



## BALL TRANSFER UNITS

STR and its partners have more than 50 years experience in steel production and can customize product to meet customer needs

# BALL TRANSFER UNITS

## "SBM" HEAVY DUTY TYPE WITH STEEL OR STAINLESS BALLS



Solid machined body without upper flange,  
all balls made of steel or stainless steel

SERIES SBM 8-12  
VERSIONS A-B-C-SS

page 7

## "SBM" HEAVY DUTY TYPE



Solid machined body without upper flange,  
main ball made of plastic and small balls  
made of steel or stainless steel

SERIES SBM 8-12  
VERSIONS BD-CD-SS/CD

page 7

## "SPM" HEAVY DUTY TYPE WITH STEEL OR STAINLESS BALLS



Solid machined body with upper flange,  
all balls made of steel or stainless steel

SERIES SPM  
12-15-22-30-45  
VERSIONS A-B-C-SS

page 8

## "SPM" HEAVY DUTY TYPE WITH PLASTIC BALLS



Solid machined body with upper flange,  
main ball made of plastic and small balls  
made of steel or stainless steel

SERIES SPM 12-15-22-30-45  
VERSIONS BD-CD-SS/CD

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## "SPM 25" HEAVY DUTY TYPE WITH STEEL OR STAINLESS BALLS



Solid machined body with upper flange,  
all balls made of steel or stainless steel

SERIES SPM 25  
VERSIONS A-B-C-BD-CD-SS  
SS/BD-SS/CD

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## "SPM" SUPER HEAVY DUTY TYPE WITH STEEL OR STAINLESS BALLS



Solid machined body, main ball made of  
steel  $\varnothing$  60 - 76 - 90 mm, small balls  
made of steel or stainless steel

SERIES SPM 60-76-90  
VERSIONS A-B-C

page 11

# "SPM-CX" HEAVY DUTY TYPE

## AIR CARGO AND AIRPORT HANDLING UNITS



Solid machined body, all balls made of stainless steel, seven holes on bottom

SERIES SPM 30-45  
VERSIONS CX-CX/SS

page 12

# "SPM-R" HEAVY DUTY TYPE WITH INSERT CLIP



Solid machined body with insert clip, all balls made of stainless steel or plastic

SERIES SPM 15-22-30-45  
Equivalent to version BPM  
VERSIONS A/R-B/R-C/R-SS/R

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# "SPM-AF" HEAVY DUTY TYPE SPRING LOADED (RETRACTABLE) WITH STEEL OR STAINLESS STEEL BALLS



Solid machined body, retractable spring, balls made of steel or stainless steel

SERIES SPM 22-30-45  
VERSIONS AF-BF-CF

page 14

# "SPM-FL" HEAVY DUTY TYPE WITH THREADED NUT



Solid machined body with threaded nut, all balls made of steel, stainless steel or plastic

SERIES SPM 12-15  
VERSIONS  
B-C-BD-SS-CD + FL

page 15

# "SPS" LIGHT DUTY TYPE WITH PRESSED METAL SHEET BODY



Pressed zinc plated body, main ball made of stainless steel or plastic

SERIES SPS 12-15-22-30-45  
VERSIONS  
B-C-SS-BD-CD-SS/CD

pages  
16/17

# CONSTRUCTION

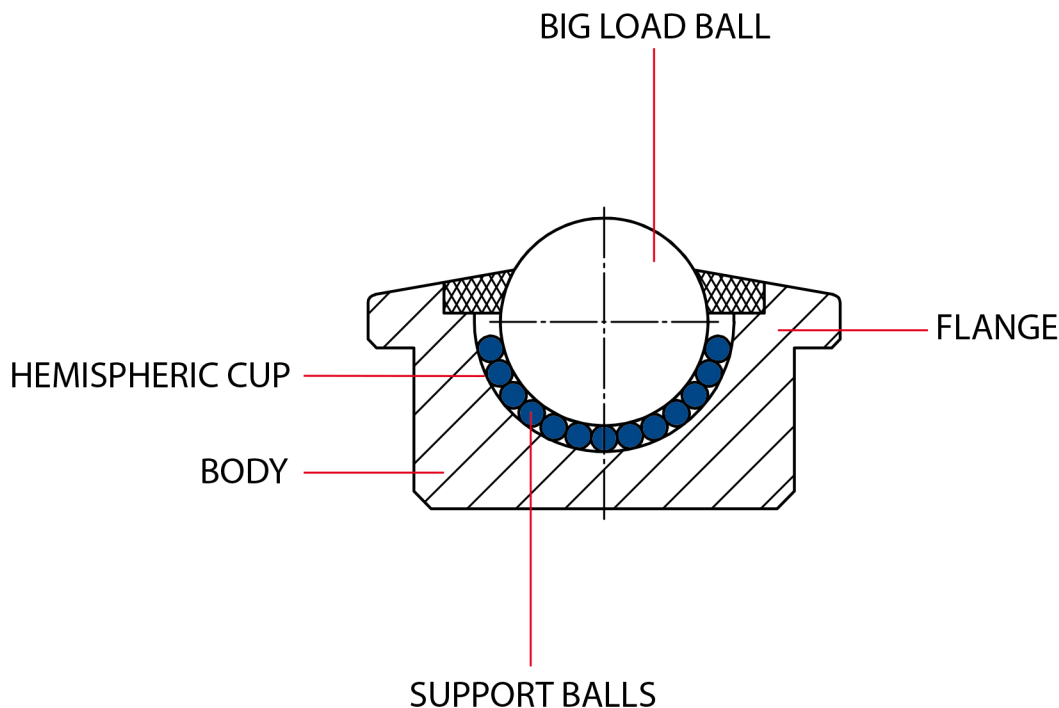
STR ball transfer units are composed of a large precision ball rolling on a bed of small precision balls seated in a hardened hemispheric cup.

All balls are ground and heat treated; they start moving when the main big ball (which is made of hardened steel, stainless steel or plastic) rolls, to let it move with the lowest possible friction and guarantee a regular movement. This kind of construction allows moving with small effort any kind of heavy material, whose surface is plain, smooth and rigid enough.

Friction is extremely reduced and a smooth movement is provided at a speed of 2m / sec. In this way, very heavy loads can be easily moved.

Our production range includes different kinds of ball transfer units, starting from a main supporting ball's dimension of 8 mm up to a maximum of 90 mm in steel, stainless steel or polyacetal plastic material, and loading capacities from 15 kg to 2000 kg. Basically there are two kinds of products: Machined Heavy Duty units (studied for heavy shock loads and long life applications), and Pressed Light Duty units (suitable for light loads). The housings of the units are bright metal zinc plated or completely stainless steel made and they incorporate self cleaning bottom holes and oiled felt sealing system (except SP8-12-15-25). This is available on request on SP 15 and 25 series only. We can also provide ball transfer units with main balls made of AISI 440C, AISI 304, AISI 316, teflon, glass, with various coupling between big and small balls.

A BALL TRANSFER UNIT IS DESIGNED AS SHOWN IN THE PICTURE



The ball transfer units can be assembled horizontally, vertically or ball down, they do not need hard maintenance and are provided with a felt sealing (or a plastic one if they have to be exposed to high temperature).

Under particular conditions (high humidity, dyes, soaking baths, sea water) the usual correct activity can be damaged; in order to repair these inconveniences, some kinds of ball transfer units have a dirt exit hole in the bottom.

