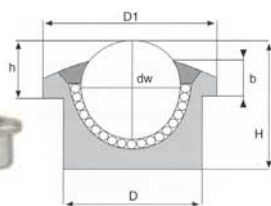


MASSIVE SP SERIES

for loads till 600 kg

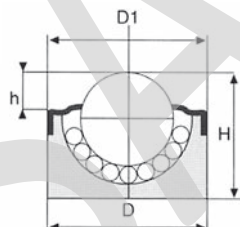


Massive carbon steel box obtained from machine full bar, for heavy load use and long product life. Support unit made of hardened carbon steel HCR 60-62, carbon steel balls I AISI 1010/1075 HCR 60-62. For SP-30 and SP-45 types in versions "A" and "B" chrome-steel balls AISI 52100 HCR 63+/-3 are used. Embodied discharge hole on the base of each type (except for SP-8). Internal dust-saving gasket standard on models SP-22/30/45 and on request only for types SP-15-25. Use temperature -30°C/+100°C.

Type	Description	dw	D	Tol	D1	h	Tol	H	b	Capacity		Weight kg
										LOAD UP	LOAD DOWN	
SP 12 A	Steel box and balls	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	30	12	0,035
SP 15 A		15	24	± 0,065	31	9,5	± 0,2	21	5,5	60	24	0,055
SP 22 A		22	36	± 0,080	45	9,8	± 0,2	30,5	6	180	72	0,185
SP 30 A		30	45	± 0,080	55	13,8	± 0,3	36,8	8	350	140	0,365
SP 45 A		45	62	± 0,095	75	19,0	± 0,4	53,5	10	600	240	0,990
SP 12 B	Zinc-coated box and steel balls	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	30	12	0,035
SP 15 B		15	24	± 0,065	31	9,5	± 0,2	21	5,5	60	24	0,055
SP 22 B		22	36	± 0,080	45	9,8	± 0,2	30,5	6	180	72	0,185
SP 30 B		30	45	± 0,080	55	13,8	± 0,3	36,8	8	350	140	0,365
SP 45 B		45	62	± 0,095	75	19,0	± 0,4	53,5	10	600	240	0,990
SP 12 C	Zinc-coated box and stainless steel balls AISI 420	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	20	8	0,035
SP 15 C		15	24	± 0,065	31	9,5	± 0,2	21	5,5	40	16	0,055
SP 22 C		22	36	± 0,080	45	9,8	± 0,2	30,5	6	120	48	0,185
SP 30 C		30	45	± 0,080	55	13,8	± 0,3	36,8	8	200	80	0,365
SP 45 C		45	62	± 0,095	75	19,0	± 0,4	53,5	10	300	120	0,990
SP 12 SS	Stainless steel box 303 and stainless steel balls AISI 420	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	20	8	0,035
SP 15 SS		15	24	± 0,065	31	9,5	± 0,2	21	5,5	40	16	0,055
SP 22 SS		22	36	± 0,080	45	9,8	± 0,2	30,5	6	120	48	0,185
SP 30 SS		30	45	± 0,080	55	13,8	± 0,3	36,8	8	200	80	0,365
SP 45 SS		45	62	± 0,095	75	19,0	± 0,4	53,5	10	300	120	0,990

