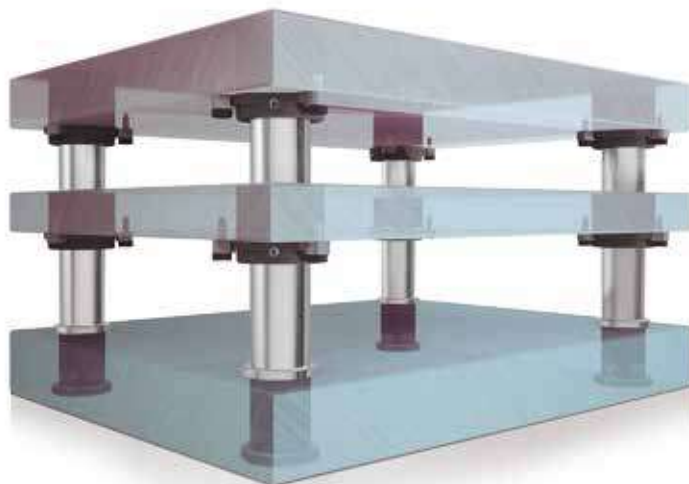




DIE STAMPING COMPONENTS NORMALIZADOS PARA MATRICERIA



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BR Stamp

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BR stamp is the **new division** created by Bru y Rubio to meet the needs of the **die toolmaker and stamping customers**, offering the best products for **guiding components, punching, die bottoms, gas springs, diesel machined according customer design** and a long list of products related to the tooling and stamping workshop.

Standard Die Components

A wide range of products such as **pillars and bushes (ISO/DIN Standard), ball cages, punching, springs, standard die sets and machined according customer design, lifters and P plates.**

Standard Die sets

A wide range of **standardized die sets** with superior performance. Manufactured in **steel 1.1730**, it has **high precision milled sides**. In addition, the standard die set plates are identified with their respective ID number, facilitating the **traceability of the product** throughout its life.

BR stamp es la **Nueva División** creada por Bru y Rubio para atender las necesidades de los Clientes de **Matrickería y Estampación**, ofreciéndoles los mejores productos de **Guiado, Punzonado, Casquillos de Corte, Cilindros de Gas Nitrógeno, Porta Matrices Mecanizados** y un largo etcétera de productos relacionados con el taller de Matrickería y Estampación.

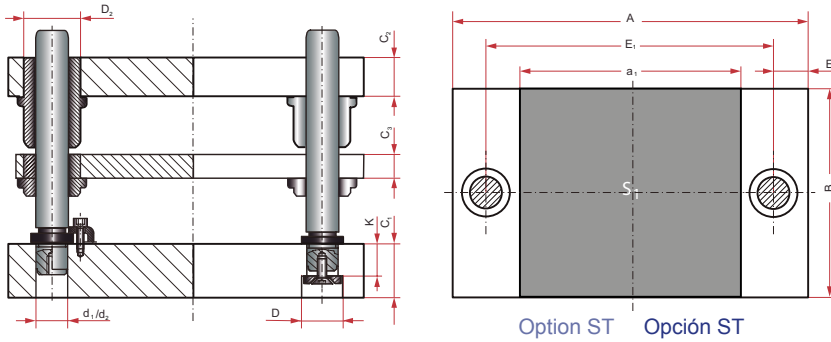
Normalizados para Matrickería

Una amplia gama de productos como **columnas y casquillos ISO, jaulas de bola, punzonado, muelles, porta matrices normalizados y mecanizados según diseño, elevadores de banda y placas ciega.**

Porta Matrices Normalizados

Una amplia gama de porta matrices normalizados de prestaciones superiores. Fabricados en **acero 1.1730**, tiene las **laterales cuadradas con alta precisión**. Además las placas de los porta matrices normalizados están identificadas con su respectivo numero facilitando la **trazabilidad** del producto durante toda su vida.

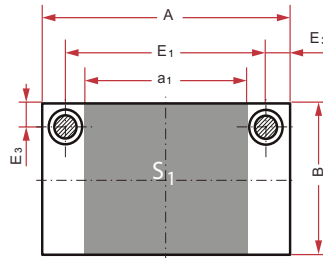
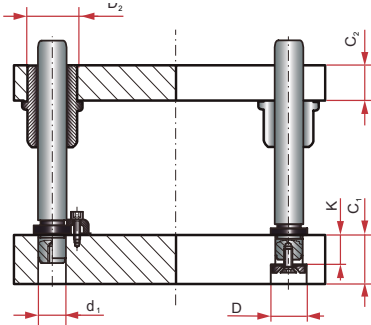




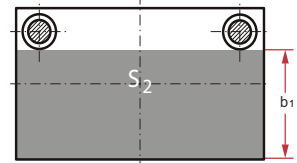
B X A	C ₁		C ₂		C ₃	d ₁ /d ₂	D ₂	E ₁	E ₂	E ₃	D	K	S ₁	S ₂				
													a ₁ x B	Axb ₁				
156X156	27 _a	36 _a	27	36	27	20/19	32	114	----	21	----	----	56x156	----				
156X196							154	----	96x156				----					
156X246							204	----	146x156				----					
190X246						25/24	40	162	----				42	----	----	116x190	----	
196X196									112							----	66x196	----
196X296									212							----	166x196	----
196X346									262							----	216x196	----
196X396									312							----	266x196	----
246X246	46 _a	36 _b	36	46	36	32/30	48	154	----	46	----	----	96x246	----				
246X296									204				----	146x246	----			
246X346									254				----	196x246	----			
246X396									304				----	246x246	----			
246X446									354				----	296x246	----			
296X296									204				----	146x296	----			
296X346									254				----	196x296	----			
296X396									304				----	246x296	----			
296X446		56	46	56	46	40/38	58	378	----	34	52	38	276x296	----				
346X346									278				----	176x346	----			
346X396									328				----	226x346	----			
346X446									378				----	276x346	----			
346X496									428				----	326x346	----			
346X596									528				----	426x346	----			
396X396									328				----	226x396	----			
396X446									378				----	276x396	----			
396X496									428				----	326x396	----			
396X546									478				----	376x396	----			
396X596									528				----	426x396	----			
446X446	56	66	56	66	56			378	----				276x446	----				
446X496									428				----	326x446	----			
496X496									428				----	326x496	----			
496X546									478				----	376x496	----			
496X596									528				----	426x496	----			
496X696									628				----	526x496	----			
596X596									528				----	426x596	----			

How to order: SDS100-BxA-C1/C2/C3 Example: SDS-246x346-46/36/36
 Forma de pedido: SDS100-BxA-C1/C2/C3 Ejemplo: SDS-246x346-46/36/36

Note: Dimensions only for ISO standard components. All die sets will be delivered with components not assembly.
 Nota: Dimensiones válidas solamente para componentes ISO standard. Todos los portamatrices serán entregados con los componentes desmontados.



Option PT Opción PT

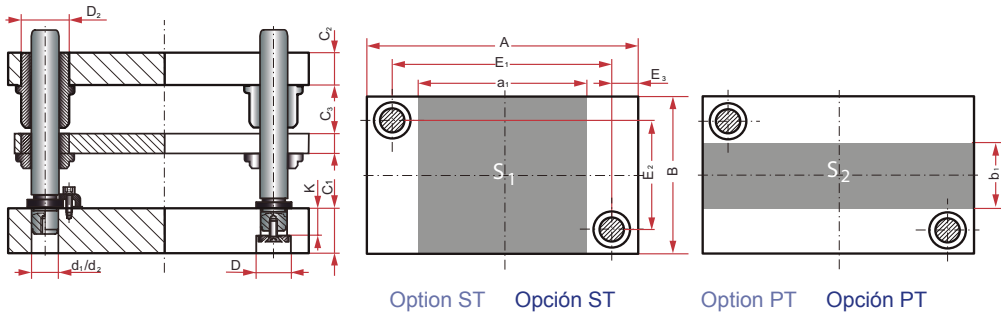


Option ST Opción ST

B X A	C ₁		C ₂		d ₁	D ₂	E ₁	E ₂	E ₃	D	K	S ₁	S ₂
												a ₁ x B	Axb ₁
156X156	27 _a	36 _a	27	36	20	32	80	----	38	----	----	56x156	156x106
156X196							120	----				96x156	196x106
156X246							170	----				146x156	246x106
190X246					25	40	162	----	42	----	----	116x190	246x125
196X196							112	----				66x196	196x131
196X296							212	----				166x196	296x131
196X346							262	----				216x196	346x131
196X396							312	----				266x196	396x131
246X246	46 _a	36 _b	36	46	32	48	154	----	46	----	----	96x246	246x171
246X296							204	----				146x246	296x171
246X346							254	----				196x246	346x171
246X396							304	----				246x246	396x171
246X446							354	----				296x246	446x171
296X296							204	----				146x296	296x221
296X346							254	----				196x296	346x221
296X396							304	----				246x296	396x221
296X446		56	46	56	40	58	348	----	49	52	38	276x296	446x211
346X346							248	----				176x346	346x261
346X396							298	----				226x346	396x261
346X446							348	----				276x346	446x261
346X496							398	----				326x346	496x261
346X596							498	----				426x346	596x261
396X396							298	----				226x396	396x311
396X446							348	----				276x396	446x311
396X496							398	----				326x396	496x311
396X546							448	----				376x396	546x311
396X596							498	----				426x396	596x311
446X446							56	66				56	66
446X496	398	----	326x446	496x361									
496X496	398	----	326x496	496x411									
496X546	448	----	376x496	546x411									
496X596	498	----	426x496	596x411									
496X696	598	----	526x496	696x411									
596X596							498	----				426x596	596x511

How to order: SDS200-BxA-C1/C2 Example: SDS200-246x346-46/36
 Forma de pedido: SDS200-BxA-C1/C2 Ejemplo: SDS200-246x346-46/36

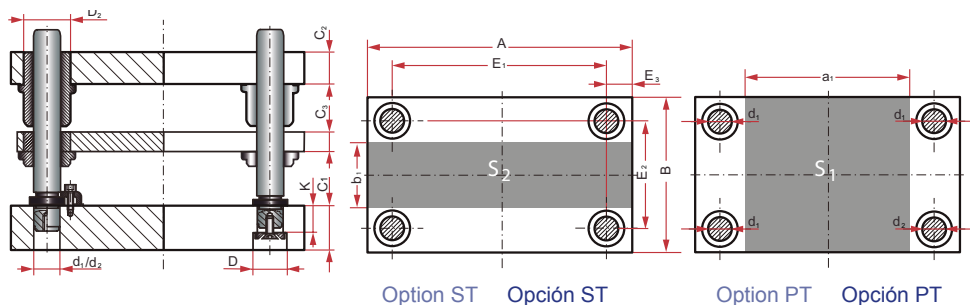
Note: Dimensions only for ISO standard components. All die sets will be delivered with components not assembly.
 Nota: Dimensiones válidas solamente para componentes ISO standard. Todos los portamatrices serán entregados con los componentes desmontados.



B X A	C ₁		C ₂		C ₃	d ₁ /d ₂	D ₂	E ₁	E ₂	E ₃	D	K	S ₁	S ₂					
													a ₁ x B	Axb ₁					
156X156	27 _a	36 _a	27	36	27	20/19	32	80	80	38	----	----	56x156	156x56					
156X196								120					96x156	196x56					
156X246								170					146x156	246x56					
190X246						25/24	40	162	106	42	----	----	116x190	246x60					
196X196								112	112				66x196	196x66					
196X296								212					166x196	296x66					
196X346								262					216x196	346x66					
196X396								312					266x196	396x66					
246X246	46 _a	36 _b	36	46	36	32/30	48	154	154	46	----	----	96x246	246x96					
246X296								204					146x246	296x96					
246X346								254					196x246	346x96					
246X396								304					246x246	396x96					
246X446								354					296x246	446x96					
296X296								204	204				146x296	296x146					
296X346								254					196x296	346x146					
296X396								304					246x296	396x146					
296X446								40/38	58				348	198	49	52	38	276x296	446x126
346X346													248	248				176x346	346x176
346X396						298				226x346	396x176								
346X446						348				276x346	446x176								
346X496						398				326x346	496x176								
346X596						498				426x346	596x176								
396X396						298	298			226x396	396x226								
396X446						348				276x396	446x226								
396X496						398				326x396	496x226								
396X546						448				376x396	546x226								
396X596						498				426x396	596x226								
446X446						56	66	56	66	56		348	348				276x446	446x276	
446X496											398		326x446				496x276		
496X496	398	398	326x496	496x326															
496X546	448		376x496	546x326															
496X596	498		426x496	596x326															
496X696	598		526x496	696x326															
596X596	498		426x596	596x426															

How to order: SDS300-BxA-C1/C2/C3 Example: SDS300-246x346-46/36/36
 Forma de pedido: SDS300-BxA-C1/C2/C3 Ejemplo: SDS300-246x346-46/36/36

Note: Dimensions only for ISO standard components. All die sets will be delivered with components not assembly.
 Nota: Dimensiones válidas solamente para componentes ISO standard. Todos los portamatrices serán entregados con los componentes desmontados.



Option ST

Opción ST

Option PT

Opción PT

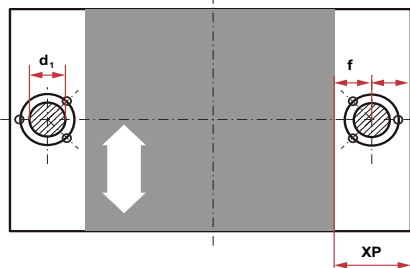
B X A	C ₁		C ₂		C ₃	d ₁ /d ₂	D ₂	E ₁	E ₂	E ₃	D	K	S ₁	S ₂					
													a ₁ x B	Axb ₁					
156X156	27 _a	36 _a	27	36	27	20/19	32	74	77	41	-----	-----	56x156	156x56					
156X196								114					96x156	196x37					
156X246								164					146x156	246x37					
190X246						25/24	40	156	103	45	-----	-----	116x190	246x49					
196X196								106					66x196	196x55					
196X296								206					166x196	296x55					
196X346								256					216x196	346x55					
196X396								306					266x196	396x55					
246X246	46 _a	36 _b	36	46	36	32/30	48	148	151	49	-----	-----	96x246	246x93					
246X296								198					146x246	296x93					
246X346								248					196x246	346x93					
246X396								298					246x246	396x93					
246X446								348					296x246	446x93					
296X296								198					201	146x296	296x143				
296X346								248						196x296	346x143				
296X396								298					246x296	396x143					
296X446						56	46	56	46	40/38	58	342	195	52	52	38	276x296	446x129	
346X346												242					245	176x346	346x179
346X396												292						226x346	396x179
346X446												342					276x346	446x179	
346X496												392					326x346	496x179	
346X596												492					426x346	596x179	
396X396												292					295	226x396	396x229
396X446												342						276x396	446x229
396X496	392	326x396	496x229																
396X546	442	376x396	546x229																
396X596	492	426x396	596x229																
446X446	56	66	56	66	56	40/38	58	342	345			52	52	38	276x446	446x279			
446X496								392							326x446	496x279			
496X496								392							326x496	496x329			
496X546								442	376x496						546x329				
496X596								492	426x496						596x329				
496X696								592	526x496	696x329									
596X596								492	426x596	596x429									

How to order: SDS400-BxA-C1/C2/C3 Example: SDS400-246x346-46/36/36
 Forma de pedido: SDS400-BxA-C1/C2/C3 Ejemplo: SDS400-246x346-46/36/36

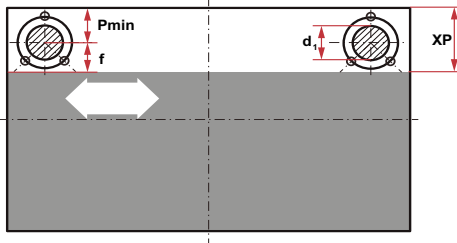
Note: Dimensions only for ISO standard components. All die sets will be delivered with components not assembly.
 Nota: Dimensiones válidas solamente para componentes ISO standard. Todos los portamatrices serán entregados con los componentes desmontados.

Screw clamp direction and Pmin distance Sentido grapas y distancia Pmin

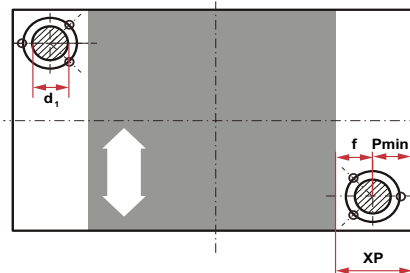
SDS100



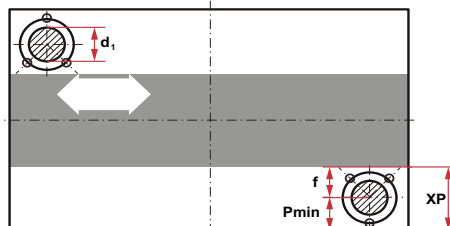
SDS200



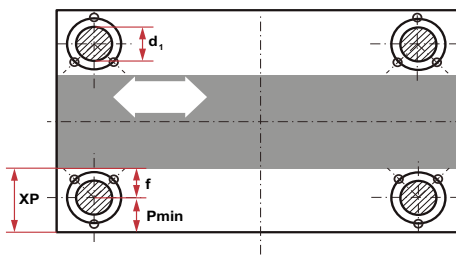
SDS300



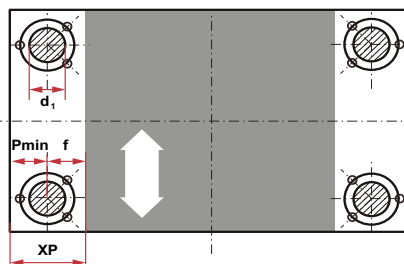
SDS300



SDS400



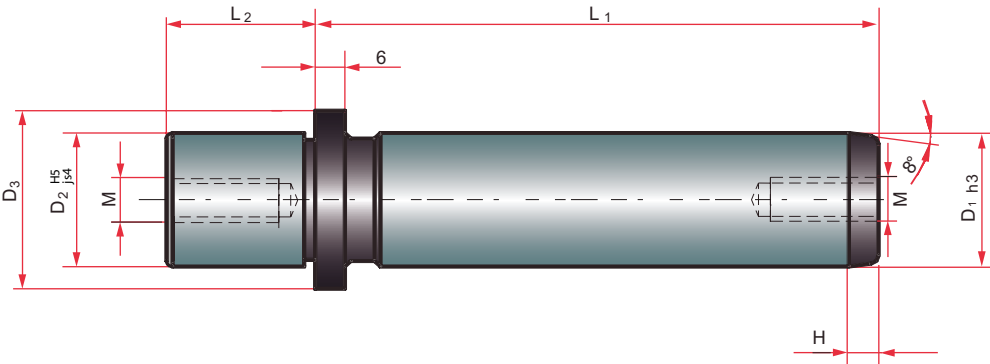
SDS400



	Clamp (Position) Garra ISO/(Posicion elemento lado placa)		
d_1	P min.	XP	f
20/19	30	50	20
25/24	40	65	25
32/30	45	75	30
40/38	50	85	35
50/48	60	100	40
63/60	70	105	35
80	• By Costumer	• By Costumer	• By Costumer

The Pmin distance is only a suggestion
La distancia Pmin solo es una sugerencia

Guide pillar with collar (h3)
Columna guía desmontable (h3)



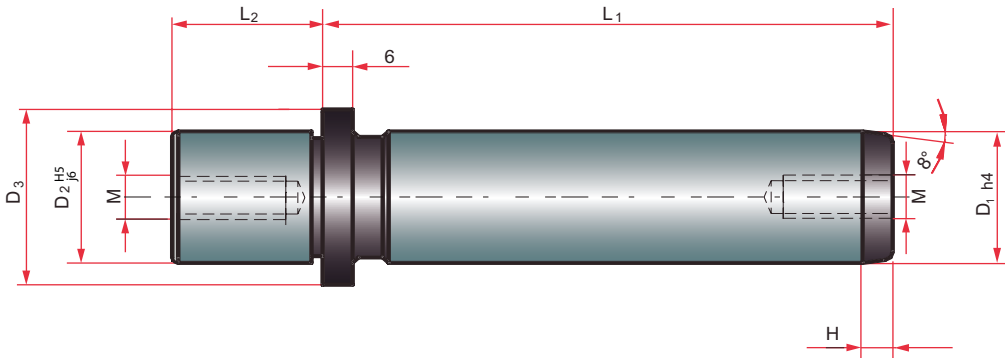
Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensiones/ Dimensions						L ₁													
D ₁	D ₂	D ₃	H	M	L ₂	100	112	125	140	160	180	200	224	250	280	315	355	400	
15-16	15-16	22	4	M8	20	●	●	●	●	●	●	●							
19-20	19-20	25	4	M8	23	●	●	●	●	●	●	●							
24-25	24-25	32	6	M8	30			●	●	●	●	●	●	●					
30-32	30-32	40	6	M8	37			●	●	●	●	●	●	●	●	●			
38-40	38-40	50	6	M8	37					●	●	●	●	●	●	●	●		
48-50	48-50	63	8	M8	47						●	●	●	●	●	●	●	●	
60-63	60-63	80	8	M8	47							●	●	●	●	●	●	●	
80	80	95	8	M12	60										●	●	●	●	

Mounting system for SP103 available on page 17
Sistemas de montaje para SP103 disponible en página 17

How to order: SP103/D1-L1 / Example: SP103/032-250
Forma de pedido: SP103/D1-L1 / Ejemplo: SP103/032-250

Guide pillar with collar (h4)
Columna guía desmontable (h4)



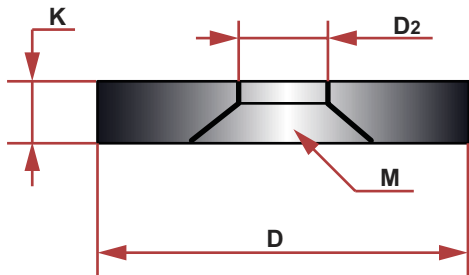
Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensiones/ Dimensions						L ₁													
D ₁	D ₂	D ₃	H	M	L ₂	100	112	125	140	160	180	200	224	250	280	315	355	400	
15-16	15-16	22	4	M8	20	●	●	●	●	●	●	●							
19-20	19-20	25	4	M8	23	●	●	●	●	●	●	●							
24-25	24-25	32	6	M8	30			●	●	●	●	●	●	●					
30-32	30-32	40	6	M8	37			●	●	●	●	●	●	●	●	●			
38-40	38-40	50	6	M8	37					●	●	●	●	●	●	●	●		
48-50	48-50	63	8	M8	47						●	●	●	●	●	●	●	●	
60-63	60-63	80	8	M8	47							●	●	●	●	●	●	●	
80	80	95	8	M12	60										●	●	●	●	

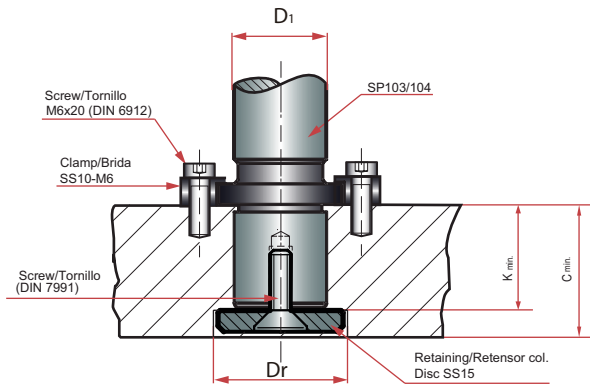
Mounting system for SP104 available on page 17
Sistemas de montaje para SP104 disponible en página 17

How to order: SP104/D1-L1 / Example: SP104/032-250
Forma de pedido: SP104/D1-L1 / Ejemplo: SP104/032-250

Retaining
Retensor columna.

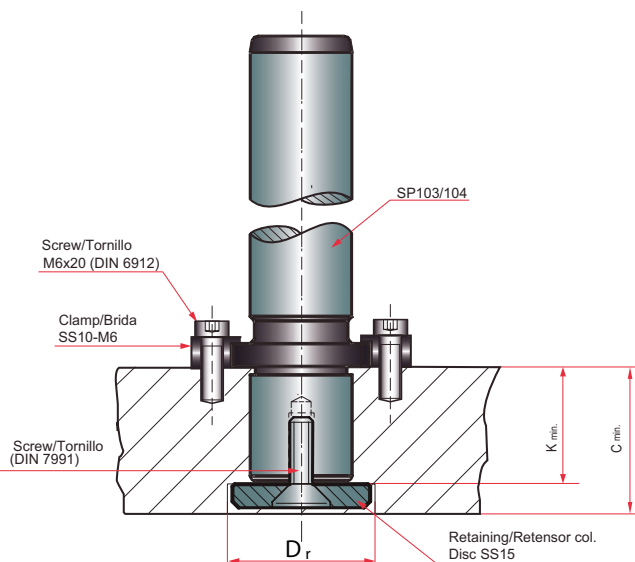


Dimensions/Dimensiones						
REF.	D	D ₁	Dr	D ₂	K	M
SS15-1516	22	15/16	24	8,5	6	DIN7991 M8x20
SS15-1920	25	19/20	27			
SS15-2425	32	24/25	34			
SS15-3032	40	30/32	42			
SS15-3840	50	38/40	52			
SS15-4850	60	48/50	62			
SS15-6063	70	60/63	72	12,5	12	DIN7991 M12x30
SS15-0080	93	80	95			

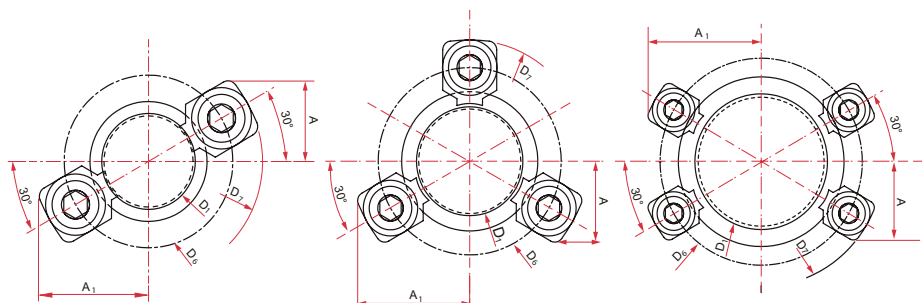


SP103/SP104

Mounting system for guide pillar SP103 /SP104
Sistemas de montaje columna guía SP103 / SP104



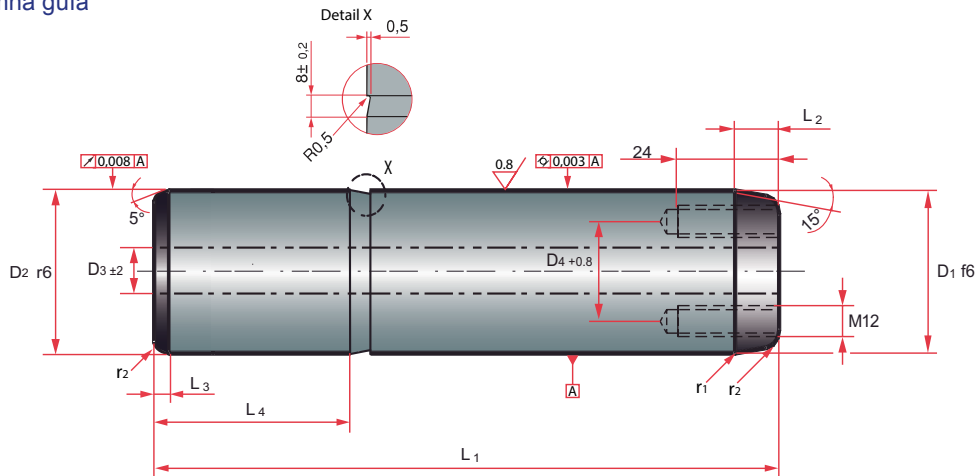
D_1	A	A_1	D_6	D_7	K_{min}	C_{min}	D_r	REF.
19-20	20,9	30,3	36	48,7	24	31	27	SS15-1920-M8
24-25	22,7	33,4	43	55,7	31	38	34	SS15-2425-M8
30-32	24,4	36,4	51	63,7	38	45	42	SS15-3032-M8
38-40	35,3	35,3	61	73,7	38	45	52	SS15-3840-M8
48-50	40,2	40,2	74	86,7	48	55	62	SS15-4850-M8
60-63	45,5	45,5	91	103,7	48	55	72	SS15-6063-M8
80	54,5	54,5	106	118,7	61	74	95	SS15-80 - M12



Ø D1 19-20 mm = 2 screw clamp
Ø D1 24-32 mm = 3 screw clamp
Ø D1 from 38 mm = 4 screw clamp

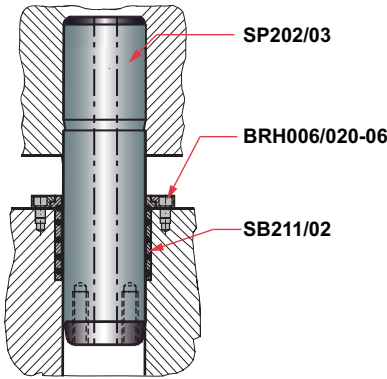
Ø D1 19-20 mm = 2 bridas
Ø D1 24-32 mm = 3 bridas
Ø D1 a partir de 38 mm = 4 bridas

Guide pillar
Column guía



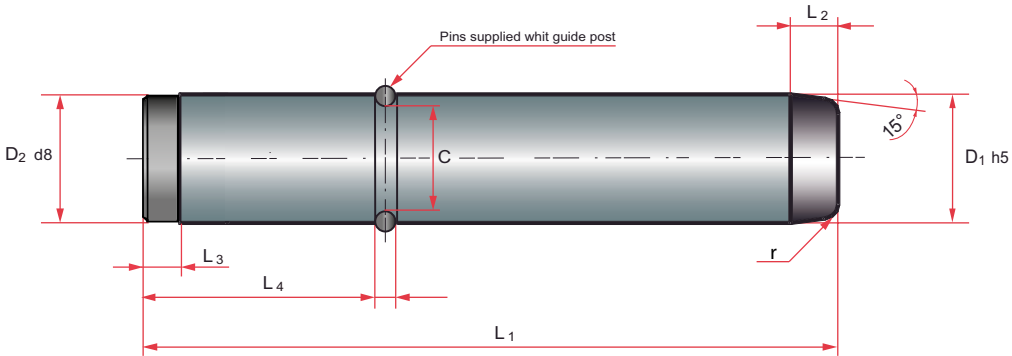
Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensiones Dimensions		L ₁															L ₂	L ₃	L ₄	r ₁	r ₂
D ₁	D ₂	D ₃	D ₄	200	224	250	280	315	355	400	450	500	560								
80		40	58	•	•	•	•	•	•	•	•			10	4	100	8	3			
100		50	72		•	•	•	•	•	•	•					125	10				
125		65	90					•	•	•	•	•				140	12		4		
160		95	132							•	•	•	•			180	18				



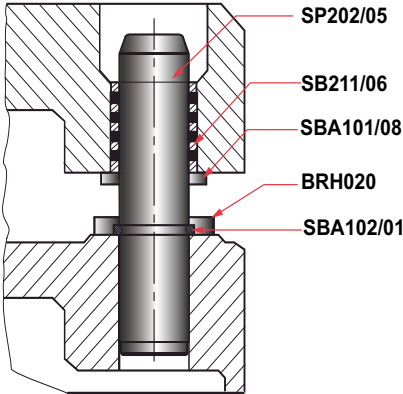
How to order: SP202/03-D1-L1 / Example: SP202/03-125-400
Forma de pedido: SP202/03-D1-L1 / Ejemplo: SP202/03-125-400

Guide pillar
Columna guía



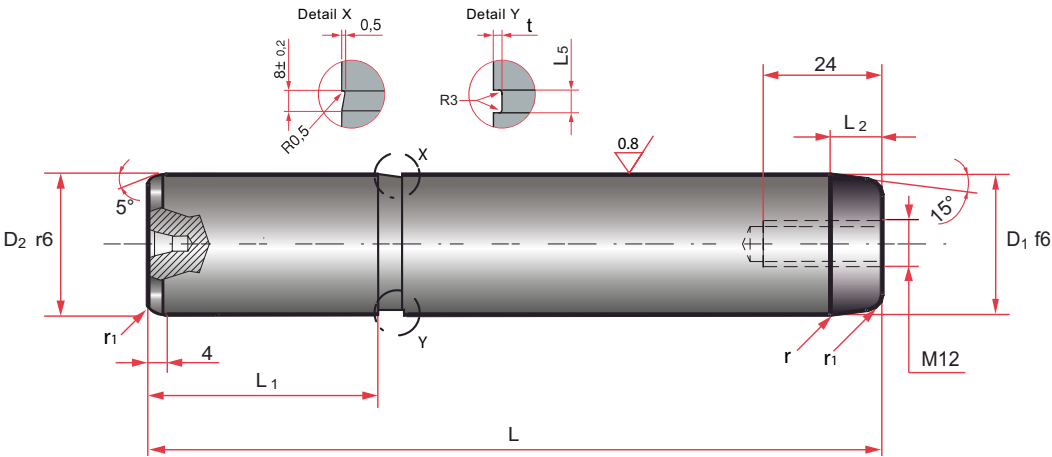
Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensiones Dimensions		L ₁																			
D ₁	D ₂	100	125	140	160	180	200	224	250	280	315	355	400	450	500	L ₂	L ₃	L ₄	C	r	K
25		•	•	•	•	•	•	•								8	8	25	22,3	2	2,7
32			•	•	•	•	•	•	•							10	12	32	27,8	2,5	4,2
40						•	•	•	•	•	•					12		63	35,8		
50							•	•	•	•	•	•	•			16		80	45,8		
63									•	•	•	•	•	•	•	18	100	56,8	3	6,2	
80											•	•	•	•	•		125	73,8			
100												•	•	•	•		160	93,8			



How to order: SP202/05-D1-L1 / Example: SP202/05-32-250
Forma de pedido: SP202/05-D1-L1 / Ejemplo: SP202/05-32-250

Guide pillar
Columna guía

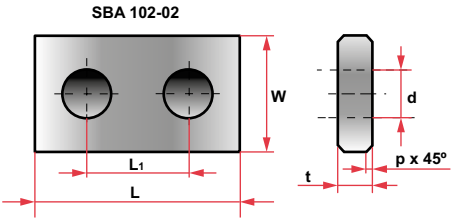


Mat. 1.6523 (21NiCrMo2) – Hardness: 60+4HRC

Mat. 1.7131 (21NiCrMo2) – Dureza: 60+4HRC

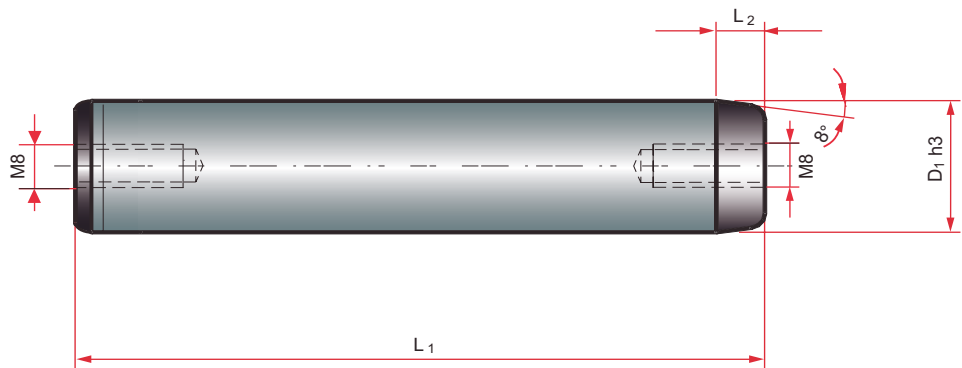
Dimensiones Dimensions		L																		
D ₁	D ₂	125	140	160	180	200	224	250	280	315	355	400	L ₁	L ₂	L ₅	r	r ₁	r ₃	t	
25		•	•	•	•								40	8	7	3	2	1	3	
32			•	•	•	•							45							
40				•	•	•	•	•	•				56							
50				•	•	•	•	•	•	•	•		70		10	10	5	2,5	2	4
63					•	•	•	•	•	•	•	•	80							
80							•	•	•	•	•	•	100							

A101-02	L	W	L ₁	t	d	p
A101-02-040-2532	40	20	20	5	9	1
A101-02-048-4050	48	25	24	8	11	2
A101-02-060-6380	60	34	30	10	14	



How to order: SP202-08-D1-L / Example: SP202-08-63-400
Forma de pedido: SP202-08-D1-L / Ejemplo: SP202-08-63-400

Guide pillar (h3)
Columna guía lisa (h3)

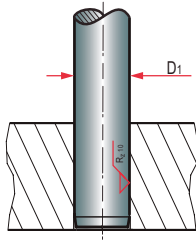


Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensions Dimensiones		L1												
D ₁	L ₂	100	112	125	140	160	180	200	224	250	280	315	355	400
15-16	4	•	•	•	•	•	•	•						
19-20	4	•	•	•	•	•	•	•						
24-25	6	•	•	•	•	•	•	•	•	•				
30-32	6		•	•	•	•	•	•	•	•	•	•		
38-40	6			•	•	•	•	•	•	•	•	•	•	
48-50	8				•	•	•	•	•	•	•	•	•	•
60-63	8					•	•	•	•	•	•	•	•	•
80	8							•	•	•	•	•	•	•

Retaining bore tolerance suggested

Sugerencia de ajuste para taladro

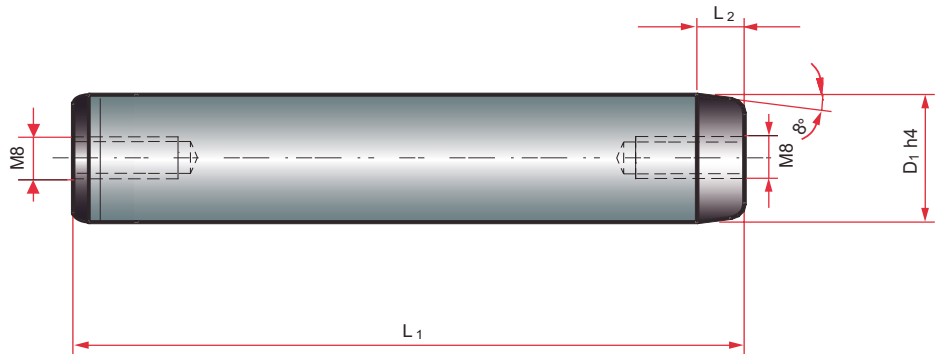


Material	Tolerancia Taladro d1 Retaining bore d1
Fundición / Grey cast iron	-0,0
	-0,0
Acero / Steel	-0,0
	-0,0

Recommended bore tolerances are based on experience. For pillars from d1=50mm. and over should be frozen before fitting.
Tolerancias recomendadas basadas en la experiencia. Las columnas a partir de d1=50mm. deberán ser congeladas antes del montaje

How to order: SP203/D1-L1 / Example: SP203/032-250
Forma de pedido: SP203/D1-L1 / Ejemplo: SP203/032-250

Guide pillar (h4)
Columna guía lisa (h4)

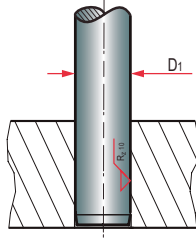


Up to Ø30 - 1.7131 (16MnCr5) – Cemented / Bigger than Ø40 - 1.1191 (Ck 45) – Induction / Hardness: 60+4HRC
Hasta Ø30 - 1.7131 (16MnCr5) – Cementado / Superior a Ø40 - 1.1191 (Ck 45) – Inducción / Dureza: 60+4HRC

Dimensions Dimensiones		L1												
D ₁	L ₂	100	112	125	140	160	180	200	224	250	280	315	355	400
15-16	4	•	•	•	•	•	•	•						
19-20	4	•	•	•	•	•	•	•						
24-25	6	•	•	•	•	•	•	•	•	•				
30-32	6		•	•	•	•	•	•	•	•	•	•		
38-40	6			•	•	•	•	•	•	•	•	•	•	
48-50	8				•	•	•	•	•	•	•	•	•	•
60-63	8					•	•	•	•	•	•	•	•	•
80	8							•	•	•	•	•	•	•

Retaining bore tolerance suggested

Sugerencia de ajuste para taladro

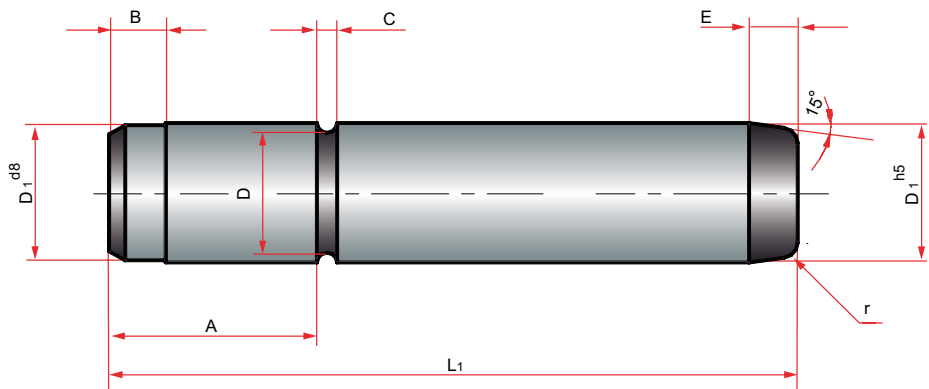


Material	Tolerancia Taladro d1 Retaining bore d1
Fundición / Grey cast iron	-0,0
	-0,0
Acero / Steel	-0,0
	-0,0

Recommended bore tolerances are based on experience. For pillars from d1=50mm. and over should be frozen before fitting.
Tolerancias recomendadas basadas en la experiencia. Las columnas a partir de d1=50mm. deberán ser congeladas antes del montaje

How to order: SP204/D1-L1 / Example: SP204-032-250
Forma de pedido: SP204/D1-L1 / Ejemplo: SP204-032-250

Guide pillar
Columna de retención intermedia

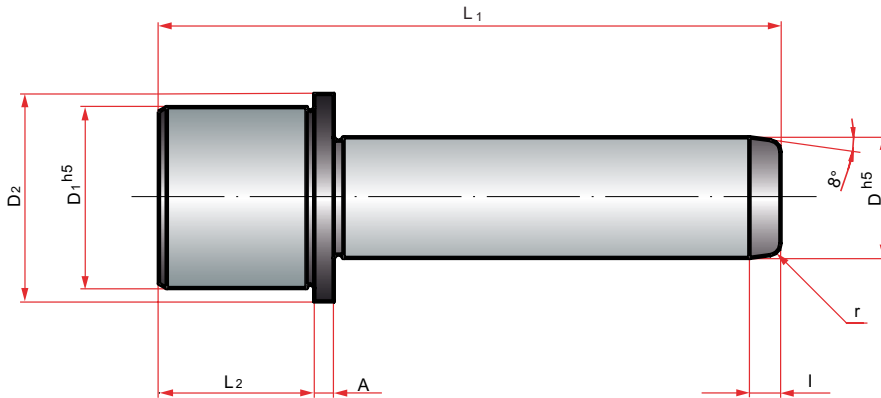


Mat: 1.7264 60-62 HRC

Dimensions / Dimensiones							L ₁												
D ₁	D	A	B	C	E	r	140	160	180	200	220	240	260	280	300	320	350	400	450
25	22,3	40	8	3	7	3	•	•	•	•	•	•	•						
32	27,8	52	10	4	8	3		•	•	•	•	•	•	•	•	•			
40	35,8	63	12		10	4			•	•	•	•	•	•	•	•	•		
50	45,8	80			12	5			•	•	•	•	•	•	•	•	•		
63	56,8	100	18	6	13	6							•	•	•	•	•		
80	73,8	125			15										•	•	•	•	
100	93,8	160																•	•

How to order: SP205/D1 x L1 / Example SP205/32x220
Forma de pedido: SP205/D1 x L1 / Ejemplo SP205/32x220

Guide pillar double diameter
Columna de doble diámetro

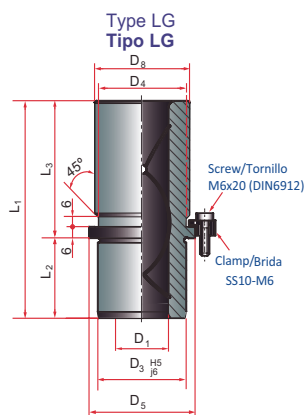


Mat: 1.7264 60-62 HRC

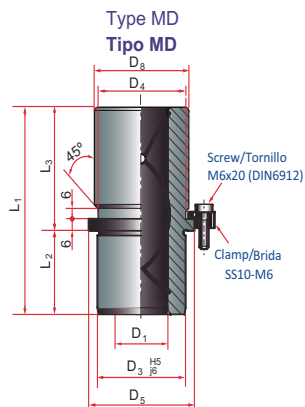
Dimensions / Dimensiones							L ₁																
D	D ₁	D ₂	L ₂	I	r	A	130	140	160	170	180	190	200	212	225	235	240	250	275	300	325	355	
15/16	28	34	25	5	2	5	•	•															
18/19	32	40	30	6			•	•	•														
24/25	40	45	35	7	3			•	•	•	•												
30/32	48	55	40	8						•	•	•	•										
40/42	58	70	45	10	4						•	•	•	•	•		•						
50/52	68	80	50	12	5									•	•	•		•					
60/63	85	95	55	13	6												•		•	•	•		
80	100	120	60	15			6,5											•		•	•	•	•

Steel guide bush
Casquillo guía acero

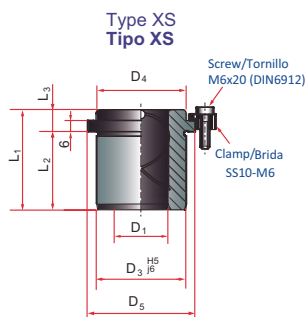
Mat. 16Mn Cr5 Cemented/ Hardness: 60±2 HRC
Mat. 16Mn Cr5 Cementado / Dureza: 60±2HRC



Tipo LG / Type LG							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	59	23	36
24-25	40	40	48	46	79	23	56
30-32	48	48	56	53	93	30	63
38-40	58	58	66	63	108	37	71
48-50	70	70	80	77	127	47	80
60-63	85	85	95	92	150	60	90
80	105	105	118	115	150	60	90



Tipo MD / Type MD							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	43	23	20
24-25	40	40	48	46	59	23	36
30-32	48	48	56	53	75	30	45
38-40	58	58	66	63	82	37	45
48-50	70	70	80	77	97	47	50
60-63	85	85	95	92	116	60	56
80	105	105	118	115	120	60	60



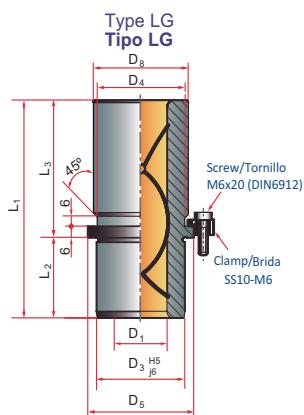
Tipo XS / Type XS						
D ₁	D ₃	D ₄	D ₅	L ₁	L ₂	L ₃
19-20	32	32	40	35	23	12
24-25	40	40	48	35	23	12
30-32	48	48	56	42	30	12
38-40	58	58	66	52	37	15
48-50	70	70	80	65	47	18
60-63	85	85	95	80	60	20
80	105	105	118	80	60	20

How to order: SB500/D1-L1 / Example: SB500/25-35
Forma de pedido: SB500/D1-L1 / Ejemplo: SB500/25-35

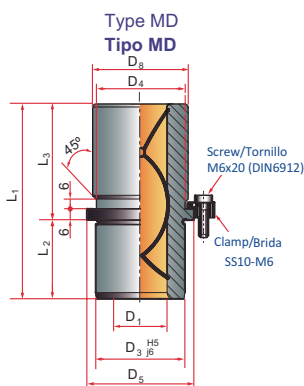
Mounting system for SB500 available on page 34
Sistema de montaje para SB500 disponible en página 34

Steel guide bush / plated
Casquillo guía acero / bronce

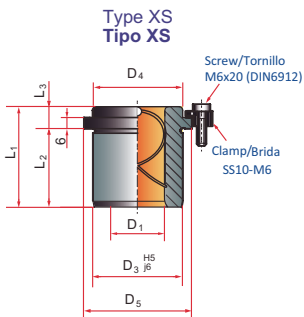
Mat. 1.050 3 - C45 / Bronze Hardness 80 Hb
Mat. 1.050 3 - C45 / Dureza Bronce 80 Hb



Tipo LG / Type LG							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	59	23	36
24-25	40	40	48	46	79	23	56
30-32	48	48	56	53	93	30	63
38-40	58	58	66	63	108	37	71
48-50	70	70	80	77	127	47	80
60-63	85	85	95	92	150	60	90
80	105	105	118	115	150	60	90



