



3

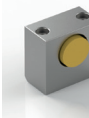
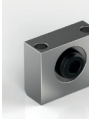
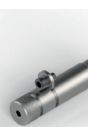
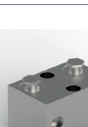
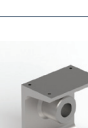
Index

Contents	Page	Contents	Page
 M301-00 Mekanik Dayamalar Gage Einweiser BMW - MERCEDES - BENZ - FCA - FORD - OPEL - VW/AUDI	3.11	 M301-09 Mekanik Dayamalar Gage Einweiser	3.18
 M301-01 Sertleştirilmiş Mekanik Dayamalar Gage Hardened Einweiser Gehärtet BMW - MERCEDES - BENZ - FCA - FORD - OPEL - VW/AUDI	3.12	 M301-10 Mekanik Dayamalar Gage Einweiser MERCEDES - BENZ	3.19
 M301-02 Sertleştirilmiş Kontrol Parçalı Mekanik Dayamalar Gage for Sensor, Hardened Einweiser für Teillagekontrolle Gehärtet	3.13	 M301-11 Sertleştirilmiş Mekanik Dayamalar Gage Hardened Einweiser Gehärtet MERCEDES - BENZ	3.20
 M301-03 Mekanik Dayamalar için Sensör ve Konnektörler Sensor and Connector Sensoren und Steckverbindungen	3.14	 M301-12 Sertleştirilmiş Hassas Mekanik Dayamalar Precision Gage Hardened Feinweiser Gehärtet VW/AUDI	3.21
 M301-04 Kontrol Parçalı Mekanik Dayamalar Gage for Sensor Lagekontrolle für Platinen VW/AUDI	3.15	 M301-13 Sertleştirilmiş Mekanik Dayamalar Gage Hardened Einweiser Gehärtet BMW - MERCEDES - BENZ	3.22
 M301-05 Sertleştirilmiş Kontrol Parçalı Mekanik Dayamalar Gage for Sensor, Hardened Einweiser für Teillagekontrolle Gehärtet BMW - FCA	3.16	 M301-14 Mekanik Dayamalar Gage Einweiser	3.23
 M301-06 Kontrol Parçalı Mekanik Dayamalar Front Gage Einweiser für Teillagekontrolle Gehärtet FCA - OPEL	3.17	 M302-01 Konik Merkezleme Üniteleri Locating Cone Zentriereinheiten mit Abstimmsscheiben FCA - VW/AUDI	3.24

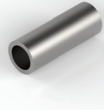
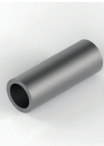
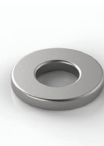
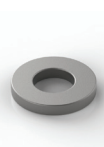
Index

Contents	Page	Contents	Page
 M302-02 Konik Merkezleme Üniteleri Locating Cone Zentriereinheiten mit Abstimmscheiben FCA - VW/AUDI	3.25	 M304-08 Hava Pimleri Air Pins Unterluftbolzen BMW - MERCEDES - BENZ - VDI 3002	3.31
 M302-03 Ayar Plakaları Shim Plates Abstimmscheibe	3.26	 M304-09 Hava Pimleri Air Pins Unterluftbolzen VW/AUDI - VDI 3002	3.32
 M302-08 Konik Merkezleme Üniteleri Locating Pins Zentriereinheiten mit Abstimmscheiben	3.27	 M305-04 Çıkarıcı Set, Gazlı Yay, Kovan ve Bronz Grafitli Burç Lifters with Gas Springs Sleeve and Bushes, Self-lubricating Federbolzen	3.33
 M303-01 Merkezleme Pimleri Locating Pins Zentrierbolzen FCA	3.28	 M305-05 Flanş Kaldırıcı Flange Lifter Kantenheber	3.34
 M303-02 Merkezleme Pimleri Locating Pins Zentrierbolzen BMW - VW/AUDI	3.28	 M305-06 Flanş Kaldırıcı Flange Lifter Kantenheber	3.35
 M304-01 Hava Pimleri Air Pins Duruckbolzen BMW - FORD - OPEL	3.29	 M305-07 Flanş Kaldırıcı Flange Lifter Kantenheber FCA	3.36
 M304-07 Hava Pimleri Air Pins Unterluftbolzen VW/AUDI	3.30	 M305-08 Flanş Kaldırıcı Flange Lifter Kantenheber FCA	3.37

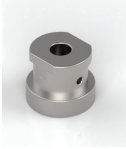
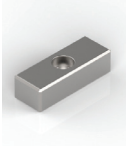
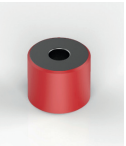
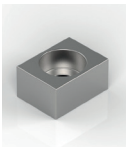
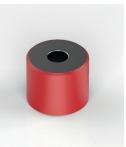
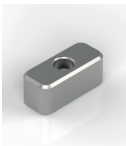
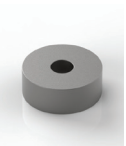
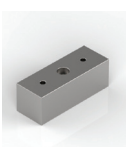
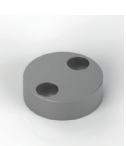
Index

Contents	Page	Contents	Page
 M305-09 Universal Çıkarıcı Ünitesi Universal Lifter Unit Universelle Hochhebereinheit BMW	3.38	 M309-04 Kızak Stoplama Bloğu Slide Stop Block Schieberanschlag VW/AUDI	3.45
 M306-02 Emniyet Pimleri Pad Retainer Pins Steckbolzen VW/AUDI - VDI 3365	3.39	 M309-05 Kızak Stoplama Bloğu Slide Stop Block Schieberanschlag BMW - VW/AUDI	3.46
 M306-03 Emniyet Pimleri Pad Retainer Pins Steckbolzen VW/AUDI - VDI 3365	3.40	 M309-06 Kızak Stoplama Bloğu Slide Stop Block Schieberanschlag BMW - VW/AUDI	3.47
 M307-01 Frenleyiciler Retainer Bolts Zugbolzensatz FCA - FORD	3.41	 M310-01 Makaralı Kollu Kaldırıcılar Roller Stock Lifter Federnde Laufrolle VW/AUDI	3.48 - 3.53
 M308-01 Akışkan Yönlendirici Flux Control Verteilerblock	3.42	 M310-03 Makaralı Sürücü Üniteler Roller Group Förderrolle FIAT	3.54
 M308-07 Hava Birleştirme Braketleri Air Coupling Brackets Luftanschlussbock	3.43	 M310-04 Bilyalı Taşıyıcılar Ball Carriers Kugelrollensystem FCA	3.54
 M309-02 Kızak Stoplama Bloğu Slide Stop Block Schieberanschlag FCA	3.44	 M310-05 Çelik Makaralar Steel Roller Stahlrolle VW/AUDI	3.55

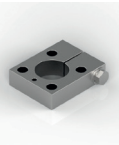
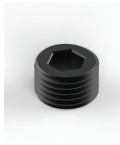
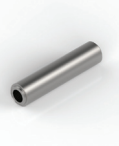
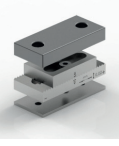
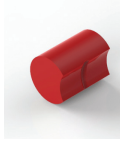
Index

Contents	Page	Contents	Page
 M310-06 Plastik Makaralar Plastic Roller Plastikrolle	3.55	 M312-08 Emniyet Cıvata ve Rondela Setleri Retainer Bolt Sets Zugbolzensatz	3.62
 M310-08 Makara Roller Rolle VW/AUDI	3.56	 M313-01 Emniyet Setleri için Borular Spacer Tubes Distanzbuchse	3.63
 M310-08 Makaralı Sürücü Üniteler Roller Group Förderrolle FCA	3.57	 M313-02 Emniyet Setleri için Borular Spacer Tubes Distanzbuchse BMW	3.64
 M310-09 Destek Kolu Coil Support Abstreifer	3.58	 M313-04 Elastomer Yaylar için Rondela Washer for Elastomer Spring Federscheibe	3.65
 M311-01 Elastomer Yaylar için Sabitleme Pimleri Pin for Elastomer Springs Aufnahmebolzen FCA	3.59	 M313-05 Rondela Washer Unterlegscheibe	3.66
 M311-05 Elastomer Yaylar için Sabitleme Pimleri Pin for Elastomer Springs Führungsbolzen DIN 9835	3.60	 M313-06 Rondela Washer Unterlegscheibe	3.67
 M312-03 Emniyet Cıvata ve Rondela Setleri Retainer Bolt Sets Zugbolzensatz FORD	3.61	 M316-01 Kavrama Plakaları Coupling Plates Befestigungsplatte FORD	3.68

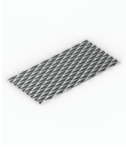
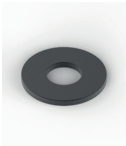
Index

Contents	Page	Contents	Page
 M316-02 Kavrama Somunları Coupling Nuts Kupplungsmutter FCA	3.69	 M317-12 Konumlandırma Bloğu Locating Block Fangbacke VW/AUDI	3.76
 M317-04 Kama Key Passfeder FCA	3.70	 M318-03 Stoplama Blokları Balance Blocks Distanzstück VW/AUDI	3.77 - 3.78
 M317-05 Kama Key Passfeder VW/AUDI	3.71	 M318-05 Stoplama Blokları Balance Blocks Distanzstück VW/AUDI	3.79 - 3.80
 M317-07 Kama Key Passfeder FORD	3.72	 M318-06 Stoplama Blokları Balance Blocks Distanzstück VW/AUDI	3.81 - 3.82
 M317-08 Kama Key Passfeder FCA	3.73	 M318-07 Silindirik Stoplama Bloğu Cylindrical Stop Block Abstandsblock FCA	3.83
 M317-10 Kama Key Passfeder	3.74	 M318-08 Boşluk Ayar Plakası Shim Unterlegscheibe	3.84
 M317-11 Kama Key Passfeder	3.75	 M318-09 Baskı Plakası Pressure Plate Druckplatte	3.85

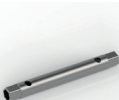
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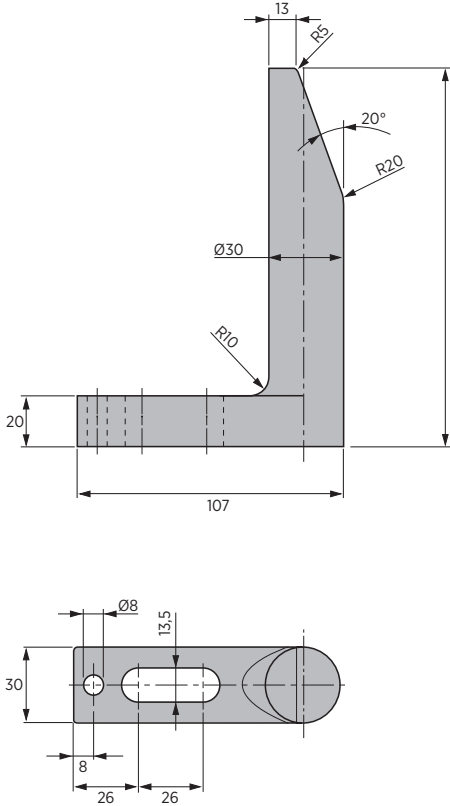
Contents	Page	Contents	Page
 M319-01 Sabitleme Kelepçeleri Coupling Clamps Befestigungselement FCA	3.86	 M322-02 Dişli Tapa Screw Plug Verschlusschraube	3.93
 M319-01 Bilyalı Yatak Sleeve Führungseinheit FCA	3.86	 M323-01 Pilot Pim Ünitesi Pilot Unit Suchereinheit MERCEDES-BENZ	3.94
 M319-02 Dişli Ayar Plakaları Spacer Plates, Toothed with Adjusting Plate Distanzplatte Gezahnt BMW - FCA - VW/AUDI	3.87	 S510-02 Emniyet Pimleri için Amortisör Vulkolonlar Shock Absorber for Pad Retainer Pins Halteelement OPEL	3.95
 M320-03 Kam Hareket Mesafesi Ayar Plakaları Cam Pad Guide Wear Plates Führung für Ziehkissen	3.88	 S511-01 Elastomer Tıpa Elastomer Cap Elastomerdruckstück FCA - PSA	3.96
 M320-07 Zorunlu Dönüş Destek Plakaları Positive Return Plates, Steel Zwangsrückholer FCA	3.89	 S515-03 Elastomer Sıyırıcılar Stripper for Blanking Dies Abstreifer für Platinenschnitte FCA - VW/AUDI	3.97
 M321-01 Boşluk Ayarı için Profil Spacing Bar Abstellbolzen VW/AUDI	3.90 - 3.91	 Z401-01 Zimba Tutucu Stamp Retainer Halteplatte FCA - PSA - RENAULT	3.98
 M322-01 Şapkalı Şerit Pimi, Yay-yüklemeli Strip Guiding Pin with Collar, Spring-loaded Streifenführung mit Bund, Gefedert	3.92 - 3.93	 Z401-02 Altlık Plakası Backing Plate Druckplatte FCA - PSA - RENAULT	3.99

Index

Contents	Page	Contents	Page
 Z401-06 Zimba Stamp Buchstabenstempel FCA - PSA - RENAULT	3.100	 M314-02 Yaylı İticiiler Spring Plungers Federnde Druckstücke mit Sechskant	3.105
 Z401-07 Zimba Stamp Buchstabenstempel FCA - PSA - RENAULT	3.101	 M314-03 Yaylı İticiiler Spring Plungers Federnde Druckstücke mit Sechskant	3.106
 Z402-03 Konumlandırma Zimbasi Visual Locator Punch Endkontrollstempel VW/AUDI	3.102	 M314-04 Yaylı İticiiler Spring Plungers Federnde Druckstücke mit Sechskant FCA	3.107
 Z000166439 Kabartmalı Çapak Kaydırma Plakası Stainless Steel Embossed Sheet Geprägt Scheiße	3.103	 M314-05 Yaylı İticiiler için Ayar Takımı Insertion Tool for Spring Plungers Beschreibung	3.108
 A101-15 Rondela Washer Scheibe	3.103	 M315-01 Stoplama Civataları Shoulder Screws Schulter-Passschrauben	3.109
 M307-04 Tespit Civataları Retainer Bolts Haltebolzen	3.104	 M315-02 Tespit Civataları Retainer Bolts Haltebolzen	3.110
 M314-01 Yaylı İticiiler Spring Plungers Federnde Druckstücke mit Sechskant	3.105	 S504-03 Yaylı İticiiler Spring Plungers Federnde Druckstücke mit Sechskant VDI 3004	3.111

Index

Contents	Page	Contents	Page
 S504-04 Yaylı İtçiler Spring Plungers Federnde Druckstücke mit Sechskant VDI 3004	3.112	 S513-1XX Vulkolon Yaylar Elastomer Springs Elastomerfeder	3.117
 S504-05 Yaylı İtçiler Spring Plungers Federnde Druckstücke mit Sechskant VDI 3004	3.113	 S514-XXX Delikli Vulkolon Yaylar Elastomer Springs, Hollow Elastomerfeder FCA - PSA	3.118 - 3.119
 S504-06 Yaylı İtçiler Spring Plungers Federnde Druckstücke mit Sechskant VDI 3004	3.114	 D901-01-745 Kalıp Aıştırma Boyası Dressing Paste for Surface Control Retuschierfarbe	3.120
 S504-07 Yaylı İtçiler Spring Plungers Federnde Druckstücke mit Sechskant VDI 3004	3.115		
 S504-08 Yaylı İtçiler için Ayar Takımı Insertion Tool for Spring Plungers Beschreibung	3.116		
 S510-05 Delikli Vulkolon Yaylar Elastomer Springs, Hollow Elastomerfeder	3.116		
 S512-1XX Delikli Vulkolon Yaylar Elastomer Springs, Hollow Elastomerfeder	3.117		



Material :
CK60
Forged



Different lengths on request;

Max. Length: 350 mm

CODE	l
M301-00-065	65
M301-00-090	90
M301-00-120	120
M301-00-150	150
M301-00-180	180
M301-00-250	250
M301-00-300	300
M301-00-350	350

Order Example:
l= 165

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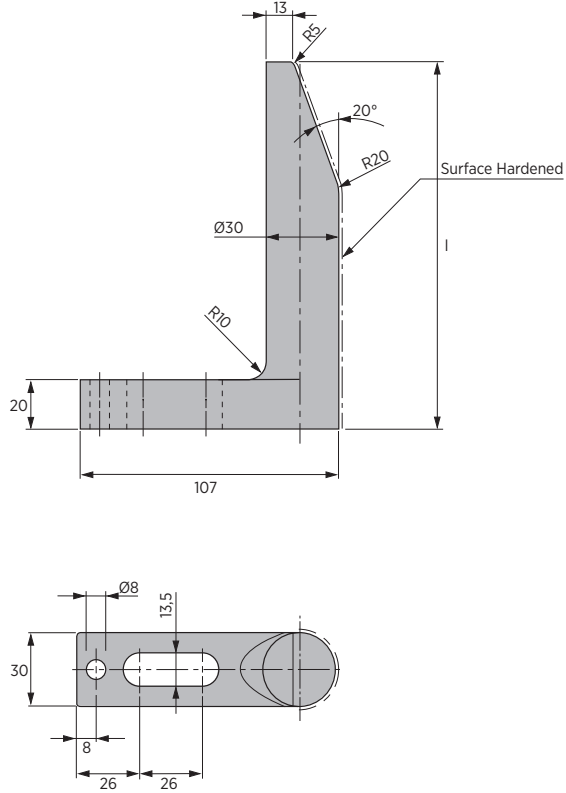


Material :
CK60
Forged



Hardened
HRC 56 + 60

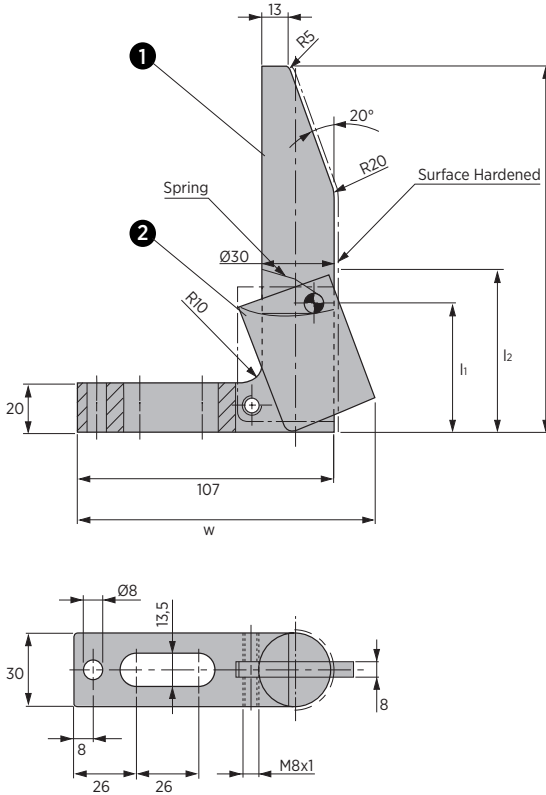
Different lengths on request;
Max. Length: 350 mm



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M301-01-120	120
M301-01-150	150
M301-01-180	180
M301-01-250	250
M301-01-300	300
M301-01-350	350

Order Example:
I= 165

Order Code:
M301-01-165



1 Material :
CK60
Forged



Hardened
HRC 50 ÷ 55

2 Material:
Plate
St37

Different lengths on request;

Max. Length: 250 mm

CODE	w	I	h ₁	l ₂
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M301-02-150	120	150	55	70
M301-02-180	124	180	105	120
M301-02-250	124	250	105	120
CODE	w	I	h ₁	l ₂
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M301-02-I	124	181 ÷ 249	105	120

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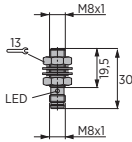


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BALLUFF

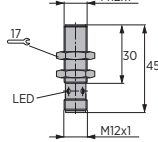


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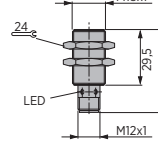
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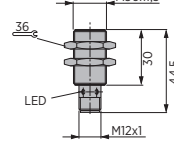
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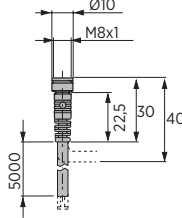


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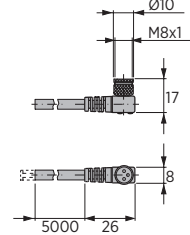


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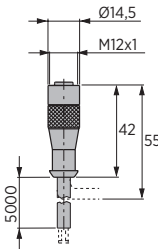
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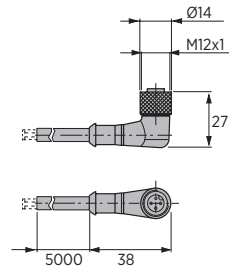
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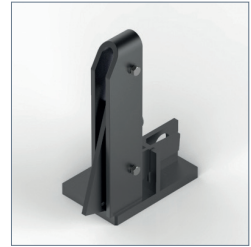
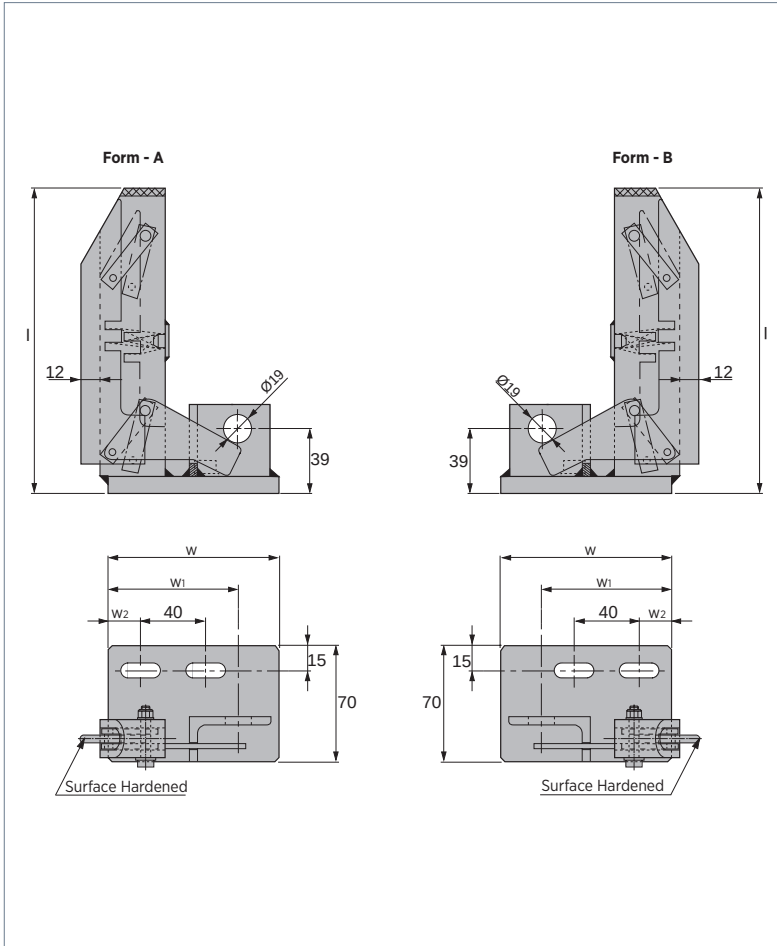
M301-03-02-003



M301-03-02-004



CODE	M301-03-01-001	M301-03-01-002	M301-03-01-003	M301-03-01-004
Rated operational voltage (Ue)	24 V DC	24 V DC	24 V DC	24 V DC
Supply voltage (Ub)	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
No load supply current (I _o max.)	≤ 7 mA	≤ 10 mA	≤ 10 mA	≤ 25 mA
Residual current (I _r)	≤ 10 µA	≤ 50 µA	≤ 50 µA	≤ 80 µA
Repeat accuracy (R)	≤ 5 %	≤ 5 %	≤ 5 %	≤ 5 %
Ambient temperature range (Ta)	-40...+85° C	-25...+85° C	-25...+70° C	-25...+70° C
Frequency of operating cycles (f)	5000 Hz	2000 Hz	1000 Hz	150 Hz
Degree of protection per IEC 60529	IP 68	IP 68	IP 67	IP 67
Housing Material	Stainless Steel	Stainless Steel	Brass	Brass
Connection	Connector	Connector	Connector	Connector
Approval	CE/UL	CE/UL	CE/UL	CE/UL


 Material :
 Steel

 Hardened
 HRC 60 ÷ 62


3

CODE	Form	w	l	w ₁	w ₂
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M301-04-0145002	B	105	145	80	25
M301-04-0145030	A	101	145	76	21
M301-04-0145031	B	101	145	76	21
M301-04-0185003	A	105	185	80	25
M301-04-0185004	B	105	185	80	25
M301-04-0185032	A	101	185	76	21
M301-04-0185033	B	101	185	76	21
M301-04-0225005	A	105	225	80	25
M301-04-0225006	B	105	225	80	25
M301-04-0225034	A	101	225	76	21
M301-04-0225035	B	101	225	76	21



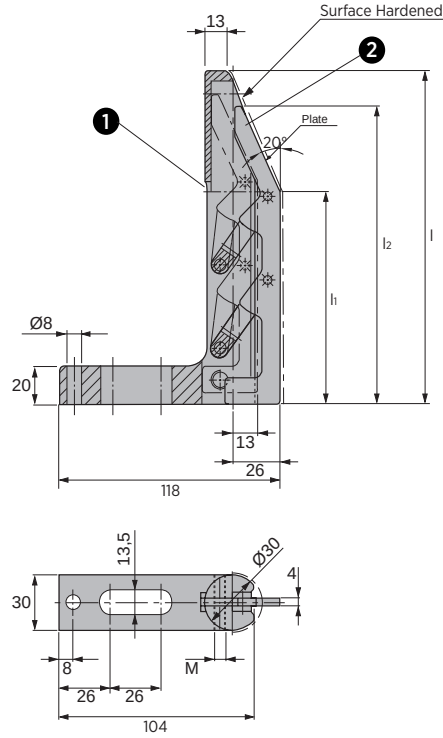
1 Material (Gage) :
CK60
Forged

Hardened
HRC 58 ÷ 60

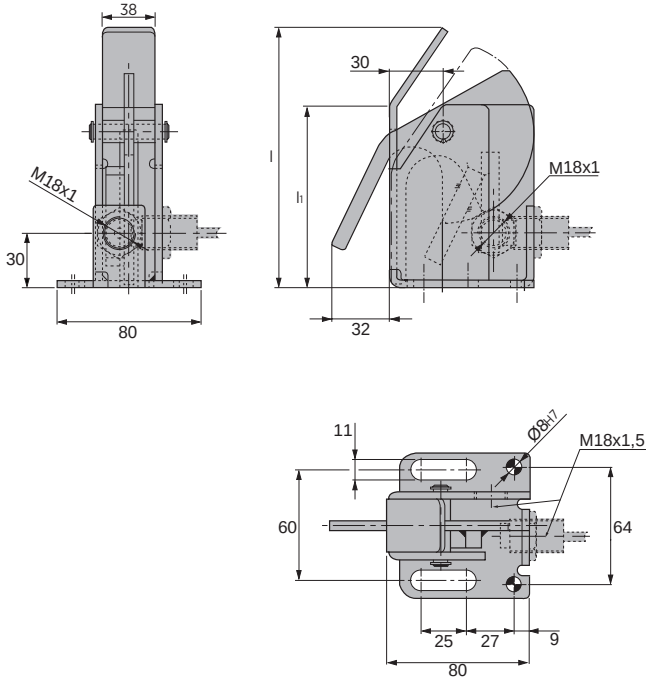


2 Material (Plate) :
St37

Hardened
HRC 58 ÷ 60



CODE	l	l ₁	l ₂	M
M301-05-120	120	78	113	M8x1
M301-05-120-002	120	78	113	M12x1
M301-05-150	150	90	130	M8x1
M301-05-150-002	150	90	130	M12x1
M301-05-180	180	114	160	M8x1
M301-05-180-002	180	114	160	M12x1
M301-05-250	250	114	160	M8x1
M301-05-250-002	250	114	160	M12x1
M301-05-250-003	250	184	230	M8x1
M301-05-250-004	250	184	230	M12x1



Material :
St37



Sensor not included.