# APPLICATIONS

STR ball transfer units are widely used in all industries to allow freely conveying in any direction of heavy loads with low stress. Most popular applications include:

AIRCRAFT TRANSPORT CARGO ROLLING DECKS

SHEET METAL-WORKING MACHINES

FOLDING PRESSES

BALL TRANSFER TABLES

LIFTING EQUIPMENTS & PLATFORMS

CONVEYORS

MARBLE WORKING MACHINES

CERAMIC TILES AND BRICKS MACHINES

TRANSPORTERS FOR CONTAINERS & PLATFORMS

SLIDING WALLS

SLIDING DOORS AND WINDOWS

ROBOTICS

ELECTRONICS

AUTOMOTIVE RACKS

GUILLOTINE PRESSES

MOULDING MACHINES

## TEMPERATURE RESISTANCE

Usually temperature resistance varies from  $-30^{\circ}\text{C}$  to  $+100^{\circ}\text{C}$  (212 F),  $+70^{\circ}\text{C}$  continuous and  $+100^{\circ}\text{C}$  intermittent. These values do not affect the correct running and quality of the ball transfer units.

Units with felt sealing can bear up to  $+100^{\circ}\text{C}$ , and without sealing temperatures up to  $+150^{\circ}\text{C}/200^{\circ}\text{C}$  are possible. For a high temperature use of this product we usually suggest ball transfer units with AISI 420C stainless steel carter without felt sealing.

The higher the temperature, the lower the load carrying capacity, as explained in the following relation:

FRICITION COEFFICIENT ( $\mu$ )  
(expressed as % of mass conveyed)  
High Capacity 0.005%  
Medium Duty 0.2%  
Light Duty 0.25%

At a speed of 1m/sec, friction will be around  $0,005\mu$ . However, this is subject to considerable deviations according to the specific applications of the ball transfer units.

# HOW TO DETERMINE THE TYPE, NUMBER AND DISTANCE

Ball size loading capacity and the effective load placed on each ball transfer unit are normally provided by the weight of charge divided by 3. The result gives the highest load which any individual ball transfer unit may support. It is important that the load is supported through the centre line of the unit; the load carrying capacity is much affected by downwards and sideways applications, so a suitable security charge margin is suggested.

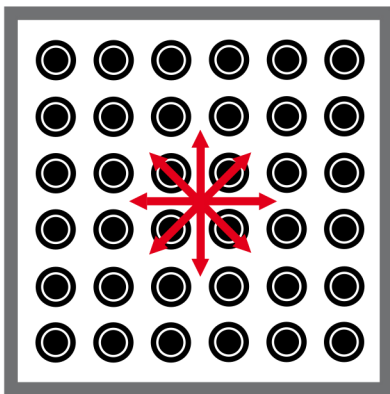
In order to determine the distance between the ball transfer units, divide the shortest horizontal distance of the load by 2,50. For example, for a weight measuring across the base 500 mm x 1.000 mm the recommended distance will be 200 mm (500 : 2,50). This is the distance among the units that guarantees enough ball transfer units on the shortest side of the load.

The units can be usually placed in three different ways:

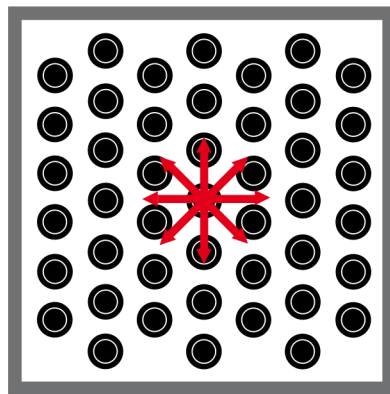
## A) SQUARED PITCH

## B) DIAMOND PITCH

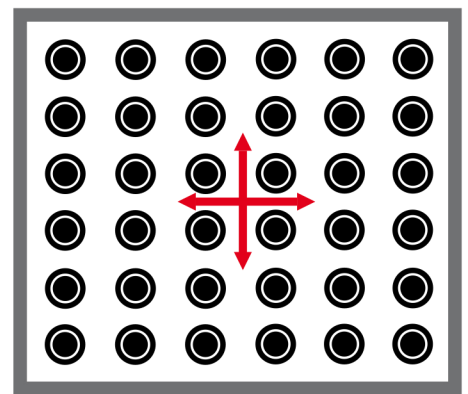
## C) EXTENDED PITCH



SQUARED PITCH



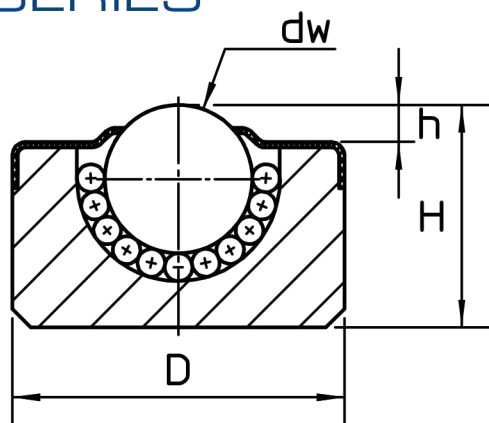
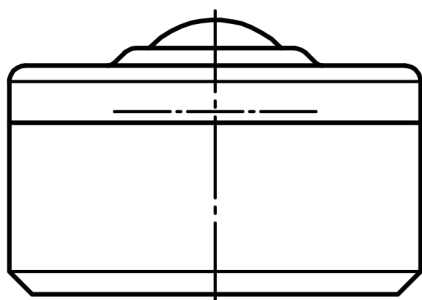
DIAMOND PITCH






EXTENDED PITCH



# "SBM" HEAVY DUTY TYPE WITH STEEL OR STAINLESS STEEL BALLS NO-COLLAR SERIES

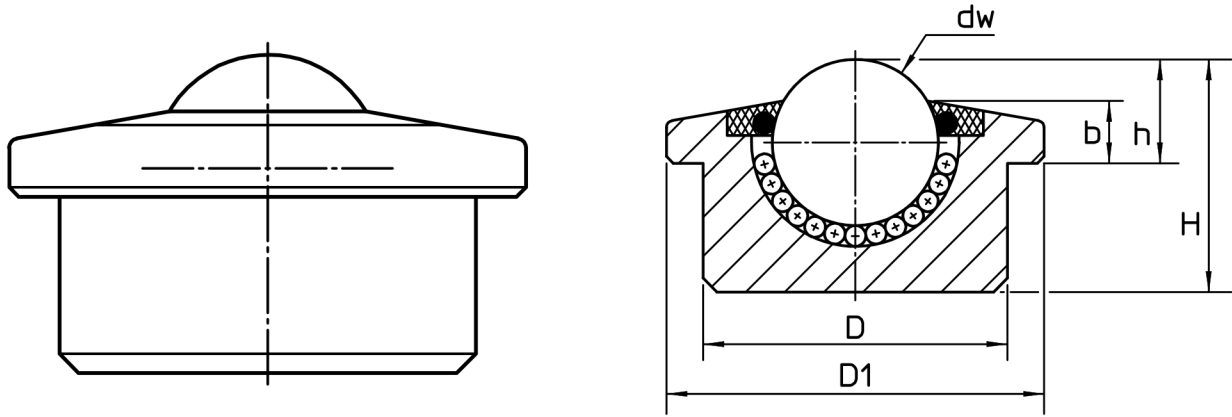




RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	h	Tol	H	LOADING CAPACITY KG.		UNIT WEIGHT KG.
											
