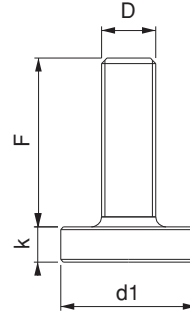


DESTEKLER

SUPPORTS



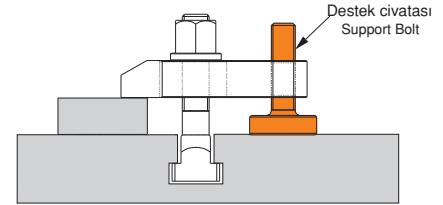
Referans Nr.	D x F	d1	k	
1490-08032	M8x32	25	8	40
1490-10042	M10x42	30	8	60
1490-12050	M12x50	36	10	110
1490-12095	M12x95	36	10	150
1490-16062	M16x62	45	13	240
1490-16097	M16x97	45	13	285
1490-16117	M16x117	45	13	310
1490-20062	M20x62	50	13	320
1490-20097	M20x97	50	13	390
1490-20117	M20x117	50	13	430
1490-24081	M24x81	50	14	445
1490-24116	M24x116	50	14	555
1490-30180	M30x180	70	24	1650


Ürün Nr. 1490 Pabuç Destek Civatası

- Siyah Kaplama

Product Nr. 1490 Clamp Support Bolt

- Black Coating



Referans Nr.		d			kgf	
1510-023030	23-30	M16	34	32	1000	140
1510-040060	40-60	M16	34	32	1800	250
1510-042052	42-52	Tr 30x4	50	50	6000	570
1510-050070	50-70	Tr 30x4	50	50	6000	680
1510-070100	70-100	Tr 30x4	50	50	6000	960
1510-100140	100-140	Tr 30x4	50	50	6000	1395
1510-140220	140-220	Tr 30x4	54	54	6000	2285
1510-210330	210-330	Tr 30x6	58	58	8000	3950
1510-260430	260-430	Tr 30x6	68	68	8000	7250

Ürün Nr. 1510 Trapez Diş Yükseltici Destek

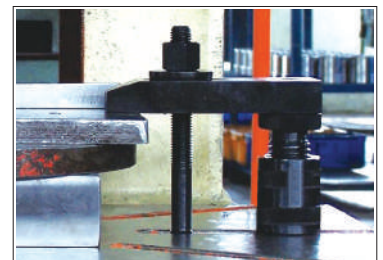
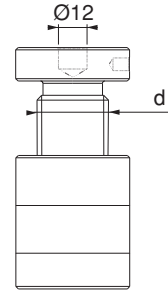
- Nr. 1510 yükselticiler DIN 6314-6315-6316 pabuçlarda yükseltici destek amaçlı kullanılır.
- Hareketli parça üstünde bulunan Ø12mm delik Referans Nr. 1555-1560-1565-1570-1575 yükselticiler üst üste ve farklı amaçlı kullanılır
- Siyah Kaplama
- Destek Civatası : Sertleştirilmiş

Product Nr. 1510 Trapeze Thread Lifter Support

- Nr.1510 Lifters are used in DIN 6314-6315-6316 clamps as the lifter support
- Hole with Ø12mm taking place on the moving part are used with the lifters with the Reference Nr.1 555-1560-1565-1570-1575 on top of each other and also used with different purpose.
- Black Coating
- Support Bolt : Hardened

Trapez Diş Yükseltici Destek

Trapeze Thread Lifter Support



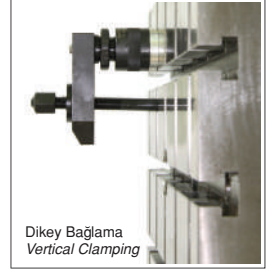
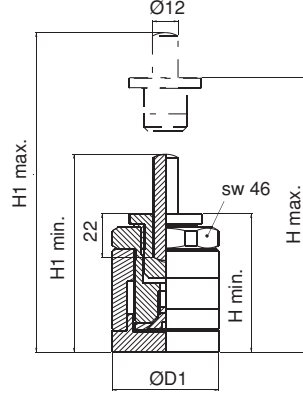
Referans Nr.	H min.	H max.	D1	Ø12x50 H1 min.- H1 max.	Ø12x80 H1 min.- H1 max.	Kgf	(g)
1515-065085	65	85	50	93-113	123-143	3000	810
1515-085125	85	125	50	113-153	143-183	3000	1050

Ürün Nr. 1515 Manyetik Vidalı Yükseltici

- Ürün manyetik olduğundan dolayı kendi ağırlığını taşıdığı için yatay bağlamalarda özellikle enjeksiyon makinelerinde kullanım avantajı sağlar.
- Sertleştirilmiş
- Siyah kaplama

Product Nr. 1515 Magnetic Screw Booster

- Because of magnetic it holds its own weight. Therefore it provides using advantage in horizontal clamping especially on injection machines.
- Hardened
- Black coating


Modüler Manyetik Yükseltici

Modular Magnetic Booster

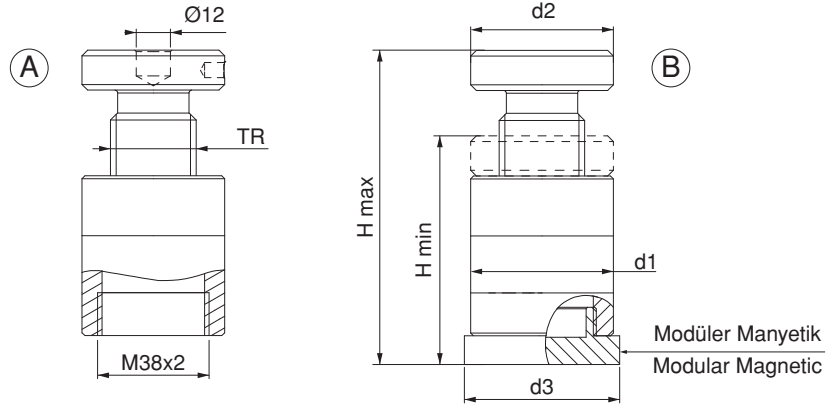
Referans Nr.	H min-max. A	H min-max. B	TR	d1	d2	d3	kgf	(g)
1517-04262	42-52	52-62	30x4	50	50	53.5	6000	700
1517-05080	50-70	60-80	30x4	50	50	53.5	6000	770
1517-70110	70-100	80-110	30x4	50	50	53.5	6000	1050

Ürün Nr. 1517 Modüler Manyetik Yükseltici

- Siyah Kaplama

Product Nr. 1517 Modular Magnetic Booster

- Black coating



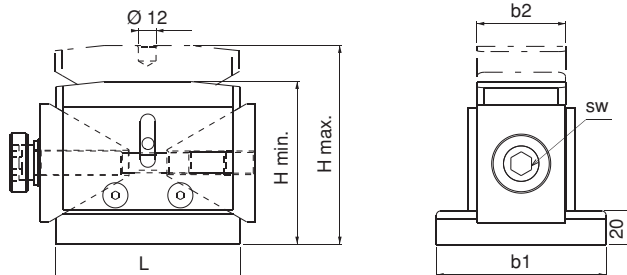
Referans Nr.	H min.	H max.	b1	b2	L	sw	kgf	(g)
1520-050063	50	63	-	40	63	8	4000	1890
1520-100125	100	125	115	60	125	14	10000	9910
1520-170190	170	190	145	80	175	22	25000	28480

Ürün Nr. 1520 Blok Destek

- Ürün Özellikle ağır parçaların desteklenmesi ve kaldırılması için tasarlanmıştır.
- Sertleştirilmiş
- Siyah kaplama

Product Nr. 1520 Support Block

- Designed for supporting and lifting of heavy work pieces
- Hardened
- Black coating


Blok Destek
Support Block

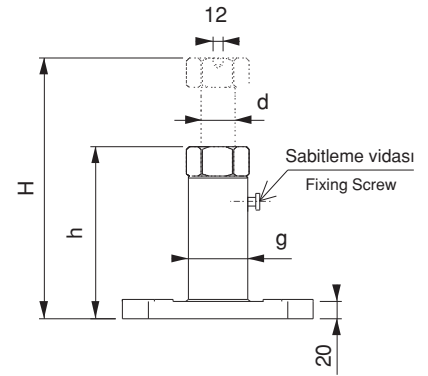
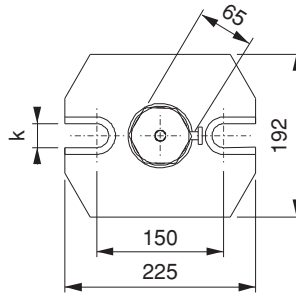

Referans Nr.		d	g	k	 kgf	 (kg)
1530-200	200-300	Tr40x7	69	28	8000	10.0
1530-280	280-460	Tr40x7	69	28	6000	11.8
1530-430	430-750	Tr40x7	69	28	5000	14.2
1530-710	710-1250	Tr40x7	69	28	4000	20.9

Ürün Nr. 1530 Büyük Boy Yükseltici Destek

- Yüksek parçalarda kullanım amaçlı trapez diş yükseltici destek
- Gövde statik boyalı. Altı köşede bulunan Ø12mm delik
- Referans Nr. 1555-1560-1565-1570-1575 ürünlerle kullanıldığında farklı kullanım avantajı sağlar.