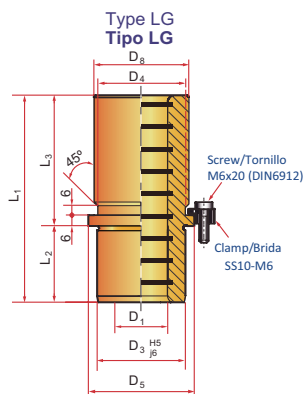
Tipo MD / Type MD							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	43	23	20
24-25	40	40	48	46	59	23	36
30-32	48	48	56	53	75	30	45
38-40	58	58	66	63	82	37	45
48-50	70	70	80	77	97	47	50
60-63	85	85	95	92	116	60	56
80	105	105	118	115	120	60	60



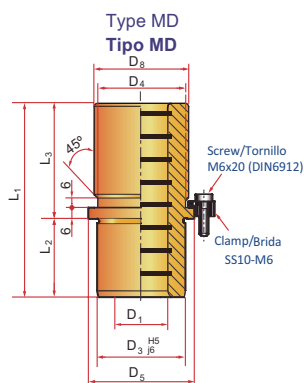
Tipo XS / Type XS						
D ₁	D ₃	D ₄	D ₅	L ₁	L ₂	L ₃
19-20	32	32	40	35	23	12
24-25	40	40	48	35	23	12
30-32	48	48	56	42	30	12
38-40	58	58	66	52	37	15
48-50	70	70	80	65	47	18
60-63	85	85	95	80	60	20
80	105	105	118	80	60	20

Bronze guide bush with graphite rings
Casquillo guía bronce con anillos de grafito

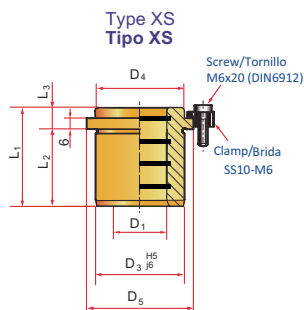
Mat. SAE430B+GR
Hardness $\geq 180\text{Hb}$
Dureza $\geq 180\text{Hb}$



Tipo LG / Type LG							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	59	23	36
24-25	40	40	48	46	79	23	56
30-32	48	48	56	53	93	30	63
38-40	58	58	66	63	108	37	71
48-50	70	70	80	77	127	47	80
60-63	85	85	95	92	150	60	90
80	105	105	118	115	150	60	90



Tipo MD / Type MD							
D ₁	D ₃	D ₄	D ₅	D ₈	L ₁	L ₂	L ₃
19-20	32	32	40	39	43	23	20
24-25	40	40	48	46	59	23	36
30-32	48	48	56	53	75	30	45
38-40	58	58	66	63	82	37	45
48-50	70	70	80	77	97	47	50
60-63	85	85	95	92	116	60	56
80	105	105	118	115	120	60	60



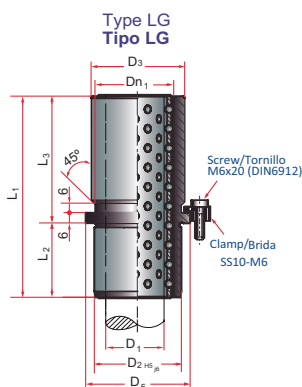
Tipo XS / Type XS						
D ₁	D ₃	D ₄	D ₅	L ₁	L ₂	L ₃
19-20	32	32	40	35	23	12
24-25	40	40	48	35	23	12
30-32	48	48	56	42	30	12
38-40	58	58	66	52	37	15
48-50	70	70	80	65	47	18
60-63	85	85	95	80	60	20
80	105	105	118	80	60	20

How to order: SB540/D1-L1 / Example: SB540/25-35
Forma de pedido: SB540/D1-L1 / Ejemplo: SB540/25-35

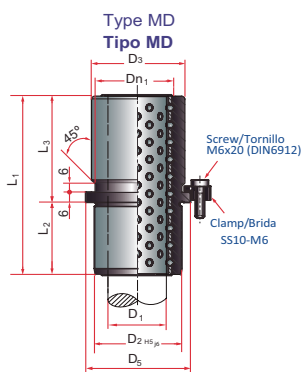
Mounting system for SB540 available on page 34
Sistema de montaje para SB540 disponible en página 34

Steel guide bush ball cage
Casquillo guía acero jaula bolas

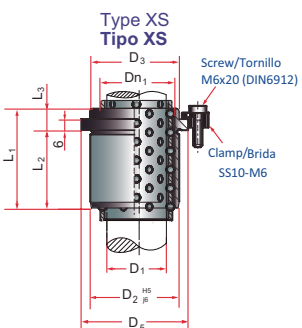
Mat. 16Mn Cr5 Cemented/ Hardness: 60±2 HRC
Mat. 16Mn Cr5 Cementado / Dureza: 60±2 HRC



Tipo LG / Type LG							
D ₁	Dn ₁	D ₂	D ₃	D ₅	L ₁	L ₂	L ₃
19-20	25-26	32	39	40	59	23	36
24-25	30-31	40	46	48	79	23	56
30-32	38-40	48	53	56	93	30	63
38-40	46-48	58	63	66	108	37	71
48-50	56-58	70	77	80	127	47	80
60-63	68-71	85	92	95	150	60	90
80	92	105	115	118	150	60	90



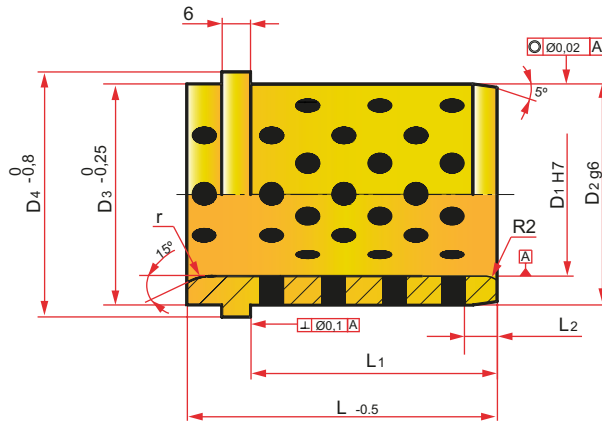
Tipo MD / Type MD							
D ₁	Dn ₁	D ₂	D ₃	D ₅	L ₁	L ₂	L ₃
19-20	25-26	32	39	40	43	23	20
24-25	30-31	40	46	48	59	23	36
30-32	38-40	48	53	56	75	30	45
38-40	46-48	58	63	66	82	37	45
48-50	56-58	70	77	80	97	47	50
60-63	68-71	85	92	95	116	60	56
80	92	105	115	118	120	60	60



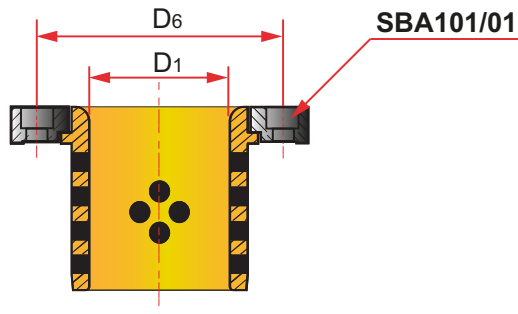
Tipo XS / Type XS							
D ₁	Dn ₁	D ₂	D ₃	D ₅	L ₁	L ₂	L ₃
19-20	25-26	32	39	40	35	23	12
24-25	30-31	40	46	48	35	23	12
30-32	38-40	48	53	56	42	30	12
38-40	46-48	58	63	66	52	37	15
48-50	56-58	70	77	80	65	47	18
60-63	68-71	85	92	95	80	60	20
80	92	105	115	118	80	60	20

Bronze guide bush with graphite inserts
Casquillo guía bronce con insertos de grafito

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



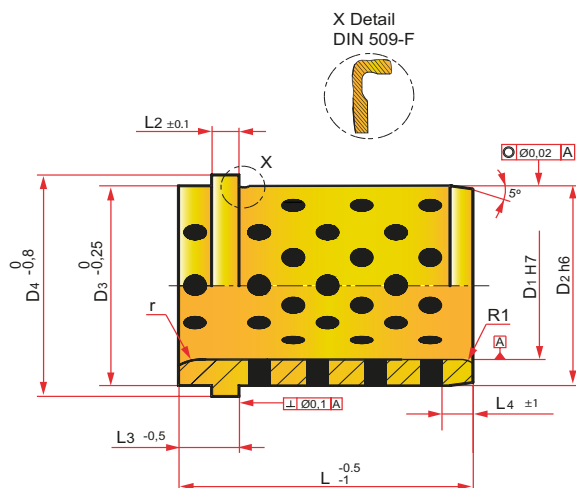
D_1	D_2	D_3	D_4	D_6	L	L_1	L_2	r
25	32		40	75	40	30	4	3
32	40		50	83	50	40		
40	50		63	93	63	50		
50	63		71	106	71	56	6	5
63	80		90	123	80	63	8	6
80	100		112	143	100	80	10	8
100	125		140	168	125	106	12	10
125	160		180	203	160	132		12



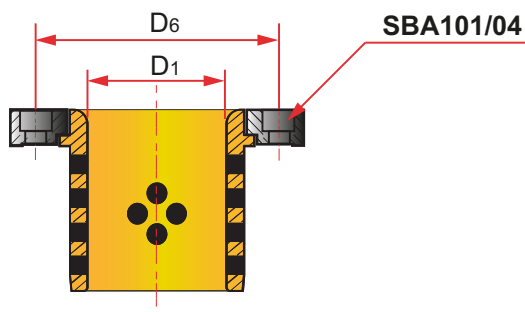
How to order: SB211/01 D1 x L / Example: SB211/01 63x80
Forma de pedido: SB211/01 D1 x L / Ejemplo: SB211/01 63x80

Bronze guide bush with graphite inserts DIN9834
Casquillo guía bronce con insertos de grafito DIN9834

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



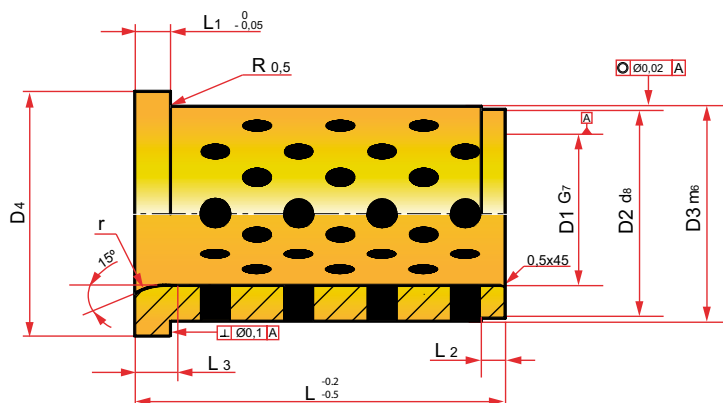
D_1	D_2	D_3	D_4	D_6	L	L_2	L_3	L_4	r
25	32	40	58	40	6,3	10	10	3	3
32	40	50	66	50			12	4	
40	50	63	79	63			15	5	
50	63	71	89	71			17	6,3	5
63	80	90	123	80	10	19	8	6	6
80	100	112	143	100			10	8	
100	125	140	168	125			12,5	10	
125	160	180	203	160			16	12	
160	200	220	243	200			18	18	



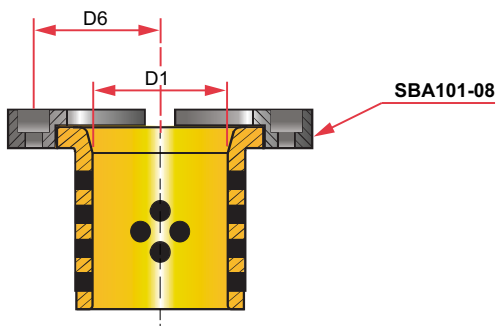
How to order: SB211/02 D1 x L / Example: SB211/02 63x80
Forma de pedido: SB211/02 D1 x L / Ejemplo: SB211/02 63x80

Bronze guide bush with graphite inserts CNOMO
Casquillo guía bronce con insertos de grafito CNOMO

Mat. SAE430B+GR
Hardness > 180HB
Durezza > 180HB



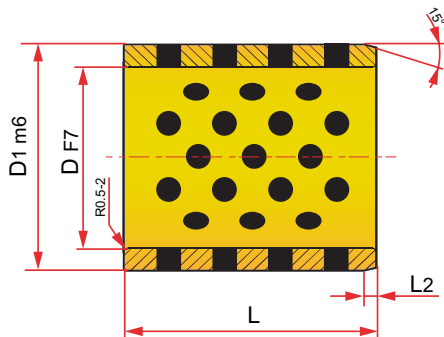
D_1	$D_2 \quad D_3$	D_4	D_6	L	L_1	L_2	L_3	r	
20	28	32	16	32	4	3	-	2	
25	35	40	20	40	5	5		8	3
32	44	50	25	50	6				
40	52	60	38,5	63	8	8	10		
50	63	71	46	80	10				
63	80	90	55	100	12	10			
80	100	112	70	125	16				
100	125	140	81	160	20				



How to order: SB211/D1 x L / Example: SB211/06 50x80
Forma de pedido: SB211/06 D1 x L / Ejemplo: SB211/06 50x80

Bronze guide bush with graphite inserts
Casquillo guía bronce con insertos de grafito

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

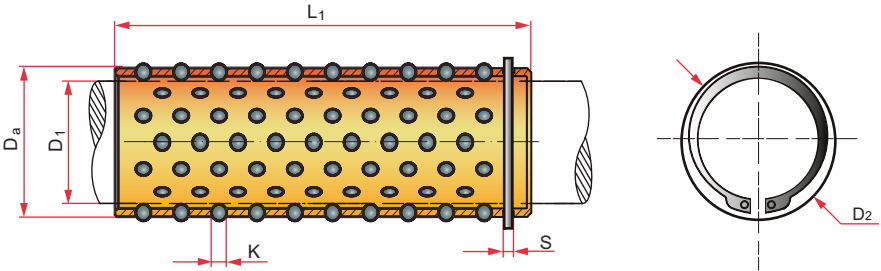


D	D ₁	L																L ₂
		8	10	12	15	16	20	25	30	35	40	50	60	70	80	100	120	
8	12	•	•	•	•													2
10	14		•	•	•		•											
12	18		•	•		•	•	•	•									
16	22					•	•	•	•	•	•							
18	24						•	•	•	•	•							
20	28						•	•	•	•	•							
20	30					•	•	•	•	•	•							
25	33						•	•	•	•	•	•						
25	35						•	•	•	•	•	•						
30	38							•	•	•	•	•	•					
30	40						•		•	•	•	•	•					
35	44										•	•						
35	45								•	•	•	•	•					
40	50							•	•	•	•	•	•					
40	55											•	•					
50	60											•	•	•				
50	62												•	•				
50	65											•		•				
60	75											•	•		•			
70	85												•	•	•	•		
80	96												•			•		
80	100												•			•	•	
100	120																•	
110	130														•		•	
130	150															•		4

How to order: SB212/01 Dx D1 x L / Example: SB212/01 30x38x40
Forma de pedido: SB212/01 Dx D1 x L / Ejemplo: SB212/01 30x38x40

Ball cage with circlip DIN 471
Jaula de bolas con anillo DIN 471

Mat. BRONZE / Mat. BRONCE



D ₁	L ₁	D _a	D ₂	S	K
19	45	24	33,2	1,2	3
	56				
	71				
	80				
	95				
20	45	25	34,2	1,2	3
	56				
	71				
	80				
24	95	29	39,1	1,5	4
	45				
	56				
	71				
	80				
	95				
25	120	30	40,5	1,5	4
	45				
	56				
	71				
	80				
	95				
30	120	37	49	1,8	4
	140				
	160				
	45				
	56				
	71				
	80				
	95				
	105				

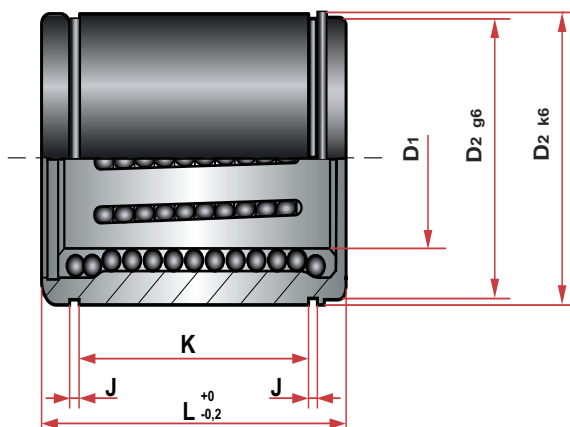
How to order: SG100/D1-L1 /
Example: SG100/32-95
Forma de pedido: SG100/D1-L1 /
Ejemplo: SG100/32-95

D ₁	L ₁	D _a	D ₂	S	K
32	45	39	51,4	1,8	4
	56				
	71				
	80				
	95				
	105				
	120				
	140				
38	160	45	59,1	1,8	4
	56				
	71				
	80				
	95				
	105				
	120				
	140				
40	160	47	60,8	1,8	4
	56				
	71				
	80				
	95				
	105				
	120				
	140				
48	160	55	70,2	2	4
	80				
	95				
	105				
	120				
	140				
	160				
	180				
	200				

D ₁	L ₁	D _a	D ₂	S	K
50	80	57	72,6	2	4
	95				
	105				
	120				
	140				
	160				
60	180	67	83,1	2,5	4
	200				
	95				
	105				
	120				
	140				
63	160	70	87	2,5	4
	180				
	200				
	95				
	105				
	120				
80	140	90	108	3	6
	160				
	180				
	200				
	240				

Straight lineal ball bearings
Casquillo liso lineal de bolas

Mat.1.3505/ DIN 100 Cr6- 60-62Hrc



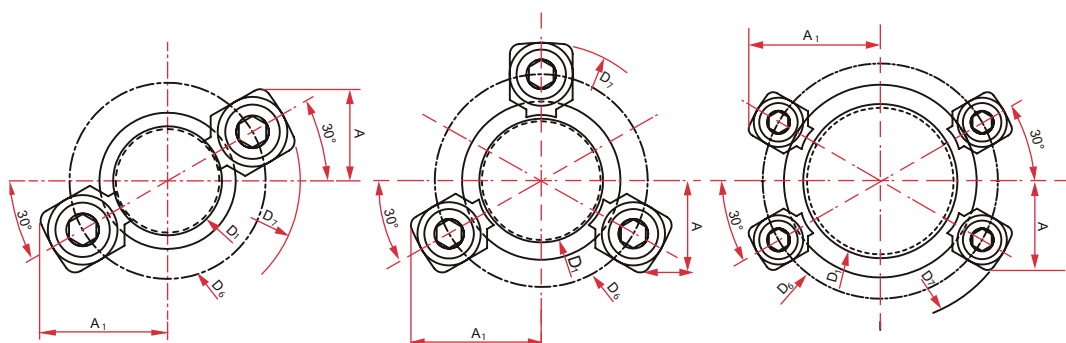
D_1	L	D_2	K	J	REF.
12	30	24	20	1,3	SG200-1230
16	30	28	24	1,6	SG200-1630
	35				SG200-1635
20	35	32	24	1,6	SG200-2035
	45				SG200-2045
25	35	40	23	1,8	SG200-2535
	45				SG200-2545
	55				SG200-2555
32	45	50	33	2,1	SG200-3245
	63				SG200-3263
40	45	60	33	2,1	SG200-4045
	63				SG200-4063

How to order: SG200/D1-L / Example: SG200/1630
Forma de pedido: SG200/D1-L / Ejemplo: SG200/1630

SB500/510/540/550

Mounting system for guide bush SB 500/510/540/550

Sistemas de montaje para casquillo guía SB500/510/540/550



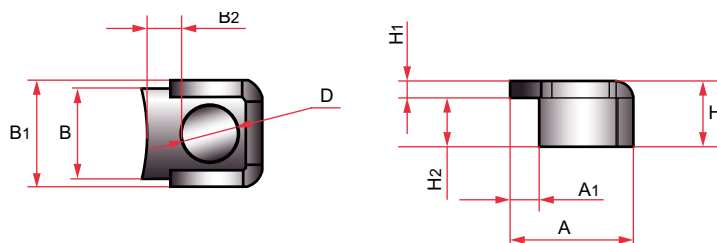
Ø D1 19-20 mm = 2 screw clamp
 Ø D1 24-32 mm = 3 screw clamp
 Ø D1 from 38 mm = 4 screw clamp

Ø D1 19-20 mm = 2 bridas
 Ø D1 24-32 mm = 3 bridas
 Ø D1 a partir de 38 mm = 4 bridas

D_1	D_6	D_7	A	A_1
19-20	52	64,7	20,7	30
24-25	60	72,7	22,7	33,4
30-32	67	79,7	24,4	36,4
38-40	77	89,7	35,3	35,3
48-50	91	103,7	40,2	40,2
60-63	106	118,7	45,5	45,5
80	129	141,7	54,5	54,5

SS10

Clamp for Guide bush
Bridas de fijación



A	A ₁	B	B ₁	B ₂	D	H	H ₁	H ₂	REF.
14,8	3,5	11	13	4,2	7	8	2	5,8	SS10-M6

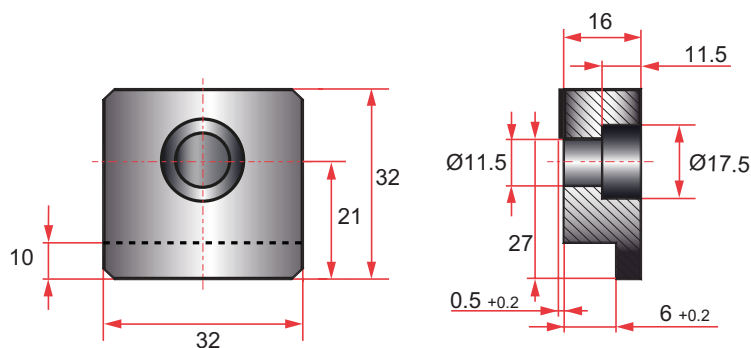
How to order: BRSS10
Forma de pedido: BRSS10

BR101/01

GSB A101-01

Clamp for Guide bush
Bridas de fijación

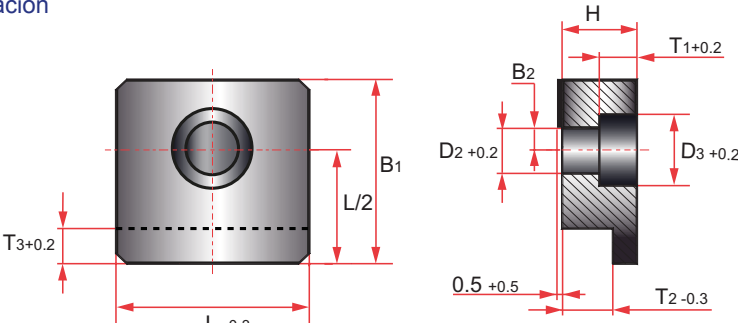
Mat: 1.1191



How to order: BR101/01
Forma de pedido: BR101/01

Clamp for guide bush
Bridas de fijación

Mat: 1.1191



BUSHES SIZE	B ₁	B ₂	D ₂	D ₃	H	L	T ₁	T ₂	T ₃
Ø25 - 50	20	7,5	7	11	10	20	7	6,3	5
Ø63 - 160	32	11	11,5	17,5	16	32	11,5	10	10

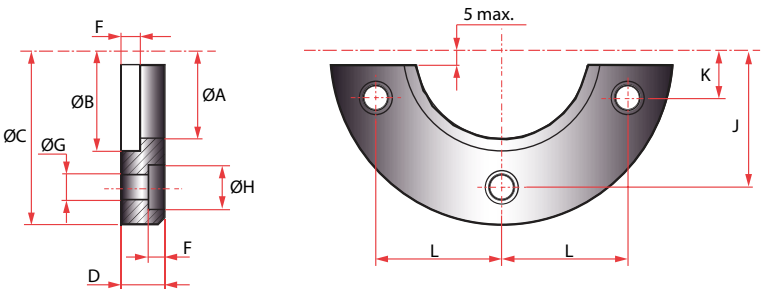
How to order: BR101/04-B1-L
Forma de pedido: BR101/04-B1-L

BR101/08

GSB A101-08

Retainer flange for guide bush to engage CNOMO
Brida de retención casquillo CNOMO

Mat: 1.1191



A	B	C	D	E	F	G	H	J	K	L	Bushes size
32	41	72	10	5	7	6,6	12	-	20	20	25
40	51	80	12	6					21	25	32
50	61	100		8					41	14	40
63	72	125	16	10	9	9	16	49	17	46	50
80	91	140	20	12	11	11	18	57,5		55	63
100	113	180	25	16	13	14	22	72		70	80
125	141	200	32	20				85	25	81	100

How to order: BR101/08-A
Forma de pedido: BR101/08-A

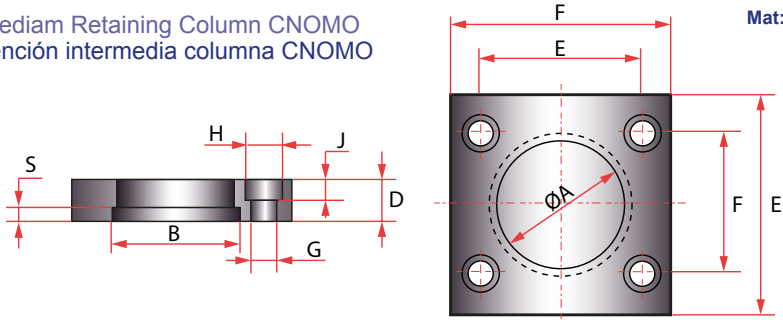
BR101/03

GSB A101-03



Flange for Medium Retaining Column CNOMO
Brida de retención intermedia columna CNOMO

Mat: 1.1191



A	B	D	E	F	G	H	J	S
25	28	10	45	31	7	11	7	2,7
32	37	10	56	36	7	11	7	4,2
40	45	12	70	50	7	11	7	4,2
50	55	14	80	55	9	16	9	4,2
63	70	18	100	70	11	18	11	6,2
80	87	20	110	80	14	22	14	6,2
100	107	20	140	100	14	22	14	6,2

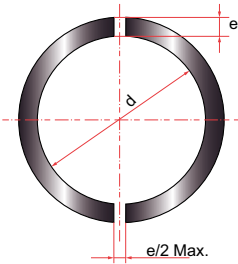
How to order: BR101-03-A
Forma de pedido: BR101-03-A

BR102/01

GSB A102-01

Guide Post Retainer Ring CNOMO
Anillo de retención columnas CNOMO

Mat: 1.1191

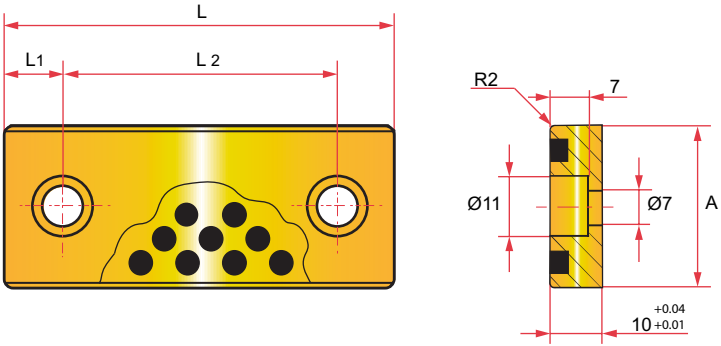


GUIDE/COL. Ø	d	e
25	22,5	2,5
32	28	4
40	36	
50	46	
63	57	6
80	74	
100	94	

How to order: BR102/01-Ø GUIDE
Forma de pedido: BR102/01-Ø COL.

Wear plates, self-lubricating
Regletas autolubricantes.

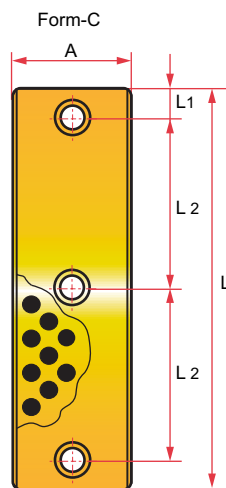
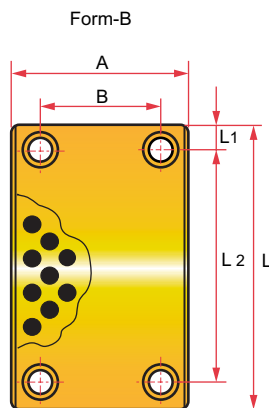
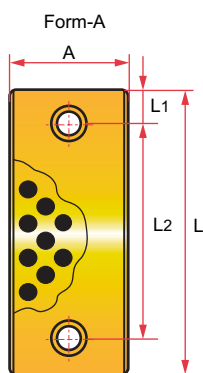
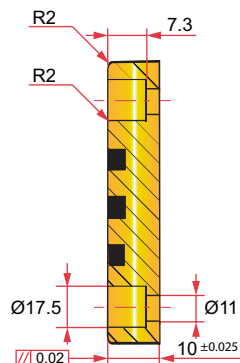
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



A	L	L ₁	L ₂
18	75	15	45
	100	25	50
	125		75
	150		100
28	75	15	45
	100	25	50
	125		75
	150		100
38	75	15	45
	100	25	50
	125		75
	150		100
48	75	15	45
	100	25	50
	125		75
	150		100

Wear plates, self-lubricating
Regletas autolubricantes.

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

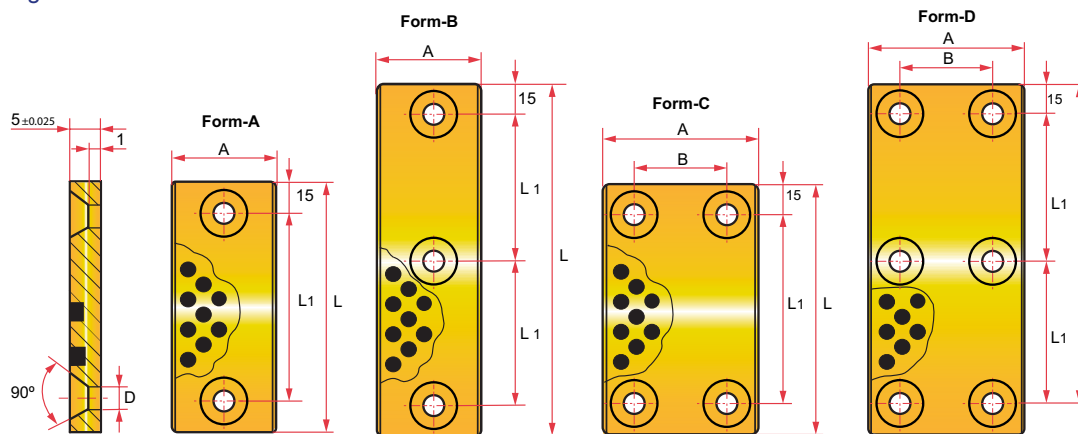


Form	A	B	L	L ₁	L ₂
A	28	—	75	15	45
		—	100	25	50
		—	125	—	75
		—	150	—	100
	38	—	75	15	45
		—	100	25	50
		—	125	—	75
		—	150	—	100
	48	—	75	15	45
		—	100	25	50
		—	125	—	75
		—	150	—	100
	58	—	75	15	45
		—	100	25	50
		—	125	—	75

Form	A	B	L	L ₁	L ₂
A	58	—	150	25	100
		—	200	50	—
	75	—	75	15	45
		—	100	25	50
		—	125	—	75
		—	150	—	100
C	—	—	200	—	75
B	100	50	100	—	50
			125	—	75
			150	—	100
			200	—	150
			250	—	200
	125	50	150	—	100
			200	—	150
			250	—	200
		100	150	—	100
			200	—	150

Wear plates, self-lubricating
Regletas autolubricantes.

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

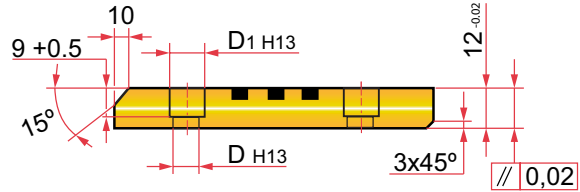
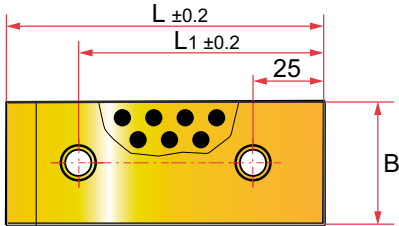


Form	A	B	L	L ₁	D
A	18	—	50	20	6,5
A			75	45	
A			100	70	
B			150	60	
A	28		50	20	9
A			75	45	
A			100	70	
B			150	60	
A	38		50	20	
A			75	45	
A			100	70	
B			150	60	
A	48		75	45	
A			100	70	
A			125	95	
B			150	60	
C	75	45	75	45	
C			100	70	
C			125	95	
D			150	60	
C	100	70	100	70	
C			125	95	
D			150	60	

How to order: SW605/01-A-L / Example: SW605/01-038-075
Forma de pedido: SW605/01-A-L / Ejemplo: SW605/01-038-075

Wear plates, self-lubricating VDI3357
Regletas autolubricantes VDI3357

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

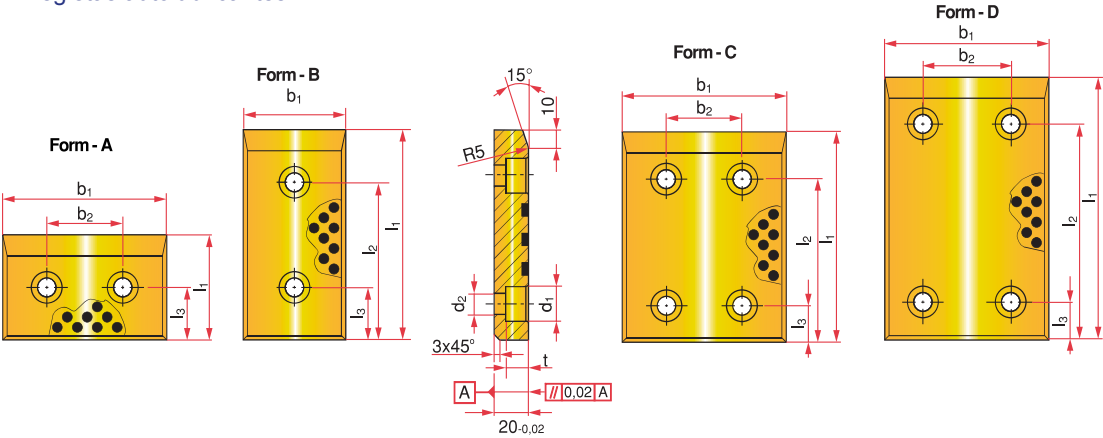


<i>B</i>	<i>D</i> ₁	<i>D</i>	<i>L</i>	<i>L</i> ₁
30	15	9	80	55
			100	75
			125	100
			160	135
			200	175
40			80	55
			100	75
			125	100
			160	135
			200	175
50			80	55
			100	75
			125	100
			160	135
			200	175
60			80	55
			100	75
			125	100
			160	135
			200	175
80			80	55
			100	75
			125	100
			160	135
			200	175

How to order: SB222/01-B-L / Example: SB222/01-050-080
Forma de pedido: SB222/01-B-L / Ejemplo: SB222/01-050-080

Wear plates, self-lubricating
Regletas autolubricantes.

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

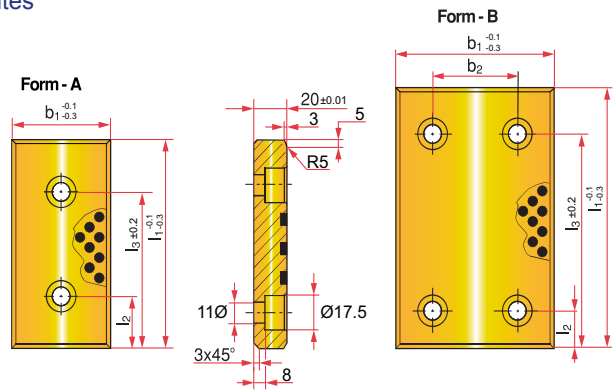


Form	b ₁	b ₂	d ₁	d ₂	l ₁	l ₂	l ₃	t
B	50	—	15	9	80	55	25	9
					100	75	13	13
					125	100		
					160	135		
					200	175		
A	80	50	15	9	50	—	13	9
B	—	20	13,5	80	55	—		13
					100	75		
					125	100		
					160	135		
					200	175		
A	100	50	—	20	50	—		25
					80	—		
					100	75		
					125	100		
					160	135		
B	—	—	—	—	100	75	25	40
					125	100		
					160	135		
					200	175		
					250	210		

Form	b ₁	b ₂	d ₁	d ₂	l ₁	l ₂	l ₃	t		
B	100	—	20	13,5	315	275	40	13		
A	125	75			50	—	25			
A					80	—	40			
C					100	75	25			
					125	100				
					160	135				
					200	175				
					250	210			40	
					315	275				
					A	160			110	50
A					80		—			40
C					100		75			25
					125		100			
	160	135								
	200	175								
	D	250	210	40						
315		275								
C		250	210							
	315	275								

Wear plates, self-lubricating
Regletas autolubricantes

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



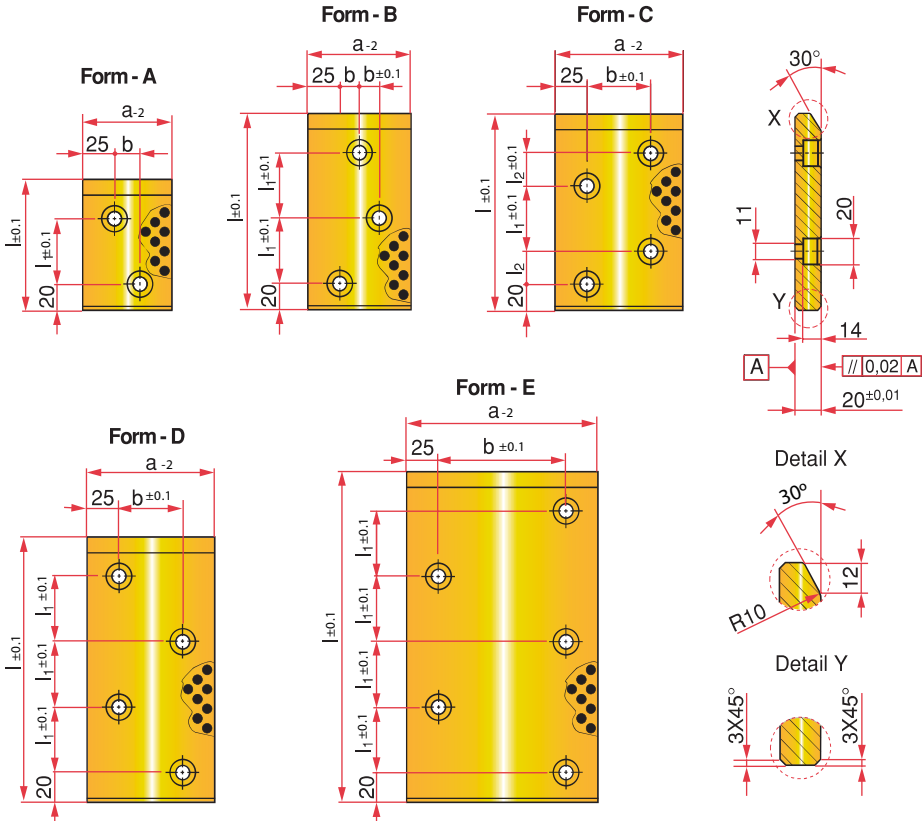
Form	b ₁	b ₂	l ₁	l ₂	l ₃
A	28	—	75	15	45
			100	25	50
			150		100
			75	15	45
			100	25	50
			150		100
	38		200		150
			75	15	45
			100	25	50
			125		75
			150		100
			200		150
	48		75	15	45
			100	25	50
			125		75
			150		100
			200		150
			75	15	45
	58		100	25	50
			150		100
			75	15	45
			100	25	50
	75		150		100
			75	15	45
			100	25	50
			125		75
			150		100
			200		150

Form	b ₁	b ₂	l ₁	l ₂	l ₃
B	100	50	100	25	50
			125		75
			150		100
			200		150
			250		200
			300		250
	125		350		300
			125		100
			150		150
			200		200
			250		250
			300		300
	150	100	350		100
			150		150
			200		200
			250		250
			300		300
			350		150
	200	150	200		200
			250		250
			300		300
			350		150
			200		200
			250		250

How to order: SW224/02-b1-l1 / Example: SW224/02-100-150
Forma de pedido: SW224/02-b1-l1 / Ejemplo: SW224/02-100-150

Wear plates, self-lubricating AFNOR ISO 9183-2
Regletas autolubricantes AFNOR ISO9183-2

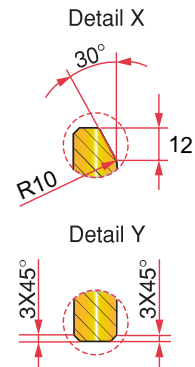
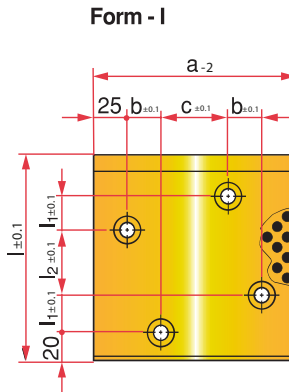
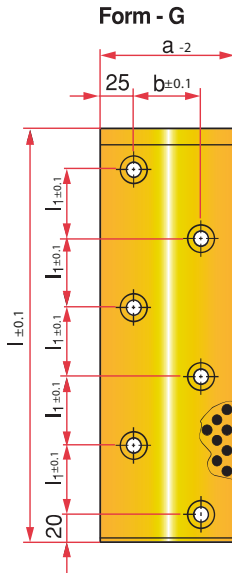
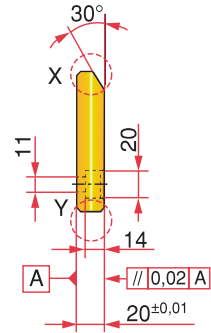
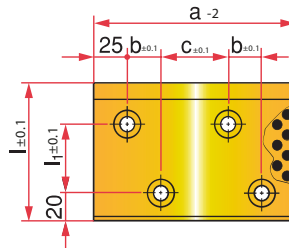
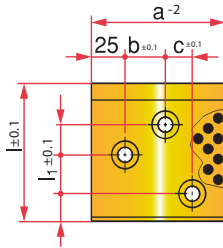
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



Form	a	b	l	l_1	l_2
A	70	20	100	50	-
B		10	150		
D		20	200		
C	100	50	150		25
D			200		-
E			250		
D	150	100	200		
E			250		

Wear plates, self-lubricating AFNOR ISO 9183-2
Regletas autolubricantes AFNOR ISO9183-2

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

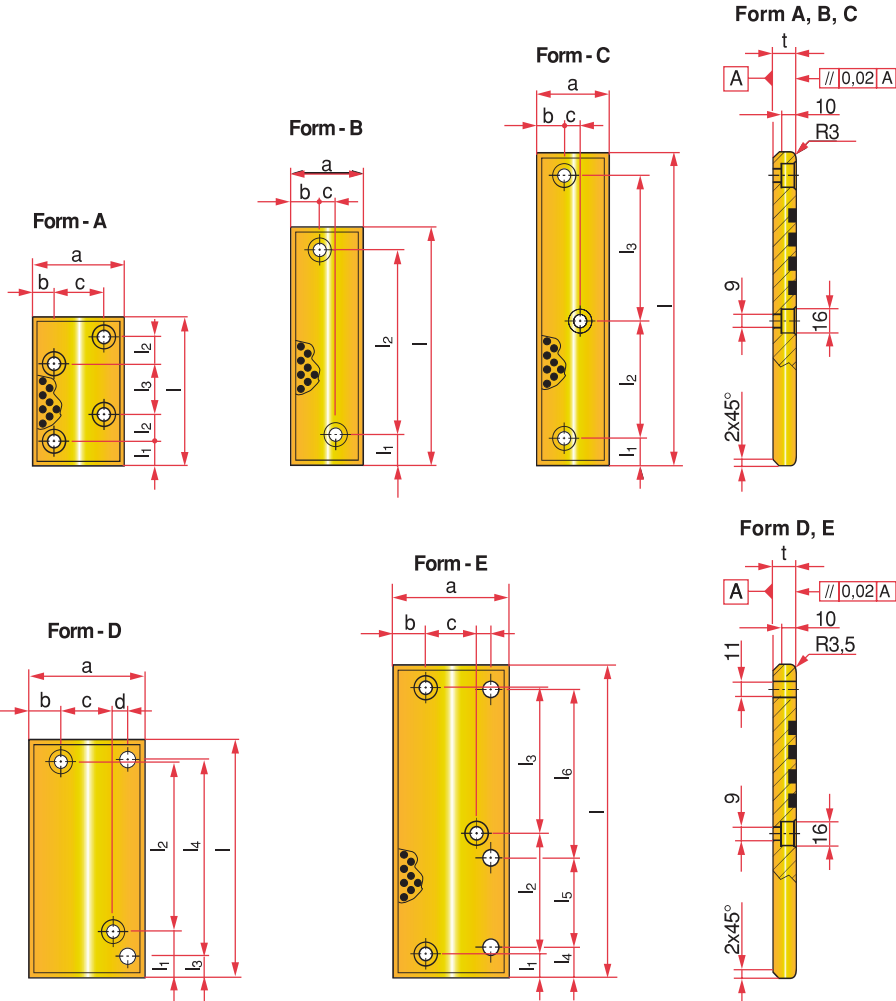


Form	a	b	c	l	l ₁	l ₂
F	100	30	20	100	25	25
G		50	—	300	50	—
H	150	25	50	100	25	50
I		100	—	300	50	—
G	200	50	50	100	25	50
H		50	50	100	50	—

How to order: SW224/08 a x l / Example: SW224/08-100-300
Forma de pedido: SW224/08 a x l / Ejemplo: SW224/08-100-300

Wear plates, self-lubricating CNOMO
Regletas autolubricantes CNOMO

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

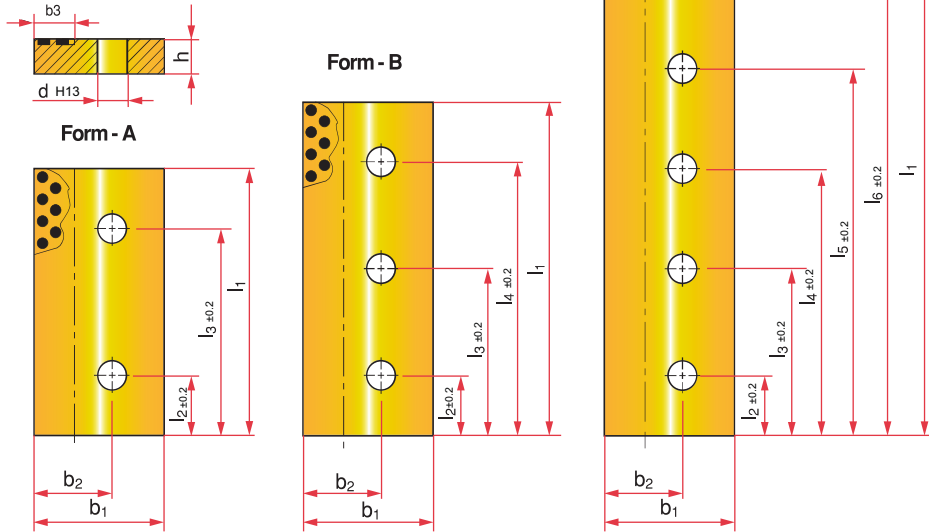


Form	a	b	c	d	l	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	t _{+0,05}	t _{+0,01}
B	50	15	20	—	63	12	39	—	—	—	—	32,5	16	—
B		19	12		160	21	126					45	—	16
C								250						
A	63	12	39	10	100	15	18	34	130	80	130	70	16	—
D	80	22	36		160	31	116	15				145	—	16
E					250	21	100	116	25			80	45	

How to order: SW224/09-a-l / Example: SW224/09-080-160
Forma de pedido: SW224/09-a-l / Ejemplo: SW224/09-080-160

Gib plates, self-lubricating
Regletas autolubricantes

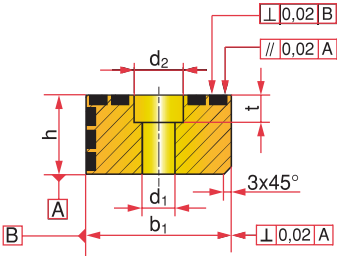
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



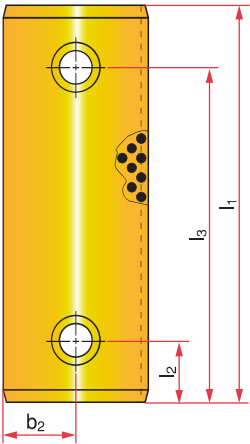
Form	b ₁	b ₂	b ₃	d	h	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆						
A	75	40	25	17,5	25	160	45	115	—	—	—						
A						200		155									
B						250		125	205								
A	100	60	30			22		30	160	45	115	—	275	355			
A									200		155						
B									250		125	205					
C									400		125	200	275	355			
A				125	75		30		22		30	160	45	115	—	275	355
A												200		155			
B												250		125	205		
C	400	125	200			275		355									
A	125	75	30			22		30		160		45		115	—	275	355
A										200				155			
B										250				125	205		
C				400	125		200		275	355							

Wear strip whit two slide surfaces VDI 3357
Regletas dos caras autolubrificantes VDI 3357

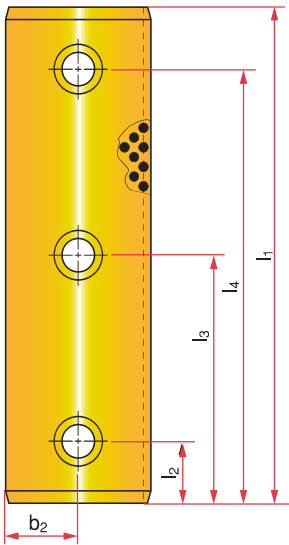
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



Form - A



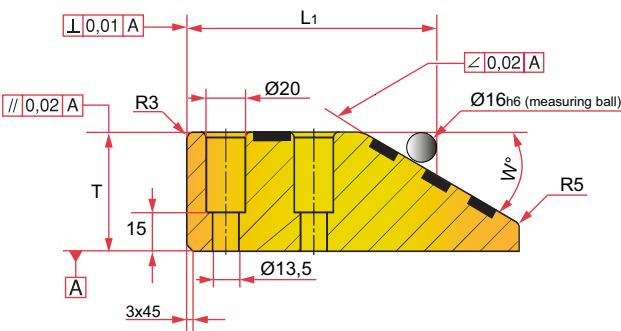
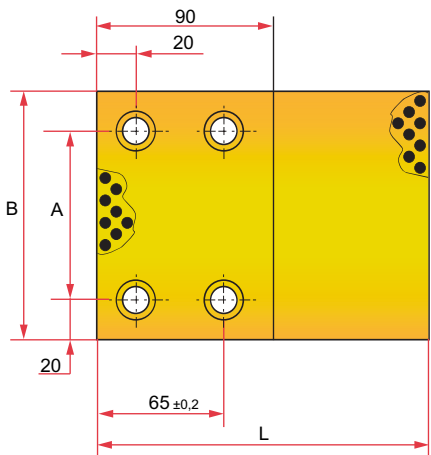
Form - B



Form	b_1	b_2	d_1	d_2	h	l_1	l_2	l_3	l_4	t
A	25	12,5	9	15	12	110	25	85	-	8,5
A						120		95		
A						110		85		
A						120		95		
A	60	30	11	18	15	125	25	100	-	10,5
A						160		135		
A						200		100		
A						125		135		
B			13,5	20	30	200		100	175	13
A						125		100	-	
A						160		135	-	
B						200		100	175	

Cam Dwell, self-lubricating VDI 3357
Cuña autolubricada, VDI 3357.