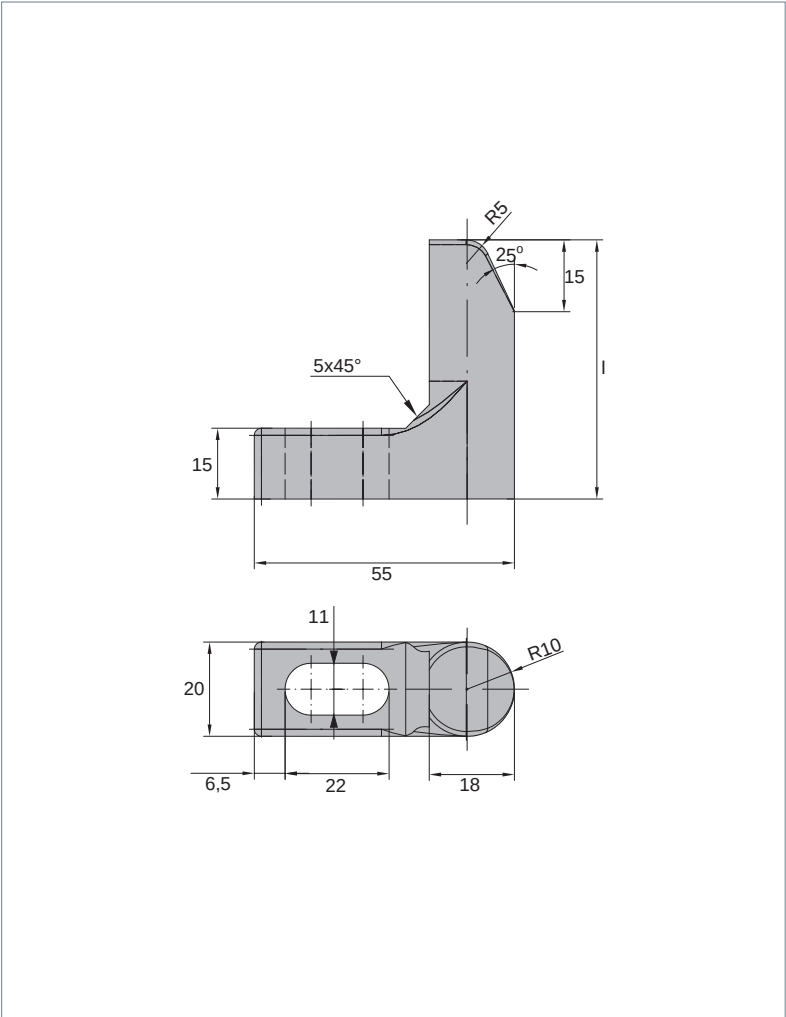
3

CODE	l	h
M301-06-075-117	117	75
M301-06-100-142	142	100
M301-06-150-192	192	150

3



Material :
CK45
Forged



CODE	I
M301-09-055	55
M301-09-065	65
M301-09-090	90
M301-09-095	95
M301-09-120	120

Order Example:
I= 120

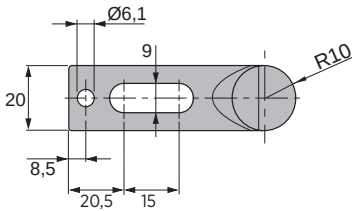
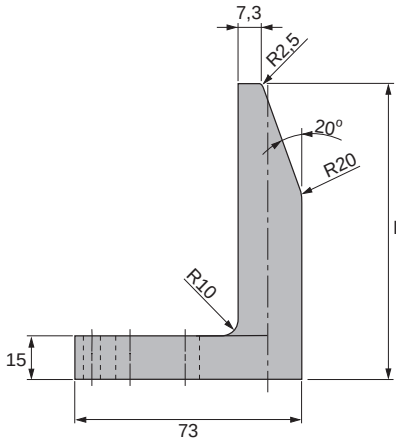
Order Code:
M301-09-120



Material :
CK60
Forged



3



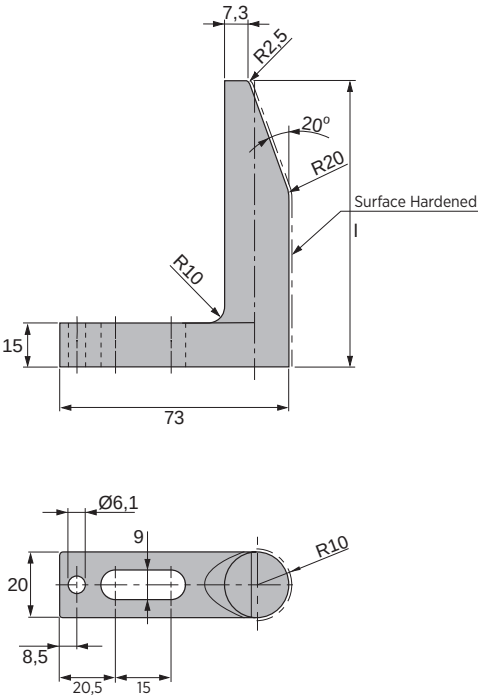
CODE	I
M301-10-065	65
M301-10-090	90

3

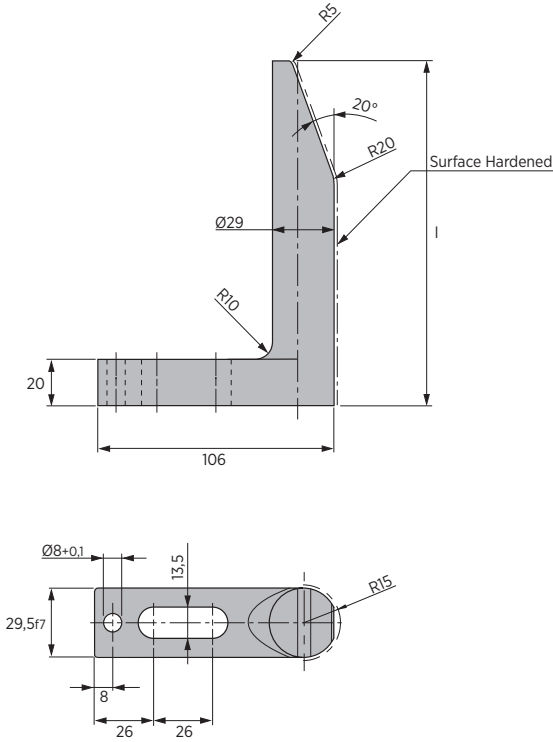


Material :
CK60
Forged

Hardened
HRC 58 ÷ 60



CODE	I
M301-11-065	65
M301-11-090	90



Material :
CK60
Forged



Hardened
HRC 58 ÷ 60

Different lengths on request;

Max. Length: 350 mm

CODE	l
M301-12-065	65
M301-12-090	90
M301-12-120	120
M301-12-150	150
M301-12-180	180
M301-12-250	250
M301-12-300	300
M301-12-350	350

Order Example:
l= 165

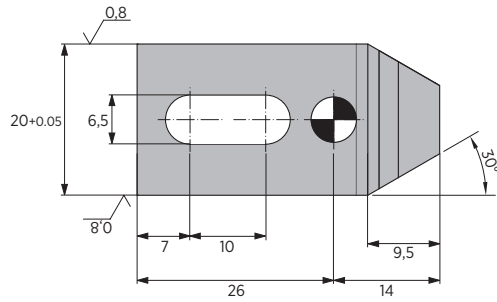
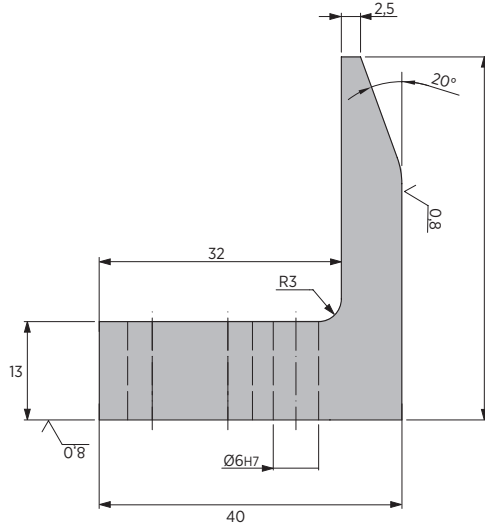
Order Code:
M301-12-165

3

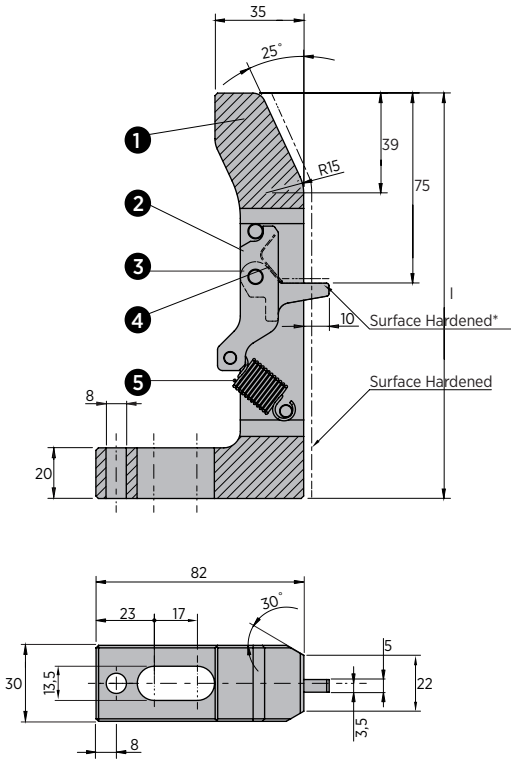


Material :
21MnCr5

Hardened
HRC 58 ÷ 60



CODE	I
M301-13-028	28
M301-13-038	38
M301-13-048	48
M301-13-068	68
M301-13-088	88



- 1** Material :
CK45
Hardened
HRC 58 ÷ 60
- 2** Material :
CK45
Hardened
HRC 54 ÷ 56
- 3** Material :
CK45
Hardened*
HRC 58 ÷ 60
+Lumena Advanced Coating
- 4** Spring
- 5** Spring



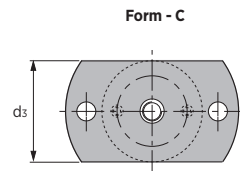
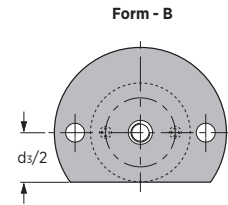
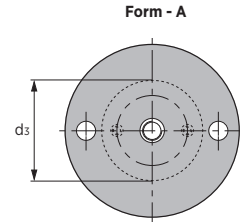
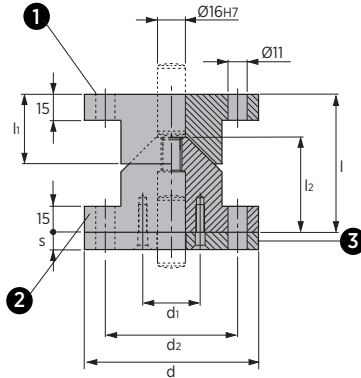
CODE	I
M301-14-160	160
M301-14-170	170
M301-14-180	180
M301-14-190	190
M301-14-200	200

Order Example:
I= 180

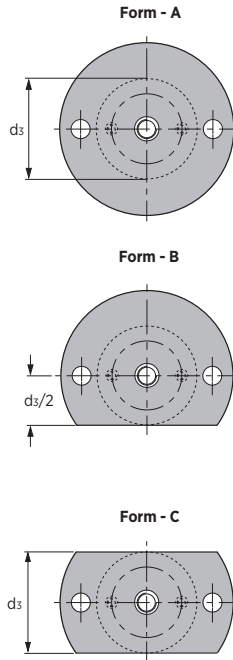
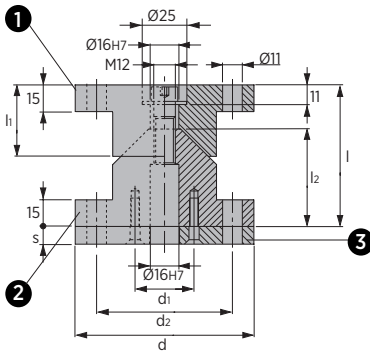
Order Code:
M301-14-180



- 1** Material :
Forged
16MnCr5
- Hardened
HRC 60 ± 64
- 3** Material :
CK45



CODE	Form	d	l ±0,05	l ₁	l ₂	d ₁	d ₂	d ₃	s
M302-01-100-005	A	100	80	40	55	40,5	76	58	5,5
M302-01-120-005	A	120	90	50	65	50,5	96	78	5,5
M302-01-100-105	B	100	80	40	55	40,5	76	58	5,5
M302-01-120-105	B	120	90	50	65	50,5	96	78	5,5
M302-01-100-205	C	100	80	40	55	40,5	76	58	5,5
M302-01-120-205	C	120	90	50	65	50,5	96	78	5,5
M302-01-100-010	A	100	80	40	55	40,5	76	58	10
M302-01-120-010	A	120	90	50	65	50,5	96	78	10
M302-01-100-110	B	100	80	40	55	40,5	76	58	10
M302-01-120-110	B	120	90	50	65	50,5	96	78	10
M302-01-100-210	C	100	80	40	55	40,5	76	58	10
M302-01-120-210	C	120	90	50	65	50,5	96	78	10
M302-01-100-001	A	100	80	40	55	40,5	76	58	10,5
M302-01-120-001	A	120	90	50	65	50,5	96	78	10,5
M302-01-100-002	C	100	80	40	55	40,5	76	58	10,5
M302-01-120-002	C	120	90	50	65	50,5	96	78	10,5



1 Material :
Forged
2 16MnCr5



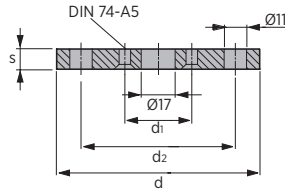
Hardened
HRC 60 ÷ 64

3 Material :
CK45

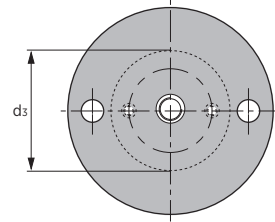
CODE	Form	d	$l_{\pm 0,05}$	l_1	l_2	d_1	d_2	d_3	s
M302-02-100-005	A	100	80	40	55	40,5	76	58	5,5
M302-02-120-005	A	120	90	50	65	50,5	96	78	5,5
M302-02-100-105	B	100	80	40	55	40,5	76	58	5,5
M302-02-120-105	B	120	90	50	65	50,5	96	78	5,5
M302-02-100-205	C	100	80	40	55	40,5	76	58	5,5
M302-02-120-205	C	120	90	50	65	50,5	96	78	5,5
M302-02-100-010	A	100	80	40	55	40,5	76	58	10
M302-02-120-010	A	120	90	50	65	50,5	96	78	10
M302-02-100-110	B	100	80	40	55	40,5	76	58	10
M302-02-120-110	B	120	90	50	65	50,5	96	78	10
M302-02-100-210	C	100	80	40	55	40,5	76	58	10
M302-02-120-210	C	120	90	50	65	50,5	96	78	10
M302-02-100-215	C	100	80	40	55	40,5	76	58	10,5
M302-02-120-215	C	120	90	50	65	50,5	96	78	10,5



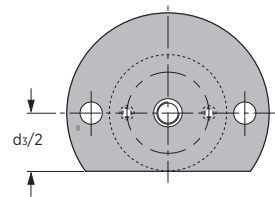
Material :
CK45



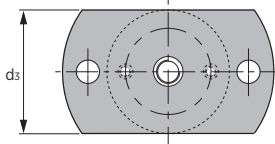
Form - A



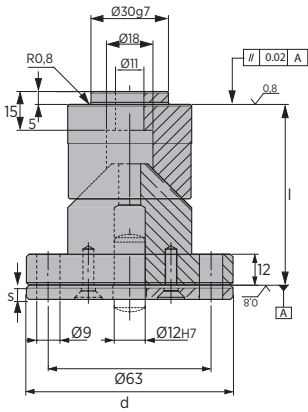
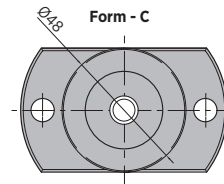
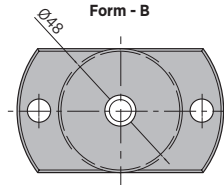
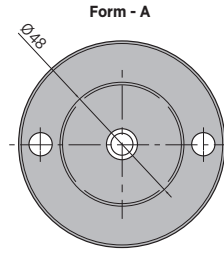
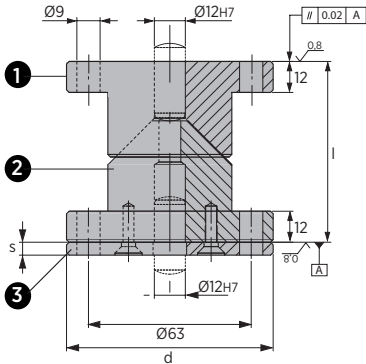
Form - B



Form - C



CODE	Form	d	d ₁	d ₂	d ₃	s
M302-03-100-005	A	100	40,5	76	58	5,5
M302-03-120-005	A	120	50,5	96	78	5,5
M302-03-100-105	B	100	40,5	76	58	5,5
M302-03-120-105	B	120	50,5	96	78	5,5
M302-03-100-205	C	100	40,5	76	58	5,5
M302-03-120-205	C	120	50,5	96	78	5,5
M302-03-100-010	A	100	40,5	76	58	10
M302-03-120-010	A	120	50,5	96	78	10
M302-03-100-110	B	100	40,5	76	58	10
M302-03-120-110	B	120	50,5	96	78	10
M302-03-100-210	C	100	40,5	76	58	10
M302-03-120-210	C	120	50,5	96	78	10
M302-03-100-215	C	100	40,5	76	58	10,5
M302-03-120-215	C	120	50,5	96	78	10,5



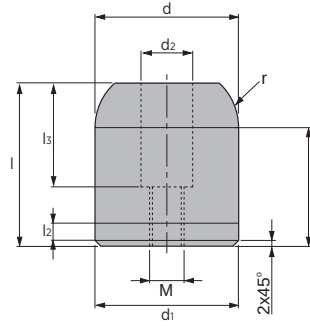
- 1 Material :
Forged
16MnCr5
- 2 Hardened
HRC 60 ÷ 62
- 3 Material :
CK45



CODE	Form	d	s	I ±0,05
M302-08-080-005	A	80	5	70
M302-08-080-055	A	80	5,5	70
M302-08-080-105	B	80	5	70
M302-08-080-155	B	80	5,5	70
M302-08-080-205	C	80	5	70
M302-08-080-255	C	80	5,5	70



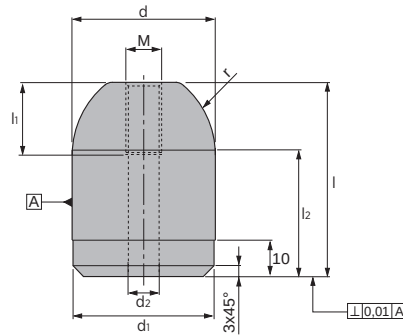
Material :
16MnCr5
Hardened
HRC 58 ± 60



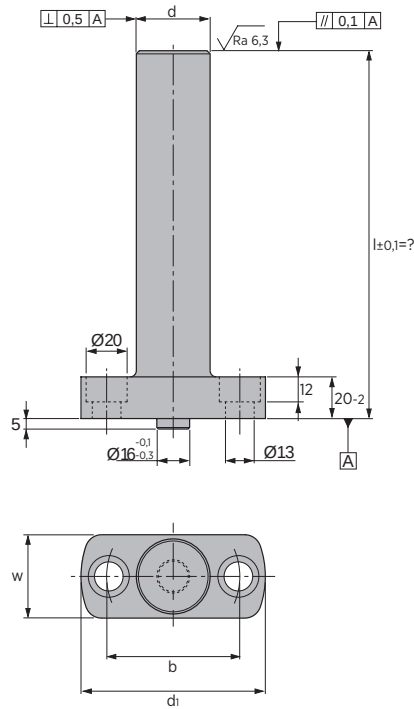
CODE	d j6	d1 -0,05 / -0,1	l	l1	l2	l3	d2 ±0,2	M	r
M303-01-022045	22	22	45	37,5	8	25	14	M10	12,5
M303-01-032050	32	32	50	40	10	35	18	M12	20
M303-01-040055	40	40	55	40	10	35	18	M12	20
M303-01-050055	50	50	55	40	10	35	18	M12	20



Material :
16MnCr5
Hardened
HRC 58 ± 60



CODE	d h6	l	l1	l2	d1 -0,05	d2	M	r
M303-02-022045	22	45	16	35	22	7	M8	15
M303-02-022055	22	55	16	45	22	7	M8	15
M303-02-032050	32	50	20	37,5	32	9	M10	20
M303-02-040055	40	55	20	35	40	9	M10	25
M303-02-040065	40	65	20	45	40	9	M10	25
M303-02-040085	40	85	20	65	40	9	M10	25
M303-02-050055	50	55	20	41,25	50	9	M10	25
M303-02-056080	56	80	20	60	56	9	M10	30



Material :
CK45
Forged
800 ÷ 1000 N/mm²



Length (l) is given by the customer;

Max. Length: 360 mm

3

CODE	d +2	w	b	d1 ±1	Max. Load (kN)
M304-01-036-l	36	40	65	90	50
M304-01-045-l	45	50	75	100	70

Order Example:
d= 36, l= 205

Order Code:
M304-01-036-205

3

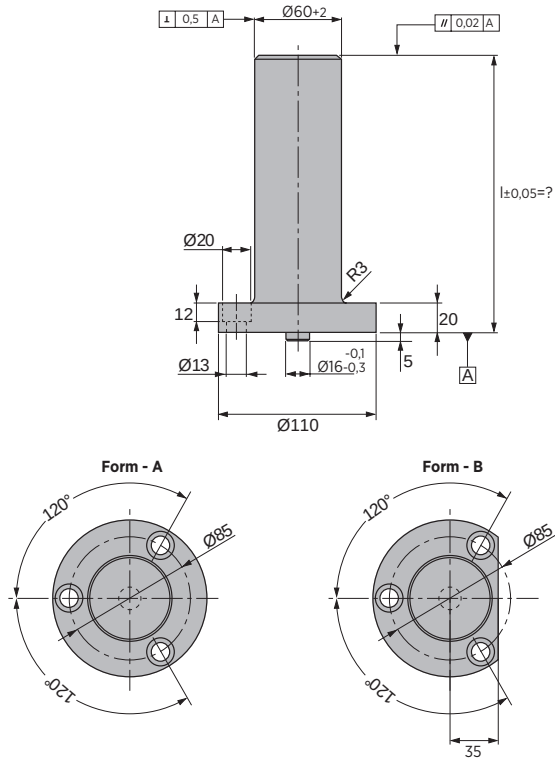


Material :
CK45
Forged
800 ÷ 1000 N/mm²



Length (l) is given by the customer;

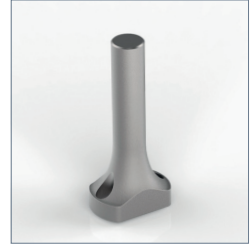
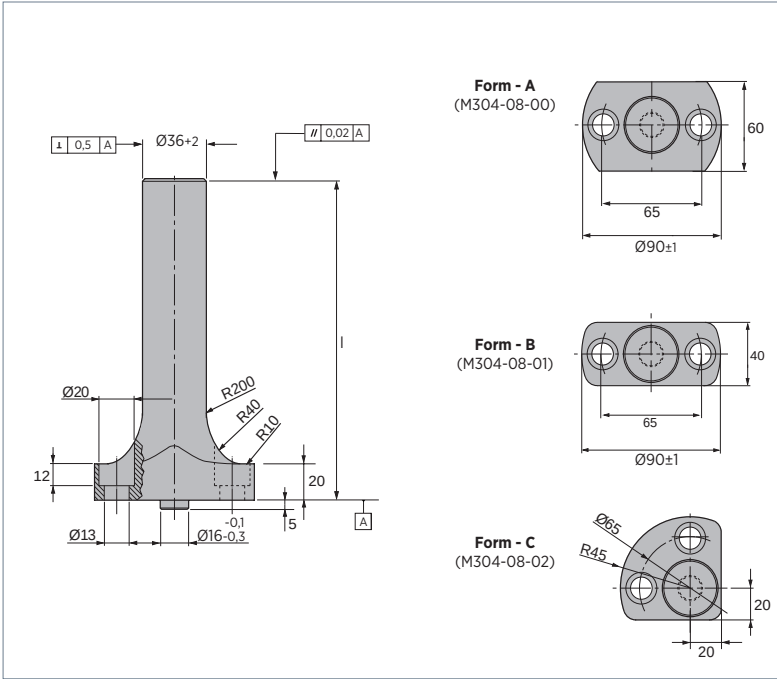
Max. Length: 440 mm



CODE	Form	Max. Load (kN)
M304-07-00-I	A	80
M304-07-01-I	B	80

Order Example:
Form= A, I= 205

Order Code:
M304-07-00-205



Material :
CK45
Forged
800 ÷ 1000 N/mm²



Different lengths on request;

Max. Length: 360 mm

CODE	l ±0,05	Max. Load (kN)
M304-08-??-150	150	50
M304-08-??-155	155	50
M304-08-??-160	160	50
M304-08-??-165	165	50
M304-08-??-170	170	50
M304-08-??-175	175	50
M304-08-??-180	180	50
M304-08-??-185	185	50
M304-08-??-190	190	50
M304-08-??-195	195	50
M304-08-??-200	200	50
M304-08-??-205	205	50

