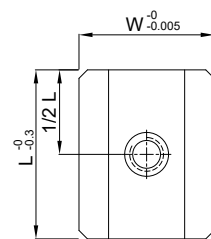
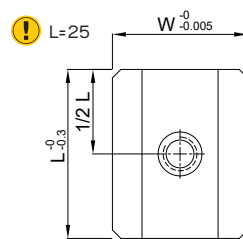
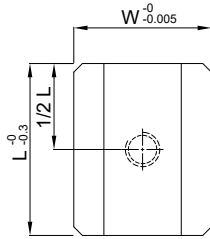
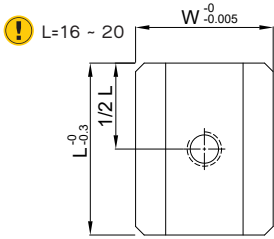
! W = 16



! W = 20 - 30



FOIL FREE™



ORDER EXAMPLE Model W - L
21TBF20-25

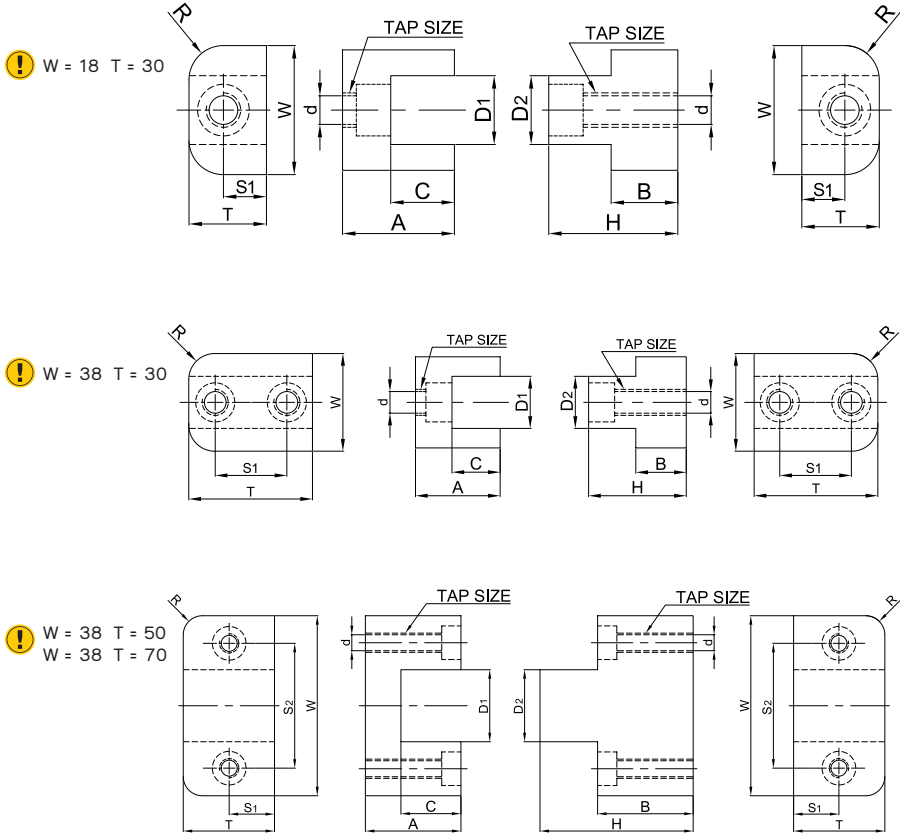
SCM440 (HRC58-60)

Model	W	L	A	B	C	D1	D2	E	G	H	S1	S2	Installation Bolt	M Tap Hole
21TBF	16	16	17	8	9	9	9	8	26	16	-	-	M4	M4
		20	17	8	9	12	12	8	26	16	-	-	M3	M4
	20	25	17	8	9	12	12	8	26	16	7.5	7.5	M3	M4
		30	17	8	9	12	12	8	26	16	7.5	7.5	M3	M4
	25	25	21	10	11	15	15	10	32	20	-	-	M4	M5
		30	21	10	11	15	15	10	32	20	7.5	7.5	M4	M5
	30	30	23	12	13	17	17	12	36	24	7.5	7.5	M5	M6
		40	23	12	13	17	17	12	36	24	10	10	M5	M6

Locating Block Set - ชุดบล็อก หาดำแหน่ง

FOIL FREE™

Model: 21TN



ORDER
EXAMPLE

Model W - T
21TN18-30

Ⓜ SCM440 (HRC58-60)

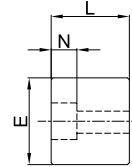
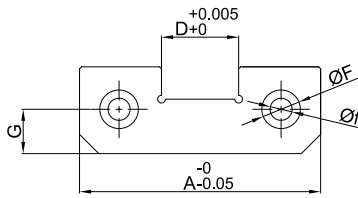
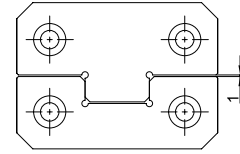
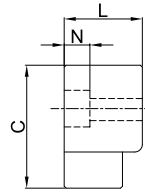
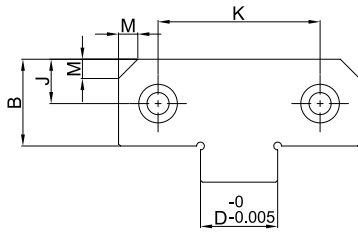
Model	W	T	A	B	C	D1	D2	H	R	S1	S2	d	Installation Bolt	M Tap Hole
21TN	18	30	26	15.5	14.8	16	16	30	9	-	10	7	M6	M8
	38	30	26	15.5	14.8	16	16	30	9	-	22	7	M6	M8
		50	29.8	29.8	20	20	20	48.8	9	35	19	7	M6	M8
		75	39.8	39.8	25	20	20	6.8	9	52	19	8.6	M8	M10

ชิ้นส่วนตั้งตำแหน่ง

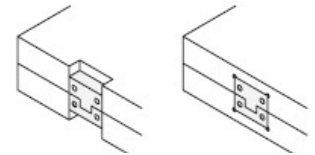
Side Straight Block Set - ชุดไขด์บล็อก

FOIL FREE™

Model:
21PL (Plain)
21PLG (Oil Groove)



ตัวอย่างการประกอบ
Installation Example



ร่องทะลุ
Groove

กัดด้วยเอ็นมิล
End Mill

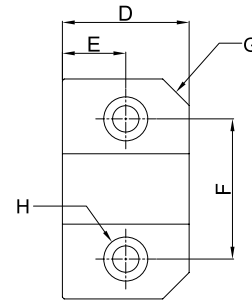
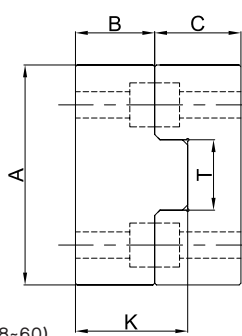
ORDER Model A
EXAMPLE 21PL50 SCM440 (HRC58-60)

Model	A	B	C	D	E	F	f	G	J	K	L	M	N
21PL	38	22	30	12	22	10.5	6.5	7	7	22	13	5	8
	50	21.5	30	17	21.5	10.5	6.5	11	11	34	16	5	8
21PLG (Oil Groove)	75	36	50	25	36	16.5	10.5	18	18	50	19	8	12
	100	45	65	35	45	16.5	10.5	22	22	70	19	10	12
	125	45	65	45	45	16.5	10.5	22	22	84	25	10	12

Locking Block Set - ชุดล็อกบล็อก

FOIL FREE™

Model: 21GLM



ORDER Model A
EXAMPLE 21GLM75 SCM440 (HRC58-60)

Model	A	B	C	D	E	F	G	H	K	T
21GLM	50	20	25	25	12.5	34	5	M6	30	17
	75	25	30	50	25	52	8	M8	40	30

Positioning

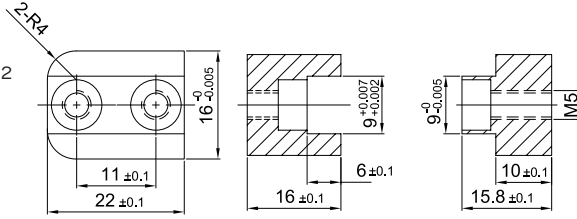
Compact Slide Block Sets - ชุดสไลด์บล็อก แบบคอมแพ็ค



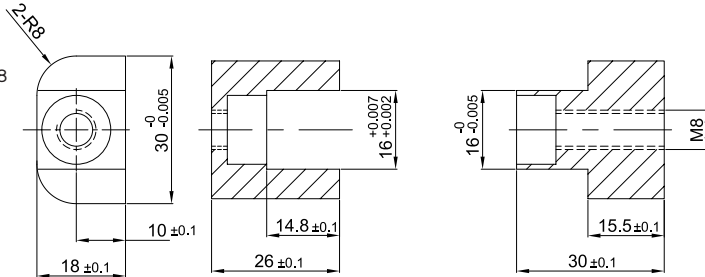
Model: 21HAS-Z50



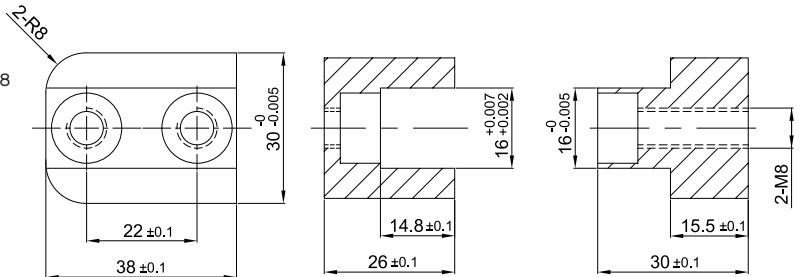
! 21HAS-Z50-9-22



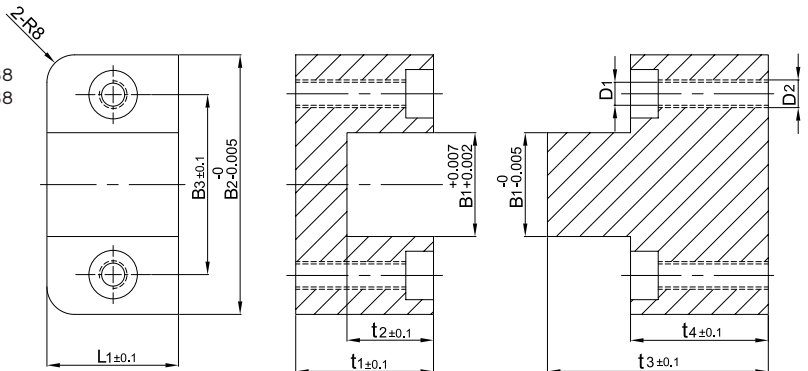
! 21HAS-Z50-16-18



! 21HAS-Z50-16-38



! 21HAS-Z50-20-38
21HAS-Z50-30-38



ORDER
EXAMPLE

Model - B1 - L1
21HAS-Z50-9-22



SCM440 (HRC58-60)

Model	B1	L1	B2	B3	t1	t2	t3	t4	D1	D2
21HAS-Z50	20	38	50	35	29.8	20	48.8	29.8	6.5	M8
	30	38	75	52	39.8	25	63.8	39.8	8.3	M10

ชิ้นส่วนตั้งตำแหน่ง

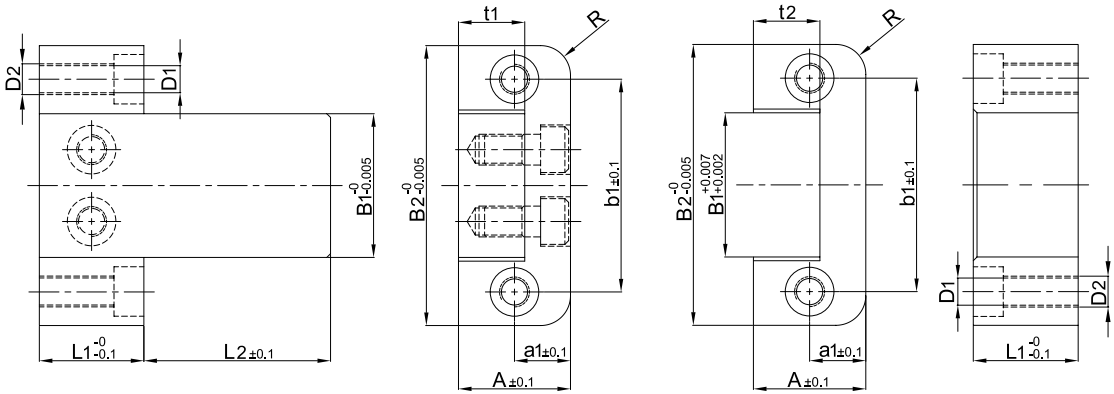
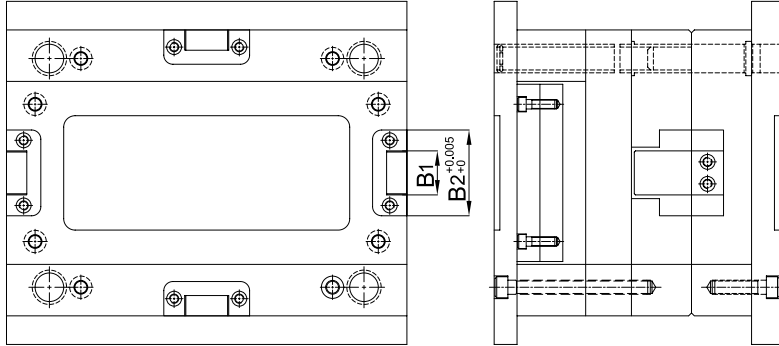
Slide Block Set - ชุดสไลด์บล็อก

FOIL FREE™

Model: 21HAS-Z46



ตัวอย่างการประกอบ
Installation Example



ORDER EXAMPLE Model - B1 - L1 - L2
21HAS-Z46-16-20-20

(M) SCM440 (HRC58-60)

Model	B1	L1	L2	A	B2	D1	D2	a1	b1	t1	t2	R	
21HAS-Z46	16	20	20	22	45	6.8	M8	11	30	11.5	12	8	
			40										
	30	26	40	35	60	6.8	M8	17.5	46	19.5	20	10	
			63										
	48	36	32	46	100	10.3	M12	23	74	25.5	26	12.5	
			50										
			63										
	77	56	50	60	150	14	M16	30	114	35.5	36	16	
			71										
			100										

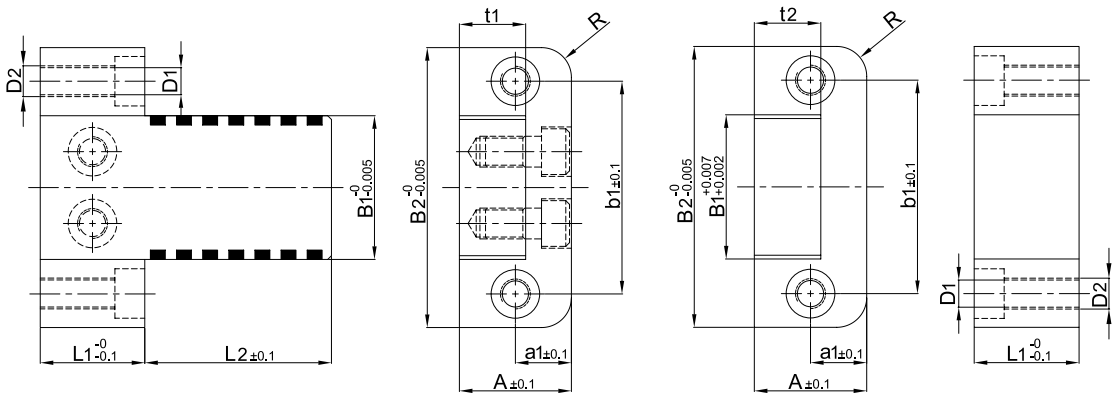
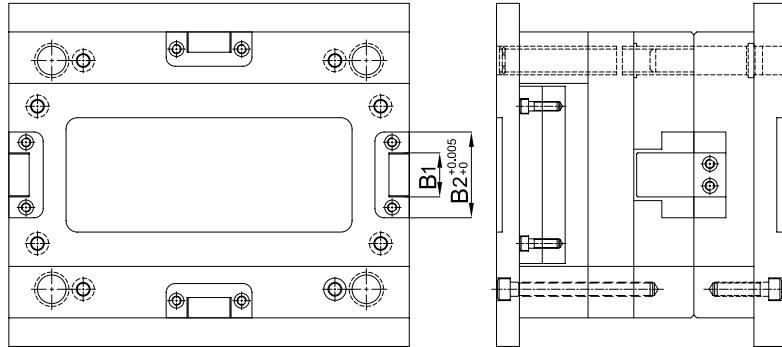
Slide Block Set Oil Free™ - ชุดสไลด์บล็อกคอยฟรี™



Model: 21HAS-Z48



ตัวอย่างการประกอบ
Installation Example



ORDER EXAMPLE Model - B1 - L1 - L2
21HAS-Z48-16-20-20

M SCM440 (HRC58-60)
Oil Free™ Solid Lubricant

Model	B1	L1	L2	A	B2	D1	D2	a1	b1	t1	t2	R
21HAS-Z48	16	20	20	22	45	6.8	M8	11	30	11.5	12	8
			40									
	30	26	40	35	60	6.8	M8	17.5	46	19.5	20	10
			63									
			32									
	48	36	50	46	100	10.3	M12	23	74	25.5	26	12.5
			63									
			80									
	77	56	50	60	150	14	M16	30	114	35.5	36	16
			71									
			100									

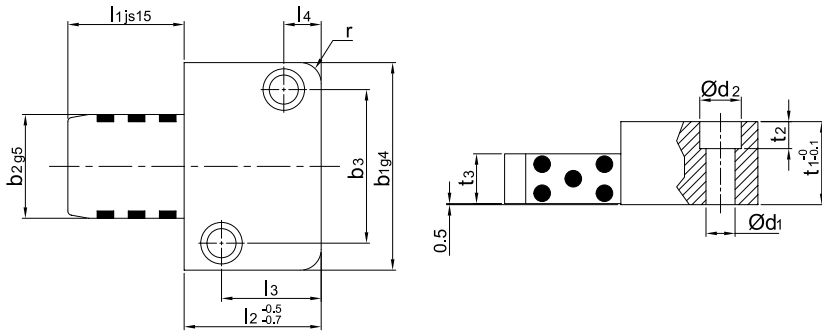
Positioning

ชิ้นส่วนตั้งตำแหน่ง

Square Guide Bar Oil Free™ - โกลด์บาร์ออยฟรี™

FOIL FREE™

Model: 21HAS-Z07



ORDER
EXAMPLE

Model - l2 - b2 - l1

21HAS-Z07-22-16-20



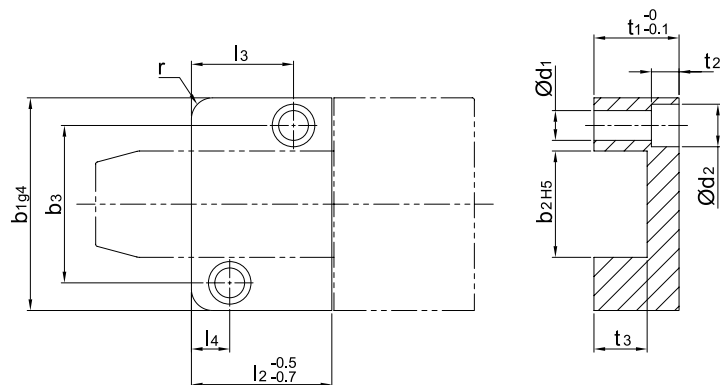
SCM440 (HRC58-60)
Oil Free™ Solid Lubricant

Model	l2	b2	l1	r	t3	t2	t1	d2	d1	l4	l3	b3	b1
21HAS-Z07	22	16	20	6	11	6.9	20	11	6.6	7	15	26	40
			40										
	27	20	25	6	13	6.9	22	11	6.6	7	19	31	45
			50										
	36	25	32	8	14	6.9	25	11	6.6	9	27	35	50
			63										
	46	32	40	8	19	9	32	15	9	11	35	45	63
			80										
	56	40	50	10	22	11	36	18	11	15	40	60	85
			100										
	66	50	56	10	24	13	40	20	14	18	48	74	100
			112										

Square Guide Retainer - โกลด์รีเทนเนอร์

FOIL FREE™

Model: 21HAS-Z17



SCM440 (HRC58-60)

ORDER
EXAMPLE

Model - l2 - b2 - l1

21HAS-Z17-22-16-20

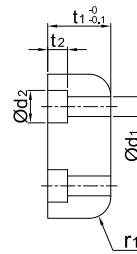
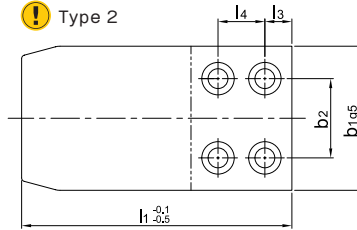
Model	l2	b2	l1	r	t3	t2	t1	d2	d1	l4	l3	b3	b1
21HAS-Z17	22	16	20	6	12	6.2	20	10.3	6.3	7	15	26	40
	27	20	25	6	14	6.2	22	10.3	6.3	7	19	31	45
	36	25	32	8	15	6.2	25	10.3	6.3	9	27	35	50
	46	32	40	8	20	9	32	15	9	11	35	45	63
	56	40	50	10	23	11	36	18	11	15	40	60	85
	66	50	56	10	25	13	40	20	14	18	48	74	100

Square Guide Bar - ไกด์บาร์

Model: 21HAS-Z18

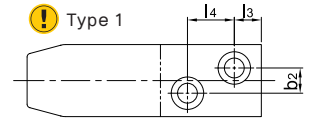


⚠ Type 2



FOIL FREE™

⚠ Type 1



ORDER EXAMPLE

Model - B - T - L

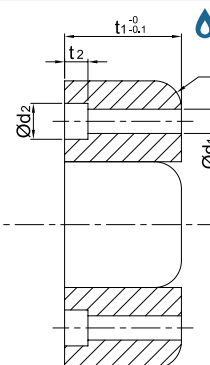
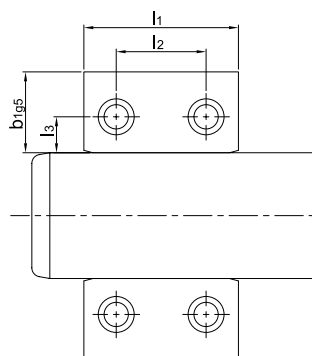
21HAS-Z18-20-18-50

Ⓜ SCM440 (HRC58-60)

Model	B	T	L	l3	l4	b2	d1	d2	t2	r1	type
21HAS-Z18	20	18	50	8	9	7	5.5	10	5.7	6	2
			75								
	32	22	70	9	18	14	6.6	11	6.8	6	
			90								
			112								
	50	30	90	12	21	24	9	15	9	8	
			125								
			150								
	63	32	112	15	26	30	11	18	11	10	
			150								
			175								
	80	35	112	15	26	44	11	18	11	12	
			150								
			175								
100	50	175	18	32	55	13.5	20	13	15		
		200									
120	65	250	20	35	75	13.5	20	13	15		
		200									
		300									

Square Guide Jaws - ไกด์จอร์ส

Model: 21HAS-Z19



FOIL FREE™

Ⓜ SCM440 (HRC58-60)

ORDER EXAMPLE

Model - B - T - L

21HAS-Z19-18-18-27

Model	B	T	L	l2	l3	d1	d2	t2	r1
21HAS-Z19	18	18	27	12	8	5.5	10	5.7	6
	20	22	36	16	10	6.6	11	6.8	6
	25	30	46	24	11	9	15	9	8
	32	32	56	30	16	11	18	11	10
	35	35	56	30	16	11	18	11	12
	40	50	76	40	17	13.5	20	13	15
	45	65	86	50	20	13.5	20	13	15

Positioning

ข้อต่อน้ำแม่พิมพ์
MOLD COUPLINGS



Name	Mold Coupling (G-Type)	Mold Coupling	Coupling Elbow 90°	Coupling Elbow 45°	Female Coupling	Male Coupling	Male Elbow 90°	Male Elbow 45°	Diverter	Nipple	Nipple Elbow 90°
Model	21101 / 21201										
Page	127-130	127	127	127	127	128	128	128	129	129	129



Name	Extension Nipple	Nipple Hose Barb	Mold Coupling (A-Type)	Mold Socket	Socket Elbow 90°	Socket Elbow 45°	Female Socket	Male Socket	Fitting Plug	Fitting Plug Elbow 90°
Model	21301/21401									
Page	130	130	131-134	131	131	131	132	133	133	133



Name	Fitting Plug Hose Barb	Fitting Extension Plug	Light Alloy Socket	Light Alloy Fitting Plug	Mold Coupling (J-Type)	Socket SH	Socket Elbow 90° SHL	Male Socket SM	Female Socket SF
Model	21LA				21601/21701				
Page	133	134	134	134	135-136	135	135	135	135



Name	Fitting Plug PM	Fitting Plug Elbow 90° PML	Fitting Plug Extension PME	Fastening Coupling	Fastening Coupling Elbow
Model				21S-NKC	21S-NKL
Page	136	136	136	137	138





Name	Quick Fitting Joints							Quick Fitting Reducers		
Model	21SPC / 21SPOC / 21SPLL / 21SPCF / 21SPLFL / 21SPLFL / 21SPLFL / 21SPH / 21SLL / 21SPXY / 21SPBT / 21SPDT							21SPG / 21SPWY / 21SPEGT / 21SPKG		
Page	139 - 141							141		







Name	Quick Fitting Unions					Quick Fitting Triple Branch	
Model	21SLSA / 21SPU / 21SPV / 21SPY / 21SPE / 21SPM / 21SPZA / 21SPK / 21HVFF					21SPKB / 21SPKD	
Page	142					142	

ตารางการเลือกข้อต่อ | Coupling Selecting Chart



Types	Page
German Type Couplings G 101 G 201  	P.127 ~ P.129



ใช้ร่วมกันได้
Suitable

Types	Page
German Type Fittings G 101 G 201  	P.129 ~ P.130



Types	Page
American Type Couplings A 301 A 401  	P.131 ~ P.132

ใช้ร่วมกันได้
Suitable

Types	Page
American Type Fittings A 301 A 401  	P.133 ~ P.134

Types	Page
Japan Type Couplings J 601 J 701  	P.135

ใช้ร่วมกันได้
Suitable

Types	Page
Japan Type Fittings J 601 J 701  	P.136

การเลือกข้อต่อแบบสวมสายยาง | Fittings and Tube Selecting

เลือกขนาดรูฝั่งที่สวมสายยางของฟิตติง ตามขนาดโตด้านนอกของสายยาง

Choose fitting's tube side by the size of tube outer diameter size.



ข้อต่อน้ำแม่พิมพ์



G-Type

ข้อต่อคัปปลิ่งแม่พิมพ์แบบเยอรมัน German Type Mold Coupling

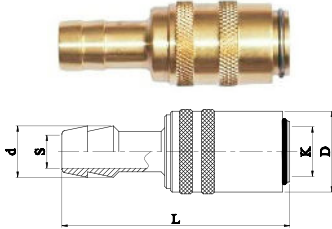
Fitting Types
G 101
G 201

M Body : Brass
Seal : Viton

! Max. Temperature 200 °C
Max. Pressure 1470kPa

Mold Coupling (G-Type) - โมลด์คัปปลิ่ง (G-Type)

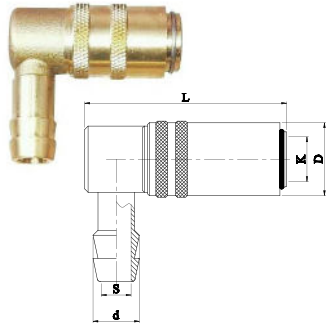
FOIL FREE™



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21101-3	21101-3-0	G 101	17	53	10	9	6
21101-4	21101-4-0				14		9
21201-3	21201-3-0	G 201	22	62	10	13.5	6
21201-4	21201-4-0				14		9

Mold Coupling Elbow 90° (G-Type) - โมลด์คัปปลิ่งหักศอก 90° (G-Type)

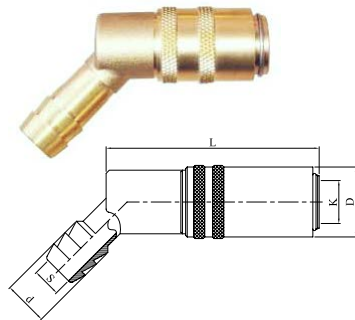
FOIL FREE™



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21101-L3	21101-L3-0	G 101	17	46.5	10	9	6
21101-L4	21101-L4-0				14		9
21201-L3	21201-L3-0	G 201	22	56.5	10	13.5	6
21201-L4	21201-L4-0				14		9

Mold Coupling Elbow 45° (G-Type) - โมลด์คัปปลิ่งหักศอก 45° (G-Type)

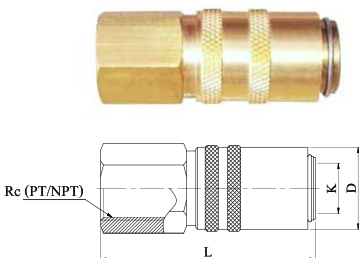
FOIL FREE™



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21101-Y3	21101-Y3-0	G 101	17	46.5	10	9	6
21101-Y4	21101-Y4-0				14		9
21201-Y3	21201-Y3-0	G 201	22	56.5	10	13.5	6
21201-Y4	21201-Y4-0				14		9

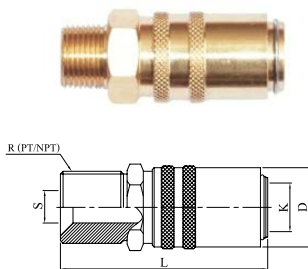
Female Mold Coupling (G-Type) - โมลด์คัปปลิ่ง เกลียวตัวเมีย (G-Type)

FOIL FREE™



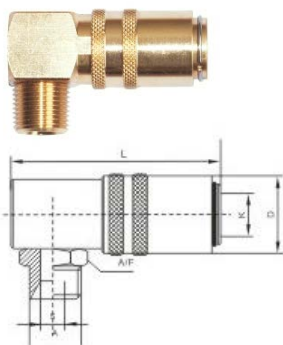
Order Code		Matching Fitting	D	L	Rc	K
Valve	No Valve					
21101-A1/4	21101-A1/4-0	G 101	17	46.5	1/4BSPT	9
21101-A3/8	21101-A3/8-0				3/8BSPT	
21201-A1/4	21201-A1/4-0	G 201	22	56.5	1/4BSPT	13.5
21201-A3/8	21201-A3/8-0				3/8BSPT	

Male Mold Coupling (G-Type) - โมลด์คัปปลิ่ง เกลียวตัวผู้ (G-Type)



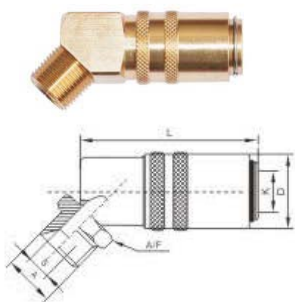
Order Code		Matching Fitting	D	L	R	K	S
Valve	No Valve						
21101-M10	21101-M10-0	G 101	17	50.5	M10x1	9	6
21101-M14	21101-M14-0			54.5	M14x1.5		8
21101-1/4	21101-1/4-0			51.5	1/4BSPT		8
21101-3/8	21101-3/8-0				3/8BSPT		10
21201-1/4	21201-1/4-0	G 201	22	56.5	1/4BSPT	13.5	8
21201-3/8	21201-3/8-0				3/8BSPT		9
21201-1/2	21201-1/2-0			58.5	1/2BSPT		15

Male Mold Coupling Elbow 90° (G-Type) - โมลด์คัปปลิ่ง เกลียวตัวผู้ หักศอก 90° (G-Type)



Order Code		Matching Fitting	D	L	R	K	S
Valve	No Valve						
21101-LM14	21101-LM14-0	G 101	17	46.5	M14x1.5	9	6
21101-L1/4	21101-L1/4-0				1/4BSPT		8
21101-L3/8	21101-L3/8-0				3/8BSPT		10
21201-LM14	21201-LM14-0	G 201	22	56.5	M14x1.5	13.5	8
21201-L1/4	21201-L1/4-0				1/4BSPT		8
21201-L3/8	21201-L3/8-0				3/8BSPT		9

Male Mold Coupling Elbow 45° (G-Type) - โมลด์คัปปลิ่ง เกลียวตัวผู้ หักศอก 45° (G-Type)

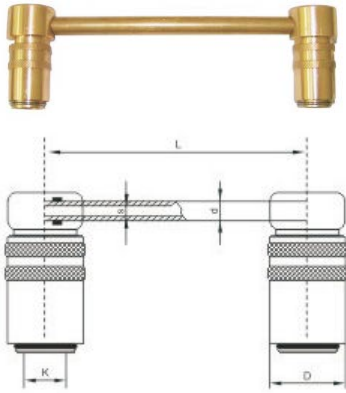


Order Code		Matching Fitting	D	L	R	K	S
Valve	No Valve						
21101-YM14	21101-YM14-0	G 101	17.2	46.5	M14x1.5	9	8
21101-Y1/4	21101-Y1/4-0				1/4BSPT		8
21101-Y3/8	21101-Y3/8-0				3/8BSPT		10
21201-YM14	21201-YM14-0	G 201	22	56.5	M14x1.5	13.5	8
21201-Y1/4	21201-Y1/4-0				1/4BSPT		8
21201-Y3/8	21201-Y3/8-0				3/8BSPT		10

ข้อต่อน้ำแม่พิมพ์

Mold Coupling Diverter (G-Type) - โมลด์คัปปลิง เปลี่ยนทางน้ำ (G-Type)

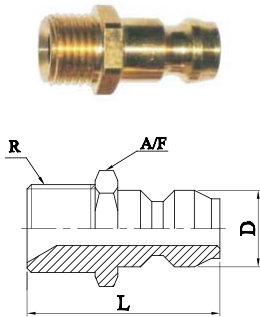
FOIL FREE™



Order Code	Matching Fitting	D	L	K	d	S
No Valve						
21101-B125-0	G 101	17	125	9	8	6
21101-B250-0			250			
21101-B500-0			500			
21201-B125-0	G 201	22	125	13.5	10	8
21201-B250-0			250			
21201-B500-0			500			

Mold Fitting Nipple (G-Type) - โมลด์ฟิตติ้งนิปลเปิ้ล (G-Type)

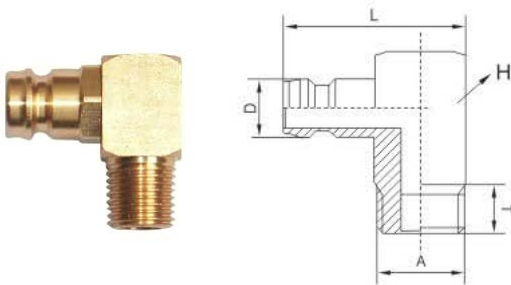
FOIL FREE™



Order Code		Matching Fitting	D	L	R	T	A/F
Valve	No Valve						
-	21101-M10x1-M	G 101	9	24	M10x1	7	11
-	21101-M14x1.5-M			26	M14x1.5	9	15
-	21101-01BSPT-M			24	1/8BSPT	7	11
21101-02BSPTC-M	21101-02BSPT-M			26	1/4BSPT	9	15
-	21101-03BSPT-M	G 201	13.4	26	3/8BSPT	9	17
-	21201-M14x1.5-M			M14x1.5	15		
-	21201-M16x1.5-M			M16x1.5	17		
-	21201-01BSPT-M			1/8BSPT	15		
21201-02BSPTC-M	21201-02BSPT-M			1/4BSPT	15		
-	21201-03BSPT-M			3/8BSPT	17		

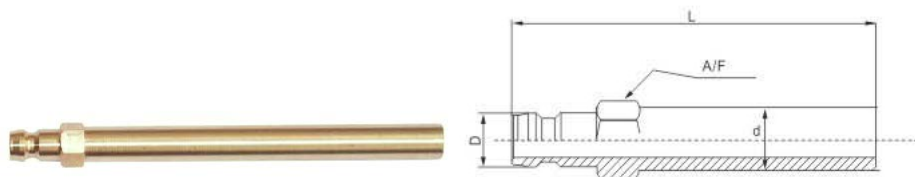
Mold Fitting Nipple Elbow 90° (G-Type) - โมลด์ฟิตติ้งนิปลเปิ้ล หักศอก 90° (G-Type)

FOIL FREE™



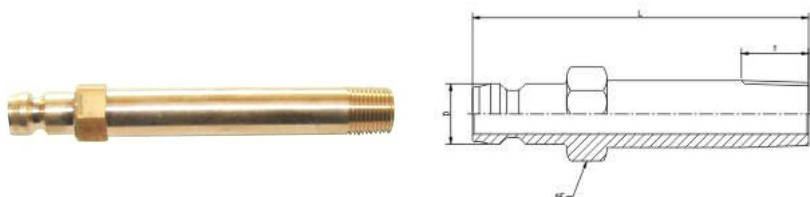
Order Code	Matching Fitting	D	L	R	T	H
No Valve						
21101-M10x1-L	G 101	9	33	M10x1	12	15
21101-M14x1.5-L				M14x1.5		
21101-01BSPT-L				1/8BSPT		
21101-02BSPT-L				1/4BSPT		
21101-03BSPT-L	G 201	13.4	33	3/8BSPT	12	20
21201-M14x1.5-L				M14x1.5		15
21201-M16x1.5-L				M16x1.5		20
21201-01BSPT-L				1/8BSPT		15
21201-02BSPT-L				1/4BSPT		15
21201-03BSPT-L				3/8BSPT		20

Mold Fitting Extension Nipple (G-Type) - โมลด์ฟิตติ้งนิปปเปิ้ล รุ่นยาว (G-Type)



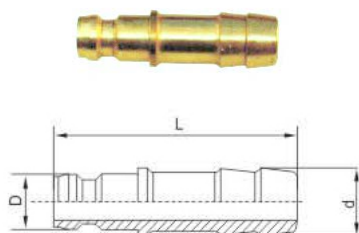
Order Code	Matching Fitting	D	L	d	A/F
No Valve					
21101-120	G 101	9	120	10	11
21101-240			240		
21101-360			360		
21201-150	G 201	13.4	150	13	15
21201-300			300		
21201-450			450		

Mold Extension Nipple w/ Thread (G-Type) - โมลด์ฟิตติ้งนิปปเปิ้ล รุ่นยาวมีเกลียว (G-Type)