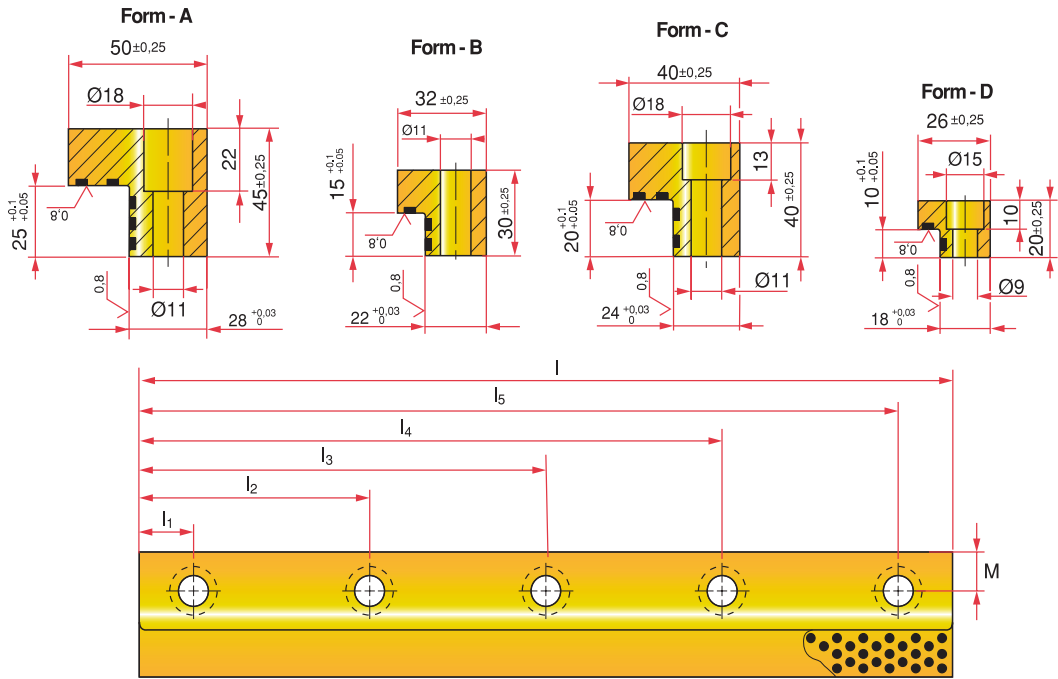
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



A	B	L	L ₁	T	W
60	100	170	143,37	45	20°
85	125				
110	150				
60	100	150	127,86	60	30°
		170			
85	125	150		45	
		170		60	
110	150	150		45	
		170		60	

“L” Shaped wear plates self-lubricating
Placas de desgaste “L” autolubricada

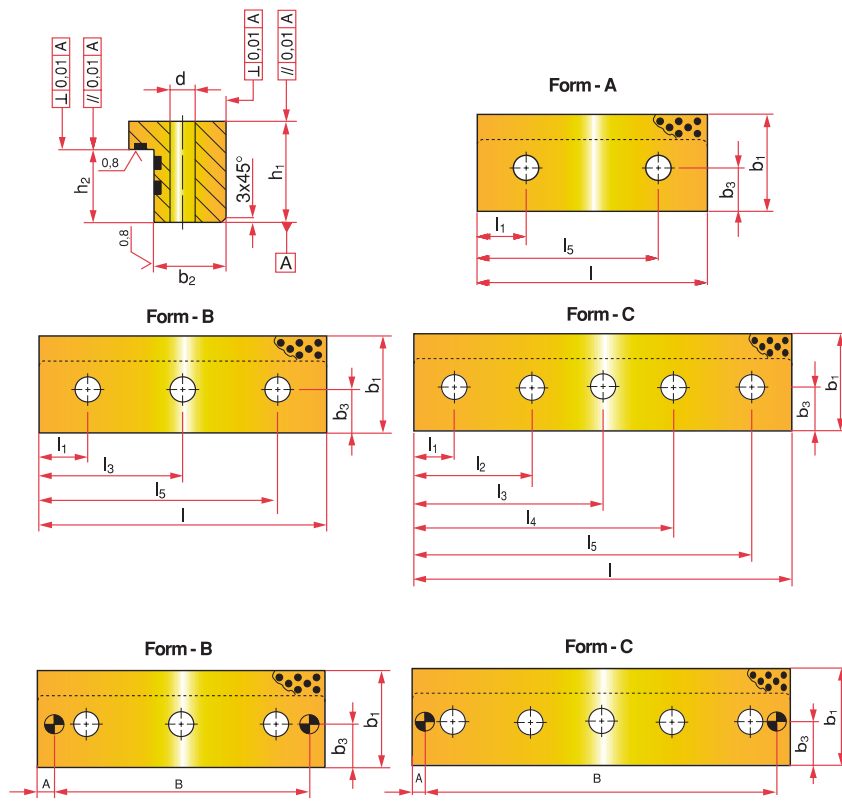
Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



Form	l	l_1	l_2	l_3	l_4	l_5	M	holes
D	100	20	80	—	—	—	9	2
	150		75	130	—			3
	200		—	125	180			4
B	100	20	80	—	—	—	11	2
	150		75	130	—			3
	200		—	125	180			4
	250		90	160	230			—
C	160	15	145	—	—	—	12	2
	250		—	225	—			3
A	200	20	75	125	180	—	14	4
	250		90	160	230			—
	300		85	150	215	280		5
	350		100	175	250	330		

"L" Shaped wear plates self-lubricating VDI 3357
Placas de desgaste "L" autolubricada VDI 3357.

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB



Dowel Holes Location on Request/ Taladros para pasadores a petición

D= With dowel holes/con taladros

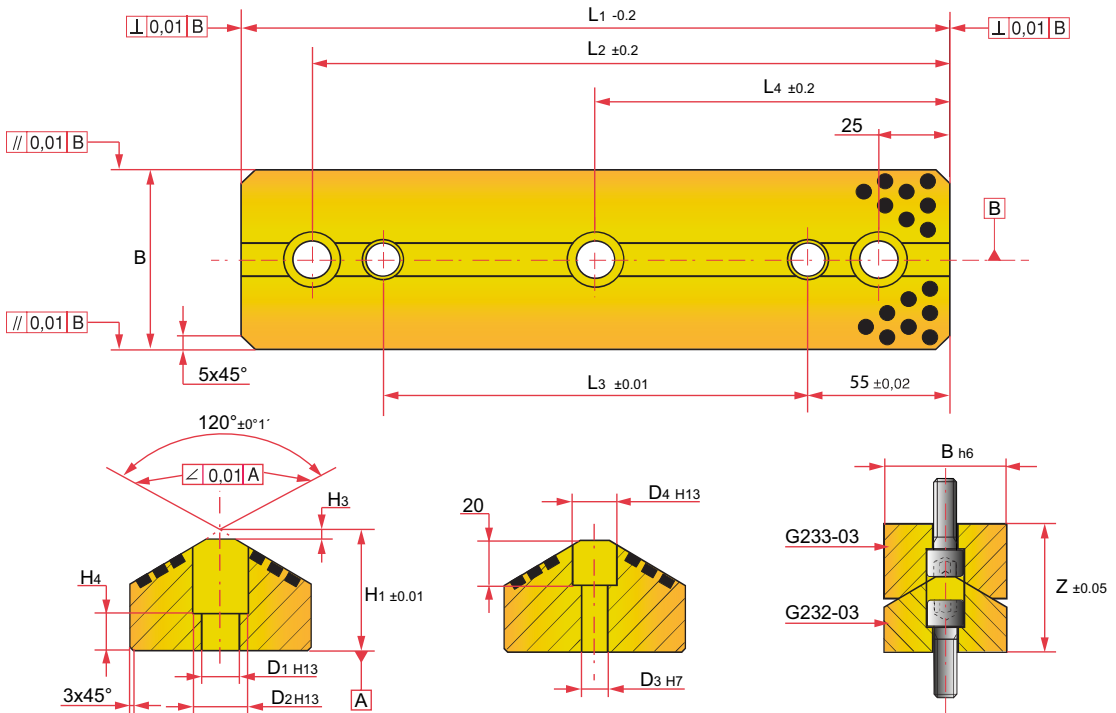
Blank= Without dowel holes/sin taladros

Form	b ₁	b ₂	b ₃	d	l	l ₁	l ₂	l ₃	l ₄	l ₅	h ₁	h ₂	A	B
A	55	37	20	13,5	100	27,5	-	-	-	72,5	55	39	10	80
					160					132,5				140
	70	50	30	17,5	200					125				135
					250					165				175
					400					215				225
B								125						375
C							125	200	275	365				375
A	85	63	38	22	160	42,5	-	-	-	117,5	90	65	15	130
					200					157,5				170
B					250					207,5				220
C					400					357,5				370

How to order: SW231/04 b1xI-D or blank/ Example: SW231/04-85-200-D
Forma de pedido: SW231/04 b1xI-D o blank / Ejemplo: SW231/ 04-85-200-D

"V" Driver, self-lubricating VDI 3357
Patín autolubricado "V", VDI 3357

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

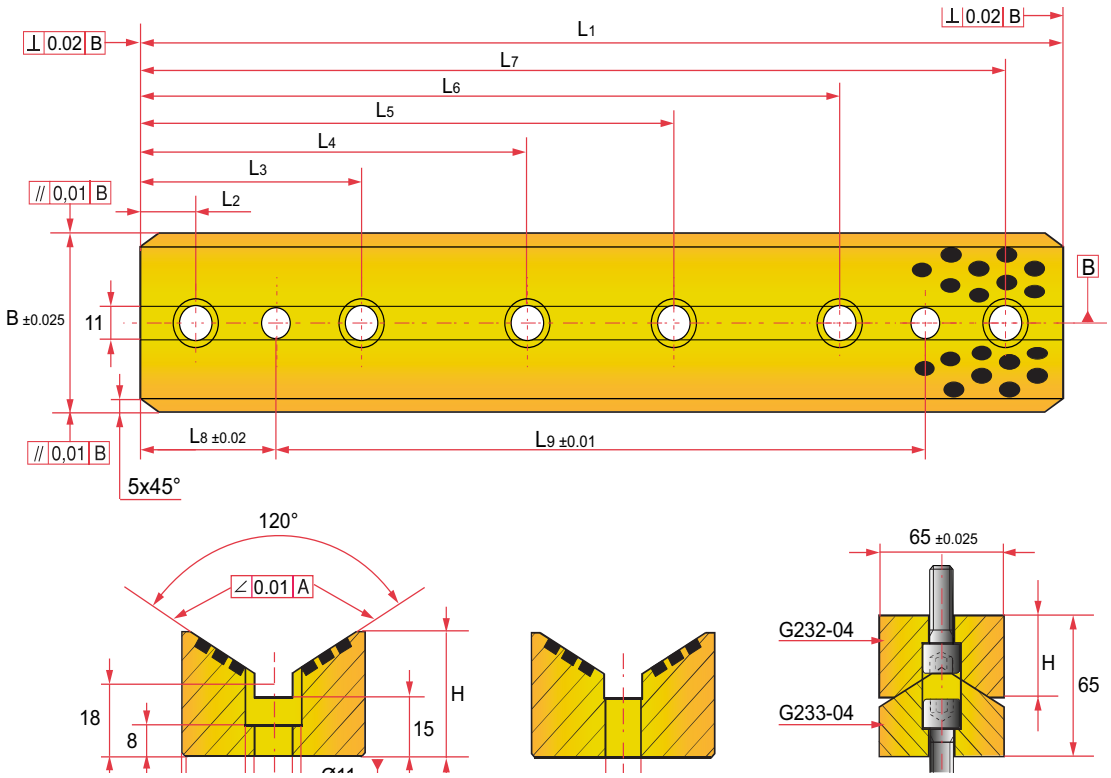


B	D ₁	D ₂	D ₃	D ₄	H ₁	H ₃	H ₄	L ₁	L ₂	L ₃	L ₄	Z
65	13,5	20	12	14	47	3	20	150	125	45	—	65
								200	175	95		
								250	225	145		
								300	275	195		
125	17,5	26	16	18	57	5	15	150	125	45	—	85
								200	175	95		
								250	225	145		
								300	275	195		

How to order: SW232/03 B x L₁ / Example: SW232/03 125X150
Forma de pedido: SW232/03 B x L₁ / Ejemplo: SW232/03 125X150

“V” Driver, self-lubricating
Patín autolubricado “V”

Mat. SAE430B+GR
Hardness > 180HB
Dureza > 180HB

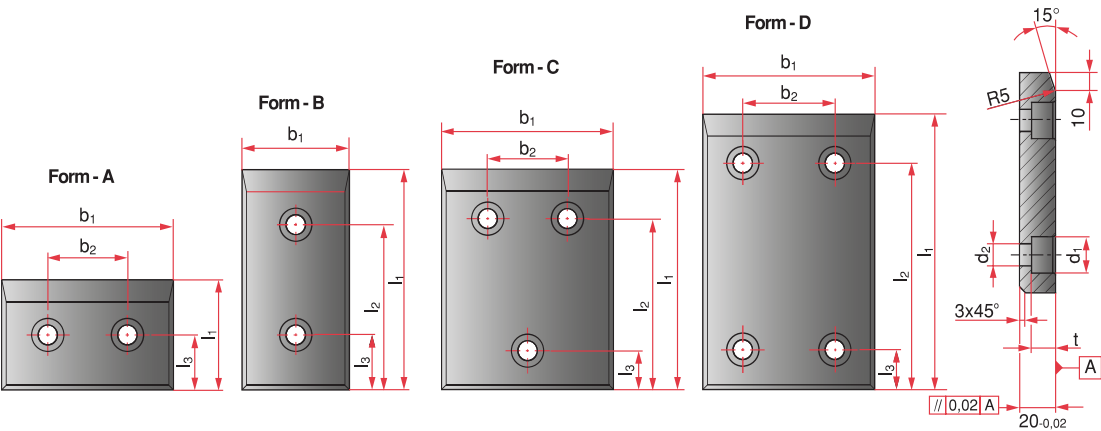


H	B	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉
35	65	100	20	80	—	—	—	—	40	20
		150	25	75	125	—	—	—	50	50
		200	—	—	—	175	—	—	—	100
		250				225	—	—		150
		300					—	275		200

How to order: SW232/04 H-B-L₁ / Example: SW232/04 3565250
Forma de pedido: SW232/04 H-B-L₁ / Ejemplo: SW232/04 3565250

Wear plates, steel VDI 3357
Regleta de acero, VDI 3357

Mat. 16MnCr5
60/64 HRC



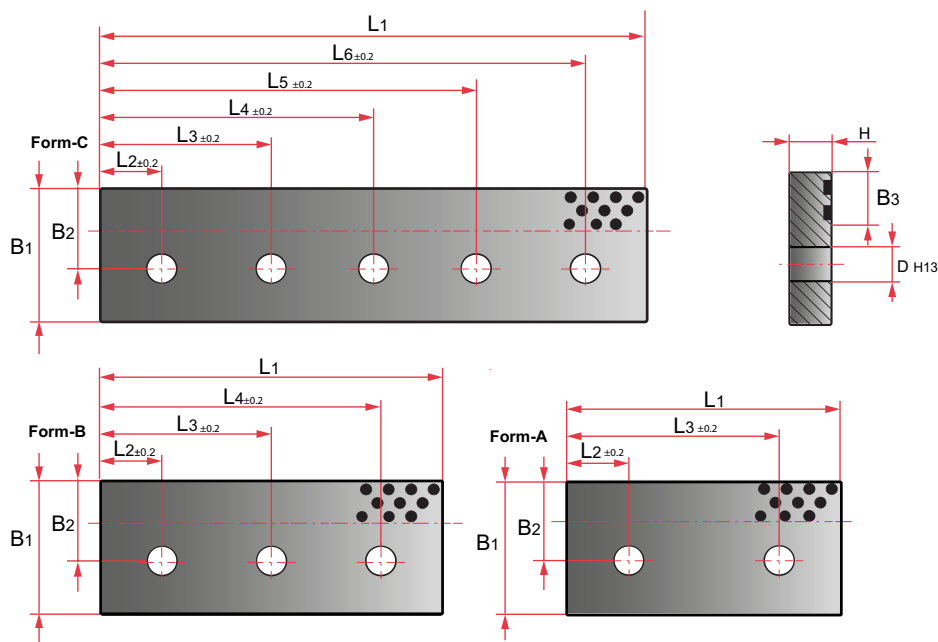
Form	b ₁	b ₂	d ₁	d ₂	l ₁	l ₂	l ₃	t	
B	50	—	15	9	80	55	25	9	
			20		13,5	100		75	13
			125		100				
			160		135				
			200		175				
A	80	50	15	9	50	—	25	9	
B		—	20	13,5	80	55		13	
					100	75			
					125	100			
					160	135			
					200	175			
					250	210		40	
						275			
A		100	50		50	—		25	
80				80	40				
B		—			100	75		25	
					125	100			
					160	135			
					200	175			
	250				210	40			
	315				275				

Form	b ₁	b ₂	d ₁	d ₂	l ₁	l ₂	l ₃	t
A	125	75	20	13,5	50	-	25	13
					80	-		
					100	75		
					125	100		
					160	135		
C	160	110	20	13,5	200	175	40	40
					250	210		
					315	275		
					50	-		
					80	-		
D	160	110	20	13,5	100	75	25	25
					125	100		
					160	135		
					200	175		
					250	210		
C	160	110	20	13,5	315	275	40	40
					50	-		
					80	-		
					100	75		
					125	100		

How to order: SW225/01-b1-l1 / Example: SW225/01-100-250
Forma de pedido: SW225/01-b1-l1 / Ejemplo: SW225/01-100-250

Wear plates , self-lubricating
Regleta de acero autolubricantes

Mat. 1.1191(CK45)+GR
Hardness > 58-62 HRC
Dureza > 58-62 HRC

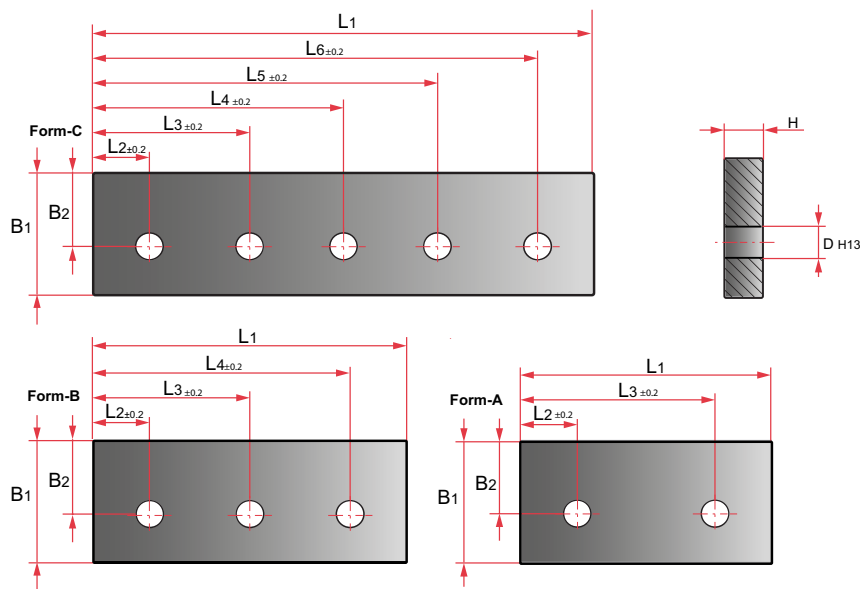


Form	B ₁	B ₂	D	H	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆
A	75	40	17,5	25	160	45	115	-	-	-
A	75	40	17,5	25	200	45	155	-	-	-
B	75	40	17,5	25	250	45	125	205	-	-
A	100	60	17,5	25	160	45	115	-	-	-
A	100	60	17,5	25	200	45	155	-	-	-
B	100	60	17,5	25	250	45	125	205	-	-
C	100	60	17,5	25	400	45	125	200	275	355
A	100	60	22	30	160	45	115	-	-	-
A	100	60	22	30	200	45	155	-	-	-
B	100	60	22	30	250	45	125	205	-	-
C	100	60	22	30	400	45	125	200	275	355
A	125	75	22	30	160	45	115	-	-	-
A	125	75	22	30	200	45	155	-	-	-
B	125	75	22	30	250	45	125	205	-	-
C	125	75	22	30	400	45	125	200	275	355

How to order: SW225/08-B1-L1-H / Example: SW225/08-100-250-25
Forma de pedido: SW225/08-B1-L1-H / Ejemplo: SW225/08-100-250-25

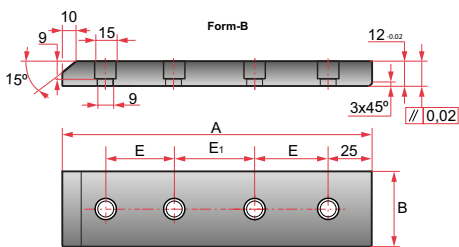
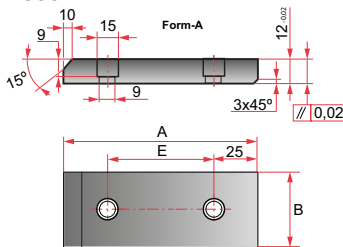
Wear plates
Regleta de acero

Mat. 1.1191(CK45)
Hardness > 58-62 HRC
Dureza > 58-62 HRC



Form	B ₁	B ₂	D	H	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆
A	75	40	17,5	25	160	45	115	-	-	-
A	75	40	17,5	25	200	45	155	-		-
B	75	40	17,5	25	250	45	125	205		-
A	100	60	17,5	25	160	45	115	-		-
A	100	60	17,5	25	200	45	155	-		-
B	100	60	17,5	25	250	45	125	205		-
C	100	60	17,5	25	400	45	125	200	275	355
A	100	60	22	30	160	45	115	-	-	-
A	100	60	22	30	200	45	155	-		-
B	100	60	22	30	250	45	125	205		-
C	100	60	22	30	400	45	125	200	275	355
A	125	75	22	30	160	45	115	-	-	-
A	125	75	22	30	200	45	155	-		-
B	125	75	22	30	250	45	125	205		-
C	125	75	22	30	400	45	125	200	275	355

Steel guide plate VDI3357
Regleta de acero VDI3357

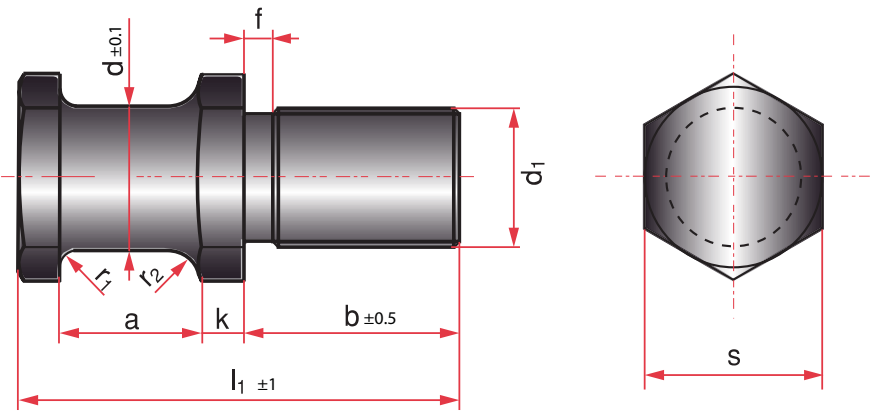


Form	B	A	E	E ₁	Num.Ø
A	30	80	30	-	2
A	30	100	50		
A	30	125	75		
A	30	160	110		
A	30	200	150		
A	40	80	30		
A	40	100	50		
A	40	125	75		
A	40	160	110		
A	40	200	150		
A	40	225	175		
B	40	240	60	70	4
B	40	250	60	80	
B	40	260	60	90	
B	40	280	60	110	
A	50	80	30	-	2
A	50	100	50		
A	50	125	75		
A	50	160	110		
A	50	180	130		
A	50	200	150		
A	50	225	175		
B	50	240	60	70	4
B	50	250	60	80	
B	50	260	60	90	
B	50	280	60	110	
A	60	80	30	-	2
A	60	100	50		
A	60	125	75		
A	60	160	110		

Form	B	A	E	E ₁	Num.Ø
A	60	200	150	-	2
A	60	225	175		
B	60	240	60	70	4
B	60	250	60	80	
B	60	260	60	90	
B	60	280	60	110	
B	60	300	80	90	
B	60	320	80	110	
B	60	340	80	130	
B	60	350	100	100	
A	80	80	30	-	2
A	80	100	50		
A	80	125	75		
A	80	160	110		
A	80	200	150		
A	80	225	175		
B	80	240	60	70	4
B	80	250	60	80	
B	80	260	60	90	
B	80	280	60	110	
B	80	300	80	90	
B	80	320	80	110	
B	80	340	80	130	
B	80	350	100	100	
B	100	250	60	80	
B	100	280	60	110	
B	100	300	80	90	
B	100	320	80	110	
B	100	340	80	130	
B	100	350	100	100	

Lifting pins VDI 3366
Pivote elevación VDI 3366

Mat. CK45
Hardness 700÷800 N/mm²

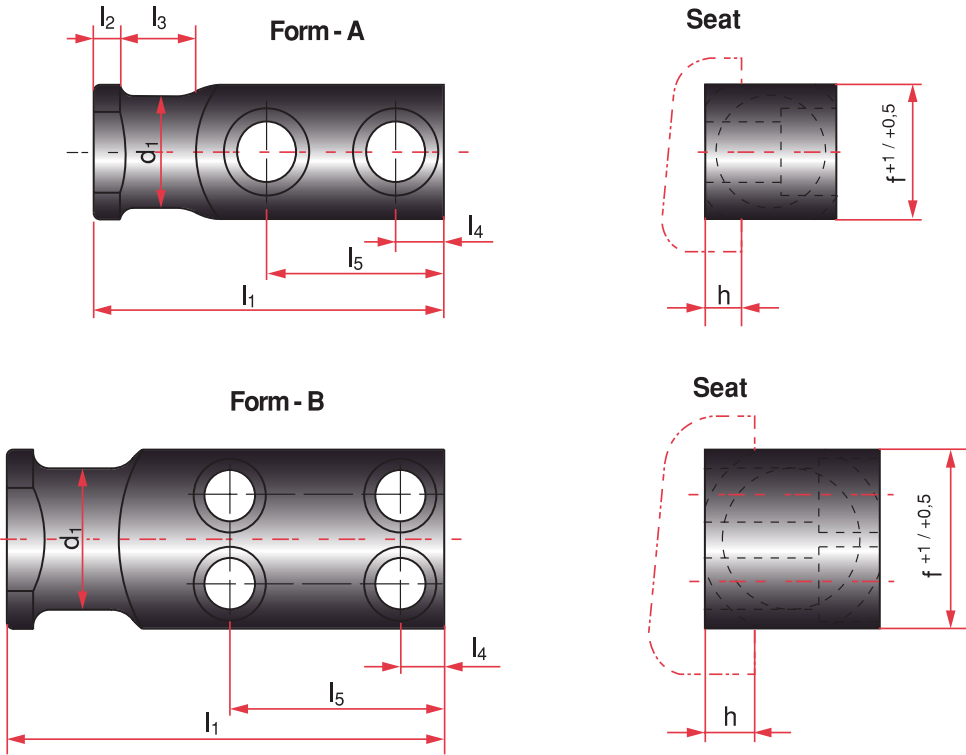


Max.	Max.Die	d	d ₁	a	b	f	k	l ₁	r ₁	r ₂	s
Load (KG)	Weigth (Kg)										
320	640	16	M16	20	28	3	5	58	5	8	24
500	1000	20	M20	22	34		6	68			30
1000	2000	25	M24	25	38	4	8	78	6	10	36
1500	3000	32	M30	32	45	5	10	95			41
2500	5000	40	M36	40	56		12	118	8	12	50

How to order: C101/02-d1 / Example: C101/02-M20
Forma de pedido: C101/02-d1 / Ejemplo: C101/02-M20

Lifting brackets VDI 3366
Pivote elevación VDI 3366

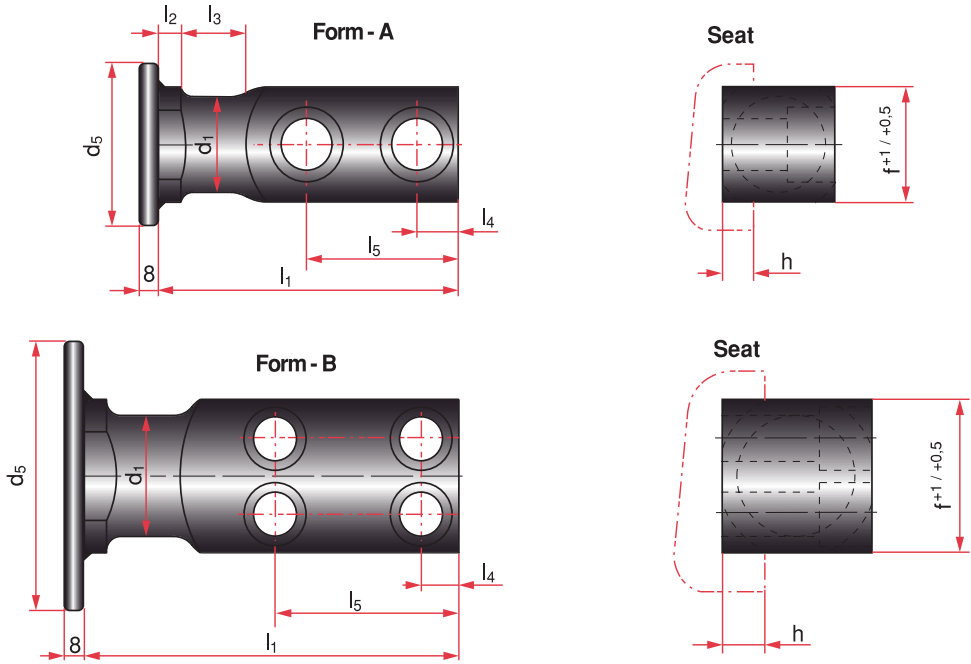
Mat. CK45
Hardness700+800 N/mm2



Max. Load (KG)	Max.Die Weigth (Kg)	Form	d_1	f	h	l_1	l_2	l_3	l_4	l_5	DIN 912
											Screw 8,8
320	640	A	16	20	6	80	6	20	10	44	M8x25
630	1260		20	25	8	90	8	25		47	M10x30
1250	2500		25	35	10	100		30	12	50	M12x40
2000	4000		32	40		120	10	32	16	62	M16x45
3200	6400		40	50	12	140		40	18	72	M20x60
5000	10000		50	60	14	160	12	45	22	81	M24x70
8000	16000	B	63	80	16	200		50	20	98	M20x90
12500	25000		80	100	18	250	15	65	25	125	M24x110
20000	40000		100	120	20	300		80	30	155	M30x130

Lifting brackets whith rope stop safety
Soportes de elevación con tope de seguridad

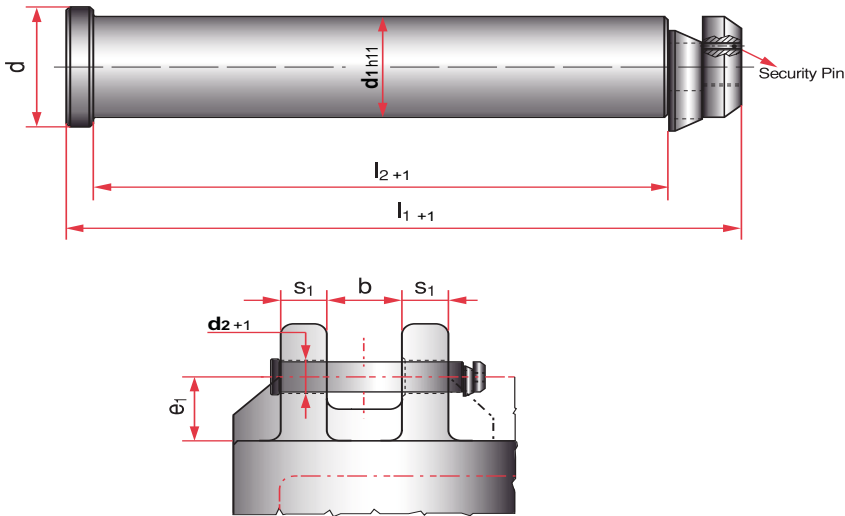
Mat. CK45
Hardness700+800 N/mm2



Max. Load (KG)	Max.Die Weigth (Kg)	Form	d1	d5	f	h	l1	l2	l3	l4	l5	DIN 912 Screw 8,8
320	640	A	16	60	20	6	80	6	20	10	44	M8x25
630	1260		20	70	25	8	90	8	25		47	M10x30
1250	2500		25		35	10	100		30	12	50	M12x40
2000	4000		32	110	40		120	10	32	16	62	M16x45
3200	6400		40		50	12	140		40	18	72	M20x60
5000	10000		50	150	60	14	160	12	45	22	81	M24x70
8000	16000	B	63		80	16	200		50	20	98	M20x90
12500	25000		80		100	18	250	15	65	25	125	M24x110
20000	40000		100		120	20	300		80	30	155	M30x130

Lifting pins VDI 3366
Bulón de retención VDI 3366

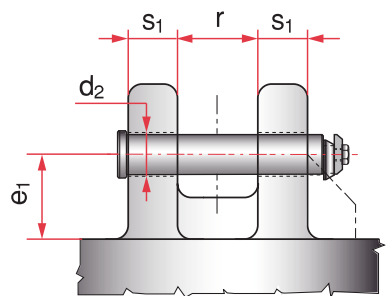
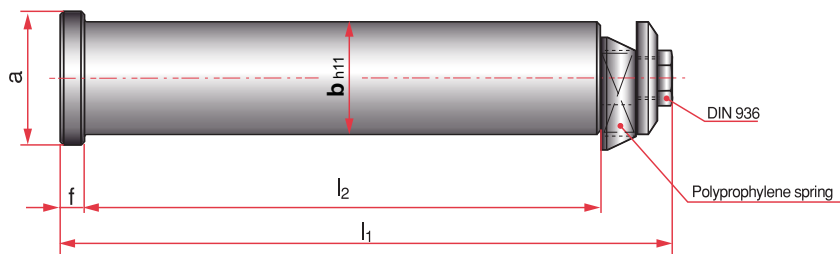
Mat. CK45



Max.	Max.Die	d	d₁	d₂	e₁	l₁	l₂	s₁	Mat.
Load (KG)	Weigth (Kg)								
3200	6400	40	32	34	63	175	145	40	CK45
5000	10000	50	40	42	80	225	188	50	
8000	16000	60	50	52	100	273	230	60	
12500	25000	75	63	65	125	347	295	80	
31500	63000	95	76	78	160	422	360	100	42CrMo4

Lifting pins FIAT
Bulón de retención FIAT

Mat. CK45

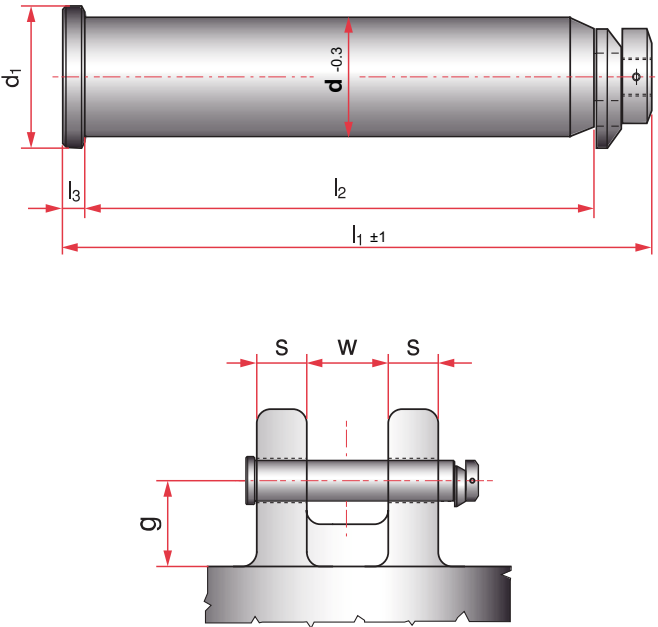


<i>Max.</i>	<i>Max.Die</i>	<i>a</i>	<i>b</i>	<i>d₂</i>	<i>e₁</i>	<i>f</i>	<i>l₁</i>	<i>l₂</i>	<i>r</i>	<i>s₁</i>
<i>Load (KG)</i>	<i>Weigth (Kg)</i>									
2000	4000	38	29	30	60	6	178,5	150	60	40
3200	6400	43	33	35	65	8	200,5	170	80	50
5000	10000	53	43	45	85		233,0	195		60
8000	16000	65	53	55	105	10	282,0	235	100	
					75		227,0	180	65	50
12000	24000	78	63	65	100	12	272,5	215	120	80
13000	26000				130		352,5	295	80	60
30000	60000	95	78	81	150	14	421,5	355	140	100

How to order: C103/02-b-l2 / Example: C103/02-029-150
Forma de pedido: C103/02-b-l2 / Ejemplo: C103/02-029-150

Lifting pins FORD
Bulón de retención FORD

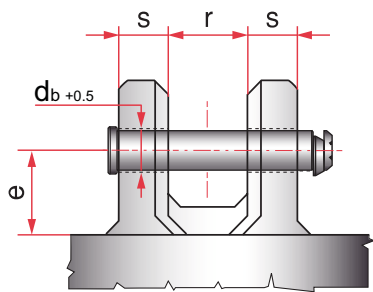
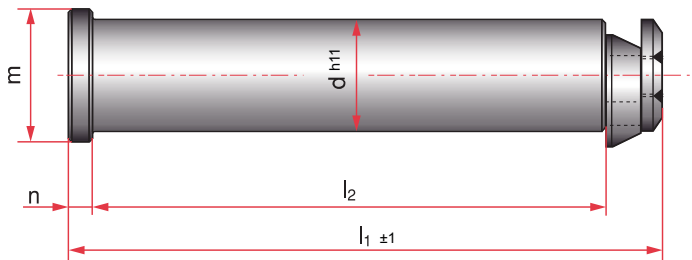
Mat. 42CrMo4



Max.	Max.Die	d	d ₁	g min.	l ₁	l ₂	l ₃	s	w
Load (KG)	Weigth (Kg)								
1500	3000	35	45	60	165	125	10	30	50
5000	10000	50	63	65	230	190		50	70
20000	40000	63	76	70	320	280		80	100
30000	60000	80	89	80	370	320	15	100	

Lifting pins CNOMO
Bulón de retención CNOMO

Mat. CK45

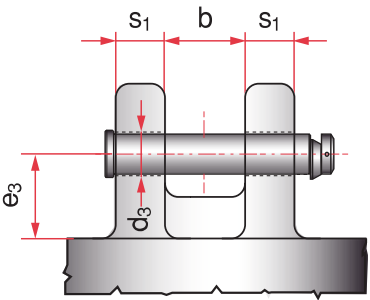
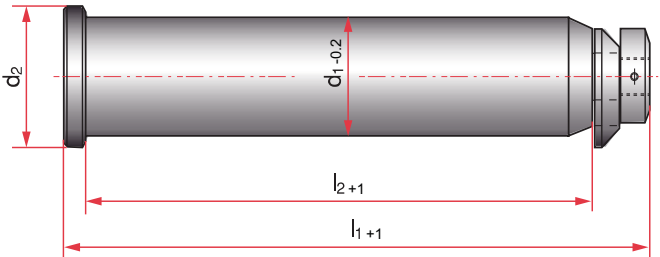


Max.	Max.Die	d	d _b	e	l ₁	l ₂	m	n	r	s
Load (KG)	Weigth (Kg)									
6000	12000	32	34	55	154,0	132	40	6	50	37,5
9000	18000	40	42	70	197,5	170	50	8	65	47,5
14000	28000	50	52	90	247,5	212	63	10	80	60,0
22500	45000	63	65	100	309,0	265	80	12	100	75,0

How to order: C103/05-d-l2 / Example: C103/05-040-170
Forma de pedido: C103/05-d-l2 / Ejemplo: C103/05-040-170

Lifting pins OPEL-GM
Bulón de retención OPEL-GM

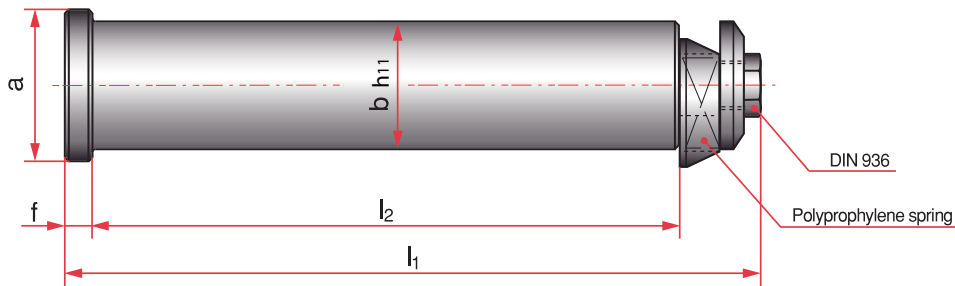
Mat. 42CrMo4



Max.	Max.Die	b	d₁	d₂	d₃	e₃	l₁	l₂	s₁
Load (KG)	Weigth (Kg)								
3400	6800	70	32	40	34	65	177	155	40
5650	11300	80	40	50	42	85	220	188	50
8950	17900	100	50	60	52	100	270	230	60
14350	28700	120	63	75	65	125	342	295	80
26700	53400		80	89	82	160	387	335	100

Lifting pins FIAT
Bulón de retención FIAT

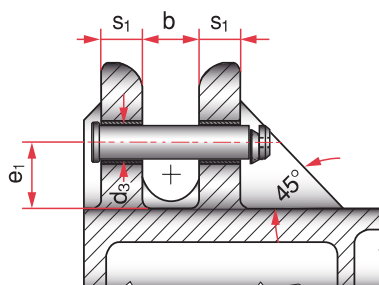
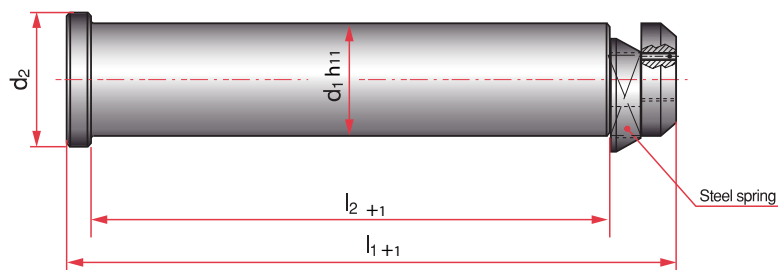
Mat. CK45



Max. Load (KG)	Max.Die Weigth (Kg)	a	b	f	l ₁	l ₂
600	1200	25	15,6	6	102,5	77
1000	2000	30	20,6		113,5	86
2000	4000	35	25,6		128,5	100
4000	8000	43	33,0		166,5	135
7000	14000	53	43,0		210,5	175

Lifting pins VW/AUDI
Bulón de retención VW/AUDI

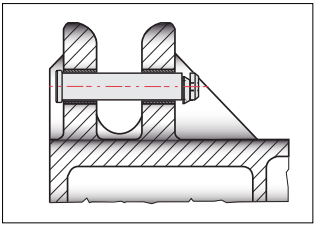
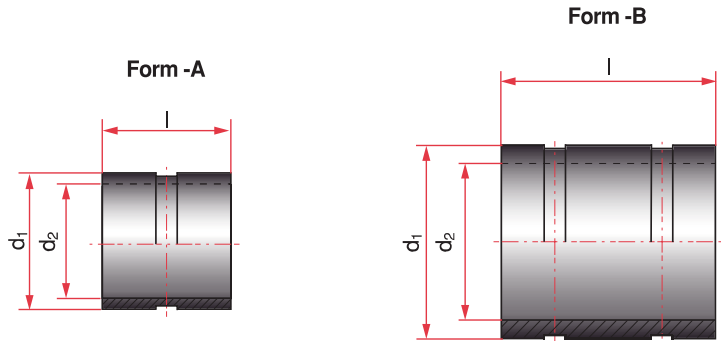
Mat. 42CrMo4 +QT



Max. Load (KG)	Max.Die Weigth (Kg)	b	d ₁	d ₂	d ₃	e ₁	l ₁	l ₂	s ₁	Mat.
3200	6400	60	32	40	34	63	175	145	40	CK45
5000	10000	80	40	50	42	80	225	188	50	
8000	16000	100	50	60	52	100	273	230	60	
12500	25000	120	63	75	65	125	347	295	80	
31500	63000	140	76	95	78	160	422	360	100	42CrMo4

Bush for lifting pins VDI-BAK
Casquillo para bulón de retención VDI-BAK

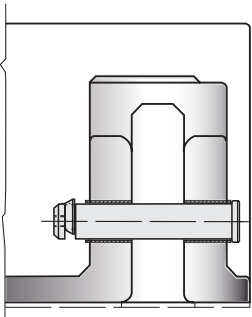
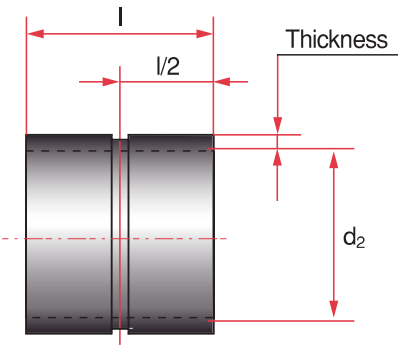
Mat. St37



