BALL TRANSFER UNITS

RGPBALLS
A WORLD OF SPECIAL BALLS

WELCOME

COMPANY PROFILE

Founded in 2015, RGPBALLS S.r.l. carries on market leadership from R.G.P. INTERNATIONAL S.r.l. in the production of the main components for linear movement: precision balls, rollers and rollers, bearing balls.

The company is focused on the availability of the widest range of materials, diameters and degrees of precision throughout Europe, simultaneously available in a single supply site. Main goals are the achievement of high quality standards at competitive prices, and customer assistance (starting with the choice of the correct item for each use, up to the supply of the necessary certifications for each application).

The headquarter occupies an area of approximately 10,000 m² and includes offices, quality control laboratories (metallographic and metrological), selection department and warehouse. It is located in Cinisello Balsamo, in the north of Milan, and is easily accessible thanks to the nearby motorway junctions.

RGPBALLS employs 70 people in the Cinisello Balsamo headquarter: 15 people deal with the commercial / administrative part (the range of languages spoken includes English, French, German, Spanish, Russian, Chinese, Turkish and Romanian), 10 are dedicated to quality control, and the rest of the staff is employed in the selection, logistics and warehouse departments.

The Company is certified EN ISO 9001: 2015, EN ISO 14001: 2015 and ISO 45001: 2018.

The metrological laboratory is equipped with high-tech instruments for checking the technical characteristics of the products. The related raw material documentation and certificate 3.1 are available for each checked batch. In 2017 RGPBALLS introduced the metallographic laboratory, which allows microstructural checks and analyzes of the steels used to make balls and rollers.

Our warehouse regularly stocks more than 4,000 tons of products in order to quickly meet the needs of customers all over the world.

The goal for the future is to improve the research for the highest quality and precision of the products; RGPBALLS is ready to take on the challenges posed by the market and the competition, confirming itself as the sector leader.

2015
Foundation

10.000
m² Headquarter

70
employees

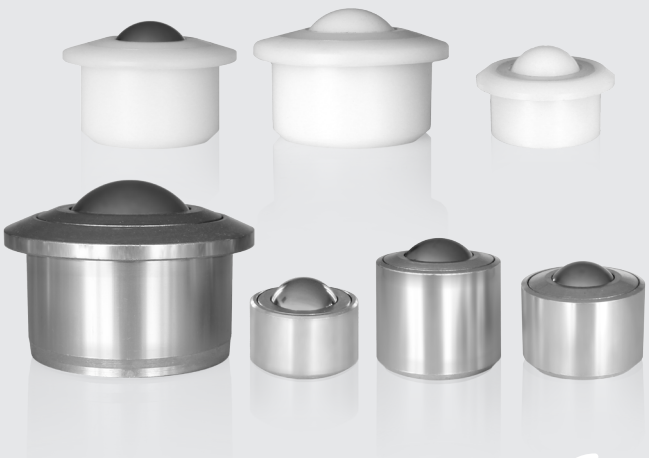
4.000
tons of products

More than
3.000
customers

CERTIFICATIONS

TÜV PROFI CERT ® TÜV Hessen
ISO 45001
73 117 2145
www.proficert.com

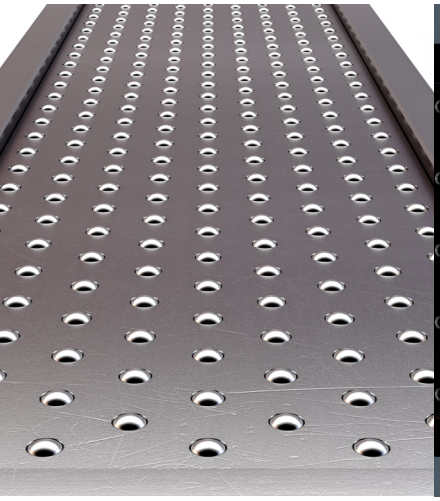
TÜV PROFI CERT ® TÜV Hessen
ISO 9001 + 14001
73 100/104 2145
www.proficert.com



APPLICATIONS

RGPBALLS ball transfer units are used a wide range of applications. The most common include:

- airport loading and unloading equipment
- metal sheets working machines
- hydraulic presses
- ball tables
- lifting platforms and equipment
- mechanical conveyors
- marble and ceramic working machines
- conveyor trolleys
- pallet rack and containers
- movable walls
- sliding gates
- sliding doors and windows
- equipment for robotics, electronics and automation
- car stands



HOW TO SELECT THE CORRECT PRODUCT - FIRST OBSERVATIONS

ASPECTS TO BE EVALUATED

- **Position and assembly of the component:** the product can be assembled with the load sphere facing upwards, downwards or according to the type of use required.
- **Working temperature:** depending on what type of material they are made of, the balls can react to loads in different ways.
- **Working environment:** different contaminating factors (dirt, dust, humidity etc.) can influence the yield of the product.
- **Load** (size, hardness, surface, stability etc.) to which the product will be subjected.
- **Additional aspects such as speed, frequency and duration** of the loads handled.

POSITIONING

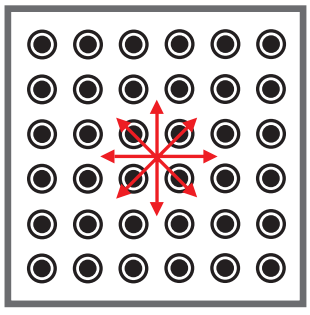
Fixing and positioning are performed with the usual insertion in pre-established holes or resting on the base, by means of screws and rivets in the versions with fixing holes or through internal or external threads.

Two versions of fixing rings in fixed or removable types are available for locking in the seats.

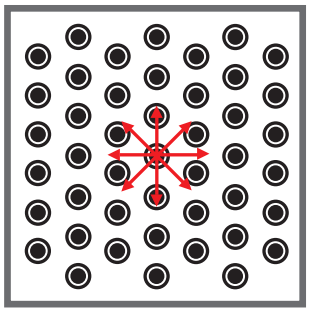
We also have a special a version (called SPM-R) with a predetermined height groove for the insertion of the fixing rings according to DIN 471, which allows the locking in holes made on support surfaces of variable thickness. On request it is possible to make this groove at different heights and on different types of transfer balls.

LAYOUT

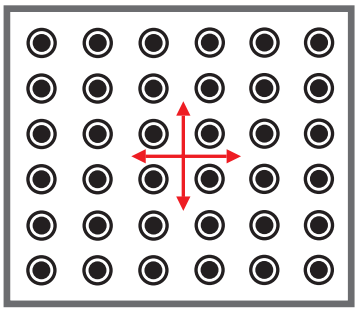
Usually ball transfer units are used with three layouts:



A) SQUARED ARRANGEMENT



B) DIAMOND ARRANGEMENT



C) ELONGATED ARRANGEMENT

CONSTRUCTION

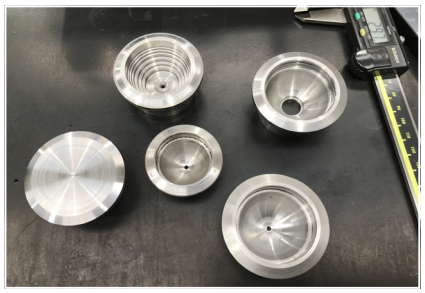
RGPBALLS ball transfer units are multidirectional systems for the linear handling of loads.
They consist of a large ball that rolls on a defined quantity of small diameter balls, all enclosed in a hemispherical seat.

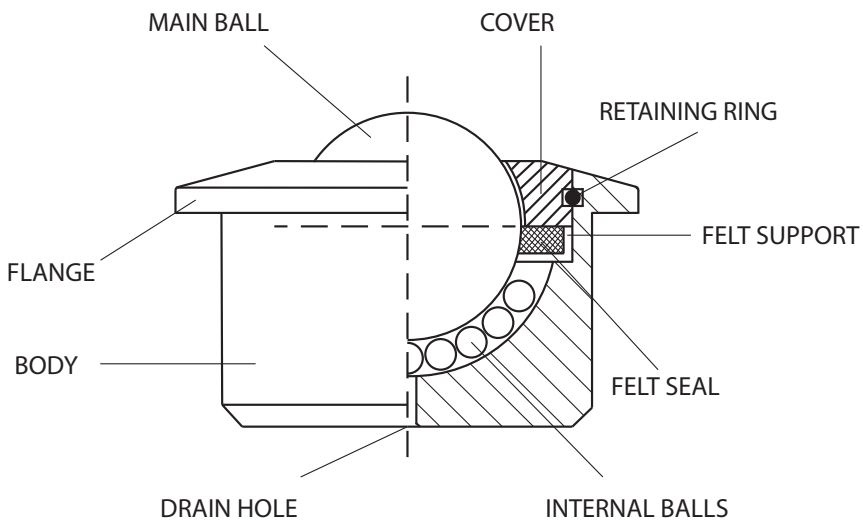
Thanks to the care with which the various components are processed, friction is particularly low, thus allowing the strength required to move the loads to be significantly reduced.

The production range starts with a main ball of 8 mm diameter up to a maximum of 90 mm, which can be made of different types of materials such as steel, stainless steel, pressed metal sheet and plastic materials. Among the versions made, different types of coatings are also available, which are useful to preserve oxidation resistance over time. Even the balls used can be chosen from different types of materials according to the final application. All components can be assembled in different materials, to meet any specific final use.