MASSIVE SP SERIES

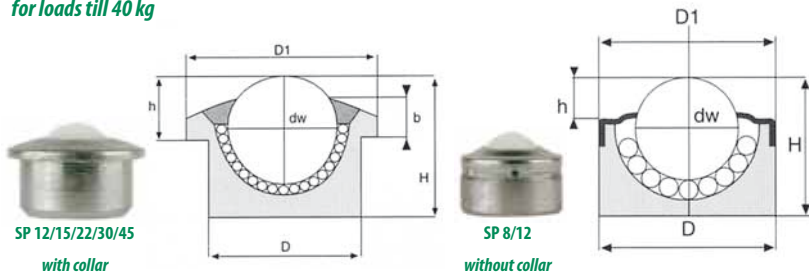
for loads till 600 kg



Type	Description	dw	D	Tol	D1	h	Tol	H	b	Capacity		Weight kg
										LOAD UP	LOAD DOWN	
SP 8 A	Steel box and balls	8	18	± 0,030	18	2,2	± 0,1	12	15	6	0,018	
SP 12 A(2)		12	22	± 0,030	22	5,5	± 0,2	17,5	30	12	0,035	
SP 8 B	Zinc-coated box and steel balls	8	18	± 0,030	18	2,2	± 0,1	12	15	6	0,018	
SP 12 B(2)		12	22	± 0,030	22	5,5	± 0,2	17,5	30	12	0,035	
SP 8 C	Zinc-coated box and stainless steel balls AISI 420 steel	8	18	± 0,030	18	2,2	± 0,1	12	10	4	0,018	
SP 12 C(2)		12	22	± 0,030	22	5,5	± 0,2	17,5	20	8	0,035	
SP 8 SS	Stainless steel box 303 and stainless steel balls AISI 420	8	18	± 0,030	18	2,2	± 0,1	12	10	4	0,018	
SP 12 S(2)		12	22	± 0,030	22	5,5	± 0,2	17,5	20	8	0,035	

MASSIVE SP SERIES WITH PLASTIC BALL

for loads till 40 kg



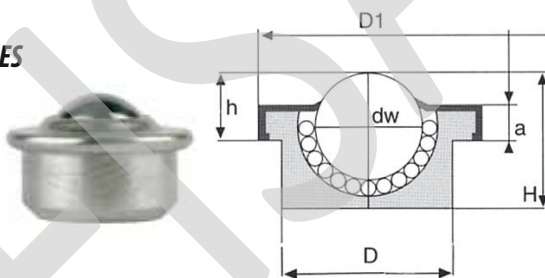
Higher diameter ball in POM-polyacetal (Delrin). Because of the lightness of the plastic ball, models SP-22/30/45 are not provided any internal dust-saving gasket to enable free running of the big ball. The gasket can be mounted on request for special applications. Exercise temperature: +60°C. This application is not suitable for use with upside down ball. Series discharge hole in all types (except for SP-8).

Type	Description	dw	D	Tol	D1	h	Tol	H	b	Capacity	Weight kg
SP 8 B-D	Zinc-coated box, big plastic and small steel balls	8	18	± 0,03	18	2,2	± 0,2	12	-	3	0,015
SP 12 B-D		12	22	± 0,03	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SP 12 B-D(2)		12	22	± 0,03	22	5,5	± 0,2	17,5	-	6	0,025
SP 15 B-D		15	24	± 0,065	31	9,5	± 0,2	21	5,5	9	0,030
SP 22 B-D		22	36	± 0,08	45	9,8	± 0,2	30,5	6	15	0,100
SP 30 B-D		30	45	± 0,08	55	13,8	± 0,3	36,8	8	25	0,200
SP 45 B-D		45	55	± 0,095	75	19	± 0,4	53,5	10	40	0,450
SP 8 C-D	Zinc-coated box, big plastic ball and small stainless steel balls AISI 420	8	18	± 0,03	18	2,2	± 0,2	12	-	3	0,015
SP 12 C-D		12	22	± 0,03	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SP 12 C-D(2)		12	22	± 0,03	22	5,5	± 0,2	17,5	-	6	0,025
SP 15 C-D		15	24	± 0,065	31	9,5	± 0,2	21	5,5	9	0,030
SP 22 C-D		22	36	± 0,08	45	9,8	± 0,2	30,5	6	15	0,100
SP 30 C-D		30	45	± 0,08	55	13,8	± 0,3	36,8	8	25	0,200
SP 45 C-D		45	55	± 0,095	75	19	± 0,4	53,5	10	40	0,450
SP 8 SS-CD	Stainless steel box 303, big plastic ball and small stainless steel balls AISI 420	8	18	± 0,03	18	2,2	± 0,2	12	-	3	0,015
SP 12 SS-CD		12	22	± 0,03	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SP 12 SS-CD(2)		12	22	± 0,03	22	5,5	± 0,2	17,5	-	6	0,025
SP 15 SS-CD		15	24	± 0,065	31	9,5	± 0,2	21	5,5	9	0,030
SP 22 SS-CD		22	36	± 0,08	45	9,8	± 0,2	30,5	6	15	0,100
SP 30 SS-CD		30	45	± 0,08	55	13,8	± 0,3	36,8	8	25	0,200
SP 45 SS-CD		45	55	± 0,095	75	19	± 0,4	53,5	10	40	0,450