Order Code	Matching Fitting	D	L	L1	R	A/F
No Valve						
21101-01BSPT-100M	G 101	9	100	10	1/8" BSPT	11
21101-02BSPT-100M				12	1/4" BSPT	15
21101-03BSPT-100M					3/8" BSPT	17
21201-02BSPT-100M	G 201	13.4			1/4" BSPT	15
21201-03BSPT-100M					3/8" BSPT	17

Mold Fitting Nipple Hose Barb (G-Type) - โมลด์ฟิตติ้งนิปปเปิ้ล ทางปลาไหล (G-Type)



Order Code	Matching Fitting	D	L	d
No Valve				
21101-06-M	G 101	9	34.5	6
21101-08-M				8
21101-10-M				10
21101-13-M				13
21201-13-M	G 201	13.4	35	

ข้อต่อน้ำแม่พิมพ์



A-Type

ข้อต่อคัปปลิ่งแม่พิมพ์แบบอเมริกา American Type Mold Coupling

Fitting Types

A 301

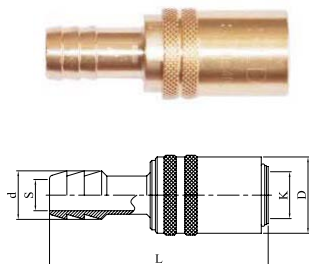
A 401

(M) Body : Brass
Seal : Viton

! Max. Temperature 200 °C
Max. Pressure 1470kPa

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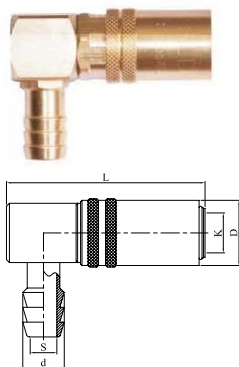
Mold Socket (A-Type) - โมลด์คัปปลิ่งซ็อกเก็ต (A-Type)



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21301-2	21301-2-0	A 301	17	52	7.3	9.7	5
21301-3	21301-3-0				10.5		6
21301-4	21301-4-0				14		9
21301-2L	21301-2L-0			7.3	5		
21301-3L	21301-3L-0			10.5	6		
21301-4L	21301-4L-0			14	9		
-	21401-3-0	A 401	22	55	10.5	13.5	6
-	21401-4-0				14		9
21401-3L	21401-3L-0			10.5	6		
21401-4L	21401-4L-0			14	9		

Mold Socket Elbow 90° (A-Type) - โมลด์คัปปลิ่งซ็อกเก็ตหักศอก 90° (A-Type)

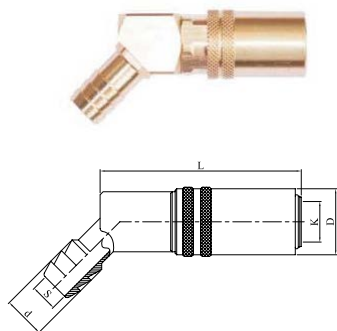
FOIL FREE™



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21301-L2	21301-L2-0	A 301	17	46.5	7.3	9.7	6
21301-L3	21301-L3-0				10.5		6
21301-L4	21301-L4-0				14		9
21401-L3	21401-L3-0	A 401	22	62	10.5	13.5	6
21401-L4	21401-L4-0				14		9

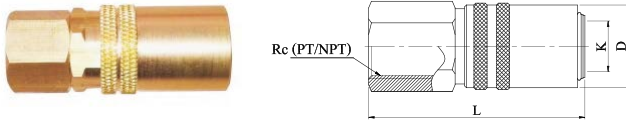
Mold Socket Elbow 45° (A-Type) - โมลด์คัปปลิ่งซ็อกเก็ตหักศอก 45° (A-Type)

FOIL FREE™



Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21301-Y2	21301-Y2-0	A 301	17	46.5	7.3	9.7	6
21301-Y3	21301-Y3-0				10.5		6
21301-Y4	21301-Y4-0				14		9
21401-Y3	21401-Y3-0	A 401	22	62	10.5	13.5	6
21401-Y4	21401-Y4-0				14		9

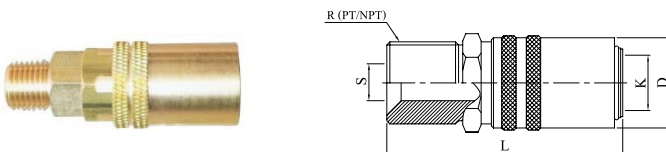
Female Mold Socket (A-Type) - โมลด์คัปปลิ่งซ็อกเก็ต เกลียตัวเมีย (A-Type)



! เกลียสามารถเลือกได้ระหว่าง PT และ NPT
Choose between PT or NPT thread

PT Order Code		NPT Order Code		Matching Fitting	D	L	Rc (PT/NPT)	K
Valve	No Valve	Valve	No Valve					
21301-A1/8	21301-A1/8-0	21301-AN1/8	21301-AN1/8-0	A 301	17	46	1/8	9.7
21301-A1/4	21301-A1/4-0	21301-AN1/4	21301-AN1/4-0				1/4	
21401-A1/4	21401-A1/4-0	21401-AN1/4	21401-AN1/4-0	A 401	22	57.5	1/4	13.5
21401-A3/8	21401-A3/8-0	21401-AN3/8	21401-AN3/8-0				3/8	
21401-A1/2	21401-A1/2-0	21401-AN1/2	21401-AN1/2-0				1/2	

Male Mold Socket (A-Type) - โมลด์คัปปลิ่งซ็อกเก็ต เกลียตัวผู้ (A-Type)

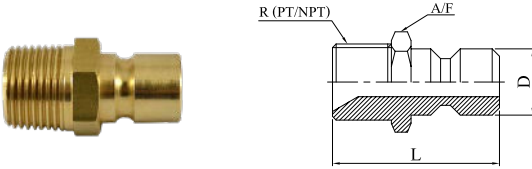


! เกลียสามารถเลือกได้ระหว่าง PT และ NPT
Choose between PT or NPT thread

PT Order Code		NPT Order Code		Matching Fitting	D	L	Rc (PT/NPT)	K	S
Valve	No Valve	Valve	No Valve						
21301-1/8	21301-1/8-0	21301-N1/8	21301-N1/8-0	A 301	17	46	1/8	9.7	6
21301-1/4	21301-1/4-0	21301-N1/4	21301-N1/4-0				1/4		9
21401-1/4	21401-1/4-0	21401-N1/4	21401-N1/4-0	A 401	22	57.5	1/4	13.5	9
21401-3/8	21401-3/8-0	21401-N3/8	21401-N3/8-0				3/8		12
21401-1/2	21401-1/2-0	21401-N1/2	21401-N1/2-0				1/2		14

ข้อต่อน้ำแม่พิมพ์

Mold Fitting Plug (A-Type) - โมลด์ฟิตติ้งปลั๊ก (A-Type)



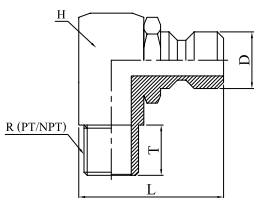
! เกลียสามารถเลือกได้ระหว่าง PT และ NPT
Choose between PT or NPT thread

PT Order Code		NPT Order Code		Matching Fitting	D	L	R (PT/NPT)	T	A/F
Valve	No Valve	Valve	No Valve						
-	21301-01PT-M	-	21301-01NPT-M	A 301	9.5	29	1/8	12	11
21301-02PTC-M	21301-02PT-M	21301-02NPTC-M	21301-02NPT-M				1/4		14
-	21301-03PT-M	-	21301-03NPT-M				3/8		17
-	21301-04PT-M	-	21301-04NPT-M				1/2		21
-	21401-01PT-M	-	21401-01NPT-M	A 401	13.5	34	1/8	12	11
21401-02PTC-M	21401-02PT-M	21401-02NPTC-M	21401-02NPT-M				1/4		14
-	21401-03PT-M	-	21401-03NPT-M				3/8		17
-	21401-04PT-M	-	21401-04NPT-M				1/2		21

Mold Fitting Plug Elbow 90° (A-Type) - โมลด์ฟิตติ้งปลั๊ก หักศอก 90° (A-Type)

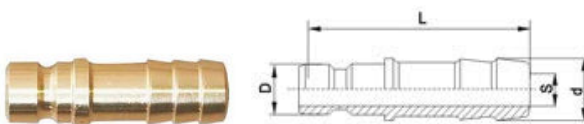


! เกลียสามารถเลือกได้ระหว่าง PT และ NPT
Choose between PT or NPT thread



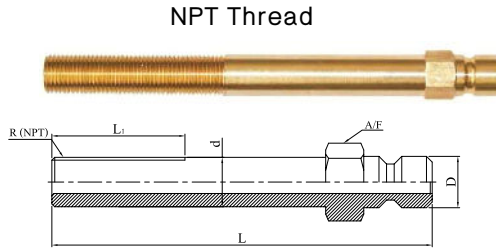
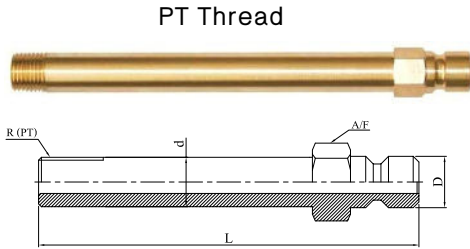
PT Order Code	NPT Order Code	Matching Fitting	D	L	R (PT/NPT)	T	H
No Valve	No Valve						
21301-01PT-L	21301-01NPT-L	A 301	9.5	29.5	1/8	12	15
21301-02PT-L	21301-02NPT-L				1/4		
21301-03PT-L	21301-03NPT-L				3/8		
21401-01PT-L	21401-01NPT-L	A 401	13.5	34.5	1/8	12	15
21401-02PT-L	21401-02NPT-L				1/4		
21401-03PT-L	21401-03NPT-L				3/8		

Mold Fitting Plug Hose Barb (A-Type) - โมลด์ฟิตติ้งปลั๊ก ทางปลาไหล (A-Type)



Order Code	Matching Fitting	D	L	d
21301-10-M	A 301	9.5	34	10
21401-13-M	A 401	13.5	35	13

Mold Fitting Extension Plug (A-Type) - โมลด์ฟิตติ้งปลั๊ก รุ่นยาว (A-Type)



L	L1
50	20
75	30
100	50
125	60
150	60
200	60

ORDER EXAMPLE

Model - L
21301-01PT-50

! คัปปลิ้งปลั๊กตัวยาว สามารถเลือกความยาวได้
The length of this type can be chosen

! ความยาว 250 สำหรับรุ่นเกลียว PT เท่านั้น
The length 250 for PT thread only

PT Model	NPT Model	L								Matching Fitting	D	R (PT/NPT)	d	A/F
No Valve	No Valve													
21301-01PT	21301-01NPT									A 301	9.5	1/8	10	11
21301-02PT	21301-02NPT	50	75	100	125	150	200	250*	1/4			13	14	
21301-03PT	-											3/8	16.5	17
21401-01PT	21401-01NPT									A 401	13.5	1/8	10	14
21401-02PT	21401-02NPT	50	75	100	125	150	200	250*	1/4			13	14	
21401-03PT	-											3/8	16.5	17

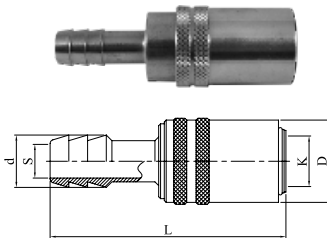
Light Alloy Mold Socket (A-Type) - โมลด์คัปปลิ้งซ็อกเก็ต รุ่นอัลลอยเบา (A-Type)



i น้ำหนักเบากว่าทองเหลือง แต่แข็งแรงเท่ากัน
Lighter than brass model with the same strength

M Body : Light Alloy
Seal : Viton

! Max. Temperature 200 °C
Max. Pressure 1470kPa



Order Code	Matching Fitting	D	L	d	K	S
No Valve						
21LA301-2-0	A 301	17	52	7.3	9.7	5
21LA301-3-0				10.5		6
21LA401-3-0	A 401	22	55	10.5	13.5	6
21LA401-4-0				14		9
21LA401-3L-0				22	63	10.5
21LA401-4L-0	14	9				

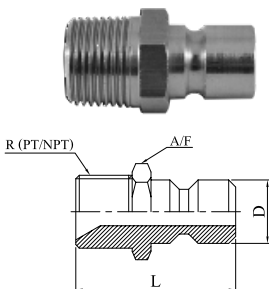
Light Alloy Mold Fitting Plug (A-Type) - โมลด์ฟิตติ้งปลั๊ก รุ่นอัลลอยเบา (A-Type)



i น้ำหนักเบากว่าทองเหลือง แต่แข็งแรงเท่ากัน
Lighter than brass model with the same strength

M Body : Light Alloy
Seal : Viton

! Max. Temperature 200 °C
Max. Pressure 1470kPa



PT Order Code	NPT Order Code	Matching Fitting	D	L	R (PT/NPT)	T	A/F
No Valve	No Valve						
21LA301-01PT-M	21LA301-01NPT-M	A 301	9.5	29	1/8	12	11
21LA301-02PT-M	21LA301-02NPT-M				1/4		14
21LA401-01PT-M	21LA401-01NPT-M	A 401	13.5	34	1/8	12	11
21LA401-02PT-M	21LA401-02NPT-M				1/4		14
21LA401-03PT-M	21LA401-03NPT-M				3/8		17

Couplers

ข้อต่อน้ำแม่พิมพ์



J-Type

ข้อต่อคัปปลิ่งแม่พิมพ์แบบญี่ปุ่น Japanese Type Mold Coupling

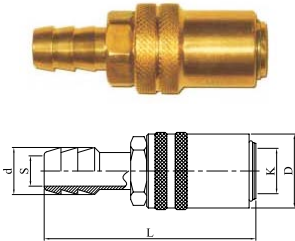
Fitting Types
J 601
J 701

M Body : Brass
Seal : Viton

! Max. Temperature 200 °C
Max. Pressure 1470kPa

Mold Socket SH (J-Type) - โมลด์คัปปลิ่งซ็อกเก็ต SH (J-Type)

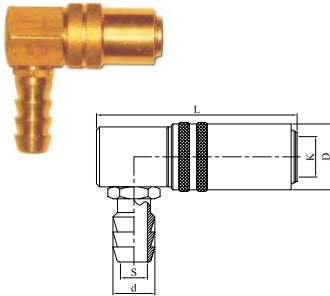
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Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21601-2	21601-2-0	J 601	18.5	61.5	8.5	10.0	4.5
21601-3	21601-3-0				11.0		6.0
21601-4	21601-4-0				14.0		9.0
21701-3	21701-3-0	J 701	22.0	67.0	11.0	13.0	6.0
21701-4	21701-4-0				14.0		9.0

Mold Socket Elbow 90° SHL (J-Type) - โมลด์คัปปลิ่งซ็อกเก็ตหักศอก 90° SHL (J-Type)

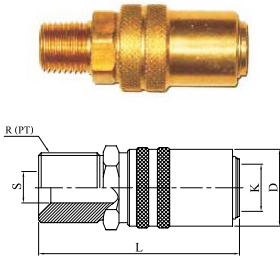
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Order Code		Matching Fitting	D	L	d	K	S
Valve	No Valve						
21601-L2	21601-L2-0	J 601	18.5	48.0	8.5	10.0	4.5
21601-L3	21601-L3-0				11.0		6.0
21601-L4	21601-L4-0				14.0		
21701-L3	21701-L3-0	J 701	22.0	60.0	11.0	13.0	7.0
21701-L4	21701-L4-0				14.0		

Male Mold Socket SM (J-Type) - โมลด์คัปปลิ่งซ็อกเก็ต เกลียวตัวผู้ SM (J-Type)

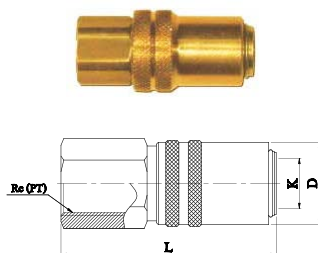
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Order Code		Matching Fitting	D	L	R (PT)	K	S
Valve	No Valve						
21601-1/4	21601-1/4-0	J 601	18.5	51.0	1/4PT	10.0	6.0
21601-3/8	21601-3/8-0				3/8PT		
21701-1/4	21701-1/4-0	J 701	22.0	58.0	1/4PT	13.0	9.0
21701-3/8	21701-3/8-0				3/8PT		

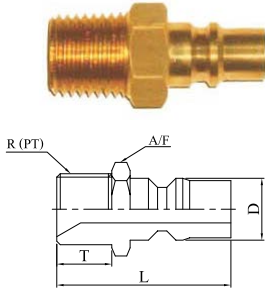
Female Mold Socket SF (J-Type) - โมลด์คัปปลิ่งซ็อกเก็ต เกลียวตัวเมีย SF (J-Type)

FOIL FREE™



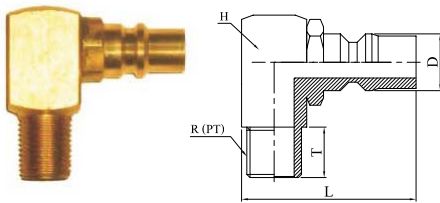
Order Code		Matching Fitting	D	L	Rc (PT)	K
Valve	No Valve					
21601-A1/4	21601-A1/4-0	J 601	18.5	48.0	1/4PT	10.0
21601-A3/8	21601-A3/8-0				3/8PT	
21701-A1/4	21701-A1/4-0	J 701	22.0	61.0	1/4PT	13.0
21701-A3/8	21701-A3/8-0				3/8PT	

Mold Fitting Plug PM (J-Type) - โมลด์ฟิตติ้งปลั๊ก PM (J-Type)



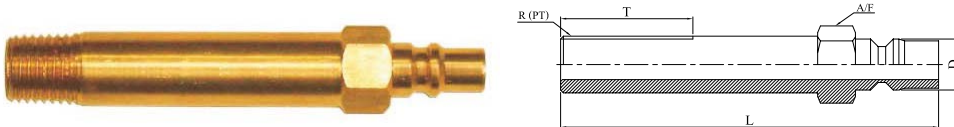
Order Code No Valve	Matching Fitting	D	L	R (PT)	T	A/F
21601-01PT-M	J 601	10.0	33.0	1/8PT	12.0	11.0
21601-02PT-M				1/4PT		14.0
21601-03PT-M				3/8PT		17.0
21701-01PT-M	J 701	13.0	38.0	1/8PT	12.0	14.0
21701-02PT-M				1/4PT		17.0
21701-03PT-M				3/8PT		17.0

Mold Fitting Plug Elbow 90° PML (J-Type) - โมลด์ฟิตติ้งปลั๊ก หักศอก 90° PML (J-Type)



Order Code No Valve	Matching Fitting	D	L	R (PT)	T	H
21601-01PT-L	J 601	10.0	34.0	1/8PT	12.0	15.0
21601-02PT-L				1/4PT		20.0
21601-03PT-L				3/8PT		20.0
21701-01PT-L	J 701	13.0	39.0	1/8PT	12.0	15.0
21701-02PT-L				1/4PT		20.0
21701-03PT-L				3/8PT		20.0

Mold Fitting Extension Plug PME (J-Type) - โมลด์ฟิตติ้งปลั๊ก รุ่นยาว PME (J-Type)



ORDER
EXAMPLE

Model - L
21601-02PT-75

! คัปปลิ้งปลั๊กตัวยาว สามารถเลือกความยาวได้
The length of this type can be chosen

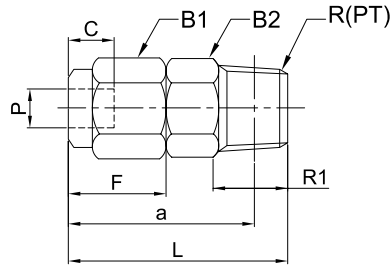
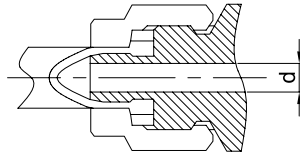
Model No Valve	L						Matching Fitting	D	R (PT)	T	A/F
21601-01PT	75	100	125	150	200	250	J 601	10.0	1/8PT	12.0	11.0
21601-02PT									1/4PT		14.0
21701-01PT	75	100	125	150	200	250	J 701	13.0	1/8PT	12.0	14.0
21701-02PT									1/4PT		14.0

ข้อต่อน้ำแม่พิมพ์

Fastening Coupling - คัปปลิ่งแบบขันน๊อต

FOIL FREE™

Model: 21S-NKC



ORDER Model P - No.
EXAMPLE 21S-NKC8-02



Brass



Max. Temperature 180 °C



Applicable: Water, Air

Model	P	No.	R (PT)	Tube OD x ID	C	d	L	a	F	B1	R1	B2	
21S-NKC	6	01	1/8PT	6 x 4	6	3.0	25.5	21.5	11.5	12	8	12	
		02	1/4PT				28.5	22.5			11	14	
		03	3/8PT				29.5	23.2			12	17	
	8	01	1/8PT	8 x 6	7	5.0	27.5	23.5	13.5	14	8	14	
		02	1/4PT				30.5	24.5			11	14	
		03	3/8PT				31.5	25.2			12	17	
	10	02	02	1/4PT	10 x 7.5	9	6.0	33.5	27.5	16.5	17	11	17
			03	3/8PT				34.5	28.2			12	17
			04	1/2PT				37.5	29.3			15	21
	12	02	02	1/4PT	12 x 9	9	7.5	33.5	27.5	16.5	19	11	19
			03	3/8PT				34.5	28.2			12	19
			04	1/2PT				37.5	29.3			15	21

การใช้งาน - Usage Instructions

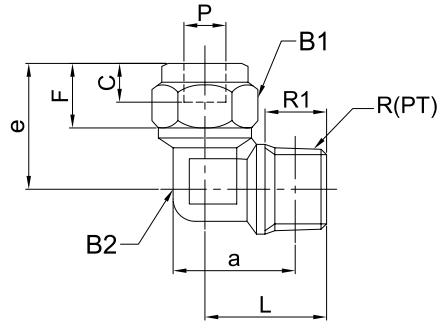
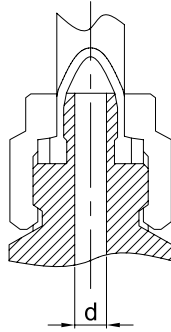
- ขันน๊อตออกจากตัวบอดี้
- ตัดปลายสายยางให้ตรง
- สอดสายยางเข้าไปในน๊อต
- เสียบสายยางเข้าไปกับตัวบอดี้
- ขันน๊อตเข้ากับบอดี้ให้แน่น
- ทดสอบด้วยการลองดึงสายยางเบาๆ
- Un-fasten the nut from the body
- Square cut the tube end
- Insert the tube through the nut
- Attach the tube end to the coupling body
- Fasten the nut back to the body
- Test by lightly pull the tube

! ระหว่างการถอดสายยาง ให้ลดอุณหภูมิลงมาต่ำกว่า 30°C ก่อน เพื่อป้องกันอุบัติเหตุจากน้ำที่ค้างในท่อ
Before removing the joint. Make sure to lower the tube temperature down below 30°C first to prevent accident.

Fastening Coupling Elbow - คัปปลิ่งแบบขันน็อต ทักศอก



Model: 21S-NKL



ORDER
EXAMPLE

Model P - No.
21S-NKL8-02



Brass



Max. Temperature 180 °C



Applicable: Water, Air

Model	P	No.	R (PT)	Tube OD x ID	C	d	L	a	e	F	B1	R1	B2
21S-NKL	6	01	1/8PT	6 x 4	6	3.0	21	23.9	21	11.5	12	8	12
		02	1/4PT				22	24.1	22			11	14
		03	3/8PT				29	33.6	29			12	19
	8	01	1/8PT	8 x 6	7	5.0	25	30.8	25	13.5	14	8	17
		02	1/4PT				25	28.8	25			11	17
		03	3/8PT				29	33.6	29			12	19
	10	02	1/4PT	10 x 7.5	9	6.0	29	34.0	29	16.5	17	11	19
		03	3/8PT				29	33.6	29			12	19
		04	1/2PT				31	36.1	31			15	23
	12	02	1/4PT	12 x 9	9	7.5	29	34.0	29	16.5	19	11	19
		03	3/8PT				29	33.6	29			12	19
		04	1/2PT				31	36.1	31			15	23

การใช้งาน - Usage Instructions

- ขันน็อตออกจากตัวบอดี้
- ตัดปลายสายยางให้ตรง
- สอดสายยางเข้าไปในน็อต
- เสียบสายยางเข้ากับตัวบอดี้
- ขันน็อตเข้ากับบอดี้ให้แน่น
- ทดสอบด้วยการลองดึงสายยางเบาๆ
- Un-fasten the nut from the body
- Square cut the tube end
- Insert the tube through the nut
- Attach the tube end to the coupling body
- Fasten the nut back to the body
- Test by lightly pull the tube



ระหว่างการถอดสายยาง ให้ลดอุณหภูมิลงต่ำกว่า 30°C ก่อน เพื่อป้องกันอุบัติเหตุจากน้ำที่ค้างในท่อ

Before removing the joint. Make sure to lower the tube temperature down below 30°C first to prevent accident.

ข้อต่อน้ำแม่พิมพ์

Quick Fitting Joints - ข้อต่อสวมเร็ว

FOIL FREE™

ORDER Model D - Nominal
 EXAMPLE 21SPC8-02PT

Model: 21SPC
 เก็ยตัวผู้
 Male Thread



Model	Matching Tube O.D.	Thread Size	
		D	Nominal R(PT)
21SPC	4	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	8	01PT	1/8PT
		02PT	1/4PT
		04PT	1/2PT
	10	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
04PT		1/2PT	
12	02PT	1/4PT	
	03PT	3/8PT	
16	03PT	3/8PT	
	04PT	1/2PT	

Model: 21SPOC
 เก็ยตัวผู้ รูทรงหกเหลี่ยม
 Male Thread
 Hexagon Hole



Model	Matching Tube O.D.	Thread Size	
		D	Nominal R(PT)
21SPOC	6	01PT	1/8PT
		02PT	1/4PT
	8	01PT	1/8PT
		02PT	1/4PT
	10	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT

Model: 21SPCF
 เก็ยตัวเมีย
 Female Thread



Model	Matching Tube O.D.	Thread Size	
		D	Nominal Rc(PT)
21SPCF	4	01PT	1/8PT
		02PT	1/4PT
	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	10	04PT	1/2PT
		01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
12	04PT	1/2PT	
	02PT	1/4PT	
		03PT	3/8PT
		04PT	1/2PT

Model: 21SPLL
 เก็ยตัวผู้ ทักศอก
 Male Elbow



Model	Matching Tube O.D.	Thread Size	
		D	Nominal R(PT)
21SPLL	4	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
		04PT	1/2PT
	10	01PT	1/8PT
		02PT	1/4PT
03PT		3/8PT	
04PT		1/2PT	
12	02PT	1/4PT	
	03PT	3/8PT	
16	04PT	1/2PT	
	06PT	3/4PT	

Model: 21SPLFL
 เก็ยตัวเมีย ทักศอก
 Female Elbow



Model	Matching Tube O.D.	Thread Size	
		D	Nominal R(PT)
21SPLFL	4	01PT	1/8PT
		02PT	1/4PT
	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
	10	04PT	1/2PT
		01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
12	04PT	1/2PT	
	02PT	1/4PT	
		03PT	3/8PT
		04PT	1/2PT

Couplers

Quick Fitting Joints - ข้อต่อสวมเร็ว



ORDER Model D - Nominal
 EXAMPLE 21SPLEL10-02PT

Model: 21SPLEL
 เก็ลยยาวตัวผู้ ทักศอก
 Extended
 Male Elbow



Model	Matching Tube O.D.	Thread Size	
		D	R(PT)
21SPLEL	4	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
6	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
8	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
10	10	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
12	12	02PT	1/4PT
		03PT	3/8PT
		04PT	1/2PT

Model: 21SPH
 เก็ลยตัวผู้ แบนใจทักศอก
 Male Banjo



Model	Matching Tube O.D.	Thread Size	
		D	R(PT)
21SPH	4	01PT	1/8 PT
		02PT	1/4 PT
		03PT	3/8 PT
6	6	01PT	1/8 PT
		02PT	1/4 PT
		03PT	3/8 PT
8	8	01PT	1/8 PT
		02PT	1/4 PT
		03PT	3/8 PT
10	10	01PT	1/8 PT
		02PT	1/4 PT
		03PT	3/8 PT
12	12	02PT	1/4 PT
		03PT	3/8 PT
		04PT	1/2 PT

Model: 21SLL
 เก็ลยตัวผู้
 มีวาล์วปรับระดับ
 Male Thread
 Flow Control Valve



Model	Matching Tube O.D.	Thread Size	
		D	R(PT)
21SLL	4	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
6	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
8	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
10	10	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
12	12	02PT	1/4PT
		03PT	3/8PT
		04PT	1/2PT
16	16	04PT	1/2PT

Model: 21SPXY
 เก็ลยตัวผู้ ตัว Y
 Male Thread Y



Model	Matching Tube O.D.	Thread Size	
		D	R(PT)
21SPXY	4	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
6	6	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
8	8	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
10	10	01PT	1/8PT
		02PT	1/4PT
		03PT	3/8PT
12	12	02PT	1/4PT
		03PT	3/8PT
		04PT	1/2PT
16	16	03PT	3/8PT
		04PT	1/2PT
		06PT	3/4PT

Couplers

ข้อต่อน้ำแม่พิมพ์

Quick Fitting Joints - ข้อต่อสวมเร็ว

ORDER Model D - Nominal
 EXAMPLE 21SPBT10-02PT

FOIL FREE™

Model: 21SPBT
 เกลียวตัวผู้ ตัว T
 Male Thread T



Model	Matching Tube O.D. D	Thread Size		
		Nominal	R(PT)	
21SPBT	4	01PT	1/8PT	
		02PT	1/4PT	
		03PT	3/8PT	
	6	01PT	1/8PT	1/4PT
			02PT	3/8PT
			03PT	1/2PT
		04PT	1/2PT	
	8	01PT	1/8PT	1/4PT
			02PT	3/8PT
			03PT	1/2PT
		04PT	1/2PT	
	10	01PT	1/8PT	1/4PT
02PT			3/8PT	
03PT			1/2PT	
04PT		1/2PT		
12	02PT	1/4PT	3/8PT	
		03PT	1/2PT	
		04PT	1/2PT	
	16	03PT	3/8PT	1/2PT
04PT			1/2PT	
06PT			3/4PT	

Model: 21SPDT
 เกลียวตัวผู้ ตัว T ข้าง
 Male Thread T Side



Model	Matching Tube O.D. D	Thread Size		
		Nominal	R(PT)	
21SPDT	4	01PT	1/8PT	
		02PT	1/4PT	
		03PT	3/8PT	
	6	01PT	1/8PT	1/4PT
			02PT	3/8PT
			03PT	1/2PT
		04PT	1/2PT	
	8	01PT	1/8PT	1/4PT
			02PT	3/8PT
			03PT	1/2PT
		04PT	1/2PT	
	10	01PT	1/8PT	1/4PT
02PT			3/8PT	
03PT			1/2PT	
04PT		1/2PT		
12	02PT	1/4PT	3/8PT	
		03PT	1/2PT	
		04PT	1/2PT	
	16	03PT	3/8PT	1/2PT
04PT			1/2PT	
06PT			3/4PT	

ข้อลด - Reducers

ORDER Model D1 - D2
 EXAMPLE 21SPG10-8

Model: 21SPG
 ข้อลดแบบตรง
 Union Straight Reducer



Model	Matching Tube O.D.	
	D1	D2
21SPG	6	4
	8	4
		6
	10	6
		8
	12	8
10		
16	12	

Model: 21SPWY
 ข้อลดแบบตัว Y
 Union Y Reducers



Model	Matching Tube O.D.	
	D1	D2
21SPWY	6	4
	8	4
		6
	10	6
		8
	12	8
10		

Model: 21SPEGT
 ข้อลดแบบตัว T
 Union T Reducers



Model	Matching Tube O.D.	
	D1	D2
21SPEGT	6	4
	8	4
		6
	10	6
		8
	12	8
10		

Model: 21SPKG
 ข้อลดแบบแฉว
 Union Branch Reducers



Model	Matching Tube O.D.	
	D1	D2
21SPKG	6	4
	8	4
		6
	10	6
		8
	12	8
10		

Couplers

Quick Fitting Joints - ข้อต่อสวมเร็ว

ข้อต่อตรง - Unions

ORDER Model D
EXAMPLE 21SPZA10



Model: 21SLSA
ข้อต่อตรง มีวาล์ว
ปรับระดับ
Union Flow
Control Valve



Model	Matching Tube O.D.
	D
21SLSA	4
	6
	8
	10
	12

Model: 21SPU
ข้อต่อตรง
Union Straight



Model	Matching Tube O.D.
	D
21SPU	4
	6
	8
	10
	12
	16

Model: 21SPV
ข้อต่อหักศอก
Union Elbow



Model	Matching Tube O.D.
	D
21SPV	4
	6
	8
	10
	12
	16

Model: 21SPY
ข้อต่อตัว Y
Union Y



Model	Matching Tube O.D.
	D
21SPY	4
	6
	8
	10
	12

Model: 21SPE
ข้อต่อตัว T
Union T



Model	Matching Tube O.D.
	D
21SPE	4
	6
	8
	10
	12
	16

Model: 21SPM
ข้อต่อตรง
Bulkhead Union



Model	Matching Tube O.D.
	D
21SPM	4
	6
	8
	10
	12

Model: 21SPZA
ข้อต่อสี่ทาง
Union Cross



Model	Matching Tube O.D.
	D
21SPZA	4
	6
	8
	10
	12

Model: 21SPK
ข้อต่อแบบแถว
Union Branch



Model	Matching Tube O.D.
	D
21SPK	4
	6
	8
	10
	12

Model: 21HVFF
ข้อต่อตรง วาล์วเปิด/ปิด
Union Shutoff Valve

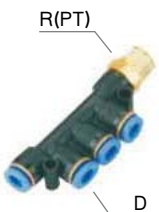


Model	Matching Tube O.D.
	D
21HVFF	4
	6
	8

แบบแถวมีเกลียว - Triple Branch

ORDER Model D - Nominal
EXAMPLE 21SPKB10-02PT

Model: 21SPKB
แบบแถวมีเกลียว
Triple Branch



Model	Matching Tube O.D.	Thread Size	
		Nominal	R(PT)
21SPKB	4	01PT	1/8PT
		02PT	1/4PT
	6	01PT	1/8PT
		02PT	1/4PT
8	03PT	3/8PT	
	01PT	1/8PT	
	02PT	1/4PT	
10	03PT	3/8PT	

Model: 21SPKD
แบบแถว มีเกลียว ตัวเมีย
Triple Branch
Female Thread



Model	Matching Tube O.D.	Thread Size	
		Nominal	Rc(PT)
21SPKD	4	01PT	1/8PT
		02PT	1/4PT
6	01PT	1/8PT	
		02PT	1/4PT
8	03PT	3/8PT	
	01PT	1/8PT	
	02PT	1/4PT	
10	03PT	3/8PT	



Name	Hose Nipple	Long Hose Nipple	L-Swivel Hose Nipple	L-Swivel Fitting	Ball Valve	Cooling Joint Plug
Model	21CT	21CT	21LSN	21LSNF	21VC / 21VCN	21JN
Page	144	144	144	145	145	146



Name	Water Flow Meter	Flexible Uni-Joint Plugs	Tapered Screw Plug	Cooling Circuit Plug	Baffle Board	Spiral Baffle Board	Single Spiral Water Core
Model	21FM / 21FMV	21FC	21ES / 21AS	21GCCP	21ES / 21AS	21ESS / 21ASS	21SST
Page	146	146	147	147	148	148	149



Name	Double Spiral Water Core	High Flow Cascade	Hex Key Cascade	Compact Cascade	Nipple Type Cascade	Quick Coupling Cascade	Hex Key Extension Elbow
Model	21DST	21CHF	21CHK	21CACC	21CNT	21CQC	21EKL
Page	149	150	150	151	151	152	152



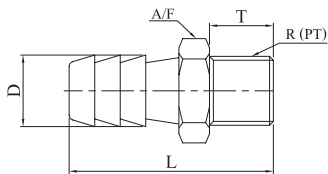
Name	Mold Cooling Manifold	Fine Mold Cooling Manifold
Model	21AL / 21ALV	21LT
Page	153	154

Hose Nipple - ข้อต่อหางปลาไหล

FOIL FREE™

Model: 21CT

M Brass **!** Max. Pressure 1470 kPa

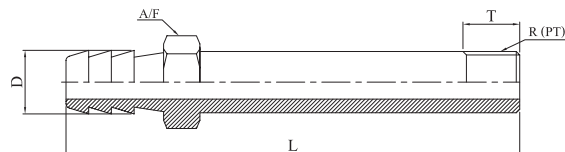


Order Code	D	R(PT)	For Hose I.D.	T	A/F
21CT-301PT-M	11	1/8PT	9 (3/8")	12.	11
21CT-302PT-M		1/4PT			14
21CT-303PT-M		3/8PT			17
21CT-401PT-M	14	1/8PT	12 (1/2")	12.	11
21CT-402PT-M		1/4PT			14
21CT-403PT-M		3/8PT			17

Long Hose Nipple - ข้อต่อหางปลาไหล รุ่นยาว

FOIL FREE™

Model: 21CT



ORDER EXAMPLE Model - L
21CT-302PT-100

! ดับปลั๊กด้วยยาว สามารถเลือกความยาวได้
The length of this type can be chosen

M Brass **!** Max. Pressure 1470 kPa

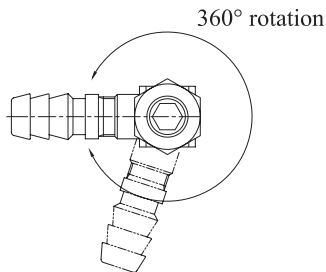
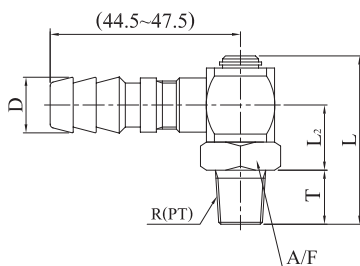
Model	L							D	R(PT)	For Hose I.D.	T	A/F
21CT-301PT	50	75	100	125	150	200	250	11	1/8PT	9 (3/8")	12	11
21CT-302PT									1/4PT			14
21CT-303PT									3/8PT			17
21CT-401PT								14	1/8PT	12 (1/2")	12	11
21CT-402PT									1/4PT			14
21CT-403PT									3/8PT			17

L-Swivel Hose Nipple - ข้อต่อหางปลาไหล หัวหมุนได้

FOIL FREE™

ข้อต่อหางปลาไหลรูปตัว L หัวหมุนได้ 360 องศา สำหรับสามสายยาง
The L-shape Hose Nipple head can rotate 360 degree.