Product Nr. 1530 King Size Lifter Support

- This is a trapeze thread lifting support having the purpose of using with High Pieces.
- Body and statical painting. It provides different usage advantages when Ø12mm hole is used with 1555-1560-1565-1570-1575 reference numbered products taking place.



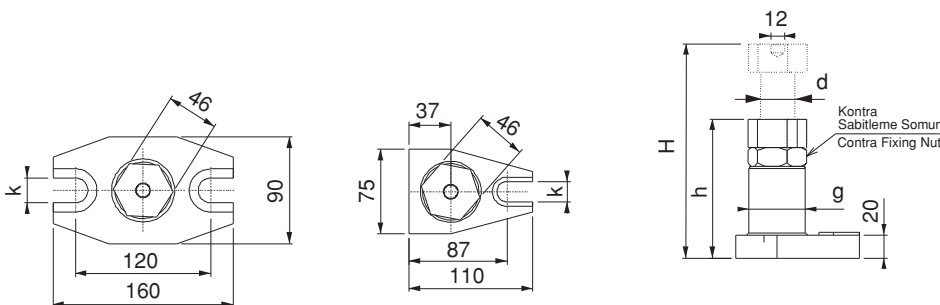
Referans Nr.		d	g	k	 kgf	 (kg)
1550-100	100-140	Tr30x6	49	18	6000	2.05
1550-140	140-200	Tr30x6	49	18	6000	2.45
1550-200	200-320	Tr30x6	49	22	4000	3.90
1550-320	320-550	Tr30x6	49	22	2500	5.15

Ürün Nr. 1550 Büyük Boy Yükseltici Destek

- Yüksek parçalarda kullanım amaçlı trapez diş yükseltici destek
- Gövde statik boyalı. Altı köşede bulunan Ø12mm delik
- Referans Nr. 1555-1560-1565-1570-1575 ürünlerle kullanıldığında farklı kullanım avantajı sağlar.

Product Nr. 1530 King Size Lifter Support

- This is a trapeze thread lifting support having the purpose of using with High Pieces.
- Body and statical painting. It provides different usage advantages when Ø12mm hole is used with 1555-1560-1565-1570-1575 reference numbered products taking place.



Referans Nr.	h	Ø d	
1555	10	37	75

Bu ürünler Nr. 1510-1517-1530-1550 ürünler ile kullanılır

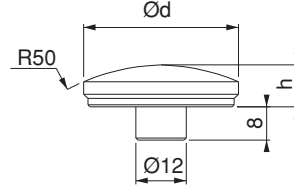
These products are used with the product Nos 1510-1517-1530-1550 taking place.

Ürün Nr. 1555 Trapez Diş Yükseltici Radüslü Destek

- Açılı yüzeylerde kullanım kolaylığı sağlar
- Siyah Kaplama

Product Nr. 1555 Trapeze Thread Lifter Rad-top Support

- This part provides usage convenience on angled surfaces
- Black Coating



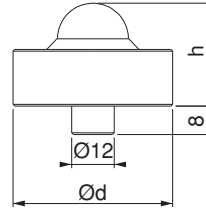
Referans Nr.	h	Ø d		Kgf	
1560	25	45	3000	220	

Ürün Nr. 1560 Trapez Diş Yükseltici Bilyalı Destek

- Bozuk yüzeylerde kullanım kolaylığı sağlar
- Siyah Kaplama

Product Nr. 1560 Trapeze Thread Lifter Ball Support

- This part provides usage convenience on irregular surfaces
- Black Coating



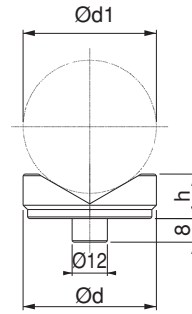
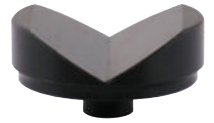
Referans Nr.	h	Ø d	min	max	
1565	15	45	10	50	130

Ürün Nr. 1565 Trapez Diş Yükseltici V-Yatak

- Silindirik parçalarda V yatak desteği
- Siyah Kaplama

Product Nr. 1565 Trapeze Thread Lifter V-Clamping Block

- V clamping block support for cylindrical pieces
- Black Coating


V-Yatak
V-Clamping Block


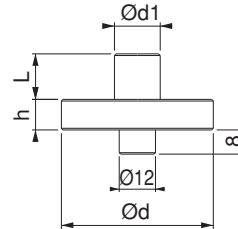
Referans Nr.	h	Ø d	Ø d1	L	
1570	12	50	15	20	220

Ürün Nr. 1570 Trapez Diş Yükseltici Pimli Destek

- Şekilli parçalarda araya giderek destek sağlar
- Siyah Kaplama

Product Nr. 1570 Trapeze Thread Lifter Pin Support

- This part provides support for formed pieces by entering in between
- Black Coating


Pimli Destek
Pin Support

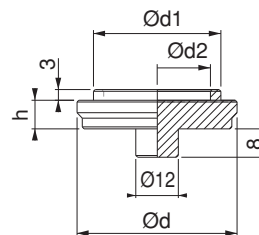

Referans Nr.	h	Ø d	Ø d1	Ø d2	
1575	8	45	35.8	30	105

Ürün Nr. 1575 TDY Ara Merkezleme Vasatı

- Trapez diş yükselticiler üst üste kullanıldığında ara merkezleme vasatı olarak kullanılır
- Siyah Kaplama

Product Nr. 1575 TDY Intermediary Centering Mean

- This part is used as Intermediary Centering Mean when used with Trapeze Thread Lifters
- Black Coating


Ara Merkezleme Vasatı
Intermediary Centering Mean


Referans Nr.	H	S	M1	D	L	W	R	A	H2	M	H1	P
1588-05001	24	5	M 5x0.8 Derinlik / Depth 8	10	52	25	40	14	14	M4	19	15
1588-06001	29	6	M 6x1 Derinlik / Depth 10	12	58	30	50	16	18	M5	22	18
1588-08001	37	8	M 8x1.25 Derinlik / Depth 15	16	75	38	63	19	23	M6	25	24
1588-10001	42	10	M10x1.5 Derinlik / Depth 15	19	85	45	80	24	26	M8	30	28

Referans Nr.	L1	L2	L3	Kam Kolları / Parça Numarası Cam Handles / Part Number	Kabul Edilebilir Yük Allowable Oper. Load (N)*	Destek Kapasitesi Support Capacity (kN)	Piston Yay Kuvveti Piston Spring Force (N)	Kilitleme Mekanizması Locking Mechanism	(g)
1588-05001	36	8	8	QLCA-04	80	0.5	0 ~ 6	Spiral Kam / Kam Açısı: 4°	213
1588-06001	39	9.5	10	QLCA-05	100	0.7	0 ~ 6		335
1588-08001	51	12	12	QLCA-06	150	0.9	0 ~ 7	Spiral Cam / Cam Angle: 4°	738
1588-10001	56	14.5	15	QLCA-08	200	1.2	1 ~ 11		1110

* Kolu kullanabilmek için kabul edilebilir yük / * Allowable load to operate the handle

Ürün Nr. 1588 Pistonlu Tek Dokunuş Destek

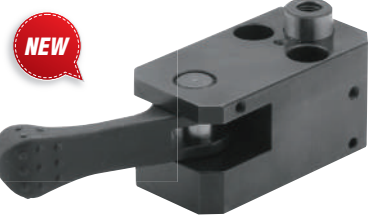
- Gövde**
- S45C çelik
 - Siyah oksit kaplama
- Kilitleme Pimi**
- S45C çelik
 - Sertleştirilmiş
 - Siyah oksit kaplama