MASSIVE SP SERIES

for loads till 600 kg

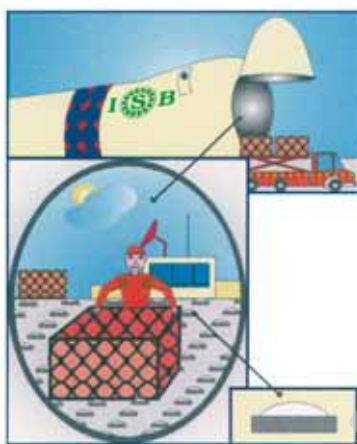
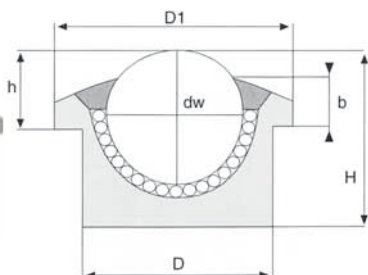
Ø 1" ball



Carbon steel massive box obtained from machine full bar, with pressed sheet cover and discharge hole on the base. Dust-saving gasket only on request.

Type	Description	dw	D	D1	h	H	a	Capacity	Weight kg
SP 25 A	Steel box and balls	1" = 25,4	38 ± 0,08	45	14 ± 0,2	31	5	200 / 80	0,190
SP 25 B	Zinc-coated box and steel balls	1" = 25,4	38 ± 0,08	45	14 ± 0,2	31	5	200 / 80	0,190
SP 25 C	Zinc-coated box and stainless steel balls AISI 420	1" = 25,4	38 ± 0,08	45	14 ± 0,2	31	5	110 / 44	0,190
SP 25 D	Zinc-coated box, big plastic ball and small steel balls	1" = 25,4	38 ± 0,08	45	14 ± 0,2	31	5	18 / 7	0,110
SP 25 SS	Stainless steel box 303, and stainless steel balls AISI 420	1" = 25,4	38 ± 0,08	45	14 ± 0,2	31	5	110 / 44	0,190

**MASSIVE SP-CX SERIES
AIRPORT AND
HARBOUR USE**



Massive carbon steel box obtained from machine full bar, with AISI 420 stainless steel internal hemispheric vacuum hardened cap, HCR 60 hardness, with dust-saving gasket and discharge hole on the base. This version is particularly suitable for granting a long life and good resistance to corrosion in extreme use conditions, in outdoor environments with rain, snow, ice and dust. Exercise temperature between -50°C/+100°C. On request it can be supplied with stainless steel balls AISI 440C-304-316.

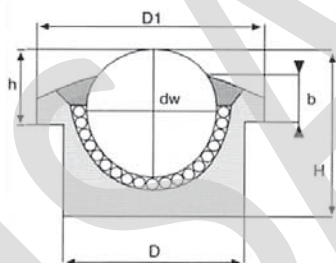
Type	Description	dw	D	Tol	D1	h	Tol	H	b	Capacity		Weight kg
										LOAD UP	LOAD DOWN	
SP 22 CX	Zinc-coated box stainless steel internal cap and balls AISI 420	22	36	± 0,08	45	9,8	± 0,2	30,5	6	120	48	0,185
SP 30 CX		30	45	± 0,08	55	13,8	± 0,3	36,8	8	200	80	0,365
SP 45 CX		45	55	± 0,095	75	19	± 0,4	53,5	10	300	120	0,990
SP 22 CX-SS	Stainless steel box 303 stainless steel internal cap and balls AISI 420	22	36	± 0,08	45	9,8	± 0,2	30,5	6	120	48	0,185
SP 30 CX-SS		30	45	± 0,08	55	13,8	± 0,3	36,8	8	200	80	0,365
SP 45 CX-SS		45	55	± 0,095	75	19	± 0,4	53,5	10	300	120	0,990