Model: 21LSN



M Brass (Body)
Synthetic Rubber Seal

! Max pressure 980 kPa
Max Temperature 200°C

Order Code	D	R(PT)	For Hose I.D.	L	L2	A/F	T
21LSN-1	11	1/8PT	9 (3/8")	36.5	15.75	19	9.5
21LSN-2		1/4PT		39.5	15.75	19	12.5
21LSN-3		3/8PT		42.5	17.75	19	13.5

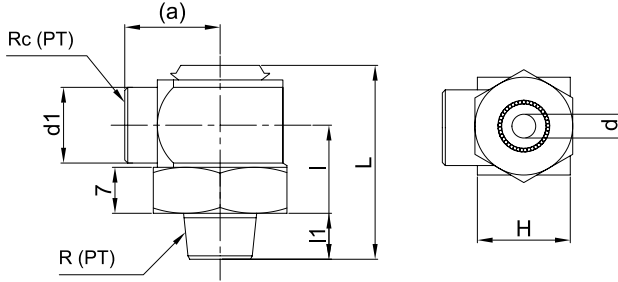
ชิ้นส่วนระบบหล่อเย็น

L-Swivel Fitting - ข้อต่อ หัวหมุนได้

ข้อต่อรูปตัว L หัวหมุนได้ 360 องศา
The L-shape head can rotate 360 degree.



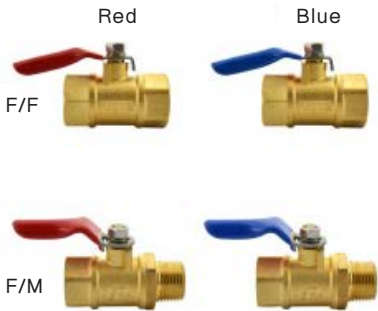
Model: 21LSNF



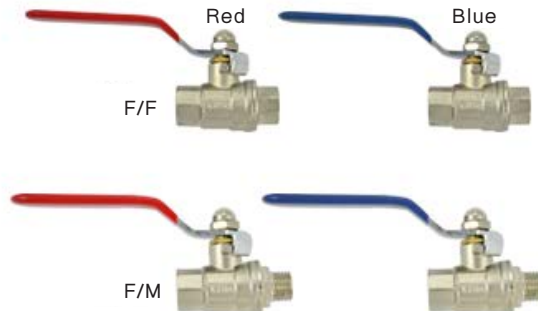
- M** Brass (Body)
Synthetic Rubber Seal
- !** Max pressure 980 kPa
Max Temperature 200°C

Order Code	Rc (PT)	R (PT)	d1	L	l	l1	a
21LSNF-1	1/8PT	1/8PT	14	34	14.5	9.5	16
21LSNF-2	1/4PT	1/4PT	17	42.5	17	12.5	22
21LSNF-3	3/8PT	3/8PT	19				

Ball Valve - บอลวาล์วทองเหลือง



ทองเหลือง | Brass
Model: 21VC



ชุบนิกเกิล | Nickel Plated
Model: 21VCN

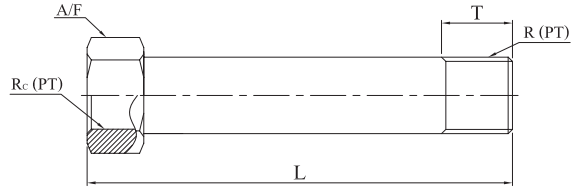
- M** Brass (Body)
Resin (Handle)
- !** Max. Pressure 1470 kPa
- i** เลือกสีด้ามและ ประเภทเกลียวตัวผู้/ตัวเมีย
Choose handle color and thread type

Order Code	Handle	Type	Thread	Body
21VC-02PT	Red	F/F	1/4PT	Brass
21VC-03PT			3/8PT	
21VC-04PT			1/2PT	
21VC-02PTB	Blue	F/F	1/4PT	Brass
21VC-03PTB			3/8PT	
21VC-02PT-2	Red	F/M	1/4PT	Brass
21VC-03PT-3			3/8PT	
21VC-04PT-4			1/2PT	
21VC-02PT-2B	Blue	F/M	1/4PT	Brass
21VC-03PT-3B			3/8PT	
21VCN-02PT	Red	F/F	1/4PT	Nickel Plated
21VCN-03PT			3/8PT	
21VCN-02PTB	Blue	F/F	1/4PT	Nickel Plated
21VCN-03PTB			3/8PT	
21VCN-02PT-2	Red	F/M	1/4PT	Nickel Plated
21VCN-02PT-2B	Blue	F/M	1/4PT	

Cooling Joint Plug - คูณลิ่งจ๊อยท์



Model: 21JN



ORDER EXAMPLE

Model - L
21JN01-01PT-75

M Brass **!** Max. Pressure 980 kPa

Model	L							T	Rc	R	A/F
21JN01-01PT	50	75	100	125	150	200	250	12.0	1/8PT	1/8PT	14.0
21JN01-02PT								12.0	1/8PT	1/4PT	14.0
21JN02-01PT								12.0	1/4PT	1/8PT	17.0
21JN02-02PT								12.0	1/4PT	1/4PT	17.0
21JN03-03PT								12.0	3/8PT	3/8PT	21.0

Water Flow Meter - โพลวมิเตอร์



โพลวมิเตอร์ สำหรับตรวจสอบทางการเดินของน้ำหล่อเย็นในแม่พิมพ์
To check the flow direction of cooling water.



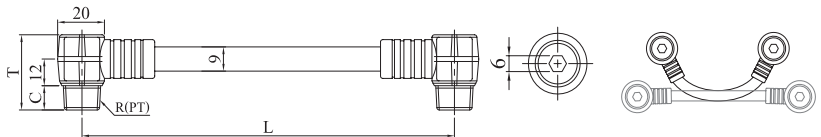
M Body : Brass
Scale : Plastic
! Max Pressure 900 kPa
Max Flow Rate 10L/Min
Max Temperature 80°C

Order Code	Type	H1 (Hexagon)	H2 (Hexagon)	Rc1 (Thread)	Rc2 (Thread)	L
21FM-03PT	Double female thread	21	21	Female 3/8PT	Female 3/8PT	84
21FM-03PT-3	Male + Female thread	21	21	Male 3/8PT	Female 3/8PT	81
21FMV-03PT	Double female thread+valve	21	23	Female 3/8PT	Female 3/8PT	97.5

Flexible Uni-Joint Plugs - ท่อสายยางยูนิจอยท์



Model: 21FC



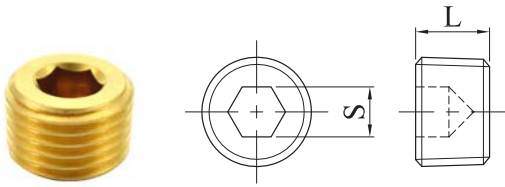
Order Code	R (PT)	L	T	C	Max Torque
21FC01-140	1/8PT	140	31	9	4.9N·m
21FC02-140	1/4PT	140	35	12.7	8.8N·m

M Screw Body: Brass
Tube: Urethane
! Max Pressure 1470 kPa
Max Temperature 80°C
For water

ชิ้นส่วนระบบหล่อเย็น

Tapered Screw Plug - สกรูปลั๊กทองเหลือง

สกรูปลั๊กทองเหลือง เกลียวเทเปอร์สำหรับอุดรูน้ำหล่อเย็นแม่พิมพ์ และของเหลวอื่นๆ ทนแรงดันได้สูง
For sealing cooling water holes, or other liquid. Withstanding high pressure.



(M) Brass

(!) Max pressure 4120 kPa
For water / oil / steam

(!) มีให้เลือกแบบเกลียว PT และ NPT
Available in PT and NPT type

PT Thread
Model: 21ES

Order Code	PT Thread	L (mm)	Hex S (mm)	Thread per Inch
21ES-01PT	1/8PT	7.0	5.0	28
21ES-02PT	1/4PT	8.9	6.0	19
21ES-03PT	3/8PT	10.0	8.0	19
21ES-04PT	1/2PT	12.0	10.0	14
21ES-06PT	3/4PT	14.0	14.0	14
21ES-08PT	1PT	16.5	17.0	11

NPT Thread
Model: 21AS

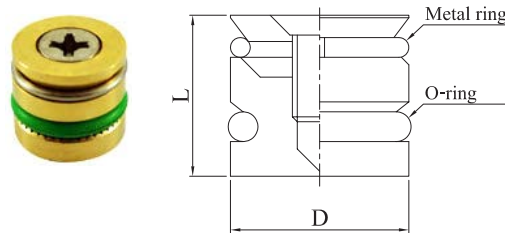
Order Code	NPT Thread	L (inch)	Hex S (inch)	Thread per Inch
21AS-01NPT	1/8NPT	0.250	3/16	27
21AS-02NPT	1/4NPT	0.406	1/4	18
21AS-03NPT	3/8NPT	0.406	5/16	18
21AS-04NPT	1/2NPT	0.531	3/8	14
21AS-06NPT	3/4NPT	0.531	9/16	14
21AS-08NPT	1NPT	0.656	5/8	11 1/2

Cooling Circuit Plug - ปลั๊กอุดรูน้ำแม่พิมพ์

ปลั๊กอุดรูน้ำที่สามารถอุดรูในจุดที่เข้าถึงได้ยากโดยไม่ต้องตีแปเกลียว
Threadless type sealing plug that can be place almost anywhere.



Model: 21GCCP

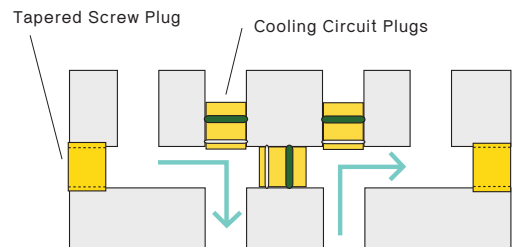
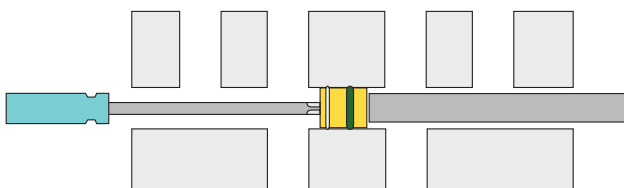


(M) Body: Brass
O-Ring: Synthetic Rubber

(!) Max pressure 600 kPa
Max Temperature 100°C
For water / oil

Order Code	D	L
21GCCP06-10	6	10
21GCCP08-10	8	10
21GCCP10-11	10	11
21GCCP12-12	12	12
21GCCP14-13	14	13
21GCCP16-14	16	14
21GCCP18-16	18	16
21GCCP20-19	20	19
21GCCP25-19	25	19
21GCCP30-19	30	19

(!) ติดตั้งด้วยการใช้เหล็วยาวยื่นท้ายของปลั๊กอุดรูน้ำเอาไว้แล้วใช้ไขควงยาว
ขันตัวปลั๊ก จะทำให้ตัวปลั๊กขยายตัวออกมาเบียดเข้ากับรูน้ำ
Install by using long rod to hold the Cooling Circuit Plug in place, then fasten it with long screw driver.



Baffle Board - แบลฟเฟิลบอร์ด

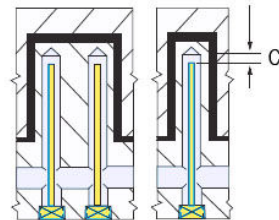
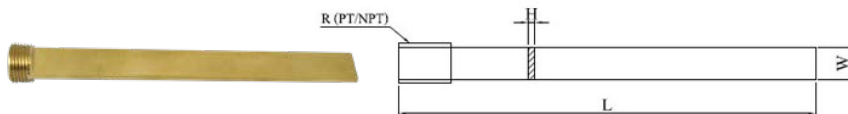
แบลฟเฟิลบอร์ด เพื่อปรับทางเดินน้ำเพื่อการระบายความร้อนสูงสุด
Use for maximize the cooling water flow.



Straight Type

Model: 21ES (metric / PT thread)

Model: 21AS (inch / NPT thread)



i รูเจาะเพื่อติดตั้งเท่ากับ $W + 0.3\text{mm}$. (H13)
ระยะห่าง C เป็นการประมาณคร่าวๆ
Drill hole equal to $W + 0.3\text{mm}$. (H13)
Clearance C is approximate.

ORDER EXAMPLE

Model - Nominal - L
21ES-02-125

! มีให้เลือกแบบเกลียว PT และ NPT
Available in PT and NPT type

M Brass

PT Model	Nominal	L (mm)	R	W (mm)	H (mm)	C (mm)	
21ES	01	100	200	1/8 PT	8.2	2	3
	02	125	250	1/4 PT	11.2	2.5	4.5
	03	150	300	3/8 PT	14.7	2.5	5.5
	04	200	400	1/2 PT	18.2	2.5	6.5
	06	300	350	3/4 PT	23.2	3	9
	08	400	600	1 PT	26.7	3	10.5

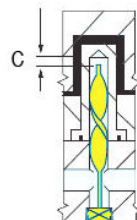
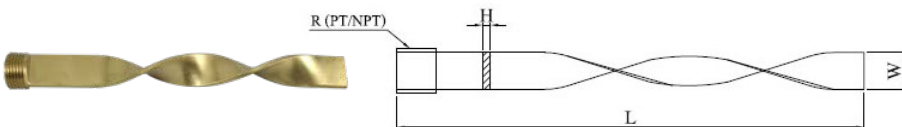
NPT Model	Nominal	L (Inch)	R	W (Inch)	H (Inch)	C (Inch)	
21AS	01	4	8	1/8NPT	5/16	1/16	0.12
	02	5	10	1/4NPT	7/16	3/32	0.17
	03	6	12	3/8NPT	9/16	3/32	0.21
	04	8	16	1/2NPT	11/16	3/32	0.26
	06	12	20	3/4NPT	15/16	1/8	0.35
	08	16	24	1 NPT	1 1/8	1/8	0.42

Spiral Baffle Board - แบลฟเฟิลบอร์ด แบบเกลียว

Spiral Type

Model: 21ESS (metric / PT thread)

Model: 21ASS (inch / NPT thread)



i รูเจาะเพื่อติดตั้งเท่ากับ $W + 0.3\text{mm}$. (H13)
ระยะห่าง C เป็นการประมาณคร่าวๆ
Drill hole equal to $W + 0.3\text{mm}$. (H13)
Clearance C is approximate.

ORDER EXAMPLE

Model - Nominal - L
21ESS-02-125

! มีให้เลือกแบบเกลียว PT และ NPT
Available in PT and NPT type

M Brass

PT Model	Nominal	L (mm)	R (PT)	W (mm)	H (mm)	C (mm)	
21ESS	01	100	200	1/8PT	8.2	2	3
	02	125	250	1/4PT	11.2	2.5	4.5
	03	150	300	3/8PT	14.7	2.5	5.5
	04	200	400	1/2PT	18.2	2.5	6.5
	06	300	350	3/4PT	23.2	3	9
	08	400	600	1PT	26.7	3	10.5

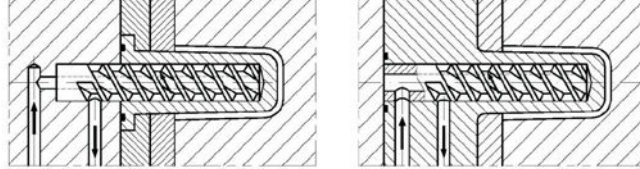
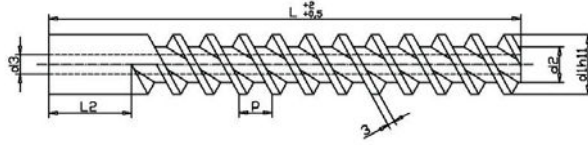
NPT Model	Nominal	L (Inch)	R (NPT)	W (Inch)	H (Inch)	C (Inch)	
21ASS	01	4	8	1/8NPT	5/16	1/16	0.12
	02	5	10	1/4NPT	7/16	3/32	0.17
	03	6	12	3/8NPT	9/16	3/32	0.21
	04	8	16	1/2NPT	11/16	3/32	0.26
	06	12	20	3/4NPT	15/16	1/8	0.35
	08	16	24	1NPT	1 1/8	1/8	0.42

ชิ้นส่วนระบบหล่อเย็น

Single Spiral Water Core - วอเตอร์คอร์ เกลียวเดี่ยว



Model: 21SST



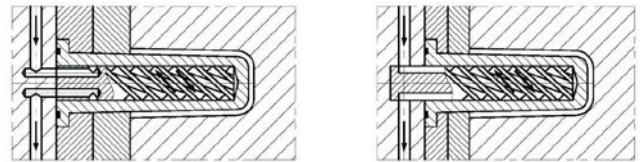
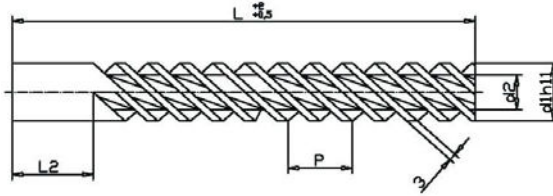
ORDER EXAMPLE Model d1 - L Aluminum
21SST20-250

Model	d1	L	d2	d3	P	L2
21SST	12	150 / 175 / 200 / 250 / 300 / 400	8	5	14	35
	16		11	6		
	20		13	8		
	25		15	10	18	
	32		22	12		
	40		26	14		
	50		32	16		

Double Spiral Water Core - วอเตอร์คอร์ เกลียวคู่



Model: 21DST



ORDER EXAMPLE Model d1 - L Aluminum
21DST20-250

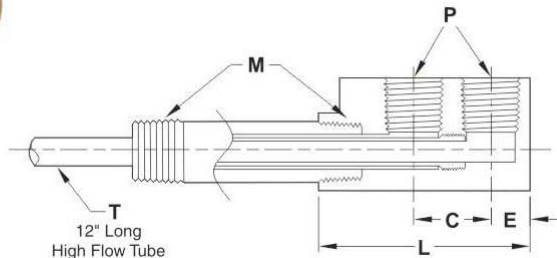
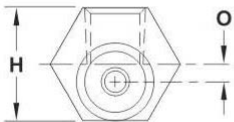
Model	d1	L	d2	P	L2
21DST	12	150 / 175 / 200 / 250 / 300 / 400	8	28	35
	16		11		
	20		13		
	25		15	36	
	32		22		
	40		26		
			50		

Cooling

High Flow Cascade - คาสเคดน้ำ รุ่นไหลเร็ว



Model: 21CHF



ORDER EXAMPLE Model M - P - C
21CHF1/4-1/4-1.00

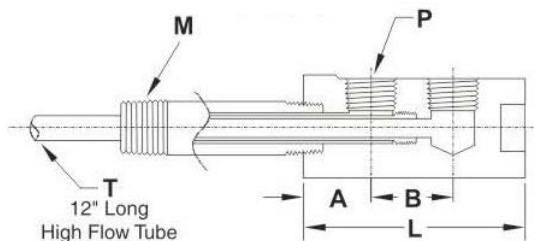
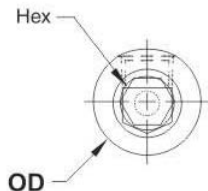
M Head : Brass
Nipple : Galvanized Steel
Tube : Stainless Steel

Model	M (NPT)	P (NPT)	C (Inch)	T (Inch)	H (Inch)	O (Inch)	E (Inch)	L (Inch)
21CHF	1/16	1/16	0.50	0.125	0.62	0.094	0.25	1.25
			0.68	0.187	0.75	0.094	0.31	1.62
	1/8	1/8	1.00	0.187	0.75	0.094	0.31	1.93
			0.68	0.250	1.00	0.156	0.34	1.87
	1/4	1/4	1.00	0.250	1.00	0.156	0.34	2.18
3/8	1/4	1.00	0.375	1.12	0.125	0.34	2.25	

Hex Key Cascade - คาสเคดน้ำ รุ่นหัวหกเหลี่ยม



Model: 21CHK



ORDER EXAMPLE Model M - P - B
21CHK1/4-1/4-1.00

M Head : Brass
Nipple : Galvanized Steel
Tube : Stainless Steel

Model	M (NPT)	P (NPT)	B (Inch)	T (Inch)	L (Inch)	A (Inch)	Hex (Inch)	OD (Inch)	Nominal Clearance (Inch)
21CHK	1/16	1/16	0.56	0.125	1.625	0.50	3/16	0.610	5/8
			0.56	0.187	1.687	0.56		0.735	3/4
	1/8	1/8	0.68	0.187	1.875	0.56	3/8	0.860	7/8
			1.00	0.187	2.187	0.56		0.860	7/8
	1/4	1/8	0.68	0.250	2.187	0.81	1.2	0.985	1
			1.00	0.250	2.500	0.81		0.985	1
		1/4	1/4	0.68	0.250	2.312		0.87	0.985
	3/8	1/4	1.00	0.250	2.625	0.87	0.985	1	1
	1/2	1/4	1.00	0.375	2.812	1.00	1.235	1-1/4	1-1/4

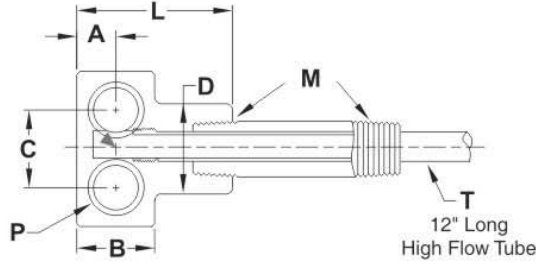
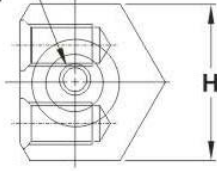
ชิ้นส่วนระบบหล่อเย็น

Compact Cascade - คาสเคดน้ำ รุ่นคอมแพ็ค



Model: 21CACC

High Flow Tube is offset to achieve maximum flow



ORDER EXAMPLE Model M - P
21CACC1/4-1/4

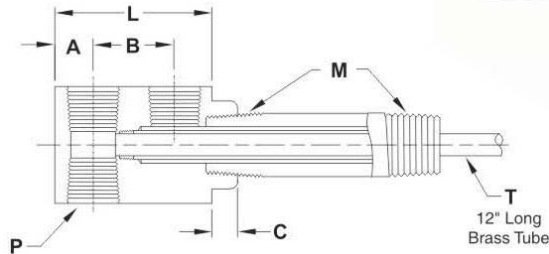
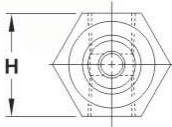
(M) Head : Brass
Nipple : Galvanized Steel
Tube : Stainless Steel

Model	M (NPT)	P (NPT)	C (Inch)	T (Inch)	H (Inch)	A (Inch)	B (Inch)	L (Inch)	D (Inch)
21CACC	1/8	1/16	0.50	0.187	0.93	0.21	0.437	1.00	0.625
	1/4	1/8	0.68	0.250	1.25	0.31	0.625	1.25	0.750
		1/4	0.75	0.250	1.50	0.37	0.750	1.50	0.875
	3/8	1/4	0.75	0.312	1.50	0.37	0.750	1.50	1.000

Nipple Type Cascade - คาสเคดน้ำ รุ่นสมนิปเปิ้ล



Model: 21CNT



ORDER EXAMPLE Model M - P - B
21CNT1/4-1/4-1.00

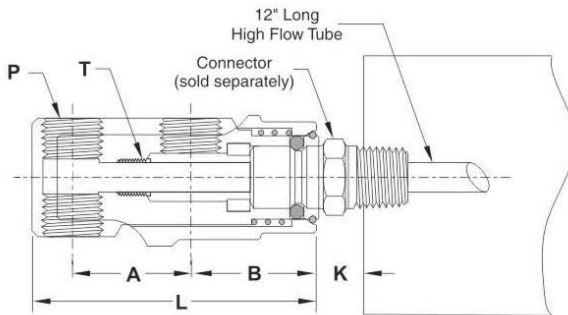
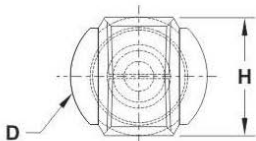
(M) Head : Brass
Nipple : Galvanized Steel
Tube : Brass

Model	M (NPT)	P (NPT)	B (Inch)	T (Inch)	H (Inch)	A (Inch)	C (Inch)	L (Inch)
21CNT	1/8	1/16	0.50	0.187	0.75	0.21	0.28	0.937
		1/8	0.68	0.187	0.87	0.32	0.28	1.343
			1.00	0.187	0.87	0.32	0.28	1.656
	1/4	1/8	0.68	0.250	1.00	0.32	0.21	1.343
			1.00	0.250	1.00	0.32	0.43	1.656
		1/4	0.68	0.250	1.00	0.32	0.21	1.343
			1.00	0.250	1.00	0.32	0.43	1.656
	3/8	1/8	1.00	0.312	1.00	0.34	0.40	1.687
		1/4	1.00	0.312	1.00	0.34	0.40	1.687
		1/2	1.00	0.437	1.25	0.40	0.56	1.812
	3/4	3/8	1.25	0.625	1.50	0.50	0.75	2.250

Quick Coupling Cascade - คาสเคดน้ำ รุ่นคัปปลิ่ง



Model: 21CQC



ORDER EXAMPLE Model - P - A
21CQC301-1/8-1.000

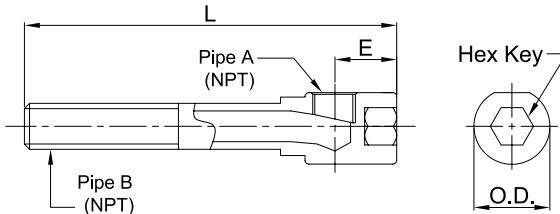
Head : Brass
Tube : Stainless Steel

Model	P (NPT)	A (Inch)	Matching Fitting	T (Inch)	B (Inch)	H (Inch)	D (Inch)	L (Inch)
21CQC301	1/8	0.687	A 301	0.187	0.968	0.812	0.875	1.937
		1.000		0.187				2.250
21CQC401	1/4	0.687	A 401	0.250	1.156	1.000	1.125	2.187
		1.000		0.250				2.500
	3/8	1.250		0.437	1.375	1.250	1.375	3.113

Hex Key Extension Elbow - ข้อต่อหัวหกเหลี่ยม แบบหักศอก



Model: 21EKL



ORDER EXAMPLE Model A - B - L
21EKL1/4-1/4-5-1/2

Head : Brass

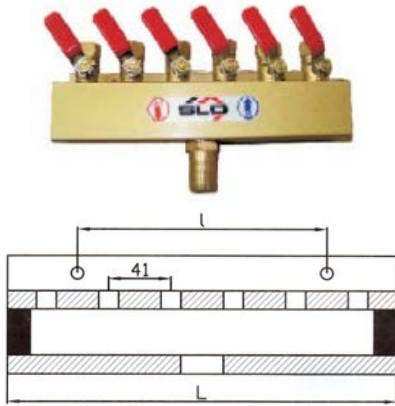
Model	A (NPT)	B (NPT)	L (Inch)								E (Inch)	O.D. (Inch)	Hex Key (Inch)
21EKL	1/16	1/16	2-1/2	4	5-1/2	7	8-1/2	10	11-1/2	13	0.531	0.552	1/4
	1/8	1/8									0.580	0.615	5/16
	1/4	1/4									0.660	0.860	3/8
	3/8	3/8									0.780	0.985	1/2
	1/2	1/2									0.940	1.235	1/2

ชิ้นส่วนระบบหล่อเย็น

Mold Cooling Manifold - ชุดแฉกนิโพลด์เครื่องฉีดพลาสติก

FOIL FREE™

1 Main Tube



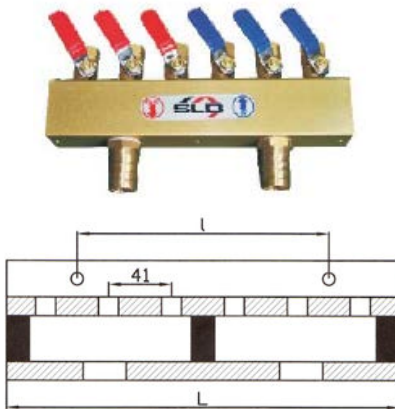
Model: 21AL

ORDER Model - Color
EXAMPLE 21AL01X08-R

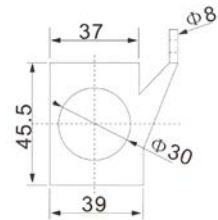
Body : Aluminum
Fittings : Brass

Model	Color	IN / OUT	L	I	Main Tube
21AL01X02	B (ด้ามฟ้า, blue handle)	2	92	-	1"
21AL01X03		3	133	42	
21AL01X04		4	174	83	
21AL01X05		5	215	124	
21AL01X06		6	256	165	
21AL01X07		R (ด้ามแดง, red handle)	7	297	
21AL01X08	8		338	247	
21AL01X10	10		420	249	
21AL01X12	12		502	411	

2 Main Tubes



2 Main Tubes & Valves



Order Code		IN / OUT	L	I	Main Tube
No Valve	With Valve				
21AL02X02	21ALV02X02	2 x 2	174	83	1"
21AL03X03	21ALV03X03	3 x 3	256	165	
21AL04X04	21ALV04X04	4 x 4	338	247	
21AL05X05	21ALV05X05	5 x 5	420	329	
21AL06X06	21ALV06X06	6 x 6	502	411	
21AL07X07	21ALV07X07	7 x 7	584	493	
21AL08X08	21ALV08X08	8 x 8	666	575	
21AL10X10	21ALV10X10	10 x 10	830	739	
21AL12X12	21ALV12X12	12 x 12	994	903	



❗ ใข้ชุดมาพร้อมกับฟิตติงรุ่น 21401-03PT-M
Standard set come with fitting 21401-03PT-M

❗ ใช้ร่วมกับเกลียว 3/8PT
Use with 3/8PT thread



❗ สามารถเปลี่ยนฟิตติงเป็นชิ้นส่วนอื่นๆที่เป็นเกลียว 3/8PT ได้
Can change the nipples to other fittings with 3/8PT thread

Special Mold Cooling Manifold - ชุดแมนิโฟลด์เครื่องฉีดพลาสติก แบบพิเศษ

ชุดแมนิโฟลด์ สำหรับเครื่องฉีดพลาสติก สามารถประกอบพิเศษตามแบบได้
Manifold can be design and assemble upon special request



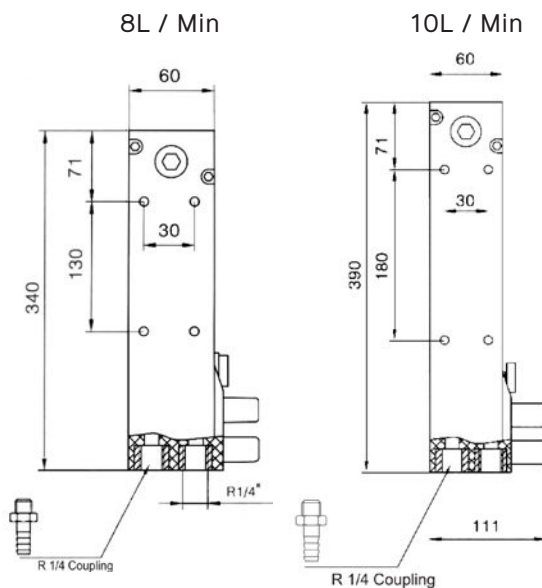
i รุ่นประกอบพิเศษที่มีได้มาตรฐาน
Special manifolds with standard order code



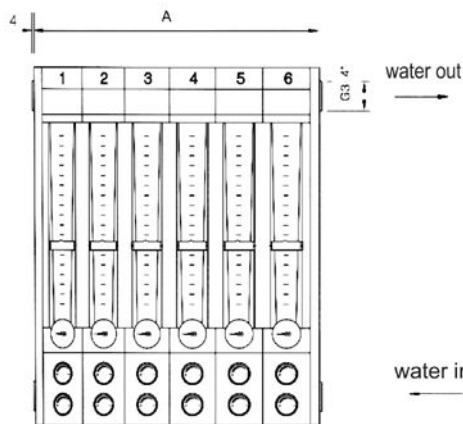
Fine Mold Cooling Manifold - ชุดแมนิโฟลด์เครื่องฉีดพลาสติก พร้อมเกจวัด



Model: 21LT



Max Pressure	Max Temperature
4 bar	120°C
6 bar	100°C
8 bar	80°C
10 bar	60°C



Order Code		IN / OUT	A	Main Tube
8L / Min	10L / Min			
21LT-100-080	21LT-100-100	1 x 1	72	G3/4"
21LT-200-080	21LT-200-100	2 x 2	124	
21LT-300-080	21LT-300-100	3 x 3	177	
21LT-400-080	21LT-400-100	4 x 4	229	
21LT-500-080	21LT-500-100	5 x 5	282	
21LT-600-080	21LT-600-100	6 x 6	334	
21LT-700-080	21LT-700-100	7 x 7	387	
21LT-800-080	21LT-800-100	8 x 8	439	
21LT-1000-080	21LT-1000-100	10 x 10	543	
21LT-1200-080	21LT-1200-100	12 x 12	647	



Name	Mold Smart Clamp	Mold Clamp	Forged Mold Clamp	Tapped End Mold Clamp	Thread Support	Strap Clamp	U-Shaped Clamp
Model	21CE	11MC	11MCF	11TTUC	11TS	11TSC	11TUC
Page	156	156	157	157	157	158	158



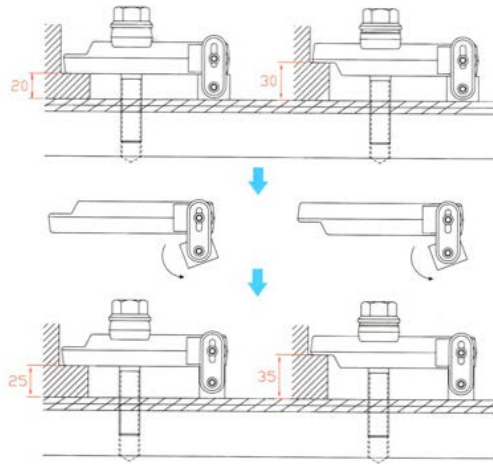
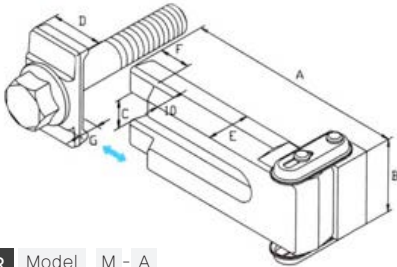
Name	Forged Goose Neck Clamp	Stepped Strap Clamp	Step Block	Clamping Stud	T-Nut	Flange Nut	Extension Nut
Model	11TGNCF	11TSSC	11TSB	11TCS	11TTN	11FN	11TEN
Page	158	159	159	160	161	161	161



Name	Plain Washer	C-Washer	Magnetic Chuck for Injection Mold Machine
Model	11TPW	11TCW	
Page	161	161	162

Mold Smart Clamp - แคลมป์ยึดแม่พิมพ์ Smart Clamp

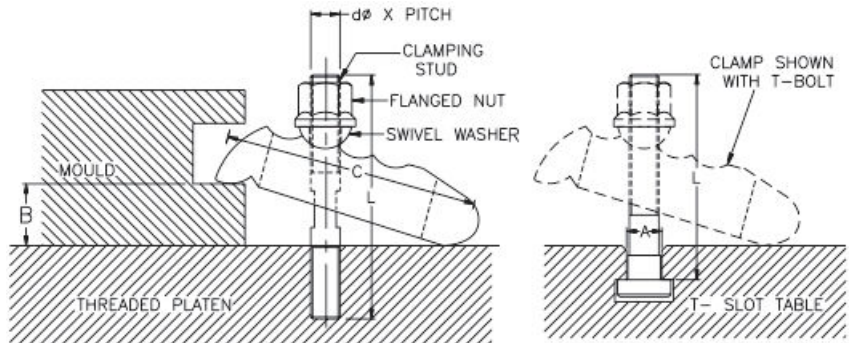
สามารถปรับเปลี่ยนความสูงในการแคลมป์แม่พิมพ์ได้อย่างรวดเร็วด้วยการปรับพลิกบล็อก
Fast and easy to adjust clamping height by rotating the end block.