- Piston**
- SK95 çelik
 - Sertleştirilmiş
 - Siyah oksit kaplama
- Kol**
- SCM440 çelik
 - Sertleştirilmiş
 - Siyah oksit kaplama

Product Nr. 1588 Work Supports With Cam Handle

- Body**
- S45C steel
 - Black oxide finish
- Locking Pin**
- S45C steel
 - Quenched and tempered
 - Black oxide finish

- Piston**
- SK95 steel
 - Quenched and tempered
 - Black oxide finish
- Handle**
- SCM440 steel
 - Quenched and tempered
 - Black oxide finish



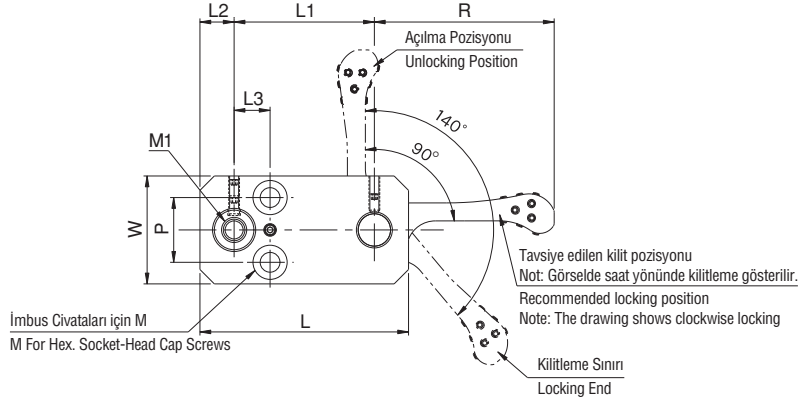
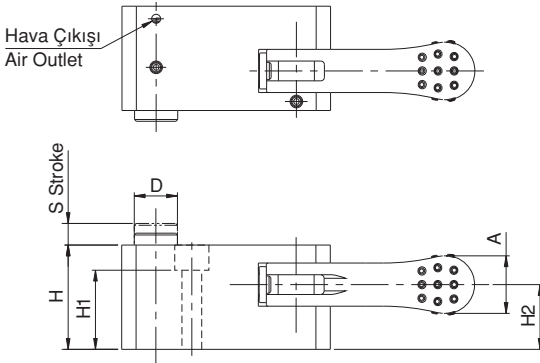
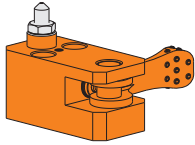
NEW

Not

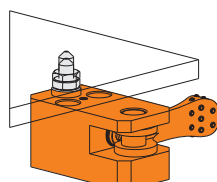
- Destek ucunu milin içinden civata yerine takınca hasarı önlemek için mili sıkıştırıp sabitleyin.

Note

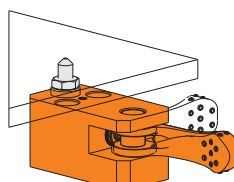
- When you attach a support tip to the tapped hole through the shaft, tighten the shaft and fix it to prevent damage.


Kullanım Şekli / How To Use


- 1. Açık**
İşparçası yüklenmemiş
- 1. Unlocked**
No workpiece loaded



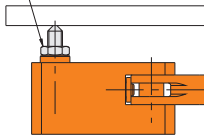
- 2. İşparçası Yükleme**
Bir işparçası yüklendiğinde piston alçalır.
- 2. Workpiece Loading**
Load a workpiece, and the piston lowers.



- 3. Kilitleme**
Pistonu kilitlemek için kolu çevirin.
- 3. Locking**
Turn the handle to lock the piston.

**Kol Kilitleme Pozisyonunu Ayarlama
Adjusting Handle Locking Position**

Destek Ucu / Support Tip



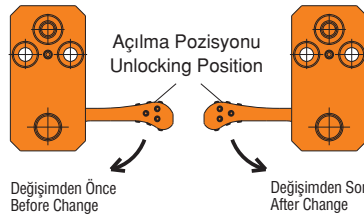
Gövdedeki projeksiyon miktarı S torkunun yarısı olunca kol önerilen kilitleme pozisyonuna gelir. Uygulamanızı destek ucu iş parçası ile bu pozisyonda temas edecek şekilde tasarlayın.

When the projection amount from the body is 1/2 of the stroke S, the handle comes to the recommended locking position. Design your application as the support tip contacts the workpiece at this position.

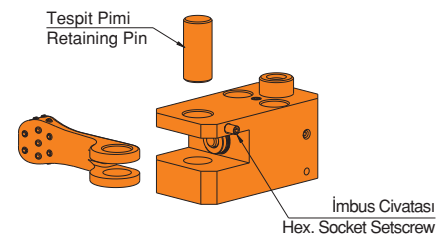
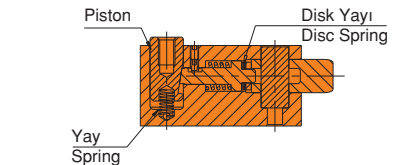
**Kilitleme Yönünü Değiştirme
Changing Locking Direction**

Tespit pimini çıkarmak için imbus civatalarını gevşetin. Kolu başaşağı döndürüp yeniden takın.

Loosen the hex. socket setscrew to remove the retaining pin. Turn the handle upside down and put it in position again.


Özellikler / Features

Cihazın içindeki disk yayı gevşek kilitlemeyi önler. The built-in disc spring prevents loosened locking.



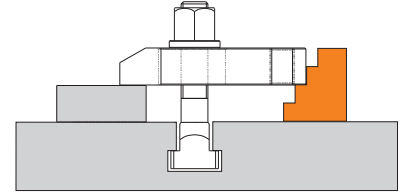
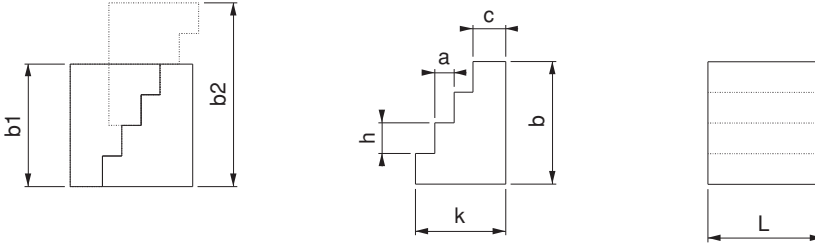
Referans Nr.	h	a	c	k	b	L	b1	b2	
1580-050	13	8	13	37	52	50	52	78	460
1580-060	16	10	17	47	64	60	64	96	860
1580-070	19	13	18	57	76	70	76	114	1420

Ürün Nr. 1580 Basamaklı Destek

- Siyah Kaplama

Product Nr. 1580 Stepped Support

- Black Coating


Merdiven Diş Kombine Destek

Serrated Thread Combined Support

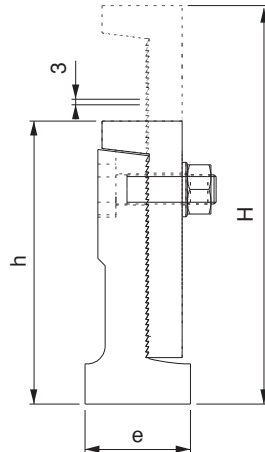
Referans Nr.	h-H	e	 kgf	
1585-050	110-152	48x48	4000	1120
1585-060	155-221	60x58	5000	2710
1585-080	220-340	80x78	6000	6560

Ürün Nr. 1585 Merdiven Diş Kombine Destek

- Yükseltme aralığı (hatve) 3mm'dir
- Siyah Kaplama

Product Nr. 1585 Serrated Thread Combined Support

- Lifting gap (screw pitch) is 3 millimeters
- Black Coating



Referans Nr.	H	S	D	D1	M	L	W	H1	D2	L1	L2	L3	M1
1588-08040	40	4	25	16	M 8x1.25 12 Derin / Deep	80	40	31	32	22	23.5	8	M 8x1.25
1588-10050	50	5	32	20	M10x1.5 15 Derin / Deep	95	50	39	40	25	28	9	M10x1.5
1588-12060	60	6	38	24	M12x1.75 18 Derin / Deep	115	60	47	50	32	35.5	12	M12x1.75