SUPER MASSIVE SP SERIES

for loads till 3.000 kg



SP 60



Suitable for high stresses, extremely heavy loads and long life. Massive steel UN 18NiCrMo5 (=UNI 7846-78/AFNOR 18NCD6/B.S.EN353) carbonitrided (CM7 case hardening + tempera of hardness HRC60, thickness 0,6/0,8mm), box, with internal dust-saving gasket and discharge hole on the base. Chrome steel AISI balls 52100 100Cr6 G 100 ISO 3290 with HRC 60/62 hardness in versions "A" and "B". On request chrome steel balls G10/G16/G20 ISO 3290.

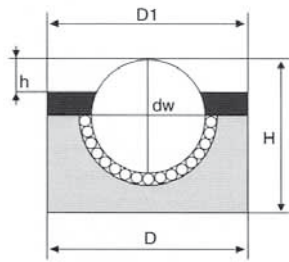
Type	Description	dw	D	Tol	D1	h	Tol	H	b	Capacity		Weight kg
										LOAD UP	LOAD DOWN	
SP 60 A	Steel box and balls	60	100	± 0,010	117	29,5	± 0,4	77,5	14,5	1500	600	3,5
SP 60 B	Zinc-coated box and steel balls	60	100	± 0,010	117	29,5	± 0,4	77,5	14,5	1500	600	3,5
SP 60 C	Zinc-coated box and stainless steel balls AISI 420	60	100	± 0,010	117	29,5	± 0,4	77,5	14,5	900	360	3,5

SUPER MASSIVE SP SERIES

for load till 3000 kg



SP 76/SP 90



Type	Description	dw	D	Tol	h	Tol	H	Capacity		Weight kg
								LOAD UP	LOAD DOWN	
SP 76 A	Steelbox and balls	76	130	± 0,08	23	± 0,05	103	2500	1000	8,6
SP 76 B	Zinc-coated box and steel balls	76	130	± 0,08	23	± 0,05	103	2500	1000	8,6
SP 76 C	Zinc-coated and stainless steel balls AISI 420	76	130	± 0,08	23	± 0,05	103	1500	600	8,6
SP 90 A	Steelbox and balls	90	145	± 0,08	23	± 0,05	115	3000	1200	11
SP 90 B	Zinc-coated box and steel balls	90	145	± 0,08	23	± 0,05	115	3000	1200	11
SP 90 C	Zinc-coated box and stainless steel balls AISI 420	90	145	± 0,08	23	± 0,05	115	1800	720	11

MASSIVE SP-FL SERIES WITH THREADED STEM

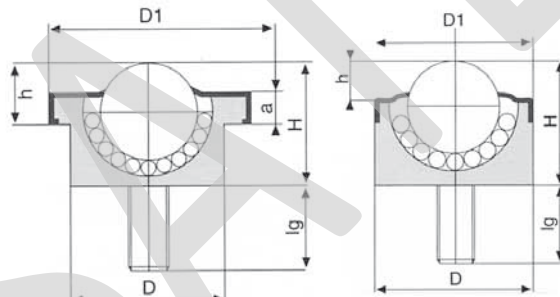
for loads till 60 kg



SP 15



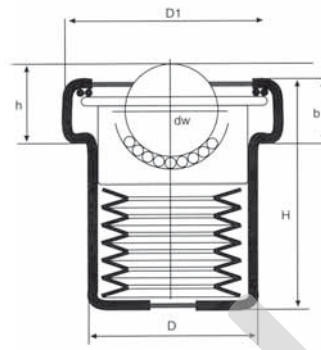
SP 12



Massive carbon steel box with threaded stem obtained from machine full bar, pressed sheet cap. Threaded stem size: diameter 6/8/10mm and length 10/15/20/25/30mm. Dust-saving gasket not included.