SBM00800A	SBM 8 A	BRIGHT MACHINED STEEL BODY AND STEEL BALLS	8	18	± 0,030	2	± 0,1	12	10	6	0,018
SBM01200A	SBM 12 A		12	22	± 0,030	6	± 0,2	18	20	12	0,035
SBM00800B	SBM 8 B	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	8	18	± 0,030	2	± 0,1	12	10	6	0,018
SBM01200B	SBM 12 B		12	22	± 0,030	6	± 0,2	18	20	12	0,035
SBM00800C	SBM 8 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS TYPE AISI 420-C	8	18	± 0,030	2	± 0,1	12	7	4	0,018
SBM01200C	SBM 12 C		12	22	± 0,030	6	± 0,2	18	15	8	0,035
SBM00800SS	SBM 8 SS	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C AND STAINLESS STEEL BALLS TYPE AISI 420-C	8	18	± 0,030	2,2	± 0,1	12	10	4	0,018
SBM01200SS	SBM 12 SS		12	22	± 0,030	5,5	± 0,2	17,5	20	8	0,035

RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	h	Tol	H	b	LOADING CAPACITY KG.	UNIT WEIGHT KG.
											
SBM01200BD	SBM 12 B-D	ZINC PLATED MACHINED STEEL BODY LARGE BALL IN POLYACETAL (DELFIN) AND SMALL STEEL BALLS	12	22	± 0,030	6	± 0,2	18	-	5	0,031
SBM01200CD	SBM 12 C-D	ZINC PLATED MACHINED STEEL BODY LARGE BALL IN POLYACETAL (DELFIN) AND SMALL STAINLESS STEEL BALLS AISI 420-C	12	22	± 0,030	5,5	± 0,2	17,5	-	6	0,031
SBM01200SSCD	SBM 12 SS-CD	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C, LARGE BALL IN POLYACETAL (DELFIN) AND SMALL BALLS IN STAINLESS STEEL AISI 420-C	12	22	± 0,030	5,5	± 0,2	17,5	-	6	0,031

# “SPM” HEAVY DUTY TYPE WITH STEEL OR STAINLESS STEEL BALLS

Solid machined carbon steel body for heavy shock loads and long life applications. Machined & case hardened body made of low carbon steel HRC 60-62, balls in carbon steel AISI 1010/1075 with hardness HRC 60-62. Types SP-30 and SP-45 versions “A” and “B” are made with balls AISI 52100 chrome with hardness HRC 63 +/-3. Self cleaning hole incorporated in all types (except SP-8). Oiled felt sealing system incorporated in SP-22/30/45, and is also available on request for types SP-15/25. Beared temperatures: -30°C / +100°C.



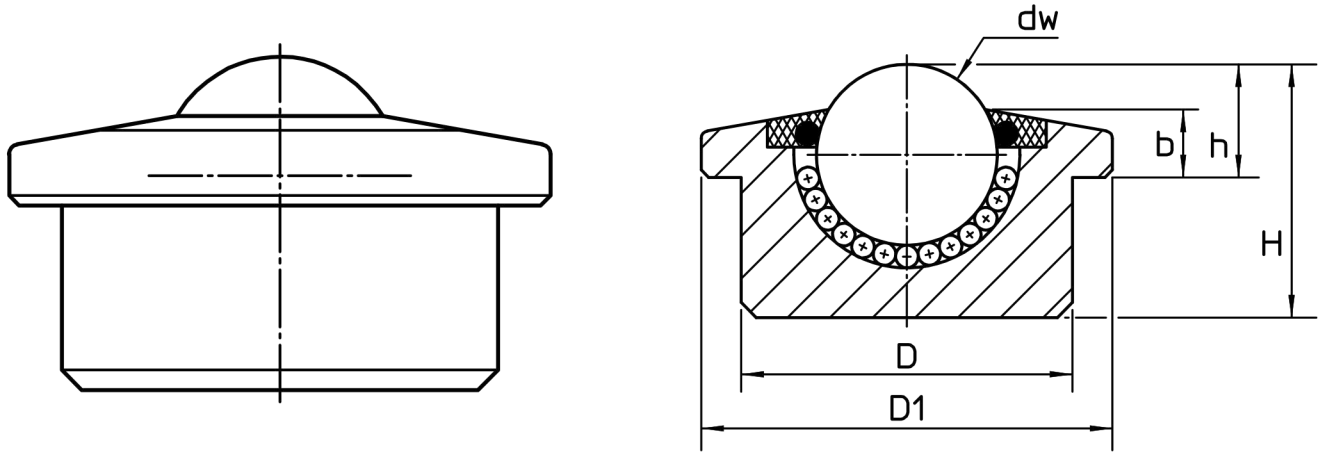
RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
													
SPM01200A	SPM 12 A	BRIGHT MACHINED STEEL BODY AND STEEL BALLS	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	30	12	0,035
SPM01500A	SPM 15 A		15	24	± 0,065	31	9,5	± 0,2	21	5,5	50	24	0,060
SPM02200A	SPM 22 A		22	36	± 0,080	45	9,8	± 0,2	31	6	180	72	0,190
SPM03000A	SPM 30 A		30	45	± 0,080	55	14	± 0,3	37	8	350	140	0,360
SPM04500A	SPM 45 A		45	62	± 0,095	75	19,0	± 0,4	54	10	600	240	1,000
SPM01200B	SPM 12 B	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	30	12	0,035
SPM01500B	SPM 15 B		15	24	± 0,065	31	9,5	± 0,2	21	5,5	50	24	0,060
SPM02200B	SPM 22 B		22	36	± 0,080	45	9,8	± 0,2	31	6	180	72	0,190
SPM03000B	SPM 30 B		30	45	± 0,080	55	14	± 0,3	37	8	350	140	0,360
SPM04500B	SPM 45 B		45	62	± 0,095	75	19,0	± 0,4	54	10	600	240	1,000
SPM01200C	SPM 12 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS TYPE AISI 420-C	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	20	8	0,035
SPM01500C	SPM 15 C		15	24	± 0,065	31	9,5	± 0,2	21	5,5	40	16	0,060
SPM02200C	SPM 22 C		22	36	± 0,080	45	9,8	± 0,2	31	6	130	48	0,190
SPM03000C	SPM 30 C		30	45	± 0,080	55	14	± 0,3	37	8	210	80	0,360
SPM04500C	SPM 45 C		45	62	± 0,095	75	19,0	± 0,4	54	10	400	120	1,000
SPM01200SS	SPM 12 SS	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C AND STAINLESS STEEL BALLS TYPE AISI 420-C	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	7	8	0,035
SPM01500SS	SPM 15 SS		15	24	± 0,065	31	9,5	± 0,2	21	5,5	15	16	0,060
SPM02200SS	SPM 22 SS		22	36	± 0,080	45	9,8	± 0,2	30,5	6	22	48	0,190
SPM03000SS	SPM 30 SS		30	45	± 0,080	55	13,8	± 0,3	37	8	30	80	0,360
SPM04500SS	SPM 45 SS		45	62	± 0,095	75	19,0	± 0,4	53,5	10	70	120	0,990




# "SPM" HEAVY DUTY TYPE WITH PLASTIC BALLS

Large main ball made in POM Polyacetal (Delrin). Since this main balls is very light, oiled felt sealing system is not incorporated in types SP-22/30/45, in order to allow the free movement of the ball. Sealing can be assembled on request, for special applications. Beared temperature: +60°.