ORDER EXAMPLE Model M - A
21CE16-130

Model	M	A	B	C	D	E	F	G	Screw Size	Block Size
21CE	12	95	44	16.5	32	25	18	11	M12x1.75-80L	20 x 25
	16	95	44	16.5	32	25	18	11	M16x2.0-90L	
		130								
	20	150	57	21	40	30	18	17	M20x2.5-120L	30 x 35
150										

Mold Clamp - แคลมป์ยึดแม่พิมพ์



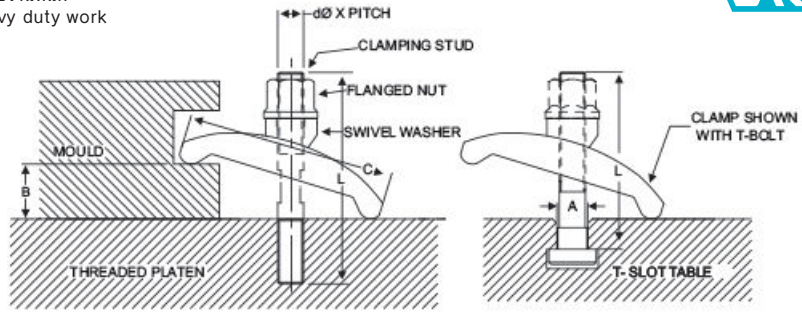
Order Code	Stud Size (d x pitch x L)	Clamping Height B	Clamping Length C	Clamp Width	Weight / Set (kg)
11MC-12	M12 x 1.75 x 100	0 - 35	110	50	1
11MC-16	M16 x 2.0 x 125	0 - 40	135	60	1.7
11MC-20	M20 x 2.5 x 175	0 - 50	160	70	2.81
11MC-24	M24 x 3.0 x 200	0 - 60	180	80	4.19

แคลมป์แม่พิมพ์

Forged Mold Clamp – แคลมป์ยึดแม่พิมพ์รุ่นเหล็กฟอจ

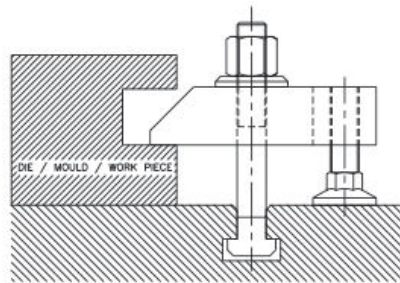
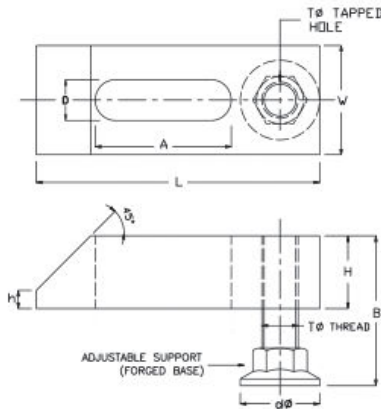


i แข็งแรงยิ่งขึ้น สำหรับงานหนัก
Stronger for heavy duty work



Order Code	Stud Size (d x pitch x L)	Clamping Height B	Clamping Length C	Clamp Width	Weight / Set (kg)
11MCF-12	M12 x 1.75 x 100	0 - 35	102	46	0.5
11MCF-16	M16 x 2.0 x 125	0 - 50	124	58	1
11MCF-20	M20 x 2.5 x 175	0 - 65	156	68	1.8
11MCF-24	M24 x 3.0 x 200	0 - 75	178	82	2.98

Tapped End Mold Clamp – แคลมป์ยึดแม่พิมพ์รุ่นเกลียวท้าย



i รูปแสดงการใช้งาน
Image shown usage

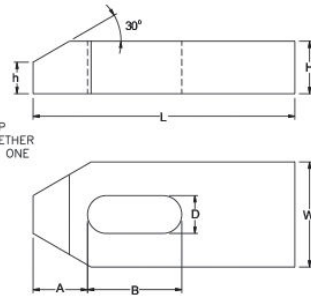
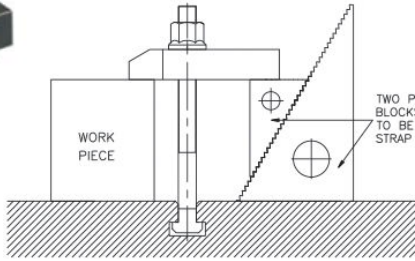
Order Code	D	L	A	W	H	h	T (Tapped Hole)	d	B Max	Weight / Set (kg)
11TTUC-12	M12	110	55	38	18	6	M12	30	60	0.55
11TTUC-16	M16	125	60	48	24	8	M16	35	70	1
11TTUC-20	M20	160	80	62	30	10	M20	40	80	2.45
11TTUC-24	M24	200	110	72	38	10	M24	50	85	3.67

i ซัพพอร์ต สำหรับ แคลมป์แม่พิมพ์รุ่นเกลียวท้าย
Threaded Support for Tapped End Mold Clamp



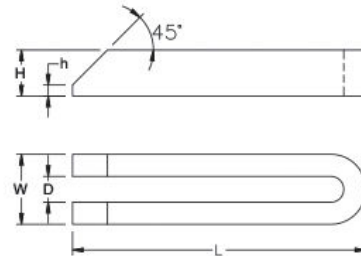
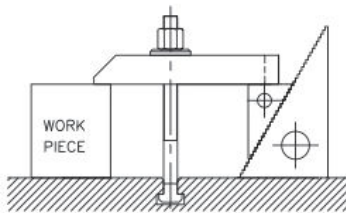
Order Code	Thread Size	Weight (kg)
11TS-12	M12 x 1.75	0.07
11TS-16	M16 x 2.00	0.14
11TS-20	M20 x 2.50	0.23
11TS-24	M24 x 3.00	0.4

Strap Clamp – แคลมป์มาตรฐาน



Order Code	Bolt Slot D	L	W	H	A	B	h	Weight (kg)
11TSC-8-60	M8	60	24	12	13	22	7	0.09
11TSC-10-80	M10	80	30	15	15	30	9	0.23
11TSC-12-100	M12	100	38	18	21	40	12	0.43
11TSC-12-125	M12	125	38	18	21	50	12	0.56
11TSC-16-125	M16	125	48	24	26	45	15	0.85
11TSC-16-160	M16	160	48	24	26	65	15	1.11
11TSC-20-160	M20	160	62	30	30	60	18	1.89
11TSC-24-200	M24	200	72	38	35	80	21	3.39

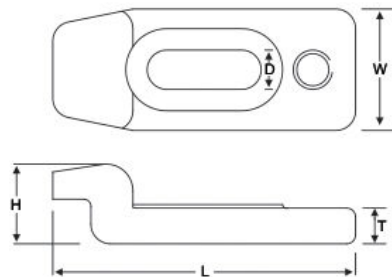
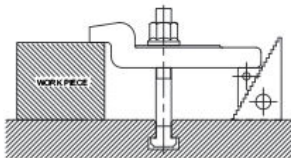
U-Shaped Clamp – แคลมป์รูปตัวยู



Order Code	Bolt Slot D	L	W	H	h	Weight (kg)
11TUC-12-160	M12	160	38	24	6	0.68
11TUC-16-200	M16	200	48	30	8	1.44
11TUC-20-250	M20	250	62	38	10	2.72
11TUC-24-250	M24	250	62	38	10	2.72

Forged Goose Neck Clamp – แคลมป์ทรงคอห่านทำจากเหล็กพอง

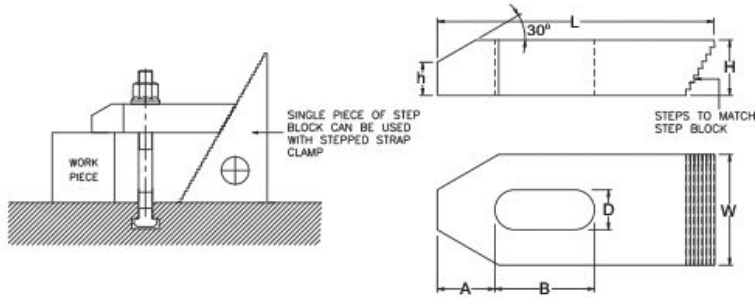
i แข็งแรงยิ่งขึ้น สำหรับงานหนัก
Stronger for heavy duty work



Order Code	Bolt Slot D	L	W	H	T	Weight (kg)
11TGNCF-12	M12	125	50	33	18	0.65
11TGNCF-16	M16	125	50	33	18	0.65
11TGNCF-20	M20	165	47	68	24	1.44
11TGNCF-24	M24	200	52	76	28	2.34

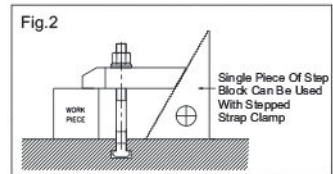
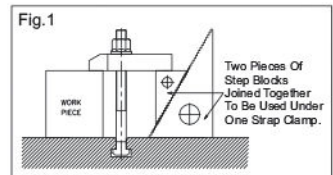
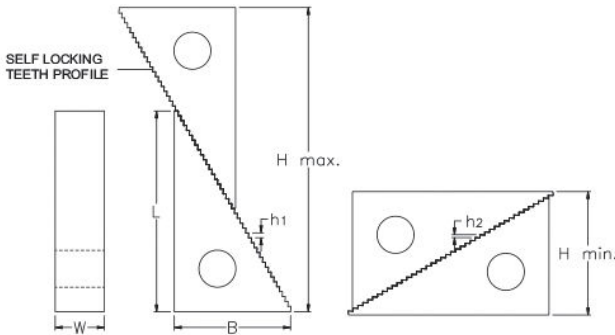
แคลมป์แม่พิมพ์

Stepped Strap Clamp – สเตปแคลมป์



Order Code	Bolt Slot D	L	W	H	A	B	h	Weight (kg)
11TSSC-12-65	M12	65	30	15	15	25	9	0.16
11TSSC-12-100	M12	100	38	18	21	35	12	0.42
11TSSC-12-125	M12	125	38	18	21	45	12	0.55
11TSSC-16-75	M16	75	38	18	21	30	12	0.29
11TSSC-16-125	M16	125	48	24	26	45	15	0.75
11TSSC-16-160	M16	160	48	24	26	65	15	1.1
11TSSC-20-160	M20	160	62	30	30	60	18	1.64
11TSSC-24-200	M24	200	72	38	35	80	21	3.21

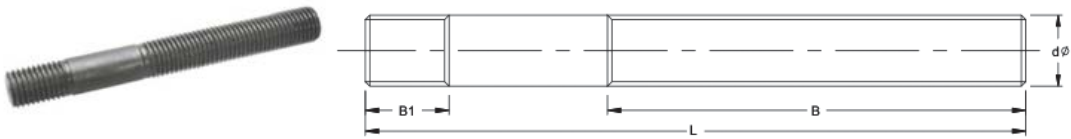
Step Block – สเตปบล็อก



i 11THSB รุ่นสำหรับงานหนัก
11THSB series for heavy duty work

Order Code	L	B	W	Height Adjustment		Step Height h1	Step Height h2	Weight In pair (kg)
				H Min	H Max			
11TSB-1	30	18	30	20	44	2.7	1.6	0.14
11TSB-2	66	38	30	40	100	2.7	1.6	0.39
11TSB-3	101	58	30	60	155	2.7	1.6	1.36
11THSB-5	66	38	48	40	100	2.7	1.6	0.95
11THSB-6	117	68	48	72	180	2.7	1.6	2.83

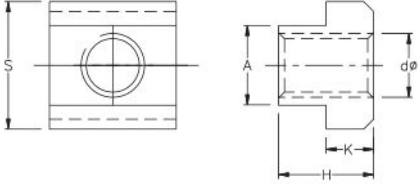
Clamping Stud – แคลมป์สตั๊ด



Order Code	Thread Size Ød	L	B1	B	Weight (kg)
11TCS-8-75	M8	75	11	48	0.025
11TCS-8-100		100		63	0.03
11TCS-8-150		150		95	0.05
11TCS-10-75	M10	75	13	48	0.04
11TCS-10-100		100		63	0.05
11TCS-10-150		150		95	0.075
11TCS-10-200		200		125	0.1
11TCS-12-75	M12	75	15	48	0.055
11TCS-12-100		100		63	0.075
11TCS-12-125		125		75	0.09
11TCS-12-150		150		95	0.11
11TCS-12-175		175		110	0.13
11TCS-12-200		200		125	0.15
11TCS-12-250		250		160	0.19
11TCS-12-300	300	190	0.23		
11TCS-16-75	M16	75	19	50	0.1
11TCS-16-100		100		63	0.13
11TCS-16-125		125		75	0.17
11TCS-16-150		150		95	0.2
11TCS-16-175		175		110	0.24
11TCS-16-200		200		125	0.27
11TCS-16-250		250		160	0.34
11TCS-16-300	300	190	0.41		
11TCS-20-100	M20	100	27	60	0.21
11TCS-20-150		150		95	0.31
11TCS-20-200		200		125	0.42
11TCS-20-250		250		160	0.53
11TCS-20-300		300		190	0.63
11TCS-20-400		400		250	0.86
11TCS-20-500	500	250	1.11		
11TCS-24-150	M24	150	35	95	0.41
11TCS-24-200		200		120	0.61
11TCS-24-250		250		160	0.76
11TCS-24-300		300		190	0.92
11TCS-24-400		400		250	1.23
11TCS-24-500		500		250	1.58

แกลมปีแม่พิมพ์

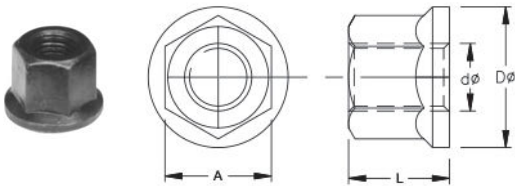
T-Nut – นัทรูปตัวที



i เลือกจากขนาด T-Slot (A)
Choose from your T-Slot table size

Order Code	T Slot Size A	Thread Size ϕd	H	K	S	Weight (kg)
11TTN-10-8	10	M8	12	6	15	0.015
11TTN-12-10	12	M10	14	7	18	0.02
11TTN-14-10	14	M10	16	8	22	0.04
11TTN-14-12	14	M12	16	8	22	0.035
11TTN-16-12	16	M12	18	9	25	0.055
11TTN-18-16	18	M16	20	10	28	0.07
11TTN-20-16	20	M16	24	12	32	0.12
11TTN-22-16	22	M16	28	14	35	0.18
11TTN-24-20	24	M20	32	16	40	0.24
11TTN-28-24	28	M24	36	18	44	0.33
11TTN-36-24	36	M24	44	22	54	0.64

Flange Nut – นัทมีขา



Order Code	Thread ϕd	ϕD	A	L	Weight (kg)
11TFN-12	M12	25	19	18	0.035
11TFN-16	M16	32	24	24	0.07
11TFN-20	M20	40	30	30	0.14
11TFN-24	M24	47	36	36	0.23

Extension Nut – นัทเสริม



Order Code	Thread Size	Total Length	Weight (kg)
11TEN-8	M8	24	0.02
11TEN-10	M10	30	0.04
11TEN-12	M12	36	0.06
11TEN-16	M16	48	0.12
11TEN-20	M20	60	0.23
11TEN-24	M24	72	0.41



Plain Washer – วอชเชอร์



Order Code	Bolt Size	Thickness	O.D.	Weight (kg)
11TPW-8	M8	4	23	0.01
11TPW-10	M10	4	28	0.015
11TPW-12	M12	5	35	0.03
11TPW-16	M16	7	45	0.07
11TPW-20	M20	7	48	0.07
11TPW-24	M24	9	60	0.15



C-Washer – วอชเชอร์ตัว C



Order Code	Bolt Size	Thickness	O.D.	Weight (kg)
11TCW-10	M10	9	40	0.07
11TCW-12	M12	9	48	0.11
11TCW-16	M16	11	63	0.2
11TCW-20	M20	11	80	0.36
11TCW-24	M24	12	100	0.59



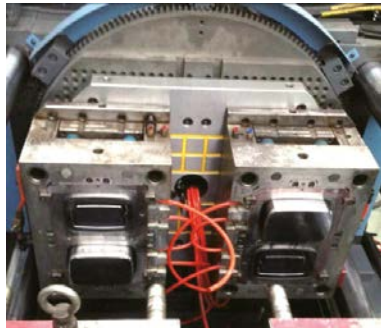
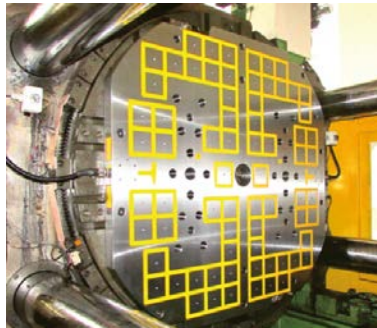
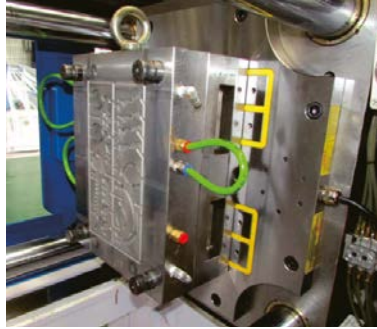
Magnetic Chuck for Injection Mold - แม่เหล็กสำหรับจับยึดแม่พิมพ์ฉีดพลาสติก

แม่เหล็กถาวร ควบคุมด้วยระบบไฟฟ้า สำหรับจับยึดแม่พิมพ์บนเครื่องฉีดพลาสติก สามารถติดตั้งเพื่อใช้ทดแทนระบบการ แคลมป์ปิ้งด้วยตัวแคลมป์ มาเป็นการจับยึด ด้วยแรงแม่เหล็กแทน

Electro-Permanent Magnetic Chuck for injection mold is a complete replacement of the traditional mold clamping system. It use permanent magnetic force, but control completely by electronic with full safety feature.

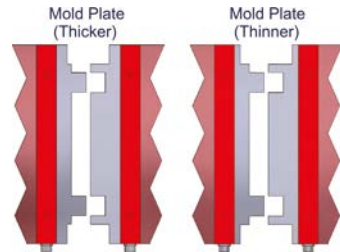
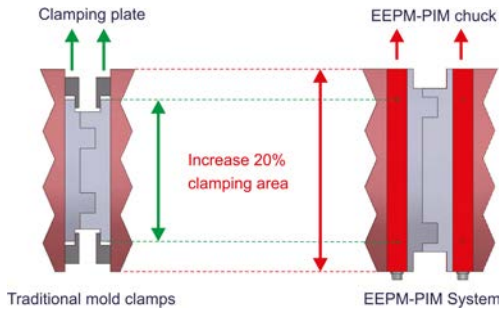


! สินค้าสั่งทำตามแบบ โปรดสอบถามฝ่ายขายเพื่อส่งรายละเอียดเพิ่มเติม
Customize only product. Contact our sale personal for more info.



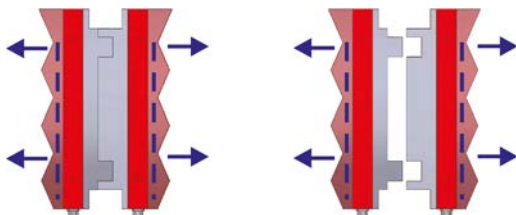
i จับแม่พิมพ์ขนาดใหญ่ขึ้นได้ ไม่ต้องเว้นพื้นที่สำหรับการแคลมป์
Can hold larger mold by not wasting space for clamps

i ไม่ว่าฐานแม่พิมพ์จะหนาหรือบาง ก็จับยึดได้หมด
Can hold any mold plate whether thick or thin



i แรงจับยึดเต็มหน้าสัมผัส ลดโอกาสโก่งของฐานแม่พิมพ์
Clamping force is evenly distributed to reduce stress and deformation on the mold plate






i บังคับแม่เหล็กด้วยรีโมทคอนโทรล ที่ออกแบบมาเพื่อความปลอดภัย ระหว่างใช้งานอย่างเต็มที่
Control the clamping remotely with full safety system





				
Name	Sprue Bush A-Type	Sprue Bush B-Type	Sprue Bush C-Type	Locating Ring
Model	21SBCA / 21SBUA / 21SBSA	21SBCB / 21SBUB / 21SBSB	21SBC	21GLRA / 21GLRB
Page	164	164	164	165

						
Name	Ball Plungers	Hose Clamps	Date Marking Pin	Front Exchange Date Marking Pin	Back Exchange Date Marking Pin	
Model	21GBP	21GM	21HS	21GDA	21GDD	21GDJ
Page	165	166	166	167	167	

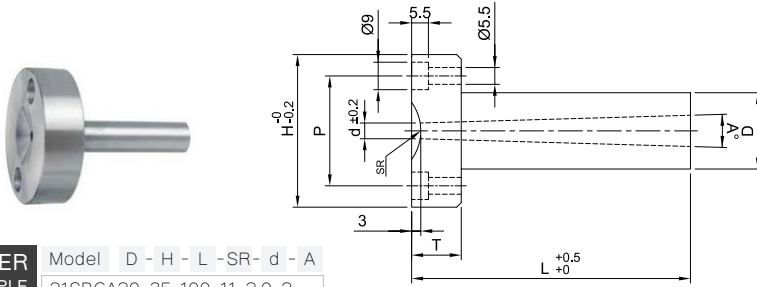
					
Name	Double Ring Date Marking Pin	Recycle Marking Pin	Die Cast Date Marking Pin	Air Valve	Air Jet Valve
Model	21GDZ	21RMA / 21RMB	21ATDC / 21BTDC	21GVJ	21TVB
Page	168	168	168	169	169

					
Name	Air Poppet Valve	Gas Vent	Mold Shot Counter	Magnetic Backed Thermometer	Pen Type Thermometer
Model	21TVA	21GAS1 / 21GAS2	21MRSP / 21MRSE / 21BMCS / 21BMCSE	21NKC	21NKP
Page	169	169	170	170	170

						
Name	Precision Shim Tapes	Precision Shim Stock	Roller Carriers	Ball Transfer (Saucer)	Roller Carriers (Fit Type)	Ball Transfer (Press Fit)
Model	17R376	17ST / 17BR	25BCR	25SSBRS	25BCRP	25SSBRP
Page	171	172	173	173	173-174	173-174

		
Name	Ball Roller Carriers	Ball Bearing
Model	25CHI	25B
Page	174	174

Sprue Bush A-Type - สปรูบูช แบบ A

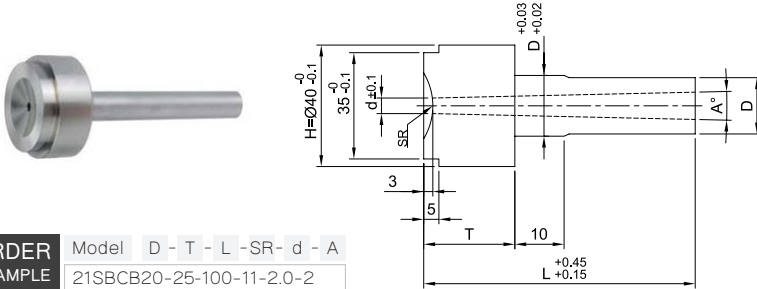


ORDER EXAMPLE Model D - H - L - SR - d - A
21SBCA20-35-100-11-2.0-2

Model	Materials
21SBCA	S45C HRC40
21SBUA	SUJ2 HRC58-62
21SBSA	SKD61 HRC48-54

Model	D	H	L 10mm increments	SR	d	A°	P	T	
21SBCA 21SBUA 21SBSA	12	-0.000 -0009	35	40 - 150	0	1° 2° 3°	25	10	
	16	-0.000 -0011			11			15	
	20	-0.000 -0011			12			20	
	16	-0.000 -0013	50		13		3.0	36	10
	20	-0.000 -0013			0		15		
	25	-0.000 -0013			11		20		
				12	4.5				
				13	5.0				
				16					

Sprue Bush B-Type - สปรูบูช แบบ B

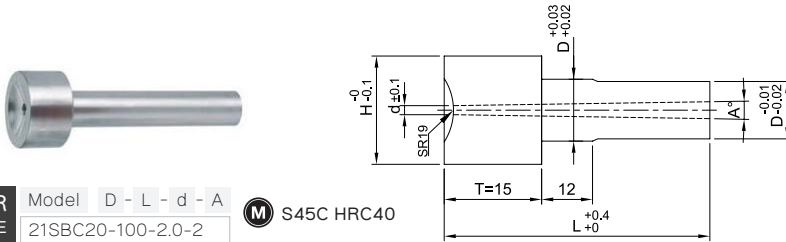


ORDER EXAMPLE Model D - T - L - SR - d - A
21SBCB20-25-100-11-2.0-2

Model	Materials
21SBCB	S45C HRC40
21SBUB	SUJ2 HRC58-62
21SBSB	SKD61 HRC48-54

Model	D	T	L 10mm increments	SR	d	A°	H	
21SBCB 21SBUB 21SBSB	16	-0.000 -0011	40 - 150	0	2.0 2.5 3.0 3.5 4.0 4.5 5.0	1° 2° 3°	40	
				11				25
				12				30
	20	-0.000 -0013		13			3.5	40
				16			4.0	
				19			4.5	
		21	5.0					

Sprue Bush C-Type - สปรูบูช แบบ C



ORDER EXAMPLE Model D - L - d - A
21SBC20-100-2.0-2 **M** S45C HRC40

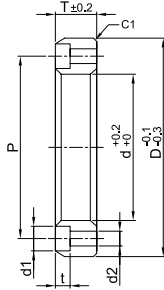
Model	D	L 10mm increments	d	A°	H	T
21SBC	12	50 - 150	2.0	1° 2° 3°	25	15
	16		2.5			
	20		3.0			
			3.5		35	
			4.0			
			4.5			
			5.0			

ชิ้นส่วนแม่พิมพ์

Locating Ring - โลเคตติ้งริง

FOIL FREE™

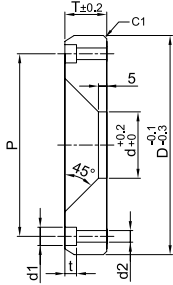
Model: 21GLRA



ORDER Model D - T - d
EXAMPLE 21GLRA100-15-85 (M) S45C

Model	D	T	d	P	t	d1	d2
21GLRA	60	15	35	48	4.5	7.5	5
	100	15	70	85	7	11	7
	120	15	90	105	7	11	7
	150	20	110	130	9	15	9

Model: 21GLRB



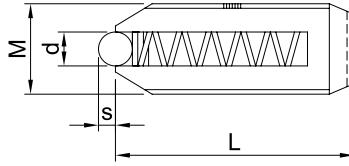
ORDER Model D - T - d
EXAMPLE 21GLRB100-15-35 (M) S45C

Model	D	T	d	P	t	d1	d2
21GLRB	100	15	35	85	7	11	7
			50				
	120	15	35	105	7	11	7
			50				

Ball Plungers - ลูกดันสปริง บอลพุ่งเจาะ

FOIL FREE™

Model: 21GBP



(M) Thread : SCM21
Ball : SUJ2

Order Code	M x Pitch	d	S	L	Load	
					min	max
21GBP-4	4 x 0.7	2.5	1.0	9	0.3	1.0
21GBP-5	5 x 0.8	3	1.0	12	0.5	1.5
21GBP-6	6 x 1.0	3.5	1.2	14	0.7	2.0
21GBP-8	8 x 1.25	5.0	1.8	16	0.9	2.5
21GBP-10	10 x 1.5	6.0	2.0	19	1.0	3.0
21GBP-12	12 x 1.75	8.0	3.0	22	1.6	5.0
21GBP-16	16 x 2.0	10.0	4.0	25	2.5	8.0

Hose Clamps - แคลมป์รัดท่อ



Model: 21GM
German Type
แบบเยอรมัน

M Body : Stainless Steel
Screw : Stainless Steel



Order Code	Clamp Range (mm)
21GM08-12	8-12
21GM10-16	10-16
21GM12-20	12-20
21GM16-27	16-27
21GM20-32	20-32
21GM25-40	25-40
21GM32-50	32-50
21GM40-60	40-60
21GM50-70	50-70
21GM70-90	70-90



Model: 21HS
American Type
แบบอเมริกัน

M Body : Stainless Steel
Screw : Nickel Plated



Order Code	Clamp Range (mm)
21HS10-16	10-16
21HS13-19	13-19
21HS16-25	16-25
21HS21-38	21-38
21HS27-51	27-51
21HS33-57	33-57
21HS40-64	40-64
21HS52-76	52-76
21HS60-83	60-83
21HS70-92	70-92

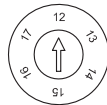


Date Marking Pin - ตัวอักษร วัน เดือน ปี

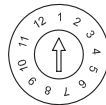


Model: 21GDA

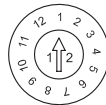
รูปแบบมาตรฐาน - Standard Designs



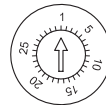
6Y



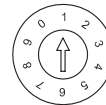
12M



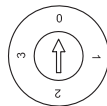
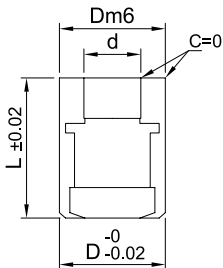
Y12M



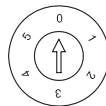
31D



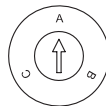
9D



3D



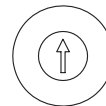
5W



ABC



AL



AB

- ! สามารถทำรูปแบบอื่นๆได้ โปรดส่งรูปถ่ายตัวอย่าง
Other design can be done, please send us your drawing.
- ! รูปแบบ 31D ไม่สามารถผลิตได้สำหรับขนาด D6 มม. หรือเล็กกว่า
31D type can not be produce if the D is 6mm or smaller.

M Stainless Steel
Hardness 46-58HRC

! Max Temperature 150°C

i รูปแบบ 6Y และ Y12M ต้องระบุปีที่ต้องการ
6Y and Y12M designs must indicate year when order

6Y Type

ORDER Model - D - L - 6Y - Year (2digit)
EXAMPLE 21GDA-10-12-6Y-18

Y12M Type

ORDER Model - D - L - Y12M - Year (2digit) Y
EXAMPLE 21GDA-08-10-Y12M-18Y

Other Types

ORDER Model - D - L - Design
EXAMPLE 21GDA-10-12-12M

Model	D	L	d
21GDA	03	08	1.5
	04	08	2.0
	05	08	2.5
	06	08	2.9
	06	10	2.9
	08	10	3.9
	10	10	4.9
	10	12	4.9
	12	12	5.5
	16	14	7.4
	20	14	8.7

- การหมุนตัวลูกศร ทำได้โดยการใช้ไขควงปลายแบนขนาดเล็กลงที่ลูกศร
- การติดตั้งควรเจาะรูที่ขนาดเล็กลงกว่าตัว Date Marking Pin เพื่อใช้ในการปลดเมื่อจำเป็นจะต้องเปลี่ยนโดยใช้แท่งโลหะกระทุ้งจากด้านล่าง
- การติดตั้งเป็นแบบ Press-Fit, แต่ถ้าหากขนาดรูเล็กจนเกินไป อาจจะทำให้ไปบีบ Date Marking Pin มากจนไม่สามารถหมุนลูกศรได้
- ใช้ค้อนยาง หรือ ค้อนไม้ในการติดตั้งเพื่อรักษามิวน้ำของ Date Marking Pin ไม่ให้เกิดรอยขีดข่วน

- To move the arrow, use flat screwdriver to turn the arrow.
- Always make a through drill hole smaller than the Date Marking Pin itself for removing.
- If the Press-Fit hole is too small, it might tighten the pin too hard the arrow can not rotate.
- Use soft face urethane or wood hammer during installation to save the surface of the pin.

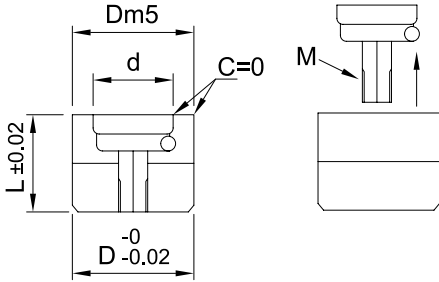
ชิ้นส่วนแม่พิมพ์

Front Exchange Date Marking Pin - ตัวอักษร วัน เดือน ปี ถอดด้านหน้า

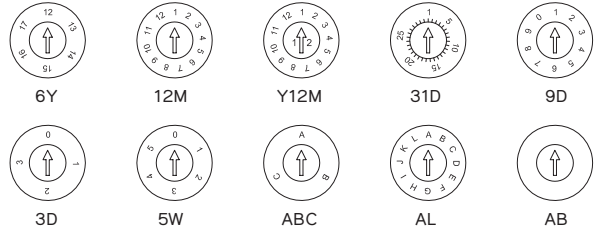
FOIL FREE™



Model: 21GDD



รูปแบบมาตรฐาน - Standard Designs



- ❗ สามารถทำรูปแบบอื่นๆได้ โปรดส่งรูปภาพตัวอย่าง
Other design can be done, please send us your drawing.
- ❗ รูปแบบ 31D ไม่สามารถผลิตได้สำหรับขนาด D6มม. หรือเล็กกว่า
31D type can not be produce if the D is 6mm or smaller.

❗ รูปแบบ 6Y และ Y12M ต้องระบุปีที่ต้องการ
6Y and Y12M designs must indicate year when order

6Y Type

ORDER Model- D - L - 6Y - Year (2digit)
EXAMPLE 21GDD-10-12-6Y-18

Y12M Type

ORDER Model- D - L - Y12M - Year (2digit) Y
EXAMPLE 21GDD-08-10-Y12M-18Y

Other Types

ORDER Model- D - L - Design
EXAMPLE 21GDD-10-12-12M

Model	D	L	d
21GDD	04	08	2.4
	05	08	2.9
	06	08	3.7
	08	10	5.0
	10	12	6.3
	12	14	7.5
	16	14	11.0
	20	16	13.2

Ⓜ Stainless Steel
Hardness 46-58HRC

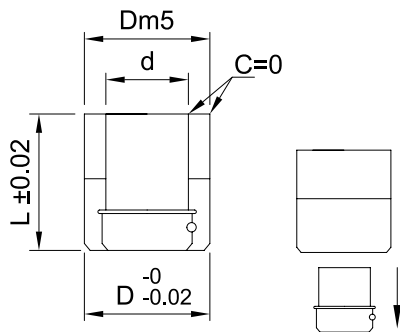
❗ Max Temperature 150°C

Back Exchange Date Marking Pin - ตัวอักษร วัน เดือน ปี ถอดด้านหลัง

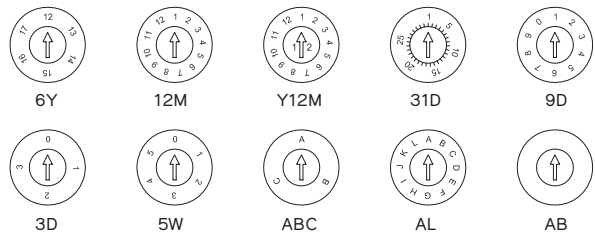
FOIL FREE™



Model: 21GDJ



รูปแบบมาตรฐาน - Standard Designs



- ❗ สามารถทำรูปแบบอื่นๆได้ โปรดส่งรูปภาพตัวอย่าง
Other design can be done, please send us your drawing.
- ❗ รูปแบบ 31D ไม่สามารถผลิตได้สำหรับขนาด D6มม. หรือเล็กกว่า
31D type can not be produce if the D is 6mm or smaller.

❗ รูปแบบ 6Y และ Y12M ต้องระบุปีที่ต้องการ
6Y and Y12M designs must indicate year when order

6Y Type

ORDER Model- D - L - 6Y - Year (2digit)
EXAMPLE 21GDJ-10-12-6Y-18

Y12M Type

ORDER Model- D - L - Y12M - Year (2digit) Y
EXAMPLE 21GDJ-08-10-Y12M-18Y

Other Types

ORDER Model- D - L - Design
EXAMPLE 21GDJ-10-12-12M

Model	D	L	d
21GDJ	04	08	1.9
	05	08	2.3
	06	08	2.8
	08	10	4.0
	10	12	5.0
	12	14	6.5
	16	14	10.0
	20	16	12.0

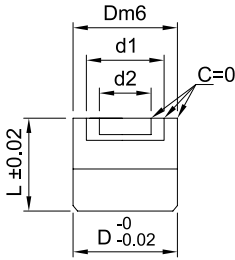
Ⓜ Stainless Steel
Hardness 46-58HRC

❗ Max Temperature 150°C

Double Ring Date Marking Pin - ตัวอักษร วัน เดือน ปี สองชั้น



Model: 21GDZ



- Stainless Steel
Hardness 46-58HRC
- Max Temperature 150°C
- ระบุปีที่ต้องการ
indicate year when order

ORDER EXAMPLE Model - D - Year (2digit) Y
21GDZ-10-17Y

Model	D	d1	d2	L
21GDZ	08	5.8	3.6	20
	10	7.0	4.0	20
	12	8.5	5.0	20
	16	11.5	7.0	20
	20	14.0	8.0	20

Recycle Marking Pin - ตรารีไซเคิล

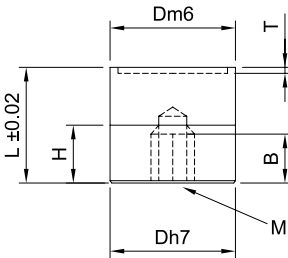
US SPI Standard (The Society of Plastics Industry, Inc.)



Model:
21RMA
21RMB



German & French Standards (Comparable to US SPI)



ORDER EXAMPLE Model - D
21RMA1-8



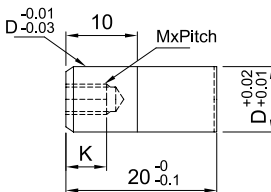
- Stainless Steel
Hardness 46-58HRC
- Max Temperature 150°C
Standard USSPI / German / French

Model	D	L	M	A	T	B
21RMA_ 21RMB_	8	10	M4	5	0.2	5
	10	12	M5	6	0.3	7
	12	14	M5	7	0.3	7
	16	14	M6	10	0.3	7
	20	16	M6	12	0.3	8

Die Cast Date Marking Pin - ตัวอักษร เดือน ปี สำหรับไดคาสต์



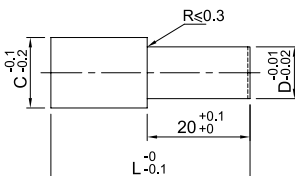
Model: 21ATDC



ORDER EXAMPLE Model - D - L SKD61
Hardness 47-52HRC

Model	D	K	M
21ATDC	8	6	M3
	10	7.5	M4
	12	9	M6

Model: 21BTDC

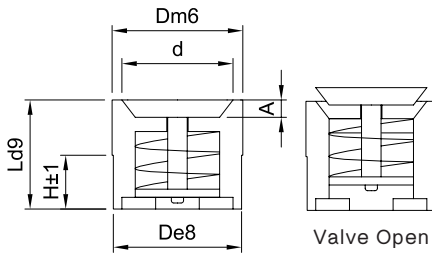


Model	D	L 0.1mm increments	C
21BTDC	8		13
	10	30-100	15
	12		17

ชิ้นส่วนแม่พิมพ์

Air Valve - แอร์วาล์ว

Model: 21GVJ



(M) Stainless Steel
Hardness 50-54HRC

(!) Min Working Pressure 400 kPa
Max Temperature 120°C

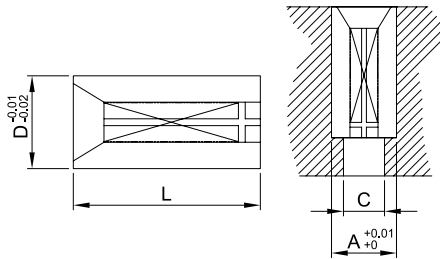
ORDER Model - D
EXAMPLE 21GVJ-10

FOIL FREE™

Model	D	d	L	A	H
21GVJ	6	5.2	12	1.5	7
	8	6.5	12	1.5	7
	10	8.0	12	2.0	7
	12	10.0	12	2.5	7
	16	13.0	20	3.0	12
20	17.0	20	3.5	12	

Air Jet Valve - แอร์เจ็ทวาล์ว

Model: 21TVB



(M) Stainless Steel
Hardness 50-54HRC

(!) Min Working Pressure 400 kPa
Max Temperature 120°C

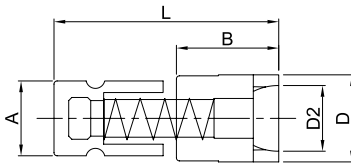
ORDER Model - D
EXAMPLE 21TVB-10

FOIL FREE™

Model	D	L	A	C
21TVB	8	15	8	4.5
	10	20	10	7
	12	25	12	7.7
	16	30	16	10.3
	20	35	20	12.9
	25	45	25	14.9
30	45	30	18	

Air Poppet Valve - แอร์ป๊อปเป็ทวาล์ว

Model: 21TVA



(M) Stainless Steel
Hardness 50-54HRC

(!) Min Working Pressure 400 kPa
Max Temperature 120°C

ORDER Model - D
EXAMPLE 21TVA-10

FOIL FREE™

Model	D	D2	B	L	A
21TVA	8	6.6	11	24	6
	10	8.0	11	24	6
	12	9.7	18	34	8
	16	13.0	20	38	8
	18	14.8	22	46	12
	20	16.0	26	50	12
25	20.0	26	50	12	

Gas Vent - แผงระบายอากาศ

Sintered
Stainless Steel

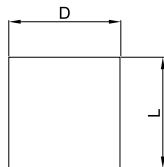


21GAS1

Sintered
Bronze



21GAS2



ORDER Model - D - L
EXAMPLE 21GAS1-06-10

FOIL FREE™

Model	D	L
21GAS1 21GAS2	05	10
	06	10
	08	10
	10	10
	12	12

สามารถขัดผิวแผงระบายอากาศไปพร้อมกับผิวแม่พิมพ์ได้ เมื่อขัดขึ้นรูปเสร็จควรใช้ลมเป่าเพื่อไล่เศษผงออกให้หมด

The Gas Vent surface can be work on with polishing tools along with the mold. Once finish use air to blow the powder out of the vent.

