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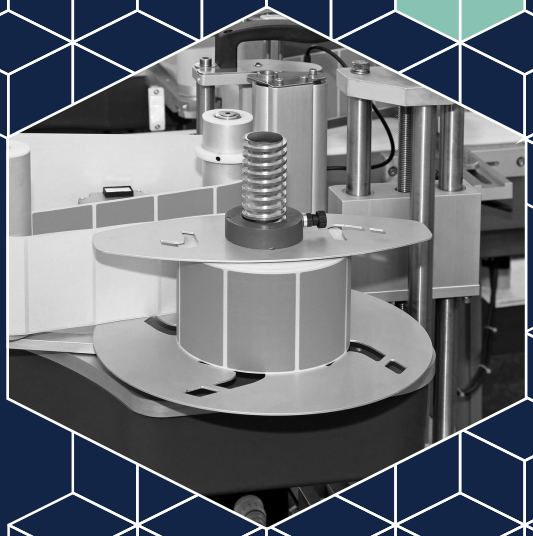

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IN THIS **CATALOGUE**

LINEAR COMPONENTS

LINEAR GUIDEWAYS

LEAD SCREWS & NUTS

BALL SCREWS & NUTS

LINEAR BALL BUSHES

LINEAR SHAFT BARS

LINEAR SHAFT SUPPORTS & RAILS

LONG LINEAR RAILS

IN THIS **CATALOGUE**

MECHANICAL COMPONENTS

SHOULDER SCREWS

CAPTIVE SCREWS

THUMB SCREWS

LINKAGES & ROTARY COMPONENTS

UNIVERSAL JOINTS

WORKHOLDING

CLAMPING & HEIGHT SETTING

DESIGN ELEMENTS

POSITIONING ELEMENTS

IN THIS **CATALOGUE**

MACHINING CENTRE

INJECTION MOULDING

Automotion hardened steel linear rails are regularly used in injection machine moulding machines due to their durable nature that improves longevity and repeatability. Also our **high-precision bearings** are ideal for maintaining consistent, accurate movements, ensuring tight tolerances for quality moulding.

Due to excellent thermal stability which prevents deformations under high temperatures, our **stainless steel shafts** are a popular choice. **Wixroyd ergonomic handles** are commonly used for ease of maintenance and frequent use.

Additional products, all available ONLINE.

L1016 & L1016.U
LINEAR GUIDE RAIL & CARRIAGE
Hardened & ground steel.

P0150
CAPTIVE SCREW PAN HEAD
Stainless steel (AISI 303).

L1772
HARDENED STAINLESS SHAFTS
Corrosion resistant.

L1751
STAINLESS LINEAR CARRIAGES
Aluminium housing.

S0523
SURFACE MOUNT LEAF HINGES
Stainless steel (AISI 304).

79250
PULL HANDLES
Polyamide.

P2161
STAINLESS MACHINE MOUNTS
Stainless steel (AISI 304).

sales@wixroyd.com

STAINLESS COMPONENTS

Due to the ability to maintain hygiene and withstand cleaning products, our stainless steel **Wixroyd** & **Automotion** components are the first choice for food packaging machines. Our precision captive and shoulder screws are largely trusted and facilitate reliable sealing and easy cleaning, minimising operational disruptions.

34713
LEVELLING FEET BOLT DOWN, HD
Stainless steel (AISI 303).

P0130.A2
SHOULDER SCREWS CAP HEAD
Stainless steel (AISI 303).

P0149.A2
CAPTIVE SCREWS BUTTON HEAD
Stainless steel (AISI 303).

S0563
SURFACE MOUNT LEAF HINGES
Polyamide.

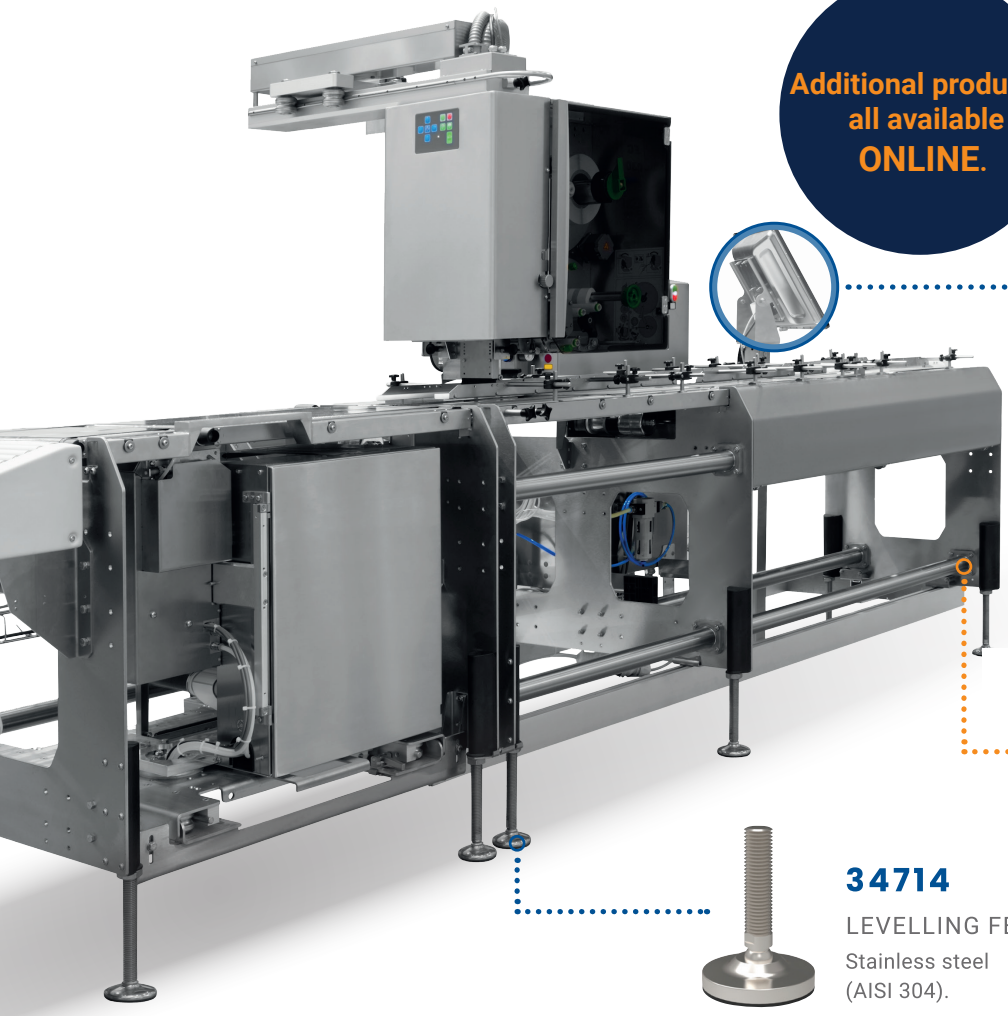
L1709 & L1772
BALL BUSHING & STAINLESS SHAFT
Stainless steel (440c).

P0151.A2
CAPTIVE SCREWS BUTTON HEAD
Stainless steel (AISI 303).

79760
PULL HANDLES 3A STANDARD
Stainless steel (AISI 304).

Additional products, all available ONLINE.

73004
BALL KNOBS
Stainless steel 1.4305.



S4022
CONSTANT TORQUE FRICTION TORQUE HINGES
Stainless steel (AISI 430).

L1872
SQUARE FLANGED BEARING UNITS
Stainless steel (AISI 304).

34714
LEVELLING FEET
Stainless steel (AISI 304).

LINEAR & DESIGN ELEMENTS

Automotion lead screws, nuts, shafts and bearings offer accurate linear movement, making them a preferred choice to ensure precise positioning and alignment, which is a key for labelling machines.

To ensure secure mounting, our **shoulder screws** are ideal as they reduce vibration and loosening over time. Designers often use our ergonomically designed **Wixroyd handwheels and handles with textured grips,** to further enhance control and comfort during machine operation.

Additional products, all available ONLINE.

P0144.ZP
PAN HEAD SHOULDER SCREW
Steel, zinc plated.

77340
TWO SPOKED HANDWHEELS
Duroplast, black, matt. Zinc plated steel hub.

33927
ONE TOUCH FASTENER BALL CLAMPING
Steel, nickel plated.

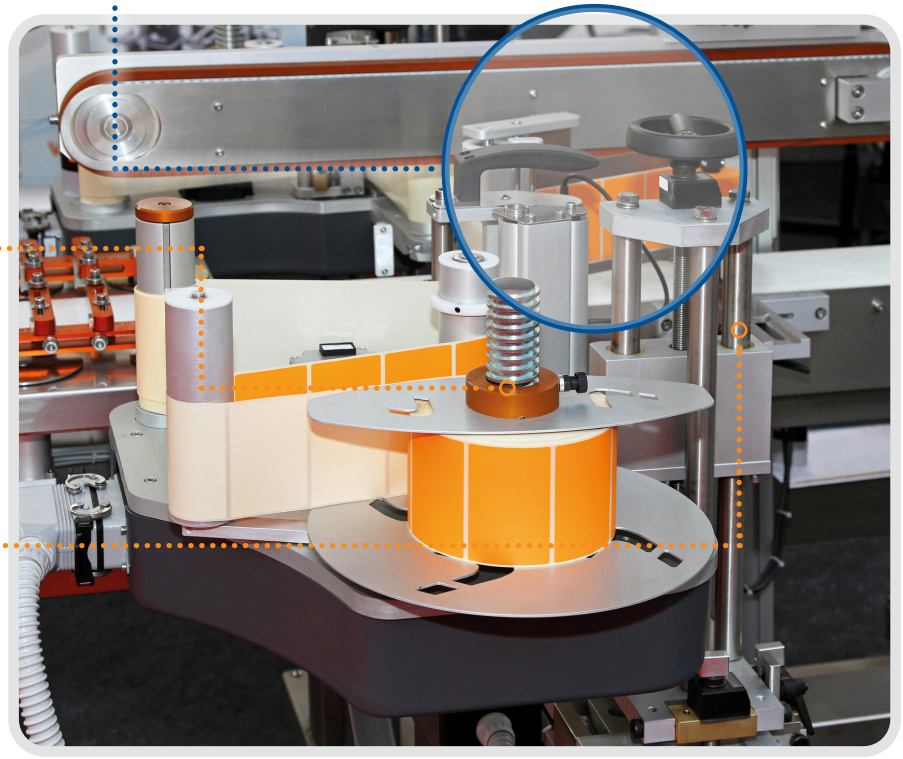
L1470
POSITION COUNTER
Black thermoplastic, burnished steel bushing.

78190
PULL HANDLES
Thermoplastic PA 6, glass ball reinforced, matt black.

74760
ADJUSTABLE CLAMPING LEVERS
Black, matt thermoplast, reinforced.

L1320 & L1330
LEAD SCREW & CYLINDRICAL BRONZE NUT
Steel & bronze.

L1770 & L1706
HARDENED STEEL SHAFT & CLOSED BALL BUSHING
Carbon steel & bearing steel.



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MRI SCANNERS

MRI scanners and similar large medical machinery utilise long ball screws to create the movement of the bed in and out of the scanner. Due to the non-magnetic property of aluminium, the L1018 rail is well-suited to MRI scanners to prevent interference with the MRI's magnetic field, which can distort images.

Additionally, our stainless steel lead screws can withstand stringent cleaning protocols whilst allowing smooth operation to minimise vibrations and ensure accurate positioning, essential for image quality.

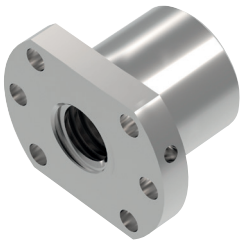
Additional products, all available ONLINE.

L1375

BALL SCREW
Rolled.

Materials Available:

Steel (CF53 or C55R), induction hardened to 60 HRC ±2, polished.

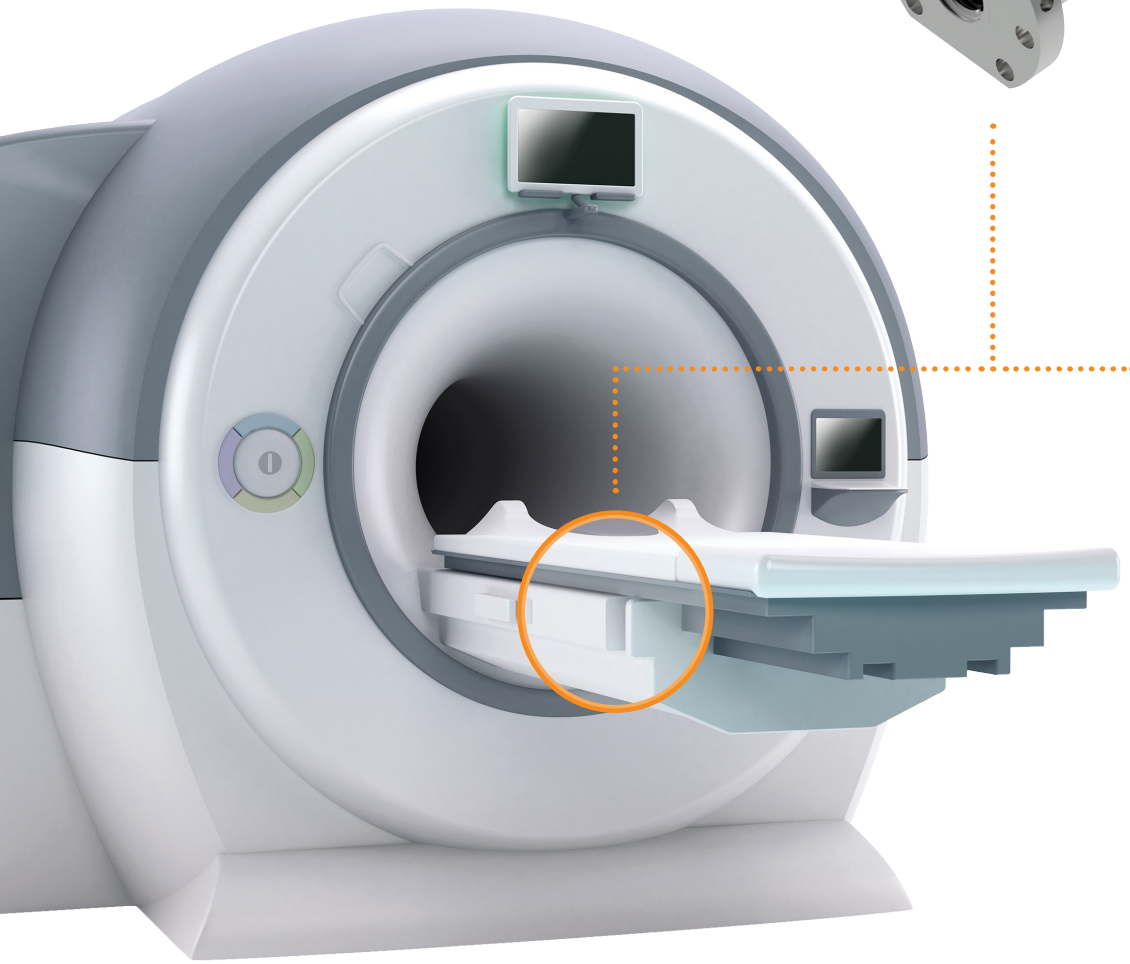


L1370

FLANGED BALL NUTS

Materials Available:

Steel (16MnCr5 or 100Cr6), with Vulkollan seals.



L2052

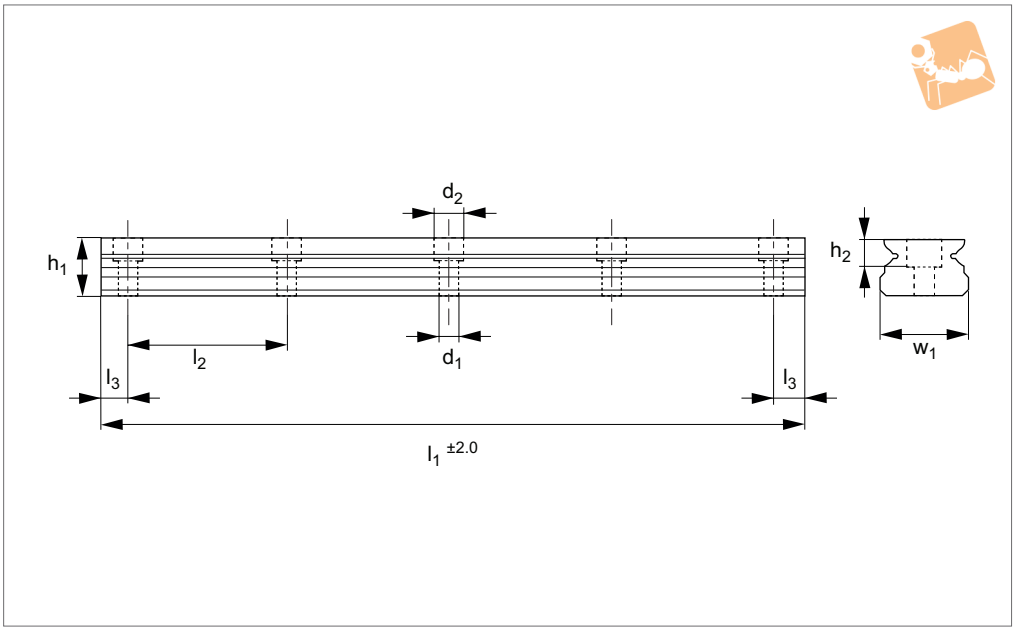
STAINLESS AISI 316 SLIDES

Materials Available:

Stainless steel (A4, AISI 316) - rail, balls and ball cage.

Miniature Linear Rail
standard width

L1010



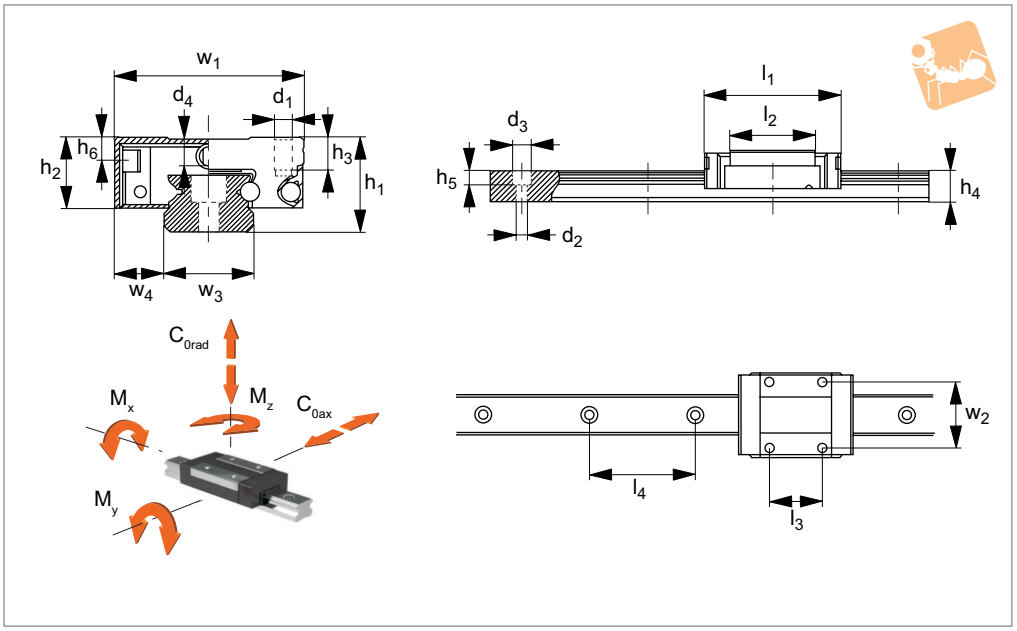
Material
Corrosion resistant stainless steel, hardened (similar to 440C).

Technical Notes
Supplied with special low profile hex screws.

Select the size and number of carriages to suit the required load (see part L1010.C).
Other rail lengths on request.
Weight: 0.05 Kg/m.

Important Notes
This size rail has a through thread from underside.
Must be ordered with corresponding sized carriage. **Replace xxxx with desired rail length eg. L1010.03-1000 is 1000mm long.**

Order No.	w_1	$l_{1\ max.}$	l_2	l_3	h_1	h_2	d_1	d_2	For screws
L1010.03-xxxx	3	1000	10	2.5	2.6	-	-	-	M 1.6
L1010.05-xxxx	5	1000	15	5.0	3.5	1.0	2.4	3.5	M 2
L1010.07-xxxx	7	1000	15	5.0	4.7	2.3	2.4	4.2	M 2
L1010.09-xxxx	9	1000	20	7.5	5.5	3.5	3.5	6.0	M 3
L1010.12-xxxx	12	1000	25	10.0	7.5	4.5	3.5	6.0	M 3
L1010.15-xxxx	15	1000	40	15.0	9.5	4.5	3.5	6.0	M 3



L1010.C

Material
Corrosion resistant stainless steel body (440C), with hardened stainless steel ball bearings.
Black plastic end plates and ball bearing retainers.

Technical Notes
Max.speed 3 m/s. max. acceleration 40m/s^2.

Temperature range -40°C to +80°C.
Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1010.07 through to L1010.15).

Tips
Carriages are supplied with a dummy plastic rail. When mounting carriages onto rail, slide directly from the dummy rail onto the steel rail. Do not simply remove the carriage from the dummy rail - the balls will become loose making the carriage unusable.

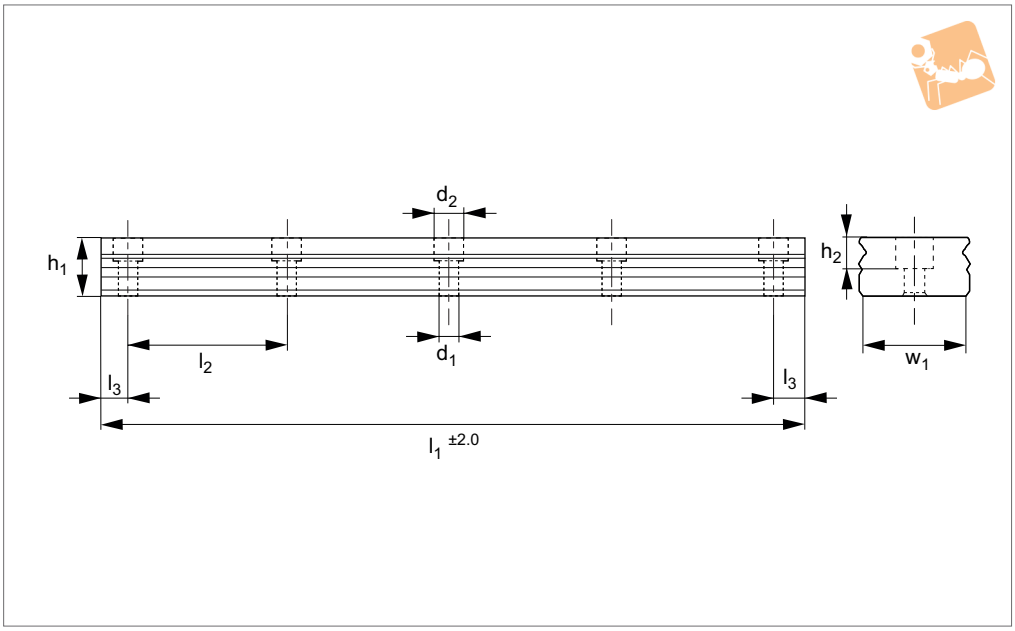
Important Notes
*Size 3 and Size 5 carriage must be ordered with rails.

Order No.	For rail	l_1	l_2	l_3	l_4	h_1	h_2	h_3	h_4	h_5	h_6	d_2	d_3	d_4	For screws d_1	Weight g
L1010.C03	3*	11.9	6.7	3.5	10	4	3.2	1.1	2.6	-	1.5	-	M 1.6	0.3	M 1.6	0.9
L1010.C03L	3*	16.1	11.0	5.5	10	4	3.2	1.1	2.6	-	1.5	-	M 1.6	0.3	M 2	1.2
L1010.C05	5*	16.3	10.0	-	15	6	4.7	1.5	3.5	1.0	2.0	2.4	3.5	0.7	M 2	3.5
L1010.C05L	5*	19.7	13.5	7	15	6	4.6	2.0	3.5	1.0	2.0	2.4	3.5	0.7	M 2.6	4.0
L1010.C07	7	24.1	14.3	8	15	8	6.6	2.5	4.7	2.3	2.8	2.4	4.2	1.1	M 2	8.0
L1010.C07L	7	31.5	21.8	13	15	8	6.7	2.5	4.7	2.3	2.8	2.4	4.2	1.1	M 2	14.0
L1010.C09	9	30.9	20.5	10	20	10	7.9	3.0	5.5	3.5	3.3	3.5	6.0	1.3	M 3	18.0
L1010.C09L	9	41.1	30.8	16	20	10	8.0	3.0	5.5	3.5	3.3	3.5	6.0	1.3	M 3	28.0
L1010.C12	12	35.8	22.0	15	25	13	10.1	3.5	7.5	4.5	4.3	3.5	6.0	1.3	M 3	34.0
L1010.C12L	12	47.8	34.0	20	25	13	10.2	3.5	7.5	4.5	4.3	3.5	6.0	1.3	M 3	51.0
L1010.C15	15	43.4	27.0	20	40	16	12.2	5.5	9.5	4.5	4.3	3.5	6.0	1.8	M 3	61.0
L1010.C15L	15	60.2	44.0	25	40	16	12.2	5.5	9.5	4.5	4.3	3.5	6.0	1.8	M 3	90.0

Order No.	Static load $C_{0rad\ \&\ ax}$ N	w_1	w_2	w_3	w_4	Dyn. load $C_{rad\ \&\ ax}$ N	M_x Nm	M_y Nm	M_z Nm
L1010.C03	310	8	-	3	2.5	190	0.6	0.4	0.4
L1010.C03L	575	8	-	3	2.5	295	0.9	1.1	1.1
L1010.C05	550	12	8	5	3.5	335	1.7	1.0	1.0
L1010.C05L	900	12	-	5	3.5	470	2.4	2.1	2.1
L1010.C07	1440	17	12	7	5.0	890	5.2	3.3	3.3
L1010.C07L	2440	17	12	7	5.0	1310	9.0	7.7	7.7
L1010.C09	2495	20	15	9	5.5	1570	11.7	6.4	6.4
L1010.C09L	3880	20	15	9	5.5	2135	18.2	12.4	12.4
L1010.C12	3465	27	20	12	7.5	2308	21.5	12.9	12.9
L1010.C12L	5630	27	20	12	7.5	3240	34.9	30.2	30.2
L1010.C15	5590	32	25	15	8.5	3810	43.6	27.0	27.0
L1010.C15L	9080	32	25	15	8.5	5350	70.0	63.3	63.3

Miniature Linear Rail
wide version

L1012

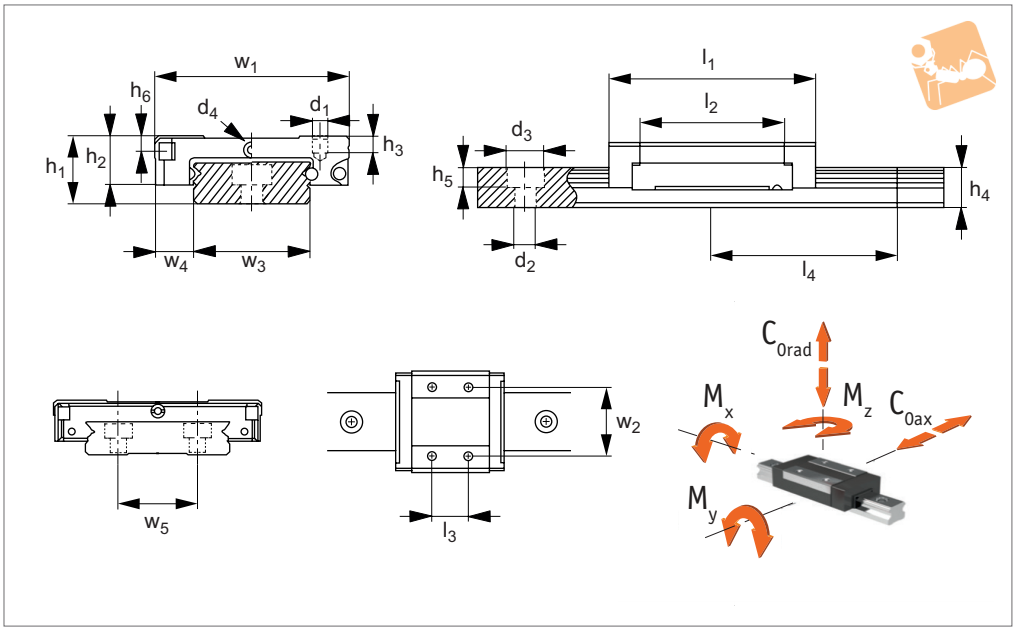


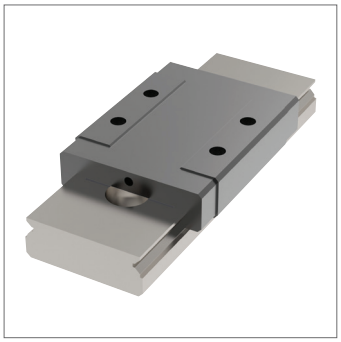
Material
Corrosion resistant stainless steel, hardened (similar to 440C).

Technical Notes
Select the size and number of carriages to suit the required load (see part L1012.C).
Other rail lengths on request.
Weight: 0.3 Kg/m.

Replace xxxx with desired rail length eg. L1012.10-1000 is 1000mm long.

Order No.	$l_{1\ max.}$	l_2	l_3	h_1	h_2	d_1	d_2	For screws	w_1
L1012.10-xxxx	1000	20	7.5	4.0	1.6	3.0	5.5	M 2.5	-
L1012.14-xxxx	1000	30	10.0	5.2	3.5	3.5	6.0	M 3	-
L1012.18-xxxx	1000	30	10.0	7.3	4.5	3.5	6.0	M 3	-
L1012.24-xxxx	1000	40	15.0	8.5	4.5	4.5	8.0	M 4	-
L1012.42-xxxx	1000	40	15.0	9.5	4.5	4.5	8.0	M 4	23





L1012.C

Material

Corrosion resistant stainless steel body (440C), with hardened stainless steel ball bearings.
Black plastic end plates and ball bearing retainers.

Technical Notes

Max.speed 3 m/s. max. acceleration 40m/s².
Temperature range -40°C to +80°C.
Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1012.10 through to L1012.42).

Tips

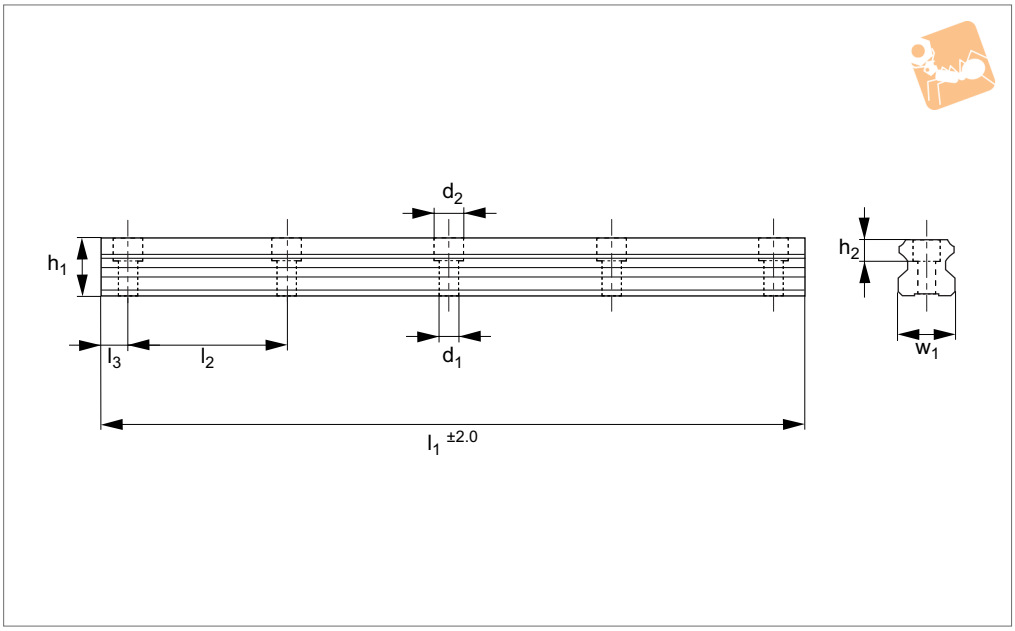
Carriages are supplied with a dummy (plastic) rail. When mounting carriages onto rail, slide directly from the dummy rail onto the steel rail. Do not simply remove the carriage from the dummy rail - the balls will become loose making the carriage unusable.

Order No.	For rail	l_1	l_2	l_3	l_4	h_1	h_2	h_3	h_4	h_5	h_6	d_1	d_2	d_3	d_4	Static load $C_{0rad\ \&\ ax}$ N	Weight g
L1012.C10	10	21.1	15.1	6.5	20	6.5	5.0	1.5	4.0	1.6	2.3	M 2.5	3.0	5.5	0.9	900	8
L1012.C10L	10	27.2	21.2	11	20	6.5	5.0	1.5	4.0	1.6	2.3	M 2.5	3.0	5.5	0.9	1315	19
L1012.C14	14	31.6	21.2	10	30	9.0	7.0	3.0	5.2	3.5	3.2	M 3	3.5	6.0	1.1	2095	27
L1012.C14L	14	40.5	30.1	19	30	9.0	7.0	3.0	5.2	3.5	3.2	M 3	3.5	6.0	1.1	3140	37
L1012.C18	18	39.1	27.9	12	30	12.0	8.6	3.0	7.3	4.5	4.0	M 3	3.5	6.0	1.3	3605	37
L1012.C18L	18	50.7	39.5	24	30	12.0	8.6	3.0	7.3	4.5	4.0	M 3	3.5	6.0	1.3	4990	57
L1012.C24	24	44.4	31.0	15	40	14.0	10.1	3.5	8.5	4.5	4.5	M 3	4.5	8.0	1.3	5200	65
L1012.C24L	24	59.4	46.0	28	40	14.0	10.1	3.5	8.5	4.5	4.5	M 3	4.5	8.0	1.3	7800	93
L1012.C42	42	55.3	38.5	20	40	16.0	12.0	4.5	9.5	4.5	4.5	M 4	4.5	8.0	1.8	8385	137
L1012.C42L	42	74.4	57.6	35	40	16.0	12.0	4.5	9.5	4.5	4.5	M 4	4.5	8.0	1.8	12580	200

Order No.	w_1	w_2	w_3	w_4	w_5	Dyn. load $C_{rad\ \&\ ax}$ N	M_x Nm	M_y Nm	M_z Nm
L1012.C10	17	13	10	3.5	-	475	4.6	2.2	2.2
L1012.C10L	17	13	10	3.5	-	615	6.8	4.1	4.1
L1012.C14	25	19	14	5.5	-	1180	15.0	7.3	7.3
L1012.C14L	25	19	14	5.5	-	1570	22.6	14.9	14.9
L1012.C18	30	21	18	6.0	-	2030	33.2	13.7	13.7
L1012.C18L	30	23	18	6.0	-	2550	45.9	26.7	26.7
L1012.C24	40	28	24	8.0	-	3065	63.7	26.3	26.3
L1012.C24L	40	28	24	8.0	-	4070	95.6	56.4	56.4
L1012.C42	60	45	42	9.0	23	5065	171.7	45.7	45.7
L1012.C42L	60	45	42	9.0	23	6725	257.0	93.1	93.1

Linear Guide Rail
standard

L1016

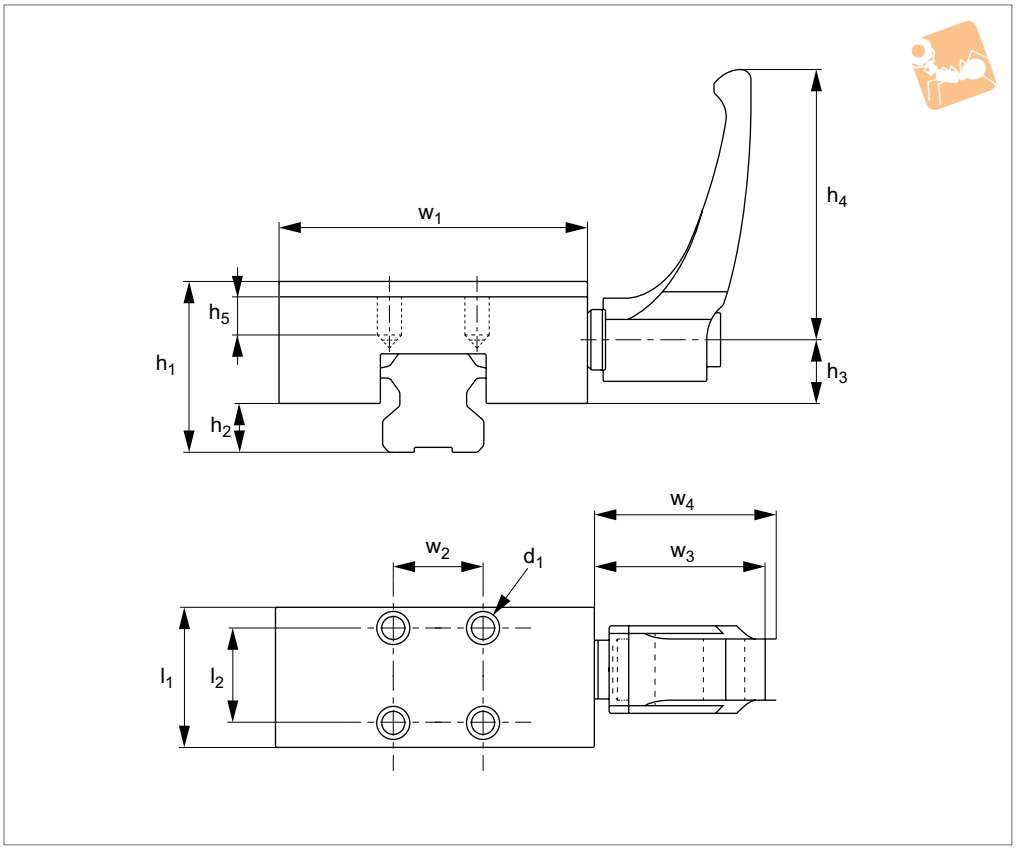


Material
Hardened and ground steel (typically 60 HRc).

Technical Notes
For carriages to suit the required load see part nos. L1016.F (flanged) and L1016.U (unflanged).
Other rail lengths on request.
Weight: 1.4 Kg/m.

Tips
Plastic screw covers issued with the rails to protect screw holes from debris.
Replace xxxx with desired rail length eg. L1016-15-1000 is 1000mm long.

Order No.	Rail size	$l_{1\ max.}$	h_1	l_2	w_1	l_3	h_2	d_1	d_2	For screws
L1016.15-xxxx	15	4000	13.0	60	15	20.0	6.0	4.5	7.5	M 4
L1016.20-xxxx	20	4000	16.3	60	20	20.0	8.5	6.0	9.5	M 5
L1016.25-xxxx	25	4000	19.2	60	23	20.0	9.0	7.0	11.0	M 6
L1016.30-xxxx	30	4000	22.8	80	28	20.0	12.0	9.0	14.0	M 8
L1016.35-xxxx	35	4000	26.0	80	34	20.0	12.0	9.0	14.0	M 8
L1016.45-xxxx	45	4000	31.1	105	45	22.5	17.0	14.0	20.0	M 12
L1016.55-xxxx	55	4000	38.0	120	53	30.0	20.0	16.0	23.0	M 14



L1016.CL

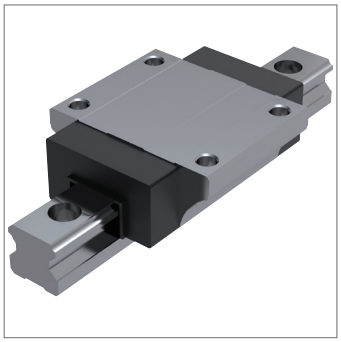
Material
Aluminium body, steel contact faces.

Technical Notes
The manual rail clamps are used in conjunction with the rail carriages L1016.F and L1016.U (flanged and unflanged).

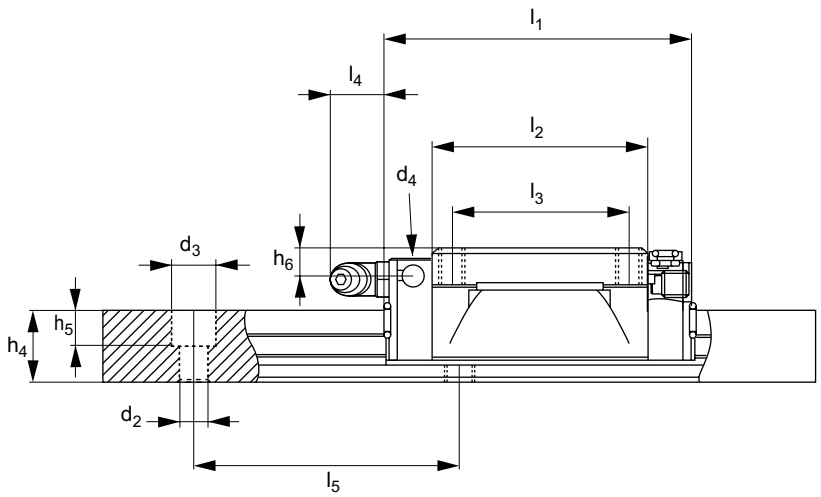
By adjusting the clamping lever, the contact sections are pressed into contact with the rail, clamping the carriage in place.

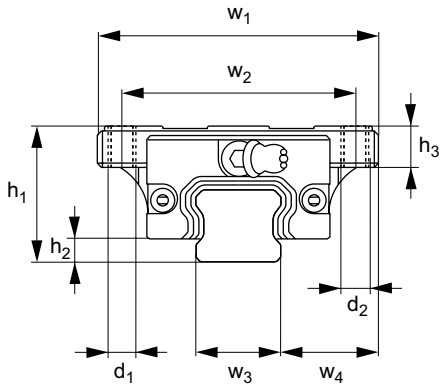
Order No.	For rail	h_1	l_1	w_1	h_2	h_3	h_4	l_2	w_2	w_3	w_4	d_1	Holding force N	Torque to Nm
L1016.CL15-24	15	24	25	47	4.5	12.5	44	17	17	30.5	33.5	M 4	1200	5
L1016.CL15-28	15	28	25	47	4.5	12.5	44	17	17	30.5	33.5	M 4	1200	5
L1016.CL20-28	20	28	24	60	8.0	13.0	63	15	15	38.5	41.5	M 5	1200	7
L1016.CL20-30	20	30	24	60	8.0	13.0	63	15	15	38.5	41.5	M 5	1200	7
L1016.CL25-33	25	33	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL25-36	25	36	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL25-40	25	40	30	70	9.0	15.0	63	20	20	38.5	41.5	M 6	1200	7
L1016.CL30-42	30	42	39	90	12.0	21.5	78	22	22	46.5	50.5	M 6	2000	15
L1016.CL35-48	35	48	39	100	13.0	21.5	78	24	24	46.5	50.5	M 8	2000	15
L1016.CL45-60	45	60	44	120	12.0	26.5	78	26	26	46.5	50.5	M 10	2000	15
L1016.CL55-70	55	70	49	140	17.0	31.0	95	30	30	56.5	61.5	M 14	2000	22

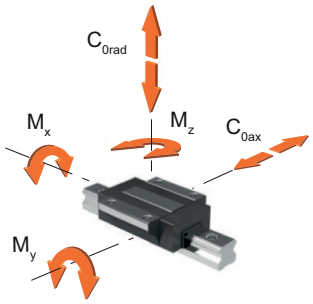
Flanged Carriages - Standard
with retained ball cage



L1016.F







Material
Hardened and ground steel.

Technical Notes
Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55). Standard preload carriages are K_0 (no preload) or K_1 (0.02 x dynamic load capacity). Other preloads available on request.

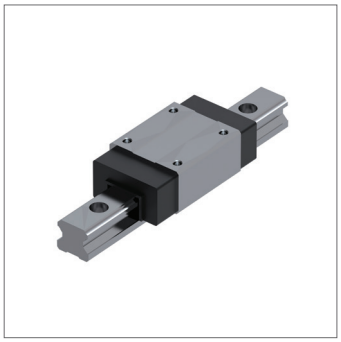
Tips
Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	l_1	h_1	l_2	w_1	l_3	h_2	h_3	h_4	d_1	h_5	d_2	h_6	w_2	w_3	w_4	l_4	Weight kg
L1016.F15	15	58.6	24	40.2	47	30	3.4	7.5	13.0	M 5	5.5	4.4	5.5	38	15	16.0	5.7	0.21
L1016.F15-L	15	66.1	24	47.7	47	30	3.4	7.5	13.0	M 5	5.5	4.4	5.5	38	15	16.0	5.7	0.23
L1016.F20	20	70.1	30	48.5	63	40	4.5	9.0	16.3	M 6	8.5	5.4	7.1	53	20	21.5	12.3	0.40
L1016.F20-L	20	82.9	30	61.3	63	40	4.5	9.0	16.3	M 6	8.5	5.4	7.1	53	20	21.5	12.3	0.46
L1016.F25	25	79.2	36	57.5	70	45	5.8	10.1	19.2	M 8	9.0	6.8	10.2	57	23	23.5	12.2	0.57
L1016.F25-L	25	93.9	36	72.2	70	45	5.8	10.1	19.2	M 8	9.0	6.8	10.2	57	23	23.5	12.2	0.72
L1016.F25-XL	25	108.6	36	86.9	70	45	5.8	10.1	19.2	M 8	9.0	6.8	10.2	57	23	23.5	12.2	0.89
L1016.F30	30	94.8	42	67.8	90	52	7.0	12.0	22.8	M 10	12.0	8.6	10.0	72	28	31.0	11.7	1.10
L1016.F30-L	30	105.0	42	78.0	90	52	7.0	12.0	22.8	M 10	12.0	8.6	10.0	72	28	31.0	11.7	1.34
L1016.F30-XL	30	130.5	42	103.5	90	52	7.0	12.0	22.8	M 10	12.0	8.6	10.0	72	28	31.0	11.7	1.66
L1016.F35	35	111.5	48	80.5	100	62	7.5	14.0	26.0	M 10	12.0	8.6	11.5	82	34	33.0	11.5	1.50
L1016.F35-L	35	123.5	48	92.5	100	62	7.5	14.0	26.0	M 10	12.0	8.6	11.5	82	34	33.0	11.5	1.90
L1016.F35-XL	35	153.5	48	122.5	100	62	7.5	14.0	26.0	M 10	12.0	8.6	11.5	82	34	33.0	11.5	2.54
L1016.F45	45	129.0	60	94.0	120	80	8.9	16.0	31.1	M 12	17.0	10.6	14.4	100	45	37.5	10.8	2.27
L1016.F45-L	45	145.0	60	110.0	120	80	8.9	16.0	31.1	M 12	17.0	10.6	14.4	100	45	37.5	10.8	2.68
L1016.F45-XL	45	174.0	60	139.0	120	80	8.9	16.0	31.1	M 12	17.0	10.6	14.4	100	45	37.5	10.8	3.42
L1016.F55	55	155.0	70	116.0	140	95	12.7	19.0	38.0	M 14	20.0	12.6	14.0	116	53	43.5	10.8	3.44
L1016.F55-L	55	193.0	70	154.0	140	95	12.7	19.0	38.0	M 14	20.0	12.6	14.0	116	53	43.5	10.8	4.63
L1016.F55-XL	55	210.0	70	171.0	140	95	12.7	19.0	38.0	M 14	20.0	12.6	14.0	116	53	43.5	10.8	5.16

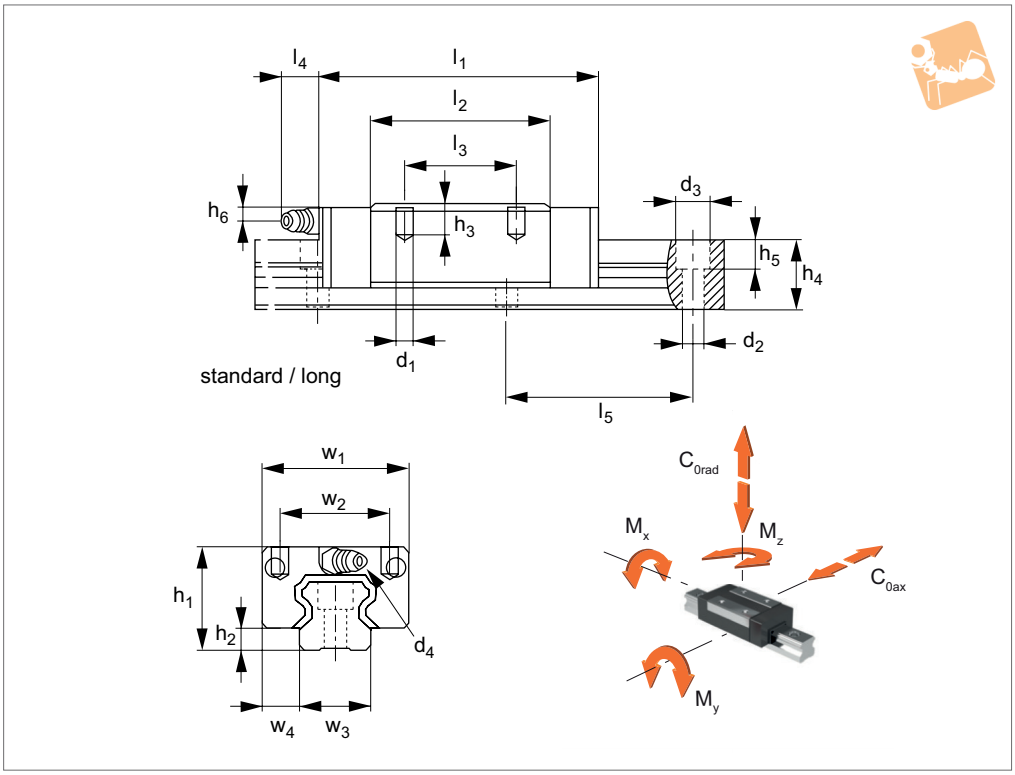
Order No.	l_5	d_3	d_4	M_x Nm	M_y Nm	M_z Nm	Dyn. load $C_{rad\ \&\ ax}$ kN	Static load $C_{0rad\ \&\ ax}$ kN
L1016.F15	60	7.5	M 3x0.5	137	120	120	11.67	19.90
L1016.F15-L	60	7.5	M 3x0.5	166	171	171	14.12	24.05
L1016.F20	60	9.5	M 6x1.0	289	224	224	17.98	30.96
L1016.F20-L	60	9.5	M 6x1.0	376	366	366	23.30	40.11
L1016.F25	60	11.0	M 6x1.0	447	358	358	25.25	41.73
L1016.F25-L	60	11.0	M 6x1.0	576	577	577	32.44	53.63
L1016.F25-XL	60	11.0	M 6x1.0	691	833	833	36.58	64.30
L1016.F30	80	14.0	M 6x1.0	719	560	560	37.33	55.50
L1016.F30-L	80	14.0	M 6x1.0	931	836	836	48.35	71.88
L1016.F30-XL	80	14.0	M 6x1.0	1142	1361	1361	53.83	88.18
L1016.F35	80	14.0	M 6x1.0	1307	991	991	53.31	82.66
L1016.F35-L	80	14.0	M 6x1.0	1633	1424	1424	66.61	103.29
L1016.F35-XL	80	14.0	M 6x1.0	2020	2330	2330	73.29	127.68
L1016.F45	105	20.0	M 8x1.25	2353	1559	1559	73.14	111.30
L1016.F45-L	105	20.0	M 8x1.25	2798	2170	2170	86.99	132.39
L1016.F45-XL	105	20.0	M 8x1.25	3527	3455	3455	100.52	166.87
L1016.F55	120	23.0	M 8x1.25	3385	2361	2361	88.26	136.62
L1016.F55-L	120	23.0	M 8x1.25	4538	4202	4202	119.10	183.14
L1016.F55-XL	120	23.0	M 8x1.25	6430	6617	6617	161.43	259.71

Unflanged Carriages - Standard

with retained ball cage



L1016.U



Material

Hardened and ground steel.

Technical Notes

Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55). Standard preload carriages are K_0 (no preload) or K_1 (0,02 x dynamic load capacity). Other preloads available on request.

Tips

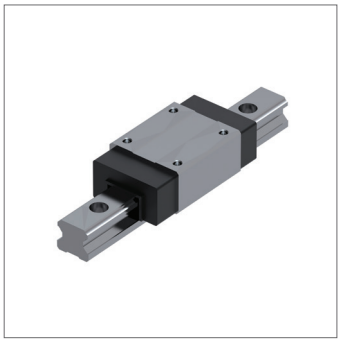
Improved version with ball cages allowing the carriages to be removed from the rail without the balls falling out.

Order No.	Rail size	l_1	h_1	l_2	w_1	l_3	h_2	h_3	h_4	d_1	h_5	d_2	h_6	w_2	w_3	w_4	l_4	Weight kg
L1016.U15	15	58.6	28	40.2	34	26	3.3	6.0	13.0	M 4	6.0	4.5	9.5	26	15	9.5	5.0	0.19
L1016.U20	20	69.3	30	48.5	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.31
L1016.U20-L	20	82.1	30	61.3	44	36	4.5	6.5	16.3	M 5	8.5	6.0	7.1	32	20	12.0	15.6	0.36
L1016.U25	25	79.2	40	57.5	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.45
L1016.U25-L	25	93.9	40	72.2	48	35	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.66
L1016.U25-XL	25	108.6	40	86.9	48	50	5.8	9.0	19.2	M 6	9.0	7.0	14.2	35	23	12.5	15.6	0.80
L1016.U30	30	94.8	45	67.8	60	40	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	0.91
L1016.U30-L	30	105.0	45	78.0	60	40	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	1.04
L1016.U30-XL	30	130.5	45	103.5	60	60	7.0	12.0	22.8	M 8	12.0	9.0	13.0	40	28	16.0	15.6	1.36
L1016.U35	35	111.5	55	80.5	70	50	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	1.50
L1016.U35-L	35	123.5	55	92.5	70	50	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	1.80
L1016.U35-XL	35	153.5	55	122.5	70	72	7.5	12.0	26.0	M 8	12.0	9.0	18.5	50	34	18.0	15.6	2.34
L1016.U45	45	129.0	70	94.0	86	60	8.9	18.0	31.1	M 10	17.0	14.0	24.5	60	45	20.5	16.0	2.28
L1016.U45-L	45	145.0	70	110.0	86	60	8.9	18.0	31.1	M 10	17.0	14.0	24.5	60	45	20.5	16.0	2.67
L1016.U45-XL	45	174.0	70	139.0	86	80	8.9	18.0	31.1	M 10	17.0	14.0	24.5	60	45	20.5	16.0	3.35
L1016.U55	55	155.0	80	116.0	100	75	12.7	22.0	38.0	M 12	20.0	16.0	24.0	75	53	23.5	16.0	3.42
L1016.U55-L	55	193.0	80	154.0	100	75	12.7	22.0	38.0	M 12	20.0	16.0	24.0	75	53	23.5	16.0	4.57
L1016.U55-XL	55	210.0	80	171.0	100	95	12.7	22.0	38.0	M 12	20.0	16.0	24.0	75	53	23.5	16.0	5.08

Order No.	l_5	d_3	d_4	M_x Nm	M_y Nm	M_z Nm	Dyn. load $C_{rad\ \&\ ax}$ kN	Static load $C_{0rad\ \&\ ax}$ kN
L1016.U15	60	7.5	M 3x0.50	137	120	120	11.67	19.90
L1016.U20	60	9.5	M 6x1.00	289	224	224	17.98	30.96
L1016.U20-L	60	9.5	M 6x1.00	376	366	366	23.30	40.11
L1016.U25	60	11.0	M 6x1.00	447	358	358	25.25	41.73
L1016.U25-L	60	11.0	M 6x1.00	576	577	577	32.44	53.63

Order No.	l_5	d_3	d_4	M_x Nm	M_y Nm	M_z Nm	Dyn. load $C_{rad\ \&\ ax}$ kN	Static load $C_{0rad\ \&\ ax}$ kN
L1016.U25-XL	60	11.0	M 6x1.00	691	833	833	36.58	64.30
L1016.U30	80	14.0	M 6x1.00	719	560	560	37.33	55.50
L1016.U30-L	80	14.0	M 6x1.00	931	836	836	48.35	71.88
L1016.U30-XL	80	14.0	M 6x1.00	1142	1361	1361	53.83	88.18
L1016.U35	80	14.0	M 6x1.00	1307	991	991	53.31	82.66
L1016.U35-L	80	14.0	M 6x1.00	1633	1424	1424	66.61	103.29
L1016.U35-XL	80	14.0	M 6x1.00	2020	2330	2330	73.29	127.68
L1016.U45	105	20.0	M 8x1.25	2353	1559	1559	73.14	111.30
L1016.U45-L	105	20.0	M 8x1.25	2798	2170	2170	86.99	132.39
L1016.U45-XL	105	20.0	M 8x1.25	3527	3455	3455	100.52	166.87
L1016.U55	120	23.0	M 8x1.25	3385	2361	2361	88.26	136.62
L1016.U55-L	120	23.0	M 8x1.25	4538	4202	4202	119.10	183.14
L1016.U55-XL	120	23.0	M 8x1.25	6430	6617	6617	161.43	259.71

Unflanged Carriages - Low
with retained ball cage



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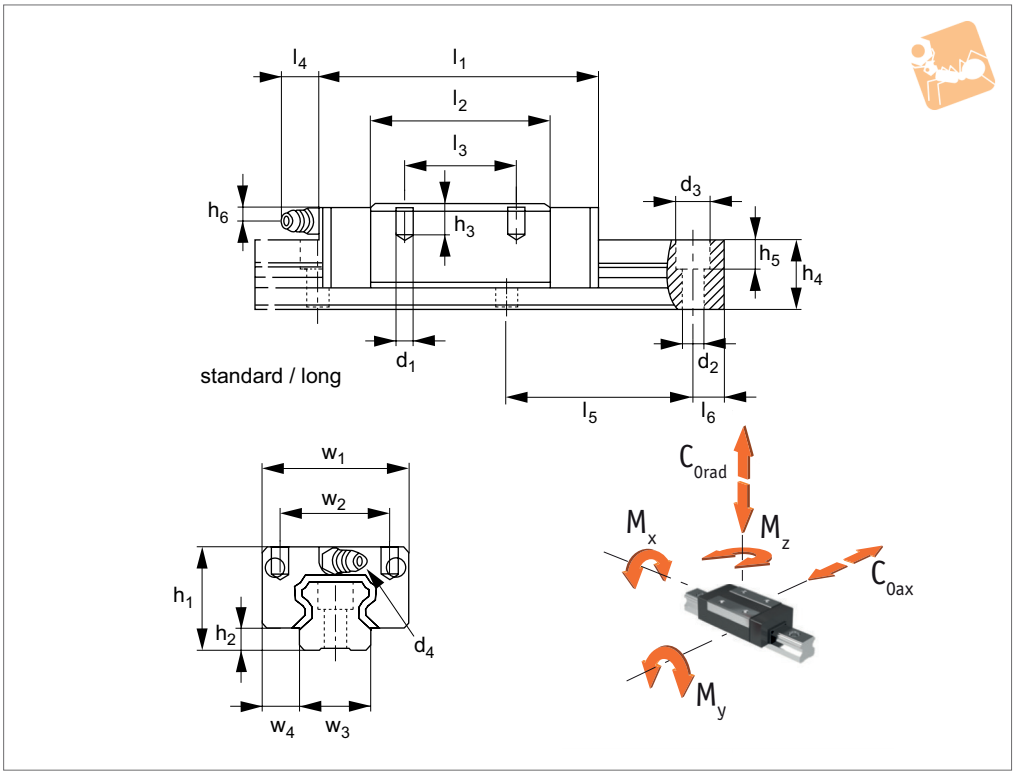


Material
Hardened and ground steel.

Technical Notes
Select the size and number of carriages to suit the required load then select the required rail length, (see part nos. L1016.15 through to L1016.55).

Standard preload carriages are K_0 (no preload) or K_1 (0,02 x dynamic load capacity). Other preloads available on request.

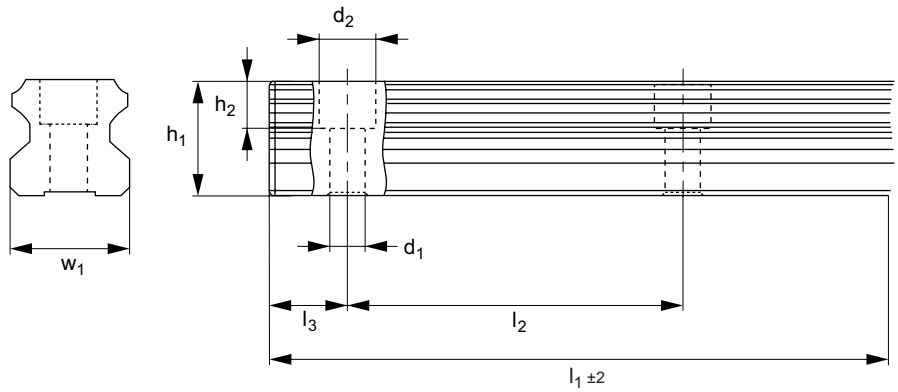
Order No.	Rail size	l_1	h_1	l_2	w_1	l_3	h_2	h_3	h_4	d_1	h_5	d_2	h_6	w_2	w_3	w_4	l_4	Weight kg
L1016.UL15-S	15	40.6	24	22.2	34	-	3.3	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.10
L1016.UL15	15	58.6	24	40.2	34	26	3.3	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.17
L1016.UL15-L	15	66.1	24	47.7	34	26	3.0	4.8	13.0	M 4	6.0	4.5	5.5	26	15	9.5	5.0	0.18
L1016.UL20-S	20	48.3	28	27.5	42	-	4.5	5.5	16.3	M 5	8.5	6.0	5.1	32	20	11.0	15.6	0.17
L1016.UL20	20	69.3	28	48.5	42	32	4.5	5.5	16.3	M 5	8.5	6.0	7.1	32	20	11.0	15.6	0.26
L1016.UL25-S	25	54.0	33	32.3	48	-	5.8	6.8	19.2	M 6	9.0	7.0	7.2	35	23	12.5	15.6	0.21
L1016.UL25	25	79.2	33	57.5	48	35	5.8	6.8	19.2	M 6	9.0	7.0	7.2	35	23	12.5	15.6	0.38
L1016.UL30-S	30	64.2	42	37.2	60	-	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.50
L1016.UL30	30	94.8	42	67.8	60	40	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.80
L1016.UL30-L	30	105.0	42	78.0	60	40	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	0.94
L1016.UL30-XL	30	130.5	42	103.5	60	60	7.0	10.0	22.8	M 8	12.0	9.0	10.0	40	28	16.0	15.6	1.16
L1016.UL35-S	35	75.5	48	44.5	70	-	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	0.80
L1016.UL35	35	111.5	48	80.5	70	50	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.20
L1016.UL35-L	35	123.5	48	92.5	70	50	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.40
L1016.UL35-XL	35	153.5	48	122.5	70	72	7.5	10.0	26.0	M 8	12.0	9.0	11.5	50	34	18.0	16.0	1.84
L1016.UL45	45	129.0	60	94.0	86	60	8.9	15.5	31.1	M 10	17.0	14.0	14.4	60	45	20.5	16.0	1.64
L1016.UL45-L	45	145.0	60	110.0	86	60	8.9	15.5	31.1	M 10	17.0	14.0	14.4	60	45	20.5	16.0	1.93
L1016.UL45-XL	45	174.0	60	139.0	86	80	8.9	15.5	31.1	M 10	17.0	14.0	14.4	60	45	20.5	16.0	2.42
L1016.UL55	55	155.0	70	116.0	100	75	12.7	18.0	38.0	M 12	20.0	16.0	14.0	75	53	23.5	16.0	2.67
L1016.UL55-L	55	193.0	70	154.0	100	75	12.7	18.0	38.0	M 12	20.0	16.0	14.0	75	53	23.5	16.0	3.57
L1016.UL55-XL	55	210.0	70	171.0	100	95	12.7	18.0	38.0	M 12	20.0	16.0	14.0	75	53	23.5	16.0	3.97

Order No.	l_5	l_6	d_3	d_4	M_x Nm	M_y Nm	M_z Nm	Dyn. load $C_{rad\ \&\ ax}$ kN	Static load $C_{0rad\ \&\ ax}$ kN
L1016.UL15-S	60	20.0	7.5	M 3x0.5	69	32	32	5.81	9.90
L1016.UL15	60	20.0	7.5	M 3x0.5	137	120	120	11.67	19.90
L1016.UL15-L	60	20.0	7.5	M 3x0.5	166	171	171	14.12	24.05
L1016.UL20-S	60	20.0	9.5	M 6x1.0	148	66	66	9.25	15.93

Order No.	l_5	l_6	d_3	d_4	M_x Nm	M_y Nm	M_z Nm	Dyn. load $C_{rad\ \&\ ax}$ kN	Static load $C_{0rad\ \&\ ax}$ kN
L1016.UL20	60	20.0	9.5	M 6x1.0	289	224	224	17.98	30.96
L1016.UL25-S	60	20.0	11.0	M 6x1.0	230	103	103	12.87	21.34
L1016.UL25	60	20.0	11.0	M 6x1.0	447	358	358	25.25	41.73
L1016.UL30-S	80	20.0	14.0	M 6x1.0	356	153	153	18.50	27.51
L1016.UL30	80	20.0	14.0	M 6x1.0	719	560	560	37.33	55.50
L1016.UL30-L	80	20.0	14.0	M 6x1.0	931	836	836	48.35	71.88
L1016.UL30-XL	80	20.0	14.0	M 6x1.0	1142	1361	1361	53.83	88.18
L1016.UL35-S	80	20.0	14.0	M 6x1.0	655	275	275	26.72	41.43
L1016.UL35	80	20.0	14.0	M 6x1.0	1307	991	991	53.31	82.66
L1016.UL35-L	80	20.0	14.0	M 6x1.0	1633	1424	1424	66.61	103.29
L1016.UL35-XL	80	20.0	14.0	M 6x1.0	2020	2330	2330	73.29	127.68
L1016.UL45	105	22.5	20.0	M 8x1.25	2353	1559	1559	73.14	111.30
L1016.UL45-L	105	22.5	20.0	M 8x1.25	2798	2170	2170	86.99	132.39
L1016.UL45-XL	105	22.5	20.0	M 8x1.25	3527	3455	3455	100.52	166.87
L1016.UL55	120	30.0	23.0	M 8x1.25	3385	2361	2361	88.26	136.62
L1016.UL55-L	120	30.0	23.0	M 8x1.25	4538	4202	4202	119.10	183.14
L1016.UL55-XL	120	30.0	23.0	M 8x1.25	6430	6617	6617	161.43	259.71

Aluminium Linear Guide Rail
with stainless raceways

L1018

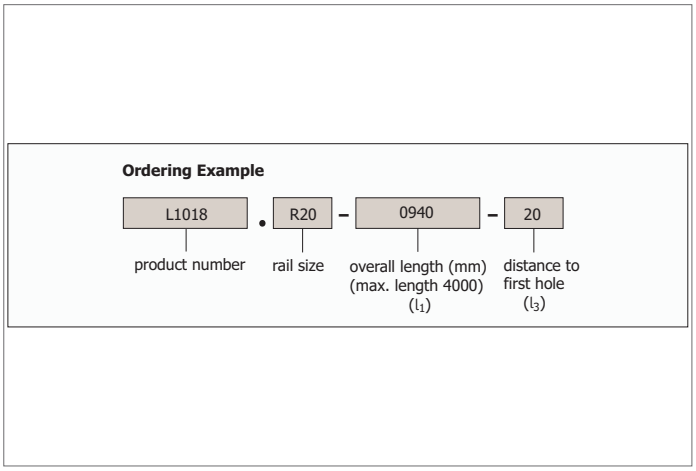


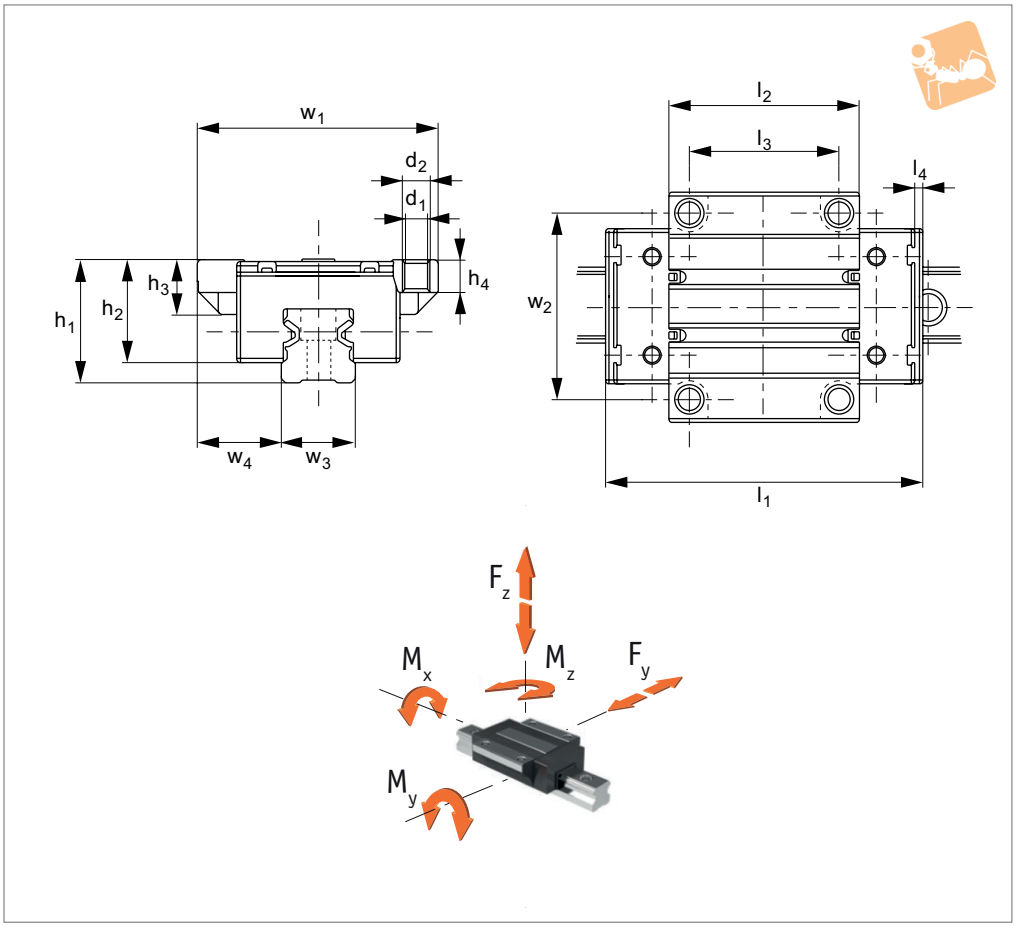
Material
Aluminium profile (AlMgSi0.5,anodized 12-15µ). Raceway stainless steel (X46Cr13), hardened to 58-62HRC.

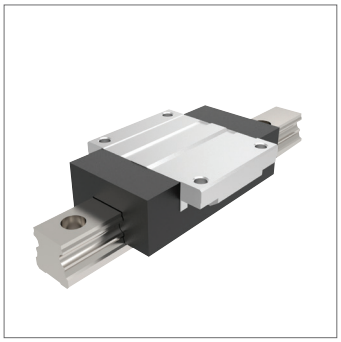
Technical Notes
Compact, light-weight design. 60% saving versus steel versions. The aluminium rails are made of high quality aluminium alloy with hardened stainless steel raceway. **Replace xxxx with desired rail length eg. L1018.15-1000 is 1000mm long.**

Tips
These are very lightweight aluminium rails and can only be used with our lightweight aluminium carriages. For standard steel linear guideways and carriages see part no. L1016.

Order No.	$l_{1\ max.}$	w_1	h_1	h_2	d_1	d_2	l_2	l_3	Weight kg
L1018.15-xxxx	4000	15	14.3	6.2	4.4	7.4	60	30	10.3
L1018.20-xxxx	4000	20	19.3	7.7	6.0	9.4	60	30	0.1
L1018.25-xxxx	4000	25	21.8	8.9	7.0	11.0	60	30	0.2







L1018.F

Material
Aluminium block (X46Cr13 hardened to F35), tensile strength 350N/mm².
Stainless steel inserts hardened, and stainless ball bearings (DIN 1.4034).

Technical Notes
Compact, light-weight design. 60% saving versus steel versions.
Select the size and number of carriages to suit the required load then select the required rail length, (see rail part nos. L1018). Standard carriages are not preloaded.
Mounting dimensions are identical to those of most steel linear guide rails, making them interchangeable.

Tips
These are aluminium rail carriages and can only be used with corresponding aluminium linear rails L1018.

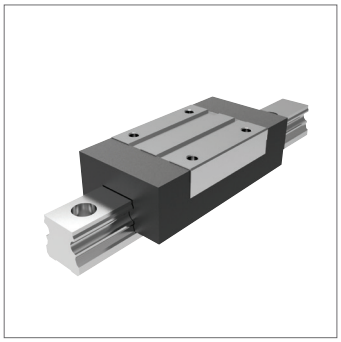
For standard steel linear guideways and carriages see part no. L1016.

Important Notes
Static loads ratings are difficult to calculate clearly due to the combination of materials. Do not exceed $F_{max.}$ or maximum static moment load rating. See load calculations on technical pages.

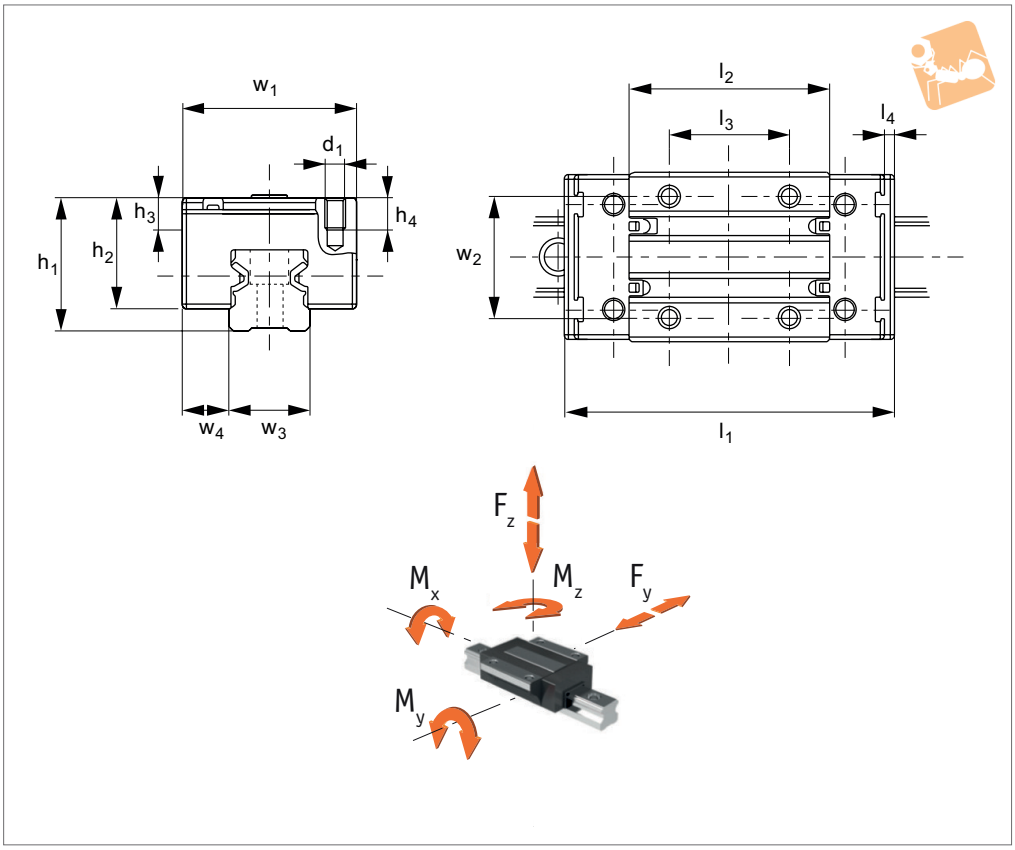
Order No.	Rail size	l_1	w_1	h_1 ±0.03	d_1	d_2	h_2	h_3	h_4	l_2	l_3	l_4	w_2	Weight kg
L1018.F15	15	64.0	47	24	4.3	M 5	19.8	11	6.0	37.8	30	2.5	38	0.08
L1018.F20	20	85.9	63	30	5.3	M 6	24.7	13	8.0	51.5	40	2.8	53	0.18
L1018.F25	25	96.0	70	36	6.7	M 8	29.9	17	9.3	58.0	45	3.0	57	0.26

Order No.	w_3	w_4 ±0.05	F max. $C_{0\ rad\ \&\ ax}$ N	Dyn. load C N	Dyn. moment M_x Nm	Dyn. moment $M_{y\ \&\ z}$ Nm	Static moment M_x Nm	Static moment $M_{y\ \&\ z}$ Nm
L1018.F15	15	16.0	2.000	5.000	36	29	14	12
L1018.F20	20	21.5	4.400	11.000	101	89	40	35
L1018.F25	23	23.5	6.400	16.000	165	147	66	59

Unflanged Aluminium Carriages
with retained ball cage



L1018.U



Material
Aluminium block (X46Cr13 hardened to F35), tensile strength 350N/mm^2.
Stainless steel inserts hardened, and stainless ball bearings (DIN 1.4034).

Technical Notes
Compact, light-weight design. 60% saving versus steel versions.
Select the size and number of carriages to suit the required load then select the required rail length, (see rail part nos. L1018). Standard carriages are not preloaded.
Mounting dimensions are identical to those of most steel linear guide rails, making them interchangeable.

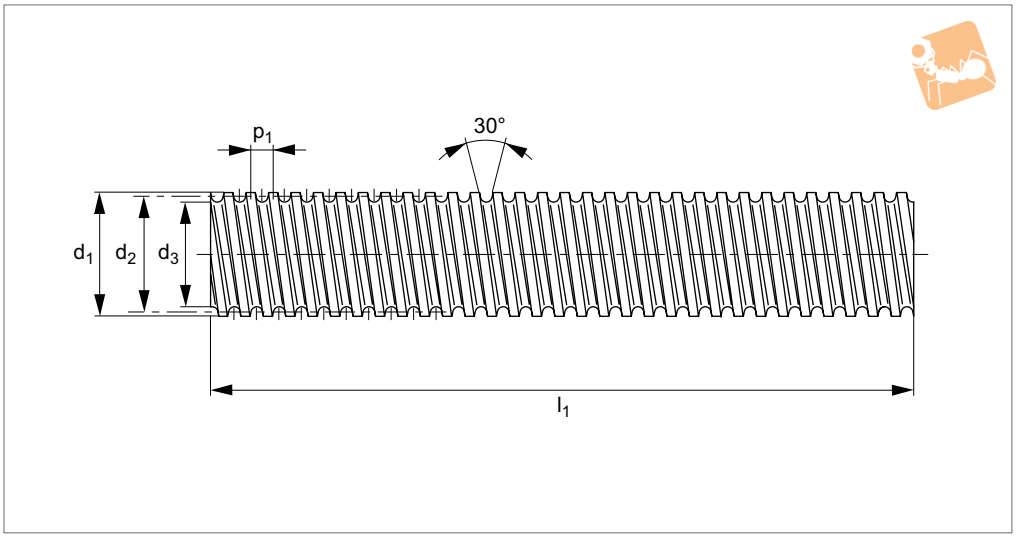
Tips
These are aluminium rail carriages and can only be used with corresponding aluminium linear rails L1018.

For standard steel linear guideways and carriages see part no. L1016.

Important Notes
Static loads ratings are difficult to calculate clearly due to the combination of materials. Do not exceed $F_{max.}$ or maximum static moment load rating.
See load calculations on technical pages.