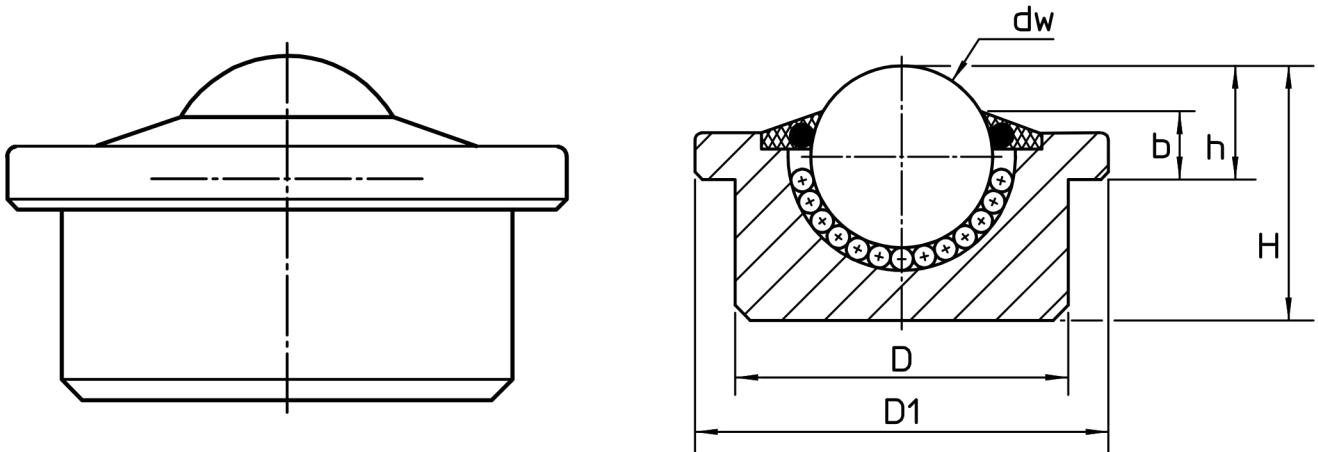
Not suitable for reversed application (ball down). Self cleaning hole incorporated in all units (except SP-8).





RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	b	LOADING CAPACITY KG. 	UNIT WEIGHT KG.
SPM01200BD	SPM 12 B-D	ZINC PLATED MACHINED STEEL BODY LARGE BALL IN POLYACETAL (DELRIN) AND SMALL STEEL BALLS	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SPM01500BD	SPM 15 B-D		15	24	± 0,065	31	9,5	± 0,2	21	5,5	13	0,046
SPM02200BD	SPM 22 B-D		22	36	± 0,080	45	9,8	± 0,2	31	6	22	0,150
SPM03000BD	SPM 30 B-D		30	45	± 0,080	55	14	± 0,3	37	8	25	0,300
SPM04500BD	SPM 45 B-D		45	62	± 0,095	75	19,0	± 0,4	53,5	10	40	0,450
SPM01200CD	SPM 12 C-D	ZINC PLATED MACHINED STEEL BODY LARGE BALL IN POLYACETAL (DELRIN) AND SMALL STAINLESS STEEL BALLS AISI 420-C	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SPM01500CD	SPM 15 C-D		15	24	± 0,065	31	9,5	± 0,2	21	5,5	13	0,046
SPM02200CD	SPM 22 C-D		22	36	± 0,080	45	9,8	± 0,2	30,5	6	22	0,150
SPM03000CD	SPM 30 C-D		30	45	± 0,080	55	13,8	± 0,3	36,8	8	25	0,300
SPM04500CD	SPM 45 C-D		45	62	± 0,095	75	19,0	± 0,4	53,5	10	40	0,450
SPM01200SSCD	SPM 12 SS-CD	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C LARGE BALL IN POLYACETAL (DELRIN) AND SMALL STAINLESS STEEL BALLS AISI 420-C	12	22	± 0,030	27,3	7,5	± 0,2	16,8	4,5	6	0,028
SPM01500SSCD	SPM 15 SS-CD		15	24	± 0,065	31	9,5	± 0,2	21	5,5	13	0,046
SPM02200SSCD	SPM 22 SS-CD		22	36	± 0,080	45	9,8	± 0,2	30,5	6	22	0,150
SPM03000SSCD	SPM 30 SS-CD		30	45	± 0,080	55	13,8	± 0,3	36,8	8	25	0,300
SPM04500SSCD	SPM 45 SS-CD		45	62	± 0,095	75	19,0	± 0,4	53,5	10	40	0,450

# "SPM 25" HEAVY DUTY TYPE WITH STEEL OR STAINLESS BALLS

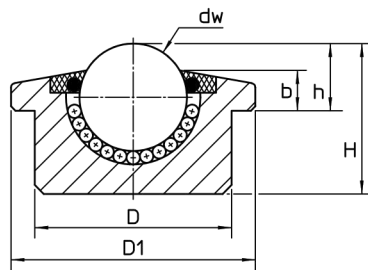
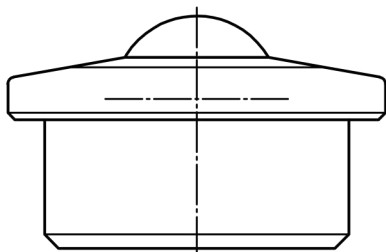
Solid machined carbon steel body with pressed steel cover cap and self cleaning hole incorporated. Oiled felt sealing system available on request.



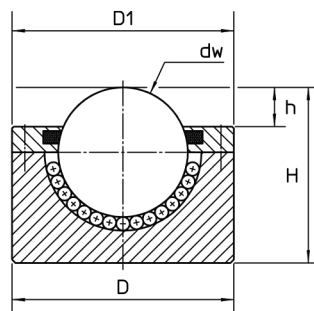
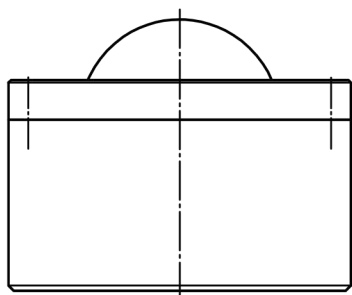
RGP CODE	TYPE	DESCRIPTION	dw	D	D1	h	H	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
											
SPM02500A	SPM 25 A	BRIGHT MACHINED STEEL BODY AND STEEL BALLS	25	38 ± 0,08	46	13 ± 0,2	31	7	180	80	0,195
SPM02500B	SPM 25 B	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	25	38 ± 0,08	46	13 ± 0,2	31	7	180	80	0,195
SPM02500C	SPM 25 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	25	38 ± 0,08	46	13 ± 0,2	31	7	130	44	0,195
SPM02500BD	SPM 25 B-D	ZINC PLATED MACHINED STEEL BODY, LARGE BALL IN POLYACETAL (DELFIN) AND STEEL BALLS	25	38 ± 0,08	46	13 ± 0,2	31	7	23	7	0,190
SPM02500SS	SPM 25 SS	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C AND STAINLESS STEEL BALLS AISI 420-C	25	38 ± 0,08	45	14,0 ± 0,2	31	5	110	44	0,190

# "SPM" SUPER HEAVY DUTY TYPE WITH STEEL OR STAINLESS STEEL BALLS

Solid machined body made of steel UNI18NiCrMo5 (= UNI 7846-78/AFNOR 18NCD6/B.S.EN353) nitride carbonated (CM7 case hardening, hardness HRC 60, wall thickness 0,6/0,8mm), with inside sealing system and self cleaning hole incorporated. All balls made of chrome steel AISI 52100 100Cr6 G100 ISO 3290, with hardness HRC 60 / 62 for versions "A" and "B". Used for extremely heavy shock loads and long-lasting life.