Referans Nr.	H2	d	P	P1	L4	M2	Kaldırma Kuvveti (N) Lifting Force (N)	Kabul Edilebilir Cıvata Torku Allowable Screw Torque (N*m)	Yük Kapasite Load Capacity (N)	(kg)
1588-08040	18	5.5	40	25	10	M4x0.7	700	1	8,000	0.82
1588-10050	23	6.5	50	30	15	M5x0.8	800	1.5	12,800	1.52
1588-12060	28	9	60	40	15	M5x0.8	900	2	18,500	2.67

Ürün Nr. 1588 Ayarlanabilir Yükseltici Destek
Gövde

- S45C çelik
- Siyah oksit kaplama

Piston & Kilitleme Pimi

- SK95 çelik
- Sertleştirilmiş
- Siyah oksit kaplama

Mil

- S45C çelik
- Sertleştirilmiş
- Siyah oksit kaplama

Tokmak

- FC200 döküm
- Krom Kaplama

Product Nr. 1588 Extendable Work Supports
Body

- S45C steel
- Black oxide finish

Piston & Locking Pin

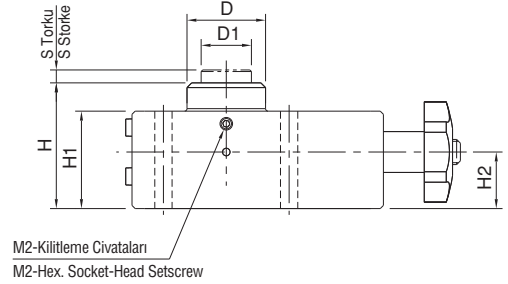
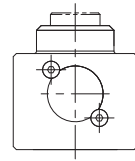
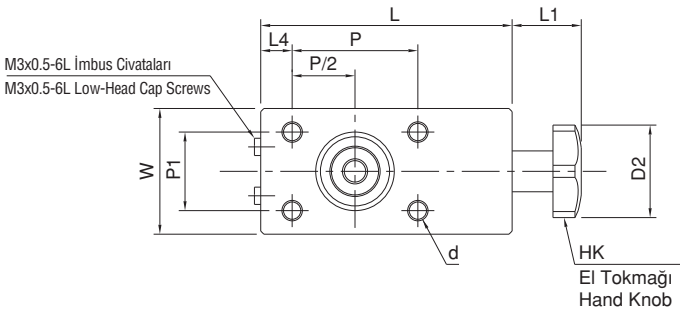
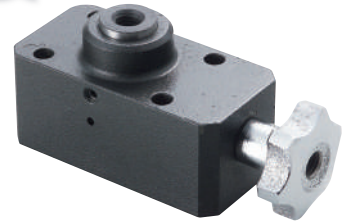
- SK95 steel
- Quenched and tempered
- Black oxide finish

Spindle

- S45C steel
- Quenched and tempered
- Black oxide finish

Knob

- FC200 cast iron
- Chrome plated



Referans Nr.	H	M1	D	L	W	W1	L1	M	Dp	L2	H1	H2	d
1588-PTNS112	57	M12x1.75 Derin / Depth 24	26	90	62	32	32	M8	50	35	48	40	6
1588-PTNS116	72	M16x2.00 Derin / Depth 32	33	115	75	35	42	M10	60	42	61	50	8

Referans Nr.	P	L3	H3	Kabul Edilebilir Sıkma Torku (N.m)* Allowable Tightening Torque (N.m)*	Destek Kapasitesi Support Capacity (kN)*	Piston Yay Kuvveti Piston Spring Force (N)	(kg)
1588-PTNS112	36	35	12	40	5	15~30	2.4
1588-PTNS116	48	45	16	80	10	15~35	4.8

* Darbeli Anahtarla kullanmak için kabul edilebilir sıkma torku ve destek kapasitesinin %50'sinden azını kullanın.

* To operate with an impact wrench, use less than 50% of the allowable tightening torque and support capacity.

Ürün Nr. 1588 Pistonlu Ayarlı Destek

Gövde

- S50C çelik
- Siyah Oksit Kaplama

Altıgen Başlık / Sabitleme Mili

- SCM435 çelik
- Sertleştirilmiş
- Siyah Oksit Kaplama

Piston

- SK95 çelik
- Sertleştirilmiş
- Siyah Oksit Kaplama

Product Nr. 1588 Nutrunner Work Supports

Body

- S50C steel
- Black oxide finished

Hex. Head / Locking Shaft

- SCM435 steel
- Quenched and tempered
- Black oxide finished

Piston

- SK95 steel
- Quenched and tempered
- Black oxide finished

★ Kilit Nokta

İşparçasının titirmesini ve sapmasını önler

Sağlanan Ürünler

PTNS1-12:

2 paralel pim, Ø6 (h7)x20L
Civata delikleri için 1 THP12 Koruyucu Tıpa

PTNS1-16:

2 paralel pim, Ø8 (h7)x25L
Civata delikleri için 1 THP16 Koruyucu Tıpa

★ Key Point

Prevent workpiece vibration and deflection.

Supplied With

PTNS1-12:

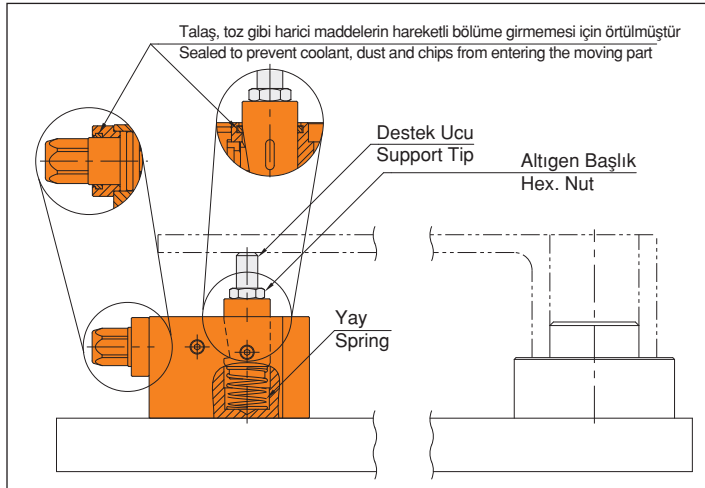
2 of parallel pin, Ø6 (h7)x20L
1 of THP12 Protection Plugs
For Tapped Holes

PTNS1-16:

2 of parallel pin, Ø8 (h7)x25L
1 of THP16 Protection Plugs
For Tapped Holes

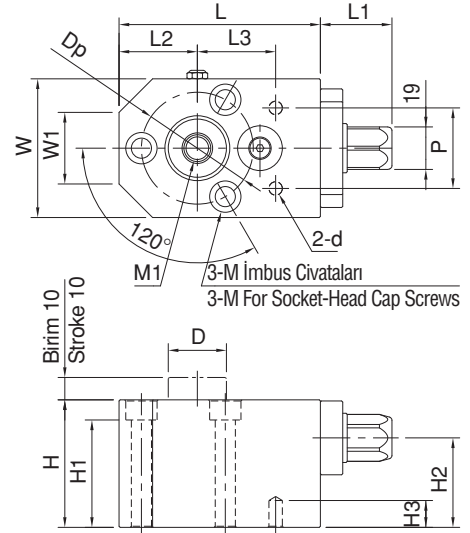
Kullanım Şekli / How To Use

- Otomatik bir üretim ağında bir somun sıkma aletiyle kullanıma idealdir.
- Bu iş desteği manuel bir şekilde de sıkılabilir.
- Ideal for use with a nut runner for automated production line.
- This work support can be also tightened manually.



- Piston bir işparçası koyunca alçalır. Altıgen başlığı döndürerek pistonu kilitleyin.
- İşparçasının titreyip sapmasını önleyin.
- Load a workpiece, and the piston lowers. Turn the hex. head to lock the piston.
- Prevent workpiece vibration and deflection.

NEW



Not

- Bu iş desteği bir darbeli ahanar ile kullanılabilir. Darbeli anahtar torku ayarlayabilmelidir.
- Pitonun civata deliğine bir destek ucu bağlarken hasarı önlemek için pistonun sıkı kalmasını sağlayın.

Note

- This work support can be operated with an impact wrench. Be sure to use an impact wrench that can set the torque.
- When attaching a support tip to the tapped hole of the piston, keep the piston tightened to prevent damage.

Özellikler

- Yüksek destek kapasitesi ağır işleme makinalarının kullanımı mümkün kılar.