(!) Pore sizes : 0.035 - 0.050 mm.

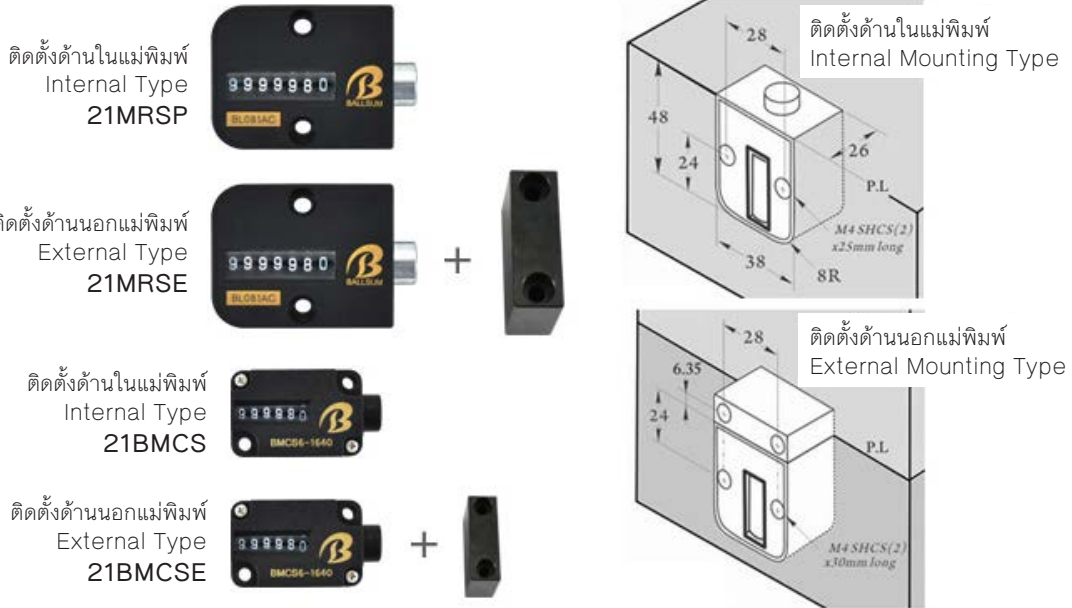
(M) Stainless Steel
Bronze

Mold Shot Counter - โมลด์ช็อตเคาน์เตอร์

โมลด์ช็อตเคาน์เตอร์ เครื่องนับจำนวนการใช้งานของแม่พิมพ์ฉีดพลาสติก สำหรับ ตรวจสอบอายุการใช้งานแม่พิมพ์อย่างแม่นยำ เป็นระบบ mechanic ไม่ใช่ไฟฟ้า ไม่สามารถเปลี่ยนแปลงตัวเลขได้ (non-resettable)

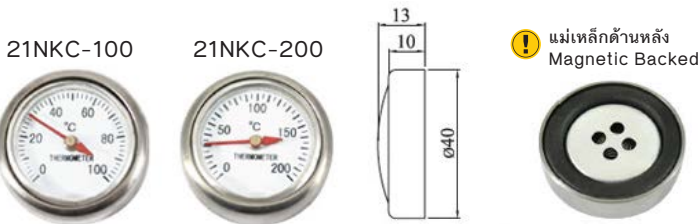


Mold Shot Counter **Ballsum, Oil Free.** For tracking the number of use for each mold. The Counter is non-resettable to give the most accurate counting of the closing times of each mould, ensuring the limit number of each mold is not overuse.



Order Code	Type	Mounting	Digits	Dimension (WxLxH)	Screws
21MRSP	Large	Internal Mount	7-Digits	38 x 47.6 x 24.4	2 pcs
21MRSE		External Mount			4 pcs
21BMCS	Compact	Internal Mount	6-Digits	20 x 30 x 16.5	2 pcs
21BMCSSE		External Mount			4 pcs

Magnetic Backed Thermometer - เทอร์โมมิเตอร์รุ่นแม่เหล็ก



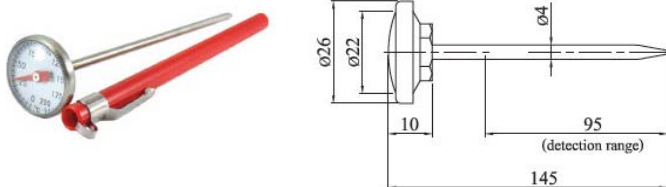
(M) Body: Stainless Steel
Back : Ferrite Magnet

Order Code	Temperature Range (°C)
21NKC-100	0-100
21NKC-200	0-200

Pen Type Thermometer - เทอร์โมมิเตอร์ รุ่นปากกา



Model: 21NKP-200



(M) Body: Stainless Steel
Sheath : Plastic

Order Code	Temperature Range (°C)
21NKP-200	0-200

ชิ้นส่วนแม่พิมพ์

Precision Shim Tapes - แผ่นซิมแบบกล่อง

Model: 17R376



Shim Tape



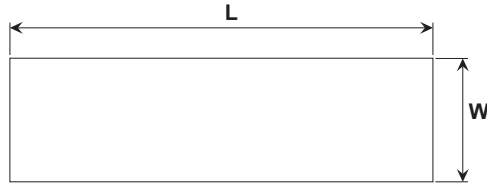
Shim Box

i Hasberg Shim Tape & Box

M ตัวอักษรดำ | Black Text : Carbon Steel (Shim Grade)
ตัวอักษรฟ้า | Blue Text : Stainless Steel (Shim Grade)

Thickness (mm)	Order Code						Tolerance
	Precision Shim Tape					Shim Box (10pc/box)	
	12.7mm x 2m	12.7mm x 5m	25mm x 5m	50mm x 5m	100mm x 5m	50mm x 300mm	
0.005	17R376-G5B						±0.001
0.01	17R376-01B					17R376-01K	
0.02	17R376-02B			17R376-02G		17R376-02K	±0.002
0.03	17R376-03B		17R376-03F	17R376-03G		17R376-03K	
0.04	17R376-04B					17R376-04K	
0.05	17R376-05B		17R376-05F	17R376-05G	17R376-05H	17R376-05K	±0.003
0.06	17R376-06B					17R376-06K	
0.07	17R376-07B					17R376-07K	
0.08	17R376-08B					17R376-08K	
0.09	17R376-09B					17R376-09K	±0.004
0.10	17R376-10B	17R376-10C	17R376-10F	17R376-10G	17R376-10H	17R376-10K	
0.12	17R376-12B						
0.15	17R376-15B						±0.005
0.18	17R376-18B						
0.20	17R376-20B		17R376-20F	17R376-20G	17R376-20H	17R376-20K	±0.006
0.25	17R376-25B						
0.30	17R376-30B		17R376-30F	17R376-30G	17R376-30H	17R376-30K	±0.007
0.35	17R376-35B						±0.008
0.40	17R376-40B			17R376-40G	17R376-40H	17R376-40K	
0.45	17R376-45B						±0.009
0.50	17R376-50B	17R376-50C	17R376-50F	17R376-50G	17R376-50H	17R376-50K	±0.01
0.60	17R376-60B					17R376-60K	
0.70	17R376-70B					17R376-70K	
0.80	17R376-80B					17R376-80K	±0.012
0.90	17R376-90B					17R376-90K	
1.00	17R376-A0B				17R376-A0H	17R376-A0K	±0.013

Precision Shim Stock - แผ่นชิมแบบแผ่น



ORDER EXAMPLE Model Thickness x W x L
17ST0.05x300x2M

Model: 17ST สแตนเลสสตีล เกรดแผ่นชิม
Stainless Steel (Shim Grade)

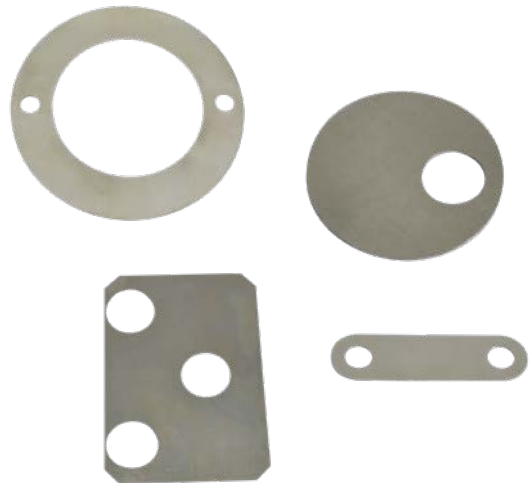
Thickness (mm)	W (mm)	L (M)	
0.01	100	1M	2M
0.02	150	1M	
	300	1M	2M
0.03	150	1M	
	300	1M	2M
0.04	150	1M	
	300	1M	2M
0.05	150 , 300	1M	2M
0.06	300	1M	2M
0.07	300	1M	2M
0.08	300	1M	2M
0.09	300	1M	2M
0.10	150 , 300	1M	2M
0.20	150 , 300	1M	2M
0.25	280	1M	2M
0.30	150 , 300	1M	2M
0.40	150 , 300	1M	2M
0.50	150 , 300	1M	2M
0.60	150	1M	
	150	1M	
0.80	300	1M	2M
	300	1M	2M
1.00	150 , 300	1M	2M
1.20	150	1M	
1.50	150	1M	
2.00	150 , 300	1M	2M
3.00	150	1M	
4.00	150	1M	
5.00	150	1M	

Model: 17BR ทองเหลือง เกรดแผ่นชิม
Brass (Shim Grade)

Thickness (mm)	W (mm)	L (M)	
0.05	150 , 300	1M	2M
0.10	150 , 300	1M	2M
0.20	150 , 300	1M	2M
0.30	150 , 300	1M	2M
0.40	150 , 300	1M	2M
0.50	150 , 300	1M	2M
0.80	150	1.2M	
1.00	150	1M	

Customizable!

แผ่นชิมสามารถตัดตามแบบได้ เพียงส่งแบบมาให้เรา
Shims can be cut to your drawing



Roller Carriers (Fit Type) - รางโรลเลอร์แบบฝัง

Model:
25BCRP22

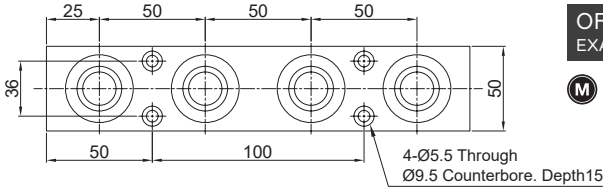
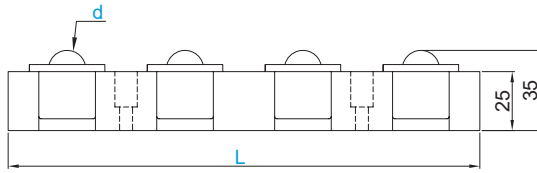
FOIL FREE™

ชิ้นส่วนทดแทน
Replacement Parts



Order Code

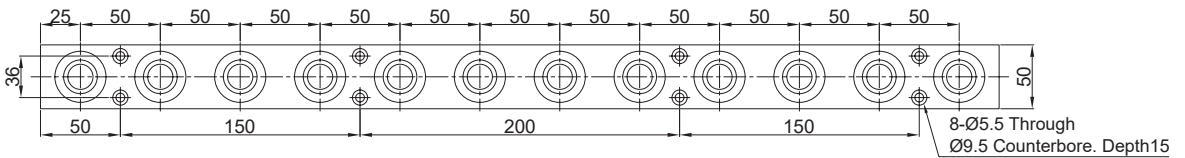
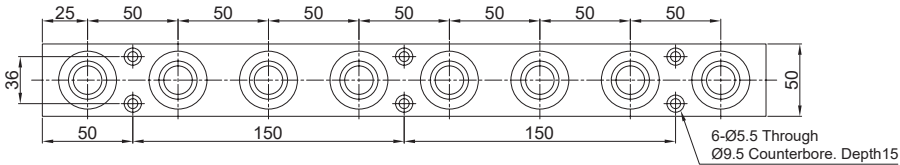
25SSBRP22



ORDER EXAMPLE Model d - L
25BCRP22-400

① Aluminum Ball Bearing

Model	d	L	Ball No.
25BCRP	22	200	4
		400	8
		600	12



Ball Roller Carriers - รางบอลโรลเลอร์

Model: 25CHI

FOIL FREE™

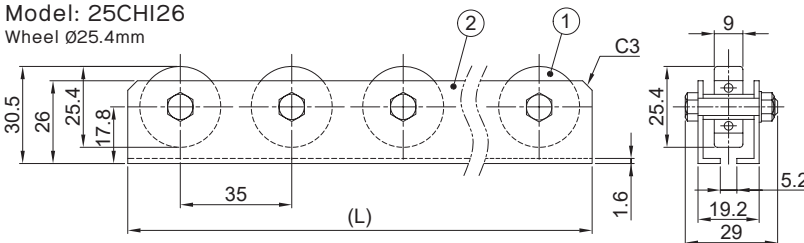


ORDER EXAMPLE Model - A
25CHI26-10

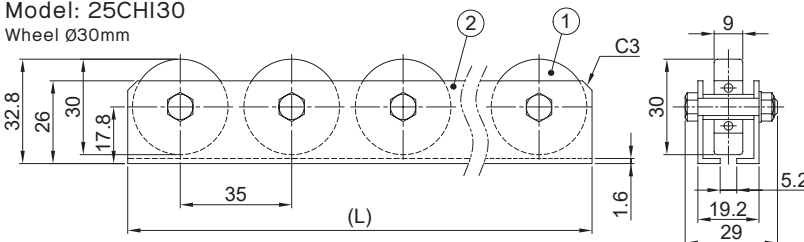
- ① ① SPC
- ② Ball Bearing

Model	A No. Wheels	L
	3	105
	4	140
	5	175
	6	210
	7	245
	8	280
	9	315
	10	350
	11	385
	12	420
	13	455
	14	490
	15	525
25CHI26	16	560
25CHI30	17	595
	18	630
	19	665
	20	700
	21	735
	22	770
	23	805
	24	840
	25	875
	26	910
	27	945
	28	980

Model: 25CHI26
Wheel Ø25.4mm



Model: 25CHI30
Wheel Ø30mm



ชิ้นส่วนทดแทน
Replacement Parts



Order Code	Wheel Size
25B6000ZZ	26mm
25B6200ZZ	30mm



Name	Ultra High Deflection	Super High Deflection	High Deflection	Medium Deflection	Lightest Load	Light Load	Medium Load
Model	19SSY	19SSU	19SSR	19SSS	19SF	19SL	19SM
Page	177	179	181	183	184	189	195



Name	Heavy Load	Extra Heavy Load	Super Heavy Load
Model	19SH	19SB	19SG
Page	201	207	212

! ข้อควรระวังในการใช้สปริง | Spring Usage Precautions



- ควรใช้ร่วมกับสปริงไกด์ เพื่อยืดอายุการใช้งานสปริง และลดอุบัติเหตุจากการทำงาน
Use with Spring Guide to increase spring life time and reduce accident
- ขนาดของแกนไกด์ควรเล็กกว่าค่าในของสปริง 1 มม (d - 1)
Guide diameter should be 1mm smaller than spring inside diameter (d - 1)
- ขนาดของช่องสวมสปริงควรโตกว่าค่าไดนอกของสปริง 1.5 มม (D + 1)
Spring housing should be 1.5mm larger than the spring outer diameter (D + 1)
- ความยาวไกด์ขั้นต่ำอยู่ที่ 150% ของความสูงเริ่มต้น และแกนไกด์ควรทำแชมเฟอร์ที่ระดับ C3
Guide length minimum at 150% of initial set height, and should be C3 chamfer
- กำหนดค่ายุบตัวเริ่มต้น เพื่อรักษาสภาพส่วนหัวและท้ายของสปริง
Setting an initial deflection to stabilize the top and bottom ends of the spring
- สปริงแต่ละตัวควรวางในตำแหน่งของตายที่ขนาดกัน
The mounting surface of springs should be sufficient parallel
- ไม่ควรใช้สปริงเกินค่าขีดจำกัด
Do not use spring over their allow limits
- ไม่ควรใช้งานเมื่อมีสิ่งแปลกปลอมเข้าไปติดค้างในสปริง
Do not use when foreign objects are caught in the spring
- ไม่ควรนำสปริงมาต่อกันด้านหัวท้าย ควรเลือกความยาวที่ถูกต้องหรือสอบถามเพื่อสั่งทำขนาดพิเศษ
Do not stack springs to increase length, choose the right length or ask for customize length
- ไม่ควรนำสปริงมาซ้อนกันสองชั้น (ตัวเล็กในตัวใหญ่)
Do not use spring inside another spring
- ไม่ควรใช้สปริงในแนวนอน
Do not use spring horizontally

ตารางการเลือกสปริง Spring Selection Chart



Type	Model	Color	Outer Diameter		Free Length		1,000,000 Free Length %	Load N (kgf)	
			Min	Max	Min	Max		Min	Max
Ultra High Deflection	19SSY	Light Green	∅11	∅42	20	300	65.0%	29.4 (3.0)	392.3 (40.0)
Super High Deflection	19SSU	Light Blue	∅10.5	∅43	15	300	60.0%	68.6 (7.0)	588.4 (60.0)
High Deflection	19SSR	Ivory White	∅10.5	∅46	15	300	50.0%	127.5 (13)	3579.4 (110)
Medium Deflection	19SSS	Orange	∅10.5	∅46	30	300	40.0%	976.15 (30)	4230.2 (130)
Lightest Load	19SF	Yellow	∅6	∅70	10	500	40.0%	58.8 (6)	2255.5 (230)
Light Load	19SL	Dark Blue	∅6	∅70	10	500	32.0%	78.5 (8)	3814.4 (389)
Medium Load	19SM	Red	∅6	∅70	10	350	25.6%	107.9 (11)	5638.8 (525)
Heavy Load	19SH	Dark Green	∅6	∅70	10	350	19.2%	166.7 (17)	8472.9 (864)
Extra Heavy Load	19SB	Brown	∅6	∅70	10	350	16.0%	255.0 (26)	11297.3 (152)
Super Heavy Load	19SG	Grey	∅10	∅50	15	300	16.0%	392.3 (40)	10101.2 (1040)

Spring Tolerance

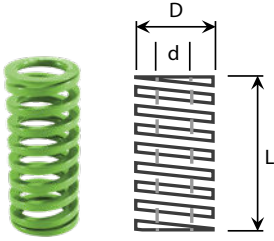
Outer Dia	Inner Dia	Free Length		Load (kgf)	Coil Direction
		< 50mm	> 55mm		
+ 0mm - 0mm	+ 0.7mm - 0.1mm	±0.5mm	±1%	±10%	Right

วิธีคำนวณค่ารับแรงกดของสปริง
Spring force calculation

$Force = Spring\ Constant \times Deflection$
 $N = N/mm \times Deflection$
 $kgf = kgf/mm \times Deflection$

สปริงแม่พิมพ์

Ultra-High Deflection Spring - สปริงยวบตัวได้สูงมากพิเศษ



สปริงสีเขียวอ่อน
Light Green Spring
Model: 19SSY



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 3° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1.5%

ORDER EXAMPLE Model D - L
19SSY12.5-050

SAE9245

JIS Standard

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					65% Deflection	Load N (kgf)
11	7	7	5.0	2.26 (0.23)	13.0	29.4 (3.0)
			6.3	1.81 (0.18)	16.3	
			7.5	1.51 (0.15)	19.5	
			8.8	1.29 (0.13)	22.8	
			10.0	1.13 (0.12)	26.0	
			11.3	1.01 (0.10)	29.3	
			12.5	0.91 (0.092)	32.5	
			13.8	0.82 (0.084)	35.8	
			15.0	0.75 (0.077)	39.0	
			16.3	0.70 (0.071)	42.3	
			17.5	0.65 (0.066)	45.5	
			18.8	0.60 (0.061)	48.8	
			20.0	0.57 (0.058)	52.0	
			22.5	0.50 (0.051)	58.8	
25.0	0.45 (0.046)	65.0				
12.5	6.5	6.5	5.0	3.09 (0.32)	13.0	40.2 (4.1)
			6.3	2.47 (0.25)	16.3	
			7.5	2.06 (0.21)	19.5	
			8.8	1.77 (0.18)	22.8	
			10.0	1.55 (0.16)	26.0	
			11.3	1.37 (0.14)	29.3	
			12.5	1.24 (0.13)	32.5	
			13.8	1.12 (0.11)	35.8	
			15.0	1.03 (0.11)	39.0	
			16.3	0.95 (0.10)	42.3	
			17.5	0.88 (0.090)	45.5	
			18.8	0.82 (0.084)	48.8	
			20.0	0.77 (0.079)	52.0	
			22.5	0.69 (0.070)	58.5	
25.0	0.62 (0.063)	65.0				
27.5	0.56 (0.057)	71.5				
30.0	0.52 (0.053)	78.0				
31.3	0.49 (0.050)	81.3				

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times		
					65% Deflection	Load N (kgf)	
16.5	10.5	10.5	5.0	7.02 (0.72)	13.0	91.2 (9.3)	
			6.3	5.61 (0.57)	16.3		
			7.5	4.68 (0.48)	19.5		
			8.8	4.01 (0.41)	22.8		
			10.0	3.51 (0.36)	26.0		
			11.3	3.12 (0.32)	29.3		
			12.5	2.81 (0.29)	32.5		
			13.8	2.55 (0.26)	35.8		
			15.0	2.34 (0.24)	39.0		
			16.3	2.16 (0.22)	42.3		
			17.5	2.00 (0.20)	45.5		
			18.8	1.87 (0.19)	48.8		
			20.0	1.75 (0.18)	52.0		
			22.5	1.56 (0.16)	58.5		
25.0	1.40 (0.14)	65.0					
110	27.5	1.28 (0.13)	71.5	108.9 (11.1)			
120	30.0	1.17 (0.12)	78.0				
125	31.3	1.12 (0.11)	81.3				
150	37.5	0.94 (0.10)	97.5				
20.5	13.5	13.5	7.5		5.58 (0.57)	19.5	108.9 (11.1)
			8.8		4.78 (0.49)	22.8	
			10.0		4.19 (0.43)	26.0	
			11.3		3.72 (0.38)	29.3	
			12.5		3.35 (0.34)	32.5	
			13.8		3.04 (0.31)	35.8	
			15.0		2.79 (0.28)	39.0	
			16.3		2.58 (0.26)	42.3	
			17.5		2.39 (0.24)	45.5	
			18.8		2.23 (0.23)	48.8	
			20.0	2.09 (0.21)	52.0		
			22.5	1.86 (0.19)	58.5		
			25.0	1.67 (0.17)	65.0		
			27.5	1.52 (0.16)	71.5		
30.0	1.40 (0.14)	78.0					
31.3	1.34 (0.14)	81.3					
32.5	1.29 (0.13)	84.5					
35.0	1.20 (0.12)	91.0					
37.5	1.12 (0.11)	97.5					

Ultra-High Deflection Spring - สปริงยวบตัวได้สูงมากพิเศษ

ORDER EXAMPLE

Model **D - L**
19SSY12.5-050

สปริงสีเขียวอ่อน
Light Green Spring
Model: 19SSY

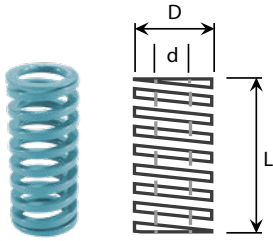
Spring Load Chart



Springs

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					65% Deflection	Load N (kgf)
24.5	16.5	7.5	6.99 (0.71)	19.5	136.3 (13.9)	
		8.8	5.99 (0.61)	22.8		
		10.0	5.24 (0.53)	26.0		
		11.3	4.66 (0.48)	29.3		
		12.5	4.19 (0.43)	32.5		
		13.8	3.81 (0.39)	35.8		
		15.0	3.50 (0.36)	39.0		
		16.3	3.23 (0.33)	42.3		
		17.5	3.00 (0.31)	45.5		
		18.8	2.80 (0.29)	48.8		
		20.0	2.62 (0.27)	52.0		
		22.5	2.33 (0.24)	58.5		
		25.0	2.10 (0.21)	65.0		
		27.5	1.91 (0.19)	71.5		
		30.0	1.75 (0.18)	78.0		
		31.3	1.68 (0.17)	81.3		
32.5	1.61 (0.16)	84.5				
35.0	1.50 (0.15)	91.0				
37.5	1.40 (0.14)	97.5				
43.8	1.20 (0.12)	113.8				
50.0	1.05 (0.11)	130.0				
30	21	8.8	8.79 (0.90)	22.8	200.1 (20.4)	
		10.0	7.69 (0.78)	26.0		
		11.3	6.84 (0.70)	29.3		
		12.5	6.16 (0.63)	32.5		
		13.8	5.60 (0.57)	35.8		
		15.0	5.13 (0.52)	39.0		
		16.3	4.74 (0.48)	42.3		
		17.5	4.40 (0.45)	45.5		
		18.8	4.10 (0.42)	48.8		
		20.0	3.85 (0.39)	52.0		
		22.5	3.42 (0.35)	58.5		
		25.0	3.08 (0.31)	65.0		
		27.5	2.80 (0.29)	71.5		
		30.0	2.56 (0.26)	78.0		
		31.3	2.46 (0.25)	81.3		
		32.5	2.37 (0.24)	84.5		
		35.0	2.20 (0.22)	91.0		
		37.5	2.05 (0.21)	97.5		
		40.0	1.92 (0.20)	104.0		
		42.5	1.81 (0.18)	110.5		
43.8	1.76 (0.18)	113.8				
45.0	1.71 (0.17)	117.0				
47.5	1.62 (0.17)	123.5				
50.0	1.54 (0.16)	130.0				
62.5	1.23 (0.13)	162.5				
75.0	1.03 (0.10)	195.0				

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					65% Deflection	Load N (kgf)
37	26	10.0	11.32 (1.15)	26.0	294.2 (30.0)	
		11.3	10.06 (1.03)	29.3		
		12.5	9.05 (0.92)	32.5		
		13.8	8.23 (0.84)	35.8		
		15.0	7.54 (0.77)	39.0		
		16.3	6.96 (0.71)	42.3		
		17.5	6.47 (0.66)	45.5		
		18.8	6.03 (0.62)	48.8		
		20.0	5.66 (0.58)	52.0		
		22.5	5.03 (0.51)	58.5		
		25.0	4.53 (0.46)	65.0		
		27.5	4.11 (0.42)	71.5		
		30.0	3.77 (0.38)	78.0		
		32.5	3.48 (0.36)	84.5		
		35.0	3.23 (0.33)	91.0		
		37.5	3.02 (0.31)	97.5		
40.0	2.83 (0.29)	104.0				
42.5	2.66 (0.27)	110.5				
45.0	2.51 (0.26)	117.0				
47.5	2.38 (0.24)	123.5				
50.0	2.26 (0.23)	130.0				
56.3	2.01 (0.21)	146.3				
62.5	1.81 (0.18)	162.5				
68.8	1.65 (0.17)	178.8				
75.0	1.51 (0.15)	195.0				
42	31	12.5	12.07 (1.23)	32.5	392.3 (40.0)	
		15.0	10.06 (1.03)	39.0		
		17.5	8.62 (0.88)	45.5		
		20.0	7.54 (0.77)	52.0		
		22.5	6.71 (0.68)	58.5		
		25.0	6.03 (0.62)	65.0		
		27.5	5.49 (0.56)	71.5		
		30.0	5.03 (0.51)	78.0		
		32.5	4.64 (0.47)	84.5		
		35.0	4.31 (0.44)	91.0		
		37.5	4.02 (0.41)	97.5		
		40.0	3.77 (0.38)	104.0		
		42.5	3.55 (0.36)	110.5		
		45.0	3.35 (0.34)	117.0		
		47.5	3.18 (0.32)	123.5		
		50.0	3.02 (0.31)	130.0		
56.3	2.68 (0.27)	146.3				
62.5	2.41 (0.25)	162.5				
68.8	2.19 (0.22)	178.8				
75.0	2.01 (0.21)	195.0				



สปริงสีฟ้าอ่อน
Light Blue Spring
Model: 19SSU



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 3° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1.5%

ORDER EXAMPLE Model D - L
19SSU12.5-050

SAE9245

JIS Standard

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					60% Deflection	Load N (kgf)
10.5	6	15	4.5	7.63 (0.78)	9	68.6 (7.0)
		20	6.0	5.72 (0.58)	12	
		25	7.5	4.58 (0.47)	15	
		30	9.0	3.81 (0.39)	18	
		35	10.5	3.27 (0.33)	21	
		40	12.0	2.86 (0.29)	24	
		45	13.5	2.54 (0.26)	27	
		50	15.0	2.29 (0.23)	30	
		55	16.5	2.08 (0.21)	33	
		60	18.0	1.91 (0.19)	36	
		65	19.5	1.76 (0.18)	39	
		70	21.0	1.63 (0.17)	42	
12.5	7	15	4.5	8.72 (0.89)	9	78.5 (8.0)
		20	6.0	6.54 (0.67)	12	
		25	7.5	5.23 (0.53)	15	
		30	9.0	4.36 (0.44)	18	
		35	10.5	3.74 (0.38)	21	
		40	12.0	3.27 (0.33)	24	
		45	13.5	2.91 (0.30)	27	
		50	15.0	2.62 (0.27)	30	
		55	16.5	2.38 (0.24)	33	
		60	18.0	2.18 (0.22)	36	
		65	19.5	2.01 (0.21)	39	
		70	21.0	1.87 (0.19)	42	
14.5	8.5	15	4.5	10.90 (1.11)	9	98.1 (10.0)
		20	6.0	8.17 (0.83)	12	
		25	7.5	6.54 (0.67)	15	
		30	9.0	5.45 (0.56)	18	
		35	10.5	4.67 (0.48)	21	
		40	12.0	4.09 (0.42)	24	
		45	13.5	3.63 (0.37)	27	
		50	15.0	3.27 (0.33)	30	
		55	16.5	2.97 (0.30)	33	
		60	18.0	2.72 (0.28)	36	
		65	19.5	2.51 (0.26)	39	
		70	21.0	2.33 (0.24)	42	
17	10.5	15	4.5	12.26 (1.25)	9	147.1 (15.0)
		20	6.0	9.81 (1.00)	12	
		25	7.5	8.17 (0.83)	15	
		30	9.0	7.00 (0.71)	18	
		35	10.5	6.13 (0.63)	21	
		40	12.0	5.45 (0.56)	24	
		45	13.5	4.90 (0.50)	27	
		50	15.0	4.46 (0.45)	30	
		55	16.5	4.09 (0.42)	33	
		60	18.0	3.77 (0.38)	36	
		65	19.5	3.50 (0.36)	39	
		70	21.0	3.27 (0.33)	42	
21	13.5	15	4.5	15.04 (1.53)	9	225.6 (23.0)
		20	6.0	12.53 (1.28)	12	
		25	7.5	10.74 (1.10)	15	
		30	9.0	9.40 (0.96)	18	
		35	10.5	8.35 (0.85)	21	
		40	12.0	7.52 (0.77)	24	
		45	13.5	6.83 (0.70)	27	
		50	15.0	6.27 (0.64)	30	
		55	16.5	5.78 (0.59)	33	
		60	18.0	5.37 (0.55)	36	
		65	19.5	5.01 (0.51)	39	
		70	21.0	4.70 (0.48)	42	
25	16.5	15	4.5	18.20 (1.85)	9	300.0 (30.0)
		20	6.0	14.85 (1.52)	12	
		25	7.5	12.53 (1.28)	15	
		30	9.0	10.74 (1.10)	18	
		35	10.5	9.40 (0.96)	21	
		40	12.0	8.35 (0.85)	24	
		45	13.5	7.52 (0.77)	27	
		50	15.0	6.83 (0.70)	30	
		55	16.5	6.27 (0.64)	33	
		60	18.0	5.78 (0.59)	36	
		65	19.5	5.37 (0.55)	39	
		70	21.0	5.01 (0.51)	42	

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					60% Deflection	Load N (kgf)
17	10.5	20	6.0	12.26 (1.25)	12	147.1 (15.0)
		25	7.5	9.81 (1.00)	15	
		30	9.0	8.17 (0.83)	18	
		35	10.5	7.00 (0.71)	21	
		40	12.0	6.13 (0.63)	24	
		45	13.5	5.45 (0.56)	27	
		50	15.0	4.90 (0.50)	30	
		55	16.5	4.46 (0.45)	33	
		60	18.0	4.09 (0.42)	36	
		65	19.5	3.77 (0.38)	39	
		70	21.0	3.50 (0.36)	42	
		75	22.5	3.27 (0.33)	45	
21	13.5	20	6.0	15.04 (1.53)	12	225.6 (23.0)
		25	7.5	12.53 (1.28)	15	
		30	9.0	10.74 (1.10)	18	
		35	10.5	9.40 (0.96)	21	
		40	12.0	8.35 (0.85)	24	
		45	13.5	7.52 (0.77)	27	
		50	15.0	6.83 (0.70)	30	
		55	16.5	6.27 (0.64)	33	
		60	18.0	5.78 (0.59)	36	
		65	19.5	5.37 (0.55)	39	
		70	21.0	5.01 (0.51)	42	
		75	22.5	4.70 (0.48)	45	
25	16.5	20	6.0	18.20 (1.85)	12	300.0 (30.0)
		25	7.5	14.85 (1.52)	15	
		30	9.0	12.53 (1.28)	18	
		35	10.5	10.74 (1.10)	21	
		40	12.0	9.40 (0.96)	24	
		45	13.5	8.35 (0.85)	27	
		50	15.0	7.52 (0.77)	30	
		55	16.5	6.83 (0.70)	33	
		60	18.0	6.27 (0.64)	36	
		65	19.5	5.78 (0.59)	39	
		70	21.0	5.37 (0.55)	42	
		75	22.5	5.01 (0.51)	45	

Super-High Deflection Spring - สปริงยวบตัวได้สูงมาก

ORDER EXAMPLE

Model D - L
19SSU12.5-050

สปริงสีฟ้าอ่อน
Light Blue Spring
Model: 19SSU

Spring Load Chart



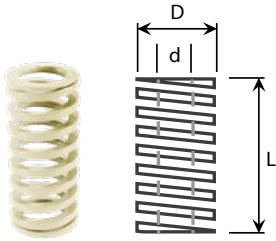
Springs

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					60% Deflection	Load N (kgf)
26	16.5	30	9.0	16.34 (1.67)	18	294.2 (30.0)
		35	10.5	14.01 (1.43)	21	
		40	12.0	12.26 (1.25)	24	
		45	13.5	10.90 (1.11)	27	
		50	15.0	9.81 (1.00)	30	
		55	16.5	8.92 (0.91)	33	
		60	18.0	8.17 (0.83)	36	
		65	19.5	7.54 (0.77)	39	
		70	21.0	7.00 (0.71)	42	
		75	22.5	6.54 (0.67)	45	
		80	24.0	6.13 (0.63)	48	
		90	27.0	5.45 (0.56)	54	
		100	30.0	4.90 (0.50)	60	
		110	33.0	4.46 (0.45)	66	
		120	36.0	4.09 (0.42)	72	
		125	37.5	3.92 (0.40)	75	
130	39.0	3.77 (0.38)	78			
140	42.0	3.50 (0.36)	84			
150	45.0	3.27 (0.33)	90			
175	52.5	2.80 (0.29)	105			
200	60.0	2.45 (0.25)	120			
225	67.5	2.18 (0.22)	135			
250	75.0	1.96 (0.20)	150			
31	21	35	10.5	17.75 (1.81)	21	372.7 (38.0)
		40	12.0	15.53 (1.58)	24	
		45	13.5	13.80 (1.41)	27	
		50	15.0	12.42 (1.27)	30	
		55	16.5	11.29 (1.15)	33	
		60	18.0	10.35 (1.06)	36	
		65	19.5	9.56 (0.97)	39	
		70	21.0	8.87 (0.90)	42	
		75	22.5	8.28 (0.84)	45	
		80	24.0	7.76 (0.79)	48	
		90	27.0	6.90 (0.70)	54	
		100	30.0	6.21 (0.63)	60	
		110	33.0	5.65 (0.58)	66	
		120	36.0	5.18 (0.53)	72	
		125	37.5	4.97 (0.51)	75	
		130	39.0	4.78 (0.49)	78	
		140	42.0	4.44 (0.45)	84	
		150	45.0	4.14 (0.42)	90	
		160	48.0	3.88 (0.40)	96	
		170	51.0	3.65 (0.37)	102	
175	52.5	3.55 (0.36)	105			
180	54.0	3.45 (0.35)	108			
190	57.0	3.27 (0.33)	114			
200	60.0	3.11 (0.32)	120			
250	75.0	2.48 (0.25)	150			
300	90.0	2.07 (0.21)	180			