RGPBALLS mainly produces two "families" of ball transfer units:

- **Hardened machined steel housing (turned from bar):** they are normally used to handle heavy loads, strong stresses, impacts and severe conditions in general. For high flow rates, similar versions are available specifically designed for these applications.
- **Pressed metal sheet components:** they are instead preferable in applications which involve lower loads. They combine good smoothness at adequate flow rates, allowing a cheaper final price.





Many versions feature a felt seal that helps keep the major ball clean when rotating, thus preventing impurities from coming into contact with the recirculating balls. They usually have one or more drain holes on the bottom to facilitate the escape of impurities, liquids, condensation, etc.

They are normally supplied pre-lubricated to facilitate their conservation if not used. They do not require lubrications, even periodically applied. For particularly critical conditions of use with the presence of dirt, it is advisable to provide cleaning by applying a common release / lubricant such as WD-40.

CONDITIONS OF USE AND TECHNICAL DATA

RGPBALLS ball transfer units can be positioned in any orientation. If the positioning is different from the conventional one (with the main ball facing upwards), we have to expect a lower performance in terms of scope and smoothness. Some versions intended for specific applications, on the other hand, are suitable for conventional use only. Technical sheets of each version show an indication of the flow rates according to the position of use.

The temperature of use is normally included between -20 ° C to +100 ° C (+70 ° C continuously and +100 ° C intermittent). These values do not affect the correct functioning of the units. They can even reach temperatures up to +150/200 ° C by eliminating the internal dust seal. For a high temperature use we usually suggest our version with all components made of AISI 420C stainless steel, without felt seal.

It is important to remember that the higher the temperature, the more load factors decrease. Ball transfer units with plastic balls or completely made of plastic material are only suitable for use at room temperature.

Following is the friction coefficient considered for steel ball transfer units used in an optimal environment, for correctly designed applications:

FRICTION COEFFICIENT (as % of loaded mass)	
High yield	**0.5 %**
Medium yield	**2 %**
Low yield	**3 %**

We can find the right type and calculate the extent of the load to be placed on each single unit by dividing by 3 the total weight of the load to be moved. The resulting number represents the highest weight that each unit is able to bear.

It is necessary to check that the support surface is sufficiently rigid and aligned so that all units which simultaneously support the load are subjected to the same expected stress. Likewise check that the surface of the load to be moved is rigid enough to prevent the units from plowing it. However, consider an appropriate safety margin.

To determine the distance between the units it is necessary to divide by 2.5 the horizontal side of shorter length of the load.

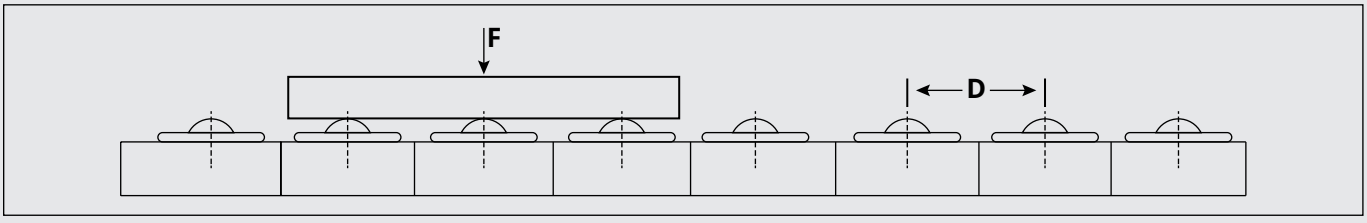
For example, for a slab of 700x1000 mm, the distance (D) will be 280 mm (700: 2.5). This is the space needed between one unit and the other, and it ensures that on the minimum length of the support there are enough units to support the load.

Example 1
Strength due to weight = 1500 N

Load on units (F) $F = \frac{1500N}{3} = 500N$

Example 2
Surface of the load = 700 × 1000 mm

Distance (D) between the units $D = \frac{700\ mm}{2,5} = 280\ mm$



BALL TRANSFER UNITS

PAGINA

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"SPS" SERIES – LIGHT DUTY TYPE

Zinc plated pressed metal sheet metal housing and cover*, inner shell in hardened pressed steel*, felt seal**.
Balls in chrome steel, AISI420C stainless steel, plastic material.

* Available completely in stainless steel version.
** Except SPS 15 and versions with plastic ball.

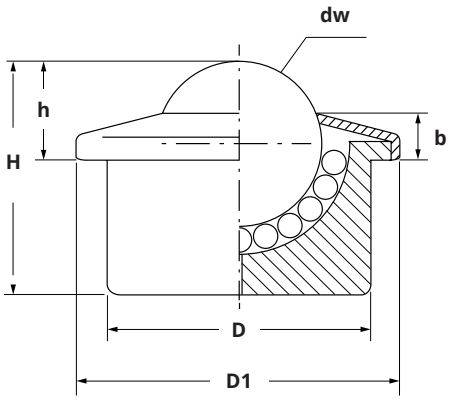
"SPP" SERIES – ALL PLASTIC MATERIAL

Housing and cover in POM (acetal resin) turned from solid, no felt seal to ensure better smoothness, drain hole on the bottom.
Plastic or AISI316 stainless steel balls.

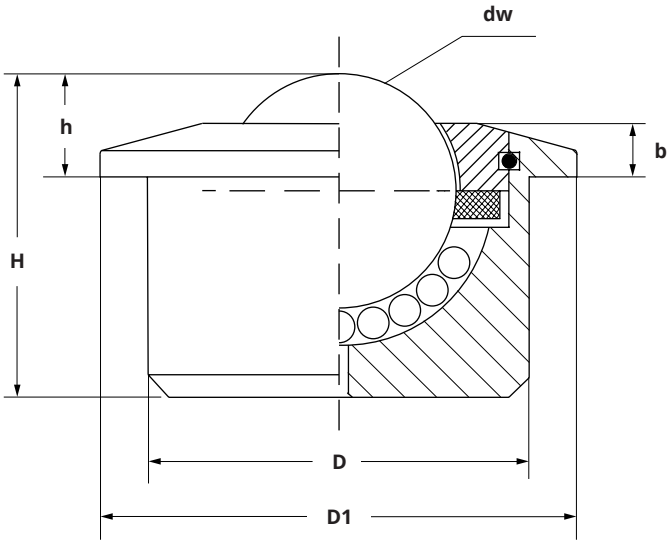
MADE IN ITALY

All products shown in this catalogue are MADE IN ITALY

"SPM" SERIES – HEAVY DUTY TYPE WITH FLANGE



SPM 12

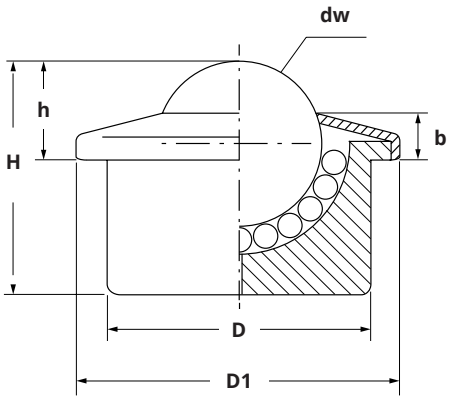


SPM 15/22/30/45

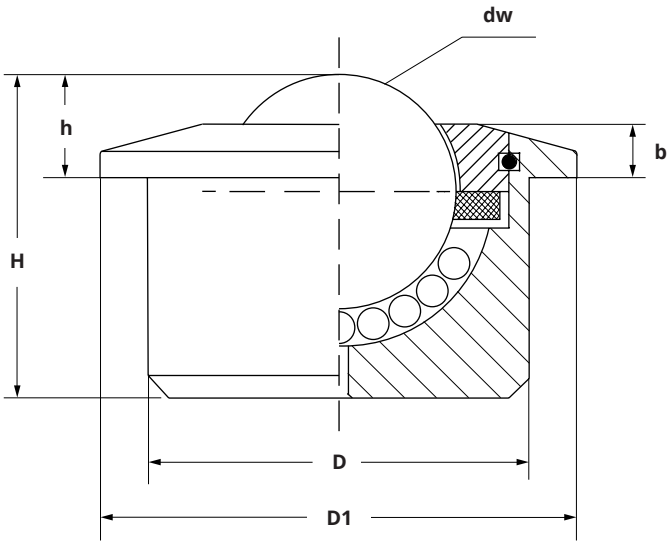
- Hardened housing with flange machined from bar, in order to guarantee high flow rates and a greater resistance to stress.
- reinforced cover in turned steel.
- felt seal (except for SPM 12 and 15).
- drain hole on the bottom.

