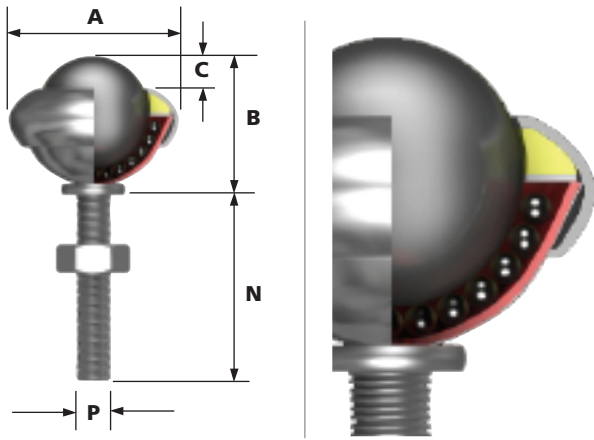


# THREAD FIXING UNITS

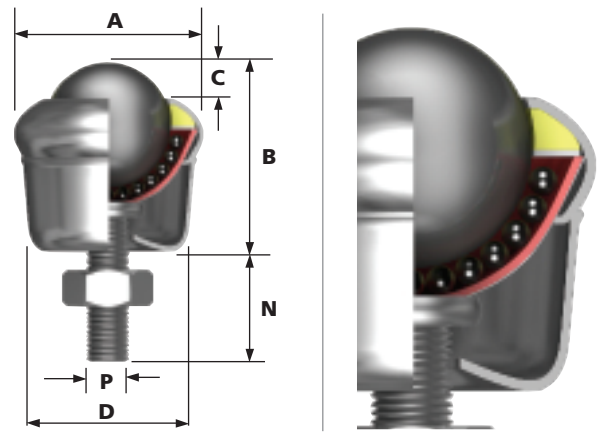
## 3001

Features: Adjustable height, drilled hole fixing.  
Optional extras: Additional nuts, alternative thread sizes, dirt exit hole.



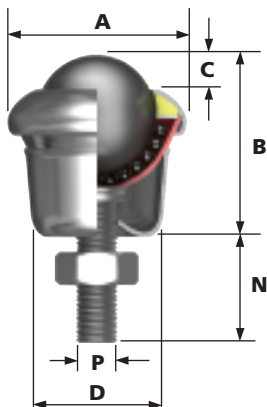
## 3002

Features: Large support area, greater stability, drilled hole fixing.  
Optional extras: Alternative thread sizes, dirt exit hole.



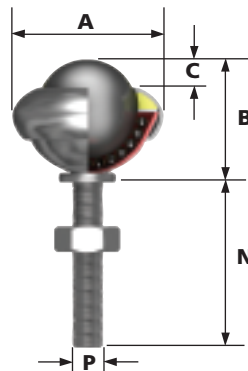
## 1003

Features: Large support area, greater stability, drilled hole fixing.  
Optional extras: Alternative thread sizes, dirt exit hole.



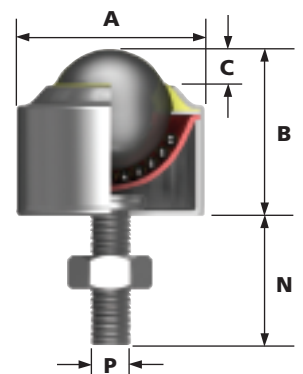
## 1009

Features: Adjustable height, drilled hole fixing.  
Optional extras: Additional nuts, alternative thread sizes, dirt exit hole.



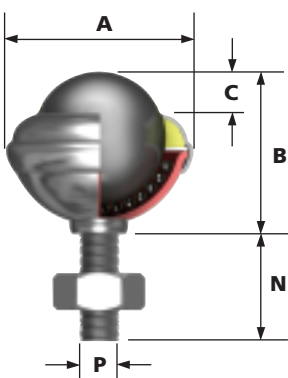
## 1501

Features: Large support area, greater stability, drilled hole fixing. High load capacity, plastic knife edge seal on main ball.  
Optional extras: Alternative thread sizes, dirt exit hole.