Form	d ₁	d ₂	l
A	44	34,0	40
	52	42,0	50
	62	52	60
	75	65	80
B	100	78,0	100
	105		

Bush for lifting pins FORD
Casquillo para bulón de retención FORD

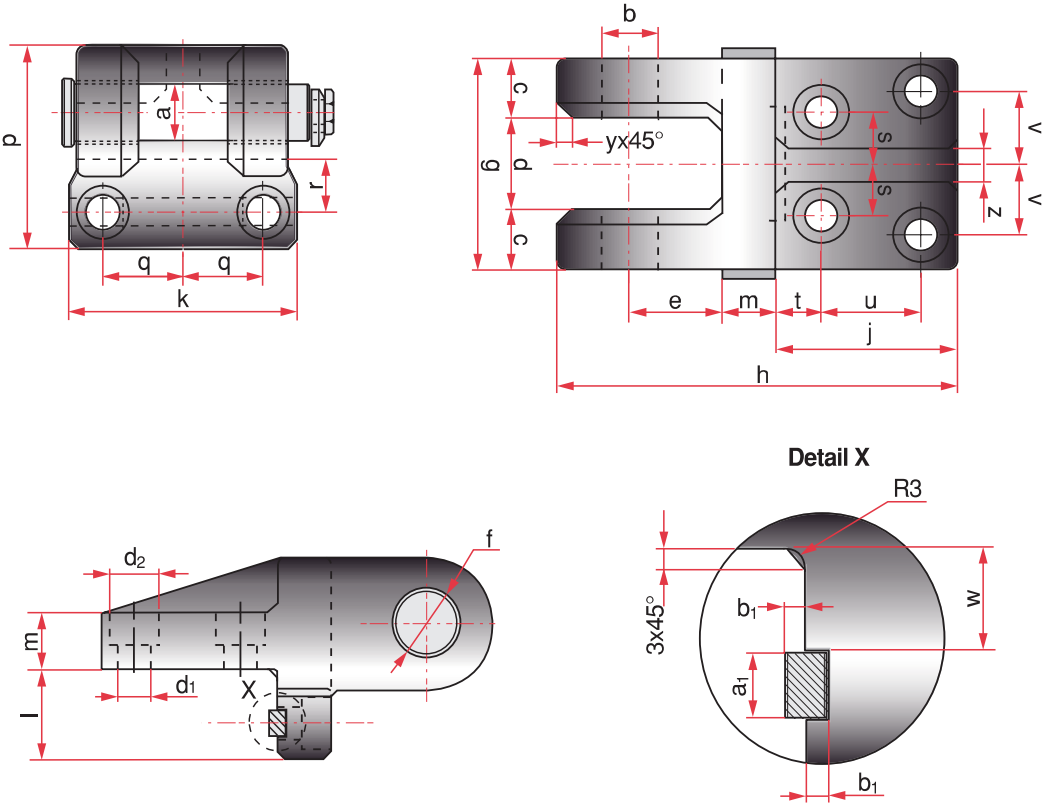
Mat. St37



d_2	Thickness	l
36	4,0	32
52		52
65		82
82	5,0	102

Lifting brackets whith pins CNOMO
Soporte de elevación con pasador CNOMO

Mat. CK45
Hardness 800÷1000 N/mm2



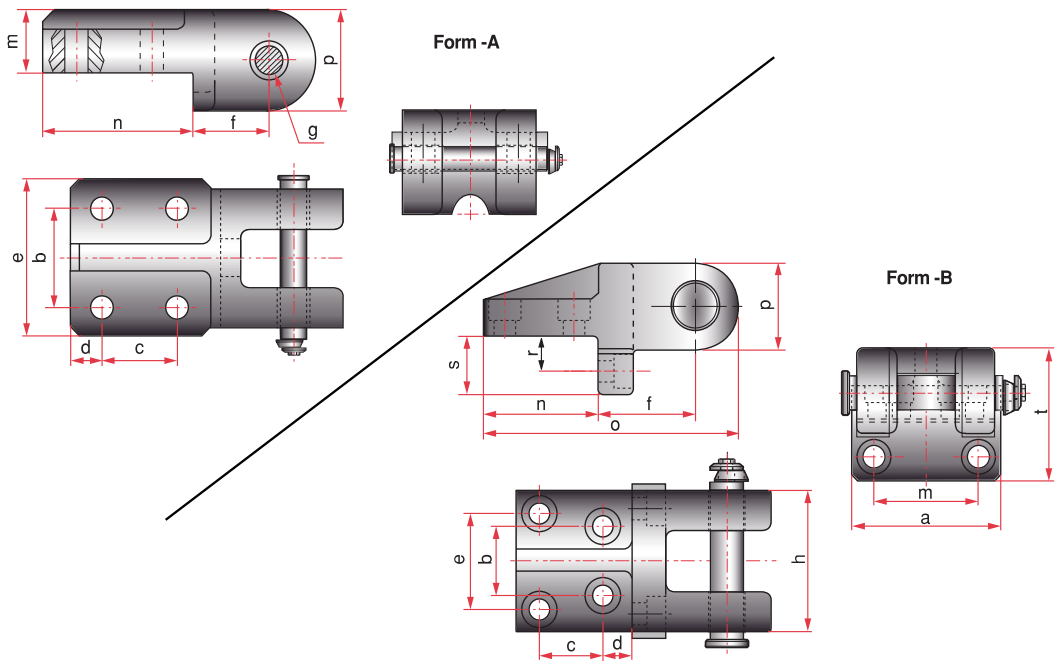
Max.	Max.Die	a	b	c	d	d ₁	d ₂	e	f	g	h	j
Load (Kg)	Weigth (Kg)											
4000	8000	32	33	35	55	18	36	55	36	125	221	100
6300	12600	40	41	50	60	22	45	60	45	160	270	125

Max.	k	l	m	p	q	r	s	t	u	v	w	y	z	a ₁	b ₁
Load (Kg)															
4000	135	50	30	111	48	30	28	20	60	42	23	10,0	20	14	4,5
6300	180	60	40	140	65	35	40	30	70	55	27	12,5	25	16	5,0

How to order: C105/01-Load / Example: C105/01-6300
Forma de pedido: C105/01-Load/ Ejemplo: C105/01-6300

Lifting brackets with pins FIAT
Soporte de elevación con pasador FIAT

Mat. CK45
Hardness 800÷1000 N/mm2



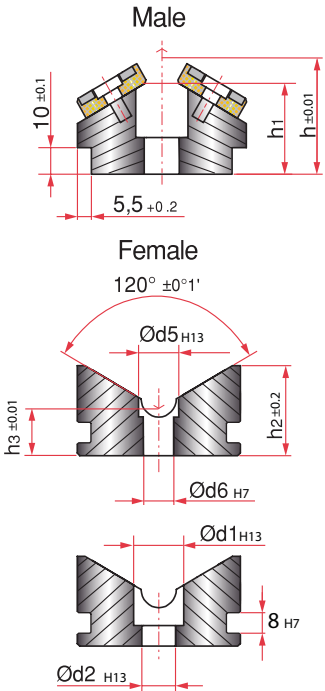
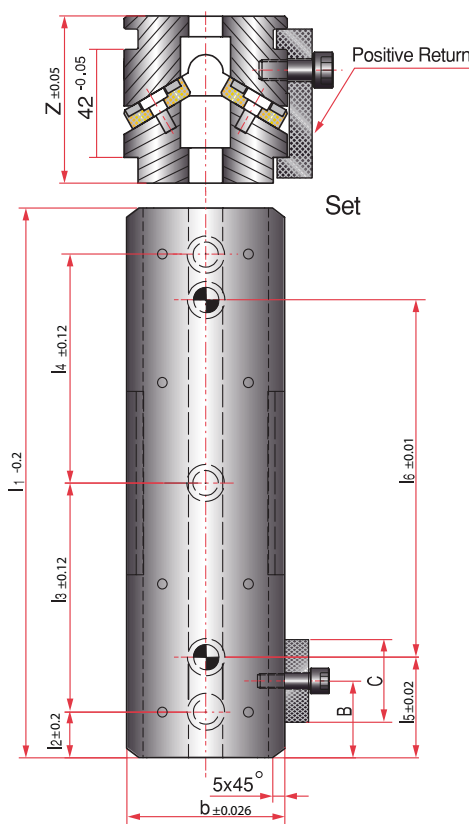
Max.	Max.Die	Form	a	b	c	d	e	f
Load (KG)	Weigth (Kg)							
600	1200	A	80	50	40	22,5	—	39
1000	2000		90	60		27,5		42
2000	4000		100	65		32,5		60
4000	8000	B	135	56	60	20,0	84	85
7000	14000		180	80	70	30,0	110	100

Max.	g	h	l	m	n	o	p	r	s	t
Load (Kg)										
600	16	70	102,5	32	80	145	52	—	—	—
1000	21	79	113,5	36	90	160	56			
2000	26	90	128,5	50	120	215	70			
4000	34	125	166,5	96	100	221	72	30	50	111
7000	44	160	210,5	130	125	270	90	35	60	140

How to order: C105/02-Load / Example: C105/02-7000
Forma de pedido: C105/02-Load/ Ejemplo: C105/02-7000

“V” Driver sets with replaceable inserts with positive return VDI 3357
Prisma guía en “V” VDI 3357

Mat. SAE430B+GR
Hardness > 180HB
Mat. Block (CK45)
Hardness > 60-64 HRC



“B” and “C” dimension is given by the customer
La distancia “B” y “C” es solicitada por el cliente

Code	b	d ₁	d ₂	d ₅	d ₆	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	h	h ₁	h ₂	h ₃	z
G245-XX-0615-01-X-BC	65	20	13,5	16	12	150	25	—	100	55	45	47	34	35	18	65
G245-XX-0620-01-X-BC						200			150		95					
G245-XX-0625-01-X-BC						250			100		145					
G245-XX-0630-01-X-BC						300			125		195					
G245-XX-1215-01-X-BC	125	26	17,5	20	16	150	—	—	100	—	45	57	44	60	28	85
G245-XX-1220-01-X-BC						200			150		95					
G245-XX-1225-01-X-BC						250			100		145					
G245-XX-1230-01-X-BC						300			125		195					

Ordering example: G245-XX-0615-01-X-BC

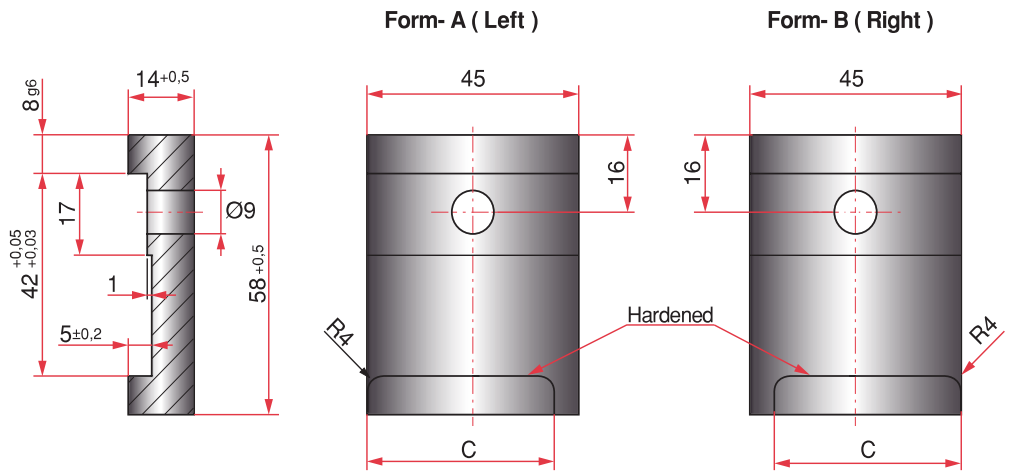
How to order: Code / Example: G245/01-0615-01-S-BC
Forma de pedido: Code / Ejemplo: G245/01-0615-01-S-BC

Sliding type
01=Bronze with non-liquid lubricant
02=Sintered lubricant

Part type
S= Set
M= Male
F= Female

Positive return clamp for “V” drivers
Uña de enclavamiento para conjuntos en “V”

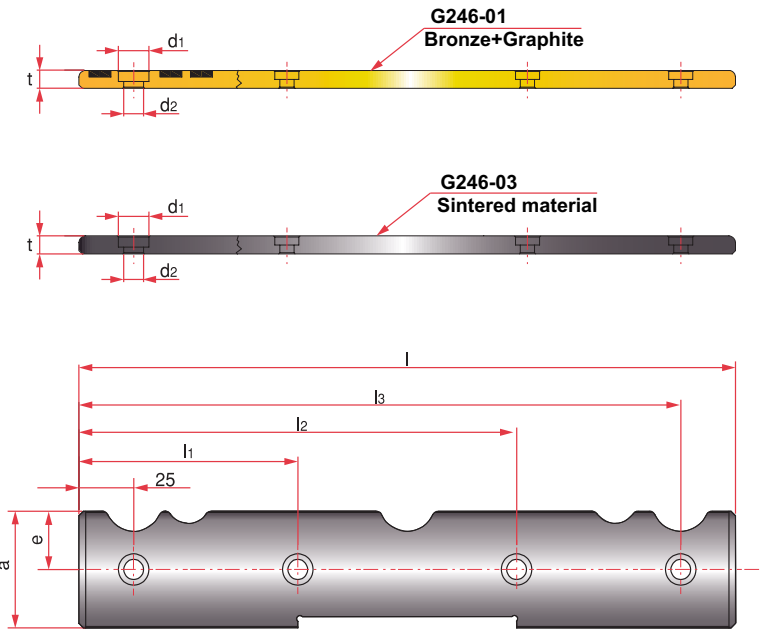
Mat. 1.2343
Hardness > 30-35 HRC



“C” dimension is given by the customer
La distancia “C” es solicitada por el cliente

Code	Form	Location
G234-03-045-C	A+B	Set both sides
G234-03-045L-C	A	Left
G234-03-045R-C	B	Rigth

Replaceable wear plates, self-lubricating
Placas de desgaste recambiables



Code	a	d ₁	d ₂	e	h	l ₁	l ₂	l ₃	t
G246-XX-065-150-01	27	11	6,5	9	4	75	—	125	8
G246-XX-065-200-01							125	175	
G246-XX-065-250-01						90	160	225	
G246-XX-065-300-01						95	205	275	
G246-XX-125-150-01	52	14	9	22	5	75	—	125	
G246-XX-125-200-01							125	175	
G246-XX-125-250-01						90	160	225	
G246-XX-125-300-01						100	200	275	

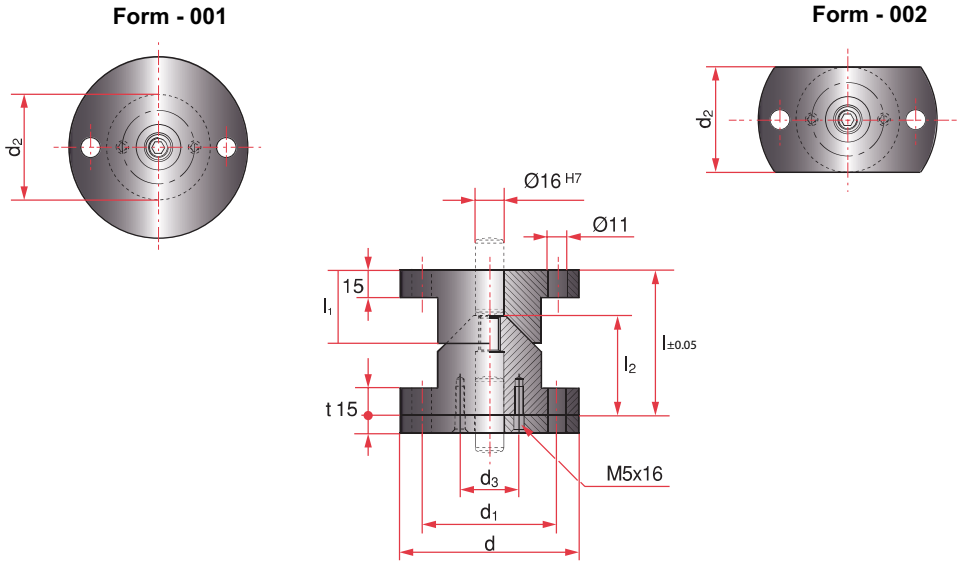
Ordering example: G246-XX-065-150-01

How to order: Code / Example: G246/01-065-150-01
Forma de pedido: Code / Ejemplo: G246/01-065-150-01

Sliding type
01=Bronze with non-liquid lubricant
02=Sintered lubricant

Locating cone
Cono de centrage

Mat. (Cone)16MnCr5. Hardness 60÷64 HRC
Mat. (Shim plate) CK45



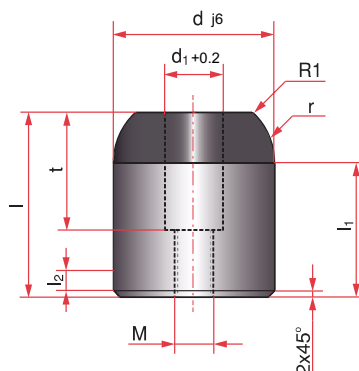
Form	d	d ₁	d ₂	d ₃	l	l ₂	t
001	100	76	58	40,5	80	55	10,5
002							
001	120	96	78	50,5	90	65	10,5
002							

M303/01

GSB M303-01/VW-Audi 39V1205

Locating pins
Centrador

Mat. 16MnCr5
Hardness HRC: 60÷64



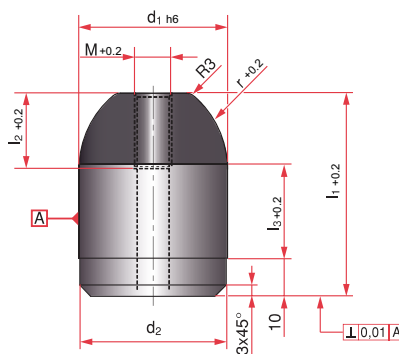
d	d ₁	l	l ₁	l ₂	M	r	t
22	14	45	37,5	8	M10	12,5	25
32	18	50	40	10	M12	20	35
40		55					
50							

How to order: M303-01-d-l / Example: M303-01-022-045
Forma de pedido: M303-01-d-l / Ejemplo: M303-01-022-045

M303/02

GSB M303-02

Mat. 16MnCr5
Hardness HRC: 60÷64



d ₁	d ₂	l ₁	l ₂	l ₃	M	r
22	22	45	16	35,00	M8	15
		55		45,00		
32	32	50	20	37,50	M10	20
40	40	55		35,00		25
		65		45,00		
		85		65,00		
50	50	55		41,25		
56	56	80		60,00		30

How to order: M303/02-d1-l1 / Example: M303/02-050-055
Forma de pedido: M303/02-d1-l1 / Ejemplo: M303/02-050-055

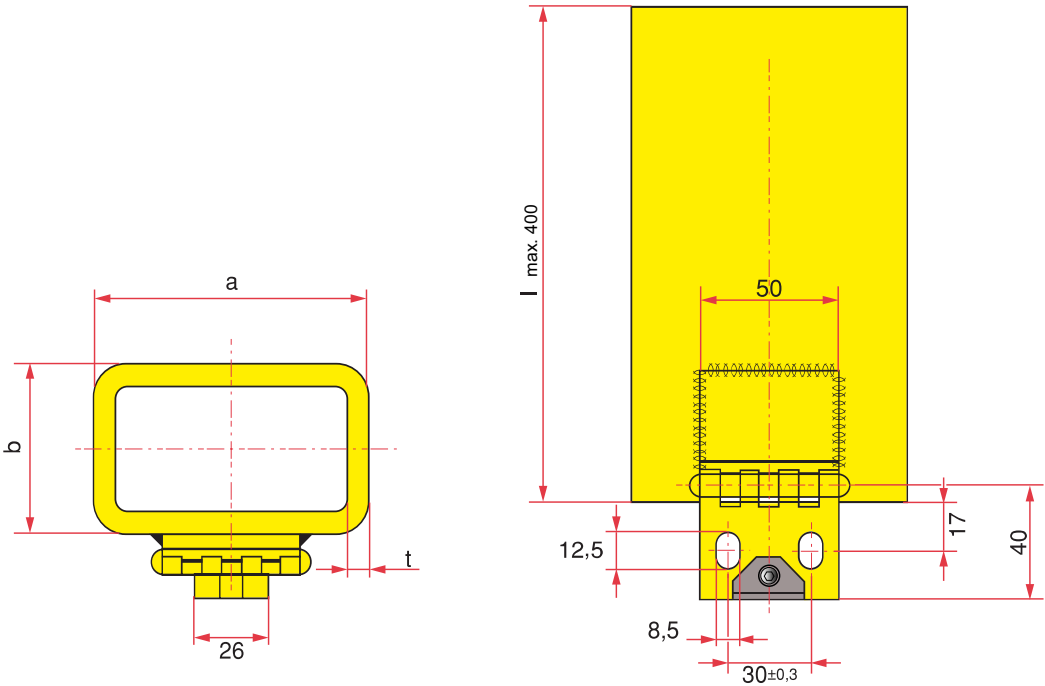
M321/01

GSB M321-01/ VW-Audi 39D578



Spacing bar
Tubo de almacenaje

Mat. St 37
Polyurethane 68 Sh

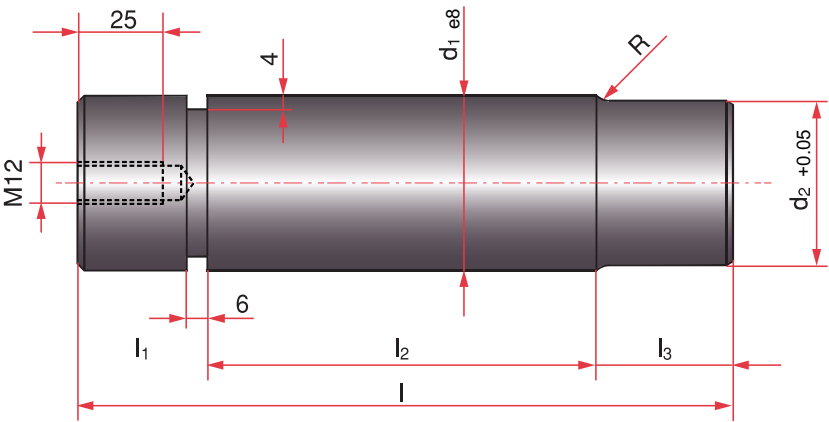


a	b	l	t	Max load (Kgs.)
70	50	???	3	10,000
100	60	???	7-8	30,000

How to order: M321/01-a- l (is given by the customer) / Example: M321/01-070-200
Forma de pedido: M321/01-a- l (medida dada por el cliente) / Ejemplo: M321/ 01-070-200

Pad retainer pins VDI3365
Bulón de retención VDI3365

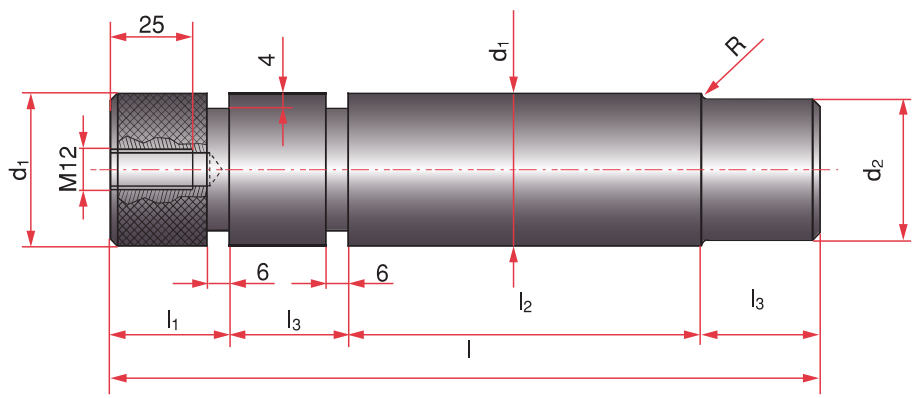
Mat. 45CrMo5
800÷1000 N/mm2



d_1	d_2	l	l_1	l_2	l_3	r	Dynamic load (Kgs.)
32	29	105	22	58	25	4	500
		122		75			
40	37	139	32	95	32	5	750
		159					
50	47	167		120	40	6	1250
		192					
63	60	202		155	50		2500
		237					

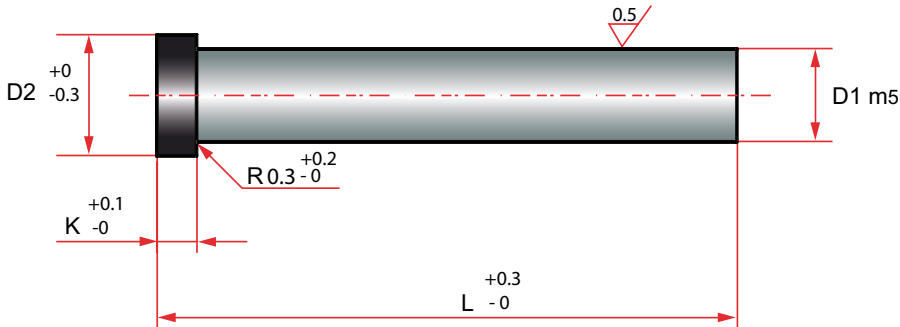
Pad retainer pins VDI3365
Bulón de retención VDI3365

Mat. 45CrMo5
800÷1000 N/mm2



d_1	d_2	l	l_1	l_2	l_3	r	Dynamic load (Kgs.)
32	29	130	22	58	25	4	500
		147		75			
40	37	171	32	95	32	5	750
		191					
50	47	207		120	40	6	1250
		232					
63	60	252		155	50		2500
		287					

Punch ISO 8020
Punzón ISO 8020

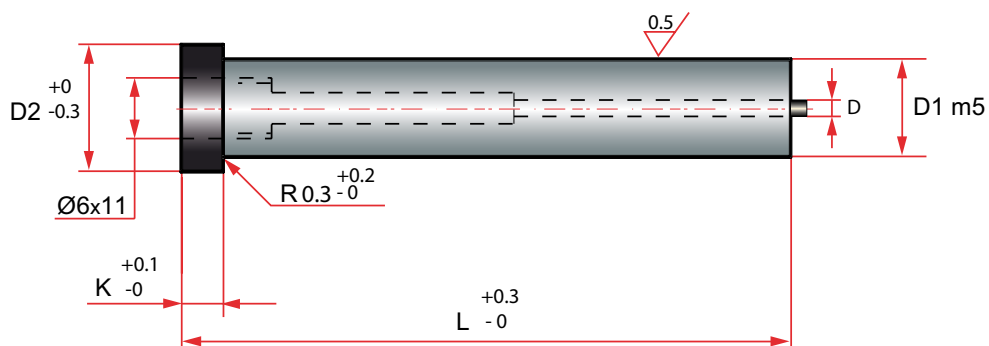


Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

D1	D2	K	L						
			71	80	90	100	110	120	130
10,0	13,0	5,0	*	*	*	*	*	*	*
13,0	16,0		*	*	*	*	*	*	*
16,0	19,0		*	*	*	*	*	*	*
20,0	23,0		*	*	*	*	*	*	*
25,0	28,0		*	*	*	*	*	*	*
32	35		*	*	*	*	*	*	*

How to order: SPPB/Mat.D1 x L
Forma de pedido: SPPB/Mat.D1x L

Punch ISO 8020
Punzón ISO 8020

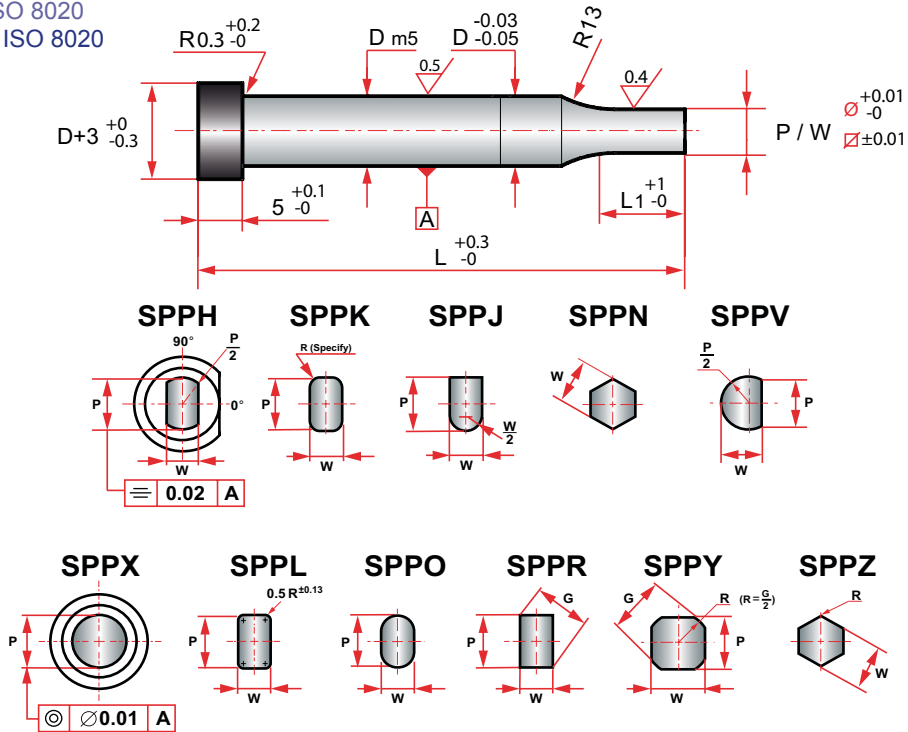


Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

D1	D2	K	D	L						
				71	80	90	100	110	120	130
10,0	13,0	5,0	1,5	*	*	*	*	*	*	*
13,0	16,0		1,5	*	*	*	*	*	*	*
16,0	19,0		2,3	*	*	*	*	*	*	*
20,0	23,0			*	*	*	*	*	*	*
25,0	28,0			*	*	*	*	*	*	*
32	35		3,1	*	*	*	*	*	*	*

How to order: SPJB/Mat.D1 x L
Forma de pedido: SPJB/Mat.D1 x L

Punch ISO 8020
Punzón ISO 8020



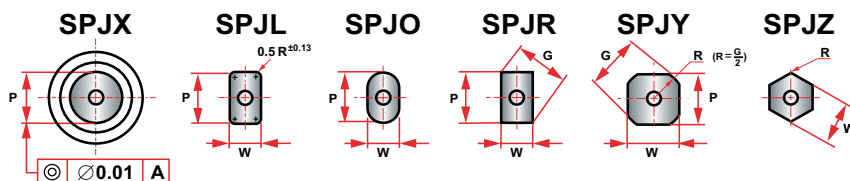
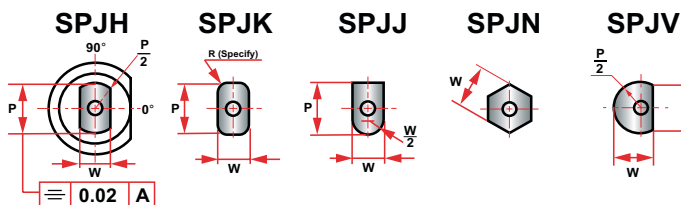
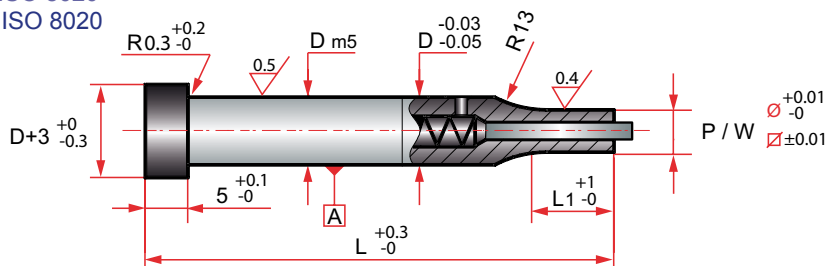
Check "P/W" dimensions to be sure the diagonal "G" does not exceed the max. shown.
 $G = \sqrt{P^2 + W^2}$

Shank D	Point length L1		Type & D SPPX	Range P	Type & D SPP_	Min. W	Max P/G	L											
	Std.	Alt.						40	50	56	60	63	70	71	80	90	100		
04	8	13	SPPX 04	1,60 - 3,95	SPP_04	1,60 - 3,95		*	*	*	*	*	*	*	*	*	*	*	
05	13	19	SPPX 05	1,60 - 4,95	SPP_05	1,60 - 4,95		*	*	*	*	*	*	*	*	*	*	*	
06	13	19	SPPX 06	1,60 - 5,95	SPP_06	1,60 - 5,95		*	*	*	*	*	*	*	*	*	*	*	
08	19	25	SPPX 08	2,50 - 7,95	SPP_08	2,50 - 7,95			*	*	*	*	*	*	*	*	*	*	
10	19	25	SPPX 10	3,20 - 9,95	SPP_10	3,20 - 9,95			*	*	*	*	*	*	*	*	*	*	
13	19	25	SPPX 13	5,00 - 12,95	SPP_13	4,50 - 12,95			*	*	*	*	*	*	*	*	*	*	
16	19	25	SPPX 16	8,00 - 15,95	SPP_16	6,00 - 15,95			*	*	*	*	*	*	*	*	*	*	
20	19	25	SPPX 20	10,00 - 19,95	SPP_20	8,00 - 19,95				*	*	*	*	*	*	*	*	*	
25	19	25	SPPX 25	12,00 - 24,95	SPP_25	9,00 - 24,95				*	*	*	*	*	*	*	*	*	
32	25	30	SPPX 32	16,00 - 31,95	SPP_32	10,00 - 31,95					*	*	*	*	*	*	*	*	

Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

How to order : Type/D+L1+L-Mat.+P or W-P/G SPPRz/16-25-80-HSS-P8.5 W8.0 x2
Forma de pedido: Type/D+L1+L-Mat.+P ó W-P/G SPPR/16-25-80-HSS-P8.5 W8.0 x2

Ejector Punches ISO 8020
Punzón expulsor ISO 8020



Check "P/W" dimensions to be sure the diagonal "G" does not exceed the max. shown.
 $G = \sqrt{P^2 + W^2}$

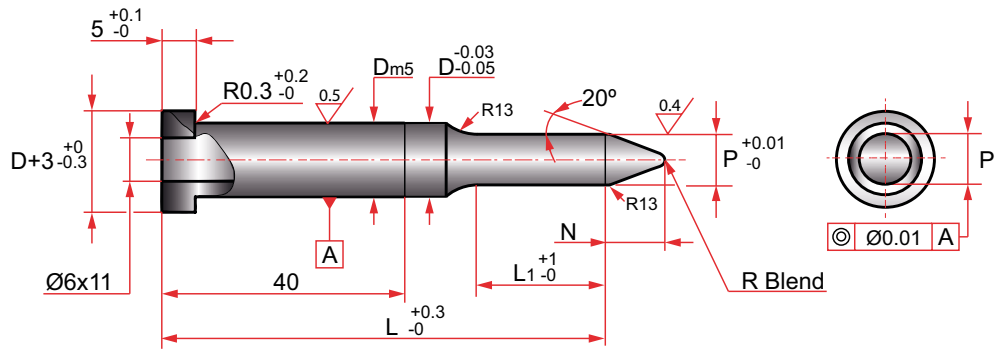
Shank D	Point length L1		Type & D SPPX	Range P	Type & D SPP_	Min. W	Max P/G	L									
	Std.	Alt.						40	50	56	60	63	70	71	80	90	100
05	13	19	SPJX 05	1,60 - 4,95	SPJ_05	1,60 - 4,95	*	*	*	*	*	*	*	*	*	*	
06	13	19	SPJX 06	2,40 - 5,95	SPJ_06	2,40 - 5,95	*	*	*	*	*	*	*	*	*	*	
08	19	25	SPJX 08	3,20 - 7,95	SPJ_08	3,20 - 7,95		*	*	*	*	*	*	*	*	*	
10	19	25	SPJX 10	4,50 - 9,95	SPJ_10	4,50 - 9,95		*	*	*	*	*	*	*	*	*	
13	19	25	SPJX 13	6,00 -12,95	SPJ_13	6,00 -12,95		*	*	*	*	*	*	*	*	*	
16	19	25	SPJX 16	8,00 -15,95	SPJ_16	7,20 -15,95		*	*	*	*	*	*	*	*	*	
20	19	25	SPJX 20	10,00-19,95	SPJ_20	8,00-19,95		*	*	*	*	*	*	*	*	*	
25	19	25	SPJX 25	12,00- 24,95	SPJ_25	9,00- 24,95		*	*	*	*	*	*	*	*	*	
32	25	30	SPJX 32	16,00-31,95	SPJ_32	10,00-31,95					*	*	*	*	*	*	

<i>Material</i>	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

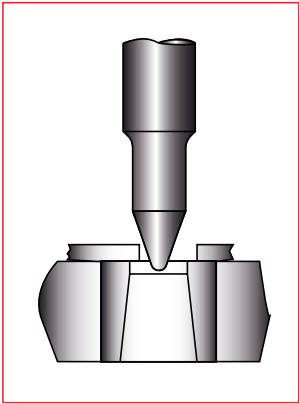
How to order : SPJ_/Type & D+L1+L-Mat.+P or W-P/G
Forma de pedido: SPJ_/Type & D+L1+L-MAT.+P ó W-P/G

SPJR 16 25 80 P8.5 W8.0 x2
BRSP HSS SPJR 16 25 80 P8.5 W8.0 x2

Positive Pick-Up Pilots
Macho centrador positivo



Shank D	Point Std.	Lght. L1 Alt.	Type & D SPPA	Range P	Nose Lgth. N	L								
						65	72	73	82	92	102	112	127	142
10	21	27	SPPA10	4,85 -10,00	8	*	*	*	*	*	*	*		
13	21	27	SPPA13	6,30 -13,00	10	*	*	*	*	*	*	*	*	
16	21	27	SPPA16	9,95 -16,00	15		*	*	*	*	*	*	*	*
20	21	27	SPPA20	13,60 -20,00	20		*	*	*	*	*	*	*	*
25	21	27	SPPA25	17,25 -25,00	25		*	*	*	*	*	*	*	*
32	27	32	SPPA32	20,85 -32,00	30			*	*	*	*	*	*	*

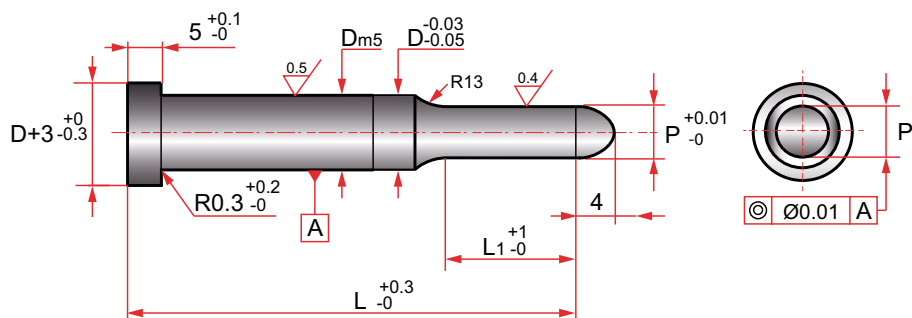


Material	Hardness
HSS	62 ± 2 HRC
HEAD through D25	40-55 HRC

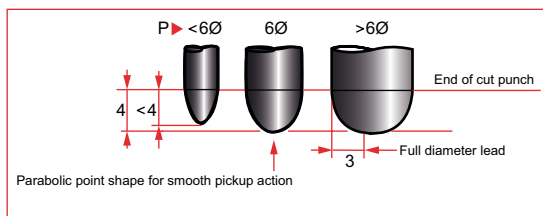
How to order: Type & D/L1-P-L-Mat.
Forma de pedido: Type & D/L1-P-L-Mat.

Pilots ISO 8020

Macho centrador ISO 8020



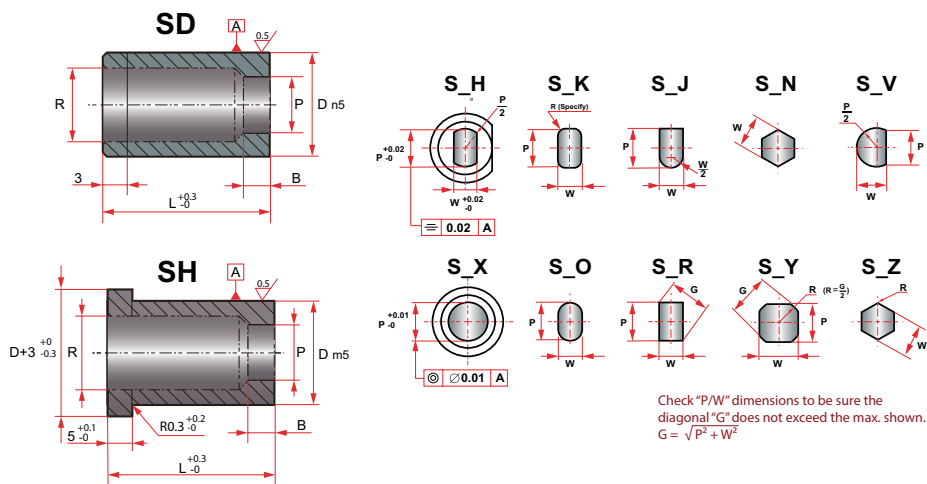
Shank	Point	Lght. L1	Type & D	Range	L										
					D	Std.	Alt.	SPPT	P	42	52	58	62	65	72
04	10	15	SPPT04	1,55 - 4,00	*	*	*	*	*	*	*	*			
05	15	21	SPPT05	1,55 - 5,00	*	*	*	*	*	*	*	*			
06	15	21	SPPT06	1,55 - 6,00	*	*	*	*	*	*	*	*	*	*	*
08	21	27	SPPT08	2,45 - 8,00		*	*	*	*	*	*	*	*	*	*
10	21	27	SPPT10	3,15 -10,00		*	*	*	*	*	*	*	*	*	*
13	21	27	SPPT13	4,95 -13,00		*	*	*	*	*	*	*	*	*	*
16	21	27	SPPT16	7,95 -16,00		*	*	*	*	*	*	*	*	*	*
20	21	27	SPPT20	9,95 -20,00			*	*	*	*	*	*	*	*	*
25	21	27	SPPT25	11,95-25,00			*	*	*	*	*	*	*	*	*
32	27	32	SPPT32	15,95-32,00						*	*	*	*	*	*
Alt. Point lenght not available					*										



<i>Material</i>	Hardness
HSS	62 ± 2 HRC
HWS	62 ± 2 HRC
HEAD through D25	40-55 HRC

How to order: Type & D/L1-P-L-Mat.
Forma de pedido: Type & D-L1-P-L-Mat.

Die Button ISO 8977 (Round only)
Casquillos corte ISO 8977 (Solo redondo)

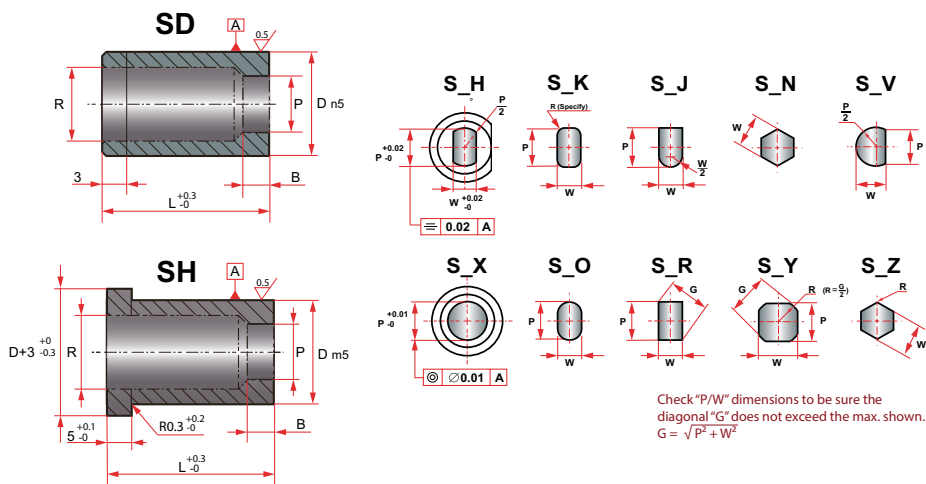


Body	B			Type & D	Ø Range P	Type & D	Shape		R	L							
	Std	Alt	Alt				Min.	Max.		20	22	25	28	30	32	35	40
	S	A	B				W	P/G									
08	4	-	-	S_X08	1,50 - 2,40	-	-	-	3,5	*	*	*	*	*	*	*	*
	4	-	-	S_X08	2,41 - 3,00	-	-	-	4,0	*	*	*	*	*	*	*	*
	4	8	-	S_X08	3,01 - 3,20	-	-	-	4,0	*	*	*	*	*	*	*	*
10	4	-	-	S_X10	1,50 - 2,40	S__10	-	-	3,5	*	*	*	*	*	*	*	*
	4	-	-	S_X10	2,41 - 3,00	S__10	-	-	4,0	*	*	*	*	*	*	*	*
	4	8	-	S_X10	3,01 - 3,20	S__10	1,2 - 3,20	4,0	4,0	*	*	*	*	*	*	*	*
	4	8	-	S_X10	3,21 - 5,00	S__10	1,2 - 5,00	6,0	6,0	*	*	*	*	*	*	*	*
13	5	-	-	S_X13	1,50 - 2,40	S__13	-	-	3,5	*	*	*	*	*	*	*	*
	5	-	-	S_X13	2,41 - 3,00	S__13	-	-	4,0	*	*	*	*	*	*	*	*
	5	8	-	S_X13	3,01 - 3,20	S__13	-	-	4,0	*	*	*	*	*	*	*	*
	5	8	-	S_X13	3,21 - 5,00	S__13	2,00 - 5,00	6,0	6,0	*	*	*	*	*	*	*	*
	5	8	-	S_X13	5,01 - 7,20	S__13	2,00 - 7,20	8,0	8,0	*	*	*	*	*	*	*	*
16	5	8	-	S_X16	5,00 - 7,20	S__16	2,40 - 7,20	8,0	8,0	*	*	*	*	*	*	*	*
	5	8	-	S_X16	7,21 - 8,80	S__16	2,40 - 8,80	9,5	9,5	*	*	*	*	*	*	*	*
20	5	12	20	S_X20	7,00 - 8,80	S__20	3,20 - 8,80	9,5	9,5	*	*	*	*	*	*	*	*
	5	12	20	S_X20	8,81-11,00	S__20	3,20 - 11,00	12,0	12,0	*	*	*	*	*	*	*	*

How to order: Type & D/P-L-Mat. or Type & D/W-P/G-L-Mat.
Forma de pedido: Type & D/P-L-Mat. o Type & D/W-P/G-L-Mat.

Material	Hardness
HWS (12% Cr)	62 ± 2 HRC
HSS	62 ± 2 HRC

Die Button ISO 8977 (Round only)
Casquillos corte ISO 8977 (Solo redondo)



Body D	B Std Alt Alt S A B			Type & D	Ø Range P	Type & D	Shape		R	L							
	Min.	Max.	20				22	25		28	30	32	35	40			
															W	P/G	
22	6	12	20	S_X22	9,00-14,00	S__22	4,00 - 14,00	15,0	*	*	*	*	*	*	*	*	
25	6	12	20	S_X25	11,00-14,00	S__25	4,80 - 14,00	15,0	*	*	*	*	*	*	*	*	
	6	12	20	S_X25	14,01-16,50	S__25	4,80 - 16,50	17,5	*	*	*	*	*	*	*	*	
32	6	12	20	S_X32	13,00-16,50	S__32	5,50 - 16,50	17,5	*	*	*	*	*	*	*	*	
	6	12	20	S_X32	16,51-20,00	S__32	5,50 - 20,00	21,0	*	*	*	*	*	*	*	*	
38	8	12	20	S_X38	16,00-20,00	S__38	6,40 - 20,00	21,0	*	*	*	*	*	*	*	*	
	8	12	20	S_X38	20,01-26,00	S__38	6,40 - 26,00	27,0	*	*	*	*	*	*	*	*	
40	8	12	20	S_X40	16,00-20,00	S__40	6,40 - 20,00	21,0	*	*	*	*	*	*	*	*	
	8	12	20	S_X40	20,01-26,00	S__40	6,40 - 26,00	27,0	*	*	*	*	*	*	*	*	

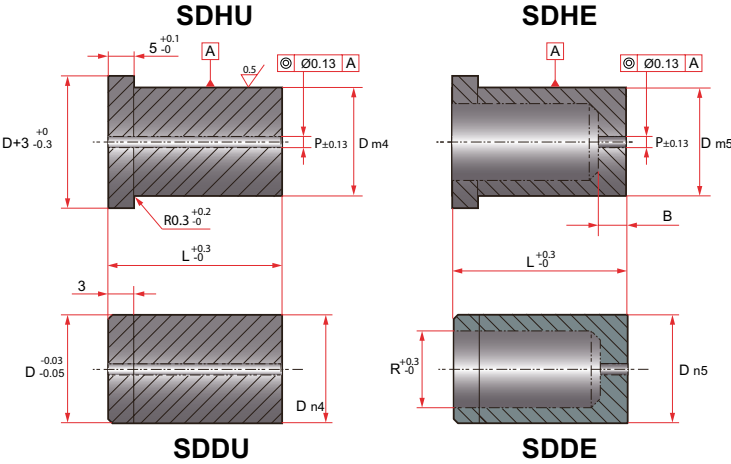
How to order: Type & D/P-L-Mat. or Type & D/W-P/G-L-Mat.
Forma de pedido: Type & D/P-L-Mat. o Type & D/W-P/G-L Mat.