Referans

- Civata delikleri için THP 12 ve THP16 Koruyucu Tıpalar
- PTRC1 Uzatma Birimi

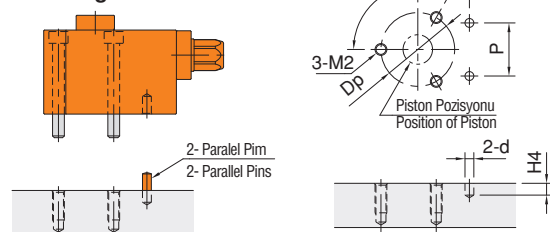
Features

- High support capacity allows heavy duty machining.

Reference

- THP12 THP16 Protection plugs for tapped holes
- PTRC1 Extension Units

Monte Deliği Boyutları Mounting Hole Dimension

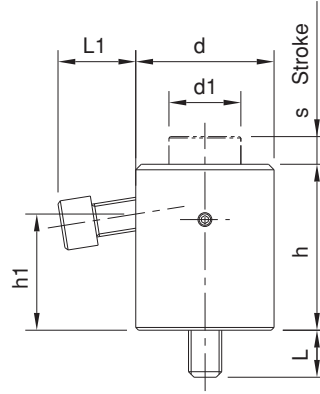
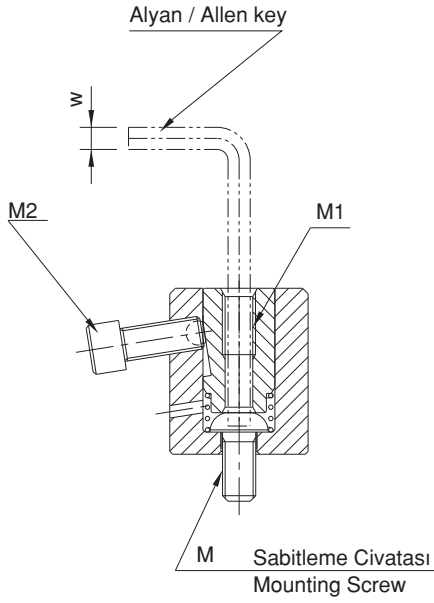


Referans Nr.	M2	Dp	d (+0.1)	P (±0.05)	L3 (+0.1)	H4
PTNS1-12	M8x1.25	50	6	36	35	9
PTNS1-16	M10x1.50	60	8	48	45	10

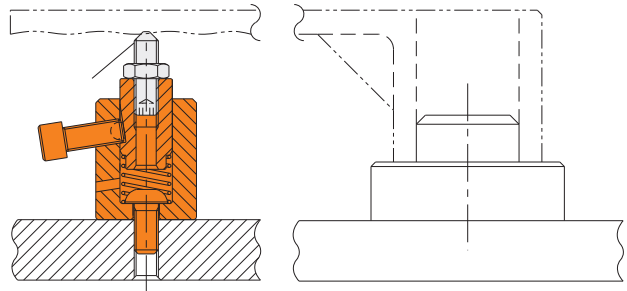
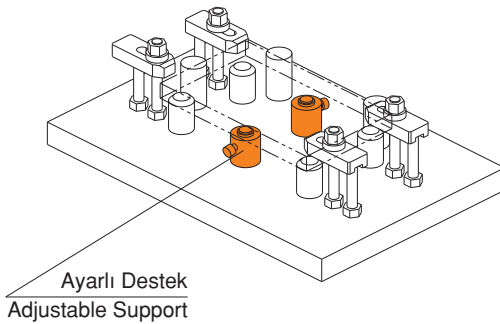
Referans Nr.	h	s	M1	d1	d	M	L	w	h1	L1	M2	İzin Verilen Vida Torku Allowable Screw Torque(Nm)	Destek Kapasitesi Support Capacity (kgf)	Piston Yay Kuvveti Piston Spring Force (N)	(g)
1588-060	33	6	M6x12	14	28	M6	10	4	22	14.1	M6x16	7.5	400	10~22	150
1588-080	42	10	M8x16	19	35	M8	15	5	28.5	18.8	M8x20	14	600	10~27	300
1588-100	50	10	M10x20	22	42	M10	14	6	34	23.8	M10x25	18	750	14~28	540
1588-120	60	10	M12x24	26	50	M12	17	8	42	28.5	M12x30	22	900	15~30	865
1588-160	70	10	M16x32	33	60	M16	22	10	47	26.5	M12x30	25	900	15~35	1.390

Ürün Nr. 1588 Ayarlı Destek
• Siyah kaplama

Product Nr. 1588 Adjustable Support
• Black coating

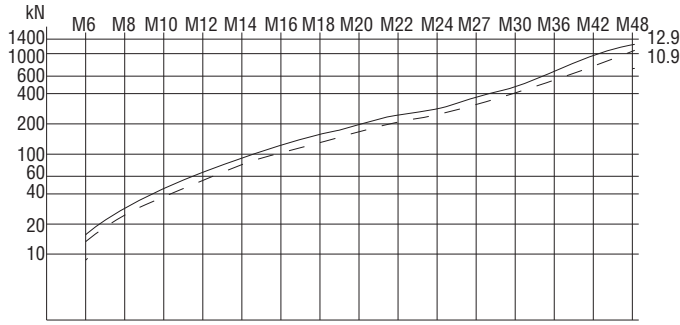


Uygulama Örneği / Application Example





		Kalite Dayanım Sınıfları Quality Strength Classes		
		10	10.9	12.9
DIN 787		-	-	X
DIN 6379		-	X	-
DIN 6330B DIN 6331 Nr. 1830		X	-	-
Sembol gerilme mukavemeti [N/mm ²] Nominal tensile strength [N/mm ²]		1000	1000	1200
Minimum akma noktası [N/mm ²] Minimum yield point [N/mm ²]		-	900	1080



Standart Anahtar İle Öngerilme Kuvveti
Pre-stress Force With Standard Spanner

Çizelge Özelliklerinin Açıklanması:

- **İzin Verilen Civata Yüğü** : Maksimum gerilim yükü ve vida hesabı alınarak vurgu yapıldı. Aktif kuvvetler, akma noktası, sadece güvenlik için %80 kullanılır.
- **İzin Verilen Ön Gerilme Kuvveti** : Yük, vida ve somun uygulamasında, tablodaki rakamların sirtünmeye karşılık, itme yüzeyleri ve parçanın $\mu = 0,14$ sirtünme kat sayısı geçerlidir.
- **İzin Verilen Ön Gerilme Kuvveti Yağlı Hesaplama** : Yük, vida ve somun uygulamasında, parçanın $\mu = 0,1$ sirtünme kat sayısı hesaplanmalıdır.

Explanation Of Table Characteristics:

- **Permissible Bolt Load** : is the maximum tension load, the screw can be stressed with taking into account all active forces. The yield point is only utilized to 80% for safety.
- **Permissible Pre-stress Force** : is the load, the screw can be pre-stressed at most, when tightening the matching nut. Figures of table are valid for a friction of $\mu = 0,14$ in thrust faces and thread, corresponding to the friction of greased medium faces.
- **Allowed pretension with oil calculation** : At an application with screws and nuts, the load must be calculated with a $\mu = 0,1$ frictional factor of the workpiece.

Civata ve Somun İçin Mukavemet 10.9 ve 12.9 Kalite ve Momentleri / Strength Figures And Torques For Bolts And Nuts:

Diş / Threads	Kalite Quality	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M36	M42	M48
Hatve / Pitch of thread	mm	1	1.25	1.50	1.75	2	2	2.50	2.50	2.50	3	3	3.50	4	4.50	5
Somun / Nuts																
Sertlik / Hardness DIN 6330 / 6331 / 6334	HRC	10	28-32													
Test Kuvveti (AS x Sp) Test force DIN EN 20898-2	kN	10	20.9	38.1	60	88	121	165	203	260	321	374	486	595	866	-
"T" Pabuç DIN 508 / Nr. 1710 Nuts for T-Slots DIN 508 / Nr. 1710																
Ölçü / Size		M6x8	M8x10	M10x12	M12x14	-	M16x18	-	M20x22	-	M24x28	-	M30x36	M36x42	M42x48	M48x54
Sertlik / Hardness	HRC	22 - 30														
Test Kuvveti / Test Force	kN	16	29	46	67	-	128	-	196	-	282	-	448	653	653	653
Civata / Bolts																
Sertlik / Hardness	HRC	10.9	32 - 39													
		12.9	39 - 44													