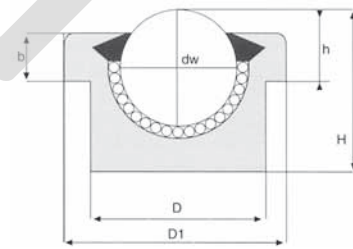
Type	Description	dw	D ± 0,06	D1	h ± 0,06	H	a	Capacity		Weight kg
								LOAD UP	LOAD DOWN	
SP 12 A-FL	Steelbox and balls	12	22	22	6	17	-	30	12	0,045
SP 15 A-FL		15	24	31	10	21	5	60	24	0,070
SP 12 B-FL	Zinc-coated box and steel balls	12	22	22	6	17	-	30	12	0,045
SP 15 B-FL		15	24	31	10	21	5	60	24	0,070
SP 12 C-FL	Zinc-coated box and stainless steel balls AISI 420	12	22	22	6	17	-	12	6	0,045
SP 15 C-FL		15	24	31	10	21	5	25	10	0,070
SP 12 D-FL	Zinc coated box, big plastic ball and small stainless steel balls	12	22	22	6	17	-	6	-	0,035
SP 15 D-FL		15	24	31	10	21	5	8	-	0,040
SP 12 SS-FL	Stainless steel box 303 and stainless steel balls AISI 420	12	22	22	6	17	-	15	6	0,045
SP 15 SS-FL		15	24	31	10	21	5	25	10	0,070
SP 12 SS-CD-FL	Stainless steel box 303, big plastic ball and small stainless steel balls AISI 420	12	22	22	6	17	-	6	-	0,035
SP 15 SS-CD-FL		15	24	31	10	21	5	8	-	0,040

**MASSIVE AF SERIES
WITH INTERNAL SPRINGING ELEMENTS**



Type	Description	dw	D	D1	h	Tol	H	b	Load compress	Capacity	Weight kg
SP 22 AF SP 30 AF SP 45 AF	Steel box and balls	22 30 45	39 48,5 66,5	50 62 85	18,5 245 36	± 0,100 ± 0,125 ± 0,150	58 10 100,5	14 17,5 25,5	7 13 22	80 70 217	0,37 0,62 1,65
SP 22 BF SP 30 BF SP 45 BF	Zinc-coated box and steel balls	22 30 45	39 48,5 66,5	50 62 85	18,5 245 36	± 0,100 ± 0,125 ± 0,150	58 10 100,5	14 17,5 25,5	7 13 22	80 70 217	0,37 0,62 1,65
SP 22 CF SP 30 CF SP 45 CF	Zinc-coated box and stainless steel balls AISI 420	22 30 45	39 48,5 66,5	50 62 85	18,5 245 36	± 0,100 ± 0,125 ± 0,150	58 10 100,5	14 17,5 25,5	7 13 22	80 70 217	0,37 0,62 1,65

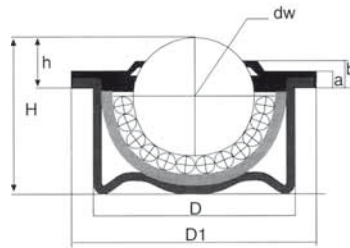
**SP SERIES
WITH PLASTIC BOX**



"ABS" box with tempered steel internal hemispheric cap, ball diameter 1"=25,4 mm.

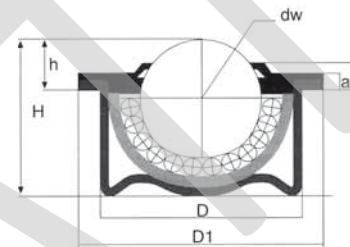
Type	Description	dw	D	D1	h	Tol	H	b	Capacity		Weight kg
									LOAD UP	LOAD DOWN	
SP 25 PA	Plastic box and steel balls	1" = 25,4	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3	40	16	0,140
SP 25 P-C	Plastic box and stainless steel balls AISI 420	1" = 25,4	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3	30	12	0,140
SP 25 P-C-D	Plastic box and big ball, stainless steel balls AISI 420	1" = 25,4	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3	10	-	0,080

SPS SERIES PRESSED SHEET



Zinc-coated pressed sheet box with tempered steel internal cap, internal dust-saving gasket (only in SPS-22 and SPS-30 models). Exercise temperature -30°C/+100°C.