Order No.	Rail size	l_1	w_1	h_1 ±0.03	d_1	h_2	h_3	h_4	l_2	l_3	l_4	w_2	w_3	Weight kg
L1018.U15	15	64.0	34	24	M 4	19.8	4.1	6.0	37.8	26	2.5	26	15	0.07
L1018.U20	20	85.9	44	30	M 5	24.7	5.5	7.5	51.5	36	2.8	32	20	0.15
L1018.U25	25	96.0	48	36	M 6	29.9	6.4	9.0	58.0	35	3.0	35	23	0.22

Order No.	w_4 ±0.05	F N max.	Dyn. load $C_{rad\ \&\ ax}$ N	M_x dyn. Nm	M_x static Nm max.	M_y +M_z dyn. Nm	M_y +M_z static Nm max.
L1018.U15	9.5	2.000	5.000	36	14	29	12
L1018.U20	12.0	4.400	11.000	101	40	89	35
L1018.U25	12.5	6.400	16.000	165	66	147	59



L1320

Material
Rolled trapezoidal thread,
steel EN 10083-2 (C35, DIN 1.0501) or (C45, DIN 1.0503). Manufactured to ISO 2901/2903 (DIN 103).
Surface hardness approx. 250HB.

Technical Notes
‚Lead' refers to the distance that a nut will travel for a complete revolution of the screw.

Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.
Single start lead screws are less expensive than twin start lead screws.

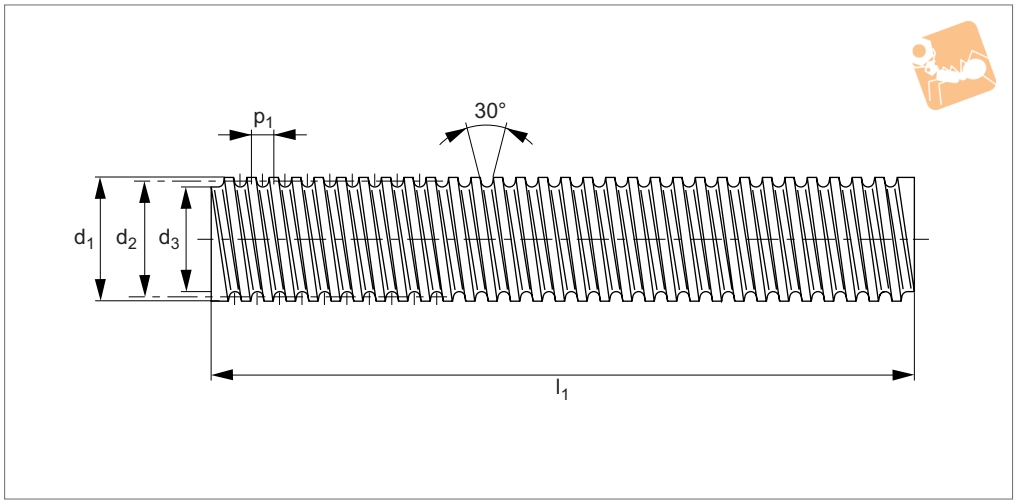
Tips
These are the standard right hand thread lead screws - for left hand thread versions see part no. L1321.
For stainless steel right hand lead screws see part no. L1322.
Cutting to required length and machining of ends - on request.
Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

Order No.	Size	No. of starts	d_1 tol. 7e	Lead	p_1	d_2 tol. 7e min.	d_2 tol. 7e max.	d_3 tol. 7h min.	d_3 tol. 7h max.	l_1	Lead angle	Pitch accuracy mm/ 300mm	Straightness mm/300mm	Weight kg
L1320.R08-015-1.0	TR8x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	1000	3°50‘	0.20	0.5	0.311
L1320.R08-015-1.5	TR8x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	1500	3°50‘	0.20	0.5	0.466
L1320.R08-015-2.0	TR8x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	2000	3°50‘	0.20	0.5	0.622
L1320.R08-015-3.0	TR8x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	3000	3°50‘	0.20	0.5	0.933
L1320.R10-02-1.0	TR10x2	1	10	2.0	2.0	8.739	8.929	6.891	7.500	1000	4°07‘	0.20	0.5	0.480
L1320.R10-02-1.5	TR10x2	1	10	2.0	2.0	8.739	8.929	6.891	7.500	1500	4°07‘	0.20	0.5	0.720
L1320.R10-02-2.0	TR10x2	1	10	2.0	2.0	8.739	8.929	6.891	7.500	2000	4°07‘	0.20	0.5	0.960
L1320.R10-02-3.0	TR10x2	1	10	2.0	2.0	8.739	8.929	6.891	7.500	3000	4°07‘	0.20	0.5	1.440
L1320.R10-04-1.0	TR10x4	2	10	4.0	2.0	8.716	8.929	7.685	7.500	1000	8°12‘	0.30	0.5	0.480
L1320.R10-04-1.5	TR10x4	2	10	4.0	2.0	8.716	8.929	7.685	7.500	1500	8°12‘	0.30	0.5	0.720
L1320.R10-04-2.0	TR10x4	2	10	4.0	2.0	8.716	8.929	7.685	7.500	2000	8°12‘	0.30	0.5	0.960
L1320.R10-04-3.0	TR10x4	2	10	4.0	2.0	8.716	8.929	7.685	7.500	3000	8°12‘	0.30	0.5	1.440
L1320.R12-03-1.0	TR12x3	1	12	3.0	3.0	10.191	10.415	7.685	8.500	1000	5°17‘	0.20	0.5	0.650
L1320.R12-03-1.5	TR12x3	1	12	3.0	3.0	10.191	10.415	7.685	8.500	1500	5°17‘	0.20	0.5	0.970
L1320.R12-03-2.0	TR12x3	1	12	3.0	3.0	10.191	10.415	7.685	8.500	2000	5°17‘	0.20	0.5	1.300
L1320.R12-03-3.0	TR12x3	1	12	3.0	3.0	10.191	10.415	7.685	8.500	3000	5°17‘	0.20	0.5	1.950
L1320.R12-06-1.0	TR12x6	2	12	6.0	3.0	10.164	10.415	7.685	8.500	1000	10°30‘	0.30	0.5	0.650
L1320.R12-06-1.5	TR12X6	2	12	6.0	3.0	10.164	10.415	7.685	8.500	1500	10°30‘	0.30	0.5	0.970
L1320.R12-06-2.0	TR12x6	2	12	6.0	3.0	10.164	10.415	7.685	8.500	2000	10°30‘	0.30	0.5	1.300
L1320.R12-06-3.0	TR12x6	2	12	6.0	3.0	10.164	10.415	7.685	8.500	3000	10°30‘	0.30	0.5	1.950
L1320.R14-03-1.0	TR14x3	1	14	3.0	3.0	12.191	12.415	9.685	10.500	1000	4°26‘	0.20	0.5	0.930
L1320.R14-03-1.5	TR14x3	1	14	3.0	3.0	12.191	12.415	9.685	10.500	1500	4°26‘	0.20	0.5	1.390
L1320.R14-03-2.0	TR14x3	1	14	3.0	3.0	12.191	12.415	9.685	10.500	2000	4°26‘	0.20	0.5	1.860
L1320.R14-03-3.0	TR14x3	1	14	3.0	3.0	12.191	12.415	9.685	10.500	3000	4°26‘	0.20	0.5	2.790
L1320.R14-06-1.0	TR14x6	2	14	6.0	3.0	12.164	12.415	9.685	10.500	1000	8°49‘	0.30	0.5	0.930

Additional sizes up to TR120x16 are available on our website.

Steel Lead Screws
left hand thread

L1321



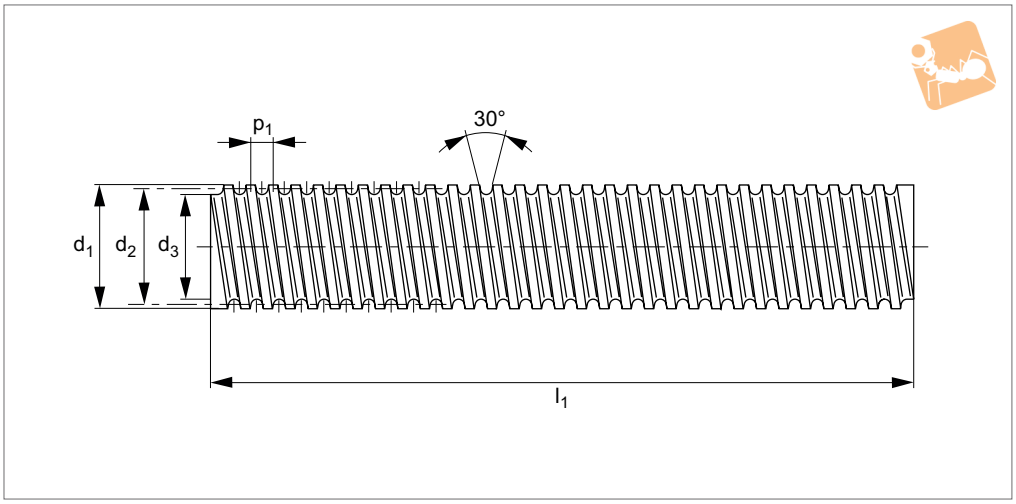
Material
Rolled trapezoidal thread,
steel EN 10083-2 (C35, DIN 1.0501) or (C45, DIN 1.0503). Manufactured to ISO 2901/2903 (DIN 103).
Surface hardness approx. 250HB.

Technical Notes
‚Lead' refers to the distance that a nut will travel for a complete revolution of the screw.
Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.
Single start lead screws are less expensive than twin start lead screws.

Tips
These are left hand thread lead screws - for the standard right hand threads see part no. L1320.
For stainless steel left hand lead screws see part no. L1323.
Cutting to required length and machining of ends - on request.
Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

Order No.	Size	No. of starts	d_1 tol. 7e	Lead	p_1	d_2 tol. 7e min.	d_2 tol. 7e max.	d_3 tol. 7h min.	d_3 tol. 7h max.	l_1	Lead angle	Pitch accuracy mm/300mm	Straightness mm/ 300mm	Weight kg
L1321.L10-02-1.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	1000	4°07‘	0.20	0.5	0.48
L1321.L10-02-1.5	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	1500	4°07‘	0.20	0.5	0.72
L1321.L10-02-2.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	2000	4°07‘	0.20	0.5	0.96
L1321.L10-02-3.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	3000	4°07‘	0.20	0.5	1.44
L1321.L12-03-1.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1000	5°17‘	0.20	0.5	0.65
L1321.L12-03-1.5	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1500	5°17‘	0.20	0.5	0.97
L1321.L12-03-2.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	2000	5°17‘	0.20	0.5	1.30
L1321.L12-03-3.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	3000	5°17‘	0.20	0.5	1.95
L1321.L14-03-1.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	1000	4°26‘	0.20	0.5	0.93
L1321.L14-03-1.5	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	1500	4°26‘	0.20	0.5	1.39
L1321.L14-03-2.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	2000	4°26‘	0.20	0.5	1.86
L1321.L14-03-3.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	3000	4°26‘	0.20	0.5	2.79
L1321.L16-04-1.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1000	5°16‘	0.05	0.5	1.17
L1321.L16-04-1.5	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1500	5°16‘	0.05	0.5	1.75
L1321.L16-04-2.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	2000	5°16‘	0.05	0.5	2.34
L1321.L16-04-3.0	TR15x4	1	16	4	4	13.640	13.905	10.474	11.500	3000	5°16‘	0.05	0.5	3.51
L1321.L18-04-1.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	1000	4°36‘	0.05	0.5	1.52
L1321.L18-04-1.5	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	1500	4°36‘	0.05	0.5	2.28
L1321.L18-04-2.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	2000	4°36‘	0.05	0.5	3.04
L1321.L18-04-3.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	3000	4°36‘	0.05	0.5	4.56
L1321.L20-04-1.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1000	4°05‘	0.05	0.5	1.94
L1321.L20-04-1.5	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1500	4°05‘	0.05	0.5	2.91
L1321.L20-04-2.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	2000	4°05‘	0.05	0.5	3.88
L1321.L20-04-3.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	3000	4°05‘	0.05	0.5	5.82
L1321.L22-05-1.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	1000	4°43‘	0.05	0.2	2.29
L1321.L22-05-1.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	1500	4°43‘	0.05	0.2	3.43
L1321.L22-05-1.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	2000	4°43‘	0.05	0.2	4.58
L1321.L22-05-1.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	3000	4°43‘	0.05	0.2	6.87

Additional sizes up to TR80x10 are available on our website.



L1322

Material
Rolled trapezoidal thread, stainless steel (AISI 316L, A4). Resistant to nearly all types of corrosion (can be used in a wet or corrosive environment). Manufactured to ISO 2901/2093, DIN103.
Surface hardness approx. 280HB.

Technical Notes
‚Lead' refers to the distance that a nut will travel for a complete revolution of the screw.
Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

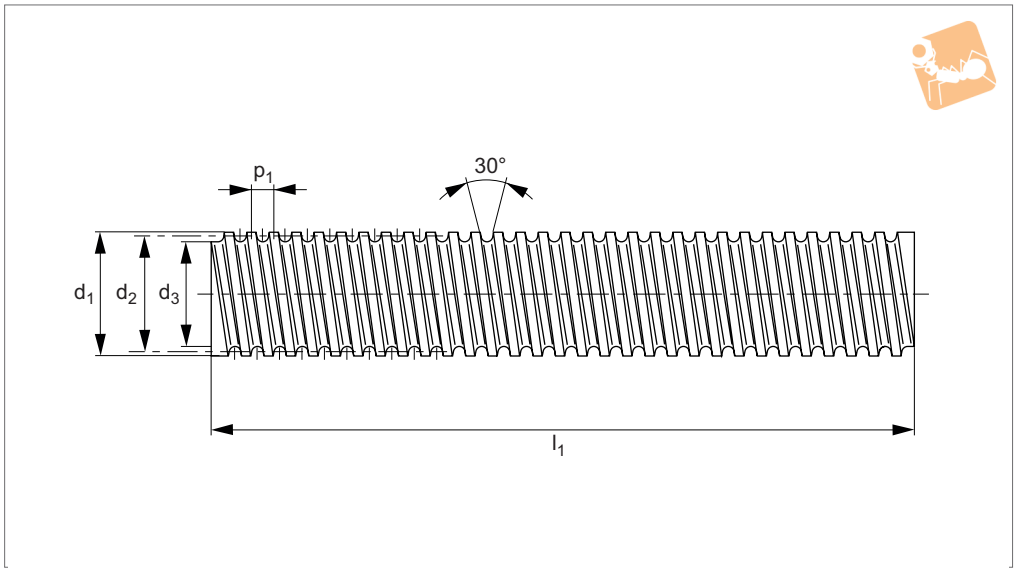
Tips
Right hand thread lead screws are standard.
For left hand stainless steel threads see part no. L1323.
Cutting to required length and machining of ends - on request.
Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

Order No.	Size	No. of starts	d_1 tol. 7e	Lead	p_1	d_2 tol. 7e min.	d_2 tol. 7e max.	d_3 tol. 7h min.	d_3 tol. 7h max.	l_1	Lead angle	Pitch accuracy mm/ 300mm	Straightness mm/300mm	Weight kg
L1322.R10-02-1.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	1000	4°07‘	0.3	1.5	0.48
L1322.R10-02-1.5	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	1500	4°07‘	0.3	1.5	0.72
L1322.R10-02-2.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	2000	4°07‘	0.3	1.5	0.96
L1322.R10-02-3.0	TR10x2	1	10	2	2	8.739	8.929	6.891	7.500	3000	4°07‘	0.3	1.5	1.44
L1322.R12-03-1.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1000	5°17‘	0.3	1.5	0.65
L1322.R12-03-1.5	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1500	5°17‘	0.3	1.5	0.97
L1322.R12-03-2.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	2000	5°17‘	0.3	1.5	1.30
L1322.R12-03-3.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	3000	5°17‘	0.3	1.5	1.95
L1322.R14-03-1.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	1000	4°26‘	0.3	1.5	0.93
L1322.R14-03-1.5	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	1500	4°26‘	0.3	1.5	1.39
L1322.R14-03-2.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	2000	4°26‘	0.3	1.5	1.86
L1322.R14-03-3.0	TR14x3	1	14	3	3	12.191	12.415	9.685	10.500	3000	4°26‘	0.3	1.5	2.79
L1322.R16-04-1.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1000	5°16‘	0.1	1.5	1.17
L1322.R16-04-1.5	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1500	5°16‘	0.1	1.5	1.75
L1322.R16-04-2.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	2000	5°16‘	0.1	1.5	2.34
L1322.R16-04-3.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	3000	5°16‘	0.1	1.5	3.51
L1322.R18-04-1.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	1000	4°36‘	0.1	1.5	1.52
L1322.R18-04-1.5	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	1500	4°36‘	0.1	1.5	2.28
L1322.R18-04-2.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	2000	4°36‘	0.1	1.5	3.04
L1322.R18-04-3.0	TR18x4	1	18	4	4	15.640	15.905	12.474	13.500	3000	4°36‘	0.1	1.5	4.56
L1322.R20-04-1.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1000	4°05‘	0.1	1.5	1.94
L1322.R20-04-1.5	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1500	4°05‘	0.1	1.5	2.91
L1322.R20-04-2.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	2000	4°05‘	0.1	1.5	3.88
L1322.R20-04-3.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	3000	4°05‘	0.1	1.5	5.82
L1322.R22-05-1.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	1000	4°43‘	0.1	1.5	2.29
L1322.R22-05-1.5	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	1500	4°43‘	0.1	1.5	3.43
L1322.R22-05-2.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	2000	4°43‘	0.1	1.5	4.58
L1322.R22-05-3.0	TR22x5	1	22	5	5	19.114	19.394	15.294	16.500	3000	4°43‘	0.1	1.5	6.87
L1322.R24-05-1.0	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	1000	4°17‘	0.1	1.5	2.78
L1322.R24-05-1.5	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	2000	4°17‘	0.1	1.5	4.17

Additional sizes up to TR70x10 are available on our website.

Stainless Lead Screws
left hand thread

L1323



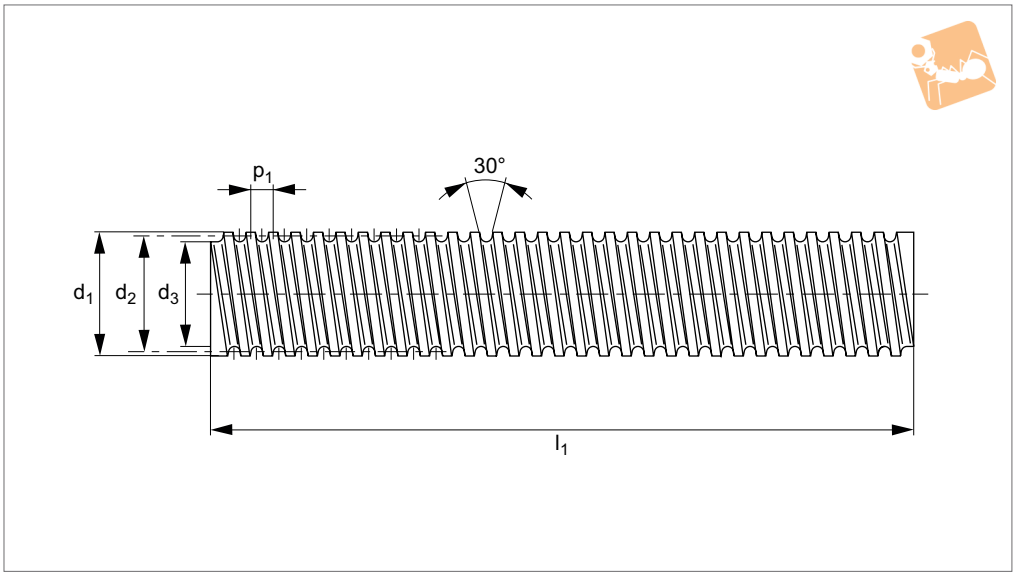
Material
Rolled trapezoidal thread, stainless steel (AISI 316L, A4).
Resistant to nearly all types of corrosion (can be used in a wet or corrosive environment).
Manufactured to ISO 2901/2093, DIN103.
Surface hardness approx. 280HB.

Technical Notes
‚Lead' refers to the distance that a nut will travel for a complete revolution of the screw.
Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

Tips
These are stainless steel left hand thread lead screws. For the standard right hand threads in stainless steel see part no. L1322. Cutting to required length and machining of ends - on request.
Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

Order No.	Size	No. of starts	d_1 tol. 7e	Lead	p_1	d_2 tol. 7e min.	d_2 tol. 7e max.	d_3 tol. 7h min.	d_3 tol. 7h max.	l_1	Lead angle	Pitch accuracy mm/300mm	Straightness mm/ 300mm	Weight kg
L1323.L12-03-1.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1000	5°17‘	0.3	0.5	0.65
L1323.L12-03-1.5	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	1500	5°17‘	0.3	0.5	0.97
L1323.L12-03-2.0	TR12X3	1	12	3	3	10.191	10.415	7.685	8.500	2000	5°17‘	0.3	0.5	1.30
L1323.L12-03-3.0	TR12x3	1	12	3	3	10.191	10.415	7.685	8.500	3000	5°17‘	0.3	0.5	1.95
L1323.L16-04-1.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1000	5°16‘	0.2	0.1	1.17
L1323.L16-04-1.5	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	1500	5°16‘	0.2	0.1	1.75
L1323.L16-04-2.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	2000	5°16‘	0.2	0.1	2.34
L1323.L16-04-3.0	TR16x4	1	16	4	4	13.640	13.905	10.474	11.500	3000	5°16‘	0.2	0.1	3.51
L1323.L20-04-1.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1000	4°05‘	0.2	0.1	1.94
L1323.L20-04-1.5	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	1500	4°05‘	0.2	0.1	2.91
L1323.L20-04-2.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	2000	4°05‘	0.2	0.1	3.88
L1323.L20-04-3.0	TR20x4	1	20	4	4	17.640	17.905	14.474	15.500	3000	4°05‘	0.2	0.1	5.82
L1323.L24-05-1.0	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	1000	4°17‘	0.5	0.1	2.78
L1323.L24-05-1.5	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	1500	4°17‘	0.5	0.1	4.17
L1323.L24-05-2.0	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	2000	4°17‘	0.5	0.1	5.56
L1323.L24-05-3.0	TR24x5	1	24	5	5	21.094	21.394	17.269	18.500	3000	4°17‘	0.5	0.1	8.34
L1323.L30-06-1.0	TR30x6	1	30	6	6	26.547	26.882	21.563	23.000	1000	4°05‘	0.5	0.1	4.35
L1323.L30-06-1.5	TR30x6	1	30	6	6	26.547	26.882	21.563	23.000	1500	4°05‘	0.5	0.1	6.52
L1323.L30-06-2.0	TR30x6	1	30	6	6	26.547	26.882	21.563	23.000	2000	4°05‘	0.5	0.1	8.70
L1323.L30-06-3.0	TR30x6	1	30	6	6	26.547	26.882	21.563	23.000	3000	4°05‘	0.5	0.1	13.05
L1323.L32-06-1.0	TR32x6	1	32	6	6	28.547	28.882	23.563	25.000	1000	3°48‘	0.5	0.1	5.03
L1323.L32-06-1.5	TR32x6	1	32	6	6	28.547	28.882	23.563	25.000	1500	3°48‘	0.5	0.1	7.54
L1323.L32-06-2.0	TR32x6	1	32	6	6	28.547	28.882	23.563	25.000	2000	3°48‘	0.5	0.1	10.06
L1323.L32-06-3.0	TR32x6	1	32	6	6	28.547	28.882	23.563	25.000	3000	3°48‘	0.5	0.1	15.09
L1323.L36-06-1.0	TR36x6	1	36	6	6	32.547	32.882	27.563	29.000	1000	3°20‘	0.5	0.1	6.54
L1323.L36-06-1.5	TR36x6	1	36	6	6	32.547	32.882	27.563	29.000	1500	3°20‘	0.5	0.1	9.81
L1323.L36-06-2.0	TR36x6	1	36	6	6	32.547	32.882	27.563	29.000	2000	3°20‘	0.5	0.1	13.08
L1323.L36-06-3.0	TR36x6	1	36	6	6	32.547	32.882	27.563	29.000	3000	3°20‘	0.5	0.1	19.62

Additional sizes up to TR70x10 are available on our website.



L1325

Material
Rolled trapezoidal thread, stainless steel (AISI 304, A2).
Manufactured to ISO 2901/2093, DIN103.

Technical Notes
„Lead" refers to the distance that a nut will travel for a complete revolution of the screw. Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

Tips
Right hand thread lead screws are standard. For left hand stainless steel threads see part no. L1326. Cutting to required length and machining of ends - on request. Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

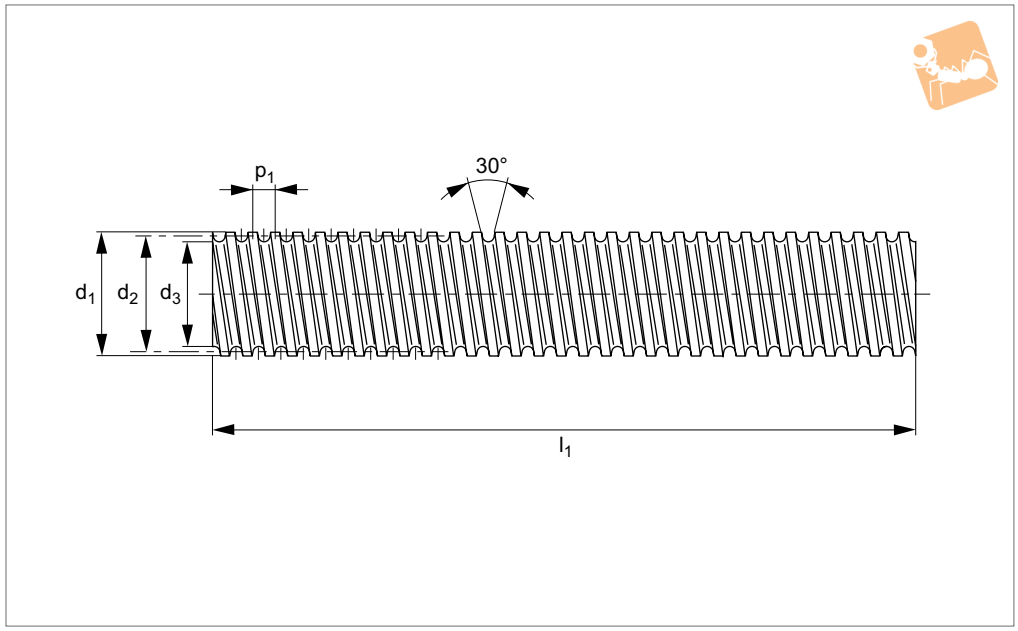
Order No.	Size	No. of starts	d_1 tol, 7e	Lead	p_1	d_2 tol, 7e min	d_2 tol, 7e max	d_3 tol, 7h min	d_3 tol, 7h max	Weight kg
L1325.R08-015-1.0	TR08x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	0.31
L1325.R08-015-1.5	TR08x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	0.46
L1325.R08-015-2.0	TR08x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	0.64
L1325.R08-015-3.0	TR08x1.5	1	8	1.5	1.5	7.013	7.183	5.763	7.200	0.93
L1325.R10-02-1.0	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.891	7.500	0.48
L1325.R10-02-1.5	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.891	7.500	0.72
L1325.R10-02-2.0	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.891	7.500	0.96
L1325.R10-02-3.0	TR10x2.0	1	10	2.0	2.0	8.739	10.415	6.891	7.500	1.44
L1325.R12-03-1.0	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	0.65
L1325.R12-03-1.5	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	0.97
L1325.R12-03-2.0	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	1.30
L1325.R12-03-3.0	TR12x3.0	1	12	3.0	3.0	10.191	12.415	7.685	8.500	1.95
L1325.R14-03-3.0	TR14x3.0	1	14	3.0	3.0	13.640	13.905	9.685	10.500	2.79
L1325.R16-04-1.0	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	1.17
L1325.R16-04-1.5	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	1.75
L1325.R16-04-2.0	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	2.34
L1325.R16-04-3.0	TR16x4.0	1	16	4.0	4.0	15.640	15.905	10.474	11.500	3.51
L1325.R18-04-1.0	TR18x4.0	1	18	4.0	4.0	15.640	15.905	12.474	13.500	1.52
L1325.R18-04-1.5	TR18x4.0	1	18	4.0	4.0	15.640	15.905	12.474	13.500	2.28
L1325.R18-04-2.0	TR18x4.0	1	18	4.0	4.0	15.640	15.905	12.474	13.500	3.04
L1325.R18-04-3.0	TR18x4.0	1	18	4.0	4.0	17.640	17.905	12.474	13.500	4.56
L1325.R20-04-1.0	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	1.94
L1325.R20-04-1.5	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	2.91
L1325.R20-04-2.0	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	3.88
L1325.R20-04-3.0	TR20x4.0	1	20	4.0	4.0	19.114	19.394	14.474	15.500	5.82
L1325.R24-05-1.0	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	2.78
L1325.R24-05-1.5	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	4.17
L1325.R24-05-2.0	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	5.56
L1325.R24-05-3.0	TR24x5.0	1	24	5.0	5.0	25.094	25.394	17.269	18.500	8.34
L1325.R28-05-1.0	TR28x5.0	1	28	5.0	5.0	25.094	25.394	21.269	22.500	3.90

Stainless 304 Lead Screws

right hand thread

Order No.	Size	No. of starts	d_1 tol, 7e	Lead	p_1	d_2 tol, 7e min	d_2 tol, 7e max	d_3 tol, 7h min	d_3 tol, 7h max	Weight kg
L1325.R28-05-1.5	TR28x5.0	1	28	5.0	5.0	25.094	25.394	21.269	22.500	5.85
L1325.R28-05-2.0	TR28x5.0	1	28	5.0	5.0	25.094	25.394	21.269	22.500	7.80
L1325.R28-05-3.0	TR28x5.0	1	28	5.0	5.0	26.547	26.882	21.269	22.500	11.7
L1325.R30-06-1.0	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	4.35
L1325.R30-06-1.5	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	6.52
L1325.R30-06-2.0	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	8.70
L1325.R30-06-3.0	TR30x6.0	1	30	6.0	6.0	32.547	32.882	21.563	23.000	13.05
L1325.R36-06-1.0	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	6.54
L1325.R36-06-1.5	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	9.81
L1325.R36-06-2.0	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	13.08
L1325.R36-06-3.0	TR36x6.0	1	36	6.0	6.0	36.020	36.375	27.563	29.000	19.62
L1325.R40-07-1.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	7.98
L1325.R40-07-1.5	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	11.97
L1325.R40-07-2.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	15.96
L1325.R40-07-3.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	23.94

Order No.	l_1	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm
L1325.R08-015-1.0	1000	3°50‘	0.300	1.5
L1325.R08-015-1.5	1500	3°50‘	0.300	1.5
L1325.R08-015-2.0	2000	3°50‘	0.300	1.5
L1325.R08-015-3.0	3000	3°50‘	0.300	1.5
L1325.R10-02-1.0	1000	4°07‘	0.300	1.5
L1325.R10-02-1.5	1500	4°07‘	0.300	1.5
L1325.R10-02-2.0	2000	4°07‘	0.300	1.5
L1325.R10-02-3.0	3000	4°07‘	0.300	1.5
L1325.R12-03-1.0	1000	5°17‘	0.300	1.5
L1325.R12-03-1.5	1500	5°17‘	0.300	1.5
L1325.R12-03-2.0	2000	5°17‘	0.300	1.5
L1325.R12-03-3.0	3000	5°17‘	0.300	1.5
L1325.R14-03-3.0	3000	4°26‘	0.300	1.5
L1325.R16-04-1.0	1000	5°16‘	0.100	1.5
L1325.R16-04-1.5	1500	5°16‘	0.100	1.5
L1325.R16-04-2.0	2000	5°16‘	0.100	1.5
L1325.R16-04-3.0	3000	5°16‘	0.100	1.5
L1325.R18-04-1.0	1000	4°36‘	0.100	1.5
L1325.R18-04-1.5	1500	4°36‘	0.100	1.5
L1325.R18-04-2.0	2000	4°36‘	0.100	1.5
L1325.R18-04-3.0	3000	4°36‘	0.100	1.5
L1325.R20-04-1.0	1000	4°05‘	0.100	1.5
L1325.R20-04-1.5	1500	4°05‘	0.100	1.5
L1325.R20-04-2.0	2000	4°05‘	0.100	1.5
L1325.R20-04-3.0	3000	4°05‘	0.100	1.5
L1325.R24-05-1.0	1000	4°17‘	0.100	1.5
L1325.R24-05-1.5	1500	4°17‘	0.100	1.5
L1325.R24-05-2.0	2000	4°17‘	0.100	1.5
L1325.R24-05-3.0	3000	4°17‘	0.100	1.5
L1325.R28-05-1.0	1000	3°36‘	0.100	1.5
L1325.R28-05-1.5	1500	3°36‘	0.100	1.5
L1325.R28-05-2.0	2000	3°36‘	0.100	1.5
L1325.R28-05-3.0	3000	3°36‘	0.100	1.5
L1325.R30-06-1.0	1000	4°05‘	0.100	1.5
L1325.R30-06-1.5	1500	4°05‘	0.100	1.5
L1325.R30-06-2.0	2000	4°05‘	0.100	1.5
L1325.R30-06-3.0	3000	4°05‘	0.100	1.5
L1325.R36-06-1.0	1000	3°20‘	0.100	1.5
L1325.R36-06-1.5	1500	3°20‘	0.100	1.5
L1325.R36-06-2.0	2000	3°20‘	0.100	1.5
L1325.R36-06-3.0	3000	3°20‘	0.100	1.5
L1325.R40-07-1.0	1000	3°31‘	0.015	1.5
L1325.R40-07-1.5	1500	3°31‘	0.015	1.5
L1325.R40-07-2.0	2000	3°31‘	0.015	1.5
L1325.R40-07-3.0	3000	3°31‘	0.015	1.5



L1326

Material
Rolled trapezoidal thread, stainless steel (AISI 304, A2). Manufactured to ISO 2901/2093, DIN103.

Technical Notes
„Lead" refers to the distance that a nut will travel for a complete revolution of the screw. Select a suitable lead screw nut (part nos. L1330 to L1343) to suit the lead screw - the most popular nuts are the flanged, bronze nuts part no. L1331.

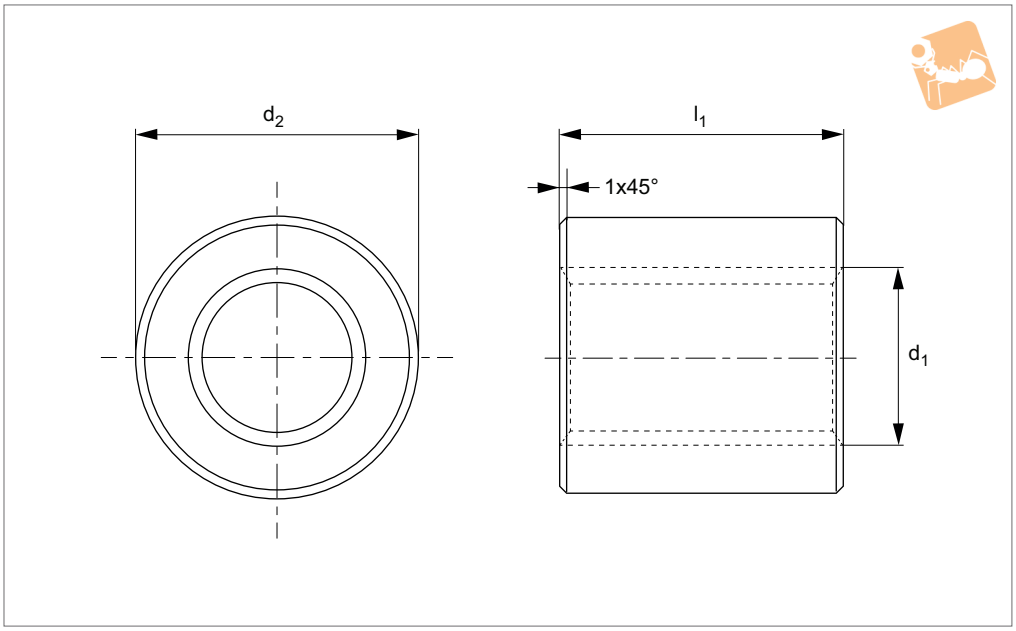
Tips
These are stainless steel left hand thread lead screws. For the standard right hand threads in stainless steel see part no. L1325. Cutting to required length and machining of ends - on request. Lead screw lengths of up to 6 metres can be provided for a diameter >30mm.

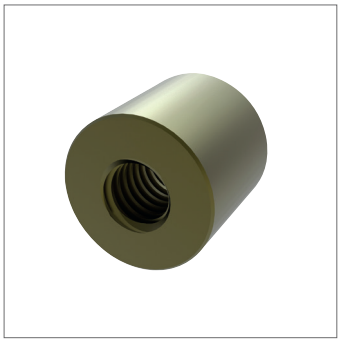
Order No.	Size	No. of starts	d_1 tol, 7e	Lead	p_1	d_2 tol, 7e	d_2 tol, 7e	d_3 tol, 7h	d_3 tol, 7h	Weight kg
L1326.L10-02-1.0	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.962	7.500	0.482
L1326.L10-02-1.5	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.962	7.500	0.723
L1326.L10-02-2.0	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.962	7.500	0.964
L1326.L10-02-3.0	TR10x2.0	1	10	2.0	2.0	8.739	8.929	6.962	7.500	1.446
L1326.L12-03-1.0	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	0.650
L1326.L12-03-1.5	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	0.970
L1326.L12-03-2.0	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	1.300
L1326.L12-03-3.0	TR12x3.0	1	12	3.0	3.0	10.191	10.415	7.685	8.500	1.950
L1326.L16-04-1.0	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	1.170
L1326.L16-04-1.5	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	1.750
L1326.L16-04-2.0	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	2.340
L1326.L16-04-3.0	TR16x4.0	1	16	4.0	4.0	13.640	13.905	10.474	11.500	3.510
L1326.L20-04-1.0	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	1.940
L1326.L20-04-1.5	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	2.910
L1326.L20-04-2.0	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	3.880
L1326.L20-04-3.0	TR20x4.0	1	20	4.0	4.0	17.640	17.905	14.474	15.500	5.820
L1326.L24-05-1.0	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	2.780
L1326.L24-05-1.5	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	4.170
L1326.L24-05-2.0	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	5.560
L1326.L24-05-3.0	TR24x5.0	1	24	5.0	5.0	21.094	21.394	17.269	18.500	8.340
L1326.L30-06-1.0	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	4.350
L1326.L30-06-1.5	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	6.520
L1326.L30-06-2.0	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	8.700
L1326.L30-06-3.0	TR30x6.0	1	30	6.0	6.0	26.547	26.882	21.563	23.000	13.050
L1326.L36-06-1.0	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	6.540
L1326.L36-06-1.5	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	9.810
L1326.L36-06-2.0	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	13.080
L1326.L36-06-3.0	TR36x6.0	1	36	6.0	6.0	32.547	32.882	27.563	29.000	19.620
L1326.L40-07-1.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	7.980
L1326.L40-07-1.5	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	11.970

Stainless 304 Lead Screws
left hand thread

Order No.	Size	No. of starts	d_1 tol, 7e	Lead	p_1	d_2 tol, 7e	d_2 tol, 7e	d_3 tol, 7h	d_3 tol, 7h	Weight kg
L1326.L40-07-2.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	15.960
L1326.L40-07-3.0	TR40x7.0	1	40	7.0	7.0	36.020	36.375	30.381	32.000	23.940

Order No.	l_1	Lead angle	Pitch accuracy mm/300mm	Straightness mm/300mm
L1326.L10-02-1.0	1000	4°07‘	0.3	0.40
L1326.L10-02-1.5	1500	4°07‘	0.3	0.40
L1326.L10-02-2.0	2000	4°07‘	0.3	0.40
L1326.L10-02-3.0	3000	4°07‘	0.3	0.40
L1326.L12-03-1.0	1000	5°17‘	0.3	0.50
L1326.L12-03-1.5	1500	5°17‘	0.3	0.50
L1326.L12-03-2.0	2000	5°17‘	0.3	0.50
L1326.L12-03-3.0	3000	5°17‘	0.3	0.50
L1326.L16-04-1.0	1000	5°16‘	0.5	0.10
L1326.L16-04-1.5	1500	5°16‘	0.5	0.10
L1326.L16-04-2.0	2000	5°16‘	0.5	0.10
L1326.L16-04-3.0	3000	5°16‘	0.5	0.10
L1326.L20-04-1.0	1000	4°05‘	0.5	0.10
L1326.L20-04-1.5	1500	4°05‘	0.5	0.10
L1326.L20-04-2.0	2000	4°05‘	0.5	0.10
L1326.L20-04-3.0	3000	4°05‘	0.5	0.10
L1326.L24-05-1.0	1000	4°17‘	0.5	0.10
L1326.L24-05-1.5	1500	4°17‘	0.5	0.10
L1326.L24-05-2.0	2000	4°17‘	0.5	0.10
L1326.L24-05-3.0	3000	4°17‘	0.5	0.10
L1326.L30-06-1.0	1000	4°05‘	0.5	0.10
L1326.L30-06-1.5	1500	4°05‘	0.5	0.10
L1326.L30-06-2.0	2000	4°05‘	0.5	0.10
L1326.L30-06-3.0	3000	4°05‘	0.5	0.10
L1326.L36-06-1.0	1000	3°20‘	0.5	0.10
L1326.L36-06-1.5	1500	3°20‘	0.5	0.10
L1326.L36-06-2.0	2000	3°20‘	0.5	0.10
L1326.L36-06-3.0	3000	3°20‘	0.5	0.10
L1326.L40-07-1.0	1000	3°31‘	0.5	0.15
L1326.L40-07-1.5	1500	3°31‘	0.5	0.15
L1326.L40-07-2.0	2000	3°31‘	0.5	0.15
L1326.L40-07-3.0	3000	3°31‘	0.5	0.15





L1330

Material
Bronze (CuSn7ZnPb). To ISO 2901/2903 and DIN 103.

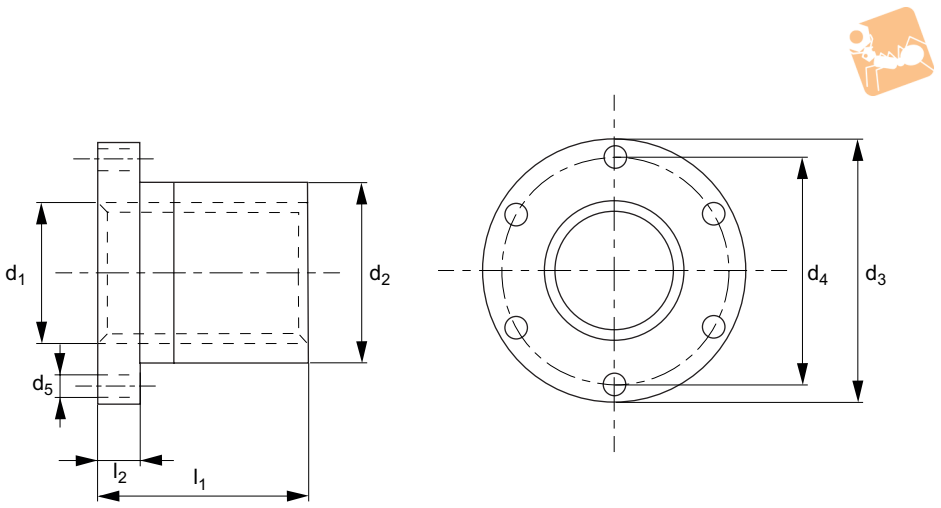
Technical Notes
For manual or powered applications at low and medium rotation and under loads.

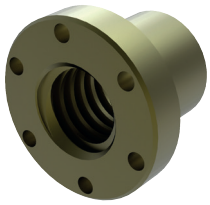
Tips
Standard nuts are right hand thread, single starts.
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	d_2 tol. h10	l_1	Weight kg
L1330.R08-015	TR8x1.5	1	8	1.5	Right	150	18	16	0.029
L1330.R10-02	TR10x 2	1	10	2.0	Right	200	22	20	0.053
L1330.R10-04	TR10x 4	2	10	4.0	Right	200	22	20	0.053
L1330.R12-03	TR12x 3	1	12	3.0	Right	280	26	24	0.083
L1330.R12-06	TR12x 6	2	12	6.0	Right	280	26	24	0.083
L1330.R14-03	TR14x 3	1	14	3.0	Right	380	30	28	0.135
L1330.R14-06	TR14x 6	2	14	6.0	Right	380	30	28	0.135
L1330.R16-04	TR16x 4	1	16	4.0	Right	490	36	32	0.232
L1330.R16-08	TR16x 8	2	16	8.0	Right	490	36	32	0.232
L1330.R18-04	TR18x 4	1	18	4.0	Right	630	40	36	0.320
L1330.R18-08	TR18x 8	2	18	8.0	Right	630	40	36	0.320
L1330.R20-04	TR20x 4	1	20	4.0	Right	790	45	40	0.455
L1330.R20-08	TR20x 8	2	20	8.0	Right	790	45	40	0.455
L1330.R22-05	TR22x 5	1	22	5.0	Right	940	45	44	0.480
L1330.R22-10	TR22x10	2	22	10.0	Right	940	45	44	0.480
L1330.R24-05	TR24x 5	1	24	5.0	Right	1130	50	48	0.656
L1330.R24-10	TR24x10	2	24	10.0	Right	1130	50	48	0.656
L1330.R26-05	TR26x 5	1	26	5.0	Right	1340	50	52	0.670
L1330.R28-05	TR28x 5	1	28	5.0	Right	2400	60	56	1.102
L1330.R28-10	TR28x10	2	28	10.0	Right	1570	60	56	1.102
L1330.R30-06	TR30x 6	1	30	6.0	Right	1780	60	60	1.140
L1330.R30-12	TR30x12	2	30	12.0	Right	1780	60	60	1.140
L1330.R32-06	TR32x 6	1	32	6.0	Right	1910	60	64	1.177
L1330.R32-12	TR32x12	2	32	12.0	Right	1910	60	64	1.177
L1330.R36-06	TR36x 6	1	36	6.0	Right	2610	75	72	2.189
L1330.R36-12	TR36x12	2	36	12.0	Right	2610	75	72	2.189
L1330.R40-07	TR40x 7	1	40	7.0	Right	3210	80	80	2.725
L1330.R40-14	TR40x14	2	40	14.0	Right	3210	80	80	2.725
L1330.R44-07	TR44x 7	1	44	7.0	Right	3920	80	88	2.815
L1330.R50-08	TR50x 8	1	50	8.0	Right	5060	90	100	4.014
L1330.R60-09	TR60x 9	1	60	9.0	Right	7320	100	120	5.150
L1330.R70-10	TR70x10	1	70	10.0	Right	10000	110	140	7.805

Cylindrical Bronze Nuts
for lead screws

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	d_2 tol. h10	l_1	Weight kg
L1330.R80-10	TR80x10	1	80	10.0	Right	12950	120	160	9.800
L1330.L10-02	TR10x 2	1	10	2.0	Left	200	22	20	0.053
L1330.L12-03	TR12x 3	1	12	3.0	Left	280	26	24	0.083
L1330.L14-03	TR14x 3	1	14	3.0	Left	380	30	28	0.136
L1330.L16-04	TR16x 4	1	16	4.0	Left	490	36	32	0.232
L1330.L18-04	TR18x 4	1	18	4.0	Left	630	40	36	0.320
L1330.L20-04	TR20x 4	1	20	4.0	Left	790	45	40	0.455
L1330.L22-05	TR22x 5	1	22	5.0	Left	940	45	44	0.480
L1330.L24-05	TR24x 5	1	24	5.0	Left	1130	50	48	0.656
L1330.L26-05	TR26x 5	1	26	5.0	Left	1340	50	52	0.670
L1330.L28-05	TR28x 5	1	28	5.0	Left	2400	60	56	1.102
L1330.L30-06	TR30x 6	1	30	6.0	Left	1780	60	60	1.140
L1330.L32-06	TR32x 6	1	32	6.0	Left	1910	60	64	1.177
L1330.L36-06	TR36x 6	1	36	6.0	Left	2610	75	72	2.189
L1330.L40-07	TR40x 7	1	40	7.0	Left	3210	80	80	2.725
L1330.L44-07	TR44x 7	1	44	7.0	Left	3920	80	88	2.815
L1330.L50-08	TR50x 8	1	50	8.0	Left	5060	90	100	4.014
L1330.L60-09	TR60x 9	1	60	9.0	Left	7320	100	120	5.150
L1330.L70-10	TR70x10	1	70	10.0	Left	10000	110	140	7.805
L1330.L80-10	TR80x10	1	80	10.0	Left	12950	120	160	9.800





L1331

Material
Bronze (CuSn7ZnPb).

Technical Notes
For manual or powered applications at medium/low rotation speeds under load.

Tips
Standard nuts are right hand thread, single starts.

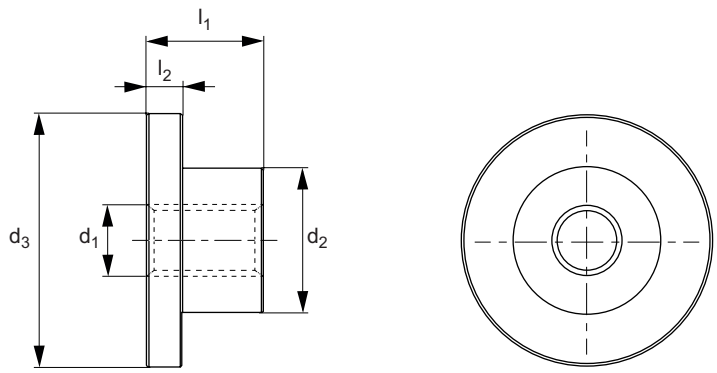
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

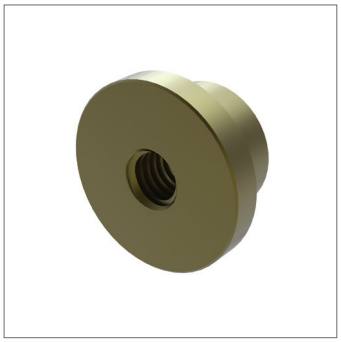
Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread hand	Contact surface mm²	d_2 tol. h9	d_3 tol. h11	d_4	d_5	l_1 ±0.2	l_2 +0.15|-0.0	Weight kg
L1331.R08-015	TR8x1.5	1	8	1.5	Right	170	18	35	26	6	20	7	0.135
L1331.R10-02	TR10x 2	1	10	2.0	Right	250	25	42	34	5	25	10	0.164
L1331.R10-04	TR10x 4	2	10	4.0	Right	250	25	42	34	5	25	10	0.164
L1331.R12-03	TR12x 3	1	12	3.0	Right	400	28	48	38	6	35	12	0.266
L1331.R12-06	TR12x 6	2	12	6.0	Right	400	28	48	38	6	35	12	0.266
L1331.R14-03	TR14x 3	1	14	3.0	Right	460	28	48	38	6	35	12	0.258
L1331.R14-06	TR14x 6	2	14	6.0	Right	460	28	48	38	6	35	12	0.258
L1331.R16-04	TR16x 4	1	16	4.0	Right	530	28	48	38	6	35	12	0.244
L1331.R16-08	TR16x 8	2	16	8.0	Right	530	28	48	38	6	35	12	0.244
L1331.R18-04	TR18x 4	1	18	4.0	Right	610	28	48	38	6	35	12	0.228
L1331.R18-08	TR18x 8	2	18	8.0	Right	610	28	48	38	6	35	12	0.228
L1331.R20-04	TR20x 4	1	20	4.0	Right	870	32	55	45	7	44	12	0.346
L1331.R20-08	TR20x 8	2	20	8.0	Right	870	32	55	45	7	44	12	0.346
L1331.R22-05	TR22x 5	1	22	5.0	Right	1030	32	55	45	7	44	12	0.322
L1331.R22-10	TR22x10	2	22	10.0	Right	1030	32	55	45	7	44	12	0.322
L1331.R24-05	TR24x 5	1	24	5.0	Right	1040	32	55	45	7	44	12	0.304
L1331.R24-10	TR24x10	2	24	10.0	Right	1040	32	55	45	7	44	12	0.304
L1331.R26-05	TR26x 5	1	26	5.0	Right	1280	38	62	50	7	46	14	0.474
L1331.R26-10	TR26x10	2	26	10.0	Right	1280	38	62	50	7	46	14	0.474
L1331.R28-05	TR28x 5	1	28	5.0	Right	1200	38	62	50	7	46	14	0.442
L1331.R28-10	TR28x10	2	28	10.0	Right	1200	38	62	50	7	46	14	0.442
L1331.R30-06	TR30x 6	1	30	6.0	Right	1370	38	62	50	7	46	14	0.408
L1331.R30-12	TR30x12	2	30	12.0	Right	1370	38	62	50	7	46	14	0.408
L1331.R32-06	TR32x 6	1	32	6.0	Right	1710	45	70	58	7	54	16	0.706
L1331.R32-12	TR32x12	2	32	12.0	Right	1710	45	70	58	7	54	16	0.706
L1331.R36-06	TR36x 6	1	36	6.0	Right	1950	45	70	58	7	54	16	0.606
L1331.R36-12	TR36x12	2	36	12.0	Right	1950	45	70	58	7	54	16	0.606
L1331.R40-07	TR40x 7	1	40	7.0	Right	2650	63	95	78	9	66	16	1.700
L1331.R40-14	TR40x14	2	40	14.0	Right	2650	63	95	78	9	66	16	1.700
L1331.R44-07	TR44x 7	1	44	7.0	Right	2940	63	95	78	9	66	16	1.524
L1331.R50-08	TR50x 8	1	50	8.0	Right	4540	72	110	90	11	75	18	2.324
L1331.R60-09	TR60x 9	1	60	9.0	Right	5490	88	130	110	13	90	20	3.942
L1331.R70-10	TR70x10	1	70	10.0	Right	7500	95	140	120	13	105	22	4.465

Flanged Bronze Nuts

for lead screws

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread hand	Contact surface mm²	d_2 tol. h9	d_3 tol. h11	d_4	d_5	l_1 ±0.2	l_2 +0.15|-0.0	Weight kg
L1331.L10-02	TR10x 2	1	10	2.0	Left	250	25	42	34	5	25	10	0.164
L1331.L12-03	TR12x 3	1	12	3.0	Left	400	28	48	38	6	35	12	0.266
L1331.L14-03	TR14x 3	1	14	3.0	Left	460	28	48	38	6	35	12	0.258
L1331.L16-04	TR16x 4	1	16	4.0	Left	530	28	48	38	6	35	12	0.244
L1331.L18-04	TR18x 4	1	18	4.0	Left	610	28	48	38	6	35	12	0.228
L1331.L20-04	TR20x 4	1	20	4.0	Left	870	32	55	45	7	44	12	0.346
L1331.L22-05	TR22x 5	1	22	5.0	Left	1030	32	55	45	7	44	12	0.322
L1331.L24-05	TR24x 5	1	24	5.0	Left	1040	32	55	45	7	44	12	0.304
L1331.L26-05	TR26x 5	1	26	5.0	Left	1280	38	62	50	7	46	14	0.474
L1331.L28-05	TR28x 5	1	28	5.0	Left	1200	38	62	50	7	46	14	0.442
L1331.L30-06	TR30x 6	1	30	6.0	Left	1370	38	62	50	7	46	14	0.408
L1331.L32-06	TR32x 6	1	32	6.0	Left	1710	45	70	58	7	54	16	0.706
L1331.L36-06	TR36x 6	1	36	6.0	Left	1950	45	70	58	7	54	16	0.606
L1331.L40-07	TR40x 7	1	40	7.0	Left	2650	63	95	78	9	66	16	1.700
L1331.L44-07	TR44x 7	1	44	7.0	Left	2940	63	95	78	9	66	16	1.524
L1331.L50-08	TR50x 8	1	50	8.0	Left	4540	72	110	90	11	75	18	2.324
L1331.L60-09	TR60x 9	1	60	9.0	Left	5490	88	130	110	13	90	20	3.942
L1331.L70-10	TR70x10	1	70	10.0	Left	7500	95	140	120	13	105	22	4.465





L1332

Material
Bronze (CuSn7ZnPb).

Technical Notes
For manual or powered applications at medium/low rotation speeds under load.

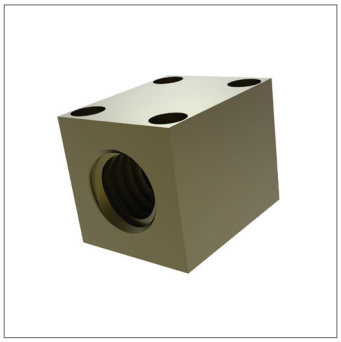
Tips
Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

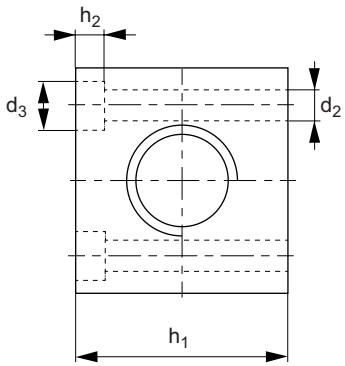
Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	d_2 tol. h11	d_3 tol. h9	l_1	l_2	Weight kg
L1332.R10-02	TR10x2	1	10	2	Right	150	20	35	15	6	0.068
L1332.R10-04	TR10x2	2	10	4	Right	150	20	35	15	6	0.068
L1332.R12-03	TR12x3	1	12	3	Right	228	24	42	20	7	0.120
L1332.R12-06	TR12x6	2	12	6	Right	262	24	42	20	7	0.120
L1332.R14-03	TR14x3	1	14	3	Right	315	30	52	24	10	0.260
L1332.R16-04	TR16x4	1	16	4	Right	363	30	52	24	10	0.250
L1332.R16-08	TR16x8	2	16	8	Right	363	30	52	24	12	0.250
L1332.R20-04	TR20x4	1	20	4	Right	514	38	62	26	11	0.400
L1332.R20-08	TR20x8	2	20	8	Right	514	38	62	26	12	0.400
L1332.R24-05	TR24x5	1	24	5	Right	780	50	77	33	13	0.750
L1332.R24-10	TR24x10	2	24	10	Right	780	50	77	33	12	0.750
L1332.R30-06	TR30x6	1	30	6	Right	1430	58	90	48	15	1.400
L1332.R30-12	TR30x12	2	30	12	Right	1430	58	90	48	14	1.400
L1332.R36-06	TR36x6	1	36	6	Right	2166	80	115	60	20	3.200
L1332.R36-12	TR36x12	2	36	12	Right	2166	80	115	60	16	3.200
L1332.R40-07	TR40x7	1	40	7	Right	2610	80	140	65	20	4.100
L1332.R40-14	TR40x14	2	40	14	Right	2610	80	140	65	16	4.100
L1332.R50-08	TR50x8	1	50	8	Right	4237	90	170	70	20	5.900
L1332.L10-02	TR10x2	1	10	2	Left	150	20	35	15	6	0.068
L1332.L12-03	TR12x3	1	12	3	Left	228	24	42	20	7	0.120
L1332.L14-03	TR14x3	1	14	3	Left	315	30	52	24	10	0.260
L1332.L16-04	TR16x4	1	16	4	Left	363	30	52	24	10	0.250
L1332.L20-04	TR20x4	1	20	4	Left	514	38	62	26	11	0.400
L1332.L24-05	TR24x5	1	24	5	Left	780	50	77	33	13	0.750
L1332.L30-06	TR30x6	1	30	6	Left	1430	58	90	48	15	1.400
L1332.L36-06	TR36x6	1	36	6	Left	2166	80	115	60	20	3.200
L1332.L40-07	TR40x7	1	40	7	Left	2610	80	140	65	20	4.100
L1332.L50-08	TR50x8	1	50	8	Left	4237	90	170	70	20	5.900

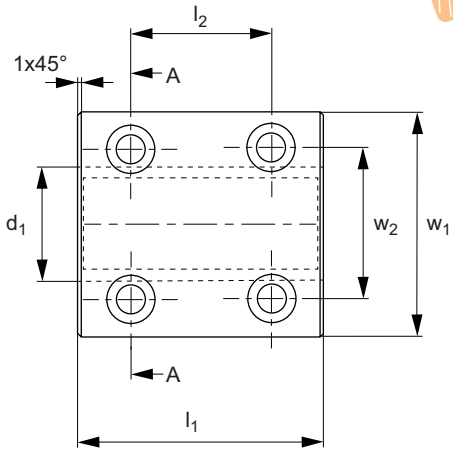
Square Bronze Nut with Through Holes

for lead screws



L1334





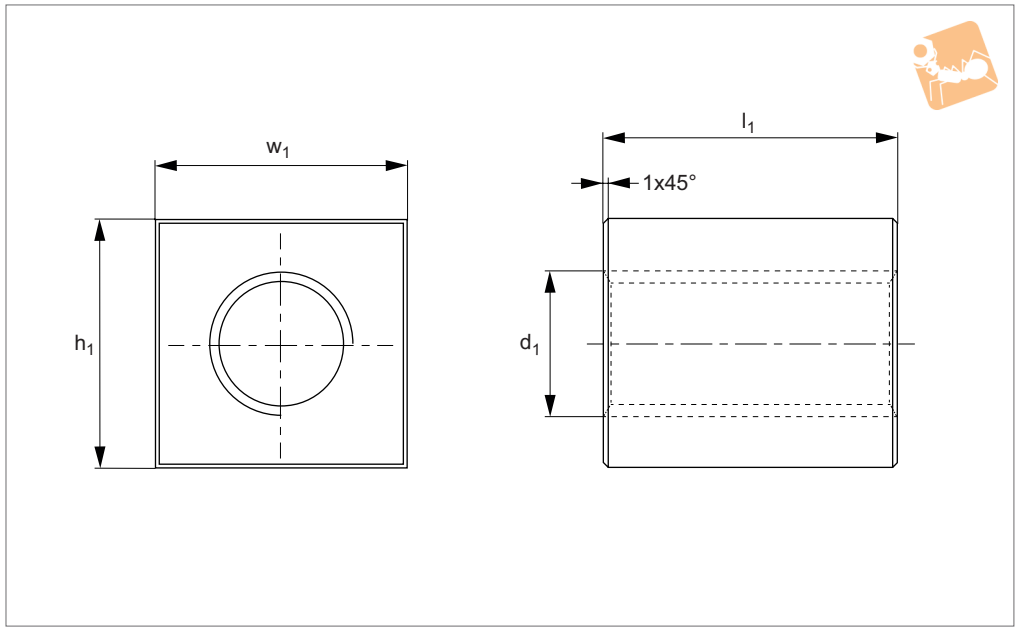
Material
Bronze (CuSn7ZnPb).

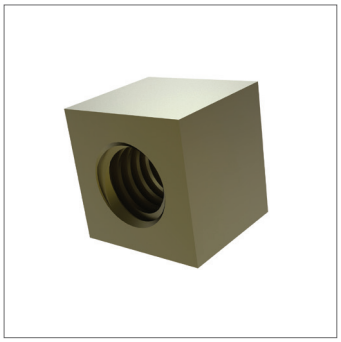
Technical Notes
Suitable for movements with medium duty loads.

Tips
Standard nuts are right hand thread, single starts.

For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.
*Special M8 fixing screw with a reduced head diameter.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	d_2	d_3	h_1 & w_1 tol. h9	h_2	l_1 +0.0|-0.2	l_2	w_2	For screw	Weight kg
L1334.R16-04	TR16x4	1	16	4	Right	770	5	9.5	35	5.2	40	26	24	M 5	0.34
L1334.R20-04	TR20x4	1	20	4	Right	1412	6	10.0	40	6.5	50	38	28	M 6	0.57
L1334.R30-06	TR30x6	1	30	6	Right	2544	6	10.0	50	6.5	60	49	38	M 6	0.98
L1334.R40-07	TR40x7	1	40	7	Right	4013	8*	9.9*	60	8.5	75	55	49	M 8*	1.60
L1334.L16-04	TR16x4	1	16	4	Left	770	5	9.5	35	5.2	40	26	24	M 5	0.34
L1334.L20-04	TR20x4	1	20	4	Left	1412	6	10.0	40	6.5	50	38	28	M 6	0.57
L1334.L30-06	TR30x6	1	30	6	Left	2544	6	10.0	50	6.5	60	49	38	M 6	0.98
L1334.L40-07	TR40x7	1	40	7	Left	4013	8*	9.9*	60	8.5	75	55	49	M 8*	1.60





L1335

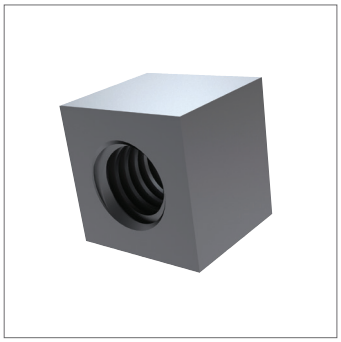
Material
Brass (EN 12164, CW614N-M).

Technical Notes
Used for fairly light loads.

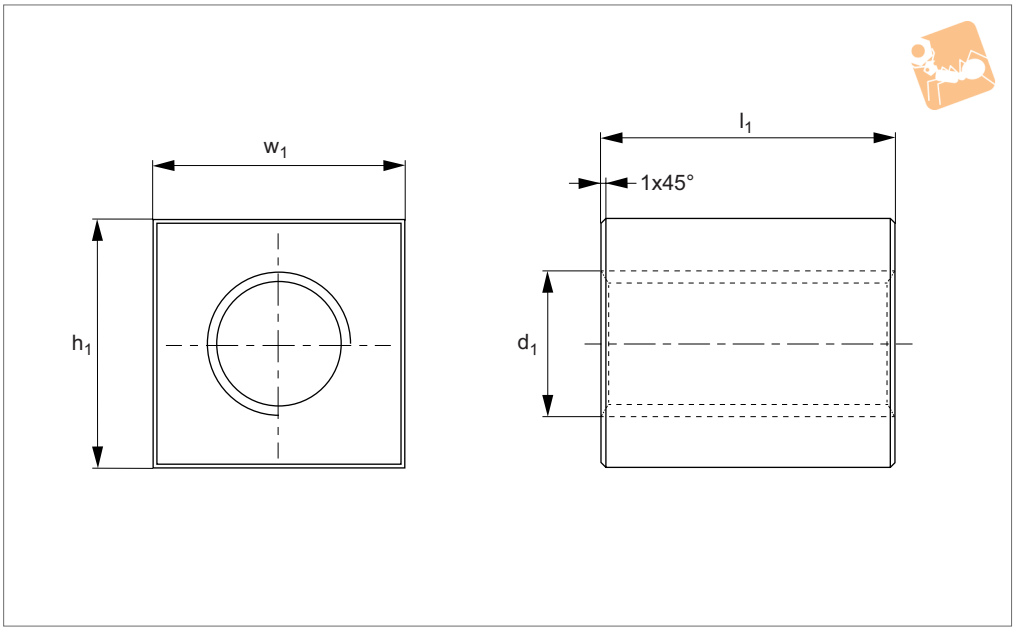
Tips
Standard nuts are right hand thread.
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	h_1 & w_1 tol. h11	l_1 +0.0|-0.2	Weight kg
L1335.R12-03	TR12x3	1	12	3	Right	411	25	25	0.11
L1335.R16-04	TR16x4	1	16	4	Right	770	30	35	0.21
L1335.R18-04	TR18x4	1	18	4	Right	1131	35	45	0.38
L1335.R20-04	TR20x4	1	20	4	Right	1412	40	50	0.55
L1335.R30-06	TR30x6	1	30	6	Right	2544	50	60	0.95
L1335.R36-06	TR36x6	1	36	6	Right	3630	60	70	1.56
L1335.R40-07	TR40x7	1	40	7	Right	4013	60	70	1.46
L1335.L12-03	TR12x3	1	12	3	Left	411	25	25	0.11
L1335.L16-04	TR16x4	1	16	4	Left	770	30	35	0.21
L1335.L18-04	TR18x4	1	18	4	Left	1131	35	45	0.38
L1335.L20-04	TR20x4	1	20	4	Left	1412	40	50	0.55
L1335.L30-06	TR30x6	1	30	6	Left	2554	50	60	0.95
L1335.L36-06	TR32x6	1	36	6	Left	3630	60	70	1.56
L1335.L40-07	TR40x7	1	40	7	Left	4013	60	70	1.46

Square Steel Nuts
for lead screws



L1336



Material
Steel (11SMnPb37). Manufactured to ISO 2901/2903 (DIN 103).

Technical Notes
Used for low rotation speeds, manual control, for clamping or locking functions and for receiving dead weights.
The use of steel to steel contact surface is not suitable for motorised motion.

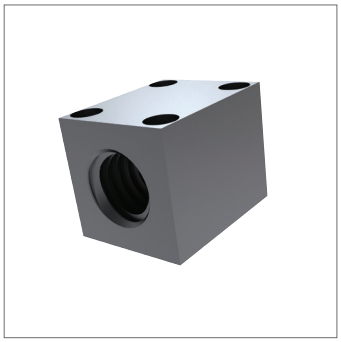
Tips
Standard nuts are right hand thread, single starts.
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	h_1 & w_1 tol. h11	l_1 +0.0|-0.2	Weight kg
L1336.R10-02	TR10x 2	1	10	2	Right	150	17	15	0.027
L1336.R10-04	TR10x 4	2	10	4	Right	150	17	15	0.027
L1336.R12-03	TR12x 3	1	12	3	Right	210	25	18	0.076
L1336.R12-06	TR12x 6	2	12	6	Right	210	25	18	0.076
L1336.R14-03	TR14x 3	1	14	3	Right	285	25	20	0.079
L1336.R14-06	TR14x 6	2	14	6	Right	285	25	20	0.079
L1336.R16-04	TR16x 4	1	16	4	Right	770	28	24	0.199
L1336.R16-08	TR16x 8	2	16	8	Right	365	28	24	0.119
L1336.R18-04	TR18x 4	1	18	4	Right	1131	30	28	0.353
L1336.R18-08	TR18x 8	2	18	8	Right	470	30	28	0.154
L1336.R20-04	TR20x 4	1	20	4	Right	1412	35	30	0.517
L1336.R20-08	TR20x 8	2	20	8	Right	590	35	30	0.259
L1336.R22-05	TR22x 5	1	22	5	Right	700	35	33	0.240
L1336.R22-10	TR22x10	2	22	10	Right	700	35	33	0.240
L1336.R24-05	TR24x 5	1	24	5	Right	845	40	36	0.354
L1336.R24-10	TR24x19	2	24	10	Right	845	40	36	0.354
L1336.R26-05	TR26x 5	1	26	5	Right	1005	40	39	0.363
L1336.R26-10	TR26x10	2	26	10	Right	1005	40	39	0.363
L1336.R28-05	TR28x 5	1	28	5	Right	1175	45	42	0.506
L1336.R28-10	TR28x10	2	28	10	Right	1175	45	42	0.506
L1336.R30-06	TR30x 6	1	30	6	Right	2544	45	45	0.877
L1336.R30-12	TR30x12	2	30	12	Right	1335	45	45	0.513
L1336.R32-06	TR32x 6	1	32	6	Right	1430	55	48	0.891
L1336.R32-12	TR32x12	2	32	12	Right	1430	55	48	0.891
L1336.R36-06	TR36x 6	1	36	6	Right	3630	60	54	1.465
L1336.R36-12	TR36x12	2	36	12	Right	1950	60	54	1.163
L1336.R40-07	TR40x 7	1	40	7	Right	4013	60	60	1.347
L1336.R40-14	TR40x14	2	40	14	Right	2400	60	60	1.216
L1336.R44-07	TR44x 7	1	44	7	Right	2940	65	66	1.538
L1336.L10-02	TR10x2	1	10	2	Left	150	17	15	0.027
L1336.L12-03	TR12x3	1	12	3	Left	739	25	18	0.123
L1336.L14-03	TR14x3	1	14	3	Left	285	25	20	0.079

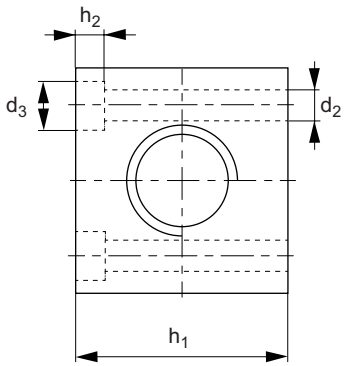
Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	h_1 & w_1 tol. h11	l_1 +0.0|-0.2	Weight kg
L1336.L16-04	TR16x4	1	16	4	Left	770	28	24	0.199
L1336.L18-04	TR18x4	1	18	4	Left	1131	30	28	0.353
L1336.L20-04	TR20x4	1	20	4	Left	1412	35	30	0.517
L1336.L22-05	TR22x5	1	22	5	Left	700	35	33	0.240
L1336.L24-05	TR24x5	1	24	5	Left	845	40	36	0.354
L1336.L26-05	TR26x5	1	26	5	Left	1005	40	39	0.363
L1336.L28-05	TR28x5	1	28	5	Left	1175	45	42	0.506
L1336.L30-06	TR30x6	1	30	6	Left	2544	45	45	0.877
L1336.L32-06	TR32x6	1	32	6	Left	1430	55	48	0.891
L1336.L36-06	TR36x6	1	36	6	Left	1950	60	54	1.163
L1336.L40-07	TR40x7	1	40	7	Left	4013	60	60	1.347
L1336.L44-07	TR44x7	1	44	7	Left	2940	65	66	1.538

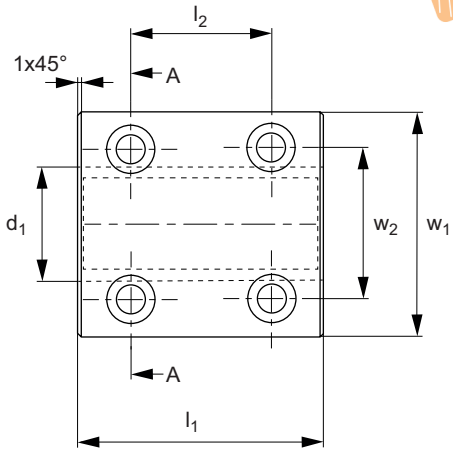
Square Steel Nut with Holes

for lead screws



L1337





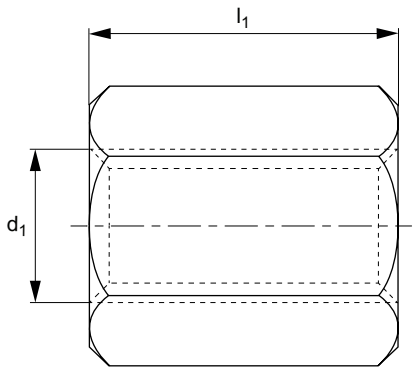
Material
Steel (EN 10277-3, 11SMnPb37).

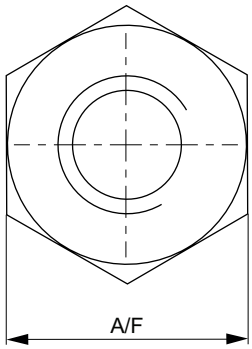
Technical Notes
Used as a fixing nut or for manual movements where the load is not important, as the steel to steel coupling used for moving under heavy loads tends to seize.
The use of steel/steel contact surface is not suitable for motorised motion.

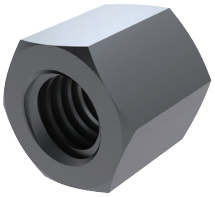
Tips
Standard nuts are right hand thread.

For use with steel or stainless steel lead screws, L1320 and L1322.
*Special M 8 fixing screw with a reduced head diameter.

Order No.	Size	No. of starts	d_1	Lead	Thread direction	Contact surface mm²	d_2	d_3	h_1 & w_1	h_2	l_1	l_2	w_2	Weight kg
L1337.R12-03	TR12x3	1	12	3	Right	739	4	7.0	25	4.2	30	20	17	0.123
L1337.R16-04	TR16x4	1	16	4	Right	770	5	9.5	35	5.2	40	24	21	0.199
L1337.R18-04	TR18x4	1	18	4	Right	1131	6	10.0	35	6.5	45	26	24	0.353
L1337.R20-04	TR20x4	1	20	4	Right	1412	6	10.0	40	6.5	50	38	28	0.517
L1337.R30-06	TR30x6	1	30	6	Right	2544	6	10.0	50	6.5	60	48	38	0.877
L1337.R40-07	TR40x7	1	40	7	Right	4013	8*	9.9*	60	8.5	70	55	49	1.347
L1337.R50-08	TR50x8	1	50	8	Right	6502	8*	9.9*	70	8.5	90	70	60	2.183
L1337.R60-09	TR60x9	1	60	9	Right	8718	8*	9.9*	80	8.5	100	80	69	2.990
L1337.L12-03	TR12x3	1	12	3	Left	739	4	7.0	25	4.2	30	20	17	0.123
L1337.L16-04	TR16x4	1	16	4	Left	770	5	9.5	35	5.2	40	24	21	0.199
L1337.L18-04	TR18x4	1	18	4	Left	1131	6	10.0	35	6.5	45	26	24	0.353
L1337.L20-04	TR20x4	1	20	4	Left	1412	6	10.0	40	6.5	50	38	28	0.517
L1337.L30-06	TR30x6	1	30	6	Left	2544	6	10.0	50	6.5	60	48	38	0.877
L1337.L40-07	TR40x7	1	40	7	Left	4013	8*	9.9*	60	8.5	70	55	49	1.347
L1337.L50-08	TR50x8	1	50	8	Left	6502	8*	9.9*	70	8.5	90	70	60	2.183
L1337.L60-09	TR60x9	1	60	9	Left	8718	8*	9.9*	80	8.5	100	80	69	2.990







L1338

Material
Steel (EN10277-3, 11SMnPb37).
Manufactured to ISO 2901/2903 (DIN103).

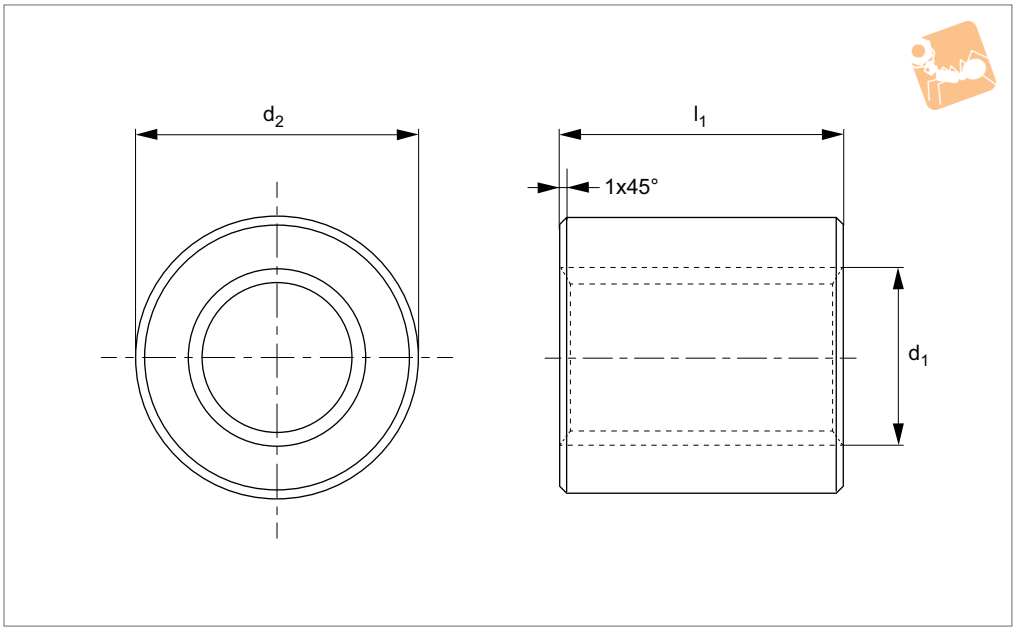
Technical Notes
Used for low rotation speeds, manual control, for clamping or locking functions and for receiving dead weights.
The use of steel to steel contact surface is not suitable for motorised motion.