Sıkma Verileri / Tightening Data																
Minimum Kırılma Kuvveti Minimum Breaking Force (AS x Rm)	kN	10.9	21	38	60	88	(120)	(163)	(200)	(255)	(315)	(367)	(477)	(583)	(850)	(1165)
		12.9	(24)	(45)	71	103	(140)	192	(234)	299	(370)	431	(560)	(684)	(997)	(1367)
İzin verilen civata yükü max. Verim noktası % 80	kN	10.9	14	27	43	63	86	118	144	184	228	265	345	421	614	843
		12.9	17	32	51	74	101	138	169	215	266	310	404	493	719	986
(X Sp AS) Test kuvveti DIN EN ISO 898, bölüm 1	kN	10.9	17	30	48	70	(96)	(130)	(159)	(203)	(252)	(293)	(381)	(466)	(678)	(930)
		12.9	(20)	(35)	56	82	(112)	152	(186)	238	(294)	342	(445)	(544)	(792)	(1087)
İzin verilen ön gerilme kuvveti max. Verim % 90 Nokta ve sirtünme $\mu = 0,14$	kN	10.9	13	25	38	55	77	107	130	167	208	240	315	384	561	773
		12.9	15	29	44	65	91	125	152	196	243	281	369	449	657	904
Gerilme öncesi müsadde edilen tork değeri Kuvvet ve sirtünme $\mu = 0,14$	Nm	10.9	14	36	67	120	191	302	405	580	772	994	1455	1930	3378	5415
		12.9	17	43	79	141	223	354	474	679	903	1163	1703	2258	3953	6337
Müsadde edilen kol uzunluğu ön gerilme kuvveti	mm	10.9	42	90	175	300	450	700	920	1200	1560	-	-	-	-	-
		12.9	51	110	210	360	550	830	1100	1470	1860	-	-	-	-	-
Standart anahtar ile tork değeri elde etmek mümkündür	Nm	-	60	80	90	100	110	125	140	150	170	185	225	240	300	330
Öngerilme kuvveti	kN	-	54	53	48	43	43	43	43	42	42	43	45	43	45	46
Bu öngerilme kuvveti ile tehlikesi var		10.9	Kırılma breakage		kalıcı deformasyon		permanent deformation		hareket kuvvetinin başlangıcında bağlama ünitesinin gevşemesi loosening of clamping unit at start of motive force							
		12.9														

As = Sembolik kesit mm²
As = Nominal cross section in mm²

Sp = Min. N / mm² cinsinden sıkma kuvveti
Sp = min. Clamping force in N/mm²

Rm = Min. N/mm² yük faktörü
Rm = min. load factor in N/mm²

μ = sirtünme
 μ = friction

Referans Nr.		x L	b	a	e	k	Sıkma Verileri		
							Tightening Data Nm	kN	
1590-0606025	M6x6	x25	15	5.7	10	4	17	17	8
1590-0606040		x40	28						11
1590-0606063		x63	40						15
1590-0808032	M8x8	x32	22	7.7	12	6	43	32	13
1590-0808050		x50	35						16
1590-0808080		x80	50						20
1590-1010040	M10x10	x40	23	9.7	15	6	79	51	35
1590-1010063		x63	45						45
1590-1010080		x80	50						60
1590-1010100		x100	60						70
1590-1012050	M10x12	x50	35	11.7	18	7	79	51	55
1590-1012063		x63	40						60
1590-1012080		x80	55						65
1590-1012100		x100	60						75
1590-1012125		x125	75						90
1590-1012160		x160	90						105
1590-1012200		x200	120						120
1590-1212050	M12x12	x50	35	11.7	18	7	141	74	65
1590-1212063		x63	40						70
1590-1212080		x80	55						80
1590-1212100		x100	65						100
1590-1212125		x125	75						110
1590-1212160		x160	100						140
1590-1212200		x200	120						160
1590-1214050	M12x14	x50	35	13.7	22	8	141	74	80
1590-1214063		x63	45						90
1590-1214080		x80	55						100
1590-1214100		x100	65						110
1590-1214125		x125	75						135
1590-1214160		x160	100						160
1590-1214200		x200	120						180
1590-1416063	M14x16	x63	45	15.7	25	9	223	101	115
1590-1416080		x80	55						140
1590-1416100		x100	65						160
1590-1416125		x125	75						180
1590-1416160		x160	100						220
1590-1416200		x200	120						255
1590-1416250		x250	150						300
1590-1616063	M16x16	x63	45	15.7	25	9	354	138	140
1590-1616080		x80	55						160
1590-1616100		x100	65						190
1590-1616125		x125	85						225
1590-1616160		x160	100						270
1590-1616200		x200	120						315
1590-1616250		x250	150						380
1590-1618063	M16x18	x63	45	17.7	28	10	354	138	170
1590-1618080		x80	55						185
1590-1618100		x100	65						220
1590-1618125		x125	85						245
1590-1618160		x160	100						295
1590-1618200		x200	120						340
1590-1618250		x250	150						405
1590-1820080	M18x20	x80	55	19.7	32	12	474	169	260
1590-1820100		x100	65						290
1590-1820125		x125	85						340
1590-1820160		x160	110						390
1590-1820200		x200	125						455
1590-1820250		x250	150						535
1590-1820315		x315	190						650
1590-2020080	M20x20	x80	55	19.7	32	12	679	215	300
1590-2020100		x100	65						330
1590-2020125		x125	85						380
1590-2020160		x160	110						450
1590-2020200		x200	125						535
1590-2020250		x250	160						635
1590-2020315		x315	190						760
1590-2022080	M20x22	x80	55	21.7	35	14	679	215	345
1590-2022100		x100	65						380
1590-2022125		x125	85						435
1590-2022160		x160	110						500
1590-2022200		x200	125						590
1590-2022250		x250	150						695
1590-2022315		x315	190						820

Referans Nr.		x L	b	a	e	k	Sıkma Verileri Tightening Data		
							Nm	kN	
1590-2224080	M22x24	x80	55	23.7	40	16	903	266	465
1590-2224100		x100	65						515
1590-2224125		x125	85						580
1590-2224160		x160	110						660
1590-2224200		x200	125						775
1590-2224250		x250	150						805
1590-2224315		x315	190						1050
1590-2424100	M24x24	x100	70	23.7	40	16	1163	310	550
1590-2424125		x125	85						630
1590-2424160		x160	110						725
1590-2424200		x200	125						850
1590-2424250		x250	150						990
1590-2424315		x315	190						1180
1590-2424400		x400	240						1410
1590-2428100	M24x28	x100	70	27.7	44	18	1163	310	660
1590-2428125		x125	85						730
1590-2428160		x160	110						820
1590-2428200		x200	125						950
1590-2428250		x250	150						1090
1590-2428315		x315	190						1300
1590-2428400		x400	240						1530
1590-2428500		x500	290						1800
1590-3036125	M30x36	x125	80	35.6	54	22	2258	493	1280
1590-3036160		x160	110						1440
1590-3036200		x200	135						1620
1590-3036250		x250	150						1880
1590-3036315		x315	200						2150
1590-3036500		x500	300						3010
1590-3642160	M36x42	x160	100	41.6	65	26	3953	719	2260
1590-3642250		x250	175						2890
1590-3642400		x400	250						4010
1590-3642600		x600	340						5900
1590-4248160	M42x48	x160	100	47.6	75	30	6337	986	3550
1590-4248250		x250	175						4530
1590-4248400		x400	250						6160

DIN 787

Ürün Nr. 1590 T-Ayaklı Saplama

- Kalite 12.9
- Siyah kaplama

Product Nr. 1590 T-Slot Bolt

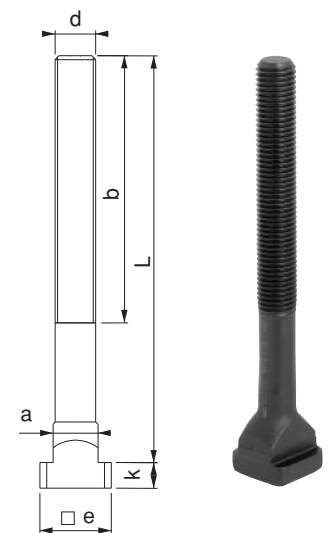
- Quality 12.9
- Black coating



Loctite
8150

Not: 150 °C üzerindeki ortamlarda sıkma işlemi yapılırken dişlerin üzerine Loctite 8150 kullanılır.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.