Type	Description	dw	D	Tol	D1	h	Tol	H	a	b	Capacity		Weight kg
											LOAD UP	LOAD DOWN	
SPS 15 B SPS 22 B SPS 30 B	Zinc-coated box and steel balls	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	50 130 250	20 52 100	0,038 0,132 0,265
SPS 15 C SPS 22 C SPS 30 C	Zinc coated box and stainless steel balls AISI 420	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	37 97 190	15 39 76	0,038 0,132 0,265
SPS 15 SS SPS 22 SS SPS 30 SS	Stainless steel box 304, stainless steel internal cap and balls AISI 420	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	37 97 190	15 39 76	0,038 0,132 0,265



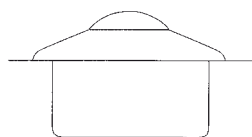
With big ball in POM-polyacetal (Delrin) without dust-saving gasket, not suitable for upside down ball applications.

Type	Description	dw	D	Tol	D1	h	Tol	H	a	b	Capacity	Weight kg
											LOAD UP	
SPS 15 B-D SPS 22 B-D SPS 30 B-D	Zinc-coated box, big plastic ball and small steel balls	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	7 10 15	0,024 0,093 0,168
SPS 15 C-D SPS 22 C-D SPS 30 C-D	Zinc-coated box, big plastic ball and small stainless steel balls AISI 420	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	7 10 15	0,024 0,093 0,168
SPS 15 SSCD SPS 22 SSCD SPS 30 SSCD	Stainless steel box 304, stainless steel cap and balls AISI 420	15 22 30	24 36 45	$\pm 0,065$ $\pm 0,080$ $\pm 0,080$	31 45 55	9,5 9,8 13,8	$\pm 0,2$ $\pm 0,2$ $\pm 0,3$	20,7 29,5 37	2,8 2,8 4	6,3 5,5 8,3	7 10 15	0,024 0,093 0,168

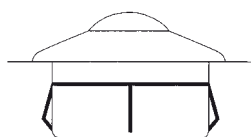
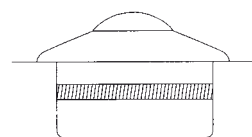
FIXING METHODS



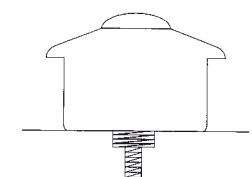
DIN 471 Retaining ring
(only for types with massive SP series box) please communicate the "A" quote dimension.



Pressure



With fixing clip



With threaded nut

PRODUCTION PROGRAM

Material	Diameters	Degrees of accuracy ISO 3290
CHROME STEEL AISI 52100	0,2 mm - 250 mm	G3, G5, G10, G16, G20, G28, G40, G100, G200, G500, G1000
CARBON STEEL AISI 1060-1075-1085	1,5 mm - 33 mm	G40, G100, G200
CARBON STEEL - AISI 1010-1015	1,5 mm - 50 mm	G100, G200, G500, G1000
STAINLESS STEEL AISI 420B, 420C, 304, 304L, 316, 316L	0,2 mm - 150 mm	G3, G5, G10, G16, G20, G28, G40, G100, G200, G500, G1000
TUNGSTEN CARBIDE	0,2 mm - 150 mm	G10, G20, G40, G200
CERAMIC Al_2O_3 E Si_3N_4	0,5 mm - 50 mm	G5, G10, G20, G40, G200
SODA LIME GLASS	1 mm - 150 mm	G200
BORO-SILICATE BLACK GLASS	1 mm - 50 mm	G10, G20, G40, G200
PLASTICS: NYLON, DELRIN POLYPROPYLENE, POLYTHENE, TEFLON, POLYSTYRENE, PVC, TORLON, ABS	1 mm - 60 mm	G I, G II, G III
RUBBER: EPDM, VITON, SILICONE, POLYURETHANE, NBR	2 mm - 50 mm	G II, G III
ALLOYS: MONEL-K, HASTELLOY, MSO, TANTALUM, COBALT, BRONZE, BRASS, TITANIUM, ALUMINUM, INCONEL, CARPENTER 20 CB3	2 mm - 50 mm	G100, G200