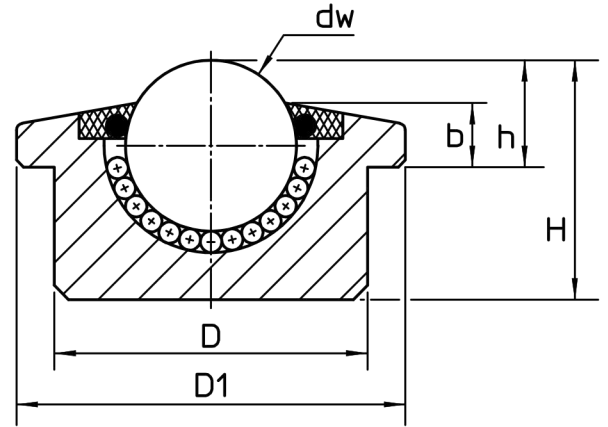
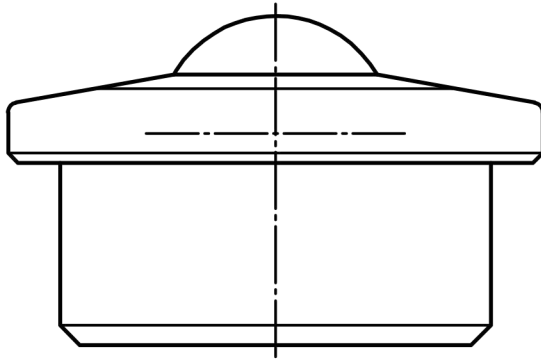
RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
SPM06000A	SPM 60 A	BRIGHT MACHINED STEEL BODY AND CHROME STEEL BALLS	60	100	± 0,010	117	30	± 0,4	78	15	1500	600	3,500
SPM06000B	SPM 60 B	ZINC PLATED MACHINED STEEL BODY AND CHROME STEEL BALLS	60	100	± 0,010	117	30	± 0,4	78	15	1500	600	3,500
SPM06000C	SPM 60 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	60	100	± 0,010	117	30	± 0,4	78	15	900	360	3,500





RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	h	Tol	H	LOADING CAPACITY KG.		UNIT WEIGHT KG.
SPM07600A	SPM 76 A	BRIGHT MACHINED STEEL BODY AND CHROME STEEL BALLS	76	130	± 0,08	23	± 0,04	103	2500	1000	8,600
SPM07600B	SPM 76 B	ZINC PLATED MACHINED STEEL BODY AND CHROME STEEL BALLS	76	130	± 0,08	23	± 0,04	103	2500	1000	8,600
SPM07600C	SPM 76 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	76	130	± 0,08	23	± 0,04	103	1500	600	8,600
SPM09000A	SPM 90 A	BRIGHT MACHINED STEEL BODY AND CHROME STEEL BALLS	90	145	± 0,08	25	± 0,04	115	3000	1200	11,000
SPM09000B	SPM 90 B	ZINC PLATED MACHINED STEEL BODY AND CHROME STEEL BALLS	90	145	± 0,08	25	± 0,04	115	3000	1200	11,000
SPM09000C	SPM 90 C	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	90	145	± 0,08	25	± 0,04	115	1800	720	11,000

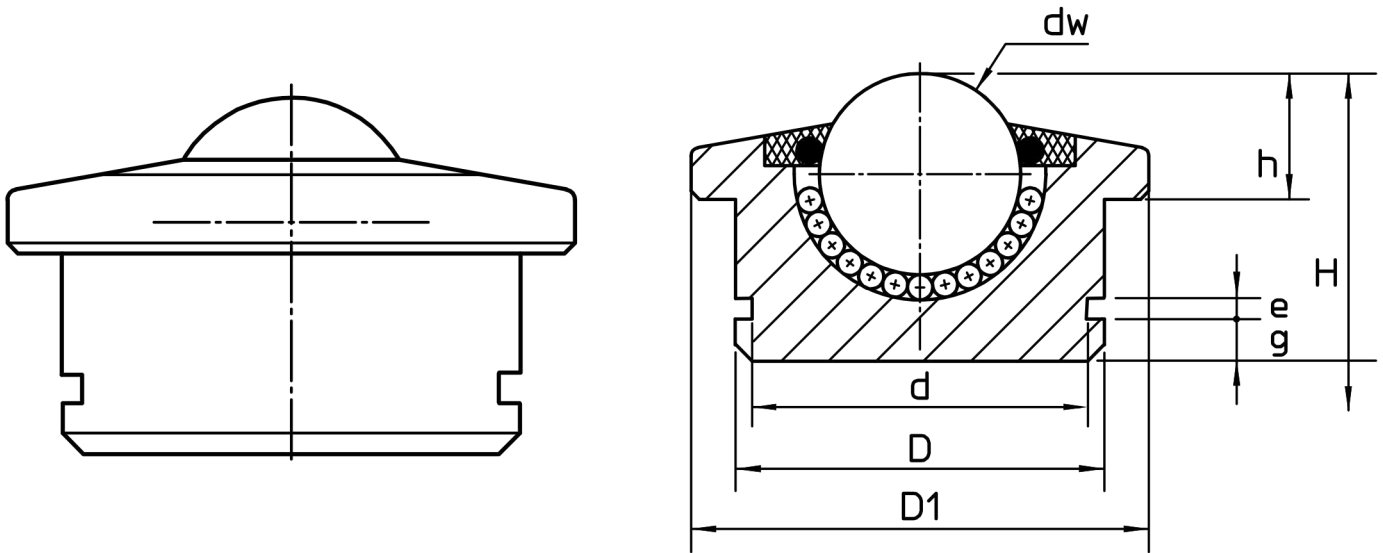
# "SPM-CX" HEAVY DUTY TYPE AIR CARGO AND AIRPORT HANDLING UNITS



Solid machined zinc plated carbon steel body, with inner ball race entirely made of stainless steel AISI 420-C especially thru-hardened, hardness HRC 60, sealing system and self cleaning bottom hole incorporated. Especially designed to allow long life use and corrosion resistance to particular applications, such as extreme outdoors conditions (rain, snow, ice and dust). Beared temperatures: -50°C / +100°C. Available with stainless steel balls AISI 440-C - 316 - 304 on request.



RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
													
SPM03000CX	SPM 30 CX	ZINC PLATED MACHINED STEEL BODY HARDENED INNER BALL RACE IN STAINLESS STEEL AISI 420-C, ALL BALLS IN STAINLESS STEEL AISI 420-C	30	45	± 0,080	55	13,8	± 0,3	36,8	8	200	80	0,365
SPM04500CX	SPM 45 CX		45	55	± 0,095	75	19,0	± 0,4	53,5	10	300	120	0,990
SPM03000CX-SS	SPM 30 CX-SS	COMPLETELY STAINLESS STEEL BODY TYPE AISI 420-C, HARDENED INNER BALL RACE IN STAINLESS STEEL AISI 420-C, ALL BALLS IN STAINLESS STEEL AISI 420-C	30	45	± 0,080	55	13,8	± 0,3	36,8	8	200	80	0,365
SPM04500CX-SS	SPM 45 CX-SS		45	55	± 0,095	75	19,0	± 0,4	53,5	10	300	120	0,990