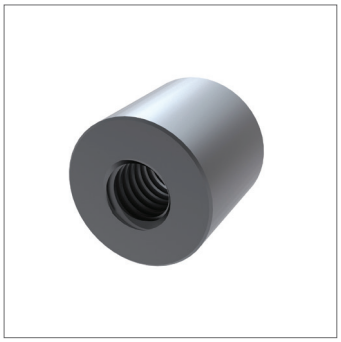
Tips
Standard nuts are right hand thread, single starts.
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	A/F tol. h11	l_1 +0.0|-0.2	Weight kg
L1338.R08-015	TR8x1.5	1	8	1.5	Right	100	15	12	0.014
L1338.R10-02	TR10x2	1	10	2.0	Right	150	17	15	0.022
L1338.R10-04	TR10x4	2	10	4.0	Right	150	17	15	0.022
L1338.R12-03	TR12x3	1	12	3.0	Right	210	19	18	0.032
L1338.R12-06	TR12x6	2	12	6.0	Right	210	19	18	0.032
L1338.R14-03	TR14x3	1	14	3.0	Right	285	22	21	0.049
L1338.R14-06	TR14x6	2	14	6.0	Right	285	22	21	0.049
L1338.R16-04	TR16x4	1	16	4.0	Right	365	24	24	0.065
L1338.R16-08	TR16x8	2	16	8.0	Right	365	24	24	0.065
L1338.R18-04	TR18x4	1	18	4.0	Right	470	27	27	0.091
L1338.R18-08	TR18x8	2	18	8.0	Right	470	27	27	0.091
L1338.R20-04	TR20x4	1	20	4.0	Right	590	30	30	0.124
L1338.R20-08	TR20x8	2	20	8.0	Right	590	30	30	0.124
L1338.R22-05	TR22x5	1	22	5.0	Right	700	30	33	0.125
L1338.R22-10	TR22x10	2	22	5.0	Right	700	30	33	0.125
L1338.R24-05	TR24x5	1	24	5.0	Right	845	36	36	0.219
L1338.R24-10	TR24x10	2	24	10.0	Right	845	36	36	0.219
L1338.R26-05	TR26x5	1	26	5.0	Right	1005	36	39	0.216
L1338.R26-10	TR26x10	2	26	10.0	Right	1005	36	39	0.216
L1338.R28-05	TR28x5	1	28	5.0	Right	1175	41	42	0.318
L1338.R28-10	TR28x10	2	28	5.0	Right	1175	41	42	0.318
L1338.R30-06	TR30x6	1	30	6.0	Right	1335	46	45	0.445
L1338.R30-12	TR30x12	2	30	12.0	Right	1335	55	54	0.445
L1338.R32-06	TR32x6	1	32	6.0	Right	1430	50	48	0.567
L1338.R32-12	TR32x12	2	32	6.0	Right	1430	50	48	0.567
L1338.R36-06	TR36x6	1	36	6.0	Right	1950	55	54	0.708
L1338.R36-12	TR36x12	2	36	12.0	Right	1950	55	54	0.708
L1338.R40-07	TR40x7	1	40	7.0	Right	2400	60	60	0.893
L1338.R40-14	TR40x14	2	40	14.0	Right	2400	60	60	0.893
L1338.R44-07	TR44x7	1	44	7.0	Right	2940	65	66	1.538
L1338.R50-08	TR50x8	1	50	8.0	Right	3790	75	75	1.889
L1338.R60-09	TR60x9	1	60	9.0	Right	5490	90	90	3.227

Hexagon Steel Nuts

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread direction	Contact surface mm²	A/F tol. h11	l_1 +0.0|-0.2	Weight kg
L1338.L10-02	TR10x2	1	10	2.0	Left	150	17	15	0.022
L1338.L12-03	TR12x3	1	12	3.0	Left	210	19	18	0.032
L1338.L14-03	TR14x3	1	14	3.0	Left	285	22	21	0.049
L1338.L16-04	TR16x4	1	16	4.0	Left	365	24	24	0.065
L1338.L18-04	TR18x4	1	18	4.0	Left	470	27	27	0.091
L1338.L20-04	TR20x4	1	20	4.0	Left	590	30	30	0.124
L1338.L22-05	TR22x5	1	22	5.0	Left	700	30	33	0.125
L1338.L24-05	TR24x5	1	24	5.0	Left	845	36	36	0.219
L1338.L26-05	TR26x5	1	26	5.0	Left	1005	36	39	0.216
L1338.L28-05	TR28x5	1	28	5.0	Left	1175	41	42	0.318
L1338.L30-06	TR30x6	1	30	6.0	Left	1335	46	45	0.445
L1338.L32-06	TR32x6	1	32	6.0	Left	1430	50	48	0.567
L1338.L36-06	TR36x6	1	36	6.0	Left	1950	55	54	0.708
L1338.L40-07	TR40x7	1	40	7.0	Left	2400	60	60	0.893
L1338.L44-07	TR44x7	1	44	7.0	Left	2940	65	66	1.538
L1338.L50-08	TR50x8	1	50	8.0	Left	3790	75	75	1.889
L1338.L60-09	TR60x9	1	60	9.0	Left	5490	90	90	3.227





L1339

Material
Steel (EN10277-3, 11SMnPb37).
Manufactured to ISO2901/2903 (DIN 103).

Technical Notes
Used for low rotation speeds, manual control, for clamping or locking functions and for receiving dead weights.
The use of steel to steel contact surface is not suitable for motorised motion.

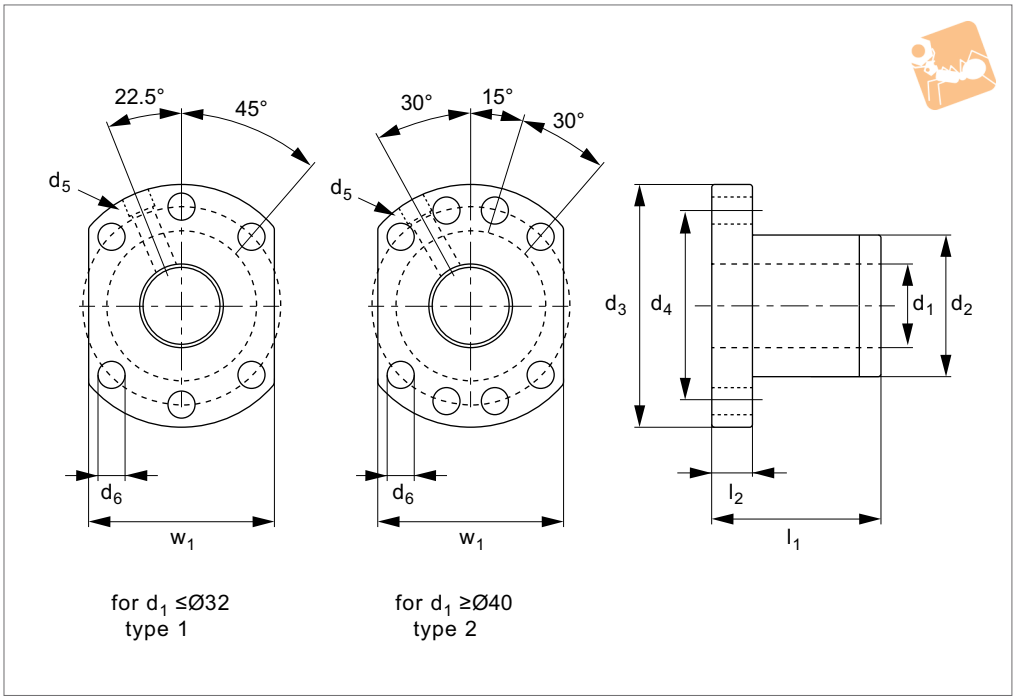
Tips
Standard nuts are right hand thread, single starts.
For use with steel or stainless steel lead screws, L1320, L1321, L1322, and L1323.

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread hand	Contact surface mm²	d_2 tol. h10	l_1 +0.0|-0.1	Weight kg
L1339.R08-015	TR8x1.5	1	8	1.5	Right	100	18	12	0.016
L1339.R10-02	TR10x2	1	10	2.0	Right	150	22	15	0.040
L1339.R10-04	TR10x4	2	10	4.0	Right	150	22	15	0.040
L1339.R12-03	TR12x3	1	12	3.0	Right	210	26	18	0.060
L1339.R12-06	TR12x6	2	12	6.0	Right	210	26	18	0.060
L1339.R14-03	TR14x3	1	14	3.0	Right	285	30	21	0.090
L1339.R14-06	TR14x6	2	14	6.0	Right	285	30	21	0.090
L1339.R16-04	TR16x4	1	16	4.0	Right	365	36	24	0.160
L1339.R16-08	TR16x8	2	16	8.0	Right	365	36	24	0.160
L1339.R18-04	TR18x4	1	18	4.0	Right	470	40	27	0.220
L1339.R18-08	TR18x8	2	18	8.0	Right	470	40	27	0.220
L1339.R20-04	TR20x4	1	20	4.0	Right	590	45	30	0.310
L1339.R20-08	TR20x8	2	20	8.0	Right	590	45	30	0.310
L1339.R22-05	TR22x5	1	22	5.0	Right	700	45	33	0.320
L1339.R22-10	TR22x10	2	22	10.0	Right	700	45	33	0.320
L1339.R24-05	TR24x5	1	24	5.0	Right	845	50	36	0.440
L1339.R24-10	TR24x10	2	24	10.0	Right	845	50	36	0.440
L1339.R26-05	TR26x5	1	26	5.0	Right	1005	50	39	0.450
L1339.R26-10	TR26x10	2	26	10.0	Right	1005	50	39	0.450
L1339.R28-05	TR28x5	1	28	5.0	Right	1175	60	42	0.750
L1339.R28-10	TR28x10	2	28	10.0	Right	1175	60	42	0.750
L1339.R30-06	TR30x6	1	30	6.0	Right	1335	60	45	0.770
L1339.R30-12	TR30x12	2	30	12.0	Right	1335	60	45	0.770
L1339.R32-06	TR32x6	1	32	6.0	Right	1430	60	48	0.790
L1339.R32-12	TR32x12	2	32	12.0	Right	1430	60	48	0.790
L1339.R36-06	TR36x6	1	36	6.0	Right	1950	75	54	1.480
L1339.R36-12	TR36x12	2	36	12.0	Right	1950	75	54	1.490
L1339.R40-07	TR40x7	1	40	7.0	Right	2400	80	60	1.830
L1339.R40-14	TR40x14	2	40	14.0	Right	2400	80	60	1.830
L1339.R44-07	TR44x7	1	44	7.0	Right	2940	80	66	1.890
L1339.R50-08	TR50x 8	1	50	8.0	Right	3790	90	75	2.690

Cylindrical Steel Nuts

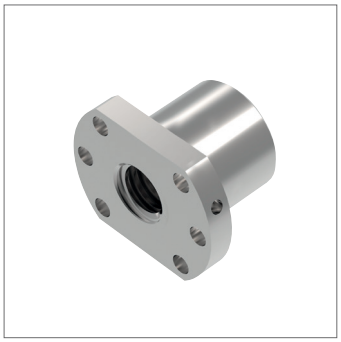
for lead screws

Order No.	Size	No. of starts	d_1 tol. 7H	Lead	Thread hand	Contact surface mm²	d_2 tol. h10	l_1 +0.0|-0.1	Weight kg
L1339.R60-09	TR60x9	1	60	9.0	Right	5490	100	90	3.870
L1339.R70-10	TR70x10	1	70	10.0	Right	7140	110	100	5.120
L1339.R80-10	TR80x10	1	80	10.0	Right	8900	120	110	6.000
L1339.L10-02	TR10x2	1	10	2.0	Left	150	22	15	0.040
L1339.L12-03	TR12x3	1	12	3.0	Left	210	26	18	0.060
L1339.L14-03	TR14x3	1	14	3.0	Left	210	30	21	0.090
L1339.L16-04	TR16x4	1	16	4.0	Left	365	36	24	0.160
L1339.L18-04	TR18x4	1	18	4.0	Left	470	40	27	0.220
L1339.L20-04	TR20x4	1	20	4.0	Left	590	45	30	0.310
L1339.L22-05	TR22x5	1	22	5.0	Left	700	45	33	0.320
L1339.L24-05	TR24x5	1	24	5.0	Left	845	50	36	0.440
L1339.L26-05	TR26x5	1	26	5.0	Left	1005	50	39	0.450
L1339.L28-05	TR28x5	1	28	5.0	Left	1175	60	42	0.750
L1339.L30-06	TR30x6	1	30	6.0	Left	1335	60	45	0.770
L1339.L32-06	TR32x6	1	32	6.0	Left	1430	60	48	0.790
L1339.L36-06	TR36x6	1	36	6.0	Left	1950	75	54	1.480
L1339.L40-07	TR40x7	1	40	7.0	Left	2400	80	60	1.830
L1339.L44-07	TR44x7	1	44	7.0	Left	2940	80	66	1.880
L1339.L50-08	TR50x8	1	50	8.0	Left	3790	90	75	2.690
L1339.L60-09	TR60x9	1	60	9.0	Left	5490	100	90	3.870
L1339.L70-10	TR70x10	1	70	10.0	Left	7140	110	100	5.120
L1339.L80-10	TR80x10	1	80	10.0	Left	8900	120	110	6.000



for d_1 ≤Ø32
type 1

for d_1 ≥Ø40
type 2



L1370

Material
Steel (16MnCr5 or 100Cr6), with Vulkollan seals.

Technical Notes
To DIN 69051 form B.
Axial play for 5mm pitch = 0.05mm;
for 10mm pitch = 0.10mm;
for multi-starts = 0.20mm.
Preload max. 5% of max. dynamic load.

For axial run-out, concentricity and parallelism figures see technical pages.
With lubrication and fixing holes.
For use with ball screws no. L1375.

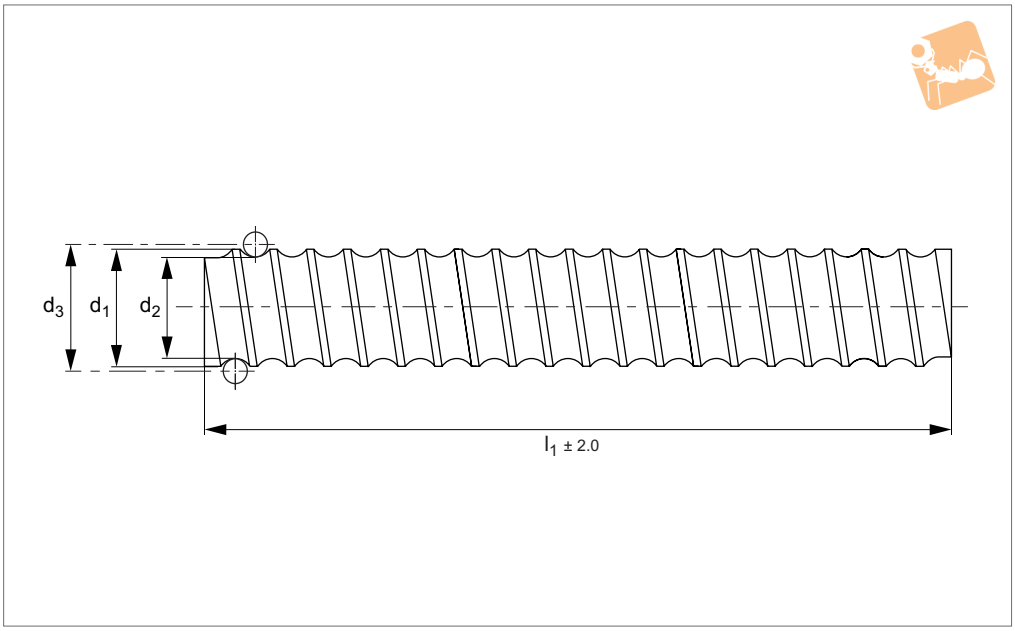
Tips
For easy mounting of the ball screw nuts see the nut bracket - part L1377.
For miniature ball screws Ø6 to Ø14 see part no. L1379.

Important Notes
Fit ball nut to screw using the sleeve provided. Offer up the ball nut to the screw and slide carefully on. Do not remove the ball nut from the sleeve provided - the ball bearings can come loose rendering the ball nut unusable.

Order No.	d_1 for screw	Pitch	Type	d_2	d_3	d_4	d_5 for	d_6	l_1	l_2	w_1	Ball dia.	Dyn. load C kN	Static load C_0 kN	Stiffness N/µm
L1370.16-05	16	5	Type 1	28	48	38	M 6	5.5	45	10	40	3.175	13.53	29.92	314
L1370.16-10	16	10	Type 1	28	48	38	M 6	5.5	57	10	40	3.175	10.82	23.55	255
L1370.20-05	20	5	Type 1	36	58	47	M 6	6.6	51	10	44	3.175	15.21	38.00	382
L1370.25-05	25	5	Type 1	40	62	51	M 6	6.6	51	10	48	3.175	16.91	48.09	441
L1370.25-10	25	10	Type 1	40	62	51	M 6	6.6	80	12	48	4.762	28.96	71.54	490
L1370.32-05	32	5	Type 1	50	80	65	M 6	9.0	52	12	62	3.175	18.85	62.21	529
L1370.32-10	32	10	Type 1	50	80	65	M 6	9.0	85	12	62	6.350	47.12	119.72	598
L1370.40-05	40	5	Type 2	63	93	78	M 8	9.0	55	14	70	3.175	20.69	78.34	617
L1370.40-10	40	10	Type 2	63	93	78	M 8	9.0	88	14	70	6.340	52.95	152.00	715
L1370.50-10	50	10	Type 2	75	110	93	M 8	11.0	88	16	85	6.350	58.88	192.35	833
L1370.63-10	63	10	Type 2	90	125	108	M 8	11.0	93	18	95	6.350	65.89	248.68	970
L1370.80-10	80	10	Type 2	105	145	125	M 8	13.5	93	20	110	6.350	72.04	313.36	1068

Ball Screws
rolled

L1375



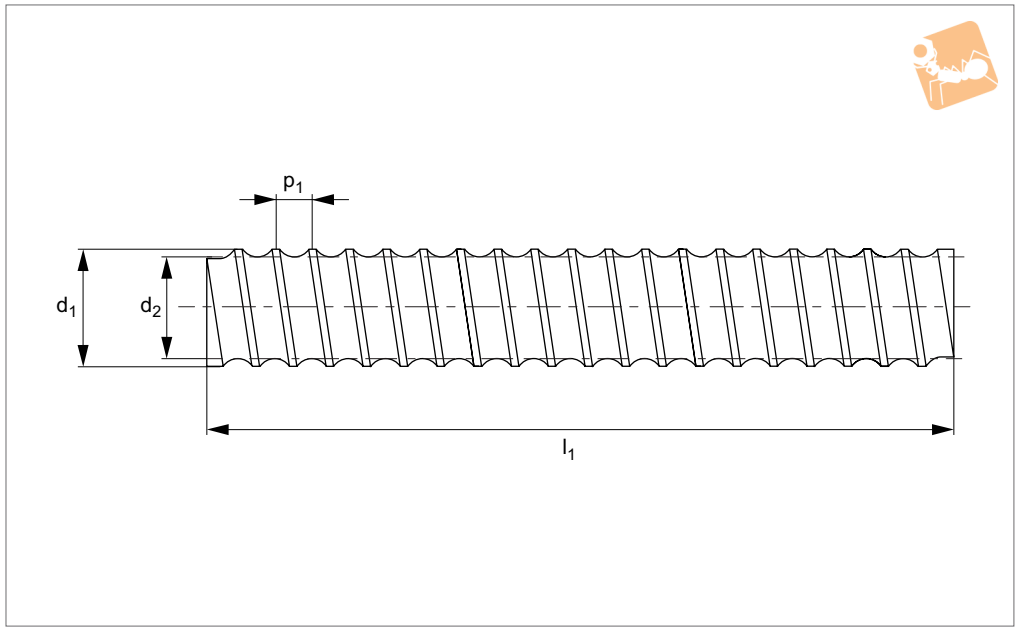
Material
Steel (CF53 or C55R), induction hardened to 60 HRC ±2, polished.

Technical Notes
Gothic profile with a 5 or 10mm lead. Tolerance T7 - 50µ/300mm. Shorter lengths or longer lengths up to a maximum of 3000mm available.

For ball screw nuts see parts L1370-L1374 & L1377.
For end screw machining to suit ball screw support units see relevant ball screw supports (L1388-L1406). End machining on request.
Replace xxxx with desired rail length eg. L1375.16-05-1000 is 1000mm long.

Important Notes
Ensure the ball nut can be fitted to the ball screw after machining. Do not remove the ball nut from the sleeve prior to installation - the balls come free rendering the ball nut unusable.

Order No.	Screw dia. x lead	Lead	d_1	d_2	d_3	l_1 max.	Mass moment of inertia kg·m²	Weight kg
L1375.16-05-xxxx	16x5	5	17.08	16	13.90	500	$4.45x10^{-5}$	0.71
L1375.16L-05-xxxx	16x5	5	17.08	16	13.90	600	$4.45x10^{-5}$	0.71
L1375.20-05-xxxx	20x5	5	21.08	20	17.90	800	$1.12x10^{-4}$	1.18
L1375.20L-05-xxxx	20x5	5	21.08	20	17.90	1000	$1.12x10^{-4}$	1.18
L1375.25-05-xxxx	25x5	5	26.08	25	22.90	1500	$2.62x10^{-4}$	1.80
L1375.25L-05-xxxx	25x5	5	26.08	25	22.90	2000	$2.62x10^{-4}$	1.80
L1375.32-05-xxxx	32x5	5	33.08	32	29.90	2500	$7.25x10^{-4}$	2.99
L1375.32L-05-xxxx	32x5	5	33.08	32	29.90	3000	$7.25x10^{-4}$	2.99
L1375.40-05-xxxx	40x10	5	41.08	40	37.90	500	$1.81x10^{-3}$	4.72
L1375.40L-05-xxxx	40x10	5	41.08	40	37.90	600	$1.81x10^{-3}$	4.72
L1375.50-05-xxxx	50x10	5	52.15	50	45.80	800	$4.19x10^{-3}$	7.18
L1375.63-10-xxxx	63x10	10	65.15	63	58.80	1000	$1.09x10^{-2}$	11.56
L1375.80-10-xxxx	80x10	10	82.15	80	75.80	1500	$2.89x10^{-2}$	18.88



L1379

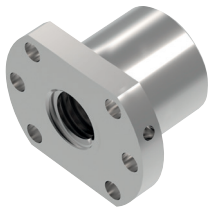
Material
Steel (Cf53 or C55R), hardened, rust proof chrome plated (X90CrMoV5).

Technical Notes
Where xxxx is length in mms.
Tolerance T7 - 50µ/300mm.
For ball screw nuts L1379.F (flanged) and L1379.C (cylindrical).
For end machining of ball screws to suit miniature or standard ball screw support units please see technical pages.
We provide a service to cut and machine ball screws as required.
Chrome plating for use in food industry etc. contains 98% pure chromium.
Replace xxxx with desired rail length eg. L1379.06-10-1000 is 1000mm long.

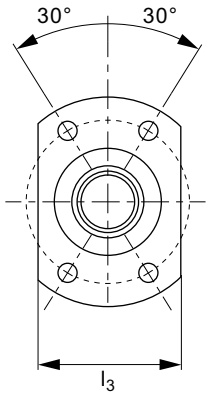
Tips
Do not remove the ball nut from the sleeve that it comes with prior to installation - the balls come free rendering the ball nut unusable. Offer up the ball nut still on it's mounting sleeve to the ball screw and screw carefully on.

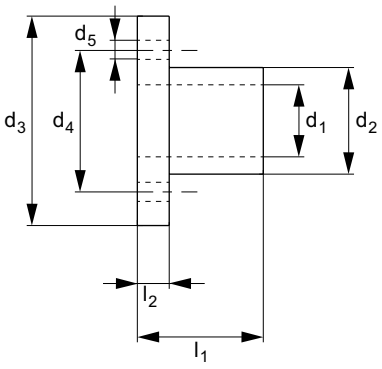
Order No.	Screw dia. x lead	d_1	d_2 core dia.	l_1 max.	Lead w_1	Mass moment of inertia kg·m²
L1379.06-10-xxxx	6x1.0	6	5.47	1000	1	$0.83x10^{-7}$
L1379.08-10-xxxx	8x1.0	8	7.40	1000	1	$2.67x10^{-6}$
L1379.08-20-xxxx	8x2.0	8	7.21	1000	1	$2.71x10^{-6}$
L1379.08-25-xxxx	8x2.5	8	7.21	1000	1	$2.80x10^{-6}$
L1379.10-20-xxxx	10x2.0	10	9.21	1000	1	$5.11x10^{-6}$
L1379.10-40-xxxx	10x4.0	10	8.68	1000	1	$6.53x10^{-6}$
L1379.12-20-xxxx	12x2.0	12	11.21	1000	1	$1.07x10^{-5}$
L1379.12-40-xxxx	12x4.0	12	9.80	1000	1	$1.51x10^{-5}$
L1379.12-50-xxxx	12x5.0	12	9.80	1000	1	$7.64x10^{-6}$
L1379.14-20-xxxx	14x2.0	14	13.21	1000	1	$2.01x10^{-5}$

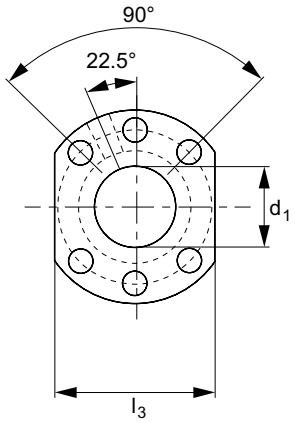
Miniature Flanged Ball Nut



L1379.F







for part L1379.F12-050

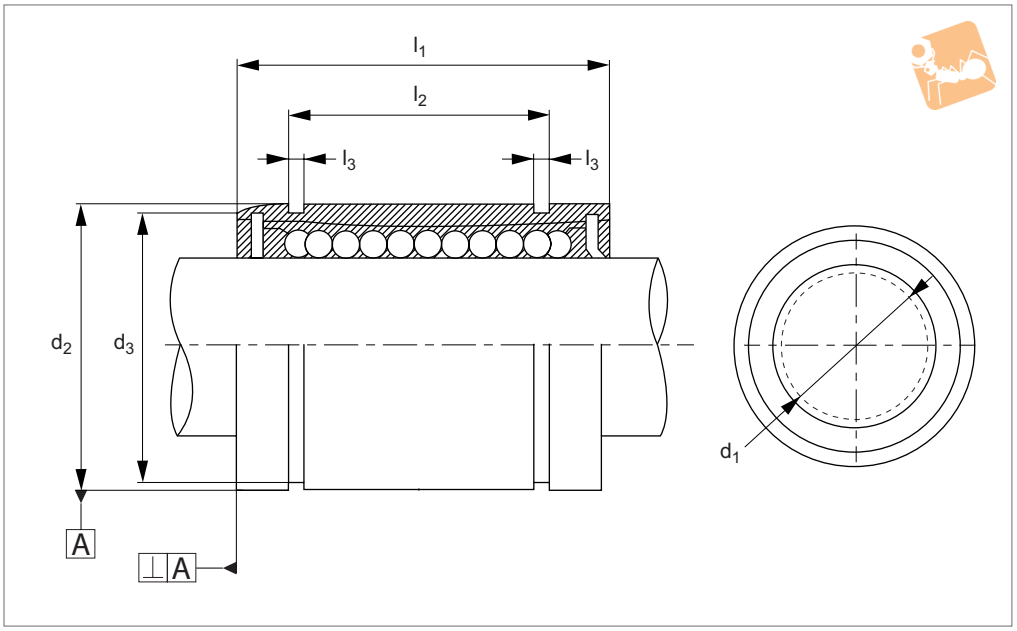
Material
Steel body (16MnCr5), balls (100Cr6) and polyurethane (Vulkolan) seals.

Technical Notes
Axial clearance 0,05mm.
Preload max. 5% of dynamic load.
For axial run-out, concentricity and parallelism figures see technical pages.

For use with miniature ball screws L1379.06- L1379.14.

Tips
Fit ball nut to screw using the sleeve provided. Offer up the ball nut to the screw and slide carefully on. Do not remove the ball nut from the sleeve provided - the ball bearings can come loose rendering the ball nut unusable.

Order No.	d_1 for screw	Pitch	d_2 tol. G6	d_3	d_4	d_5	l_1	l_2	l_3 ±0.10	No. of circuits	Ball dia.	Dyn. load C kN max.	Static load C_0 kN max.	Stiffness N/µm
L1379.F06-010	6	1.0	12	24	18	3.4	15	3.5	16	3	0.8	1.09	2.19	88
L1379.F08-010	8	1.0	14	27	21	3.4	16	4.0	18	4	0.8	1.58	3.95	137
L1379.F08-020	8	2.0	14	27	21	3.4	16	4.0	18	3	1.2	2.17	4.49	127
L1379.F08-025	8	2.5	16	29	23	3.4	26	4.0	20	3	1.2	2.17	4.49	127
L1379.F10-020	10	2.0	18	35	27	4.5	28	5.0	22	3	1.2	2.38	5.58	147
L1379.F10-040	10	4.0	26	46	36	4.5	34	10.0	28	3	2.0	4.59	8.88	167
L1379.F12-020	12	2.0	20	37	29	4.5	28	5.0	24	4	1.2	3.17	8.88	216
L1379.F12-050	12	5.0	22	37	29	4.5	39	8.0	24	3	2.5	6.61	12.9	186
L1379.F14-020	14	2.0	21	40	31	5.5	23	6.0	26	4	1.2	3.48	10.3	235



L1706

Material
Hardened and ground body from bearing steel. Single body resin retainer (POM). Supplied with nitrile rubber (NBR) end-seals -UU as standard.

Technical Notes
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6.

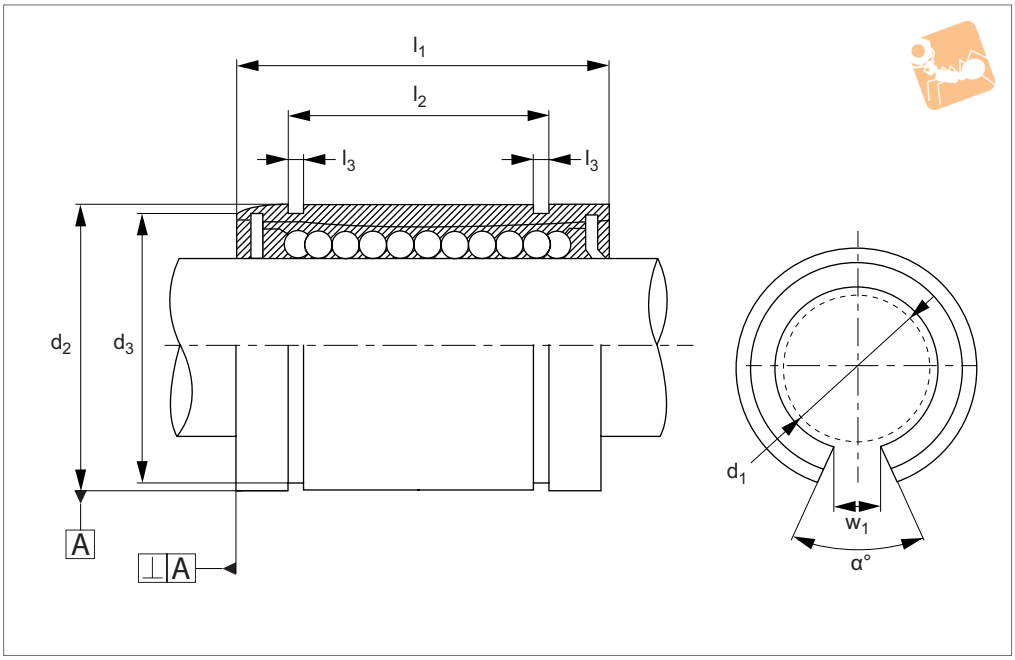
Perpendicularity .A is better than 15µ.
For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range: -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications up to 120°C - with no end seals. Please advise at time of ordering if this is required.

Tips
Superball linear bearings are also available (3 x load rating of standard bushings and 27 x travel life see part nos. L1740 and L1742.)
Nickel plated version with stainless steel balls (for corrosion resistance) on request - or stainless steel version no. L1709.

Order No.	d_1 tol. h6	d_2 tol. h6	l_1 +0|-0.3	d_3	l_2 +0|-0.3	l_3	No. of ball circuits	Dyn. load C N max.	Static load C_0 N max.	Weight g
L1706.005	5	12	22	11.5	14.5	1.10	4	200	260	12
L1706.006-1	6	12	19	11.5	13.5	1.10	4	200	260	8
L1706.008	8	16	25	15.2	16.5	1.10	4	260	400	20
L1706.010-1	10	19	29	18.0	22.0	1.30	4	370	540	30
L1706.012	12	22	32	21.0	22.9	1.30	4	410	590	41
L1706.016	16	26	36	24.9	24.9	1.30	5	770	1170	57
L1706.020	20	32	45	30.3	31.5	1.60	5	860	1370	91
L1706.025	25	40	58	37.5	44.1	1.85	6	980	1560	215
L1706.030	30	47	68	44.5	52.1	1.85	6	1560	2740	325
L1706.040	40	62	80	59.0	60.6	2.15	6	2150	4010	705
L1706.050	50	75	100	72.0	77.6	2.65	6	3820	7930	1130
L1706.060	60	90	125	86.5	101.7	3.15	6	4700	9990	2220

Open Linear Ball Bushings

L1707

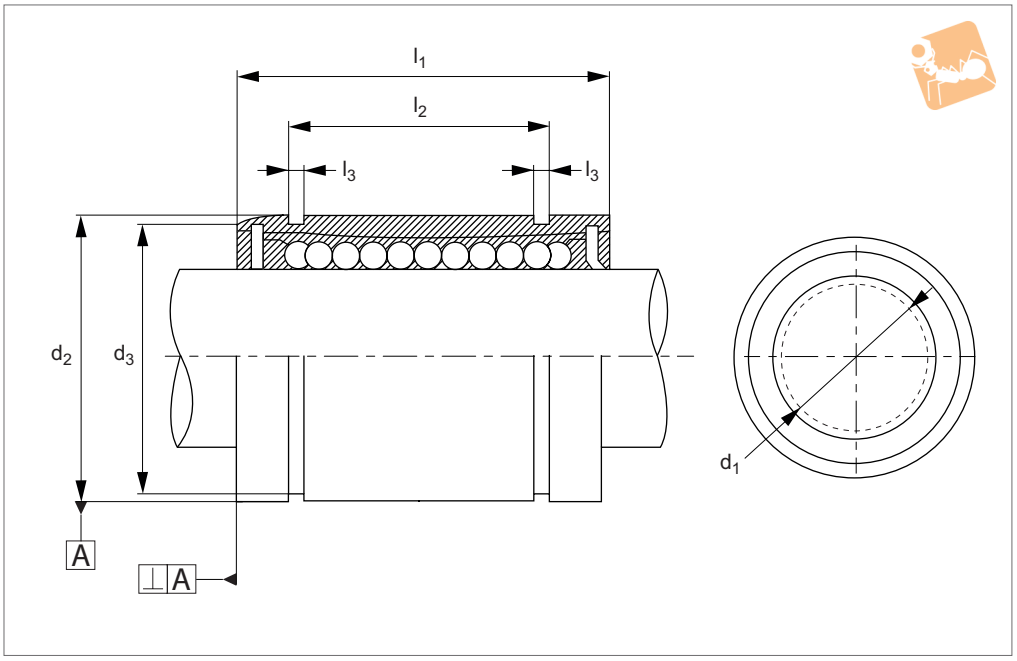


Material
Hardened and ground body from bearing steel. Single body resin retainer (POM). Supplied with nitrile rubber (NBR) end-seals -UU as standard.

Technical Notes
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6. Perpendicularity . A is better than 15µ. Temperature range: -20°C to +80°C. Steel ball retainers can be supplied for higher temperature applications up to +120°C - with no end seals. Please advise at time of ordering if this is required.

Tips
d_2 is the dimension before the bush has been slotted. Superball linear bearings are also available (3 x load rating of standard bushings and 27 x travel life see part nos. L1740 and L1742.)

Order No.	d_1 tol. h6	d_2 tol. h6	l_1 +0|-0.3	d_3	l_2 +0|-0.3	l_3	w_1	α °	No. of ball circuits	Dyn. load C N max.	Static load C_0 N max.	Weight g
L1707.012	12	22	32	21.0	22.9	1.30	7.3	78°	3	410	590	41
L1707.016	16	26	36	24.9	24.9	1.30	10.0	78°	4	770	1170	57
L1707.020	20	32	45	30.3	31.5	1.60	10.0	60°	5	860	1370	91
L1707.025	25	40	58	37.5	44.1	1.85	12.5	60°	6	980	1560	215
L1707.030	30	47	68	44.5	52.1	1.85	12.5	50°	6	1560	2740	325
L1707.040	40	62	80	59.0	60.6	2.15	16.8	50°	6	2150	4010	705
L1707.050	50	75	100	72.0	77.6	2.65	21.0	50°	6	3820	7930	1130
L1707.060	60	90	125	86.5	101.7	3.15	27.2	54°	6	4700	9990	2220



L1709

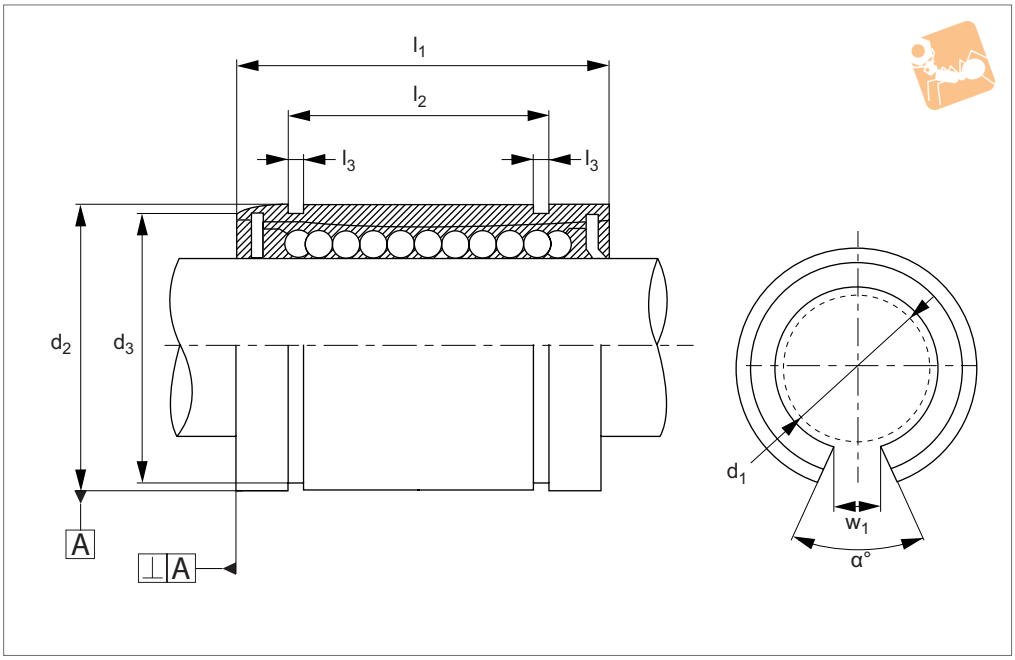
Material
Stainless steel body (440C) with a resin (POM) retainer.
Stainless steel balls (440C).
Supplied with nitrile rubber (NBR) end seals.

Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772) - tolerance h6.
Perpendicularity A is better than 15µ.
For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range: For resin ball cage -20°C to +80°C.

Order No.	Ball cage	d_1 tol. h6	d_2 tol. h6	l_1	l_2	l_3	d_3	Dyn. load C N max.	No. of ball circuits	Static load C_0 N max.	Weight g
L1709.005-RS	Resin	5	12	22	14.5	1.10	11.5	200	4	260	12
L1709.006-RS-1	Resin	6	12	19	13.5	1.10	11.5	200	4	260	8
L1709.008-RS	Resin	8	16	25	16.5	1.10	15.2	260	4	400	20
L1709.010-RS-1	Resin	10	19	29	22.0	1.30	18.0	370	4	540	30
L1709.012-RS	Resin	12	22	32	22.9	1.30	21.0	410	4	590	41
L1709.016-RS	Resin	16	26	36	24.9	1.30	24.9	770	5	1170	57
L1709.020-RS	Resin	20	32	45	31.5	1.60	30.3	860	5	1370	91
L1709.025-RS	Resin	25	40	58	44.1	1.85	37.5	980	6	1560	215
L1709.030-RS	Resin	30	47	68	52.1	1.85	44.5	1584	6	2740	360
L1709.040-RS	Resin	40	62	80	60.6	2.15	59.0	2357	6	4020	770
L1709.050-RS	Resin	50	75	100	77.6	2.65	72.0	4702	6	7940	1250
L1709.060-RS	Resin	60	90	125	101.7	3.15	86.5	6085	6	9800	2220

Stainless Ball Bushings
open

L1710

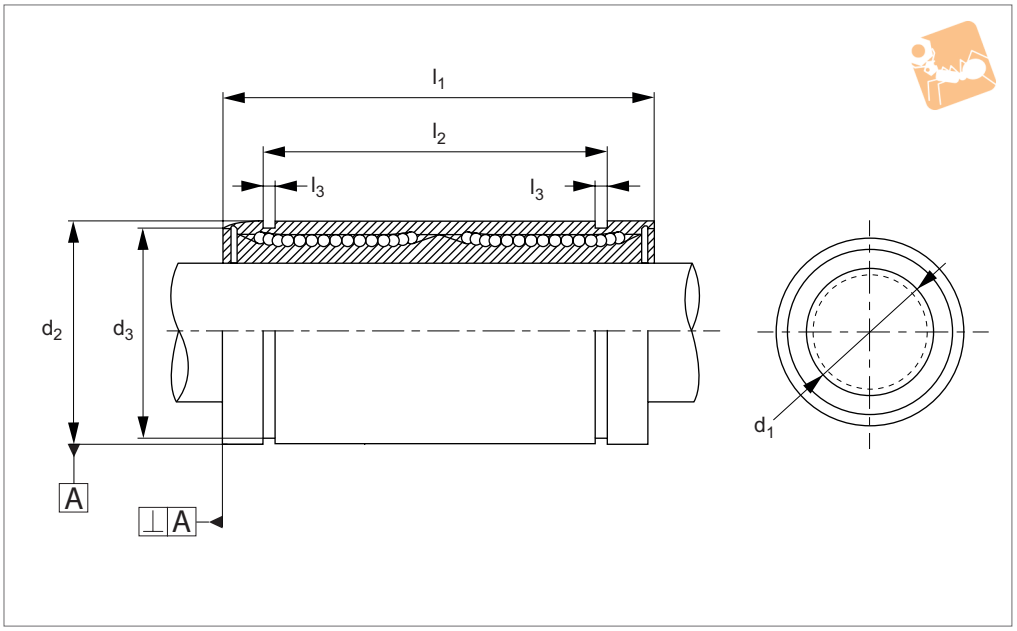


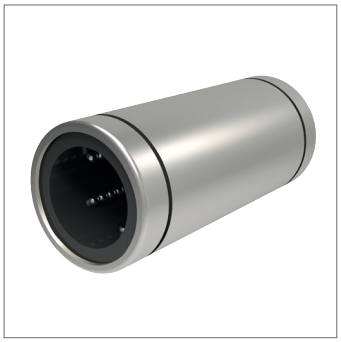
Material
Stainless steel body (440C) with either a resin (POM) or stainless steel (316) retainer.
Stainless steel balls (440C).

Supplied with nitrile rubber (NBR) end seals.

Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772) - tolerance h6.
Perpendicularity A is better than 15µ.
Temperature range: For resin ball cage -20°C to +80°C.
For stainless ball cage -20°C to +120°C.

Order No.	Ball cage	d_1 tol. h6	d_2 tol. h6	l_1	l_2	l_3	d_3	w_1	Dyn. load C N max.	α °	No. of ball circuits	Static load C_0 N max.	Weight g
L1710.012-RS	Resin	12	22	32	22.9	1.30	21.0	7.5	510	78	3	784	35
L1710.016-RS	Resin	16	26	36	24.9	1.30	24.9	10.0	578	78	3	892	48
L1710.020-RS	Resin	20	32	45	31.5	1.60	30.3	10.0	862	60	4	1370	84
L1710.025-RS	Resin	25	40	58	44.1	1.85	37.5	12.5	980	60	5	1570	195
L1710.012-SS	St. Steel	12	22	32	22.9	1.30	21.0	7.5	510	78	3	784	35
L1710.016-SS	St. Steel	16	26	36	24.9	1.30	24.9	10.0	578	78	3	892	48
L1710.020-SS	St. Steel	20	32	45	31.5	1.60	30.3	10.0	862	60	4	1370	84
L1710.025-SS	St. Steel	25	40	58	44.1	1.85	37.5	12.5	980	60	5	1570	195





L1713

Material
Stainless steel body (440C) with either a resin (POM) or stainless steel (316) retainer.
Stainless steel balls (440C).

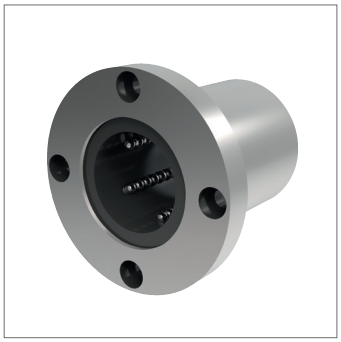
Supplied with nitrile rubber (NBR) end seals.

Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772) - tolerance h6.
Perpendicularity A is better than 15µ.
Temperature range: For resin ball cage -20°C to +80°C.
For stainless ball cage -20°C to +120°C.

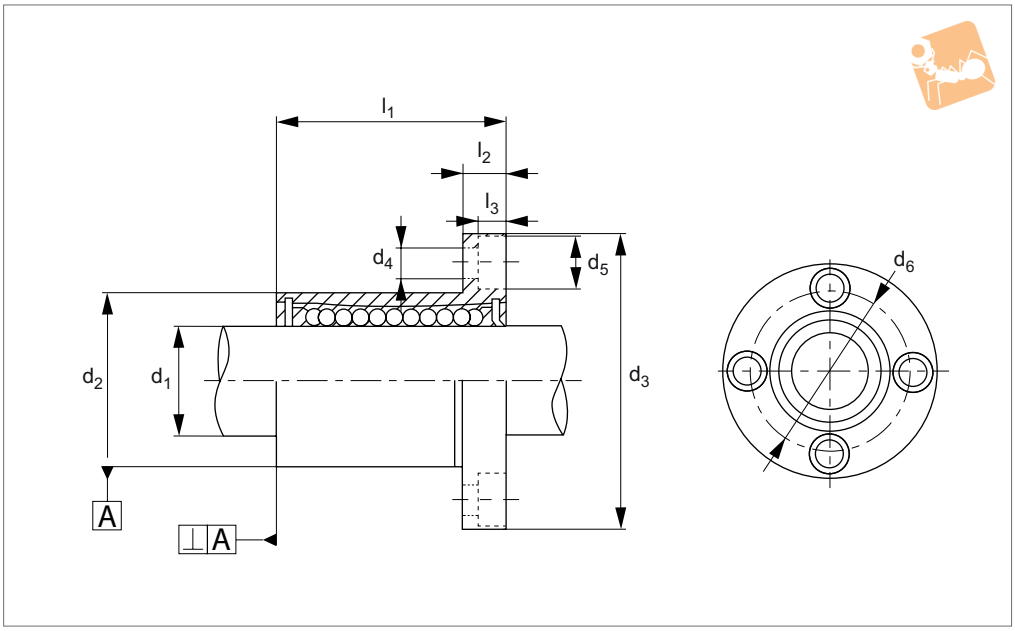
Order No.	Ball cage	d_1 tol. h6	d_2 tol. h6	l_1	l_2	l_3	d_3	Dyn. load C N max.	No. of ball circuits	Static load C_0 N max.	Weight g
L1713.008-RS	Resin	8	16	45	33.0	1.10	15.2	430	4	780	31
L1713.012-RS	Resin	12	22	57	45.8	1.30	21.0	650	4	1200	80
L1713.016-RS	Resin	16	26	70	49.8	1.30	24.9	1230	5	2350	145
L1713.020-RS	Resin	20	32	80	61.0	1.60	30.3	1400	5	2750	180
L1713.025-RS	Resin	25	40	112	82.0	1.85	38.0	1560	6	3140	440
L1713.008-SS	Stainless	8	16	45	33.0	1.10	15.2	430	4	780	31
L1713.012-SS	Stainless	12	22	57	45.8	1.30	21.0	650	4	1200	80
L1713.016-SS	Stainless	16	26	70	49.8	1.30	24.9	1230	5	2350	145
L1713.020-SS	Stainless	20	32	80	61.0	1.60	30.3	1400	5	2750	180
L1713.025-SS	Stainless	25	40	112	82.0	1.85	38.0	1560	6	3140	440

Flanged Linear Ball Bushings

circular flange



L1718



Material

Hardened and ground body from bearing steel.
Single body resin retainer (POM).
Supplied with nitrile rubber (NBR) end-seals -UU as standard.

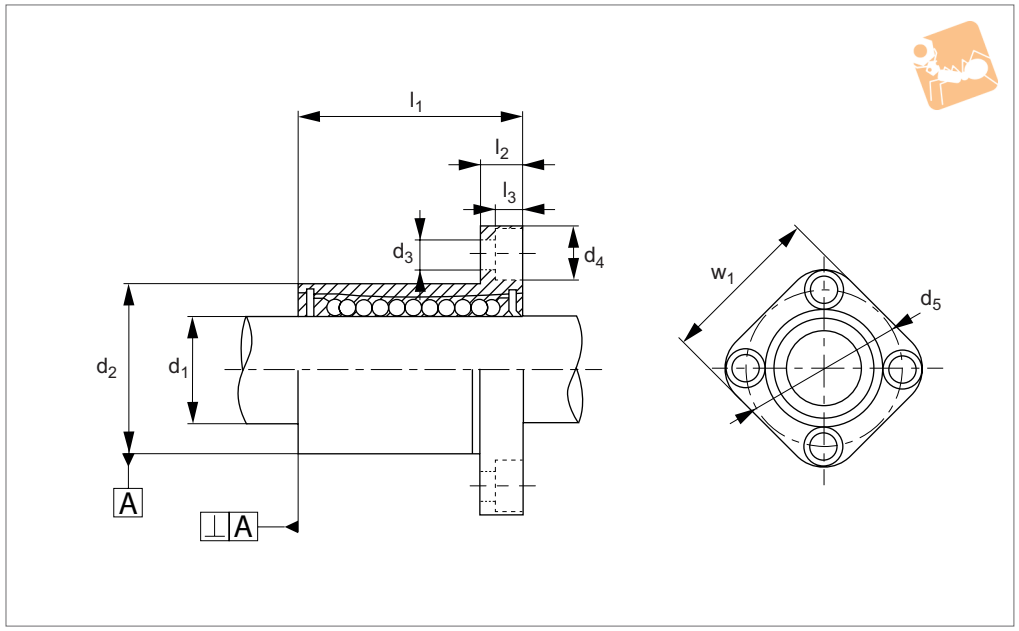
Technical Notes

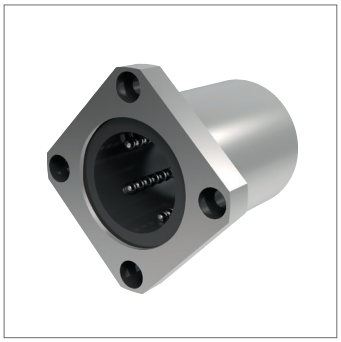
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6.
For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range : -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to +120°C - with no end seals. Please advise at time of ordering if this is required.

Tips

Nickel plated version with stainless steel balls (for corrosion resistance) on request - or stainless steel version no. L1720.

Order No.	d_1	d_2	l_1	d_3	d_4	d_5	d_6	l_2	l_3	No. of ball circuits	Squareness A µm	Dyn. load C N	Static load C_0 N	Weight g
L1718.006-1	6	12	19	28	3.4	6.5	20	5	3.3	4	12	200	260	26.5
L1718.008	8	16	25	32	3.4	6.5	24	5	3.3	4	12	260	400	44.0
L1718.010-1	10	19	29	40	4.5	8.0	29	6	4.4	4	12	370	540	78.0
L1718.012	12	22	32	42	4.5	8.0	32	6	4.4	4	12	410	590	86.0
L1718.016	16	26	36	46	4.5	8.0	36	6	4.4	5	12	770	1170	120.0
L1718.020	20	32	45	54	5.5	9.5	43	8	5.4	5	15	860	1370	184.0
L1718.025	25	40	58	62	5.5	9.5	51	8	5.4	6	15	980	1560	335.0
L1718.030	30	47	68	76	6.6	11.0	62	10	6.5	6	15	1560	2740	545.0
L1718.040	40	62	80	98	9.0	14.0	80	13	8.6	6	20	2150	4010	1185.0
L1718.050	50	75	100	112	9.0	14.0	94	13	8.6	6	20	3820	7930	1730.0
L1718.060	60	90	125	134	11.0	17.5	112	18	10.8	6	25	4700	9990	3180.0





L1719

Material

Hardened and ground body from bearing steel.
Single body resin retainer (POM).
Supplied with nitrile rubber (NBR) end-seals -UU as standard.

Technical Notes

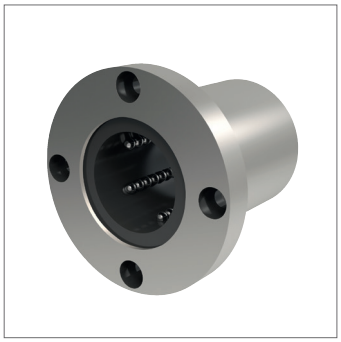
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6.
For part numbers with^{-1} shaft tolerance required is g6. Temperature range : -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to +120°C) - with no end seals. Please advise at time of ordering if this is required.

Tips

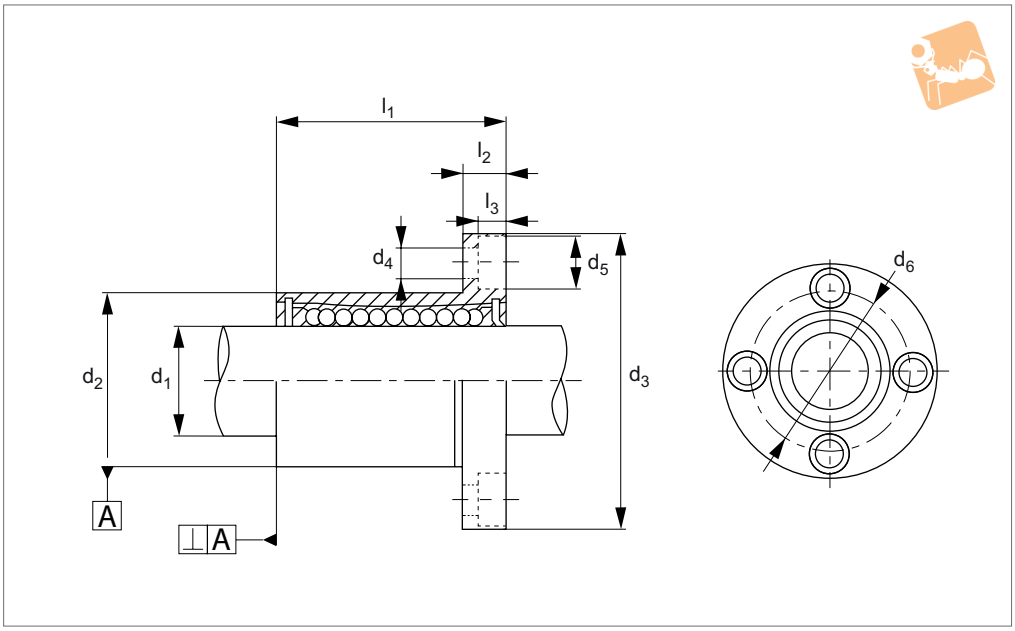
Nickel plated version with stainless steel balls (for corrosion resistance) on request - or stainless steel version no. L1721.

Order No.	d_1	d_2	l_1	d_3	d_4	d_5	l_2	l_3	No. of ball circuits	w_1	Squareness A µm	Dyn. load C N	Static load C_0 N	Weight g
L1719.006-1	6	12	19	3.4	6.5	20	5	3.3	4	22	12	200	260	26.5
L1719.008	8	16	25	3.4	6.5	24	5	3.3	4	25	12	260	400	44.0
L1719.010-1	10	19	29	4.5	8.0	29	6	4.4	4	30	12	370	540	78.0
L1719.012	12	22	32	4.5	8.0	32	6	4.4	4	32	12	410	590	86.0
L1719.016	16	26	36	4.5	8.0	36	6	4.4	5	35	12	770	1170	120.0
L1719.020	20	32	45	5.5	9.5	43	8	5.4	5	42	15	860	1370	184.0
L1719.025	25	40	58	5.5	9.5	51	8	5.4	6	50	15	980	1560	335.0
L1719.030	30	47	68	6.6	11.0	62	10	6.5	6	60	15	1560	2740	545.0
L1719.040	40	62	80	9.0	14.0	80	13	8.6	6	75	20	2150	4010	1185.0
L1719.050	50	75	100	9.0	14.0	94	13	8.6	6	88	20	3820	7930	1730.0
L1719.060	60	90	125	11	17.5	112	18	10.8	6	106	25	4700	9990	3180.0

Stainless Ball Bushings
circular flange



L1720

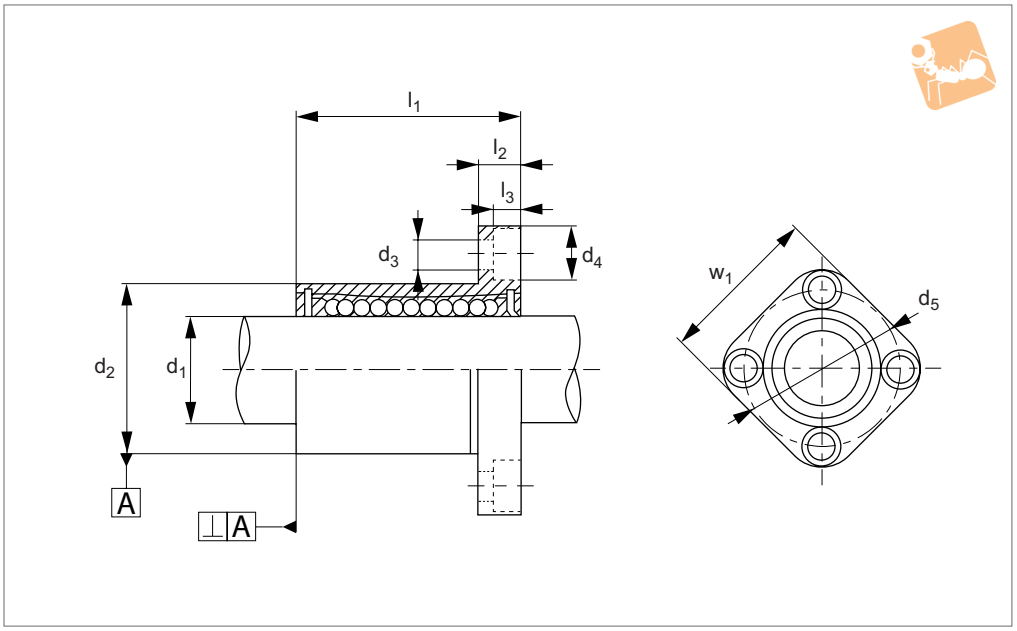


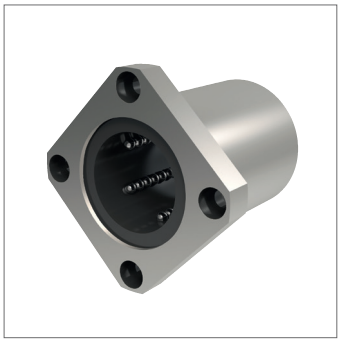
Material
Stainless steel body (440C) with either a resin (POM) or stainless steel (316) retainer.
Stainless steel balls (440C).

Supplied with nitrile rubber (NBR) end seals.

Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772) - tolerance h6. For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range: For resin ball cage - 20°C to +80°C. For stainless ball cage -20°C to +120°C.

Order No.	Ball cage	d_1 tol. h6	d_2 tol. h6	l_1	l_2	l_3	d_3 tol. h4	d_4	d_5	d_6	Dyn. load C N max.	No. of ball circuits	Static load C_0 N max.	Squareness A µm	Weight g
L1720.006-RS-1	Resin	6	12	19	5	3.3	28	3.4	6.5	20	200	4	260	12	26.5
L1720.008-RS	Resin	8	16	25	5	3.3	32	3.4	6.5	24	260	4	400	12	44.0
L1720.010-RS-1	Resin	10	19	29	6	4.4	40	4.5	8.0	29	370	4	540	12	78.0
L1720.012-RS	Resin	12	22	32	6	4.4	42	4.5	8.0	32	410	4	590	12	86.0
L1720.016-RS	Resin	16	26	36	6	4.4	46	4.5	8.0	36	770	5	1170	12	120.0
L1720.020-RS	Resin	20	32	45	8	5.4	54	5.5	9.5	43	860	5	1370	15	184.0
L1720.025-RS	Resin	25	40	58	8	5.4	62	5.5	9.5	51	980	6	1560	15	335.0
L1720.006-SS-1	Stainless	6	12	19	5	3.3	28	3.4	6.5	20	200	4	260	12	26.5
L1720.008-SS	Stainless	8	16	25	5	3.3	32	3.4	6.5	24	260	4	400	12	44.0
L1720.010-SS-1	Stainless	10	19	29	6	4.4	40	4.5	8.0	29	370	4	540	12	78.0
L1720.012-SS	Stainless	12	22	32	6	4.4	42	4.5	8.0	32	410	4	590	12	86.0
L1720.016-SS	Stainless	16	26	36	6	4.4	46	4.5	8.0	36	770	5	1170	12	120.0
L1720.020-SS	Stainless	20	32	45	8	5.4	54	5.5	9.5	43	860	5	1370	15	184.0
L1720.025-SS	Stainless	25	40	58	8	5.4	62	5.5	9.5	51	980	6	1560	15	335.0





L1721

Material
Stainless steel body (440C) with either a resin (POM) or stainless steel (316) retainer.
Stainless steel balls (440C).

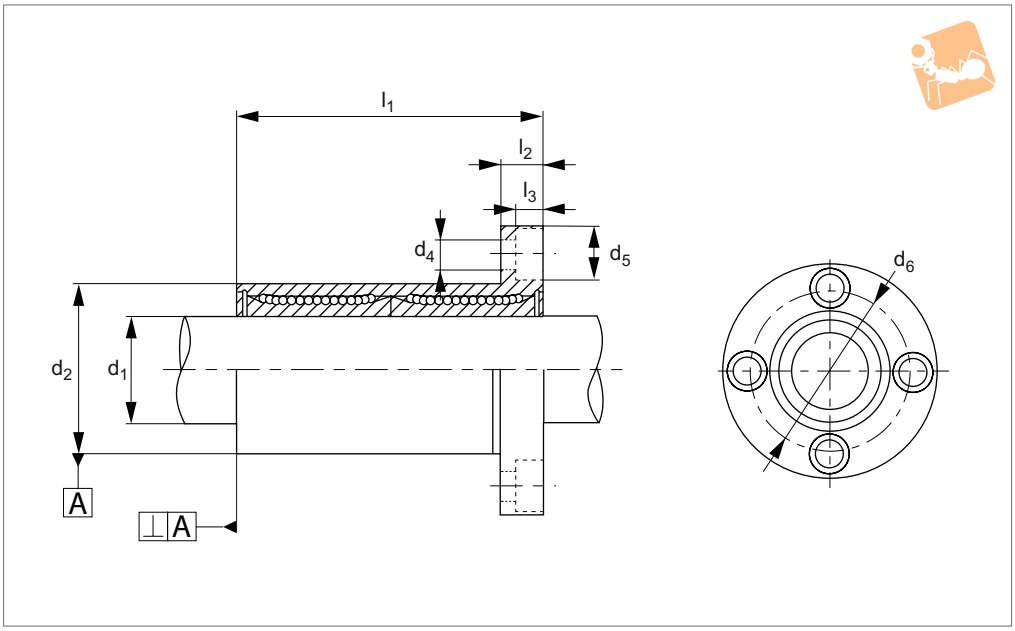
Supplied with nitrile rubber (NBR) end seals.

Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772) - tolerance h6. For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range: For resin ball cage -20°C to +80°C.
For stainless ball cage -20°C to +120°C.

Order No.	Ball cage	d_1 tol. h6	d_2 tol. h6	l_1	l_2	l_3	d_3	d_4	d_5	w_1	Dyn. load C N max.	No. of ball circuits	Static load C_0 N max.	Squareness A µm	Weight g
L1721.006-RS-1	Resin	6	12	19	5	3.3	3.4	6.5	20	22	200	4	260	12	26.5
L1721.008-RS	Resin	8	16	25	5	3.3	3.4	6.5	24	25	260	4	400	12	44.0
L1721.010-RS-1	Resin	10	19	29	6	4.4	4.5	8.0	29	30	370	4	540	12	78.0
L1721.012-RS	Resin	12	22	32	6	4.4	4.5	8.0	32	32	410	4	590	12	86.0
L1721.016-RS	Resin	16	26	36	6	4.4	4.5	8.0	36	35	770	5	1170	12	120.0
L1721.020-RS	Resin	20	32	45	8	5.4	5.5	9.5	43	42	860	5	1370	15	184.0
L1721.025-RS	Resin	25	40	58	8	5.4	5.5	9.5	51	50	980	6	1560	15	335.0
L1721.006-SS-1	Stainless	6	12	19	5	3.3	3.4	6.5	20	22	200	4	260	12	26.5
L1721.008-SS	Stainless	8	16	25	5	3.3	3.4	6.5	24	25	260	4	400	12	44.0
L1721.010-SS-1	Stainless	10	19	29	6	4.4	4.5	8.0	29	30	370	4	540	12	78.0
L1721.012-SS	Stainless	12	22	32	6	4.4	4.5	8.0	32	32	410	4	590	12	86.0
L1721.016-SS	Stainless	16	26	36	6	4.4	4.5	8.0	36	35	770	5	1170	12	120.0
L1721.020-SS	Stainless	20	32	45	8	5.4	5.5	9.5	43	42	860	5	1370	15	184.0
L1721.025-SS	Stainless	25	40	58	8	5.4	5.5	9.5	51	50	980	6	1560	15	335.0

Long Flanged Linear Ball Bushings
circular flange

L1722

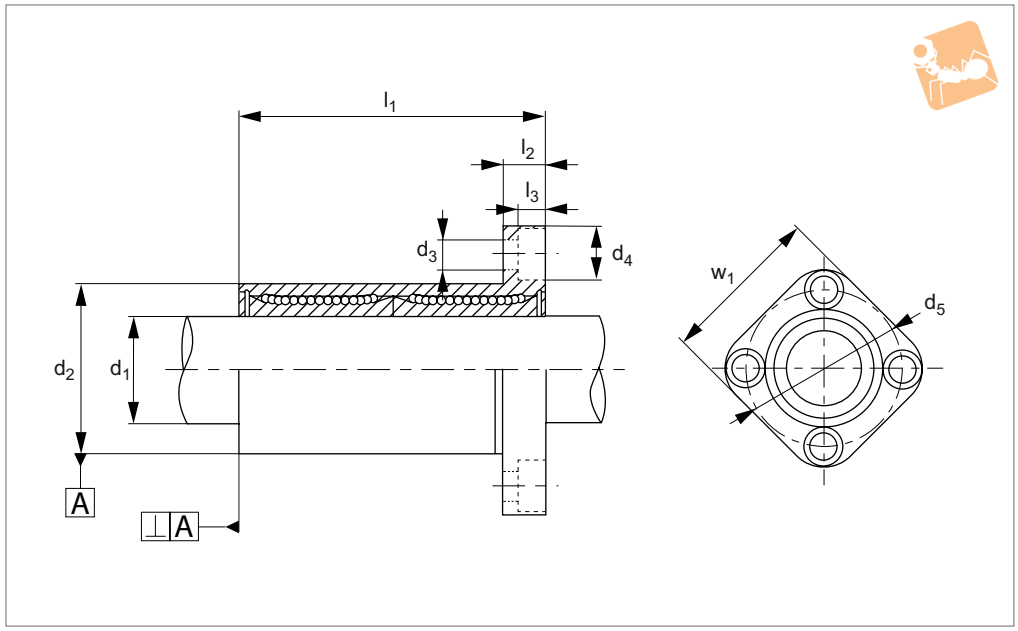


Material
Hardened and ground body from bearing steel.
Single body resin retainer (POM).
Supplied with nitrile rubber (NBR) end-seals -UU as standard.

Technical Notes
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6. For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range : -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to +120°C - with no end seals. Please advise at time of ordering if this is required.

Tips
Nickel plated version with stainless steel balls (for corrosion resistance) on request - or stainless steel version part no. L1724.

Order No.	d_1	d_2	l_1	d_3	d_4	d_5	d_6	l_2	l_3	No. of ball circuits	Squareness A µm	Dyn. load C N	Static load C_0 N	Weight g
L1722.006-1	6	12	35	28	3.4	6.5	20	5	3.3	4	12	320	520	31
L1722.008	8	16	45	32	3.4	6.5	24	5	3.3	4	12	430	780	53
L1722.010-1	10	19	55	40	4.5	8.0	29	6	4.4	4	12	580	1100	105
L1722.012	12	22	57	42	4.5	8.0	32	6	4.4	4	12	650	1200	100
L1722.016	16	26	70	46	4.5	8.0	36	6	4.4	5	12	1230	2350	187
L1722.020	20	32	80	54	5.5	9.5	43	8	5.4	5	15	1400	2750	260
L1722.025	25	40	112	62	5.5	9.5	51	8	5.4	6	15	1560	3140	515
L1722.030	30	47	123	76	6.6	11.0	62	10	6.5	6	15	2490	5490	655
L1722.040	40	62	154	98	9.0	14.0	80	13	8.6	6	20	3430	8040	1560
L1722.050	50	75	192	112	9.0	14.0	94	13	8.6	6	20	6080	15900	3500
L1722.060	60	90	211	134	11.0	17.5	112	18	10.8	6	25	7650	20000	4500



L1723

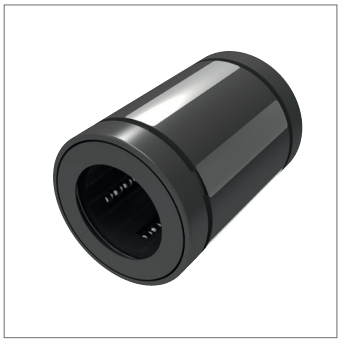
Material
Hardened and ground body from bearing steel.
Single body resin retainer (POM).
Supplied with nitrile rubber (NBR) end-seals -UU as standard.

Technical Notes
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6. For part numbers with $^{-1}$ shaft tolerance required is g6. Temperature range : -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to +120°C - with no end seals. Please advise at time of ordering if this is required.

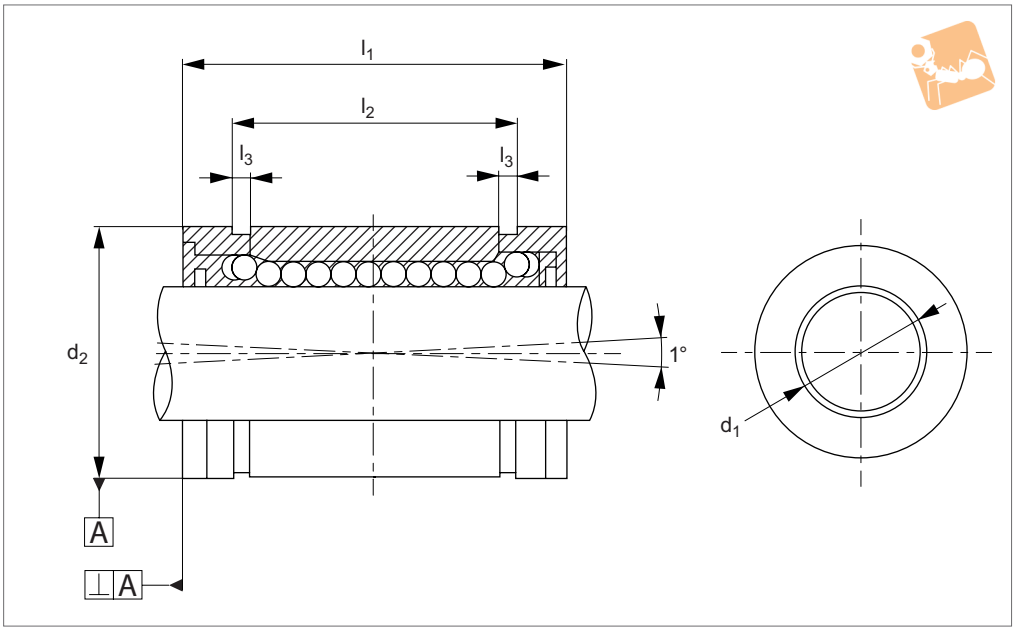
Tips
Nickel plated version with stainless steel balls (for corrosion resistance) on request - or stainless steel version no. L1725.

Order No.	d_1 tol. h6	d_2 tol. h6	l_1	d_3	d_4	d_5	l_2	l_3	No. of ball circuits	w_1	Squareness A µm	Dyn. load C N max.	Static load C_0 N max.	Weight g
L1723.006-1	6	12	35	3.4	6.5	20	5	3.3	4	22	15	320	520	31
L1723.008	8	16	45	3.4	6.5	24	5	3.3	4	25	15	430	780	53
L1723.010-1	10	19	55	4.5	8.0	29	6	4.4	4	30	15	580	1100	105
L1723.012	12	22	57	4.5	8.0	32	6	4.4	4	32	15	650	1200	100
L1723.016	16	26	70	4.5	8.0	36	6	4.4	5	35	15	1230	2350	187
L1723.020	20	32	80	5.5	9.5	43	8	5.4	5	42	17	1400	2750	260
L1723.025	25	40	112	5.5	9.5	51	8	5.4	6	50	17	1560	3140	515
L1723.030	30	47	123	6.6	11.0	62	10	6.5	6	60	17	2490	5490	655
L1723.040	40	62	154	9.0	14.0	80	13	8.6	6	75	20	3430	8040	1560
L1723.050	50	75	192	9.0	14.0	94	13	8.6	6	88	20	6080	15900	3500
L1723.060	60	90	211	11.0	17.5	112	18	10.8	6	106	25	7650	20000	4500

Superball Closed Linear Ball Bushings



L1740



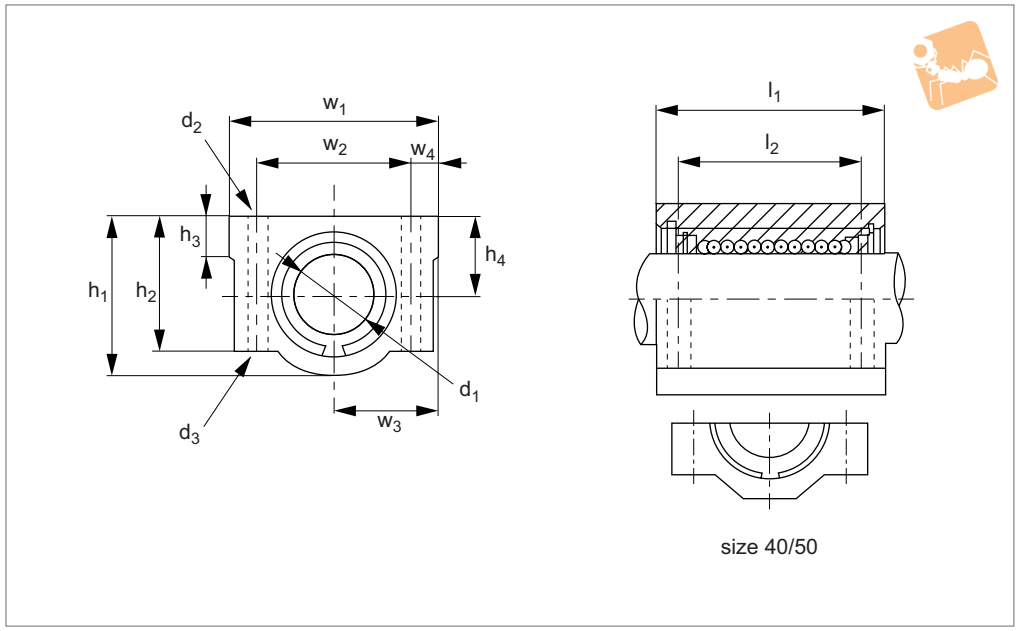
Material

Hardened and ground steel ball plate from bearing steel.
Floating plate feature offers self-alignment and clearance adjustment.
Single body resin retainer (POM).
Supplied with nitrile rubber (NBR) end seals -UU as standard.

Technical Notes

The superball series has 3 x the load rating and 27 x the travel life of conventional linear bushings.
They offer self-alignment - prolonging travel life by reducing the friction between shaft and balls.
For use with hardened shafts only (see part nos. L1770 - L1772) - tolerance h6.
Perpendicularity A is better than 15µ.
Temperature range: -20°C to +80°C.

Order No.	d_1 tol. h6	d_2 tol. h6	l_1 ±0.2	l_2 ±0.2	l_3 min.	No. of ball circuits	Dyn. load C N max.	Static load C_0 N max.	Weight g
L1740.010	10	19	29	21.7	1.35	5	550	750	17
L1740.012	12	22	32	22.7	1.35	5	1100	1230	23
L1740.016	16	26	36	24.7	1.35	5	1250	1550	28
L1740.020	20	32	45	31.3	1.65	6	1670	2580	61
L1740.025	25	40	58	43.8	1.90	6	2750	3800	122
L1740.030	30	47	68	51.8	1.90	6	2800	4710	185
L1740.040	40	62	80	60.4	2.20	6	5720	6500	360
L1740.050	50	75	100	77.4	2.70	6	7940	11460	580



L1750

Material

Aluminium body, with linear bearing L1706 (steel shell) installed. Bearing has a resin retainer (POM).
Supplied with nitrile rubber (NBR) end seals -UU as standard.

Long versions have L1712 linear bearing installed, short versions have L1715 Linear bearing installed.

Technical Notes

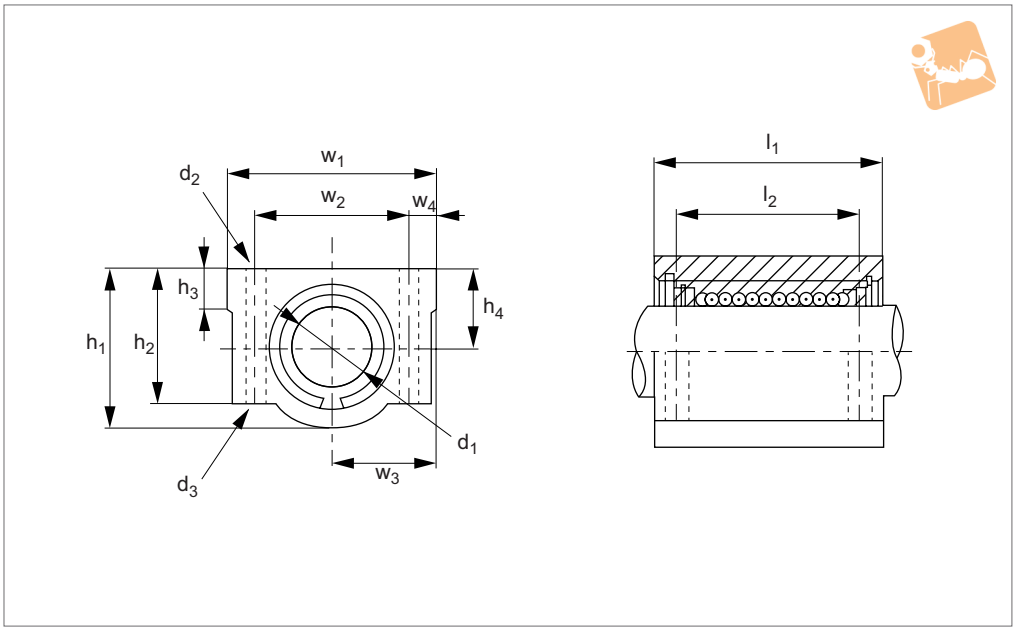
For use with hardened shafts only (see part nos. L1770 - L1772).
Temperature range: -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to 120°C - with no end seals. Please advise at time of ordering if this is required.