CODE	l ±0,05	Max. Load (kN)
M304-08-??-210	210	50
M304-08-??-215	215	50
M304-08-??-220	220	50
M304-08-??-225	225	50
M304-08-??-230	230	50
M304-08-??-235	235	50
M304-08-??-240	240	50
M304-08-??-245	245	50
M304-08-??-250	250	50
M304-08-??-255	255	50
M304-08-??-260	260	50
M304-08-??-265	265	50

CODE	l ±0,05	Max. Load (kN)
M304-08-??-270	270	50
M304-08-??-275	275	50
M304-08-??-280	280	50
M304-08-??-285	285	50
M304-08-??-290	290	50
M304-08-??-295	295	50
M304-08-??-300	300	50
M304-08-??-310	310	50
M304-08-??-320	320	50
M304-08-??-330	330	50
M304-08-??-340	340	50
M304-08-??-350	350	50
M304-08-??-360	360	50

Order Example:
Form= A, l= 205

Order Code:
M304-08-00-205

3

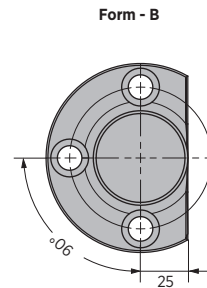
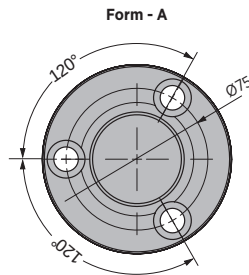
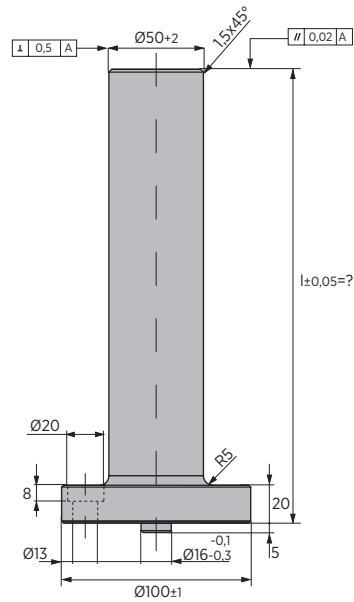


Material :
CK45
Forged
800 ÷ 1000 N/mm²



Length (l) is given by the customer;

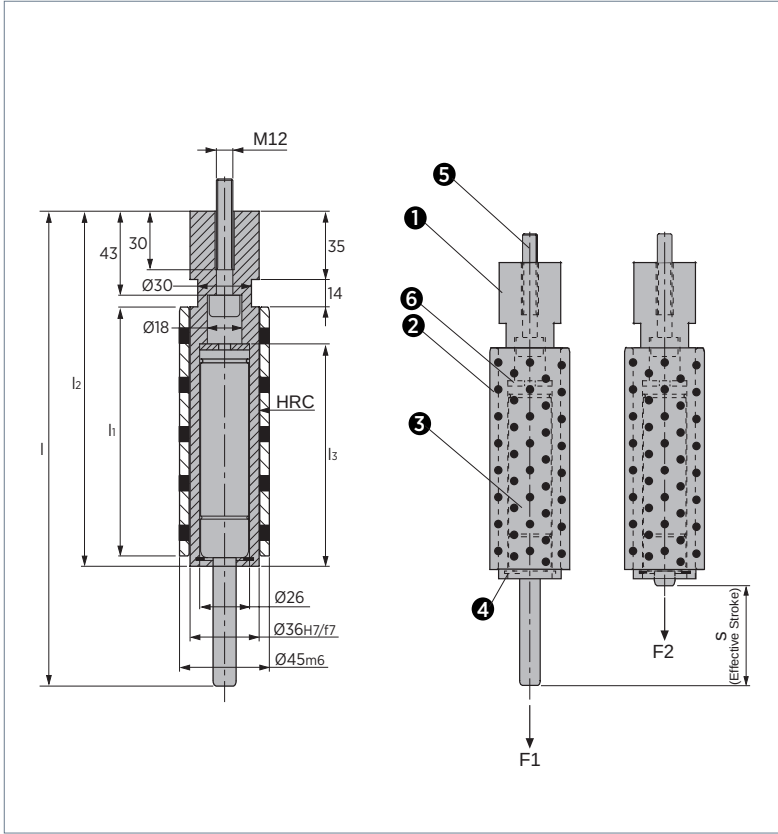
Max. Length: 600 mm



CODE	Form	Max. Load (kN)
M304-09-00-I	A	80
M304-09-01-I	B	80

Order Example:
Form= A, I= 220

Order Code:
M304-09-00-220



1 Material (Sleeve):
CK45



Hardened
HRC 58 ÷ 62

2 Material (Bushes):
Bronze with Non-Liquid
Lubricant
HB ≥ 190

3 Gas Spring

4 DIN 472

5 M10x60 DIN 912

6 Material :
90MnCrV8

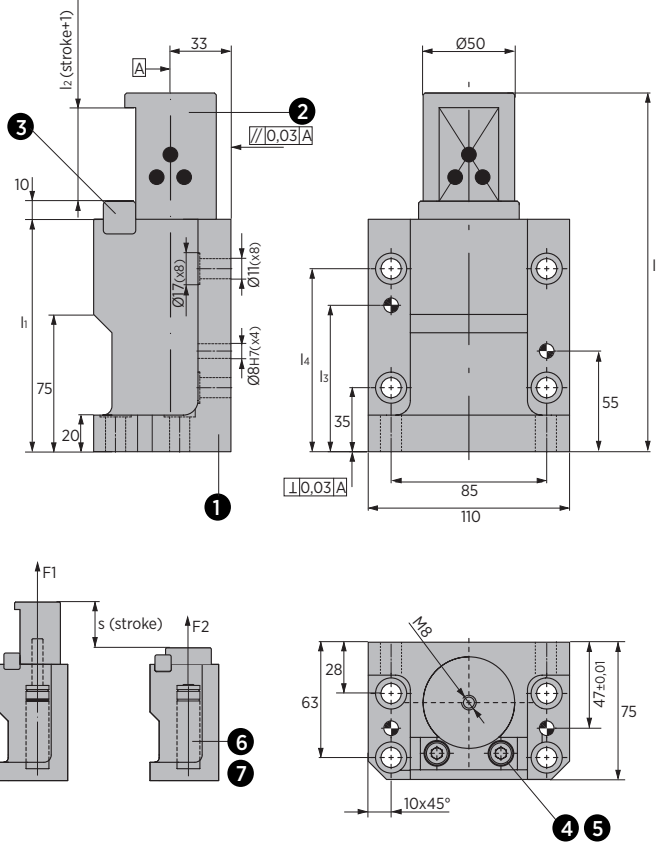
Hardened
HRC 54 ÷ 60

CODE	l	l ₁	l ₂	l ₃	F1 (daN)	F2 (daN)	s
M305-04-50050	240	115	182	118	50	68	50
M305-04-50100	240	115	182	118	100	136	50
M305-04-50150	240	115	182	118	150	204	50
M305-04-50200	240	115	182	118	200	272	50
M305-04-65050	274	145	200	135	50	68	65
M305-04-65100	274	145	200	135	100	136	65
M305-04-65150	274	145	200	135	150	204	65
M305-04-65200	274	145	200	135	200	272	65
M305-04-80050	314	170	220	155	50	68	80
M305-04-80100	314	170	220	155	100	136	80
M305-04-80150	314	170	220	155	150	204	80
M305-04-80200	314	170	220	155	200	272	80



3

- 1 Material : CK45
- 2 Material : Bronze + Graphite
HB > 190
- 3 Material : 36NiCrMo4
- 4 M8x30 DIN 912
- 5 Schnorr Ø8
- 6 Gas Spring
- 7 M6x12 DIN 7991



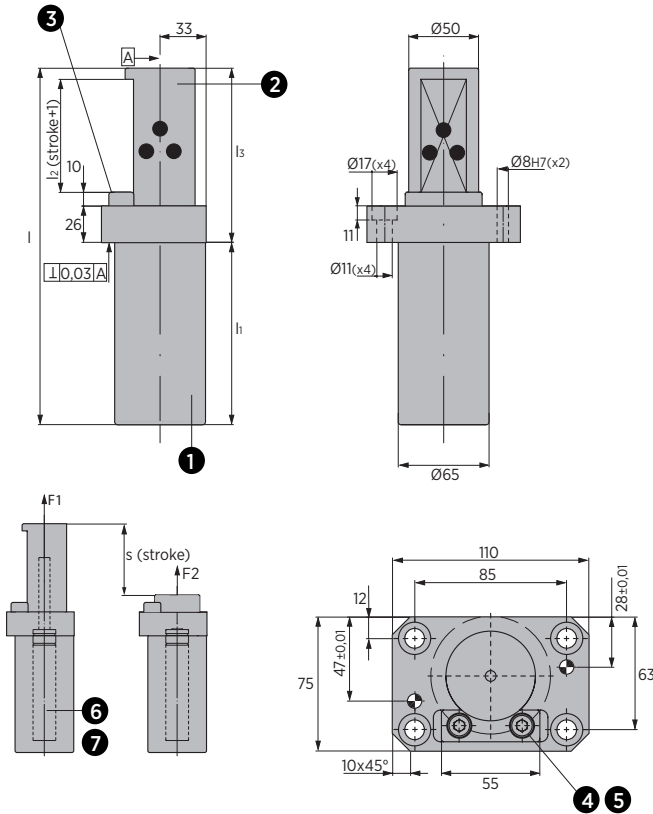
CODE	l	l ₁	l ₂	l ₃	l ₄	F ₁ (daN)	F ₂ (daN)	s
M305-05-50050	196	127	51	80	100	50	86	50
M305-05-50100	196	127	51	80	100	100	172	50
M305-05-50150	196	127	51	80	100	150	258	50
M305-05-50200	196	127	51	80	100	200	344	50
M305-05-80050	256	157	81	110	130	50	86	80
M305-05-80100	256	157	81	110	130	100	172	80
M305-05-80150	256	157	81	110	130	150	258	80
M305-05-80200	256	157	81	110	130	200	344	80



3



- 1 Material :
CK45
- 2 Material :
Bronze + Graphite
HB > 190
- 3 Material :
36NiCrMo4
- 4 M8x30 DIN 912
- 5 Schnorr Ø8
- 6 Gas Spring
- 7 M6x12 DIN 7991

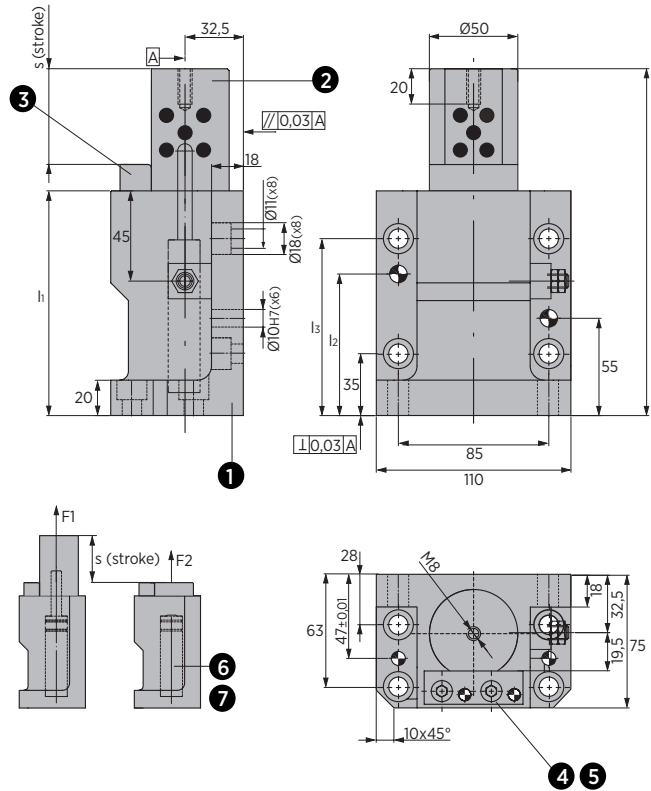


CODE	I	I ₁	I ₂	I ₃	F1 (daN)	F2 (daN)	s
M305-06-50050	196	101	51	95	50	86	50
M305-06-50100	196	101	51	95	100	172	50
M305-06-50150	196	101	51	95	150	258	50
M305-06-50200	196	101	51	95	200	344	50
M305-06-80050	256	131	81	125	50	86	80
M305-06-80100	256	131	81	125	100	172	80
M305-06-80150	256	131	81	125	150	258	80
M305-06-80200	256	131	81	125	200	344	80

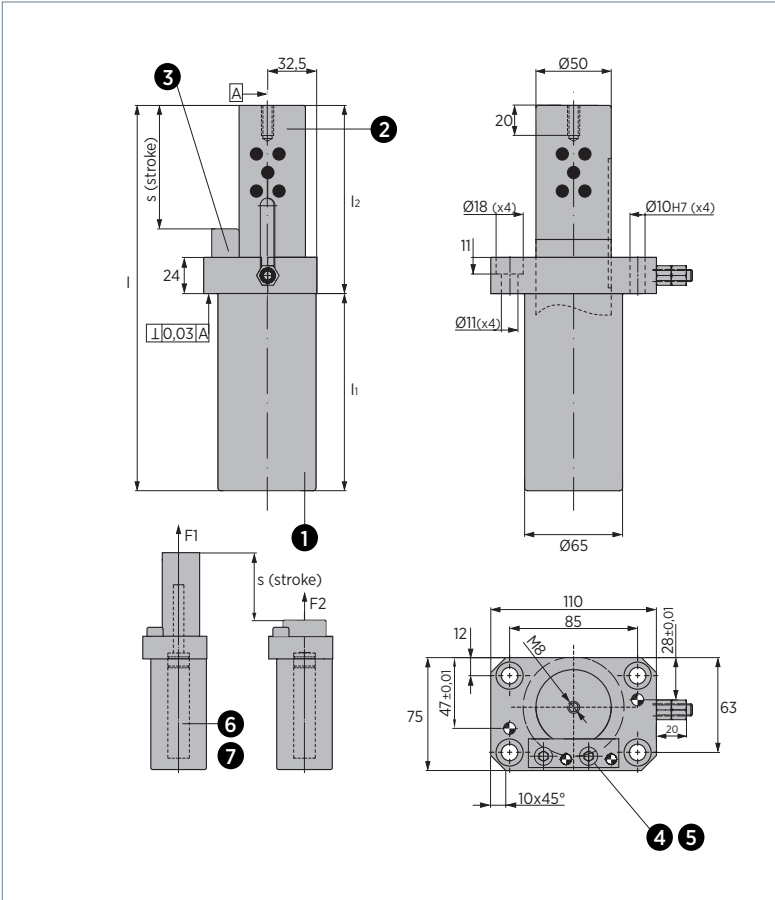


3

- 1 Material :
CK45
- 2 Material :
Bronze + Graphite
HB > 190
- 3 Material :
36NiCrMo4
- 4 M8x30 DIN 912
- 5 Schnorr Ø8
- 6 Gas Spring
- 7 M6x12 DIN 7991



CODE	l	h	l ₂	l ₃	F1 (daN)	F2 (daN)	s
M305-07-50050	196	125	80	100	50	65	50
M305-07-50100	196	125	80	100	100	135	50
M305-07-50150	196	125	80	100	150	200	50
M305-07-50200	196	125	80	100	200	260	50
M305-07-80050	256	155	110	130	50	65	80
M305-07-80100	256	155	110	130	100	135	80
M305-07-80150	256	155	110	130	150	200	80
M305-07-80200	256	155	110	130	200	260	80
M305-07-100050	296	175	130	150	50	65	100
M305-07-100100	296	175	130	150	100	135	100
M305-07-100150	296	175	130	150	150	200	100
M305-07-100200	296	175	130	150	200	260	100



- 1 Material : CK45
- 2 Material : Bronze + Graphite
HB > 190
- 3 Material : 36NiCrMo4
- 4 M8x30 DIN 912
- 5 Schnorr Ø8
- 6 Gas Spring
- 7 M6x12 DIN 7991

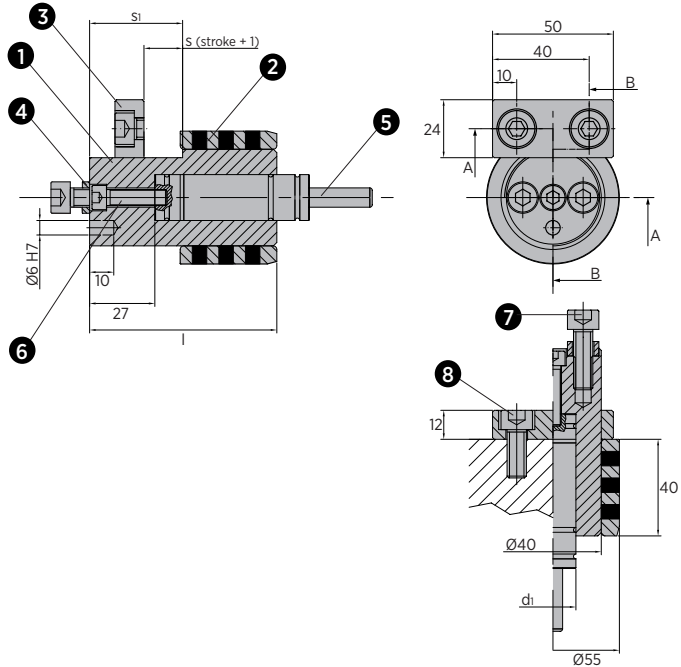


CODE	l	l ₁	l ₂	F ₁ (daN)	F ₂ (daN)	s
M305-08-50050	196	101	95	50	65	50
M305-08-50100	196	101	95	100	135	50
M305-08-50150	196	101	95	150	200	50
M305-08-50200	196	101	95	200	260	50
M305-08-80050	256	131	125	50	65	80
M305-08-80100	256	131	125	100	135	80
M305-08-80150	256	131	125	150	200	80
M305-08-80200	256	131	125	200	260	80
M305-08-100050	296	151	145	50	65	100
M305-08-100100	296	151	145	100	135	100
M305-08-100150	296	151	145	150	200	100
M305-08-100200	296	151	145	200	260	100

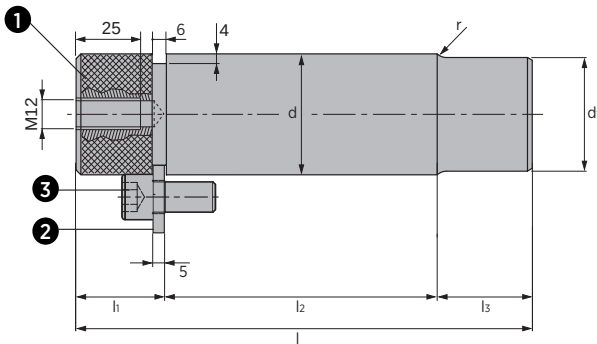
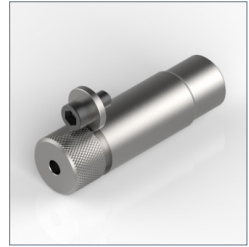


3

- 1** Material :
16MnCr5
Hardened
HRC 54 ÷ 56
- 2** Material (Bush Self-lubricating) :
Bronze + Graphite
HB > 190
- 3** Retainer (2 172 472)
- 4** Material (Locating Ring) :
115CrV3
- 5** Gas Spring
- 6** M6x25 DIN 912
- 7** M8x25 DIN 912
- 8** M8x20 DIN 912



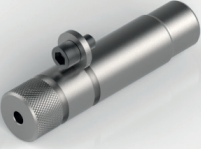
CODE	d ₁ +1 / +1,5	l ±0,1	s	s ₁
M305-09-010090	19	64	9	25
M305-09-010200	25	64	9	25
M305-09-015090	19	68,5	13,5	29,5
M305-09-015200	25	68,5	13,5	29,5
M305-09-025090	19	77,5	22,5	38,5
M305-09-025200	25	77,5	22,5	38,5
M305-09-038090	19	89	34	50
M305-09-038200	25	89	34	50
M305-09-050090	19	100	45	63
M305-09-050200	25	100	45	63
M305-09-063090	19	113,5	58,5	74,5
M305-09-063200	25	113,5	58,5	74,5
M305-09-080090	19	130	75	91
M305-09-080200	25	130	75	91
M305-09-100090	19	150	95	111
M305-09-100200	25	150	95	111
M305-09-125090	19	175	120	136
M305-09-125200	25	175	120	136



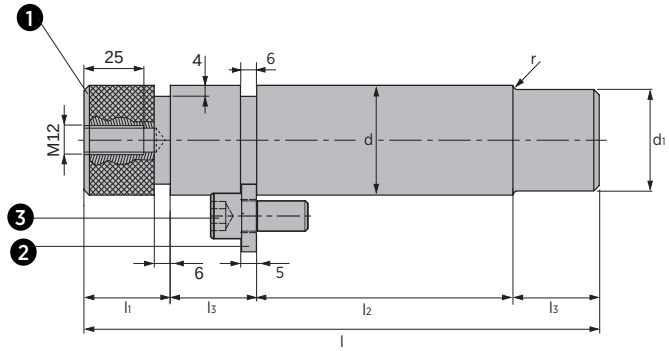
- 1 Material :
42CrMo4
 $800 \div 1000 \text{ N/mm}^2$
- 2 Material :
CK45
Washer: 5xØ13,2xØ30
- 3 Screw: M12x20 DIN 912



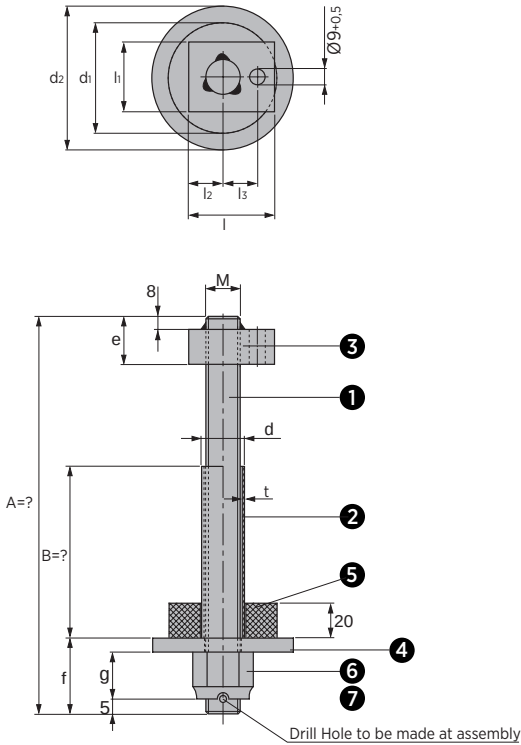
CODE	d _{e8}	l	l ₁	l ₂	l ₃	d _{1+0,05}	r	Dynamic load (kN)
M306-02-032105	32	105	22	58	25	29	4	3
M306-02-032122	32	122	22	75	25	29	4	3
M306-02-040139	40	139	32	75	32	37	5	5
M306-02-040159	40	159	32	95	32	37	5	5
M306-02-050167	50	167	32	95	40	47	6	7,5
M306-02-050192	50	192	32	120	40	47	6	7,5
M306-02-063202	63	202	32	120	50	60	6	12,5
M306-02-063237	63	237	32	155	50	60	6	12,5



- 1** Material :
42CrMo4
800 ÷ 1000 N/mm² 
- 2** Material :
CK45
Washer: 5xØ13,2xØ30
- 3** Screw: M12x20 DIN 912



CODE	d e8	l	l ₁	l ₂	l ₃	d ₁ +0,05	r	Dynamic load (kN)
M306-03-032130	32	130	22	58	25	29	4	3
M306-03-032147	32	147	22	75	25	29	4	3
M306-03-040171	40	171	32	75	32	37	5	5
M306-03-040191	40	191	32	95	32	37	5	5
M306-03-050207	50	207	32	95	40	47	6	7,5
M306-03-050232	50	232	32	120	40	47	6	7,5
M306-03-063252	63	252	32	120	50	60	6	12,5
M306-03-063287	63	287	32	155	50	60	6	12,5



- 1 Material: 36NiCrMo4
- 2 3 Material: St37
- 4 Material: CK45
- 5 Elastomer 92SH
- 6 DIN 935 cl. 8.8
- 7 DIN 94



A and B are given by the customer.

*Respect the max. load.