<i>Material</i>	Hardness
HWS (12% Cr)	62 ± 2 HRC
HSS	62 ± 2 HRC

SDHU/SDHE/SDDU/SDDE



Button blank
Casquillos corte en bruto



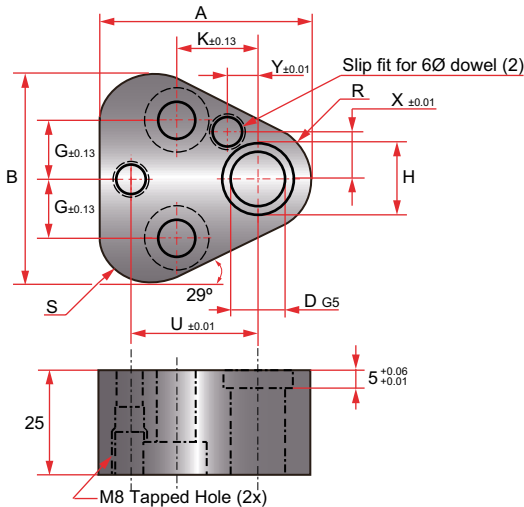
Type	Body		SDHE/SDDE				SDHE/SDDE							
	D	P	B				R	20	22	25	28	30	32	35
			Std	S	Alt	A								
SDD_ SDH_	8	0,8	—	—	—	—	—	*	*	*	*	*	*	*
	10	0,8	4	8	—	6,0	6,0	*	*	*	*	*	*	*
	13	1,6	5	8	—	8,0	8,0	*	*	*	*	*	*	*
	16	1,6	5	8	—	9,5	9,5	*	*	*	*	*	*	*
	20	1,6	5	12	20	12,0	12,0	*	*	*	*	*	*	*
	22	1,6	6	12	20	15,0	15,0	*	*	*	*	*	*	*
	25	1,6	6	12	20	17,5	17,5	*	*	*	*	*	*	*
	32	1,6	6	12	20	21,0	21,0	*	*	*	*	*	*	*
	38	1,6	8	12	20	27,0	27,0	*	*	*	*	*	*	*
	40	1,6	8	12	20	27,0	27,0	*	*	*	*	*	*	*
	45	3,2	8	12	20	36,0	36,0	*	*	*	*	*	*	*
	50	3,2	8	12	20	41,0	41,0	*	*	*	*	*	*	*
	56	3,2	8	12	20	46,0	46,0	*	*	*	*	*	*	*
	63	3,2	8	12	20	51,0	51,0	*	*	*	*	*	*	*
SDD_ Only	71	3,2	8	12	20	57,0	57,0	*	*	*	*	*	*	*
	76	3,2	8	12	20	61,0	61,0	*	*	*	*	*	*	*
	85	3,2	8	12	20	67,0	67,0	*	*	*	*	*	*	*
	90	3,2	8	12	20	71,0	71,0	*	*	*	*	*	*	*
	100	3,2	8	12	20	79,0	79,0	*	*	*	*	*	*	*

Material	Hardness
HWS (12% Cr)	62 ± 2 HRC
HSS	62 ± 2 HRC

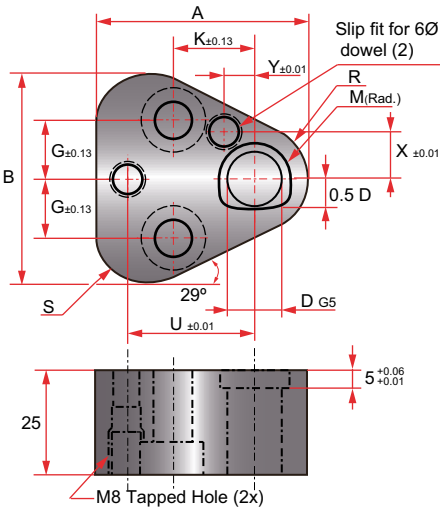
How to order: Type-D/B-L-Mat. - Example: SDHE/16-5-28-HSS
Forma de pedido: Type-D/B-L-Mat. - Ejemplo: SDHE/16-5-28-HSS

Headed punch retainers ISO 8020
Base porta-punzones ISO 8020

SRRT



SRRTS



Hardness approximately 42 HRC

2 Tapped dowels+ 2 Screws Includes

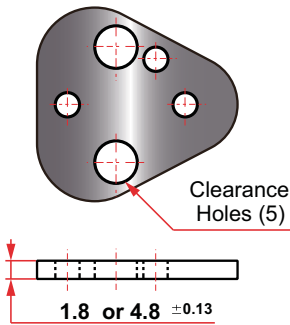
Type	Code	D	A	B	SRRT H	G	K	SRRTS M	R	S	U	X	Y	Screw
SRRT/SRRTS	10	10,00	44,5	43,7	14,00	11,1	19,0	7,0	9,5	12,00	26,925	9,0	7,50	M8
SRRT/SRRTS	13	13,00	50,8	50,0	17,00	14,3	19,0	8,5	12,7	15,20	29,970	12,0	6,50	M8
SRRT/SRRTS	16	16,00	54,0	53,2	20,00	15,9	19,0	10,0	14,3	16,80	31,750	13,5	6,00	M8
SRRT/SRRTS	20	20,00	60,3	59,5	24,00	17,5	19,0	12,0	17,5	20,00	33,530	16,5	5,00	M10
SRRT/SRRTS	25	25,00	69,9	69,1	29,00	19,8	23,8	14,5	22,2	24,70	40,640	22,0	7,00	M12
SRRT/SRRTS	32	32,00	69,9	69,1	36,00	19,8	23,8	18,0	22,2	24,70	40,460	22,0	7,00	M12

How to order: Type D/Code. Example: SRRT/10
Forma de pedido: Type D+Code Ejemplo: SRRT/10

D	1,8 (soft)	4,8 (HRC 55)
	REF.	REF.
10	SRSP/10-18	SRBP/10-48
13	SRSP/13-18	SRBP/13-48
16	SRSP/16-18	SRBP/16-48
20	SRSP/20-18	SRBP/20-48
25	SRSP/25-18	SRBP/25-48
32	SRSP/32-18	SRBP/32-48

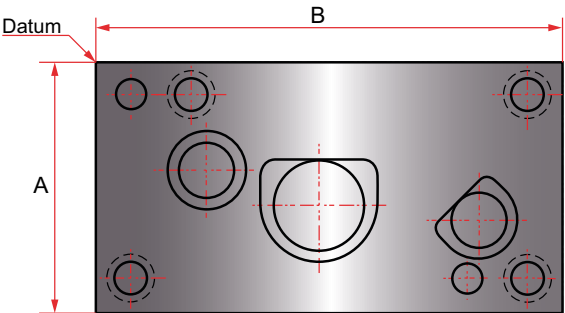
How to order: REF. Example: SRSP/20-18
Forma de pedido: REF. SRSP/20-18

Shim Plates

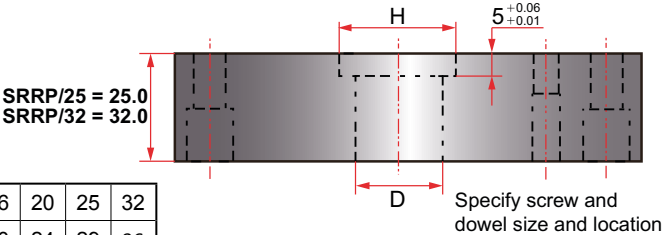


Multiple head type punch retainers
Portapunzon multiple

Hole locations from datum	
Dowel holes	± 0.01
Screw holes	± 0.13
Component holes	± 0.01

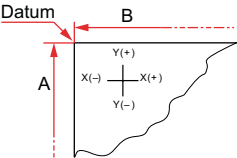
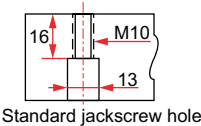
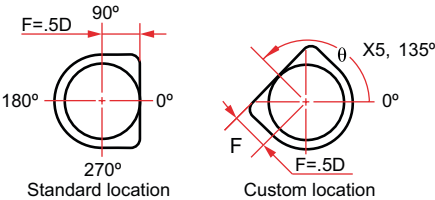


Note: Looking at retainer from punch head side.



D	4	5	6	8	10	13	16	20	25	32
H	8	9	10	12	14	17	20	24	29	36

Type	A	B											
		60	70	80	90	100	125	150	175	200	225	250	300
SRRP/	50	5060	5070	5080	5090	50100	50125	50150	50175	50200	50225	50250	50300
	60	6060	6070	6080	6090	60100	60125	60150	60175	60200	60225	60250	60300
	70		7070	7080	7090	70100	70125	70150	70175	70200	70225	70250	70300
	80			8080	8090	80100	80125	80150	80175	80200	80225	80250	80300
	100					100100	100125	100150	100175	100200	100225	100250	100300
	125						125125	125150	125175	125200	125225	125250	125300
	150							150150	150175	150200	150225	150250	150300
	200								200175	200200	200225	200250	200300

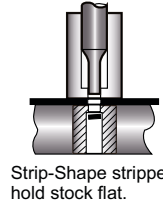
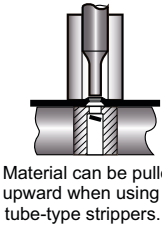
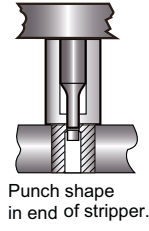
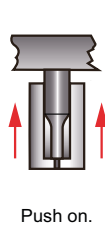
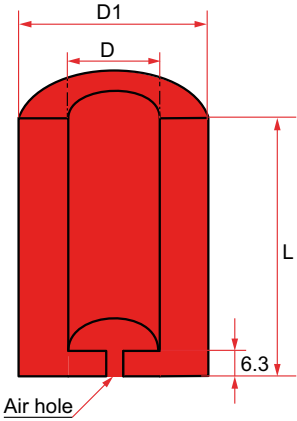


Flat tolerances	
F	RADIAL
+0,025	0,03
-0	25,0

Material	Type	Hardness
1.2312	X0	26-32 HRC
1.2379	X1	47-52 HRC

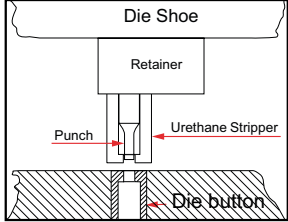
How to order: Type/_ A/B-Mat. Example:SRRP/25-70200-X0
Forma de pedido: Type/_ A/B- Mat. Ejemplo:SRRP/25-70200-X0

Urethane strippers
Rascador de uretano



Closed end a conforms to punch shape

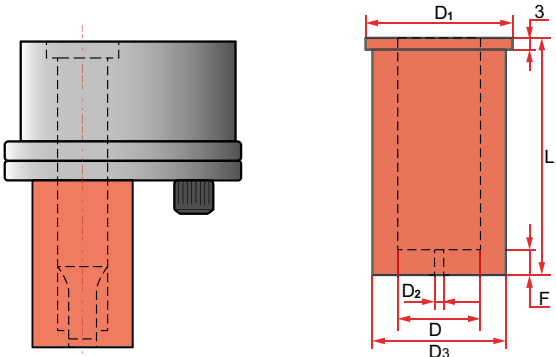
Air Hole	I.D.
1.6	06-10
3.0	13-32



D	D ₁	L	Pressure at deflection of		
			3.0	6.5	9.5
06	19	45	1324	2256	—
		53	1079	1863	2354
		71	686	1076	1756
08	21	45	1471	2207	—
		53	1324	1961	2942
		71	981	1618	2648
10	23	45	1716	2795	—
		53	1422	2452	3187
		56	1422	2452	3187
		71	1128	2010	2697
13	26	45	2109	3334	—
		53	1471	2354	3432
		56	1471	2354	2942
		71	1275	1961	2452
16	30	45	2354	3825	—
		53	2158	3531	4511
		56	2158	3531	4511
		71	1814	2942	3825
20	38	45	2452	3923	—
		53	2158	3629	5590
		71	1618	2942	4658
25	50	45	9317	14318	—
		53	7355	11572	15985
		71	4904	8336	13485

How to order: SUS/DxL Example: SUSP/10x71
Forma de pedido: SUS/DxL Ejemplo: SUS/10x71

Urethane strippers units
Conjunto rascador de uretano



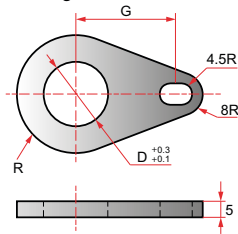
D	D ₁	D ₂	D ₃	F	L	Pressure at deflection of		
						3	6	9
10	21	1,6	18	6	43	1060	1820	—
					52	900	1650	2170
					63	720	1450	1860
					72	570	1280	1610
13	26	3,0	23		43	1700	2850	—
					52	1460	2610	3410
					63	1170	2320	2910
					72	930	2080	2500
16	31		28		43	2310	3900	—
					52	1990	3560	4640
					63	1590	3150	3980
					72	1270	2810	3440
20	36		33	7	43	2900	1900	—
					52	2500	4470	5820
					63	2000	3950	5000
					72	1590	3420	4330

D	D ₁	D ₂	D ₃	F	L	Pressure at deflection of		
						3	6	9
25	43	3,0	40	7	43	4440	7520	—
					52	3810	6860	8780
					63	3050	6050	7680
					72	2420	5390	6780
32	55		50		43	6840	11390	—
					52	5880	10450	13300
					63	4700	9310	11640
					72	3740	8370	10280
38	65		60	8	52	9480	19330	29720
					72	5950	11630	18160
40					43	10100	21090	—
					52	8650	17300	25960
					63	6890	13780	20670

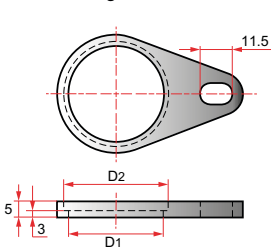
Urethane hardness: 95±5 Shore A
Max. recommended reflection: 15% of overall length
Pressure ratings shown in Newtons.

D	D ₁	D ₂	R	G	REF.	REF.
10	19	22	13,0	28,0	SUBP10	SURP10
13	24	27	15,5	31,0	SUBP13	SURP13
16	29	32	18,0	32,9	SUBP16	SURP16
20	34	37	20,5	34,8	SUBP20	SURP20
25	41	44	24,0	39,8	SUBP25	SURP25
32	51	56	31,0	41,3	SUBP32	SURP32
38	61	66	36,0	45,0	SUBP38	SURP38
40					SUBP42	SURP42

Backing Plates SUBP



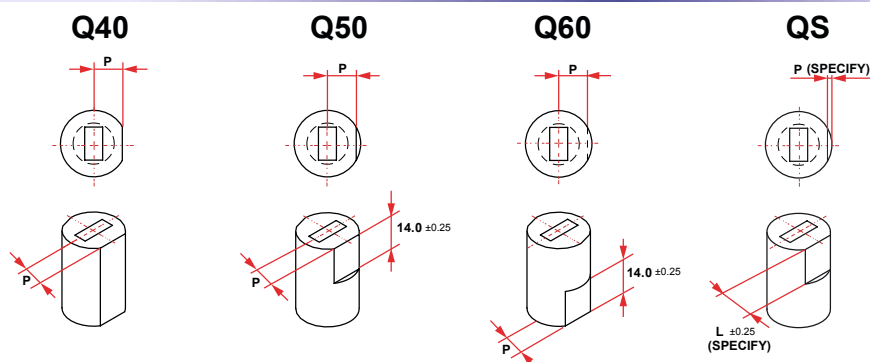
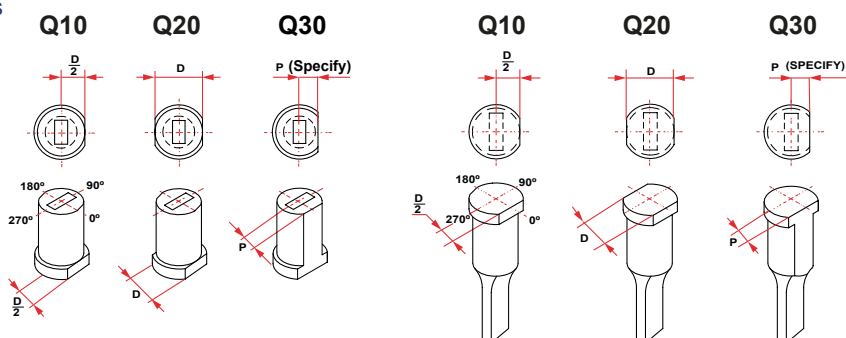
Retaining Plates SURP



How to order: SUH/DxL/SUBP/D/SURP/D Example: SUH/10x72/SUBP10/SURP10
Forma de pedido: SUH/DxL Ejemplo: SUH/10x72/SUBP10/SURP10

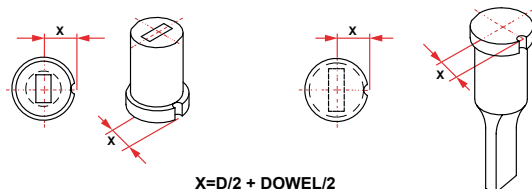
Locking devices

Locking devices
Antigiros



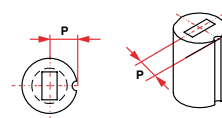
Body Ø	10	13	16	20	22	25	32	38	40	45	50	56	63	71	76	85	90	100
P	4,0	5,5	7,0	8,5	9,5	11,0	14,0	17,0	18,0	20,5	23,0	26,0	29,5	33,5	35,5	40,0	42,5	47,5

Q70 / Q80 / Q90



$$X = D/2 + DOWEL/2$$

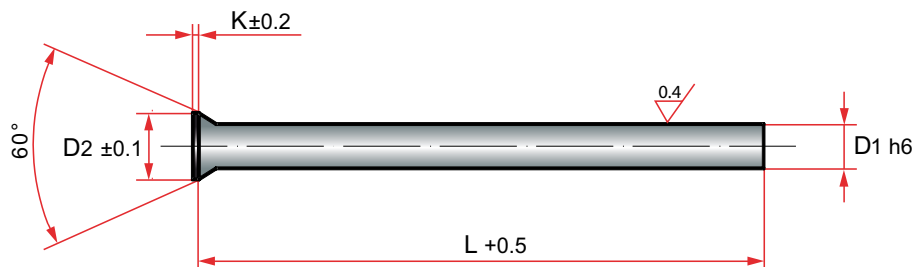
QP



Body Ø	Q 70 3,0 Dowel Ø	Q 80 4,0 Dowel Ø	Q 90 6,0 Dowel Ø	QP Specify dowel
	P			
10	5,5	6,0	7,0	Specify
13	6,7	7,2	8,2	
16	8,0	8,0	9,0	
20	10,0	10,0	11,0	
22	11,0	11,0	12,0	
25	12,5	12,5	13,5	
32-up	D/2	D/2	D/2	

Punch DIN 9861D

Punzón cabeza cónica DIN 9861D



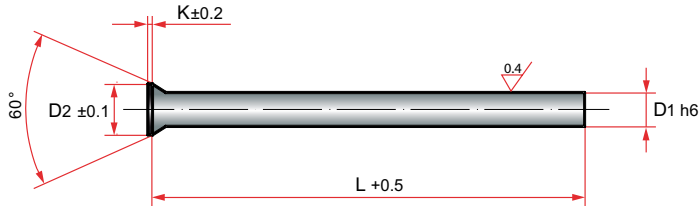
Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

D1	D2	K	L			
			71	80	100	130
0,5	0,9	0,2	*			
0,6	1,0		*			
0,6	1,1		*			
0,7	1,2		*			
0,7 - 0,75	1,3		*			
0,8 - 0,85	1,4	0,4	*			
0,9 - 0,95	1,6		*			
1,0 - 1,1	1,8	0,5	*	*	*	
1,15 - 1,3	2,0		*	*	*	
1,35 - 1,5	2,2		*	*	*	
1,55 - 1,7	2,5		*	*	*	
1,75 - 1,9	2,8		*	*	*	
1,95 - 2,0	3,0		*	*	*	
2,05 - 2,2	3,2		*	*	*	
2,25 - 2,5	3,5		*	*	*	
2,55 - 2,95	4,0		*	*	*	

How to order: DIN9861D/D1xL-Mat .
Forma de pedido: BR9861D/D1xL-Mat.

Punch DIN 9861D

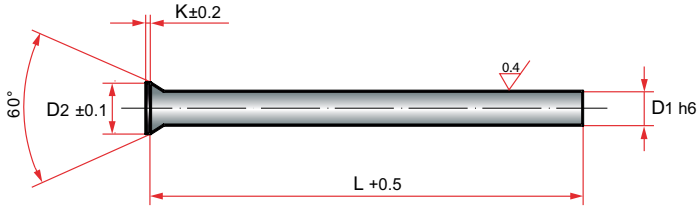
Punzón cabeza cónica DIN 9861D



D1	D2	K	L			
			71	80	100	130
3,0 - 3,45	4,5	0,5	*	*	*	*
3,5 - 3,95	5,0		*	*	*	*
4,0 - 4,45	5,5		*	*	*	*
4,5 - 4,95	6,0		*	*	*	*
5,0 - 5,45	6,5		*	*	*	*
5,5 - 6,0	7,0		*	*	*	*
6,1 - 6,4	8,0		*	*	*	*
6,5 - 7,4	9,0	1,0	*	*	*	*
7,5 - 8,4	10,0	0,5	*	*	*	*
8,5 - 9,4	11,0	1,0	*	*	*	*
9,5 - 10,0	12,0		*	*	*	*
10,5 - 11,0	13,0		*	*	*	*
11,5 - 12,0	14,0		*	*	*	*
12,5 - 13,0	15,0		*	*	*	
13,5 - 14,0	16,0	1,5	*	*	*	
14,5 - 15,0	17,0		*	*	*	
15,5 - 16,0	18,0		*	*	*	
16,5 - 17,0	19,0		*	*	*	
17,5 - 18,0	20,0		*	*	*	
18,5 - 19,0	21,0		*	*	*	
19,5 - 20,0	22,0		*	*	*	
21	23,0		*	*	*	

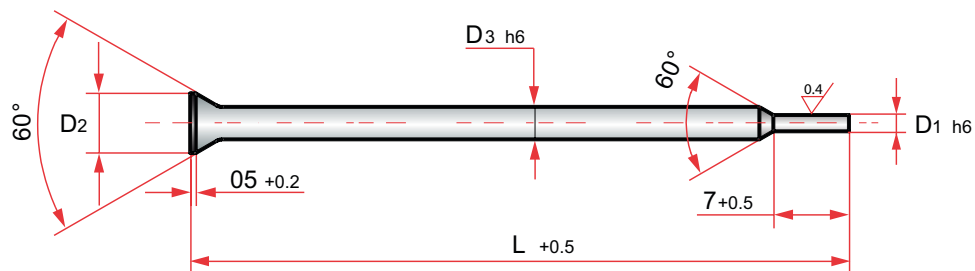
Punch DIN 9861D

Punzón cabeza cónica DIN 9861D



D1	D2	K	L			
			71	80	100	130
22	24,0	1,5	*	*	*	
23	25,0		*	*	*	
24	26,0		*	*	*	
25	27,0		*	*	*	
26	28,0		*			
27	29,0		*			
28	30,0		*			
29	31,0		*			
30	32,0		*			

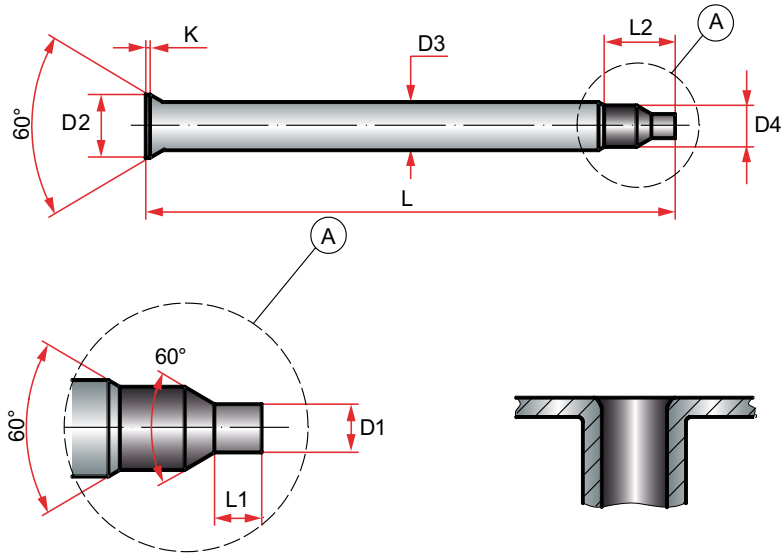
Punch similar DIN9861C
Punzón de embutición



Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

D1	D2	D3	Progresión	L	
				71	80
0,50 - 1,50	3,0	2,0	0,05	*	*
1,55 - 2,95	3,0	3,0	0,05	*	*

EC Draw Punch
Punzón de embutición



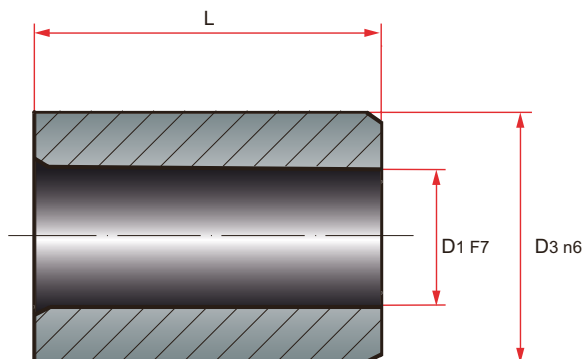
Material	Hardness	
	Body	Head
HWS (12% Cr)	62 ± 2 HRC	50 ± 5 HRC
HSS	64 ± 2 HRC	50 ± 5 HRC

Rosca	D1	D2	D3	D4	L	L1	L2	K
M2	1,0	4,5	3	1,6	75	1,5	10	0,5
M2,5	1,1			2,1		2,0		
M3	1,3			2,6		2,5		
M4	2,0	5,5	4	3,4	80	3,0	12	1,0
M5	2,7	6,5	5	4,3		3,5		
M6	3,4	8,0	6	5,1				
M8	4,2	10,0	8	6,9		4,0		

How to order: BREC thread
Forma de pedido: BREC Rosca

Punch Guide Bush DIN 179 A
Casquillo guía DIN 179 A

Mat: 1.7264 Carbonitrurado 60 - 62 HRC

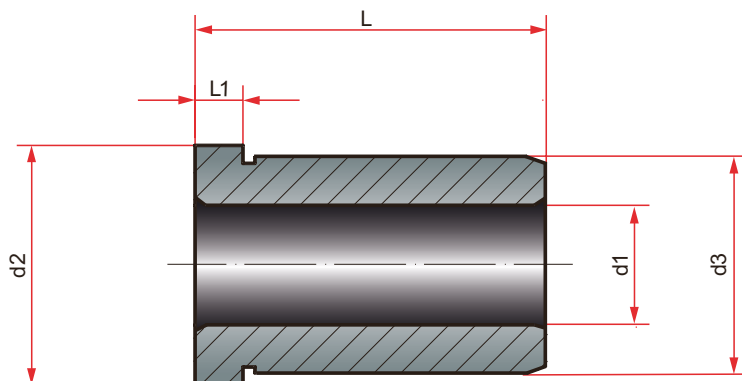


D1	D3	L	
		corto	largo
0,8 - 1,0	3	6	9
1,1 - 1,8	4		
1,9 - 2,6	5		
2,7 - 3,3	6	8	12
3,4 - 4,0	7		
4,1 - 5,0	8		
5,1 - 6,0	10	10	16
6,1 - 8,0	12		
8,1 - 10,0	15	12	20
10,1 - 12,0	18		
12,1 - 15,0	22	16	28
15,1 - 18,0	26		
18,1 - 22,0	30	20	36
22,1 - 26,0	35		
26,1 - 30,0	42		

How to order: DIN179A d1xL
Forma de pedido: DIN179A d1xL

Punch guide bush DIN172A
Casquillo guía DIN 172 A

Mat: 1.7264 Carbonitrurado 60 - 62 HRC

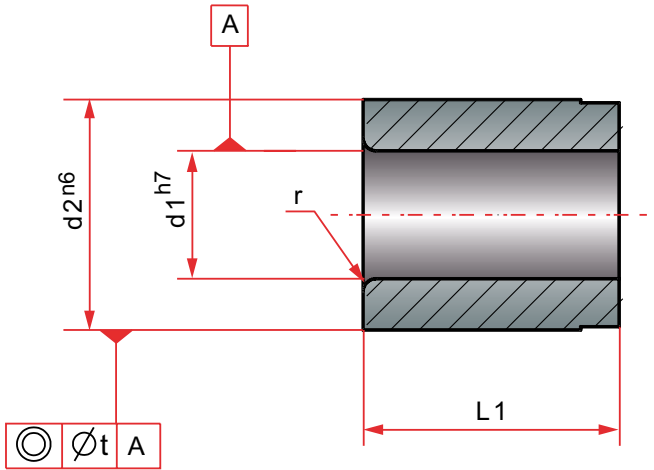


d1 F7			d3 n6	L		d2	L1
				corto	largo		
0,8	-	1,0	3	6	9	6	2
1,1	-	1,8	4			7	
1,9	-	2,6	5			8	
2,7	-	3,3	6	8	12	9	2,5
3,4	-	4,0	7			10	
4,1	-	5,0	8			11	
5,1	-	6,0	10	10	16	13	3
6,1	-	8,0	12			15	
8,1	-	10,0	15	12	20	18	4
10,1	-	12,0	18			22	
12,1	-	15,0	22	16	28	26	
15,1	-	18,0	26			30	
18,1	-	22,0	30	20	36	34	5
22,1	-	26,0	35			39	
26,1	-	30,0	42			46	

How to order: DIN172A/d1xL
Forma de pedido: DIN172A/d1xL

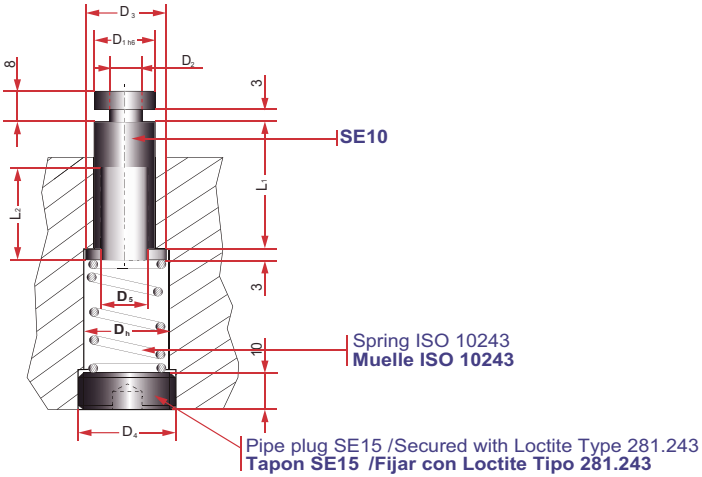
Punch guide bush DIN 9845 C
Casquillo guía punzón DIN 9845 C

Mat: 1.7264 Carbonitrurado 60 - 62 HRC



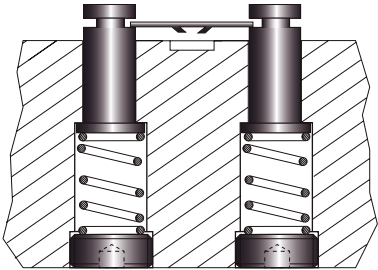
d1 h7	d2 n6	L1	r	Progresión	t
0,75 - 1,0	5	9	1	0,1	0,01
1,10 - 2,0	6	12			
2,10 - 3,0	7				
3,10 - 4,0	8				
4,10 - 5,0	10	16	1,5		0,02
5,10 - 6,0	12				
6,10 - 8,0	15	20			
8,10 - 10,0	18		2		
10,10 - 12,0	22	28			
12,10 - 15,0	26				
15,10 - 18,0	30				

Lifter pin
Elevador de banda



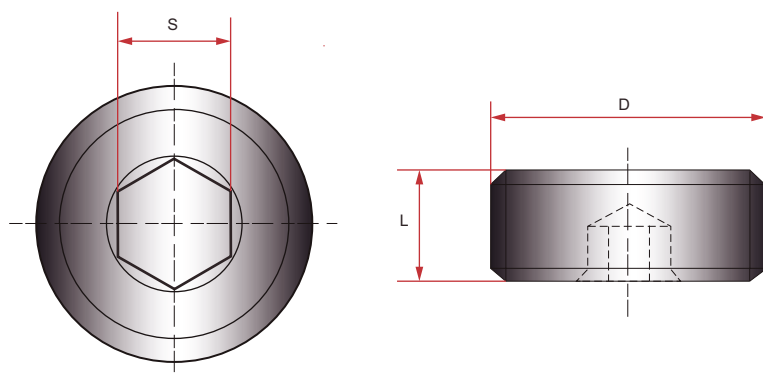
D_1	D_2	D_3	D_h	D_4	D_5	L_1	L_2	L	Plug Tapón	REF.
8	5	10	10,5	M12x1,5	-	20	-	31	SE15-M12	SE10-0820-M12
						25		36		SE10-0825-M12
						32		43		SE10-0832-M12
						40		51		SE10-0840-M12
10	6	12	12,5	M14x1,5	6,5	25	18	36	SE15-M14	SE10-1025-M14
						32	24	43		SE10-1032-M14
						40	30	51		SE10-1040-M14
						50	40	61		SE10-1050-M14
13	7	16	16,5	M18x1,5	8,5	25	18	36	SE15-M18	SE10-1325-M18
						32	24	43		SE10-1332-M18
						40	30	51		SE10-1340-M18
						50	40	61		SE10-1350-M18
16	8	20	20,5	M22x1,5	10,5	32	24	43	SE15-M22	SE10-1632-M22
						40	30	51		SE10-1640-M22
						50	40	61		SE10-1650-M22

Mounting example
Ejemplo de montaje

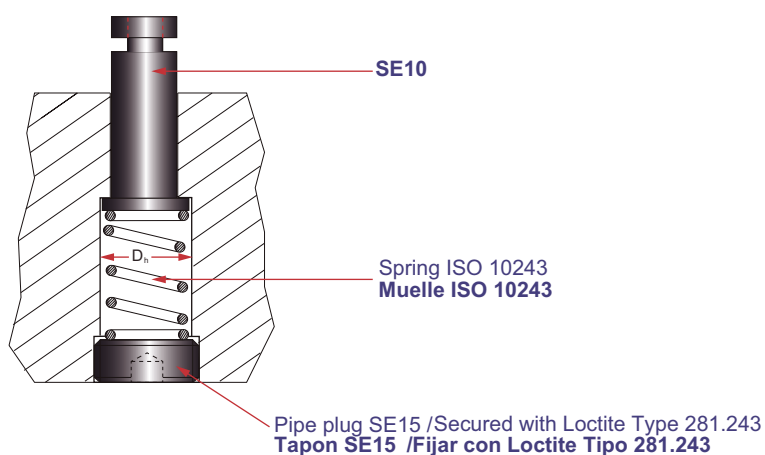


SE15

Plug for lifter pin
Tapón para elevadores de banda

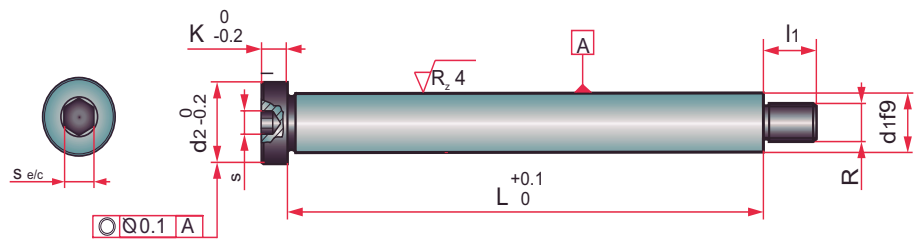


<i>Dimensiones/ Dimensions</i>				
REF.	D	L	D _h	S
SE15-M12	M12x1,5	10	10,5	6
SE15-M14	M14x1,5	10	12,5	6
SE15-M18	M18x1,5	10	16,5	8
SE15-M22	M22x1,5	10	20,5	8

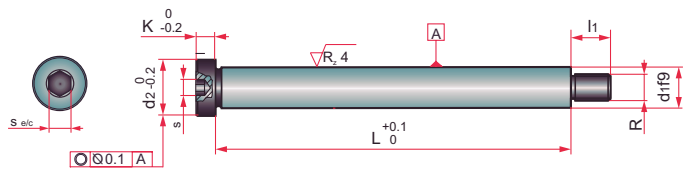


Shoulder bolt
Tornillo limitador

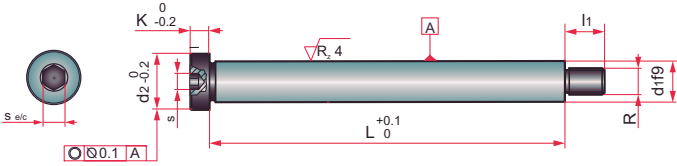
Mat. : Alloy steel. Hardness: HRC 38-42 - ISO 7379.



s	K	l1	d2	T	d1	R	L	REF.
3	4,5	9,5	10	3	6	M5	10	TPM/ 5 x 10
							12	TPM/ 5 x 12
							16	TPM/ 5 x 16
							20	TPM/ 5 x 20
							25	TPM/ 5 x 25
							30	TPM/ 5 x 30
							35	TPM/ 5 x 35
							40	TPM/ 5 x 40
							45	TPM/ 5 x 45
							50	TPM/ 5 x 50
4	5,5	11	13	4	8	M6	60	TPM/ 5 x 60
							12	TPM/ 6 x 12
							16	TPM/ 6 x 16
							20	TPM/ 6 x 20
							25	TPM/ 6 x 25
							30	TPM/ 6 x 30
							35	TPM/ 6 x 35
							40	TPM/ 6 x 40
							45	TPM/ 6 x 45
							50	TPM/ 6 x 50
							60	TPM/ 6 x 60
							70	TPM/ 6 x 70
							80	TPM/ 6 x 80
							90	TPM/ 6 x 90
							100	TPM/ 6 x 100



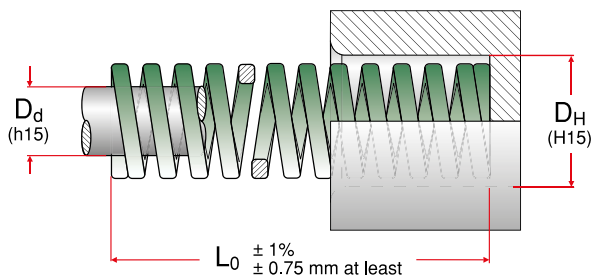
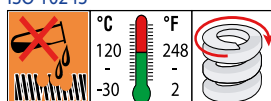
s	K	l1	d2	T	d1	R	L	REF.
5	7	13	16	5	10	M8	16	TPM/ 8 x 16
							20	TPM/ 8 x 20
							25	TPM/ 8 x 25
							30	TPM/ 8 x 30
							35	TPM/ 8 x 35
							40	TPM/ 8 x 40
							45	TPM/ 8 x 45
							50	TPM/ 8 x 50
							60	TPM/ 8 x 60
							70	TPM/ 8 x 70
							80	TPM/ 8 x 80
							90	TPM/ 8 x 90
							100	TPM/ 8 x 100
6	9	16	18	6	12	M10	110	TPM/ 8 x 110
							120	TPM/ 8 x 120
							16	TPM/ 10 x 16
							20	TPM/ 10 x 20
							25	TPM/ 10 x 25
							30	TPM/ 10 x 30
							35	TPM/ 10 x 35
							40	TPM/ 10 x 40
							45	TPM/ 10 x 45
							50	TPM/ 10 x 50
							60	TPM/ 10 x 60
							70	TPM/ 10 x 70
							80	TPM/ 10 x 80
8	11	18	24	8	16	M12	90	TPM/ 10 x 90
							100	TPM/ 10 x 100
							110	TPM/ 10 x 110
							120	TPM/ 10 x 120
							140	TPM/ 10 x 140
							30	TPM/ 12 x 30



s	K	I1	d2	T	d1	R	L	REF.
8	11	18	24	8	16	M12	35	TPM/ 12 x 35
							40	TPM/ 12 x 40
							45	TPM/ 12 x 45
							50	TPM/ 12 x 50
							60	TPM/ 12 x 60
							70	TPM/ 12 x 70
							80	TPM/ 12 x 80
							90	TPM/ 12 x 90
							100	TPM/ 12 x 100
							110	TPM/ 12 x 110
							120	TPM/ 12 x 120
10	14	22	30	10	20	M16	140	TPM/ 12 x 140
							160	TPM/ 12 x 160
							40	TPM/ 16 x 40
							50	TPM/ 16 x 50
							60	TPM/ 16 x 60
							70	TPM/ 16 x 70
							80	TPM/ 16 x 80
							90	TPM/ 16 x 90
12	16	27	36	12	25	M20	100	TPM/ 16 x 100
							120	TPM/ 16 x 120
							140	TPM/ 16 x 140
							160	TPM/ 16 x 160
							180	TPM/ 16 x 180
							200	TPM/ 16 x 200
							220	TPM/ 16 x 220
16	20	36	48	16	30	M24	80	TPM/ 20 x 80
							100	TPM/ 20 x 100
							120	TPM/ 20 x 120
							140	TPM/ 20 x 140
							160	TPM/ 20 x 160
20	24	45	60	20	36	M27	160	TPM/ 20 x 160
							180	TPM/ 20 x 180
							200	TPM/ 20 x 200

Light load spring ISO 10243:2010
Muelles de carga ligera ISO 10243:2010

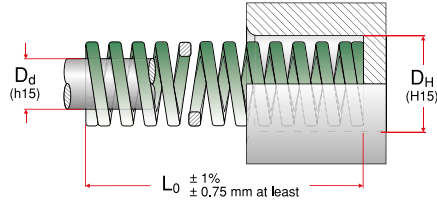
ISO 10243



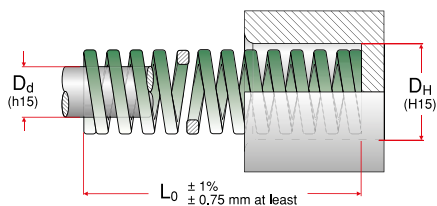
D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $25\%L_0$ $+3.000.000$		B $30\%L_0$ $-1.500.000$		C $35\%L_0$ $300-500.000$		D $40\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
10	5	25	10	6,3	63	7,5	75	8,8	88	10	100	13,5
		32	8,5	8	68	9,6	82	11,2	95	12,8	109	17,5
		38	6,8	9,5	65	11,4	78	13,3	90	15,2	103	20,8
		44	6	11	66	13,2	79	15,4	92	17,6	106	23,9
		51	5	12,8	64	15,3	77	17,9	89	20,4	102	28,9
		64	4,3	16	69	19,2	83	22,4	96	25,6	110	36,1
		76	3,2	19	61	22,8	73	26,6	85	30,4	97	43,2
		305	1,1	76,3	84	91,5	101	107	117	122	134	178
12,5	6,3	25	17,9	6,3	113	7,5	134	8,8	157	10	179	13,2
		32	16,4	8	131	9,6	157	11,2	184	12,8	210	18
		38	13,6	9,5	129	11,4	155	13,3	181	15,2	207	21
		44	12,1	11	133	13,2	160	15,4	186	17,6	213	24
		51	11,4	12,8	146	15,3	174	17,9	203	20,4	233	28,7
		64	9,3	16	149	19,2	179	22,4	208	25,6	238	35,8
		76	7,1	19	135	22,8	162	26,6	189	30,4	216	42,7
		89	5,4	22,3	120	26,7	144	31,2	168	35,6	192	50,4
		102	4,1	25,5	105	30,6	125	35,7	146	40,8	167	58,4
		305	1,4	76,3	107	91,5	128	107	149	122	171	172
16	8	25	23,4	6,3	147	7,5	176	8,8	205	10	234	12,6

How to order: BRV- D_H x L_0

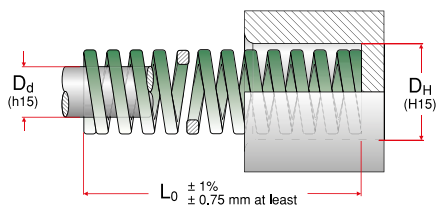
Forma de pedido: BRV- D_H x L_0



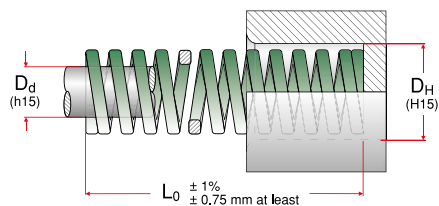
D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $25\%L_0$ +3.000.000		B $30\%L_0$ -1.500.000		C $35\%L_0$ 300-500.000		D $40\%L_0$ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
16	8	32	22,9	8	183	9,6	220	11,2	256	12,8	293	16,4
		38	19,3	9,5	183	11,4	220	13,3	257	15,2	293	19,7
		44	17,1	11	188	13,2	226	15,4	263	17,6	301	22,5
		51	15,7	12,8	201	15,3	240	17,9	280	20,4	320	26,3
		64	10,7	16	171	19,2	205	22,4	240	25,6	274	33,3
		76	10	19	190	22,8	228	26,6	266	30,4	304	40,2
		89	8,6	22,3	192	26,7	230	31,2	268	35,6	306	47,6
		102	7,8	25,5	199	30,6	239	35,7	278	40,8	318	55,4
		115	6,6	28,8	190	34,5	228	40,3	266	46	304	60,8
		305	2,5	76,3	191	91,5	229	107	267	122	305	165
20	10	25	55,8	6,3	352	7,5	419	8,8	488	10	558	12,1
		32	45	8	360	9,6	432	11,2	504	12,8	576	15,3
		38	33,3	9,5	316	11,4	380	13,3	443	15,2	506	18,9
		44	30	11	330	13,2	396	15,4	462	17,6	528	21,5
		51	24,5	12,8	314	15,3	375	17,9	437	20,4	500	25
		64	20	16	320	19,2	384	22,4	448	25,6	512	31,1
		76	16	19	304	22,8	365	26,6	426	30,4	486	37,3
		89	14	22,3	312	26,7	374	31,2	436	35,6	498	44,5
		102	12	25,5	306	30,6	367	35,7	428	40,8	490	51,1
		115	10,9	28,8	314	34,5	376	40,3	439	46	501	58,2
		127	9,5	31,8	302	38,1	362	44,5	422	50,8	483	64,9
		139	8,4	35	294	42	353	48,7	409	56	470	71,5
		152	7,5	38	285	45,6	342	53,2	399	60,8	456	78,8



D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant ±10%	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 35%L ₀ 300-500.000		D 40%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
20	10	305	4	76,3	305	91,5	366	107	427	122	488	157
25	12,5	25	100	6,3	630	7,5	750	8,8	875	10	1000	11,9
		32	80,3	8	642	9,6	771	11,2	899	12,8	1028	16
		38	62	9,5	589	11,4	707	13,3	825	15,2	942	18,3
		44	52,9	11	582	13,2	698	15,4	815	17,6	931	21,4
		51	44	12,8	563	15,3	673	17,9	785	20,4	898	24,9
		64	35,2	16	563	19,2	676	22,4	788	25,6	901	31,4
		76	28	19	532	22,8	638	26,6	745	30,4	851	37,5
		89	24	22,3	535	26,7	641	31,2	748	35,6	854	43,5
		102	21,1	25,5	538	30,6	646	35,7	753	40,8	861	51,1
		115	18,7	28,8	539	34,5	645	40,3	753	46	860	58,1
		127	16,7	31,8	531	38,1	636	44,5	742	50,8	848	64,1
		139	15,3	35	536	42	643	48,7	744	56	857	70,4
		152	14	38	532	45,6	638	53,2	745	60,8	851	77,1
		178	12,5	44,5	556	53,4	668	62,3	779	71,2	890	93,1
		203	10,4	50,8	528	60,9	633	71,1	739	81,2	844	103
		305	7	76,3	534	91,5	641	107	747	122	854	156
32	16	38	94	9,5	893	11,4	1072	13,3	1250	15,2	1429	18,3
		44	79,5	11	875	13,2	1049	15,4	1224	17,6	1399	21,5
		51	67	12,8	858	15,3	1025	17,9	1196	20,4	1367	25,5
		64	53	16	848	19,2	1018	22,4	1187	25,6	1357	31,9
		76	44	19	836	22,8	1003	26,6	1170	30,4	1338	38,6
		89	37,2	22,3	830	26,7	993	31,2	1159	35,6	1324	46,5