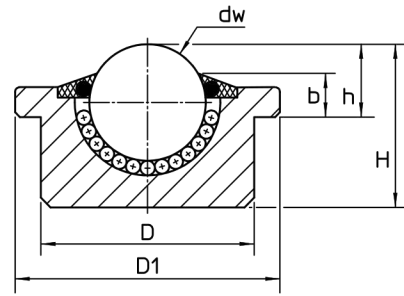
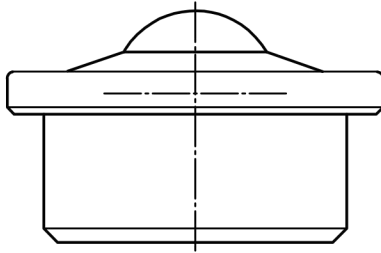
# "SPM-R" HEAVY DUTY TYPE WITH INSERT CLIP



RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	e	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
														
SPM01500A-R	SPM 15 A-R	BRIGHT MACHINED STEEL BODY AND STEEL BALLS	15	24	$\pm 0,065$	31	9,5	$\pm 0,2$	21	$1,3 + 0,1$	5,5	60	24	0,055
SPM02200A-R	SPM 22 A-R		22	36	$\pm 0,080$	45	9,8	$\pm 0,2$	30,5	$1,3 + 0,1$	6	180	72	0,185
SPM03000A-R	SPM 30 A-R		30	45	$\pm 0,080$	55	13,8	$\pm 0,3$	36,8	$1,3 + 0,1$	8	350	140	0,365
SPM04500A-R	SPM 45 A-R		45	62	$\pm 0,095$	75	19,0	$\pm 0,4$	53,5	$1,3 + 0,1$	10	600	240	0,990
SPM01500B-R	SPM 15 B-R	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	15	24	$\pm 0,065$	31	9,5	$\pm 0,2$	21	$1,85 + 0,1$	5,5	60	24	0,055
SPM02200B-R	SPM 22 B-R		22	36	$\pm 0,080$	45	9,8	$\pm 0,2$	30,5	$1,85 + 0,1$	6	180	72	0,185
SPM03000B-R	SPM 30 B-R		30	45	$\pm 0,080$	55	13,8	$\pm 0,3$	36,8	$1,85 + 0,1$	8	350	140	0,365
SPM04500B-R	SPM 45 B-R		45	62	$\pm 0,095$	75	19,0	$\pm 0,4$	53,5	$1,85 + 0,1$	10	600	240	0,990
SPM01500C-R	SPM 15 C-R	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS TYPE AISI 420-C	15	24	$\pm 0,065$	31	9,5	$\pm 0,2$	21	$1,85 + 0,1$	5,5	40	16	0,055
SPM02200C-R	SPM 22 C-R		22	36	$\pm 0,080$	45	9,8	$\pm 0,2$	30,5	$1,85 + 0,1$	6	120	48	0,185
SPM03000C-R	SPM 30 C-R		30	45	$\pm 0,080$	55	13,8	$\pm 0,3$	36,8	$1,85 + 0,1$	8	200	80	0,365
SPM04500C-R	SPM 45 C-R		45	62	$\pm 0,095$	75	19,0	$\pm 0,4$	53,5	$1,85 + 0,1$	10	300	120	0,990
SPM01500SS-R	SPM 15 SS-R	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C AND ALL BALLS IN STAINLESS STEEL AISI 420-C	15	24	$\pm 0,065$	31	9,5	$\pm 0,2$	21	$2,15 + 0,1$	5,5	40	16	0,055
SPM02200SS-R	SPM 22 SS-R		22	36	$\pm 0,080$	45	9,8	$\pm 0,2$	30,5	$2,15 + 0,1$	6	120	48	0,185
SPM03000SS-R	SPM 30 SS-R		30	45	$\pm 0,080$	55	13,8	$\pm 0,3$	36,8	$2,15 + 0,1$	8	200	80	0,365
SPM04500SS-R	SPM 45 SS-R		45	62	$\pm 0,095$	75	19,0	$\pm 0,4$	53,5	$2,15 + 0,1$	10	300	120	0,990

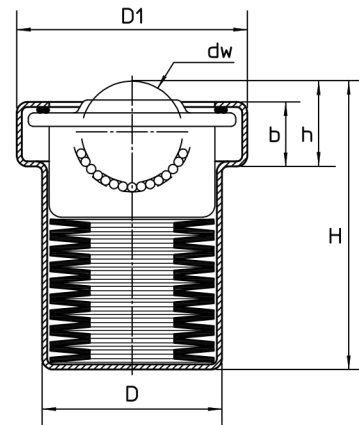
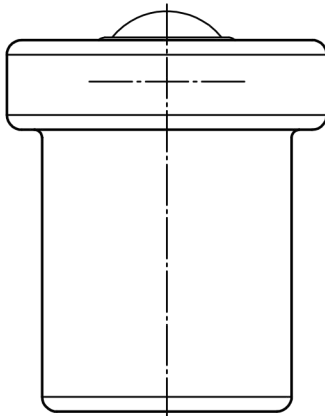
# "SPP" TYPE WITH PLASTIC BODY

Body entirely made of "ABS" with inner ball race made of hardened steel, main ball diameter 1" = 25,4 mm.



RGP CODE	TYPE	DESCRIPTION	dw	D	D1	h	Tol	H	B	LOADING CAPACITY KG.		UNIT WEIGHT KG.	
SPP02500PA	SP 25 P-A	PLASTIC BODY (ABS) AND ALL STEEL BALLS	1" (25,4 mm)	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3		40	16	0,140
SPP02500PC	SP 25 P-C	PLASTIC BODY (ABS) AND ALL STAINLESS STEEL BALLS AISI 420-C	1" (25,4 mm)	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3		30	12	0,140
SPP02500PCD	SP 25 P-C-D	PLASTIC BODY (ABS), LARGE PLASTIC BALL AND SMALL BALLS IN STAINLESS STEEL AISI 420-C	1" (25,4 mm)	37,5 ± 0,5	45,5	14,7	± 0,3	32,5 ± 0,5	8,3		10	-	0,140

# "SPM-AF" HEAVY DUTY TYPE SPRING LOADED (RETRACTABLE) WITH STEEL OR STAINLESS STEEL BALLS



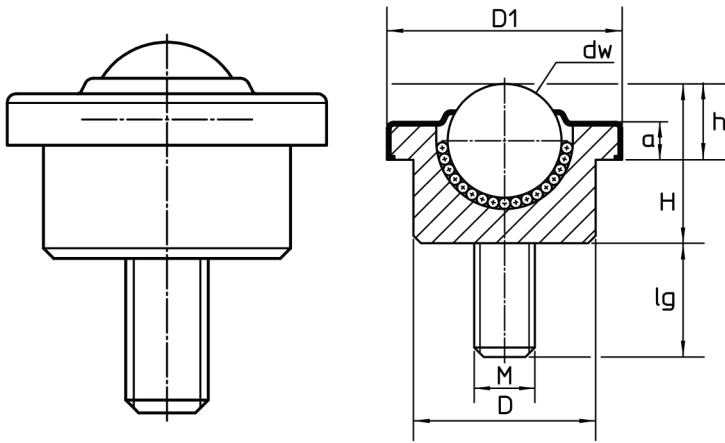
RGP CODE	TYPE	DESCRIPTION	dw	D	D1	h	Tol	H	b	PRE-LOAD KG.	LOADING CAPACITY KG.	UNIT WEIGHT KG.	
SPM02200AF	SPM 22 AF	BRIGHT MACHINED STEEL BODY AND STEEL BALLS	22	39	50	18,5	± 0,100	58	14	7		80	0,36
SPM03000AF	SPM 30 AF		30	48,5	62	24,5	± 0,125	70	17,5	13	150	0,68	
SPM04500AF	SPM 45 AF		45	66,5	85	36,0	± 0,150	100,5	25,5	22	217	1,65	
SPM02200BF	SPM 22 BF	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	22	39	50	18,5	± 0,100	58	14	7		80	0,36
SPM03000BF	SPM 30 BF		30	48,5	62	24,5	± 0,125	70	17,5	13	150	0,68	
SPM04500BF	SPM 45 BF		45	66,5	85	36,0	± 0,150	100,5	25,5	22	217	1,65	
SPM02200CF	SPM 22 CF	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	22	39	50	18,5	± 0,100	58	14	7		80	0,36
SPM03000CF	SPM 30 CF		30	48,5	62	24,5	± 0,125	70	17,5	13	150	0,68	
SPM04500CF	SPM 45 CF		45	66,5	85	36,0	± 0,150	100,5	25,5	22	217	1,65	