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPM01200A	SPM 12 A	steel housing, balls made of chrome steel	12	22 ± 0,08	27	8 ± 0,2	16,75	5	20	15	0,035
SPM01500A	SPM 15 A		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	50	35	0,060
SPM02200A	SPM 22 A		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	180	125	0,185
SPM03000A	SPM 30 A		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	350	250	0,355
SPM04500A	SPM 45 A		45	62 ± 0,1	75	19 ± 0,4	53,5	10	600	420	0,990
SPM01200B	SPM 12 B	zinc plated steel housing, balls made of chrome steel	12	22 ± 0,08	27	8 ± 0,2	16,75	5	20	15	0,035
SPM01500B	SPM 15 B		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	50	35	0,060
SPM02200B	SPM 22 B		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	180	125	0,185
SPM03000B	SPM 30 B		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	350	250	0,355
SPM04500B	SPM 45 B		45	62 ± 0,1	75	19 ± 0,4	53,5	10	600	420	0,990
SPM01200C	SPM 12 C	zinc plated steel housing, balls made of stainless steel AISI 420C	12	22 ± 0,08	27	8 ± 0,2	16,75	5	15	10	0,035
SPM01500C	SPM 15 C		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	40	25	0,060
SPM02200C	SPM 22 C		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	130	90	0,185
SPM03000C	SPM 30 C		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	240	170	0,355
SPM04500C	SPM 45 C		45	62 ± 0,1	75	19 ± 0,4	53,5	10	400	280	0,990
SPM01200SS	SPM 12 SS	housing, internal parts and balls made of stainless steel AISI 420C	12	22 ± 0,08	27	8 ± 0,2	16,75	5	15	10	0,035
SPM01500SS	SPM 15 SS		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	40	25	0,060
SPM02200SS	SPM 22 SS		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	130	90	0,185
SPM03000SS	SPM 30 SS		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	240	170	0,355
SPM04500SS	SPM 45 SS		45	62 ± 0,1	75	19 ± 0,4	53,5	10	400	280	0,990

"SPM" SERIES – HEAVY DUTY TYPE WITH FLANGE AND MAIN PLASTIC BALL



SPM 12

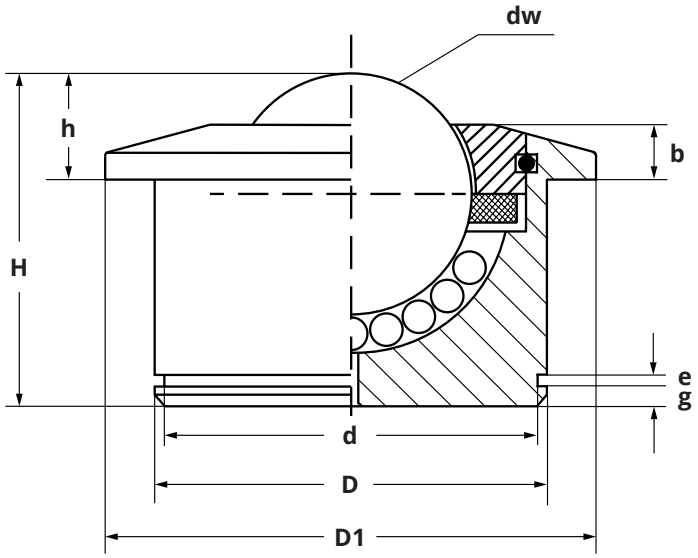


SPM 15/22/30/45

- Hardened housing with flange machined from bar, in order to guarantee high flow rates and a greater resistance to stress
- Reinforced cover in turned steel
- Drain hole on the bottom.
- Versions with main plastic ball:
  - best choice for handling particularly delicate surfaces such as sheets of glass or crystal, wooden panels, painted or satin sheet plates, and so on*
  - felt seal to ensure maximum smoothness even in the presence of light loads
  - Usually not to be used turned upside down;*
  - Working temperature 0°/60°*

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPM01200BD	SPM 12 BD	zinc plated steel body, small chrome steel balls, main ball made of plastic*	12	22 ± 0,08	27	8 ± 0,2	16,75	5	5	-	0,030
SPM01500BD	SPM 15 BD		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	13	-	0,046
SPM02200BD	SPM 22 BD		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	20	-	0,150
SPM03000BD	SPM 30 BD		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	25	-	0,240
SPM04500BD	SPM 45 BD		45	62 ± 0,1	75	19 ± 0,4	53,5	10	30	-	0.670
SPM01200CD	SPM 12 CD	zinc plated steel body, small AISI 420C stainless steel balls, main ball made of plastic*	12	22 ± 0,08	27	8 ± 0,2	16,75	5	5	-	0,030
SPM01500CD	SPM 15 CD		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	13	-	0,046
SPM02200CD	SPM 22 CD		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	20	-	0,150
SPM03000CD	SPM 30 CD		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	25	-	0,240
SPM04500CD	SPM 45 CD		45	62 ± 0,1	75	19 ± 0,4	53,5	10	30	-	0,670
SPM01200SSCD	SPM 12 SSCD	housing, internal parts and small balls made of stainless steel AISI 420C, main ball made of plastic*	12	22 ± 0,08	27	8 ± 0,2	16,75	5	5	-	0,030
SPM01500SSCD	SPM 15 SSCD		15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	13	-	0,046
SPM02200SSCD	SPM 22 SSCD		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	20	-	0,150
SPM03000SSCD	SPM 30 SSCD		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	25	-	0,240
SPM04500SSCD	SPM 45 SSCD		45	62 ± 0,1	75	19 ± 0,4	53,5	10	30	-	0,670

"SPM" SERIES – HEAVY DUTY TYPE WITH FLANGE – SEEGER GROOVE ACCORDING TO DIN 471



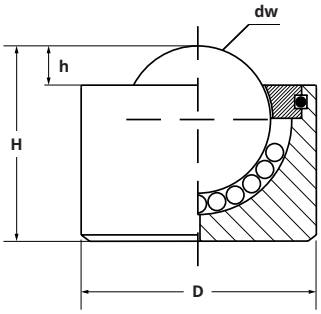
TIPO	g	d	e
SPM 15	2	22,09 +0,1 -0,2	1,3 +0,1 -0
SPM 22	3	34 +0 -0,25	1,85 +0,1 -0,2
SPM 30	4	42,5 +0 -0,25	1,85 +0,1 -0,37
SPM 45	4,5	59 +0 -0,3	2,15 +0,1 -0

- Hardened housing with flange machined from bar, in order to guarantee high flow rates and a greater resistance to stress.
- Seeger groove on the housing for the insertion of fixing rings according to DIN 471 standards*
- Reinforced cover in turned steel
- Felt seal (except for SPM 15)
- Drain hole on the bottom.
- all listed versions can also be produced with main plastic ball**

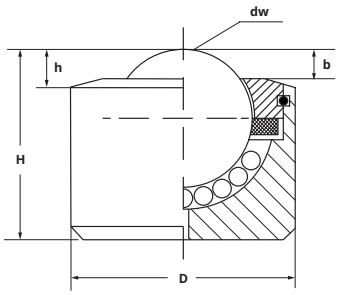
* Groove can be made on request with different dimensions and heights.
** For technical features see page 11.

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPM01500AR	SPM 15 A-R	Steel housing, balls made of chrome steel	15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	50	35	0,060
SPM02200AR	SPM 22 A-R		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4	180	125	0,185
SPM03000AR	SPM 30 A-R		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8,5	350	250	0,355
SPM04500AR	SPM 45 A-R		45	62 ± 0,1	75	19 ± 0,4	53,5	10	600	420	0,990
SPM01500BR	SPM 15 B-R	Zinc plated steel housing, balls made of chrome steel	15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	50	35	0,060
SPM02200BR	SPM 22 B-R		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4	180	125	0,185
SPM03000BR	SPM 30 B-R		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8,5	350	250	0,355
SPM04500BR	SPM 45 B-R		45	62 ± 0,1	75	19 ± 0,4	53,5	10	600	420	0,990
SPM01500CR	SPM 15 C-R	Zinc plated steel housing, balls made of stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	40	25	0,060
SPM02200CR	SPM 22 C-R		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4	130	90	0,185
SPM03000CR	SPM 30 C-R		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8,5	240	170	0,355
SPM04500CR	SPM 45 C-R		45	62 ± 0,1	75	19 ± 0,4	53,5	10	400	280	0,990
SPM01500SSR	SPM 15SS-R	housing, internal parts and balls made of stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	5,5	40	25	0,060
SPM02200SSR	SPM 22SS-R		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4	130	90	0,185
SPM03000SSR	SPM 30SS-R		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8,5	240	170	0,355
SPM04500SSR	SPM 45SS-R		45	62 ± 0,1	75	19 ± 0,4	53,5	10	400	280	0,990

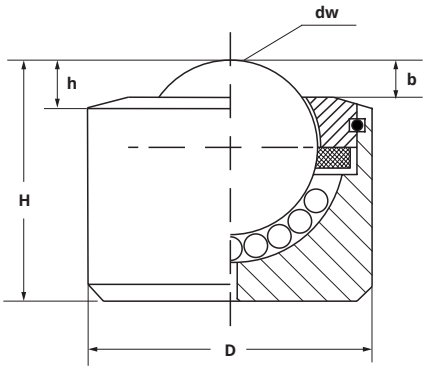
"SBM" SERIES – HEAVY DUTY TYPE WITHOUT FLANGE