CODE	dxt	l	h	l ₂	l ₃ ±0,5	d ₁	d ₂	e	f	g	M	Max. Load (kg)
M307-01-16AAABBB	22x2	50	35	20	20	50	65	28	30	19	M16	250
M307-01-20AAABBB	25x2	50	40	20	20	63	82	28	35	22	M20	450
M307-01-24AAABBB	30x2,5	50	45	20	20	80	105	28	42	27	M24	750
M307-01-30AAABBB	38x3,5	63	50	28	26	100	130	33	50	33	M30	1250

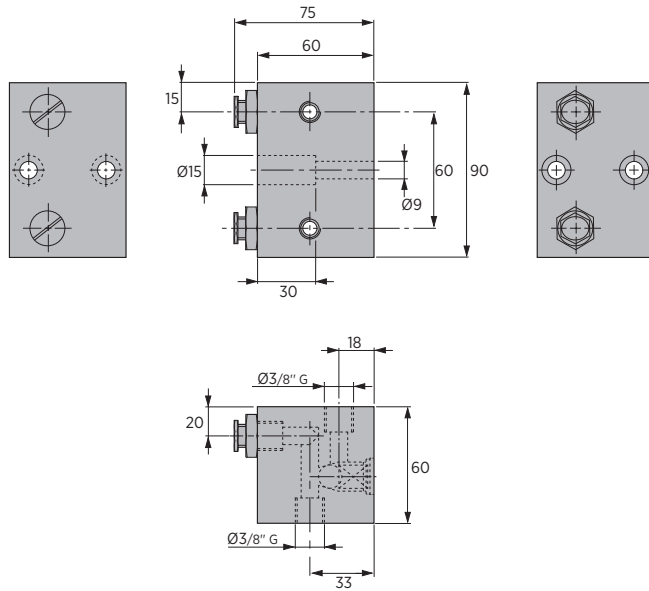
Order Example:
M= 20, A= 247, B= 110

Order Code:
M307-01-20247110

3

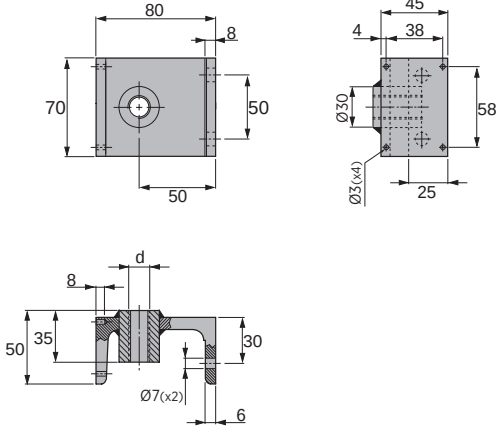
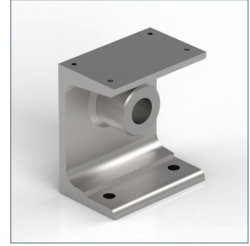
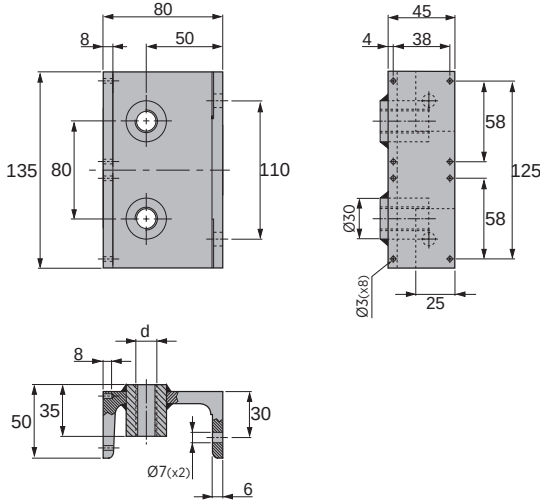


Material:
CK45



CODE

M308-01-090-060

Form - A

Form - B

Material :
St 37


3

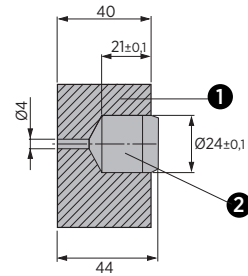
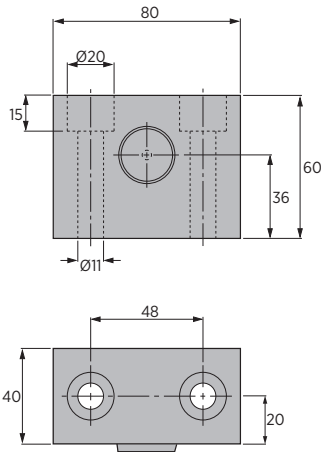
CODE	Form	d
M308-07-080070	A	G 3/8"
M308-07-080135	B	G 1/4"



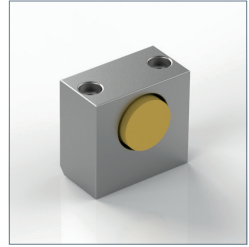
1 Material :
CK45



2 Elastomer 92 Shore



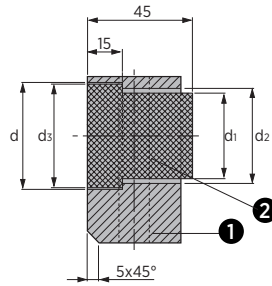
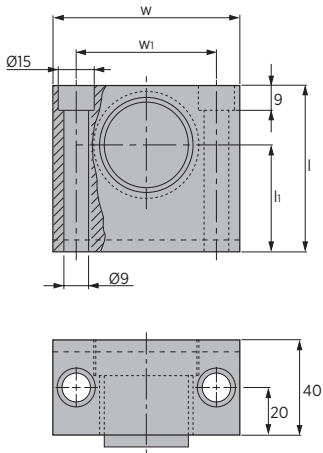
CODE	Fmax. (kN)	Max. Energy Absorbed (J)
M309-02-040080	3	4,8



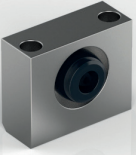
1 Material :
CK45



2 Elastomer 90 Shore



CODE	w	d	l	l ₁	w ₁	d ₁	d ₂	d ₃	F _{max} (kN)	Max. Energy Absorbed (J)
M309-04-040065	65	35	60	40	45	27	30	34	5,2	13
M309-04-040075	75	45	70	45	55	36	40	44	9,8	24,5

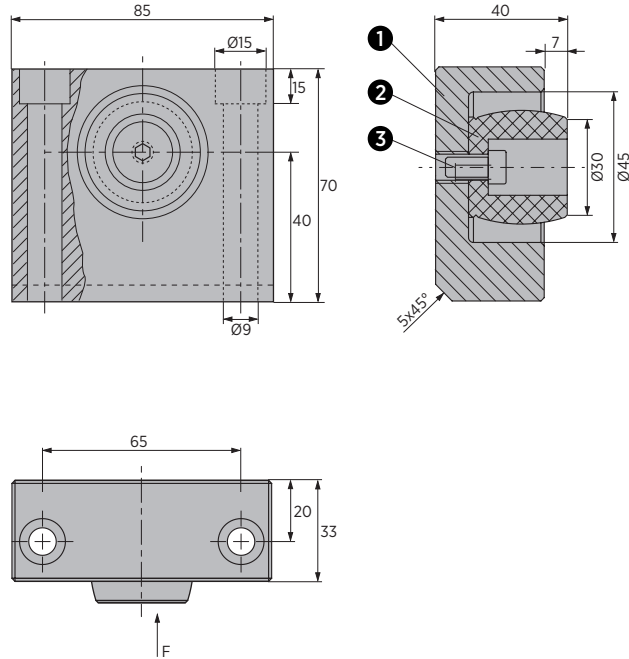


3

1 Material:
CK45

2 Shock Absorber

3 M6x12 DIN 912



CODE	Fmax. (kN)	Max. Energy Absorbed (J)	Max. Stroke (mm)
M309-05-033085	3,75	8	7

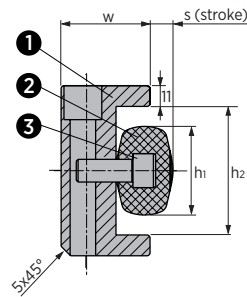
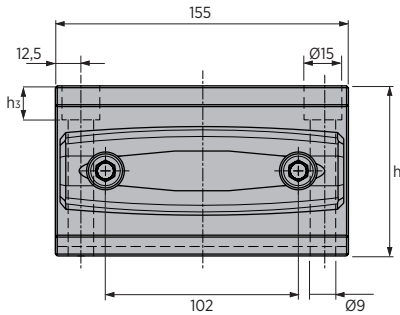


3

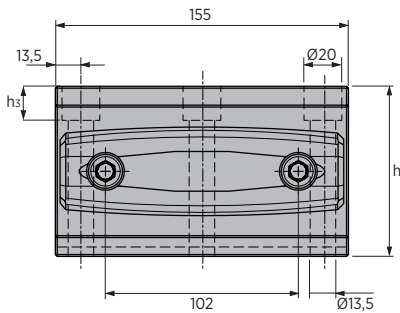


- 1 Material:
CK45
- 2 Shock Absorber
- 3 M10x30 DIN 912

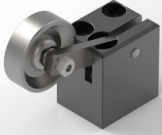
Form - A



Form - B

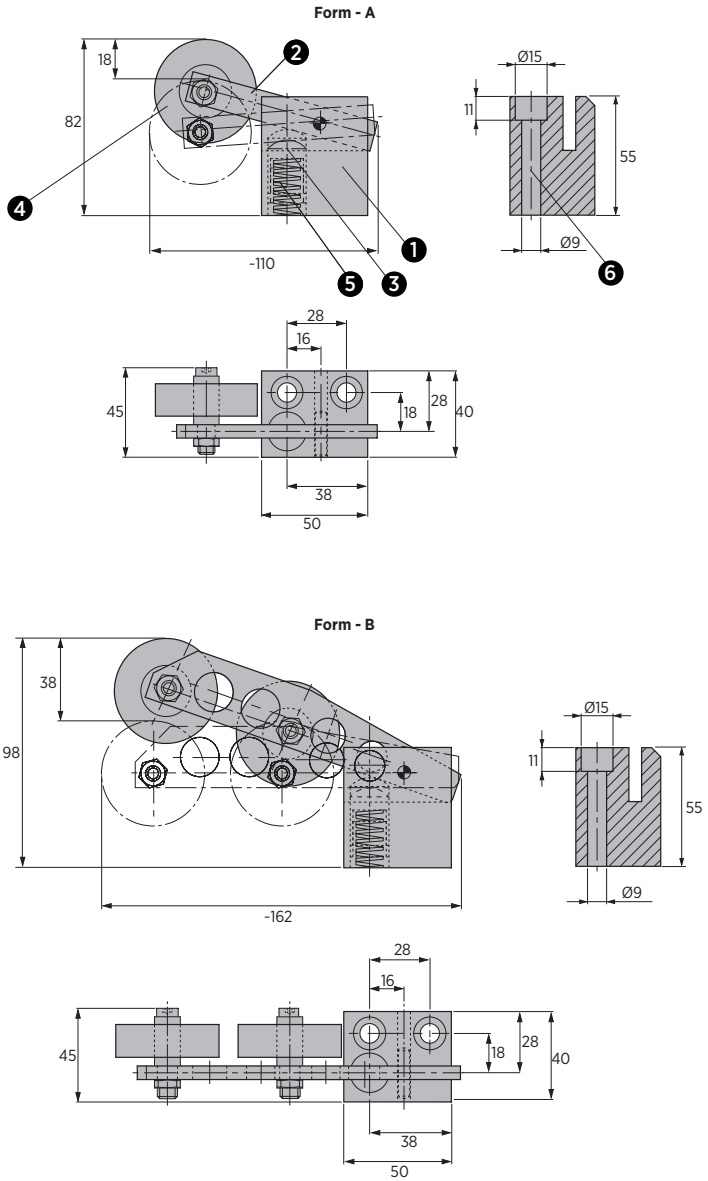


CODE	Form	w	h	h ₁	h ₂	h ₃	Max. Energy/Hub (J/Hub)	Max. Stroke (mm)
M309-06-0467155	A	46,7	80	47	58	9	210	10,3
M309-06-047155	A	47	90	52	68	19	230	7
M309-06-0471551	B	47	90	47	68	18	210	14

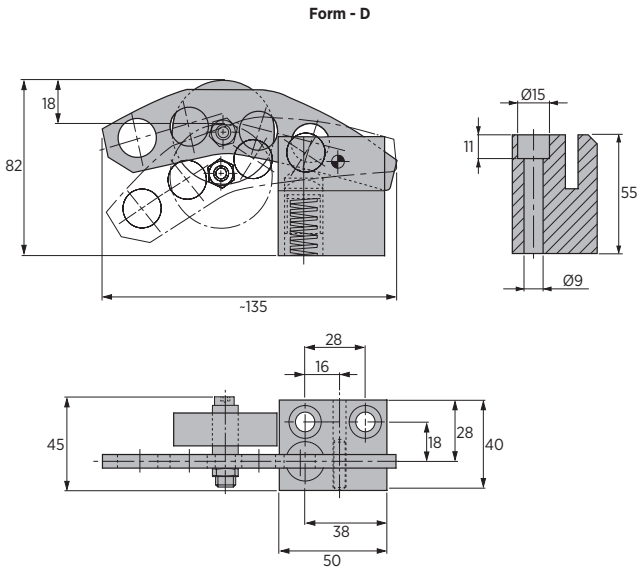
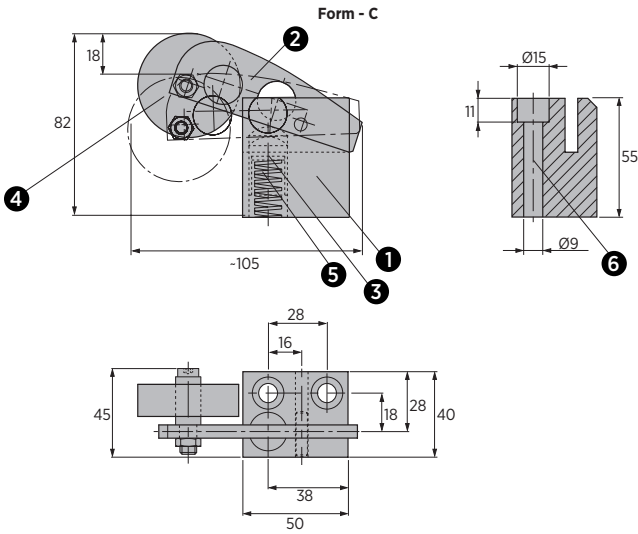


3

- 1 Material: C15
- 2 Material: S235JRG2K
- 3 Material: 42CrMo4
- 4 Roller
- 5 Spring
- 6 Screws M8x60 DIN 912



CODE	Form
M310-01-001	A
M310-01-002	B

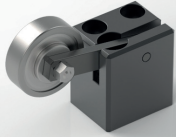


- 1** Material: C15
- 2** Material: S235JRG2K
- 3** Material: 42CrMo4
- 4** Roller
- 5** Spring
- 6** Screws M8x60 DIN 912



3

CODE	Form
M310-01-003	C
M310-01-004	D

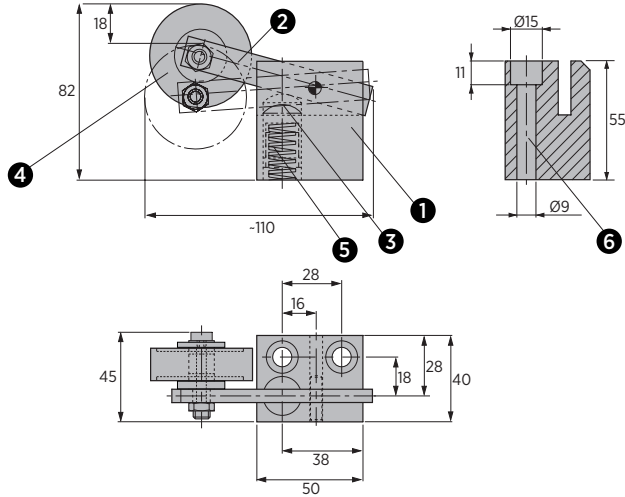


3

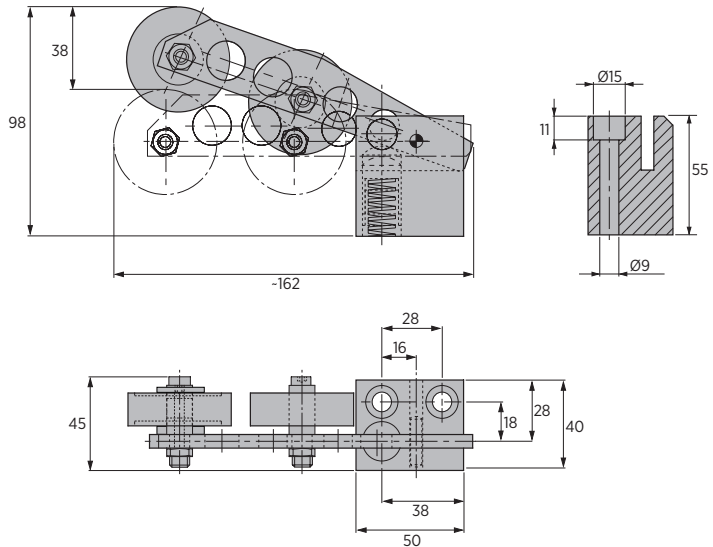
- 1 Material: C15
- 2 Material: S235JRG2K
- 3 Material: 42CrMo4
- 4 Roller
- 5 Spring
- 6 Screws M8x60 DIN 912



Form - A

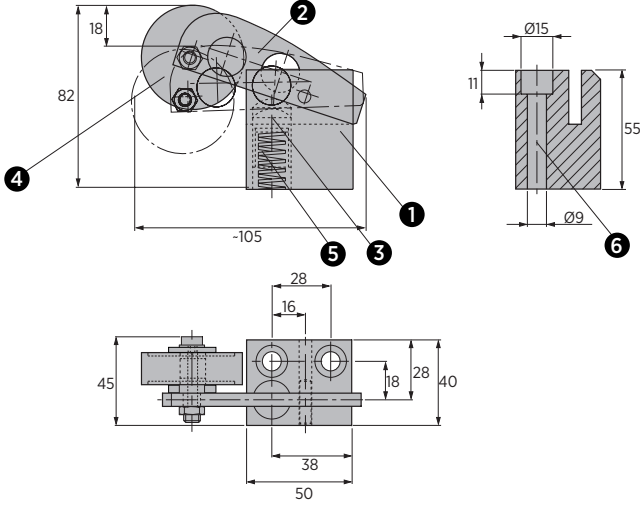


Form - B

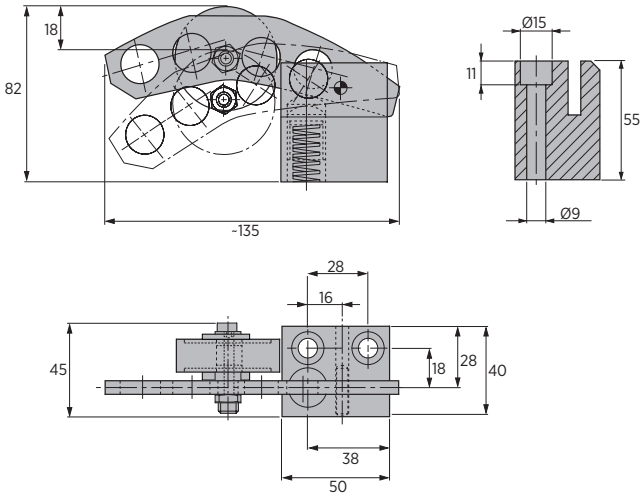


CODE	Form
M310-01-010	A
M310-01-011	B

Form - C



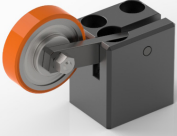
Form - D



- 1** Material: C15
- 2** Material: S235JRG2K
- 3** Material: 42CrMo4
- 4** Roller
- 5** Spring
- 6** Screws M8x60 DIN 912



CODE	Form
M310-01-012	C
M310-01-013	D

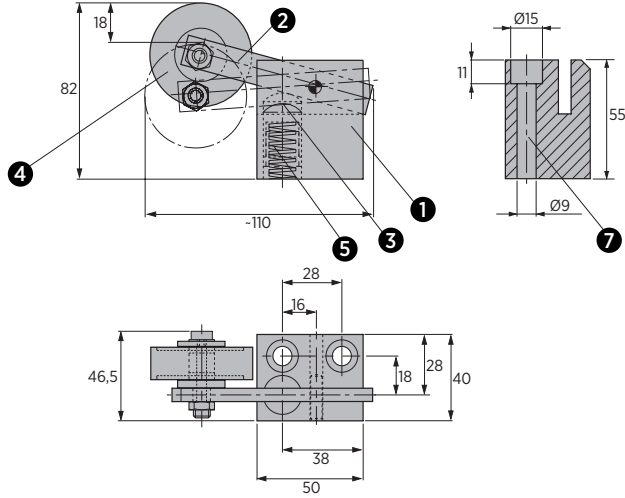


3

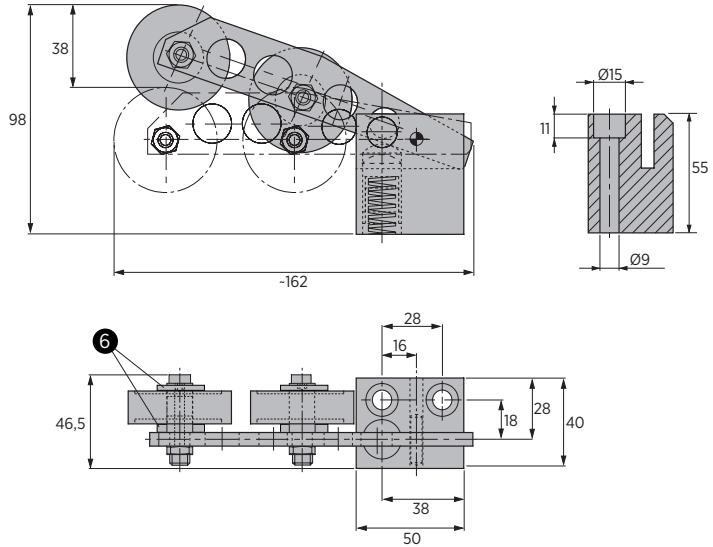
- 1 Material: C15
- 2 Material: S235JRG2K
- 3 Material: 42CrMo4
- 4 Roller
- 5 Spring
- 6 Material: Steel
- 7 Screws M8x60 DIN 912



Form - A

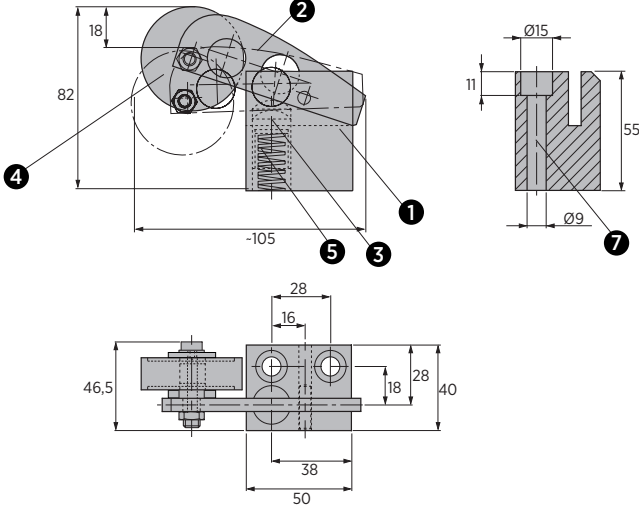


Form - B

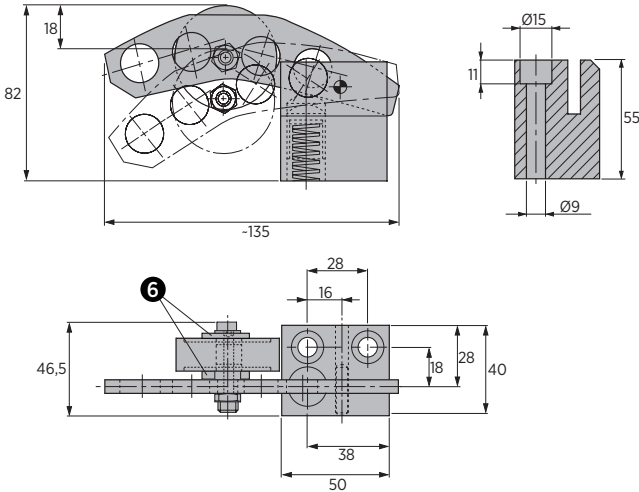


CODE	Form
M310-01-020	A
M310-01-021	B

Form - C



Form - D

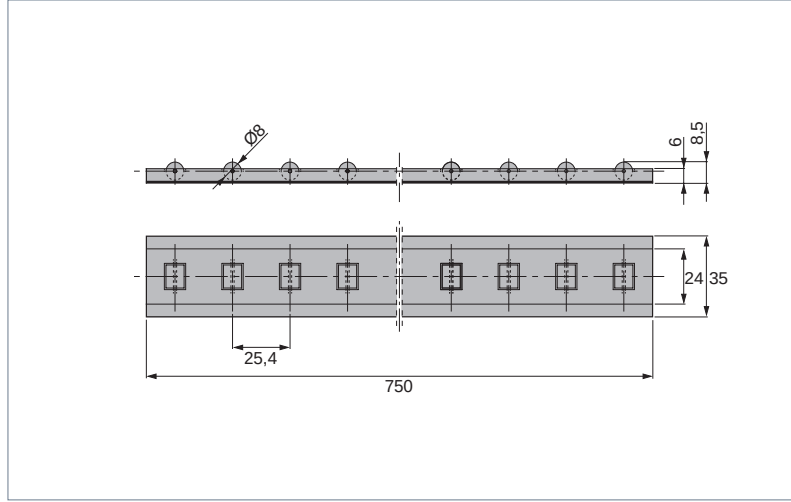


- 1** Material: C15
- 2** Material: S235JRG2K
- 3** Material: 42CrMo4
- 4** Roller
- 5** Spring
- 6** Material: Steel
- 7** Screws M8x60 DIN 912



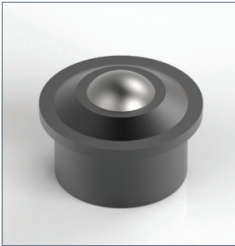
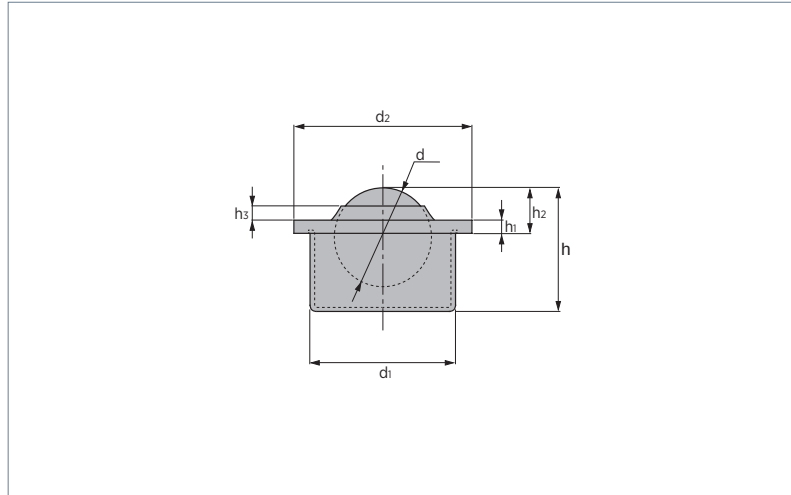
CODE	Form
M310-01-022	C
M310-01-023	D

3

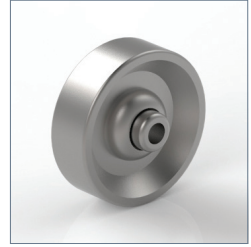
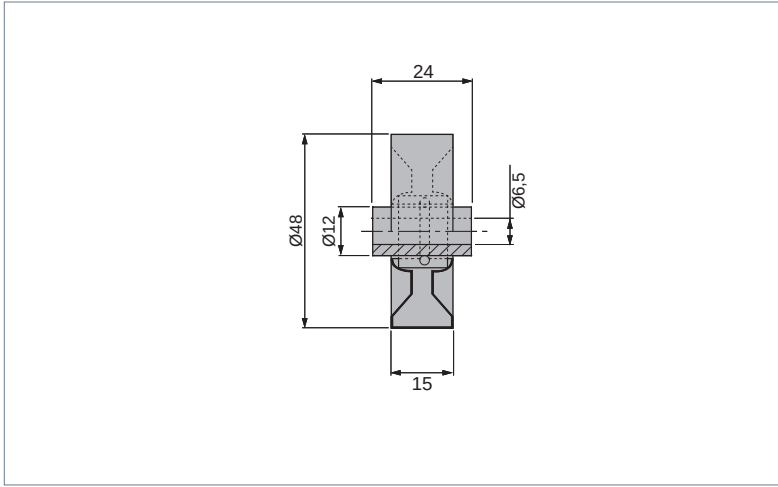