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					60% Deflection	Load N (kgf)
37	26	40	12.0	19.20 (1.96)	24	460.9 (47.0)
		45	13.5	17.07 (1.74)	27	
		50	15.0	15.36 (1.57)	30	
		55	16.5	13.97 (1.42)	33	
		60	18.0	12.80 (1.31)	36	
		65	19.5	11.82 (1.21)	39	
		70	21.0	10.97 (1.12)	42	
		75	22.5	10.24 (1.04)	45	
		80	24.0	9.60 (0.98)	48	
		90	27.0	8.54 (0.87)	54	
		100	30.0	7.68 (0.78)	60	
		110	33.0	6.98 (0.71)	66	
		120	36.0	6.40 (0.65)	72	
		130	39.0	5.91 (0.60)	78	
		140	42.0	5.49 (0.56)	84	
		150	45.0	5.12 (0.52)	90	
160	48.0	4.80 (0.49)	96			
170	51.0	4.52 (0.46)	102			
180	54.0	4.27 (0.44)	108			
190	57.0	4.04 (0.41)	114			
200	60.0	3.84 (0.39)	120			
225	67.5	3.41 (0.35)	135			
250	75.0	3.07 (0.31)	150			
275	82.5	2.79 (0.28)	165			
300	90.0	2.56 (0.26)	180			
43	31	50	15.0	19.61 (2.00)	30	588.4 (60.0)
		60	18.0	16.34 (1.67)	36	
		70	21.0	14.01 (1.43)	42	
		80	24.0	12.26 (1.25)	48	
		90	27.0	10.90 (1.11)	54	
		100	30.0	9.81 (1.00)	60	
		110	33.0	8.92 (0.91)	66	
		120	36.0	8.17 (0.83)	72	
		130	39.0	7.54 (0.77)	78	
		140	42.0	7.00 (0.71)	84	
		150	45.0	6.54 (0.67)	90	
		160	48.0	6.13 (0.63)	96	
		170	51.0	5.77 (0.59)	102	
		180	54.0	5.45 (0.56)	108	
		190	57.0	5.16 (0.53)	114	
		200	60.0	4.90 (0.50)	120	
225	67.5	4.36 (0.44)	135			
250	75.0	3.92 (0.40)	150			
275	82.5	3.57 (0.36)	165			
300	90.0	3.27 (0.33)	180			

สปริงแม่พิมพ์

High Deflection Spring - สปริงยวบตัวได้สูง



สปริงสีขาววงข้าง
Ivory White Spring
Model: 19SSR



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 3° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1.5%

ORDER EXAMPLE

Model D - L
19SSR12.5-050



SAE9245



JIS Standard

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					50% Deflection	Load N (kgf)
10.5	6	6	6	10.46 (1.07)	7.5	78.5 (8.0)
		8	7.85 (0.80)	10.0		
		10	6.28 (0.64)	12.5		
		12	5.23 (0.53)	15.0		
		14	4.48 (0.46)	17.5		
		16	3.92 (0.40)	20.0		
		18	3.49 (0.36)	22.5		
		20	3.14 (0.32)	25.0		
		22	2.85 (0.29)	27.5		
		24	2.62 (0.27)	30.0		
		26	2.41 (0.25)	32.5		
		28	2.24 (0.23)	35.0		
12.5	7	30	2.09 (0.21)	37.5	88.3 (9.0)	
		32	1.96 (0.20)	40.0		
		6	11.77 (1.20)	7.5		
		8	8.83 (0.90)	10.0		
		10	7.06 (0.72)	12.5		
		12	5.88 (0.60)	15.0		
		14	5.04 (0.51)	17.5		
		16	4.41 (0.45)	20.0		
		18	3.92 (0.40)	22.5		
		20	3.53 (0.36)	25.0		
		22	3.21 (0.33)	27.5		
		24	2.94 (0.30)	30.0		
26	2.72 (0.28)	32.5				
28	2.52 (0.26)	35.0				
30	2.35 (0.24)	37.5				
32	2.21 (0.23)	40.0				
36	1.96 (0.20)	45.0				
40	1.77 (0.18)	50.0				

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					50% Deflection	Load N (kgf)
14.5	8.5	6	6	17.00 (1.73)	7.5	127.5 (13.0)
		8	12.75 (1.30)	10.0		
		10	10.20 (1.04)	12.5		
		12	8.50 (0.87)	15.0		
		14	7.28 (0.74)	17.5		
		16	6.37 (0.65)	20.0		
		18	5.67 (0.58)	22.5		
		20	5.10 (0.52)	25.0		
		22	4.64 (0.47)	27.5		
		24	4.25 (0.43)	30.0		
		26	3.92 (0.40)	32.5		
		28	3.64 (0.37)	35.0		
17	10.5	30	3.40 (0.35)	37.5	196.1 (20.0)	
		32	3.19 (0.33)	40.0		
		36	2.83 (0.29)	45.0		
		40	2.55 (0.26)	50.0		
		50	2.04 (0.21)	62.5		
		60	1.70 (0.17)	75.0		
		10	15.69 (1.60)	12.5		
		12	13.08 (1.33)	15.0		
		14	11.21 (1.14)	17.5		
		16	9.81 (1.00)	20.0		
		18	8.72 (0.89)	22.5		
		20	7.85 (0.80)	25.0		
22	7.13 (0.73)	27.5				
24	6.54 (0.67)	30.0				
26	6.03 (0.62)	32.5				
28	5.60 (0.57)	35.0				
30	5.23 (0.53)	37.5				
32	4.90 (0.50)	40.0				
36	4.36 (0.44)	45.0				
40	3.92 (0.40)	50.0				
50	3.14 (0.32)	62.5				
60	2.62 (0.27)	75.0				
70	2.24 (0.23)	87.5				

High Deflection Spring - สปริงยวบตัวได้สูง

ORDER
EXAMPLE

Model D - L
19SSR12.5-050

สปริงสีขาววงข้าง
Ivory White Spring
Model: 19SSR

Spring Load Chart



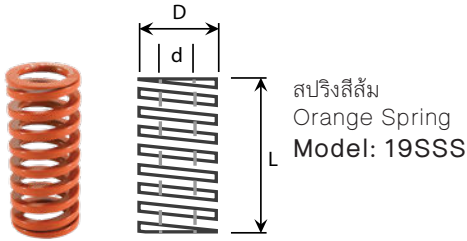
Springs

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times		
					50% Deflection	Load N (kgf)	
21	13.5	25	10	23.54 (2.40)	12.5	294.2 (30.0)	
		30	12	19.61 (2.00)	15.0		
		35	14	16.81 (1.71)	17.5		
		40	16	14.71 (1.50)	20.0		
		45	18	13.08 (1.33)	22.5		
		50	20	11.77 (1.20)	25.0		
		55	22	10.70 (1.09)	27.5		
		60	24	9.81 (1.00)	30.0		
		65	26	9.05 (0.92)	32.5		
		70	28	8.41 (0.86)	35.0		
		75	30	7.85 (0.80)	37.5		
		80	32	7.35 (0.75)	40.0		
		90	36	6.54 (0.67)	45.0		
		100	40	5.88 (0.60)	50.0		
		110	44	5.35 (0.55)	55.0		
		120	48	4.90 (0.50)	60.0		
		125	50	4.71 (0.48)	62.5		
		130	52	4.53 (0.46)	65.0		
		140	56	4.20 (0.43)	70.0		
		150	60	3.92 (0.40)	75.0		
26	16.5	70	3.36 (0.34)	87.5	392.3 (40.0)		
		200	80	2.94 (0.30)		100.0	
		25	10	31.38 (3.20)		12.5	490.3 (50.0)
		30	12	26.15 (2.67)		15.0	
		35	14	22.42 (2.29)		17.5	
		40	16	19.61 (2.00)		20.0	
		45	18	17.43 (1.78)		22.5	
		50	20	15.69 (1.60)		25.0	
		55	22	14.26 (1.45)		27.5	
		60	24	13.08 (1.33)		30.0	
		65	26	12.07 (1.23)		32.5	
		70	28	11.21 (1.14)		35.0	
		75	30	10.46 (1.07)		37.5	
		80	32	9.81 (1.00)		40.0	
		90	36	8.72 (0.89)		45.0	
		100	40	7.85 (0.80)		50.0	
		110	44	7.13 (0.73)		55.0	
		120	48	6.54 (0.67)		60.0	
		125	50	6.28 (0.64)		62.5	
		130	52	6.03 (0.62)		65.0	
140	56	5.60 (0.57)	70.0				
150	60	5.23 (0.53)	75.0				
175	70	4.48 (0.46)	87.5				
200	80	3.92 (0.40)	100.0				
225	90	3.49 (0.36)	112.5				
250	100	3.14 (0.32)	125.0				
31	21	35	14	28.02 (2.86)	17.5	490.3 (50.0)	
		40	16	24.52 (2.50)	20.0		
		45	18	21.79 (2.22)	22.5		
		50	20	19.61 (2.00)	25.0		
		55	22	17.83 (1.82)	27.5		
		60	24	16.34 (1.67)	30.0		
		65	26	15.09 (1.54)	32.5		
		70	28	14.01 (1.43)	35.0		
		75	30	13.08 (1.33)	37.5		
		80	32	12.26 (1.25)	40.0		
		90	36	10.90 (1.11)	45.0		
		100	40	9.81 (1.00)	50.0		
		110	44	8.92 (0.91)	55.0		
		120	48	8.17 (0.83)	60.0		
		125	50	7.85 (0.80)	62.5		
130	52	7.54 (0.77)	65.0				
140	56	7.00 (0.71)	70.0				
150	60	6.54 (0.67)	75.0				

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times				
					50% Deflection	Load N (kgf)			
31	21	160	67	6.13 (0.63)	80.0	490.3 (50.0)			
		170	68	5.77 (0.59)	85.0				
		175	70	5.60 (0.57)	87.5				
		180	72	5.45 (0.56)	90.0				
		190	76	5.16 (0.53)	95.0				
		200	80	4.90 (0.50)	100.0				
		250	100	3.92 (0.40)	125.0				
		300	120	3.27 (0.33)	150.0				
		39	26	35	14		33.62 (3.43)	17.5	588.4 (60.0)
				40	16		29.42 (3.00)	20.0	
45	18			26.15 (2.67)	22.5				
50	20			23.54 (2.40)	25.0				
55	22			21.40 (2.18)	27.5				
60	24			19.61 (2.00)	30.0				
65	26			18.10 (1.85)	32.5				
70	28			16.81 (1.71)	35.0				
75	30			15.69 (1.60)	37.5				
80	32			14.71 (1.50)	40.0				
46	33	90	36	13.08 (1.33)	45.0	1079 (110)			
		100	40	11.77 (1.20)	50.0				
		110	44	10.70 (1.09)	55.0				
		120	48	9.81 (1.00)	60.0				
		125	50	9.41 (0.96)	62.5				
		130	52	9.05 (0.92)	65.0				
		140	56	8.41 (0.86)	70.0				
		150	60	7.85 (0.80)	75.0				
		160	64	7.35 (0.75)	80.0				
		170	68	6.92 (0.71)	85.0				
175	70	6.72 (0.69)	87.5						
46	33	180	72	6.54 (0.67)	90.0	1079 (110)			
		190	76	6.19 (0.63)	95.0				
		200	80	5.88 (0.60)	100.0				
		250	100	4.71 (0.48)	125.0				
		300	120	3.92 (0.40)	150.0				
		50	20	43.15 (4.40)	25.0		1079 (110)		
		60	24	35.96 (3.67)	30.0				
		70	28	30.82 (3.14)	35.0				
		80	32	26.97 (2.75)	40.0				
		90	36	23.97 (2.44)	45.0				
		100	40	21.57 (2.20)	50.0				
		110	44	19.61 (2.00)	55.0				
		120	48	17.98 (1.83)	60.0				
		125	50	17.26 (1.76)	62.5				
		130	52	16.60 (1.69)	65.0				
140	56	15.41 (1.57)	70.0						
150	60	14.38 (1.47)	75.0						
175	70	12.33 (1.26)	87.5						
200	80	10.79 (1.10)	100.0						
225	90	9.59 (0.98)	112.5						
250	100	8.63 (0.88)	125.0						
275	110	7.85 (0.80)	137.5						
300	120	7.19 (0.73)	150.0						

สปริงแม่พิมพ์

Medium Deflection Spring - สปริงยวบตัวได้ปานกลาง



แรงกด Load +20% -10%

ความได้ฉาก Perpendicularity 3° or less

ระยะเพื่อความยาว Free Length ±2%

ORDER EXAMPLE

Model D - L
19SSS21-050

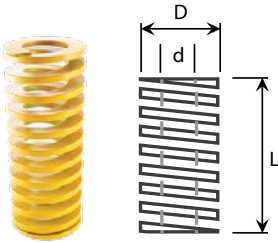
SAE9245

JIS Standard

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					40% Deflection	Load N (kgf)
17	30	10.5	15.0	24.52 (2.50)	12	294.2 (30.0)
	40		20.0	18.39 (1.88)	16	
	50		25.0	14.71 (1.50)	20	
	60		30.0	12.26 (1.25)	24	
	70		35.0	10.51 (1.07)	28	
	80		40.0	9.19 (0.94)	32	
	90		45.0	8.17 (0.83)	36	
	100		50.0	7.35 (0.75)	40	
21	30	13.5	15.0	35.17 (3.59)	12	422.0 (43.0)
	40		20.0	26.38 (2.69)	16	
	50		25.0	21.10 (2.15)	20	
	60		30.0	17.58 (1.79)	24	
	70		35.0	15.07 (1.54)	28	
	80		40.0	13.19 (1.34)	32	
	90		45.0	11.72 (1.20)	36	
	100		50.0	10.55 (1.08)	40	
	110		55.0	9.59 (0.98)	44	
	125		62.5	8.44 (0.86)	50	
26	30	16.5	15.0	47.42 (4.84)	12	569.0 (58.0)
	40		20.0	35.56 (3.63)	16	
	50		25.0	28.45 (2.90)	20	
	60		30.0	23.71 (2.42)	24	
	70		35.0	20.32 (2.07)	28	
	80		40.0	17.78 (1.81)	32	
	90		45.0	15.81 (1.61)	36	
	100		50.0	14.23 (1.45)	40	
	110		55.0	12.93 (1.32)	44	
	125		62.5	11.38 (1.16)	50	
150	75.0	9.48 (0.97)	60			

D	L	d	Solid Length	Spring Constant N/mm (kgf/mm)	1,000,000 times	
					40% Deflection	Load N (kgf)
31	40	21	20.0	49.00 (5.00)	16	784.0 (79.9)
	50		25.0	39.20 (4.00)	20	
	60		30.0	32.67 (3.33)	24	
	70		35.0	28.00 (2.86)	28	
	80		40.0	24.50 (2.50)	32	
	90		45.0	21.78 (2.22)	36	
	100		50.0	19.60 (2.00)	40	
	110		55.0	17.82 (1.82)	44	
	125		62.5	15.68 (1.60)	50	
	150		75.0	13.07 (1.33)	60	
	175		87.5	11.20 (1.14)	70	
	200		100.0	9.80 (1.00)	80	
37	40	26	20.0	52.13 (5.32)	16	834.0 (85.0)
	50		25.0	41.70 (4.25)	20	
	60		30.0	34.75 (3.54)	24	
	70		35.0	29.79 (3.04)	28	
	80		40.0	26.06 (2.66)	32	
	90		45.0	23.17 (2.36)	36	
	100		50.0	20.85 (2.13)	40	
	110		55.0	18.95 (1.93)	44	
	125		62.5	16.68 (1.70)	50	
	150		75.0	13.90 (1.42)	60	
175	87.5	11.91 (1.21)	70			
200	100.0	10.43 (1.06)	80			
46	50	33	25.0	63.74 (6.50)	20	1275 (130)
	60		30.0	53.12 (5.42)	24	
	70		35.0	45.53 (4.64)	28	
	80		40.0	39.84 (4.06)	32	
	90		45.0	35.41 (3.61)	36	
	100		50.0	31.87 (3.25)	40	
	110		55.0	28.97 (2.95)	44	
	125		62.5	25.50 (2.60)	50	
	150		75.0	21.25 (2.17)	60	
	175		87.5	18.21 (1.86)	70	
	200		100.0	15.94 (1.63)	80	
	250		125.0	12.75 (1.30)	100	
300	150.0	10.62 (1.08)	120			

Lightest Load Spring - สปริงรับแรงกดที่มีค่าน้อยมาก



สปริงสีเหลือง
Yellow Spring
Model: 19SF



- แรงกด Load $\pm 10\%$
- ความได้ฉาก Perpendicularity 2° or less
- ระยะเพื่อความยาว Free Length $\leq 50 \pm 0.5\text{mm}$
 $\geq 55 \pm 1$

ORDER EXAMPLE Model D - L
19SF25-050

- SAE9245
- JIS Standard

D	L	d	Spring Constant (kg/mm)	300,000 times		500,000 times		1,000,000 times	
				50% Deflection	Load N (kgf)	45% Deflection	Load N (kgf)	40% Deflection	Load N (kgf)
6	15	3	0.80	7.5	59 (6)	6.8	53 (5.4)	6.0	47 (4.8)
	20		0.60	10.0		9.0		8.0	
	25		0.48	12.5		11.3		10.0	
	30		0.40	15.0		13.5		12.0	
	35		0.34	17.5		15.8		14.0	
	40		0.30	20.0		18.0		16.0	
	45		0.27	22.5		20.3		18.0	
	50		0.24	25.0		22.5		20.0	
	55		0.22	27.5		24.8		22.0	
	60		0.20	30.0		27.0		24.0	
8	10	4	1.56	5.0	79 (8)	4.5	71 (7.2)	4.0	63 (6.4)
	15		1.04	7.5		6.8		6.0	
	20		0.78	10.0		9.0		8.0	
	25		0.62	12.5		11.2		10.0	
	30		0.52	15.0		13.5		12.0	
	35		0.44	17.5		15.7		14.0	
	40		0.39	20.0		18.0		16.0	
	45		0.35	22.5		20.2		18.0	
	50		0.31	25.0		22.5		20.0	
	55		0.28	27.5		24.7		22.0	
	60		0.26	30.0		27.0		24.0	
	65		0.24	32.5		29.2		26.0	
	70		0.22	35.0		31.5		28.0	
	75		0.21	37.5		33.7		30.0	
80	0.20	40.0	36.0	32.0					
10	10	5	2.00	5.0	98 (10)	4.5	88 (9)	4.0	78 (8)
	15		1.32	7.5		6.8		6.0	
	20		1.00	10.0		9.0		8.0	
	25		0.80	12.5		11.2		10.0	
	30		0.67	15.0		13.5		12.0	
	35		0.57	17.5		15.7		14.0	
	40		0.50	20.0		18.0		16.0	
	45		0.44	22.5		20.2		18.0	
	50		0.40	25.0		22.5		20.0	
	55		0.36	27.5		24.7		22.0	
	60		0.33	30.0		27.0		24.0	
	65		0.31	32.5		29.2		26.0	
	70		0.29	35.0		31.5		28.0	
	75		0.27	37.5		33.7		30.0	
	80		0.25	40.0		36.0		32.0	
	90		0.22	45.0		40.5		36.0	
	100		0.20	50.0		45.0		40.0	
125	0.16	62.5	56.2	50.0					

สปริงแม่พิมพ์

Lightest Load Spring - สปริงรับแรงกดที่มีค่าน้อยมาก

ORDER
EXAMPLE

Model D - L
19SF25-050

สปริงสีเหลือง
Yellow Spring
Model: 19SF

Spring Load Chart

Light ←



→ Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				50% Deflection	Load N (kgf)	45% Deflection	Load N (kgf)	40% Deflection	Load N (kgf)
12	6	20	1.40	10.0	137 (14)	9.0	124 (13)	8.0	110 (11)
		25	1.12	12.5		11.2			
		30	0.93	15.0		13.5			
		35	0.80	17.5		15.7			
		40	0.70	20.0		18.0			
		45	0.62	22.5		20.2			
		50	0.56	25.0		22.5			
		55	0.51	27.5		24.7			
		60	0.47	30.0		27.0			
		65	0.43	32.5		29.2			
		70	0.40	35.0		31.5			
		75	0.37	37.5		33.7			
		80	0.35	40.0		36.0			
		90	0.31	45.0		40.5			
		100	0.28	50.0		45.0			
14	7	125	0.22	62.5	56.2	50.0			
		20	1.78	10.0	9.0	159 (16)	8.0	141 (14)	
		25	1.44	12.5	11.2				
		30	1.20	15.0	13.5				
		35	1.03	17.5	15.7				
		40	0.90	20.0	18.0				
		45	0.80	22.5	20.2				
		50	0.72	25.0	22.5				
		55	0.65	27.5	24.7				
		60	0.60	30.0	27.0				
		65	0.55	32.5	29.2				
		70	0.51	35.0	31.5				
		75	0.48	37.5	33.7				
		80	0.45	40.0	36.0				
		90	0.40	45.0	40.5				
100	0.36	50.0	45.0						
16	8	125	0.29	62.5	56.2	50.0			
		20	2.11	10.0	9.0	185 (19)	8.0	165 (17)	
		25	1.68	12.5	11.2				
		30	1.40	15.0	13.5				
		35	1.20	17.5	15.7				
		40	1.05	20.0	18.0				
		45	0.94	22.5	20.2				
		50	0.84	25.0	22.5				
		55	0.77	27.5	24.7				
		60	0.70	30.0	27.0				
		65	0.65	32.5	29.2				
		70	0.60	35.0	31.5				
		75	0.56	37.5	33.7				
		80	0.53	40.0	36.0				
		90	0.47	45.0	40.5				
100	0.42	50.0	45.0						
18	9	125	0.34	62.5	56.2	50.0			
		20	2.56	10.0	9.0	229 (23)	8.0	204 (21)	
		25	2.08	12.5	11.2				
		30	1.74	15.0	13.5				
		35	1.49	17.5	15.7				
		40	1.30	20.0	18.0				
		45	1.16	22.5	20.2				
		50	1.04	25.0	22.5				
		55	0.95	27.5	24.7				
		60	0.87	30.0	27.0				
		65	0.80	32.5	29.2				
		70	0.74	35.0	31.5				
		75	0.70	37.5	33.7				
		80	0.65	40.0	36.0				
		90	0.58	45.0	40.5				
100	0.52	50.0	45.0						
125	0.42	62.5	56.2						
150	0.34	75.0	67.5						

Lightest Load Spring - สปริงรับแรงกดที่มีค่าน้อยมาก

ORDER
EXAMPLE

Model **D - L**
19SF25-050

สปริงสีเหลือง
Yellow Spring
Model: 19SF

Spring Load Chart



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				50% Deflection	Load N (kgf)	45% Deflection	Load N (kgf)	40% Deflection	Load N (kgf)
20	11	20	3.22	10.0	314 (32)	9.0	282 (29)	8.0	251 (26)
		25	2.56	12.5		11.2		10.0	
		30	2.13	15.0		13.5		12.0	
		35	1.83	17.5		15.7		14.0	
		40	1.60	20.0		18.0		16.0	
		45	1.42	22.5		20.2		18.0	
		50	1.28	25.0		22.5		20.0	
		55	1.16	27.5		24.7		22.0	
		60	1.07	30.0		27.0		24.0	
		65	0.98	32.5		29.2		26.0	
		70	0.91	35.0		31.5		28.0	
		75	0.85	37.5		33.7		30.0	
		80	0.80	40.0		36.0		32.0	
		90	0.71	45.0		40.5		36.0	
		100	0.64	50.0		45.0		40.0	
		125	0.51	62.5		56.2		50.0	
		150	0.43	75.0		67.5		60.0	
175	0.37	87.5	78.7	70.0					
22	11	25	3.20	12.5	392 (40)	11.2	353 (36)	10.0	314 (32)
		30	2.67	15.0		13.5		12.0	
		35	2.29	17.5		15.7		14.0	
		40	2.00	20.0		18.0		16.0	
		45	1.78	22.5		20.2		18.0	
		50	1.60	25.0		22.5		20.0	
		55	1.46	27.5		24.7		22.0	
		60	1.33	30.0		27.0		24.0	
		65	1.23	32.5		29.2		26.0	
		70	1.14	35.0		31.5		28.0	
		75	1.07	37.5		33.7		30.0	
		80	1.00	40.0		36.0		32.0	
		90	0.89	45.0		40.5		36.0	
		100	0.80	50.0		45.0		40.0	
		125	0.64	62.5		56.2		50.0	
		150	0.53	75.0		67.5		60.0	
		175	0.46	87.5		78.7		70.0	
25	13.5	25	4.00	12.5	490 (50)	11.2	441 (45)	10.0	392 (40)
		30	3.33	15.0		13.5		12.0	
		35	2.85	17.5		15.7		14.0	
		40	2.50	20.0		18.0		16.0	
		45	2.22	22.5		20.2		18.0	
		50	2.00	25.0		22.5		20.0	
		55	1.82	27.5		24.7		22.0	
		60	1.67	30.0		27.0		24.0	
		65	1.54	32.5		29.2		26.0	
		70	1.43	35.0		31.5		28.0	
		75	1.33	37.5		33.7		30.0	
		80	1.25	40.0		36.0		32.0	
		90	1.11	45.0		40.5		36.0	
		100	1.00	50.0		45.0		40.0	
		125	0.80	62.5		56.2		50.0	
		150	0.67	75.0		67.5		60.0	
		175	0.57	87.5		78.7		70.0	
200	0.50	100.0	90.0	80.0					
27	13.5	25	4.80	12.5	588 (60)	11.2	530 (54)	10.0	471 (48)
		30	4.00	15.0		13.5		12.0	
		35	3.43	17.5		15.7		14.0	
		40	3.00	20.0		18.0		16.0	
		45	2.67	22.5		20.2		18.0	
		50	2.40	25.0		22.5		20.0	
		55	2.18	27.5		24.7		22.0	
		60	2.00	30.0		27.0		24.0	
		65	1.85	32.5		29.2		26.0	
		70	1.71	35.0		31.5		28.0	
		75	1.60	37.5		33.7		30.0	
		80	1.50	40.0		36.0		32.0	
		90	1.33	45.0		40.5		36.0	
		100	1.20	50.0		45.0		40.0	
		125	0.96	62.5		56.2		50.0	
		150	0.80	75.0		67.5		60.0	
		175	0.96	87.5		78.7		70.0	
200	0.60	100.0	90.0	80.0					

สปริงแม่พิมพ์

Lightest Load Spring - สปริงรับแรงกดที่มีค่าน้อยมาก

ORDER
EXAMPLE

Model D - L
19SF25-050

สปริงสีเหลือง
Yellow Spring
Model: 19SF

Spring Load Chart

Light ←



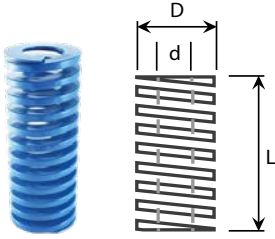
→ Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				50% Deflection	Load N (kgf)	45% Deflection	Load N (kgf)	40% Deflection	Load N (kgf)
30	16	25	5.80	12.5	760 (72)	11.2	635 (65)	10.0	565 (58)
		30	4.83	15.0		13.5		12.0	
		35	4.13	17.5		15.7		14.0	
		40	3.60	20.0		18.0		16.0	
		45	3.21	22.5		20.2		18.0	
		50	2.88	25.0		22.5		20.0	
		55	2.63	27.5		24.7		22.0	
		60	2.40	30.0		27.0		24.0	
		65	2.22	32.5		29.2		26.0	
		70	2.05	35.0		31.5		28.0	
		75	1.93	37.5		33.7		30.0	
		80	1.80	40.0		36.0		32.0	
		90	1.60	45.0		40.5		36.0	
		100	1.44	50.0		45.0		40.0	
		125	1.15	62.5		56.2		50.0	
		150	0.96	75.0		67.5		60.0	
		175	0.82	87.5		78.7		70.0	
200	0.72	100.0	90.0	80.0					
35	19	35	5.60	17.5	768 (78)	15.7	864 (88)	14.0	768 (78)
		40	4.90	20.0		18.0		16.0	
		45	4.36	22.5		20.2		18.0	
		50	3.92	25.0		22.5		20.0	
		55	3.56	27.5		24.7		22.0	
		60	3.26	30.0		27.0		24.0	
		65	3.02	32.5		29.2		26.0	
		70	2.80	35.0		31.5		28.0	
		75	2.61	37.5		33.7		30.0	
		80	2.45	40.0		36.0		32.0	
		90	2.17	45.0		40.5		36.0	
		100	1.96	50.0		45.0		40.0	
		125	1.57	62.5		56.2		50.0	
150	1.30	75.0	67.5	60.0					
175	1.12	87.5	78.7	70.0					
200	0.98	100.0	90.0	80.0					
40	22	40	6.38	20.0	1254 (128)	18.0	1129 (115)	16.0	1003 (102)
		45	5.67	22.5		20.2		18.0	
		50	5.12	25.0		22.5		20.0	
		55	4.64	27.5		24.7		22.0	
		60	4.26	30.0		27.0		24.0	
		65	3.93	32.5		29.2		26.0	
		70	3.65	35.0		31.5		28.0	
		75	3.40	37.5		33.7		30.0	
		80	3.20	40.0		36.0		32.0	
		90	2.84	45.0		40.5		36.0	
		100	2.56	50.0		45.0		40.0	
		125	2.04	62.5		56.2		50.0	
		150	1.70	75.0		67.5		60.0	
		175	1.46	87.5		78.7		70.0	
		200	1.28	100.0		90.0		80.0	
		225	1.13	112.5		101.2		90.0	
		250	1.02	125.0		112.5		100.0	
275	0.93	137.5	123.7	110.0					
300	0.85	150.0	135.0	120.0					

สปริงแม่พิมพ์

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย



สปริงสีน้ำเงิน
Blue Spring
Model: 19SL



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 2° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1

ORDER EXAMPLE Model D - L
19SL25-050

SAE9245

JIS Standard

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
6	15	3	1.33	6.0	78 (8)	5.4	71 (7.2)	4.8	63 (64)
	20		1.00	8.0		7.2		6.4	
	25		0.80	10.0		9.0		8.0	
	30		0.67	12.0		10.8		9.6	
	35		0.57	14.0		12.6		11.2	
	40		0.50	16.0		14.4		12.8	
	45		0.44	18.0		16.2		14.4	
	50		0.40	20.0		18.0		16.0	
	55		0.36	22.0		19.8		17.6	
	60		0.33	24.0		21.6		19.2	
8	10	4	2.50	40.0	98 (10)	3.6	88 (9)	3.2	78 (8)
	15		1.67	6.0		5.4		4.8	
	20		1.25	8.0		7.2		6.4	
	25		1.00	10.0		9.0		8.0	
	30		0.83	12.0		10.8		9.6	
	35		0.71	14.0		12.6		11.2	
	40		0.63	16.0		14.4		12.8	
	45		0.56	18.0		16.2		14.4	
	50		0.50	20.0		18.0		16.0	
	55		0.46	22.0		19.8		17.6	
	60		0.42	24.0		21.6		19.2	
	65		0.38	26.0		23.4		20.8	
	70		0.36	28.0		25.2		22.4	
	75		0.33	30.0		27.0		24.0	
80	0.31	32.0	28.8	25.6					
90	0.28	36.0	32.4	28.8					
100	0.25	40.0	36.0	32.0					
10	10	5	3.61	4.0	137 (14)	3.6	124 (13)	3.2	110 (11)
	15		2.41	6.0		5.4		4.8	
	20		1.81	8.0		7.2		6.4	
	25		1.45	10.0		9.0		8.0	
	30		1.21	12.0		10.8		9.6	
	35		1.03	14.0		12.6		11.2	
	40		0.90	16.0		14.4		12.8	
	45		0.80	18.0		16.2		14.4	
	50		0.73	20.0		18.0		16.0	
	55		0.66	22.0		19.8		17.6	
	60		0.60	24.0		21.6		19.2	
	65		0.55	26.0		23.4		20.8	
	70		0.51	28.0		25.2		22.4	
	75		0.48	30.0		27.0		24.0	
	80		0.45	32.0		28.8		25.6	
90	0.40	36.0	32.4	28.8					
100	0.36	40.0	36.0	32.0					
125	0.28	50.0	45.0	40.0					

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย

ORDER
EXAMPLE

Model D - L
19SL25-050

สปริงสีน้ำเงิน
Blue Spring
Model: 19SL

Spring Load Chart

Light ←  → Heavy



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
12	6	20	2.63	8.0	206 (21)	7.2	185 (19)	6.4	165 (17)
		25	2.10	10.0		9.0		8.0	
		30	1.75	12.0		10.8		9.6	
		35	1.50	14.0		12.6		11.2	
		40	1.32	16.0		14.4		12.8	
		45	1.17	18.0		16.2		14.4	
		50	1.05	20.0		18.0		16.0	
		55	0.96	22.0		19.8		17.6	
		60	0.88	24.0		21.6		19.2	
		65	0.81	26.0		23.4		20.8	
		70	0.75	28.0		25.2		22.4	
		75	0.70	30.0		27.0		24.0	
		80	0.66	32.0		28.8		25.6	
		90	0.58	36.0		32.4		28.8	
		100	0.53	40.0		36.0		32.0	
125	0.42	50.0	45.0	40.0					
14	7	20	3.47	8.0	275 (28)	7.2	247 (25)	6.4	220 (22)
		25	2.80	10.0		9.0		8.0	
		30	3.34	12.0		10.8		9.6	
		35	2.00	14.0		12.6		11.2	
		40	1.75	16.0		14.4		12.8	
		45	1.56	18.0		16.2		14.4	
		50	1.40	20.0		18.0		16.0	
		55	1.27	22.0		19.8		17.6	
		60	1.17	24.0		21.6		19.2	
		65	1.08	26.0		23.4		20.8	
		70	1.00	28.0		25.2		22.4	
		75	0.93	30.0		27.0		24.0	
		80	0.87	32.0		28.8		25.6	
		90	0.77	36.0		32.4		28.8	
		100	0.70	40.0		36.0		32.0	
125	0.56	50.0	45.0	40.0					
16	8	20	4.44	8.0	343 (35)	7.2	309 (32)	6.4	275 (28)
		25	3.50	10.0		9.0		8.0	
		30	2.92	12.0		10.8		9.6	
		35	2.50	14.0		12.6		11.2	
		40	2.19	16.0		14.4		12.8	
		45	1.95	18.0		16.2		14.4	
		50	1.75	20.0		18.0		16.0	
		55	1.60	22.0		19.8		17.6	
		60	1.46	24.0		21.6		19.2	
		65	1.35	26.0		23.4		20.8	
		70	1.25	28.0		25.2		22.4	
		75	1.17	30.0		27.0		24.0	
		80	1.10	32.0		28.8		25.6	
		90	0.98	36.0		32.4		28.8	
		100	0.88	40.0		36.0		32.0	
125	0.70	50.0	45.0	40.0					

สปริงแม่พิมพ์

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย

ORDER
EXAMPLE

Model D - L
19SL25-050

สปริงสีน้ำเงิน
Blue Spring
Model: 19SL

Spring Load Chart

Light ←  → Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
18	9	20	5.42	8.0	422 (43)	7.2	380 (39)	6.4	337 (34)
		25	4.30	10.0		9.0		8.0	
		30	3.58	12.0		10.8		9.6	
		35	3.07	14.0		12.6		11.2	
		40	2.69	16.0		14.4		12.8	
		45	2.39	18.0		16.2		14.4	
		50	2.15	20.0		18.0		16.0	
		55	1.96	22.0		19.8		17.6	
		60	1.79	24.0		21.6		19.2	
		65	1.66	26.0		23.4		20.8	
		70	1.54	28.0		25.2		22.4	
		75	1.44	30.0		27.0		24.0	
		80	1.35	32.0		28.8		25.6	
		90	1.20	36.0		32.4		28.8	
100	1.07	40.0	36.0	32.0					
125	0.86	50.0	45.0	40.0					
20	10	20	6.81	8.0	530 (54)	7.2	477 (48)	6.4	424 (43)
		25	5.40	10.0		9.0		8.0	
		30	4.50	12.0		10.8		9.6	
		35	3.86	14.0		12.6		11.2	
		40	3.38	16.0		14.4		12.8	
		45	3.00	18.0		16.2		14.4	
		50	2.70	20.0		18.0		16.0	
		55	2.45	22.0		19.8		17.6	
		60	2.25	24.0		21.6		19.2	
		65	2.08	26.0		23.4		20.8	
		70	1.93	28.0		25.2		22.4	
		75	1.80	30.0		27.0		24.0	
		80	1.69	32.0		28.8		25.6	
		90	1.50	36.0		32.4		28.8	
100	1.35	40.0	36.0	32.0					
125	1.08	50.0	45.0	40.0					
150	0.90	60.0	54.0	48.0					
175	0.77	70.0	63.0	56.0					
22	11	25	6.70	10.0	657 (67)	9.0	591 (60)	8.0	526 (54)
		30	5.60	12.0		10.8		9.6	
		35	4.80	14.0		12.6		11.2	
		40	4.20	16.0		14.4		12.8	
		45	3.72	18.0		16.2		14.4	
		50	3.35	20.0		18.0		16.0	
		55	3.05	22.0		19.8		17.6	
		60	2.80	24.0		21.6		19.2	
		65	2.58	26.0		23.4		20.8	
		70	2.40	28.0		25.2		22.4	
		75	2.23	30.0		27.0		24.0	
		80	2.10	32.0		28.8		25.6	
		90	1.86	36.0		32.4		28.8	
		100	1.68	40.0		36.0		32.0	
125	1.34	50.0	45.0	40.0					
150	1.12	60.0	54.0	48.0					
175	0.96	70.0	63.0	56.0					

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย

ORDER
EXAMPLE

Model D - L
19SL25-050

สปริงสีน้ำเงิน
Blue Spring
Model: 19SL



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
25	12.5	25	8.40	10.0	824 (84)	9.0	741 (76)	8.0	659 (67)
		30	7.00	12.0		10.8			
		35	6.00	14.0		12.6			
		40	5.25	16.0		14.4			
		45	4.67	18.0		16.2			
		50	4.20	20.0		18.0			
		55	3.82	22.0		19.8			
		60	3.50	24.0		21.6			
		65	3.23	26.0		23.4			
		70	3.00	28.0		25.2			
		75	2.80	30.0		27.0			
		80	2.63	32.0		28.8			
		90	2.33	36.0		32.4			
		100	2.10	40.0		36.0			
		125	1.68	50.0		45.0			
		150	1.40	60.0		54.0			
		175	1.20	70.0		63.0			
200	1.05	80.0	72.0						
27	13.5	25	10.00	10.0	981 (100)	9.0	883 (90)	8.0	785 (80)
		30	8.33	12.0		10.8			
		35	7.14	14.0		12.6			
		40	6.25	16.0		14.4			
		45	5.56	18.0		16.2			
		50	5.00	20.0		18.0			
		55	4.55	22.0		19.8			
		60	4.17	24.0		21.6			
		65	3.85	26.0		23.4			
		70	3.57	28.0		25.2			
		75	3.33	30.0		27.0			
		80	3.13	32.0		28.8			
		90	2.78	36.0		32.4			
		100	2.50	40.0		36.0			
		125	2.00	50.0		45.0			
		150	1.67	60.0		54.0			
		175	1.43	70.0		63.0			
200	1.25	80.0	72.0						
30	15	25	12.11	10.0	1186 (121)	9.0	1067 (109)	8.0	949 (97)
		30	10.08	12.0		10.8			
		35	8.65	14.0		12.6			
		40	7.56	16.0		14.4			
		45	6.73	18.0		16.2			
		50	6.05	20.0		18.0			
		55	5.50	22.0		19.8			
		60	5.04	24.0		21.6			
		65	4.65	26.0		23.4			
		70	4.32	28.0		25.2			
		75	4.03	30.0		27.0			
		80	3.78	32.0		28.8			
		90	3.36	36.0		32.4			
		100	3.02	40.0		36.0			
		125	2.42	50.0		45.0			
		150	2.01	60.0		54.0			
		175	1.72	70.0		63.0			
200	1.51	80.0	72.0						