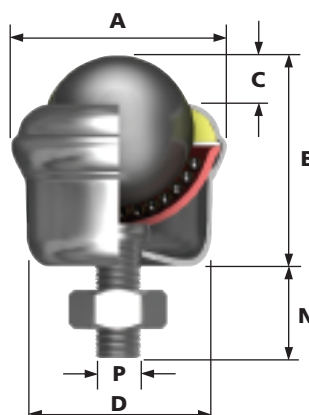
## 2001

Features: Adjustable height, drilled hole fixing.  
Optional extras: Additional nuts, alternative thread sizes, dirt exit hole.



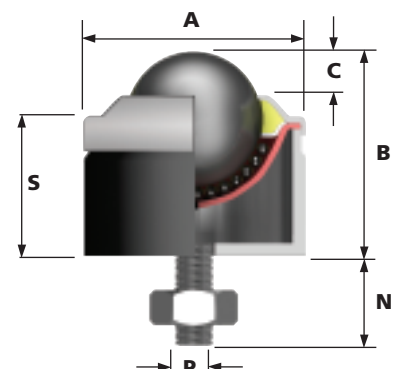
## 2005

Features: Large support area, greater stability, drilled hole fixing.  
Optional extras: Alternative thread sizes, dirt exit hole.



## 4004

Features: Adjustable height, drilled hole fixing. High load capacity, dirt exit hole.  
Optional extras: Grease points can be fitted. Alternative thread sizes.  
Finish: Body black for types 13 & 16



REF No.	BALL SIZE (mm)	MAX TORQUE on NUT (Nm)	WEIGHT (KGS)	DIMENSIONS (mm)						MAXIMUM DYNAMIC LOADING (kg)							
				A	B	C	D	N	P	TYPE 13 Carbon Steel Bearings, Zinc Plated Pressings		TYPE 14 Nylon Load Bearing, Zinc Plated Pressings		TYPE 15 Stainless Steel Bearings and Pressings		TYPE 16 Stainless Steel Bearings, Zinc Plated Pressings	
				Max Diameter	Working Height of Ball	Ball Exposure above Outer Ring	Body Diameter	Length of Thread	Thread Sizes	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN

3001	19	15	0.060	32.1	24.6	4.7	-	25 30 35 40 50	M8	25	10	20	10	25	10	25	10
3002			0.080		30.2		25.4	20 25 30 35 45									

Ball units are also available with black phenolic load balls (see page 3 suffix PB) of Ø19mm and Ø25.4mm. Ball transfer units assembled with a black phenolic load ball can be used for glass handling applications.

1003	25.4	15	0.160	39.7	6.3	25.4	18 23 28 33 43	M8	55	25	25	10	55	25	55	25
1009			0.140				32.5		-	25 30 35 40 50						
1501			0.180	39.5	35.8	6.1	-		18 23 28	100	50	25	5	100	50	100

\*Pattern 4004 can be supplied with other screw sizes or plain shanks.

REF No.	BALL SIZE (mm)	MAX TORQUE on NUT (Nm)	WEIGHT (KGS)	DIMENSIONS (mm)							MAXIMUM DYNAMIC LOADING (kg)							
				A	B	C	D	N	P*	S	TYPE 13 Carbon Steel Bearings, Zinc Plated Pressings		TYPE 14 Nylon Load Bearing, Zinc Plated Pressings		TYPE 15 Stainless Steel Bearings and Pressings		TYPE 16 Stainless Steel Bearings, Zinc Plated Pressings	
				Max Diameter	Working Height of Ball	Ball Exposure above Outer Ring	Body Diameter	Length of Thread	Thread sizes	Base to top of body	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN	LOAD UP	LOAD DOWN

2001	39.7	20	0.400	55.5	47.62	11.9	-	25 30 40 50	M10	-	140	60	N/A	N/A	140	60	140	60
2005			0.460	55.5	54.8		49	22 32 42										
4004	50.8	25	1.720	89	76	14.3	-	UPTO 75	5/8" Whit M16	53.8	340	100	N/A	N/A	250	100	340	100

To order, specify REF No., TYPE and LENGTH OF THREAD, i.e. 3001-13-25.