Order No.	Type	d_1 tol. h6	l_1	d_2	d_3	h_1	h_2	h_3	Weight g
L1750.008	Standard	8	30.0	M 4x8	3.4	22.0	18.0	6	60
L1750.012	Standard	12	39.0	M 5x10	4.3	30.0	24.5	8	118
L1750.016	Standard	16	44.0	M 5x12	4.3	38.5	32.5	9	180
L1750.020	Standard	20	53.0	M 6x12	5.2	41.0	35.0	11	245
L1750.025	Standard	25	67.0	M 8x18	6.8	51.5	41.0	12	550
L1750.030	Standard	30	76.0	M 8x18	6.8	59.5	49.0	15	760
L1750.040	Standard	40	90.0	M 10x25	8.6	78.0	62.0	20	1700
L1750.050	Standard	50	110.0	M 10x25	8.6	102.0	80.0	24	2950
L1750.008-L	Long	8	58.0	M 4X8	3.4	22.0	18.0	6	98
L1750.012-L	Long	12	77.0	M 5x10	4.3	30.0	24.5	8	232
L1750.016-L	Long	16	89.0	M 5x12	4.3	38.5	32.5	9	360
L1750.020-L	Long	20	106.0	M 6x12	5.2	41.0	35.0	11	490
L1750.025-L	Long	25	136.0	M 8x18	6.8	51.5	41.0	12	1100
L1750.030-L	Long	30	154.0	M 8x18	6.8	59.5	49.0	15	1525
L1750.040-L	Long	40	180.0	M 10x25	8.6	78.0	62.0	20	3400
L1750.050-L	Long	50	230.0	M 10x25	8.6	102.0	80.0	24	5920
L1750.008-S	Short	8	14.4	M 4x8	3.4	22.0	18.0	6	40
L1750.012-S	Short	12	20.3	M 5x10	4.3	30.0	24.5	8	82
L1750.016-S	Short	16	22.3	M 5x12	4.3	38.5	32.5	9	122
L1750.020-S	Short	20	28.3	M 6x12	5.2	41.0	35.0	11	176
L1750.025-S	Short	25	40.4	M 8x18	6.8	51.5	41.0	12	400
L1750.030-S	Short	30	48.4	M 8x18	6.8	59.5	49.0	15	570
L1750.040-S	Short	40	56.4	M 10x25	8.6	78.0	62.0	20	1320
L1750.050-S	Short	50	72.3	M 10x25	8.6	102.0	80.0	24	1900

Order No.	h_4 ±0.02	l_2 ±0.2	w_1	w_2 ±0.2	w_3 ±0.02	w_4	Dyn. load C N max.	Static load C_0 N max.	Linear ball bushing used
L1750.008	11	18	34	24	17	5.0	260	400	L1706.008
L1750.012	15	26	44	33	22	5.5	410	590	L1706.012
L1750.016	19	34	50	36	25	7.0	770	1170	L1706.016

Linear Carriages
closed

Order No.	h_4 ±0.02	l_2 ±0.2	w_1	w_2 ±0.2	w_3 ±0.02	w_4	Dyn. load C N max.	Static load C_0 N max.	Linear ball bushing used
L1750.020	21	40	54	40	27	7.0	860	1370	L1706.020
L1750.025	26	50	76	54	38	11.0	980	1560	L1706.025
L1750.030	30	58	78	58	39	10.0	1560	2740	L1706.030
L1750.040	40	60	102	80	51	11.0	2150	4010	L1706.040
L1750.050	52	80	122	100	61	11.0	3820	7930	L1706.050
L1750.008-L	11	42	34	24	17	5.0	410	800	2 x L1706.008
L1750.012-L	15	64	44	33	22	5.5	650	1180	2 x L1706.012
L1750.016-L	19	79	50	36	25	7.0	1230	2340	2 x L1706.016
L1750.020-L	21	90	54	40	27	7.0	1370	2740	2 x L1706.020
L1750.025-L	26	119	76	54	38	11.0	1560	3120	2 x L1706.025
L1750.030-L	30	132	78	58	39	10.0	2490	5480	2 x L1706.030
L1750.040-L	40	150	102	80	51	11.0	3440	8020	2 x L1706.040
L1750.050-L	52	200	122	100	61	11.0	6110	15860	2 x L1706.050
L1750.008-S	11	-	34	24	17	5.0	260	400	L1706.008
L1750.012-S	15	-	44	33	22	5.5	410	590	L1706.012
L1750.016-S	19	-	50	36	25	7.0	770	1170	L1706.016
L1750.020-S	21	-	54	40	27	7.0	860	1370	L1706.020
L1750.025-S	26	-	76	54	38	11.0	980	1560	L1706.025
L1750.030-S	30	-	78	58	39	10.0	1560	2740	L1706.030
L1750.040-S	40	-	102	80	51	11.0	2150	4010	L1706.040
L1750.050-S	52	-	122	100	61	11.0	3820	7930	L1706.050



L1751

Material
Aluminium carriage housing with L1709, stainless steel (440C) linear bushing installed.
Bushing has a resin -RS (POM) or stainless steel -SS (316) retainer and nitrile rubber (NBR) end seals -UU.
Stainless steel balls 440C.
Long versions have L1713 linear bearing installed.

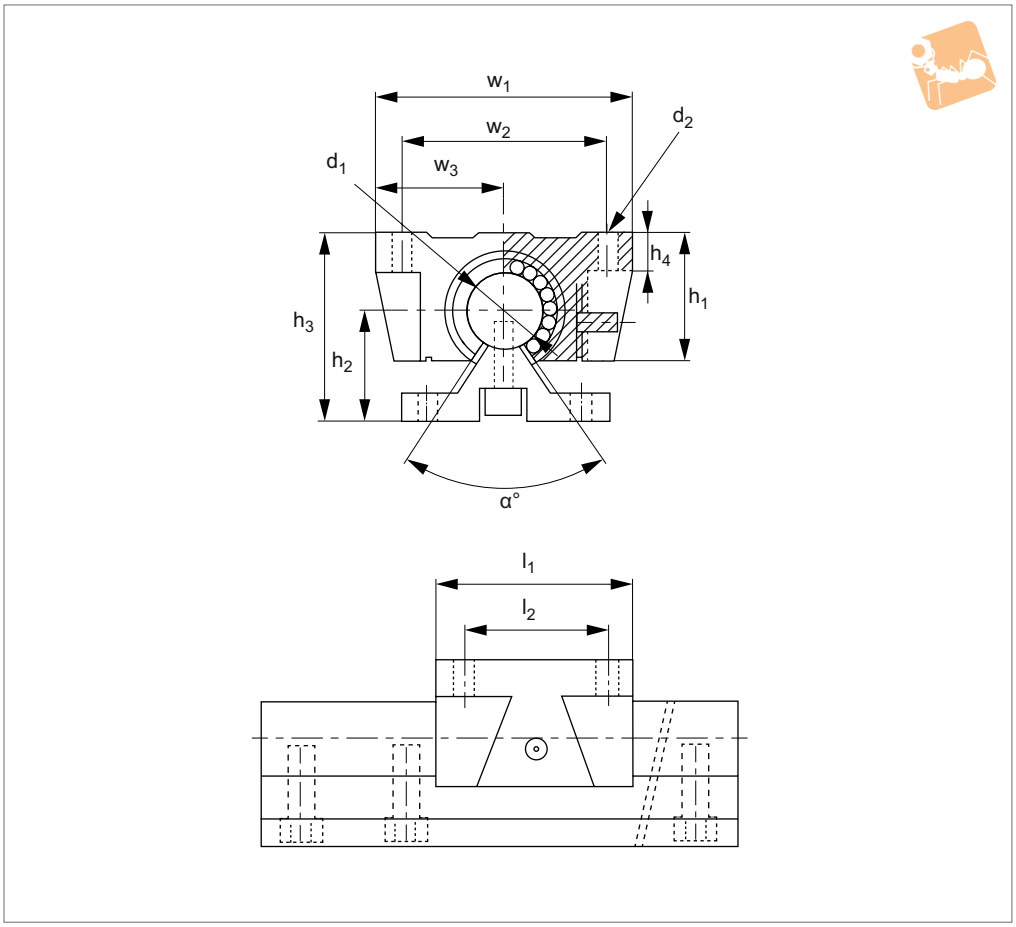
Technical Notes
For use with corrosion resistant hardened shafts (see part no. L1772).
Temperature range: -20°C to +120°C.

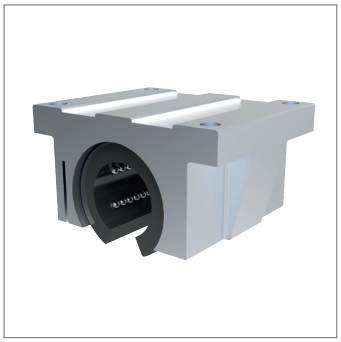
Order No.	Type	Ball cage	d_1 tol. h6	l_1	d_2	d_3	h_1	h_2	Weight g
L1751.008-RS	Normal	Resin	8	30.0	M 4x 8	3.4	22.0	18.0	60
L1751.012-RS	Normal	Resin	12	39.0	M 5x10	4.3	30.0	24.5	118
L1751.016-RS	Normal	Resin	16	44.0	M 5x12	4.3	38.5	32.5	180
L1751.020-RS	Normal	Resin	20	53.0	M 6x12	5.2	41.0	35.0	245
L1751.025-RS	Normal	Resin	25	67.0	M 8x18	6.8	51.5	41.0	550
L1751.008-SS	Normal	Stainless	8	30.0	M 4x 8	3.4	22.0	18.0	60
L1751.012-SS	Normal	Stainless	12	39.0	M 5x10	4.3	30.0	24.5	118
L1751.016-SS	Normal	Stainless	16	44.0	M 5x12	4.3	38.5	32.5	180
L1751.020-SS	Normal	Stainless	20	53.0	M 6x12	5.2	41.0	35.0	245
L1751.025-SS	Normal	Stainless	25	67.0	M 8x18	6.8	51.5	41.0	550
L1751.008-L-RS	Long	Resin	8	58.0	M 4x 8	3.4	22.0	18.0	98
L1751.012-L-RS	Long	Resin	12	77.0	M 5x10	4.3	30.0	24.5	232
L1751.016-L-RS	Long	Resin	16	89.0	M 5x12	4.3	38.5	32.5	360
L1751.020-L-RS	Long	Resin	20	106.0	M 6x12	5.2	41.0	35.0	490
L1751.025-L-RS	Long	Resin	25	136.0	M 8x18	6.8	51.5	41.0	1100
L1751.008-L-SS	Long	Stainless	8	58.0	M 4x 8	3.4	22.0	18.0	98
L1751.012-L-SS	Long	Stainless	12	77.0	M 5x10	4.3	30.0	24.5	232
L1751.016-L-SS	Long	Stainless	16	89.0	M 5x12	4.3	38.5	32.5	360
L1751.020-L-SS	Long	Stainless	20	106.0	M 6x12	5.2	41.0	35.0	490
L1751.025-L-SS	Long	Stainless	25	136.0	M 8x18	6.8	51.5	41.0	1100
L1751.008-S-RS	Short	Resin	8	14.4	M 4x 8	3.4	22.0	18.0	40
L1751.012-S-RS	Short	Resin	12	20.3	M 5x10	4.3	30.0	24.5	82
L1751.016-S-RS	Short	Resin	16	22.3	M 5x12	4.3	38.5	32.5	122
L1751.020-S-RS	Short	Resin	20	28.3	M 6x12	5.2	41.0	35.0	176
L1751.025-S-RS	Short	Resin	25	40.4	M 8x18	6.8	51.5	41.0	400
L1751.008-S-SS	Short	Stainless	8	14.4	M 4x 8	3.4	22.0	18.0	40
L1751.012-S-SS	Short	Stainless	12	20.3	M 5x10	4.3	30.0	24.5	82
L1751.016-S-SS	Short	Stainless	16	22.3	M 5x12	4.3	38.5	32.5	122
L1751.020-S-SS	Short	Stainless	20	28.3	M 6x12	5.2	41.0	35.0	176
L1751.025-S-SS	Short	Stainless	25	40.3	M 8x18	6.8	51.5	41.0	400

Stainless Linear Carriages

closed

Order No.	h_3	h_4 ±0.02	l_2 ±0.2	w_1	w_2 ±0.2	w_3 ±0.02	w_4	Dyn. load C N max.	Static load C_0 N max.	Linear ball bushing used
L1751.008-RS	6	11	18	34	24	17	5.0	260	400	L1709.008
L1751.012-RS	8	15	26	44	33	22	5.5	410	590	L1709.012
L1751.016-RS	9	19	34	50	36	25	7.0	770	1170	L1709.016
L1751.020-RS	11	21	40	54	40	27	7.0	860	1370	L1709.020
L1751.025-RS	12	26	50	76	54	38	11.0	980	1560	L1709.025
L1751.008-SS	6	11	18	34	24	17	5.0	260	400	L1709.508
L1751.012-SS	8	15	26	44	33	22	5.5	410	590	L1709.512
L1751.016-SS	9	19	34	50	36	25	7.0	770	1170	L1709.516
L1751.020-SS	11	21	40	54	40	27	7.0	860	1370	L1709.520
L1751.025-SS	12	26	50	76	54	38	11.0	980	1560	L1709.525
L1751.008-L-RS	6	11	42	34	24	17	5.0	410	800	2 x L1709.008
L1751.012-L-RS	8	15	64	44	33	22	5.5	650	1180	2 x L1709.012
L1751.016-L-RS	9	19	79	50	36	25	7.0	1230	2340	2 x L1709.016
L1751.020-L-RS	11	21	90	54	40	27	7.0	1370	2740	2 x L1709.020
L1751.025-L-RS	12	26	119	76	54	38	11.0	1560	3120	2 x L1709.025
L1751.008-L-SS	6	11	42	34	24	17	5.0	410	800	2 x L1709.508
L1751.012-L-SS	8	15	64	44	33	22	5.5	650	1180	2 x L1709.512
L1751.016-L-SS	9	19	79	50	36	25	7.0	1230	2340	2 x L1709.516
L1751.020-L-SS	11	21	90	54	40	27	7.0	1370	2740	2 x L1709.520
L1751.025-L-SS	12	26	119	76	54	38	11.0	1560	3120	2 x L1709.525
L1751.008-S-RS	6	11	-	34	24	17	5.0	260	400	L1709.008
L1751.012-S-RS	8	15	-	44	33	22	5.5	410	590	L1709.012
L1751.016-S-RS	9	19	-	50	36	25	7.0	770	1170	L1709.016
L1751.020-S-RS	11	21	-	54	40	27	7.0	860	1370	L1709.020
L1751.025-S-RS	12	26	-	76	54	38	11.0	980	1560	L1709.025
L1751.008-S-SS	6	11	-	34	24	17	5.0	260	400	L1709.508
L1751.012-S-SS	8	15	-	44	33	22	5.5	410	590	L1709.512
L1751.016-S-SS	9	19	-	50	36	25	7.0	770	1170	L1709.516
L1751.020-S-SS	11	21	-	54	40	27	7.0	860	1370	L1709.520
L1751.025-S-SS	12	26	-	76	54	38	11.0	980	1560	L1709.525





L1755

Material
Aluminium body, with L1707 (steel shell) linear bearing installed. Bearing has a resin retainer (POM).
Supplied with nitrile rubber (NBR) end seals -UU as standard.

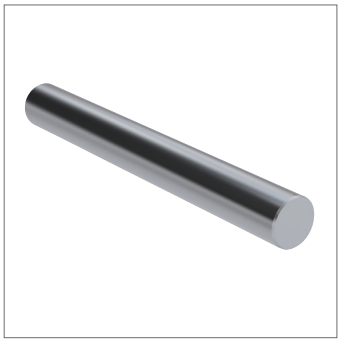
Technical Notes
For use with shaft support rails (see part number L1781 with hardened corrosive resistant shaft).
Temperature range: -20°C to +80°C.
Steel ball retainers can be supplied for higher temperature applications (up to +120°C - with no end seals. Please advise at time of ordering if this is required.

Tips
Particularly effective for high loads and long stroke applications.

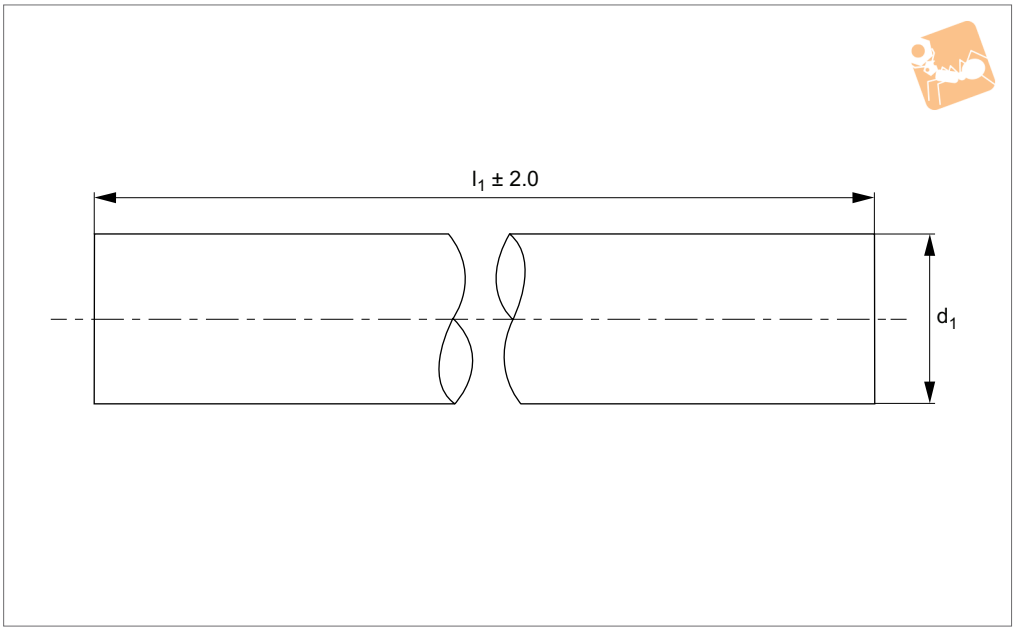
Important Notes
If using the carriage inverted, ie hanging loads, then the load rating is reduced by 50%.

Order No.	d_1 tol. H6	l_1	d_2	h_1	h_2	h_3 ±0.05	h_4	l_2 ±0.2	w_1	w_2 ±0.2	w_3	α °	Dyn. load C N max.	Static load C_0 N max.	Weight g
L1755.016	16	42	M 5	26	26	44	8	30	62	50	31.0	80°	392	490	180
L1755.020	20	51	M 6	31	32	53	10	37	68	54	34.0	60°	784	1176	300
L1755.025	25	65	M 8	41	36	64	12	50	82	65	41.0	50°	1568	2352	600
L1755.030	30	75	M 8	48	42	76	12	60	91	75	45.5	50°	1764	2940	900

Hardened Steel Shafts



L1770

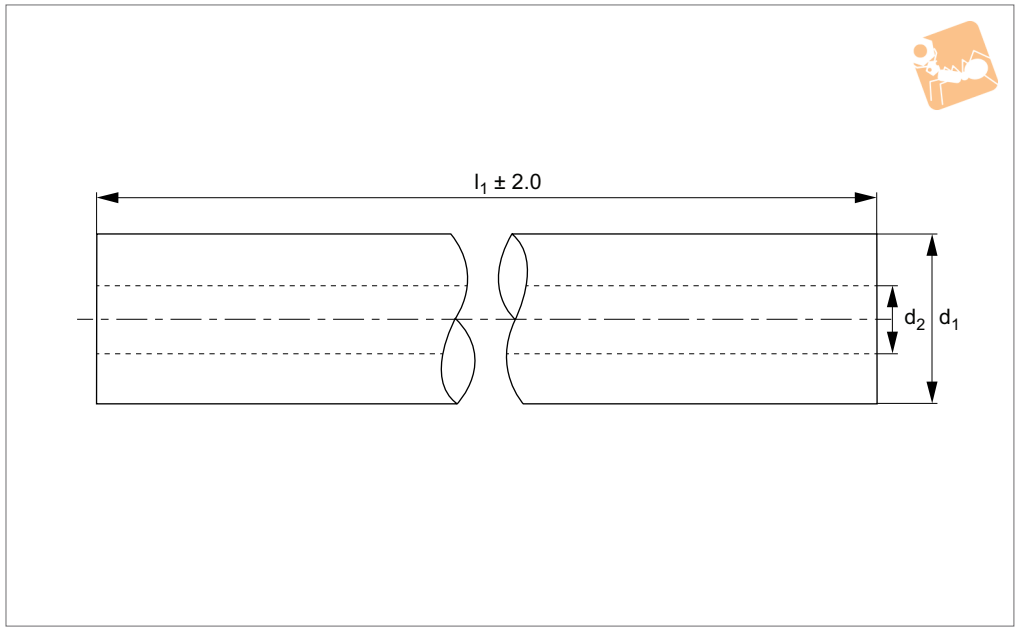


Material
Carbon steel (070M55,Cf53 - DIN 1.1213), Surface hardness 60-66 HRC. Surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla.
Yield stress: >325 N/mm^2, tensile strength: >630 N/mm^2.

Technical Notes
Tolerance, h6 standard, special tolerances upon request.
Suitable for use with linear bearings.
Straightness 0.3mm/m.
Replace xxxx with desired shaft length e.g L1770.05-1000 is 1000mm long.

Tips
Modifications, drilled and tapped holes, retainer grooves, special coatings etc. are available.
Shaft lengths are cut to typically ± 2mm, ends are not hardened.

Order No.	d_1 tol. h6	l_1 max.	Depth of hardness min.
L1770.05-xxxx	5	6000	0.4
L1770.06-xxxx	6	6000	0.4
L1770.08-xxxx	8	6000	0.4
L1770.10-xxxx	10	6000	0.4
L1770.12-xxxx	12	6000	0.6
L1770.16-xxxx	16	6000	0.6
L1770.20-xxxx	20	6000	0.9
L1770.25-xxxx	25	6000	0.9
L1770.30-xxxx	30	6000	1.5
L1770.40-xxxx	40	6000	1.5
L1770.50-xxxx	50	6000	1.5
L1770.60-xxxx	60	6000	1.5



L1771

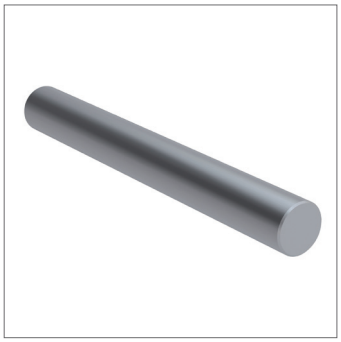
Material
Carbon steel (C60), surface hardness 60-65 HRC. Surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla.

Technical Notes
Used in linear bearing and guideway systems where weight reduction is important.
Tolerance, h6 standard, special tolerances upon request.
Suitable for use with linear bearings.
Straightness 0.2mm/m.
Replace xxxx with desired shaft length eg. L1771.06-1000 is 1000mm long.

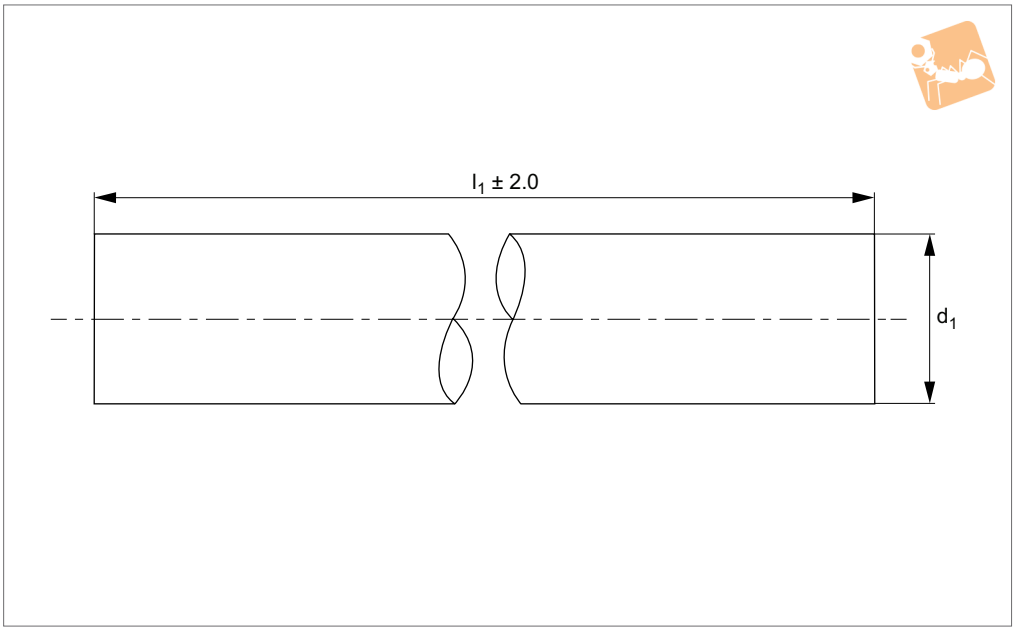
Tips
Modifications, drilled and tapped holes, retainer grooves, special coatings etc. are available.
Shaft lengths are cut to typically ± 2mm, ends are not hardened.

Order No.	d_1 tol. h6	l_1 max.	d_2	Depth of hardness min.
L1771.12-xxxx	12	6000	4	0.4
L1771.16-xxxx	16	6000	7	0.4
L1771.20-xxxx	20	6000	14	0.4
L1771.25-xxxx	25	6000	15	0.4
L1771.30-xxxx	30	6000	18	0.6
L1771.40-xxxx	40	6000	28	0.6
L1771.50-xxxx	50	6000	28	0.6

Hardened Stainless Shafts
for linear bearings



L1772

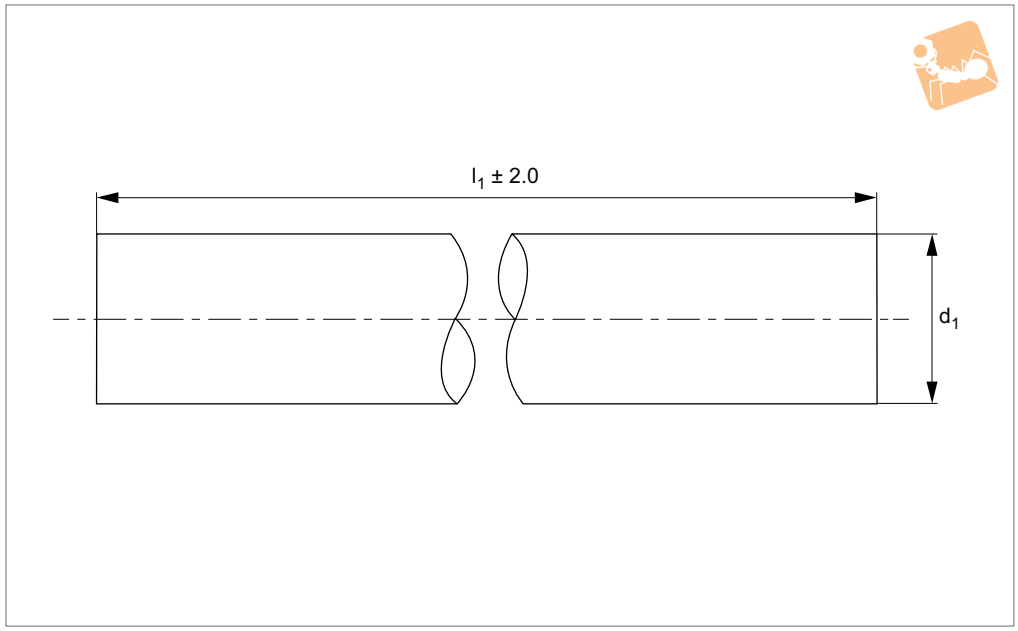


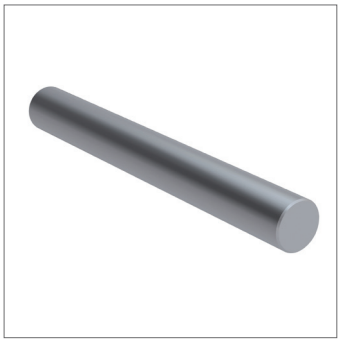
Material
Corrosion resistant steel (440C, DIN 1.4112, X90 CrMo18) hardened. Surface hardness 53-56 HRC, Rht 450Hv2.
Surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla.
Yield stress: >420 N/mm².
Tensile strength: >785 N/mm².

Technical Notes
Suitable for use with linear bearings.
Tolerance, h6 standard, special tolerances on request.
Straightness 0.1mm/m.
Replace xxxx with desired shaft length eg. L1772.06-1000 is 1000mm long.

Tips
Modifications, drilled and tapped holes, retainer grooves, special coatings etc. are available.
Shaft lengths are cut to typically ± 2mm, ends are not hardened.

Order No.	d_1 tol. h6	l_1 max.	Depth of hardness min.
L1772.06-xxxx	6	6000	0.4
L1772.08-xxxx	8	6000	0.4
L1772.10-xxxx	10	6000	0.4
L1772.12-xxxx	12	6000	0.6
L1772.16-xxxx	16	6000	0.6
L1772.20-xxxx	20	6000	0.9
L1772.25-xxxx	25	6000	0.9
L1772.30-xxxx	30	6000	1.5
L1772.40-xxxx	40	6000	1.5
L1772.50-xxxx	50	6000	1.5
L1772.60-xxxx	60	6000	1.5





L1773

Material
Stainless steel AISI 303 (1.4305, X10CrNiS18-19), surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla.
Yield stress: >510 N/mm^2, tensile strength: >720 N/mm^2.

Technical Notes
Tolerance, h6 standard, other tolerances on request.
Straightness 0.3mm/m.
Replace xxxx with desired shaft length eg. L1773.06-1000 is 1000mm long.

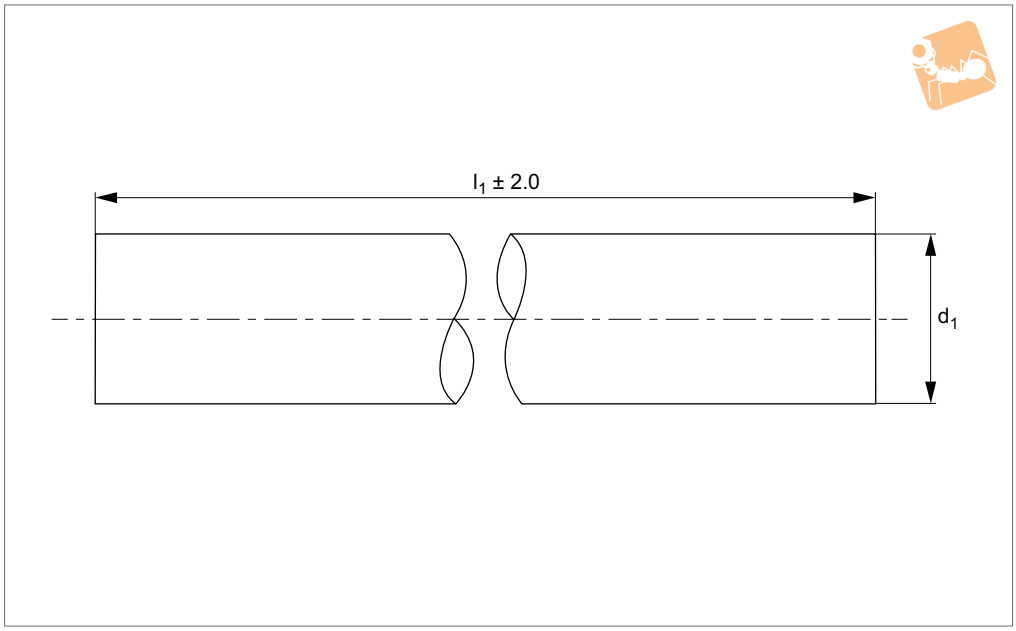
Tips
Modifications, drilled and tapped holes, circlip grooves, special coatings etc. available.

Shafts lengths are cut to typically ± 2mm. To be used with ceramic or other bearings not containing hardened ball bearings.

Order No.	d_1 tol. h6	l_1 max.	Tolerance µ tol. h6
L1772.06-xxxx	6	6000	+0,-8
L1772.08-xxxx	8	6000	+0,-9
L1772.10-xxxx	10	6000	+0,-10
L1772.12-xxxx	12	6000	0.6
L1772.16-xxxx	16	6000	0.6
L1772.20-xxxx	20	6000	+0,-13
L1772.25-xxxx	25	6000	+0,-13
L1772.30-xxxx	30	6000	+0,-13
L1772.40-xxxx	40	6000	+0,-16
L1772.50-xxxx	50	6000	+0,-16
L1772.60-xxxx	60	6000	+0,19

Stainless AISI 316 Shafts
soft

L1774

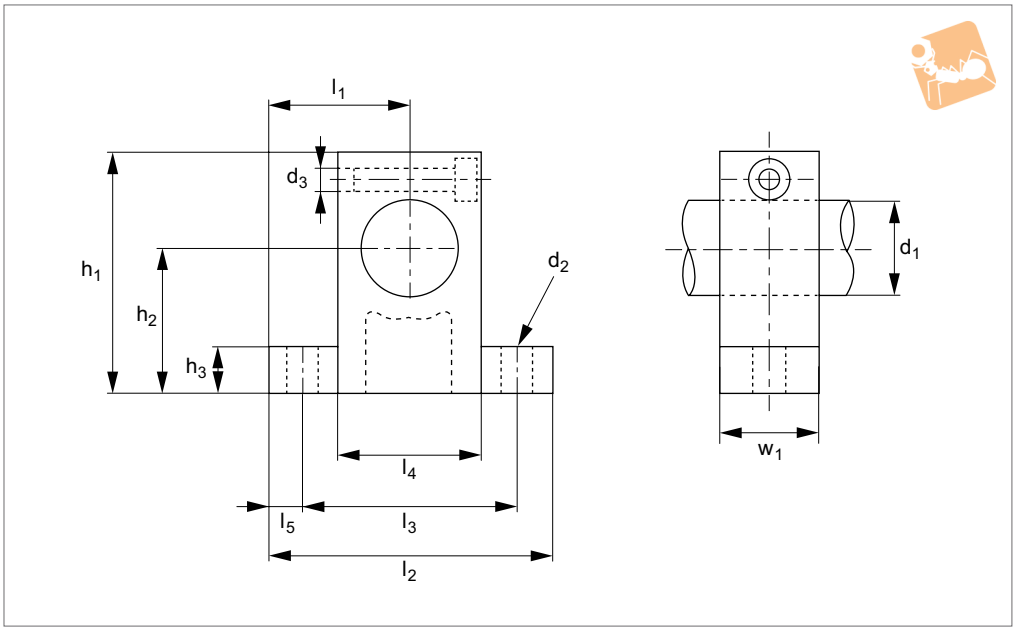


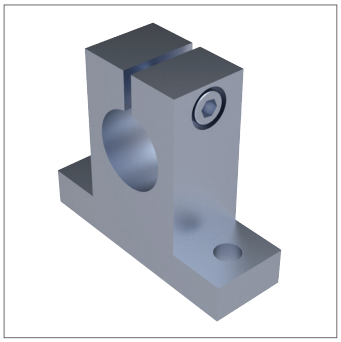
Material
Stainless steel (AISI 316, A4). Surface finish 0.3-0.6µ Ra, ground and polished to 8-12 cla.
Yield stress: >205 N/mm², tensile strength: >515 N/mm².

Technical Notes
Where xxxx is length in mms.
Tolerance, h6 standard, other tolerances on request.
Straightness 0,1mm/m.
Replace xxxx with desired length eg. L1774.06-1000 is 1000mm long.

Tips
Modifications, drilled and tapped holes, circlip grooves, special coatings etc. available.
Shafts lengths are cut to typically ± 2mm.
To be used with ceramic or other bearings not containing hardened ball bearings.

Order No.	d_1 tol. h6	l_1 max.	Tolerance µ tol. h6	Depth of hardness
L1774.06-xxxx	6	6000	+0,-8	1.0
L1774.08-xxxx	8	6000	+0,-8	1.0
L1774.10-xxxx	10	6000	+0,-8	1.0
L1774.12-xxxx	12	6000	+0,-8	1.0
L1774.16-xxxx	16	6000	+0,-8	1.0
L1774.20-xxxx	20	6000	+0,-8	1.0
L1774.25-xxxx	25	6000	+0,-8	1.0
L1774.30-xxxx	30	6000	+0,-8	1.0
L1774.40-xxxx	40	6000	+0,-8	1.0
L1774.50-xxxx	50	6000	+0,-8	1.0
L1774.60-xxxx	60	6000	+0,-8	1.0





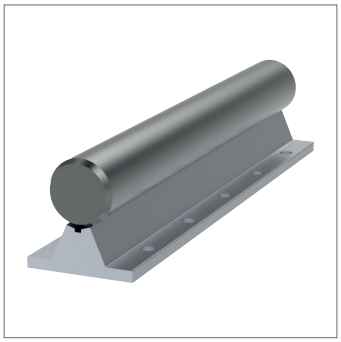
L1779.AL

Material
Aluminium (P40,6060)

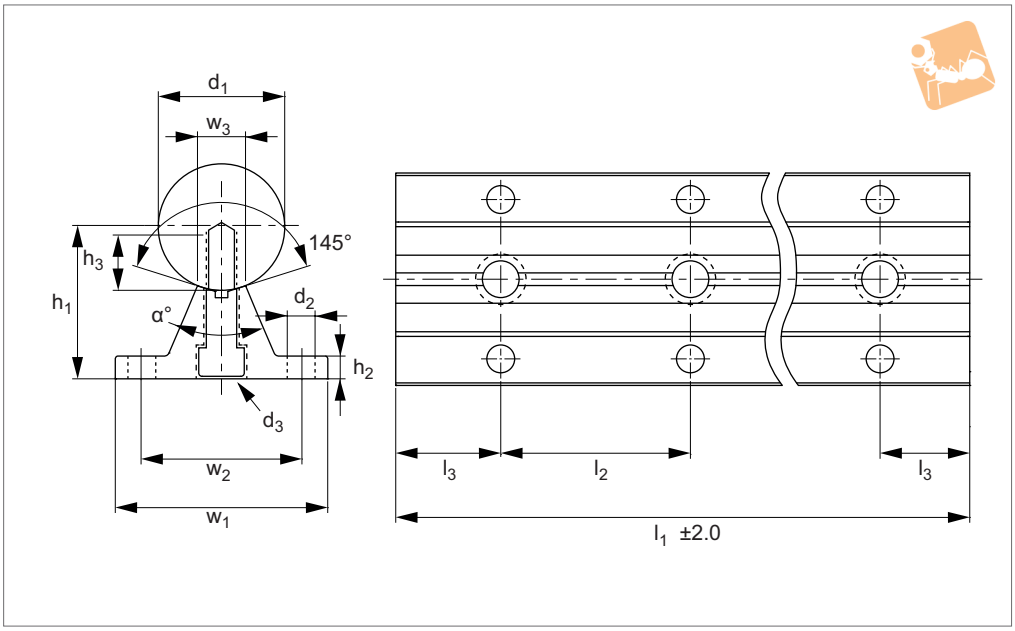
Technical Notes
For mounting of standard shaft diameters.

Order No.	d_1	d_2	d_3	h_1	h_2 ±0.02	h_3	l_1 ±0.05	l_2	l_3	l_4	l_5	w_1	Weight g
L1779.008-AL	8	5.5	M 4	32.8	20	6	21	42	32	18	5.0	14	24
L1779.010-AL	10	5.5	M 4	32.8	20	6	21	42	32	18	5.0	14	24
L1779.012-AL	12	5.5	M 4	38.0	23	6	21	42	32	20	5.0	14	30
L1779.013-AL	13	5.5	M 4	38.0	23	6	21	42	32	20	5.0	14	30
L1779.016-AL	16	5.5	M 4	44.0	27	8	24	48	38	25	5.0	16	40
L1779.020-AL	20	6.6	M 5	51.0	31	10	30	60	45	30	7.5	20	70
L1779.025-AL	25	6.6	M 6	60.0	35	12	35	70	56	38	7.0	24	130
L1779.030-AL	30	9.0	M 6	70.0	42	12	42	84	64	44	10.0	28	180
L1779.035-AL	35	11.0	M 8	85.0	50	15	49	98	74	50	12.0	32	270
L1779.040-AL	40	11.0	M 8	96.0	60	15	57	114	90	60	12.0	36	420

Shaft Support Rails
complete shaft and rail



L1780



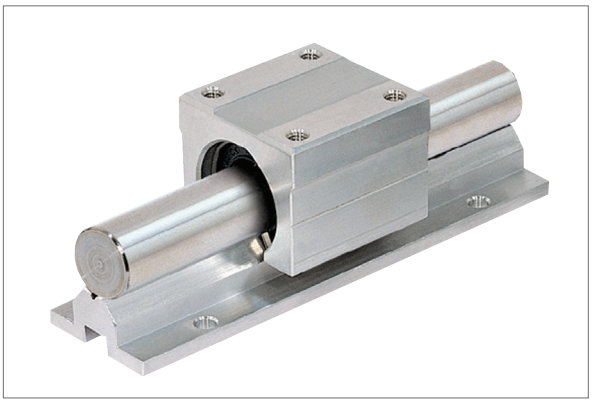
Material
Hardened and ground carbon steel shaft (070M55, Cf53 - DIN 1.1213), aluminium alloy support rail.
Surface hardness of steel shaft 60-65 HRC.

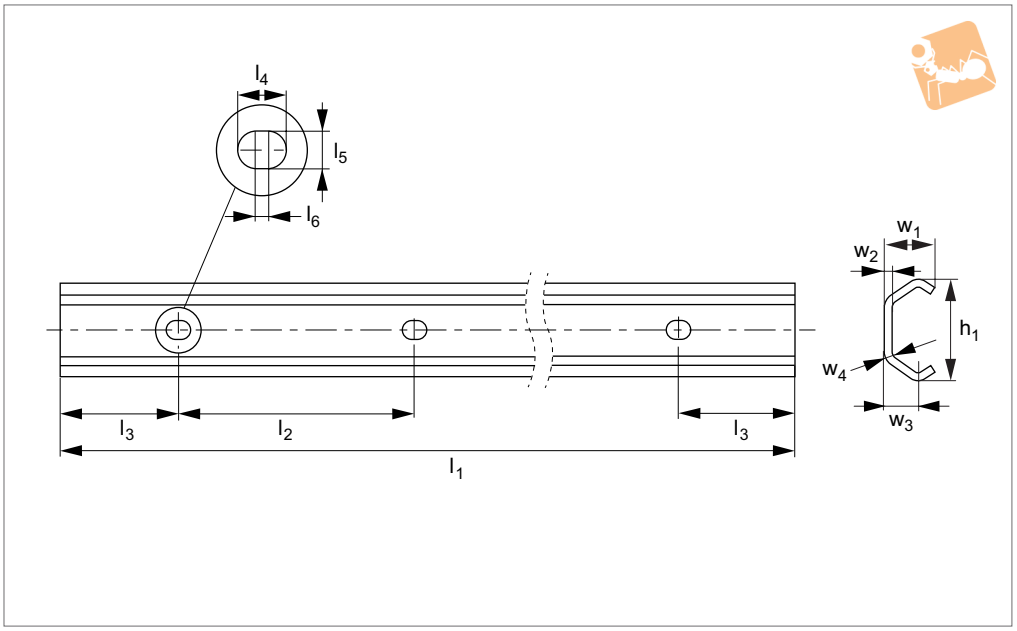
Technical Notes
For open linear bushings, ensures a very rigid and stiff system.

The shaft is pre-mounted to the shaft support rail.
Standard lengths are shown which allow the distance to the first and last hole to be equal (ie $l_2/2$). Different holes pitches available on request.
Straightness: ±0.1mm/metre.
Replace xxxx with desired length eg. L1780.12-1000 is 1000mm long.

Tips
For linear carriages see part no. L1755 (flanged) or L1752 (unflanged).
Stainless steel carriages also available, see part no. L1756 (flanged) or L1753 (unflanged).
On request a stainless steel (usually 440C) shaft can be mounted on the support rail.

Order No.	d_1 tol. h6	d_2	d_3	l_1 max.	l_2	l_3	w_1	w_2	w_3	h_1 ±0.01	h_2	h_3	α °
L1780.12-xxxx	12	4.5	M 4x20	6000	120	60	40	29	5.8	22	5	8	50
L1780.16-xxxx	16	5.5	M 5x20	6000	150	75	45	33	7.0	26	5	9	50
L1780.20-xxxx	20	6.6	M 6x25	6000	150	75	52	37	8.3	32	6	11	50
L1780.25-xxxx	25	6.6	M 8x30	6000	200	100	57	42	10.8	36	6	15	50
L1780.30-xxxx	30	9.0	M 10x35	6000	200	100	69	51	11.0	42	7	17	50
L1780.40-xxxx	40	9.0	M 10x40	6000	300	150	73	55	15.0	50	8	19	50
L1780.50-xxxx	50	11.0	M 12x45	6000	300	150	84	63	19.0	60	9	21	46
L1780.60-xxxx	60	11.0	M 14x30	6000	300	150	94	72	25.0	68	10	25	46
L1780.80-xxxx	80	11.0	M 16x60	6000	300	150	116	92	34.0	86	12	28	46





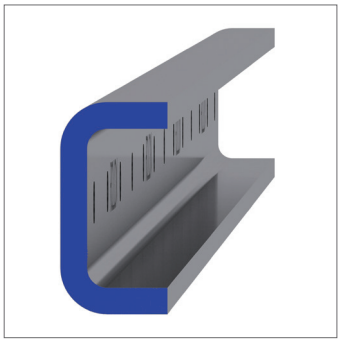
L1970.T

Material
Steel (BS1449-HR1), zinc plated.

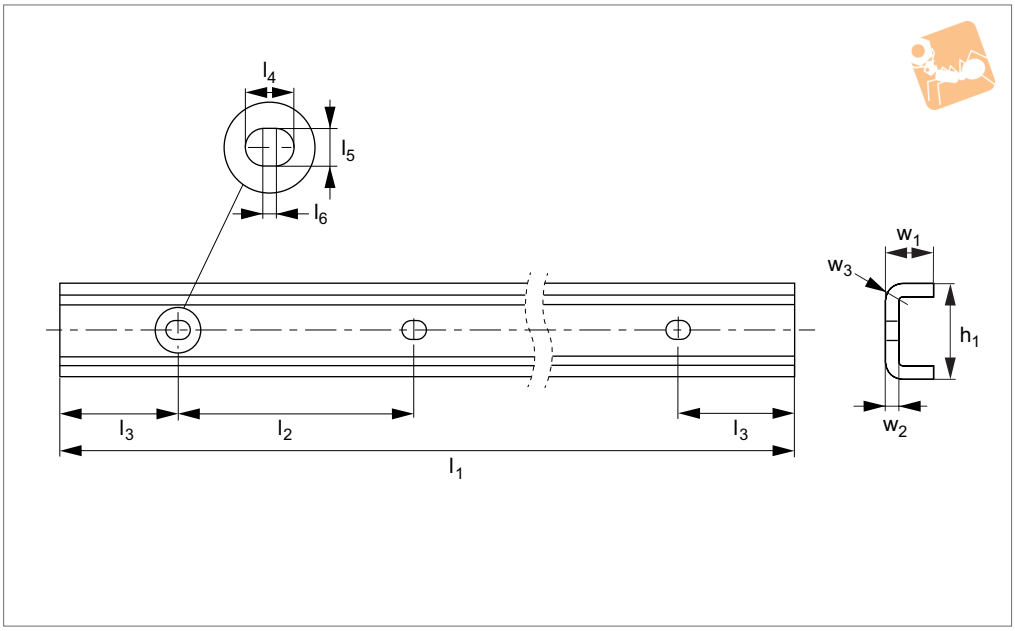
Technical Notes
Use hex. socket oval head screws (ISO 7380) or Torx screws (see part no. L1970.S).

Order No.	Rail size	For screw	h_1	l_1	l_2	l_3	l_4	l_5	l_6	w_1	w_2	w_3	w_4	Weight kg
L1970.20T-1040	20	M 4	19.2	1040	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	0.47
L1970.20T-2080	20	M 4	19.2	2080	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	0.94
L1970.20T-3120	20	M 4	19.2	3120	80	40	7	4.5	2.5	10.2	2.0	7.0	3.0	1.41
L1970.26T-1040	26	M 5	26.1	1040	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	0.80
L1970.26T-2080	26	M 5	26.1	2080	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	1.60
L1970.26T-3120	26	M 5	26.1	3120	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	2.40
L1970.30T-1040	30	M 5	29.5	1040	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	0.90
L1970.30T-2080	30	M 5	29.5	2080	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	1.80
L1970.30T-3120	30	M 5	29.5	3120	80	40	11	6.0	5.0	14.1	2.5	10.0	4.5	2.70
L1970.40T-1040	40	M 8	39.5	1040	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	1.55
L1970.40T-2080	40	M 8	39.5	2080	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	3.10
L1970.40T-3120	40	M 8	39.5	3120	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	4.65
L1970.45T-1040	45	M 8	46.4	1040	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	2.29
L1970.45T-2080	45	M 8	46.4	2080	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	4.58
L1970.45T-3120	45	M 8	46.4	3120	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	6.84

Steel X Rail
U rail (slave)



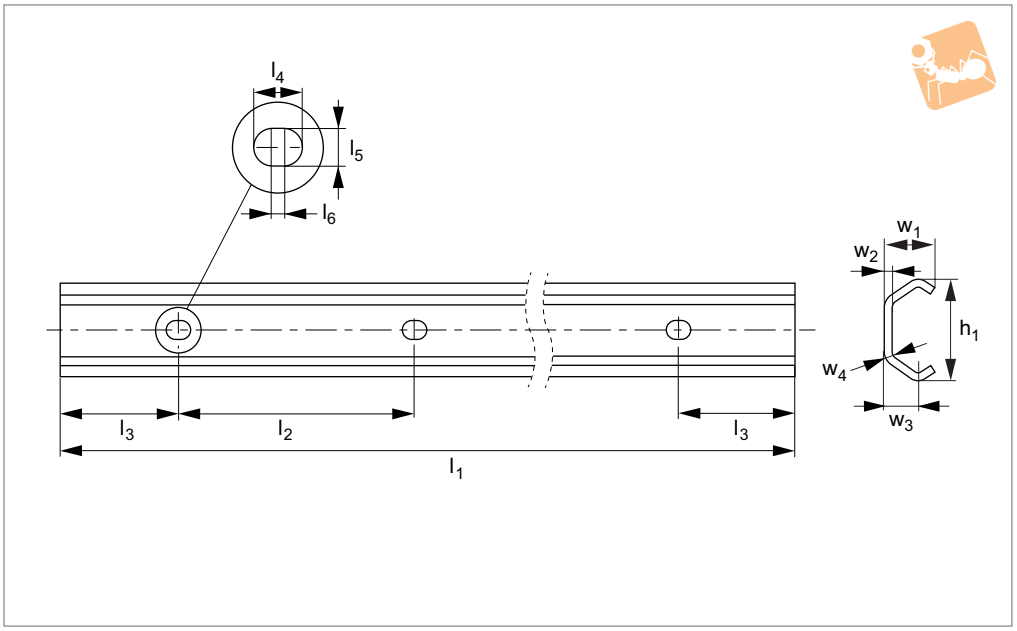
L1970.U

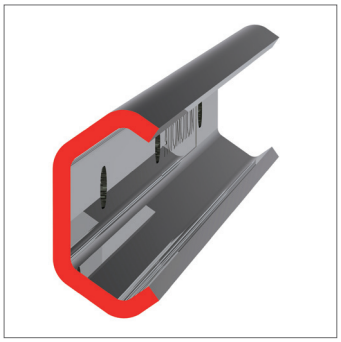


Material
Steel (BS1449-HR1), zinc plated.

Technical Notes
Use hex. socket oval head screws (ISO 7380) or Torx screws (see part no. L1970.S).

Order No.	Rail size	For screw	h_1	l_1	l_2	l_3	l_4	l_5	l_6	w_1	w_2	w_3	Weight kg
L1970.30U-1040	30	M 5	31.8	1040	80	40	8.4	6.4	2	16.0	4.0	7.0	1.4
L1970.30U-2080	30	M 5	31.8	2080	80	40	8.4	6.4	2	16.0	4.0	7.0	2.8
L1970.30U-3120	30	M 5	31.8	3120	80	40	8.4	6.4	2	16.0	4.0	7.0	4.2
L1970.40U-1040	40	M 8	38.5	1040	80	40	13.0	9.0	4	21.0	3.0	6.0	1.7
L1970.40U-2080	40	M 8	38.5	2080	80	40	13.0	9.0	4	21.0	3.0	6.0	3.4
L1970.40U-3120	40	M 8	38.5	3120	80	40	13.0	9.0	4	21.0	3.0	6.0	5.1
L1970.45U-1040	45	M 8	44.8	1040	80	40	11.0	9.0	2	24.5	4.5	9.5	2.9
L1970.45U-2080	45	M 8	44.8	2080	80	40	11.0	9.0	2	24.5	4.5	9.5	5.8
L1970.45U-3120	45	M 8	44.8	3120	80	40	11.0	9.0	2	24.5	4.5	9.5	8.7





L1971.T

Material
Stainless steel (316L). Corrosion resistant FDA/USDA compliant materials.

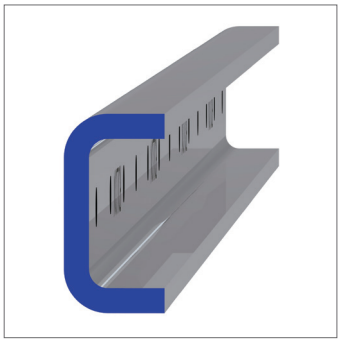
Technical Notes
X rail is for light duty loads, select number of carriages to suit.

Tips
Use hex. socket oval head screws (ISO 7380), see part no. L1971.S.

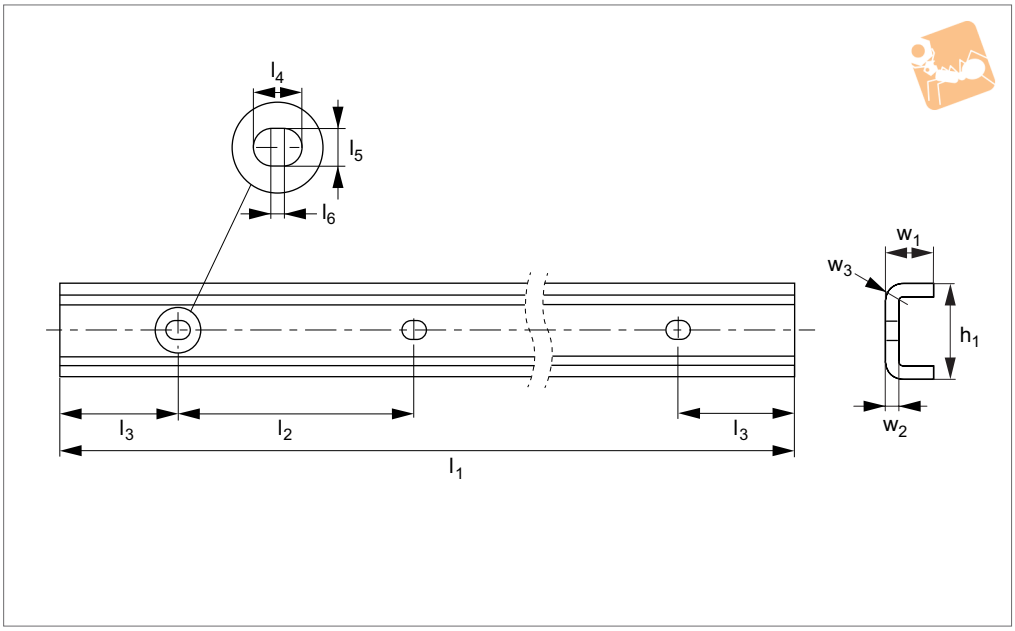
Order No.	Rail size	l_1	h_1	l_2	l_3	l_4	l_5	l_6	w_1	w_2	w_3	w_4	For screw	Weight kg
L1971.20T-1040	20	1040	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.20T-2080	20	2080	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.20T-3120	20	3120	19.2	80	40	7	4.5	2.5	10.2	2.0	6.9	3.0	M 4	0.47
L1971.26T-1040	26	1040	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 4	0.80
L1971.26T-2080	26	2080	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 5	0.80
L1971.26T-3120	26	3120	26.1	80	40	11	6.0	5.0	14.0	2.5	9.5	4.5	M 5	0.80
L1971.30T-1040	30	1040	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.30T-2080	30	2080	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.30T-3120	30	3120	29.5	80	40	11	6.0	5.0	15.0	2.5	10.0	4.5	M 5	0.90
L1971.40T-1040	40	1040	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.40T-2080	40	2080	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.40T-3120	40	3120	39.5	80	40	13	9.0	4.0	20.0	3.0	13.0	6.0	M 8	1.55
L1971.45T-1040	45	1040	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29
L1971.45T-2080	45	2080	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29
L1971.45T-3120	45	3120	46.4	80	40	11	9.0	2.0	24.0	4.0	15.5	6.5	M 8	2.29

Stainless X Rail

U rail (slave)



L1971.U

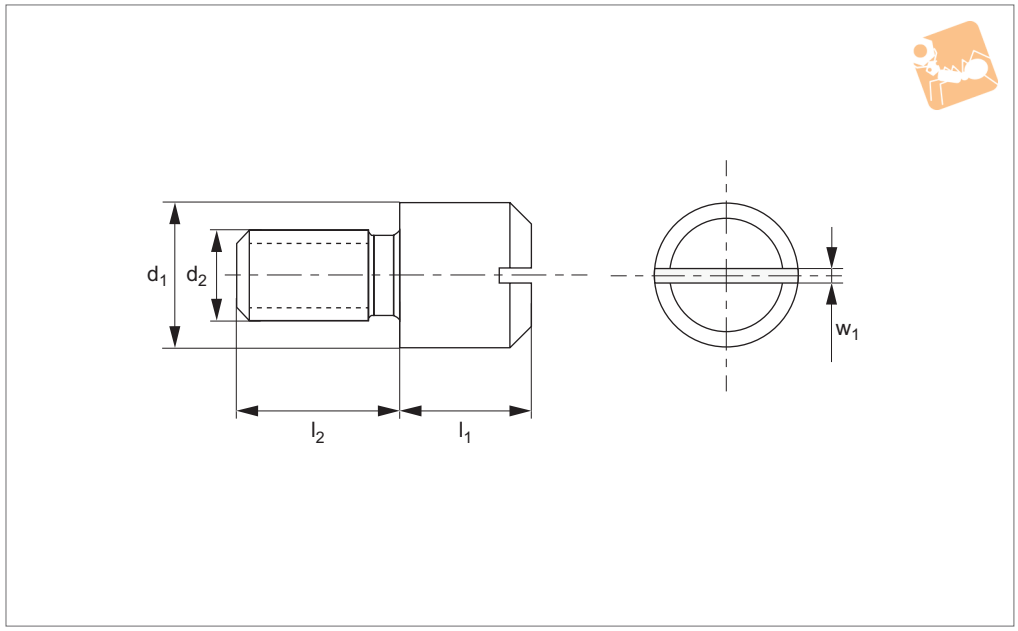


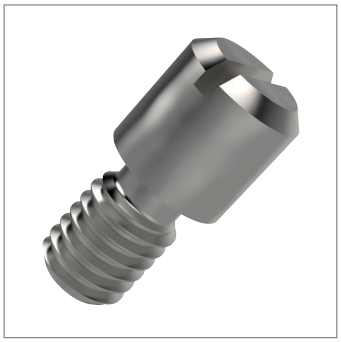
Material
Stainless steel (316L). Corrosion resistant FDA/USDA compliant materials.

Technical Notes
X rail is for light duty loads, select number of carriages to suit.

Tips
Use hex. socket oval head screws (ISO 7380), see part no. L1971.S.

Order No.	Rail size	l_1	h_1	l_2	l_3	l_4	l_5	l_6	w_1	w_2	w_3	For screw	Weight kg
L1971.30U-1040	30	1040	31.8	80	40	8.4	6.4	2	16.0	4.0	7.0	M 5	1.4
L1971.30U-2080	30	2080	31.8	80	40	8.4	6.4	2	16.0	4.0	7.0	M 5	2.8
L1971.30U-3120	30	3120	31.8	80	40	8.4	6.4	2	16.0	4.0	7.0	M 5	4.2
L1971.40U-1040	40	1040	38.5	80	40	13.0	9.0	4	21.0	3.0	6.0	M 8	1.7
L1971.40U-2080	40	2080	38.5	80	40	13.0	9.0	4	21.0	3.0	6.0	M 8	3.4
L1971.40U-3120	40	3120	38.5	80	40	13.0	9.0	4	21.0	3.0	6.0	M 8	5.1
L1971.45U-1040	45	1040	44.8	80	40	11.0	9.0	2	24.5	4.5	9.5	M 8	2.9
L1971.45U-2080	45	2080	44.8	80	40	11.0	9.0	2	24.5	4.5	9.5	M 8	5.8
L1971.45U-3120	45	3120	44.8	80	40	11.0	9.0	2	24.5	4.5	9.5	M 8	8.7





P0126.A2

Material
Austenitic stainless steel
(AISI 303, 1.4305)

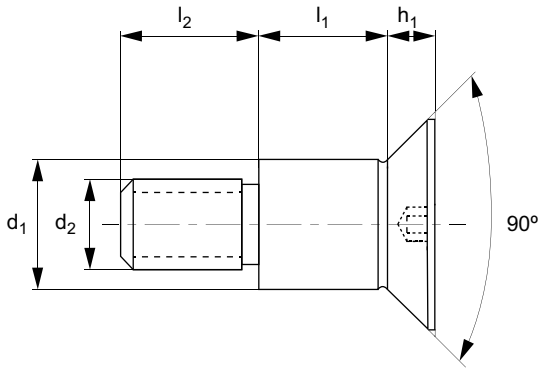
Technical Notes
303 series stainless steel provides good resistance to corrosion.
It is mildly magnetic.

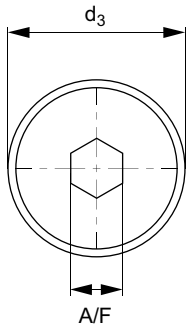
Special lengths and diameters produced to drawings.
l_1+l_2 tolerance js15.

Order No.	d_1 h9	l_1	d_2	l_2 +0.3/-0.0	w_1
P0126.040-025-A2	4.0	2.5	M 3	4.5	0.5
P0126.040-030-A2	4.0	3.0	M 3	4.5	0.5
P0126.040-040-A2	4.0	4.0	M 3	4.5	0.5
P0126.040-050-A2	4.0	5.0	M 3	4.5	0.5
P0126.040-060-A2	4.0	6.0	M 3	4.5	0.5
P0126.055-030-A2	5.5	3.0	M 4	6.0	0.6
P0126.055-040-A2	5.5	4.0	M 4	6.0	0.6
P0126.055-050-A2	5.5	5.0	M 4	6.0	0.6
P0126.055-060-A2	5.5	6.0	M 4	6.0	0.6
P0126.055-080-A2	5.5	8.0	M 4	6.0	0.6
P0126.065-040-A2	6.5	4.0	M 5	7.0	0.8
P0126.065-050-A2	6.5	5.0	M 5	7.0	0.8
P0126.065-060-A2	6.5	6.0	M 5	7.0	0.8
P0126.065-080-A2	6.5	8.0	M 5	7.0	0.8
P0126.065-100-A2	6.5	10.0	M 5	7.0	0.8
P0126.080-040-A2	8.0	4.0	M 6	8.0	1.0
P0126.080-050-A2	8.0	5.0	M 6	8.0	1.0
P0126.080-060-A2	8.0	6.0	M 6	8.0	1.0
P0126.080-080-A2	8.0	8.0	M 6	8.0	1.0
P0126.080-100-A2	8.0	10.0	M 6	8.0	1.0

Shoulder Screws - Countersunk
hex drive

P0128





Material
Available in a range of materials, replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless and -B4 for blackened 316 stainless.

Technical Notes
Stainless steel provides good resistance to corrosion.

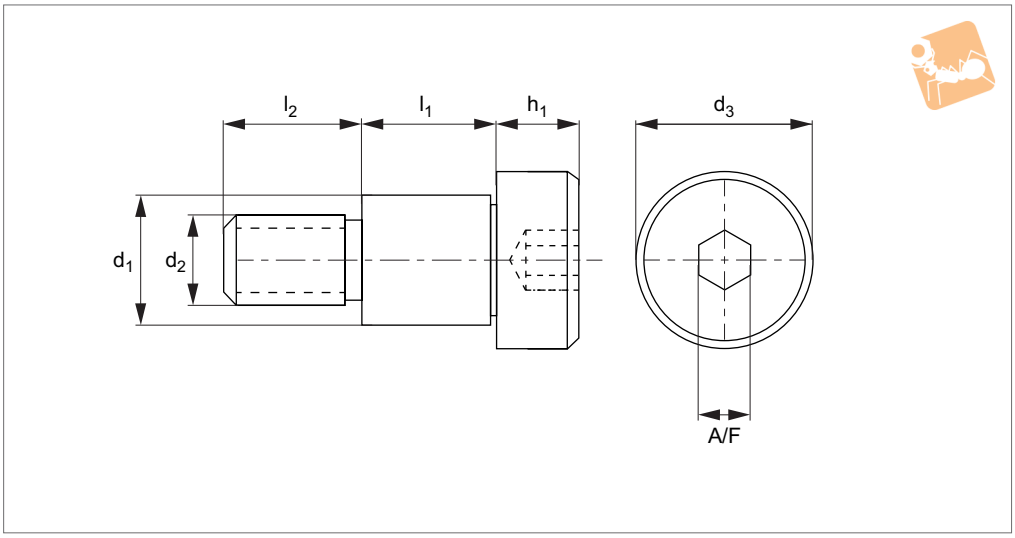
Order No.	d_1 +0.000|-0.025	l_1 +0.05|-0.00	d_2 tol. G6	d_3	l_2 +0.05|-0.00	h_1 +0.00|-0.05	A/F
P0128.040-010-XX	4	10	M 3	8	4	2.0	2.0
P0128.040-012-XX	4	12	M 3	8	4	2.0	2.0
P0128.040-014-XX	4	14	M 3	8	4	2.0	2.0
P0128.040-016-XX	4	16	M 3	8	4	2.0	2.0
P0128.040-018-XX	4	18	M 3	8	4	2.0	2.0
P0128.040-020-XX	4	20	M 3	8	4	2.0	2.0
P0128.040-025-XX	4	25	M 3	8	4	2.0	2.0
P0128.040-030-XX	4	30	M 3	8	4	2.0	2.0
P0128.050-010-XX	5	10	M 4	10	5	2.5	2.5
P0128.050-012-XX	5	12	M 4	10	5	2.5	2.5
P0128.050-016-XX	5	16	M 4	10	5	2.5	2.5
P0128.050-020-XX	5	20	M 4	10	5	2.5	2.5
P0128.050-025-XX	5	25	M 4	10	5	2.5	2.5
P0128.050-030-XX	5	30	M 4	10	5	2.5	2.5
P0128.050-035-XX	5	35	M 4	10	5	2.5	2.5
P0128.050-040-XX	5	40	M 4	10	5	2.5	2.5
P0128.060-010-XX	6	10	M 5	12	6	3.0	3.0
P0128.060-012-XX	6	12	M 5	12	6	3.0	3.0
P0128.060-016-XX	6	16	M 5	12	6	3.0	3.0
P0128.060-020-XX	6	20	M 5	12	6	3.0	3.0
P0128.060-025-XX	6	25	M 5	12	6	3.0	3.0
P0128.060-030-XX	6	30	M 5	12	6	3.0	3.0
P0128.060-035-XX	6	35	M 5	12	6	3.0	3.0
P0128.060-040-XX	6	40	M 5	12	6	3.0	3.0
P0128.080-010-XX	8	10	M 6	16	11	4.0	4.0
P0128.080-012-XX	8	12	M 6	16	11	4.0	4.0
P0128.080-016-XX	8	16	M 6	16	11	4.0	4.0
P0128.080-020-XX	8	20	M 6	16	11	4.0	4.0
P0128.080-025-XX	8	25	M 6	16	11	4.0	4.0
P0128.080-030-XX	8	30	M 6	16	11	4.0	4.0
P0128.080-035-XX	8	35	M 6	16	11	4.0	4.0
P0128.080-040-XX	8	40	M 6	16	11	4.0	4.0

Shoulder Screws - Countersunk
hex drive

Order No.	d_1 +0.000|-0.025	l_1 +0.05|-0.00	d_2 tol. G6	d_3	l_2 +0.05|-0.00	h_1 +0.00|-0.05	A/F
P0128.100-012-XX	10	12	M 8	20	12	5.0	5.0
P0128.100-016-XX	10	16	M 8	20	12	5.0	5.0
P0128.100-020-XX	10	20	M 8	20	12	5.0	5.0
P0128.100-025-XX	10	25	M 8	20	12	5.0	5.0
P0128.100-030-XX	10	30	M 8	20	12	5.0	5.0
P0128.100-040-XX	10	40	M 8	20	12	5.0	5.0
P0128.100-050-XX	10	50	M 8	20	12	5.0	5.0
P0128.120-012-XX	12	12	M 10	24	16	6.0	6.0
P0128.120-016-XX	12	16	M 10	24	16	6.0	6.0
P0128.120-020-XX	12	20	M 10	24	16	6.0	6.0
P0128.120-025-XX	12	25	M 10	24	16	6.0	6.0
P0128.120-030-XX	12	30	M 10	24	16	6.0	6.0
P0128.120-040-XX	12	40	M 10	24	16	6.0	6.0
P0128.120-050-XX	12	50	M 10	24	16	6.0	6.0

Shoulder Screws - Cap Head
hex drive

P0130



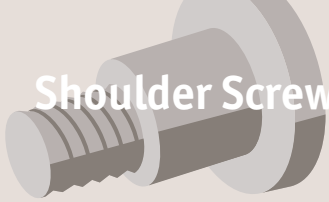
Material
Available in a range of materials, replace XX with -A2 for 304 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless, -T2 for grade 2 titanium and -T5 for grade 5 titanium.

Technical Notes
For torx drive versions please see P0145.
Special lengths and diameters produced to drawings.

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.030-002-XX	3	2	M 2	5	4	2	1.5
P0130.030-003-XX	3	3	M 2	5	4	2	1.5
P0130.030-004-XX	3	4	M 2	5	4	2	1.5
P0130.030-005-XX	3	5	M 2	5	4	2	1.5
P0130.030-006-XX	3	6	M 2	5	4	2	1.5
P0130.030-007-XX	3	7	M 2	5	4	2	1.5
P0130.030-008-XX	3	8	M 2	5	4	2	1.5
P0130.030-010-XX	3	10	M 2	5	4	2	1.5
P0130.030-012-XX	3	12	M 2	5	4	2	1.5
P0130.030-014-XX	3	14	M 2	5	4	2	1.5
P0130.030-016-XX	3	16	M 2	5	4	2	1.5
P0130.030-018-XX	3	18	M 2	5	4	2	1.5
P0130.030-020-XX	3	20	M 2	5	4	2	1.5
P0130.030-025-XX	3	25	M 2	5	4	2	1.5
P0130.040-002-XX	4	2	M 3	6	4	3	2.0
P0130.040-003-XX	4	3	M 3	6	4	3	2.0
P0130.040-004-XX	4	4	M 3	6	4	3	2.0
P0130.040-005-XX	4	5	M 3	6	4	3	2.0
P0130.040-006-XX	4	6	M 3	6	4	3	2.0
P0130.040-007-XX	4	7	M 3	6	4	3	2.0
P0130.040-008-XX	4	8	M 3	6	4	3	2.0
P0130.040-010-XX	4	10	M 3	6	4	3	2.0
P0130.040-012-XX	4	12	M 3	6	4	3	2.0
P0130.040-014-XX	4	14	M 3	6	4	3	2.0
P0130.040-016-XX	4	16	M 3	6	4	3	2.0
P0130.040-018-XX	4	18	M 3	6	4	3	2.0
P0130.040-020-XX	4	20	M 3	6	4	3	2.0
P0130.040-025-XX	4	25	M 3	6	4	3	2.0
P0130.040-030-XX	4	30	M 3	6	4	3	2.0
P0130.040-035-XX	4	35	M 3	6	4	3	2.0
P0130.040-040-XX	4	40	M 3	6	4	3	2.0
P0130.040-045-XX	4	45	M 3	6	4	3	2.0
P0130.040-050-XX	4	50	M 3	6	4	3	2.0
P0130.050-002-XX	5	2	M 4	8	5	4	2.5
P0130.050-003-XX	5	3	M 4	8	5	4	2.5
P0130.050-004-XX	5	4	M 4	8	5	4	2.5
P0130.050-005-XX	5	5	M 4	8	5	4	2.5

Shoulder Screws - Cap Head
hex drive

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.050-006-XX	5	6	M 4	8	5	4	2.5
P0130.050-007-XX	5	7	M 4	8	5	4	2.5
P0130.050-008-XX	5	8	M 4	8	5	4	2.5
P0130.050-010-XX	5	10	M 4	8	5	4	2.5
P0130.050-012-XX	5	12	M 4	8	5	4	2.5
P0130.050-014-XX	5	14	M 4	8	5	4	2.5
P0130.050-016-XX	5	16	M 4	8	5	4	2.5
P0130.050-018-XX	5	18	M 4	8	5	4	2.5
P0130.050-020-XX	5	20	M 4	8	5	4	2.5
P0130.050-025-XX	5	25	M 4	8	5	4	2.5
P0130.050-030-XX	5	30	M 4	8	5	4	2.5
P0130.050-035-XX	5	35	M 4	8	5	4	2.5
P0130.050-040-XX	5	40	M 4	8	5	4	2.5
P0130.050-045-XX	5	45	M 4	8	5	4	2.5
P0130.050-050-XX	5	50	M 4	8	5	4	2.5
P0130.060-002-XX	6	2	M 5	10	6	5	3.0
P0130.060-003-XX	6	3	M 5	10	6	5	3.0
P0130.060-004-XX	6	4	M 5	10	6	5	3.0
P0130.060-005-XX	6	5	M 5	10	6	5	3.0
P0130.060-006-XX	6	6	M 5	10	6	5	3.0
P0130.060-007-XX	6	7	M 5	10	6	5	3.0
P0130.060-008-XX	6	8	M 5	10	6	5	3.0
P0130.060-010-XX	6	10	M 5	10	6	5	3.0
P0130.060-012-XX	6	12	M 5	10	6	5	3.0
P0130.060-014-XX	6	14	M 5	10	6	5	3.0
P0130.060-016-XX	6	16	M 5	10	6	5	3.0
P0130.060-018-XX	6	18	M 5	10	6	5	3.0
P0130.060-020-XX	6	20	M 5	10	6	5	3.0
P0130.060-025-XX	6	25	M 5	10	6	5	3.0
P0130.060-030-XX	6	30	M 5	10	6	5	3.0
P0130.060-035-XX	6	35	M 5	10	6	5	3.0
P0130.060-040-XX	6	40	M 5	10	6	5	3.0
P0130.060-045-XX	6	45	M 5	10	6	5	3.0
P0130.060-050-XX	6	50	M 5	10	6	5	3.0
P0130.060-055-XX	6	55	M 5	10	6	5	3.0
P0130.060-060-XX	6	60	M 5	10	6	5	3.0
P0130.060-070-XX	6	70	M 5	10	6	5	3.0
P0130.060-080-XX	6	80	M 5	10	6	5	3.0
P0130.060-090-XX	6	90	M 5	10	6	5	3.0
P0130.060-100-XX	6	100	M 5	10	6	5	3.0
P0130.080-004-XX	8	4	M 6	12	11	6	4.0
P0130.080-005-XX	8	5	M 6	12	11	6	4.0
P0130.080-006-XX	8	6	M 6	12	11	6	4.0
P0130.080-007-XX	8	7	M 6	12	11	6	4.0
P0130.080-008-XX	8	8	M 6	12	11	6	4.0
P0130.080-010-XX	8	10	M 6	12	11	6	4.0
P0130.080-012-XX	8	12	M 6	12	11	6	4.0
P0130.080-014-XX	8	14	M 6	12	11	6	4.0
P0130.080-016-XX	8	16	M 6	12	11	6	4.0
P0130.080-018-XX	8	18	M 6	12	11	6	4.0
P0130.080-020-XX	8	20	M 6	12	11	6	4.0
P0130.080-025-XX	8	25	M 6	12	11	6	4.0
P0130.080-030-XX	8	30	M 6	12	11	6	4.0
P0130.080-035-XX	8	35	M 6	12	11	6	4.0
P0130.080-040-XX	8	40	M 6	12	11	6	4.0
P0130.080-045-XX	8	45	M 6	12	11	6	4.0
P0130.080-050-XX	8	50	M 6	12	11	6	4.0
P0130.080-055-XX	8	55	M 6	12	11	6	4.0
P0130.080-060-XX	8	60	M 6	12	11	6	4.0
P0130.080-065-XX	8	65	M 6	12	11	6	4.0
P0130.080-070-XX	8	70	M 6	12	11	6	4.0
P0130.080-075-XX	8	75	M 6	12	11	6	4.0
P0130.080-080-XX	8	80	M 6	12	11	6	4.0
P0130.080-090-XX	8	90	M 6	12	11	6	4.0
P0130.080-100-XX	8	100	M 6	12	11	6	4.0
P0130.100-008-XX	10	8	M 6	14	11	7	5.0
P0130.100-010-XX	10	10	M 6	14	11	7	5.0
P0130.100-012-XX	10	12	M 6	14	11	7	5.0



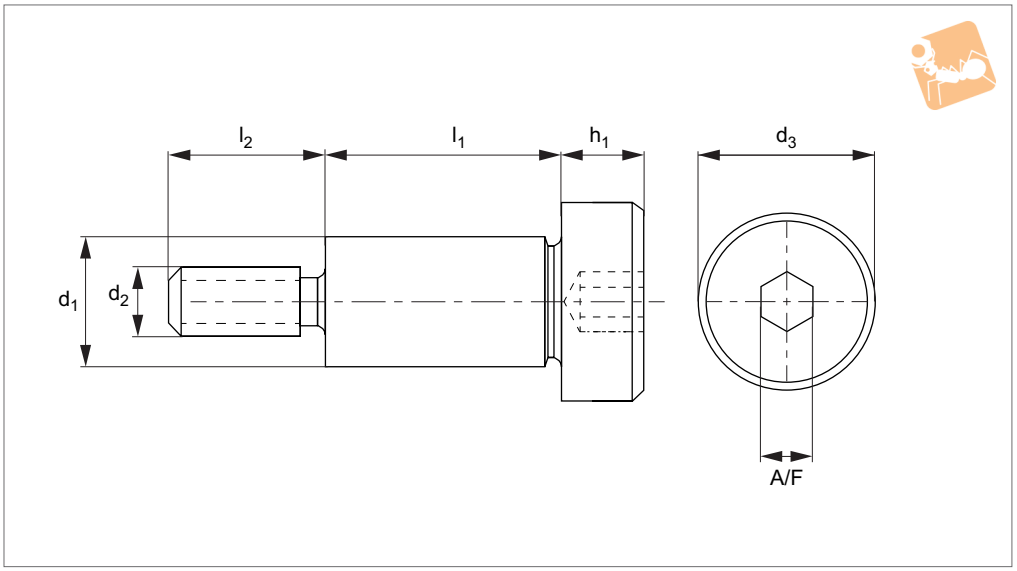
Shoulder Screws - Cap Head

hex drive

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.100-016-XX	10	16	M 6	14	11	7	5.0
P0130.100-008-XX	10	8	M 8	14	12	7	5.0
P0130.100-010-XX	10	10	M 8	14	12	7	5.0
P0130.100-012-XX	10	12	M 8	14	12	7	5.0
P0130.100-014-XX	10	14	M 8	14	12	7	5.0
P0130.100-016-XX	10	16	M 8	14	12	7	5.0
P0130.100-018-XX	10	18	M 8	14	12	7	5.0
P0130.100-020-XX	10	20	M 8	14	12	7	5.0
P0130.100-025-XX	10	25	M 8	14	12	7	5.0
P0130.100-030-XX	10	30	M 8	14	12	7	5.0
P0130.100-035-XX	10	35	M 8	14	12	7	5.0
P0130.100-040-XX	10	40	M 8	14	12	7	5.0
P0130.100-045-XX	10	45	M 8	14	12	7	5.0
P0130.100-050-XX	10	50	M 8	14	12	7	5.0
P0130.100-055-XX	10	55	M 8	14	12	7	5.0
P0130.100-060-XX	10	60	M 8	14	12	7	5.0
P0130.100-065-XX	10	65	M 8	14	12	7	5.0
P0130.100-070-XX	10	70	M 8	14	12	7	5.0
P0130.100-080-XX	10	80	M 8	14	12	7	5.0
P0130.100-090-XX	10	90	M 8	14	12	7	5.0
P0130.100-100-XX	10	100	M 8	14	12	7	5.0
P0130.120-008-XX	12	8	M 10	20	16	8	6.0
P0130.120-010-XX	12	10	M 10	20	16	8	6.0
P0130.120-012-XX	12	12	M 10	20	16	8	6.0
P0130.120-014-XX	12	14	M 10	20	16	8	6.0
P0130.120-016-XX	12	16	M 10	20	16	8	6.0
P0130.120-018-XX	12	18	M 10	20	16	8	6.0
P0130.120-020-XX	12	20	M 10	20	16	8	6.0
P0130.120-025-XX	12	25	M 10	20	16	8	6.0
P0130.120-030-XX	12	30	M 10	20	16	8	6.0
P0130.120-035-XX	12	35	M 10	20	16	8	6.0
P0130.120-040-XX	12	40	M 10	20	16	8	6.0
P0130.120-045-XX	12	45	M 10	20	16	8	6.0
P0130.120-050-XX	12	50	M 10	20	16	8	6.0
P0130.120-055-XX	12	55	M 10	20	16	8	6.0
P0130.120-060-XX	12	60	M 10	20	16	8	6.0
P0130.120-065-XX	12	65	M 10	20	16	8	6.0
P0130.120-070-XX	12	70	M 10	20	16	8	6.0
P0130.120-075-XX	12	75	M 10	20	16	8	6.0
P0130.120-080-XX	12	80	M 10	20	16	8	6.0
P0130.120-090-XX	12	90	M 10	20	16	8	6.0
P0130.120-100-XX	12	100	M 10	20	16	8	6.0
P0130.160-025-XX	16	25	M 12	24	18	11	8.0
P0130.160-030-XX	16	30	M 12	24	18	11	8.0
P0130.160-035-XX	16	35	M 12	24	18	11	8.0
P0130.160-040-XX	16	40	M 12	24	18	11	8.0
P0130.160-045-XX	16	45	M 12	24	18	11	8.0
P0130.160-050-XX	16	50	M 12	24	18	11	8.0
P0130.160-055-XX	16	55	M 12	24	18	11	8.0
P0130.160-060-XX	16	60	M 12	24	18	11	8.0
P0130.160-065-XX	16	65	M 12	24	18	11	8.0
P0130.160-070-XX	16	70	M 12	24	18	11	8.0
P0130.160-075-XX	16	75	M 12	24	18	11	8.0
P0130.160-080-XX	16	80	M 12	24	18	11	8.0
P0130.160-090-XX	16	90	M 12	24	18	11	8.0
P0130.160-100-XX	16	100	M 12	24	18	11	8.0
P0130.200-030-XX	20	30	M 16	30	22	14	10.0
P0130.200-035-XX	20	35	M 16	30	22	14	10.0
P0130.200-040-XX	20	40	M 16	30	22	14	10.0
P0130.200-045-XX	20	45	M 16	30	22	14	10.0
P0130.200-050-XX	20	50	M 16	30	22	14	10.0
P0130.200-060-XX	20	60	M 16	30	22	14	10.0
P0130.200-065-XX	20	65	M 16	30	22	14	10.0
P0130.200-070-XX	20	70	M 16	30	22	14	10.0
P0130.200-075-XX	20	75	M 16	30	22	14	10.0
P0130.200-080-XX	20	80	M 16	30	22	14	10.0
P0130.200-090-XX	20	90	M 16	30	22	14	10.0
P0130.200-100-XX	20	100	M 16	30	22	14	10.0

Shoulder Screws - Cap Head

hex drive - 303 stainless - with locking patch



P0130.P2

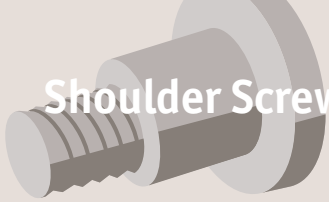
Material

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm². Proof stress min. 190 N/mm².
Anu-Lok 180 locking patch. Other locking patches available on request.