SBM 12



SBM 15

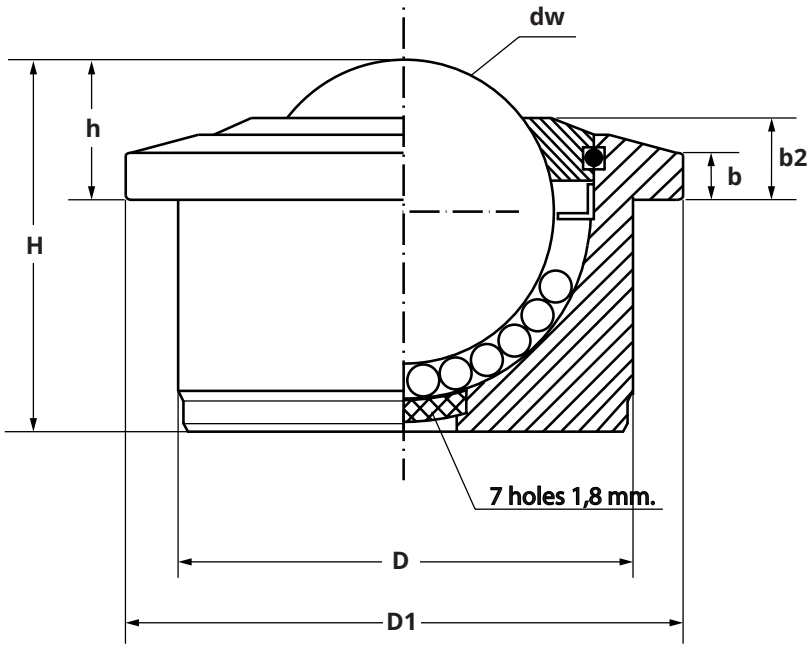


SBM 22/30/45

- Hardened machined steel housing without flange.
- Turned steel cover.
- To be used in applications which require to minimize the protrusion from the housing seat.
- In order to ensure good smoothness even under limited loads, SBM 12, 15 and all versions with main plastic ball are assembled without felt seal.
- Drain hole on the bottom.
- Working temperature for main plastic ball versions: 0°/60°*

ITEM	TYPE	VERSION	DIMENSIONS					LOAD (Kg)		WEIGHT (Kg)
			dw	D	h	H	b			
SBM00800A	SBM 8 A	Steel housing, balls made of chrome steel	8	18 ± 0,08	2 ± 0,2	12	-	12	9	0,018
SBM01200A	SBM 12 A		12	22 ± 0,08	5,5 ± 0,2	17,5	-	20	15	0,035
SBM00800B	SBM 8 B	Zinc plated steel housing, balls made of chrome steel	8	18 ± 0,08	2 ± 0,2	12	-	12	9	0,018
SBM01200B	SBM 12 B		12	22 ± 0,08	5,5 ± 0,2	17,5	-	20	15	0,035
SBM01500B	SBM 15 B		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	50	35	0,050
SBM02200B	SBM 22 B		22	36 ± 0,08	5,3 ± 0,2	30,5	4,6	180	125	0,170
SBM03000B	SBM 30 B		30	45 ± 0,08	8 ± 0,3	36,8	5 ± 0,3	350	250	0,330
SBM04500B	SBM 45 B		45	62 ± 0,1	13 ± 0,3	53,5	10	600	420	0,945
SBM00800C	SBM 8 C	Zinc plated steel housing, balls made of stainless steel AISI 420C	8	18 ± 0,08	2 ± 0,2	12	-	10	7	0,018
SBM01200C	SBM 12 C		12	22 ± 0,08	5,5 ± 0,2	17,5	-	15	10	0,035
SBM01500C	SBM 15 C		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	40	25	0,050
SBM02200C	SBM 22 C		22	36 ± 0,08	5,3 ± 0,2	30,5	4	130	90	0,170
SBM03000C	SBM 30 C		30	45 ± 0,08	8 ± 0,3	36,8	5 ± 0,3	240	170	0,330
SBM04500C	SBM 45 C		45	62 ± 0,1	13 ± 0,3	53,5	10	400	280	0,945
SBM00800SS	SBM 8 SS	housing and balls made of stainless steel AISI 420C	8	18 ± 0,08	2 ± 0,2	12	-	10	9	0,018
SBM01200SS	SBM 12 SS		12	22 ± 0,08	5,5 ± 0,2	17,5	-	15	10	0,035
SBM01500SS	SBM 15 SS		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	40	25	0,050
SBM00800BD	SBM 8 BD	Zinc plated steel housing, main plastic ball, small balls in chrome steel	8	18 ± 0,08	2 ± 0,2	12	-	3	-	0,016
SBM01200BD	SBM 12 BD		12	22 ± 0,08	5,5 ± 0,2	17,5	-	5	-	0,030
SBM01500BD	SBM 15 BD		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	13	-	0,035
SBM02200BD	SBM 22 BD		22	36 ± 0,08	5,3 ± 0,2	30,5	4	20	-	0,140
SBM03000BD	SBM 30 BD		30	45 ± 0,08	8 ± 0,3	36,8	5 ± 0,3	25	-	0,240
SBM04500BD	SBM 45 BD		45	62 ± 0,1	13 ± 0,3	53,5	10	30	-	0,650
SBM00800CD	SBM 8 CD	Zinc plated steel housing, main plastic ball, small balls in stainless steel AISI 420C	8	18 ± 0,08	2 ± 0,2	12	-	3	-	0,016
SBM01200CD	SBM 12 CD		12	22 ± 0,08	5,5 ± 0,2	17,5	-	5	-	0,030
SBM01500CD	SBM 15 CD		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	13	-	0,035
SBM02200CD	SBM 22 CD		22	36 ± 0,08	5,3 ± 0,2	30,5	4	20	-	0,140
SBM03000CD	SBM 30 CD		30	45 ± 0,08	8 ± 0,3	36,8	5 ± 0,3	25	-	0,240
SBM04500CD	SBM 45 CD		45	62 ± 0,1	13 ± 0,3	53,5	10	30	-	0,650
SBM00800SSCD	SBM 8SSCD	Main plastic ball, housing and small balls in stainless steel AISI 420C	8	18 ± 0,08	2 ± 0,2	12	-	3	-	0,016
SBM01200SSCD	SBM12SSCD		12	22 ± 0,08	5,5 ± 0,2	17,5	-	5	-	0,030
SBM01500SSCD	SBM15SSCD		15	24 ± 0,08	5,5 ± 0,1	20,9 ± 0,1	4,6 ± 0,2	13	-	0,035

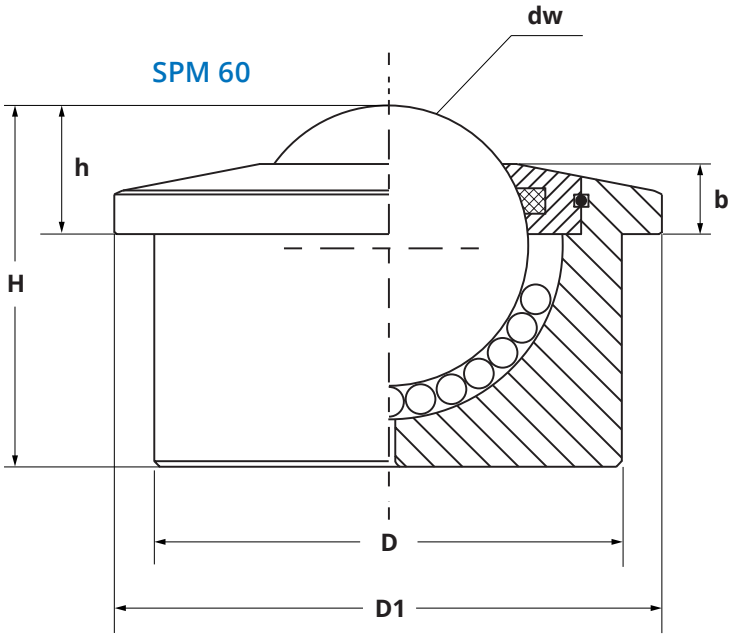
"SPM CARGO" SERIES - FOR AIRPORT USE, DEPOSITS, FREIGHT FORWARDERS FOOTBOARDS

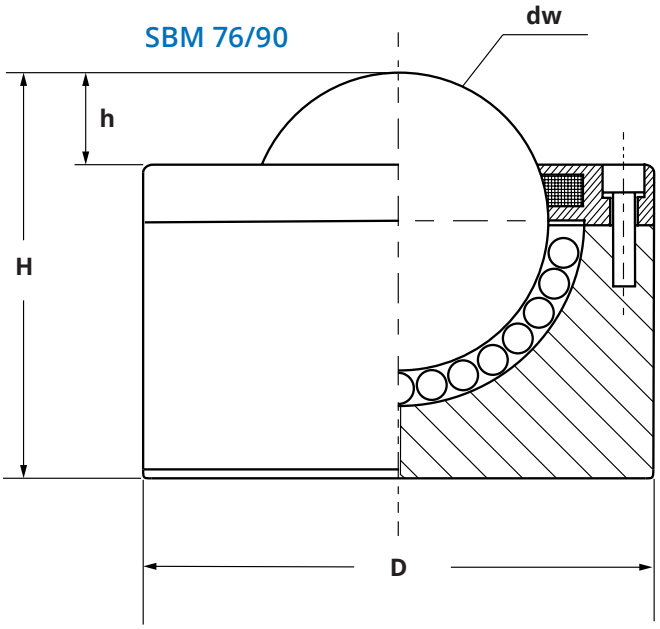


- Hardened housing with flange machined from bar, in order to guarantee high flow rates and a greater resistance to stress.
- Particularly suitable for use in airport systems, depots, platforms for shippers
- Trivalent zinc plated to offer a greater resistance to corrosion.
- Reinforced cover in turned steel.
- No felt seal, in order to offer maximum smoothness in all conditions of use.
- Stainless steel disc with 7 drain holes on the bottom to facilitate the escape of condensate, dust, impurities.
- On Request, the stainless steel disc is available with 5 drain holes.