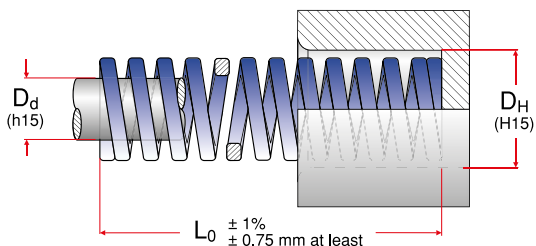


D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant ±10%	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 35%L ₀ 300-500.000		D 40%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
32	16	102	32	25,5	816	30,6	979	35,7	1142	40,8	1306	53,2
		115	29	28,8	835	34,5	1001	40,3	1167	46	1334	60
		127	25	31,8	795	38,1	953	44,5	1111	50,8	1270	66,7
		139	23	35	805	42	966	48,7	1119	56	1288	71,8
		152	21,5	38	817	45,6	980	53,2	1144	60,8	1307	78,5
		178	18,2	44,5	810	53,4	972	62,3	1134	71,2	1296	94,4
		203	15,8	50,8	803	60,9	962	71,1	1123	81,2	1283	107
		254	12,5	63,5	794	76,2	953	88,9	1111	102	1270	136
		305	10,3	76,3	786	91,5	942	107	1100	122	1257	163
40	20	51	92	12,8	1178	15,3	1408	17,9	1642	20,4	1877	25,5
		64	73	16	1168	19,2	1402	22,4	1635	25,6	1869	31,4
		76	63	19	1197	22,8	1436	26,6	1676	30,4	1915	37,8
		89	51	22,3	1137	26,7	1362	31,2	1589	35,6	1816	44,3
		102	43	25,5	1097	30,6	1316	35,7	1535	40,8	1754	50,7
		115	39,6	28,8	1140	34,5	1366	40,3	1594	46	1822	58,1
		127	37	31,8	1177	38,1	1410	44,5	1645	50,8	1880	64,6
		139	32	35	1120	42	1344	48,7	1557	56	1792	70,1
		152	28	38	1064	45,6	1277	53,2	1490	60,8	1702	76,6
		178	25,2	44,5	1121	53,4	1346	62,3	1570	71,2	1794	90,4
		203	22,7	50,8	1153	60,9	1382	71,1	1613	81,2	1843	102
		254	17	63,5	1080	76,2	1295	88,9	1511	102	1727	129
		305	14,8	76,3	1129	91,5	1354	107	1580	122	1806	156
50	25	64	156	16	2496	19,2	2995	22,4	3494	25,6	3994	31

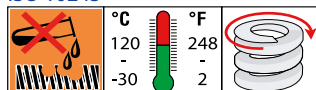


D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant $\pm 10\%$	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 35%L ₀ 300-500.000		D 40%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
50	25	76	125	19	2375	22,8	2850	26,6	3325	30,4	3800	37,2
		89	109	22,3	2431	26,7	2910	31,2	3395	35,6	3880	43,6
		102	94	25,5	2397	30,6	2876	35,7	3356	40,8	3835	50,3
		115	81	28,8	2333	34,5	2795	40,3	3260	46	3726	58,1
		127	71	31,8	2258	38,1	2705	44,5	3156	50,8	3607	63,7
		139	66,5	35	2328	42	2793	48,7	3235	56	3724	69,5
		152	60	38	2280	45,6	2736	53,2	3192	60,8	3648	76,5
		178	52	44,5	2314	53,4	2777	62,3	3240	71,2	3702	91,9
		203	44	50,8	2235	60,9	2680	71,1	3126	81,2	3573	105
		254	35	63,5	2223	76,2	2667	88,9	3112	102	3556	131
		305	28,5	76,3	2175	91,5	2608	107	3042	122	3477	155
63	38	76	189	19	3591	22,8	4309	26,6	5027	30,4	5746	36,5
		89	158	22,3	3523	26,7	4219	31,2	4922	35,6	5625	43,4
		102	131	25,5	3341	30,6	4009	35,7	4677	40,8	5345	49,7
		115	116	28,8	3341	34,5	4002	40,3	4669	46	5336	55,6
		127	103	31,8	3275	38,1	3924	44,5	4578	50,8	5232	62,7
		152	84,3	38	3203	45,6	3844	53,2	4485	60,8	5125	77,1
		178	71,5	44,5	3182	53,4	3818	62,3	4454	71,2	5091	92,2
		203	61,7	50,8	3134	60,9	3758	71,1	4384	81,2	5010	103
		254	47	63,5	2985	76,2	3581	88,9	4178	102	4775	130
		305	38,2	76,3	2915	91,5	3495	107	4078	122	4660	157

Medium load spring ISO 10243:2010
Muelles de carga media ISO 10243:2010



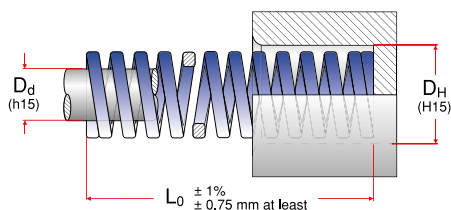
ISO 10243



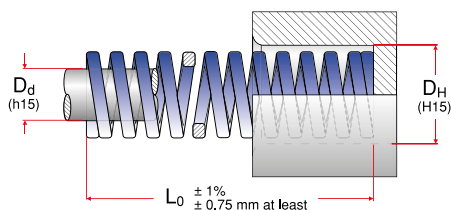
D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant ±10%	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 33.75%L ₀ 300-500.000		D 37.5%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
10	5	25	16	6,3	101	7,5	120	8,4	135	9,4	150	10,2
		32	13	8	104	9,6	125	10,8	140	12	156	14,2
		38	11,9	9,5	113	11,4	136	12,8	153	14,3	170	16,8
		44	10,3	11	113	13,2	136	14,9	153	16,5	170	19,4
		51	8,9	12,8	114	15,3	136	17,2	153	19,1	170	23,4
		64	7,5	16	120	19,2	144	21,6	162	24	180	28,2
		76	5,3	19	101	22,8	121	25,7	136	28,5	151	34,2
		305	1,6	76,3	122	91,5	146	103	165	114	183	134
12,5	6,3	25	30	6,3	189	7,5	225	8,4	253	9,4	282	11,9
		32	24,8	8	198	9,6	238	10,8	268	12	298	16,2
		38	21,4	9,5	203	11,4	244	12,8	274	14,3	306	18,7
		44	18,5	11	204	13,2	244	14,9	275	16,5	305	21,3
		51	15,5	12,8	198	15,3	237	17,2	267	19,1	296	25,6
		64	12,1	16	194	19,2	232	21,6	261	24	290	32,4
		76	10,2	19	194	22,8	233	25,7	262	28,5	291	39
		89	8,4	22,3	187	26,7	224	30	252	33,4	281	45,9
		102	6,3	25,5	161	30,6	193	34,4	217	38,3	241	52,3
		305	2,1	76,3	160	91,5	192	103	216	114	240	153
16	8	25	49,4	6,3	311	7,5	371	8,4	417	9,4	464	10,5
		32	37,1	8	297	9,6	356	10,8	401	12	445	13,2

How to order: BRS-D_H x L₀

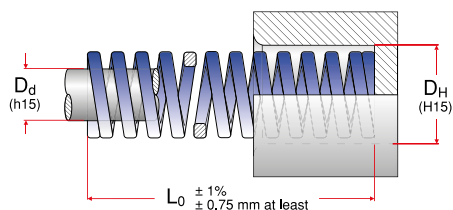
Forma de pedido: BRS-D_H x L₀



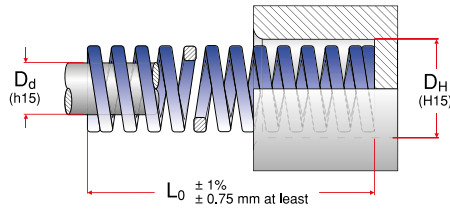
D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant ±10%	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 33.75%L ₀ 300-500.000		D 37.5%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
16	8	38	33,9	9,5	322	11,4	386	12,8	435	14,3	485	17,2
		44	30	11	330	13,2	396	14,9	446	16,5	495	19,4
		51	26,4	12,8	338	15,3	404	17,2	454	19,1	504	24,2
		64	20,5	16	328	19,2	394	21,6	443	24	492	29,2
		76	17,8	19	338	22,8	406	25,7	457	28,5	507	36,3
		89	15,2	22,3	339	26,7	406	30	457	33,4	508	41,7
		102	13,5	25,5	344	30,6	413	34,4	465	38,3	517	48,9
		115	11,8	28,8	340	34,5	407	38,8	458	43,1	509	53,1
		305	4,8	76,3	366	91,5	439	103	494	114	549	142
20	10	25	98	6,3	617	7,5	735	8,4	827	9,4	921	10,5
		32	72,6	8	581	9,6	697	10,8	784	12	871	13,9
		38	56	9,5	532	11,4	638	12,8	717	14,3	801	16,6
		44	47,5	11	523	13,2	627	14,9	705	16,5	784	18,8
		51	41,7	12,8	534	15,3	638	17,2	717	19,1	796	23,1
		64	32,3	16	517	19,2	620	21,6	698	24	775	27,5
		76	25,1	19	477	22,8	572	25,7	644	28,5	715	33,8
		89	22	22,3	491	26,7	587	30	661	33,4	735	39,7
		102	19,8	25,5	505	30,6	606	34,4	682	38,3	758	47,3
		115	18,1	28,8	521	34,5	624	38,8	703	43,1	780	52,5
		127	16,6	31,8	528	38,1	632	42,9	712	47,6	790	56,9
		139	15,1	35	529	42	634	46,9	708	52,5	793	62,1
		152	13,2	38	500	45,6	600	51,3	677	57	750	67,6
		305	6,1	76,3	465	91,5	558	103	628	114	698	143
25	12,5	25	147	6,3	926	7,5	1103	8,4	1240	9,4	1382	10,2



D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $25\%L_0$ +3.000.000		B $30\%L_0$ -1.500.000		C $33.75\%L_0$ 300-500.000		D $37.5\%L_0$ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
25	12,5	32	118	8	944	9,6	1133	10,8	1274	12	1416	13,7
		38	93	9,5	884	11,4	1060	12,8	1193	14,3	1330	15,7
		44	80,8	11	889	13,2	1067	14,9	1200	16,5	1333	18,2
		51	68,6	12,8	878	15,3	1050	17,2	1181	19,1	1310	21,7
		64	53	16	848	19,2	1018	21,6	1145	24	1272	26
		76	43,2	19	821	22,8	985	25,7	1108	28,5	1231	32,3
		89	38,2	22,3	852	26,7	1020	30	1147	33,4	1276	38
		102	33	25,5	842	30,6	1010	34,4	1136	38,3	1264	43
		115	28	28,8	806	34,5	966	38,8	1087	43,1	1207	48,6
		127	25,9	31,8	824	38,1	987	42,9	1110	47,6	1233	53,7
		139	23,2	35	812	42	974	46,9	1088	52,5	1218	59,4
		152	20,8	38	790	45,6	948	51,3	1067	57	1186	63,8
		178	17,8	44,5	792	53,4	951	60,1	1069	66,8	1189	76,6
		203	15,8	50,8	803	60,9	962	68,5	1082	76,1	1202	88,4
		305	10,2	76,3	778	91,5	933	103	1050	114	1167	135
32	16	38	185	9,5	1758	11,4	2109	12,8	2373	14,3	2646	16,3
		44	158	11	1738	13,2	2086	14,9	2346	16,5	2607	18,9
		51	134	12,8	1715	15,3	2050	17,2	2306	19,1	2559	23,1
		64	99	16	1584	19,2	1901	21,6	2138	24	2376	28,5
		76	80,5	19	1530	22,8	1835	25,7	2065	28,5	2294	34,2
		89	69,1	22,3	1541	26,7	1845	30	2076	33,4	2308	40,4
		102	58,8	25,5	1499	30,6	1799	34,4	2024	38,3	2252	48
		115	51,5	28,8	1483	34,5	1777	38,8	1999	43,1	2220	54,3
		127	44,8	31,8	1425	38,1	1707	42,9	1920	47,6	2132	59,2



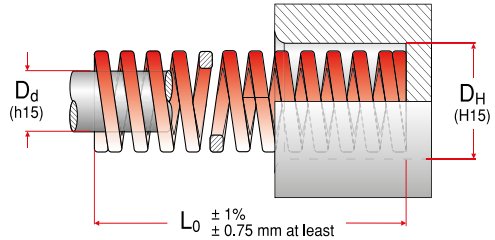
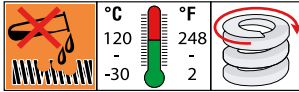
D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $25\%L_0$ $+3.000.000$		B $30\%L_0$ $-1.500.000$		C $33.75\%L_0$ $300-500.000$		D $37.5\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
32	16	139	42,3	35	1481	42	1777	46,9	1984	52,5	2221	65,3
		152	37,8	38	1436	45,6	1724	51,3	1939	57	2155	73
		178	32,5	44,5	1446	53,4	1736	60,1	1952	66,8	2171	84,5
		203	28,9	50,8	1468	60,9	1760	68,5	1980	76,1	2199	96,9
		254	21,4	63,5	1359	76,2	1631	85,7	1835	95,3	2039	121
		305	18,3	76,3	1396	91,5	1674	103	1884	114	2094	147
40	20	51	182	12,8	2330	15,3	2785	17,2	3130	19,1	3476	21,4
		64	140	16	2240	19,2	2688	21,6	3024	24	3360	26,8
		76	108	19	2052	22,8	2462	25,7	2770	28,5	3078	32,7
		89	90,7	22,3	2023	26,7	2422	30	2724	33,4	3029	39
		102	81	25,5	2066	30,6	2479	34,4	2788	38,3	3102	44,1
		115	71,8	28,8	2068	34,5	2477	38,8	2787	43,1	3095	50,6
		127	62,7	31,8	1994	38,1	2389	42,9	2687	47,6	2985	55,9
		139	57,5	35	2013	42	2415	46,9	2697	52,5	3019	61,8
		152	51,6	38	1961	45,6	2353	51,3	2647	57	2941	67,5
		178	44,1	44,5	1962	53,4	2355	60,1	2649	66,8	2946	77,2
		203	36,7	50,8	1864	60,9	2235	68,5	2514	76,1	2793	91,8
		254	30,1	63,5	1911	76,2	2294	85,7	2580	95,3	2869	113
		305	24,6	76,3	1877	91,5	2251	103	2532	114	2814	138
50	25	64	209	16	3344	19,2	4013	21,6	4514	24	5016	28,2
		76	168	19	3192	22,8	3830	25,7	4309	28,5	4788	34,9
		89	140	22,3	3122	26,7	3738	30	4205	33,4	4676	39,2
		102	119	25,5	3035	30,6	3641	34,4	4097	38,3	4558	47,3



D_H Hole Diameter	D_d Rod Diameter	L₀ Free Length	R Spring Constant $\pm 10\%$	A 25%L ₀ +3.000.000		B 30%L ₀ -1.500.000		C 33.75%L ₀ 300-500.000		D 37.5%L ₀ 100-200.000		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
50	25	115	106	28,8	3053	34,5	3657	38,8	4114	43,1	4569	52,6
		127	97	31,8	3085	38,1	3696	42,9	4158	47,6	4617	59,8
		139	87	35	3045	42	3654	46,9	4081	52,5	4568	65,1
		152	80	38	3040	45,6	3648	51,3	4104	57	4560	70,8
		178	69,5	44,5	3093	53,4	3711	60,1	4175	66,8	4643	84,2
		203	59,8	50,8	3038	60,9	3642	68,5	4097	76,1	4551	96,5
		229	50,9	57,3	2917	68,7	3497	77,3	3934	85,9	4372	108
		254	43,9	63,5	2788	76,2	3345	85,7	3763	95,3	4184	122
		305	38,6	76,3	2945	91,5	3532	103	3973	114	4416	147
63	38	76	312	19	5928	22,8	7114	25,7	8003	28,5	8892	30,7
		89	260	22,3	5798	26,7	6942	30	7810	33,4	8684	36,5
		102	221	25,5	5636	30,6	6763	34,4	7608	38,3	8464	43,6
		115	187	28,8	5386	34,5	6452	38,8	7258	43,1	8060	48,9
		127	168	31,8	5342	38,1	6401	42,9	7201	47,6	7997	54,2
		152	136	38	5168	45,6	6202	51,3	6907	57	7752	65,7
		178	114	44,5	5073	53,4	6088	60,1	6849	66,8	7615	76,5
		203	100	50,8	5080	60,9	6090	68,5	6851	76,1	7610	88
		229	89,2	57,3	5111	68,7	6128	77,3	6894	85,9	7662	104
		254	78,4	63,5	4978	76,2	5974	85,7	6721	95,3	7472	112
		305	64,7	76,3	4937	91,5	5920	103	6660	114	7402	134

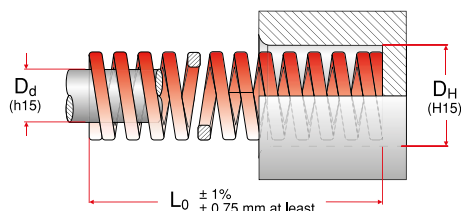
Heavy load spring ISO 10243:2010 Muelles de carga fuerte ISO 10243:2010

ISO 10243

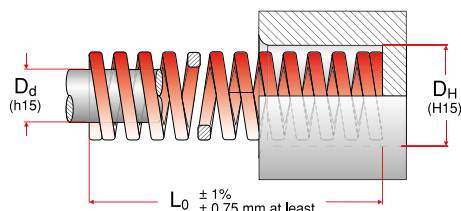


D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $20\%L_0$ $+3.000.000$		B $25\%L_0$ $\sim 1.500.000$		C $27.5\%L_0$ $300-500.000$		D $30\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
10	5	25	22,1	5	111	6,3	139	6,9	152	7,5	166	9,2
		32	17,5	6,4	112	8	140	8,8	154	9,6	168	12,1
		38	17,1	7,6	130	9,5	162	10,5	179	11,4	195	13,2
		44	15	8,8	132	11	165	12,1	182	13,2	198	15,1
		51	12,8	10,2	131	12,8	164	14	180	15,3	196	19,5
		64	10,7	12,8	137	16	171	17,6	188	19,2	205	21,8
		76	7,5	15,2	114	19	143	20,9	157	22,8	171	27,9
		305	2,1	61	128	76,3	160	83,9	176	91,5	192	127
12,5	6,3	25	42,1	5	211	6,3	265	6,9	289	7,5	316	9,8
		32	33,2	6,4	212	8	266	8,8	292	9,6	319	13,6
		38	29,3	7,6	223	9,5	278	10,5	306	11,4	334	14,6
		44	24,6	8,8	216	11	271	12,1	298	13,2	325	18,1
		51	19,6	10,2	200	12,8	251	14	275	15,3	300	22,3
		64	15	12,8	192	16	240	17,6	264	19,2	288	27,3
		76	13,2	15,2	201	19	251	20,9	276	22,8	301	33,1
		89	11,4	17,8	203	22,3	254	24,5	279	26,7	304	38,9
		102	8,4	20,4	171	25,5	214	28,1	236	30,6	257	43,8
		305	2,8	61	171	76,3	214	83,9	235	91,5	256	140
16	8	25	75,7	5	379	6,3	477	6,9	520	7,5	568	8,4
		32	52,8	6,4	338	8	422	8,8	465	9,6	507	10,5

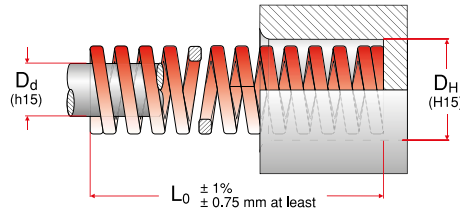
How to order: BRR- D_H x L_0
Forma de pedido: BRR- D_H x L_0



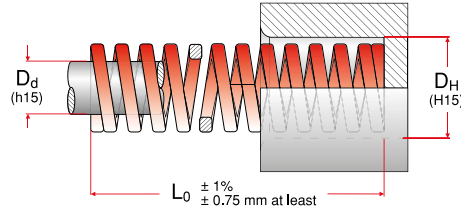
D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $20\%L_0$ $+3.000.000$		B $25\%L_0$ $\sim 1.500.000$		C $27.5\%L_0$ $300-500.000$		D $30\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
16	8	38	48,5	7,6	369	9,5	461	10,5	507	11,4	553	13,6
		44	42,8	8,8	377	11	471	12,1	518	13,2	565	15,9
		51	37,1	10,2	378	12,8	475	14	520	15,3	568	18,9
		64	30,3	12,8	388	16	485	17,6	533	19,2	582	24,9
		76	25,7	15,2	391	19	488	20,9	537	22,8	586	29,2
		89	21,7	17,8	386	22,3	484	24,5	531	26,7	579	34,5
		102	19,3	20,4	394	25,5	492	28,1	541	30,6	591	39,1
		115	15,7	23	361	28,8	452	31,6	497	34,5	542	44
		305	7,1	61	433	76,3	542	83,9	596	91,5	650	104
20	10	25	216	5	1080	6,3	1361	6,9	1485	7,5	1620	8,3
		32	168	6,4	1075	8	1344	8,8	1478	9,6	1613	10,9
		38	129	7,6	980	9,5	1226	10,5	1348	11,4	1471	12,5
		44	112	8,8	986	11	1232	12,1	1355	13,2	1478	15
		51	94	10,2	959	12,8	1203	14	1318	15,3	1438	17,6
		64	72,1	12,8	923	16	1154	17,6	1269	19,2	1384	22,6
		76	59,7	15,2	907	19	1134	20,9	1248	22,8	1361	27,5
		89	50,5	17,8	899	22,3	1126	24,5	1236	26,7	1348	31,7
		102	44,2	20,4	902	25,5	1127	28,1	1240	30,6	1353	37,5
		115	38,4	23	883	28,8	1106	31,6	1214	34,5	1325	42,6
		127	34,1	25,4	866	31,8	1084	34,9	1191	38,1	1299	45,5
		139	31	28	868	35	1085	38,2	1185	42	1302	50,1
		152	28,2	30,4	857	38	1072	41,8	1179	45,6	1286	55,8
		305	15	61	915	76,3	1145	83,9	1258	91,5	1373	114
25	12,5	25	375	5	1875	6,3	2363	6,9	2578	7,5	2813	8,5



D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $20\%L_0$ $+3.000.000$		B $25\%L_0$ $\sim 1.500.000$		C $27.5\%L_0$ $300-500.000$		D $30\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
25	12,5	32	297	6,4	1901	8	2376	8,8	2614	9,6	2851	11
		38	219	7,6	1664	9,5	2081	10,5	2289	11,4	2497	12,6
		44	187	8,8	1646	11	2057	12,1	2263	13,2	2468	14,8
		51	156	10,2	1591	12,8	1997	14	2188	15,3	2387	17,9
		64	123	12,8	1574	16	1968	17,6	2165	19,2	2362	23,1
		76	99	15,2	1505	19	1881	20,9	2069	22,8	2257	26,3
		89	84	17,8	1495	22,3	1873	24,5	2056	26,7	2243	30,5
		102	73	20,4	1489	25,5	1862	28,1	2048	30,6	2234	37,3
		115	65	23	1495	28,8	1872	31,6	2056	34,5	2243	41,9
		127	57,7	25,4	1466	31,8	1835	34,9	2015	38,1	2198	46,2
		139	52,7	28	1476	35	1845	38,2	2014	42	2213	49,3
		152	47,8	30,4	1453	38	1816	41,8	1998	45,6	2180	55,7
		178	41	25,6	1460	44,5	1825	49	2007	53,4	2189	65,1
		203	35,8	40,6	1453	50,8	1819	55,8	1999	60,9	2180	74,5
		305	22,9	61	1397	76,3	1747	83,9	1921	91,5	2095	110
32	16	38	388	7,6	2949	9,5	3686	10,5	4055	11,4	4423	12,5
		44	324	8,8	2851	11	3564	12,1	3920	13,2	4277	14,9
		51	272	10,2	2774	12,8	3482	14	3815	15,3	4162	17,8
		64	212	12,8	2714	16	3392	17,6	3731	19,2	4070	22,4
		76	172	15,2	2614	19	3268	20,9	3595	22,8	3922	26,1
		89	141	17,8	2510	22,3	3144	24,5	3451	26,7	3765	30,8
		102	122	20,4	2489	25,5	3111	28,1	3422	30,6	3733	36,8
		115	107	23	2461	28,8	3082	31,6	3384	34,5	3692	41,4
		127	93	25,4	2362	31,8	2957	34,9	3248	38,1	3543	44,4



D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $20\%L_0$ $+3.000.000$		B $25\%L_0$ $\sim 1.500.000$		C $27.5\%L_0$ $300-500.000$		D $30\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
32	16	139	86	28	2408	35	3010	38,2	3287	42	3612	48,5
		152	78	30,4	2371	38	2954	41,8	3260	45,6	3557	54,8
		178	67,2	25,6	2392	44,5	2990	49	3289	53,4	3588	63,6
		203	59,1	40,6	2399	50,8	3002	55,8	3299	60,9	3599	72,5
		254	46,4	50,8	2357	63,5	2946	69,9	3241	76,2	3536	92,8
		305	38	61	2318	76,3	2899	83,9	3187	91,5	3477	112
40	20	51	350	10,2	3570	12,8	4480	14	4909	15,3	5355	17
		64	269	12,8	3443	16	4304	17,6	4734	19,2	5165	21,9
		76	219	15,2	3329	19	4161	20,9	4577	22,8	4993	26,7
		89	190	17,8	3382	22,3	4237	24,5	4650	26,7	5073	31,3
		102	163	20,4	3325	25,5	4157	28,1	4572	30,6	4988	37,1
		115	142	23	3266	28,8	4090	31,6	4491	34,5	4899	41
		127	128	25,4	3251	31,8	4070	34,9	4470	38,1	4877	46,5
		139	115	28	3220	35	4025	38,2	4396	42	4830	53,1
		152	105	30,4	3192	38	3990	41,8	4389	45,6	4788	56,1
		178	89	35,6	3168	44,5	3961	49	4357	53,4	4753	67,4
		203	77	40,6	3126	50,8	3912	55,8	4299	60,9	4689	76,2
		254	61	50,8	3099	63,5	3874	69,9	4261	76,2	4648	96,2
		305	51	61	3111	76,3	3891	83,9	4278	91,5	4667	115
50	25	64	413	12,8	5286	16	4304	17,6	7269	19,2	7930	22,4
		76	339	15,2	5153	19	6441	20,9	7085	22,8	7729	26,5
		89	288	17,8	5126	22,3	6422	24,5	7049	26,7	7690	31,5
		102	245	20,4	4998	25,5	6248	28,1	6872	30,6	7497	37,6

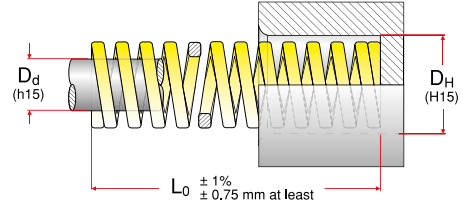
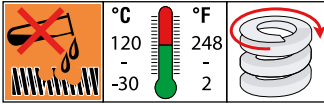


D_H Hole Diameter	D_d Rod Diameter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $20\%L_0$ $+3.000.000$		B $25\%L_0$ $\sim 1.500.000$		C $27.5\%L_0$ $300-500.000$		D $30\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
50	25	115	215	23	4945	28,8	6192	31,6	6799	34,5	7418	42,7
		127	192	25,4	4877	31,8	6106	34,9	6706	38,1	7315	47,5
		139	168	28	4704	35	5880	38,2	6422	42	7056	51,8
		152	154	30,4	4682	38	5852	41,8	6437	45,6	7022	57,8
		178	134	35,6	4770	44,5	5963	49	6559	53,4	7156	68,5
		203	117	40,6	4750	50,8	5944	55,8	6352	60,9	7125	77,6
		254	89	50,8	4521	63,5	5662	69,9	6217	76,2	6782	97,9
		305	73	61	4453	76,3	5570	83,9	6123	91,5	6680	121
63	38	76	618	15,2	9394	19	11742	20,9	12916	22,8	14090	24,7
		89	515	17,8	9167	22,3	11485	24,5	12605	26,7	13751	30
		102	438	20,4	8935	25,5	11169	28,1	12286	30,6	13403	35,1
		115	370	23	8510	28,8	10656	31,6	11701	34,5	12765	37,5
		127	333	25,4	8458	31,8	10589	34,9	11630	38,1	12687	45,9
		152	269	30,4	8178	38	10222	41,8	11244	45,6	12266	56,5
		178	226	35,6	8046	44,5	10057	49	11063	53,4	12068	66,8
		203	198	40,6	8039	50,8	10058	55,8	11053	60,9	12058	78,8
		254	155	50,8	7874	63,5	9843	69,9	10827	76,2	11811	102
		305	128	61	7808	76,3	9766	83,9	10736	91,5	11712	122

Estimated life 100.000 cycles / Vida estimada 100,000 ciclos

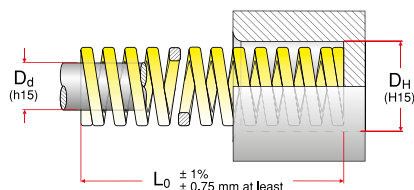
Extra-heavy load spring ISO 10243:2010
Muelles de carga extrafuerte ISO 10243:2010

ISO 10243

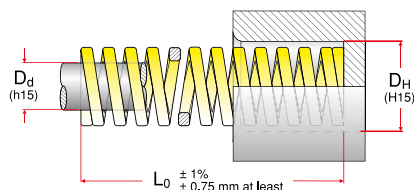


D_H Hole Diameter	D_d Rod Dia- meter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $17\%L_0$ $+3.000.000$		B $20\%L_0$ $\sim 1.500.000$		C $22.5\%L_0$ $300-500.000$		D $25\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
10	5	25	36,8	4,3	158	5	184	5,6	207	6,3	232	7,7
		32	27,9	5,4	151	6,4	179	7,2	201	8	223	10,6
		38	23,7	6,5	154	7,6	180	8,6	203	9,5	225	12,6
		44	19,2	7,5	144	8,8	169	9,9	190	11	211	13,8
		51	16,5	8,7	144	10,2	168	11,5	189	12,8	211	16,2
		64	13,2	10,9	144	12,8	169	14,4	190	16	211	20,4
		76	10,9	12,9	141	15,2	166	17,1	186	19	207	25,2
		305	2,6	51,9	135	61	159	68,6	178	76,3	198	111
12,5	6,3	25	58,5	4,3	252	5	293	5,6	329	6,3	369	8,1
		32	43,9	5,4	237	6,4	281	7,2	316	8	351	9,9
		38	36	6,5	234	7,6	274	8,6	308	9,5	342	12,9
		44	30,3	7,5	227	8,8	267	9,9	300	11	333	14,1
		51	26,2	8,7	228	10,2	267	11,5	301	12,8	335	17,4
		64	21,2	10,9	231	12,8	271	14,4	305	16	339	21
		76	17,1	12,9	221	15,2	260	17,1	292	19	325	26,4
		89	14,5	15,1	219	17,8	258	20	290	22,3	323	31,5
		102	12,7	17,3	220	20,4	259	23	291	25,5	324	36
		305	4,3	51,9	223	61	262	68,6	295	76,3	328	111
16	8	25	118	4,3	507	5	590	5,6	664	6,3	743	8,5
		32	89	5,4	481	6,4	570	7,2	641	8	712	11

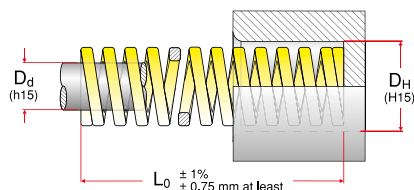
How to order: BRA- D_H x L_0
Forma de pedido: BRA- D_H x L_0



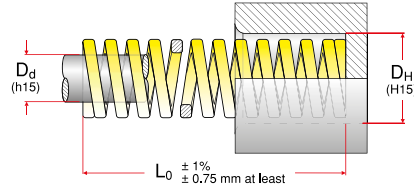
D_H Hole Diameter	D_d Rod Dia- meter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $17\%L_0$ $+3.000.000$		B $20\%L_0$ $\sim 1.500.000$		C $22.5\%L_0$ $300-500.000$		D $25\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
16	8	38	72,1	6,5	469	7,6	548	8,6	616	9,5	685	13,2
		44	60,9	7,5	457	8,8	536	9,9	603	11	670	14,7
		51	52,3	8,7	455	10,2	533	11,5	600	12,8	669	17,7
		64	41,2	10,9	449	12,8	527	14,4	593	16	659	21,9
		76	34,1	12,9	440	15,2	518	17,1	583	19	648	27,8
		89	29,5	15,1	445	17,8	525	20	591	22,3	658	31,2
		102	25,6	17,3	443	20,4	522	23	588	25,5	653	37,9
		115	22,4	19,6	439	23	515	25,9	580	28,8	645	44,5
		305	8,4	51,9	436	61	512	68,6	576	76,3	641	113
20	10	25	293	4,3	1260	5	1465	5,6	1648	6,3	1846	6,9
		32	224	5,4	1210	6,4	1434	7,2	1613	8	1792	9,4
		38	177	6,5	1151	7,6	1345	8,6	1513	9,5	1682	12
		44	149	7,5	1118	8,8	1311	9,9	1475	11	1639	13,5
		51	128	8,7	1114	10,2	1306	11,5	1469	12,8	1638	16,2
		64	99	10,9	1079	12,8	1267	14,4	1426	16	1584	21,2
		76	81,7	12,9	1054	15,2	1242	17,1	1397	19	1552	24,7
		89	69,5	15,1	1049	17,8	1237	20	1392	22,3	1550	28,8
		102	60,6	17,3	1048	20,4	1236	23	1391	25,5	1545	34,8
		115	53	19,6	1039	23	1219	25,9	1371	28,8	1526	39
		127	47,5	21,6	1026	25,4	1207	28,6	1357	31,8	1511	43
		139	43	23,8	1023	28	1204	31,3	1345	35	1505	45,3
		152	39	25,8	1006	30,4	1186	34,2	1334	38	1482	50,4
		305	21,2	51,9	1100	61	1293	68,6	1455	76,3	1618	103
25	12,5	25	459	4,3	1974	5	2295	5,6	2582	6,3	2892	7,3



D_H Hole Diameter	D_d Rod Dia- meter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $17\%L_0$ $+3.000.000$		B $20\%L_0$ $\sim 1.500.000$		C $22.5\%L_0$ $300-500.000$		D $25\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
25	12,5	32	374	5,4	2020	6,4	2394	7,2	2693	8	2992	10,7
		38	300	6,5	1950	7,6	2280	8,6	2580	9,5	2850	12
		44	244	7,5	1830	8,8	2147	9,9	2416	11	2684	14,4
		51	208	8,7	1810	10,2	2122	11,5	2392	12,8	2662	17,4
		64	161	10,9	1755	12,8	2061	14,4	2318	16	2576	21,4
		76	131	12,9	1690	15,2	1991	17,1	2240	19	2489	26,9
		89	111	15,1	1676	17,8	1976	20	2220	22,3	2475	30,9
		102	96,3	17,3	1666	20,4	1965	23	2210	25,5	2456	36,7
		115	85,7	19,6	1680	23	1971	25,9	2217	28,8	2468	40,3
		127	76,3	21,6	1648	25,4	1938	28,6	2180	31,8	2426	45,1
		139	66	23,8	1571	28	1848	31,3	2066	35	2310	47,6
		152	63,5	25,8	1638	30,4	1930	34,2	2172	38	2413	53,5
		178	53,9	30,3	1633	35,6	1919	40,1	2159	44,5	2399	63,9
		203	47	34,5	1622	40,6	1908	45,7	2147	50,8	2388	70,2
32	16	305	30,9	51,9	1604	61	1885	68,6	2121	76,3	2358	110
		38	480	6,5	3120	7,6	3648	8,6	4128	9,5	4560	11,4
		44	390	7,5	2925	8,8	3432	9,9	3861	11	4290	13,7
		51	320	8,7	2784	10,2	3264	11,5	3680	12,8	4096	15,6
		64	269	10,9	2934	12,8	3446	14,4	3876	16	4307	20
		76	219	12,9	2825	15,2	3329	17,1	3745	19	4161	24,4
		89	180	15,1	2723	17,8	3209	20	3611	22,3	4021	29,7
		102	155	17,3	2682	20,4	3162	23	3557	25,5	3953	35,1
		115	140	19,6	2744	23	3220	25,9	3623	28,8	4032	39
		127	124	21,6	2678	25,4	3150	28,6	3543	31,8	3943	42,8



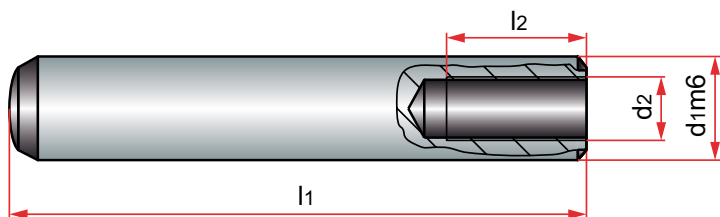
D_H Hole Diameter	D_d Rod Dia- meter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $17\%L_0$ $+3.000.000$		B $20\%L_0$ $\sim 1.500.000$		C $22.5\%L_0$ $300-500.000$		D $25\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
32	16	139	112	23,8	2673	28	3144	31,3	3512	35	3931	48,6
		152	102	25,8	2632	30,4	3101	34,2	3488	38	3876	52,4
		178	88,2	30,3	2672	35,6	3140	40,1	3532	44,5	3925	60,9
		203	76	34,5	2622	40,6	3086	45,7	3471	50,8	3861	69,2
		254	60,8	43,2	2627	50,8	3089	57,2	3475	63,5	3861	88,1
		305	49	51,9	2543	61	2989	68,6	3363	76,3	3739	104
40	20	51	628	8,7	5464	10,2	6406	11,5	7206	12,8	8038	15
		64	487	10,9	5308	12,8	6234	14,4	7013	16	7792	19,5
		76	379	12,9	4889	15,2	5761	17,1	6481	19	7201	23,3
		89	321	15,1	4847	17,8	5714	20	6428	22,3	7158	26,7
		102	281	17,3	4861	20,4	5732	23	6449	25,5	7166	33,8
		115	245	19,6	4802	23	5635	25,9	6339	28,8	7056	36,2
		127	221	21,6	4774	25,4	5613	28,6	6315	31,8	7028	40,7
		139	190	23,8	4641	28	5460	31,3	6103	35	6825	44,5
		152	168	25,8	4334	30,4	5107	34,2	5746	38	6384	49,6
		178	150	30,3	4545	35,6	5340	40,1	6015	44,5	6675	59,9
		203	132	34,5	4554	40,6	5359	45,7	6029	50,8	6706	67,1
		254	107	43,2	4622	50,8	5436	57,2	6115	63,5	6795	86,3
		305	87,8	51,9	4557	61	5356	68,6	6025	76,3	6699	104
50	25	64	709	10,9	7728	12,8	9075	14,4	10210	16	11344	19,3
		76	572	12,9	7379	15,2	8694	17,1	9781	19	10868	24,2
		89	475	15,1	7173	17,8	8455	20	9512	22,3	10593	28
		102	405	17,3	7007	20,4	8262	23	9295	25,5	10328	33,5
		115	352	19,6	6899	23	8096	25,9	9108	28,8	10138	38,6



D_H Hole Diameter	D_d Rod Dia- meter	L_0 Free Length	R Spring Constant $\pm 10\%$	A $17\%L_0$ $+3.000.000$		B $20\%L_0$ $\sim 1.500.000$		C $22.5\%L_0$ $300-500.000$		D $25\%L_0$ $100-200.000$		E approx. Do not use
mm	mm	mm	N/mm	mm	N	mm	N	mm	N	mm	N	mm
50	25	127	316	21,6	6826	25,4	8026	28,6	9030	31,8	10049	41,4
		139	289	23,8	6878	28	8092	31,3	9046	35	10115	47,3
		152	168	25,8	6166	30,4	7266	34,2	8174	38	9082	50,2
		178	215	30,3	6515	35,6	7654	40,1	8611	44,5	9568	61,1
		203	187	34,5	6452	40,6	7592	45,7	8541	50,8	9500	67,7
		254	153	43,2	6610	50,8	7772	57,2	8744	63,5	9716	87
		305	127	51,9	6591	61	7747	68,6	8715	76,3	9690	104
63	38	76	952	12,9	12280	15,2	14470	n/a	n/a	n/a	n/a	15,5
		89	819	15,1	12360	17,8	14580	n/a	n/a	n/a	n/a	20
		102	700	17,3	12110	20,4	14280	23	16065	25,5	17850	30,7
		115	620	19,6	12152	23	14260	25,9	16043	28,8	17860	34,9
		127	565	21,6	12204	25,4	14351	28,6	16145	31,8	17967	38
		152	458	25,8	11816	30,4	13923	34,2	15664	38	17404	47,2
		178	384	30,3	11635	35,6	13670	40,1	15379	44,5	17088	55,8
		203	337	34,5	11627	40,6	13682	45,7	15392	50,8	17120	64,8
		254	263	43,2	11362	50,8	13360	57,2	15030	63,5	16701	86,7
		305	218	51,9	11314	61	13298	68,6	14960	76,3	16633	106

Estimated life 100.000 cycles / Vida estimada 100,000 ciclos

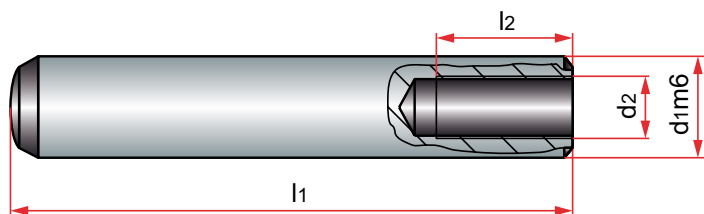
Dowel pin with extracting thread DIN 7979 / ISO 8735
Pasador cilíndrico roscado DIN 7979 / ISO 8735



Hardness: 58 ± 2 HRC. DIN 7979.

d2	l2	d1	l1	REF.
M4	6	6	16	PASR/ 6 x 16
			20	PASR/ 6 x 20
			24	PASR/ 6 x 24
			28	PASR/ 6 x 28
			32	PASR/ 6 x 32
			36	PASR/ 6 x 36
			40	PASR/ 6 x 40
			45	PASR/ 6 x 45
			50	PASR/ 6 x 50
			55	PASR/ 6 x 55
			60	PASR/ 6 x 60
			70	PASR/ 6 x 70
M5	8	8	20	PASR/ 8 x 20
			24	PASR/ 8 x 24
			28	PASR/ 8 x 28
			32	PASR/ 8 x 32
			36	PASR/ 8 x 36
			40	PASR/ 8 x 40
			45	PASR/ 8 x 45
			50	PASR/ 8 x 50
			55	PASR/ 8 x 55
			60	PASR/ 8 x 60
			70	PASR/ 8 x 70
			80	PASR/ 8 x 80
M6	10	10	24	PASR/ 10 x 24

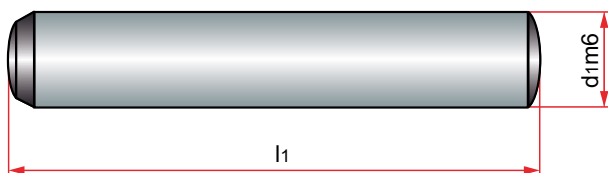
d2	l2	d1	l1	REF.
M6	10	10	28	PASR/ 10 x 28
			32	PASR/ 10 x 32
			36	PASR/ 10 x 36
			40	PASR/ 10 x 40
			45	PASR/ 10 x 45
			50	PASR/ 10 x 50
			55	PASR/ 10 x 55
			60	PASR/ 10 x 60
			70	PASR/ 10 x 70
			80	PASR/ 10 x 80
			90	PASR/ 10 x 90
			100	PASR/ 10 x 100
	12	12	28	PASR/ 12 x 28
			32	PASR/ 12 x 32
			36	PASR/ 12 x 36
			40	PASR/ 12 x 40
			45	PASR/ 12 x 45
			50	PASR/ 12 x 50
			55	PASR/ 12 x 55
			60	PASR/ 12 x 60
			70	PASR/ 12 x 70
			80	PASR/ 12 x 80
			90	PASR/ 12 x 90
			100	PASR/ 12 x 100



d2	l2	d1	l1	REF.
M6	12	12	120	PASR/ 12 x 120
M8	12	14	32	PASR/ 14 x 32
			36	PASR/ 14 x 36
			40	PASR/ 14 x 40
			45	PASR/ 14 x 45
			50	PASR/ 14 x 50
			55	PASR/ 14 x 55
			60	PASR/ 14 x 60
			70	PASR/ 14 x 70
			80	PASR/ 14 x 80
			90	PASR/ 14 x 90
			100	PASR/ 14 x 100
			120	PASR/ 14 x 120
	16	16	40	PASR/ 16 x 40
			45	PASR/ 16 x 45
			50	PASR/ 16 x 50

d2	l2	d1	l1	REF.
M8	16	16	55	PASR/ 16 x 55
			60	PASR/ 16 x 60
			70	PASR/ 16 x 70
			80	PASR/ 16 x 80
			90	PASR/ 16 x 90
			100	PASR/ 16 x 100
			120	PASR/ 16 x 120
M10	20	20	50	PASR/ 20 x 50
			55	PASR/ 20 x 55
			60	PASR/ 20 x 60
			70	PASR/ 20 x 70
			80	PASR/ 20 x 80
			90	PASR/ 20 x 90
			100	PASR/ 20 x 100
			120	PASR/ 20 x 120

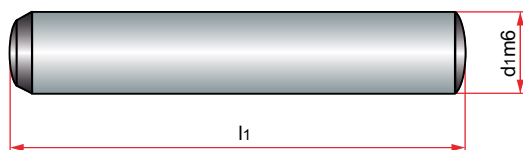
Dowel pin DIN 6325 / ISO 8734
Pasador cilíndrico DIN 6325 / ISO 8734



Hardness: 58 ± 2 HRC. DIN 6325.