Material :
Steel


CODE

M310-03-35750


Material :
Steel


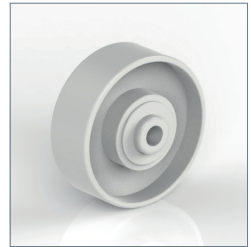
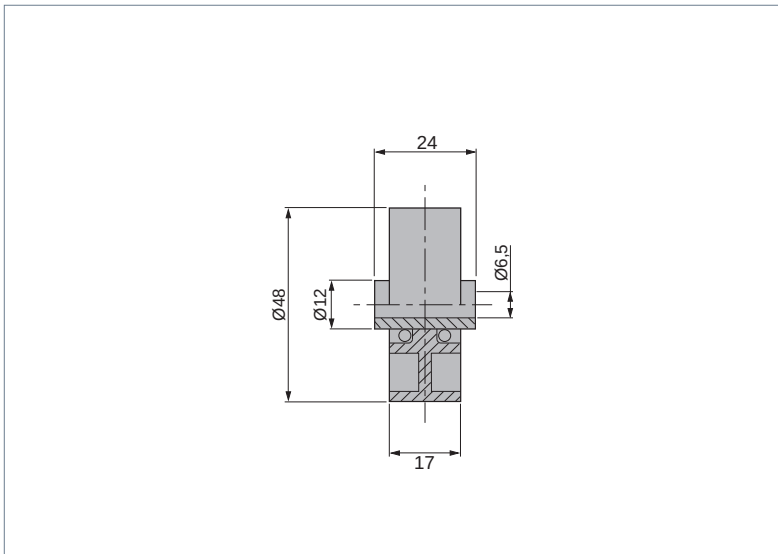
CODE	d	h	d ₁	d ₂	h ₁	h ₂	h ₃	Max. Load (daN)
M310-04-0015	15	21,5	24±0,065	31	2,8	9,5±0,2	3,5	50
M310-04-0030	30	37,5	45±0,080	55	4	13,8±0,3	4,3	250



Material :
Steel



CODE	Max. Load (daN)
M310-05-001	25



Material :
Polypropylene

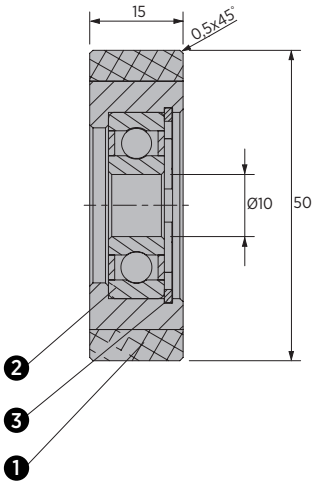


CODE	Max. Load (daN)
M310-06-001	20

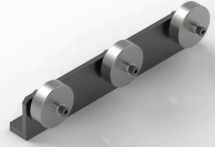
3



- 1 Material:
Steel+Vulkollan
- 2 Roller Bearing 6200 2RS
- 3 ISO DIN 472



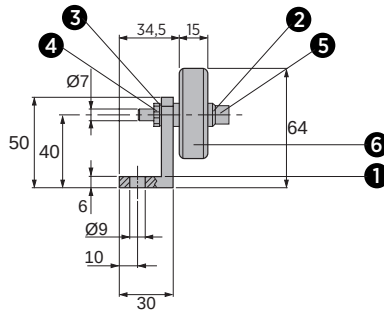
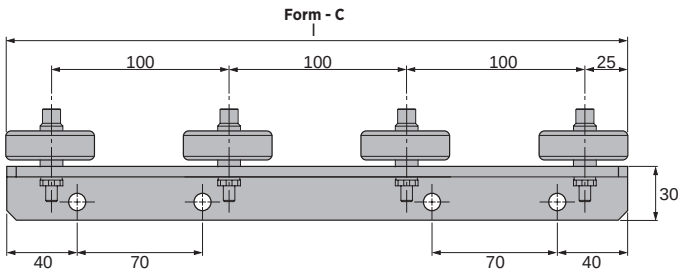
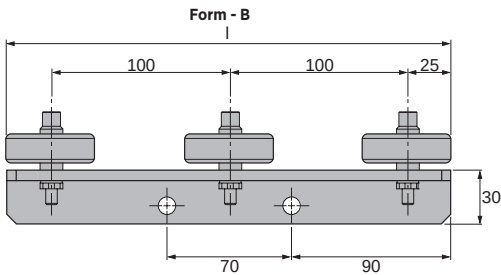
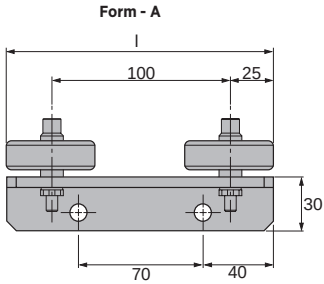
CODE	Max. Load (daN)
M310-08-001	70



3



- 1 Material: St 37
- 2 3 Washers for M6
- 4 Nut for M6
- 5 Screw M6x40 DIN 912
- 6 Material: Steel - M310-05-001

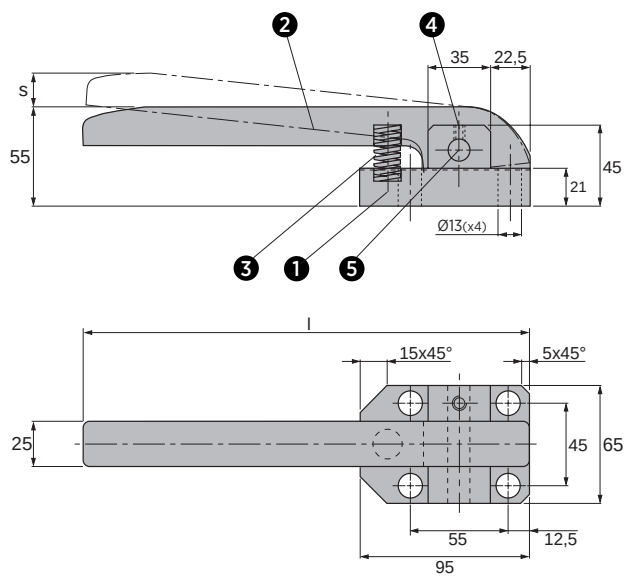


CODE	Form	I	Max. Load (daN)
M310-08-064-150	A	150	50
M310-08-064-250	B	250	75
M310-08-064-350	C	350	100

3



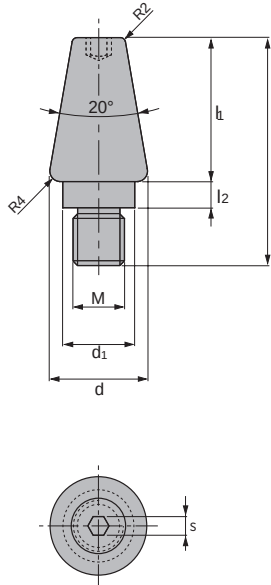
- 1 Material : CK45
- 2 Material: Bronze - HB>190
- 3 Spring
- 4 M6x8 DIN 913
- 5 Ø12x60 DIN 6325



CODE	l	s	Spring	Spring Initial Force (N)	Spring Final Force (N)
M310-09-01-001	250	18	TV016044	79	123
M310-09-01-002	250	18	B16044	270	420
M310-09-01-003	300	30	B16044	240	420



Material :
CK45

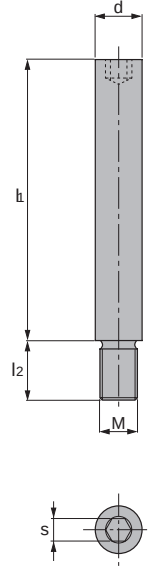


CODE	d	l	l ₁	l ₂	d ₁	M	s	Elastomer ø
M311-01-012056	28	56	30	8	19	M12	6	63
M311-01-016074	32	74	40	10	22	M16	8	80-100
M311-01-020100	38	100	55	15	28	M20	10	125-140

3



Material :
CK45



d	l1											l2	M	s
6	20	25	32	40	-	-	-	-	-	-	-	6	M4	3
8	20	25	32	40	50	-	-	-	-	-	-	9	M6	4
10	20	25	32	40	50	63	-	-	-	-	-	15	M8	5
13	-	-	32	40	50	63	80	95	-	-	-	15	M10	6
16	-	25	32	40	50	63	80	95	118	140	180	18	M12	8
20	-	-	32	40	50	63	80	95	118	140	180	25	M16	10
25	-	-	32	40	50	63	80	95	118	140	180	30	M20	14

Order Example:
d= 10, l1= 50

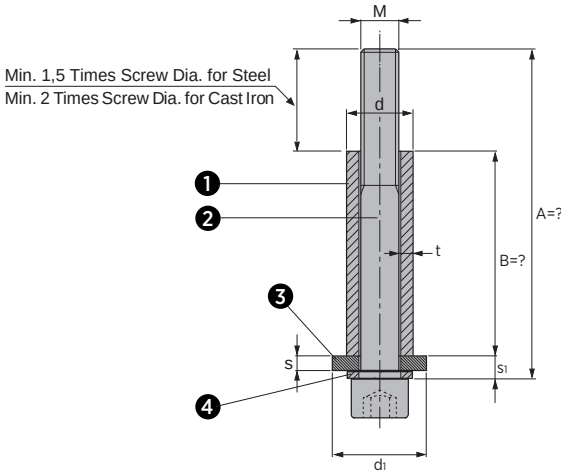
Order Code:
M311-05-10050



- 1 Material : St37
- 2 DIN 912 cl. 12.9
- 3 Material: CK45
- 4 DIN 127



A and B are given by the customer.



CODE	dxt	d ₁	M	s	s ₁	Max. Load (kg)
M312-03-10AAABBB	16x2,5	25	M10	4	5,6	100
M312-03-12AAABBB	20x3,5	30	M12	6	7,7	150
M312-03-16AAABBB	28x5,5	40	M16	6	8,1	250

Order Example:
M= 12, A= 110, B= 76

Order Code:
M312-03-12110076



3

1 Material :
St37



2 DIN 912 cl. 12.9

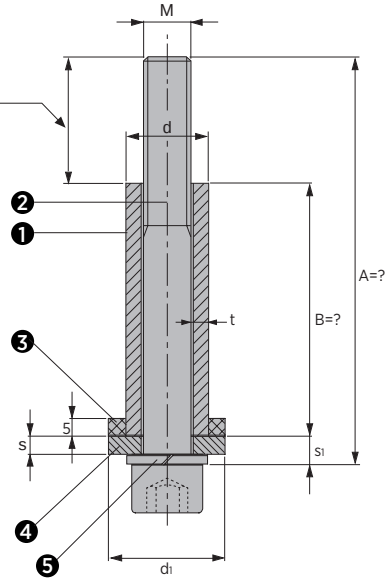
3 Material: Elastomer 92SH

4 Material : CK45

5 DIN 127

A and B are given by the
customer.

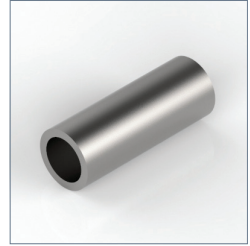
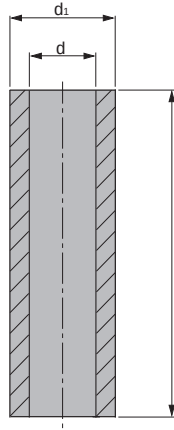
Min. 1,5 Times Screw Dia. for Steel
Min. 2 Times Screw Dia. for Cast Iron



CODE	dxt	d1	M	s	s1	Max. Load (kg)
M312-08-10AAABBB	16x2,5	32	M10	4	6,5	100
M312-08-12AAABBB	20x3,5	36	M12	6	8,5	150
M312-08-16AAABBB	28x5,5	45	M16	6	9,5	250

Order Example:
M= 12, A= 110, B= 76

Order Code:
M312-08-12110076



Material :
St35.4

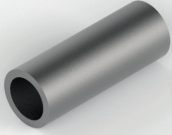


Different lengths on request.

Order Example:
d1= 20, l= 80

Order Code:
M313-01-020080

d	6,4	9	11	13	17	22	26	32
d1	10	13	16	20	25	30	36	42
Screw	M6	M8	M10	M12	M16	M20	M24	M30
l±0,1								
27	•							
30		•	•					
33	•		•	•				
38	•		•	•				
40		•	•					
44	•		•	•				
48	•		•	•	•			
50		•	•	•	•	•		
61	•		•	•	•			
63		•	•	•	•	•		
70					•	•		
72	•		•	•	•	•	•	
80	•	•	•	•	•	•	•	
90			•	•	•	•	•	
95					•			
100		•	•	•	•	•	•	
105					•			
115					•			
125			•	•	•	•	•	
135					•			
150			•	•	•	•	•	•
155					•			
175					•	•	•	
195					•			
200			•	•	•	•	•	•
215					•			
225					•	•	•	
235					•			
250					•	•	•	
255					•			



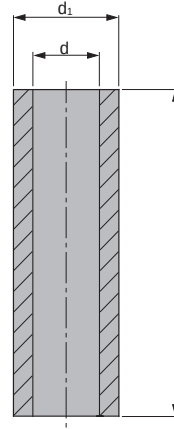
Material :
St35.4
Surface hardened.
HRC 56 ± 60



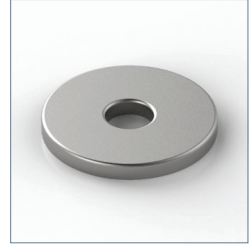
Different lengths on request.

Order Example:
d1= 20, **l**= 80

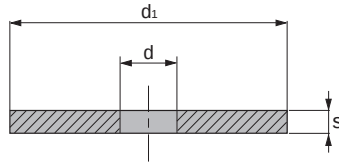
Order Code:
M313-02-020080



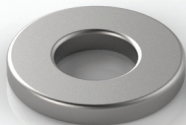
d	6,4	9	11	13	17	22	26	32
d1	10	13	16	20	25	30	36	42
Screw	M6	M8	M10	M12	M16	M20	M24	M30
l±0,1								
27	•							
30		•	•					
33	•		•	•				
38	•		•	•				
40		•	•					
44	•		•	•				
48	•		•	•	•			
50		•	•	•	•	•		
61	•		•	•	•			
63		•	•	•	•	•		
70					•	•		
72	•		•	•	•	•	•	
80	•	•	•	•	•	•	•	
90			•	•	•	•	•	
95					•			
100		•	•	•	•	•	•	
105					•			
115					•			
125			•	•	•	•	•	
135					•			
150			•	•	•	•	•	•
155					•			
175					•	•	•	
195					•			
200			•	•	•	•	•	•
215					•			
225					•	•	•	
235					•			
250					•	•	•	
255					•			



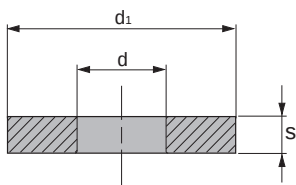
Material :
CK45



CODE	d	d ₁	s	Elastomer Ø
M313-04-020004	6,5	20	4	16
M313-04-025004	8,5	25	4	20
M313-04-030005	10,5	30	5	25
M313-04-040005	13,5	40	5	32
M313-04-050005	13,5	50	5	40
M313-04-060006	16,5	60	6	50
M313-04-080006	16,5	80	6	63
M313-04-100008	20,5	100	8	80
M313-04-120008	20,5	120	8	100
M313-04-150008	26	150	8	125

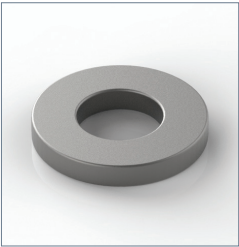
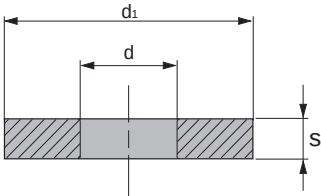


Material :
CK45



CODE	d	d ₁	s
M313-05-001	8,5	20	4
M313-05-002	10,5	25	5
M313-05-003	13,5	25	5
M313-05-004	13,2	30	5
M313-05-005	13,5	30	5
M313-05-006	12,5	32	5
M313-05-007	12,5	32	6
M313-05-008	13	32	5
M313-05-009	13,5	32	6
M313-05-010	10,5	36	5
M313-05-011	13,5	36	5
M313-05-012	16,5	36	5
M313-05-013	20,5	36	5
M313-05-014	17	38	6

CODE	d	d ₁	s
M313-05-016	20,5	45	5
M313-05-017	21	45	8
M313-05-018	10,5	55	5
M313-05-019	13,5	55	5
M313-05-020	20,5	55	5
M313-05-021	25	55	10
M313-05-022	25,5	55	5
M313-05-023	30,5	55	5
M313-05-024	12,5	60	5
M313-05-025	16,5	60	5
M313-05-026	12,5	75	5
M313-05-027	16,5	75	5
M313-05-028	16,5	90	5
M313-05-029	21	90	5
M313-05-030	21	120	5


Material :
CK45

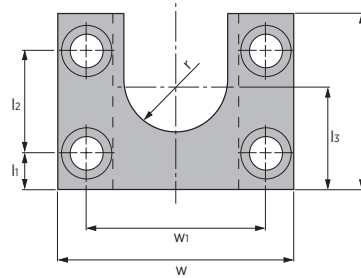
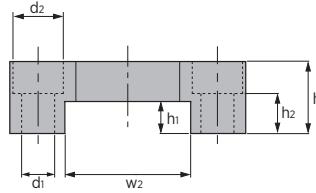
Hardened
HRC 45 ÷ 50

3

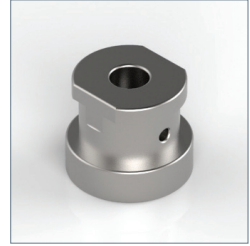
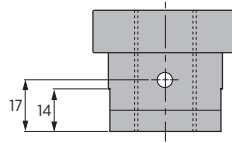
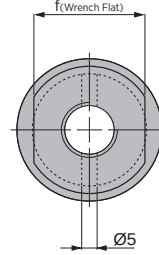
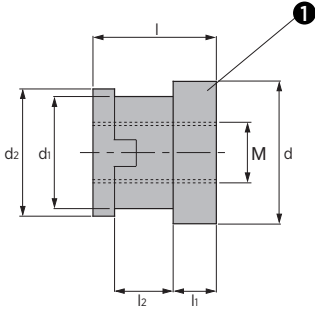
CODE	d	d ₁	s
M313-06-001	6,4	17	3
M313-06-002	8,4	23	4
M313-06-003	10,5	26	4
M313-06-004	13	30	5
M313-06-005	17	35	4
M313-06-006	17	35	5
M313-06-007	17	35	6
M313-06-008	21	42	8
M313-06-009	21	46	6
M313-06-010	25	46	10
M313-06-011	25	55	10



Material :
CK45



CODE	w	h	l	l ₁	l ₂	l ₃	w ₁	w ₂	h ₁	h ₂	d ₁	d ₂	r	Screw
M316-01-001	80	25	50	11,5	27	30	57	38	11	15	11	17	14	M10
M316-01-002	100	32	55	12,5	30	35	75	50	15	20	13	20	20	M12
M316-01-003	120	40	65	16	33	45	88	60	20	24	17	26	25	M16
M316-01-004	150	45	100	18	64	64	114	80	20	19	21	33	33	M20

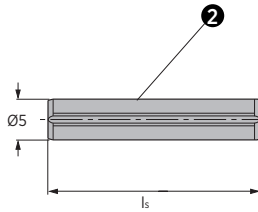


1 Material :
CK45

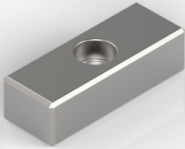


2 DIN EN ISO 8752

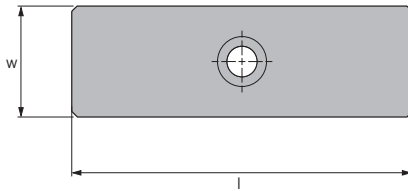
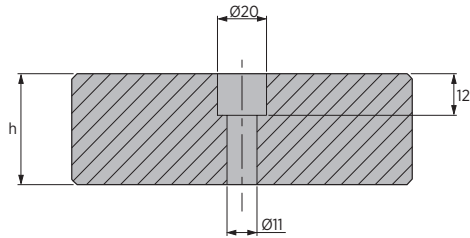
*Slotted Pin - will be supplied
with coupling nut.



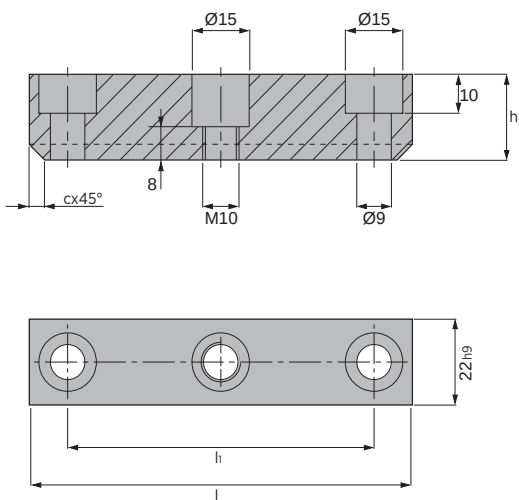
CODE	d	l	h	l ₂	l _s	d ₁	d ₂	f	M	Air Cyl. Bore Size Ø
M316-02-001	35	30	10	16	-	25	30	24	M10x1,25	32
M316-02-002	35	30	10	16	24	25	30	24	M12x1,25	40
M316-02-003	47	40	14	19	36	37	42	36	M16x1,5	50, 63
M316-02-004	47	40	14	19	36	37	42	36	M20x1,5	80, 100
M316-02-005	47	40	14	19	36	37	42	36	M27x2,0	125
M316-02-006	57	50	19	24	45	47	52	46	M36x2,0	160, 200
M316-02-007	76	76	19	50	55	59	64	60	M42x2,0	250



Material :
CK45



CODE	w h11	h	l
M317-04-2525080	25	25	80
M317-04-2525125	25	25	125
M317-04-3030080	30	30	80
M317-04-3030125	30	30	125



Material :
CK45



3

CODE	h	l	h ₁	c
M317-05-014050	14	50	32	-
M317-05-014080	14	80	50	-
M317-05-014100	14	100	80	-
M317-05-014125	14	125	100	-
M317-05-022050	22	50	32	4
M317-05-022080	22	80	50	4
M317-05-022100	22	100	80	4
M317-05-022125	22	125	100	4
M317-05-040050	40	50	32	4
M317-05-040080	40	80	50	4
M317-05-040100	40	100	80	4
M317-05-040125	40	125	100	4

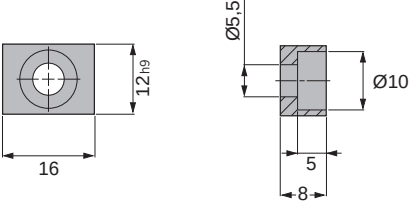
3



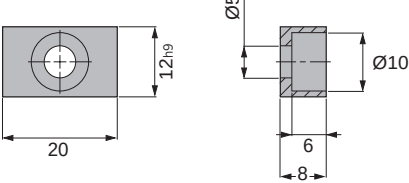
Material :
CK45

3D

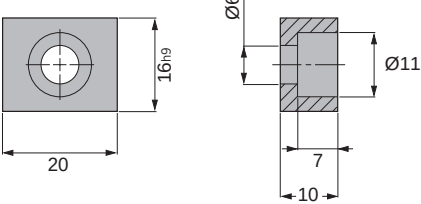
Form - A



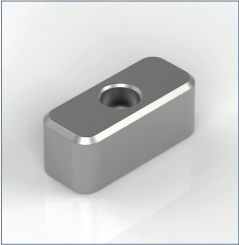
Form - B



Form - C



CODE	Form
M317-07-012016	A
M317-07-012020	B
M317-07-016020	C

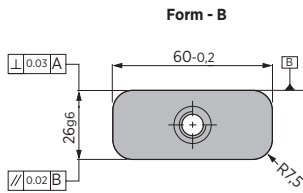
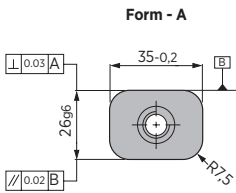


Material :
90MnCrV8

Hardened
HRC 58 ÷ 60



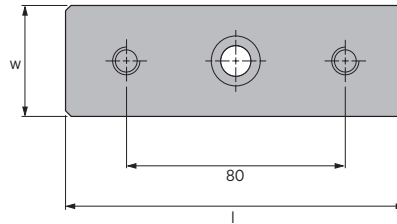
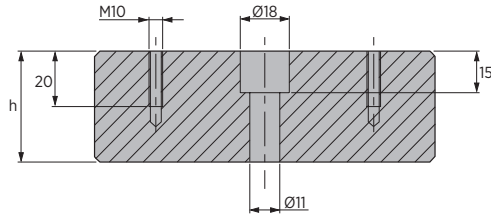
3



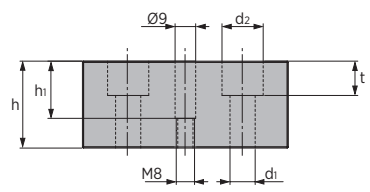
CODE	Form
M317-08-2635	A
M317-08-2660	B



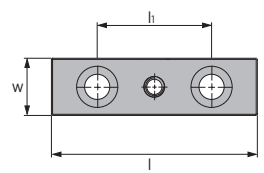
Material :
CK45



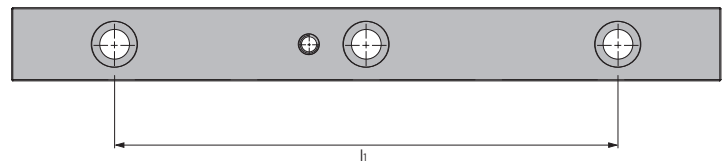
CODE	w h9	h	l
M317-10-42125	42	40	125
M317-10-50135	50	48	135
M317-10-50220	50	48	220



Form - A



Form - B

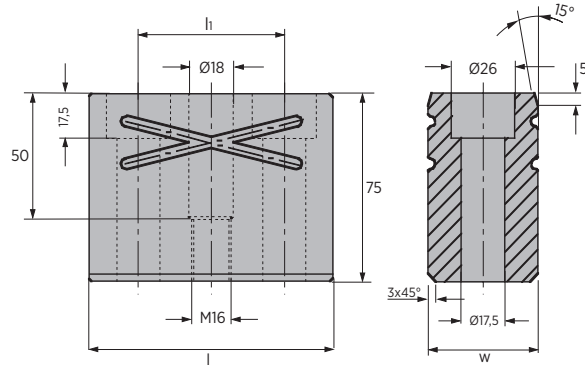

 Material :
CK45


CODE	Form	w h7	h	l	h1	h1	d1	d2	t
M317-11-2538090	A	25	38	90	50	25	11	18	15
M317-11-2538120	A	25	38	120	80	25	11	18	15
M317-11-3248150	A	32	48	150	90	35	13	20	25
M317-11-3248210	A	32	48	210	130	35	13	20	25
M317-11-3258260	A	32	58	260	150	42	13	20	25
M317-11-3258310	B	32	58	310	220	42	13	20	25
M317-11-3258350	B	32	58	350	250	42	13	20	25

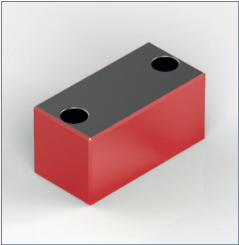
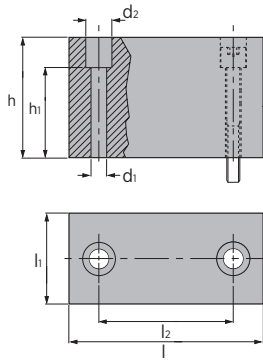


Material :
16MnCr5

Hardened
HRC 60 ± 62



CODE	w h6	l	h
M317-12-045100	45	100	60
M317-12-045125	45	125	85
M317-12-045160	45	160	120
M317-12-045200	45	200	160

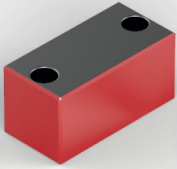

 Material :
 CK45


Screws not included.