Referans Nr.		x L	b	a	e	k	Sıkma Verileri Tightening Data		
	dx						Nm	kN	(g)
1610-0606025	M6x6	x25	15	5.7	10	4	17	17	19
1610-0606040		x40	28						25
1610-0606063		x63	40						36
1610-0808032	M8x8	x32	22	7.7	12	6	43	32	39
1610-0808050		x50	35						45
1610-0808080		x80	50						56
1610-1010040	M10x10	x40	23	9.7	15	6	79	51	65
1610-1010063		x63	45						80
1610-1010080		x80	50						90
1610-1010100	M10x12	x100	60	11.7	18	7	79	51	110
1610-1012050		x50	35						85
1610-1012063		x63	40						95
1610-1012080	M10x12	x80	55	11.7	18	7	79	51	100
1610-1012100		x100	60						110
1610-1012125		x125	75						125
1610-1012160	M12x12	x160	90	11.7	18	7	141	74	140
1610-1012200		x200	120						160
1610-1212050		x50	35						120
1610-1212063	M12x12	x63	40	11.7	18	7	141	74	128
1610-1212080		x80	55						140
1610-1212100		x100	65						160
1610-1212125	M12x14	x125	75	13.7	22	8	141	74	170
1610-1212160		x160	100						195
1610-1212200		x200	120						220
1610-1214050	M12x14	x50	35	13.7	22	8	141	74	140
1610-1214063		x63	45						150
1610-1214080		x80	55						155
1610-1214100	M12x14	x100	65	13.7	22	8	141	74	175
1610-1214125		x125	75						195
1610-1214160		x160	100						220
1610-1214200	M14x16	x200	120	15.7	25	9	223	101	240
1610-1416063		x63	45						200
1610-1416080		x80	55						230
1610-1416100	M14x16	x100	65	15.7	25	9	223	101	245
1610-1416125		x125	75						270
1610-1416160		x160	100						310
1610-1416200	M16x16	x200	120	15.7	25	9	354	138	340
1610-1416250		x250	150						390
1610-1616063		x63	45	15.7	25	9	354	138	260
1610-1616080	M16x16	x80	55						285
1610-1616100		x100	65						310
1610-1616125		x125	85	17.7	28	10	354	138	345
1610-1616160		x160	100						385
1610-1616200	M16x18	x200	120						435
1610-1616250		x250	150	17.7	28	10	354	138	505
1610-1818063		x63	45						290
1610-1818080	M16x18	x80	55	17.7	28	10	354	138	305
1610-1818100		x100	65						340
1610-1818125		x125	85	19.7	32	12	474	169	370
1610-1818160	M18x20	x160	100						415
1610-1818200		x200	125						460
1610-1820080		x80	55	19.7	32	12	679	215	405
1610-1820100	M18x20	x100	65						435
1610-1820125		x125	85						480
1610-1820160	M20x20	x160	110	19.7	32	12	679	215	535
1610-1820200		x200	125						610
1610-1820250		x250	150						680
1610-1820315	M20x22	x315	190	21.7	35	14	679	215	790
1610-2020080		x80	55						480
1610-2020100	M20x20	x100	65	19.7	32	12	679	215	515
1610-2020125		x125	85						570
1610-2020160		x160	110						635
1610-2020200	M20x22	x200	125	21.7	35	14	679	215	725
1610-2020250		x250	160						820
1610-2020315		x315	190						950
1610-2022080	M20x22	x80	55	21.7	35	14	679	215	530
1610-2022100		x100	65						565
1610-2022125		x125	85						620
1610-2022160	M20x22	x160	110	21.7	35	14	679	215	690
1610-2022200		x200	125						775
1610-2022250		x250	150						880
1610-2022315	M20x22	x315	190						1050

Referans Nr.		x L	b	a	e	k	Sıkma Verileri Tightening Data		
	Nm						kN	(g)	
1610-2224080		x80	55	23.7	40	16	903	266	700
1610-2224100		x100	65						740
1610-2224125		x125	85						805
1610-2224160		x160	110						890
1610-2224200		x200	125						1000
1610-2224250		x250	150						1115
1610-2224315		x315	190						1280
1610-2424100		x100	70	23.7	40	16	1163	310	885
1610-2424125		x125	85						970
1610-2424160		x160	110						1060
1610-2424200		x200	125						1180
1610-2424250		x250	150						1320
1610-2424315		x315	190						1515
1610-2424400		x400	240						1750
1610-2428100		x100	70	27.7	44	18	1163	310	1000
1610-2428125		x125	85						1065
1610-2428160		x160	110						1150
1610-2428200		x200	125						1280
1610-2428250		x250	150						1425
1610-2428315		x315	190						1640
1610-2428400		x400	240						1870
1610-2428500		x500	290						2170
1610-3036125		x125	80	35.6	54	22	2258	493	1900
1610-3036160		x160	110						2065
1610-3036200		x200	135						2250
1610-3036250		x250	150						2500
1610-3036315		x315	200						2770
1610-3036500		x500	300						3630
1610-3642160		x160	100	41.6	65	26	3953	719	3310
1610-3642250		x250	175						3930
1610-3642400		x400	250						5010
1610-3642600		x600	340						6900
1610-4248160		x160	100	47.6	75	30	6337	986	4600
1610-4248250		x250	175						5600
1610-4248400		x400	250						7200

Referans Nr.	dx  xL	a	e	k	h-H	e1	e2	c	s	f	sw	Sıkma Verileri Tightening Data		
												Nm	kN	
1630-2022200	M20x22x200	21.7	35	14	25-75	49	69	92	12	30	30	679	215	1635
1630-2022250	M20x22x250	21.7	35	14	70-120	49	69	92	12	30	30	679	215	1720
1630-2424200	M24x24x200	23.7	40	16	25-75	53	74	92	12	30	36	1163	310	2075
1630-2424250	M24x24x250	23.7	40	16	70-120	53	74	92	12	30	36	1163	310	2250
1630-2428200	M24x28x200	27.7	44	18	25-75	53	74	92	12	30	36	1163	310	2180
1630-2428250	M24x28x250	27.7	44	18	70-120	53	74	92	12	30	36	1163	310	2340
1630-3036200	M30x36x200	35.6	54	22	25-75	68	88	94	14	30	46	2258	493	3660
1630-3036250	M30x36x250	35.6	54	22	70-120	68	88	94	14	30	46	2258	493	3910

Ürün Nr. 1630 Kombine T-Ayaklı Saplama

- Ağır preslerde, büyük kalıplarda çalışma esnasında vibrasyondan kaynaklanan olabilecek gevşemeyi somunun kontra sıkma yapısından dolayı önler
- Kalite 12.9
- Siyah kaplama

Product Nr. 1630 Combined T-Slot Bolt

- Because of it's contra tightening structure, it prevents loosening which may be generated by the vibration during working with heavy presses and big moulds.
- Quality 12.9
- Black coating

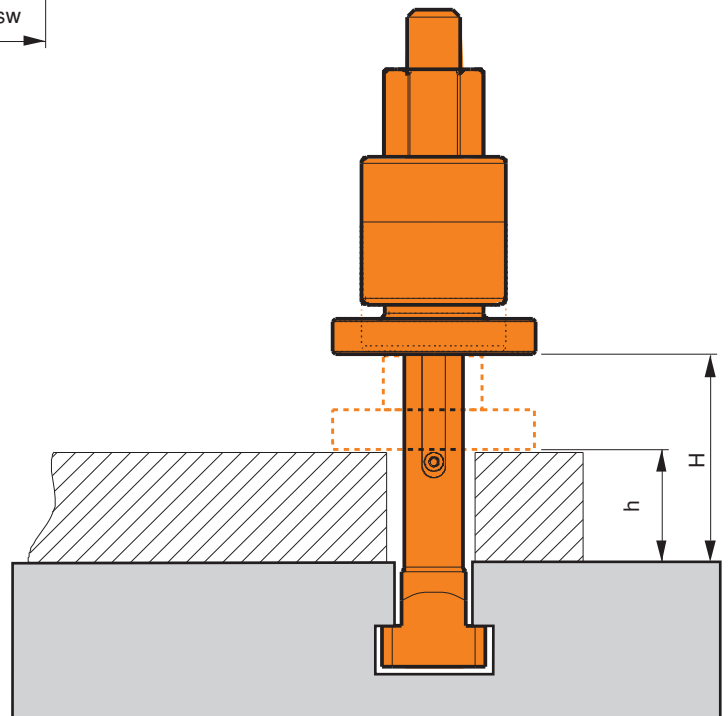
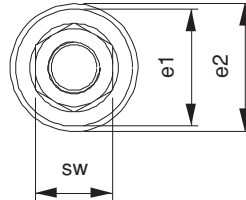
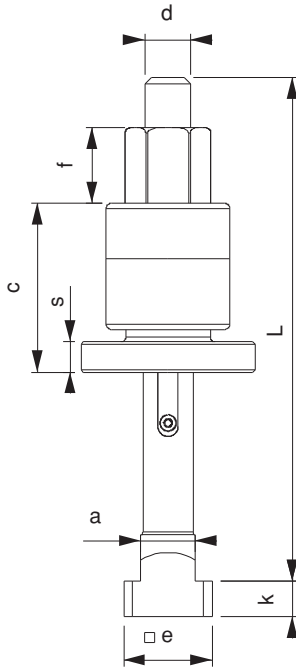


Not: 150 °C üzerindeki ortamlarda sıkma işlemi yapılırken dişlerin üzerine Loctite 8150 kullanılır.