# "SPM-FL" HEAVY DUTY TYPE WITH THREADED NUT

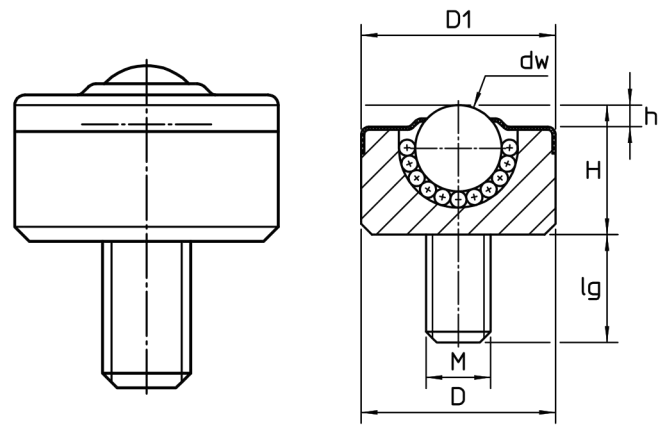
Solid machined carbon steel body with threaded nut and pressed steel cover cap. Threaded nut dimensions: diameter 6/8/10mm, length 10/15/20/25/30mm. Sealing system is not included.



WITH THREADED NUT M8X15 mm.

SPM-FL 15



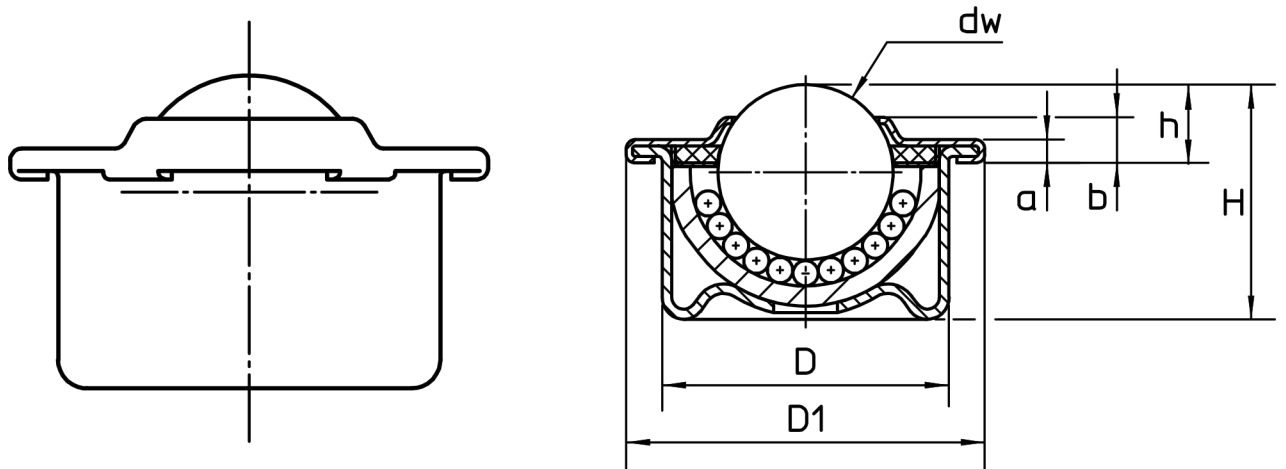
SBM-FL 12





RGP CODE	TYPE	DESCRIPTION	dw	D ± 0,06	D1	h ± 0,06	H	a	LOADING CAPACITY KG.		UNIT WEIGHT KG.
											
SBM01207B	SBM 12 B-FL	ZINC PLATED MACHINED STEEL BODY AND STEEL BALLS	12	22	22	6	17	-	30	12	0,045
SPM01507B	SPM 15 B-FL		15	24	31	10	21	5	60	24	0,070
SBM01207C	SBM 12 C-FL	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	12	22	22	6	17	-	12	6	0,045
SPM01507C	SPM 15 C-FL		15	24	31	10	21	5	25	10	0,070
SBM01207BD	SBM 12 BD-FL	ZINC PLATED MACHINED STEEL BODY, LARGE BALL IN POLYACETAL (DELFIN) AND SMALL BALLS IN STAINLESS STEEL AISI 420-C	12	22	22	6	17	-	6	-	0,035
SPM01507BD	SPM 15 BD-FL		15	24	31	10	21	5	8	-	0,040
SBM01207SS	SBM 12 SS-FL	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C AND ALL STAINLESS STEEL BALLS AISI 420-C	12	22	22	6	17	-	15	6	0,045
SPM01507SS	SPM 15 SS-FL		15	24	31	10	21	5	25	10	0,070
SBM01207CD	SBM 12 CD-FL	COMPLETELY STAINLESS STEEL MACHINED BODY TYPE AISI 420-C, LARGE BALL IN POLYACETAL (DELFIN) AND SMALL BALLS IN STAINLESS STEEL AISI 420-C	12	22	22	6	17	-	6	-	0,035
SPM0157CD	SPM 15 CD-FL		15	24	31	10	21	5	8	-	0,040

# "SPS" LIGHT DUTY TYPE WITH PRESSED METAL SHEET BODY

Pressed steel ball transfer units with hardened inner ball race, zinc plated body and oil felt sealing system incorporated (only for types SPS-22 and 30). Beared temperatures: -30°C / +100°C.

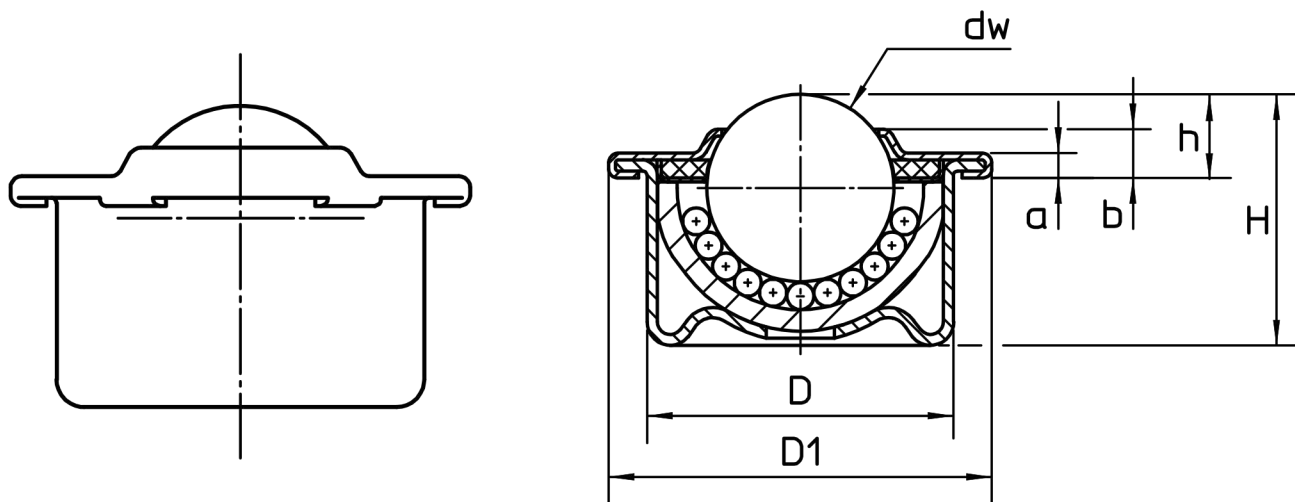



RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	a	b	LOADING CAPACITY KG.		UNIT WEIGHT KG.
														