Technical Notes

303 series stainless steel provides good resistance to corrosion. It is mildly magnetic.
For torx drive versions please see P0145.
Special lengths and diameters produced to drawings.

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.030-002-P2	3	2	M 2	5	4	2	1.5
P0130.030-003-P2	3	3	M 2	5	4	2	1.5
P0130.030-004-P2	3	4	M 2	5	4	2	1.5
P0130.030-005-P2	3	5	M 2	5	4	2	1.5
P0130.030-006-P2	3	6	M 2	5	4	2	1.5
P0130.030-007-P2	3	7	M 2	5	4	2	1.5
P0130.030-008-P2	3	8	M 2	5	4	2	1.5
P0130.030-010-P2	3	10	M 2	5	4	2	1.5
P0130.030-012-P2	3	12	M 2	5	4	2	1.5
P0130.030-014-P2	3	14	M 2	5	4	2	1.5
P0130.030-016-P2	3	16	M 2	5	4	2	1.5
P0130.030-018-P2	3	18	M 2	5	4	2	1.5
P0130.030-020-P2	3	20	M 2	5	4	2	1.5
P0130.030-025-P2	3	25	M 2	5	4	2	1.5
P0130.040-002-P2	4	2	M 3	6	4	3	2.0
P0130.040-003-P2	4	3	M 3	6	4	3	2.0
P0130.040-004-P2	4	4	M 3	6	4	3	2.0
P0130.040-005-P2	4	5	M 3	6	4	3	2.0
P0130.040-006-P2	4	6	M 3	6	4	3	2.0
P0130.040-007-P2	4	7	M 3	6	4	3	2.0
P0130.040-008-P2	4	8	M 3	6	4	3	2.0
P0130.040-010-P2	4	10	M 3	6	4	3	2.0
P0130.040-012-P2	4	12	M 3	6	4	3	2.0
P0130.040-014-P2	4	14	M 3	6	4	3	2.0
P0130.040-016-P2	4	16	M 3	6	4	3	2.0
P0130.040-018-P2	4	18	M 3	6	4	3	2.0
P0130.040-020-P2	4	20	M 3	6	4	3	2.0
P0130.040-025-P2	4	25	M 3	6	4	3	2.0
P0130.040-030-P2	4	30	M 3	6	4	3	2.0
P0130.040-035-P2	4	35	M 3	6	4	3	2.0
P0130.040-040-P2	4	40	M 3	6	4	3	2.0
P0130.040-045-P2	4	45	M 3	6	4	3	2.0
P0130.040-050-P2	4	50	M 3	6	4	3	2.0
P0130.050-002-P2	5	2	M 4	8	5	4	2.5



Shoulder Screws - Cap Head

hex drive - 303 stainless - with locking patch

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.050-003-P2	5	3	M 4	8	5	4	2.5
P0130.050-004-P2	5	4	M 4	8	5	4	2.5
P0130.050-005-P2	5	5	M 4	8	5	4	2.5
P0130.050-006-P2	5	6	M 4	8	5	4	2.5
P0130.050-007-P2	5	7	M 4	8	5	4	2.5
P0130.050-008-P2	5	8	M 4	8	5	4	2.5
P0130.050-010-P2	5	10	M 4	8	5	4	2.5
P0130.050-012-P2	5	12	M 4	8	5	4	2.5
P0130.050-014-P2	5	14	M 4	8	5	4	2.5
P0130.050-016-P2	5	16	M 4	8	5	4	2.5
P0130.050-018-P2	5	18	M 4	8	5	4	2.5
P0130.050-020-P2	5	20	M 4	8	5	4	2.5
P0130.050-025-P2	5	25	M 4	8	5	4	2.5
P0130.050-030-P2	5	30	M 4	8	5	4	2.5
P0130.050-035-P2	5	35	M 4	8	5	4	2.5
P0130.050-040-P2	5	40	M 4	8	5	4	2.5
P0130.050-045-P2	5	45	M 4	8	5	4	2.5
P0130.050-050-P2	5	50	M 4	8	5	4	2.5
P0130.060-002-P2	6	2	M 5	10	6	5	3.0
P0130.060-003-P2	6	3	M 5	10	6	5	3.0
P0130.060-004-P2	6	4	M 5	10	6	5	3.0
P0130.060-005-P2	6	5	M 5	10	6	5	3.0
P0130.060-006-P2	6	6	M 5	10	6	5	3.0
P0130.060-007-P2	6	7	M 5	10	6	5	3.0
P0130.060-008-P2	6	8	M 5	10	6	5	3.0
P0130.060-010-P2	6	10	M 5	10	6	5	3.0
P0130.060-012-P2	6	12	M 5	10	6	5	3.0
P0130.060-014-P2	6	14	M 5	10	6	5	3.0
P0130.060-016-P2	6	16	M 5	10	6	5	3.0
P0130.060-018-P2	6	18	M 5	10	6	5	3.0
P0130.060-020-P2	6	20	M 5	10	6	5	3.0
P0130.060-025-P2	6	25	M 5	10	6	5	3.0
P0130.060-030-P2	6	30	M 5	10	6	5	3.0
P0130.060-035-P2	6	35	M 5	10	6	5	3.0
P0130.060-040-P2	6	40	M 5	10	6	5	3.0
P0130.060-045-P2	6	45	M 5	10	6	5	3.0
P0130.060-050-P2	6	50	M 5	10	6	5	3.0
P0130.060-055-P2	6	55	M 5	10	6	5	3.0
P0130.060-060-P2	6	60	M 5	10	6	5	3.0
P0130.060-070-P2	6	70	M 5	10	6	5	3.0
P0130.060-080-P2	6	80	M 5	10	6	5	3.0
P0130.060-090-P2	6	90	M 5	10	6	5	3.0
P0130.060-100-P2	6	100	M 5	10	6	5	3.0
P0130.080-004-P2	8	4	M 6	12	11	6	4.0
P0130.080-005-P2	8	5	M 6	12	11	6	4.0
P0130.080-006-P2	8	6	M 6	12	11	6	4.0
P0130.080-007-P2	8	7	M 6	12	11	6	4.0
P0130.080-008-P2	8	8	M 6	12	11	6	4.0
P0130.080-010-P2	8	10	M 6	12	11	6	4.0
P0130.080-012-P2	8	12	M 6	12	11	6	4.0
P0130.080-014-P2	8	14	M 6	12	11	6	4.0
P0130.080-016-P2	8	16	M 6	12	11	6	4.0
P0130.080-018-P2	8	18	M 6	12	11	6	4.0
P0130.080-020-P2	8	20	M 6	12	11	6	4.0
P0130.080-025-P2	8	25	M 6	12	11	6	4.0
P0130.080-030-P2	8	30	M 6	12	11	6	4.0
P0130.080-035-P2	8	35	M 6	12	11	6	4.0
P0130.080-040-P2	8	40	M 6	12	11	6	4.0
P0130.080-045-P2	8	45	M 6	12	11	6	4.0
P0130.080-050-P2	8	50	M 6	12	11	6	4.0
P0130.080-055-P2	8	55	M 6	12	11	6	4.0
P0130.080-060-P2	8	60	M 6	12	11	6	4.0
P0130.080-065-P2	8	65	M 6	12	11	6	4.0
P0130.080-070-P2	8	70	M 6	12	11	6	4.0
P0130.080-075-P2	8	75	M 6	12	11	6	4.0
P0130.080-080-P2	8	80	M 6	12	11	6	4.0
P0130.080-090-P2	8	90	M 6	12	11	6	4.0
P0130.080-100-P2	8	100	M 6	12	11	6	4.0

Shoulder Screws - Cap Head

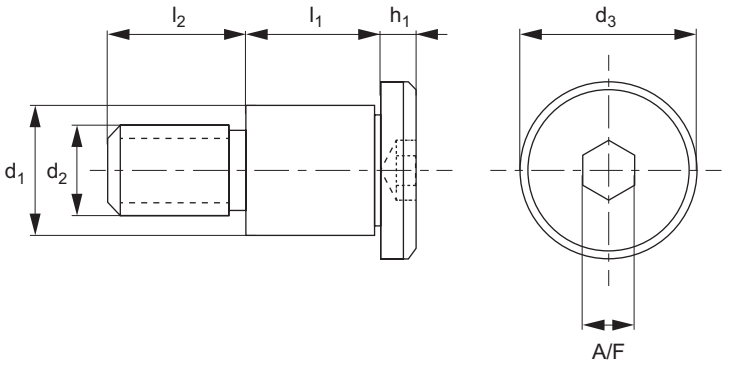
hex drive - 303 stainless - with locking patch

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0130.100-008-P2	10	8	M 8	14	12	7	5.0
P0130.100-010-P2	10	10	M 8	14	12	7	5.0
P0130.100-012-P2	10	12	M 8	14	12	7	5.0
P0130.100-016-P2	10	14	M 8	14	12	7	5.0
P0130.100-014-P2	10	16	M 8	14	12	7	5.0
P0130.100-018-P2	10	18	M 8	14	12	7	5.0
P0130.100-020-P2	10	20	M 8	14	12	7	5.0
P0130.100-025-P2	10	25	M 8	14	12	7	5.0
P0130.100-030-P2	10	30	M 8	14	12	7	5.0
P0130.100-035-P2	10	35	M 8	14	12	7	5.0
P0130.100-040-P2	10	40	M 8	14	12	7	5.0
P0130.100-045-P2	10	45	M 8	14	12	7	5.0
P0130.100-050-P2	10	50	M 8	14	12	7	5.0
P0130.100-055-P2	10	55	M 8	14	12	7	5.0
P0130.100-060-P2	10	60	M 8	14	12	7	5.0
P0130.100-065-P2	10	65	M 8	14	12	7	5.0
P0130.100-070-P2	10	70	M 8	14	12	7	5.0
P0130.100-080-P2	10	80	M 8	14	12	7	5.0
P0130.100-090-P2	10	90	M 8	14	12	7	5.0
P0130.100-100-P2	10	100	M 8	14	12	7	5.0
P0130.120-008-P2	12	8	M 10	20	16	8	6.0
P0130.120-010-P2	12	10	M 10	20	16	8	6.0
P0130.120-012-P2	12	12	M 10	20	16	8	6.0
P0130.120-014-P2	12	14	M 10	20	16	8	6.0
P0130.120-016-P2	12	16	M 10	20	16	8	6.0
P0130.120-018-P2	12	18	M 10	20	16	8	6.0
P0130.120-020-P2	12	20	M 10	20	16	8	6.0
P0130.120-025-P2	12	25	M 10	20	16	8	6.0
P0130.120-030-P2	12	30	M 10	20	16	8	6.0
P0130.120-035-P2	12	35	M 10	20	16	8	6.0
P0130.120-040-P2	12	40	M 10	20	16	8	6.0
P0130.120-045-P2	12	45	M 10	20	16	8	6.0
P0130.120-050-P2	12	50	M 10	20	16	8	6.0
P0130.120-055-P2	12	55	M 10	20	16	8	6.0
P0130.120-060-P2	12	60	M 10	20	16	8	6.0
P0130.120-065-P2	12	65	M 10	20	16	8	6.0
P0130.120-070-P2	12	70	M 10	20	16	8	6.0
P0130.120-075-P2	12	75	M 10	20	16	8	6.0
P0130.120-080-P2	12	80	M 10	20	16	8	6.0
P0130.120-090-P2	12	90	M 10	20	16	8	6.0
P0130.120-100-P2	12	100	M 10	20	16	8	6.0
P0130.160-025-P2	16	25	M 12	24	18	11	8.0
P0130.160-030-P2	16	30	M 12	24	18	11	8.0
P0130.160-035-P2	16	35	M 12	24	18	11	8.0
P0130.160-040-P2	16	40	M 12	24	18	11	8.0
P0130.160-045-P2	16	45	M 12	24	18	11	8.0
P0130.160-050-P2	16	50	M 12	24	18	11	8.0
P0130.160-055-P2	16	55	M 12	24	18	11	8.0
P0130.160-060-P2	16	60	M 12	24	18	11	8.0
P0130.160-065-P2	16	65	M 12	24	18	11	8.0
P0130.160-070-P2	16	70	M 12	24	18	11	8.0
P0130.160-075-P2	16	75	M 12	24	18	11	8.0
P0130.160-080-P2	16	80	M 12	24	18	11	8.0
P0130.160-090-P2	16	90	M 12	24	18	11	8.0
P0130.160-100-P2	16	100	M 12	24	18	11	10.0
P0130.200-030-P2	20	30	M 16	30	22	14	10.0
P0130.200-035-P2	20	35	M 16	30	22	14	10.0
P0130.200-040-P2	20	40	M 16	30	22	14	10.0
P0130.200-045-P2	20	45	M 16	30	22	14	10.0
P0130.200-050-P2	20	50	M 16	30	22	14	10.0
P0130.200-055-P2	20	55	M 16	30	22	14	10.0
P0130.200-060-P2	20	60	M 16	30	22	14	10.0
P0130.200-065-P2	20	65	M 16	30	22	14	10.0
P0130.200-070-P2	20	70	M 16	30	22	14	10.0
P0130.200-075-P2	20	75	M 16	30	22	14	10.0
P0130.200-080-P2	20	80	M 16	30	22	14	10.0
P0130.200-090-P2	20	90	M 16	30	22	14	10.0
P0130.200-100-P2	20	100	M 16	30	22	14	10.0

Ultra Low Head - Shoulder Screw

hex drive - 303 stainless

P0134



Material

Available in a range of materials, replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless and -B4 for blackened 316 stainless.

Technical Notes

These very low profile socket shoulder screws have a head height approximately 1/3 that of normal shoulder screws (P0130).
303 and 316 series stainless is suitable for pharmaceutical and other applications. Stainless steel suitable for marine and other applications.

Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0134.040-004-XX	4	4	M 3	6	4	1.3	2.0
P0134.040-005-XX	4	5	M 3	6	4	1.3	2.0
P0134.040-006-XX	4	6	M 3	6	4	1.3	2.0
P0134.040-008-XX	4	8	M 3	6	4	1.3	2.0
P0134.040-010-XX	4	10	M 3	6	4	1.3	2.0
P0134.040-012-XX	4	12	M 3	6	4	1.3	2.0
P0134.040-016-XX	4	16	M 3	6	4	1.3	2.0
P0134.040-020-XX	4	20	M 3	6	4	1.3	2.0
P0134.050-004-XX	5	4	M 4	9	5	1.3	2.5
P0134.050-005-XX	5	5	M 4	9	5	1.3	2.5
P0134.050-006-XX	5	6	M 4	9	5	1.3	2.5
P0134.050-008-XX	5	8	M 4	9	5	1.3	2.5
P0134.050-010-XX	5	10	M 4	9	5	1.3	2.5
P0134.050-012-XX	5	12	M 4	9	5	1.3	2.5
P0134.050-016-XX	5	16	M 4	9	5	1.3	2.5
P0134.050-020-XX	5	20	M 4	9	5	1.3	2.5
P0134.050-025-XX	5	25	M 4	9	5	1.3	2.5
P0134.050-030-XX	5	30	M 4	9	5	1.3	2.5
P0134.050-040-XX	5	40	M 4	9	5	1.3	2.5
P0134.060-004-XX	6	4	M 5	10	6	1.7	3.0
P0134.060-005-XX	6	5	M 5	10	6	1.7	3.0
P0134.060-006-XX	6	6	M 5	10	6	1.7	3.0
P0134.060-008-XX	6	8	M 5	10	6	1.7	3.0
P0134.060-010-XX	6	10	M 5	10	6	1.7	3.0
P0134.060-012-XX	6	12	M 5	10	6	1.7	3.0
P0134.060-016-XX	6	16	M 5	10	6	1.7	3.0
P0134.060-020-XX	6	20	M 5	10	6	1.7	3.0
P0134.060-025-XX	6	25	M 5	10	6	1.7	3.0
P0134.060-030-XX	6	30	M 5	10	6	1.7	3.0
P0134.060-040-XX	6	40	M 5	10	6	1.7	3.0
P0134.080-006-XX	8	6	M 6	13	11	2.0	4.0

Ultra Low Head - Shoulder Screw

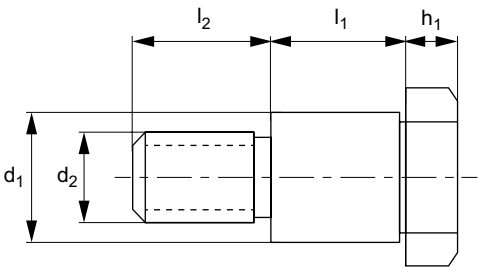
hex drive

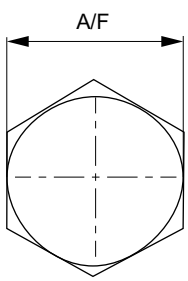
Order No.	d_1 +0|-0.025	l_1 +0.05|-0.0	d_2	d_3	l_2	h_1	A/F
P0134.080-008-XX	8	8	M 6	13	11	2.0	4.0
P0134.080-010-XX	8	10	M 6	13	11	2.0	4.0
P0134.080-012-XX	8	12	M 6	13	11	2.0	4.0
P0134.080-016-XX	8	16	M 6	13	11	2.0	4.0
P0134.080-020-XX	8	20	M 6	13	11	2.0	4.0
P0134.080-025-XX	8	25	M 6	13	11	2.0	4.0
P0134.080-030-XX	8	30	M 6	13	11	2.0	4.0
P0134.080-040-XX	8	40	M 6	13	11	2.0	4.0
P0134.100-008-XX	10	8	M 8	14	12	2.7	5.0
P0134.100-010-XX	10	10	M 8	14	12	2.7	5.0
P0134.100-012-XX	10	12	M 8	14	12	2.7	5.0
P0134.100-016-XX	10	16	M 8	14	12	2.7	5.0
P0134.100-020-XX	10	20	M 8	14	12	2.7	5.0
P0134.100-025-XX	10	25	M 8	14	12	2.7	5.0
P0134.100-030-XX	10	30	M 8	14	12	2.7	5.0
P0134.100-040-XX	10	40	M 8	14	12	2.7	5.0
P0134.100-050-XX	10	50	M 8	14	12	2.7	5.0
P0134.120-010-XX	12	10	M 10	20	16	3.5	6.0
P0134.120-012-XX	12	12	M 10	20	16	3.5	6.0
P0134.120-016-XX	12	16	M 10	20	16	3.5	6.0
P0134.120-020-XX	12	20	M 10	20	16	3.5	6.0
P0134.120-025-XX	12	25	M 10	20	16	3.5	6.0
P0134.120-030-XX	12	30	M 10	20	16	3.5	6.0
P0134.120-040-XX	12	40	M 10	20	16	3.5	6.0
P0134.120-050-XX	12	50	M 10	20	16	3.5	6.0

Stainless Shoulder Bolts - Hex. Head

Small sizes A2 Stainless

P0135





Material
Stainless steel (A2, AISI 303). Tensile strength 550 N/mm².

Technical Notes
A2 stainless steel provides good resistance to corrosion, it is soft and non-magnetic. For Ø16 (and above) stainless steel shoulder bolts see part no. P0139 and P0141.
Special lengths and diameters produced to drawings.

Order No.	d_1 +0.0|-0.025	l_1 +0.0|-0.05	d_2	l_2	h_1	A/F
P0135.040-004	4	4	M 3	4	2.1	5.5
P0135.040-005	4	5	M 3	4	2.1	5.5
P0135.040-006	4	6	M 3	4	2.1	5.5
P0135.040-008	4	8	M 3	4	2.1	5.5
P0135.040-010	4	10	M 3	4	2.1	5.5
P0135.050-004	5	4	M 4	5	2.9	7.0
P0135.050-005	5	5	M 4	5	2.9	7.0
P0135.050-006	5	6	M 4	5	2.9	7.0
P0135.050-008	5	8	M 4	5	2.9	7.0
P0135.050-010	5	10	M 4	5	2.9	7.0
P0135.050-012	5	12	M 4	5	2.9	7.0
P0135.050-014	5	14	M 4	5	2.9	7.0
P0135.050-016	5	16	M 4	5	2.9	7.0
P0135.050-020	5	20	M 4	5	2.9	7.0
P0135.050-025	5	25	M 4	5	2.9	7.0
P0135.050-030	5	30	M 4	5	2.9	7.0
P0135.060-004	6	4	M 5	6	3.6	8.0
P0135.060-005	6	5	M 5	6	3.6	8.0
P0135.060-006	6	6	M 5	6	3.6	8.0
P0135.060-008	6	8	M 5	6	3.6	8.0
P0135.060-010	6	10	M 5	6	3.6	8.0
P0135.060-012	6	12	M 5	6	3.6	8.0
P0135.060-014	6	14	M 5	6	3.6	8.0
P0135.060-016	6	16	M 5	6	3.6	8.0
P0135.060-020	6	20	M 5	6	3.6	8.0
P0135.060-025	6	25	M 5	6	3.6	8.0
P0135.060-030	6	30	M 5	6	3.6	8.0
P0135.080-006	8	6	M 6	11	4.1	10.0
P0135.080-008	8	8	M 6	11	4.1	10.0
P0135.080-010	8	10	M 6	11	4.1	10.0
P0135.080-012	8	12	M 6	11	4.1	10.0
P0135.080-016	8	16	M 6	11	4.1	10.0

Stainless Shoulder Bolts - Hex. Head

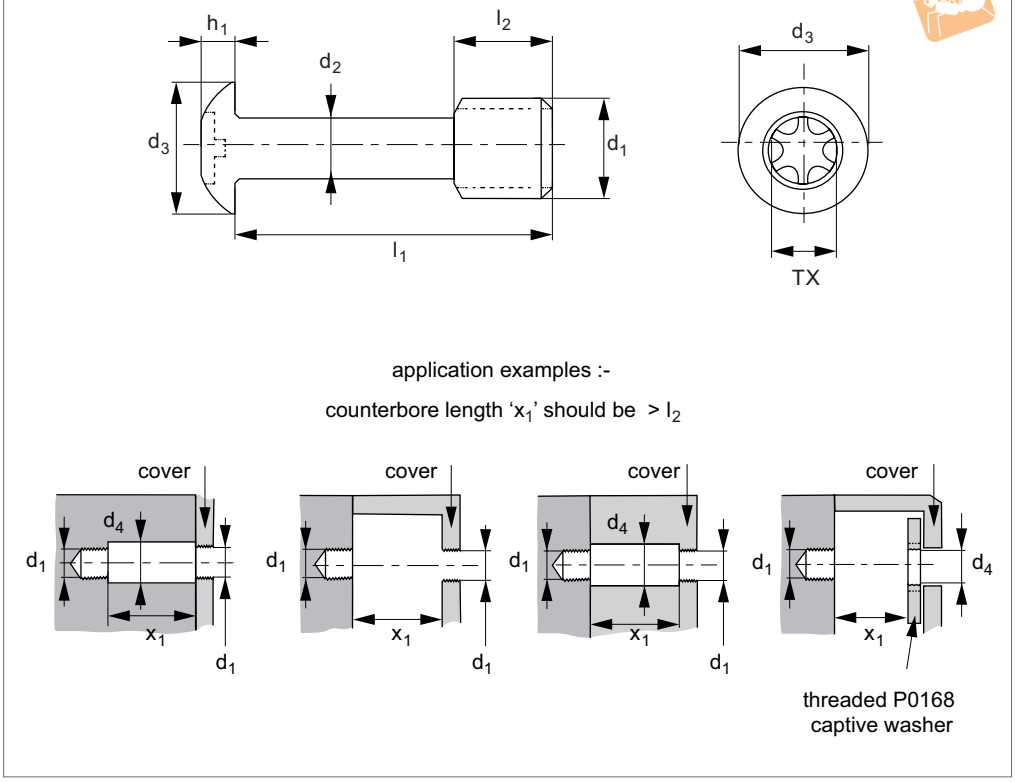
Small sizes A2 Stainless

Order No.	d_1 +0.0|-0.025	l_1 +0.0|-0.05	d_2	l_2	h_1	A/F
P0135.080-020	8	20	M 6	11	4.1	10.0
P0135.100-008	10	8	M 6	11	5.4	13.0
P0135.100-010	10	10	M 6	11	5.4	13.0
P0135.100-012	10	12	M 6	11	5.4	13.0
P0135.100-016	10	16	M 6	11	5.4	13.0
P0135.101-008	10	8	M 8	12	5.4	13.0
P0135.101-010	10	10	M 8	12	5.4	13.0
P0135.101-012	10	12	M 8	12	5.4	13.0
P0135.101-016	10	16	M 8	12	5.4	13.0
P0135.120-012	12	12	M 10	16	6.6	17.0
P0135.120-016	12	16	M 10	16	6.6	17.0
P0135.120-020	12	20	M 10	16	6.6	17.0
P0135.120-025	12	25	M 10	16	6.6	17.0

Captive Screws - Button Head

TX drive

P0149



Material

Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and Ti for titanium.

Technical Notes

Used, to comply with the Machinery Directive 2006/42/EC. Generally to ISO 7380-1. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

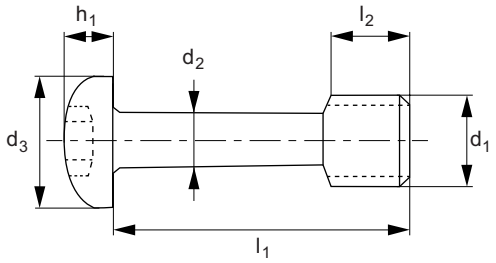
Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 -0.2	TX size
P0149.025-008-XX	M 2.5	8	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-010-XX	M 2.5	10	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-012-XX	M 2.5	12	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-016-XX	M 2.5	16	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.025-020-XX	M 2.5	20	1.7	4.5	2.8	1.50	3.7	TX- 8
P0149.030-010-XX	M 3	10	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-016-XX	M 3	16	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-020-XX	M 3	20	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-025-XX	M 3	25	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-030-XX	M 3	30	2.0	5.7	3.5	1.65	4.5	TX-10
P0149.030-040-XX	M 3	40	2.0	5.7	3.5	1.65	5.0	TX-10
P0149.040-012-XX	M 4	12	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-016-XX	M 4	16	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-020-XX	M 4	20	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-025-XX	M 4	25	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-030-XX	M 4	30	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-040-XX	M 4	40	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.040-050-XX	M 4	50	2.8	7.6	4.5	3.10	6.0	TX-20

Captive Screws - Button Head
TX drive

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 -0.2	TX size
P0149.040-060-XX	M 4	60	2.8	7.6	4.5	3.10	6.0	TX-20
P0149.050-012-XX	M 5	12	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-016-XX	M 5	16	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-020-XX	M 5	20	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-025-XX	M 5	25	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-030-XX	M 5	30	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-040-XX	M 5	40	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-050-XX	M 5	50	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.050-060-XX	M 5	60	3.7	9.5	5.5	3.70	7.5	TX-25
P0149.060-016-XX	M 6	16	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-020-XX	M 6	20	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-025-XX	M 6	25	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-030-XX	M 6	30	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-040-XX	M 6	40	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-050-XX	M 6	50	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-060-XX	M 6	60	4.2	10.5	6.5	4.70	7.5	TX-30
P0149.060-080-XX	M 6	80	4.2	10.5	6.5	4.70	7.5	TX-30

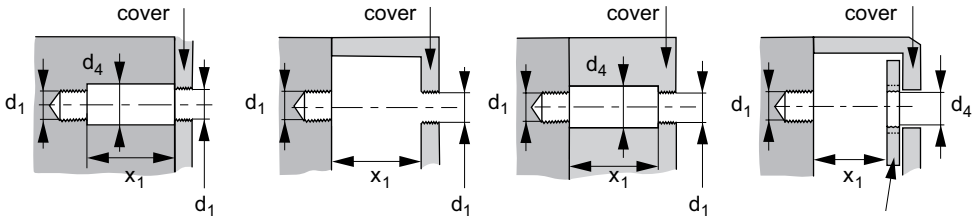
Captive Screws - Pan Head
TX drive

P0150



application examples :-

counterbore length 'x_1' should be > l_2



Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -Ti for titanium.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes
Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 14583. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.
*M 8 sizes have a reduced TX size.

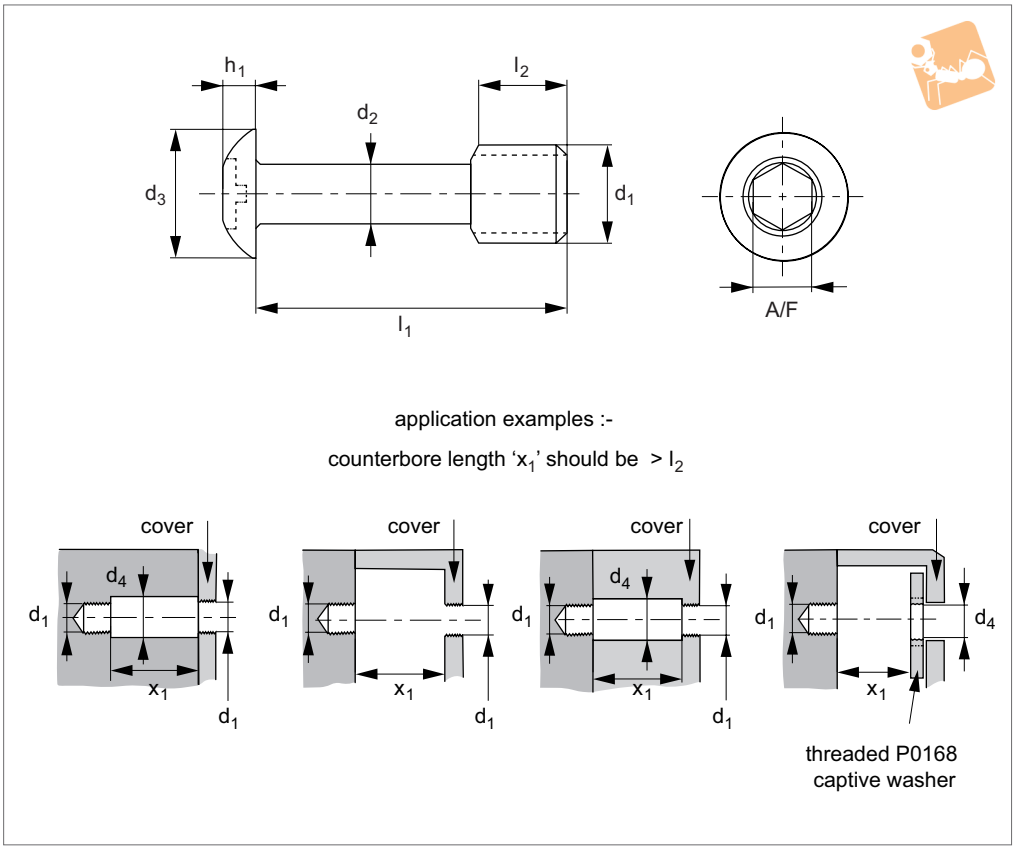
Important Notes
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	TX size
P0150.030-008-XX	M 3	8	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-010-XX	M 3	10	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-016-XX	M 3	16	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-020-XX	M 3	20	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-025-XX	M 3	25	2.0	6	3.5	2.5	4.5	TX-10
P0150.030-030-XX	M 3	30	2.0	6	3.5	2.5	4.5	TX-10
P0150.040-008-XX	M 4	8	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-010-XX	M 4	10	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-012-XX	M 4	12	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-016-XX	M 4	16	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-020-XX	M 4	20	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-025-XX	M 4	25	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-030-XX	M 4	30	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-040-XX	M 4	40	2.8	8	4.5	3.2	6.0	TX-20
P0150.040-050-XX	M 4	50	2.8	8	4.5	3.2	6.0	TX-20
P0150.050-010-XX	M 5	10	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-012-XX	M 5	12	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-016-XX	M 5	16	3.7	10	5.5	3.9	7.5	TX-25

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	TX size
P0150.050-020-XX	M 5	20	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-025-XX	M 5	25	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-030-XX	M 5	30	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-040-XX	M 5	40	3.7	10	5.5	3.9	7.5	TX-25
P0150.050-050-XX	M 5	50	3.7	10	5.5	3.9	7.5	TX-25
P0150.060-010-XX	M 6	10	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-012-XX	M 6	12	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-016-XX	M 6	16	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-020-XX	M 6	20	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-025-XX	M 6	25	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-030-XX	M 6	30	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-040-XX	M 6	40	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-050-XX	M 6	50	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-060-XX	M 6	60	4.2	12	6.5	4.7	7.5	TX-30
P0150.060-080-XX	M 6	80	4.2	12	6.5	4.7	7.5	TX-30
P0150.080-012-XX	M 8	12	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-016-XX	M 8	16	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-020-XX	M 8	20	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-025-XX	M 8	25	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-030-XX	M 8	30	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-035-XX	M 8	35	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-040-XX	M 8	40	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-045-XX	M 8	45	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-050-XX	M 8	50	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-060-XX	M 8	60	6.0	16	8.5	6.1	10.0	TX-30*
P0150.080-080-XX	M 8	80	6.0	16	8.5	6.1	10.0	TX-30*

Captive Screws - Button Head
hex drive

P0151



Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -Ti for titanium.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes
Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 7380-1. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications).

The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

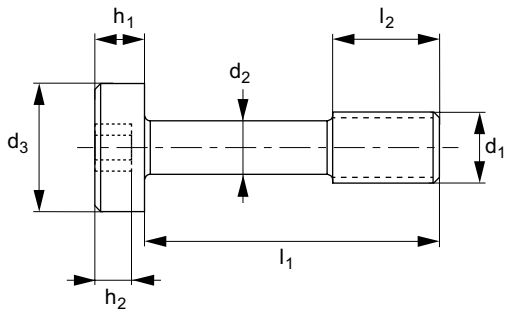
Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0151.025-008-XX	M 2.5	8	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-010-XX	M 2.5	10	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-012-XX	M 2.5	12	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-016-XX	M 2.5	16	1.7	4.5	2.8	1.50	3.7	1.5
P0151.025-020-XX	M 2.5	20	1.7	4.5	2.8	1.50	3.7	1.5
P0151.030-008-XX	M 3	8	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-010-XX	M 3	10	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-016-XX	M 3	16	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-020-XX	M 3	20	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-025-XX	M 3	25	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-030-XX	M 3	30	2.0	5.7	3.5	1.53	4.5	2.0
P0151.030-040-XX	M 3	40	2.0	5.7	3.5	1.53	4.5	2.0
P0151.040-010-XX	M 4	10	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-012-XX	M 4	12	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-016-XX	M 4	16	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-020-XX	M 4	20	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-025-XX	M 4	25	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-030-XX	M 4	30	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-035-XX	M 4	35	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-040-XX	M 4	40	2.8	7.6	4.5	2.10	6.0	2.5

Captive Screws - Button Head
hex drive

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0151.040-050-XX	M 4	50	2.8	7.6	4.5	2.10	6.0	2.5
P0151.040-060-XX	M 4	60	2.8	7.6	4.5	2.10	6.0	2.5
P0151.050-012-XX	M 5	12	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-016-XX	M 5	16	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-020-XX	M 5	20	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-025-XX	M 5	25	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-030-XX	M 5	30	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-040-XX	M 5	40	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-050-XX	M 5	50	3.7	9.5	5.5	2.63	7.5	3.0
P0151.050-060-XX	M 5	60	3.7	9.5	5.5	2.63	7.5	3.0
P0151.060-012-XX	M 6	12	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-016-XX	M 6	16	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-020-XX	M 6	20	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-025-XX	M 6	25	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-030-XX	M 6	30	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-035-XX	M 6	35	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-040-XX	M 6	40	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-050-XX	M 6	50	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-060-XX	M 6	60	4.2	10.5	6.5	3.10	7.5	4.0
P0151.060-080-XX	M 6	80	4.2	10.5	6.5	3.10	7.5	4.0
P0151.080-016-XX	M 8	16	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-020-XX	M 8	20	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-025-XX	M 8	25	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-030-XX	M 8	30	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-035-XX	M 8	35	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-040-XX	M 8	40	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-045-XX	M 8	45	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-050-XX	M 8	50	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-060-XX	M 8	60	6.0	14.0	8.5	4.46	10.0	5.0
P0151.080-080-XX	M 8	80	6.0	14.0	8.5	4.46	10.0	5.0
P0151.100-020-XX	M 10	20	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-025-XX	M 10	25	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-030-XX	M 10	30	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-035-XX	M 10	35	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-040-XX	M 10	40	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-045-XX	M 10	45	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-050-XX	M 10	50	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-060-XX	M 10	60	7.5	17.5	10.6	5.50	12.5	6.0
P0151.100-080-XX	M 10	80	7.5	17.5	10.6	5.50	12.5	6.0

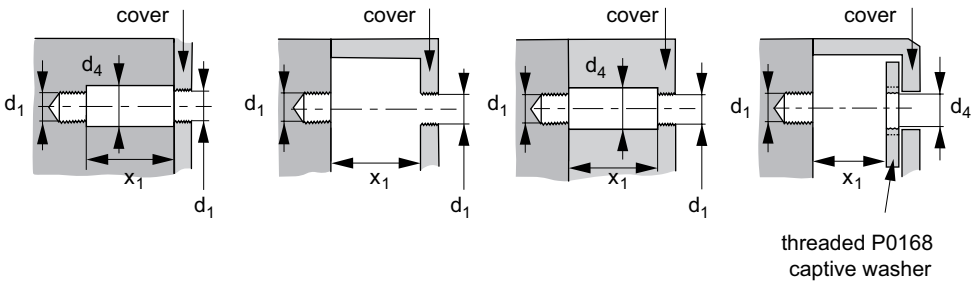
Captive Screws - Cheese Head
hex drive

P0152



application examples :-

counterbore length 'x_1' should be > l_2



Material

Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless and -B4 for blackened 316 stainless.

Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 1207. Often used with our captive washers (P0168) or retaining flanges (P0169.A2 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes

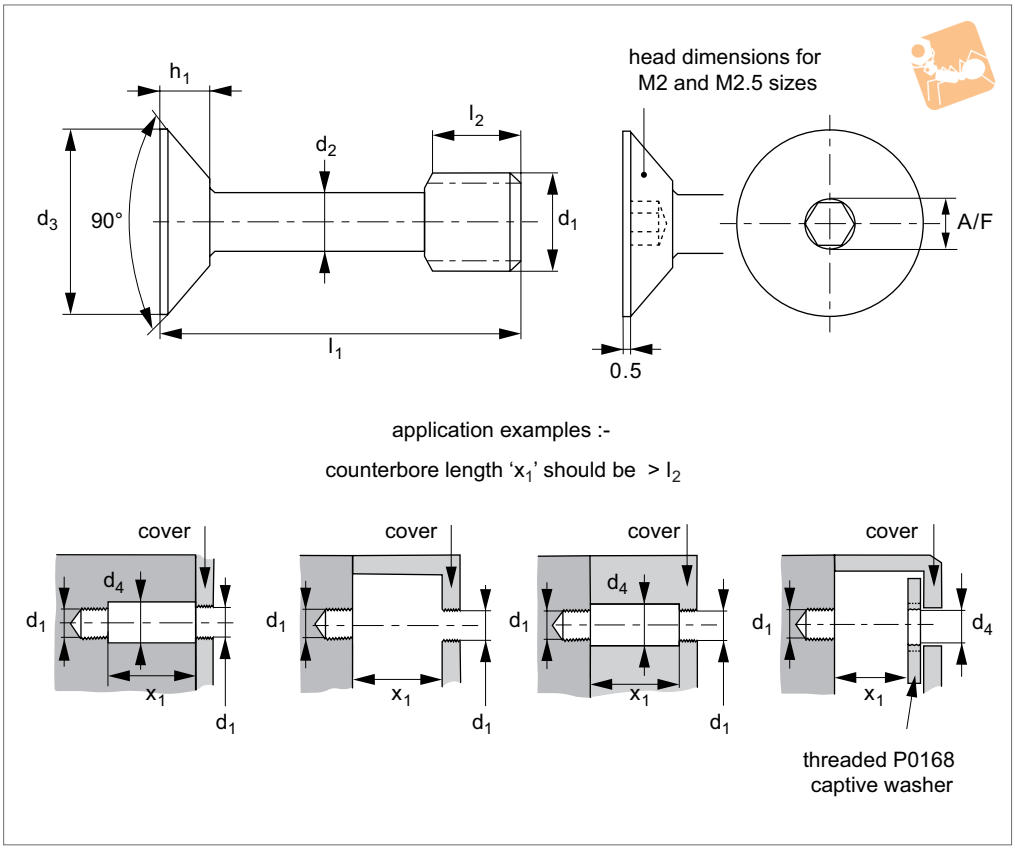
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3	d_4 min.	h_1	h_2	l_2 ±0.25	A/F
P0152.020-010-XX	M 2	10	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-012-XX	M 2	12	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-016-XX	M 2	16	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.020-020-XX	M 2	20	1.2	3.8	2.5	1.3	0.85	3.0	1.3
P0152.025-008-XX	M 2.5	8	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-010-XX	M 2.5	10	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-016-XX	M 2.5	16	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-020-XX	M 2.5	20	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-025-XX	M 2.5	25	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.025-030-XX	M 2.5	30	1.7	4.5	2.8	1.6	1.00	3.7	1.5
P0152.030-010-XX	M 3	10	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-011-XX	M 3	11	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-013-XX	M 3	13	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-016-XX	M 3	16	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-018-XX	M 3	18	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-020-XX	M 3	20	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-025-XX	M 3	25	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.030-030-XX	M 3	30	2.0	5.5	3.5	2.0	1.30	4.5	2.0

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3	d_4 min.	h_1	h_2	l_2 ±0.25	A/F
P0152.030-040-XX	M 3	40	2.0	5.5	3.5	2.0	1.30	4.5	2.0
P0152.035-010-XX	M 3.5	10	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.035-016-XX	M 3.5	16	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.035-020-XX	M 3.5	20	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.035-025-XX	M 3.5	25	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.035-030-XX	M 3.5	30	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.035-040-XX	M 3.5	40	2.3	6.0	3.8	2.4	1.40	5.2	2.5
P0152.040-010-XX	M 4	10	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-012-XX	M 4	12	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-016-XX	M 4	16	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-018-XX	M 4	18	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-019-XX	M 4	19	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-020-XX	M 4	20	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-025-XX	M 4	25	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-030-XX	M 4	30	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-040-XX	M 4	40	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-050-XX	M 4	50	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.040-060-XX	M 4	60	2.8	7.0	4.5	2.6	1.60	6.0	2.5
P0152.050-010-XX	M 5	10	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-012-XX	M 5	12	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-016-XX	M 5	16	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-018-XX	M 5	18	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-020-XX	M 5	20	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-022-XX	M 5	22	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-025-XX	M 5	25	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-030-XX	M 5	30	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-040-XX	M 5	40	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-050-XX	M 5	50	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-060-XX	M 5	60	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.050-080-XX	M 5	80	3.7	8.5	5.5	3.3	2.00	7.5	3.0
P0152.060-016-XX	M 6	16	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-020-XX	M 6	20	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-025-XX	M 6	25	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-030-XX	M 6	30	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-040-XX	M 6	40	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-050-XX	M 6	50	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-060-XX	M 6	60	4.2	10.0	6.5	3.9	2.30	7.5	4.0
P0152.060-080-XX	M 6	80	4.2	10.0	6.5	3.9	2.30	7.5	4.0

Captive Screws - Countersunk
hex drive

P0153



Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -Ti for titanium.
Also available on request in steel (anodised, black oxide or zinc plated), brass, aluminium etc.

Technical Notes
Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.
To accommodate the slight undercut at the top of the shank, the hex socket is smaller than on a similar threaded machine screw.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0153.020-010-XX	M 2	10	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-012-XX	M 2	12	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-016-XX	M 2	16	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-020-XX	M 2	20	1.2	3.8	2.5	1.20	3.5	1.0
P0153.025-010-XX	M 2.5	10	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-012-XX	M 2.5	12	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-016-XX	M 2.5	16	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-020-XX	M 2.5	20	1.7	4.7	2.8	1.80	3.7	1.3
P0153.030-008-XX	M 3	8	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-010-XX	M 3	10	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-012-XX	M 3	12	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-016-XX	M 3	16	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-020-XX	M 3	20	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-025-XX	M 3	25	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-030-XX	M 3	30	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-035-XX	M 3	35	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-040-XX	M 3	40	2.0	5.6	3.5	1.65	4.5	1.5
P0153.040-010-XX	M 4	10	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-012-XX	M 4	12	2.8	7.5	4.5	2.20	6.0	2.0

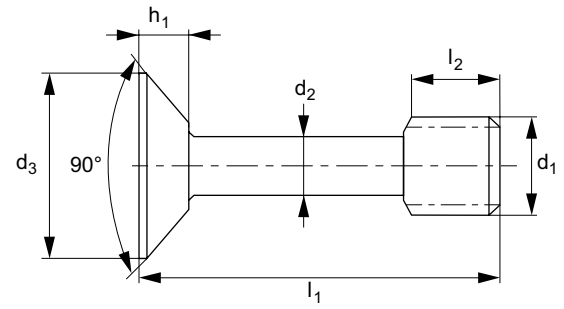
Captive Screws - Countersunk
hex drive

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0153.040-014-XX	M 4	14	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-016-XX	M 4	16	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-020-XX	M 4	20	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-025-XX	M 4	25	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-030-XX	M 4	30	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-035-XX	M 4	35	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-040-XX	M 4	40	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-050-XX	M 4	50	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-060-XX	M 4	60	2.8	7.5	4.5	2.20	6.0	2.0
P0153.050-012-XX	M 5	12	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-014-XX	M 5	14	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-016-XX	M 5	16	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-020-XX	M 5	20	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-025-XX	M 5	25	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-030-XX	M 5	30	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-035-XX	M 5	35	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-040-XX	M 5	40	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-050-XX	M 5	50	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-060-XX	M 5	60	3.7	9.2	5.5	2.50	7.5	2.5
P0153.060-016-XX	M 6	16	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-020-XX	M 6	20	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-025-XX	M 6	25	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-030-XX	M 6	30	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-035-XX	M 6	35	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-040-XX	M 6	40	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-050-XX	M 6	50	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-060-XX	M 6	60	4.2	11.0	6.5	3.00	8.0	3.0
P0153.080-020-XX	M 8	20	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-025-XX	M 8	25	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-030-XX	M 8	30	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-040-XX	M 8	40	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-050-XX	M 8	50	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-060-XX	M 8	60	6.0	15.0	8.5	4.10	10.0	4.0

Captive Screws - Countersunk

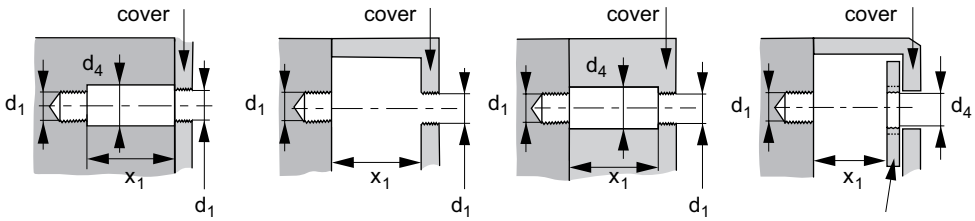
TX drive - 303 stainless

P0153.TX



application examples :-

counterbore length 'x_1' should be > l_2



Material

Stainless steel (AISI 303, 1.4305).
Tensile strength 550 N/mm².
Proof strength min. 190 N/mm² , austenitic stainless steel.

Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 10642.

Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.
To accommodate the slight undercut at the top of the shank, the torx socket is smaller than on a similar threaded machine screw.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0153.020-010-TX	M 2	10	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-012-TX	M 2	12	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-016-TX	M 2	16	1.2	3.8	2.5	1.20	3.5	1.0
P0153.020-020-TX	M 2	20	1.2	3.8	2.5	1.20	3.5	1.0
P0153.025-010-TX	M 2.5	10	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-012-TX	M 2.5	12	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-016-TX	M 2.5	16	1.7	4.7	2.8	1.80	3.7	1.3
P0153.025-020-TX	M 2.5	20	1.7	4.7	2.8	1.80	3.7	1.3
P0153.030-008-TX	M 3	8	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-010-TX	M 3	10	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-012-TX	M 3	12	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-016-TX	M 3	16	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-020-TX	M 3	20	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-025-TX	M 3	25	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-030-TX	M 3	30	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-035-TX	M 3	35	2.0	5.6	3.5	1.65	4.5	1.5
P0153.030-040-TX	M 3	40	2.0	5.6	3.5	1.65	4.5	1.5
P0153.040-010-TX	M 4	10	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-012-TX	M 4	12	2.8	7.5	4.5	2.20	6.0	2.0

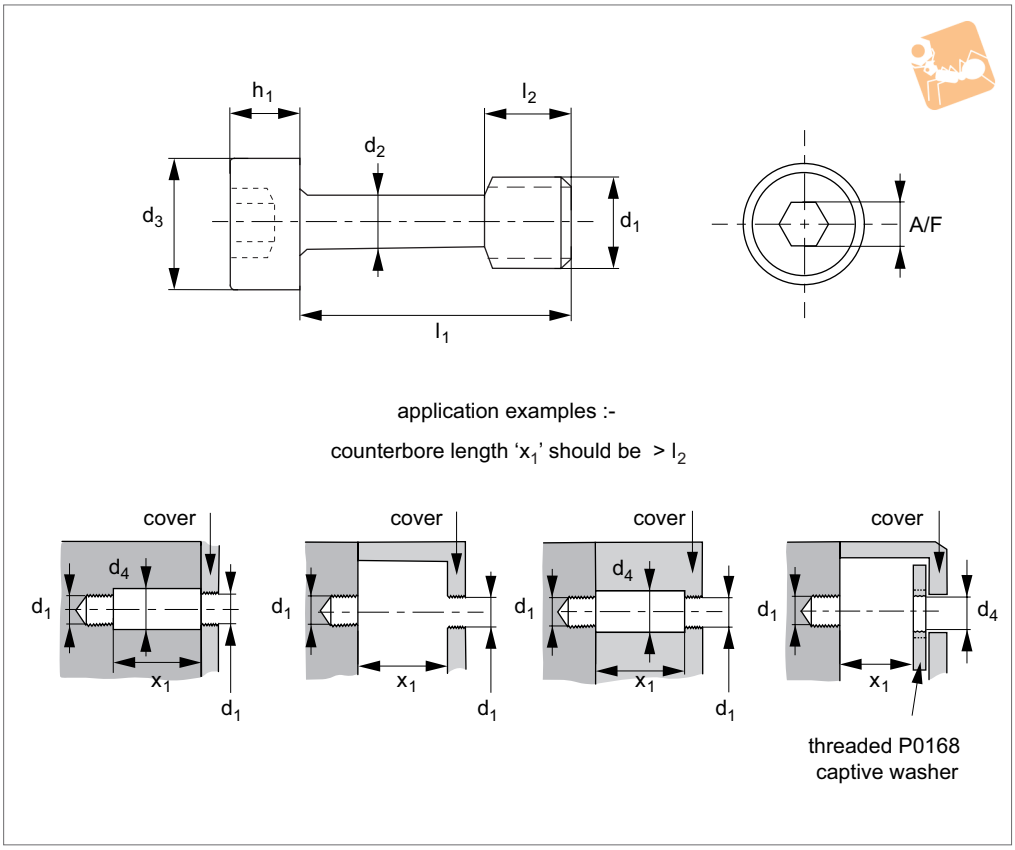
Captive Screws - Countersunk

TX drive - 303 stainless

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0153.040-014-TX	M 4	14	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-016-TX	M 4	16	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-020-TX	M 4	20	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-025-TX	M 4	25	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-030-TX	M 4	30	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-035-TX	M 4	35	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-040-TX	M 4	40	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-050-TX	M 4	50	2.8	7.5	4.5	2.20	6.0	2.0
P0153.040-060-TX	M 4	60	2.8	7.5	4.5	2.20	6.0	2.0
P0153.050-012-TX	M 5	12	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-014-TX	M 5	14	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-016-TX	M 5	16	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-020-TX	M 5	20	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-025-TX	M 5	25	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-030-TX	M 5	30	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-035-TX	M 5	35	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-040-TX	M 5	40	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-050-TX	M 5	50	3.7	9.2	5.5	2.50	7.5	2.5
P0153.050-060-TX	M 5	60	3.7	9.2	5.5	2.50	7.5	2.5
P0153.060-016-TX	M 6	16	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-020-TX	M 6	20	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-025-TX	M 6	25	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-030-TX	M 6	30	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-035-TX	M 6	35	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-040-TX	M 6	40	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-050-TX	M 6	50	4.2	11.0	6.5	3.00	8.0	3.0
P0153.060-060-TX	M 6	60	4.2	11.0	6.5	3.00	8.0	3.0
P0153.080-020-TX	M 8	20	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-025-TX	M 8	25	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-030-TX	M 8	30	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-040-TX	M 8	40	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-050-TX	M 8	50	6.0	15.0	8.5	4.10	10.0	4.0
P0153.080-060-TX	M 8	60	6.0	15.0	8.5	4.10	10.0	4.0

Captive Screws - Cap Head
hex drive

P0154



Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless , -BL for blackened steel, -Ti for titanium and -ZP for steel, zinc plated.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes
Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 4762. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Tips
TX drive style also available.

Important Notes
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

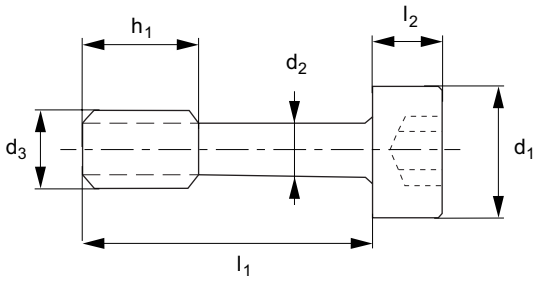
Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0154.025-005-XX	M 2.5	5	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-008-XX	M 2.5	8	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-010-XX	M 2.5	10	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-012-XX	M 2.5	12	1.8	4.5	2.8	2.5	3.0	2.0
P0154.030-008-XX	M 3	8	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-010-XX	M 3	10	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-012-XX	M 3	12	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-016-XX	M 3	16	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-020-XX	M 3	20	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-025-XX	M 3	25	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-030-XX	M 3	30	2.0	5.5	3.5	3.0	4.5	2.5
P0154.040-010-XX	M 4	10	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-012-XX	M 4	12	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-016-XX	M 4	16	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-020-XX	M 4	20	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-025-XX	M 4	25	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-030-XX	M 4	30	2.8	7.0	4.5	4.0	6.0	3.0

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0154.040-035-XX	M 4	35	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-040-XX	M 4	40	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-050-XX	M 4	50	2.8	7.0	4.5	4.0	6.0	3.0
P0154.050-012-XX	M 5	12	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-016-XX	M 5	16	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-020-XX	M 5	20	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-025-XX	M 5	25	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-030-XX	M 5	30	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-035-XX	M 5	35	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-040-XX	M 5	40	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-050-XX	M 5	50	3.7	8.5	5.5	5.0	7.5	4.0
P0154.060-012-XX	M 6	12	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-016-XX	M 6	16	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-020-XX	M 6	20	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-025-XX	M 6	25	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-030-XX	M 6	30	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-035-XX	M 6	35	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-040-XX	M 6	40	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-050-XX	M 6	50	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-060-XX	M 6	60	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-080-XX	M 6	80	4.2	10.0	6.5	6.0	7.5	5.0
P0154.080-016-XX	M 8	16	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-020-XX	M 8	20	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-025-XX	M 8	25	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-030-XX	M 8	30	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-035-XX	M 8	35	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-040-XX	M 8	40	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-045-XX	M 8	45	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-050-XX	M 8	50	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-060-XX	M 8	60	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-080-XX	M 8	80	6.0	13.0	8.5	8.0	10.0	6.0
P0154.100-020-XX	M 10	20	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-025-XX	M 10	25	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-030-XX	M 10	30	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-035-XX	M 10	35	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-040-XX	M 10	40	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-045-XX	M 10	45	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-050-XX	M 10	50	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-060-XX	M 10	60	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-080-XX	M 10	80	7.5	16.0	10.6	10.0	12.5	8.0
P0154.120-025-XX	M 12	25	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-030-XX	M 12	30	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-035-XX	M 12	35	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-040-XX	M 12	40	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-045-XX	M 12	45	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-050-XX	M 12	50	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-060-XX	M 12	60	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-080-XX	M 12	80	8.0	18.0	13.2	12.0	15.0	10.0
P0154.160-030-XX	M 16	30	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-035-XX	M 16	35	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-040-XX	M 16	40	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-045-XX	M 16	45	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-050-XX	M 16	50	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-060-XX	M 16	60	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-080-XX	M 16	80	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-100-XX	M 16	100	12.0	24.0	17.5	16.0	20.0	14.0
P0154.200-040-XX	M 20	40	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-060-XX	M 20	60	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-080-XX	M 20	80	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-100-XX	M 20	100	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-120-XX	M 20	120	16.0	30.0	22.0	20.0	25.0	19.0

Captive Screws - Cap Head

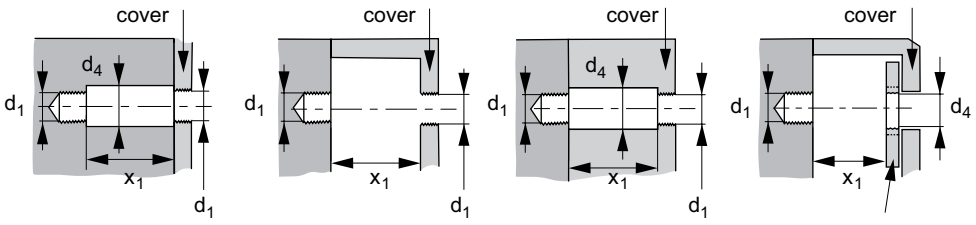
hex drive - 303 stainless - with locking patch

P0154.P2



application examples :-

counterbore length 'x_1' should be > l_2



Material

Stainless steel (AISI 303, 1.4305). Tensile strength 550 N/mm2. Proof stress min. 190 N/mm2, austenitic stainless steel.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.
Anu-Lok 180 locking patch. Other locking patches available on request.

Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 4762. Often used with our captive washers (P0168) or retaining flanges (P0169.A2 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Tips

TX drive style also available.

Important Notes

Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d1.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0154.025-005-P2	M 2.5	5	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-008-P2	M 2.5	8	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-010-P2	M 2.5	10	1.8	4.5	2.8	2.5	3.0	2.0
P0154.025-012-P2	M 2.5	12	1.8	4.5	2.8	2.5	3.0	2.0
P0154.030-008-P2	M 3	8	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-010-P2	M 3	10	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-012-P2	M 3	12	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-016-P2	M 3	16	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-020-P2	M 3	20	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-025-P2	M 3	25	2.0	5.5	3.5	3.0	4.5	2.5
P0154.030-030-P2	M 3	30	2.0	5.5	3.5	3.0	4.5	2.5
P0154.040-010-P2	M 4	10	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-012-P2	M 4	12	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-016-P2	M 4	16	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-020-P2	M 4	20	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-025-P2	M 4	25	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-030-P2	M 4	30	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-035-P2	M 4	35	2.8	7.0	4.5	4.0	6.0	3.0

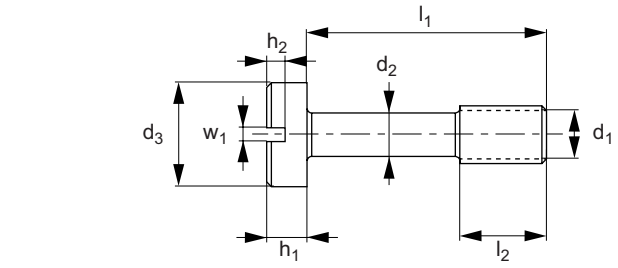
Captive Screws - Cap Head

hex drive - 303 stainless - with locking patch

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 max.	d_4 min.	h_1 max.	l_2 ±0.25	A/F
P0154.040-040-P2	M 4	40	2.8	7.0	4.5	4.0	6.0	3.0
P0154.040-050-P2	M 4	50	2.8	7.0	4.5	4.0	6.0	3.0
P0154.050-012-P2	M 5	12	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-016-P2	M 5	16	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-020-P2	M 5	20	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-025-P2	M 5	25	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-030-P2	M 5	30	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-035-P2	M 5	35	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-040-P2	M 5	40	3.7	8.5	5.5	5.0	7.5	4.0
P0154.050-050-P2	M 5	50	3.7	8.5	5.5	5.0	7.5	4.0
P0154.060-012-P2	M 6	12	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-016-P2	M 6	16	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-020-P2	M 6	20	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-025-P2	M 6	25	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-030-P2	M 6	30	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-035-P2	M 6	35	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-040-P2	M 6	40	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-050-P2	M 6	50	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-060-P2	M 6	60	4.2	10.0	6.5	6.0	7.5	5.0
P0154.060-080-P2	M 6	80	4.2	10.0	6.5	6.0	7.5	5.0
P0154.080-016-P2	M 8	16	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-020-P2	M 8	20	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-025-P2	M 8	25	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-030-P2	M 8	30	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-035-P2	M 8	35	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-040-P2	M 8	40	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-045-P2	M 8	45	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-050-P2	M 8	50	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-060-P2	M 8	60	6.0	13.0	8.5	8.0	10.0	6.0
P0154.080-080-P2	M 8	80	6.0	13.0	8.5	8.0	10.0	6.0
P0154.100-020-P2	M 10	20	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-025-P2	M 10	25	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-030-P2	M 10	30	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-035-P2	M 10	35	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-040-P2	M 10	40	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-045-P2	M 10	45	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-050-P2	M 10	50	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-060-P2	M 10	60	7.5	16.0	10.6	10.0	12.5	8.0
P0154.100-080-P2	M 10	80	7.5	16.0	10.6	10.0	12.5	8.0
P0154.120-025-P2	M 12	25	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-030-P2	M 12	30	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-035-P2	M 12	35	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-040-P2	M 12	40	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-045-P2	M 12	45	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-050-P2	M 12	50	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-060-P2	M 12	60	8.0	18.0	13.2	12.0	15.0	10.0
P0154.120-080-P2	M 12	80	8.0	18.0	13.2	12.0	15.0	10.0
P0154.160-030-P2	M 16	30	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-035-P2	M 16	35	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-040-P2	M 16	40	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-045-P2	M 16	45	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-050-P2	M 16	50	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-060-P2	M 16	60	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-080-P2	M 16	80	12.0	24.0	17.5	16.0	20.0	14.0
P0154.160-100-P2	M 16	100	12.0	24.0	17.5	16.0	20.0	14.0
P0154.200-040-P2	M 20	40	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-060-P2	M 20	60	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-080-P2	M 20	80	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-100-P2	M 20	100	16.0	30.0	22.0	20.0	25.0	19.0
P0154.200-120-P2	M 20	120	16.0	30.0	22.0	20.0	25.0	19.0

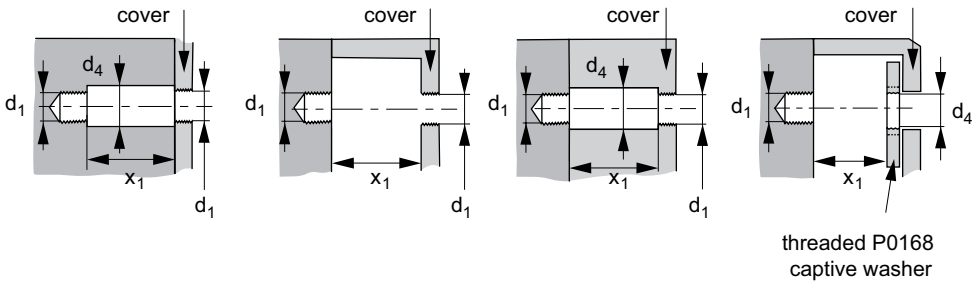
Captive Screws - Cheese Head
slot drive

P0155



application examples :-

counterbore length 'x_1' should be > l_2



Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -Ti for titanium.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes
Used to comply with the Machinery Directive 2006/42/EC. Generally to ISO 1207. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Tips
Other head drive styles - add suffix:
-TX for Torx (hexalobular).
-PZ for Pozidrive.
-SE for snake-eye security.

Important Notes
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

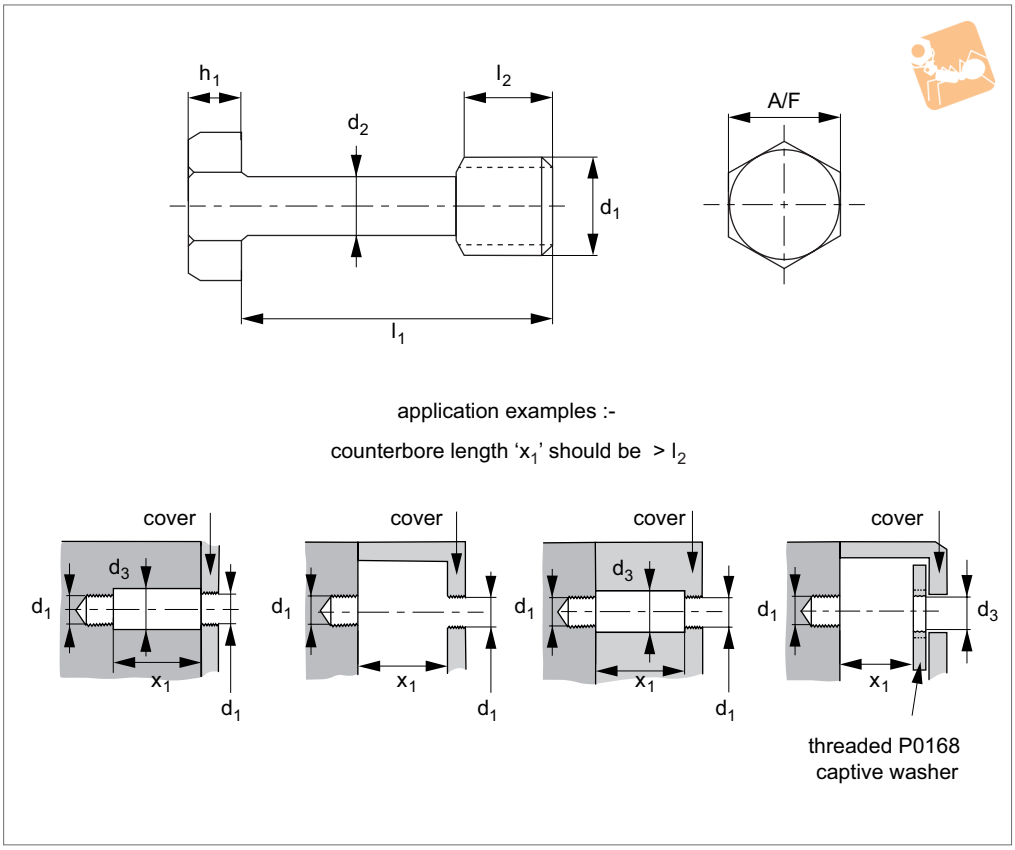
Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3	d_4 min.	h_1	h_2	l_2 ±0.25	w_1
P0155.020-010-XX	M 2	10	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-012-XX	M 2	12	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-016-XX	M 2	16	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.020-020-XX	M 2	20	1.2	3.8	2.5	1.3	0.85	3.0	0.5
P0155.025-010-XX	M 2.5	10	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-012-XX	M 2.5	12	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-016-XX	M 2.5	16	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-020-XX	M 2.5	20	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-025-XX	M 2.5	25	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.025-030-XX	M 2.5	30	1.7	4.5	2.8	1.6	1.00	3.7	0.6
P0155.030-006-XX	M 3	6	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-008-XX	M 3	8	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-010-XX	M 3	10	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-011-XX	M 3	11	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-013-XX	M 3	13	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-016-XX	M 3	16	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-018-XX	M 3	18	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-020-XX	M 3	20	2.0	5.5	3.5	2.0	1.30	4.5	0.8

Captive Screws - Cheese Head
slot drive

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3	d_4 min.	h_1	h_2	l_2 ±0.25	w_1
P0155.030-025-XX	M 3	25	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-030-XX	M 3	30	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.030-040-XX	M 3	40	2.0	5.5	3.5	2.0	1.30	4.5	0.8
P0155.035-010-XX	M 3.5	10	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.035-016-XX	M 3.5	16	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.035-020-XX	M 3.5	20	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.035-025-XX	M 3.5	25	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.035-030-XX	M 3.5	30	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.035-040-XX	M 3.5	40	2.3	6.0	3.8	2.4	1.4	5.2	1.0
P0155.040-010-XX	M 4	10	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-012-XX	M 4	12	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-016-XX	M 4	16	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-018-XX	M 4	18	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-019-XX	M 4	19	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-020-XX	M 4	20	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-025-XX	M 4	25	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-030-XX	M 4	30	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-040-XX	M 4	40	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-050-XX	M 4	50	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.040-060-XX	M 4	60	2.8	7.0	4.5	2.6	1.6	6.0	1.2
P0155.050-010-XX	M 5	10	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-012-XX	M 5	12	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-016-XX	M 5	16	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-018-XX	M 5	18	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-020-XX	M 5	20	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-022-XX	M 5	22	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-025-XX	M 5	25	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-030-XX	M 5	30	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-040-XX	M 5	40	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-050-XX	M 5	50	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-060-XX	M 5	60	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.050-080-XX	M 5	80	3.7	8.5	5.5	3.3	2.0	7.5	1.2
P0155.060-010-XX	M 6	10	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-012-XX	M 6	12	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-016-XX	M 6	16	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-020-XX	M 6	20	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-025-XX	M 6	25	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-030-XX	M 6	30	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-040-XX	M 6	40	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-050-XX	M 6	50	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-060-XX	M 6	60	4.2	10.0	6.5	3.9	2.3	7.5	1.6
P0155.060-080-XX	M 6	80	4.2	10.0	6.5	3.9	2.3	7.5	1.6

Captive Screws - Hex Bolts

P0158



Material

Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -Ti for titanium.
Also available on request in steel (anodised, black oxide or zinc plated), stainless steel (AISI 316, 1.440), brass, aluminium etc.

Technical Notes

Used to comply with the Machinery Directive 2006/42/EC. Often used with our captive washers (P0168) or retaining flanges (P0169 - for sheet metal applications). The use of our captive washers should be considered when fitted in panels with unthreaded holes.

Important Notes

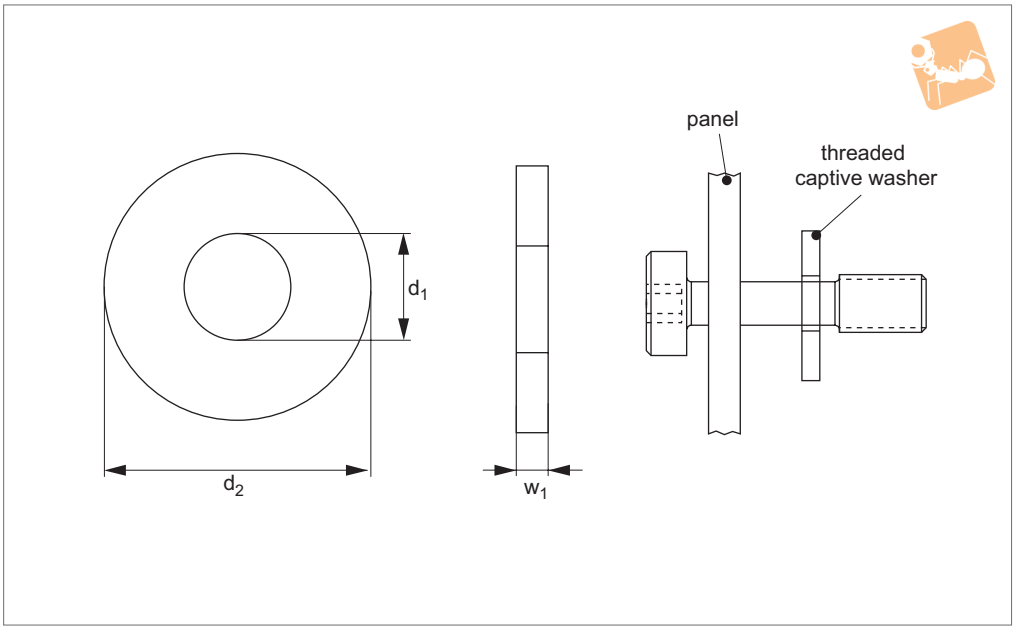
Please note that these screws have a reduced diameter shank and should not be tightened to the recommended torque for an equivalent machine screw of size d_1.