ITEM	TYPE	VERSION	DIMENSIONS							LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b1	b2			
SPM03000C-G	SPM 30 C Cargo	Zinc plated steel housing (with sealing coating), balls made of stainless steel AISI 420C	30	45 ± 0,08	55	13,8 ± 0,3	36,8	5	8,5	240		0,355
SPM04500C-G	SPM 45 C Cargo		45	62 ± 0,1	75	19 ± 0,4	53,5	6	10	400		0,990
SPM03000SS-G	SPM 30 SS Cargo	Housing and balls made of stainless steel AISI 420C, internal parts made of stainless steel AISI 303	30	45 ± 0,08	55	13,8 ± 0,3	36,8	5	8,5	240		0,355
SPM04500SS-G	SPM 45 SS Cargo		45	62 ± 0,1	75	19 ± 0,4	53,5	6	10	400		0,990

"SPM-SBM SUPER HEAVY DUTY" SERIES – FOR HIGH LOADS



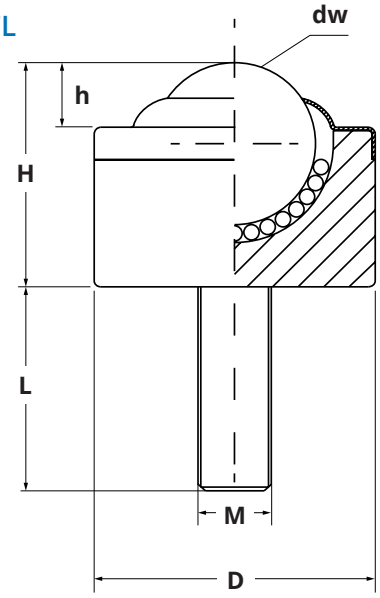


- High-performance machined, case-hardened and hardened steel housing.
- It can withstand high loads and features greater resistance to stress.
- Einforced cover in turned steel (can be removed for maintenance, except for SPM 60)
- Felt seal.
- Drain hole on the bottom.

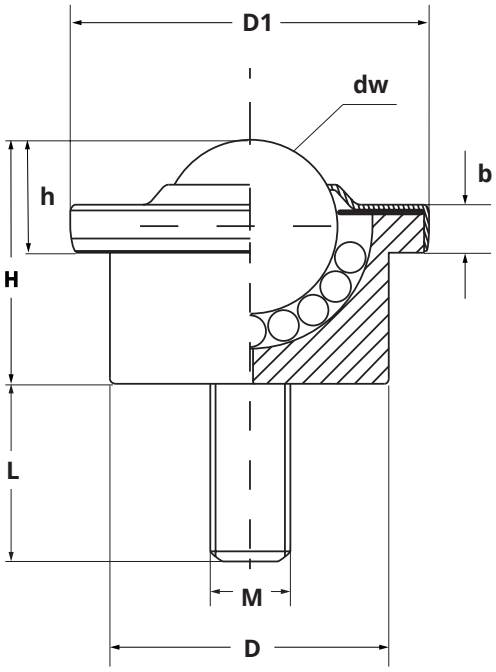
ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPM06000A	SPM 60 A	Steel housing, balls made of chrome steel	60	100 ± 0,1	117	30 ± 0,4	77,5	15	1500	900	4
SBM07600A	SBM 76 A		76	130 ± 0,1	-	23 ± 0,4	103	-	2500	1500	10
SBM09000A	SBM 90 A		90	145 ± 0,1	-	25 ± 0,4	115	-	3000	2000	11,250
SPM06000B	SPM 60 B	Zinc plated steel housing, balls made of chrome steel	60	100 ± 0,1	117	30 ± 0,4	77,5	15	1500	900	4
SBM07600R	SBM 76 B		76	130 ± 0,1	-	23 ± 0,4	103	-	2500	1500	10
SBM09000B	SBM 90 B		90	145 ± 0,1	-	25 ± 0,4	115	-	3000	2000	11,250
SPM06000C	SPM 60 C	Zinc plated steel housing, balls made of stainless steel AISI 420C	60	100 ± 0,1	117	30 ± 0,4	77,5	15	900	600	4
SBM07600C	SBM 76 C		76	130 ± 0,1	-	23 ± 0,4	103	-	1500	900	10
SBM09000C	SBM 90 C		90	145 ± 0,1	-	25 ± 0,4	115	-	1800	1200	11,250
SPM06000SS	SPM 60 SS	Housing, internal parts and balls made of stainless steel AISI 420C	60	100 ± 0,1	117	30 ± 0,4	77,5	15	900	600	4
SBM07600SS	SBM 76 SS		76	130 ± 0,1	-	23 ± 0,4	103	-	1500	900	10
SBM09000SS	SBM 90 SS		90	145 ± 0,1	-	25 ± 0,4	115	-	1800	1200	11,250

"SPM-SBM" SERIES – HEAVY DUTY TYPE WITH THREADED NUT

SBM 8/12 FL



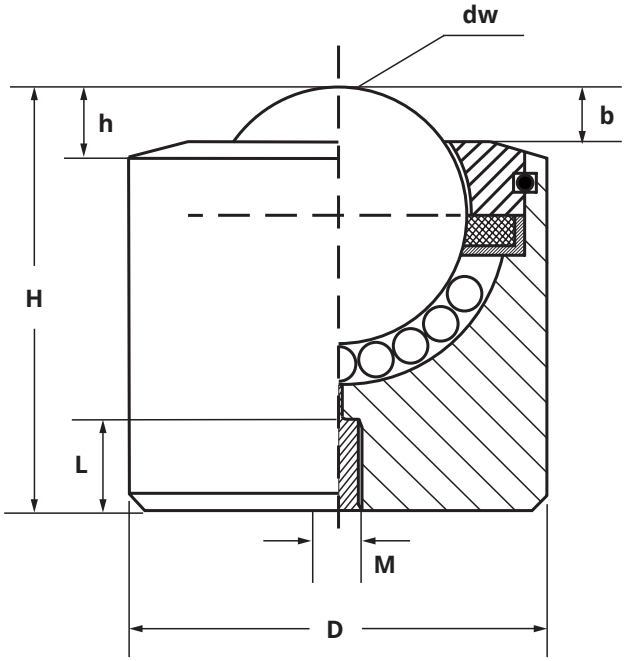
SPM 15 FL



- Hardened housing machined from bar.
- Threaded nut machined from solid (available in different diameters / lengths).
- Cover in pressed metal sheet for SBM 8. Not for SPM 15.
- No felt seal to ensure better smoothness even with low loads.
- Versions with main plastic ball:
  - Best choice for handling particularly delicate surfaces such as sheets of glass or crystal, wooden panels, painted or satin sheet plates, and so on*
  - Usually not to be used turned upside down*
  - Working temperature 0°/60°*

ITEM	TYPE	DIMENSIONS								LOAD (Kg)		WEIGHT (Kg)
		dw	D	D1	h	H	b	M	L			
SBM 8 B FL	Zinc plated steel housing, balls made of chrome steel	8	18	-	2 ± 0,2	12	-	6	10 – 15	12	9	0,025
SBM 12 B FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	20	15	0,045
SPM 15 B FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	50	35	0,070
SBM 8 C FL	Zinc plated steel housing, balls made of stainless steel AISI 420C	8	18	-	2 ± 0,2	12	-	6	10 – 15	10	7	0,025
SBM 12 C FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	15	10	0,045
SPM 15 C FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	40	25	0,070
SBM 8 SS FL	Housing and balls made of stainless steel AISI 420C	8	18	-	2 ± 0,2	12	-	6	10 – 15	10	7	0,025
SBM 12 SS FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	15	10	0,045
SPM 15 SS FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	40	25	0,070
SBM 8 BD FL	Zinc plated steel housing, main plastic ball, small balls in chrome steel	8	18	-	2 ± 0,2	12	-	6	10 – 15	3	-	0,020
SBM 12 BD FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	5	-	0,035
SPM 15 BD FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	13	-	0,055
SBM 8 CD FL	Zinc plated steel housing, main plastic ball, small balls in stainless steel AISI 420C	8	18	-	2 ± 0,2	12	-	6	10 – 15	3	-	0,020
SBM 12 CD FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	5	-	0,035
SPM 15 CD FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	13	-	0,055
SBM 8 SS CD FL	Main plastic ball, housing and small balls in stainless steel AISI 420C	8	18	-	2 ± 0,2	12	-	6	10 – 15	3	-	0,020
SBM 12 SS CD FL		12	22	-	5 ± 0,2	17,5	-	8	15 – 20	5	-	0,035
SPM 15 SS CD FL		15	24	31	9,5 ± 0,2	21	5,5	8	15 – 20	13	-	0,055

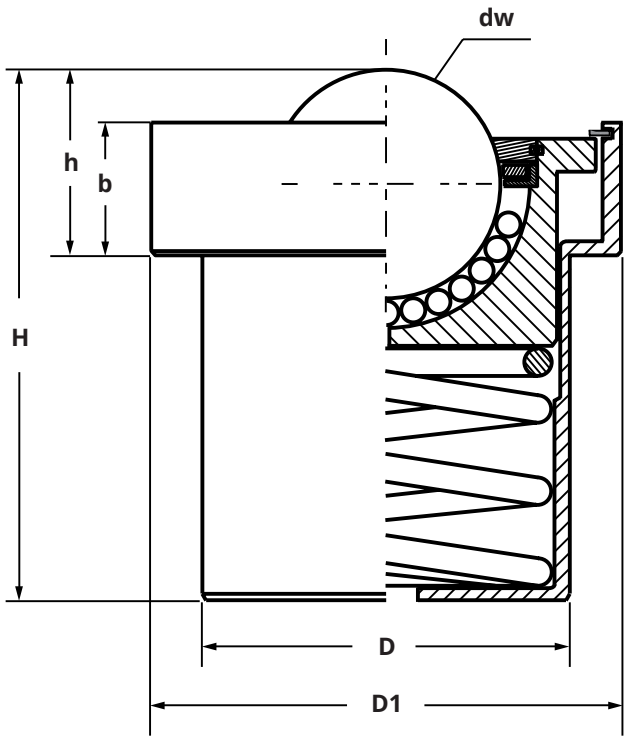
"SPM-SBM" SERIES – HEAVY DUTY TYPE WITH INTERNAL THREAD