General Tolerance unless stated ±0.3mm

# TUFF SERIES HEAVY DUTY UNITS

**ALWAYS** TUFF SERIES Heavy Duty units are built to provide a long working life and to withstand harsh conditions.

They have a solid machined body with chrome steel bearings and incorporate both dust seal and dirt exit hole (except No. 0519).

They provide a higher load capacity than standard units.

Solid steel body for attachment purposes, but not shock loading. Body chemical black finish for types 13 and 16.

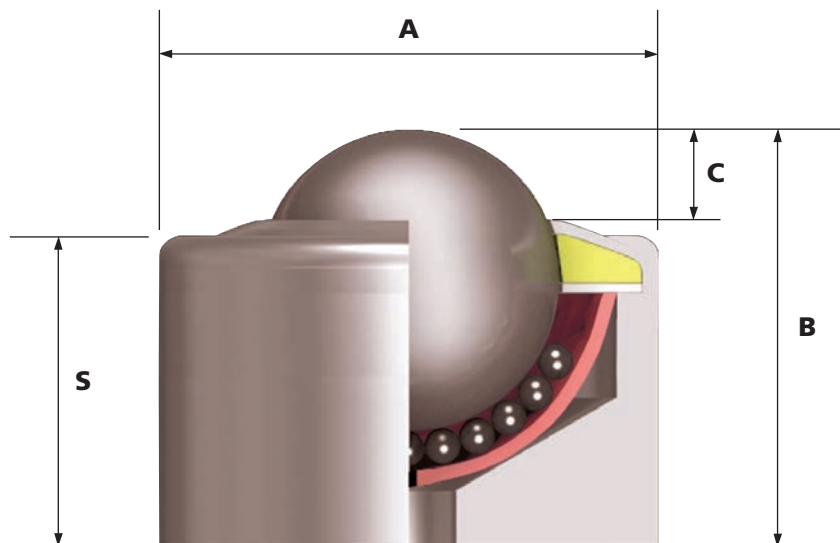
All units are machined using CNC machines from one piece of steel, therefore flanges and threads are integral.

## ALSO AVAILABLE

All patterns (i.e.: 21,22,23 and 24) of refos 0519, 3019 and 1019 are available with a nylon main ball (Type 14) ideal for light load and reduced marking

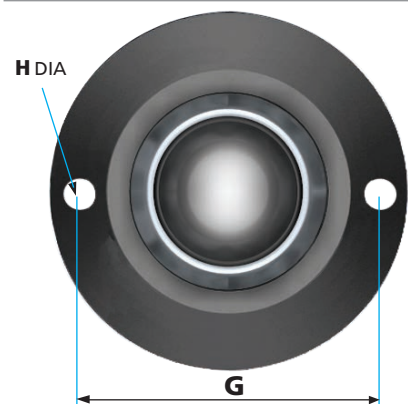
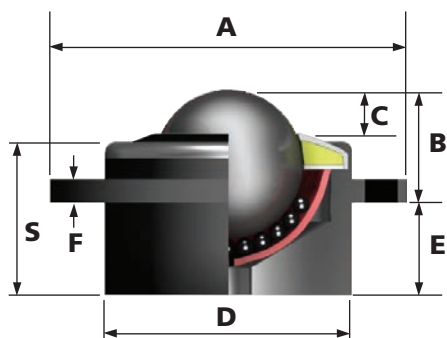
## TUFF HEAVY DUTY 21

Features: Plain solid machined body.



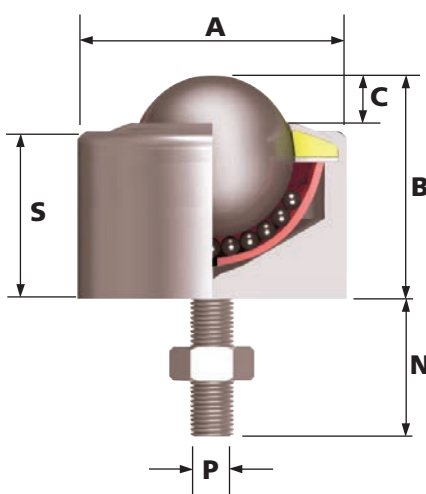
## TUFF HEAVY DUTY 22

Features: Flange fixing either by using rivets or screws.