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 min.	h_1 max.	l_2 ±0.25	A/F
P0158.030-010-XX	M 3	10	2.0	3.5	2.2	4.5	6
P0158.030-016-XX	M 3	16	2.0	3.5	2.2	4.5	6
P0158.030-020-XX	M 3	20	2.0	3.5	2.2	4.5	6
P0158.030-025-XX	M 3	25	2.0	3.5	2.2	4.5	6
P0158.030-030-XX	M 3	30	2.0	3.5	2.2	4.5	6
P0158.030-040-XX	M 3	40	2.0	3.5	2.2	4.5	6
P0158.040-012-XX	M 4	12	2.8	4.5	2.9	6.0	7
P0158.040-016-XX	M 4	16	2.8	4.5	2.9	6.0	7
P0158.040-020-XX	M 4	20	2.8	4.5	2.9	6.0	7
P0158.040-025-XX	M 4	25	2.8	4.5	2.9	6.0	7
P0158.040-030-XX	M 4	30	2.8	4.5	2.9	8.0	7
P0158.040-035-XX	M 4	35	2.8	4.5	2.9	8.0	7
P0158.040-040-XX	M 4	40	2.8	4.5	2.9	8.0	7
P0158.040-050-XX	M 4	50	2.8	4.5	2.9	8.0	7
P0158.040-060-XX	M 4	60	2.8	4.5	2.9	8.0	7
P0158.050-012-XX	M 5	12	3.7	5.5	3.6	7.5	8
P0158.050-016-XX	M 5	16	3.7	5.5	3.6	7.5	8
P0158.050-020-XX	M 5	20	3.7	5.5	3.6	7.5	8
P0158.050-025-XX	M 5	25	3.7	5.5	3.6	7.5	8
P0158.050-030-XX	M 5	30	3.7	5.5	3.6	10.0	8

Order No.	d_1	l_1 ±0.25	d_2 ±0.12	d_3 min.	h_1 max.	l_2 ±0.25	A/F
P0158.050-035-XX	M 5	35	3.7	5.5	3.6	10.0	8
P0158.050-040-XX	M 5	40	3.7	5.5	3.6	10.0	8
P0158.050-050-XX	M 5	50	3.7	5.5	3.6	10.0	8
P0158.050-060-XX	M 5	60	3.7	5.5	3.6	10.0	8
P0158.060-012-XX	M 6	12	4.2	6.5	4.1	7.5	10
P0158.060-016-XX	M 6	16	4.2	6.5	4.1	7.5	10
P0158.060-020-XX	M 6	20	4.2	6.5	4.1	7.5	10
P0158.060-025-XX	M 6	25	4.2	6.5	4.1	7.5	10
P0158.060-030-XX	M 6	30	4.2	6.5	4.1	7.5	10
P0158.060-035-XX	M 6	35	4.2	6.5	4.1	7.5	10
P0158.060-040-XX	M 6	40	4.2	6.5	4.1	7.5	10
P0158.060-050-XX	M 6	50	4.2	6.5	4.1	7.5	10
P0158.060-060-XX	M 6	60	4.2	6.5	4.1	7.5	10
P0158.060-080-XX	M 6	80	4.2	6.5	4.1	7.5	10
P0158.080-016-XX	M 8	16	6.0	8.5	5.3	10.0	13
P0158.080-020-XX	M 8	20	6.0	8.5	5.3	10.0	13
P0158.080-025-XX	M 8	25	6.0	8.5	5.3	10.0	13
P0158.080-030-XX	M 8	30	6.0	8.5	5.3	10.0	13
P0158.080-035-XX	M 8	35	6.0	8.5	5.3	10.0	13
P0158.080-040-XX	M 8	40	6.0	8.5	5.3	10.0	13
P0158.080-050-XX	M 8	50	6.0	8.5	5.3	10.0	13
P0158.080-060-XX	M 8	60	6.0	8.5	5.3	10.0	13
P0158.080-080-XX	M 8	80	6.0	8.5	5.3	10.0	13
P0158.100-020-XX	M 10	20	7.5	10.6	6.4	12.5	17
P0158.100-025-XX	M 10	25	7.5	10.6	6.4	12.5	17
P0158.100-030-XX	M 10	30	7.5	10.6	6.4	12.5	17
P0158.100-035-XX	M 10	35	7.5	10.6	6.4	12.0	17
P0158.100-040-XX	M 10	40	7.5	10.6	6.4	12.5	17
P0158.100-050-XX	M 10	50	7.5	10.6	6.4	12.5	17
P0158.100-060-XX	M 10	60	7.5	10.6	6.4	12.5	17
P0158.100-080-XX	M 10	80	7.5	10.6	6.4	12.5	17
P0158.120-025-XX	M 12	25	8.0	13.2	7.5	15.0	19
P0158.120-030-XX	M 12	30	8.0	13.2	7.5	15.0	19
P0158.120-035-XX	M 12	35	8.0	13.2	7.5	15.0	19
P0158.120-040-XX	M 12	40	8.0	13.2	7.5	15.0	19
P0158.120-050-XX	M 12	50	8.0	13.2	7.5	15.0	19
P0158.120-060-XX	M 12	60	8.0	13.2	7.5	15.0	19
P0158.120-080-XX	M 12	80	8.0	13.2	7.5	15.0	19

Threaded Captive Washers
for captive screws

P0168

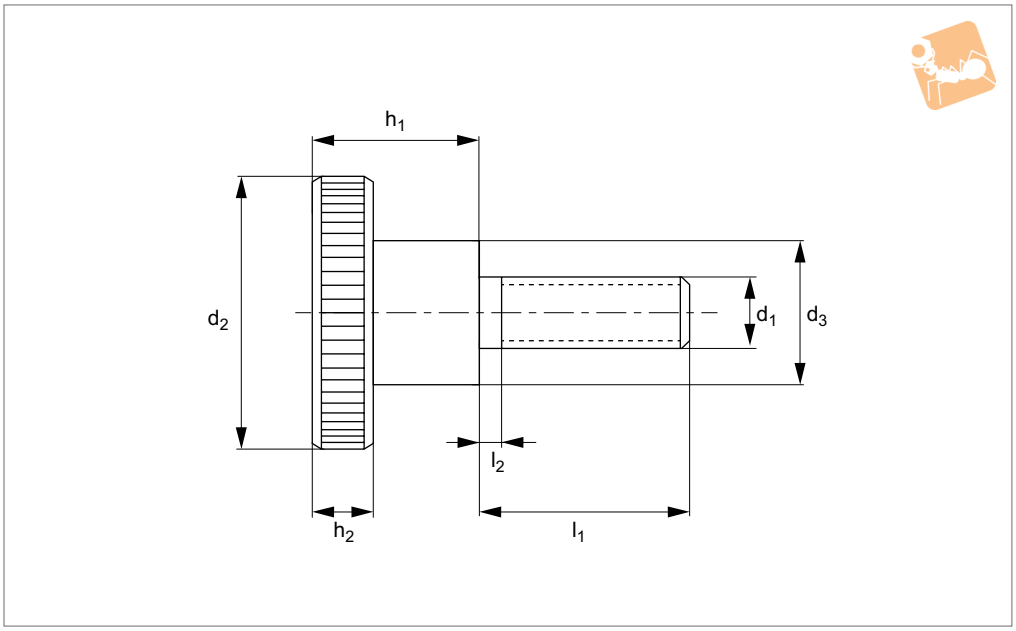


Material
Available in a range of materials; replace XX with -A2 for 303 stainless, -A4 for 316 stainless, -B2 for blackened 303 stainless, -B4 for blackened 316 stainless and -T2 or -T5 for titanium.

Technical Notes
Captive washers have a very shallow thread on the i/d.
This enables them to be screwed on, and once past the threads they do not separate from the captive screw or bolt.

Tips
Captive washers are primarily used to retain captive screws in panels which have unthreaded holes. The panel (onto which the screw needs to be retained) is placed onto the captive screw, the threaded washer is then threaded onto the screw, past the threaded section and the screw is therefore captive to the panel.

Order No.	d_1	w_1 ±0.05	d_2
P0168.025-XX	M 2.5	1.0	5.0
P0168.030-XX	M 3	1.0	6.0
P0168.035-XX	M 3.5	1.2	8.0
P0168.040-XX	M 4	1.2	8.0
P0168.050-XX	M 5	1.5	10.0
P0168.060-XX	M 6	1.6	12.0
P0168.080-XX	M 8	2.0	16.0
P0168.100-XX	M 10	3.0	20.0
P0168.120-XX	M 12	3.5	24.0
P0168.160-XX	M 16	4.0	32.0
P0168.200-XX	M 20	5.0	40.0



P0400

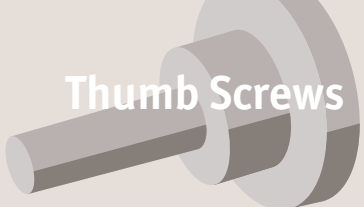
Material

Available in a range of materials; replace XX with -BL for blackened Steel (class 5.8),-BR for Brass, -A4 for 316 stainless,-A2 for 303 stainless and -ZP for bright zinc-plated Steel (class 5.8).

Technical Notes

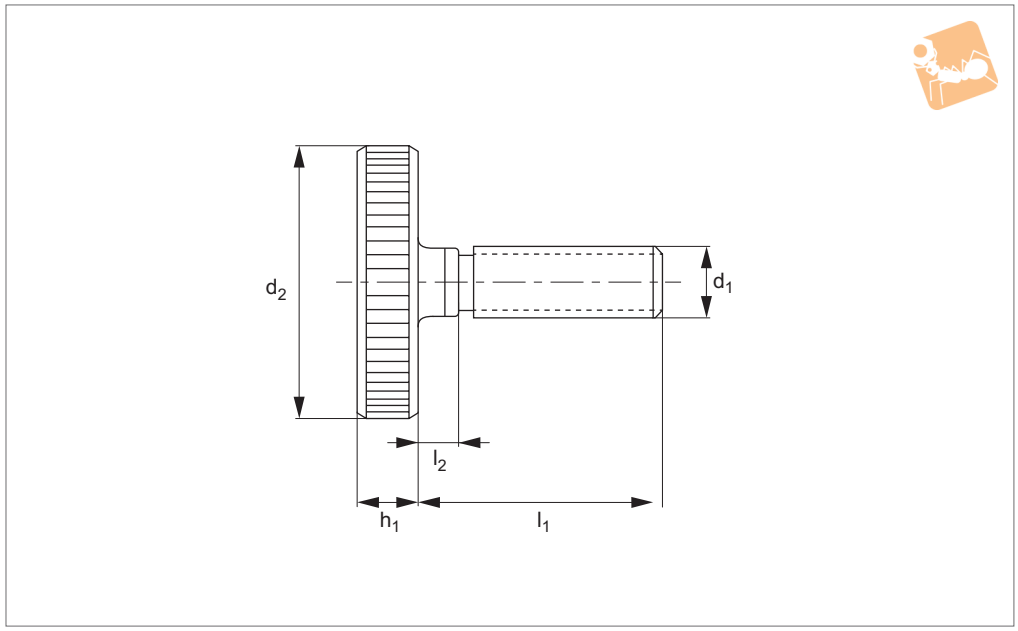
To DIN 464.
All knurled screws are one-piece manufactured. Contrary to the Official Standard Sheet, they all have a thread up to the head, as shown, but no recess at the thread end.

Order No.	d_1	l_1	d_2	d_3	h_1	h_2	l_2
P0400.030-006-XX	M 3	6	12	6	7.5	2.5	2
P0400.030-010-XX	M 3	10	12	6	7.5	2.5	2
P0400.030-012-XX	M 3	12	12	6	7.5	2.5	2
P0400.030-016-XX	M 3	16	12	6	7.5	2.5	2
P0400.030-020-XX	M 3	20	12	6	7.5	2.5	2
P0400.040-006-XX	M 4	6	16	8	9.5	3.5	2
P0400.040-008-XX	M 4	8	16	8	9.5	3.5	2
P0400.040-010-XX	M 4	10	16	8	9.5	3.5	2
P0400.040-012-XX	M 4	12	16	8	9.5	3.5	2
P0400.040-016-XX	M 4	16	16	8	9.5	3.5	2
P0400.040-020-XX	M 4	20	16	8	9.5	3.5	2
P0400.040-025-XX	M 4	25	16	8	9.5	3.5	2
P0400.050-006-XX	M 5	6	20	10	11.5	4.0	2
P0400.050-008-XX	M 5	8	20	10	11.5	4.0	2
P0400.050-010-XX	M 5	10	20	10	11.5	4.0	2
P0400.050-012-XX	M 5	12	20	10	11.5	4.0	2
P0400.050-016-XX	M 5	16	20	10	11.5	4.0	2
P0400.050-020-XX	M 5	20	20	10	11.5	4.0	2
P0400.050-025-XX	M 5	25	20	10	11.5	4.0	2
P0400.050-030-XX	M 5	30	20	10	11.5	4.0	2
P0400.060-008-XX	M 6	8	24	12	15.0	5.0	2
P0400.060-010-XX	M 6	10	24	12	15.0	5.0	2
P0400.060-012-XX	M 6	12	24	12	15.0	5.0	2
P0400.060-016-XX	M 6	16	24	12	15.0	5.0	2
P0400.060-020-XX	M 6	20	24	12	15.0	5.0	2
P0400.060-025-XX	M 6	25	24	12	15.0	5.0	2
P0400.060-030-XX	M 6	30	24	12	15.0	5.0	2
P0400.060-035-XX	M 6	35	24	12	15.0	5.0	2
P0400.060-040-XX	M 6	40	24	12	15.0	5.0	2



Steel Knurled Thumb Screws

Order No.	d_1	l_1	d_2	d_3	h_1	h_2	l_2
P0400.080-012-XX	M 8	12	30	16	18.0	6.0	2
P0400.080-016-XX	M 8	16	30	16	18.0	6.0	2
P0400.080-020-XX	M 8	20	30	16	18.0	6.0	2
P0400.080-025-XX	M 8	25	30	16	18.0	6.0	2
P0400.080-030-XX	M 8	30	30	16	18.0	6.0	2
P0400.080-035-XX	M 8	35	30	16	18.0	6.0	2
P0400.080-040-XX	M 8	40	30	16	18.0	6.0	2
P0400.100-020-XX	M 10	20	36	20	23.0	8.0	2
P0400.100-025-XX	M 10	25	36	20	23.0	8.0	2
P0400.100-030-XX	M 10	30	36	20	23.0	8.0	2
P0400.100-035-XX	M 10	35	36	20	23.0	8.0	2
P0400.100-040-XX	M 10	40	36	20	23.0	8.0	2



P0405

Material

Available in a range of materials; replace XX with -BL for blackened Steel (class 5.8),-BR for Brass, -SS for A4 or A2 stainless and -ZP for bright zinc-plated Steel (class 5.8).

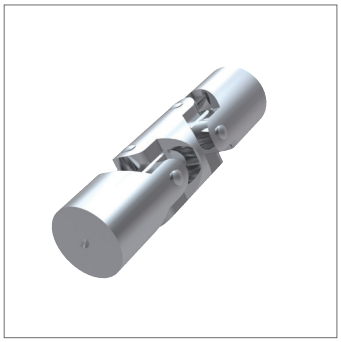
Technical Notes

To DIN 653.
All knurled screws are one-piece manufactured. Contrary to the Official Standard Sheet, they all have a thread up to the head, as shown, but no recess at the thread end.

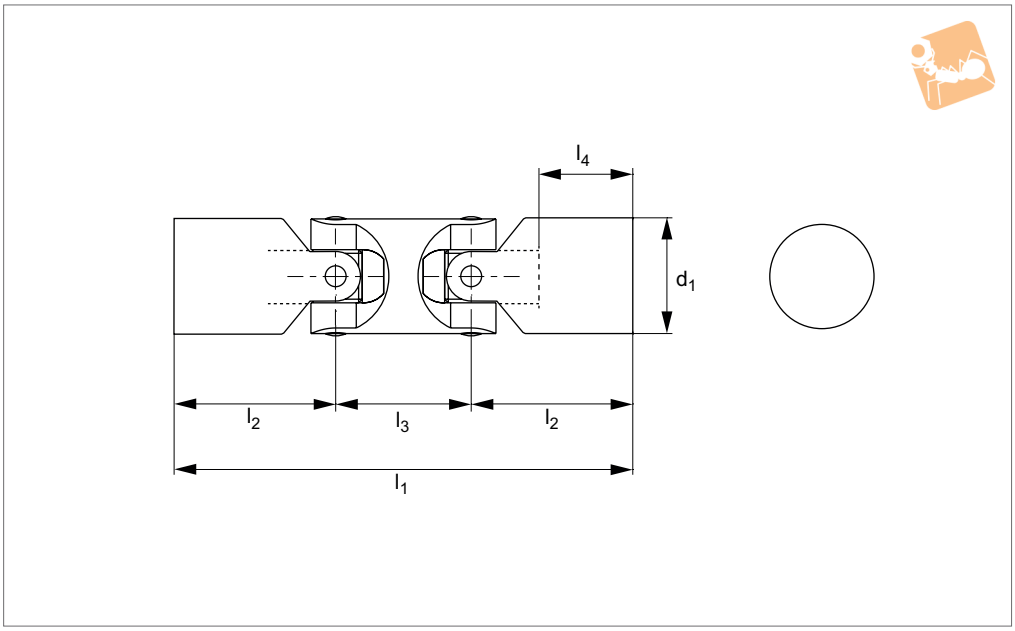
Order No.	d_1	l_1	d_2	h_1	l_2	Weight g
P0405.030-006-XX	M 3	6	12	2.5	2	2.4
P0405.030-008-XX	M 3	8	12	2.5	2	2.5
P0405.030-010-XX	M 3	10	12	2.5	2	2.6
P0405.030-016-XX	M 3	16	12	2.5	2	2.9
P0405.040-008-XX	M 4	8	16	3.5	3	6.1
P0405.040-010-XX	M 4	10	16	3.5	3	6.2
P0405.040-012-XX	M 4	12	16	3.5	3	6.4
P0405.040-016-XX	M 4	16	16	3.5	3	6.7
P0405.040-020-XX	M 4	20	16	3.5	3	7.0
P0405.040-025-XX	M 4	25	16	3.5	3	7.4
P0405.050-010-XX	M 5	10	20	4.0	3	11.0
P0405.050-012-XX	M 5	12	20	4.0	3	11.3
P0405.050-016-XX	M 5	16	20	4.0	3	11.7
P0405.050-020-XX	M 5	20	20	4.0	3	12.0
P0405.050-025-XX	M 5	25	20	4.0	3	12.6
P0405.050-030-XX	M 5	30	20	4.0	3	13.0
P0405.060-012-XX	M 6	12	24	5.0	4	20.0
P0405.060-016-XX	M 6	16	24	5.0	4	20.4
P0405.060-020-XX	M 6	20	24	5.0	4	21.0
P0405.060-025-XX	M 6	25	24	5.0	4	22.0
P0405.060-030-XX	M 6	30	24	5.0	4	22.6
P0405.080-020-XX	M 8	20	30	6.0	5	40.0
P0405.080-025-XX	M 8	25	30	6.0	5	42.0
P0405.080-030-XX	M 8	30	30	6.0	5	43.0
P0405.080-035-XX	M 8	35	30	6.0	5	45.0
P0405.080-040-XX	M 8	40	30	6.0	5	47.0
P0405.100-020-XX	M 10	20	36	8.0	6	73.0
P0405.100-025-XX	M 10	25	36	8.0	6	76.0
P0405.100-030-XX	M 10	30	36	8.0	6	78.0
P0405.100-040-XX	M 10	40	36	8.0	6	83.0

Double Universal Joint

unbored - solid ends



R3683



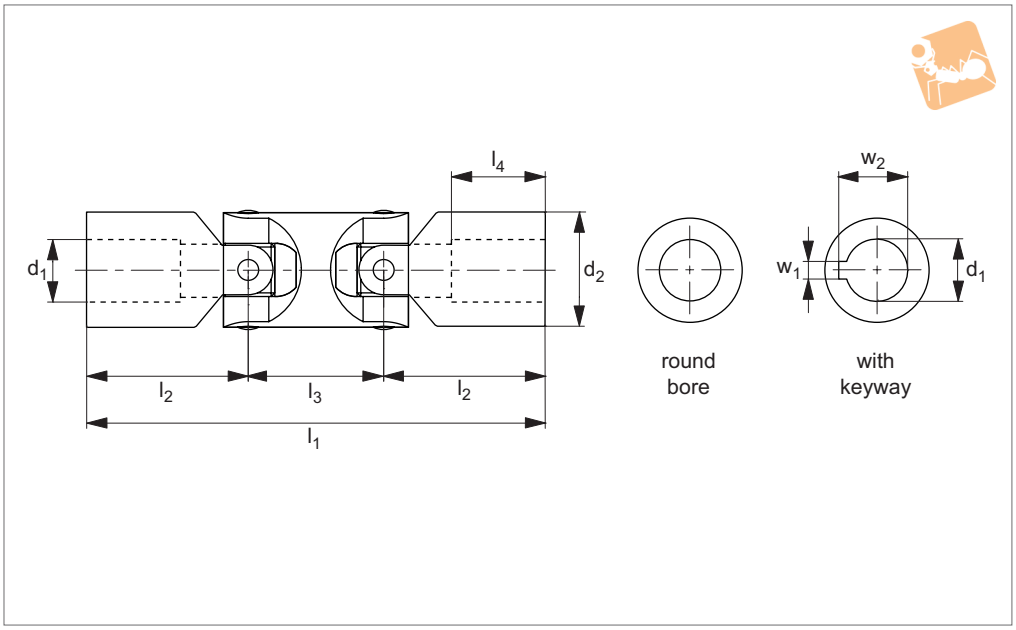
Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

Technical Notes
To DIN 808.

Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Product variations available on request: square bores and hex bores.

Order No.	Bore dia.	d_1	l_1	l_2	l_3	l_4	Weight g
R3683.013	Unbored	13	61	21	18	14	50
R3683.017	Unbored	17	63	20	22	12	80
R3683.018	Unbored	17	75	26	22	18	80
R3683.020	Unbored	20	89	31	26	21	150
R3683.025	Unbored	25	87	28	30	16	250
R3683.026	Unbored	25	105	37	30	25	350
R3683.032	Unbored	32	125	43	38	26	450
R3683.040	Unbored	40	155	54	46	34	1000
R3683.050	Unbored	50	189	66	56	42	2000
R3683.060	Unbored	60	237	83	70	53	3000



R3685

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

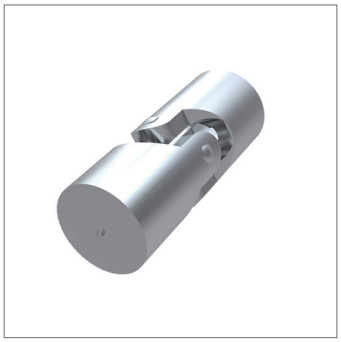
Technical Notes
To DIN 808, keyways aligned.
Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Double universal joints are used where large bending angles are required or where two shafts offset in relation to each other.
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see part number R3696, for needle roller bearings see part number R3686.

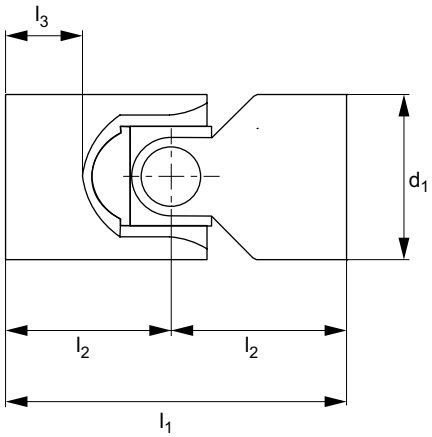
Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1 tol. JS9	w_2	Weight g
R3685.006-RB	Round Bore	6	16	56	17.0	22	8	-	-	80
R3685.008-RB	Round Bore	8	16	62	20.0	22	11	-	-	80
R3685.010-RB	Round Bore	10	22	74	24.0	26	12	-	-	150
R3685.012-RB	Round Bore	12	25	86	28.0	30	13	-	-	250
R3685.014-RB	Round Bore	14	28	96	30.0	36	14	-	-	400
R3685.016-RB	Round Bore	16	32	104	34.0	36	16	-	-	450
R3685.018-RB	Round Bore	18	36	114	37.0	40	17	-	-	700
R3685.020-RB	Round Bore	20	42	128	41.0	46	18	-	-	1000
R3685.022-RB	Round Bore	22	45	145	47.5	50	22	-	-	1550
R3685.025-RB	Round Bore	25	50	163	54.0	55	26	-	-	2000
R3685.030-RB	Round Bore	30	58	190	61.0	68	29	-	-	2900
R3685.032-RB	Round Bore	32	58	198	65.0	68	33	-	-	3000
R3685.035-RB	Round Bore	35	70	212	70.0	72	35	-	-	4750
R3685.040-RB	Round Bore	40	80	245	80.0	85	39	-	-	7200
R3685.050-RB	Round Bore	50	95	290	95.0	100	46	-	-	12000
R3685.006-KW	With Keyway	6	16	56	17.0	22	8	2	7.0	80
R3685.008-KW	With Keyway	8	16	62	20.0	22	11	2	9.0	80
R3685.010-KW	With Keyway	10	22	74	24.0	26	12	3	11.4	150
R3685.012-KW	With Keyway	12	25	86	28.0	30	13	4	13.8	250
R3685.014-KW	With Keyway	14	28	96	30.0	36	14	5	16.3	400
R3685.016-KW	With Keyway	16	32	104	34.0	36	16	5	18.3	450
R3685.018-KW	With Keyway	18	36	114	37.0	40	17	6	20.8	700
R3685.020-KW	With Keyway	20	42	128	41.0	46	18	6	22.8	1000
R3685.022-KW	With Keyway	22	45	145	47.5	50	22	6	24.8	1550
R3685.025-KW	With Keyway	25	50	163	54.0	55	26	8	28.3	2000
R3685.030-KW	With Keyway	30	58	190	61.0	68	29	8	33.3	2900
R3685.032-KW	With Keyway	32	58	198	65.0	68	33	10	35.3	3000
R3685.035-KW	With Keyway	35	70	212	70.0	72	35	10	38.3	4750
R3685.040-KW	With Keyway	40	80	245	80.0	85	39	12	43.3	7200
R3685.050-KW	With Keyway	50	95	290	95.0	100	46	14	53.8	12000

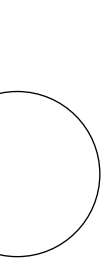
Single Universal Joint

unbored - solid ends



R3687





Material
Steel (9SMnPb28k, no. 10718).
Bearing type: Plain bearing.

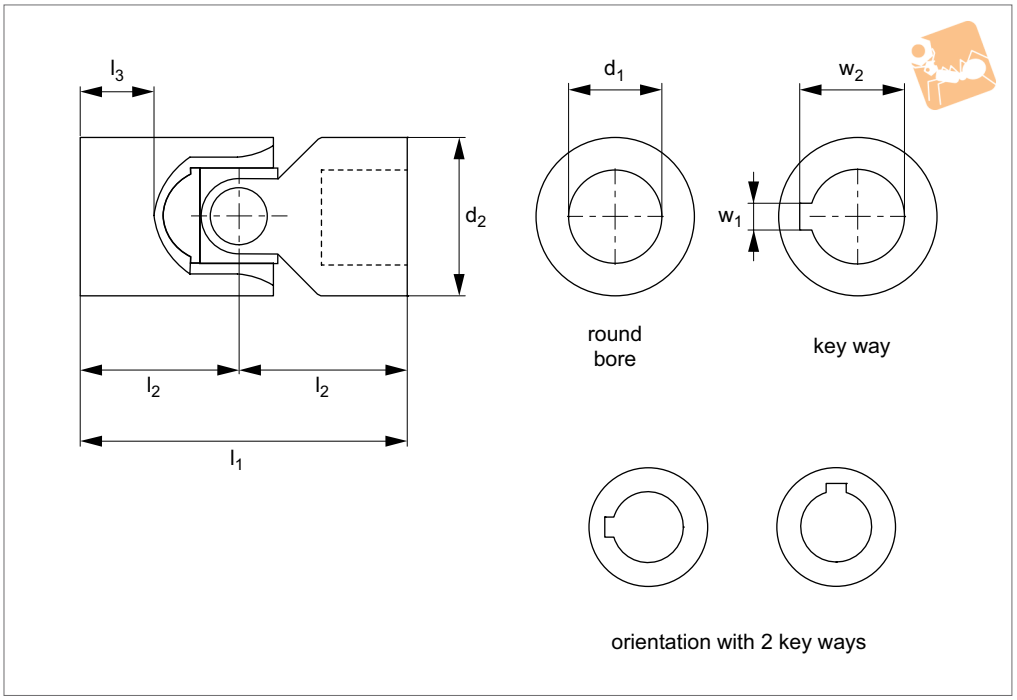
Technical Notes
To DIN 808.

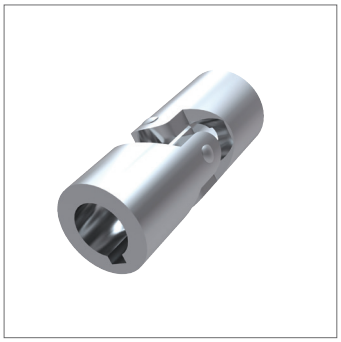
Maximum bending angle 45° per joint.
Max. drive speed of 1000 rpm.

Tips
Single universal joints are used where shafts off-set towards each other.

Product variations available on request, for square bores change the suffic to SB or HB square bores and hex bores.

Order No.	Bore dia.	d_1	l_1	l_2	l_3	Weight g
R3687.013	Unbored	13	43	21	14	20
R3687.017	Unbored	17	53	26	18	50
R3687.020	Unbored	20	63	31	21	70
R3687.025	Unbored	25	57	28	16	150
R3687.026	Unbored	25	75	37	25	150
R3687.032	Unbored	32	87	43	26	290
R3687.040	Unbored	40	109	54	34	600
R3687.045	Unbored	45	109	54	34	1120
R3687.050	Unbored	50	133	66	42	1160





R3688

Material
Steel (9SMnPb28k, no. 10718).
Bearing type: plain bearing.

Technical Notes
To DIN 808/7551.
Maximum bending angle 45° per joint, Max. drive speed of 1000 rpm.

Tips
Single universal joints are used where shafts are off-set towards each other. Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.
For stainless steel see R3694

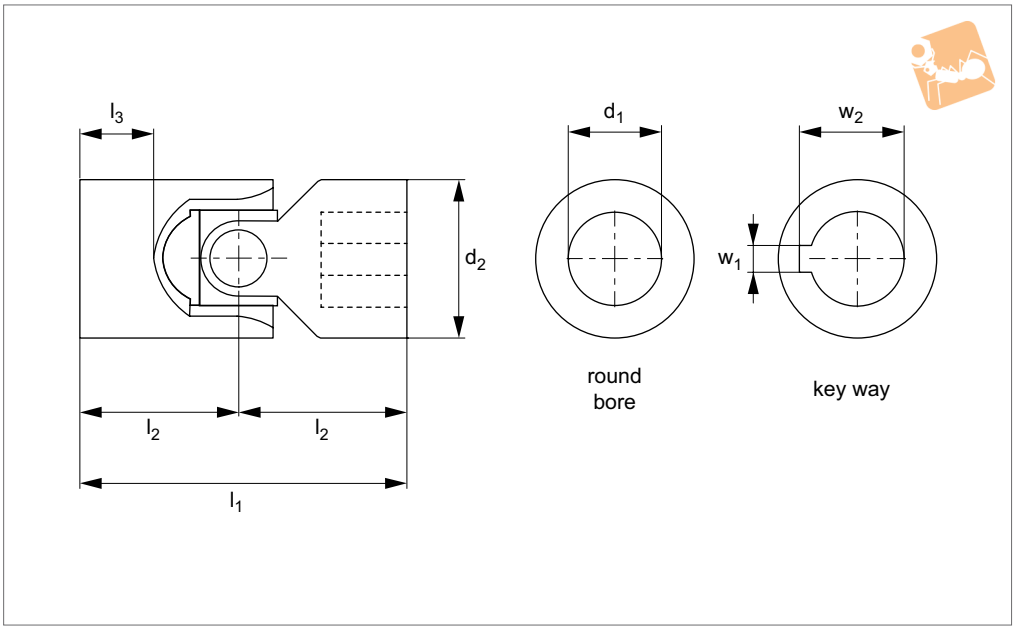
For needle roller bearings see part number R3690.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3688.010-RB	Round Bore	10	16	52	26	15	-	-	50
R3688.012-RB	Round Bore	12	22	62	31	18	-	-	120
R3688.016-RB	Round Bore	16	25	74	37	21	-	-	200
R3688.020-RB	Round Bore	20	32	86	43	24	-	-	350
R3688.025-RB	Round Bore	25	42	108	54	31	-	-	800
R3688.030-RB	Round Bore	30	50	132	66	38	-	-	1200
R3688.040-RB	Round Bore	40	70	166	83	47	-	-	2900
R3688.010-KW	With Keyway	10	16	52	26	15	3	11.4	50
R3688.012-KW	With Keyway	12	22	62	31	18	4	13.8	120
R3688.016-KW	With Keyway	16	25	74	37	21	5	18.3	200
R3688.020-KW	With Keyway	20	32	86	43	24	6	22.8	350
R3688.025-KW	With Keyway	25	42	108	54	31	8	28.3	800
R3688.030-KW	With Keyway	30	50	132	66	38	8	33.3	1200
R3688.040-KW	With Keyway	40	70	166	83	47	12	43.3	2900

Stainless Single Universal Joint

Stainless

R3694

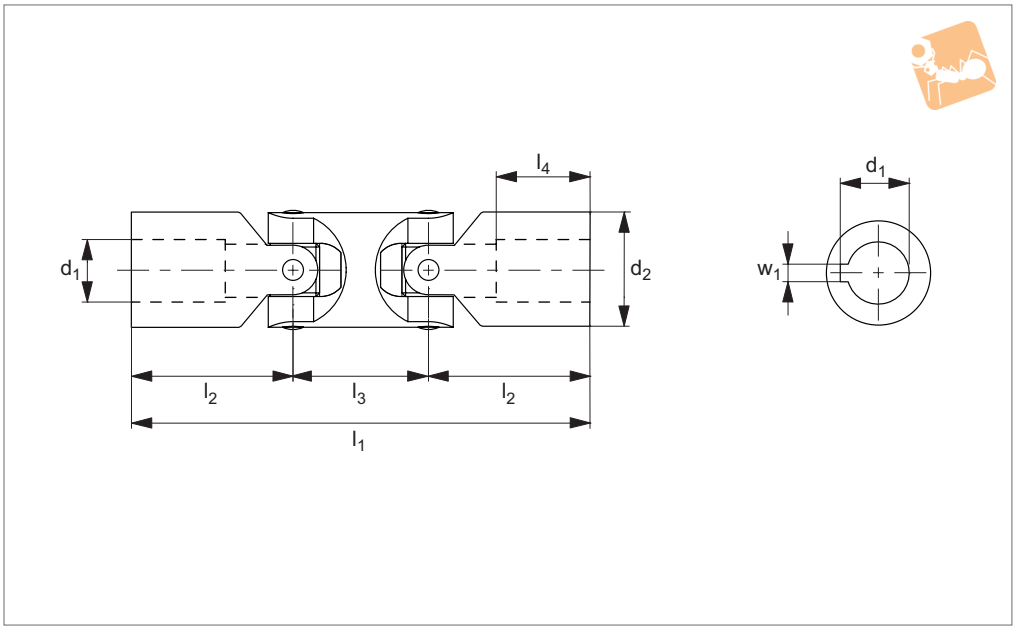


Material
Stainless steel (AISI 304)

Technical Notes
To DIN 808, maximum bending angle 45° per joint.

Tips
Single universal joints are used where shafts are off-set towards each other. Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	w_1 tol. JS9	w_2	Weight g
R3694.006-RB	Round Bore	6	16	34	17	8	-	-	50
R3694.008-RB	Round Bore	8	16	40	20	11	-	-	50
R3694.010-RB	Round Bore	10	22	48	24	12	-	-	100
R3694.012-RB	Round Bore	12	25	56	28	13	-	-	160
R3694.016-RB	Round Bore	16	32	68	34	16	-	-	300
R3694.020-RB	Round Bore	20	42	82	41	18	-	-	600
R3694.025-RB	Round Bore	25	50	108	54	26	-	-	1200
R3694.030-RB	Round Bore	30	58	122	61	29	-	-	1850
R3694.006-KW	Keyway	6	16	34	17	8	2	7.0	50
R3694.008-KW	Keyway	8	16	40	20	11	2	9.0	50
R3694.010-KW	Keyway	10	22	48	24	12	3	11.4	100
R3694.012-KW	Keyway	12	25	56	28	13	4	13.8	160
R3694.016-KW	Keyway	16	32	68	34	16	5	18.3	300
R3694.020-KW	Keyway	20	42	82	41	18	6	22.8	600
R3694.025-KW	Keyway	25	50	108	54	26	8	28.3	1200
R3694.030-KW	Keyway	30	58	122	61	29	8	33.3	1850



R3696

Material
Stainless steel (AISI 304).

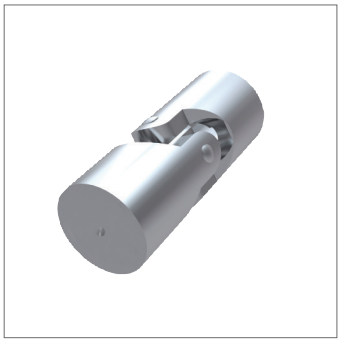
Technical Notes
To DIN 808, maximum bending angle 45° per joint.

Tips
Product variations available on request, for square bores change the suffix to SQ for square bores or HX for hex bores.

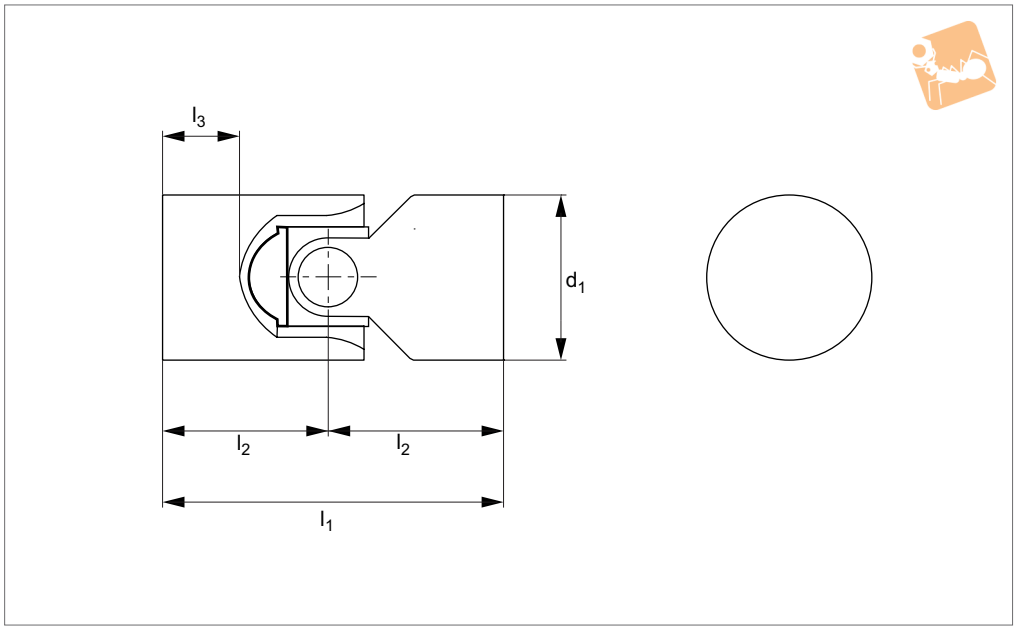
Order No.	Bore dia.	d_1 tol. H7	d_2	l_1	l_2	l_3	l_4	w_1	w_2	Weight g
R3696.006-RB	Round Bore	6	16	56	17	22	8	-	-	80
R3696.008-RB	Round Bore	8	16	62	20	22	11	-	-	80
R3696.010-RB	Round Bore	10	22	74	24	26	12	-	-	150
R3696.012-RB	Round Bore	12	25	86	28	30	13	-	-	250
R3696.016-RB	Round Bore	16	32	104	34	36	16	-	-	450
R3696.020-RB	Round Bore	20	42	128	41	46	18	-	-	1000
R3696.025-RB	Round Bore	25	50	163	54	55	26	-	-	2000
R3696.030-RB	Round Bore	30	58	190	61	68	29	-	-	2900
R3696.006-KW	Keyway	6	16	56	17	22	8	2	7.0	80
R3696.008-KW	Keyway	8	16	62	20	22	11	2	9.0	80
R3696.010-KW	Keyway	10	22	74	24	26	12	3	11.4	150
R3696.012-KW	Keyway	12	25	86	28	30	13	4	13.8	250
R3696.016-KW	Keyway	16	32	104	34	36	16	5	18.3	450
R3696.020-KW	Keyway	20	42	128	41	46	18	6	22.8	1000
R3696.025-KW	Keyway	25	50	163	54	55	26	8	28.3	2000
R3696.030-KW	Keyway	30	58	190	61	68	29	8	33.3	2900

Stainless 316 Single Universal Joint

Stainless unbored - solid ends



R3698



Material

Stainless steel (AISI 316), bearing type: Plain bearing.

Technical Notes

To DIN 808.
Maximum bending angle 45° per joint.
Max. drive speed of joints with journal bearings 100 rpm.

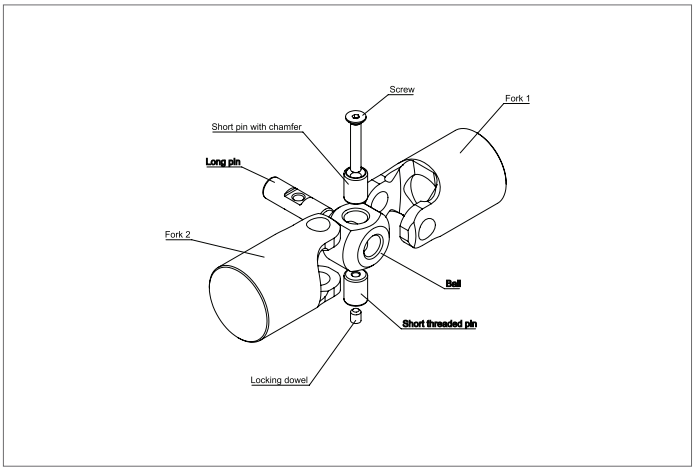
Tips

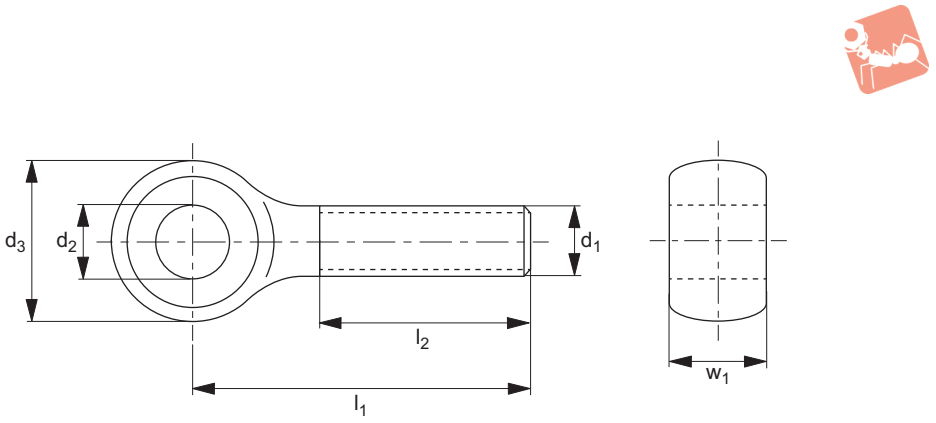
Single universal joints are used where shafts off-set towards each other.
Product variations available on request: square bores and hex bores.
Can be disassembled to aid machining of ends.

Assembly instructions:

Step 1: Spray with grease internal high load spray adhesive (type TG248) ball and holes in the forks.
Step 2: Place sphere inside fork 1 and insert long pin with planes oriented towards perpendicular hole in the sphere.
Step 3: Insert fork 2 on the ball and fit inside the short flared pin subsequently, on the opposite side, the short threaded pin.
Step 4: Place the countersunk screw tightening it adequately.
Step 5: Screw the locking dowel on the pin short threaded against the screw.

Order No.	d_1	l_1	l_2	l_3
R3698.020-UN	20	62	31	19
R3698.025-UN	25	74	37	23
R3698.032-UN	32	86	43	25
R3698.040-UN	40	108	54	30
R3698.050-UN	50	132	66	40





18832

Material
Stainless steel 1.4301.

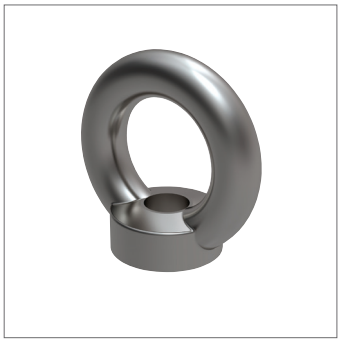
Technical Notes
DIN 444.

Important Notes
These parts have a bore d_2 to standard tolerance H9 (faces ‚w_1' are not machined).

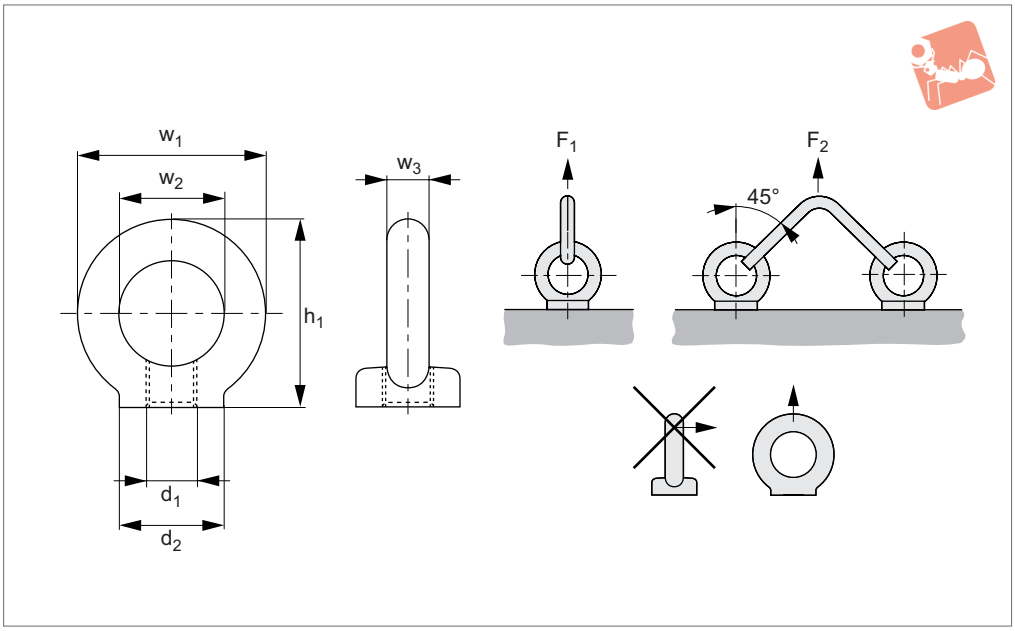
For similar parts to DIN 444 with high tolerance see our part 18830.

Order No.	d_1	l_1	d_2 tol. h9	d_3	l_2	w_1	Weight g
18832.W0402	M 5	25	5	12	16	6	5.6
18832.W0403	M 5	30	5	12	16	6	6.4
18832.W0404	M 5	35	5	12	16	6	7.1
18832.W0405	M 5	40	5	12	16	6	7.9
18832.W0412	M 6	30	6	14	18	7	9.5
18832.W0414	M 6	40	6	14	18	7	12.0
18832.W0416	M 6	50	6	14	18	7	14.0
18832.W0418	M 6	60	6	14	18	7	16.0
18832.W0422	M 6	80	6	14	18	7	20.0
18832.W0432	M 8	40	8	18	22	9	22.0
18832.W0434	M 8	50	8	18	22	9	25.0
18832.W0436	M 8	60	8	18	22	9	29.0
18832.W0440	M 8	80	8	18	22	9	37.0
18832.W0444	M 8	100	8	18	22	9	44.0
18832.W0452	M 10	50	10	20	26	12	37.0
18832.W0454	M 10	60	10	20	26	12	43.0
18832.W0457	M 10	75	10	20	26	12	52.0
18832.W0462	M 10	100	10	20	26	12	67.0
18832.W0466	M 10	120	10	20	26	12	72.0
18832.W0472	M 12	50	12	25	30	14	59.0
18832.W0474	M 12	60	12	25	30	14	68.0
18832.W0478	M 12	80	12	25	30	14	85.0
18832.W0482	M 12	100	12	25	30	14	102.0
18832.W0486	M 12	120	12	25	30	14	119.0
18832.W0502	M 16	120	16	32	38	17	220.0
18832.W0508	M 16	150	16	32	44	17	265.0
18832.W0512	M 20	100	18	40	46	22	329.0
18832.W0516	M 20	120	18	40	46	22	371.0
18832.W0524	M 20	160	18	40	52	22	466.0
18832.W0532	M 20	200	18	40	52	22	562.0
18832.W0542	M 24	100	22	45	54	25	442.0
18832.W0546	M 24	120	22	45	54	25	512.0
18832.W0554	M 24	160	22	45	60	25	649.0
18832.W0562	M 24	200	22	45	60	25	787.0

Stainless Female Lifting Eye Bolts
metric sizes



18844



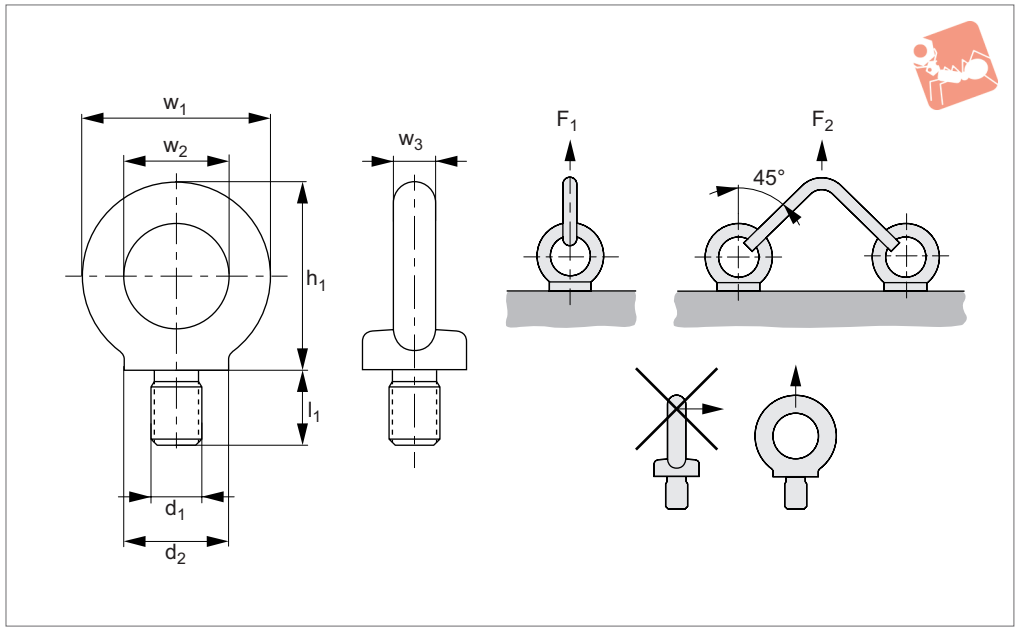
Material
Stainless steel (A4, AISI 316).
CE marked.

Technical Notes
To DIN 582.
When using lifting eye bolts it is critical to ensure that the face is in firm contact with the mating surface.
These lifting bolts are generally installed and remain on a piece of equipment for the purpose of transporting them. They are not for repeated lifting use - if this is required our swivelling lifting bolt range should be used.

Tips
Maximum load values are only applicable when the thread and the material, it is being used in is as least as strong as the that of the bolt.
F_1 and F_2 values given are for steel and cast iron components.

Important Notes
Not to be used at lift angles of greater than 45° or with swivelling loads.
Please refer to the safety documentation before using this part.
Supplied with certificate and operating instructions.

Order No.	Material	d_1	d_2	w_1	h_1	w_2	w_3	F_1 kg max.	F_2 kg max.	Weight kg
18844.W0006	A4 s/s	M 6	20	36	36	20	8	70	50	0.05
18844.W0008	A4 s/s	M 8	20	36	36	20	8	140	95	0.05
18844.W0010	A4 s/s	M 10	25	45	45	25	10	230	170	0.09
18844.W0012	A4 s/s	M 12	30	54	53	30	12	340	240	0.16
18844.W0016	A4 s/s	M 16	35	63	62	35	14	700	500	0.24
18844.W0020	A4 s/s	M 20	40	72	71	40	16	1200	860	0.36
18844.W0024	A4 s/s	M 24	50	90	90	50	20	1800	1270	0.72
18844.W0030	A4 s/s	M 30	65	108	109	60	24	3200	2300	1.32
18844.W0036	A4 s/s	M 36	75	126	128	70	28	4600	3300	2.08
18844.W0042	A4 s/s	M 42	85	144	147	80	32	6300	4500	3.11
18844.W0048	A4 s/s	M 48	100	166	168	90	38	8600	6100	5.02



18864

Material
Stainless steel (A4, AISI 316).
CE marked.

Technical Notes
To DIN 580.
When using lifting eye bolts it is critical to ensure that the face is in firm contact with the mating surface.
These lifting bolts are generally installed and remain on a piece of equipment for the purpose of transporting them. They are not for repeated lifting use - if this is required our swivelling lifting bolt range should be used.

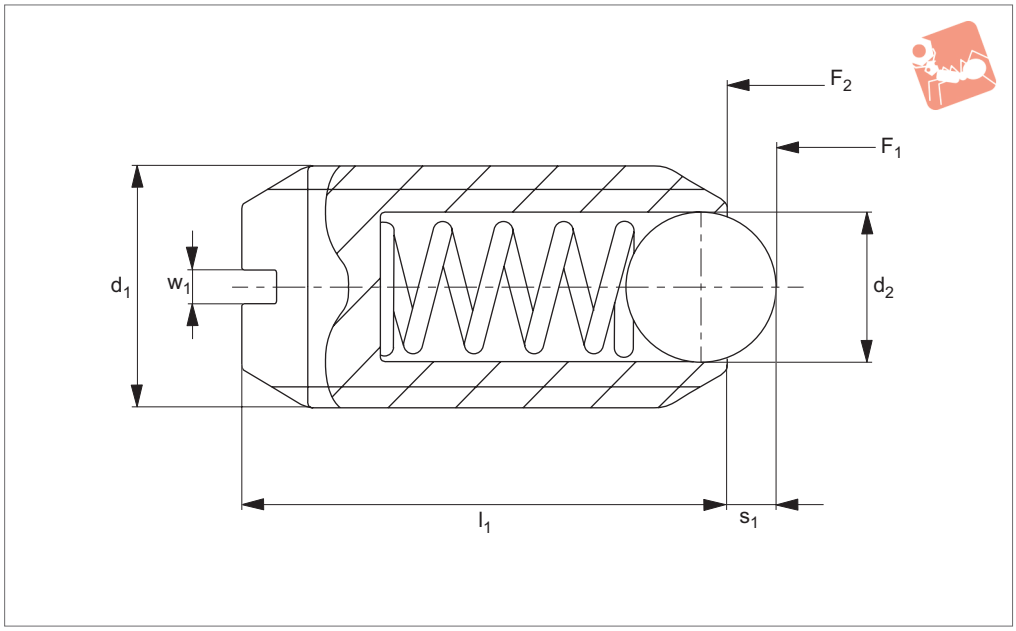
Tips
Maximum load values are only applicable when the thread and the material, it is being used in is as least as strong as the that of the bolt.
F_1 and F_2 values given are for steel and cast iron components.

Important Notes
Not to be used at lift angles of greater than 45° or with swivelling loads.
Please refer to the safety documentation before using this part.
Supplied with certificate and operating instructions.

Order No.	Material	d_1	d_2	w_1	l_1	h_1	w_2	w_3	F_1 kg max.	F_2 kg max.	Weight kg
18864.W0006	A4 s/s	M 6	20	36	13.0	36	20	8	70	50	0.05
18864.W0008	A4 s/s	M 8	20	36	13.0	36	20	8	140	95	0.06
18864.W0010	A4 s/s	M 10	25	45	17.0	45	25	10	230	170	0.11
18864.W0012	A4 s/s	M 12	30	54	20.5	53	30	12	340	240	0.18
18864.W0016	A4 s/s	M 16	35	63	27.0	62	35	14	700	500	0.28
18864.W0020	A4 s/s	M 20	40	72	30.0	71	40	16	1200	860	0.45
18864.W0024	A4 s/s	M 24	50	90	36.0	90	50	20	1800	1270	0.74
18864.W0030	A4 s/s	M 30	65	108	45.0	109	60	24	3200	2300	1.66
18864.W0036	A4 s/s	M 36	75	126	54.0	128	70	28	4600	3300	2.65
18864.W0042	A4 s/s	M 42	85	144	63.0	147	80	32	6300	4500	4.03
18864.W0048	A4 s/s	M 48	100	166	68.0	168	90	38	8600	6100	6.38

Spring Plungers
with ball & slot - stainless steel

32100



Material
Free cutting steel type-
Body: free cutting steel, blackened.
Ball: ball bearing steel 1.3505 (100Cr6) hardened.
Spring: stainless steel.
Stainless steel type-
Body: stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3505 (100Cr6), hardened.
Spring: stainless steel.

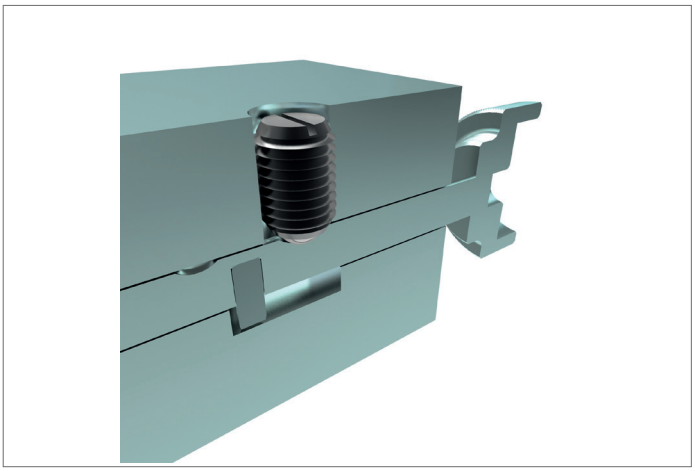
Technical Notes
These spring plungers may be used for location, for applying pressure or lifting off.
Temperature range up to 250°C.
Spring load * = statistical average value.
For calculation of indexing resistance please refer to spring plunger technical pages.

Tips
Spring load identifier:
Normal spring load - no marking.
Increased spring load - body marked with two lines.
Special types available on request.

Important Notes
All metric Wixroyd spring plungers have a coarse thread.

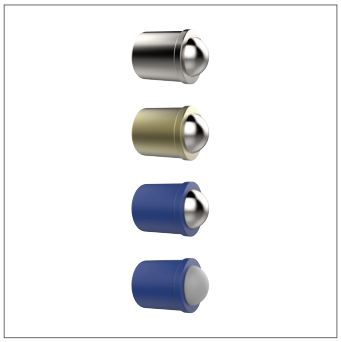
Order No.	Material	Spring load	d_1	d_2	l_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke s_1	A/F	Weight g
32100.W0002	Steel	Normal	M 2	1.0	4	0.8	1.5	0.3	0.25	0.1
32100.W0003	Steel	Normal	M 3	1.5	7	3.0	4.5	0.4	0.40	0.2
32100.W0004	Steel	Normal	M 4	2.5	9	8.5	14.0	0.8	0.60	0.4
32100.W0005	Steel	Normal	M 5	3.0	12	8.0	14.0	0.9	0.80	1.0
32100.W0006	Steel	Normal	M 6	3.5	14	11.0	18.0	1.0	1.00	1.7
32100.W0008	Steel	Normal	M 8	4.5	16	18.0	31.0	1.5	1.20	3.5
32100.W0010	Steel	Normal	M 10	6.0	19	24.0	45.0	2.0	1.50	6.6
32100.W0012	Steel	Normal	M 12	8.0	22	26.0	49.0	2.5	2.00	11.0
32100.W0016	Steel	Normal	M 16	10.0	24	41.0	86.0	3.5	2.00	23.0
32100.W0020	Steel	Normal	M 20	12.0	30	56.0	111.0	4.5	2.50	45.0
32100.W0024	Steel	Normal	M 24	15.0	34	81.0	151.0	5.5	3.00	72.0
32100.W0202	Steel	Increased	M 2	1.0	4	1.6	2.0	0.3	0.25	0.1
32100.W0203	Steel	Increased	M 3	1.5	7	6.4	9.5	0.4	0.40	0.3
32100.W0204	Steel	Increased	M 4	2.5	9	12.0	18.0	0.8	0.60	0.4
32100.W0205	Steel	Increased	M 5	3.0	12	15.0	22.0	0.9	0.80	1.0
32100.W0206	Steel	Increased	M 6	3.5	14	19.0	28.0	1.0	1.00	1.7
32100.W0208	Steel	Increased	M 8	4.5	16	36.0	62.0	1.5	1.20	3.6
32100.W0210	Steel	Increased	M 10	6.0	19	57.0	104.0	2.0	1.50	6.6
32100.W0212	Steel	Increased	M 12	8.0	22	61.0	110.0	2.5	2.00	11.0
32100.W0216	Steel	Increased	M 16	10.0	24	68.0	142.0	3.5	2.00	23.0
32100.W0220	Steel	Increased	M 20	12.0	30	84.0	166.0	4.5	2.50	43.0
32100.W0224	Steel	Increased	M 24	15.0	34	127.0	237.0	5.5	3.00	72.0

Order No.	Material	Spring load	d_1	d_2	l_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Stroke s_1	A/F	Weight g
32100.W0402	Stainless	Normal	M 2	1.0	4	0.8	1.5	0.3	0.25	0.1
32100.W0403	Stainless	Normal	M 3	1.5	7	3.0	4.5	0.4	0.40	0.2
32100.W0404	Stainless	Normal	M 4	2.5	9	8.5	14.0	0.8	0.60	0.4
32100.W0405	Stainless	Normal	M 5	3.0	12	8.0	14.0	0.9	0.80	1.0
32100.W0406	Stainless	Normal	M 6	3.5	14	11.0	18.0	1.0	1.00	1.7
32100.W0408	Stainless	Normal	M 8	4.0	16	18.0	31.0	1.5	1.20	3.5
32100.W0410	Stainless	Normal	M 10	6.0	19	24.0	45.0	2.0	1.50	6.6
32100.W0412	Stainless	Normal	M 12	8.0	22	26.0	49.0	2.5	2.00	11.0
32100.W0416	Stainless	Normal	M 16	10.0	24	41.0	86.0	3.5	2.00	23.0
32100.W0420	Stainless	Normal	M 20	12.0	30	56.0	111.0	4.5	2.50	45.0
32100.W0424	Stainless	Normal	M 24	15.0	34	81.0	151.0	5.5	3.00	72.0
32100.W0602	Stainless	Increased	M 2	1.0	4	1.6	2.0	0.3	0.25	0.1
32100.W0603	Stainless	Increased	M 3	1.5	7	6.4	9.5	0.4	0.40	0.3
32100.W0604	Stainless	Increased	M 4	2.5	9	12.0	18.0	0.8	0.60	0.5
32100.W0605	Stainless	Increased	M 5	3.0	12	15.0	22.0	0.9	0.80	1.0
32100.W0606	Stainless	Increased	M 6	3.5	14	19.0	28.0	1.0	1.00	1.7
32100.W0608	Stainless	Increased	M 8	4.5	16	36.0	62.0	1.5	1.20	3.6
32100.W0610	Stainless	Increased	M 10	6.0	19	57.0	104.0	2.0	1.50	6.6
32100.W0612	Stainless	Increased	M 12	8.0	22	61.0	110.0	2.5	2.00	11.0
32100.W0616	Stainless	Increased	M 16	10.0	24	68.0	142.0	3.5	2.00	23.0
32100.W0620	Stainless	Increased	M 20	12.0	30	84.0	166.0	4.5	2.50	43.0
32100.W0624	Stainless	Increased	M 24	15.0	34	127.0	237.0	5.5	3.00	72.0

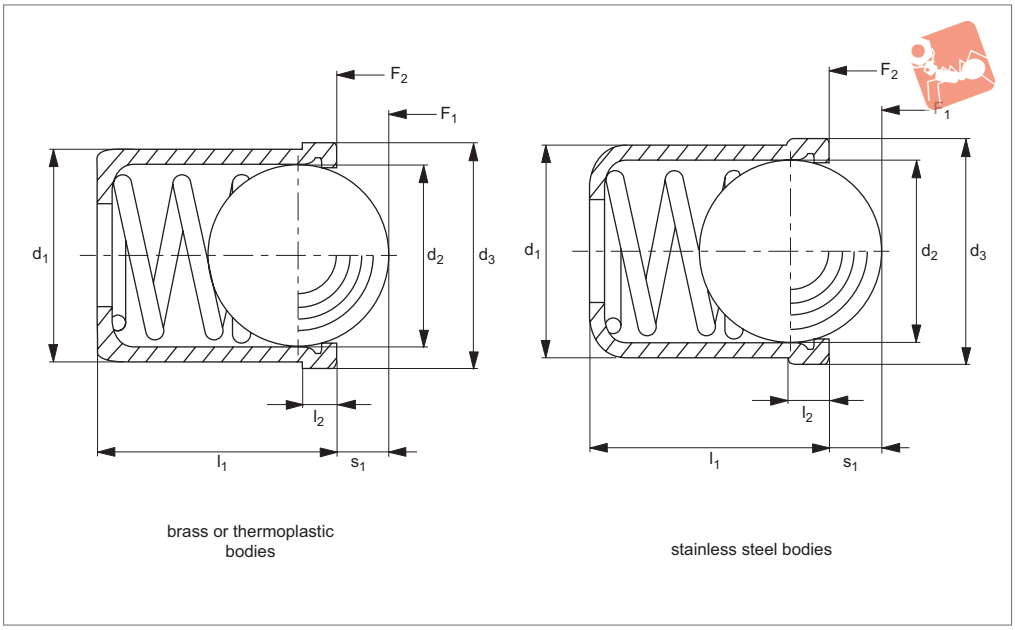


Spring Plungers

smooth model, with collar and ball - stainless steel



32300



Material

Body: stainless steel 1.4303 (AISI 305), brass, or thermoplastic POM, blue.
Ball: ball bearing steel 1.3505 (100Cr6) hardened or thermoplastic POM, white.
Spring: stainless steel 1.4568 (X7CrNiAl17-7).

Technical Notes

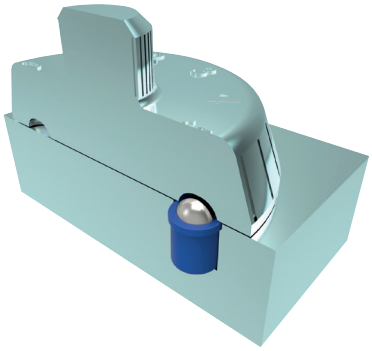
Used for locating, applying pressure or lifting off.
Spring loads * = statistical average values.
Thermo type temperature range -30°C to +50°C.
Stainless and brass type, temperature range max. 250°C.
For calculation of indexing resistance please refer to spring plunger technical pages online.

Tips

These are press fit spring plungers. Typical hole tolerance is H7 for manual assembly. These fit tolerances vary with type of material so a trial hole is recommended.
Light spring load- marked with one line.
Standard spring load - no marking.
Heavy spring load - marked with two lines.
Special types available on request.

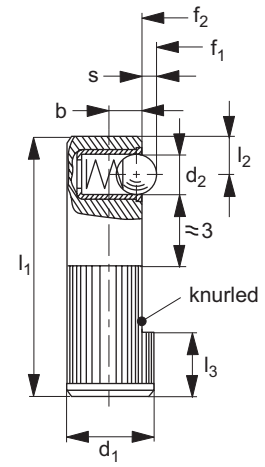
Order No.	Spring load	Finish	d_1 -0|+0.1	d_2	d_3	l_1	l_2 ≈	s_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32300.W0003	Standard	Body & Ball Stainless	3	2.38	3.5	4.0	0.6	0.70	1.8	3.5	+250	0.20
32300.W0004	Standard	Body & Ball Stainless	4	3.00	4.6	5.0	0.9	1.00	2.5	6.0	+250	0.30
32300.W0005	Standard	Body & Ball Stainless	5	4.00	5.6	6.0	0.9	1.40	3.0	6.5	+250	0.60
32300.W0006	Standard	Body & Ball Stainless	6	5.00	6.5	7.0	1.0	1.80	5.5	11.5	+250	1.00
32300.W0008	Standard	Body & Ball Stainless	8	6.50	8.5	9.0	1.1	2.40	7.0	12.5	+250	2.10
32300.W0010	Standard	Body & Ball Stainless	10	8.50	11.0	13.0	1.5	3.30	8.5	18.5	+250	4.40
32300.W0012	Standard	Body & Ball Stainless	12	10.00	13.0	16.0	2.3	4.00	12.0	26.5	+250	7.30
32300.W0203	Standard	Body Brass, Ball Stainless	3	2.38	3.6	4.0	0.6	0.60	1.8	3.5	+250	0.20
32300.W0204	Standard	Body Brass, Ball Stainless	4	3.00	4.5	5.0	1.0	0.80	3.0	6.0	+250	0.50
32300.W0205	Standard	Body Brass, Ball Stainless	5	4.00	5.5	6.0	1.0	1.00	4.0	6.5	+250	0.80
32300.W0206	Standard	Body Brass, Ball Stainless	6	5.00	6.5	7.0	1.0	1.60	6.0	11.5	+250	1.30
32300.W0208	Standard	Body Brass, Ball Stainless	8	6.50	8.5	9.0	1.0	1.90	8.0	12.5	+250	2.80
32300.W0403	Standard	Body Thermo, Ball S/S	3	2.00	3.6	4.0	0.6	0.55	1.7	3.5	-30/+50	0.09
32300.W0404	Standard	Body Thermo, Ball S/S	4	3.00	4.6	5.0	1.0	0.80	3.0	6.5	-30/+50	0.20
32300.W0405	Standard	Body Thermo, Ball S/S	5	4.00	5.6	6.0	1.0	1.00	6.0	9.4	-30/+50	0.40
32300.W0406	Standard	Body Thermo, Ball S/S	6	5.00	6.5	7.0	1.0	1.60	6.2	12.6	-30/+50	0.70
32300.W0408	Standard	Body Thermo, Ball S/S	8	6.50	8.5	9.0	1.0	1.90	10.0	20.4	-30/+50	1.50
32300.W0410	Standard	Body Thermo, Ball S/S	10	8.00	11.0	13.5	1.5	2.40	11.9	22.3	-30/+50	3.20
32300.W0412	Standard	Body Thermo, Ball S/S	12	10.00	13.0	16.0	1.5	3.30	14.0	25.0	-30/+50	5.80
32300.W0604	Standard	Body & Ball Thermoplast	4	3.00	4.6	5.0	1.0	0.80	3.0	6.5	-30/+50	0.10
32300.W0605	Standard	Body & Ball Thermoplast	5	4.00	5.6	6.0	1.0	1.00	6.0	9.4	-30/+50	0.20
32300.W0606	Standard	Body & Ball Thermoplast	6	5.00	6.5	7.0	1.0	1.60	6.2	12.6	-30/+50	0.30
32300.W0608	Standard	Body & Ball Thermoplast	8	6.50	8.5	9.0	1.0	1.90	10.0	20.4	-30/+50	0.60
32300.W0610	Standard	Body & Ball Thermoplast	10	8.50	11.0	13.5	1.5	2.40	11.9	22.3	-30/+50	1.50
32300.W0612	Standard	Body & Ball Thermoplast	12	10.00	13.0	16.0	1.5	3.30	14.0	25.0	-30/+50	2.50
32300.W1003	Light	Body Brass, Ball Stainless	3	2.38	3.5	4.0	0.6	0.70	0.4	1.3	250	0.10

Order No.	Spring load	Finish	d_1 -0|+0.1	d_2	d_3	l_1	l_2 ≈	s_1	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32300.W1004	Light	Body & Ball Stainless	4	3.00	4.6	5.0	0.9	1.00	0.4	1.0	250	0.30
32300.W1005	Light	Body & Ball Stainless	5	4.00	5.6	6.0	0.9	1.40	0.5	4.7	250	0.60
32300.W1006	Light	Body & Ball Stainless	6	5.00	6.5	7.0	1.0	1.80	2.3	6.5	250	1.00
32300.W1008	Light	Body & Ball Stainless	8	6.50	8.5	9.0	1.1	2.40	4.0	9,0	250	2.10
32300.W1010	Light	Body & Ball Stainless	10	8.50	11.0	13.0	1.5	3.30	3.9	10,0	250	4.40
32300.W1012	Light	Body & Ball Stainless	12	10.00	13.0	16.0	2.3	4.00	6.2	14.6	250	7.30
32300.W2005	Heavy	Body & Ball Stainless	5	4.00	5.6	6.0	0.9	1.40	6.0	12.0	+250	0.60
32300.W2004	Heavy	Body & Ball Stainless	4	3.00	4.6	5.0	0.9	1.00	5.0	10.4	+250	0.30
32300.W2006	Heavy	Body & Ball Stainless	6	5.00	6.5	7.0	1.0	1.80	7.3	19.0	+250	1.00
32300.W2008	Heavy	Body & Ball Stainless	8	6.50	8.5	9.0	1.1	2.40	11.0	25.0	+250	2.10
32300.W2010	Heavy	Body & Ball Stainless	10	8.50	11.0	13.0	1.5	3.30	17.0	37.0	+250	4.40
32300.W2012	Heavy	Body & Ball Stainless	12	10.00	13.0	16.0	2.3	4.00	28.0	57.0	+250	7.30

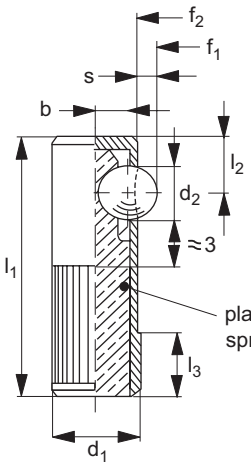


Lateral Spring Plungers

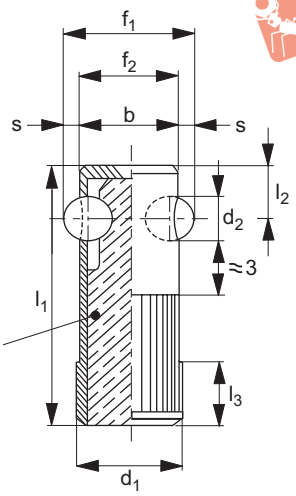
32800



one sided normal load



one sided increased load



double sided increased load

Material

Body: free cutting steel, blackened.
Ball: ball bearing steel 1.3505 (100Cr6) hardened, stainless steel, hardened or Thermoplastic white (POM).
Spring: stainless steel or plastic (PU).

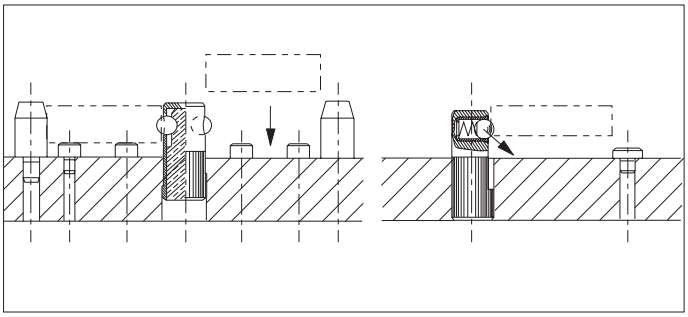
Technical Notes

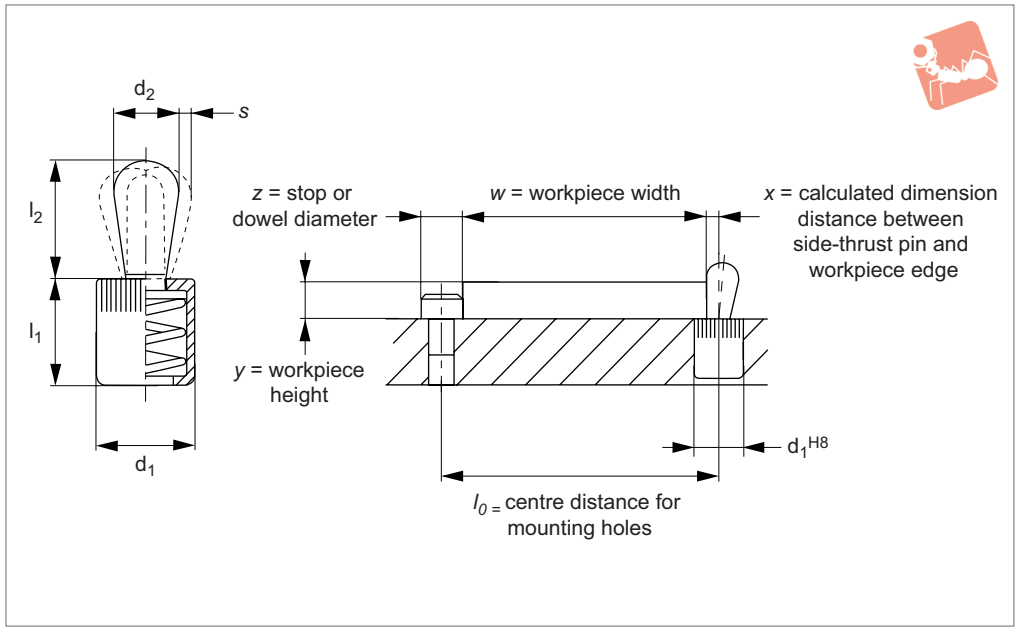
The lateral spring plunger must be inserted into a bore to measure at least l3.
Positions and applies pressure.
Spring loads * = statistical average values.

Tips

When storing the fixtures, no pressure should be applied to the plastic spring.

Order No.	Ball type	Spring load	d_1 +0.1	d_2	l_1	l_2	l_3	b	Location hole tol. H8	s	Spring load F_1 N ≈	Spring load F_2 N ≈	Temperature °C max.	Weight g
32800.W0008	Stainless, One	Normal	8	3.0	25	3.6	6	3.2	8	0.8	2.5	6.5	-30/+50	9
32800.W0010	Stainless, One	Normal	10	4.0	30	4.2	7	4.0	10	1.0	4.5	9.0	-30/+50	17
32800.W0012	Stainless, One	Normal	12	5.0	35	4.8	9	5.0	12	1.6	6.5	13.0	-30/+50	29
32800.W0014	Stainless, One	Normal	14	6.5	40	5.8	10	5.4	14	1.9	8.0	18.0	-30/+50	43
32800.W0108	Thermo, One	Normal	8	3.0	25	3.6	6	3.2	8	0.8	2.5	6.5	-30/+50	9
32800.W0110	Thermo, One	Normal	10	4.0	30	4.2	7	4.0	10	1.0	4.5	9.0	-30/+50	17
32800.W0112	Thermo, One	Normal	12	5.0	35	4.8	9	5.0	12	1.6	6.5	13.0	-30/+50	28
32800.W0114	Thermo, One	Normal	14	6.5	40	5.8	10	5.4	14	1.9	8.0	18.0	-30/+50	42
32800.W0410	Steel, One	Increased	10	5.5	30	7.0	8	4.5	10	1.0	60.0	170.0	-40/+80	9
32800.W0412	Steel, One	Increased	12	6.5	35	8.0	9	5.5	12	1.5	80.0	260.0	-40/+80	14
32800.W0414	Steel, One	Increased	14	8.0	40	9.0	10	6.5	14	2.0	120.0	480.0	-40/+80	20
32800.W0616	Steel, Double	Increased	16	5.5	35	7.0	11	15.0	16	1.5	110.0	220.0	-40/+80	21
32800.W0618	Steel, Double	Increased	18	6.5	40	8.0	12	17.0	18	1.8	120.0	330.0	-40/+80	27
32800.W0622	Steel, Double	Increased	22	8.0	45	9.0	15	21.0	22	2.5	130.0	540.0	-40/+80	45





32810

Material

Body: aluminium.
Pin: steel, case hardened and galvanized, or thermoplastic (POM) white.
Spring: steel (blackened or blue galvanized), or stainless steel.

Technical Notes

Press fit installation into hole d_1 to tol. H8, using fitting tool (order separately).
Installation calculations;
A) Calculating centre distance for mounting holes (l_0);
$l_0=(z/2)+w+x$
B) Calculating pin location (x);

When workpiece height (y) is greater than or equal to $l_2-(d_2/2)$ then (x) is calculated as; $x=(d_2/2)-s$

When workpiece height (y) is less than

$l_2-(d_2/2)$ then (x) is calculated as;
$x=(d_2/2)-s-\{[l_2-(d_2/2)-y]*0.123\}$
l_0 = centre distance for mounting holes
y = workpiece height
w = workpiece width
x = distance between side-thrust pin and workpiece edge
s = stroke
z =stop or dowel stop diameter

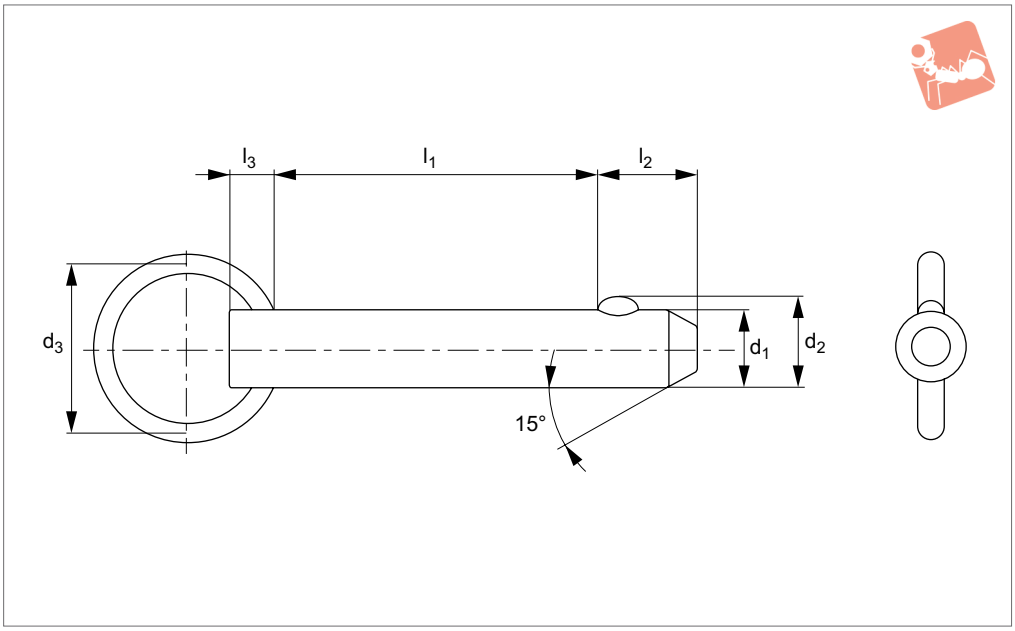
Tips

Side-thrust pins are ideal for holding, clamping and positioning parts.
Spring colour gives visual indication of spring pressure (N).
Light spring load = natural stainless spring.
Standard spring load = steel spring, blackened.
Heavy spring load = steel spring, blue galvanized.