3

$l \times l_1$	60 x 40			80 x 40			100 x 40			100 x 50			120 x 60			150 x 80		160 x 100	
d_1	9			11			14			14			14			18		18	
d_2	15			18			20			20			20			26		26	
Max. Load (t)	50			65			85			110			160			270		380	
l_2	40			56			71			76			93			120		130	
h_1	10	28	48	8	25	45	6	22	42	6	22	42	6	22	42	18	38	18	38
$h \pm 0,05$																			
20	*			*															
20,3	*			*															
20,5	*			*															
23	*			*															
25	*			*			*												
28	*			*			*												
30	*			*			*					*							
30,3	*			*			*			*		*							
30,5	*			*			*			*		*							
33	*			*			*			*		*							
35	*			*			*			*		*							
38	*			*			*			*		*							
40	*			*			*			*		*		*		*		*	
40,3		*			*			*		*		*		*		*		*	
40,5		*			*			*		*		*		*		*		*	
41		*			*			*		*		*		*		*		*	
43		*			*			*		*		*		*		*		*	
45		*			*			*		*		*		*		*		*	
48		*			*			*		*		*		*		*		*	
50		*			*			*		*		*		*		*		*	
50,3		*			*			*		*		*		*		*		*	
50,5		*			*			*		*		*		*		*		*	
51		*			*			*		*		*		*		*		*	
55		*			*			*		*		*		*		*		*	
60		*			*			*		*		*		*		*		*	
60,5			*			*			*		*		*		*		*		*
61								*		*		*		*		*		*	

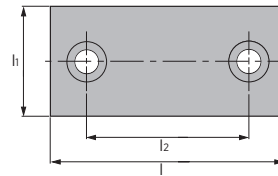
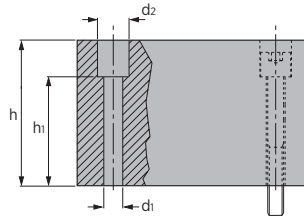
Order Example:
 $l= 150, l_1= 80, h= 40$
Order Code:
 M318-03-15008004000



Material :
CK45



Screws not included.



CODE	l	h	l ₂	d ₁	d ₂	Screw	Max. Load (t)
M318-03-???????????	60	40	40	9	15	M8	50
M318-03-???????????	80	40	56	11	18	M10	65
M318-03-???????????	100	40	71	14	20	M12	85
M318-03-???????????	100	50	76	14	20	M12	110
M318-03-???????????	120	60	93	14	20	M12	160
M318-03-???????????	150	80	120	18	26	M16	270
M318-03-???????????	160	100	130	18	26	M16	380

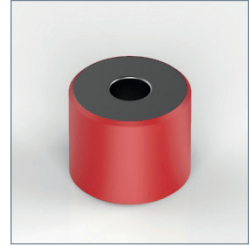
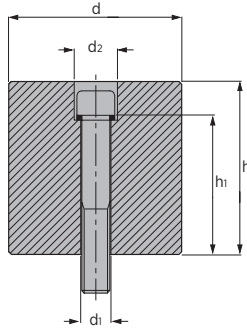
	M8	M10	M12	M16
h ±0,05	h ₁	h ₁	h ₁	h ₁
≥ 20 - 40	10	8	6	-
> 40 - 60	28	25	22	18
> 60 - 80	48	45	42	38
> 80 - 100	68	65	62	58
> 100 - 120	68	85	82	78
> 120 - 140	68	105	102	98
> 140 - 160	68	105	122	118

Order Example:

l= 150, h= 80, h= 85

Order Code:

M318-03-15008008500


 Material :
 CK45


Screws not included.

3

d	60			80			100			120			150		
d1	14			18			18			22			22		
d2	20			26			26			33			33		
Max. Load (t)	55			100			170			250			400		
h1	12	22	42	20	36	20	36	15	30	15	30	15	30	15	30
h±0,05															
25	•			•											
28	•			•											
30	•			•											
30,3	•			•											
30,5	•			•											
33	•			•											
35	•			•											
38	•			•											
40		•		•		•									
40,3		•		•		•									
40,5		•		•		•									
41		•		•		•									
43		•		•		•									
45		•		•		•									
48		•		•		•									
50		•		•		•		•		•		•			
50,3		•		•		•		•		•		•			
50,5		•		•		•		•		•		•			
51		•		•		•		•		•		•			
55		•		•		•		•		•		•			
60		•		•		•		•		•		•			
60,3			•		•		•		•		•		•		•
60,5			•		•		•		•		•		•		•
61			•		•		•		•		•		•		•

Order Example:
 d= 80, h= 45

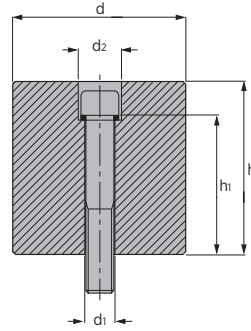
Order Code:
 M318-05-08004500



Material :
CK45



Screws not included.

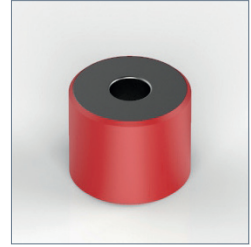
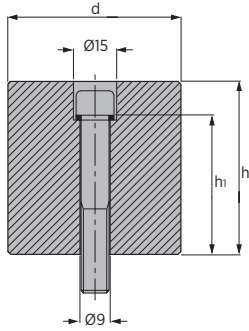


CODE	d	d ₁	d ₂	Screw	Max. Load (t)
M318-05-????????	60	14	20	M12	50
M318-05-????????	80	18	26	M16	65
M318-05-????????	100	18	26	M16	85
M318-05-????????	120	22	33	M20	110
M318-05-????????	150	22	33	M20	160

	M12	M16		M20	
d	60	80	100	120	150
h ±0,05	h ₁	h ₁		h ₁	
≥ 25 < 40	12	-	-	-	
≥ 40 - 60	22	20	20	15	
> 60 - 80	42	36	36	30	
> 80 - 100	62	56	56	50	
> 100 - 120	82	76	76	70	
> 120 - 140	102	96	96	90	
> 140 - 160	122	116	116	110	

Order Example:
d= 80, h= 105

Order Code:
M318-05-08010500


 Material :
 CK45

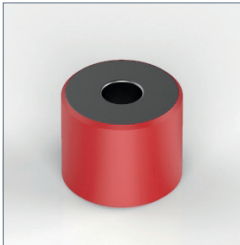

Screws not included.

d	25		30		40		50	
Max. Load (t)	3,5		8		20		35	
h ₁	10	28	10	28	10	28	10	28
h _{±0,05}								
20	•		•		•		•	
20,3	•		•		•		•	
20,5	•		•		•		•	
23	•		•		•		•	
25	•		•		•		•	
28	•		•		•		•	
30	•		•		•		•	
30,3	•		•		•		•	
30,5	•		•		•		•	
33	•		•		•		•	
35	•		•		•		•	
38	•		•		•		•	
40	•		•		•		•	
40,3		•		•		•		•
40,5		•		•		•		•
41				•		•		•
43				•		•		•
45				•		•		•
48				•		•		•
50				•		•		•
50,3				•		•		•
50,5				•		•		•
51						•		•
55						•		•
60						•		•
60,3						•		•
60,5						•		•

Order Example:
 d= 50, h= 45

Order Code:
 M318-06-05004500

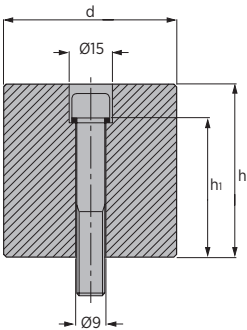
3



Material :
CK45

Screws not included.

3D

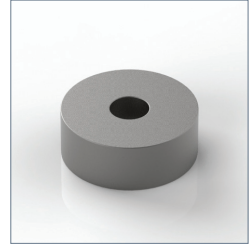


CODE	d	Screw	Max. Load (t)
M318-06-????????	25	M8	3,5
M318-06-????????	30	M8	8
M318-06-????????	40	M8	20
M318-06-????????	50	M8	35

h ±0,05	h ₁
≥ 20 - 40	10
> 40 - 60	28

Order Example:
d= 50, h= 45

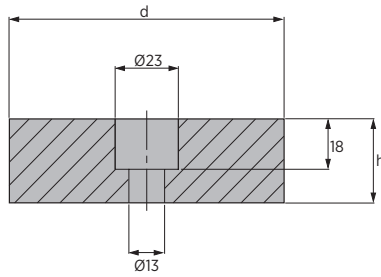
Order Code:
M318-06-05004500



Material :
42CrMo4

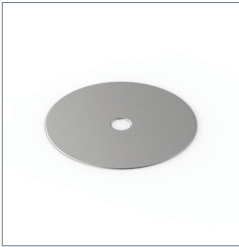


Hardened
HRC 46 ÷ 48

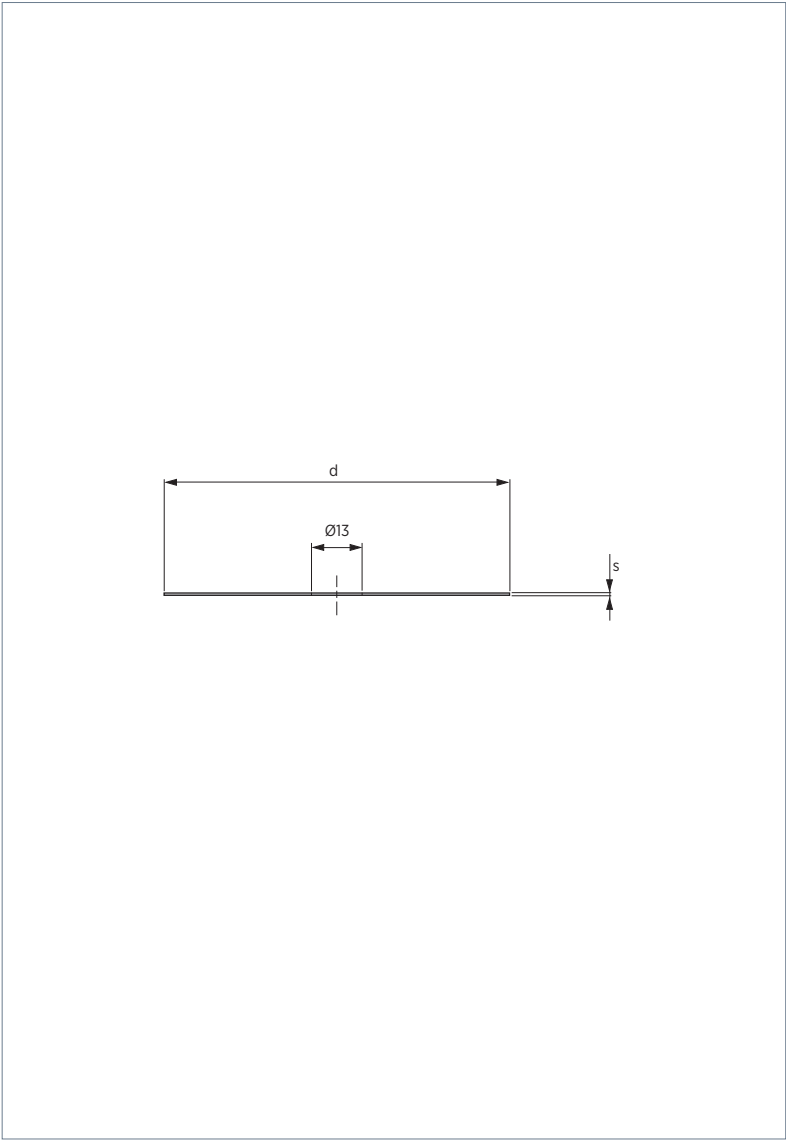


CODE	d	h
M318-07-080025	80	25
M318-07-080030	80	30
M318-07-100025	100	25
M318-07-100030	100	30
M318-07-120025	120	25
M318-07-120030	120	30

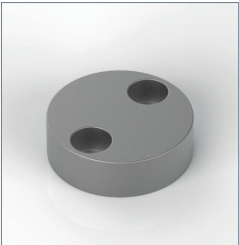
3



Material :
Steel or Brass

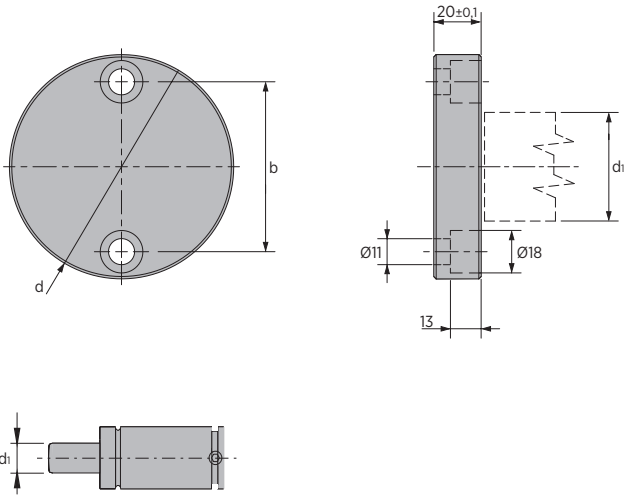



CODE	d	s	Material
M318-08-080001	80	0,1	Brass
M318-08-080005	80	0,5	Steel
M318-08-100001	100	0,1	Brass
M318-08-100005	100	0,5	Steel
M318-08-120001	120	0,1	Brass
M318-08-120005	120	0,5	Steel



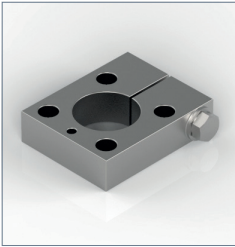
Material :
16MnCr5

Hardened
HRC 58 ÷ 60

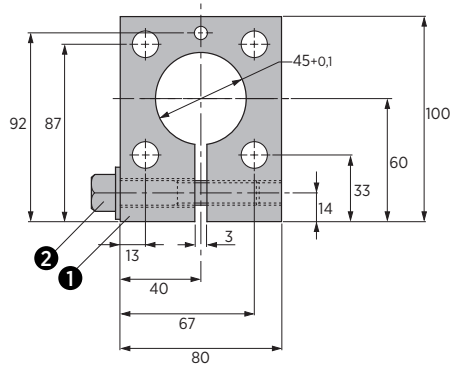


CODE	d	d ₁	b
M318-09-065020	65	≤25	42
M318-09-095020	95	≤50	72

3

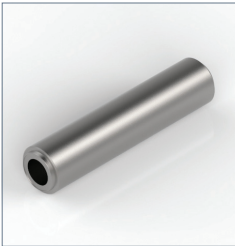


- 1 Material :
CK45
- 2 M12x70 DIN 931 (8.8)

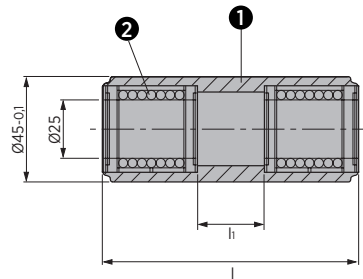


CODE

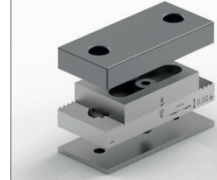
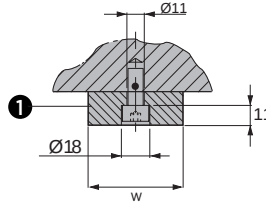
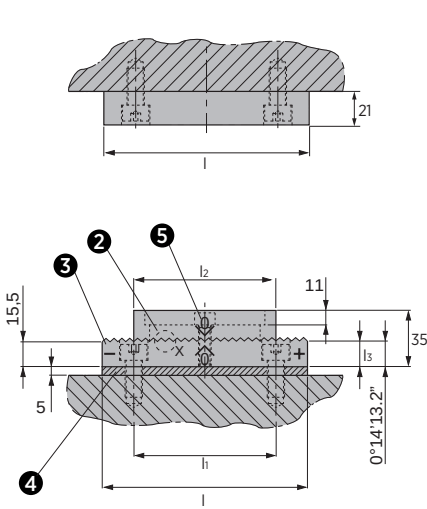
M319-01-100080



- 1 Material :
CK45
- 2 STAR 0658-225-40



CODE	l	h
M319-01-045112	112	40
M319-01-045200	200	120



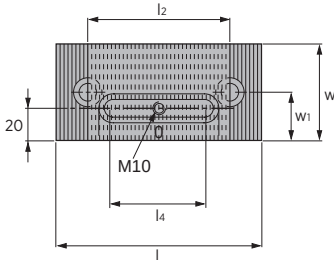
1 Material :
90MnCrV8

2 Hardened
3 HRC 58 ÷ 60

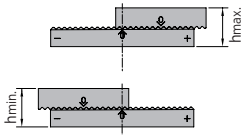
Screws not included.

4 Material :
X155CrVMo12

5 M10x20 DIN 912



Basis : 0,02 mm per tooth



Basic setting in the middle (grinding-in)
+ Adjustment to the right - plus
- Adjustment to the left - minus

Adjustment Range
- 12 increments each of 0,02 mm means an adjusting range of 0,24 mm with a minimum support area of 60 x 80 mm

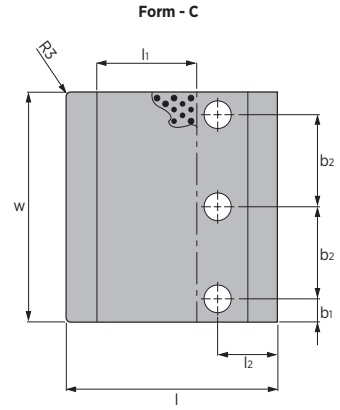
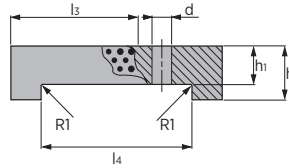
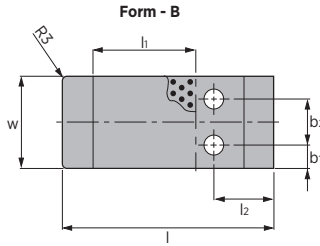
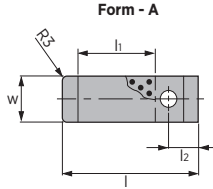
- 14 increments each of 0,02 mm means an adjusting range of 0,28 mm with a minimum support area of 100 x 80 mm

CODE	w	l	l ₁	l ₂	l ₃	l ₄	w ₁	h _{min.}	h _{max.}
M319-02-060130	60	130	90	90	16,04	61	30	34,88	35,12
M319-02-080160	80	160	120	110	16,16	71	40	34,86	35,14

3



Material :
Bronze with
Non-liquid Lubricant
HB >190



CODE	Form	w h7	h	l	h1	l2	l3	l4	d	h1	b1	b2 ±0,2
M320-03-030070	A	30	17	70	30	20	40	50	11	12	-	-
M320-03-030090	A	30	17	90	50	20	60	70	11	12	-	-
M320-03-045070	B	45	25	70	30	20	40	50	11	15	11,5	22
M320-03-045090	B	45	25	90	50	20	60	70	11	15	11,5	22
M320-03-060120	B	60	35	120	40	40	60	80	13	25	15	30
M320-03-060140	B	60	35	140	60	40	80	100	13	25	15	30
M320-03-060160	B	60	35	160	80	40	100	120	13	25	15	30
M320-03-100120	B	100	35	120	40	40	60	80	18	25	15	70
M320-03-100140	B	100	35	140	60	40	80	100	18	25	15	70
M320-03-100160	B	100	35	160	80	40	100	120	18	25	15	70
M320-03-150120	C	150	35	120	40	40	60	80	18	25	15	60
M320-03-150140	C	150	35	140	60	40	80	100	18	25	15	60
M320-03-150160	C	150	35	160	80	40	100	120	18	25	15	60
M320-03-150180	C	150	35	180	100	40	120	140	18	25	15	60

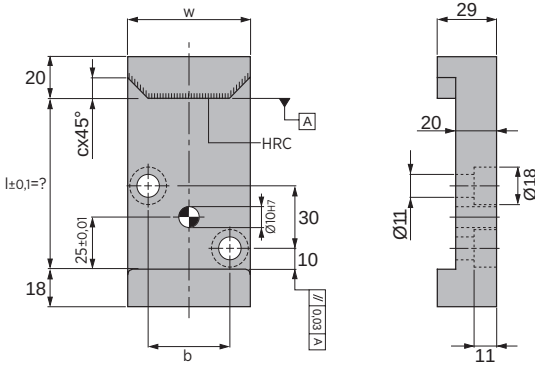


Material :
CK45



Hardened
HRC 52 ÷ 54

Length (l) is given by the customer.



CODE	w -l	b	c
M320-07-035-l	35	15	7
M320-07-060-l	60	40	10

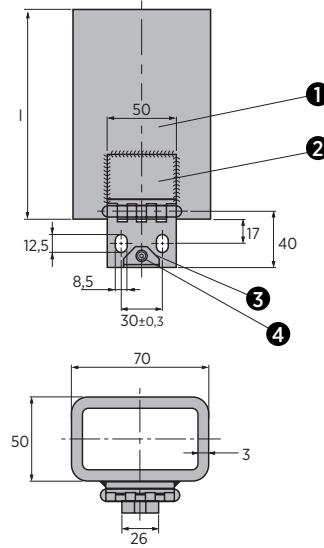
Order Example:
w= 35, l= 110

Order Code:
M320-07-035110

3

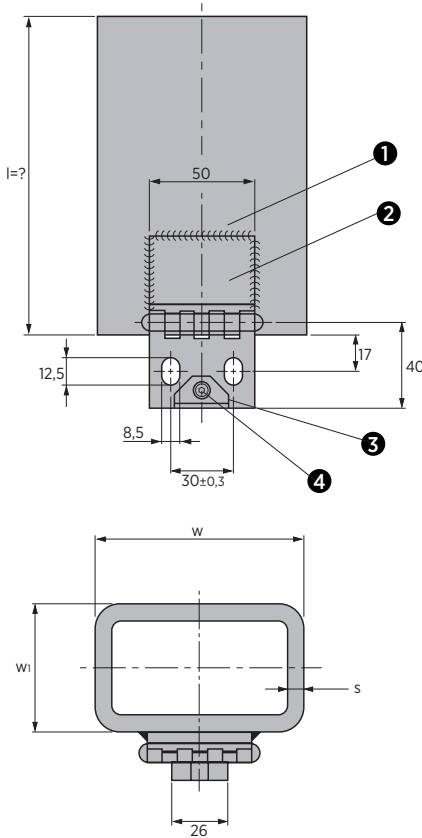


- 1 Material :
St 37
- 2 Hinge
- 3 Material :
Elastomer 68 Shore
- 4 Screw M4x8 DIN 912



CODE	I	Max. Load (kN)
M321-01-070065	65	100
M321-01-070070	70	100
M321-01-070075	75	100
M321-01-070080	80	100
M321-01-070085	85	100
M321-01-070090	90	100
M321-01-070095	95	100
M321-01-070100	100	100
M321-01-070105	105	100
M321-01-070110	110	100
M321-01-070115	115	100
M321-01-070120	120	100
M321-01-070125	125	100
M321-01-070130	130	100
M321-01-070135	135	100
M321-01-070140	140	100
M321-01-070145	145	100
M321-01-070150	150	100
M321-01-070155	155	100
M321-01-070160	160	100
M321-01-070165	165	100
M321-01-070170	170	100
M321-01-070175	175	100
M321-01-070180	180	100
M321-01-070185	185	100

CODE	I	Max. Load (kN)
M321-01-070190	190	100
M321-01-070195	195	100
M321-01-070200	200	100
M321-01-070205	205	100
M321-01-070210	210	100
M321-01-070215	215	100
M321-01-070220	220	100
M321-01-070225	225	100
M321-01-070230	230	100
M321-01-070235	235	100
M321-01-070240	240	100
M321-01-070245	245	100
M321-01-070250	250	100
M321-01-070260	260	100
M321-01-070270	270	100
M321-01-070280	280	100
M321-01-070290	290	100
M321-01-070300	300	100
M321-01-070310	310	100
M321-01-070320	320	100
M321-01-070330	330	100
M321-01-070340	340	100
M321-01-070350	350	100



- 1 Material :
St 37
- 2 Hinge
- 3 Material :
Elastomer 68 Shore
- 4 Screw M4x8 DIN 912



Length (l) is given by the customer;

Max. Length: 365 mm

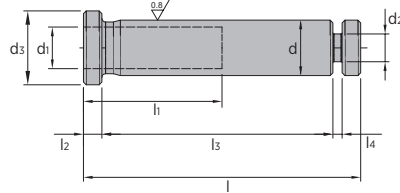
CODE	w	w1	s	Max. Load (kN)
M321-01-070-l	70	50	3	100
M321-01-100-l	100	60	8	300