SPS01200B	SPS 12 B	PRESSED ZINC PLATED STEEL BODY AND STEEL BALLS	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	15	6	0,030
SPS01500B	SPS 15 B		15	24	± 0,08	31	9,5	± 0,2	20,7	2,8	6,3	50	20	0,038
SPS02200B	SPS 22 B		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	130	52	0,132
SPS03000B	SPS 30 B		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	250	100	0,265
SPS04500B	SPS 45 B		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	300	120	0,655
SPS01200C	SPS 12 C	PRESSED ZINC PLATED STEEL BODY AND STAINLESS STEEL BALLS AISI 420-C	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	18	7	0,030
SPS01500C	SPS 15 C		15	24	± 0,08	31	9,5	± 0,2	20,7	2,8	6,3	37	15	0,038
SPS02200C	SPS 22 C		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	97	39	0,132
SPS03000C	SPS 30 C		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	190	76	0,265
SPS04500C	SPS 45 C		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	220	90	0,655
SPS01200SS	SPS 12 SS	ZINC PLATED MACHINED STEEL BODY AND STAINLESS STEEL BALLS TYPE AISI 420-C	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	18	7	0,030
SPS01500SS	SPS 15 SS		15	24	± 0,08	31	9,5	± 0,2	20,7	2,8	6,3	37	15	0,038
SPS02200SS	SPS 22 SS		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	97	39	0,132
SPS03000SS	SPS 30 SS		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	190	76	0,265
SPS04500SS	SPS 45 SS		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	220	90	0,655



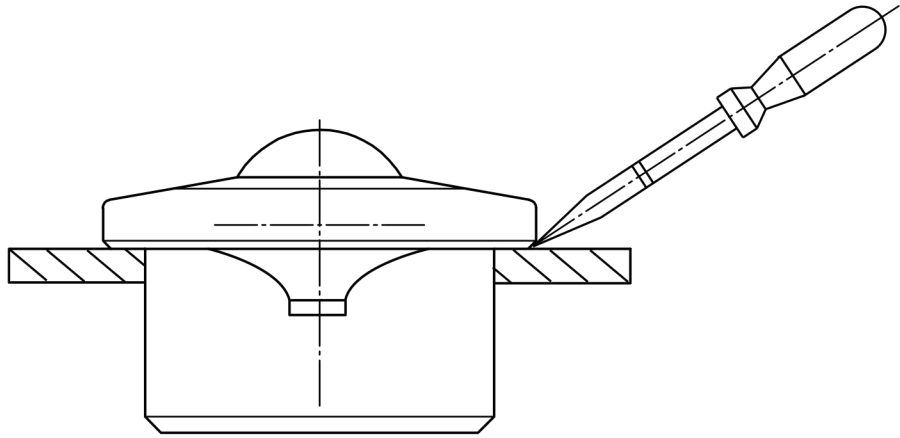
# "SPS" LIGHT DUTY TYPE WITH PLASTIC BALL

Same version with main ball made of POM Polyacetal (Delrin) without internal sealing system is not suitable for reversed applications (ball down).



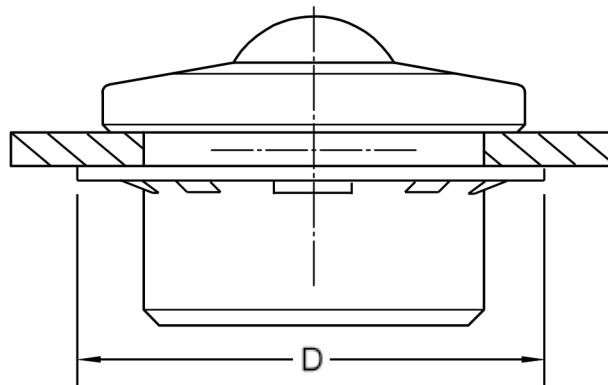
RGP CODE	TYPE	DESCRIPTION	dw	D	Tol	D1	h	Tol	H	a	b	LOADING CAPACITY KG. 	UNIT WEIGHT KG.
SPS01200BD	SPS 12 B-D	PRESSED ZINC PLATED STEEL BODY, LARGE BALL IN POLYACETAL (DELRIN) AND SMALL STEEL BALLS	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	4	0,020
SPS01500BD	SPS 15 B-D		15	24	± 0,065	31	9,5	± 0,2	20,7	2,8	6,3	7	0,024
SPS02200BD	SPS 22 B-D		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	10	0,093
SPS03000BD	SPS 30 B-D		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	15	0,168
SPS04500BD	SPS 45 B-D		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	20	0,384
SPS01200CD	SPS 12 C-D	PRESSED ZINC PLATED STEEL BODY, LARGE BALL IN POLYACETAL (DELRIN) AND SMALL STAINLESS STEEL BALLS AISI 420-C	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	4	0,020
SPS01500CD	SPS 15 C-D		15	24	± 0,065	31	9,5	± 0,2	20,7	2,8	6,3	7	0,024
SPS02200CD	SPS 22 C-D		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	10	0,093
SPS03000CD	SPS 30 C-D		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	15	0,168
SPS04500CD	SPS 45 C-D		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	20	0,384
SPS0120SSCD	SPS 12 SS-CD	COMPLETELY PRESSED STAINLESS STEEL BODY TYPE AISI 304, LARGE BALL IN POLYACETAL (DELRIN) AND SMALL BALLS IN STAINLESS STEEL AISI 420-C	12	22	± 0,08	28	7,5	± 0,2	17,2	2,3	3,5	4	0,020
SPS0150SSCD	SPS 15 SSCD		15	24	± 0,065	31	9,5	± 0,2	20,7	2,8	6,3	7	0,024
SPS0220SSCD	SPS 22 SSCD		22	36	± 0,080	45	9,8	± 0,2	29,5	2,8	5,5	10	0,093
SPS0300SSCD	SPS 30 SSCD		30	45	± 0,080	55	13,8	± 0,3	37	4	8,3	15	0,168
SPS0450SSCD	SPS 45 SS-CD		45	62	± 0,15	75	19,0	± 0,4	53,5	6,5	9,0	20	0,384

# REMOVABLE VERSION



TYPE	Ø FIXING HOLE
SPM 15 SPS 15	25,0 – 0,2 mm
SPM 22 SPS 22	37,3 – 0,3 mm
SPM 30 SPS 30	46,7 – 0,4 mm

# SETTLED VERSION



TYPE	DIAMETER D
SPM 12 SPS 12	36,5 mm
SPM 15 SPS 15	41,5 mm
SPM 30 SPS 30	60,0 mm

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