- Hardened machined steel housing without flange.
- Turned steel cover (for SBM 12 it is made of pressed steel)
- To be used in applications which require to minimize the protrusion from the housing seat.
- In order to ensure good smoothness even under limited loads, SBM 12, 15 and all versions with main plastic ball are assembled without felt seal.
- The threaded hole at the bottom allows a strong fixing in all conditions of use.
- Working temperature for main plastic ball versions: 0°/60°*

ITEM	TYPE	VERSION	DIMENSIONS							LOAD (Kg)		WEIGHT (Kg)
			dw	D	h	H	b	M	L			
SBM01200B-I	SBM 12 B FL int.	Zinc plated steel housing, balls made of chrome steel	12	22 ± 0,08	5,5 ± 0,2	24	3	8	5	20	15	0,035
SBM01500B-I	SBM 15 B FL int.		15	24 ± 0,08	5 ± 0,2	29	-	8	8	50	35	0,050
SBM02200B-I	SBM 22 B FL int.		22	36 ± 0,08	5,3 ± 0,2	40,5	4	8	10	180	125	0,170
SBM03000B-I	SBM 30 B FL int.		30	45 ± 0,08	8 ± 0,3	46,8	5 ± 0,3	8	10	350	250	0,330
SBM04500B-I	SBM 45 B FL int.		45	62 ± 0,1	13 ± 0,3	63,5	10	8	10	600	420	0,945
SBM01200C-I	SBM 12 C FL int.	Zinc plated steel housing, balls made of stainless steel AISI 420C	12	22 ± 0,08	5,5 ± 0,2	24	3	8	5	15	10	0,035
SBM01500C-I	SBM 15 C FL int.		15	24 ± 0,08	5 ± 0,2	29	-	8	8	40	25	0,050
SBM02200C-I	SBM 22 C FL int.		22	36 ± 0,08	5,3 ± 0,2	40,5	4	8	10	130	90	0,170
SBM03000C-I	SBM 30 C FL int.		30	45 ± 0,08	8 ± 0,3	46,8	5 ± 0,3	8	10	240	170	0,330
SBM04500C-I	SBM 45 C FL int.		45	62 ± 0,1	13 ± 0,3	63,5	10	8	10	400	280	0,945
SBM01200BD-I	SBM 12 BD FL int.	Zinc plated steel housing, main plastic ball, small balls in chrome steel	12	22 ± 0,08	5,5 ± 0,2	24	3	8	5	5	-	0,030
SBM01500BD-I	SBM 15 BD FL int.		15	24 ± 0,08	5 ± 0,2	29	-	8	8	13	-	0,035
SBM02200BD-I	SBM 22 BD FL int.		22	36 ± 0,08	5,3 ± 0,2	40,5	4	8	10	20	-	0,140
SBM03000BD-I	SBM 30 BD FL int.		30	45 ± 0,08	8 ± 0,3	46,8	5 ± 0,3	8	10	25	-	0,240
SBM04500BD-I	SBM 45 BD FL int.		45	62 ± 0,1	13 ± 0,3	63,5	10	8	10	30	-	0,650

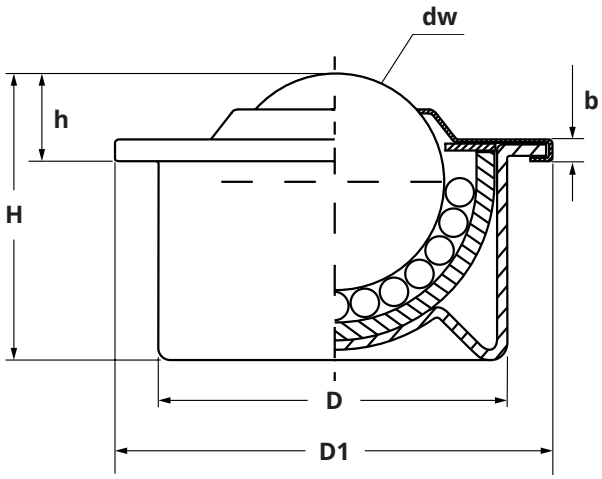
“SPM” SERIES – HEAVY DUTY TYPE WITH SPRING ELEMENT



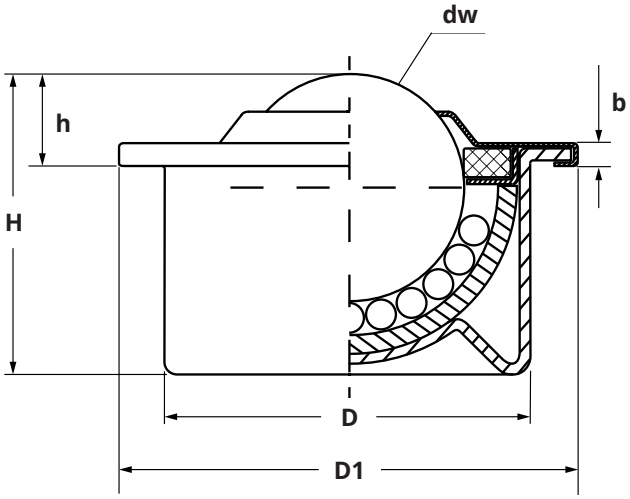
- External housing in turned, burnished steel
- It guarantees solidity and maintains its features over time, avoiding the typical bending of the pressed metal sheet.
- Internal unit all made of machined, hardened and zinc plated steel.
- Felt seal and drain hole on the bottom.
- Hardened and ground internal spiral spring.
- The fixing ring provided to lock the ball transfer unit can be removed for any maintenance and / or replacement of the internal spring.

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)	PRECARICO	TOLL. SUL PRECARICO	WEIGHT (Kg)
			dw	D	D1	h	H	b		Kg.	(%)	
SPM02200AF	SPM 22 AF	Burnished steel external housing, internal unit made of zinc plated steel, balls made of chrome steel	22	39 ± 0,1	50	18,5	58	14	80	7,5	+25/-7,5	0,36
SPM03000AF	SPM 30 AF		30	48,5 ± 1,2	62	24,5	70	17,5	150	13,5	+15/-7,5	0,68
SPM04500AF	SPM 45 AF		45	66,5 ± 1,5	85	36	100,5	25,5	215	23	+15/-7,5	1,90
SPM02200CF	SPM 22 CF	Burnished steel external housing, internal unit made of zinc plated steel, balls made of stainless steel AISI 420C	22	39 ± 0,1	50	18,5	58	14	80	7,5	+25/-7,5	0,36
SPM03000CF	SPM 30 CF		30	48,5 ± 1,2	62	24,5	70	17,5	150	13,5	+15/-7,5	0,68
SPM04500CF	SPM 45 CF		45	66,5 ± 1,5	85	36	100,5	25,5	215	23	+15/-7,5	1,90

"SPS" SERIES – LIGHT DUTY TYPE



SPS 12/15

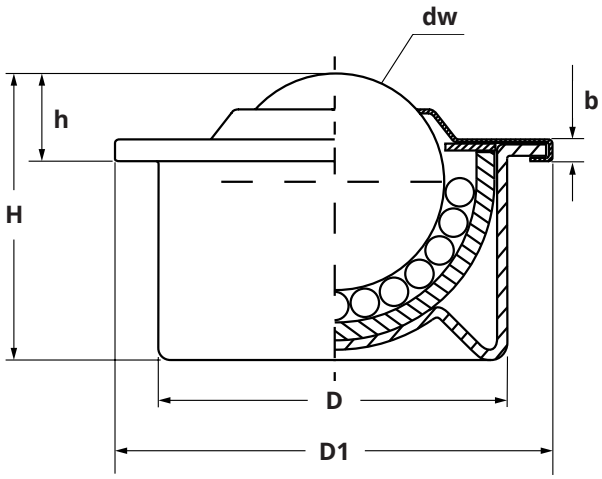


SPS 22/30/45

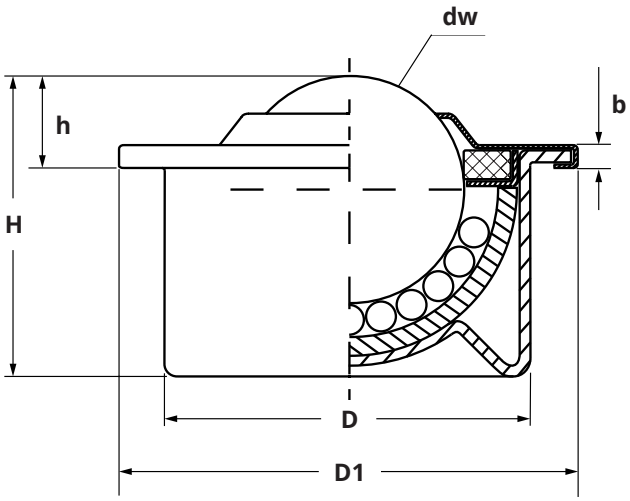
- Dimensionally interchangeable with the SPM version, they guarantee good smoothness and greater lightness at low costs.
- Housing and cover in pressed metal sheet.
- Inner shell in hardened pressed steel.
- Felt seal (except for SPS 12 and 15).