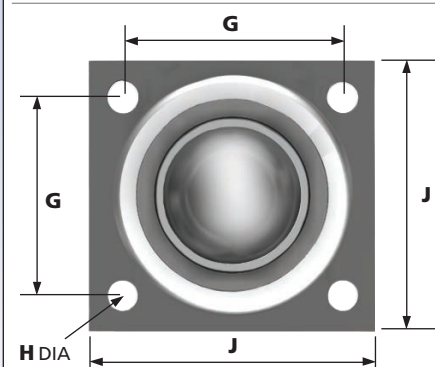
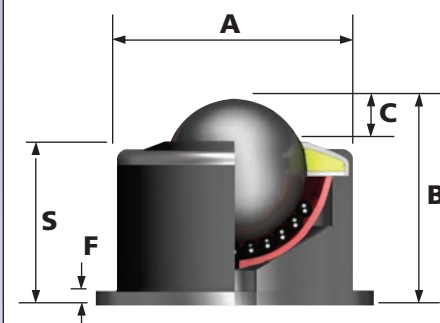
## TUFF HEAVY DUTY 23

Features: Bolt, drilled hole fixing. Maximum tightening torques range from 10Nm for M6 to 20Nm for M12.



## TUFF HEAVY DUTY 24

Features: Bottom flange fixing either by using rivets or screws. Drilled hole fixing.



REF No.	BALL SIZE (mm)	WEIGHT (KGS)	DIMENSIONS (mm)												DYNAMIC LOAD CAPACITY (kg)	
			A	B	C	D	E	F	G	H	J	N	P	S	TYPE 13 Carbon Steel Bearings, Zinc Plated Pressings	TYPE 15 Stainless Steel Bearings and Pressings

0519-21	12.7	0.036	20	20	2	-	-	-	-	-	-	-	-	17	25	25	
0519-22		0.051	32	12		20	8	4	26 ±0.2	3.5	-	-	-	-			17
0519-23		0.042	20	20		-	-	-	-	-	-	28	M6	17			
0519-24		0.096	20	25		-	-	6	24 ±0.2	6.5	35	-	-	22			

3019-21	19	0.120	30	30	4	-	-	-	-	-	-	-	-	26	50	50
3019-22		0.168	50	14		30	16	5	40 ±0.2	5	-	-	-	26		
3019-23		0.124	30	30		-	-	-	-	-	-	25	M8	26		
3019-24		0.220	30	35		-	-	6	31 ±0.2	6.5	44.5	-	-	31		

1019-21	25.4	0.177	35	35	7	-	-	-	-	-	-	-	-	28	125	125
1019-22		0.282	60	20		40	15	5	49 ±0.2	5	-	-	-	28		
1019-23		0.190	35	35		-	-	-	-	-	-	40	M8	28		
1019-24		0.294	35	40		-	-	6	35 ±0.2	7	50	-	-	33		

1029-21	31.7	0.486	50	45	8	-	-	-	-	-	-	-	-	37	250	250
1029-22		0.584	75	24		50	21	5	62.5 ±0.2	5	-	-	-	37		
1029-23		0.500	50	45		-	-	-	-	-	-	40	M10	37		
1029-24		0.740	50	50		-	-	8	49 ±0.2	7	63.45	-	-	42		

2019-21	39.7	0.850	60	55	9	-	-	-	-	-	-	-	-	46	500	250
2019-22		0.960	84	27		60	28	5	72 ±0.2	6	-	-	-	46		
2019-23		0.900	60	55		-	-	-	-	-	-	50	M12	46		
2019-24		1.350	60	60		-	-	10	60 ±0.2	7	80	-	-	51		

To order, specify REF N° and TYPE, i.e. 0519-21-13.

General Tolerance unless stated ±0.3mm