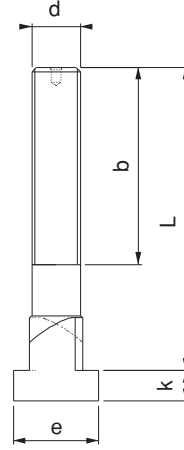
Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.



Loctite
8150



Referans Nr.	dx	x L	b	a	e	k	Sıkma Verileri Tightening Data		(g)
							Nm	kN	
1650-1214050		x50	35						70
1650-1214080	M12x14	x80	55	13.7	22	8	141	74	100
1650-1214125		x125	75						120
1650-1618063		x63	45						160
1650-1618100	M16x18	x100	65	17.7	28	10	354	138	220
1650-1618160		x160	100						280
1650-2022080		x80	55						330
1650-2022125	M20x22	x125	85	21.7	35	14	679	215	430
1650-2022200		x200	120						570
1650-2428100		x100	70						650
1650-2428125	M24x28	x125	85	27.7	44	18	1163	310	770
1650-2428250		x250	150						1150

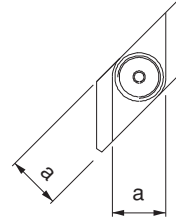


Ürün Nr. 1650 Dereceli T-Ayaklı Saplama

- T-Kanal pleytlerde üstten T-Kanala girip bağlama özelliği vardır
- Kalite 12.9
- Siyah kaplama

Product Nr. 1650 Graded T-Slot Bolt

- In T-Slot plates it has the feature of making the coupling by entering T-Slot the top.
- Quality 12.9
- Black coating



Not: 150 °C üzerindeki ortamlarda sıkma işlemi yapılırken dişlerin üzerine Loctite 8150 kullanılır.



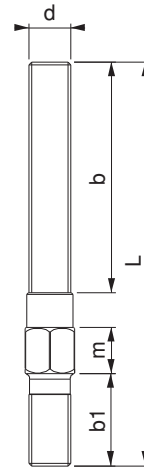
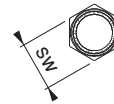
Loctite 8150

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.

Anahtar Ağızlı Saplama

Wrench Mouth Stud

Referans Nr.	d	L	b	b1	m	sw	Sıkma Verileri Tightening Data		(g)
							Nm	kN	
1670-12130	M12	130	65	24	14	14	120	63	160
1670-12160		160	90						185
1670-14130	M14	130	65	28	15	15	191	86	216
1670-14160		160	90						246
1670-16140	M16	140	70	32	16	17	302	118	310
1670-16160		160	95						340
1670-18150	M18	150	70	35	19	19	405	144	395
1670-18180		180	95						450
1670-20150	M20	150	70	40	22	22	580	184	520
1670-20180		180	95						575
1670-22150	M22	150	70	40	22	24	772	228	610
1670-22180		180	95						705
1670-24170		170	75						875
1670-24205	M24	205	105	47	22	27	994	265	990
1670-24250		250	140						1125
1670-30250	M30	250	135	55	32	36	1930	421	1950
1670-30315		315	195						2260



Ürün Nr. 1670 Anahtar Ağızlı Saplama

- Kullanım alanı; Enjeksiyon makinelerinde ve M12-14-16-18-20-22-24-30 diş açılmış pleytlerde kullanılır.
- Kalite 10.9
- Siyah kaplama

Product Nr. 1670 Wrench Mouth Stud

- Area of Use: This stud is used in injection machines and in plates with M12-14-16-18-20-22-24-30 threads
- Quality 10.9
- Black coating



Loctite 8150

Not: 150 °C üzerindeki ortamlarda sıkma işlemi yapılırken dişlerin üzerine Loctite 8150 kullanılır.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.



Referans Nr.	d x L	b1	b	Sıkma Verileri Tightening Data		
				Nm	kN	(g)
1690-08040	M8	11	20	36	27	10
1690-08063			40			15
1690-08080			50			20
1690-08100			63			30
1690-08125			75			35
1690-08160			100			45
1690-10050	M10	13	25	67	43	20
1690-10063			32			25
1690-10080			50			35
1690-10100			63			45
1690-10125			75			55
1690-10160			100			70
1690-10200			125			95
1690-12050	M12	15	25	120	63	35
1690-12063			32			40
1690-12080			50			55
1690-12100			63			70
1690-12125			75			90
1690-12160			100			115
1690-12200			125			140
1690-14063	M14	17	32	191	86	60
1690-14080			50			75
1690-14100			63			95
1690-14125			75			120
1690-14160			100			150
1690-14200			125			195
1690-14250			160			240
1690-16063	M16	19	32	302	118	85
1690-16080			50			105
1690-16100			63			130
1690-16125			75			160
1690-16160			100			205
1690-16200			125			260
1690-16250			160			325
1690-16315			180			405
1690-16500			315			650
1690-18080	M18	23	50	405	144	130
1690-18100			60			160
1690-18125			75			200
1690-18160			100			260
1690-18200			125			320
1690-18250			150			400
1690-18315			180			510
1690-20080	M20	27	32	580	184	155
1690-20100			60			200
1690-20125			70			250
1690-20160			100			330
1690-20200			125			400
1690-20250			160			510
1690-20315			200			640
1690-20400			250			815
1690-20500			315			1020
1690-22100	M22	31	45	772	228	250
1690-22125			70			305
1690-22160			100			400
1690-22200			125			500
1690-22250			160			620
1690-22315			180			780
1690-22400			250			1010
1690-24100	M24	35	45	994	265	290
1690-24125			70			365
1690-24160			100			470
1690-24200			125			580
1690-24250			160			730
1690-24315			200			920
1690-24400			250			1170
1690-24500			315			1470
1690-24630			315			1860
1690-30125	M30	43	56	1930	421	570
1690-30200			125			910
1690-30250			160			1150
1690-30315			200			1435
1690-30500			315			2315
1690-30700			400			3215
1690-301000			400			4700

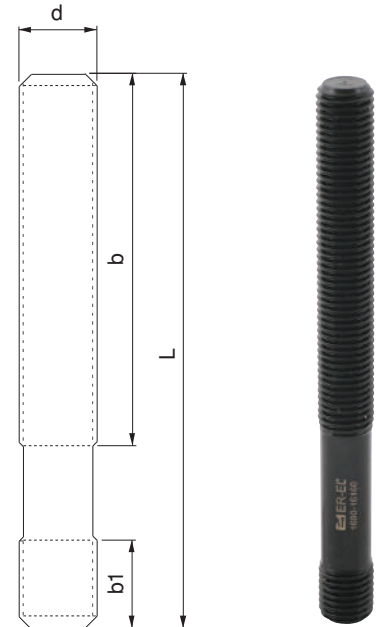
Referans Nr.	d x L	b1	b	Sıkma Verileri Tightening Data		
				Nm	kN	(g)
1690-36160	M36	51	80	3378	614	1100
1690-36200			125			1340
1690-36250			160			1710
1690-36315			200			2150
1690-36400			250			2700
1690-36500			315			3450
1690-36700			400			4750
1690-42315	M42	59	200	5415	843	2950
1690-42400			250			3750
1690-42500			315			4690

DIN 6379
Ürün Nr. 1690 Düz Saplama

- Kalite 10.9
- Siyah kaplama

Product Nr. 1690 Straight Stud

- Quality 10.9
- Black coating



Not: 150 °C üzerindeki ortamlarda sıkma işlemi yapılırken dişlerin üzerine Loctite 8150 kullanılır.

Note: Environments on the 150 °C when clamping action on the thread Loctite 8150 is used.