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPS01200B	SPS 12 B	Housing in zinc plated pressed metal sheet, inner shell in hardened steel, balls made of chrome steel	12	22 ± 0,08	28	8 ± 0,2	17,2	3	15	15	0,030
SPS01500B	SPS 15 B		15	24 ± 0,08	31	9,5 ± 0,2	21	3	50	35	0,037
SPS02200B	SPS 22 B		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	120	80	0,130
SPS03000B	SPS 30 B		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	250	170	0,265
SPS04500B	SPS 45 B		45	62 ± 0,15	75	19 ± 0,4	53,5	6	420	300	0,655
SPS01500C	SPS 15 C	Housing in zinc plated pressed metal sheet, inner shell in hardened steel, balls made of stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	3	35	25	0,037
SPS02200C	SPS 22 C		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	90	60	0,130
SPS03000C	SPS 30 C		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	140	100	0,265
SPS01500SS	SPS 15 SS	Housing in stainless steel pressed sheet, inner shell in hardened stainless steel, balls made of stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	3	35	25	0,037
SPS02200SS	SPS 22 SS		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	90	60	0,130
SPS03000SS	SPS 30 SS		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	140	100	0,265

"SPS" SERIES – LIGHT DUTY TYPE WITH MAIN PLASTIC BALL



SPS 15

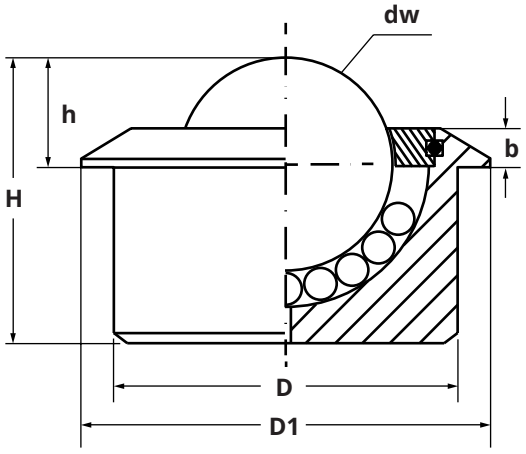


SPS 22/30/45

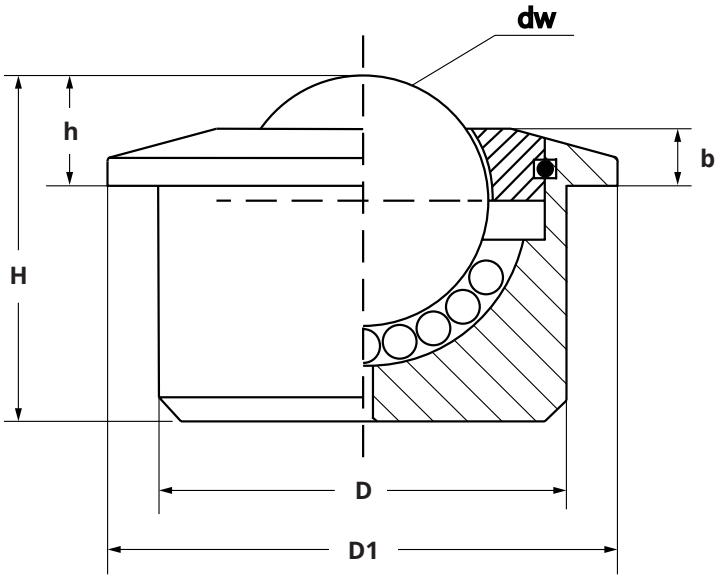
- Dimensionally interchangeable with the SPM version, they guarantee good smoothness and greater lightness at low costs.
- Housing and cover in pressed metal sheet.
- Inner shell in hardened pressed steel.
- Versions with main plastic ball:
  - Best choice for handling particularly delicate surfaces such as sheets of glass or crystal, wooden panels, painted or satin sheet plates, and so on*
  - No felt seal to ensure better smoothness even with low loads*
  - Usually not to be used turned upside down*
  - Working temperature 0°/60°*

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)		WEIGHT (Kg)
			dw	D	D1	h	H	b			
SPS01500BD	SPS 15 BD	Zinc plated steel housing, inner shell in hardened steel, main plastic ball*, small balls in chrome steel	15	24 ± 0,08	31	9,5 ± 0,2	21	3	13	-	0,026
SPS02200BD	SPS 22 BD		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	20	-	0,084
SPS03000BD	SPS 30 BD		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	25	-	0,155
SPS04500BD	SPS 45 BD		45	62 ± 0,15	75	19 ± 0,4	53,5	6	25	-	0,335
SPS01500CD	SPS 15 CD	Zinc plated steel housing, inner shell in hardened steel, main plastic ball*, small balls in stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	3	13	-	0,026
SPS02200CD	SPS 22 CD		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	20	-	0,084
SPS03000CD	SPS 30 CD		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	25	-	0,155
SPS01500SSCD	SPS15SSCD	Housing in stainless steel pressed sheet, inner shell in hardened stainless steel, main plastic ball*, small balls in stainless steel AISI 420C	15	24 ± 0,08	31	9,5 ± 0,2	21	3	13	-	0,026
SPS0220SSCD	SPS22SSCD		22	36 ± 0,08	45	9,8 ± 0,2	29,5	3,5	20	-	0,084
SPS03000SSCD	SPS30SSCD		30	45 ± 0,1	55	13,8 ± 0,3	36,8	4	25	-	0,155

"SPP" SERIES – ALL PLASTIC MATERIAL



SPP 15



SPP 22/30/45

- Housing with flange all made of POM (acetal resin) turned from solid.
- No felt seal, in order to ensure better smoothness even with low loads and to prevent liquids absorbtion.
- Drain hole on the bottom.
- Salt water and chemicals-resistant.
- Non-magnetic, they do not conduct electricity.
- Suitable for chemical, pharmaceutical, medical applications and so on.
- All listed versions can also be produced with a groove for inserting a fixing ring according to DIN 471.
- Working temperature 0°/60°.

ITEM	TYPE	VERSION	DIMENSIONS						LOAD (Kg)	WEIGHT (Kg)
			dw	D	D1	h	H	b		
SPP01500PC	SPP 15 PC	Housing made of POM acetal resin, all balls made of stainless steel AISI 316	15	24 ± 0,08	30	8 ± 0,2	20	3	7	0,024
SPP02200PC	SPP 22 PC		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	10	0,074
SPP03000PC	SPP 30 PC		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	15	0,162
SPP04500PC	SPP 45 PC		45	62 ± 0,1	75	19 ± 0,4	53,5	10	20	0,502
SPP01500PCD	SPP15 PCD	Housing and main ball made of POM acetal resin, small balls made of stainless steel AISI 316	15	24 ± 0,08	30	8 ± 0,2	20	3	7	0,015
SPP02200PCD	SPP 22 PCD		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	10	0,040
SPP03000PCD	SPP 30 PCD		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	15	0,070
SPP04500PCD	SPP 45 PCD		45	62 ± 0,1	75	19 ± 0,4	53,5	10	20	0,185
SPP01500PD	SPP 15 PD	housing and all balls made of POM acetal resin	15	24 ± 0,08	30	8 ± 0,2	20	3	7	0,012
SPP02200PD	SPP 22 PD		22	36 ± 0,08	45	9,8 ± 0,2	30,5	4,5	10	0,036
SPP03000PD	SPP 30 PD		30	45 ± 0,08	55	13,8 ± 0,3	36,8	8	15	0,066
SPP04500PD	SPP 45 PD		45	62 ± 0,1	75	19 ± 0,4	53,5	10	20	0,176

THE MATERIAL

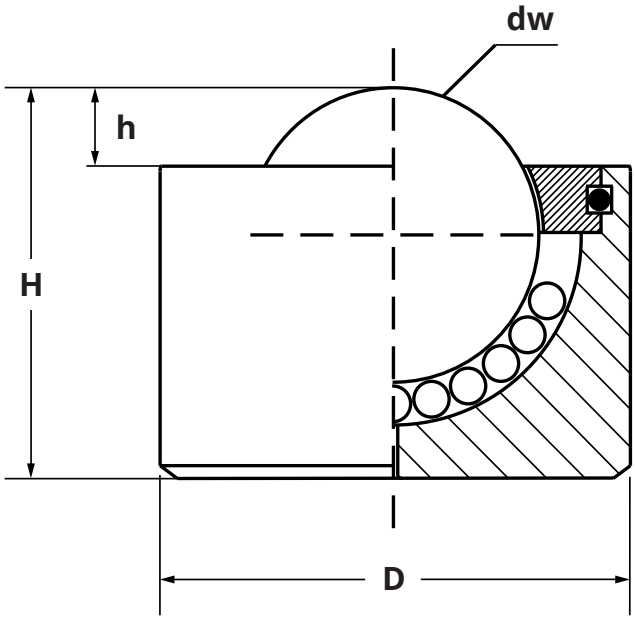
STRENGTHS OF THE MATERIAL USED:

- High resistance to stress and efforts over time.
- Excellent dimensional stability.
- Low friction coefficient.
- High compressive strength and impact resistance even at low temperatures.
- High chemical resistance to solvents, fuels and strong alkalis; high resistance to thermal and oxidative degradation.
- Excellent workability on machine tools, it is often used for automatic machines.
- Food certifications EC 10/2011, FDA, NSF/ANSI 51, even when colored.
- Good dielectric and insulating properties.
- Not permeable to gases, no microporosity.
- Natural black color; on request also red, blue, green, yellow, orange.