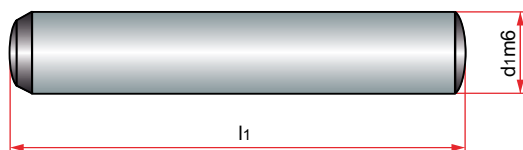
d1	l1	REF.
2	10	PAS/ 2 x 10
	12	PAS/ 2 x 12
	14	PAS/ 2 x 14
	16	PAS/ 2 x 16
	18	PAS/ 2 x 18
	20	PAS/ 2 x 20
	24	PAS/ 2 x 24
	28	PAS/ 2 x 28
3	10	PAS/ 3 x 10
	12	PAS/ 3 x 12
	14	PAS/ 3 x 14
	16	PAS/ 3 x 16
	18	PAS/ 3 x 18
	20	PAS/ 3 x 20
	24	PAS/ 3 x 24
	28	PAS/ 3 x 28
	30	PAS/ 3 x 30
	32	PAS/ 3 x 32
	36	PAS/ 3 x 36
	40	PAS/ 3 x 40
	45	PAS/ 3 x 45
	50	PAS/ 3 x 50
4	10	PAS/ 4 x 10
	12	PAS/ 4 x 12
	14	PAS/ 4 x 14
	16	PAS/ 4 x 16
	18	PAS/ 4 x 18

d1	l1	REF.
4	20	PAS/ 4 x 20
	24	PAS/ 4 x 24
	28	PAS/ 4 x 28
	30	PAS/ 4 x 30
	32	PAS/ 4 x 32
	36	PAS/ 4 x 36
	40	PAS/ 4 x 40
	45	PAS/ 4 x 45
	50	PAS/ 4 x 50
	60	PAS/ 4 x 60
5	10	PAS/ 5 x 10
	12	PAS/ 5 x 12
	14	PAS/ 5 x 14
	16	PAS/ 5 x 16
	18	PAS/ 5 x 18
	20	PAS/ 5 x 20
	24	PAS/ 5 x 24
	28	PAS/ 5 x 28
	30	PAS/ 5 x 30
	32	PAS/ 5 x 32
	36	PAS/ 5 x 36
	40	PAS/ 5 x 40
	45	PAS/ 5 x 45
	50	PAS/ 5 x 50
	55	PAS/ 5 x 55
	60	PAS/ 5 x 60
	70	PAS/ 5 x 70



d1	l1	REF.
5	80	PAS/ 5 x 80
6	10	PAS/ 6 x 10
	12	PAS/ 6 x 12
	14	PAS/ 6 x 14
	16	PAS/ 6 x 16
	18	PAS/ 6 x 18
	20	PAS/ 6 x 20
	24	PAS/ 6 x 24
	28	PAS/ 6 x 28
	30	PAS/ 6 x 30
	32	PAS/ 6 x 32
	36	PAS/ 6 x 36
	40	PAS/ 6 x 40
	45	PAS/ 6 x 45
	50	PAS/ 6 x 50
	55	PAS/ 6 x 55
	60	PAS/ 6 x 60
	70	PAS/ 6 x 70
	80	PAS/ 6 x 80
	90	PAS/ 6 x 90
	100	PAS/ 6 x 100
7	20	PAS/ 7 x 20
	24	PAS/ 7 x 24
	28	PAS/ 7 x 28
	30	PAS/ 7 x 30
	32	PAS/ 7 x 32
	36	PAS/ 7 x 36
	40	PAS/ 7 x 40
	45	PAS/ 7 x 45
	50	PAS/ 7 x 50
	55	PAS/ 7 x 55
	60	PAS/ 7 x 60
	70	PAS/ 7 x 70
	80	PAS/ 7 x 80

d1	l1	REF.
7	90	PAS/ 7 x 90
	100	PAS/ 7 x 100
8	16	PAS/ 8 x 16
	20	PAS/ 8 x 20
	24	PAS/ 8 x 24
	28	PAS/ 8 x 28
	30	PAS/ 8 x 30
	32	PAS/ 8 x 32
	36	PAS/ 8 x 36
	40	PAS/ 8 x 40
	45	PAS/ 8 x 45
	50	PAS/ 8 x 50
	55	PAS/ 8 x 55
	60	PAS/ 8 x 60
	70	PAS/ 8 x 70
	80	PAS/ 8 x 80
	90	PAS/ 8 x 90
	100	PAS/ 8 x 100
	120	PAS/ 8 x 120
10	20	PAS/ 10 x 20
	24	PAS/ 10 x 24
	28	PAS/ 10 x 28
	30	PAS/ 10 x 30
	32	PAS/ 10 x 32
	36	PAS/ 10 x 36
	40	PAS/ 10 x 40
	45	PAS/ 10 x 45
	50	PAS/ 10 x 50
	55	PAS/ 10 x 55
	60	PAS/ 10 x 60
	70	PAS/ 10 x 70
	80	PAS/ 10 x 80
	90	PAS/ 10 x 90
	100	PAS/ 10 x 100

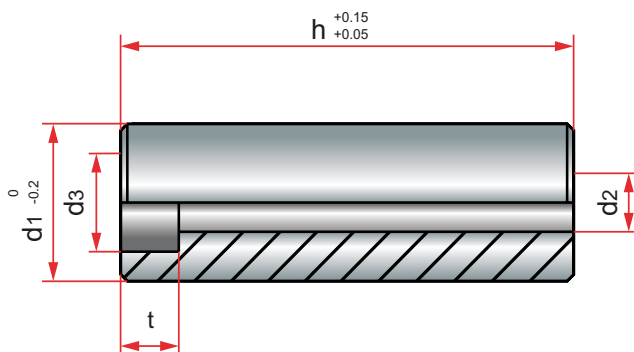


d1	l1	REF.
10	120	PAS/ 10 x 120
12	28	PAS/ 12 x 28
	30	PAS/ 12 x 30
	32	PAS/ 12 x 32
	36	PAS/ 12 x 36
	40	PAS/ 12 x 40
	45	PAS/ 12 x 45
	50	PAS/ 12 x 50
	55	PAS/ 12 x 55
	60	PAS/ 12 x 60
	70	PAS/ 12 x 70
	80	PAS/ 12 x 80
	90	PAS/ 12 x 90
	100	PAS/ 12 x 100
	120	PAS/ 12 x 120
	130	PAS/ 12 x 130
	140	PAS/ 12 x 140
	150	PAS/ 12 x 150
14	40	PAS/ 14 x 40
	45	PAS/ 14 x 45
	50	PAS/ 14 x 50
	55	PAS/ 14 x 55
	60	PAS/ 14 x 60
	70	PAS/ 14 x 70
	80	PAS/ 14 x 80
	90	PAS/ 14 x 90
	100	PAS/ 14 x 100

d1	l1	REF.
14	120	PAS/ 14 x 120
	130	PAS/ 14 x 130
	140	PAS/ 14 x 140
	150	PAS/ 14 x 150
16	36	PAS/ 16 x 36
	40	PAS/ 16 x 40
	45	PAS/ 16 x 45
	50	PAS/ 16 x 50
	55	PAS/ 16 x 55
	60	PAS/ 16 x 60
	70	PAS/ 16 x 70
	80	PAS/ 16 x 80
	90	PAS/ 16 x 90
	100	PAS/ 16 x 100
	120	PAS/ 16 x 120
	130	PAS/ 16 x 130
	140	PAS/ 16 x 140
	150	PAS/ 16 x 150
20	60	PAS/ 20 x 60
	70	PAS/ 20 x 70
	80	PAS/ 20 x 80
	90	PAS/ 20 x 90
	100	PAS/ 20 x 100
	120	PAS/ 20 x 120
	130	PAS/ 20 x 130
	140	PAS/ 20 x 140
	150	PAS/ 20 x 150

Pillar Support
Columna de apoyo

Mat. 1.1730 /640 N/mm².

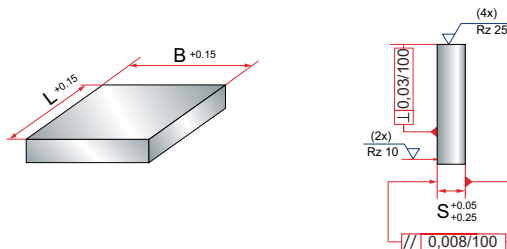


t	d3	d2	d1	h	REF.
9	15	9	32	36	BR571 / 32 x 36
				46	BR571 / 32 x 46
				56	BR571 / 32 x 56
				66	BR571 / 32 x 66
				76	BR571 / 32 x 76
				86	BR571 / 32 x 86
				96	BR571 / 32 x 96
				116	BR571 / 32 x 116
11	18	11	40	46	BR571 / 40 x 46
				56	BR571 / 40 x 56
				66	BR571 / 40 x 66
				76	BR571 / 40 x 76
				86	BR571 / 40 x 86
				96	BR571 / 40 x 96
				116	BR571 / 40 x 116
14	20	14	50	56	BR571 / 50 x 56
				66	BR571 / 50 x 66
				76	BR571 / 50 x 76
				86	BR571 / 50 x 86
				96	BR571 / 50 x 96
				116	BR571 / 50 x 116
				136	BR571 / 50 x 136

PLACAS P



P Plates
PLacas P



Mat.1.1730 / 1.2311 / 1.2312

B	L	S	REF.
156	156	22	P156x156x 22
		27	P156x156x 27
		36	P156x156x 36
		46	P156x156x 46
		56	P156x156x 56
		66	P156x156x 66
		76	P156x156x 76
		86	P156x156x 86
		96	P156x156x 96
		116	P156x156x116
	196	22	P156x196x 22
		27	P156x196x 27
		36	P156x196x 36
		46	P156x196x 46
		56	P156x196x 56
		66	P156x196x 66
		76	P156x196x 76
		86	P156x196x 86
		96	P156x196x 96
		116	P156x196x116
	246	22	P156x246x 22
		27	P156x246x 27
		36	P156x246x 36
		46	P156x246x 46
		56	P156x246x 56
		66	P156x246x 66
		76	P156x246x 76
		86	P156x246x 86
		96	P156x246x 96
		116	P156x246x116
190	246	22	P190x246x 22
		27	P190x246x 27
		36	P190x246x 36
		46	P190x246x 46
		56	P190x246x 56
		66	P190x246x 66
		76	P190x246x 76
		86	P190x246x 86
		96	P190x246x 96
		116	P190x246x116

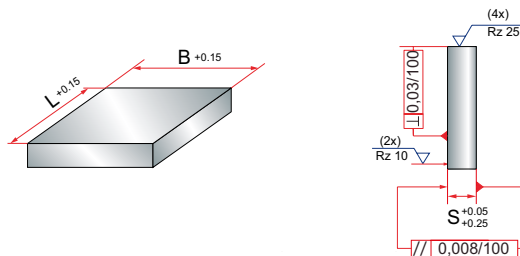
B	L	S	REF.
190	246	86	P190x246x 86
		96	P190x246x 96
		116	P190x246x116
		136	P190x246x136
	196	22	P196x196x 22
		27	P196x196x 27
		36	P196x196x 36
		46	P196x196x 46
		56	P196x196x 56
		66	P196x196x 66
		76	P196x196x 76
		86	P196x196x 86
		96	P196x196x 96
		116	P196x196x116
		136	P196x196x136
	296	22	P196x296x 22
		27	P196x296x 27
		36	P196x296x 36
		46	P196x296x 46
		56	P196x296x 56
		66	P196x296x 66
		76	P196x296x 76
		86	P196x296x 86
		96	P196x296x 96
		116	P196x296x116
	346	136	P196x296x136
		22	P196x346x 22
		27	P196x346x 27
		36	P196x346x 36
		46	P196x346x 46
		56	P196x346x 56
		66	P196x346x 66
		76	P196x346x 76
		86	P196x346x 86
		96	P196x346x 96
		116	P196x346x116
		136	P196x346x136

B	L	S	REF.
196	396	27	P196x396x 27
		36	P196x396x 36
		46	P196x396x 46
		56	P196x396x 56
		66	P196x396x 66
		76	P196x396x 76
		86	P196x396x 86
		96	P196x396x 96
		116	P196x396x116
		136	P196x396x136
	216	22	P216x246x 22
		27	P216x246x 27
		36	P216x246x 36
		46	P216x246x 46
		56	P216x246x 56
	246	66	P216x246x 66
		76	P216x246x 76
		86	P216x246x 86
		96	P216x246x 96
		116	P216x246x116
	296	22	P216x296x 22
		27	P216x296x 27
		36	P216x296x 36
		46	P216x296x 46
		56	P216x296x 56
	246	66	P216x296x 66
		76	P216x296x 76
		86	P216x296x 86
		96	P216x296x 96
		116	P216x296x116
	246	27	P246x246x 27
		36	P246x246x 36
		46	P246x246x 46
		56	P246x246x 56
		66	P246x246x 66
		76	P246x246x 76
		86	P246x246x 86

PLACAS P



P Plates
PLacas P



Mat.1.1730 / 1.2311 / 1.2312

B	L	S	REF.
246	246	96	P246x246x 96
		116	P246x246x116
		136	P246x246x136
		156	P246x246x156
	296	27	P246x296x 27
		36	P246x296x 36
		46	P246x296x 46
		56	P246x296x 56
		66	P246x296x 66
		76	P246x296x 76
		86	P246x296x 86
		96	P246x296x 96
		116	P246x296x116
		136	P246x296x136
		156	P246x296x156
	346	27	P246x346x 27
		36	P246x346x 36
		46	P246x346x 46
		56	P246x346x 56
		66	P246x346x 66
		76	P246x346x 76
		86	P246x346x 86
		96	P246x346x 96
		116	P246x346x116
		136	P246x346x136
		156	P246x346x156
	396	27	P246x396x 27
		36	P246x396x 36
		46	P246x396x 46
		56	P246x396x 56
		66	P246x396x 66
		76	P246x396x 76
		86	P246x396x 86
		96	P246x396x 96
		116	P246x396x116
		136	P246x396x136
		156	P246x396x156

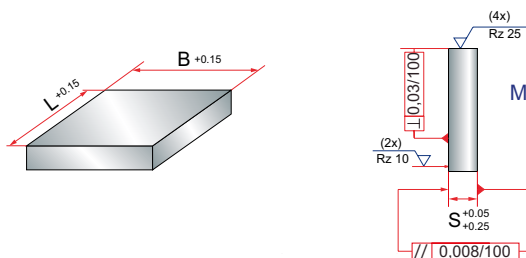
B	L	S	REF.
246	446	27	P246x446x 27
		36	P246x446x 36
		46	P246x446x 46
		56	P246x446x 56
		66	P246x446x 66
		76	P246x446x 76
		86	P246x446x 86
		96	P246x446x 96
		116	P246x446x116
		136	P246x446x136
		156	P246x446x156
	296	27	P296x296x 27
		36	P296x296x 36
		46	P296x296x 46
		56	P296x296x 56
		66	P296x296x 66
		76	P296x296x 76
		86	P296x296x 86
		96	P296x296x 96
296	346	27	P296x346x 27
		36	P296x346x 36
		46	P296x346x 46
		56	P296x346x 56
		66	P296x346x 66
		76	P296x346x 76
		86	P296x346x 86
		96	P296x346x 96
	396	27	P296x396x 27
		36	P296x396x 36
		46	P296x396x 46
		56	P296x396x 56
		66	P296x396x 66
		76	P296x396x 76
		86	P296x396x 86
		96	P296x396x 96
		116	P296x396x116
		136	P296x396x136
		156	P296x396x156

B	L	S	REF.
296	396	66	P296x396x 66
		76	P296x396x 76
		86	P296x396x 86
		96	P296x396x 96
		116	P296x396x116
		136	P296x396x156
		156	P296x396x156
	446	27	P296x446x 27
		36	P296x446x 36
		46	P296x446x 46
		56	P296x446x 56
		66	P296x446x 66
		76	P296x446x 76
		86	P296x446x 86
		96	P296x446x 96
346	346	27	P346x346x 27
		36	P346x346x 36
		46	P346x346x 46
		56	P346x346x 56
		66	P346x346x 66
		76	P346x346x 76
		86	P346x346x 86
		96	P346x346x 96
	396	27	P346x396x 27
		36	P346x396x 36
		46	P346x396x 46
		56	P346x396x 56
		66	P346x396x 66
		76	P346x396x 76
		86	P346x396x 86
		96	P346x396x 96
		116	P346x396x116
		136	P346x396x136
		156	P346x396x156

PLACAS P



P Plates
PLacas P



Mat.1.1730 / 1.2311 / 1.2312

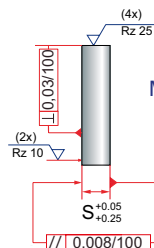
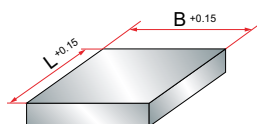
B	L	S	REF.
346	396	116	P346x396x116
		136	P346x396x136
		156	P346x396x156
446	446	27	P346x446x 27
		36	P346x446x 36
		46	P346x446x 46
		56	P346x446x 56
		66	P346x446x 66
		76	P346x446x 76
		86	P346x446x 86
		96	P346x446x 96
		116	P346x446x116
		136	P346x446x136
		156	P346x446x156
496	496	27	P346x496x 27
		36	P346x496x 36
		46	P346x496x 46
		56	P346x496x 56
		66	P346x496x 66
		76	P346x496x 76
		86	P346x496x 86
		96	P346x496x 96
		116	P346x496x116
		136	P346x496x136
		156	P346x496x156
546	546	27	P346x546x 27
		36	P346x546x 36
		46	P346x546x 46
		56	P346x546x 56
		66	P346x546x 66
		76	P346x546x 76
		86	P346x546x 86
		96	P346x546x 96
		116	P346x546x116
		136	P346x546x136
		156	P346x546x156

B	L	S	REF.
346	596	27	P346x596x 27
		36	P346x596x 36
		46	P346x596x 46
		56	P346x596x 56
		66	P346x596x 66
		76	P346x596x 76
		86	P346x596x 86
		96	P346x596x 96
		116	P346x596x116
		136	P346x596x136
		156	P346x596x156
396	396	27	P396x396x 27
		36	P396x396x 36
		46	P396x396x 46
		56	P396x396x 56
		66	P396x396x 66
		76	P396x396x 76
		86	P396x396x 86
		96	P396x396x 96
		116	P396x396x116
		136	P396x396x136
		156	P396x396x156
446	446	27	P396x446x 27
		36	P396x446x 36
		46	P396x446x 46
		56	P396x446x 56
		66	P396x446x 66
		76	P396x446x 76
		86	P396x446x 86
		96	P396x446x 96
		116	P396x446x116
		136	P396x446x136
		156	P396x446x156
496	496	27	P396x496x 27
		36	P396x496x 36
		46	P396x496x 46
		56	P396x496x 56
		66	P396x496x 66
		76	P396x496x 76

B	L	S	REF.
396	496	66	P396x496x 66
		76	P396x496x 76
		86	P396x496x 86
		96	P396x496x 96
		116	P396x496x116
		136	P396x496x136
		156	P396x496x156
	546	36	P396x546x 36
		46	P396x546x 46
		56	P396x546x 56
		66	P396x546x 66
		76	P396x546x 76
		86	P396x546x 86
		96	P396x546x 96
		116	P396x546x116
		136	P396x546x136
		156	P396x546x156
496	596	27	P396x596x 27
		36	P396x596x 36
		46	P396x596x 46
		56	P396x596x 56
		66	P396x596x 66
		76	P396x596x 76
		86	P396x596x 86
		96	P396x596x 96
		116	P396x596x116
		136	P396x596x136
		156	P396x596x156
446	446	27	P446x446x 27
		36	P446x446x 36
		46	P446x446x 46
		56	P446x446x 56
		66	P446x446x 66
		76	P446x446x 76
496	496	27	P446x496x 27
		36	P446x496x 36
		46	P446x496x 46
		56	P446x496x 56
		66	P446x496x 66
		76	P446x496x 76

PLACAS P

P Plates
PLacas P



Mat.1.1730 / 1.2311 / 1.2312

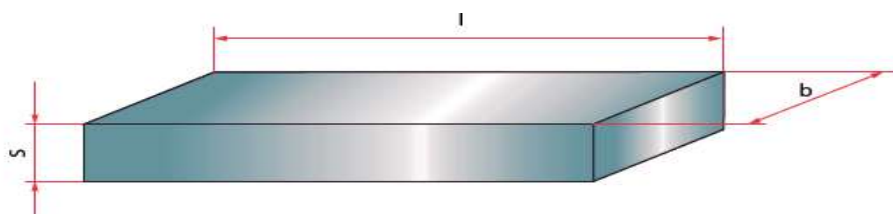
B	L	S	REF.
446	446	136	P446x446x136
		156	P446x446x156
	496	27	P446x496x 27
		36	P446x496x 36
		46	P446x496x 46
		56	P446x496x 56
		66	P446x496x 66
		76	P446x496x 76
	496	86	P446x496x 86
		96	P446x496x 96
		116	P446x496x116
		136	P446x496x136
		156	P446x496x156
496	496	36	P496x496x 36
		46	P496x496x 46
		56	P496x496x 56
		66	P496x496x 66
		76	P496x496x 76
		86	P496x496x 86
		96	P496x496x 96
		116	P496x496x116
		136	P496x496x136
		156	P496x496x156
	546	36	P496x546x 36
		46	P496x546x 46
		56	P496x546x 56
		66	P496x546x 66
		76	P496x546x 76
		86	P496x546x 86
		96	P496x546x 96
		116	P496x546x116
		136	P496x546x136
		156	P496x546x156
	596	36	P496x596x 36
		46	P496x596x 46
		56	P496x596x 56
		66	P496x596x 66
		76	P496x596x 76
		86	P496x596x 86
		96	P496x596x 96
		116	P496x596x116
		136	P496x596x136
		156	P496x596x156

B	L	S	REF.
496	596	76	P496x596x 76
		86	P496x596x 86
		96	P496x596x 96
		116	P496x596x116
		136	P496x596x136
		156	P496x596x156
	696	46	P496x696x 46
		56	P496x696x 56
		66	P496x696x 66
		76	P496x696x 76
		86	P496x696x 86
		96	P496x696x 96
		116	P496x696x116
		136	P496x696x136
		156	P496x696x156
596	596	36	P596x596x 36
		46	P596x596x 46
		56	P596x596x 56
		66	P596x596x 66
		76	P596x596x 76
		86	P596x596x 86
		96	P596x596x 96
		116	P596x596x116
			P596x596x136
		156	P596x596x156

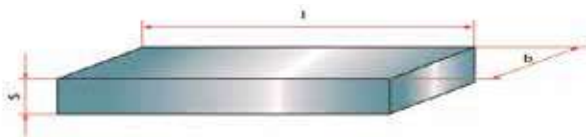
How to order: B x L x S / Example : P/246x246x46-1.1730
Forma de pedido: B x L x S / Ejemplo: P/246x246x46-1.1730

BR1162

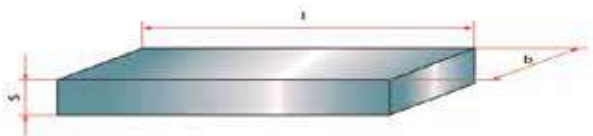
Standard Bars
Barras Estandar



MAT.		s	l	b	REF.
1.2510	1.2379	3	20	500	BR1162/ 3 x 20/MAT
			30		BR1162/ 3 x 30/MAT
			40		BR1162/ 3 x 40/MAT
			50		BR1162/ 3 x 50/MAT
			60		BR1162/ 3 x 60/MAT
			80		BR1162/ 3 x 80/MAT
			100		BR1162/ 3 x 100/MAT
		4	20		BR1162/ 4 x 20/MAT
			30		BR1162/ 4 x 30/MAT
			40		BR1162/ 4 x 40/MAT
			50		BR1162/ 4 x 50/MAT
			60		BR1162/ 4 x 60/MAT
			80		BR1162/ 4 x 80/MAT
			100		BR1162/ 4 x 100/MAT
		5	20		BR1162/ 5 x 20/MAT
			30		BR1162/ 5 x 30/MAT
			40		BR1162/ 5 x 40/MAT
			50		BR1162/ 5 x 50/MAT
			60		BR1162/ 5 x 60/MAT
			80		BR1162/ 5 x 80/MAT
			100		BR1162/ 5 x 100/MAT
		6	20		BR1162/ 6 x 20/MAT
			30		BR1162/ 6 x 30/MAT
			40		BR1162/ 6 x 40/MAT
			50		BR1162/ 6 x 50/MAT
		6	60		BR1162/ 6 x 60/MAT
			80		BR1162/ 6 x 80/MAT
			100		BR1162/ 6 x 100/MAT
			100		BR1162/ 6 x 100/MAT
		8	20		BR1162/ 8 x 20/MAT
			30		BR1162/ 8 x 30/MAT



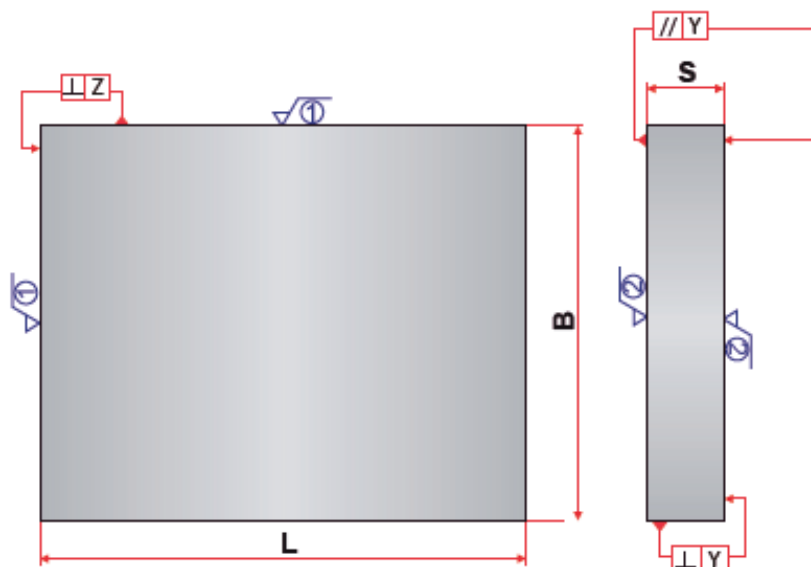
MAT.		s	l	b	REF.
1.2510	1.2379	8	40	500	BR1162/ 8 x 40/MAT
			50		BR1162/ 8 x 50/MAT
			60		BR1162/ 8 x 60/MAT
			80		BR1162/ 8 x 80/MAT
			100		BR1162/ 8 x 100/MAT
		10	20		BR1162/10 x 20/MAT
			30		BR1162/10 x 30/MAT
			40		BR1162/10 x 40/MAT
			50		BR1162/10 x 50/MAT
			60		BR1162/10 x 60/MAT
			80		BR1162/10 x 80/MAT
			100		BR1162/10 x 100/MAT
			120		BR1162/10 x 120/MAT
			150		BR1162/10 x 150/MAT
		12	20		BR1162/12 x 20/MAT
			30		BR1162/12 x 30/MAT
			40		BR1162/12 x 40/MAT
			50		BR1162/12 x 50/MAT
			60		BR1162/12 x 60/MAT
			80		BR1162/12 x 80/MAT
			100		BR1162/12 x 100/MAT
			120		BR1162/12 x 120/MAT
			150		BR1162/12 x 150/MAT
		16	20		BR1162/16 x 20/MAT
			30		BR1162/16 x 30/MAT
			40		BR1162/16 x 40/MAT
			50		BR1162/16 x 50/MAT
			60		BR1162/16 x 60/MAT
			80		BR1162/16 x 80/MAT
			100		BR1162/16 x 100/MAT
			120		BR1162/16 x 120/MAT
			150		BR1162/16 x 150/MAT
		20	20		BR1162/20 x 20/MAT
			30		BR1162/20 x 30/MAT
			40		BR1162/20 x 40/MAT
			50		BR1162/20 x 50/MAT



MAT.		s	l	b	REF.
1.2510	1.2379	20	60	500	BR1162/20 x 60/MAT
			80		BR1162/20 x 80/MAT
			100		BR1162/20 x 100/MAT
			120		BR1162/20 x 120/MAT
			150		BR1162/20 x 150/MAT
		25	20		BR1162/25 x 20/MAT
			30		BR1162/25 x 30/MAT
			40		BR1162/25 x 40/MAT
			50		BR1162/25 x 50/MAT
			60		BR1162/25 x 60/MAT
			80		BR1162/25 x 80/MAT
			100		BR1162/25 x 100/MAT
			120		BR1162/25 x 120/MAT
			150		BR1162/25 x 150/MAT
		30	30		BR1162/30 x 30/MAT
			40		BR1162/30 x 40/MAT
			50		BR1162/30 x 50/MAT
			60		BR1162/30 x 60/MAT
			80		BR1162/30 x 80/MAT
			100		BR1162/30 x 100/MAT
			120		BR1162/30 x 120/MAT
			150		BR1162/30 x 150/MAT
		40	40		BR1162/40 x 40/MAT
			50		BR1162/40 x 50/MAT
			60		BR1162/40 x 60/MAT
			80		BR1162/40 x 80/MAT
			100		BR1162/40 x 100/MAT
			120		BR1162/40 x 120/MAT
			150		BR1162/40 x 150/MAT
		50	50		BR1162/50 x 50/MAT
			60		BR1162/50 x 60/MAT
			80		BR1162/50 x 80/MAT
			100		BR1162/50 x 100/MAT
			120		BR1162/50 x 120/MAT
			150		BR1162/50 x 150/MAT

BR1162

External measures- tolerances
Medidas exteriores - tolerancias



B L	≤ 496	$+ 0,10$
		0
	≤ 996	$+0,20$
		0
	> 996	$+ 0,30$
		0
$\sqrt{\textcircled{1}}$	Rz	≤ 25
$\sqrt{\textcircled{2}}$	Rz	≤ 10
$\perp$	Y0	$,04/100$
$\perp$	Z0	$,04/100$
$// L$	Y0	$,008/100$
S	$+0,25 / +0,40 \text{ mm}$	

Tolerancias ISO para Ejes ISO Tolerances for Shafts (ISO 286-2)

Diámetro nominal ejes (mm)					Ø	Nominal Shafts Sizes (mm)				
Sup. Over	3	6	10	18	30	40	50	65	80	100
Inc.	6	10	18	30	40	50	65	80	100	120
	micrometres µ									
a12	-270	-280	-290	-300	-310	-320	-340	-360	-380	-410
	-390	-430	-470	-510	-560	-570	-640	-660	-730	-780
d6	-30	-40	-50	-65	-80		-100		-120	
	-38	-49	-61	-78	-96		-119		-142	
e6	-20	-25	-32	-40	-50		-60		-72	
	-28	-34	-43	-53	-66		-79		-94	
e13	-20	-25	-32	-40	-50		-60		-72	
	-200	-245	-302	-370	-440		-520		-612	
f5	-10	-13	-16	-20	-25		-30		-36	
	-15	-19	-24	-29	-36		-43		-51	
f6	-10	-13	-16	-20	-25		-30		-36	
	-18	-22	-27	-33	-41		-49		-58	
f7	-10	-13	-16	-20	-25		-30		-36	
	-22	-28	-34	-41	-50		-60		-71	
g5	-4	-5	-6	-7	-9		-10		12	
	-9	-11	-14	-16	-20		-23		-27	
g6	-4	-5	-6	-7	-9		-10		-12	
	-12	-14	-17	-20	-25		-29		-34	
g7	-4	-5	-6	-7	-9		-10		-12	
	-16	-20	-24	-28	-34		-40		-47	
h4	-0	-0	-0	-0	-0		-0		-0	
	-4	-4	-5	-6	-7		-8		-10	
h5	-0	-0	-0	-0	-0		-0		-0	
	-5	-6	-8	-9	-11		-13		-15	
h6	-0	-0	-0	-0	-0		-0		-0	
	-8	-9	-11	-13	-16		-19		-22	
h7	-0	-0	-0	-0	-0		-0		-0	
	-12	-15	-18	-21	-25		-30		-35	
h8	-0	-0	-0	-0	-0		-0		-0	
	-18	-22	-27	-33	-39		-46		-54	
h9	-0	-0	-0	-0	-0		-0		-0	
	-30	-36	-43	-52	-62		-74		-87	
h10	-0	-0	-0	-0	-0		-0		-0	
	-48	-58	-70	-84	-100		-120		-140	
h11	-0	-0	-0	-0	-0		-0		-0	
	-75	-90	-110	-130	-160		-190		-220	
h12	-0	-0	-0	-0	-0		-0		-0	
	-120	-150	-180	-210	-250		-300		-350	
j5	+3	+4	+5	+5	+6		+6		+6	
	-2	-2	-3	-4	-5		-7		-9	
j6	+6	+7	+8	+9	+11		+12		+13	
	-2	-2	-3	-4	-5		-7		-9	
j7	+8	+10	+12	+13	+15		+18		+20	
	-4	-5	-6	-8	-10		-12		-15	
js5	+2.5	+3	+4	+4.5	+5.5		+6.5		+7.5	
	-2.5	-3	-4	-4.5	-5.5		-6.5		-7.5	
js6	+4	+4.5	+5.5	+6.5	+8		+9.5		+11	
	-4	-4.5	-5.5	-6.5	-8		-9.5		-11	
js7	+6	+7.5	+9	+10.5	+12.5		+15		+17.5	
	-6	-7.5	-9	-10.5	-12.5		-15		-17.5	
k5	+6	+7	+9	+11	+13		+15		+18	
	+1	+1	+1	+2	+2		+2		+3	
k6	+9	+10	+12	+15	+18		+21		+25	
	+1	+1	+1	+2	+2		+2		+3	
k7	+13	+16	+19	+23	+27		+32		+38	
	+1	+1	+1	+2	+2		+2		+3	
m5	+9	+12	+15	+17	+20		+24		+28	
	+4	+6	+7	+8	+9		+11		+13	
m6	+12	+15	+18	+21	+25		+30		+35	
	+4	+6	+7	+8	+9		+11		+13	

Tolerancias ISO para Agujeros ISO Tolerances for Holes (ISO 286-2)

Diámetro int. nominal (mm)										Ø	Nominal holes Sizes (mm)										
Sup. Over	3	6	10	18	30	40	50	65	80	100		3	6	10	18	30	40	50	65	80	100
Inc.	6	10	18	30	40	50	65	80	100	120		6	10	18	30	40	50	65	80	100	120
micrometres µ																					
E6	+28	+34	+43	+53	+66		+79		+94		+28	+34	+43	+53	+66		+79		+94		
	+20	+25	+32	+40	+50		+60		+72		+20	+25	+32	+40	+50		+60		+72		
E7	+32	+40	+50	+61	+75		+90		+107		+32	+40	+50	+61	+75		+90		+107		
	+20	+25	+32	+40	+50		+60		+72		+20	+25	+32	+40	+50		+60		+72		
E11	+95	+115	+142	+170	+210		+250		+292		+95	+115	+142	+170	+210		+250		+292		
	+20	+25	+32	+40	+50		+60		+72		+20	+25	+32	+40	+50		+60		+72		
E12	+140	+175	+212	+250	+300		+360		+422		+140	+175	+212	+250	+300		+360		+422		
	+20	+25	+32	+40	+50		+60		+72		+20	+25	+32	+40	+50		+60		+72		
E13	+200	+245	+302	+370	+440		+520		+612		+200	+245	+302	+370	+440		+520		+612		
	+20	+25	+32	+40	+50		+60		+72		+20	+25	+32	+40	+50		+60		+72		
F6	+18	+22	+27	+33	+41		+49		+58		+18	+22	+27	+33	+41		+49		+58		
	+10	+13	+16	+20	+2		+30		+36		+10	+13	+16	+20	+2		+30		+36		
F7	+22	+28	+34	+41	+50		+60		+71		+22	+28	+34	+41	+50		+60		+71		
	+10	+13	+16	+20	+25		+30		+36		+10	+13	+16	+20	+25		+30		+36		
F8	+28	+35	+43	+53	+64		+76		+90		+28	+35	+43	+53	+64		+76		+90		
	+10	+13	+16	+20	+25		+30		+36		+10	+13	+16	+20	+25		+30		+36		
G6	+12	+14	+17	+20	+25		+29		+34		+12	+14	+17	+20	+25		+29		+34		
	+4	+5	+6	+7	+9		+10		+12		+4	+5	+6	+7	+9		+10		+12		
G7	+16	+20	+24	+28	+34		+40		+47		+16	+20	+24	+28	+34		+40		+47		
	+4	+5	+6	+7	+9		+10		+12		+4	+5	+6	+7	+9		+10		+12		
G8	+22	+27	+33	+40	+48		+56		+68		+22	+27	+33	+40	+48		+56		+68		
	+4	+5	+6	+7	+9		+10		+12		+4	+5	+6	+7	+9		+10		+12		
H6	+8	+9	+11	+13	+16		+19		+22		+8	+9	+11	+13	+16		+19		+22		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
H7	+12	+15	+18	+21	+25		+30		+35		+12	+15	+18	+21	+25		+30		+35		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
H8	+18	+22	+27	+33	+39		+46		+54		+18	+22	+27	+33	+39		+46		+54		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
H9	+30	+36	+43	+52	+62		+74		+87		+30	+36	+43	+52	+62		+74		+87		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
H10	+48	+58	+70	+84	+100		+120		+140		+48	+58	+70	+84	+100		+120		+140		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
H11	+75	+90	+110	+130	+160		+190		+220		+75	+90	+110	+130	+160		+190		+220		
	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
J6	+5	+5	+6	+8	+10		+13		+16		+5	+5	+6	+8	+10		+13		+16		
	-3	-4	-5	-5	-6		-6		-6		-3	-4	-5	-5	-6		-6		-6		
J7	+6	+8	+10	+12	+14		+18		+22		+6	+8	+10	+12	+14		+18		+22		
	-6	-7	-8	-9	-11		-12		-13		-6	-7	-8	-9	-11		-12		-13		
J8	+10	+12	+15	+20	+24		+28		+34		+10	+12	+15	+20	+24		+28		+34		
	-8	-10	-12	-13	-15		-18		-20		-8	-10	-12	-13	-15		-18		-20		
JS6	+4	+4,5	+5,5	+6,5	+8		+9,5		+11		+4	+4,5	+5,5	+6,5	+8		+9,5		+11		
	-4	-4,5	-5,5	-6,5	-8		-9,5		-11		-4	-4,5	-5,5	-6,5	-8		-9,5		-11		
JS7	+6	+7,5	+9	+10,5	+12,5		+15		+17,5		+6	+7,5	+9	+10,5	+12,5		+15		+17,5		
	-6	-7,5	-9	-10,5	-12,5		-15		-17,5		-6	-7,5	-9	-10,5	-12,5		-15		-17,5		
JS8	+9	+11	+13,5	+16,5	+19,5		+23		+27		+9	+11	+13,5	+16,5	+19,5		+23		+27		
	-9	-11	-13,5	-16,5	-19,5		-23		-27		-9	-11	-13,5	-16,5	-19,5		-23		-27		
K6	+2	+2	+2	+2	+3		+4		+4		+2	+2	+2	+2	+3		+4		+4		
	-6	-7	-9	-11	-13		-15		-18		-6	-7	-9	-11	-13		-15		-18		
K7	+3	+5	+6	+6	+7		+9		+10		+3	+5	+6	+6	+7		+9		+10		
	-9	-10	-12	-15	-18		-21		-25		-9	-10	-12	-15	-18		-21		-25		
K8	+5	+6	+8	+10	+12		+14		+16		+5	+6	+8	+10	+12		+14		+16		
	-13	-16	-19	-23	-27		-32		-36		-13	-16	-19	-23	-27		-32		-36		
M6	-1	-3	-4	-4	-4		-5		-6		-1	-3	-4	-4	-4		-5		-6		
	-9	-12	-15	-17	-20		-24		-28		-9	-12	-15	-17	-20		-24		-28		
M7	0	0	0	0	0		0		0		0	0	0	0	0		0		0		
	-12	-15	-18	-21	-25		-30		-35		-12	-15	-18	-21	-25		-30		-35		
M8	+2	+1	+2	+4	+5		+5		+6		+2	+1	+2	+4	+5		+5		+6		
	-16	-21	-25	-29	-34		-41		-48		-16	-21	-25	-29	-34		-41		-48		
N6	-5	-7	-9	-11	-12		-14		-16		-5	-7	-9	-11	-12		-14		-16		
	-13	-16	-20	-24	-28		-33		-36		-13	-16	-20	-24	-28		-33		-36		

Founded in 1996, in Istanbul (Turkey), **GSB Oilless** achieved **international prestige** providing **innovative and competitive solutions for die stamping components**.

Fundada en Estambul (Turquía) en 1996, **GSB Oilless** ha conquistado **prestigio internacional** ofreciendo **soluciones innovadoras y competitivas** para el mercado de **matrickería de corte y estampación**.



The new **Cam bottom V drive** developed by **GSB OILLESS**, is an innovative product which responds to the needs of the Global market, which is **high quality, low cost** and possibility to **replace the sliding parts** without having to purchase a new set. The replacement of the sliding parts takes **only a few minutes, just remove the screws and replace the new sliding parts**.

Producto innovador que proporciona una **reducción de coste** en la adquisición del producto y además de una **sobresaliente valía en el mantenimiento**, eliminando la necesidad de **remover el troquel de la prensa** para el mantenimiento. Además el **coste de las plaquitas es muy inferior** que el coste de una pieza maciza.



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LIFTING ELEMENTS

Lifting Elements
Componentes de Elevación



C101-02
Lifting Pins



C101-04
Lifting Brackets



C101-05
Lifting Brackets with
Rope Stop Safety



C103-01/C103-02
Lifting Pins



C103-03/ 103-05
Lifting Pins



C103-06
Lifting Pins



C103-07
Lifting Pins



C103-09
Lifting Pins



C104-01
Bush For Lifting Pins



C104-02
Bush For Lifting Pins



C105-01
Lifting Brackets With
Pins



C105-02
Lifting Brackets With
Pins

GUIDE ELEMENTS

Guide Elements
Componentes de Guiado



G201-01 / 02
Guide Posts



G202-01 / 02
Guide Posts



G202-03
Guide Posts DIN 9833



G202-05
Guide Posts



G211-01
Guide Bushes with
collar, self-lubricating



G211-02
Guide Bushes with
collar, self-lubricating
DIN 9834



G211-06
Guide Bushes with
collar, self-lubricating



G212-01
Guide Bushes, self-
lubricating



G213-01
Steel Headed Guide
Bushes, oil groove



G213-02
Steel Headed Guide
Bushes, oil groove



G213-03
Steel Headed Guide
Bushes, oil groove



G213-04
Steel Headed Guide
Bushes, oil groove



G217-01
Steel Headed Guide
Bushes with bronze-
plated



G217-02
Steel Headed Guide
Bushes with bronze-
plated



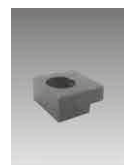
G215-01
Steel Headed Guide
Bushes for Ball Cages



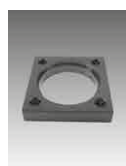
G215-02
Steel Headed Guide
Bushes for Ball Cages



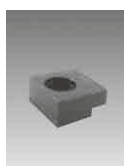
G216-01
Ball Cages with
Circlip Groove



A101-01
Toe Clamp



A101-03
Flange for Median
Retaining Column



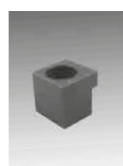
A101-04
Toe Clamp for Guide
Bushing DIN 9832



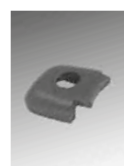
A101-05
Toe Clamp for Guide
Bushing



A101-08
Retainer Flange for
Guide Bush to Engage



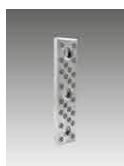
A101-09
Toe Clamp



A101-10
Toe Clamp



A102-01
Guide Posts
Retainer Ring



P605-01
Wear Plates,
self-lubricating



G220-01
Wear Plates,
self-lubricating



G220-03
Wear Plates,
self-lubricating



G222-01
Wear Plates, self-
lubricating VDI 3357



G224-01
Wear Plates, self-
lubricating VDI 3357

GUIDE ELEMENTS

Guide Elements
Componentes de Guiado



G225-01
Wear Plates, steel
VDI 3357



G224-02
Wear Plates,
self-lubricating



G224-08
Wear Plates,
self-lubricating
AFNOR ISO 9183-2



G225-07
Wear Plates,
self-lubricating
AFNOR ISO 9183-2



G234-01
Backing Plates, steel



G224-09
Wear Plates, self-
lubricating



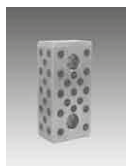
G224-11
Gib Plates,
self-lubricating



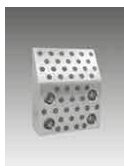
G225-08
Gib Plates, steel



G225-09
Gib Plates, steel



G224-12
Wear Plate with two
slide surfaces
VDI 3357



G228-01
Cam Dwell, self-
lubricating VDI 3357



G229-01
Cam Dwell, steel VDI
3357



G228-04
Cam Dwell,
self-lubricating



G229-03
Cam Dwell, steel



G229-05
Removable Die Heels,
steel and
self-lubricating



G231-01
"L" Shaped Wear
Plates, self-lubricating
VDI 3357



G231-04
"L" Shaped Wear
Plates, self-lubricating
VDI 3357



G233-03
"V" Driver, steel VDI
3357



G232-03
"V" Driver, self-
lubricating VDI 3357



G232-04
"V" Driver, self-
lubricating



G233-04
"V" Driver, steel



G245-XX
"V" Driver Sets with
replaceable inserts with
positive return VDI 3357



G234-03
Positive Return Clamp
for "V" Drivers



G246-XX
Replaceable Wear Pla-
tes, self-lubricating

DIE COMPONENTS

Die Components
Componentes para Matrices



M301-00
Gage



M301-01
Gage Hardened



M301-02
Gage for Sensor,
Hardened



M301-12
Gage Hardened



M301-05
Gage for Sensor,
hardened



M301-04
Gage for Sensor



M301-06
Front Gage



M301-03
Sensor and
Connector



M302-01
Locating Cone



M303-01
Locating Pins



M303-02
Locating Pins



M304-06
Air Pins



M304-07
Air Pins



M304-08
Air Pins VDI 3002



M305-04
Lifters with gas
springs, sleeve and
bushes



M306-02
Pad Retainer Pins
VDI 3365



M306-03
Pad Retainer Pins
VDI 3365



S510-02
Shock Absorber for
Pad Retainer Pins



M307-01
Retainer Bolt



M308-07
Air Coupling Bracket



M309-02
Slide Stop Block



S511-01
Elastomer Cap



M309-04
Slide Stop Block



M310-01
Roller Stock Lifter



M310-08
Roller Group



M310-09
Coil Support



M310-03
Roller Group



M310-04
Ball Carriers



M310-05
Steel Roller



M310-06
Plastic Roller

DIE COMPONENTS

Die Components
Componentes para Matrices



S514-192
Elastomer Springs,
hollow



M311-02
Pin for Elastomer
Springs



M311-05
Pin for Elastomer
Springs DIN 9835



M313-04
Washer for Elastomer
Spring



M312-03
Retainer Bolt Sets



M312-08
Retainer Bolt Sets



M313-01
Spacer Tubes



M313-02
Spacer Tubes



M313-03
Spacer Tubes



M313-05/M313-06
Washer



M316-01
Coupling Plates



M316-02
Coupling Nut



M317-04
Key



M317-05
Key



M317-07
Key



M317-10
Key



M318-07
Cylindrical Stop Block



M318-08
Shim



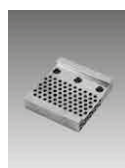
M319-01
Coupling Clamp



M319-01
Sleeve



M319-02
Spacer Plates,
toothed with
adjusting plate



M320-03
Cam Pad Guide Wear
Plate



M320-07
Positive Return Plate,
steel



M321-01
Spacing Bar

BMW Standard Die Components
Componentes Normalizados BMW



B2 2101 16



B2 2305 17



**B2 2305 22
B2 2305 23**



B2 2305 24



B2 2506 12



B2 2604 12



B2 2615 12



B2 2615 12a



B2 2625 11



B2 2625 11



B2 2705 11



B2 2705 11



B2 2708 11



B2 2709 11



B2 2715 11



B2 2715 11



**B2 2717 12a
B2 2717 13a**



B2 2904 9



B2 2920 1



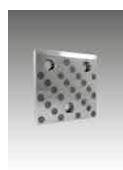
B2 2920 2



**B2 2920 1
B2 2920 2**



B2 2933 1



B2 2960 12



B2 2960 12



B2 2961 11



B2 2961 11



B2 2969 11



B2 2975 11

BMW Standard Die Components
Componentes Normalizados BMW



B2 2978 20



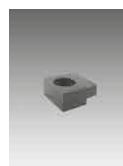
B2 2978 21



B2 2978 21



B2 2978 22



B2 2983 11



B2 3001 20



B2 3602 15



B2 3602 15



B2 3765 1



B2 3925 11



B2 4010 1



B2 4010 2



B2 2705 11



B2 4069 1



B2 5601 11



B2 5602 11



**B2 5605 11
B2 5605 11a**



B2 5605 12



B2 5702 12



B2 6201 11



B2 6201 12



B2 6202 1



B2 6202 1



B2 6202 1



B2 6202 13



B2 6204 12

FIAT/CHRYSLER Standard Die Components
Componentes Normalizados FIAT/CHRYSLER

FCA
FIAT CHRYSLER AUTOMOBILES



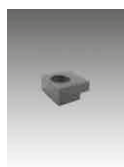
STQ 10002



STQ 10002



STQ 10003



STQ 10004



STQ 10005



STQ 10006



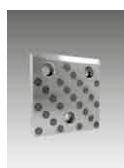
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STQ 10010



STQ 10010



STQ 10013



STQ 10013



STQ 10013



STQ 10014



STQ 10014



STQ 10014



STQ 10015



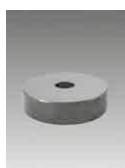
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STQ 10015



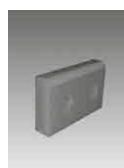
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STQ 20020



STQ 20020



STQ 20021



STQ 20022



STQ 20023



STQ 20024



STQ 20025



STQ 20026



STQ 40001

FIAT/CHRYSLER Standard Die Components
Componentes Normalizados FIAT/CHRYSLER

FCA
FIAT CHRYSLER AUTOMOBILES



STQ 40001



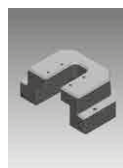
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STQ 40004



STQ 40005



STQ 40006



STQ 40006



STQ 40006



STQ 40007



STQ 40008



STQ 40009



STQ 40009



STQ 40010



STQ 40011



STQ 40012



STQ 40013



STQ 40014



STQ 40015



STQ 40017



STQ 40018



STQ 40019



STQ 40020



STQ 40021



STQ 60010



STQ 60011



STQ 60012



STQ 60013



STQ 60013

FIAT/CHRYSLER Standard Die Components
Componentes Normalizados FIAT/CHRYSLER

FCA
FIAT CHRYSLER AUTOMOBILES



STQ 60014



STQ 60015



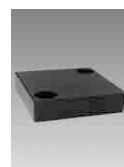
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STQ 70019