Order Example:
w= 100, l= 200

Order Code:
M321-01-100200

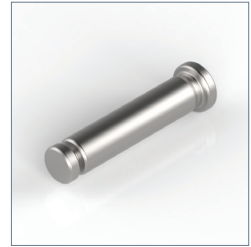
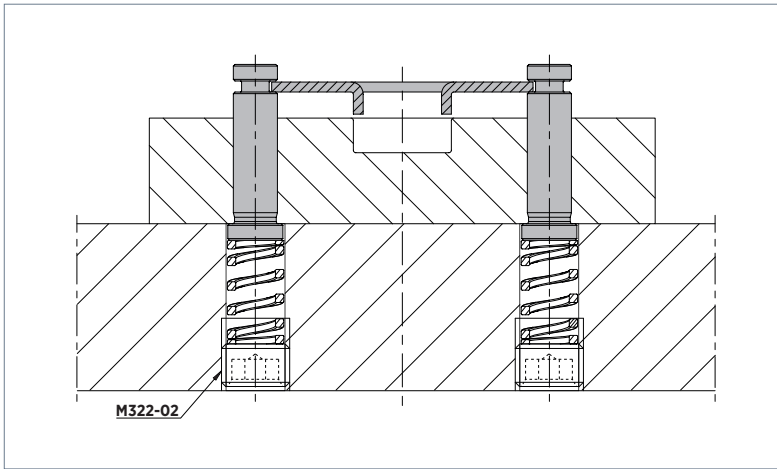


Material :
16MnCr5
Hardened
HRC 60



CODE	d h6	l -0,5	l ₁	l ₂	l ₃ ±0,1	l ₄	d ₁	d ₂ -0,05/-0,1	d ₃ -0,2/-0,5
M322-01-0060295	6	29,5	-	2	25	0,5	-	3	8
M322-01-006030	6	30	-	2	25	1	-	3	8
M322-01-0060365	6	36,5	-	2	32	0,5	-	3	8
M322-01-006037	6	37	-	2	32	1	-	3	8
M322-01-008031	8	31	-	3	25	1	-	5	10
M322-01-008032	8	32	-	3	25	2	-	5	10
M322-01-008038	8	38	-	3	32	1	-	5	10
M322-01-008039	8	39	-	3	32	2	-	5	10
M322-01-008046	8	46	-	3	40	1	-	5	10
M322-01-008047	8	47	-	3	40	2	-	5	10
M322-01-010033	10	33	18	3	25	2	6,5	6	12,5
M322-01-010034	10	34	18	3	25	3	6,5	6	12,5
M322-01-010040	10	40	24	3	32	2	6,5	6	12,5
M322-01-010041	10	41	24	3	32	3	6,5	6	12,5
M322-01-010048	10	48	30	3	40	2	6,5	6	12,5
M322-01-010049	10	49	30	3	40	3	6,5	6	12,5
M322-01-012033	12	33	18	3	25	2	8,5	7	16
M322-01-012034	12	34	18	3	25	3	8,5	7	16
M322-01-012040	12	40	24	3	32	2	8,5	7	16
M322-01-012041	12	41	24	3	32	3	8,5	7	16
M322-01-012048	12	48	30	3	40	2	8,5	7	16
M322-01-012049	12	49	30	3	40	3	8,5	7	16
M322-01-016042	16	42	24	3	32	3	10,5	7	20
M322-01-016044	16	44	24	3	32	5	10,5	8	20
M322-01-016050	16	50	30	3	40	3	10,5	8	20
M322-01-016052	16	52	30	3	40	5	10,5	8	20
M322-01-016060	16	60	40	3	50	3	10,5	8	20
M322-01-016062	16	62	40	3	50	5	10,5	8	20
M322-01-020052	20	52	30	5	40	3	12,5	12	25
M322-01-020054	20	54	30	5	40	5	12,5	12	25
M322-01-020062	20	62	40	5	50	3	12,5	12	25
M322-01-020064	20	64	40	5	50	5	12,5	12	25
M322-01-020075	20	75	50	5	63	3	12,5	12	25
M322-01-020077	20	77	50	5	63	5	12,5	12	25

Şapkalı Şerit Pimi, Yay-yüklemeli
Strip Guiding Pin with Collar, Spring-loaded
Streifenführung mit Bund, Gefedert



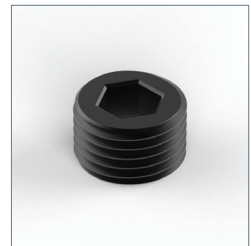
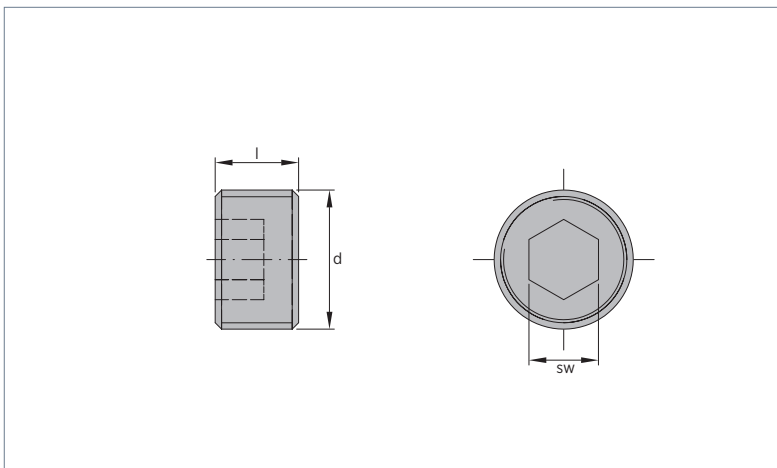
Material :
16MnCr5

Hardened
HRC 60



3

Dışlı Tapa
Screw Plug
Verschlusschraube



Material :
Steel 12.9



CODE	d	l	SW
M322-02-12010	M12x1,5	10	6
M322-02-14010	M14x1,5	10	6
M322-02-16010	M16x1,5	10	8
M322-02-18010	M18x1,5	10	10
M322-02-20012	M20x1,5	12	10
M322-02-22012	M22x1,5	12	12
M322-02-24012	M24x1,5	12	14
M322-02-27012	M27x1,5	12	14
M322-02-36012	M36x1,5	12	17

3



1 Punch 1.2550

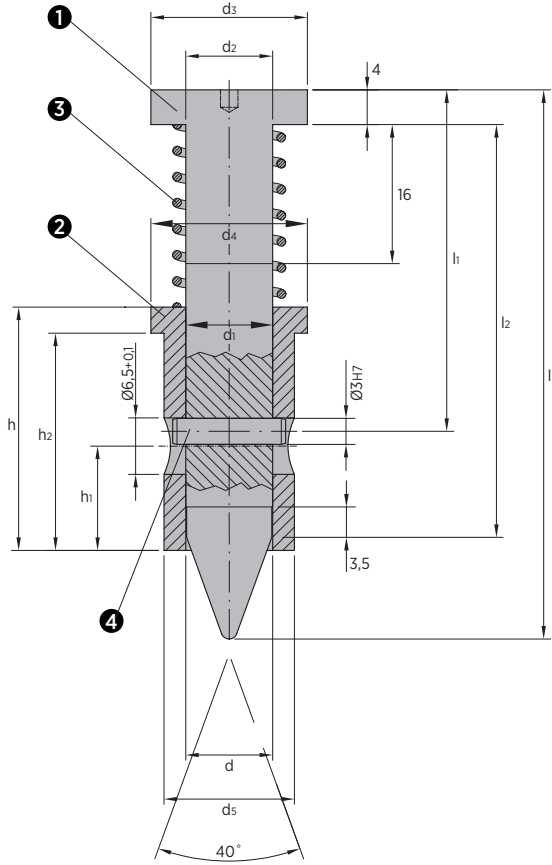
Hardness
 50 ± 2 HRC

2 Bush 1.3505

Hardness
 58 ± 2 HRC

3 Coil Spring

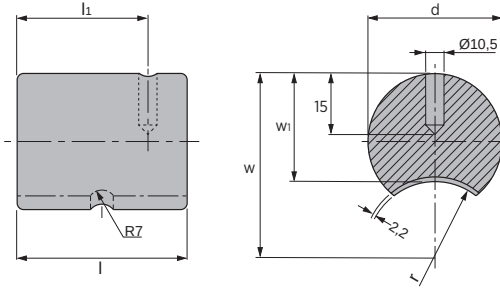
4 $\varnothing 3 \times 14$ DIN 6325



CODE	d +0,05	l	l ₁	l ₂	d ₁ H7, f7	d ₂	d ₃	d ₄	d ₅ f7	h	h ₁	h ₂ +0,1	Spring force preloaded (daN)	Spring force pressed (daN)
M323-01-0980632	9,8	63,2	39,3	47,5	10	10	18	18	15	28	12	25	4,9	6,2
M323-01-1580725	15,8	72,5	46,3	54,5	16	16	24	30	26	28	12	25	4,8	5,6



Material :
Elastomer 92 Sh



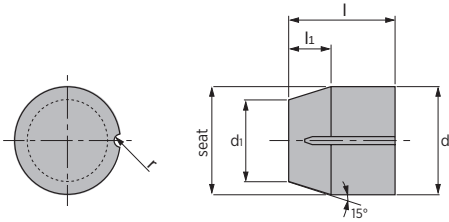
CODE	d ±0,25	w	l	h	w1	r
S510-02-040060	40	50	60	45	32	18
S510-02-050080	50	63	80	60	40	23
S510-02-063080	63	86	80	60	51	35

3



Material :
Elastomer 92 Shore

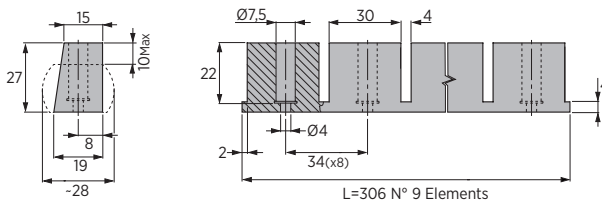
3D



CODE	d +0,3 / +0,5	l	h	d ₁	r	seat ±0,1	F max. (N)
S511-01-006	6	10	4,5	3,6	-	6	100
S511-01-010	10	15,5	7,5	6	0,5	10	450
S511-01-016	16	25	12	9,5	1,5	16	1500
S511-01-024	24	25	10	18	2	24	3000
S511-01-030	30	35	19	20	2,5	30	3000
S511-01-032	32	32	14	24	3	32	12000
S511-01-039	39,5	40	16	30	3	39,5	25000



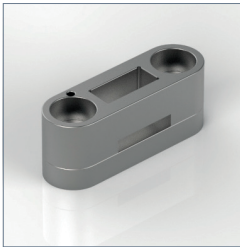
Material :
Elastomer 70 Shore



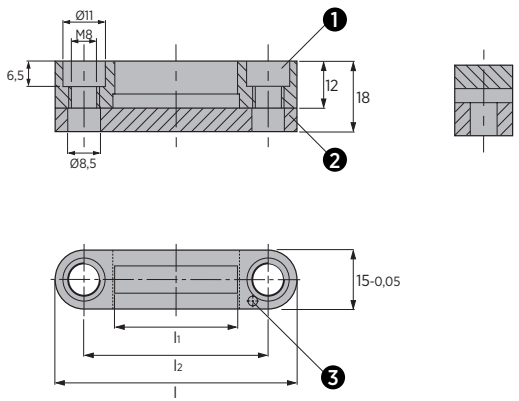
CODE

S515-03-0017

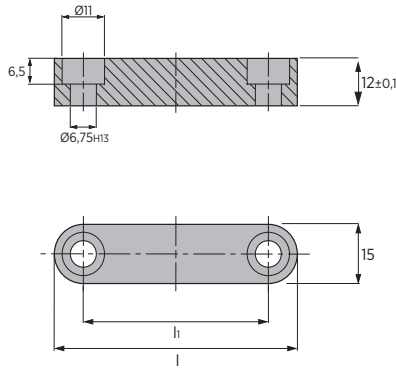
3



- 1 Material : CK45
- 2
- 3 ELASTIC PIN Ø2.5x14 DIN 1481

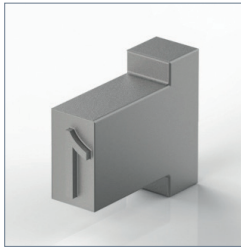


CODE	l -0,05	l ₁ +0,1	l ₂	Number of Stamps
Z401-01-045	45	12	30	6
Z401-01-047	47	16	32	8
Z401-01-055	55	24	40	12
Z401-01-063	63	32	48	16
Z401-01-071	71	40	56	20


Material :
CK45


CODE	l	h
Z401-02-045	45	30
Z401-02-047	47	32
Z401-02-056	55	40
Z401-02-063	63	48
Z401-02-071	71	56

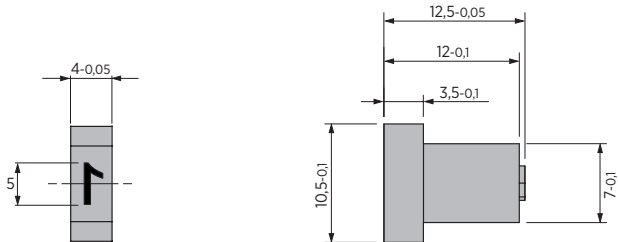
3



Material :
X153CrMoV12

Hardened
HRC 54 ÷ 56

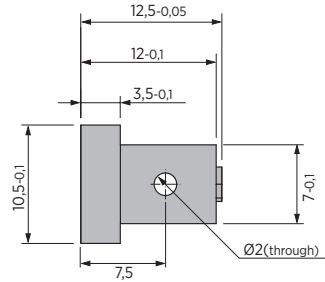
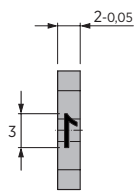
3D



CODE	Stamp
Z401-06-000	0
Z401-06-001	1
Z401-06-002	2
Z401-06-003	3
Z401-06-004	4
Z401-06-005	5
Z401-06-006	6 or 9
Z401-06-007	7
Z401-06-008	8
Z401-06-009	A
Z401-06-010	B
Z401-06-011	C
Z401-06-012	D

CODE	Stamp
Z401-06-013	E
Z401-06-014	F
Z401-06-015	G
Z401-06-016	H
Z401-06-017	I
Z401-06-018	J
Z401-06-019	K
Z401-06-020	L
Z401-06-021	M
Z401-06-022	N
Z401-06-023	O
Z401-06-024	P
Z401-06-025	Q

CODE	Stamp
Z401-06-026	R
Z401-06-027	S
Z401-06-028	T
Z401-06-029	U
Z401-06-030	V
Z401-06-031	W
Z401-06-032	X
Z401-06-033	Y
Z401-06-034	Z
Z401-06-035	Space
Z401-06-036	-
Z401-06-037	—



Material :
X153CrMoV12

Hardened
HRC 54 ÷ 56



CODE	Stamp
Z401-07-000	0
Z401-07-001	1
Z401-07-002	2
Z401-07-003	3
Z401-07-004	4
Z401-07-005	5
Z401-07-006	6 or 9
Z401-07-007	7
Z401-07-008	8
Z401-07-009	A
Z401-07-010	B
Z401-07-011	C
Z401-07-012	D

CODE	Stamp
Z401-07-013	E
Z401-07-014	F
Z401-07-015	G
Z401-07-016	H
Z401-07-017	I
Z401-07-018	J
Z401-07-019	K
Z401-07-020	L
Z401-07-021	M
Z401-07-022	N
Z401-07-023	O
Z401-07-024	P
Z401-07-025	Q

CODE	Stamp
Z401-07-026	R
Z401-07-027	S
Z401-07-028	T
Z401-07-029	U
Z401-07-030	V
Z401-07-031	W
Z401-07-032	X
Z401-07-033	Y
Z401-07-034	Z
Z401-07-035	Space
Z401-07-036	-
Z401-07-037	—

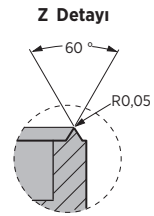
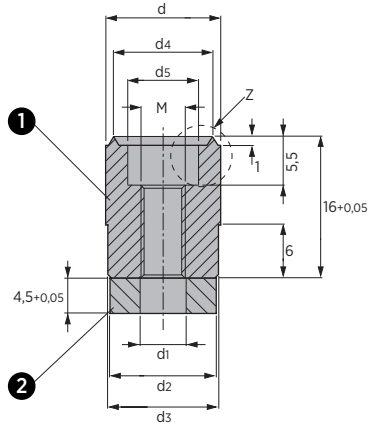
3



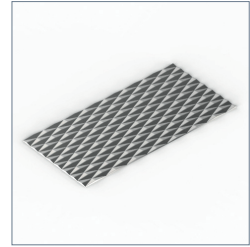
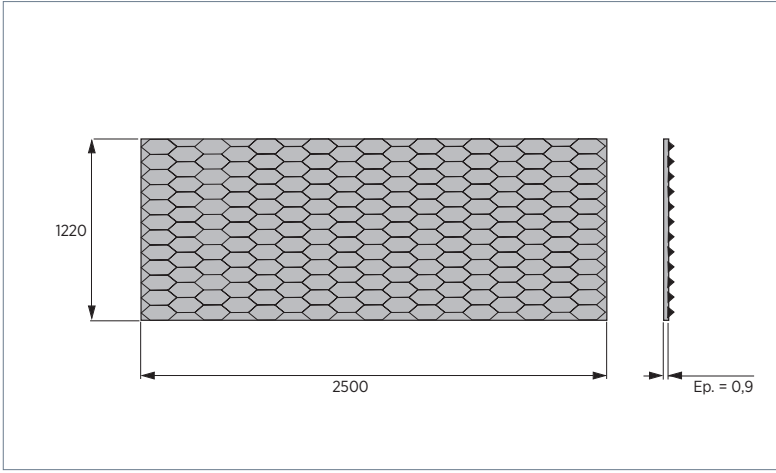
1 Material :
X205Cr12KU
Hardened
HRC 60 ÷ 62



2 Material: X205Cr12KU



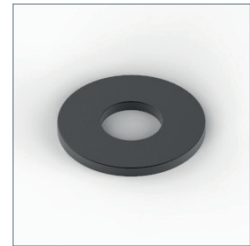
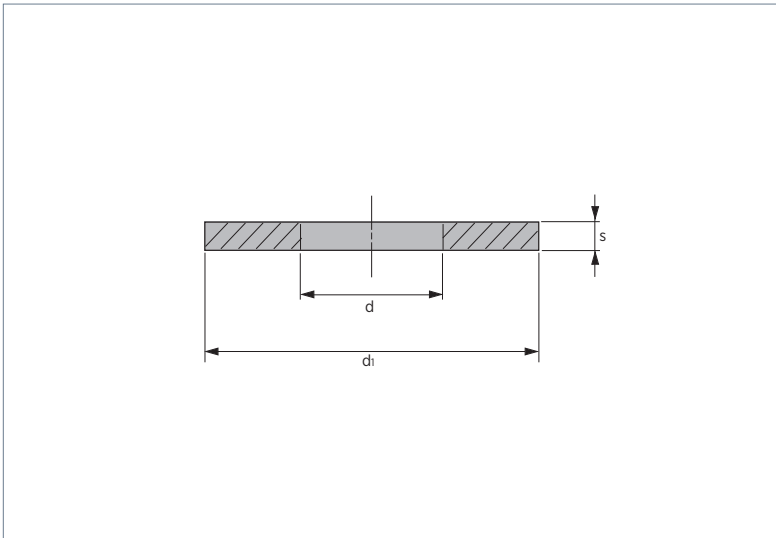
CODE	d d9	d1	d2	d3	d4 ±0,1	d5	M
Z402-03-010	10	4,2	9,9	9,5	8	6	M4
Z402-03-013	13	5,2	12	12,5	11,2	8	M5



Material :
Stainless Steel



CODE	Dimensions mm
Z000166439	2500x1220xep.0,9

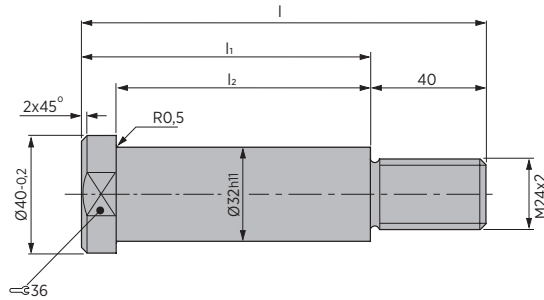


Material :
CK45

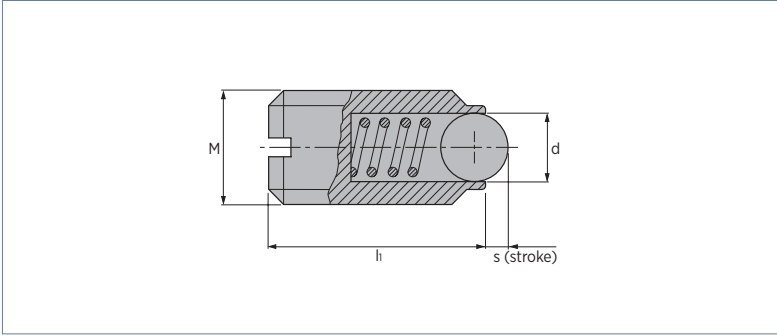


CODE	d	d ₁	s
A101-15-001	33	80	6
A101-15-002	33	100	8

3


 Material :
 42CrMo4
 1000 ÷ 1200 N/mm²


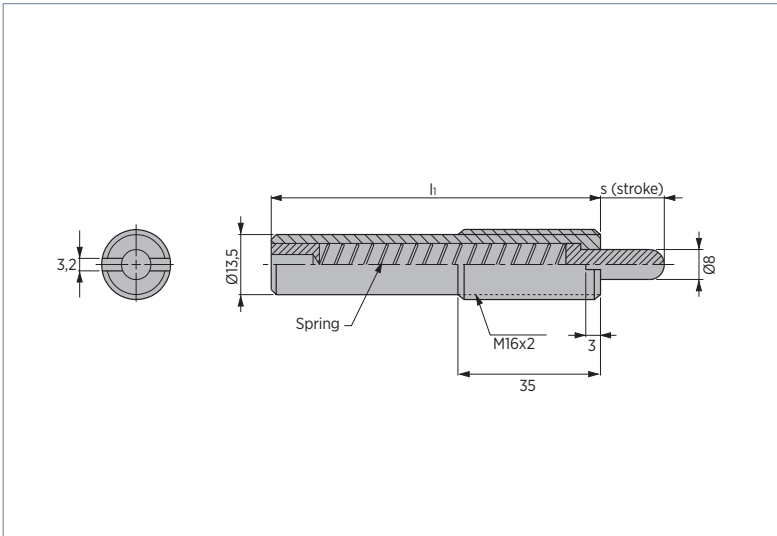
CODE	l	l ₁	l ₂
M307-04-048	100	60	48
M307-04-068	120	80	68
M307-04-088	140	100	88
M307-04-108	160	120	108
M307-04-128	180	140	128
M307-04-148	200	160	148
M307-04-168	220	180	168
M307-04-188	240	200	188
M307-04-208	260	220	208
M307-04-228	280	240	228
M307-04-248	300	260	248
M307-04-268	320	280	268
M307-04-288	340	300	288



Material :
Steel Class 5.8
Hardened inox.



CODE	d	h	s	M	Initial Force (N)	Final Force (N)
M314-01-004	2.5	9	0.8	M4	6	12
M314-01-005	3	12	0.9	M5	7	13
M314-01-006	3.5	14	1.0	M6	9	15
M314-01-008	5	16	1.5	M8	20	35
M314-01-010	6	19	2.0	M10	25	45
M314-01-012	8	22	2.5	M12	35	60
M314-01-016	10	24	3.5	M16	65	110



Material :
C80W2

Hardened
HRC 36 ÷ 40

Body 34CrMo4

Springs C80W2

Hardened
HRC 36 ÷ 40

Black oxide finish.



CODE	h	s	Initial Force (N)	Final Force (N)
M314-02-060	150	60	11	45
M314-02-080	200	80	2	38

3



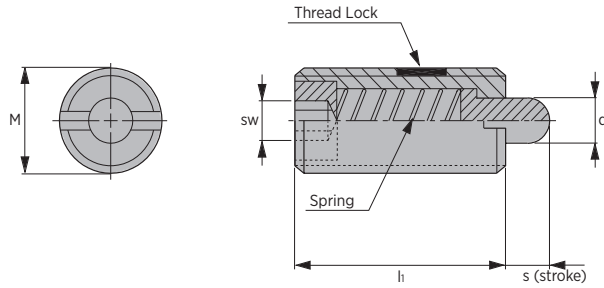
Material :
90Mn4



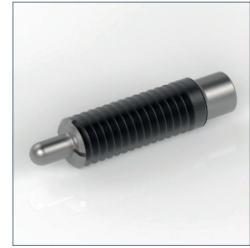
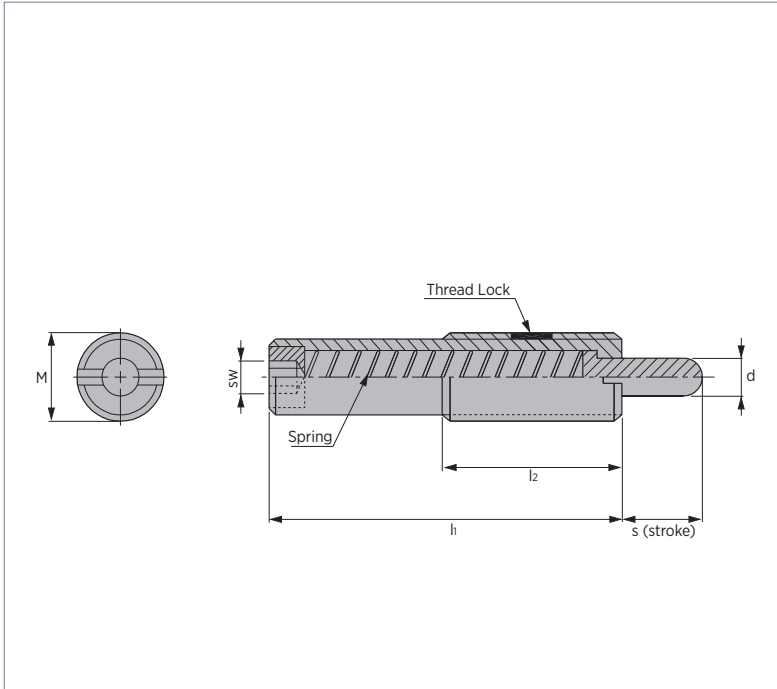
Hardened
HRC 36 ÷ 40

Body 34CrMo4

Black oxide finish.