SIGNIFICANT ASPECTS:

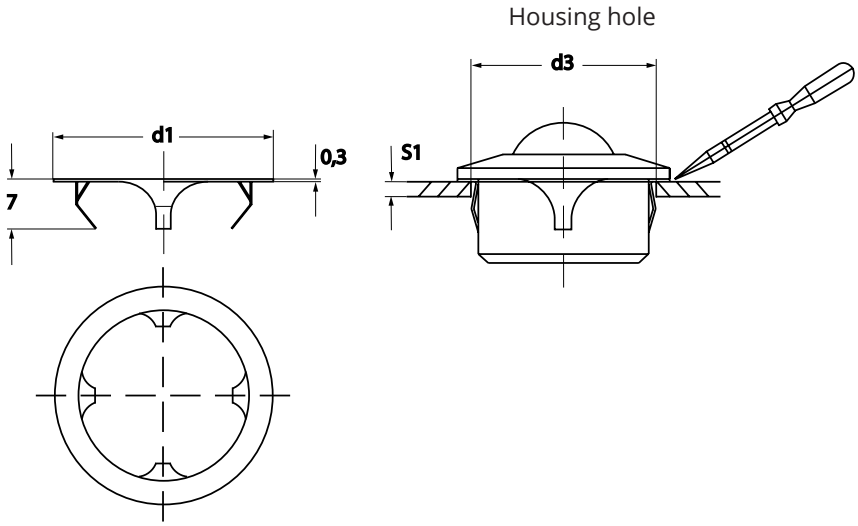
- It has a lower abrasion resistance compared to PA6, especially in dirty and dusty environments.
- It does not resist to concentrated acids.

Please note: all versions can be provided without flange (see SBM drawing hereunder)



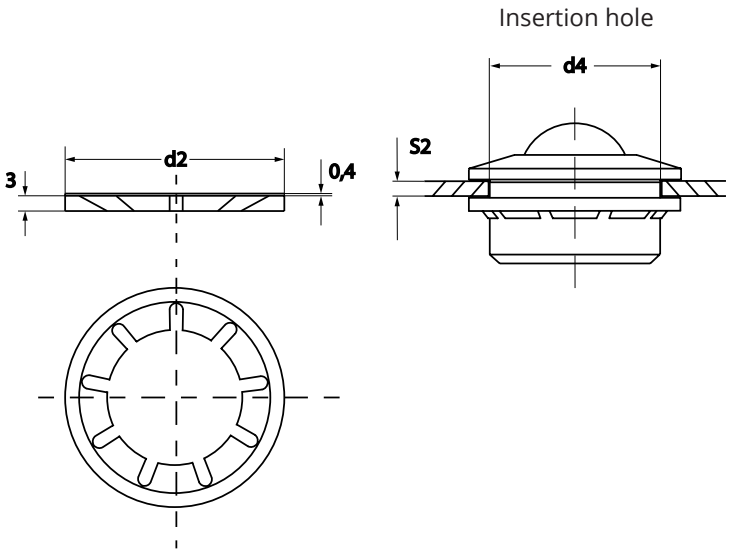
FIXING RING

TIPE “A” – ELASTIC FIXING RING, REMOVABLE VERSION



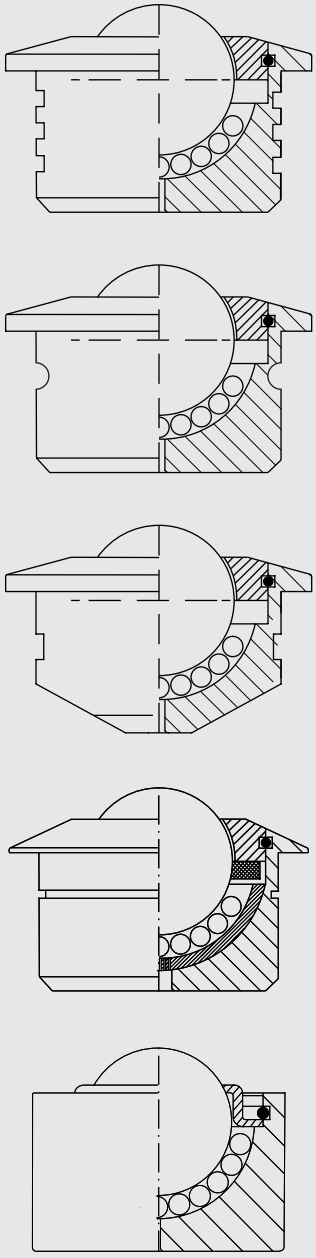
TYPE	D1	D3	S1
SPM – SPS 15	30,50	25 -0,2	2 – 3 mm.
SPM – SPS 22	44	37,3 -0,3	2 – 4 mm.
SPM – SPS 30	54,80	46,7 -0,4	2 – 4 mm.

TIPE “B” – FIXING RING, FIXED VERSION



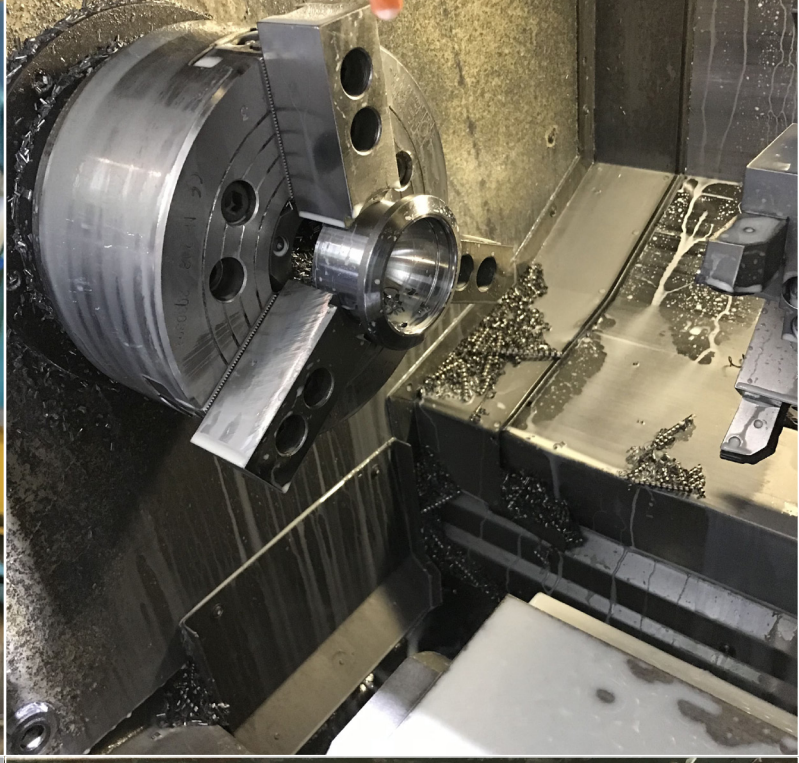
TYPE	D2	D4	S2
SPM – SPS 12	36,50	23 -0,2	2 – 4 mm.
SPM – SPS 15	41,50	25 -0,3	2 – 6 mm.
SPM – SPS 30	60,00	46 -0,4	2 – 15 mm.

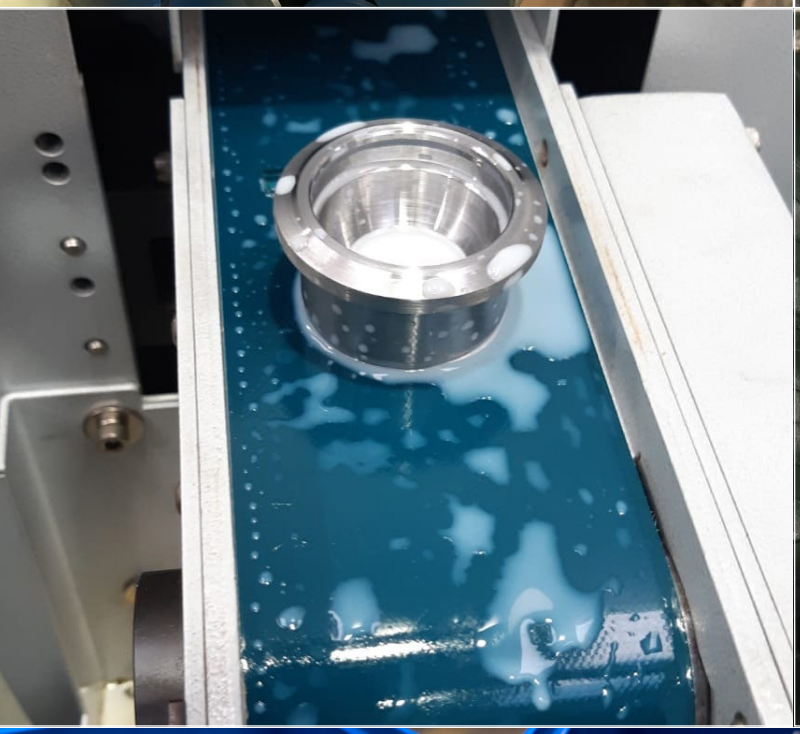
ON REQUEST



In order to face the widest variety of uses and applications, other types of ball transfer units are also available on request, after careful evaluation.
Our technical office is at your disposal to evaluate the feasibility of new versions to meet the user’s needs, and possibly advise the customer in the correct choice of the ball transfer unit to be used.

NOTE






AS0015
(ANELLO DI CHIUSURA)
AE0015
(SEEGER)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