STQ 70040



STQ 70040



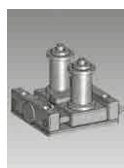
STQ 70040



STQ 80001



STQ 80002



STQ 80003



STQ 80004



STQ 80005



STQ 80005



STQ 80005



STQ 80005



STQ 80006



STQ 80007



BSTQ 80008



STQ 80009



STQ 80010



STQ 80011



STQ 80012



STQ 80012



STQ 80012



STQ 80013



STQ 80014



STQ 80015



STQ 80015



STQ 80023

Renault Standard Die Components
Componentes Normalizados Renault



EM24.50.400/F



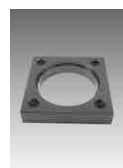
EM24.50.400/F



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.100/J



EM24.52.300/C



EM24.52.300/C



EM24.52.100/J



EM24.52.500/B



EM24.55.100/G



EM24.55.100/G



EM24.55.100/G



EM24.59.500/J



EM24.59.500/I



EM24.59.500/I

DIE COMPONENTS



FORD Standard Die Components
Componentes Normalizados FORD



WDX3-60



WDX3-70



WDX3-70



WDX3-70



WDX3-70



WDX3-70



WDX3-70



WDX3-70



WDX3-80



WDX4-70



WDX4-70



WDX4-70



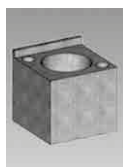
WDX4-70



WDX4-70



WDX4-70



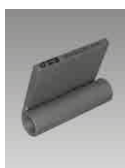
WDX4-70



WDX5-60



WDX5-60



WDX5-60



WDX5-60



WDX5-60



WDX5-60



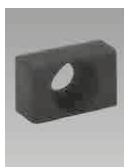
WDX5-60



WDX5-60



WDX5-60



WDX5-61



WDX6-60



WDX7-60



WDX7-60



WDX7-60

DIE COMPONENTS



FORD Standard Die Components
Componentes Normalizados FORD



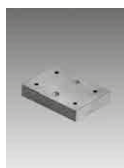
WDX7-60



WDX7-65



WDX7-65



WDX7-65



WDX7-65



WDX7-65



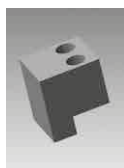
WDX7-65



WDX7-65



WDX7-65



WDX7-65



WDX7-65



WDX7-65



WDX7-70



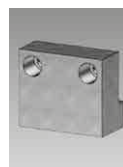
WDX7-70



WDX7-70



WDX7-70



WDX7-70



WDX13-60



WDX13-60



WDX13-60



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65



WDX13-65

DIE COMPONENTS



FORD Standard Die Components
Componentes Normalizados FORD



WDX13-65



WDX13-65



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-60



WDX14-62



WDX14-65



WDX14-65



WDX14-65



WDX14-65



WDX14-65



WDX14-65



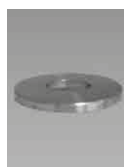
WDX14-65



WDX14-65



WDX14-65



WDX15-70



WDX15-70



WDX16-60

DIE COMPONENTS



FORD Standard Die Components
Componentes Normalizados FORD



WDX16-60



WDX16-70



WDX16-70



WDX16-70



WDX16-70



WDX16-80



WDX17-60



WDX17-60



WDX17-70



WDX19-70



WDX20-65



WDX20-65



WDX20-66



WDX20-66



WDX20-66



WDX20-66



WDX20-66



WDX20-70



WDX20-70



WDX20-70



WDX22-60



WDX22-70



WDX30-60



WDX30-60



WDX35-70



WDX35-70



WDX35-70

MERCEDES BENZ Standard Die Components Componentes Normalizados MERCEDES BENZ



Mercedes-Benz



B8 0110 100 008 806



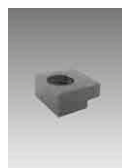
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B8 0111 131 008 814



B8 0111 431 008 801



B8 0161 121 008 802



B8 0162 410 008 801



B8 0301 231 108 801



B8 0441 123 408 802



B8 0450 200 009 001



B8 0450 200 009 001



B8 0450 200 009 001



B8 0450 200 009 001



B8 0460 219 008 801



B8 0460 231 009 002



B8 0460 231 008 801



B8 0460 231 009 003



B8 0460 850 000 101



B8 0461 131 000 101



B8 0461 110 000 101



B8 0467 000 009 001



B8 0467 000 009 001



B8 0467 111 000 101



B8 0541 000 009 001



B8 0541 000 009 005

MERCEDES BENZ Standard Die Components Componentes Normalizados MERCEDES BENZ



Mercedes-Benz



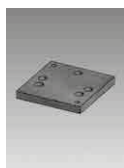
B8 0541 000 009 005



B8 0541 000 009 007



B8 0550 100 008 801



B8 0561 131 008 801



B8 0561 131 008 803



B8 0561 152 000 001



B8 0602 104 008 803



B8 0602 321 008 801



B8 0604 100 001 102



B8 0604 100 008 802



B8 0624 108 800 002



B8 1001 110 008 801



B8 1013 110 008 802



B8 1087 100 000 001



B8 1240 300 009 001



B8 2002 231 009 001



B8 2002 310 008 801



B8 2002 521 008 801



B8 2002 621 008 802



B8 2002 731 000 001



B8 7007 000 008 808



B8 7007 000 008 809



B8 7007 000 008 810



B8 7466 100 009 001

PSA PEUGEOT CITROEN Standard Die Components
Componentes Normalizados PSA PEUGEOT CITROEN



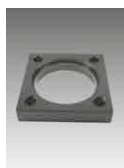
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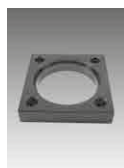
E24.51.930.G



E24.52.105.G



E24.52.105.G



E24.52.105.G



E24.52.105.G



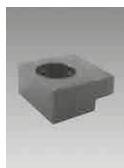
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E24.52.105.G



E24.52.105.G



E24.52.105.G



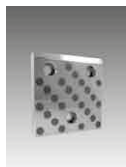
E24.52.305.G



E24.52.504.G



E24.52.504.G



E24.52.504.G



E24.52.504.G



E24.52.504.G



E24.52.504.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.512.G



E24.52.535.G

DIE COMPONENTS



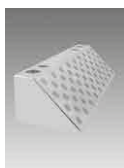
PSA PEUGEOT CITROEN Standard Die Components
Componentes Normalizados PSA PEUGEOT CITROEN



E24.52.535.G



E24.52.535.G



E24.52.535.G



E24.52.535.G



E24.52.540.G



E24.53.920.G



E24.54.410.G



E24.54.410.G



E24.54.420.G



E24.54.445.G



E24.54.445.G



E24.55.265.G



E24.55.265.G



E24.55.410.G



E24.56.200.G



E24.56.630.G



E24.56.700.G



E24.57.370.G



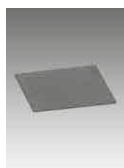
E24.57.370.G



E24.57.370.G



E24.57.370.G



E24.57.900.G



E24.64.100.G



E24.64.100.G



E24.64.105.G



E24.65.000.G

OPEL Standard Die Components
Componentes Normalizados OPEL



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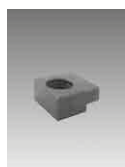
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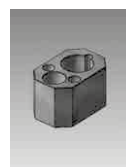
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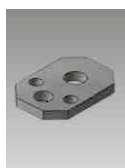
F3302



F3302



F3303



F3303



F3304



F3304



F3304



F3304



F3304



F3304



F3304



F3304



F3304



F3304



F3304



F3304



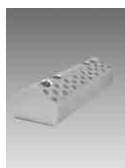
F3304



F3305



F3305



F3305



F3305

OPEL Standard Die Components
Componentes Normalizados OPEL



F3305



F3305



F3305



F3315



F3315



F3315



F3315



F3315



F3316



F3316



F3316



F3316



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F3318



F3319



F3319



F3319



F3319



F3320



F3326

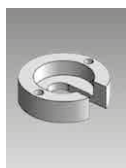


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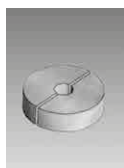
OPEL Standard Die Components
Componentes Normalizados OPEL



F3326



F3326



F3326



F3326



F3326



F3326



F3328



F3329



F3329



F3329



F3329



F3329



F3331



F3331



F3331



F3391



F3391



F3391



F3391



F3391



J0691



M1604



M3660

DIE COMPONENTS



GRUPO VOLSWAGEN Standard Die Components
Componentes Normalizados GRUPO VOLSWAGEN

VOLKSWAGEN
GROUP



39D 506



39D 543



39D 571



39D 578



39D 578



39D 578



39D 582



39D 592



39D 599



39D 599



39D 599



39D 630



39D 638



39D 639



39D 639



39D 649



39D 650



39D 651



39D 807



39D 807



39D 826



39D 828



39D 828



39D 828



39D 828



39D 847



39D 847



39D 851



39D 854



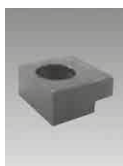
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GRUPO VOLSWAGEN Standard Die Components
Componentes Normalizados GRUPO VOLSWAGEN

VOLKSWAGEN
GROUP



39D 860



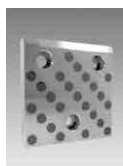
39D 861



39D 862



39D 862



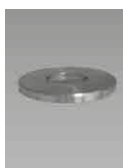
39D 863



39D 863



39D 866 39D 866



39D 869



39D 870



39D 872



39D 873



39D 876



39D 882



39D 882



39D 887



39D 887



39D 890



39D 890



39D 894



39D 894



39D 896



39D 896



39D 896



39D 896



39D 896



39D 896



39D 896



39D 896



39D 951



39D 952

GRUPO VOLSWAGEN Standard Die Components
Componentes Normalizados GRUPO VOLSWAGEN

VOLKSWAGEN
GROUP



39D 952



39D 954



39D 954



39D 956



39D 958



39D 969



39D 972



39D 976



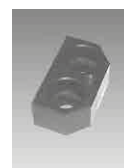
39D 993



39D 995



39D 995



39D 995



39D 995



39D 1392



39D 996



39D 1430



39V 863



39V 1071



39V 1159



39V 1162



39V 1162



39V 1168



39V 1199



39V 1205



39V 1242



39V 1254



39V 1304



39V 1304



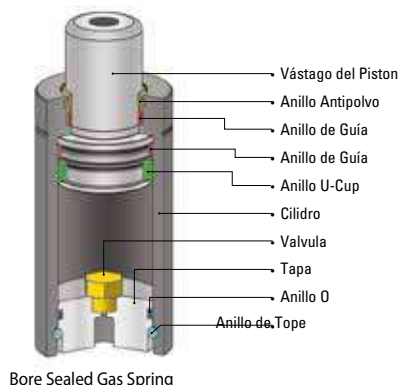
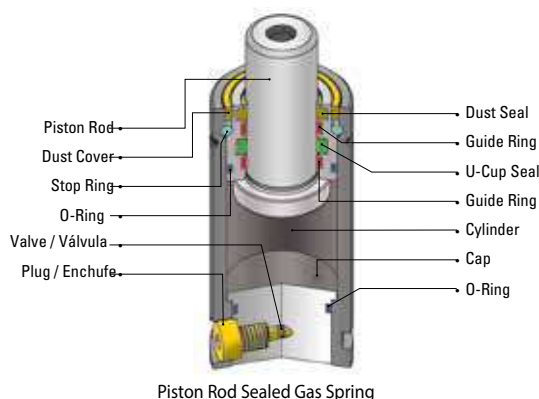
39V 1569

BR stamp is the **Powertec Gas Springs distributor in Europe and Latin America**. The **high technology patented seal system**, providing **superior durability** for the gas springs. **Powertec** is **approved supplier** in Japan for **Nissan, Suzuki and Isuzu**. Furthermore, is regional approved supplier for **Magna, Tata Motors, Samsung and LG**.

BR stamp distribuye los cilindros de gas nitrógeno **Powertec Gas Springs**. Su **novedosa y patentada tecnología aplicada a las juntas, proporciona mayor durabilidad** a los cilindros. **Powertec** es **proveedor homologado** en Japón para **Nissan, Suzuki y Isuzu**. Además cuenta con homologaciones locales para **Magna, Tata Motors, Samsung y LG**.

Founded in 2009, in the city of Gwangju (South Korea), **Powertec** achieves important goals applying the **patented seal system providing superior durability for the gas springs**. Furthermore, the **patented scrap remover** is achieving great results due the simple installation and application, taking advantage in the Global market. The Powertec gas springs are certified by PED 2014/68/EU.

Fundada en 2009 en Gwangju (Corea del Sur), **Powertec** ha alcanzado importantes logros debido a su **patentado sistema de juntas que proporciona una durabilidad superior** a los cilindros de gas nitrógeno. Además cuenta con los también **patentados transportadores neumáticos (vibradores)**, que con su sencillez de instalación y sus prestaciones viene logrando un importante crecimiento en el mercado mundial. Cuenta con la certificación PED 2014/68/EU.

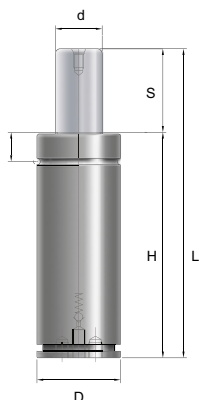


PRODUCT RANGE / PRODUCTOS	Page / Página
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PX Series



Extra Compact Type, Micro Type
Serie Extra Compacta, tipo Micro



PX – Serie Extra Compacta, tipo Micro

Features / Características:

Stroke/Carrera: From 7-125mm

Cylinder Ø / Cilindro: From 19-150mm

Rod Ø / Vástagos: From 11-90mm

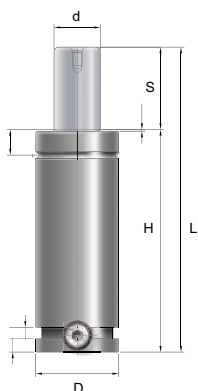
Initial Force/Fuerza inicial: From 170-9700 Kg

Type: Self / Autónomo

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autó- nomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PX170	7-125	19	11	180	170	270	O
PX320	7-125	25	15	180	320	510	O
PX350	10-125	32	16	180	360	570	O
PX500	10-125	38	20	153	480	730	O
PX750	10-125	45	25	153	750	1200	O
PX1000	13-125	50	28	153	940	1490	O
PX1500	13-125	63	36	150	1530	2450	O
PX2400	16-125	75	45	154	2450	4000	O
PX4200	16-125	95	60	150	4280	6840	O
PX6600	16-125	120	75	153	6770	10270	O
PX9500	19-125	150	90	153	9700	14900	O

PG Series

Groove Compact Type Micro Type
Serie Compacta, tipo Micro



PG – Serie Compacta, tipo Micro

Features / Características:

Stroke/Carrera: From 10-125mm

Cylinder Ø / Cilindro: From 32-120mm

Rod Ø / Vástagos: From 16-75mm

Initial Force/Fuerza inicial: From 360-6770 Kg

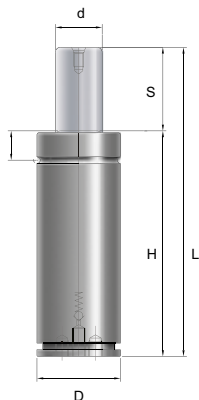
Type: Self/System / Autónomo / Sistema

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autó- nomo	System Of Gas Springs Serie Manifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PG350	10-125	32	16	180	360	570	O	
PG500	10-125	38	20	153	480	730	O	
PG750	10-125	45	25	153	750	1200	O	O
PG1000	13-125	50	28	153	940	1490	O	O
PG1500	13-125	63	36	150	1530	2450	O	O
PG2400	16-125	75	45	154	2450	4000	O	O
PG4200	16-125	95	60	150	4280	6840	O	O
PG6600	16-125	120	75	153	6770	10270	O	O
PG9500	19-125	150	90	153	9700	14900	O	O

PC Series



Compact Type
Serie Compacta



PC – Serie Compacta

Features / Características:

Stroke/Carrera: From 10-200mm

Cylinder Ø / Cilindro: From 19-120mm

Rod Ø / Vástagos: From 11-80mm

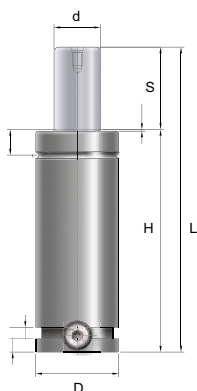
Initial Force/Fuerza inicial: From 100-7500 Kg

Type: Self / Autónomo

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo: autó- nomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PC100	10-125	19	11	105	100	160	o
PC200	10-125	25	12	177	200	300	o
PC350	10-125	32	16	174	350	560	o
PC500	10-125	38	20	159	500	800	o
PC700	10-125	45	25	142	700	1120	o
PC1000	10-200	50	28	162	1000	1600	o
PC1500	10-200	63	36	147	1500	2400	o
PC2500	10-200	75	45	157	2500	4000	o
PC4000	10-200	95	60	141	4000	6400	o
PC7500	10-200	120	80	149	7500	12000	o

PCB Series

Compact Type
Serie Compacta



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo: autó- nomo	System Of Gas Springs Serie Manifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PCB700	10-125	45	25	142	700	1120	o	o
PCB1000	10-200	50	28	162	1000	1600	o	o
PCB1500	10-200	63	36	147	1500	2400	o	o
PCB2500	10-200	75	45	157	2500	4000	o	o
PCB4000	10-200	95	60	141	4000	6400	o	o
PCB7500	10-200	120	80	149	7500	12000	o	o

PCB – Serie Compacta

Features / Características:

Stroke/Carrera: From 10-200mm

Cylinder Ø / Cilindro: From 45-120mm

Rod Ø / Vástagos: From 25-80mm

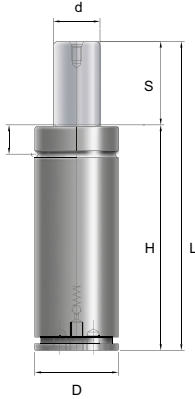
Initial Force/Fuerza inicial: From 700-7500 Kg

Type: Self/System / Autónomo/Sistema

PK Series



Exchangable Compact Type Serie Intercambiable Compacta



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autó- nomo	System Of Gas Springs Serie Ma- nifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PK100	7-125	19	11	95	90	145	o	
PK200	10-125	25	12	176	200	300	o	
PK300	10-125	38	16	150	300	480	o	
PK500	10-125	45	20	153	480	680	o	
PK750	10-125	50	25	153	750	1200	o	
PK1500	10-200	75	36	147	1500	2400	o	o
PK3000	25-200	95	50	152	3000	4800	o	o
PK5000	25-200	120	60	150	5000	8000	o	o

PK – Serie Intercambiable Compacta

Features / Características:

Stroke/Carrera: From 10-200mm

Cylinder Ø / Cilindro: From 25-120mm

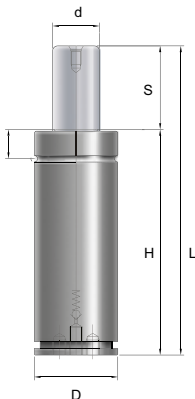
Rod Ø / Vástagos: From 12-65mm

Initial Force/Fuerza inicial: From 200-5000 Kgf

Type: Self/System / Autónomo/Sistema

PKM Series

Mini Type Serie Mini



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PKM-GR	10-125	25	12	45	50	80	o
PKM-BU	10-125	25	12	90	100	150	o
PKM-RD	10-125	25	12	135	150	230	o
PKM-YW	10-125	25	12	180	200	300	o
PKM-BK	10-125	25	12	20-180	30-200	45-300	o

PKM – Serie Mini

Features / Características:

Stroke/Carrera: From 10-200mm

Cylinder Ø / Cilindro: 25mm

Rod Ø / Vástagos: 12mm

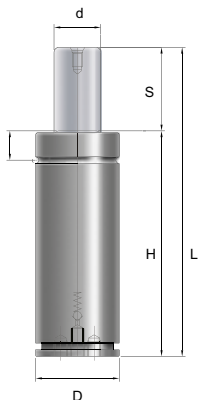
Initial Force/Fuerza inicial: From 30-200 Kgf

Type: Self / Autónomo

PS Series



Standard Type Serie Standard



PS – Serie Standard

Features / Características:

Stroke/Carrera: From 7-200mm

Cylinder Ø / Cilindro: From 12-120mm

Rod Ø / Vástagos: From 6-80mm

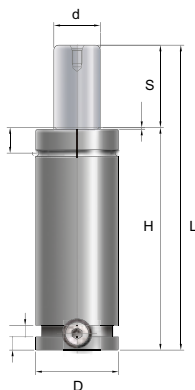
Initial Force/Fuerza inicial: From 50-7500 Kgf

Type: Self / Autónomo

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PS45	7-125	12	6	180	50	75	o
PS70	7-125	15	7	180	70	112	o
PS100	10-125	19	11	105	100	160	o
PS200	10-125	25	12	177	200	300	o
PS350	10-125	32	16	174	350	560	o
PS500	10-125	38	20	159	500	800	o
PS700	10-125	45	25	142	700	1120	o
PS1000	10-200	50	28	162	1000	1600	o
PS1500	10-200	63	36	147	1500	2400	o
PS2500	10-200	75	45	157	2500	4000	o
PS4000	10-200	95	60	141	4000	6400	o
PS7500	10-200	120	80	149	7500	12000	o

PSB Series

Compact Type Serie Compacta



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo	System Of Gas Springs Serie Ma- nifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PSB700	10-125	45	25	142	700	1120	o	o
PSB1000	10-200	50	28	162	1000	1600	o	o
PSB1500	10-200	63	36	147	1500	2400	o	o
PSB2500	10-200	75	45	157	2500	4000	o	o
PSB4000	10-200	95	60	141	4000	6400	o	o
PSB7500	10-200	120	80	149	7500	12000	o	o

PSB – Serie Standard

Features / Características:

Stroke/Carrera: From 10-200mm

Cylinder Ø / Cilindro: From 45-120mm

Rod Ø / Vástagos: From 25-80mm

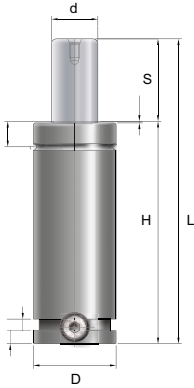
Initial Force/Fuerza inicial: From 700-7500 Kgf

Type: Self/System / Autónomo/Sistema

PN Series



International Standard Type
Serie ISO Standard



PN- Serie ISO Standard

Features / Características:

Stroke/Carrera: From 10-125mm

Cylinder Ø / Cilindro: From 35-195mm

Rod Ø / Vástagos: From 16-95mm

Initial Force/Fuerza inicial: From 270-10800 Kg

Type: Self/System / Autónomo/Sistema

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo	System Of Gas Springs Serie Manifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PN250	10-125	35	16	135	270	300	O	
PN500	10-160	45	20	153	480	680	O	O
PN750	25-300	50	25	153	750	1200	O	O
PN1000	25-300	63	28	162	940	1500	O	O
PN1500	25-300	75	36	147	1500	2400	O	O
PN3000	25-300	95	50	153	3000	4800	O	O
PN5000	25-300	120	65	150	5000	8000	O	O
PN7500	25-300	150	80	153	7650	12100	O	O
PN10000	25-300	195	95	153	10800	15900	O	O

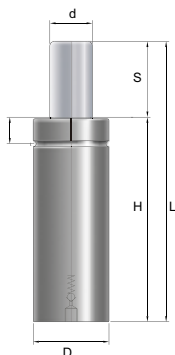
PD Series



POWERTEC



Double Power Type
Serie Doble Potenci



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo auto-nomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PD700	6-50	32	18	142	700	1120	o
PD1000	10-50	38	25	151	1000	1600	o
PD2000	10-50	50	28	159	2000	3200	o
PD3000	10-50	63	45	153	3000	4800	o
PD4000	10-50	75	50	147	4000	6400	o
PD7000	10-50	95	60	146	7000	11200	o

PD – Serie Doble Potencia

Features / Características:

Stroke/Carrera: From 6-50mm

Cylinder Ø / Cilindro: From 32-95mm

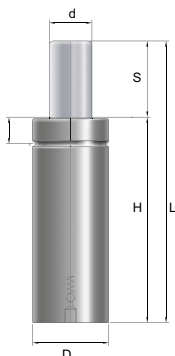
Rod Ø / Vástagos: From 18-60mm

Initial Force/Fuerza inicial: From 700-7000Kg

Type: Self / Autónomo

PU Series

Upgrade Double Power Type
Serie Doble Potencia Plus



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo auto-nomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PU420	6-50	25	16	209	420	670	o
PU740	6-50	32	18	153	750	1200	o
PU1000	6-50	38	20	164	1080	1730	o
PU1800	6-50	50	28	146	1840	2950	o
PU2900	10-50	63	45	153	3010	4810	o
PU4700	10-50	75	50	169	4800	7680	o
PU7500	10-50	95	55	160	7650	12240	o

PU – Serie Doble Potencia Plus

Features / Características:

Stroke/Carrera: From 10-125mm

Cylinder Ø / Cilindro: From 35-195mm

Rod Ø / Vástagos: From 16-95mm

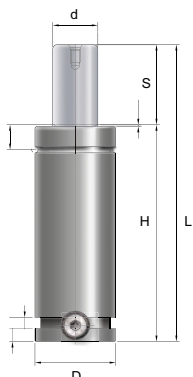
Initial Force/Fuerza inicial: From 270-10800 Kg

Type: Self/System / Autónomo/Sistema

PT Series



Japanese Series
Serie Japonesa



PT – Serie Japonesa

Features / Características:

Stroke/Carrera: From 13-125mm

Cylinder Ø / Cilindro: From 32-150mm

Rod Ø / Vástagos: From 16-90mm

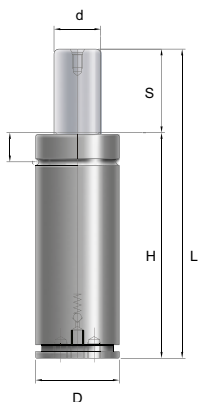
Initial Force/Fuerza inicial: From 360-9700 Kg

Type: Self/System / Autónomo/Sistema

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo	System Of Gas Springs Serie Manifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PT350	13-80	32	16	150	360	570	O	
PT500	13-80	38	20	153	480	730	O	
PT750	13-125	45	25	153	750	1200	O	O
PT1000	13-125	50	28	153	940	1490	O	O
PT1500	13-125	63	36	150	1530	2450	O	O
PT2400	16-125	75	45	154	2450	4000	O	O
PT4200	16-125	95	60	150	4280	6840	O	O
PT6600	16-125	120	75	153	6770	10270	O	O
PT9500	19-125	150	90	153	9700	14900	O	O

PZ Series

Compact Japanese Series
Serie Compacta Japonesa



PZ – Serie Japonesa Compacta

Features / Características:

Stroke/Carrera: From 13-100mm

Cylinder Ø / Cilindro: From 38-95mm

Rod Ø / Vástagos: From 16-50mm

Initial Force/Fuerza inicial: From 270-3000 Kg

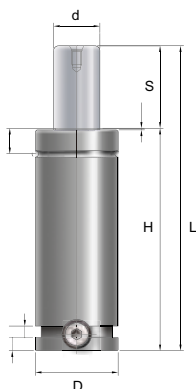
Type: Self/System / Autónomo/Sistema

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PZ250	13-100	38	16	134	270	360	O
PZ500	6-125	45	20	153	480	680	O
PZ750	6-125	50	25	153	750	1200	O
PZ1500	25-100	75	36	147	1500	2400	O
PZ3000	25-100	95	50	153	3000	4800	O

PL Series



Compact Japanese Series
Serie Japonesa Compacta



Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo	System Of Gas Springs Serie Manifold
	S mm	D mm	d mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final		
PL750	13-127	50	25	153	750	1200	O	O
PL1500	13-152	75	36	147	1500	2400	O	O
PL3000	13-178	95	50	153	3000	4800	O	O
PL5000	13-203	120	65	150	5000	8000		O

PL – Serie Japonesa Compacta

Features / Características:

Stroke/Carrera: From 13-203mm

Cylinder Ø / Cilindro: From 50-120mm

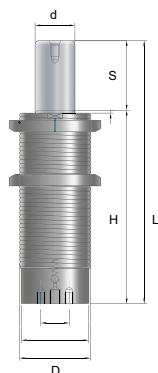
Rod Ø / Vástagos: From 25-65mm

Initial Force/Fuerza inicial: From 750-5000 Kg

Type: Self/System / Autónomo/Sistema

PM Series

Japanese Series
Serie Japonesa Cuerpo Roscado



PM – Serie Japonesa de cilindro con cuerpo roscado y tuercas de fijación

Features / Características:

Stroke/Carrera: From 10-125mm

Cylinder Ø / Cilindro: 38mm

Rod Ø / Vástagos: 20mm

Initial Force/Fuerza inicial: From 500Kg

Type: Self / Autónomo

Models Modelo	Stroke Carrera	Cylinder Cilindro	Rod Vástago	Pressure Presión	Force / Fuerza		Self-Contained Types Tipo autónomo
	S mm	H mm	L mm	bar	Initial Force Fuerza inicial	Final Force Fuerza final	
PM500-10	10	65	75	159	500	800	O
PM500-15	15	70	85				O
PM500-25	25	80	105				O
PM500-40	40	95	135				O
PM500-50	50	105	155				O
PM500-65	65	120	185				O
PM500-70	70	125	195				O
PM500-80	80	135	215				O
PM500-90	90	145	235				O
PM500-100	100	155	255				O
PM500-125	125	180	305				O

PSR 10/15/30/50



POWERTEC



Scrap Remover

Transportador Neumático (vibrador)



Type Tipo	Capacity Capacidad (Kg)	Working Pressure Presión de trabajo (bar)	Working Fluid Alimentación	Max. Stroke Carrera (mm)	Angle of inclination Angulo de inclinación	Weight Peso (Kg)
PSR-10	10	3 ~ 6	Air Aire	30	3° / 6° / 9°	2,5
PSR-20	20			35		3,5
PSR-30	30			33		8,2
PSR-50	50			43		10,8

Working Pressure Presión de trabajo	Lts/min.			
	PRS-10	PRS-20	PRS-30	PRS-50
3 bar	12	15	20	26
4 bar	20	22	29	38
5 bar	23	26	34	45
6 bar	30	30	46	60

Conveyor 22 AB is a high-tech company located in the scenic north-west of Blekinge, **Sweden**.

Conveyor 22 vision is to set a new global standard for **industrial processing and transportation of solid material**.

Conveyor 22's mission is to **design, manufacture and sell electric linear conveyors** to Scandinavian direct customers and international representatives, for applications in **industrial transport processes**.

Conveyor 22 AB es una empresa de alta tecnología ubicada en el pintoresco noroeste de Blekinge, **Suecia**.

La visión de **Conveyor 22** es establecer un nuevo estándar global para el **procesamiento industrial y el transporte de material sólido**.

La misión de **Conveyor 22** es **diseñar, fabricar y vender transportadores eléctricos lineales** para clientes directos escandinavos y representantes internacionales, **para aplicaciones en procesos de transporte industrial**.



ECS-181
Carga 10Kg



ECS-141
Carga 20Kg



ECS-121
Carga 40Kg



CLINE-181
Carga 10Kg



CLINE-141
Carga 20Kg



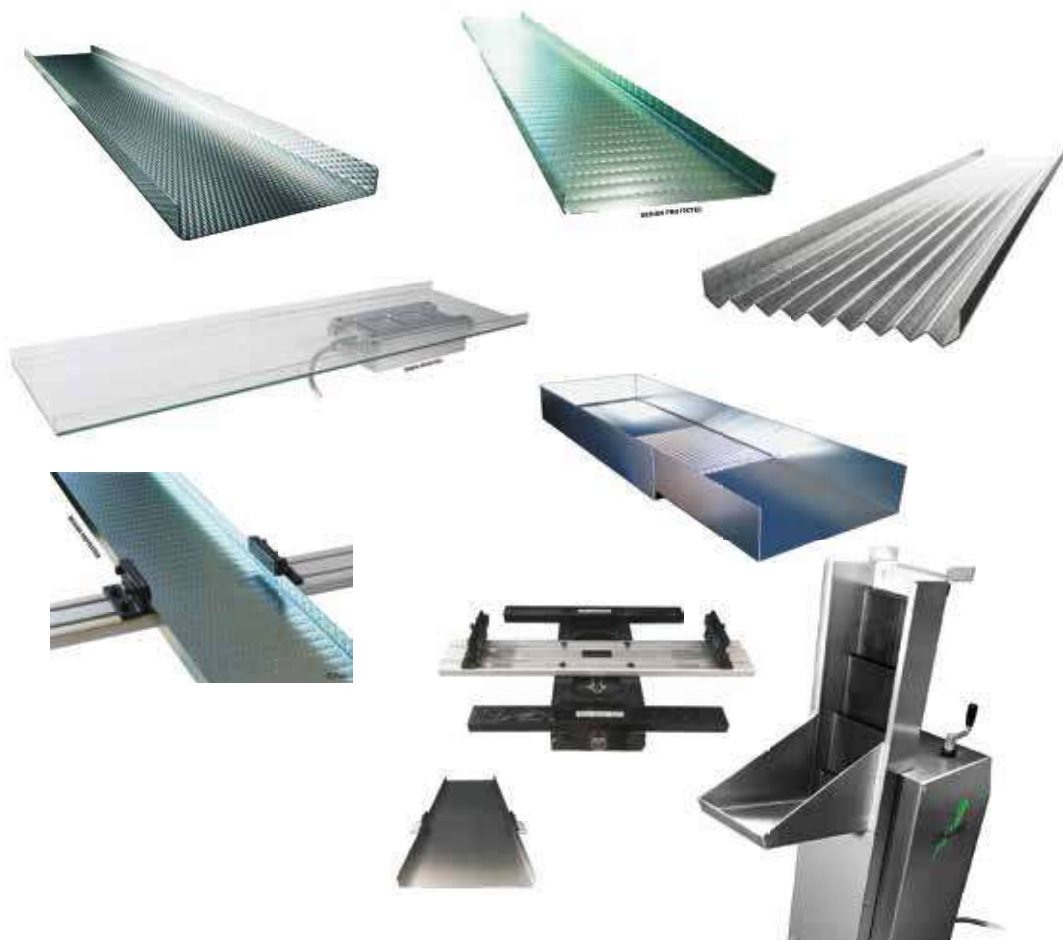
CLINE-121
Carga 40Kg

Benefits to use electrical Conveyor 22:

- ▶ **Low energy consumption:** Consumes only 5% of the energy that a pneumatic transporter uses.
- ▶ **Silent:** Only 60 dB (A). Due to the electric powering and low inner friction.
- ▶ **Mechanical speed adjustment:** Choose a focus on strength or speed, depending on what is to be moved, organized, sorted or separated. Mechanical speed adjustment allows you to easily set the feeder for different needs.
- ▶ **Eliminate/reduce costly downtime:** The built-in motion sensors monitor production and ensure 100 percent productivity.
- ▶ **Easy installation:** It is very easy and fast to install the conveyor with just four bolts. The feeding tray is mounted from above with the supplied fasteners.
- ▶ **No Maintenance:** The transporter's ball bearing mechanism works in an oil bath and is completely encapsulated. There is only one moving outer part.
- ▶ **Different quick-smart assembly accesories** to make faster and simple your production line configuration.

To know the different utilities of **Conveyor22** in the multiple fields of application, we recommend that you see the corresponding **Videos**, at <https://www.bruyrubio.com/en/content/conveyor-22>.

Conveyor 22: "The ultimate conveyor system: pioneering, sustainable, simple and smart."



Ventajas de usar el transportador Eléctrico Conveyor 22:

- ▶ **Bajo consumo energético:** Consume solo el 5% de la energía que usa un transportador neumático.
- ▶ **Silencioso:** Solo 60 dB (A). Debido a la energía eléctrica y baja fricción interna.
- ▶ **Ajuste mecánico de velocidad:** Enfoque en la fuerza o velocidad a elegir, dependiendo de lo que se va a mover, organizar, ordenar o separar. El ajuste mecánico de velocidad le permite configurar fácilmente el alimentador para las diferentes necesidades.
- ▶ **Eliminación/reducción de tiempos de parada:** Elimine el costoso tiempo de inactividad. Los sensores de movimiento incorporados supervisan la producción y garantizan una productividad del 100 por ciento.
- ▶ **Fácil de instalar:** Es muy fácil y rápido instalar el transportador con solo cuatro tornillos. La bandeja de alimentación se monta fácilmente con los tornillos y arandelas suministrados junto con el Conveyor.
- ▶ **Sin mantenimiento:** El mecanismo de rodamiento de bolas del transportador funciona en un baño de aceite y está completamente encapsulado. Solo hay una parte exterior móvil.
- ▶ **Diferentes accesorios de ensamblaje** rápidos e inteligentes para agilizar y simplificar la configuración de su línea de producción.

La mejor manera de comprobar su eficacia y las distintas aplicaciones es visitando su Web para ver los VIDEOS demostrativos de aplicaciones funcionando en <https://www.bruyrubio.com/en/content/conveyor-22>.

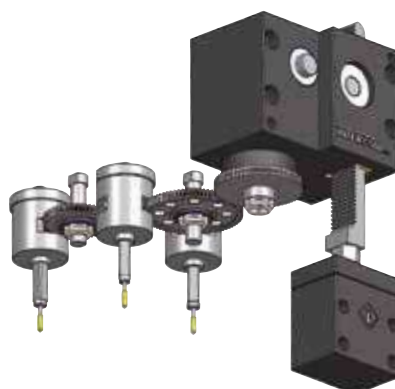
Conveyor 22: "El mejor sistema de transporte: pionero, sostenible, simple e inteligente"

INTERCOM a modern Italian company that operates since 1981, mainly in the field of equipment, standard parts for die stamping and molding of plastics and manufacturing **IN DIE TAPPING UNITS**.

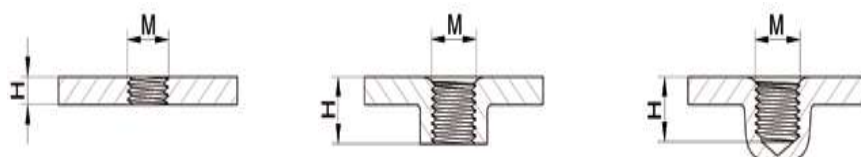
INTERCOM es una moderna empresa italiana que opera desde 1981 en el mercado de normalizados para moldes, matrices y en la fabricación de las **máquinas de roscar en troquel "IN DIE TAPPING UNITS"**.



Electronic - SL 2005



Mechanical - BMI 200



Screw types / Tipos de Rosca

The **INTERCOM IN DIE TAPPING UNITS** are available in mechanical and electronic version provides:

- ▶ **Costs reduction** for blank and threaded pieces.
- ▶ **No more** expensive secondary operation.
- ▶ **Small investment** for high performances.
- ▶ **The rolling** taphas **higher breaking resistance** instead of the cut thread.
- ▶ **Tap life** between 50000 and 300000 strokes (according to the tap dimension and the material type).
- ▶ **It can work to 200 strokes/min** according to tap dimension and material type.

Las **máquinas de roscar en troquel "IN DIE TAPPING UNITS"** INTERCOM , disponibles en las versiones **mechanica y electronica** ofrecen:

- ▶ **Reducción de costos** para blanks y piezas roscadas.
- ▶ **Eliminación** de las costosas operaciones secundarias.
- ▶ **Pequeña inversión** para altos rendimientos.
- ▶ **El macho de laminar** tiene **mayor resistencia** a la rotura en lugar del hilo cortado.
- ▶ **Vida útil** del macho entre **50.000 y 300.000 golpes** (de acuerdo con la dimensión de la rosca y el tipo de material).
- ▶ **Trabaja a 200 golpes / min** de acuerdo con la dimensión de la rosca y el tipo de material.

Brodd Automation is a Swedish company with more than 40 years dedicated to solutions for **industrial processes**.

Its specialty is the research and manufacture of **tools for the separation of sheets in NON-FERROSE materials** such as **aluminum, plastics or wood**, also usable in ferrous materials such as **Stainless Steel**, ...

Its patent is registered in more than 100 countries, and its tools work in important companies in North America, Australia, Asia and Europe.

- ▶ **FERROUS and NO FERROUS Materials.**
- ▶ **Thicknesses** of 0.6 - 3.0 mm y de 2.0 - 25.0 mm, ...
- ▶ **50 – 55 cycles/min.**
- ▶ **Used** in productions of K7.500 cycles, equivalent to approx. **15.000 hours of work.**



Brodd Automation es una empresa sueca con más de 40 años dedicada a soluciones para **procesos industriales**.

Su especialidad es la investigación y fabricación de **herramientas para la separación de chapas en materiales NO FERROSOS** como **aluminios, plásticos o madera**, también utilizable en materiales **FERROSOS** como el **Acero Inoxidable**, ...

Su patente está registrada en más de 100 países, y sus herramientas funcionan en importantes empresas de Norte América, Australia, Asia y Europa.

- ▶ **Materiales FERROSOS y NO FERROSOS.**
- ▶ **Espesores** de 0.6 - 3.0 mm y de 2.0 - 25.0 mm, ...
- ▶ **50 – 55 ciclos/min.**
- ▶ **Utilizado** en producciones de 7.500.000 ciclos, equivalente a aprox.. **15.000 horas de trabajo.**



Bru y Rubio solutions

Bru y Rubio offers for sale a wide range of high quality components and services for injection moulds such as mould bases, Standard Elements, Plain Plates, Hot Runners and all the necessary accessories for injection moulds.

Established in 1962 this company specialises in customised service with the aim to assist our customers in improving their competitiveness in a global market.

We are currently present in Europe, South-Africa and South America. Our more than 50 years experience and more than 10.000 customers vouch for our quality service.

Soluciones Bru y Rubio

Bru y Rubio comercializa una completa gama de componentes para moldes de inyección como Portamoldes, Elementos Normalizados, Placas Ciegas, Cámara Caliente y todos los accesorios necesarios para moldes de inyección, con unos altos estándares de calidad y servicio.

Fundada en 1962, esta empresa se centra en el servicio personalizado con el objetivo de atender y mejorar la competitividad de nuestros clientes, en un entorno globalizado.

Presente actualmente en Europa, Sudáfrica y Sudamérica, nuestros más de 50 años de experiencia y empresa nuestros más de 10.000 clientes avalan la calidad de nuestro servicio.

With over 50,000 products available in stock our customer's service has achieved excellence and we have a 24 hours delivery service throughout Europe.

Bru y Rubio is not just about us; our customers are an essential part of our organization and their feedback is taken into account in the day-to-day running and decision-making process at Bru y Rubio.

Our aim is to offer the best value for money currently on offer throughout the world.

Con más de 50.000 productos en stock, nuestro nivel de servicio ha adquirido rango de excelencia, pudiendo llegar a entregar en 24 horas en toda Europa.

Bru y Rubio no solo consiste en su equipo humano, nuestros clientes forman una parte muy importante de nuestra organización y son parte fundamental de cada una de las decisiones que día a día se toman en la empresa.

Nuestro objetivo es ofrecer la mejor relación calidad-precio del mercado a nivel mundial.



Machining Services



Machining services

Bru y Rubio now offers special machining according to the customers specifications

With a capacity for plates of up to 1600x1000 mm and 3000 kg, we can offer pockets and machining of high precision with a quality finish. We also offer a gun drilling service for waterways. All of these services are very competitively priced with quick delivery times. We also offer a laser marking service for plates and ancillaries to cover the customer needs.

To see our plant list and the type of machining services we offer, please visit us at **"Services and Machining ByR"** on the homepage of our website: www.bruyrubio.com. For more information, contact us at info@bruyrubio.com.

Servicios y mecanizado

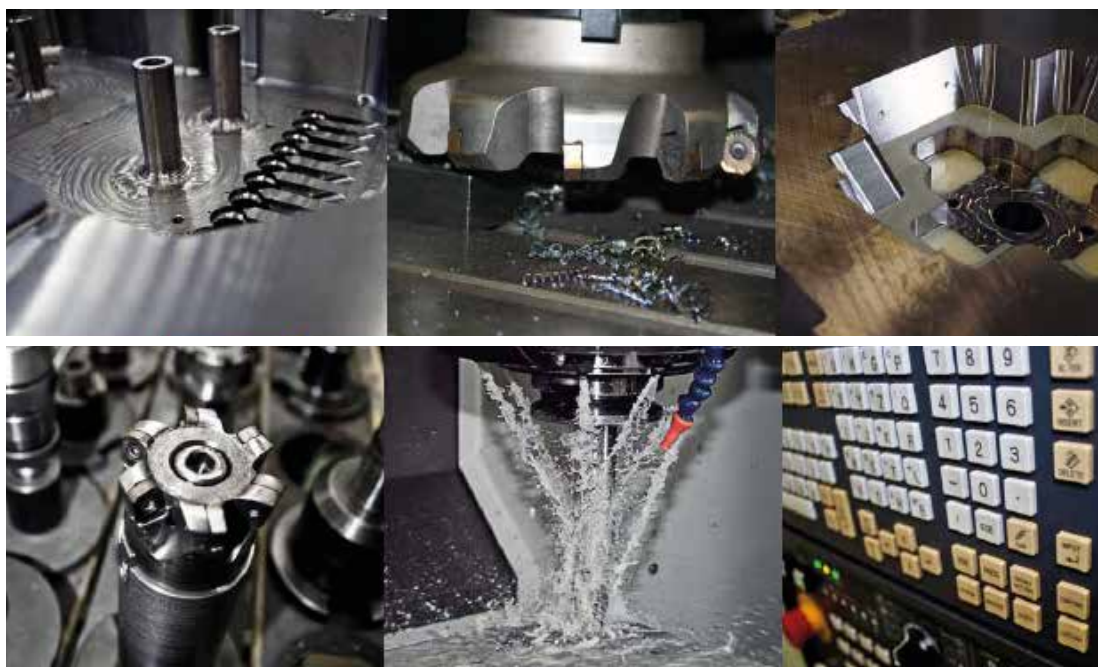
Bru y Rubio mecaniza portamoldes y portamatrices acorde al diseño del cliente

Con una capacidad para placas de hasta 1600x1000 mm y 3000 Kg, podemos realizar cajas y taladros de alta precisión y excelentes acabados. Los taladros profundos para refrigeración también son parte de nuestra gama de mecanizados. Además disponemos de una máquina para realizar marcados a láser de placas y piezas especiales.

Desde Bru y Rubio, siempre estamos aumentando nuestra oferta de servicios y mecanizado con la incorporación de nuevas máquinas de alta precisión al tren de mecanizado para incrementar el Servicio de Mecanizado Profesional con el objetivo de cubrir sus necesidades,

En base a su diseño 3D, nuestro equipo técnico de mecanizado realizará un mecanizado de excelencia en lo que se refiere a tolerancias y acabados.

Si desea realizar una consulta acerca de las máquinas de las que disponemos y de las operaciones que realizamos, puede dirigirse al apartado **"Servicios y Mecanizado ByR"** en la página inicial de nuestra web: www.bruyrubio.com. Para más información, contacte con nosotros en info@bruyrubio.com.



Bru y Rubio focuses on

1. Optimising our customer's satisfaction levels.
2. Improving our products, on a regular basis, both in terms of quality and range on offer.
3. Reliable and short delivery deadlines.
4. Comprehensive technical support.
5. To continuously expand our range of products.

Bru y Rubio está totalmente dirigido a

1. Optimizar la satisfacción de nuestros clientes.
2. Mejorar continuamente nuestros productos tanto en calidad como en rango disponible.
3. Plazos de entrega fiables y cada vez más reducidos.
4. Soporte técnico completo.
5. Incrementar continuamente nuestra gama de productos.



3D configurator

This software is compatible with any **CAD-CAM design program** currently available on the market and it offers a 3D library containing all our products.

With this tool the designer will be able to import from our Library into his designing program all the elements he may need, and combine them to achieve a 3D integrated design.

Configurador 3D

Este software es compatible con cualquier programa de **diseño CAD-CAM** disponible actualmente en el mercado y ofrece una librería 3D de nuestros productos.

Con esta herramienta el diseñador podrá importar de nuestra Librería 3D a su programa de diseño todos los productos que necesite.



Hot Runner Systems



Bru y Rubio supplies the complete range for RUNNERTECH products with its various solutions for caps and plastic closures, medical parts, thin wall packaging, automotive, appliances, electronics, homeware, toys and many other applications.

With a varied line of nozzles, we can provide solutions for injection from 0,5 g, multiple cavities up to 64 points, valved sequential systems, RPS System (pre-installed) plus the complete MB System (Half Hot).

Bru y Rubio comercializa la completa gama de cámara caliente RUNNERTECH con sus diversas soluciones para los mercados de tapones, piezas médicas, envases de pared fina, automoción, línea blanca, electrónica, menaje, juguetes y otras muchas aplicaciones.

Con una línea de boquillas muy variada, podemos proporcionar soluciones para la inyección de piezas desde 0,5 g, múltiples cavidades hasta 64 puntos, sistemas valvulados secuenciales, sistemas RPS System (premontados), además del sistema completo MB System (Half Hot).



Notes





BRUYRUBIO

• Bru y Rubio's Headquarters - Países con sede Bru y Rubio



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