Order No.	Pin material	Spring load	d_1	d_2	l_1 -1	l_2 ±0.5	Location hole d_1 tol. H8	Spring colour	Spring pressure N	Stroke s	Temp. resistance °C max.	Fitting tool 32810	Weight g
32810.W0001	Steel Pin	Light	6	3	7	4.0	6	S/S	10	0.5	250	.W0830	1
32810.W0002	Steel Pin	Standard	6	3	7	4.0	6	Black	20	0.5	250	.W0830	1
32810.W0003	Steel Pin	Heavy	6	3	7	4.0	6	Blue	40	0.5	250	.W0830	1
32810.W0004	Steel Pin	Light	10	5	11	6.7	10	S/S	20	0.8	250	.W0831	3
32810.W0005	Steel Pin	Standard	10	5	11	6.7	10	Black	50	0.8	250	.W0831	3
32810.W0006	Steel Pin	Heavy	10	5	11	6.7	10	Blue	100	0.8	250	.W0831	3
32810.W0007	Steel Pin	Light	10	6	11	10.7	10	S/S	40	1.0	250	.W0831	4
32810.W0008	Steel Pin	Standard	10	6	11	10.7	10	Black	75	1.0	250	.W0831	4
32810.W0009	Steel Pin	Heavy	10	6	11	10.7	10	Blue	150	1.0	250	.W0831	4
32810.W0010	Steel Pin	Light	12	8	13	13.9	12	S/S	50	1.3	250	.W0832	7
32810.W0011	Steel Pin	Standard	12	8	13	13.9	12	Black	100	1.3	250	.W0832	7
32810.W0012	Steel Pin	Heavy	12	8	13	13.9	12	Blue	200	1.3	250	.W0832	7
32810.W0013	Steel Pin	Light	16	10	17	16.7	16	S/S	100	1.6	250	.W0833	15
32810.W0014	Steel Pin	Standard	16	10	17	16.7	16	Black	200	1.6	250	.W0833	15
32810.W0015	Plastic Pin	Heavy	16	10	17	16.7	16	Blue	300	1.6	80	.W0833	15
32810.W0404	Plastic Pin	Heavy	10	5	11	6.7	10	S/S	20	0.8	80	.W0831	1
32810.W0407	Plastic Pin	Standard	10	6	11	10.7	10	S/S	40	1.0	80	.W0831	2
32810.W0410	Plastic Pin	Light	12	8	13	13.9	12	S/S	50	1.3	80	.W0832	3
32810.W0413	Plastic Pin	Heavy	16	10	17	16.7	16	S/S	100	1.6	80	.W0833	7

Detent Pin
Stainless Steel

33012.1



Material
Shaft: Stainless steel, AISI 303.
Ball & Spring: Stainless steel, AISI 316.

Technical Notes
Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.
For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

Hole sizes - commercial drills provide clearance for our standard pins.
Inch dimensions in brackets ( ).

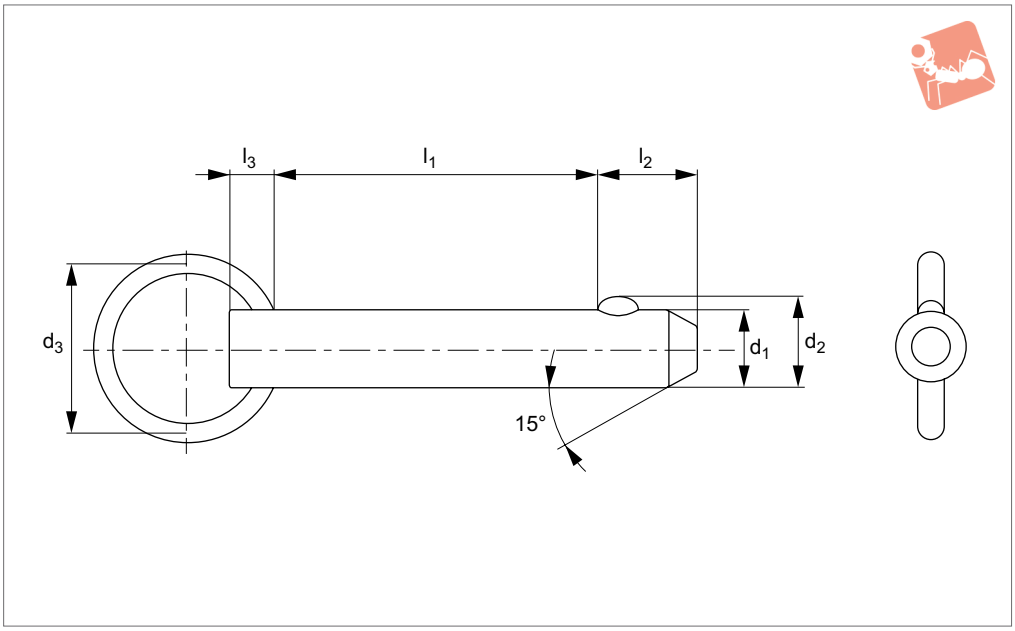
Tips
Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

Order No.	d_1 +0.00|-0.08	l_1 grip +1.5|-0.0	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33012.W1803	4.76 (3/16“)	7.62 (0.3“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1805	4.76 (3/16“)	12.7 (0.5“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1810	4.76 (3/16“)	25.4 (1“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1815	4.76 (3/16“)	38.1 (1.5“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1820	4.76 (3/16“)	50.8 (2“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1825	4.76 (3/16“)	63.5 (2.5“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1830	4.76 (3/16“)	76.2 (3“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1835	4.76 (3/16“)	88.9 (3.5“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W1840	4.76 (3/16“)	101.6 (4“)	5.18	25.4	5.08	4.74	1.9 - 2.3	12.2
33012.W2505	6.35 (1/4“)	12.7 (0.5“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2510	6.35 (1/4“)	25.4 (1“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2515	6.35 (1/4“)	38.1 (1.5“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2520	6.35 (1/4“)	50.8 (2“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2525	6.35 (1/4“)	63.5 (2.5“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2530	6.35 (1/4“)	76.2 (3“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2535	6.35 (1/4“)	88.9 (3.5“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W2540	6.35 (1/4“)	101.6 (4“)	7.26	25.4	7.92	5.58	2.27 - 2.73	21.7
33012.W3105	7.93 (5/16“)	12.7 (0.5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3110	7.93 (5/16“)	25.4 (1“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3115	7.93 (5/16“)	38.1 (1.5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3120	7.93 (5/16“)	50.8 (2“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3125	7.93 (5/16“)	63.5 (2.5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3130	7.93 (5/16“)	76.2 (3“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3135	7.93 (5/16“)	88.9 (3.5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3140	7.93 (5/16“)	101.6 (4“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3145	7.93 (5/16“)	114.3 (4.5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3150	7.93 (5/16“)	127.0 (5“)	9.09	25.4	9.52	6.35	2.27 - 2.73	33.8
33012.W3705	9.52 (3/8“)	12.7 (0.5“)	10.80	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3710	9.52 (3/8“)	25.4 (1“)	10.80	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3715	9.52 (3/8“)	38.1 (1.5“)	10.80	25.4	12.7	6.35	3.63 - 4.54	49.1

Order No.	d_1 +0.00|-0.08	l_1 grip +1.5|-0.0	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33012.W3720	9.52 (3/8“)	50.8 (2“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3725	9.52 (3/8“)	63.5 (2.5“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3730	9.52 (3/8“)	76.2 (3“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3735	9.52 (3/8“)	88.9 (3.5“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3740	9.52 (3/8“)	101.6 (4“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3745	9.52 (3/8“)	114.3 (4.5“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3750	9.52 (3/8“)	127.0 (5“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3755	9.52 (3/8“)	139.7 (5.5“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W3760	9.52 (3/8“)	152.4 (6“)	10.8	25.4	12.7	6.35	3.63 - 4.54	49.1
33012.W4305	11.1 (7/16“)	12.7 (0.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4310	11.1 (7/16“)	25.4 (1“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4315	11.1 (7/16“)	38.1 (1.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4320	11.1 (7/16“)	50.8 (2“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4325	11.1 (7/16“)	63.5 (2.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4330	11.1 (7/16“)	76.2 (3“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4335	11.1 (7/16“)	88.9 (3.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4340	11.1 (7/16“)	101.6 (4“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4345	11.1 (7/16“)	114.3 (4.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4350	11.1 (7/16“)	127.0 (5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4355	11.1 (7/16“)	139.7 (5.5“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W4360	11.1 (7/16“)	152.4 (6“)	12.5	25.4	14.2	6.35	4.09 - 5.45	66.5
33012.W5005	12.7 (1/2“)	12.7 (0.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5010	12.7 (1/2“)	25.4 (1“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5015	12.7 (1/2“)	38.1 (1.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5020	12.7 (1/2“)	50.8 (2“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5025	12.7 (1/2“)	63.5 (2.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5030	12.7 (1/2“)	76.2 (3“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5035	12.7 (1/2“)	88.9 (3.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5040	12.7 (1/2“)	101.6 (4“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5045	12.7 (1/2“)	114.3 (4.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5050	12.7 (1/2“)	127.0 (5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5055	12.7 (1/2“)	139.7 (5.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5060	12.7 (1/2“)	152.4 (6“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5065	12.7 (1/2“)	165.1 (6.5“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1
33012.W5070	12.7 (1/2“)	177.8 (7“)	14.4	31.7	15.8	7.92	4.54 - 5.45	87.1

Detent Pin
Stainless Steel

33012.2



Material
Shaft: Stainless steel, AISI 303.
Ball & Spring: Stainless steel, AISI 316.

Technical Notes
Detent pins are very economical for use in commercial and military equipment.

The solid body with direct spring loaded ball ensures reliable operation.
For locking telescopic tubing, securing bracket assemblies, as anchor clevis fittings, hinge pins etc where frequent removal is necessary.

Hole sizes - commercial drills provide clearance for our standard pins.
Inch dimensions in brackets ( ).

Tips
Also available on request in A4 (AISI 316) stainless steel, subject to min. quantity.

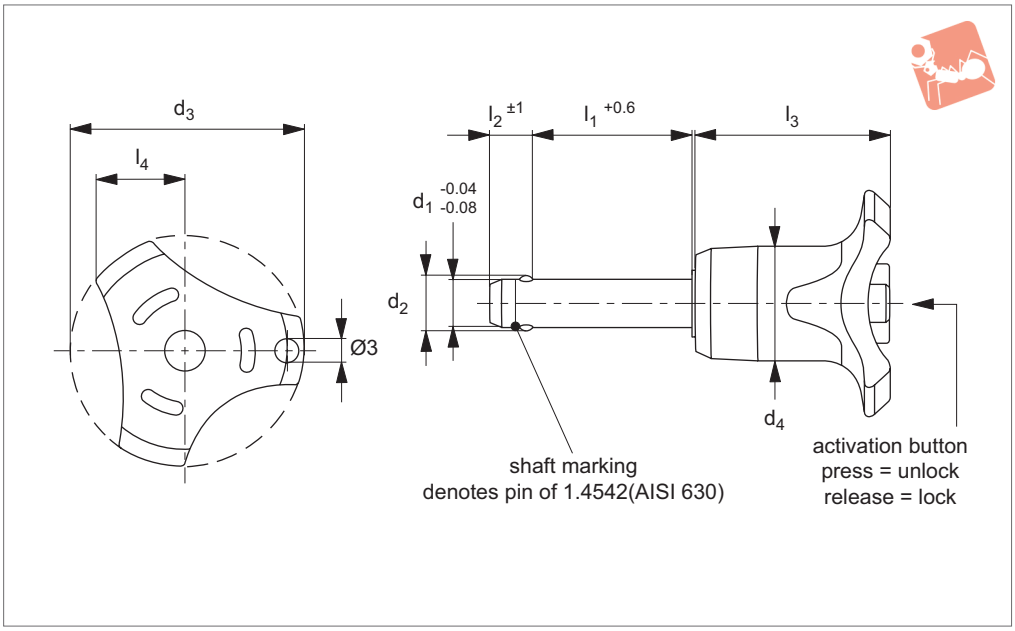
Order No.	d_1 +0.00|-0.08	l_1 grip +1.5|-0.0	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33012.W5610	14.2 (9/16“)	25.4 (1.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5615	14.2 (9/16“)	38.1 (1.5“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5620	14.2 (9/16“)	50.8 (2.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5625	14.2 (9/16“)	63.5 (2.5“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5630	14.2 (9/16“)	76.2 (3.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5635	14.2 (9/16“)	88.9 (3.5“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5640	14.2 (9/16“)	101.6 (4.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5645	14.2 (9/16“)	114.3 (4.5“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5650	14.2 (9/16“)	127.0 (5.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5655	14.2 (9/16“)	139.7 (5.5“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5660	14.2 (9/16“)	152.4 (6.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W5670	14.2 (9/16“)	177.8 (7.0“)	16.3	31.7	17.4	7.92	5.45 - 6.81	110.3
33012.W6210	15.8 (5/8“)	25.4 (1.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6215	15.8 (5/8“)	38.1 (1.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6220	15.8 (5/8“)	50.8 (2.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6225	15.8 (5/8“)	63.5 (2.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6230	15.8 (5/8“)	76.2 (3.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6235	15.8 (5/8“)	88.9 (3.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6240	15.8 (5/8“)	101.6 (4.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6245	15.8 (5/8“)	114.3 (4.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6250	15.8 (5/8“)	127.0 (5.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6255	15.8 (5/8“)	139.7 (5.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6260	15.8 (5/8“)	152.4 (6.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6265	15.8 (5/8“)	165.1 (6.5“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6270	15.8 (5/8“)	177.8 (7.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W6280	15.8 (5/8“)	203.2 (8.0“)	18.0	31.7	19.0	9.52	6.36 - 7.26	137.3
33012.W7510	19.0 (3/4“)	25.4 (1.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7515	19.0 (3/4“)	38.1 (1.5“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7520	19.0 (3/4“)	50.8 (2.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7525	19.0 (3/4“)	63.5 (2.5“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9

Order No.	d_1 +0.00|-0.08	l_1 grip +1.5|-0.0	d_2	d_3	l_2	l_3	Pull out strength kg	Single shear strength kN min.
33012.W7530	19.0 (3/4“)	76.2 (3.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7535	19.0 (3/4“)	88.9 (3.5“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7540	19.0 (3/4“)	101.6 (4.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7545	19.0 (3/4“)	114.3 (4.5“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7550	19.0 (3/4“)	127.0 (5.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7555	19.0 (3/4“)	139.7 (5.5“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7560	19.0 (3/4“)	152.4 (6.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7570	19.0 (3/4“)	177.8 (7.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W7580	19.0 (3/4“)	203.2 (8.0“)	21.7	38.1	23.7	9.52	8.17 - 9.98	195.9
33012.W8810	22.2 (7/8“)	25.4 (1.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8815	22.2 (7/8“)	38.1 (1.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8820	22.2 (7/8“)	50.8 (2.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8825	22.2 (7/8“)	63.5 (2.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8830	22.2 (7/8“)	76.2 (3.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8835	22.2 (7/8“)	88.9 (3.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8840	22.2 (7/8“)	101.6 (4.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8845	22.2 (7/8“)	114.3 (4.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8850	22.2 (7/8“)	127.0 (5.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8855	22.2 (7/8“)	139.7 (5.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8860	22.2 (7/8“)	152.4 (6.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8865	22.2 (7/8“)	165.1 (6.5“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8870	22.2 (7/8“)	177.8 (7.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W8880	22.2 (7/8“)	203.2 (8.0“)	25.2	38.1	25.4	12.7	12.71 - 14.07	262.4
33012.W1010	25.4 (1“)	25.4 (1.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1015	25.4 (1“)	38.1 (1.5“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1020	25.4 (1“)	50.8 (2.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1025	25.4 (1“)	63.5 (2.5“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1030	25.4 (1“)	76.2 (3.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1035	25.4 (1“)	88.9 (3.5“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1040	25.4 (1“)	101.6 (4.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1045	25.4 (1“)	114.3 (4.5“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1050	25.4 (1“)	127.0 (5.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1055	25.4 (1“)	139.7 (5.5“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1060	25.4 (1“)	152.4 (6.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1070	25.4 (1“)	177.8 (7.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0
33012.W1080	25.4 (1“)	203.2 (8.0“)	28.9	38.1	31.7	12.7	15.88 - 18.15	353.0

Ball Lock Pins - Single Acting

self-locking - stainless steel 1.4542 (AISI 630)

33060



Material

Pin: stainless steel 1,4542 (AISI 630), precipitation hardened, blast finish (marked at end of shaft to denote 1.4542 material).
Ball: stainless steel 1.3541.
Spring: stainless steel.
Handle: thermoplastic PA 6.
Available colours:
.OR for grey/orange, .BU for grey/blue, .GR for grey/grey and .BK for black/ black.

Technical Notes

Pressing = unlocking.
Releasing = locking.
Temperature resistance -30°C to +80°C.
For quick fastening and locking of frequently repeated connections.

Tips

For lanyards & retaining cables see part no.33250. Easy install locating bushes available see part no.33248.

Important Notes

Extreme load capacity due to high material grade.
*Shearing resistance similar to DIN 50141.
Also available in stainless grade 1.4305 (AISI 303), see part no.33080.

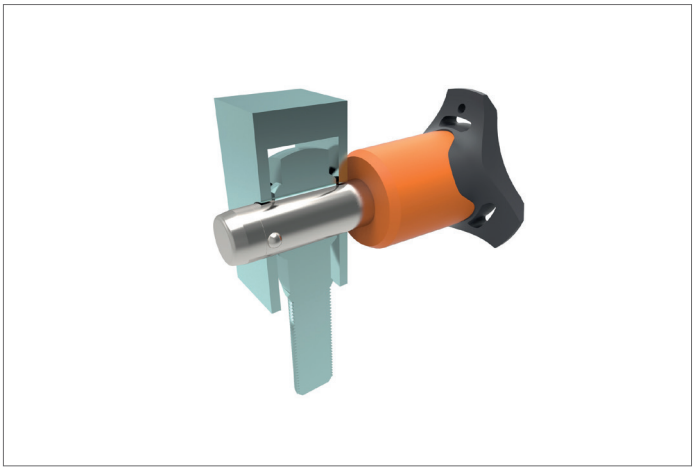
Order No.	d_1	l_1	d_2	d_3	d_4	l_2	l_3	l_4	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0152	5	10	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0153	5	15	5.5	33.2	14.5	6.0	26.7	10.8	5	24	15
33060.W0154	5	20	5.5	33.2	14.5	6.0	26.7	10.8	5	24	16
33060.W0155	5	25	5.5	33.2	14.5	6.0	26.7	10.8	5	24	17
33060.W0156	5	30	5.5	33.2	14.5	6.0	26.7	10.8	5	24	18
33060.W0157	6	60	7.0	33.2	14.5	7.0	26.7	10.8	6	21	26
33060.W0158	6	70	7.0	33.2	14.5	7.0	26.7	10.8	6	21	28
33060.W0159	6	80	7.0	33.2	14.5	7.0	26.7	10.8	6	21	30
33060.W0145	5	35	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0146	5	40	5.5	33.2	14.5	6.0	26.7	10.8	5	14	20
33060.W0147	5	45	5.5	33.2	14.5	6.0	26.7	10.8	5	14	21
33060.W0148	5	50	5.5	33.2	14.5	6.0	26.7	10.8	5	14	23
33060.W0149	5	60	5.5	33.2	14.5	6.0	26.7	10.8	5	14	24
33060.W0150	5	70	5.5	33.2	14.5	6.0	26.7	10.8	5	14	18
33060.W0151	5	80	5.5	33.2	14.5	6.0	26.7	10.8	5	14	19
33060.W0161	8	100	9.6	39.2	18.4	8.2	33.3	13.4	8	38	54
33060.W0162	6	10	7.0	33.2	14.5	7.0	26.7	10.8	6	35	16
33060.W0163	6	15	7.0	33.2	14.5	7.0	26.7	10.8	6	35	17
33060.W0164	6	20	7.0	33.2	14.5	7.0	26.7	10.8	6	35	18
33060.W0165	6	25	7.0	33.2	14.5	7.0	26.7	10.8	6	35	19
33060.W0166	6	30	7.0	33.2	14.5	7.0	26.7	10.8	6	35	20
33060.W0167	6	35	7.0	33.2	14.5	7.0	26.7	10.8	6	35	21
33060.W0168	6	40	7.0	33.2	14.5	7.0	26.7	10.8	6	35	22
33060.W0169	6	45	7.0	33.2	14.5	7.0	26.7	10.8	6	35	23
33060.W0170	6	50	7.0	33.2	14.5	7.0	26.7	10.8	6	35	24
33060.W0171	8	90	9.6	39.2	18.4	8.2	33.3	13.4	8	38	36

Order No.	d_1	l_1	d_2	d_3	d_4	l_2	l_3	l_4	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0172	8	10	9.6	39.2	18.4	8.2	33.3	13.4	8	38	38
33060.W0173	8	15	9.6	39.2	18.4	8.2	33.3	13.4	8	38	58
33060.W0174	8	20	9.6	39.2	19.3	8.2	33.3	13.4	8	63	40
33060.W0175	8	25	9.6	39.2	19.3	8.2	33.3	13.4	8	63	42
33060.W0176	8	30	9.6	39.2	19.3	8.2	33.3	13.4	8	63	44
33060.W0177	8	35	9.6	39.2	19.3	8.2	33.3	13.4	8	63	46
33060.W0178	8	40	9.6	39.2	19.3	8.2	33.3	13.4	8	63	47
33060.W0179	8	45	9.6	39.2	19.3	8.2	33.3	13.4	8	63	49
33060.W0180	8	50	9.6	39.2	19.3	8.2	33.3	13.4	8	63	51
33060.W0181	8	60	9.6	39.2	18.4	8.2	33.3	13.4	8	38	62
33060.W0182	8	70	9.6	39.2	18.4	8.2	33.3	13.4	8	38	65
33060.W0183	8	80	9.6	39.2	18.4	8.2	33.3	13.4	8	38	69
33060.W0184	10	20	12.0	39.2	19.3	9.6	33.3	13.4	10	100	47
33060.W0185	10	25	12.0	39.2	19.3	9.6	33.3	13.4	10	100	49
33060.W0186	10	30	12.0	39.2	19.3	9.6	33.3	13.4	10	100	53
33060.W0187	10	35	12.0	39.2	19.3	9.6	33.3	13.4	10	100	55
33060.W0188	10	40	12.0	39.2	19.3	9.6	33.3	13.4	10	100	58
33060.W0189	10	45	12.0	39.2	19.3	9.6	33.3	13.4	10	100	61
33060.W0190	10	50	12.0	39.2	19.3	9.6	33.3	13.4	10	100	64
33060.W0191	10	15	12.0	39.2	18.4	9.6	33.3	13.4	10	60	86
33060.W0192	10	60	12.0	39.2	19.3	9.6	33.3	13.4	10	100	70
33060.W0193	10	70	12.0	39.2	18.4	9.6	33.3	13.4	10	60	70
33060.W0194	10	80	12.0	39.2	18.4	9.6	33.3	13.4	10	60	97
33060.W0195	10	90	12.0	39.2	18.4	9.6	33.3	13.4	10	60	103
33060.W0196	10	100	12.0	39.2	18.4	9.6	33.3	13.4	10	60	109
33060.W0197	10	110	12.0	39.2	18.4	9.6	33.3	13.4	10	60	115
33060.W0198	10	120	12.0	39.2	18.4	9.6	33.3	13.4	10	60	53
33060.W0204	12	20	14.5	47.6	25.2	10.6	39.7	16.7	12	87	156
33060.W0205	12	25	14.5	47.6	26.3	10.6	39.7	16.7	12	144	96
33060.W0206	12	30	14.5	47.6	26.3	10.6	39.7	16.7	12	144	100
33060.W0207	12	35	14.5	47.6	26.3	10.6	39.7	16.7	12	144	105
33060.W0208	12	40	14.5	47.6	26.3	10.6	39.7	16.7	12	144	109
33060.W0209	12	45	14.5	47.6	26.3	10.6	39.7	16.7	12	144	113
33060.W0210	12	50	14.5	47.6	26.3	10.6	39.7	16.7	12	144	117
33060.W0212	12	60	14.5	47.6	26.3	10.6	39.7	16.7	12	144	126
33060.W0214	12	70	14.5	47.6	26.3	10.6	39.7	16.7	12	144	134
33060.W0216	12	80	14.5	47.6	26.3	10.6	39.7	16.7	12	144	143
33060.W0217	12	90	14.5	47.6	25.2	10.6	39.7	16.7	12	87	165
33060.W0218	12	100	14.5	47.6	25.2	10.6	39.7	16.7	12	87	173
33060.W0219	12	110	14.5	47.6	25.2	10.6	39.7	16.7	12	87	182
33060.W0220	12	120	14.5	47.6	25.2	10.6	39.7	16.7	12	87	177
33060.W0226	16	30	19.0	47.6	26.3	14.0	39.7	16.7	16	257	132
33060.W0227	16	35	19.0	47.6	26.3	14.0	39.7	16.7	16	257	140
33060.W0228	16	40	19.0	47.6	26.3	14.0	39.7	16.7	16	257	148
33060.W0229	16	45	19.0	47.6	26.3	14.0	39.7	16.7	16	257	155
33060.W0230	16	50	19.0	47.6	26.3	14.0	39.7	16.7	16	257	168
33060.W0232	16	60	19.0	47.6	26.3	14.0	39.7	16.7	16	257	178
33060.W0234	16	70	19.0	47.6	26.3	14.0	39.7	16.7	16	257	194
33060.W0236	16	80	19.0	47.6	26.3	14.0	39.7	16.7	16	257	208
33060.W0237	16	90	19.0	47.6	25.2	14.0	39.7	16.7	16	155	234
33060.W0238	16	100	19.0	47.6	25.2	14.0	39.7	16.7	16	155	151
33060.W0239	16	110	19.0	47.6	25.2	14.0	39.7	16.7	16	155	266
33060.W0240	16	120	19.0	47.6	25.2	14.0	39.7	16.7	16	155	281
33060.W0241	16	130	19.0	47.6	25.2	14.0	39.7	16.7	16	155	297
33060.W0242	16	140	19.0	47.6	25.2	14.0	39.7	16.7	16	155	313
33060.W0243	16	150	19.0	47.6	25.2	14.0	39.7	16.7	16	155	328
33060.W0251	20	50	25.0	57.1	33.8	20.5	50.7	21.5	20	403	329
33060.W0252	20	60	25.0	57.1	35.4	20.5	50.7	21.5	20	403	343
33060.W0253	20	70	25.0	57.1	33.8	20.5	50.7	21.5	20	403	377
33060.W0256	20	80	25.0	57.1	35.4	20.5	50.7	21.5	20	403	392
33060.W0257	20	90	25.0	57.1	33.8	20.5	50.7	21.5	20	403	426
33060.W0260	20	100	25.0	57.1	35.4	20.5	50.7	21.5	20	403	440
33060.W0261	20	110	25.0	57.1	33.5	20.5	50.7	21.5	20	403	474
33060.W0264	20	120	25.0	57.1	35.4	20.5	50.7	21.5	20	403	488
33060.W0265	20	130	25.0	57.1	33.8	20.5	50.7	21.5	20	403	523
33060.W0266	20	140	25.0	57.1	33.8	20.5	50.7	21.5	20	403	546
33060.W0267	20	150	25.0	57.1	33.8	20.5	50.7	21.5	20	403	571

Ball Lock Pins - Single Acting

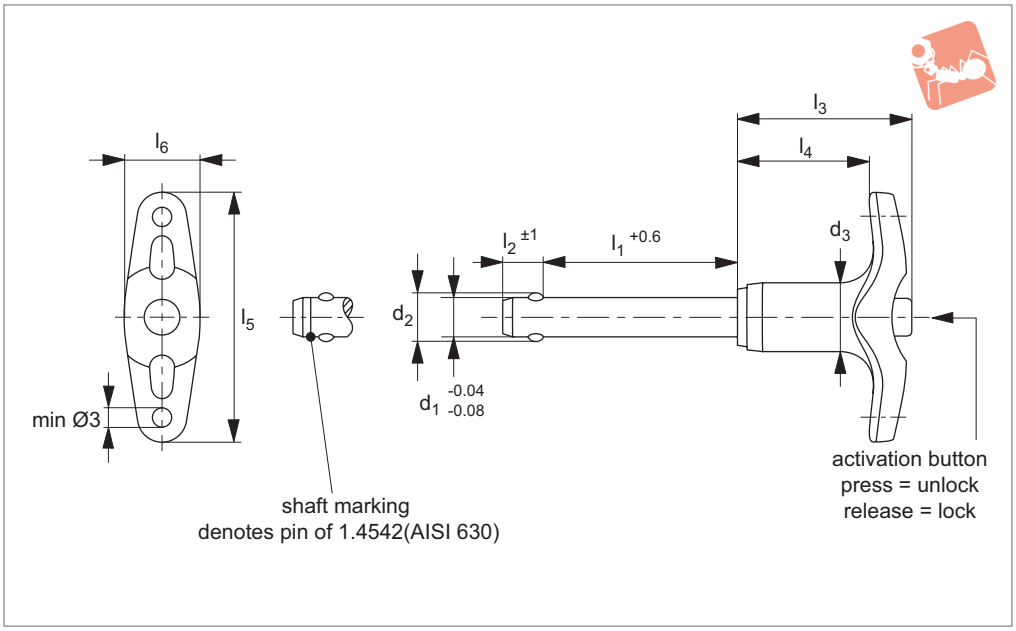
self-locking - stainless steel 1.4542 (AISI 630)

Order No.	d_1	l_1	d_2	d_3	d_4	l_2	l_3	l_4	Loc'n hole tol. H11	Shearing resistance, double kN min.	Weight g
33060.W0269	25	50	30.8	57.1	33.8	22.0	50.7	21.5	25	631	415
33060.W0270	25	60	30.8	57.1	33.8	22.0	50.7	21.5	25	631	453
33060.W0271	25	70	30.8	57.1	33.8	22.0	50.7	21.5	25	631	490
33060.W0272	25	80	30.8	57.1	33.8	22.0	50.7	21.5	25	631	528
33060.W0273	25	90	30.8	57.1	33.8	22.0	50.7	21.5	25	631	565
33060.W0274	25	100	30.8	57.1	33.8	22.0	50.7	21.5	25	631	603
33060.W0275	25	110	30.8	57.1	33.8	22.0	50.7	21.5	25	631	640
33060.W0276	25	120	30.8	57.1	33.8	22.0	50.7	21.5	25	631	678
33060.W0277	25	130	30.8	57.1	33.8	22.0	50.7	21.5	25	631	715
33060.W0278	25	140	30.8	57.1	33.8	22.0	50.7	21.5	25	631	753
33060.W0279	25	150	30.8	57.1	33.8	22.0	50.7	21.5	25	631	790



Ball Lock Pins - Single Acting - T-Handle

self-locking - stainless 1.4305



33200.1

Material
Pin: stainless steel 1.4305 (AISI 303).
Ball: stainless steel 1.3541.
Handle: aluminium, black (similar to RAL 9005).
Spring: stainless Steel.

Technical Notes
Pressing = unlocking.
Releasing = locking.
Temperature range -30°C to +150°C.
For quick fastening and locking frequently repeated connections.

Tips
For lanyards & retaining cables see part no.33250-33261. Easy install locating bushes available see part no.33248 + 33246.

Important Notes
*Shearing resistance similar to DIN 50141.

See 33200.2 for stainless steel 1.4542 version.

Order No.	Material	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5	l_6	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0007	Stainless 1.4305	5	45	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	25
33200.W0008	Stainless 1.4305	5	50	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	26
33200.W0009	Stainless 1.4305	5	60	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	27
33200.W0010	Stainless 1.4305	5	70	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	29
33200.W0011	Stainless 1.4305	5	80	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	30
33200.W0012	Stainless 1.4305	5	10	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	19
33200.W0013	Stainless 1.4305	5	15	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	20
33200.W0014	Stainless 1.4305	5	20	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	20
33200.W0015	Stainless 1.4305	5	25	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	21
33200.W0016	Stainless 1.4305	5	30	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	22
33200.W0017	Stainless 1.4305	5	35	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	24
33200.W0018	Stainless 1.4305	5	40	5.5	11.8	6.0	31.6	24.1	45.2	12.7	5	14	24
33200.W0019	Stainless 1.4305	6	60	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	31
33200.W0020	Stainless 1.4305	6	70	7.0	11.8	7,0	31.6	24.1	45.2	12.7	6	21	33
33200.W0021	Stainless 1.4305	6	80	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	35
33200.W0022	Stainless 1.4305	6	10	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	20
33200.W0023	Stainless 1.4305	6	15	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	21
33200.W0024	Stainless 1.4305	6	20	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	22
33200.W0025	Stainless 1.4305	6	25	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	23
33200.W0026	Stainless 1.4305	6	30	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	24
33200.W0027	Stainless 1.4305	6	35	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	25
33200.W0028	Stainless 1.4305	6	40	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	26
33200.W0029	Stainless 1.4305	6	45	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	27
33200.W0030	Stainless 1.4305	6	50	7.0	11.8	7.0	31.6	24.1	45.2	12.7	6	21	28
33200.W0031	Stainless 1.4305	8	60	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	52
33200.W0032	Stainless 1.4305	8	10	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	33
33200.W0033	Stainless 1.4305	8	15	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	35

Ball Lock Pins - Single Acting - T-Handle

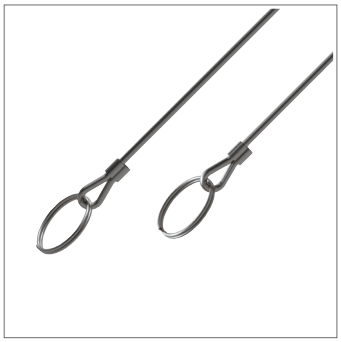
self-locking - stainless 1.4305

Order No.	Material	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5	l_6	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0034	Stainless 1.4305	8	20	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	37
33200.W0035	Stainless 1.4305	8	25	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	39
33200.W0036	Stainless 1.4305	8	30	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	41
33200.W0037	Stainless 1.4305	8	35	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	43
33200.W0038	Stainless 1.4305	8	40	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	44
33200.W0039	Stainless 1.4305	8	45	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	46
33200.W0040	Stainless 1.4305	8	50	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	48
33200.W0041	Stainless 1.4305	8	70	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	56
33200.W0042	Stainless 1.4305	8	80	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	60
33200.W0043	Stainless 1.4305	8	90	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	63
33200.W0051	Stainless 1.4305	8	100	9.5	14.7	8.2	35.8	26.9	51.5	15.8	8	38	67
33200.W0044	Stainless 1.4305	10	20	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	44
33200.W0045	Stainless 1.4305	10	25	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	47
33200.W0046	Stainless 1.4305	10	30	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	49
33200.W0047	Stainless 1.4305	10	35	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	52
33200.W0048	Stainless 1.4305	10	40	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	55
33200.W0049	Stainless 1.4305	10	45	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	58
33200.W0050	Stainless 1.4305	10	50	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	61
33200.W0052	Stainless 1.4305	10	60	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	67
33200.W0053	Stainless 1.4305	10	70	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	73
33200.W0054	Stainless 1.4305	10	80	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	79
33200.W0055	Stainless 1.4305	10	90	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	85
33200.W0056	Stainless 1.4305	10	100	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	91
33200.W0057	Stainless 1.4305	10	110	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	97
33200.W0058	Stainless 1.4305	10	120	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	103
33200.W0059	Stainless 1.4305	10	15	12.0	14.7	9.6	35.8	26.9	51.5	15.8	10	60	40
33200.W0064	Stainless 1.4305	12	20	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	68
33200.W0065	Stainless 1.4305	12	25	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	73
33200.W0066	Stainless 1.4305	12	30	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	77
33200.W0067	Stainless 1.4305	12	35	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	81
33200.W0068	Stainless 1.4305	12	40	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	86
33200.W0069	Stainless 1.4305	12	45	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	90
33200.W0070	Stainless 1.4305	12	50	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	94
33200.W0072	Stainless 1.4305	12	60	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	103
33200.W0074	Stainless 1.4305	12	70	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	111
33200.W0076	Stainless 1.4305	12	80	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	119
33200.W0060	Stainless 1.4305	12	90	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	127
33200.W0061	Stainless 1.4305	12	100	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	136
33200.W0062	Stainless 1.4305	12	110	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	144
33200.W0063	Stainless 1.4305	12	120	14.5	18.2	10.6	35.1	25.3	59.1	20.2	12	87	153
33200.W0071	Stainless 1.4305	16	30	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	150
33200.W0073	Stainless 1.4305	16	35	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	157
33200.W0075	Stainless 1.4305	16	40	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	165
33200.W0077	Stainless 1.4305	16	45	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	173
33200.W0078	Stainless 1.4305	16	50	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	180
33200.W0079	Stainless 1.4305	16	60	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	196
33200.W0080	Stainless 1.4305	16	70	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	211
33200.W0081	Stainless 1.4305	16	80	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	226
33200.W0082	Stainless 1.4305	16	90	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	242
33200.W0083	Stainless 1.4305	16	100	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	257
33200.W0084	Stainless 1.4305	16	110	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	272
33200.W0085	Stainless 1.4305	16	120	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	288
33200.W0086	Stainless 1.4305	16	130	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	303
33200.W0087	Stainless 1.4305	16	140	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	319
33200.W0088	Stainless 1.4305	16	150	19.0	23.4	14.0	42.2	29.8	74.8	24.7	16	155	334
33200.W0089	Stainless 1.4305	20	50	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	241
33200.W0090	Stainless 1.4305	20	60	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	265
33200.W0091	Stainless 1.4305	20	70	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	289
33200.W0092	Stainless 1.4305	20	80	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	313
33200.W0093	Stainless 1.4305	20	90	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	337
33200.W0094	Stainless 1.4305	20	100	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	361
33200.W0095	Stainless 1.4305	20	110	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	385
33200.W0096	Stainless 1.4305	20	120	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	409
33200.W0097	Stainless 1.4305	20	130	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	433
33200.W0098	Stainless 1.4305	20	140	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	457
33200.W0099	Stainless 1.4305	20	150	24.8	23.4	17.0	43.1	29.8	74.8	24.7	20	244	481

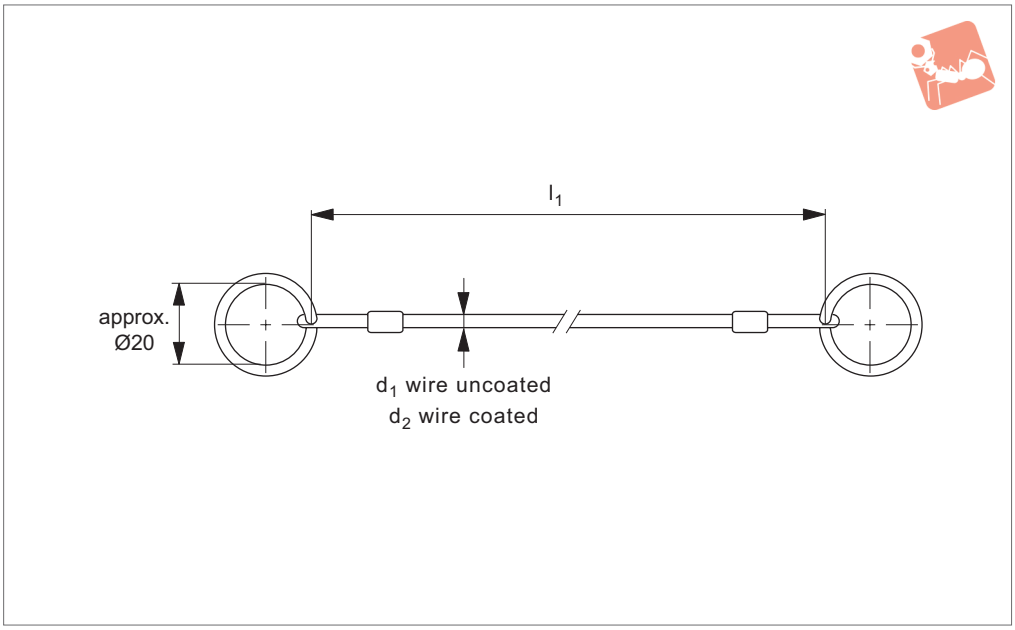
Order No.	Material	d_1	l_1	d_2	d_3	l_2	l_3	l_4	l_5	l_6	Location hole dia. tol. H11	Shearing resistance, double kN min.	Weight g
33200.W0100	Stainless 1.4305	25	50	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	447
33200.W0101	Stainless 1.4305	25	60	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	484
33200.W0102	Stainless 1.4305	25	70	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	522
33200.W0103	Stainless 1.4305	25	80	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	560
33200.W0104	Stainless 1.4305	25	90	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	598
33200.W0105	Stainless 1.4305	25	100	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	636
33200.W0106	Stainless 1.4305	25	110	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	674
33200.W0107	Stainless 1.4305	25	120	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	712
33200.W0108	Stainless 1.4305	25	130	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	750
33200.W0109	Stainless 1.4305	25	140	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	788
33200.W0110	Stainless 1.4305	25	150	31.0	30.4	22.0	54.8	37.5	88.7	33.2	25	386	825

Lanyard - Loop to Loop

with split rings - crimps stainless



33250



Material

Wire rope: stainless steel
Coating (if present): PA6 see table.
Crimps /sleeves: stainless steel
Split rings: stainless steel

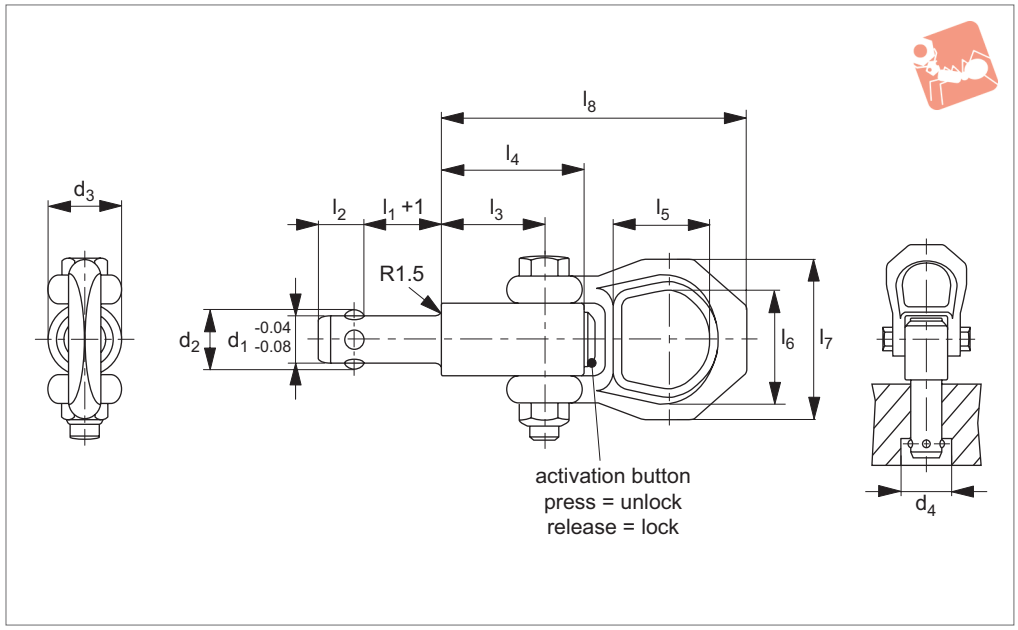
Technical Notes

Crimps tested to failure at 28 Kgf.
Temperature range: up to 250°C (uncoated)

Tips

For use in securing components to assemblies, or to avoid items being misplaced. For our wide range of quick release pins nos. 33060 through 33226.

Order No.	Coating	d_1 wire uncoated	l_1	d_2 wire coated	Weight g
33250.W0940	Black	1.5	150	2.2	6.5
33250.W0941	Black	1.5	200	2.2	6.4
33250.W0943	Black	1.5	300	2.2	7.5
33250.W0950	Clear	1.5	150	2.2	6.5
33250.W0952	Clear	1.5	200	2.2	6.4
33250.W0956	Clear	1.5	300	2.2	7.5
33250.W0930	Uncoated	1.5	150	-	6.5
33250.W0931	Uncoated	1.5	200	-	6.4
33250.W0933	Uncoated	1.5	300	-	7.5



33400

Material
Pin, Body & Shackle: heat treated steel, tempered, manganese phosphated.
Actuation Button: aluminium, red anodised.
Spring: stainless steel.

Technical Notes
Pressing = unlocking.
Releasing = locking.
Lifts forces up to 4.8kN (with a 5 fold in-built safety factor).

Temperature range up to +250°C.
Easy installation with plain drilled hole to H11 tolerance.

Tips
The design of the safety shackle prevents accidental locking/unlocking. Safety shackle is adjustable and can be used to lift components at 90°, 45° or 180°.

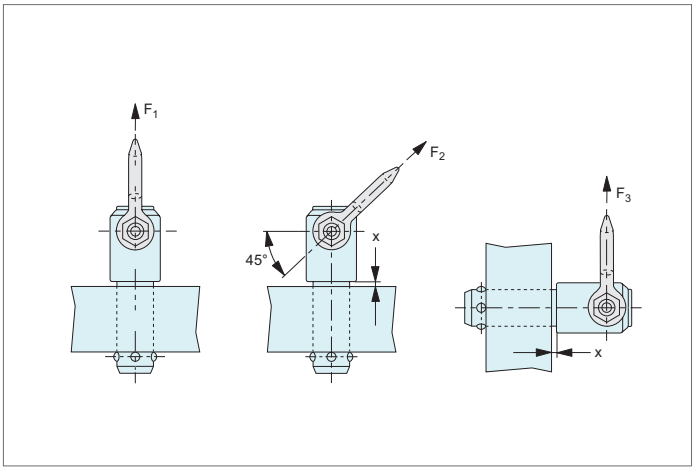
Important Notes
*Test load corresponds to 3-times the nominal load.
When machining receiving hole in aluminium we recommend use of hardened bush or collar in receiving hole, see our part no. 33440.

Supplied with TUV test certificate of manufacturing process.
Parts not individually tested.

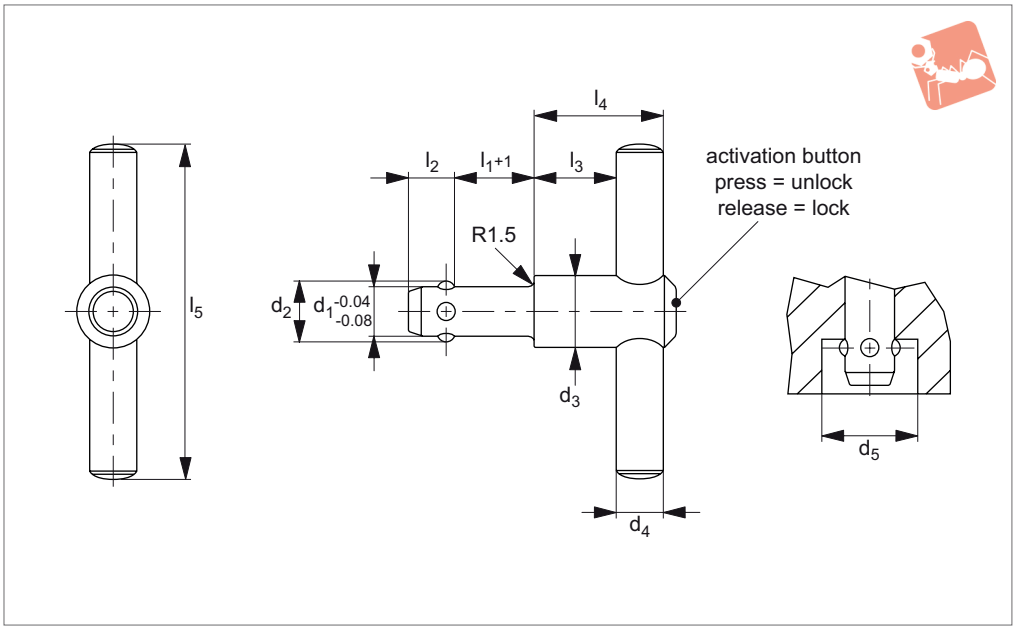
Order No.	l_1	d_1 -0.04 | -0.08	d_2	d_3	d_4 min.	l_2	l_3	l_4	l_5	Weight g
33400.W0601	10	8.0	9.35	21.5	9.85	8.75	25.7	36.0	27.0	218
33400.W0602	15	8.0	9.35	21.5	9.85	8.75	25.7	36.0	27.0	220
33400.W0604	25	8.0	9.35	21.5	9.85	8.75	25.7	36.0	27.0	223
33400.W0606	35	8.0	9.35	21.5	9.85	8.75	25.7	36.0	27.0	226
33400.W0611	10	8.3	9.65	21.5	10.05	8.75	25.7	36.0	27.0	218
33400.W0612	15	8.3	9.65	21.5	10.05	8.75	25.7	36.0	27.0	219
33400.W0614	25	8.3	9.65	21.5	10.05	8.75	25.7	36.0	27.0	223
33400.W0616	35	8.3	9.65	21.5	10.05	8.75	25.7	36.0	27.0	228
33400.W0621	15	10.0	11.70	21.5	12.20	10.20	25.7	36.0	27.0	226
33400.W0623	25	10.0	11.70	21.5	12.20	10.20	25.7	36.0	27.0	238
33400.W0625	35	10.0	11.70	21.5	12.20	10.20	25.7	36.0	27.0	244
33400.W0627	50	10.0	11.70	21.5	12.20	10.20	25.7	36.0	27.0	252
33400.W0631	15	12.0	14.20	21.5	14.70	11.00	25.7	36.0	27.0	238
33400.W0633	25	12.0	14.20	21.5	14.70	11.00	25.7	36.0	27.0	243
33400.W0635	35	12.0	14.20	21.5	14.70	11.00	25.7	36.0	27.0	251
33400.W0637	50	12.0	14.20	21.5	14.70	11.00	25.7	36.0	27.0	268
33400.W0651	25	13.8	16.20	21.5	16.70	13.00	25.7	36.0	27.0	251
33400.W0653	50	13.8	16.20	21.5	16.70	13.00	25.7	36.0	27.0	279
33400.W0655	75	13.8	16.20	21.5	16.70	13.00	25.7	36.0	27.0	309
33400.W0641	25	16.0	18.60	25.0	19.20	15.10	31.0	44.5	27.0	312
33400.W0643	50	16.0	18.60	25.0	19.20	15.10	31.0	44.5	27.0	353
33400.W0645	75	16.0	18.60	25.0	19.20	15.10	31.0	44.5	27.0	388
33400.W0673	50	20.0	24.50	30.0	25.00	19.70	36.5	52.0	32.6	607
33400.W0675	75	20.0	24.50	30.0	25.00	19.70	36.5	52.0	32.6	666

Quick Lift Pins - Self Locking

Order No.	l_6	l_7	l_8	F_1 kN	F_2 kN	F_3 kN	x min.	x max.	Location hole tol. H11
33400.W0601	30	49	87.5	1.5	1.2	0.5	1.5	5	8.0
33400.W0602	30	49	87.5	1.5	1.2	0.5	1.5	10	8.0
33400.W0604	30	49	87.5	1.5	1.2	0.5	1.5	15	8.0
33400.W0606	30	49	87.5	1.5	1.2	0.5	1.5	15	8.0
33400.W0611	30	49	87.5	1.5	1.2	0.5	1.5	5	8.3
33400.W0612	30	49	87.5	1.5	1.2	0.5	1.5	10	8.3
33400.W0614	30	49	87.5	1.5	1.2	0.5	1.5	15	8.3
33400.W0616	30	49	87.5	1.5	1.2	0.5	1.5	15	8.3
33400.W0621	30	49	87.5	2.7	2.4	2.1	1.5	10	10.0
33400.W0623	30	49	87.5	2.7	2.4	2.1	1.5	10	10.0
33400.W0625	30	49	87.5	2.7	2.4	2.1	1.5	10	10.0
33400.W0627	30	49	87.5	2.7	2.4	2.1	1.5	10	10.0
33400.W0631	30	49	87.5	3.5	3.2	2.8	1.5	10	12.0
33400.W0633	30	49	87.5	3.5	3.2	2.8	1.5	15	12.0
33400.W0635	30	49	87.5	3.5	3.2	2.8	1.5	15	12.0
33400.W0637	30	49	87.5	3.5	3.2	2.8	1.5	15	12.0
33400.W0651	30	49	87.5	3.8	3.5	2.8	1.5	15	13.8
33400.W0653	30	49	87.5	3.8	3.5	2.8	1.5	35	13.8
33400.W0655	30	49	87.5	3.8	3.5	2.8	1.5	35	13.8
33400.W0641	30	49	92.8	4.8	4.5	4.1	1.5	15	16.0
33400.W0643	30	49	92.8	4.8	4.5	4.1	1.5	35	16.0
33400.W0645	30	49	92.8	4.8	4.5	4.1	1.5	40	16.0
33400.W0673	36	56	114.0	10.0	8.5	6.5	1.5	25	20.0
33400.W0675	36	56	114.0	10.0	8.5	6.5	1.5	25	20.0



Lifting Pins-Self-Locking
with t-handle - stainless steel



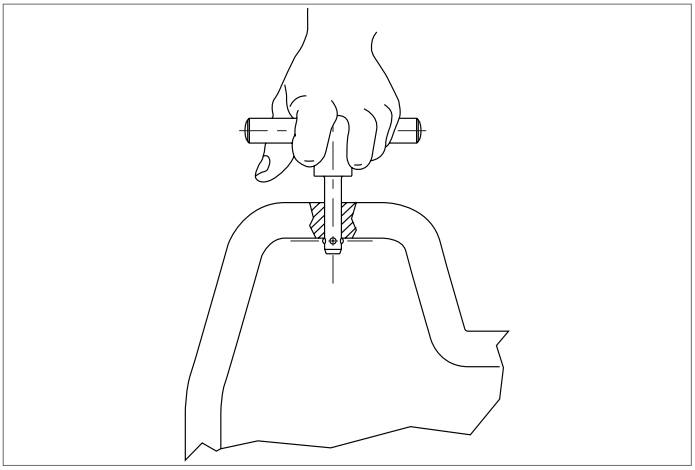
33424

Material
Pin: Stainless steel 1.4542, (AISI 630) precipitation hardened.
Handle: Aluminium, blue anodised.
Spring: Stainless Steel.

Technical Notes
Pressing= Unlocking.
Releasing= Locking.
Easy installation with plain drilled hole to H11 tolerance.
Temperature resistance up to 250° C.

Tips
The t-handled grip can be used to move or transport workpieces via hand, e.g. part finished components, work holding systems, speakers and other containers.
Corrosion and weathering resistant, thus also suitable for outdoor application.

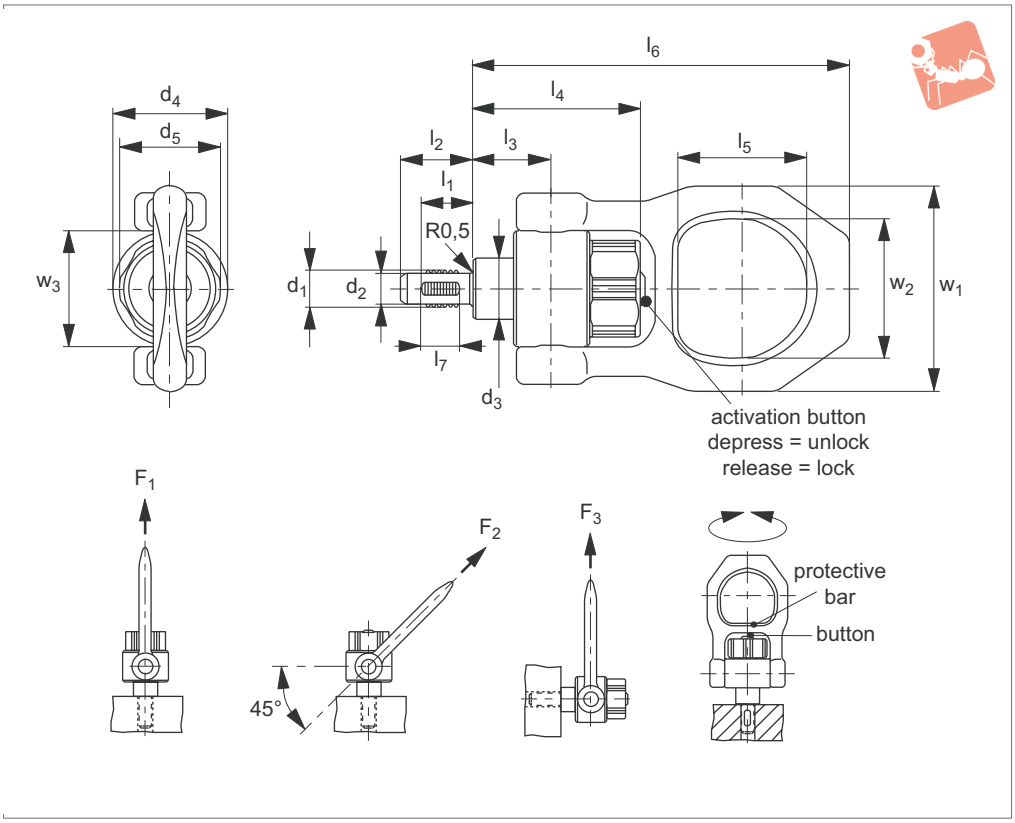
Order No.	d_1 -0.04|-0.08	l_1 +1	d_2	d_3	d_4	d_5 min.	l_2	l_3	l_4	l_5	Carrying force N	Location hole tol. H11	Weight g
33424.W0005	8.0	35	9.35	21.5	14	9.85	8.75	18.7	36.0	100	500	8.0	141
33424.W0010	8.3	35	9.65	21.5	14	10.05	8.75	18.7	36.0	100	500	8.3	142
33424.W0015	10.0	50	11.70	21.5	14	12.20	10.20	18.7	36.5	100	500	10.0	159
33424.W0020	12.0	50	14.20	21.5	14	14.70	11.00	18.7	36.5	100	500	12.0	177



Quick Lift Pins - Threaded

double swivel - metric

33425



Material

Steel

Pin: heat-treated steel, tempered, manganese phosphated.
Threaded element: stainless steel 1.4542, (AISI 630) precipitation hardened.
Shackle: steel, heat-treated, tempered, manganese phosphated.
Press button: aluminium, orange anodised.
Spring: stainless steel.

Stainless steel

Pin: stainless steel 1.4542, (AISI 630) precipitation hardened.
Threaded element: stainless steel 1.4542, (AISI 630) precipitation hardened.
Shackle: stainless steel 1.45471.
Press button: aluminium, orange anodised.
Spring: stainless Steel.

Technical Notes

To suit metric coarse threads, tolerance g6.
CE marked. Both types are corrosion protected. The stainless steel pin is resistant to corrosion and weathering, so suitable for external use.
The instruction manual and CE Declaration of Conformity are included.
F_1* and F_3* values are inscribed on the body for reference. F values are calculated on 5 x safety factor.
Depress button: to unlock.
Release button: to lock.
Max temp. 250°C.

Tips

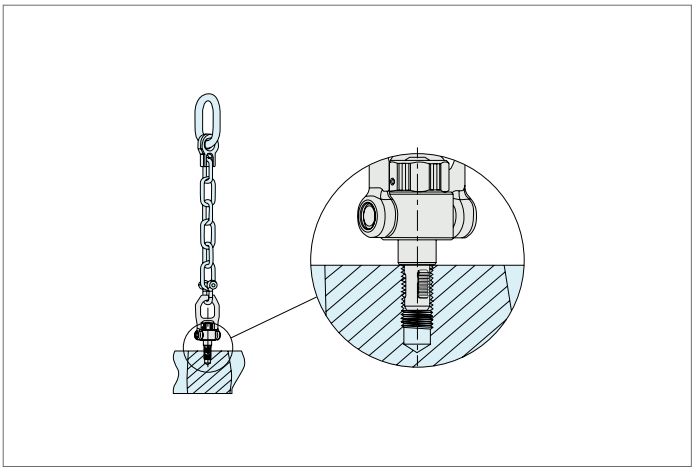
Heavy duty lifting pin, quick and easy to use with pivoting shackle and protective bar to prevent unintentional unlocking. The threaded lifting pin is inserted into a threaded hole, so no time is wasted screwing in and out alternative lifting rings. The rotatable shackle will always align with the tensile direction of pull without the pin rotating. This prevents the load-handling device from being turned out of the thread and the component can be lifted safely.
Before use: read instruction manual, and data sheets, follow standard safe lifting procedures.

Important Notes

* Test load corresponds to 3-times the nominal load.

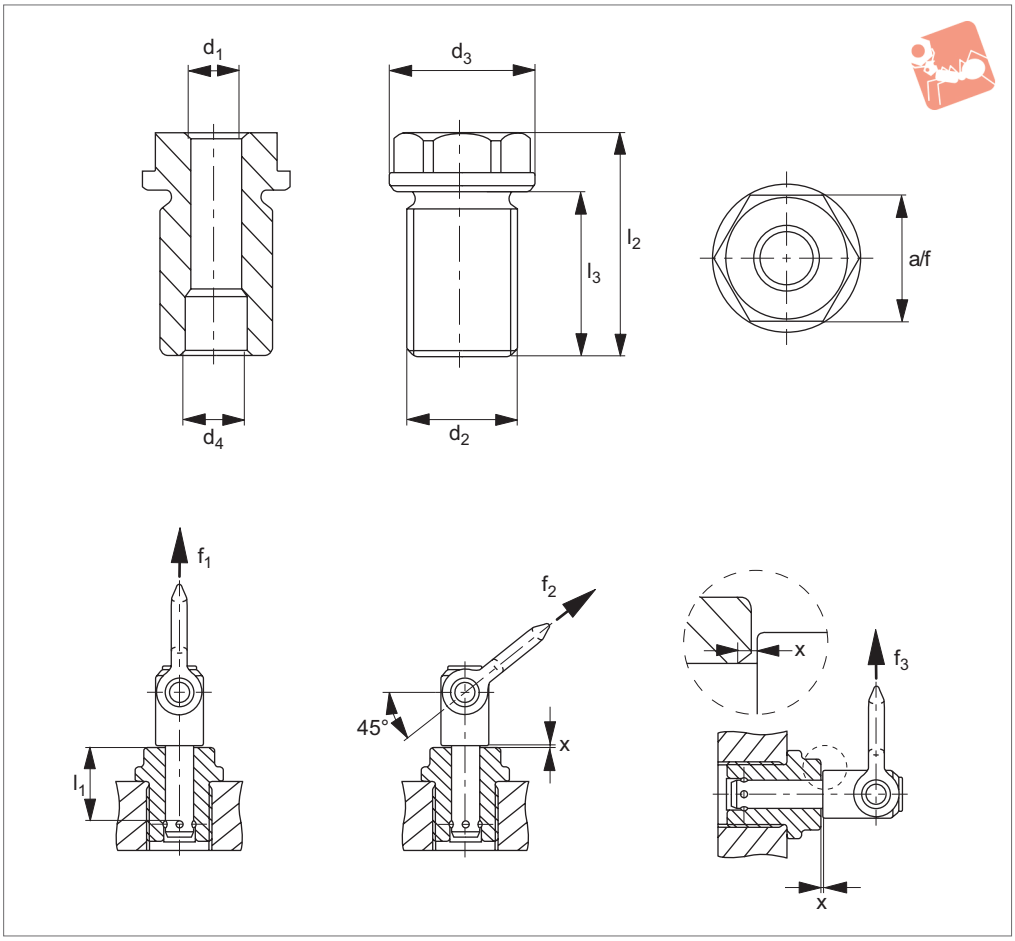
Order No.	Type	l_1	d_1	d_2 -0.07	d_3	d_4	d_5	l_2	l_3	l_4	l_5	Weight g
33425.W0008	Steel	12	M 8	8.35	20	38	33.5	17.8	25.7	54.9	42.5	677
33425.W0010	Steel	14	M 10	8.40	20	38	33.5	20.0	25.7	54.9	42.5	581
33425.W0012	Steel	17	M 12	10.10	20	38	33.5	24.0	25.7	54.9	42.5	585
33425.W0016	Steel	17	M 16	13.80	20	38	33.5	24.0	25.7	54.9	42.5	597
33425.W0020	Steel	22	M 20	17.30	35	56	50.0	30.0	36.5	73.7	55.6	1789
33425.W0024	Steel	27	M 24	20.70	35	56	50.0	36.0	42.0	79.2	55.6	1864
33425.W1008	Stainless Steel	12	M 8	8.35	20	38	33.5	17.8	25.7	54.9	42.5	677
33425.W1010	Stainless Steel	14	M 10	8.40	20	38	33.5	20.0	25.7	54.9	42.5	581
33425.W1012	Stainless Steel	17	M 12	10.10	20	38	33.5	24.0	25.7	54.9	42.5	585
33425.W1016	Stainless Steel	17	M 16	13.80	20	38	33.5	24.0	25.7	54.9	42.5	597
33425.W1020	Stainless Steel	22	M 20	17.30	35	56	50.0	30.0	36.5	73.7	55.6	1789
33425.W1024	Stainless Steel	27	M 24	20.70	35	56	50.0	36.0	42.0	79.2	55.6	1864

Order No.	l_6	l_7	w_1	w_2	w_3	F_1 kN	F_2 kN	F_3 kN	Locating thread	Tightening torque Nm max.
33425.W0008	123.7	8	68	46	38	2.1	0.9	0.8	M 8	2
33425.W0010	123.7	10	68	46	38	3.9	1.5	1.5	M 10	2
33425.W0012	123.7	12	68	46	38	6.2	2.5	2.3	M 12	2
33425.W0016	123.7	12	68	46	38	8.4	4.5	4.2	M 16	2
33425.W0020	167.5	17	102	70	59	16.6	7.7	5.0	M 20	3
33425.W0024	173.0	22	102	70	59	18.5	11.1	8.6	M 24	3
33425.W1008	123.7	8	68	46	38	2.1	0.9	0.8	M 8	2
33425.W1010	123.7	10	68	46	38	3.9	1.5	1.5	M 10	2
33425.W1012	123.7	12	68	46	38	6.2	2.5	2.3	M 12	2
33425.W1016	123.7	12	68	46	38	8.4	4.5	4.2	M 16	2
33425.W1020	167.5	17	102	70	59	16.6	7.7	5.0	M 20	3
33425.W1024	173.0	22	102	70	59	18.0	11.1	8.6	M 24	3



Locating Bushes - for Quick Lift Pins

33440



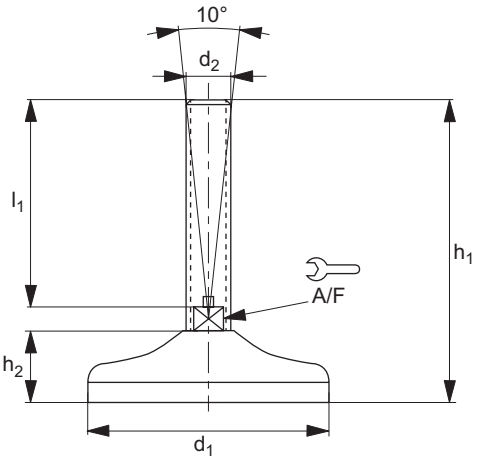
Material
Body: stainless steel 1.4542 (AISI 630), precipitation hardened.

Technical Notes
Locating bushes are used for quick and safe locating of lifting pins 33400 and 33420.

Provides easy and safe assembly, and can be incorporated into a variety of materials. Can be used in thin-walled parts and in blind holes.

Important Notes
Lifting forces f_1 to f_3, have a 5 fold in-built safety factor.
Due to the radius on the underside of the lifting face, please ensure $x_{min.}$ is $x_{max.}$ to avoid stress on pin when used as angle lift. See product table for details.

Order No.	For pin length	d_1 tol. H11	d_2	d_3 -0.2	d_4 +0.3	l_2	l_3	A/F	x max.	F_1 kN	F_2 kN	F_3 kN	Starting torque Nm max.	For lifting pin 33400/33420	Weight g
33440.W0900	10	8	M 16x1.5	24	9.8	27.5	20	19	1.5	1.5	1.2	0.5	90	.W0601/.W0701	32
33440.W0902	15	8	M 16x1.5	24	9.8	27.5	20	19	1.5	1.5	1.2	0.5	90	.W0602/.W0702	33
33440.W0904	25	8	M 16	24	9.8	37.5	25	19	1.5	1.5	1.2	0.5	75	.W0604/.W0704	46
33440.W0906	35	8	M 16	24	9.8	47.5	35	19	1.5	1.5	1.2	0.5	75	.W0606/.W0706	55
33440.W0910	15	10	M 20x1.5	28	12.2	35.5	24	24	1.0	2.7	2.4	2.1	145	.W0621/.W0721	70
33440.W0912	25	10	M 20x1.5	28	12.2	35.5	24	24	1.0	2.7	2.4	2.1	145	.W0623/.W0723	73
33440.W0914	35	10	M 20	28	12.2	46.0	29	24	1.0	2.7	2.4	2.1	130	.W0625/.W0725	93
33440.W0916	50	10	M 20	28	12.2	65.0	49	24	1.0	2.7	2.4	2.1	130	.W0627/.W0727	117
33440.W0920	15	12	M 24x1.5	32	14.7	35.5	24	27	1.0	3.5	3.2	2.8	220	.W0631/.W0731	94
33440.W0922	25	12	M 24x1.5	32	14.7	36.5	24	27	1.0	3.5	3.2	2.8	220	.W0633/.W0733	102
33440.W0924	35	12	M 24	32	14.7	48.5	36	27	1.0	3.5	3.2	2.8	200	.W0635/.W0735	119
33440.W0926	50	12	M 24	32	14.7	72.5	60	27	1.0	3.5	3.2	2.8	200	.W0637/.W0737	164
33440.W0930	25	16	M 30x2.0	39	19.2	44.0	29	30	1.0	4.8	4.5	4.1	440	.W0641/.W0741	163
33440.W0934	50	16	M 30	39	19.2	66.0	44	30	1.0	4.8	4.5	4.1	400	.W0643/.W0743	236
33440.W0936	75	16	M 30	39	19.2	96.0	74	30	1.0	4.8	4.5	4.1	400	.W0645/.W0745	323
33440.W0954	50	20	M 36x2.0	43	26.0	70.0	55	36	1.5	10.0	8.5	6.5	440	.W0673/.W0773	366
33440.W0956	75	20	M 36x2.0	43	26.0	95.0	80	36	1.5	10.0	8.5	6.5	440	.W0673/.W0775	503



34703

Material
Galvanized steel (C40), with rubber pad (70 shore A).

Technical Notes
Load values refer to static loads, located at half the screw height.

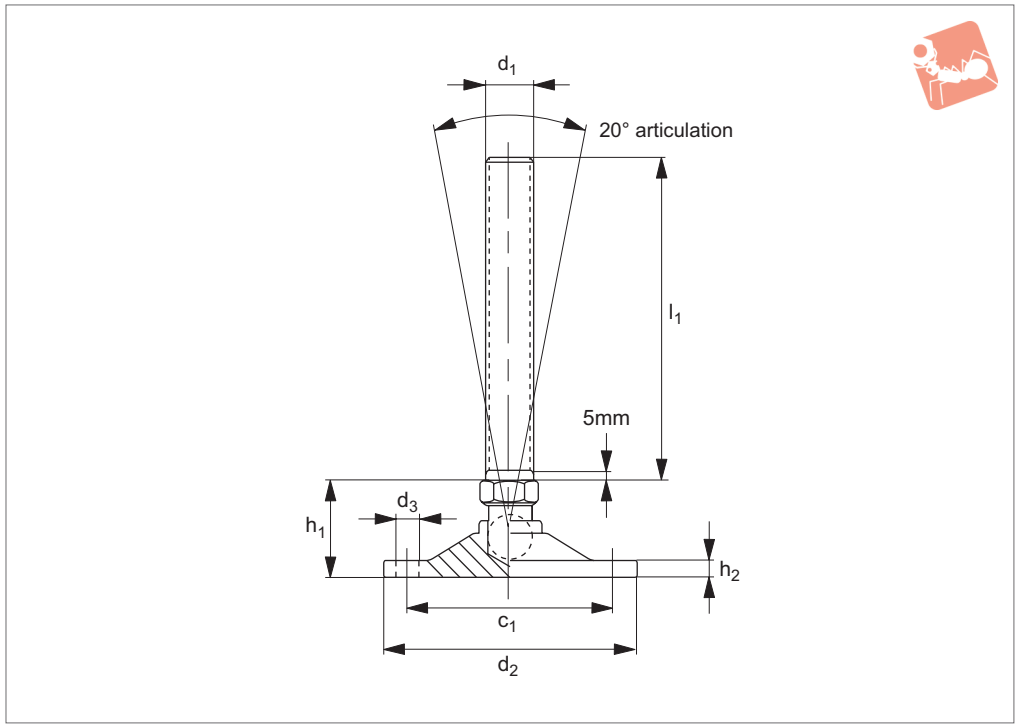
Order No.	d_1	d_2	h_1	h_2	l_1	A/F	Load kgf max.
34703.W1200	50	M 12	79.0	19	50	14	400
34703.W1201	50	M 12	129.0	19	100	14	400
34703.W1202	50	M 12	179.0	19	150	14	400
34703.W1400	50	M 14	79.0	19	50	14	400
34703.W1401	50	M 14	129.0	19	100	14	400
34703.W1402	50	M 14	179.0	19	150	14	400
34703.W1600	50	M 16	104.0	19	75	14	400
34703.W1601	50	M 16	129.0	19	100	14	400
34703.W1602	50	M 16	179.0	19	150	14	400
34703.W1002	80	M 10	85.0	25	50	14	1000
34703.W1003	80	M 10	135.0	25	100	14	1000
34703.W1203	80	M 12	85.0	25	50	14	1000
34703.W1204	80	M 12	135.0	25	100	14	1000
34703.W1205	80	M 12	185.0	25	150	14	1000
34703.W1403	80	M 14	85.0	25	50	14	1000
34703.W1404	80	M 14	135.0	25	100	14	1000
34703.W1405	80	M 14	185.0	25	150	14	1000
34703.W1603	80	M 16	85.0	25	75	14	1000
34703.W1605	80	M 16	185.0	25	150	14	1000
34703.W2000	80	M 20	111.0	25	75	14	1000
34703.W2001	80	M 20	136.0	25	100	14	1000
34703.W2002	80	M 20	186.0	25	150	14	1000
34703.W2003	80	M 20	236.0	25	200	14	1000
34703.W2400	80	M 24	111.0	25	75	14	1000
34703.W2401	80	M 24	136.0	25	100	14	1000
34703.W2402	80	M 24	186.0	25	150	14	1000
34703.W2403	80	M 24	236.0	25	200	14	1000
34703.W1606	100	M 16	112.5	28	75	16	1500
34703.W1607	100	M 16	137.5	28	100	16	1500
34703.W1608	100	M 16	187.5	28	150	16	1500
34703.W1609	100	M 16	237.5	28	200	16	1500
34703.W2004	100	M 20	113.5	28	75	20	1500
34703.W2005	100	M 20	138.5	28	100	20	1500
34703.W2006	100	M 20	188.5	28	150	20	1500

Steel Levelling Feet steel

Order No.	d_1	d_2	h_1	h_2	l_1	A/F	Load kgf max.
34703.W2007	100	M 20	238.5	28	200	20	1500
34703.W2008	100	M 20	288.5	28	250	20	1500
34703.W2404	100	M 24	138.5	28	100	24	1500
34703.W2405	100	M 24	188.5	28	150	24	1500
34703.W2406	100	M 24	238.5	28	200	24	1500
34703.W2407	100	M 24	288.5	28	250	24	1500
34703.W3000	100	M 30	139.5	28	100	30	1500
34703.W3001	100	M 30	189.5	28	150	30	1500
34703.W3002	100	M 30	239.5	28	200	30	1500
34703.W3003	100	M 30	289.5	28	250	30	1500
34703.W1610	120	M 16	116.5	32	75	16	3000
34703.W1611	120	M 16	141.5	32	100	16	3000
34703.W1612	120	M 16	191.5	32	150	16	3000
34703.W1613	120	M 16	241.5	32	200	16	3000
34703.W2009	120	M 20	117.5	32	75	20	3000
34703.W2010	120	M 20	142.5	32	100	20	3000
34703.W2011	120	M 20	192.5	32	150	20	3000
34703.W2012	120	M 20	242.5	32	200	20	3000
34703.W2013	120	M 20	292.5	32	250	20	3000
34703.W2408	120	M 24	142.5	32	100	24	3000
34703.W2409	120	M 24	192.5	32	150	24	3000
34703.W2410	120	M 24	242.5	32	200	24	3000
34703.W2411	120	M 24	292.5	32	250	24	3000
34703.W3004	120	M 30	143.5	32	100	30	3000
34703.W3005	120	M 30	193.5	32	150	30	3000
34703.W3006	120	M 30	243.5	32	200	30	3000
34703.W3007	120	M 30	293.5	32	250	30	3000

Levelling Feet - Bolt Down, Medium Duty

pad and bolt stainless steel



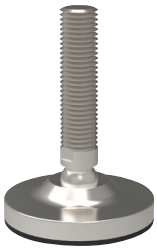
34712

Material
Pad and bolt: stainless steel, AISI 303.

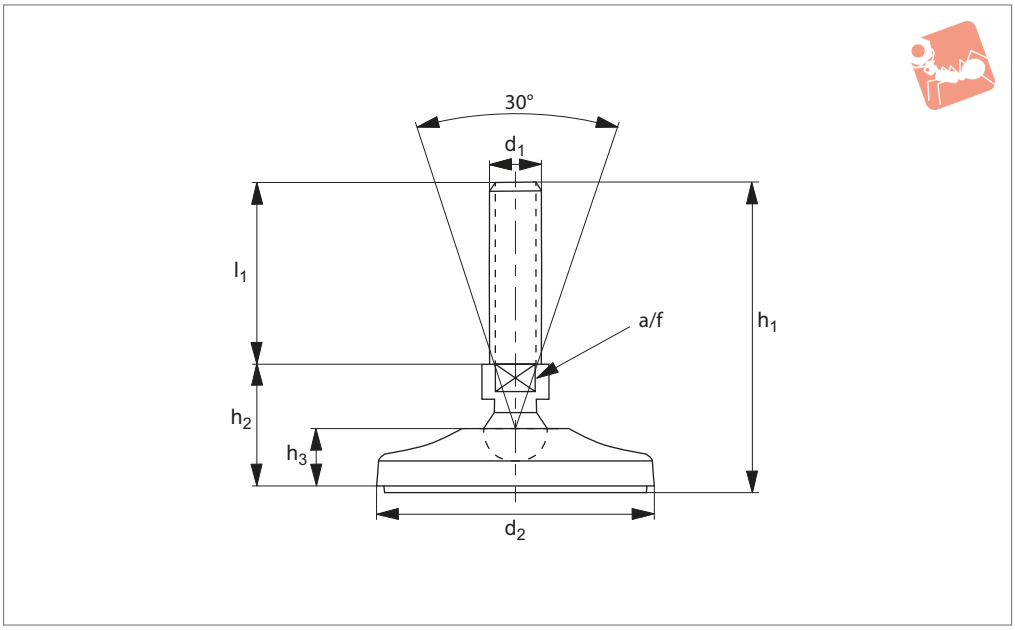
Technical Notes
Bolt has a 20° angle of movement.

Order No.	d_1	d_2	c_1	d_3	l_1	h_1	h_2	Static load kN max.
34712.W0508	M 8	50	40	5.5	60	22	4.0	3.0
34712.W0600	M 10	50	40	5.5	75	22	5.0	5.0
34712.W0620	M 12	50	40	5.5	75	25	4.0	7.5
34712.W0621	M 12	60	50	5.5	75	25	5.0	12.5
34712.W0622	M 12	60	50	5.5	125	25	5.0	12.5
34712.W0623	M 12	60	50	5.5	150	25	5.0	12.5
34712.W0660	M 16	80	68	6.5	75	31	6.0	17.5
34712.W0661	M 16	80	68	6.5	125	31	6.0	17.5
34712.W0662	M 16	80	68	6.5	150	31	6.0	17.5
34712.W0700	M 20	100	82	9.0	125	39	6.5	25.0
34712.W0701	M 20	100	82	9.0	150	39	6.5	25.0
34712.W0702	M 20	100	82	9.0	200	39	6.5	25.0
34712.W0703	M 24	120	100	11.0	150	56	7.5	37.5
34712.W0704	M 24	120	100	11.0	200	56	7.5	37.5

Levelling Feet
stainless steel swivel



34714



Material
Stainless steel (AISI 304), with rubber pad (70 Shore A).
Stainless steel (AISI 316) version available on request.