สปริงแม่พิมพ์

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย

Springs

ORDER
EXAMPLE

Model D - L
19SL25-050

สปริงสีน้ำเงิน
Blue Spring
Model: 19SL

Spring Load Chart

Light ←



→ Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
35	17.5	35	11.78	14.0	1617 (165)	12.6	1455 (148)	11.2	1294 (132)
		40	10.31	16.0		14.4			
		45	9.17	18.0		16.2			
		50	8.25	20.0		18.0			
		55	7.50	22.0		19.8			
		60	6.87	24.0		21.6			
		65	6.35	26.0		23.4			
		70	5.89	28.01		25.2			
		75	5.50	30.0		27.0			
		80	5.15	32.0		28.8			
		90	4.58	36.0		32.4			
		100	4.12	40.0		36.0			
		125	3.30	50.0		45.0			
		150	2.75	60.0		54.0			
		175	2.35	70.0		63.0			
		200	2.06	80.0		72.0			
40	20	40	13.50	16.0	2117 (216)	14.4	1905 (194)	12.8	1694 (173)
		45	12.00	18.0		16.2			
		50	10.80	20.0		18.0			
		55	9.82	22.0		19.8			
		60	9.00	24.0		21.6			
		65	8.31	26.0		23.4			
		70	7.71	28.0		25.2			
		75	7.20	30.0		27.0			
		80	6.70	32.0		28.8			
		90	6.00	36.0		32.4			
		100	5.40	40.0		36.0			
		125	4.32	50.0		45.0			
		150	3.60	60.0		54.0			
		175	3.08	70.0		63.0			
		200	2.70	80.0		72.0			
		225	2.40	90.0		81.0			
250	2.16	100.0	90.0						
275	1.96	110.0	99.0						
300	1.80	120.0	108.0						
50	25	50	16.89	20.0	3312 (338)	18.0	2981 (304)	16.0	2650 (270)
		55	15.35	22.0		19.8			
		60	14.08	24.0		21.6			
		65	12.99	26.0		23.4			
		70	12.07	28.0		25.2			
		75	11.26	30.0		27.0			
		80	10.56	32.0		28.8			
		90	9.38	36.0		32.4			
		100	8.45	40.0		36.0			
		125	6.76	50.0		45.0			
		150	5.63	60.0		54.0			
		175	4.82	70.0		63.0			
		200	4.22	80.0		72.0			
		225	3.75	90.0		81.0			
		250	3.38	100.0		90.0			
		275	3.07	110.0		99.0			
300	2.81	120.0	108.0						
350	2.41	140.0	126.0						
400	2.11	160.0	144.0						
450	1.88	180.0	162.0						
500	1.69	200.0	180.0						

Light Load Spring - สปริงรับแรงกดที่มีค่าน้อย

ORDER
EXAMPLE

Model D - L
19SL25-050

สปริงสีน้ำเงิน
Blue Spring
Model: 19SL

Spring Load Chart
Light ←  → Heavy

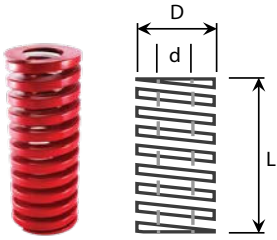


Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				40% Deflection	Load N (kgf)	36% Deflection	Load N (kgf)	32% Deflection	Load N (kgf)
60	30	60	20.25	24.0	4770 (486)	21.6	4293 (438)	19.2	3816 (389)*
		70	17.35	28.0		25.2		22.4	
		80	15.18	32.0		28.8		25.6	
		90	13.50	36.0		32.4		28.8	
		100	12.15	40.0		36.0		32.0	
		125	9.72	50.0		45.0		40.0	
		150	8.10	60.0		54.0		48.0	
		175	6.94	70.0		63.0		56.0	
		200	6.07	80.0		72.0		64.0	
		225	5.40	90.0		81.0		72.0	
		250	4.86	100.0		90.0		80.0	
		275	4.42	110.0		99.0		88.0	
		300	4.05	120.0		108.0		96.0	
		350	3.47	140.0		126.0		112.0	
		400	3.04	160.0		144.0		128.0	
		450	2.70	180.0		162.0		144.0	
		500	2.43	200.0		180.0		160.0	
70	38.5	70	21.79	28.0	5978 (610)	25.2	5380 (549)	22.4	4782 (488)
		80	19.06	32.0		28.8		25.6	
		90	16.94	36.0		32.4		28.8	
		100	15.25	40.0		36.0		32.0	
		125	12.20	50.0		45.0		40.0	
		150	10.17	60.0		54.0		48.0	
		175	8.71	70.0		63.0		56.0	
		200	7.62	80.0		72.0		64.0	
		225	6.78	90.0		81.0		72.0	
		250	6.10	100.0		90.0		80.0	
		275	5.55	110.0		99.0		88.0	
		300	5.08	120.0		108.0		96.0	
350	4.36	140.0	126.0	112.0					

สปริงแม่พิมพ์

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง



สปริงสีแดง
Red Spring
Model: 19SM



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 2° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1

ORDER EXAMPLE Model D - L
19SM25-050

SAE9245

JIS Standard

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
6	15	3	2.08	4.8	98 (10)	4.3	88 (9)	3.8	79 (8)
	20		1.56	6.4		5.8		5.1	
	25		1.25	8.0		7.2		6.4	
	30		1.04	9.6		8.6		7.7	
	35		0.89	11.2		10.1		9.0	
	40		0.78	12.8		11.5		10.2	
	45		0.69	14.4		13.0		11.5	
	50		0.63	16.0		14.4		12.8	
	55		0.57	17.6		15.8		14.1	
60	0.52	19.2	17.3	15.4	15.4				
8	10	4	4.34	3.2	137 (14)	2.9	123 (13)	2.6	110 (11)
	15		2.89	4.8		4.3		3.8	
	20		2.17	6.4		5.8		5.1	
	25		1.74	8.0		7.2		6.4	
	30		1.45	9.6		8.6		7.7	
	35		1.24	11.2		10.1		9.0	
	40		1.09	12.8		11.5		10.2	
	45		0.97	14.4		13.0		11.5	
	50		0.87	16.0		14.4		12.8	
	55		0.79	17.6		15.8		14.1	
	60		0.72	19.2		17.3		15.4	
	65		0.67	20.8		18.7		16.6	
	70		0.62	22.4		20.2		17.9	
	75		0.58	24.0		21.6		19.2	
80	0.54	25.6	23.0	20.5					
90	0.48	28.8	25.9	23.0					
100	0.44	32.0	28.8	25.6					
10	10	5	6.21	3.2	196 (20)	2.9	176 (18)	2.6	157 (16)
	15		4.09	4.8		4.4		3.8	
	20		3.13	6.4		5.8		5.1	
	25		2.50	8.0		7.2		6.4	
	30		2.08	9.6		8.6		7.7	
	35		1.78	11.2		10.1		9.0	
	40		1.56	12.8		11.5		10.2	
	45		1.38	14.4		13.0		11.5	
	50		1.25	16.0		14.4		12.8	
	55		1.13	17.6		15.8		14.1	
	60		1.04	19.2		17.3		15.4	
	65		0.96	20.8		18.7		16.6	
	70		0.89	22.4		20.2		17.9	
	75		0.83	24.0		21.6		19.2	
	80		0.78	25.6		23.0		20.5	
	90		0.70	28.8		25.9		23.0	
	100		0.63	32.0		28.8		25.6	
125	0.50	40.0	36.0	32.0					

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง

ORDER
EXAMPLE

Model D - L
19SM25-050

สปริงสีแดง
Red Spring
Model: 19SM

Spring Load Chart

Light ←



→ Heavy



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
12	6	20	4.53	6.4	284 (29)	5.8	256 (26)	5.1	227 (23)
		25	3.62	8.0		7.2		6.4	
		30	3.02	9.6		8.6		7.7	
		35	2.58	11.2		10.1		9.0	
		40	2.27	12.8		11.5		10.2	
		45	2.01	14.4		13.0		11.5	
		50	1.81	16.0		14.4		12.8	
		55	1.64	17.6		15.8		14.1	
		60	1.51	19.2		17.3		15.4	
		65	1.39	20.8		18.7		16.6	
		70	1.29	22.4		20.2		17.9	
		75	1.20	24.0		21.6		19.2	
		80	1.13	25.6		23.0		20.5	
		90	1.01	28.8		25.9		23.0	
		100	0.91	32.0		28.8		25.6	
125	0.72	40.4	36.0	32.0					
14	7	20	6.03	6.4	383 (39)	5.8	345 (35)	5.1	306 (31)
		25	4.87	8.0		7.2		6.4	
		30	4.06	9.6		8.6		7.7	
		35	3.48	11.2		10.1		9.0	
		40	3.04	12.8		11.5		10.2	
		45	2.70	14.4		13.0		11.5	
		50	2.43	16.0		14.4		12.8	
		55	2.21	17.6		15.8		14.1	
		60	2.03	19.2		17.3		15.4	
		65	1.87	20.8		18.7		16.6	
		70	1.74	22.4		20.2		17.9	
		75	1.62	24.0		21.6		19.2	
		80	1.52	25.6		23.0		20.5	
		90	1.35	28.8		25.9		23.0	
		100	1.22	32.0		28.8		25.6	
125	0.97	40.0	36.0	32.0					
16	8	20	7.93	6.4	500 (51)	5.8	450 (46)	5.1	400 (41)
		25	6.39	8.0		7.2		6.4	
		30	5.32	9.6		8.6		7.7	
		35	4.55	11.2		10.1		9.0	
		40	3.98	12.8		11.5		10.2	
		45	3.54	14.4		13.0		11.5	
		50	3.18	16.0		14.4		12.8	
		55	2.89	17.6		15.8		14.1	
		60	2.65	19.2		17.3		15.4	
		65	2.45	20.8		18.7		16.6	
		70	2.27	22.4		20.2		17.9	
		75	2.11	24.0		21.6		19.2	
		80	1.99	25.6		23.0		20.5	
		90	1.77	28.8		25.9		23.0	
		100	1.59	32.0		28.8		25.6	
125	1.28	40.0	36.0	32.0					

สปริงแม่พิมพ์

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง

ORDER MODEL D - L สปริงสีแดง
 EXAMPLE 19SM25-050 Red Spring
 Model: 19SM

Spring Load Chart
 Light ←  → Heavy 

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
18	9	20	10.00	6.4	637 (65)	5.8	574 (59)	5.1	510 (52)
		25	8.12	8.0		7.2			
		30	6.77	9.6		8.6			
		35	5.80	11.2		10.1			
		40	5.07	12.8		11.5			
		45	4.51	14.4		13.0			
		50	4.06	16.0		14.4			
		55	3.69	17.6		15.8			
		60	3.38	19.2		17.3			
		65	3.12	20.8		18.7			
		70	2.90	22.4		20.2			
		75	2.70	24.0		21.6			
		80	2.53	25.6		23.0			
		90	2.25	28.8		25.9			
		100	2.02	32.0		28.8			
125	1.62	40.0	36.0						
20	10	20	12.41	6.4	784 (80)	5.8	706 (72)	5.1	628 (64)
		25	10.00	8.0		7.2			
		30	8.33	9.6		8.6			
		35	7.14	11.2		10.1			
		40	6.25	12.8		11.5			
		45	5.55	14.4		13.0			
		50	5.00	16.0		14.4			
		55	4.54	17.6		15.8			
		60	4.16	19.2		17.3			
		65	3.84	20.8		18.7			
		70	3.57	22.4		20.2			
		75	3.33	24.0		21.6			
		80	3.12	25.6		23.0			
		90	2.77	28.8		25.9			
		100	2.50	32.0		28.8			
125	2.00	40.0	36.0						
150	1.67	48.0	43.2						
175	1.43	56.0	50.4						
22	11	25	12.13	8.0	951 (97)	7.2	856 (87)	6.4	761 (78)
		30	10.10	9.6		8.6			
		35	8.65	11.2		10.1			
		40	7.57	12.8		11.5			
		45	6.74	14.4		13.0			
		50	6.06	16.0		14.4			
		55	5.50	17.6		15.8			
		60	5.05	19.2		17.3			
		65	4.66	20.8		18.7			
		70	4.33	22.4		20.2			
		75	4.04	24.0		21.6			
		80	3.78	25.6		23.0			
		90	3.36	28.8		25.9			
		100	3.03	32.0		28.8			
		125	2.42	40.0		36.0			
150	2.01	48.0	43.2						
175	1.73	56.0	50.4						

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง

ORDER
EXAMPLE

Model D - L
19SM25-050

สปริงสีแดง
Red Spring
Model: 19SM

Spring Load Chart



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
25	12.5	25	15.63	8.0	1225 (125)	7.2	1103 (113)	6.4	981 (100)
		30	13.02	9.6		8.6		7.7	
		35	11.20	11.2		10.1		9.0	
		40	9.76	12.8		11.5		10.2	
		45	8.68	14.4		13.0		11.5	
		50	7.81	16.0		14.4		12.8	
		55	7.10	17.6		15.8		14.1	
		60	6.51	19.2		17.3		15.4	
		65	6.00	20.8		18.7		16.6	
		70	5.58	22.4		20.2		17.9	
		75	5.21	24.0		21.6		19.2	
		80	4.88	25.6		23.0		20.5	
		90	4.34	28.8		25.9		23.0	
		100	3.90	32.0		28.8		25.6	
		125	3.12	40.0		36.0		32.0	
		150	2.60	48.0		43.2		38.4	
175	2.23	56.0	50.4	44.8					
200	1.95	64.0	57.6	51.2					
27	13.5	25	18.25	8.0	1431 (146)	7.2	1288 (131)	6.4	1145 (117)
		30	15.20	9.6		8.6		7.7	
		35	13.04	11.2		10.1		9.0	
		40	11.40	12.8		11.5		10.2	
		45	10.14	14.4		13.0		11.5	
		50	9.12	16.0		14.4		12.8	
		55	8.30	17.6		15.8		14.1	
		60	7.60	19.2		17.3		15.4	
		65	7.00	20.8		18.7		16.6	
		70	6.51	22.4		20.2		17.9	
		75	6.08	24.0		21.6		19.2	
		80	5.70	25.6		23.0		20.5	
		90	5.06	28.8		25.9		23.0	
		100	4.56	32.0		28.8		25.6	
		125	3.65	40.0		36.0		32.0	
		150	3.04	48.0		43.2		38.4	
175	2.61	56.0	50.4	44.8					
200	2.28	64.0	57.6	51.2					
30	15	25	22.50	8.0	1765 (180)	7.2	1589 (162)	6.4	1412 (144)
		30	18.75	9.6		8.6		7.7	
		35	16.10	11.2		10.1		9.0	
		40	14.06	12.8		11.5		10.2	
		45	12.50	14.4		13.0		11.5	
		50	11.25	16.0		14.4		12.8	
		55	10.23	17.6		15.8		14.1	
		60	9.37	19.2		17.3		15.4	
		65	8.65	20.8		18.7		16.6	
		70	8.03	22.4		20.2		17.9	
		75	7.50	24.0		21.6		19.2	
		80	7.03	25.6		23.0		20.5	
		90	6.25	28.8		25.9		23.0	
		100	5.62	32.0		28.8		25.6	
		125	4.50	40.0		36.0		32.0	
		150	3.75	48.0		43.2		38.4	
175	3.21	56.0	50.4	44.8					
200	2.81	64.0	57.6	51.2					

สปริงแม่พิมพ์

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง

ORDER MODEL D - L สปริงสีแดง
 EXAMPLE 19SM25-050 Red Spring
 Model: 19SM



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
35	17.5	35	21.87	11.2	2401 (245)	10.1	2161 (220)	9.0	1921 (196)
		40	19.14	12.8		11.5		10.2	
		45	17.01	14.4		13.0		11.5	
		50	15.31	16.0		14.4		12.8	
		55	13.92	17.6		15.8		14.1	
		60	12.76	19.2		17.3		15.4	
		65	11.77	20.8		18.7		16.6	
		70	10.93	22.4		20.2		17.9	
		75	10.20	24.0		21.6		19.2	
		80	9.57	25.6		23.0		20.5	
		90	8.50	28.8		25.9		23.0	
		100	7.65	32.0		28.8		25.6	
		125	6.12	40.0		36.0		32.0	
		150	5.10	48.0		43.2		38.4	
40	20	40	25.02	12.8	3138 (320)	11.5	2824 (288)	10.2	2510 (256)
		45	22.26	14.4		13.0		11.5	
		50	20.00	16.0		14.4		12.8	
		55	18.15	17.6		15.8		14.1	
		60	16.60	19.2		17.3		15.4	
		65	15.40	20.8		18.7		16.6	
		70	14.28	22.4		20.2		17.9	
		75	13.34	24.0		21.6		19.2	
		80	12.50	25.6		23.0		20.5	
		90	11.11	28.8		25.9		23.0	
		100	10.00	32.0		28.8		25.6	
		125	8.00	40.0		36.0		32.0	
		150	6.66	48.0		43.2		38.4	
		175	5.71	56.0		50.4		44.8	
50	25	50	31.25	16.0	4900 (500)	14.4	4410 (450)	12.8	3920 (400)
		55	28.41	17.6		15.8		14.1	
		60	26.04	19.2		17.3		15.4	
		65	24.04	20.8		18.7		16.6	
		70	22.32	22.4		20.2		17.9	
		75	20.83	24.0		21.6		19.2	
		80	19.53	25.6		23.0		20.5	
		90	17.36	28.8		25.9		23.0	
		100	15.62	32.0		28.8		25.6	
		125	12.50	40.0		36.0		32.0	
		150	10.41	48.0		43.2		38.4	
		175	8.92	56.0		50.4		44.8	
		200	7.81	64.0		57.6		51.2	
		225	6.94	72.0		64.8		57.6	
250	6.25	80.0	72.0	64.0					
275	5.68	88.0	79.2	70.4					
300	5.20	96.0	86.4	76.8					
350	4.46	112.0	100.8	89.6					

Medium Load Spring - สปริงรับแรงกดที่มีค่าปานกลาง

ORDER
EXAMPLE

Model D - L
19SM25-050

สปริงสีแดง
Red Spring
Model: 19SM

Spring Load Chart

Light ←  → Heavy

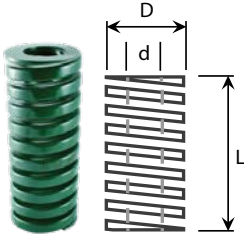


Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				32% Deflection	Load N (kgf)	28.8% Deflection	Load N (kgf)	25.6% Deflection	Load N (kgf)
60	30	60	37.40	19.2	7056 (720)	17.3	6350 (648)	15.4	5645 (576)
		70	32.10	22.4		20.2		17.9	
		80	28.12	25.6		23.0		20.5	
		90	25.00	28.8		25.9		23.0	
		100	22.50	32.0		28.8		25.6	
		125	18.00	40.0		36.0		32.0	
		150	15.00	48.0		43.2		38.4	
		175	12.85	56.0		50.4		44.8	
		200	11.25	64.0		57.6		51.2	
		225	10.00	72.0		64.8		57.6	
		250	9.00	80.0		72.0		64.0	
		275	8.18	88.0		79.2		70.4	
		300	7.50	96.0		86.4		76.8	
		350	6.43	112.0		100.8		89.6	
70	38.5	70	37.9	22.4	8330 (850)	20.2	7497 (764)	17.9	6664 (680)
		80	33.2	25.6		23.0		20.5	
		90	29.5	28.8		25.9		23.0	
		100	26.6	32.0		28.8		25.6	
		125	21.3	40.0		36.0		32.0	
		150	17.7	48.0		43.2		38.4	
		175	15.2	56.0		50.4		44.8	
		200	13.3	64.0		57.6		51.2	
		225	11.8	72.0		64.8		57.6	
		250	10.6	80.0		72.0		64.0	
		275	9.7	88.0		79.2		70.4	
		300	8.9	96.0		86.4		76.8	
		350	7.6	112.0		100.8		89.6	

สปริงแม่พิมพ์

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง



สปริงสีเขียวเข้ม
Dark Green Spring
Model: 19SH



แรงกด Load $\pm 10\%$
 ความได้ฉาก Perpendicularity 2° or less
 ระยะเผื่อความยาว Free Length $\leq 50 \pm 0.5\text{mm}$
 $\geq 55 \pm 1$

ORDER EXAMPLE Model D - L
19SH25-050

SAE9245

JIS Standard

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
6	15	3	3.90	3.6	137 (14)	3.2	123 (13)	2.9	110 (11)
	20		2.90	4.8		4.3		3.8	
	25		2.30	6.0		5.4		4.8	
	30		1.90	7.2		6.5		5.8	
	35		1.70	8.4		7.6		6.7	
	40		1.50	9.6		8.6		7.7	
	45		1.30	10.8		9.7		8.6	
	50		1.20	12.0		10.8		9.6	
	55		1.10	13.2		11.9		10.6	
	60		1.00	14.4		13.0		11.5	
8	10	4	8.80	2.4	206 (21)	2.2	185 (19)	1.9	165 (17)
	15		5.86	3.6		3.2		2.9	
	20		4.40	4.8		4.3		3.8	
	25		3.52	6.0		5.4		4.8	
	30		2.93	7.2		6.5		5.8	
	35		2.51	8.4		7.6		6.7	
	40		2.20	9.6		8.6		7.7	
	45		1.95	10.8		9.7		8.6	
	50		1.76	12.0		10.8		9.6	
	55		1.60	13.2		11.9		10.6	
	60		1.47	14.4		13.0		11.5	
	65		1.35	15.6		14.0		12.5	
	70		1.26	16.8		15.1		13.4	
	75		1.17	18.0		16.2		14.4	
80	1.10	19.2	17.3	15.4					
90	0.98	21.6	19.4	17.3					
100	0.87	24.0	21.6	19.2					
10	10	5	12.27	2.4	294 (30)	2.2	265 (27)	1.9	235 (24)
	15		8.18	3.6		3.3		2.9	
	20		6.25	4.8		4.3		3.8	
	25		5.00	6.0		5.4		4.8	
	30		4.16	7.2		6.5		5.8	
	35		3.57	8.4		7.6		6.7	
	40		3.15	9.6		8.6		7.7	
	45		2.77	10.8		9.7		8.6	
	50		2.50	12.0		10.8		9.6	
	55		2.27	13.2		11.9		10.6	
	60		2.08	14.4		13.0		11.5	
	65		1.92	15.6		14.0		12.5	
	70		1.79	16.8		15.1		13.4	
	75		1.67	18.0		16.2		14.4	
	80		1.56	19.2		17.3		15.4	
	90		1.39	21.6		19.4		17.3	
100	1.25	24.0	21.6	19.2					
125	1.00	30.0	27.0	24.0					

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง

ORDER EXAMPLE

 Model D - L
 19SH25-050

 สปริงสีเขียวเข้ม
 Dark Green Spring
 Model: 19SH

Spring Load Chart

 Light ←  → Heavy


D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
12	6	20	8.90	4.8	421 (43)	4.3	379 (38)	3.8	337 (34)
		25	7.10	6.0		5.4		4.8	
		30	5.97	7.2		6.5		5.8	
		35	5.11	8.4		7.6		6.7	
		40	4.47	9.6		8.6		7.7	
		45	3.98	10.8		9.7		8.6	
		50	3.58	12.0		10.8		9.6	
		55	3.25	13.2		11.9		10.6	
		60	2.98	14.4		13.0		11.5	
		65	2.74	15.6		14.0		12.5	
		70	2.54	16.8		15.1		13.4	
		75	2.37	18.0		16.2		14.4	
		80	2.21	19.2		17.3		15.4	
		90	1.98	21.6		19.4		17.3	
		100	1.78	24.0		21.6		19.2	
125	1.42	30.0	27.0	24.0					
14	7	20	12.05	4.8	578 (59)	4.4	520 (53)	3.8	462 (47)
		25	9.83	6.0		5.4		4.8	
		30	8.19	7.2		6.5		5.8	
		35	7.02	8.4		7.6		6.7	
		40	6.14	9.6		8.6		7.7	
		45	5.46	10.8		9.7		8.6	
		50	4.91	12.0		10.8		9.6	
		55	4.46	13.2		11.9		10.6	
		60	4.09	14.4		13.0		11.5	
		65	3.78	15.6		14.0		12.5	
		70	3.51	16.8		15.1		13.4	
		75	3.27	18.0		16.2		14.4	
		80	3.07	19.2		17.3		15.4	
		90	2.72	21.6		19.4		17.3	
		100	2.46	24.0		21.6		19.2	
125	1.97	30.0	27.0	24.0					
16	8	20	15.68	4.8	755 (77)	4.4	680 (690)	3.8	604 (62)
		25	12.83	6.0		5.4		4.8	
		30	10.69	7.2		6.5		5.8	
		35	9.16	8.4		7.6		6.7	
		40	8.02	9.6		8.6		7.7	
		45	7.12	10.8		9.7		8.6	
		50	6.41	12.0		10.8		9.6	
		55	5.83	13.2		11.9		10.6	
		60	5.34	14.4		13.0		11.5	
		65	4.93	15.6		14.0		12.5	
		70	4.58	16.8		15.1		13.4	
		75	4.28	18.0		16.2		14.4	
		80	4.01	19.2		17.3		15.4	
		90	3.57	21.6		19.4		17.3	
		100	3.21	24.0		21.6		19.2	
125	2.57	30.0	27.0	24.0					

สปริงแม่พิมพ์

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง

ORDER
EXAMPLE

Model D - L
19SH25-050

สปริงสีเขียวเข้ม
Dark Green Spring
Model: 19SH

Spring Load Chart

Light



Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
18	9	20	19.77	4.8	951 (97)	4.4	856 (87)	3.8	761 (78)
		25	16.16	6.0		5.4		4.8	
		30	13.47	7.2		6.5		5.8	
		35	11.54	8.4		7.6		6.7	
		40	10.10	9.6		8.6		7.7	
		45	8.98	10.8		9.7		8.6	
		50	8.08	12.0		10.8		9.6	
		55	7.34	13.2		11.9		10.6	
		60	6.73	14.4		13.0		11.5	
		65	6.21	15.6		14.0		12.5	
		70	5.77	16.8		15.1		13.4	
		75	5.39	18.0		16.2		14.4	
		80	5.05	19.2		17.3		15.4	
		90	4.50	21.6		19.4		17.3	
100	4.04	24.0	21.6	19.2					
125	3.23	30.0	27.0	24.0					
20	10	20	24.55	4.8	1176 (120)	4.4	1058 (108)	3.7	941 (96)
		25	20.00	6.0		5.4		4.8	
		30	16.66	7.2		6.5		5.8	
		35	14.28	8.4		7.6		6.7	
		40	12.50	9.6		8.6		7.7	
		45	11.11	10.8		9.7		8.6	
		50	10.00	12.0		10.8		9.6	
		55	9.09	13.2		11.9		10.6	
		60	8.33	14.4		13.0		11.5	
		65	7.69	15.6		14.0		12.5	
		70	7.14	16.8		15.1		13.4	
		75	6.67	18.0		16.2		14.4	
		80	6.25	19.2		17.3		15.4	
		90	5.55	21.6		19.4		17.3	
100	5.00	24.0	21.6	19.2					
125	4.00	30.0	27.0	24.0					
150	3.33	36.0	32.4	28.8					
175	2.86	42.0	37.8	33.6					
22	11	25	24.16	6.0	1421 (145)	5.4	1279 (130)	4.8	1137 (116)
		30	20.13	7.2		6.5		5.8	
		35	17.30	8.4		7.6		6.7	
		40	15.10	9.6		8.6		7.7	
		45	13.40	10.8		9.7		8.6	
		50	12.08	12.0		10.8		9.6	
		55	10.94	13.2		11.9		10.6	
		60	10.06	14.4		13.0		11.5	
		65	9.28	15.6		14.0		12.5	
		70	8.63	16.8		15.1		13.4	
		75	8.04	18.0		16.2		14.4	
		80	7.55	19.2		17.3		15.4	
		90	6.71	21.6		19.4		17.3	
		100	6.04	24.0		21.6		19.2	
125	4.83	30.0	27.0	24.0					
150	4.02	36.0	32.4	28.8					
175	3.45	42.0	37.8	33.6					

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง

ORDER
EXAMPLE

Model D - L
19SH25-050

สปริงสีเขียวเข้ม
Dark Green Spring
Model: 19SH

Spring Load Chart



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
25	12.5	25	31.20	6.0	1833 (187)	5.4	1650 (168)	4.8	1466 (150)
		30	25.97	7.2		6.5		5.8	
		35	22.38	8.4		7.6		6.7	
		40	19.47	9.6		8.6		7.7	
		45	17.40	10.8		9.7		8.6	
		50	15.58	12.0		10.8		9.6	
		55	14.20	13.2		11.9		10.6	
		60	12.98	14.4		13.0		11.5	
		65	12.00	15.6		14.0		12.5	
		70	11.13	16.8		15.1		13.4	
		75	10.40	18.0		16.2		14.4	
		80	9.73	19.2		17.3		15.4	
		90	8.65	21.6		19.4		17.3	
		100	7.79	24.0		21.6		19.2	
		125	6.23	30.0		27.0		24.0	
		150	5.20	36.0		32.4		28.8	
175	4.46	42.0	37.8	33.6					
200	3.90	48.0	43.2	38.4					
27	13.5	25	36.40	6.0	2146 (219)	5.4	1931 (197)	4.8	1717 (175)
		30	30.41	7.2		6.5		5.8	
		35	26.20	8.4		7.6		6.7	
		40	22.81	9.6		8.6		7.7	
		45	20.30	10.8		9.7		8.6	
		50	18.25	12.0		10.8		9.6	
		55	16.50	13.2		11.9		10.6	
		60	15.20	14.4		13.0		11.5	
		65	14.00	15.6		14.0		12.5	
		70	13.03	16.8		15.1		13.4	
		75	12.10	18.0		16.2		14.4	
		80	11.40	19.2		17.3		15.4	
		90	10.13	21.6		19.4		17.3	
		100	9.12	24.0		21.6		19.2	
		125	7.30	30.0		27.0		24.0	
		150	6.08	36.0		32.4		28.8	
175	5.21	42.0	37.8	33.6					
200	4.56	48.0	43.2	38.4					
30	15	25	45.00	6.0	2646 (270)	5.4	2381 (243)	4.8	2117 (216)
		30	37.50	7.2		6.5		5.8	
		35	32.26	8.4		7.6		6.7	
		40	28.12	9.6		8.6		7.7	
		45	25.00	10.8		9.7		8.6	
		50	22.50	12.0		10.8		9.6	
		55	20.40	13.2		11.9		10.6	
		60	18.75	14.4		13.0		11.5	
		65	17.30	15.6		14.0		12.5	
		70	16.07	16.8		15.1		13.4	
		75	15.00	18.0		16.2		14.4	
		80	14.06	19.2		17.3		15.4	
		90	12.50	21.6		19.4		17.3	
		100	11.25	24.0		21.6		19.2	
		125	9.00	30.0		27.0		24.0	
		150	7.50	36.0		32.4		28.8	
175	6.42	42.0	37.8	33.6					
200	5.62	48.0	43.2	38.4					

สปริงแม่พิมพ์

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง

ORDER
EXAMPLE

Model D - L
19SH25-050

สปริงสีเขียวเข้ม
Dark Green Spring
Model: 19SH

Spring Load Chart

Light ←  → Heavy

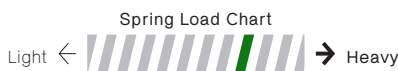


D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
35	17.5	35	43.68	8.4	3597 (367)	7.6	3237 (330)	6.7	2878 (293)
		40	38.22	9.6		8.6		7.7	
		45	33.98	10.8		9.7		8.6	
		50	30.58	12.0		10.8		9.6	
		55	27.80	13.2		11.9		10.6	
		60	25.48	14.4		13.0		11.5	
		65	23.53	15.6		14.0		12.5	
		70	21.84	16.8		15.1		13.4	
		75	20.39	18.0		16.2		14.4	
		80	19.11	19.2		17.3		15.4	
		90	16.99	21.6		19.4		17.3	
		100	15.29	24.0		21.6		19.2	
		125	12.23	30.0		27.0		24.0	
		150	10.19	36.0		32.4		28.8	
175	8.73	42.0	37.8	33.6					
200	7.64	48.0	43.2	38.4					
40	20	40	50.00	9.6	4704 (480)	8.6	4234 (432)	7.7	3763 (384)
		45	44.44	10.8		9.7		8.6	
		50	40.00	12.0		10.8		9.6	
		55	36.36	13.2		11.9		10.6	
		60	33.33	14.4		13.0		11.5	
		65	30.77	15.6		14.0		12.5	
		70	28.57	16.8		15.1		13.4	
		75	26.67	18.0		16.2		14.4	
		80	25.00	19.2		17.3		15.4	
		90	22.22	21.6		19.4		17.3	
		100	20.00	24.0		21.6		19.2	
		125	16.00	30.0		27.0		24.0	
		150	13.33	36.0		32.4		28.8	
		175	11.42	42.0		37.8		33.6	
200	10.00	48.0	43.2	38.4					
225	8.89	54.0	48.6	43.2					
250	8.00	60.0	54.0	48.0					
275	7.27	66.0	59.4	52.8					
300	6.67	72.0	64.8	57.6					
50	25	50	62.50	12.0	7350 (750)	10.8	6615 (675)	9.6	5880 (600)
		55	56.82	13.2		11.9		10.6	
		60	52.08	14.4		13.0		11.5	
		65	48.08	15.6		14.0		12.5	
		70	44.64	16.8		15.1		13.4	
		75	41.67	18.0		16.2		14.4	
		80	39.06	19.2		17.3		15.4	
		90	34.72	21.6		19.4		17.3	
		100	31.25	24.0		21.6		19.2	
		125	25.00	30.0		27.0		24.0	
		150	20.83	36.0		32.4		28.8	
		175	17.85	42.0		37.8		33.6	
		200	15.62	48.0		43.2		38.4	
		225	13.89	54.0		48.6		43.2	
250	12.50	60.0	54.0	48.0					
275	11.36	66.0	59.4	52.8					
300	10.41	72.0	64.8	57.6					
350	8.93	84.0	75.6	67.2					

Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูง

ORDER EXAMPLE

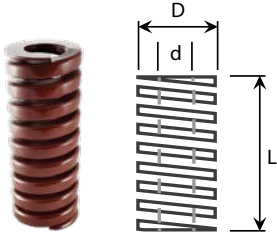
 Model D - L
 19SH25-050

 สปริงสีเขียวเข้ม
 Dark Green Spring
 Model: 19SH


D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				24% Deflection	Load N (kgf)	21.6% Deflection	Load N (kgf)	19.5% Deflection	Load N (kgf)
60	30	60	75.00	14.4	10584 (1079)	13.0	9526 (971)	11.5	8467 (863)
		70	64.28	16.8		15.1		13.4	
		80	56.25	19.2		17.3		15.4	
		90	50.00	21.6		19.4		17.3	
		100	45.00	24.0		21.6		19.2	
		125	36.00	30.0		27.0		24.0	
		150	30.00	36.0		32.4		28.8	
		175	25.71	42.0		37.8		33.6	
		200	22.50	48.0		43.2		38.4	
		225	20.00	54.0		48.6		43.2	
		250	18.00	60.0		54.0		48.0	
		275	16.36	66.0		59.4		52.8	
		300	15.00	72.0		64.8		57.6	
		350	12.86	84.0		75.6		67.2	
70	38.5	70	76.2	16.8	12557 (1280)	15.1	11301 (1152)	13.4	10046 (1024)
		80	66.7	19.2		17.3		15.4	
		90	59.3	21.6		19.4		17.3	
		100	53.3	24.0		21.6		19.2	
		125	42.7	30.0		27.0		24.0	
		150	35.6	36.0		32.4		28.8	
		175	30.5	42.0		37.8		33.6	
		200	26.7	48.0		43.2		38.4	
		225	23.7	54.0		48.6		43.2	
		250	21.3	60.0		54.0		48.0	
		275	19.4	66.0		59.4		52.8	
		300	17.8	72.0		64.8		57.6	
		350	15.2	84.0		75.6		67.2	

สปริงแม่พิมพ์

Extra Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงพิเศษ



สปริงสีน้ำตาล
Brown Spring
Model: 19SB



แรงกด Load ±10%

ความได้ฉาก Perpendicularity 2° or less

ระยะเพื่อความยาว Free Length ≤ 50 ±0.5mm
≥ 55 ±1

ORDER EXAMPLE Model D - L
19SB25-050

SAE9245

JIS Standard

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
6	15	3	6.00	3.0	177 (18)	2.7	159 (16.2)	2.4	141 (14.4)
	20		4.50	4.0		3.6		3.2	
	25		3.60	5.0		4.5		4.0	
	30		3.00	6.0		5.4		4.8	
	35		2.60	7.0		6.3		5.6	
	40		2.30	8.0		7.2		6.4	
	45		2.00	9.0		8.1		7.2	
	50		1.80	10.0		9.0		8.0	
	55		1.60	11.0		9.9		8.8	
	60		1.50	12.0		10.8		9.6	
8	10	4	16.94	2.0	324 (33)	1.8	294 (30)	1.6	255 (26)
	15		11.30	3.0		2.7		2.4	
	20		8.47	4.0		3.6		3.2	
	25		6.78	5.0		4.5		4.0	
	30		5.65	6.0		5.4		4.8	
	35		4.84	7.0		6.3		5.6	
	40		4.24	8.0		7.2		6.4	
	45		3.77	9.0		8.1		7.2	
	50		3.39	10.0		9.0		8.0	
	55		3.08	11.0		9.9		8.8	
	60		2.82	12.0		10.8		9.6	
	65		2.61	13.0		11.7		10.4	
	70		2.42	14.0		12.6		11.2	
	75		2.26	15.0		13.5		12.0	
80	2.12	16.0	14.4	12.8					
90	1.88	18.0	16.2	14.4					
100	1.65	20.0	18.0	16.0					
10	10	5	22.78	2.0	441 (45)	1.8	402 (41)	1.6	353 (36)
	15		15.19	3.0		2.7		2.4	
	20		11.25	4.0		3.6		3.2	
	25		9.00	5.0		4.5		4.0	
	30		7.50	6.0		5.4		4.8	
	35		6.43	7.0		6.3		5.6	
	40		5.63	8.0		7.2		6.4	
	45		5.00	9.0		8.1		7.2	
	50		4.50	10.0		9.0		8.0	
	55		4.09	11.0		9.9		8.8	
	60		3.75	12.0		10.8		9.6	
	65		3.47	13.0		11.7		10.4	
	70		3.21	14.0		12.6		11.2	
	75		3.00	15.0		13.5		12.0	
	80		2.82	16.0		14.4		12.8	
	90		2.50	18.0		16.2		14.4	
100	2.25	20.0	18.0	16.0					
125	1.80	25.0	22.5	20.0					