CODE	d	l ₁	s	sw	M	Initial Force N (Kgf)	Final Force N (Kgf)
M314-03-001	1	10	1,5	0,8	M3x0,5	0,4 (0,05)	2,9 (0,3)
M314-03-002	1,6	12	2	0,8	M4x0,7	1,9 (0,2)	9,8 (1,0)
M314-03-003	2	20	3	1,5	M5x0,8	3,9 (0,4)	19,6 (2,0)
M314-03-004	2	13	3	1,5	M5x0,8	1,9 (0,2)	7,8 (0,8)
M314-03-005	2	20	3	1,5	M5x0,8	1,9 (0,2)	9,8 (1,0)
M314-03-006	2,5	25	3	2,0	M6x1,0	2,9 (0,3)	9,8 (1,0)
M314-03-007	2,5	25	3	2,0	M6x1,0	7,8 (0,8)	29,4 (3,0)
M314-03-008	3,1	25	3	2,5	M8x1,25	2,9 (0,3)	9,8 (1,0)
M314-03-009	3,1	25	3	2,5	M8x1,25	7,8 (0,8)	29,4 (3,0)
M314-03-010	3,8	30	5	3,0	M10x1,5	2,9 (0,3)	14,7 (1,5)
M314-03-011	3,8	30	5	3,0	M10x1,5	9,8 (1,0)	49,0 (5,0)
M314-03-012	5,5	30	5	4,0	M12x1,75	1,9 (0,2)	9,8 (1,0)
M314-03-013	5,5	30	5	4,0	M12x1,75	9,8 (1,0)	49,0 (5,0)



Material :
Pin 90Mn4



Hardened
HRC 36 ÷ 40

Body 34CrMo4

Black oxide finish.

CODE	d	l ₁	l ₂	s	sw	M	Initial Force N (Kgf)	Final Force N (Kgf)
M314-04-001	5,5	43	35	10	4	M12x1,75	3,9 (0,4)	19,6 (2)
M314-04-002	5,5	43	35	10	4	M12x1,75	6,8 (0,7)	39,2 (4)
M314-04-003	8	50	35	10	5	M16x2,0	9,8 (1)	49,0 (5)
M314-04-004	8	50	35	10	5	M16x2,0	19,6 (2)	98,0 (10)
M314-04-005	8	60	35	10	5	M16x2,0	12,7 (1,3)	39,2 (4)
M314-04-006	8	60	35	10	5	M16x2,0	26,4 (2,7)	78,4 (8)
M314-04-007	8	60	35	15	5	M16x2,0	9,8 (1)	39,2 (4)
M314-04-008	8	60	35	15	5	M16x2,0	14,7 (1,5)	78,4 (8)
M314-04-009	8	85	35	20	5	M16x2,0	12,7 (1,3)	39,2 (4)
M314-04-010	8	85	35	20	5	M16x2,0	16,6 (1,7)	78,4 (8)
M314-04-011	8	125	35	30	5	M16x2,0	19,6 (1,8)	78,4 (4)
M314-04-012	8	125	35	30	5	M16x2,0	19,6 (2)	78,4 (8)
M314-04-013	8	155	35	50	8	M16x2,0	19,6 (2)	49,0 (5)
M314-04-014	8	155	35	50	8	M16x2,0	29,4 (3)	98,0 (10)
M314-04-015	3	60	45	15	8	M24x3,0	19,6 (2)	98,0 (10)
M314-04-016	3	60	45	15	8	M24x3,0	39,2 (4)	196,1 (20)
M314-04-017	4	70	45	20	12	M30x3,5	29,4 (3)	147,0 (15)
M314-04-018	4	70	45	20	12	M30x3,5	49,0 (5)	294,1 (30)

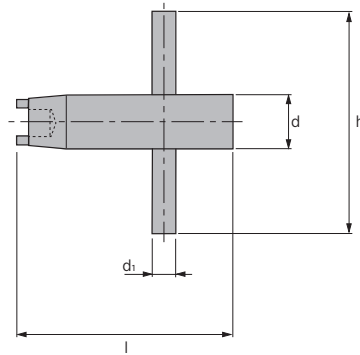


Material :
Steel

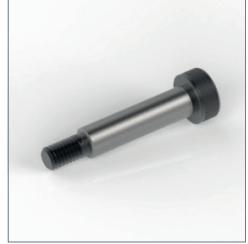
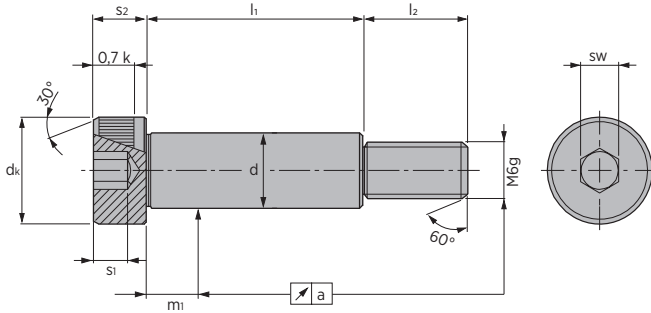


Hardened
HRC 36 ÷ 40

Black oxide finish.



CODE	d	h	l	d ₁	Spring Plunger
M314-05-006	6	40	40	3	M5, M6
M314-05-008	8	45	45	4	M8
M314-05-010	10	45	45	4	M10
M314-05-012	12	50	50	5	M12
M314-05-016	16	70	52	8	M16
M314-05-024	24	80	62	12	M24
M314-05-030	30	100	73	15	M30



Material :
High grade alloy steel
ISO 12.9



Hardened
HRC 39 ÷ 44

Tensile Strength $R_m \approx 1200$
N/mm²
Yield Strength $R_p \approx 1080$ N/mm²
Shear Strength $T_m \approx 720$ N/mm²
Elongation $A \approx 8$ min.
Impact Test : KCU 15J min.

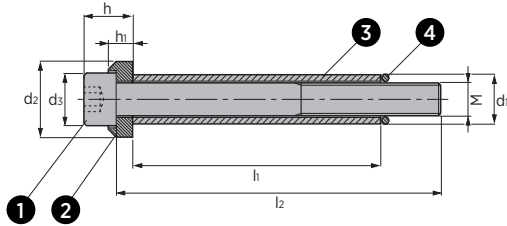
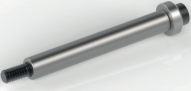
m1 measuring point = "d"

d h8	6	8	10	12	16	20	24
M	M5	M6	M8	M10	M12	M16	M20
dk/ s2	10/ 4,5	13/ 5,5	16/ 7	18/ 9	24/ 11	30/ 14	36/ 16
l2 ±0,25	9,5	11	13	16	18	22	27
s1 / SW	2,4/3	3,3/4	4,2/5	4,9/6	6,6/8	8,8/10	10/12
l1 js11							
10	•						
12	•	•					
15	•	•	•	•			
16	•	•	•	•			
20	•	•	•	•			
25	•	•	•	•			
30	•	•	•	•	•		

d h8	6	8	10	12	16	20	24
l1 js11							
35	•	•	•	•	•		
40	•	•	•	•	•	•	
45	•	•	•	•	•	•	
50	•	•	•	•	•	•	•
55	•	•	•	•	•	•	•
60	•	•	•	•	•	•	•
65		•	•	•	•	•	•
70		•	•	•	•	•	•
80		•	•	•	•	•	•
90		•	•	•	•	•	•
100		•	•	•	•	•	•
120				•	•	•	•

Order Example:
d= 6, l1= 10

Order Code:
M315-01-0506010



- 1** DIN 912 cl. 12.9 
2 Material: Steel 1000
N/mm²
3 Material: Steel 1200 ÷ 1400
N/mm²
4 O-Ring*
 * Remove before assembly

d₁ h₇	10	12,5	15	17,5	23
M	M6	M8	M10	M12	M16
d₂	15	19	23	27	34
d₃	10	13		18	24
h	10	13	15	18	24
h₁	5,5	6,5	7,5	9	11
l₁ ±0,1	l₂				
20	35	35			
25	40				
30	45	45	50	50	
35	50	50	55		
40	55	55	60	60	
45	60	60	65	65	
50	65	65	70	70	80
55	70	70	75	80	
60	80	80	80	90	90
70	90	90	90	100	100
80	100	100	100	110	110
90	110	110	110	120	120
100	120	120	120	130	130
110				140	140
120			140	150	150
140				170	180
150					180
160					200



Material :
Pin 90Mn4

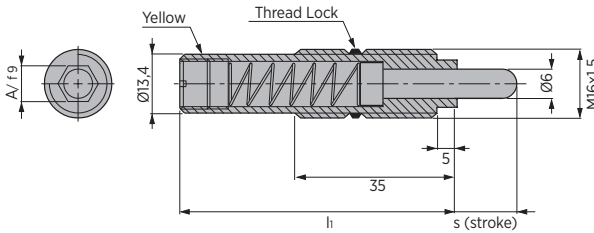


Hardened
HRC 36 ÷ 40

Body 34CrMo4

Black oxide finish.

Colour marking yellow.



CODE	l	s	Spring Rate (N/mm)	Initial Force N (Kgf)	Final Force N (Kgf)
S504-03-010060	60	10	0,95	3,8	13,3
S504-03-015060	60	15	2	10	40
S504-03-020080	80	20	1,38	6,9	34,5
S504-03-030080	80	30	1,3	6,5	45,5
S504-03-030120	120	30	0,73	18	40
S504-03-040150	150	40	0,6	13,2	37,2
S504-03-050150	150	50	0,6	13,2	43,2
S504-03-060150	150	60	0,6	13,2	49,2
S504-03-070200	200	70	0,44	9,68	40,5
S504-03-080200	200	80	0,44	9,68	44,8



3

Material :
Pin 90Mn4

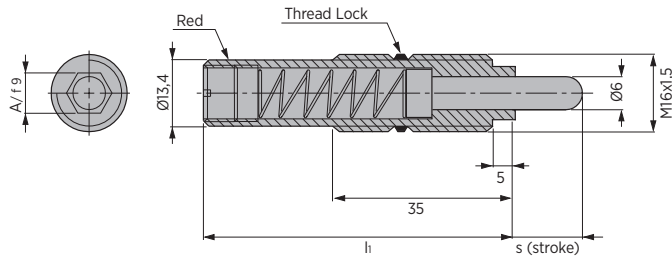


Hardened
HRC 36 ÷ 40

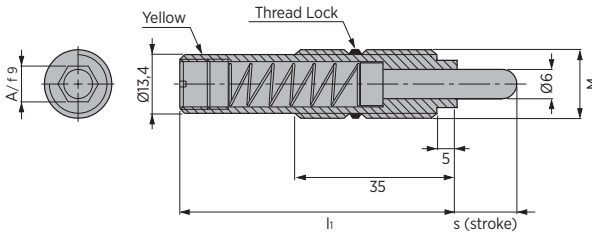
Body 34CrMo4

Black oxide finish.

Colour marking red.



CODE	h	s	Spring Rate (N /mm)	Initial Force (N)	Final Force (N)
S504-04-010060	60	10	3,25	13	45,5
S504-04-015060	60	15	2,60	15	56,0
S504-04-020080	80	20	6,90	34,5	172,5
S504-04-030120	120	30	2	20	80,0
S504-04-030150	150	30	2,55	56,1	132,6
S504-04-040150	150	40	2,55	56,1	158,1
S504-04-050200	200	50	1,61	19,3	99,9
S504-04-060200	200	60	1,61	19,3	116,1
S504-04-070200	200	70	1,61	19,3	132,1
S504-04-080200	200	80	0,94	25	100,1



Material :
Pin 90Mn4



Hardened
HRC 36 ÷ 40

Body 34CrMo4

Black oxide finish.

Colour marking yellow.

***The spring pin made from high performance plastic with additives permits lateral loading of max. 15° depending on the stroke length.**

CODE	M	li	s	Spring Rate (N /mm)	Initial Force N (Kgf)	Final Force N (Kgf)
S504-05-010060	16x1,5	60	10	0,95	3,8	13,3
S504-05-010060-002	16x2	60	10	0,95	3,8	13,3
S504-05-015060	16x1,5	60	15	2	10	40
S504-05-015060-002	16x2	60	15	2	10	40
S504-05-020080	16x1,5	80	20	1,38	6,9	34,5
S504-05-020080-002	16x2	80	20	1,38	6,9	34,5
S504-05-030080	16x1,5	80	30	1,3	6,5	45,5
S504-05-030080-002	16x2	80	30	1,3	6,5	45,5
S504-05-030120	16x1,5	120	30	0,73	18	40
S504-05-030120-002	16x2	120	30	0,73	18	40
S504-05-040150	16x1,5	150	40	0,6	13,2	37,2
S504-05-040150-002	16x2	150	40	0,6	13,2	37,2
S504-05-050150	16x1,5	150	50	0,6	13,2	43,2
S504-05-050150-002	16x2	150	50	0,6	13,2	43,2



Material :
Pin 90Mn4



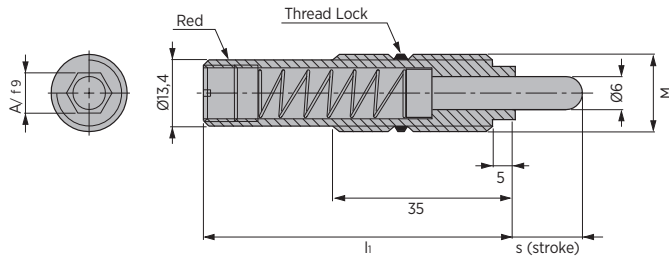
Hardened
HRC 36 ÷ 40

Body 34CrMo4

Black oxide finish.

Colour marking red.

***The spring pin made from high performance plastic with additives permits lateral loading of max. 15° depending on the stroke length.**



CODE	M	l ₁	s	Spring Rate (N /mm)	Initial Force (N)	Final Force (N)
S504-06-010060	16x1,5	60	10	3,25	13	45,5
S504-06-010060-002	16x2	60	10	3,25	13	45,5
S504-06-015060	16x1,5	60	15	2,6	15	56
S504-06-015060-002	16x2	60	15	2,6	15	56
S504-06-020080	16x1,5	80	20	6,9	34,5	172,5
S504-06-020080-002	16x2	80	20	6,9	34,5	172,5
S504-06-030120	16x1,5	120	30	2	20	80
S504-06-030120-002	16x2	120	30	2	20	80
S504-06-030150	16x1,5	150	30	2,55	56,1	132,6
S504-06-030150-002	16x2	150	30	2,55	56,1	132,6
S504-06-040150	16x1,5	150	40	2,55	56,1	158,1
S504-06-040150-002	16x2	150	40	2,55	56,1	158,1
S504-06-050200	16x1,5	200	50	1,61	19,3	99,9
S504-06-050200-002	16x2	200	50	1,61	19,3	99,9



Material :
Pin 90Mn4



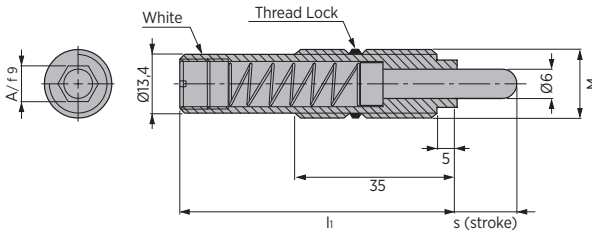
Hardened
HRC 36 ÷ 40

Body 34CrMo4

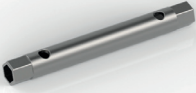
Black oxide finish.

Colour marking white.

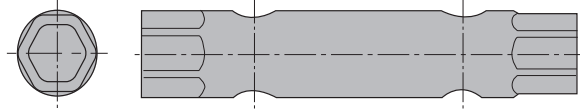
***The spring pin made from high performance plastic with additives permits lateral loading of max. 15° depending on the stroke length.**



CODE	M	h _i	s	Spring Rate (N /mm)	Initial Force N (Kgf)	Final Force N (Kgf)
S504-07-020080	16x1,5	80	20	3,02	15,1	75,6
S504-07-020080-002	16x2	80	20	3,02	15,1	75,6



Material :
Steel

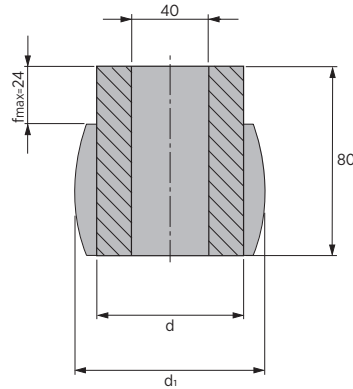


CODE

S504-08-016

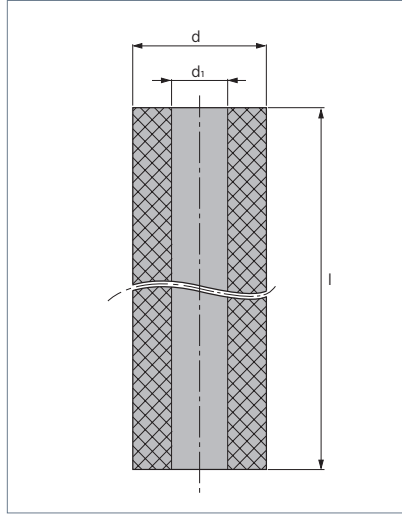


Material :
Elastomer 92 Shore A



CODE	d	d ₁
S510-05-003	80	106
S510-05-004	90	117

CODE	d	d ₁	l
S512-1XX-0160250	16	6,5	250
S512-1XX-0200250	20	8,5	250
S512-1XX-0250250	25	10,5	250
S512-1XX-0320500	32	13,5	500
S512-1XX-0400500	40	13,5	500
S512-1XX-0500500	50	17	500
S512-1XX-0630500	63	17	500
S512-1XX-0800500	80	21	500
S512-1XX-1000500	100	21	500
S512-1XX-1250500	125	27	500



Material :
Polyurethane - Ultraflex



Hardness - Color - Deflection
82 Shore A - Yellow %35
92 Shore A - Red %30
94 Shore A - Green %25

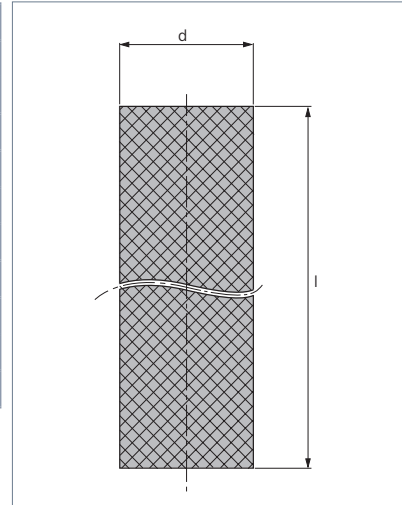
Order Example:

d= 32, l= 500, Hardness= 92 Sh

Order Code:

S512-192-0320500

CODE	d	l
S513-1XX-0160250	16	250
S513-1XX-0200250	20	250
S513-1XX-0250250	25	250
S513-1XX-0320500	32	500
S513-1XX-0400500	40	500
S513-1XX-0500500	50	500
S513-1XX-0630500	63	500
S513-1XX-0800500	80	500
S513-1XX-1000500	100	500
S513-1XX-1250500	125	500



Material :
Polyurethane - Ultraflex



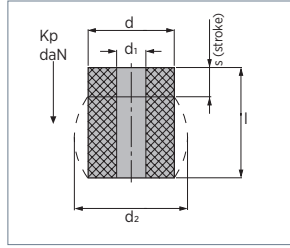
Hardness - Color - Deflection
82 Shore A - Yellow %35
92 Shore A - Red %30
94 Shore A - Green %25

Order Example:

d= 32, l= 500, Hardness= 92 Sh

Order Code:

S513-192-0320500


 Material:
 Polyurethane - Ultraflex

 Hardness - Colour - Deflection
 82 Shore A - Yellow %35
 92 Shore A - Red %30
 94 Shore A - Green %25

Order Example:
d= 32, **l=** 50, **Hardness=** 92 Sh

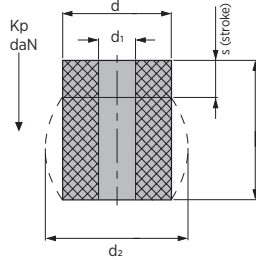
Order Code:

S514-192-032050

				S514-182			S514-192			S514-194		
				Mak. Esneme %30 Ultrafleks 82 Shore Yellow			Mak. Esneme %30 Ultrafleks 92 Shore Red			Mak. Esneme %25 Ultrafleks 94 Shore Green		
dxl	d	d1	l	s	d2	Kp	s	d2	Kp	s	d2	Kp
mm	mm	mm	mm	mm	mm	daN	mm	mm	daN	mm	mm	daN
016 x 16	16	6,5	16	5,6	22	80	4,8	19	130	4	19	160
016 x 20	16	6,5	20	7	22	80	6	19	130	5	19	160
016 x 25	16	6,5	25	9	22	80	7,5	19	130	6	19	160
016 x 32	16	6,5	32	11,2	22	80	9,6	19	130	8	19	160
020 x 16	20	8,5	16	6	28	150	4,8	26	200	4	25	325
020 x 20	20	8,5	20	7	28	150	6	26	200	5	25	325
020 x 25	20	8,5	25	9	28	150	7,5	26	200	6	25	325
020 x 32	20	8,5	32	11,2	28	150	9,6	26	200	8	25	325
020 x 40	20	8,5	40	14	28	150	12	26	200	10	25	325
025 x 16	25	10,5	16	6	33	210	4,8	30	300	4	29	450
025 x 20	25	10,5	20	7	33	210	6	30	300	5	29	450
025 x 25	25	10,5	25	9	33	210	7,5	30	300	6	29	450
025 x 32	25	10,5	32	11	33	210	9,6	30	300	8	29	450
025 x 40	25	10,5	40	14	33	210	12	30	300	10	29	450
025 x 50	25	10,5	50	17,5	33	210	15	30	300	13	29	450
032 x 16	32	13,5	16	6	43	360	4,8	41	580	4	38	800
032 x 20	32	13,5	20	7	43	360	6	41	580	5	38	800
032 x 25	32	13,5	25	9	43	360	7,5	41	580	6	38	800
032 x 32	32	13,5	32	11	43	360	9,6	41	580	8	38	800
032 x 40	32	13,5	40	14	43	360	12	41	580	10	38	800
032 x 50	32	13,5	50	18	43	360	15	41	580	13	38	800
032 x 63	32	13,5	63	22	43	360	19	41	580	16	38	800
040 x 20	40	13,5	20	7	54	650	6	50	1250	5	47	1500
040 x 25	40	13,5	25	9	54	650	7,5	50	1250	6	47	1500
040 x 32	40	13,5	32	11	54	650	9,6	50	1250	8	47	1500
040 x 40	40	13,5	40	14	54	650	12	50	1250	10	47	1500
040 x 50	40	13,5	50	18	54	650	15	50	1250	13	47	1500
040 x 63	40	13,5	63	22	54	650	19	50	1250	16	47	1500
040 x 80	40	13,5	80	28	54	650	24	50	1250	20	47	1500
050 x 25	50	17	25	9	65	1100	7,5	62	1700	6	60	2000
050 x 32	50	17	32	11	65	1100	9,6	62	1700	8	60	2000
050 x 40	50	17	40	14	65	1100	12	62	1700	10	60	2000
050 x 50	50	17	50	18	65	1100	15	62	1700	13	60	2000
050 x 63	50	17	63	22	65	1100	19	62	1700	16	60	2000
050 x 80	50	17	80	28	65	1100	24	62	1700	20	60	2000
050 x 100	50	17	100	35	65	1100	30	62	1700	25	60	2000

Order Example:
d= 80, l= 100, Hardness= 92 Sh

Order Code:
 S514-192-080100



Material:
 Polyurethane - Ultraflex



Hardness - Colour - Deflection
 82 Shore A - Yellow %35
 92 Shore A - Red %30
 94 Shore A - Green %25

3

				S514-182			S514-192			S514-194		
				Mak. Esneme %35 Ultraflex 82 Shore Yellow			Mak. Esneme %30 Ultraflex 92 Shore Red			Mak. Esneme %25 Ultraflex 94 Shore Green		
dxl	d	d1	l	s	d2	Kp	s	d2	Kp	s	d2	Kp
mm	mm	mm	mm	mm	mm	daN	mm	mm	daN	mm	mm	daN
063 x 32	63	17	32	11	81	1600	9,6	78	2600	8	74	3500
063 x 40	63	17	40	14	81	1600	12	78	2600	10	74	3500
063 x 50	63	17	50	18	81	1600	15	78	2600	13	74	3500
063 x 63	63	17	63	22	81	1600	19	78	2600	16	74	3500
063 x 80	63	17	80	28	81	1600	24	78	2600	20	74	3500
063 x 100	63	17	100	35	81	1600	30	78	2600	25	74	3500
063 x 125	63	17	125	44	81	1600	37,5	78	2600	31	74	3500
080 x 40	80	21	40	14	103	2600	12	98	4300	10	95	6000
080 x 50	80	21	50	18	103	2600	15	98	4300	13	95	6000
080 x 63	80	21	63	22	103	2600	19	98	4300	16	95	6000
080 x 80	80	21	80	28	103	2600	24	98	4300	20	95	6000
080 x 100	80	21	100	35	103	2600	30	98	4300	25	95	6000
080 x 125	80	21	125	44	103	2600	37,5	98	4300	31	95	6000
080 x 160	80	21	160	56	103	2600	48	98	4300	40	95	6000
0100 x 50	100	21	50	18	126	4300	15	120	5900	13	120	10000
0100 x 63	100	21	63	22	126	4300	19	120	5900	16	120	10000
0100 x 80	100	21	80	28	126	4300	24	120	5900	20	120	10000
0100 x 100	100	21	100	35	126	4300	30	120	5900	25	120	10000
0100 x 125	100	21	125	44	126	4300	37,5	120	5900	31	120	10000
0100 x 160	100	21	160	56	126	4300	48	120	5900	40	120	10000
0125 x 63	125	27	63	22	160	6400	19	152	9900	15,7	150	15000
0125 x 80	125	21	80	28	160	6400	24	152	9900	20	150	15000
0125 x 100	125	21	100	35	160	6400	30	152	9900	25	150	15000
0125 x 125	125	21	125	43,7	160	6400	37,5	152	9900	31,2	150	15000
0125 x 160	125	21	160	56	160	6400	48	152	9900	40	150	15000
0125 x 200	125	21	200	70	160	6400	60	152	9900	50	150	15000



CODE	Colour	Lt.
D901-01-745	Blue	250 ml.

3

Physical and Chemical Properties	
Physical State	Paste
Colour	Blue
Odour	Characteristic
Melting Point	45 °C
Flammability	> 150 °C
Explosiveness	not explosive
Density	0,85 g /ml
Solubity	In many solvents
Water Solubility (20°C)	Insoluble

Fiziksel ve Kimyasal Özellikler	
Fiziksel Durum	Paste
Renk	Mavi
Koku	Karakteristik
Erime Noktası	45 °C
Yanma Derecesi	> 150 °C
Patlayıcılık	Patlayıcı özelliği yoktur.
Yoğunluk	0,85 g /ml
Çözünürlük	Birçok çözücü de çözünür.
Suda Çözünme (20°C)	Suda çözünmez

Physikalische und chemische Eigenschaften	
Physischer Zustand	Paste
Farbe	Blau
Geruch	Karakteristik
Schmelzpunkt	45 °C
Endzündbarkeit	> 150 °C
Brisant	Keine
Dichte	0,85 g /ml
Lösbarkeit	Mit den meisten Lösungsmittel lösbar
Wasserlöslichkeit (20°C)	Keine