Extra Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงพิเศษ

ORDER
EXAMPLE

Model D - L
19SB25-050

สปริงสีน้ำตาล
Brown Spring
Model: 19SB

Spring Load Chart



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
12	20	6	14.50	4.0	569 (58)	3.6	510 (52)	3.2	451 (46)
	25		11.60	5.0		4.5		4.0	
	30		9.67	6.0		5.4		4.8	
	35		8.29	7.0		6.3		5.6	
	40		7.25	8.0		7.2		6.4	
	45		6.44	9.0		8.1		7.2	
	50		5.80	10.0		9.0		8.0	
	55		5.27	11.0		9.9		8.8	
	60		4.83	12.0		10.8		9.6	
	65		4.44	13.0		11.7		10.4	
	70		4.13	14.0		12.6		11.2	
	75		3.85	15.0		13.5		12.0	
	80		3.61	16.0		14.4		12.8	
	90		3.22	18.0		16.2		14.4	
100	2.90	20.0	18.0	16.0					
125	2.30	25.0	22.5	20.0					
14	20	7	18.89	4.0	736 (75)	3.6	667 (68)	3.2	589 (60)
	25		15.00	5.0		4.5		4.0	
	30		12.50	6.0		5.4		4.8	
	35		10.72	7.0		6.3		5.6	
	40		9.38	8.0		7.2		6.4	
	45		8.34	9.0		8.1		7.2	
	50		7.50	10.0		9.0		8.0	
	55		6.82	11.0		9.9		8.8	
	60		6.25	12.0		10.8		9.6	
	65		5.77	13.0		11.7		10.4	
	70		5.36	14.0		12.6		11.2	
	75		5.00	15.0		13.5		12.0	
	80		4.69	16.0		14.4		12.8	
	90		4.17	18.0		16.2		14.4	
100	3.75	20.0	18.0	16.0					
125	3.00	25.0	22.5	20.0					
16	20	8	25.00	4.0	981 (100)	3.6	883 (90)	3.2	785 (80)
	25		20.00	5.0		4.5		4.0	
	30		16.67	6.0		5.4		4.8	
	35		14.29	7.0		6.3		5.6	
	40		12.50	8.0		7.2		6.4	
	45		11.11	9.0		8.1		7.2	
	50		10.00	10.0		9.0		8.0	
	55		9.09	11.0		9.9		8.8	
	60		8.34	12.0		10.8		9.6	
	65		7.69	13.0		11.7		10.4	
	70		7.14	14.0		12.6		11.2	
	75		6.67	15.0		13.5		12.0	
	80		6.25	16.0		14.4		12.8	
	90		5.56	18.0		16.2		14.4	
100	5.00	20.0	18.0	16.0					
125	4.00	25.0	22.5	20.0					
18	20	9	31.39	4.0	1226 (125)	3.6	1108 (113)	3.2	981 (100)
	25		25.00	5.0		4.5		4.0	
	30		20.84	6.0		5.4		4.8	
	35		17.86	7.0		6.3		5.6	
	40		15.63	8.0		7.2		6.4	
	45		13.89	9.0		8.1		7.2	
	50		12.50	10.0		9.0		8.0	
	55		11.37	11.0		9.9		8.8	
	60		10.42	12.0		10.8		9.6	
	65		9.62	13.0		11.7		10.4	
	70		8.93	14.0		12.6		11.2	
	75		8.34	15.0		13.5		12.0	
	80		7.82	16.0		14.4		12.8	
	90		6.95	18.0		16.2		14.4	
100	6.26	20.0	18.0	16.0					
125	5.00	25.0	22.5	20.0					

สปริงแม่พิมพ์

Extra Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงพิเศษ

ORDER
EXAMPLE

Model D - L
19SB25-050

สปริงสีน้ำตาล
Brown Spring
Model: 19SB

Spring Load Chart

Light ←



→ Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
20	10	20	40.00	4.0	1569 (160)	3.6	1412 (144)	3.2	1255 (128)
		25	32.00	5.0		4.5		4.0	
		30	26.67	6.0		5.4		4.8	
		35	22.86	7.0		6.3		5.6	
		40	20.00	8.0		7.2		6.4	
		45	17.78	9.0		8.1		7.2	
		50	16.00	10.0		9.0		8.0	
		55	14.55	11.0		9.9		8.8	
		60	13.33	12.0		10.8		9.6	
		65	12.31	13.0		11.7		10.4	
		70	11.43	14.0		12.6		11.2	
		75	10.67	15.0		13.5		12.0	
		80	10.00	16.0		14.4		12.8	
		90	8.89	18.0		16.2		14.4	
		100	8.00	20.0		18.0		16.0	
		125	6.40	25.0		22.5		20.0	
		150	5.33	30.0		27.0		24.0	
175	4.57	35.0	31.5	28.0					
22	11	25	39.00	5.0	1912 (195)	4.5	1726 (176)	4.0	1530 (156)
		30	32.50	6.0		5.4		4.8	
		35	27.86	7.0		6.3		5.6	
		40	24.38	8.0		7.2		6.4	
		45	21.67	9.0		8.1		7.2	
		50	19.50	10.0		9.0		8.0	
		55	17.73	11.0		9.9		8.8	
		60	16.25	12.0		10.8		9.6	
		65	15.00	13.0		11.7		10.4	
		70	13.93	14.0		12.6		11.2	
		75	13.00	15.0		13.5		12.0	
		80	12.19	16.0		14.4		12.8	
		90	10.83	18.0		16.2		14.4	
		100	9.75	20.0		18.0		16.0	
		125	7.80	25.0		22.5		20.0	
		150	6.50	30.0		27.0		24.0	
		175	5.57	35.0		31.5		28.0	
25	12.5	25	49.00	5.0	2403 (245)	4.5	2167 (221)	4.0	1922 (196)
		30	40.80	6.0		5.4		4.8	
		35	35.00	7.0		6.3		5.6	
		40	30.60	8.0		7.2		6.4	
		45	27.20	9.0		8.1		7.2	
		50	24.50	10.0		9.0		8.0	
		55	22.30	11.0		9.9		8.8	
		60	20.40	12.0		10.8		9.6	
		65	18.80	13.0		11.7		10.4	
		70	17.50	14.0		12.6		11.2	
		75	16.30	15.0		13.5		12.0	
		80	15.30	16.0		14.4		12.8	
		90	13.60	18.0		16.2		14.4	
		100	12.30	20.0		18.0		16.0	
		125	9.80	25.0		22.5		20.0	
		150	8.17	30.0		27.0		24.0	
		175	7.00	35.0		31.5		28.0	
200	6.13	40.0	36.0	32.0					

Extra Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงพิเศษ

ORDER
EXAMPLE

Model D - L
19SB25-050

สปริงสีน้ำตาล
Brown Spring
Model: 19SB

Spring Load Chart



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
27	13.5	25	58.00	5.0	2844 (290)	4.5	2560 (261)	4.0	2275 (232)
		30	48.33	6.0		5.4		4.8	
		35	41.43	7.0		6.3		5.6	
		40	36.25	8.0		7.2		6.4	
		45	32.22	9.0		8.1		7.2	
		50	29.00	10.0		9.0		8.0	
		55	26.36	11.0		9.9		8.8	
		60	24.17	12.0		10.8		9.6	
		65	22.31	13.0		11.7		10.4	
		70	20.71	14.0		12.6		11.2	
		75	19.33	15.0		13.5		12.0	
		80	18.13	16.0		14.4		12.8	
		90	16.11	18.0		16.2		14.4	
		100	14.50	20.0		18.0		16.0	
		125	11.60	25.0		22.5		120.0	
		150	9.67	30.0		27.0		24.0	
		175	8.28	35.0		31.5		28.0	
200	7.25	40.0	36.0	32.0					
30	15	25	72.00	5.0	3530 (360)	4.5	3177 (324)	4.0	2824 (288)
		30	60.00	6.0		5.4		4.8	
		35	51.43	7.0		6.3		5.6	
		40	45.00	8.0		7.2		6.4	
		45	40.00	9.0		8.1		7.2	
		50	36.00	10.0		9.0		8.0	
		55	32.72	11.0		9.9		8.8	
		60	30.00	12.0		10.8		9.6	
		65	27.69	13.0		11.7		10.4	
		70	25.71	14.0		12.6		11.2	
		75	24.00	15.0		13.5		12.0	
		80	22.50	16.0		14.4		12.8	
		90	20.00	18.0		16.2		14.4	
		100	18.00	20.0		18.0		16.0	
		125	14.40	25.0		22.5		20.0	
		150	12.00	30.0		27.0		24.0	
		175	10.28	35.0		31.5		28.0	
200	9.00	40.0	36.0	32.0					
35	17.5	35	569.94	7.0	4805 (490)	6.3	4325 (441)	5.6	3844 (392)
		40	61.25	8.0		7.2		6.4	
		45	54.44	9.0		8.1		7.2	
		50	49.00	10.0		9.0		8.0	
		55	44.54	11.0		9.9		8.8	
		60	40.83	12.0		10.8		9.6	
		65	37.69	13.0		11.7		10.4	
		70	35.00	14.0		12.6		11.2	
		75	32.67	15.0		13.5		12.0	
		80	30.62	16.0		14.4		12.8	
		90	27.22	18.0		16.2		14.4	
		100	24.50	20.0		18.0		16.0	
		125	19.60	25.0		22.5		20.0	
		150	16.33	30.0		27.0		24.0	
		175	14.00	35.0		31.5		28.0	
		200	12.25	40.0		36.0		32.0	

สปริงแม่พิมพ์

Extra Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงพิเศษ

ORDER Model D - L
EXAMPLE 19SB25-050

สปริงน้ำหนัก
Brown Spring
Model: 19SB

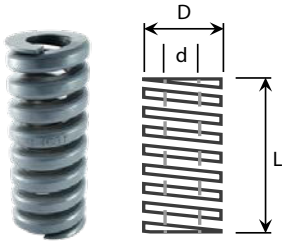
Spring Load Chart

Light ←  → Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
40	20	40	80.00	8.0	6276 (640)	7.2	5649 (576)	6.4	5021 (512)
		45	71.11	9.0		8.1		7.2	
		50	64.00	10.0		9.0		8.0	
		55	58.18	11.0		9.9		9.8	
		60	53.33	12.0		10.8		9.6	
		65	49.23	13.0		11.7		10.4	
		70	45.71	14.0		12.6		11.2	
		75	42.86	15.0		13.5		12.0	
		80	40.00	16.0		14.4		12.8	
		90	35.56	18.0		16.2		14.4	
		100	32.00	20.0		18.0		16.0	
		125	25.60	25.0		22.5		20.0	
		150	21.33	30.0		27.0		24.0	
		175	18.28	35.0		31.5		28.0	
		200	16.00	40.0		36.0		32.0	
50	25	50	100.00	10.0	9807 (1000)	9.0	8826 (900)	8.0	7845 (800)
		55	90.91	11.0		9.9		8.8	
		60	83.33	12.0		10.8		9.6	
		65	76.92	13.0		11.7		10.4	
		70	71.42	14.0		12.6		11.2	
		75	66.67	15.0		13.5		12.0	
		80	62.50	16.0		14.4		12.8	
		90	55.56	18.0		16.2		14.4	
		100	50.00	20.0		18.0		16.0	
		125	40.00	25.0		22.5		20.0	
		150	33.33	30.0		27.0		24.0	
		175	28.57	35.0		31.5		28.0	
		200	25.00	40.0		36.0		32.0	
		225	22.22	45.0		40.5		36.0	
		250	20.00	50.0		45.0		40.0	
60	30	60	120.00	12.0	14122 (1440)	10.8	12709 (1296)	9.6	11297 (1152)
		70	102.86	14.0		12.6		11.2	
		80	90.00	16.0		14.4		12.8	
		90	80.00	18.0		16.2		14.4	
		100	72.00	20.0		18.0		16.0	
		125	57.60	25.0		22.5		20.0	
		150	48.00	30.0		27.0		24.0	
		175	41.14	35.0		31.5		28.0	
		200	36.00	40.0		36.0		32.0	
		225	32.00	45.0		40.5		36.0	
		250	28.80	50.0		45.0		40.0	
		275	26.18	55.0		49.5		44.0	
		300	24.00	60.0		54.0		48.0	
		350	20.57	70.0		63.0		56.0	
		70	38.5	70		124.3		14.0	
80	108.8			16.0	14.4	12.8			
90	96.7			18.0	16.2	14.4			
100	87.0			20.0	18.0	16.0			
125	69.6			25.0	22.5	20.0			
150	58.0			30.0	27.0	24.0			
175	49.7			35.0	31.5	28.0			
200	43.5			40.0	36.0	32.0			
225	38.7			45.0	40.5	36.0			
250	34.8			50.0	45.0	40.0			
275	31.6			55.0	49.5	44.0			
300	29.0			60.0	54.0	48.0			
350	24.9			70.0	63.0	56.0			

Super Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงมาก



สปริงสีเทา
Grey Spring
Model: 19SG



แรงกด Load $\pm 10\%$
 ความได้ฉาก Perpendicularity 2° or less
 ระยะเพื่อความยาว Free Length $\leq 50 \pm 0.5\text{mm}$
 $\geq 55 \pm 1$

ORDER EXAMPLE

Model D - L
19SG25-050



D	L	d	Spring Constant (kg/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
10	15	5	16.67	3.0	490 (50)	2.7	441 (45)	2.4	392 (40)
	20		12.50	4.0		3.6		3.2	
	25		10.00	5.0		4.5		4.0	
	30		8.33	6.0		5.4		4.8	
	35		7.14	7.0		6.3		5.6	
	40		6.25	8.0		7.2		6.4	
	45		5.56	9.0		8.1		7.2	
	50		5.00	10.0		9.0		8.0	
	55		4.55	11.0		9.9		8.8	
	60		4.17	12.0		10.8		9.6	
	65		3.85	13.0		11.7		10.4	
	70		3.57	14.0		12.6		11.2	
	75		3.33	15.0		13.5		12.0	
80	3.13	16.0	14.4	12.8					
90	2.78	18.0	16.2	14.4					
100	2.50	20.0	18.0	16.0					
12	20	6	18.75	4.0	736 (75)	3.6	662 (67.5)	3.2	588 (60)
	25		15.00	5.0		4.5		4.0	
	30		12.50	6.0		5.4		4.8	
	35		10.71	7.0		6.3		5.6	
	40		9.38	8.0		7.2		6.4	
	45		8.33	9.0		8.1		7.2	
	50		7.50	10.0		9.0		8.0	
	55		6.82	11.0		9.9		8.8	
	60		6.25	12.0		10.8		9.6	
	65		5.77	13.0		11.7		10.4	
	70		5.36	14.0		12.6		11.2	
	75		5.00	15.0		13.5		12.0	
	80		4.69	16.0		14.4		12.8	
90	4.17	18.0	16.2	14.4					
100	3.75	20.0	18.0	16.0					
14	20	7	24.25	4.0	951 (97)	3.6	853 (87)	3.2	761 (77.6)
	25		19.40	5.0		4.5		4.0	
	30		16.17	6.0		5.4		4.8	
	35		13.86	7.0		6.3		5.6	
	40		12.13	8.0		7.2		6.4	
	45		10.78	9.0		8.1		7.2	
	50		9.70	10.0		9.0		8.0	
	55		8.82	11.0		9.9		8.8	
	60		8.08	12.0		10.8		9.6	
	65		7.46	13.0		11.7		10.4	
	70		6.93	14.0		12.6		11.2	
	75		6.47	15.0		13.5		12.0	
	80		6.06	16.0		14.4		12.8	
90	5.39	18.0	16.2	14.4					
100	4.85	20.0	18.0	16.0					

Super Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงมาก

ORDER
EXAMPLE

Model D - L
19SG25-050

สปริงสีเทา
Grey Spring
Model: 19SG

Spring Load Chart

Light



Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
16	8	20	32.25	4.0	1275 (130)	3.6	1147 (117)	3.2	1020 (104)
		25	25.80	5.0		4.5		4.0	
		30	21.50	6.0		5.4		4.8	
		35	18.43	7.0		6.3		5.6	
		40	16.13	8.0		7.2		6.4	
		45	14.33	9.0		8.1		7.2	
		50	12.90	10.0		9.0		8.0	
		55	11.73	11.0		9.9		8.8	
		60	10.75	12.0		10.8		9.6	
		65	9.92	13.0		11.7		10.4	
		70	9.21	14.0		12.6		11.2	
		75	8.60	15.0		13.5		12.0	
		80	8.06	16.0		14.4		12.8	
		90	7.17	18.0		16.2		14.4	
100	6.45	20.0	18.0	16.0					
18	9	20	40.25	4.0	1569 (160)	3.6	1412 (144)	3.2	1255 (128)
		25	32.20	5.0		4.5		4.0	
		30	26.83	6.0		5.4		4.8	
		35	23.00	7.0		6.3		5.6	
		40	20.13	8.0		7.2		6.4	
		45	17.89	9.0		8.1		7.2	
		50	16.10	10.0		9.0		8.0	
		55	14.64	11.0		9.9		8.8	
		60	13.42	12.0		10.8		9.6	
		65	12.38	13.0		11.7		10.4	
		70	11.50	14.0		12.6		11.2	
		75	10.73	15.0		13.5		12.0	
		80	10.06	16.0		14.4		12.8	
		90	8.94	18.0		16.2		14.4	
100	8.05	20.0	18.0	16.0					
20	10	20	51.50	4.0	2059 (210)	3.6	1853 (189)	3.2	1648 (168)
		25	41.20	5.0		4.5		4.0	
		30	34.33	6.0		5.4		4.8	
		35	29.43	7.0		6.3		5.6	
		40	25.75	8.0		7.2		6.4	
		45	22.89	9.0		8.1		7.2	
		50	20.60	10.0		9.0		8.0	
		55	18.73	11.0		9.9		8.8	
		60	17.17	12.0		10.8		9.6	
		65	15.85	13.0		11.7		10.4	
		70	14.71	14.0		12.6		11.2	
		75	13.73	15.0		13.5		12.0	
		80	12.88	16.0		14.4		12.8	
		90	11.44	18.0		16.2		14.4	
100	10.30	20.0	18.0	16.0					
125	8.24	25.0	22.5	20.0					
22	11	25	50.20	5.0	2354 (240)	4.5	2118 (216)	4.0	1883 (192)
		30	41.83	6.0		5.4		4.8	
		35	35.86	7.0		6.3		5.6	
		40	31.38	8.0		7.2		6.4	
		45	27.89	9.0		8.1		7.2	
		50	25.10	10.0		9.0		8.0	
		55	22.82	11.0		9.9		8.8	
		60	20.92	12.0		10.8		9.6	
		65	19.31	13.0		11.7		10.4	
		70	17.93	14.0		12.6		11.2	
		75	16.73	15.0		13.5		12.0	
		80	15.69	16.0		14.4		12.8	
		90	13.94	18.0		16.2		14.4	
		100	12.55	20.0		18.0		16.0	
125	10.04	25.0	22.5	20.0					

Super Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงมาก

ORDER
EXAMPLE

Model D - L
19SG25-050

สปริงสีเทา
Grey Spring
Model: 19SG

Spring Load Chart

Light ←



→ Heavy



Springs

D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
25	25	12.5	63.00	5.0	3040 (310)	4.5	2736 (279)	4.0	2432 (248)
	30		52.50	6.0		5.4		4.8	
	35		45.00	7.0		6.3		5.6	
	40		39.38	8.0		7.2		6.4	
	45		35.00	9.0		8.1		7.2	
	50		31.50	10.0		9.0		8.0	
	55		28.64	11.0		9.9		8.8	
	60		26.25	12.0		10.8		9.6	
	65		24.23	13.0		11.7		10.4	
	70		22.50	14.0		12.6		11.2	
	75		21.00	15.0		13.5		12.0	
	80		19.69	16.0		14.4		12.8	
	90		17.50	18.0		16.2		14.4	
	100		15.75	20.0		18.0		16.0	
125	12.60	25.0	22.5	20.0					
150	10.50	30.0	27.0	24.0					
27	25	13.5	74.60	5.0	3628 (370)	4.5	3265 (333)	4.0	2903 (296)
	30		62.17	6.0		5.4		4.8	
	35		53.29	7.0		6.3		5.6	
	40		46.63	8.0		7.2		6.4	
	45		41.44	9.0		8.1		7.2	
	50		37.30	10.0		9.0		8.0	
	55		33.91	11.0		9.9		8.8	
	60		31.08	12.0		10.8		9.6	
	65		28.69	13.0		11.7		10.4	
	70		26.64	14.0		12.6		11.2	
	75		24.87	15.0		13.5		12.0	
	80		23.31	16.0		14.4		12.8	
	90		20.72	18.0		16.2		14.4	
	100		18.65	20.0		18.0		16.0	
125	14.92	25.0	22.5	20.0					
150	12.43	30.0	27.0	24.0					
30	25	15	92.80	5.0	4707 (480)	4.5	4236 (432)	4.0	3765 (384)
	30		77.33	6.0		5.4		4.8	
	35		66.29	7.0		6.3		5.6	
	40		58.00	8.0		7.2		6.4	
	45		51.56	9.0		8.1		7.2	
	50		46.40	10.0		9.0		8.0	
	55		42.18	11.0		9.9		8.8	
	60		38.67	12.0		10.8		9.6	
	65		35.69	13.0		11.7		10.4	
	70		33.14	14.0		12.6		11.2	
	75		30.93	15.0		13.5		12.0	
	80		29.00	16.0		14.4		12.8	
	90		25.78	18.0		16.2		14.4	
	100		23.20	20.0		18.0		16.0	
	125		28.56	25.0		22.5		20.0	
	150		15.47	30.0		27.0		24.0	
175	13.26	35.0	31.5	28.0					
200	11.60	40.0	36.0	32.0					
35	35	17.5	90.14	7.0	6178 (630)	6.3	5560 (567)	5.6	4942 (504)
	40		78.88	8.0		7.2		6.4	
	45		70.11	9.0		8.1		7.2	
	50		63.10	10.0		9.0		8.0	
	55		57.36	11.0		9.9		8.8	
	60		52.58	12.0		10.8		9.6	
	65		48.54	13.0		11.7		10.4	
	70		45.07	14.0		12.6		11.2	
	75		42.07	15.0		13.5		12.0	
	80		39.44	16.0		14.4		12.8	
	90		35.06	18.0		16.2		14.4	
	100		31.55	20.0		18.0		16.0	
	125		25.24	25.0		22.5		20.0	
	150		21.03	30.0		27.0		24.0	
175	18.03	35.0	31.5	28.0					
200	15.78	40.0	36.0	32.0					

สปริงแม่พิมพ์

Super Heavy Load Spring - สปริงรับแรงกดที่มีค่าสูงมาก

ORDER
EXAMPLE

Model D - L
19SG25-050

สปริงสีเทา
Grey Spring
Model: 19SG

Spring Load Chart

Light ←



→ Heavy



D	L	d	Spring Constant (kgf/mm)	300,000 times		500,000 times		1,000,000 times	
				20% Deflection	Load N (kgf)	18% Deflection	Load N (kgf)	16% Deflection	Load N (kgf)
40	20	40	103.00	8.0	8041 (820)	7.2	7237 (738)	6.4	6433 (656)
		45	91.56	9.0		8.1			
		50	82.40	10.0		9.0			
		55	74.91	11.0		9.9			
		60	68.67	12.0		10.8			
		65	63.38	13.0		11.7			
		70	58.86	14.0		12.6			
		75	54.93	15.0		13.5			
		80	51.50	16.0		14.4			
		90	45.78	18.0		16.2			
		100	41.20	20.0		18.0			
		125	32.96	25.0		22.5			
		150	27.47	30.0		27.0			
		175	23.54	35.0		31.5			
200	20.60	40.0	36.0						
50	25	50	128.80	10.0	12258 (1250)	9.0	11033 (1125)	8.0	9807 (1000)
		55	117.09	11.0		9.9			
		60	107.33	12.0		10.8			
		65	99.08	13.0		11.7			
		70	92.00	14.0		12.6			
		75	85.87	15.0		13.5			
		80	80.50	16.0		14.4			
		90	71.56	18.0		16.2			
		100	64.40	20.0		18.0			
		125	51.52	25.0		22.5			
		150	42.93	30.0		27.0			
		175	36.80	35.0		31.5			
		200		40.0		36.0			

GROUP 11

11FN	Mold Clamps	161
11MC	Mold Clamps	156
11MCF	Mold Clamps	157
11TCS	Mold Clamps	160
11TCW	Mold Clamps	161
11TEN	Mold Clamps	161
11TGNCF	Mold Clamps	158
11TPW	Mold Clamps	161
11TS	Mold Clamps	157
11TSB	Mold Clamps	159
11TSC	Mold Clamps	158
11TSSC	Mold Clamps	159
11TTN	Mold Clamps	161
11TTUC	Mold Clamps	157
11TUC	Mold Clamps	158

GROUP 17

17BR	Mold Accessories	172
17R376	Mold Accessories	171
17ST	Mold Accessories	172

GROUP 19

19SB	Mold Springs	207
19SF	Mold Springs	184
19SG	Mold Springs	212
19SH	Mold Springs	201
19SL	Mold Springs	189
19SM	Mold Springs	195
19SSR	Mold Springs	181
19SSS	Mold Springs	183
19SSU	Mold Springs	179
19SSY	Mold Springs	177

GROUP 21

21101	Mold Couplings	127-130
21201	Mold Couplings	127-130
21301	Mold Couplings	131-134
21401	Mold Couplings	131-134
21601	Mold Couplings	135-136
21701	Mold Couplings	135-136
21AL	Cooling System	153-154
21ALV	Cooling System	154-154
21AS	Cooling System	147
21AS	Cooling System	148
21ASS	Cooling System	148
21ATDC	Mold Accessories	168
21BMCS	Mold Accessories	170
21BMCSE	Mold Accessories	170
21BTDC	Mold Accessories	168
21CACC	Cooling System	151
21CE	Mold Clamps	156
21CHF	Cooling System	150
21CHK	Cooling System	150
21CNT	Cooling System	151
21CQC	Cooling System	152
21CT	Cooling System	144
21CT	Cooling System	144
21DST	Cooling System	149
21EKL	Cooling System	152
21ES	Cooling System	147
21ES	Cooling System	148
21ESS	Cooling System	148
21FC	Cooling System	146
21FM	Cooling System	146
21FMV	Cooling System	146
21GAS1	Mold Accessories	169
21GAS2	Mold Accessories	169
21GBP	Mold Accessories	165
21GCCP	Cooling System	147
21GDA	Mold Accessories	166
21GDD	Mold Accessories	167
21GDJ	Mold Accessories	167
21GDZ	Mold Accessories	168
21GLM	Positioning	119

21GLRA	Mold Accessories	165
21GLRB	Mold Accessories	165
21GM	Mold Accessories	166
21GPLA	Positioning	115
21GTBL	Positioning	116
21GTBS	Positioning	116
21GVJ	Mold Accessories	169
21HAS-Z07	Positioning	123
21HAS-Z17	Positioning	123
21HAS-Z18	Positioning	124
21HAS-Z19	Positioning	124
21HAS-Z46	Positioning	121
21HAS-Z48	Positioning	122
21HAS-Z50	Positioning	120
21HS	Mold Accessories	166
21HVFF	Mold Couplings	142
21JN	Cooling System	146
21LSN	Cooling System	144
21LSNF	Cooling System	145
21LT	Cooling System	154
21MRSE	Mold Accessories	170
21MRSP	Mold Accessories	170
21NKC	Mold Accessories	170
21NKP	Mold Accessories	170
21PL	Positioning	119
21PLG	Positioning	119
21RMA	Mold Accessories	168
21RMB	Mold Accessories	168
21SBC	Mold Accessories	164
21SBCA	Mold Accessories	164
21SBCB	Mold Accessories	164
21SBSA	Mold Accessories	164
21SBSB	Mold Accessories	164
21SBUA	Mold Accessories	164
21SBUB	Mold Accessories	164
21SLL	Mold Couplings	146-141
21LSLA	Mold Couplings	142
21S-NKC	Mold Couplings	137
21S-NKL	Mold Couplings	138
21SPBT	Mold Couplings	148-141
21SPC	Mold Couplings	139-141
21SPCF	Mold Couplings	142-141
21SPDT	Mold Couplings	149-141
21SPE	Mold Couplings	142
21SPEGT	Mold Couplings	141
21SPG	Mold Couplings	141
21SPH	Mold Couplings	145-141
21SPK	Mold Couplings	142
21SPKB	Mold Couplings	142
21SPKD	Mold Couplings	142
21SPKG	Mold Couplings	141
21SPLEL	Mold Couplings	144-141
21SPLFL	Mold Couplings	143-141
21SPLL	Mold Couplings	141-141
21SPM	Mold Couplings	142
21SPOC	Mold Couplings	140-141
21SPU	Mold Couplings	142
21SPV	Mold Couplings	142
21SPWY	Mold Couplings	141
21SPXY	Mold Couplings	147-141
21SPY	Mold Couplings	142
21SPZA	Mold Couplings	142
21SST	Cooling System	149
21TAP	Positioning	115
21TBF	Positioning	117
21TN	Positioning	118
21TVA	Mold Accessories	169
21TVB	Mold Accessories	169
21VC	Cooling System	145
21VCN	Cooling System	145

GROUP 25

25ABPX	Angular Pins	56
25ABPZS	Angular Pins	56
25ABPZT	Angular Pins	56
25AGHX	Angular Pins	50
25AGHXS	Angular Pins	50
25AGM	Angular Pins	51
25AGMS	Angular Pins	51
25AGP	Angular Pins	49
25AGRSS	Angular Pins	52
25AGRWS	Angular Pins	52
25AGS	Angular Pins	49
25AGU	Angular Pins	50
25AGUS	Angular Pins	50
25AGX	Angular Pins	51
25AGXS	Angular Pins	51
25ALBMS	Angular Pins	57
25ALBPS	Angular Pins	58
25ANC	Angular Pins	53
25APP	Angular Pins	52
25B	Mold Accessories	174
25BCR	Mold Accessories	173
25BCRP	Mold Accessories	173-174
25CGZ	Guide Rails	95
25CHI	Mold Accessories	174
25CKBF	Guide Rails	96
25CKBI	Guide Rails	96
25CKBW	Guide Rails	96
25CUPF	Guide Rails	99
25CUPI	Guide Rails	99
25CUPW	Guide Rails	99
25DSAA	Slide Core Units	67
25DSAN	Slide Core Units	65
25DSAP	Slide Core Units	72
25DSNP	Slide Core Units	71
25DSPL	Ejector Components	45
25EGBB	Ejector Components	40
25EGBH	Ejector Components	33
25EGBHZ-I	Ejector Components	33
25EGBK-W	Ejector Components	35
25EGBLH-W	Ejector Components	36
25EGBL-W	Ejector Components	36
25EGBT	Ejector Components	39
25EGB-W	Ejector Components	35
25EGBZS-W	Ejector Components	34
25EGBZ-W	Ejector Components	34
25EGD	Ejector Components	30
25EGDHE	Ejector Components	32
25EGDHF	Ejector Components	32
25EGDP	Ejector Components	30
25EGDX	Ejector Components	32
25ERST	Ejector Components	43
25ETH	Ejector Components	27
25ETHA	Ejector Components	31
25ETHC	Ejector Components	28
25ETHN	Ejector Components	28
25ETHR	Ejector Components	29
25ETZA	Ejector Components	31
25FRTL	Guide Rails	88
25FSBW	Guide Pins & Bushs	24
25GA	Guide Pins & Bushs	6
25GAT	Guide Pins & Bushs	7
25GBAS	Guide Pins & Bushs	11
25GBBS	Guide Pins & Bushs	12
25GBH	Guide Pins & Bushs	10
25GBHDZ-W	Guide Pins & Bushs	15
25GBHE	Guide Pins & Bushs	13
25GBHEZ	Guide Pins & Bushs	15
25GBS	Guide Pins & Bushs	10
25GBSDZ-W	Guide Pins & Bushs	16
25GBSE	Guide Pins & Bushs	14
25GBSEZ	Guide Pins & Bushs	16

25GPAL	Guide Pins & Bushs	3	25SOLW	Guide Rails	112
25GPALSP	Guide Pins & Bushs	5	25SOSG	Ejector Components	37
25GPJL	Guide Pins & Bushs	4	25SOST	Guide Pins & Bushs	20
25GPLP	Guide Pins & Bushs	5	25SOVM	Ejector Components	38
25GPPA	Guide Pins & Bushs	7	25SPD	Guide Pins & Bushs	9
25GPPL	Guide Pins & Bushs	6	25SPH-F	Slide Core Units	79
25GPXL	Guide Pins & Bushs	6	25SPH-M	Slide Core Units	80
25GRS	Guide Rails	85	25SPL	Ejector Components	44
25GR_S	Guide Rails	89	25SPLF	Ejector Components	45
25GRSM	Guide Rails	85	25SPLG	Ejector Components	44
25GR_SM	Guide Rails	89	25SPLW	Guide Rails	105
25GRSZ	Guide Rails	85	25SPMW	Guide Rails	104
25GR_SZ	Guide Rails	89	25SPP	Guide Pins & Bushs	8
25GRZ	Guide Rails	85	25SPPH	Ejector Components	46
25GR_Z	Guide Rails	89	25SPFN	Ejector Components	46
25GT_S	Guide Rails	93	25SPP-O	Guide Pins & Bushs	9
25GT_SM	Guide Rails	93	25SPFZ	Guide Pins & Bushs	8
25LBCSK	Angular Pins	53	25SPPZ-O	Guide Pins & Bushs	9
25LBCSM	Angular Pins	53	25SPS	Guide Pins & Bushs	9
25LBCSZ	Angular Pins	53	25SPW	Ejector Components	46
25LBMD	Angular Pins	54	25SPWD	Ejector Components	46
25LBMS	Angular Pins	54	25SPWG	Ejector Components	46
25LBSS	Angular Pins	55	25SSBRP	Mold Accessories	173-174
25LBSSST	Angular Pins	55	25SSBRS	Mold Accessories	173
25MSRGF	Guide Rails	100	25STRB	Ejector Components	46
25MSRGI	Guide Rails	100	25STRT	Ejector Components	46
25MSRGW	Guide Rails	100	25STWI	Guide Rails	109
25MSTS	Guide Rails	104	25STWW	Guide Rails	102
25RGBD-W	Guide Pins & Bushs	17	25STWWD	Guide Rails	102
25RGBF-W	Guide Pins & Bushs	19	25SWF	Guide Rails	107
25RGBTD-W	Guide Pins & Bushs	17	25SWFD	Guide Rails	107
25RGB-W	Guide Pins & Bushs	18	25SWI	Guide Rails	108
25RPH-F	Slide Core Units	79	25SWW	Guide Rails	101
25RPH-M	Slide Core Units	81	25SWWD	Guide Rails	101
25RSCU-F	Slide Core Units	77	25TSOEG	Ejector Components	38
25RSCU-M	Slide Core Units	78	25UTWW	Guide Rails	103
25RT_T(L/ V/Z)	Ejector Components	41	25WSBW	Guide Pins & Bushs	23
25RT_T(XE/ XF/SM)	Ejector Components	42	25WSBW-N	Guide Pins & Bushs	23
25SAA	Slide Core Units	62			
25SAN	Slide Core Units	61			
25SAP	Slide Core Units	70			
25SBW	Guide Pins & Bushs	21			
25SB-W	Ejector Components	40			
25SCA	Slide Core Units	64			
25SCGD	Guide Rails	95			
25SCGH	Guide Rails	95			
25SCGI	Guide Rails	95			
25SCN	Slide Core Units	63			
25SCUF	Guide Rails	97			
25SCUI	Guide Rails	97			
25SCUW	Guide Rails	97			
25SGRI	Guide Rails	87			
25SGRIK	Guide Rails	87			
25SGRIS	Guide Rails	91			
25SGRLI	Guide Rails	92			
25SGRLW	Guide Rails	92			
25SGRTI	Guide Rails	94			
25SGRTW	Guide Rails	94			
25SGRW	Guide Rails	87			
25SGRWK	Guide Rails	87			
25SGRWS	Guide Rails	91			
25SGTHL	Slide Core Units	82			
25SGTHR	Slide Core Units	82			
25SGTL	Slide Core Units	82			
25SGTR	Slide Core Units	82			
25SLSPH	Guide Rails	111			
25SMP	Guide Rails	110			
25SNP	Slide Core Units	69			
25SOCU-F	Slide Core Units	75			
25SOCU-M	Slide Core Units	76			
25SOCU-S	Slide Core Units	73			

ชิ้นส่วนแม่พิมพ์ฉีด
MOLD COMPONENTS
STANDARD & CUSTOMIZABLE



GUIDE PINS & BUSHES	โถดัดพิน และ บุช
EJECTOR COMPONENTS	ชิ้นส่วนการอีเจ็ค
ANGULAR PINS	แองกูล่าพิน
SLIDE CORE UNITS	ชุดสไลด์คอร์
GUIDE RAILS	โถดัดเรล
POSITIONING	ชิ้นส่วนตั้งตำแหน่ง
MOLD COUPLINGS	ชิ้นส่วนข้อต่อน้ำแม่พิมพ์
COOLING SYSTEM	ชิ้นส่วนระบบหล่อเย็น
MOLD CLAMPS	แคลมป์แม่พิมพ์
MOLD ACCESSORIES	ชิ้นส่วนแม่พิมพ์
MOLD SPRINGS	สปริงแม่พิมพ์



บริษัท ซันไรส์ เทคโนโลยี จำกัด
969 หมู่ 5 ต.แพรกษา ต.แพรกษาใหม่
อ.เมืองสมุทรปราการ, จ.สมุทรปราการ, 10280

SUN RISE TECHNOLOGIES Co.,LTD.
969 moo 5 Praksa Rd., Praksa Mai
Muang Samuthprakarn, Samuthprakarn, 10280, Thailand

Tel: +662-030-0092 Fax: +662-324-3190
Email: sale@sunrisegr.com LINE @sunrisegroup