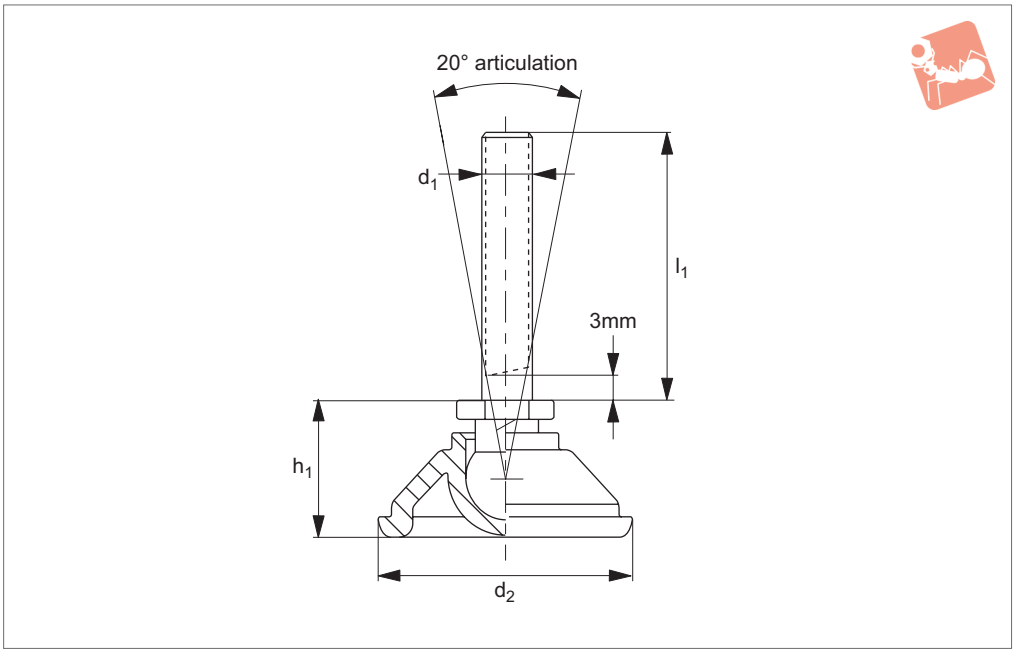
Technical Notes
Load values refer to static loads, located at half the screw height.
When vibrations or dynamic loads are present these values should be reduced.

Order No.	d_1	l_1	d_2	h_1	h_2	h_3	A/F	Load kN max.
34714.W1000	M 10	25	50	56	28	16.0	14	15
34714.W1001	M 10	50	50	81	28	16.0	14	15
34714.W1002	M 10	75	50	106	28	16.0	14	15
34714.W1003	M 10	100	50	131	28	16.0	14	15
34714.W1004	M 10	125	50	156	28	16.0	14	15
34714.W1200	M 12	25	50	56	28	16.0	14	15
34714.W1201	M 12	50	50	81	28	16.0	14	15
34714.W1202	M 12	75	50	106	28	16.0	14	15
34714.W1203	M 12	100	50	131	28	16.0	14	15
34714.W1204	M 12	125	50	156	28	16.0	14	15
34714.W1400	M 14	50	65	83	30	17.0	14	20
34714.W1401	M 14	75	65	108	30	17.0	14	20
34714.W1402	M 14	100	65	133	30	17.0	14	20
34714.W1403	M 14	125	65	158	30	17.0	14	20
34714.W1404	M 14	150	65	183	30	17.0	14	20
34714.W1600	M 16	50	100	96	43	20.0	20	35
34714.W1601	M 16	75	100	121	43	20.0	20	35
34714.W1602	M 16	100	100	146	43	20.0	20	35
34714.W1603	M 16	125	100	171	43	20.0	20	35
34714.W1604	M 16	150	100	196	43	20.0	20	35
34714.W1605	M 16	175	100	221	43	20.0	20	35
34714.W1606	M 16	200	100	246	43	20.0	20	35
34714.W2000	M 20	75	100	121	43	20.0	20	45
34714.W2001	M 20	100	100	146	43	20.0	20	45
34714.W2002	M 20	125	100	171	43	20.0	20	45
34714.W2003	M 20	150	100	196	43	20.0	20	45
34714.W2004	M 20	175	100	221	43	20.0	20	45
34714.W2005	M 20	200	100	246	43	20.0	20	45
34714.W2006	M 20	225	100	271	43	20.0	20	45
34714.W2007	M 20	250	100	296	43	20.0	20	45
34714.W2400	M 24	75	100	122	44	20.0	20	55
34714.W2401	M 24	100	100	147	44	20.0	20	55
34714.W2402	M 24	125	100	172	44	20.0	20	55

Order No.	d_1	l_1	d_2	h_1	h_2	h_3	A/F	Load kN max.
34714.W2403	M 24	150	100	202	44	20.0	20	55
34714.W2404	M 24	175	100	222	44	20.0	20	55
34714.W2405	M 24	200	100	247	44	20.0	20	55
34714.W2406	M 24	225	100	272	44	20.0	20	55
34714.W2407	M 24	250	100	297	44	20.0	20	55
34714.W3000	M 30	100	120	150	47	23.0	26	65
34714.W3001	M 30	125	120	175	47	23.0	26	65
34714.W3002	M 30	150	120	200	47	23.0	26	65
34714.W3003	M 30	175	120	225	47	23.0	26	65
34714.W3004	M 30	200	120	250	47	23.0	26	65
34714.W3005	M 30	225	120	275	47	23.0	26	65
34714.W3006	M 30	250	120	300	47	23.0	26	65

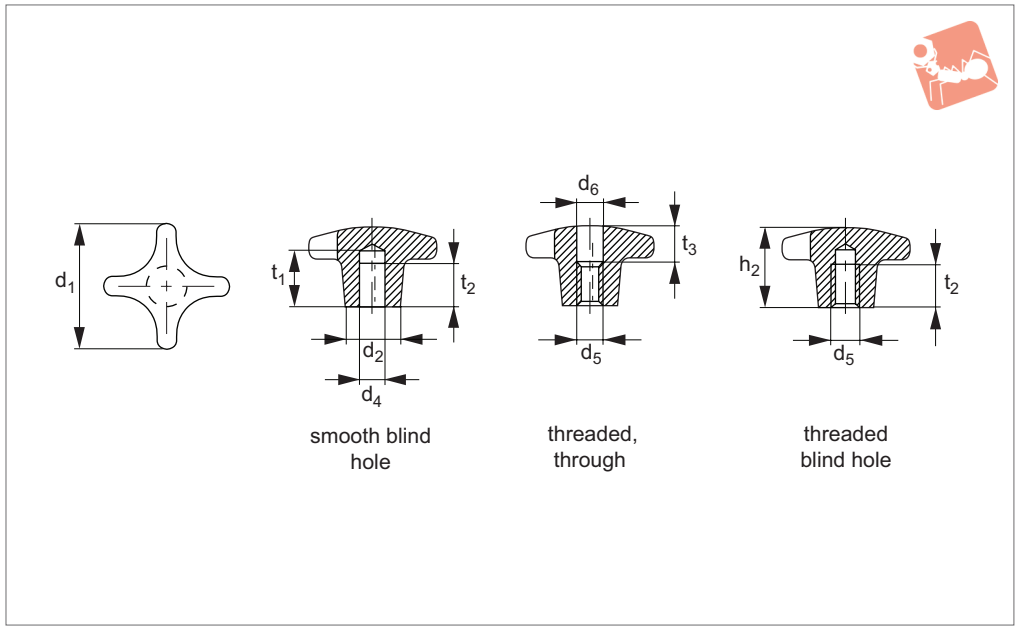
Levelling Feet
pad plastic, bolt steel

34721



Material
Pad: polyamide reinforced nylon.
Bolt: mild steel, plated.

Order No.	d_1	d_2	l_1	h_1	Static load kN max.
34721.W0060	M 6	40	20	21	3.0
34721.W0061	M 6	50	20	23	3.0
34721.W0062	M 6	40	40	21	3.0
34721.W0063	M 6	50	40	23	3.0
34721.W0080	M 8	40	25	21	4.5
34721.W0081	M 8	50	25	23	4.5
34721.W0082	M 8	40	40	21	4.5
34721.W0083	M 8	50	40	23	4.5
34721.W0084	M 8	40	60	21	4.5
34721.W0085	M 8	50	60	23	4.5
34721.W0100	M 10	40	38	21	5.0
34721.W0101	M 10	50	38	23	5.0
34721.W0102	M 10	40	60	21	5.0
34721.W0103	M 10	50	60	23	5.0
34721.W0104	M 10	40	75	21	5.0
34721.W0105	M 10	50	75	23	5.0
34721.W0120	M 12	40	50	23	6.0
34721.W0121	M 12	50	50	25	6.0
34721.W0122	M 12	40	75	23	6.0
34721.W0123	M 12	50	75	25	6.0
34721.W0124	M 12	40	100	23	6.0
34721.W0125	M 12	50	100	25	6.0
34721.W0126	M 12	40	125	23	6.0
34721.W0127	M 12	50	125	25	6.0



70040

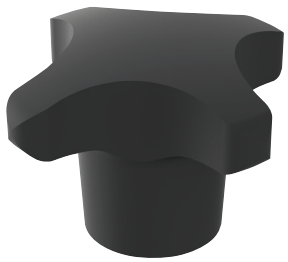
Material
Light metal aluminium (polished or unpolished).

Technical Notes
Produced to DIN 6335.

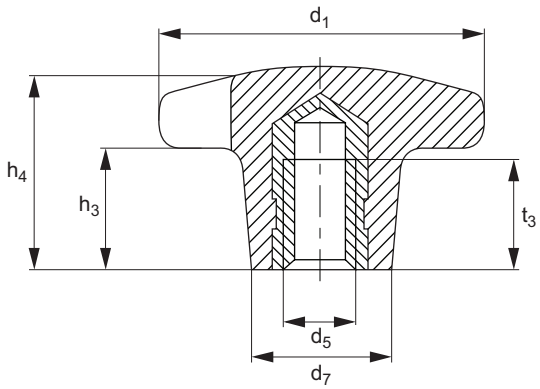
Tips
Grips with different bores or surface treatment can be made to order (min. quantity for specials 200 off).

Order No.	Finish	Type	d_1	d_2	d_4 tol. H7	d_5	d_6	h_2	t_1	t_2	t_3	Weight g
70040.W0240	Unpolished	Smooth, Blind	40	14	8	-	-	25	18	15	-	25
70040.W0250	Unpolished	Smooth, Blind	50	18	10	-	-	32	21	18	-	45
70040.W0263	Unpolished	Smooth, Blind	63	20	12	-	-	40	25	22	-	84
70040.W0280	Unpolished	Smooth, Blind	80	25	16	-	-	50	32	28	-	141
70040.W0440	Unpolished	Threaded, Blind	40	14	-	M 8	-	25	-	15	-	22
70040.W0450	Unpolished	Threaded, Blind	50	18	-	M 10	-	32	-	18	-	46
70040.W0463	Unpolished	Threaded, Blind	63	20	-	M 12	-	40	-	22	-	86
70040.W0480	Unpolished	Threaded, Blind	80	25	-	M 16	-	50	-	28	-	143
70040.W0640	Polished	Smooth, Blind	40	14	8	-	-	25	18	15	-	25
70040.W0650	Polished	Smooth, Blind	50	18	10	-	-	32	21	18	-	45
70040.W0663	Polished	Smooth, Blind	63	20	12	-	-	40	25	22	-	84
70040.W0680	Polished	Smooth, Blind	80	25	16	-	-	50	32	28	-	141
70040.W0840	Polished	Threaded, Blind	40	14	-	M 8	-	25	-	15	-	22
70040.W0850	Polished	Threaded, Blind	50	18	-	M 10	-	32	-	18	-	46
70040.W0863	Polished	Threaded, Blind	63	20	-	M 12	-	40	-	22	-	86
70040.W0880	Polished	Threaded, Blind	80	25	-	M 16	-	50	-	28	-	143
70040.W0340	Unpolished	Threaded, Through	40	14	-	M 8	8.4	25	-	-	12	23
70040.W0350	Unpolished	Threaded, Through	50	18	-	M 10	10.5	32	-	-	16	44
70040.W0363	Unpolished	Threaded, Through	63	20	-	M 12	13.0	40	-	-	20	70
70040.W0380	Unpolished	Threaded, Through	80	25	-	M 16	17.0	50	-	-	30	129
70040.W0740	Polished	Threaded, Through	40	14	-	M 8	8.4	25	-	-	12	23
70040.W0750	Polished	Threaded, Through	50	18	-	M 10	10.5	32	-	-	16	44
70040.W0763	Polished	Threaded, Through	63	20	-	M 12	13.0	40	-	-	20	70
70040.W0780	Polished	Threaded, Through	80	25	-	M 16	17.0	50	-	-	30	129

Palm Grips
plastic - DIN 6335

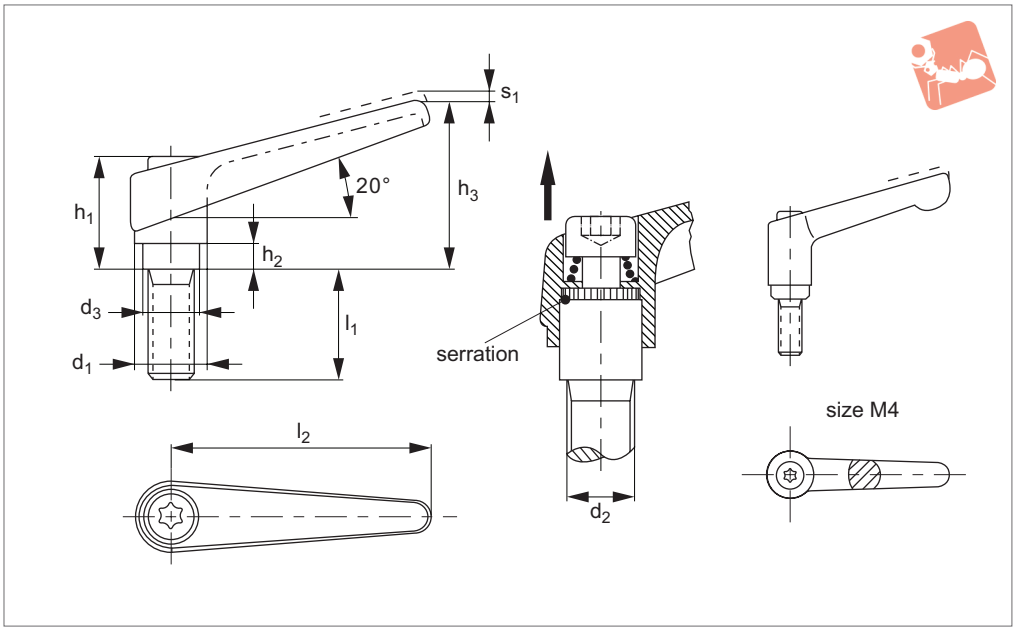


70060



Material
Grip: duroplast PF 31 DIN 7708, black.
Threaded bush: steel, galvanised or stainless steel A2.
Temperature range: max 110°C.

Order No.	Finish	d_1	d_5	d_7	h_3	h_4	t_3	Weight g
70060.W0220	Brass	20	M 4	10	6	13	6.5	3.3
70060.W0225	Steel	25	M 5	12	8	16	9.5	7.0
70060.W0232	Steel	32	M 6	14	10	20	12.0	12.0
70060.W0240	Steel	40	M 8	18	13	25	14.0	16.0
70060.W0250	Steel	50	M 10	22	20	32	18.0	32.0
70060.W0263	Steel	63	M 12	26	25	40	22.0	62.0
70060.W0280	Steel	80	M 16	35	30	50	30.0	137.0
70060.W1225	Stainless	25	M 5	12	8	16	9.5	7.0
70060.W1232	Stainless	32	M 6	14	10	20	12.0	12.0
70060.W1240	Stainless	40	M 8	18	13	25	14.0	16.0
70060.W1263	Stainless	63	M 12	26	25	40	22.0	62.0
70060.W1280	Stainless	80	M 16	35	30	50	30.0	137.0



74430

Material
Handle: die-cast zinc.
- Orange RAL 2004
- Black RAL 9005
- Silver RAL 9006.

Inner parts: steel, quality 5.8, blackened.
Screw: steel, quality 5.8, blackened.

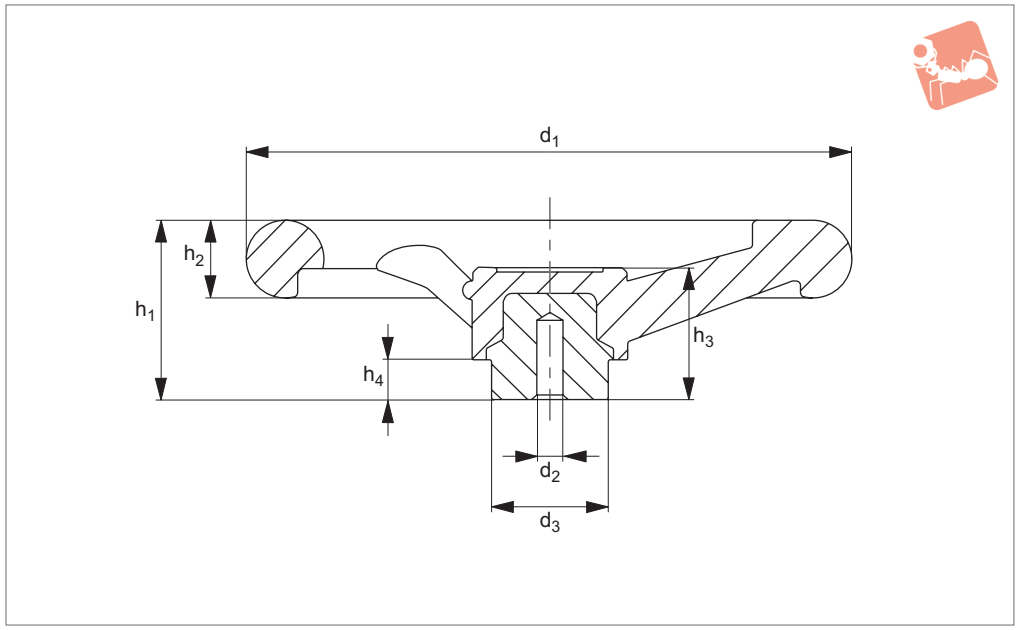
Technical Notes
By lifting the lever, the serrations are disengaged. The handle can be positioned by the serrations, and the threaded insert can be exchanged. Upon releasing the handle, the serrations are automatically re-engaged. The collar screw is torx head.

Additional sizes available on our website.

Order No.	Colour	Finish	d_1	d_2	d_3	h_1	h_2	h_3	l_1	l_2	Stroke s_1	Weight g
74430.W0010	Orange	Male thread	13	M 4	10.0	24.5	4.0	30.5	12	30	3.5	27
74430.W0012	Black	Male thread	13	M 4	10.0	24.5	4.0	30.5	12	30	3.5	27
74430.W0014	Orange	Male thread	13	M 4	10.0	24.5	4.0	30.5	16	30	3.5	27
74430.W0016	Black	Male thread	13	M 4	10.0	24.5	4.0	30.5	16	30	3.5	27
74430.W0018	Orange	Male thread	13	M 4	10.0	24.5	4.0	30.5	20	30	3.5	27
74430.W0020	Black	Male thread	13	M 4	10.0	24.5	4.0	30.5	20	30	3.5	27
74430.W0022	Orange	Male thread	13	M 4	10.0	24.5	4.0	30.5	25	30	3.5	28
74430.W0024	Black	Male thread	13	M 4	10.0	24.5	4.0	30.5	25	30	3.5	28
74430.W0026	Orange	Male thread	13	M 4	10.0	24.5	4.0	30.5	32	30	3.5	28
74430.W0028	Black	Male thread	13	M 4	10.0	24.5	4.0	30.5	32	30	3.5	28
74430.W0041	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	12	45	3.0	36
74430.W0043	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	12	45	3.0	36
74430.W0044	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	12	45	3.0	36
74430.W0051	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	16	45	3.0	36
74430.W0053	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	16	45	3.0	36
74430.W0054	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	16	45	3.0	36
74430.W0061	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	20	45	3.0	37
74430.W0063	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	20	45	3.0	37
74430.W0064	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	20	45	3.0	37
74430.W0071	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	25	45	3.0	38
74430.W0073	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	25	45	3.0	38
74430.W0074	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	25	45	3.0	38
74430.W0081	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	32	45	3.0	38
74430.W0083	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	32	45	3.0	38
74430.W0084	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	32	45	3.0	38
74430.W0086	Orange	Male thread	14	M 5	10.0	24.5	4.0	35.0	40	45	3.0	39
74430.W0088	Grey	Male thread	14	M 5	10.0	24.5	4.0	35.0	40	45	3.0	39
74430.W0089	Black	Male thread	14	M 5	10.0	24.5	4.0	35.0	40	45	3.0	39
74430.W0131	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	12	45	3.0	37
74430.W0133	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	12	45	3.0	37
74430.W0134	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	12	45	3.0	37
74430.W0141	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	16	45	3.0	37
74430.W0143	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	16	45	3.0	37

Adjustable Clamping Levers
with grub screw

Order No.	Colour	Finish	d_1	d_2	d_3	h_1	h_2	h_3	l_1	l_2	Stroke s_1	Weight g
74430.W0144	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	16	45	3.0	37
74430.W0151	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	20	45	3.0	38
74430.W0153	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	20	45	3.0	38
74430.W0154	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	20	45	3.0	38
74430.W0161	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	25	45	3.0	39
74430.W0163	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	25	45	3.0	39
74430.W0164	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	25	45	3.0	39
74430.W0171	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	32	45	3.0	40
74430.W0173	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	32	45	3.0	40
74430.W0174	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	32	45	3.0	40
74430.W0181	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	40	45	3.0	41
74430.W0183	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	40	45	3.0	41
74430.W0184	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	40	45	3.0	41
74430.W0191	Orange	Male thread	14	M 6	10.0	24.5	4.0	35.0	50	45	3.0	43
74430.W0193	Grey	Male thread	14	M 6	10.0	24.5	4.0	35.0	50	45	3.0	43
74430.W0194	Black	Male thread	14	M 6	10.0	24.5	4.0	35.0	50	45	3.0	43
74430.W0221	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	16	62	3.0	72
74430.W0223	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	16	62	3.0	72
74430.W0224	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	16	62	3.0	72
74430.W0231	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	20	62	3.0	72
74430.W0233	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	20	62	3.0	72
74430.W0234	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	20	62	3.0	72
74430.W0241	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	25	62	3.0	74
74430.W0243	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	25	62	3.0	74
74430.W0244	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	25	62	3.0	74
74430.W0251	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	32	62	3.0	74
74430.W0253	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	32	62	3.0	74
74430.W0254	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	32	62	3.0	74
74430.W0261	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	40	62	3.0	76
74430.W0263	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	40	62	3.0	76
74430.W0264	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	40	62	3.0	76
74430.W0271	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	50	62	3.0	76
74430.W0273	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	50	62	3.0	76
74430.W0274	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	50	62	3.0	76
74430.W0281	Orange	Male thread	18	M 6	13.5	31.0	6.5	45.0	63	62	3.0	80
74430.W0283	Grey	Male thread	18	M 6	13.5	31.0	6.5	45.0	63	62	3.0	80
74430.W0284	Black	Male thread	18	M 6	13.5	31.0	6.5	45.0	63	62	3.0	80
74430.W0331	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	16	62	3.0	74
74430.W0333	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	16	62	3.0	74
74430.W0334	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	16	62	3.0	74
74430.W0341	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	20	62	3.0	76
74430.W0343	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	20	62	3.0	76
74430.W0344	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	20	62	3.0	76
74430.W0351	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	25	62	3.0	77
74430.W0353	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	25	62	3.0	77
74430.W0354	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	25	62	3.0	77
74430.W0361	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	32	62	3.0	79
74430.W0363	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	32	62	3.0	79
74430.W0364	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	32	62	3.0	79
74430.W0371	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	40	62	3.0	81
74430.W0373	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	40	62	3.0	81
74430.W0374	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	40	62	3.0	81
74430.W0381	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	50	62	3.0	84
74430.W0383	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	50	62	3.0	84
74430.W0384	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	50	62	3.0	84
74430.W0391	Orange	Male thread	18	M 8	13.5	31.0	6.5	45.0	63	62	3.0	89
74430.W0393	Grey	Male thread	18	M 8	13.5	31.0	6.5	45.0	63	62	3.0	89
74430.W0394	Black	Male thread	18	M 8	13.5	31.0	6.5	45.0	63	62	3.0	89
74430.W0441	Orange	Male thread	22	M 10	16.0	36.0	8.0	52.0	20	74	3.5	128
74430.W0443	Grey	Male thread	22	M 10	16.0	36.0	8.0	52.0	20	74	3.5	128
74430.W0444	Black	Male thread	22	M 10	16.0	36.0	8.0	52.0	20	74	3.5	128
74430.W0451	Orange	Male thread	22	M 10	16.0	36.0	8.0	52.0	25	74	3.5	130
74430.W0453	Grey	Male thread	22	M 10	16.0	36.0	8.0	52.0	25	74	3.5	130
74430.W0454	Black	Male thread	22	M 10	16.0	36.0	8.0	52.0	25	74	3.5	130
74430.W0461	Orange	Male thread	22	M 10	16.0	36.0	8.0	52.0	32	74	3.5	134
74430.W0463	Grey	Male thread	22	M 10	16.0	36.0	8.0	52.0	32	74	3.5	134
74430.W0464	Black	Male thread	22	M 10	16.0	36.0	8.0	52.0	32	74	3.5	134
74430.W0471	Orange	Male thread	22	M 10	16.0	36.0	8.0	52.0	40	74	3.5	138



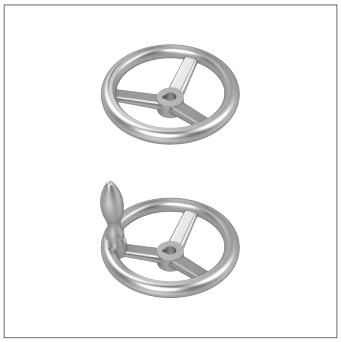
77010

Material
Standard: Duroplast, black. Zinc plated steel hub.
Reinforced: Duroplast with glass fibre beads of increased strength, black zinc plated steel hub.

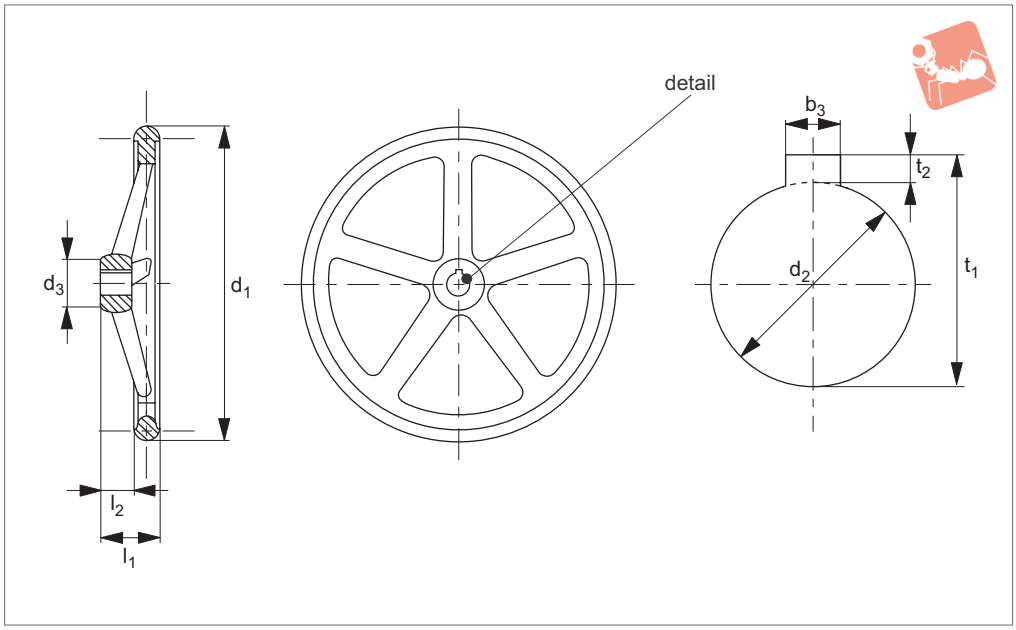
Technical Notes
The pilot hole allows various sizes of holes, keyways etc. to be machined into the boss.

Order No.	d_1	d_3	Weight g
77010.W0100	100	24	159
77010.W0125	125	24	240
77010.W0150	150	32	380
77010.W0175	175	40	603
77010.W0200	200	40	736
77010.W0250	250	48	1200
77010.W0300	300	58	2032
77010.W0500	100	24	162
77010.W0525	125	24	260
77010.W0550	150	32	385
77010.W0575	175	40	611
77010.W0700	200	40	761
77010.W0750	250	48	1210
77010.W0800	300	58	2015

Aluminium Handwheels



77120



Material
Aluminium, deburred. Hub machined, rim polished. For corresponding handle details see no. 75060.

Technical Notes
Produced to DIN 950.

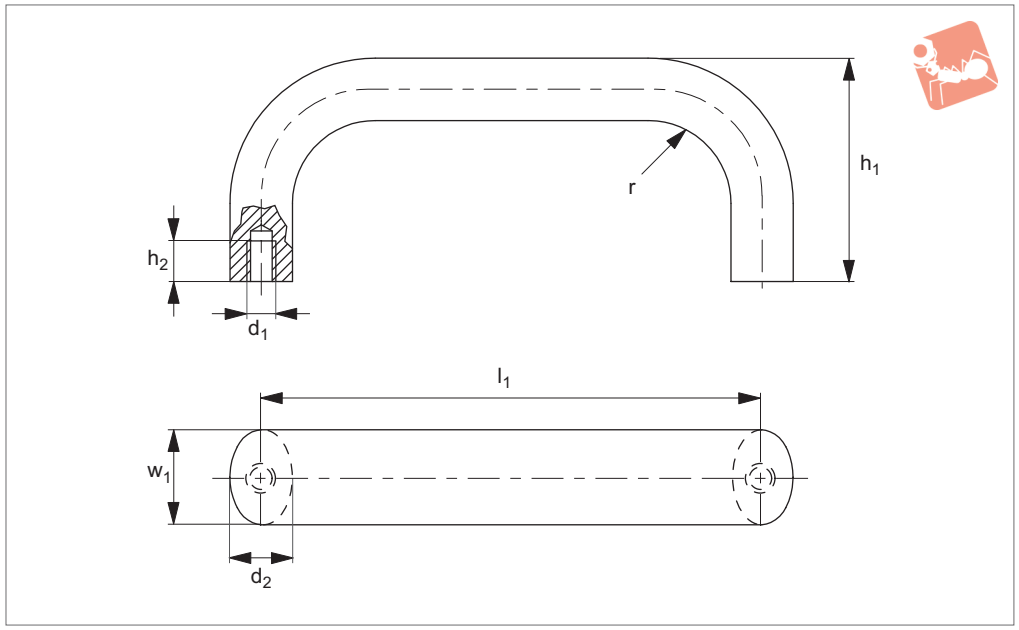
For keyways information (dim. t_1 and b_3) to DIN 6885.

Order No.	Type	Bore dia.	d_1	d_2	d_2	d_3	l_1	l_2	No. of spokes	Corresp. handle dia.	Weight g
77120.W0000	W/o Keyway, W/o Handle	d_2 Small	80	10	12	24	29	16	3	-	92
77120.W0001	W/o Keyway, W/o Handle	d_2 Large	80	10	12	24	29	16	3	-	92
77120.W0005	W/o Keyway, W/o Handle	d_2 Small	100	10	12	26	33	17	3	-	160
77120.W0006	W/o Keyway, W/o Handle	d_2 Large	100	10	12	26	33	17	3	-	160
77120.W0010	W/o Keyway, W/o Handle	d_2 Small	125	12	14	28	36	18	3	-	237
77120.W0011	W/o Keyway, W/o Handle	d_2 Large	125	12	14	28	36	18	3	-	237
77120.W0015	W/o Keyway, W/o Handle	d_2 Small	140	14	16	30	39	19	3	-	295
77120.W0016	W/o Keyway, W/o Handle	d_2 Large	140	14	16	30	39	19	3	-	295
77120.W0020	W/o Keyway, W/o Handle	d_2 Small	160	14	16	32	40	20	3	-	435
77120.W0021	W/o Keyway, W/o Handle	d_2 Large	160	14	16	32	40	20	3	-	435
77120.W0030	W/o Keyway, W/o Handle	d_2 Small	200	18	22	38	45	24	3	-	783
77120.W0031	W/o Keyway, W/o Handle	d_2 Large	200	18	22	38	45	24	3	-	783
77120.W0040	W/o Keyway, W/o Handle	d_2 Small	250	22	26	45	50	28	5	-	1509
77120.W0041	W/o Keyway, W/o Handle	d_2 Large	250	22	26	45	50	28	5	-	1509
77120.W0045	W/o Keyway, W/o Handle	d_2 Small	315	26	30	53	56	33	5	-	2440
77120.W0046	W/o Keyway, W/o Handle	d_2 Large	315	26	30	53	56	33	5	-	2440
77120.W0050	W/o Keyway, W/o Handle	d_2 Small	400	30	34	65	63	38	5	-	3740
77120.W0051	W/o Keyway, W/o Handle	d_2 Large	400	30	34	65	63	38	5	-	3740
77120.W0100	With Keyway, W/o Handle	d_2 Small	80	10	12	24	29	16	3	-	99
77120.W0101	With Keyway, W/o Handle	d_2 Large	80	10	12	24	29	16	3	-	99
77120.W0105	With Keyway, W/o Handle	d_2 Small	100	10	12	26	33	17	3	-	171
77120.W0106	With Keyway, W/o Handle	d_2 Large	100	10	12	26	33	17	3	-	171
77120.W0110	With Keyway, W/o Handle	d_2 Small	125	12	14	28	36	18	3	-	232
77120.W0111	With Keyway, W/o Handle	d_2 Large	125	12	14	28	36	18	3	-	232
77120.W0115	With Keyway, W/o Handle	d_2 Small	140	14	16	30	39	19	3	-	309
77120.W0116	With Keyway, W/o Handle	d_2 Large	140	14	16	30	39	19	3	-	309
77120.W0120	With Keyway, W/o Handle	d_2 Small	160	14	16	32	40	20	3	-	422
77120.W0121	With Keyway, W/o Handle	d_2 Large	160	14	16	32	40	20	3	-	422
77120.W0130	With Keyway, W/o Handle	d_2 Small	200	18	22	38	45	24	3	-	779
77120.W0131	With Keyway, W/o Handle	d_2 Large	200	18	26	38	45	24	3	-	779
77120.W0140	With Keyway, W/o Handle	d_2 Small	250	22	26	45	50	28	5	-	1511
77120.W0141	With Keyway, W/o Handle	d_2 Large	250	22	26	45	50	28	5	-	1511
77120.W0145	With Keyway, W/o Handle	d_2 Small	315	26	30	53	56	33	5	-	2500
77120.W0146	With Keyway, W/o Handle	d_2 Large	315	26	30	53	56	33	5	-	2500

Order No.	Type	Bore dia.	d_1	d_2	d_2	d_3	l_1	l_2	No. of spokes	Corresp. handle dia.	Weight g
77120.W0150	With Keyway, W/o Handle	d_2 Small	400	30	34	65	63	38	5	-	3600
77120.W0151	With Keyway, W/o Handle	d_2 Large	400	30	34	65	63	38	5	-	3600
77120.W0200	W/o Keyway, Rotating Handle	d_2 Small	80	10	12	24	29	16	3	16	150
77120.W0201	W/o Keyway, Rotating Handle	d_2 Large	80	10	12	24	29	16	3	16	150
77120.W0205	W/o Keyway, Rotating Handle	d_2 Small	100	10	12	26	33	17	3	16	210
77120.W0206	W/o Keyway, Rotating Handle	d_2 Large	100	10	12	26	33	17	3	16	210
77120.W0210	W/o Keyway, Rotating Handle	d_2 Small	125	12	14	28	36	18	3	20	340
77120.W0211	W/o Keyway, Rotating Handle	d_2 Large	125	12	14	28	36	18	3	20	340
77120.W0215	W/o Keyway, Rotating Handle	d_2 Small	140	14	16	30	39	19	3	20	430
77120.W0216	W/o Keyway, Rotating Handle	d_2 Large	140	14	16	30	39	19	3	20	430
77120.W0220	W/o Keyway, Rotating Handle	d_2 Small	160	14	16	32	40	20	3	25	615
77120.W0221	W/o Keyway, Rotating Handle	d_2 Large	160	14	16	32	40	20	3	25	615
77120.W0230	W/o Keyway, Rotating Handle	d_2 Small	200	18	22	38	45	24	3	25	970
77120.W0231	W/o Keyway, Rotating Handle	d_2 Large	200	18	22	38	45	24	3	25	970
77120.W0240	W/o Keyway, Rotating Handle	d_2 Small	250	22	26	45	50	28	5	32	1885
77120.W0241	W/o Keyway, Rotating Handle	d_2 Large	250	22	26	45	50	28	5	32	1885
77120.W0245	W/o Keyway, Rotating Handle	d_2 Small	315	26	30	53	56	33	5	32	2885
77120.W0246	W/o Keyway, Rotating Handle	d_2 Large	315	26	30	53	56	33	5	32	2885
77120.W0250	W/o Keyway, Rotating Handle	d_2 Small	400	30	34	65	63	38	5	36	4250
77120.W0251	W/o Keyway, Rotating Handle	d_2 Large	400	30	34	65	63	38	5	36	4250
77120.W0300	With Keyway, Rotating Handle	d_2 Small	80	10	12	24	29	16	3	16	150
77120.W0301	With Keyway, Rotating Handle	d_2 Large	80	10	12	24	29	16	3	16	150
77120.W0305	With Keyway, Rotating Handle	d_2 Small	100	10	12	26	33	17	3	16	210
77120.W0306	With Keyway, Rotating Handle	d_2 Large	100	10	12	26	33	17	3	16	210
77120.W0310	With Keyway, Rotating Handle	d_2 Small	125	12	14	28	36	18	3	20	340
77120.W0311	With Keyway, Rotating Handle	d_2 Large	125	12	14	28	36	18	3	20	340
77120.W0315	With Keyway, Rotating Handle	d_2 Small	140	14	16	30	39	19	3	20	430
77120.W0316	With Keyway, Rotating Handle	d_2 Large	140	14	16	30	39	19	3	20	430
77120.W0320	With Keyway, Rotating Handle	d_2 Small	160	14	16	32	40	20	3	25	615
77120.W0321	With Keyway, Rotating Handle	d_2 Large	160	14	16	32	40	20	3	25	615
77120.W0330	With Keyway, Rotating Handle	d_2 Small	200	18	22	38	45	24	3	25	970
77120.W0331	With Keyway, Rotating Handle	d_2 Large	200	18	22	38	45	24	3	25	970
77120.W0340	With Keyway, Rotating Handle	d_2 Small	250	22	26	45	50	28	5	32	1885
77120.W0341	With Keyway, Rotating Handle	d_2 Large	250	22	26	45	50	28	5	32	1885
77120.W0345	With Keyway, Rotating Handle	d_2 Small	315	26	30	53	56	33	5	32	2885
77120.W0346	With Keyway, Rotating Handle	d_2 Large	315	26	30	53	56	33	5	32	2885
77120.W0350	With Keyway, Rotating Handle	d_2 Small	400	30	34	65	63	38	5	36	4250
77120.W0351	With Keyway, Rotating Handle	d_2 Large	400	30	34	65	63	38	5	36	4250
77120.W0400	W/o Keyway, Fixed Handle	d_2 Small	80	10	12	24	29	16	3	16	150
77120.W0401	W/o Keyway, Fixed Handle	d_2 Large	80	10	12	24	29	16	3	16	150
77120.W0405	W/o Keyway, Fixed Handle	d_2 Small	100	10	12	26	33	17	3	16	210
77120.W0406	W/o Keyway, Fixed Handle	d_2 Large	100	10	12	26	33	17	3	16	210
77120.W0410	W/o Keyway, Fixed Handle	d_2 Small	125	12	14	28	36	18	3	20	340
77120.W0411	W/o Keyway, Fixed Handle	d_2 Large	125	12	14	28	36	18	3	20	340
77120.W0415	W/o Keyway, Fixed Handle	d_2 Small	140	14	16	30	39	19	3	20	420
77120.W0416	W/o Keyway, Fixed Handle	d_2 Large	140	14	16	30	39	19	3	20	420
77120.W0420	W/o Keyway, Fixed Handle	d_2 Small	160	14	16	32	40	20	3	25	615
77120.W0421	W/o Keyway, Fixed Handle	d_2 Large	160	14	16	32	40	20	3	25	615
77120.W0430	W/o Keyway, Fixed Handle	d_2 Small	200	18	22	38	45	24	3	25	970
77120.W0431	W/o Keyway, Fixed Handle	d_2 Large	200	18	22	38	45	24	3	25	970
77120.W0440	W/o Keyway, Fixed Handle	d_2 Small	250	22	26	45	50	28	5	32	1860
77120.W0441	W/o Keyway, Fixed Handle	d_2 Large	250	22	26	45	50	28	5	32	1860
77120.W0445	W/o Keyway, Fixed Handle	d_2 Small	315	26	30	53	56	33	5	32	2860
77120.W0446	W/o Keyway, Fixed Handle	d_2 Large	315	26	30	53	56	33	5	32	2860
77120.W0450	W/o Keyway, Fixed Handle	d_2 Small	400	30	34	65	63	38	5	36	4210
77120.W0451	W/o Keyway, Fixed Handle	d_2 Large	400	30	34	65	63	38	5	36	4210
77120.W0500	With Keyway, Fixed Handle	d_2 Small	80	10	12	24	29	16	3	16	150
77120.W0501	With Keyway, Fixed Handle	d_2 Large	80	10	12	24	29	16	3	16	150
77120.W0505	With Keyway, Fixed Handle	d_2 Small	100	10	12	26	33	17	3	16	210
77120.W0506	With Keyway, Fixed Handle	d_2 Large	100	10	12	26	33	17	3	16	210
77120.W0510	With Keyway, Fixed Handle	d_2 Small	125	12	14	28	36	18	3	20	330
77120.W0511	With Keyway, Fixed Handle	d_2 Large	125	12	14	28	36	18	3	20	330
77120.W0515	With Keyway, Fixed Handle	d_2 Small	140	14	16	30	39	19	3	20	420
77120.W0516	With Keyway, Fixed Handle	d_2 Large	140	14	16	30	39	19	3	20	420
77120.W0520	With Keyway, Fixed Handle	d_2 Small	160	14	16	32	40	20	3	25	610
77120.W0521	With Keyway, Fixed Handle	d_2 Large	160	14	16	32	40	20	3	25	610
77120.W0530	With Keyway, Fixed Handle	d_2 Small	200	18	22	38	45	24	3	25	960
77120.W0531	With Keyway, Fixed Handle	d_2 Large	200	18	22	38	45	24	3	25	960

Aluminium Handwheels

Order No.	Type	Bore dia.	d_1	d_2	d_2	d_3	l_1	l_2	No. of spokes	Corresp. handle dia.	Weight g
77120.W0540	With Keyway, Fixed Handle	d_2 Small	250	22	26	45	50	28	5	32	1860
77120.W0541	With Keyway, Fixed Handle	d_2 Large	250	22	26	45	50	28	5	32	1860
77120.W0545	With Keyway, Fixed Handle	d_2 Small	315	26	30	53	56	33	5	32	2860
77120.W0546	With Keyway, Fixed Handle	d_2 Large	315	26	30	53	56	33	5	32	2860
77120.W0550	With Keyway, Fixed Handle	d_2 Small	400	30	34	65	65	38	5	36	4210
77120.W0551	With Keyway, Fixed Handle	d_2 Large	400	30	34	65	65	38	5	36	4210



78000

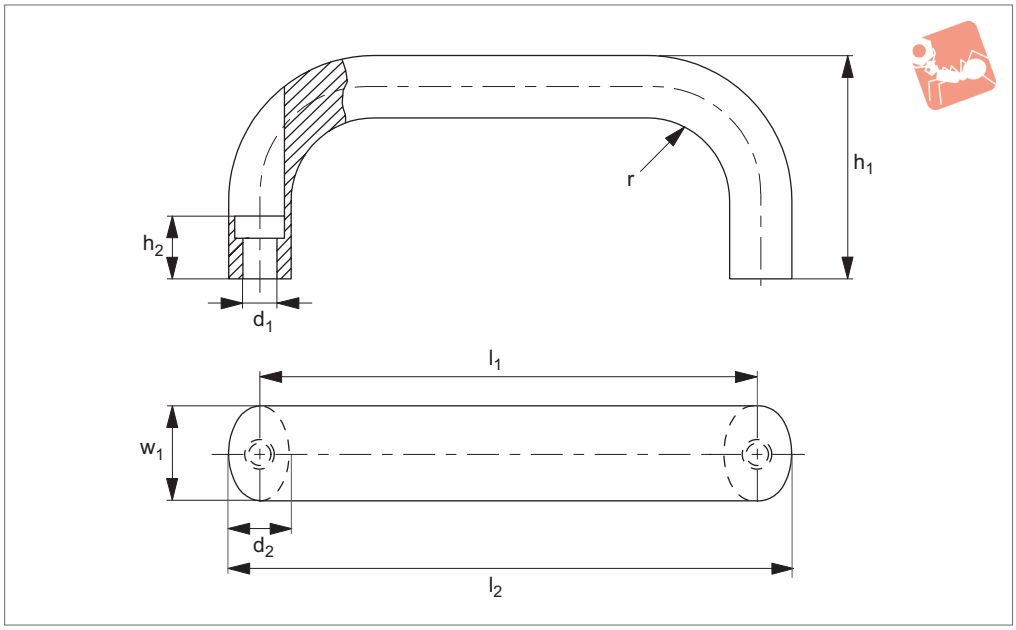
Material
Aluminium: plastic coated, black RAL9005
Natural silver anodised, bright.

Technical Notes
Ergonomic design offering high stability and smooth surfaces.

Order No.	Colour	l_1	w_1	h_1	d_1	d_2	h_2	r	Weight g
78000.W0010	Black	100	20	47	M 6	13	10	13	92
78000.W0011	Black	112	20	49	M 6	13	10	13	97
78000.W0012	Black	128	20	51	M 6	13	10	13	110
78000.W0013	Black	117	20	49	M 6	13	10	13	100
78000.W0014	Black	120	20	49	M 6	13	10	13	97
78000.W0016	Black	160	20	51	M 6	13	10	13	126
78000.W0111	Black	112	26	53	M 8	17	12	17	165
78000.W0112	Black	128	26	55	M 8	17	12	17	181
78000.W0113	Black	117	26	55	M 8	17	12	17	166
78000.W0114	Black	120	26	55	M 8	17	12	17	200
78000.W0115	Black	125	26	55	M 8	17	12	17	180
78000.W0116	Black	160	26	57	M 8	17	12	17	219
78000.W0117	Black	179	26	57	M 8	17	12	17	234
78000.W0119	Black	192	26	57	M 8	17	12	17	250
78000.W0130	Black	300	26	57	M 8	17	12	17	347
78000.W0140	Black	400	26	57	M 8	17	12	17	445
78000.W0150	Black	500	26	57	M 8	17	12	17	538
78000.W0210	Natural	100	20	47	M 6	13	10	13	92
78000.W0211	Natural	112	20	49	M 6	13	10	13	97
78000.W0212	Natural	128	20	51	M 6	13	10	13	110
78000.W0213	Natural	117	20	49	M 6	13	10	13	100
78000.W0214	Natural	120	20	49	M 6	13	10	13	97
78000.W0216	Natural	160	20	51	M 6	13	10	13	126
78000.W0311	Natural	112	26	53	M 8	17	12	17	165
78000.W0312	Natural	128	26	55	M 8	17	12	17	181
78000.W0313	Natural	117	26	55	M 8	17	12	17	166
78000.W0314	Natural	120	26	55	M 8	17	12	17	200
78000.W0315	Natural	125	26	55	M 8	17	12	17	180
78000.W0316	Natural	160	26	57	M 8	17	12	17	219
78000.W0317	Natural	179	26	57	M 8	17	12	17	234
78000.W0319	Natural	192	26	57	M 8	17	12	17	250
78000.W0330	Natural	300	26	57	M 8	17	12	17	347
78000.W0340	Natural	400	26	57	M 8	17	12	17	445
78000.W0350	Natural	500	26	57	M 8	17	12	17	538

Cabinet Handles
aluminium, front mounting

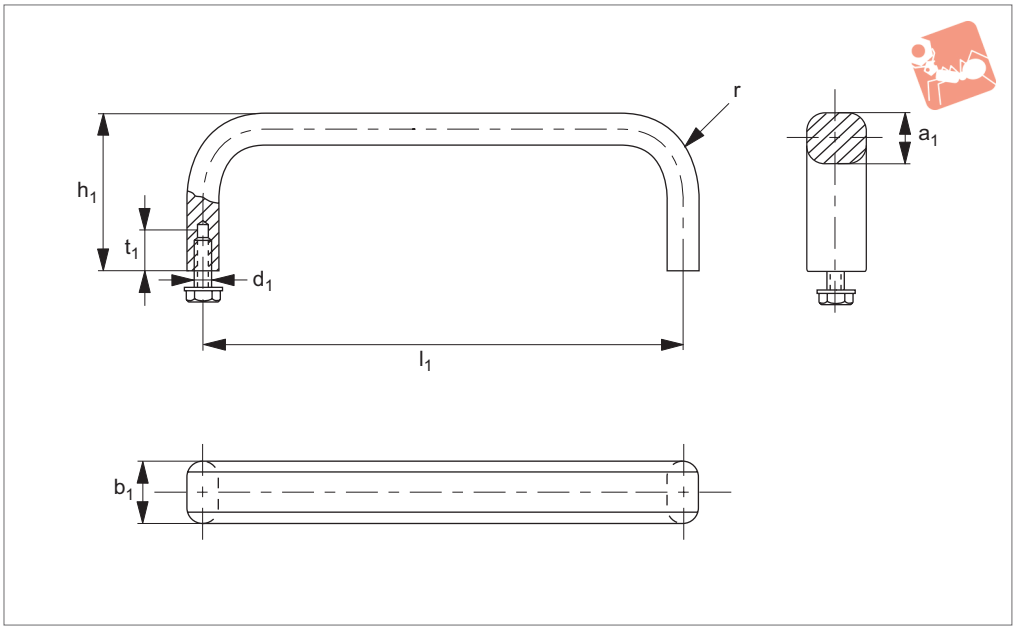
78010



Material
Aluminium: plastic coated, black RAL 9005
Natural silver, bright.

Technical Notes
Ergonomic design offering high stability and smooth surfaces.

Order No.	Colour	l_1	w_1	h_1	d_1	d_2	l_2	h_2	For cylinder screw	r	Weight g
78010.W0100	Black	100	20	49	5.4	13	113	19	M 5	13	80
78010.W0103	Black	112	20	49	5.4	13	125	19	M 5	13	82
78010.W0106	Black	128	20	51	5.4	13	141	19	M 5	13	100
78010.W0109	Black	160	20	51	5.4	13	173	19	M 5	13	100
78010.W0111	Black	116	26	55	6.4	17	133	17	M 6	17	146
78010.W0113	Black	132	26	55	6.4	17	149	17	M 6	17	164
78010.W0116	Black	164	26	57	6.4	17	181	17	M 6	17	206
78010.W0119	Black	196	26	57	6.4	17	213	17	M 6	17	232
78010.W0300	Natural	100	20	49	5.4	13	113	19	M 5	13	80
78010.W0303	Natural	112	20	49	5.4	13	125	19	M 5	13	82
78010.W0306	Natural	128	20	51	5.4	13	141	19	M 5	13	100
78010.W0309	Natural	160	20	51	5.4	13	173	19	M 5	13	100
78010.W0311	Natural	116	26	55	6.4	17	133	17	M 6	17	146
78010.W0313	Natural	132	26	55	6.4	17	149	17	M 6	17	164
78010.W0316	Natural	164	26	57	6.4	17	181	17	M 6	17	206
78010.W0319	Natural	196	26	57	6.4	17	213	17	M 6	17	232
78010.W0511	Stainless	160	20	49	5.4	13	173	19	M 5	13	258
78010.W0521	Stainless	128	20	49	5.4	13	141	19	M 5	13	293
78010.W0531	Stainless	160	20	51	5.4	13	173	19	M 5	13	345



78920

Material
Stainless steel X12 CrNiS 18 8, 1.4305 (AISI 303).
Finish: vibration ground with a semi-matte finish.

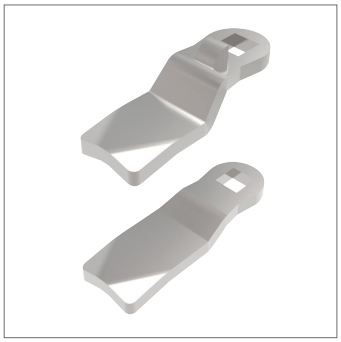
Technical Notes
Supplied with hex screws DIN 933 and suitable washer. Minimum stress resistance >1000N.

Tips
Attractively shaped handles for all applications, with high corrosive and chemical resistance. Other dimensions on request.

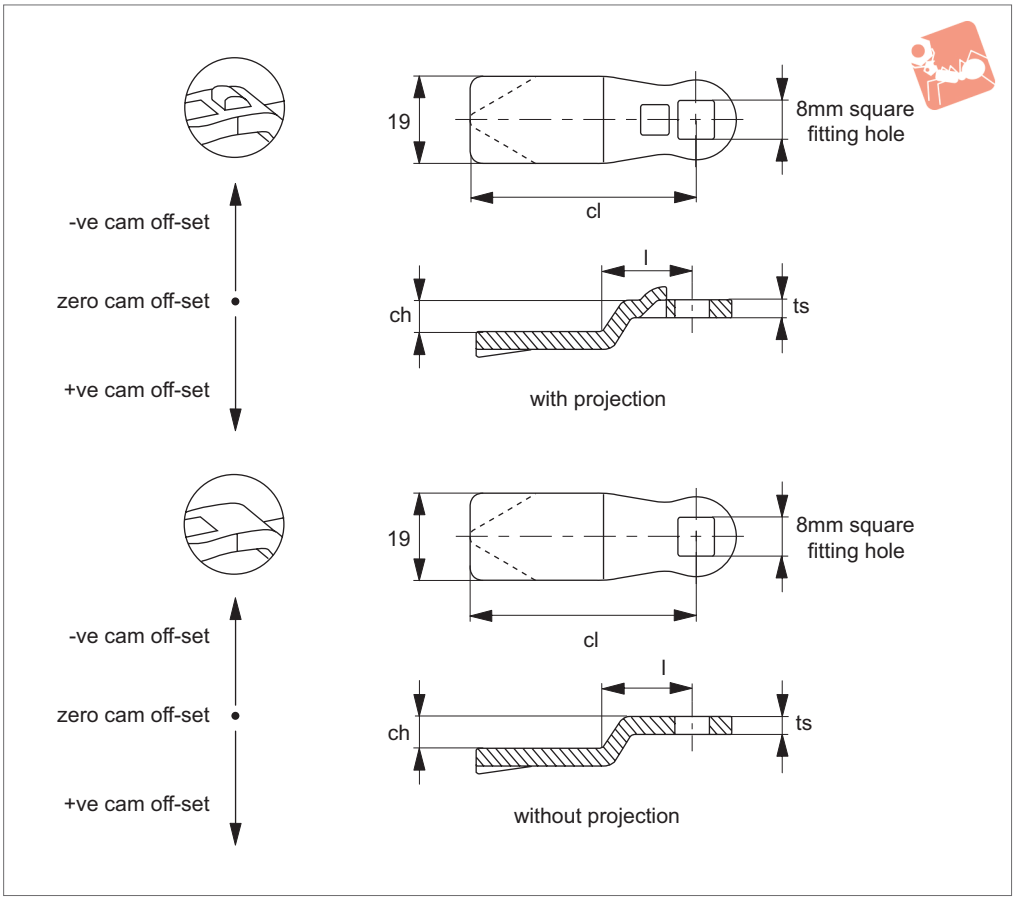
Order No.	Type	l_1	a_1	b_1	d_1	h_1	r	t_1
78920.W0010	Narrow	100	8	12.0	M 5x10	40	22	10
78920.W0012	Narrow	120	8	12.0	M 5x10	40	22	10
78920.W0015	Narrow	150	8	12.0	M 5x10	40	22	10
78920.W0018	Narrow	180	8	12.0	M 5x10	40	22	10
78920.W0025	Narrow	250	8	12.0	M 5x10	40	22	10
78920.W0035	Narrow	350	8	12.0	M 5x10	40	22	10
78920.W0110	Wide	100	10	19.5	M 6x12	45	24	12
78920.W0112	Wide	120	10	19.5	M 6x12	45	24	12
78920.W0115	Wide	150	10	19.5	M 6x12	45	24	12
78920.W0118	Wide	180	10	19.5	M 6x12	45	24	12
78920.W0125	Wide	250	10	19.5	M 6x12	45	24	12
78920.W0135	Wide	350	10	19.5	M 6x12	45	24	12

Single Point Cams - Flexi-System

for cam latches and locks - steel - 8 x 8 Sq.



A0203



Material

Steel, zinc plated.

Technical Notes

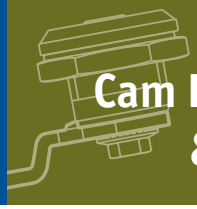
Use formula to calculate ch (required cam off-set), and select from product table below;
ch = h - lh where;

ch = required cam off-set/height.
h = grip length (distance between inside of latch face and front of cam).
lh = body length of cam latch/lock to be used (see individual latch/lock product table).
Refer to installation drawing below.

Important Notes

Suitable for Flexi-System latches. „With projection" type ensures correct location and prevents cam rotating over 45°. **See cam selection chart for specific latch/lock suitability - available online.**
Sold subject to pack quantity.

Order No.	Type	ch	cl	ts	Where lh = 18	Where lh = 18.5	Where lh = 20	Where lh = 24	Where lh = 30	Where lh = 40	Where lh = 50	Where lh = 60
A0203.AW0300	With Projection	0	35	3.0	18.5	20.0	24.0	30	40	50	60	52
A0203.AW0302	With Projection	2	35	3.0	20.5	22.0	26.0	32	42	52	62	52
A0203.AW0304	With Projection	4	35	3.0	22.5	24.0	28.0	34	44	54	64	52
A0203.AW0308	With Projection	8	35	3.0	26.5	28.0	32.0	38	48	58	68	52
A0203.AW0310	With Projection	10	35	3.0	28.5	30.0	34.0	40	50	60	70	52
A0203.AW0400	With Projection	0	45	3.0	18.0	18.5	20.0	24	30	40	50	60
A0203.AW0402	With Projection	2	45	3.0	20.5	22.0	26.0	32	42	52	62	52
A0203.AW0403	With Projection	3	45	3.0	21.0	21.5	23.0	27	33	43	53	63
A0203.AW0404	With Projection	4	45	3.0	22.0	22.5	24.0	28	34	44	54	64
A0203.AW0406	With Projection	6	45	3.0	24.0	24.5	26.0	30	36	46	56	66
A0203.AW0407	With Projection	7	45	3.0	25.0	25.5	27.0	31	37	47	57	67
A0203.AW0408	With Projection	8	45	3.0	26.0	26.5	28.0	32	38	48	58	68
A0203.AW0410	With Projection	10	45	3.0	28.0	28.5	30.0	34	40	50	60	70
A0203.AW0412	With Projection	12	45	3.0	30.0	30.5	32.0	36	42	52	62	72
A0203.AW0414	With Projection	14	45	3.0	32.0	32.5	34.0	38	44	54	64	74
A0203.AW0416	With Projection	16	45	3.0	34.0	34.5	36.0	40	46	56	66	76
A0203.AW0418	With Projection	18	45	3.0	36.0	36.5	38.0	42	48	58	68	78
A0203.AW0420	With Projection	20	45	3.0	38.0	38.5	40.0	44	50	60	70	80
A0203.AW1302	With Projection	-2	35	3.0	16.5	18.0	22.0	28	38	48	58	52

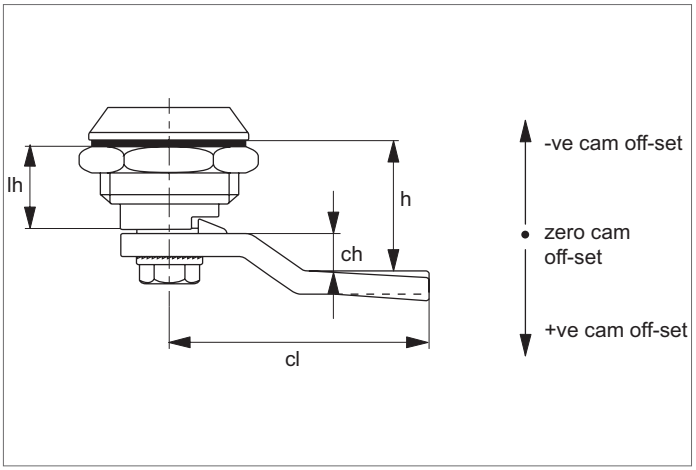


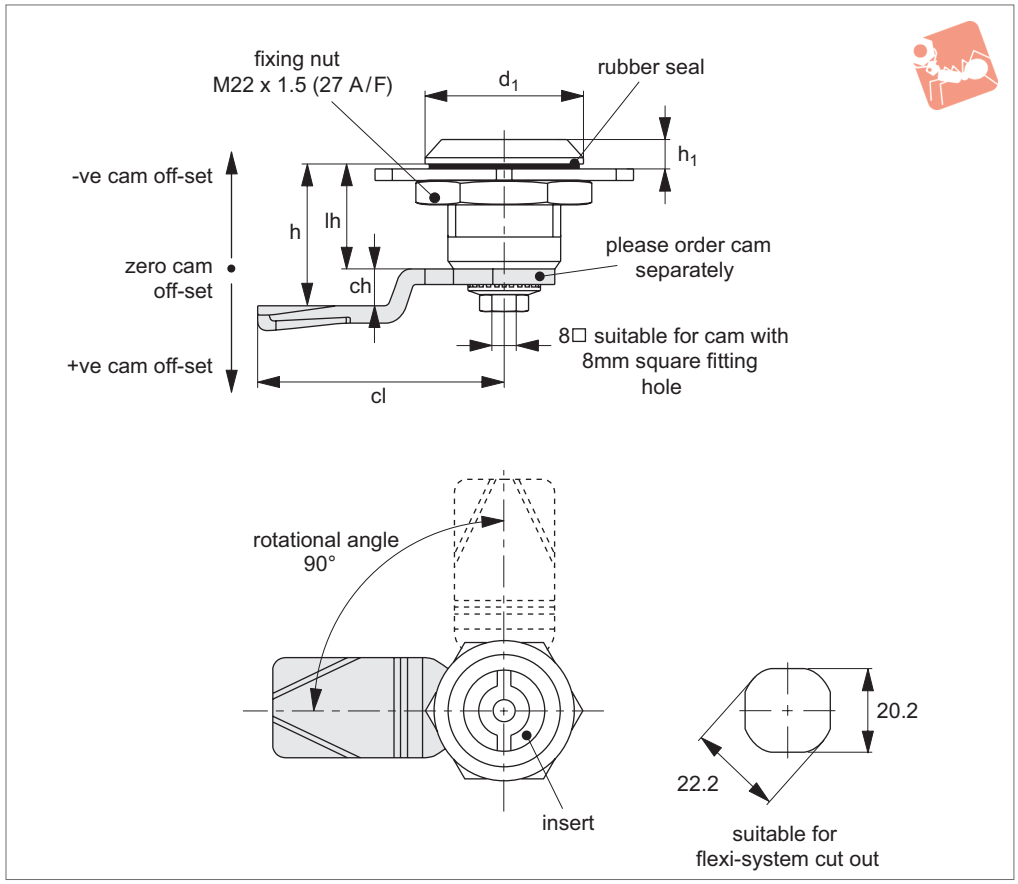
Order No.	Type	ch	cl	ts	Where lh = 18	Where lh = 18.5	Where lh = 20	Where lh = 24	Where lh = 30	Where lh = 40	Where lh = 50	Where lh = 60
A0203.AW1402	With Projection	-2	45	3.0	16.0	16.5	18.0	22	28	38	48	58
A0203.AW1404	With Projection	-4	45	3.0	14.5	16.0	20.0	26	36	46	56	52
A0203.AW1406	With Projection	-6	45	3.0	12.5	14.0	18.0	24	34	44	54	52
A0203.AW1408	With Projection	-8	45	3.0	10.5	12.0	16.0	22	32	42	52	52
A0203.AW5300	W/o Projection	0	35	4.0	18.0	18.5	20.0	24	30	40	50	60
A0203.AW5302	W/o Projection	2	35	4.0	20.0	20.5	22.0	26	32	42	52	62
A0203.AW5304	W/o Projection	4	35	4.0	22.0	22.5	24.0	28	34	44	54	64
A0203.AW5306	W/o Projection	6	35	4.0	24.0	24.5	26.0	30	36	46	56	66
A0203.AW5310	W/o Projection	10	35	4.0	28.0	28.5	30.0	34	40	50	60	70
A0203.AW5400	W/o Projection	0	45	3.0	18.0	18.5	20.0	24	30	40	50	60
A0203.AW5402	W/o Projection	2	45	3.0	20.0	20.5	22.0	26	32	42	52	62
A0203.AW5403	W/o Projection	3	45	21.0	21.5	23.0	27.0	33	43	53	63	52
A0203.AW5404	W/o Projection	4	45	3.0	22.0	22.5	24.0	28	34	44	54	64
A0203.AW5406	W/o Projection	6	45	3.0	24.0	24.5	26.0	30	36	46	56	66
A0203.AW5407	W/o Projection	7	45	3.0	25.0	25.5	27.0	31	37	47	57	67
A0203.AW5408	W/o Projection	8	45	3.0	26.0	26.5	28.0	32	38	48	58	68
A0203.AW5410	W/o Projection	10	45	3.0	28.0	28.5	30.0	34	40	50	60	70
A0203.AW5412	W/o Projection	12	45	3.0	30.0	30.5	32.0	36	42	52	62	72
A0203.AW5414	W/o Projection	14	45	3.0	32.0	32.5	34.0	38	44	54	64	74
A0203.AW5416	W/o Projection	16	45	3.0	34.0	34.5	36.0	40	46	56	66	76
A0203.AW5418	W/o Projection	18	45	3.0	36.0	36.5	38.0	42	48	58	68	78
A0203.AW5420	W/o Projection	20	45	3.0	38.0	38.5	40.0	44	50	60	70	80
A0203.AW6302	W/o Projection	-2	35	4.0	16.0	16.5	18.0	22	28	38	48	64
A0203.AW6402	W/o Projection	-2	45	3.0	16.0	16.5	18.0	22	28	38	48	58
A0203.AW6404	W/o Projection	-4	45	4.0	14.0	14.5	16.0	20	26	36	46	56
A0203.AW6406	W/o Projection	-6	45	4.0	12.0	12.5	14.0	18	24	34	44	54
A0203.AW6408	W/o Projection	-8	45	4.0	10.5	12.0	16.0	22	32	42	52	52
A0203.AW6494	With Projection	-4	45	14.0	14.5	16.0	20.0	26	36	46	56	52
A0203.AW6496	With Projection	-6	45	12.0	12.5	14.0	18.0	24	34	44	54	52
A0203.AW6498	With Projection	-8	45	10.0	10.5	12.0	16.0	22	32	42	52	52
A0203.AW0305	With Projection	5	35	4.0	23.0	23.5	25.0	29	35	45	55	65
A0203.AW1304	With Projection	-4	35	4.0	14.0	14.5	14.5	20	26	36	46	56
A0203.AW1306	With Projection	-6	35	4.0	12.0	12.5	12.5	18	24	34	44	54
A0203.AW1308	With Projection	-8	35	4.0	10.0	10.5	10.5	16	22	32	42	52
A0203.AW1314	With Projection	-14	35	4.0	4.0	4.5	4.5	10	16	26	36	46
A0203.AW5308	W/o Projection	8	35	3.0	26.0	26.5	26.5	32	38	48	58	68
A0203.AW5312	W/o Projection	12	35	4.0	30.0	30.5	30.5	36	42	52	62	72
A0203.AW5314	W/o Projection	14	35	3.0	32.0	32.5	32.5	38	44	54	64	74
A0203.AW5318	W/o Projection	18	35	3.0	36.0	36.5	36.5	42	48	58	68	78
A0203.AW5322	W/o Projection	22	35	4.0	40.0	40.5	40.5	46	52	62	72	82
A0203.AW5324	W/o Projection	24	35	3.0	42.0	42.5	42.5	48	54	64	74	84
A0203.AW5326	W/o Projection	26	35	4.0	44.0	44.5	44.5	50	56	66	76	86
A0203.AW5328	W/o Projection	28	35	3.0	46.0	46.5	46.5	52	58	68	78	88
A0203.AW5360	W/o Projection	30	35	4.0	48.0	48.5	48.5	54	60	70	80	90
A0203.AW6301	W/o Projection	-1	35	3.0	17.0	17.5	17.5	23	29	39	49	59
A0203.AW6306	W/o Projection	-6	35	3.0	12.0	12.5	12.5	18	24	34	44	54
A0203.AW6308	W/o Projection	-8	35	3.0	10.0	10.5	10.5	16	22	32	42	52
A0203.AW6310	W/o Projection	-10	35	4.0	8.0	8.5	8.5	14	20	30	40	50
A0203.AW6314	W/o Projection	-14	35	3.0	4.0	4.5	4.5	10	16	26	36	46
A0203.AW6316	W/o Projection	-16	35	4.0	2.0	2.5	2.5	8	14	24	34	44
A0203.AW5422	W/o Projection	22	45	3.4	40.0	40.5	42.0	46	52	62	72	82
A0203.AW5424	W/o Projection	24	45	3.4	42.0	42.5	44.0	48	54	64	74	84
A0203.AW5426	W/o Projection	26	45	3.4	44.0	44.5	46.0	50	56	66	76	86
A0203.AW5428	W/o Projection	28	45	3.0	46.0	46.5	48.0	52	58	68	78	88
A0203.AW5430	W/o Projection	30	45	3.4	48.0	48.5	50.0	54	60	70	80	90
A0203.AW5432	W/o Projection	32	45	3.4	50.0	50.5	52.0	56	62	72	82	92
A0203.AW5434	W/o Projection	34	45	3.4	52.0	52.5	54.0	58	64	74	84	94
A0203.AW6410	W/o Projection	-10	45	3.4	8.0	8.5	10.0	14	20	30	40	50
A0203.AW6412	W/o Projection	-12	45	3.4	6.0	6.5	8.0	12	18	28	38	48
A0203.AW6414	W/o Projection	-14	45	3.4	4.0	4.5	6.0	10	16	26	36	46
A0203.AW6416	W/o Projection	-16	45	3.4	2.0	2.5	4.0	8	14	24	34	44
A0203.AW6418	W/o Projection	-18	45	3.4	-	0.5	2.0	6	12	22	32	42
A0203.AW6420	W/o Projection	-20	45	3.4	-2.0	-1.5	-	4	10	20	30	40
A0203.AW6422	W/o Projection	-22	45	3.4	-4.0	-3.5	-2.0	2	8	18	28	38
A0203.AW6424	W/o Projection	-24	45	3.0	-6.0	-5.5	-4.0	0	6	16	26	36
A0203.AW0422	With Projection	22	45	3.4	40.0	40.5	42.0	46	52	62	72	82
A0203.AW0424	With Projection	24	45	4.0	42.0	42.5	44.0	48	54	64	74	84
A0203.AW0426	With Projection	26	45	4.0	44.0	44.5	46.0	50	56	66	76	86

Single Point Cams - Flexi-System

for cam latches and locks - steel - 8 x 8 Sq.

Order No.	Type	ch	cl	ts	Where lh = 18	Where lh = 18.5	Where lh = 20	Where lh = 24	Where lh = 30	Where lh = 40	Where lh = 50	Where lh = 60
A0203.AW0428	With Projection	28	45	4.0	46.0	46.5	48.0	52	58	68	78	88
A0203.AW0432	With Projection	32	45	3.0	50.0	50.5	52.0	56	62	72	82	92
A0203.AW1410	With Projection	-10	45	4.0	8.0	8.5	10.0	14	20	30	40	50
A0203.AW1412	With Projection	-12	45	4.0	6.0	6.5	8.0	12	18	28	38	48
A0203.AW1414	With Projection	-14	45	4.0	4.0	4.5	6.0	10	16	26	36	46
A0203.AW1420	With Projection	-20	45	4.0	-2.0	-1.5	-	4	10	20	30	40
A0203.AW1422	With Projection	-22	45	4.0	-4.0	-3.5	-2.0	2	8	18	28	38
A0203.AW1426	With Projection	-26	45	4.0	-8.0	-7.5	-6.0	-2	4	14	24	34
A0203.AW1428	With Projection	-28	45	4.0	-10.0	-0.5	-8.0	-4	2	12	22	32





A1003

Material
Body & insert: die cast zinc. Finished in chrome plate or black powder coating. Insert fitted with O'ring to achieve IP54 rating. Internal spring provides 1.5mm torsion.
Supplied with: Nut: steel, zinc plated. Sealing washer: PU and rubber.
Not supplied: CAM nor KEY - order separately.

Technical Notes
Order cam and key separately.

Cams: see suitable cam A0203, A0224 and A0240. Select „without projection" cam type.
Dimensions ch and cl relate to cam. Use formula to calculate ch (required cam off-set), and refer to cam selection chart;
ch = h - lh where;
ch = required cam off-set/height.
h = grip length (distance between inside of latch face and front of cam).
lh = body length of cam latch/lock to be used (see product table below).

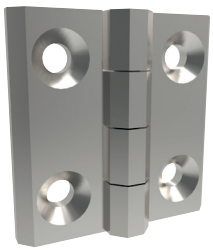
Keys: see A0102.
Rods & Guides: to achieve 3-point latching - A0303, A0321, A0325.

Important Notes
Extended body version - A1251.
Sold subject to pack quantity.

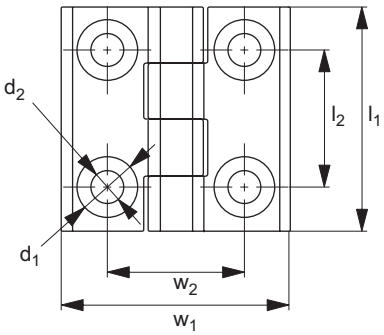
Order No.	Finish	Insert driver	d_1	h_1	lh
A1003.AW0010	Chrome Plated	Square 7	28	6	18
A1003.AW0310	Black Coated	Square 7	28	6	18
A1003.AW0020	Chrome Plated	Square 8	28	6	18
A1003.AW0320	Black Coated	Square 8	28	6	18
A1003.AW0040	Chrome Plated	Triangle 7	28	6	18
A1003.AW0340	Black Coated	Triangle 7	28	6	18
A1003.AW0050	Chrome Plated	Triangle 8	28	6	18
A1003.AW0350	Black Coated	Triangle 8	28	6	18
A1003.AW0060	Chrome Plated	3mm Double Bit	28	6	18
A1003.AW0360	Black Coated	3mm Double Bit	28	6	18
A1003.AW0070	Chrome Plated	4mm Double Bit	28	6	18
A1003.AW0370	Black Coated	4mm Double Bit	28	6	18
A1003.AW0080	Chrome Plated	Slotted (2x4)	28	6	18
A1003.AW0380	Black Coated	Slotted (2x4)	28	6	18

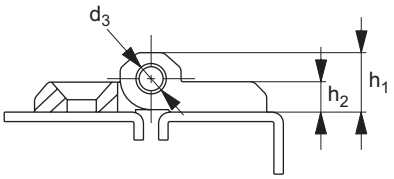
Surface Mount - Leaf Hinges

screw mount - stainless steel



S0523

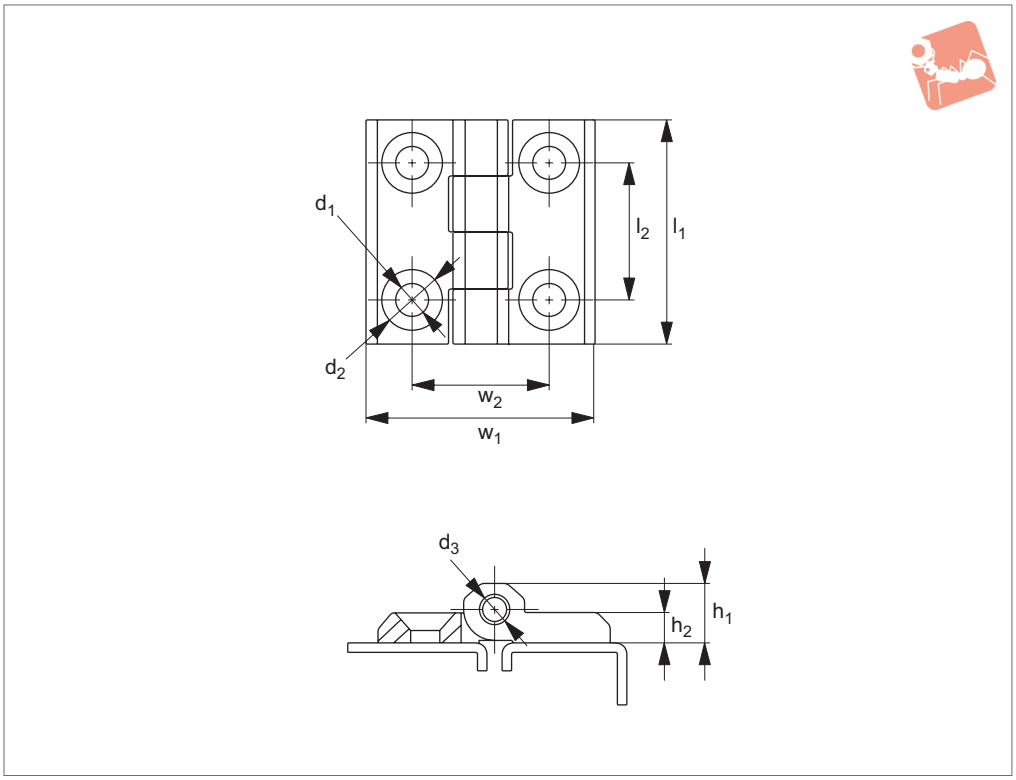


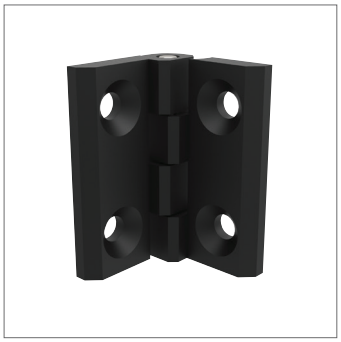


Material
Stainless steel, AISI 304.

Technical Notes
For plain/flush mounted doors, as well as electrical panels and covers.
Opening angle 180°.

Order No.	Size	h_1	h_2	l_1	l_2	w_1	w_2	d_1	d_2	d_3	90° Angled stress kN	Axial load F_x N max.	Axial stress kN	Radial load F_x N max.	Radial stress kN
S0523.AW0040	40 x 40	9.0	5	40	25	40	25	10.5	5.3	4	2.00		1.45		2.1
S0523.AW0050	50 x 50	11.5	6	50	30	50	30	12.5	6.3	7	2.45	1.3	2.10	1.2	3.5
S0523.AW0060	60 x 60	15.0	8	60	36	60	36	12.5	8.4	8	4.40	1.8	3.20	1.5	6.0





S0563

Material
Body: polyamide.
Pin: steel, nickel plated.

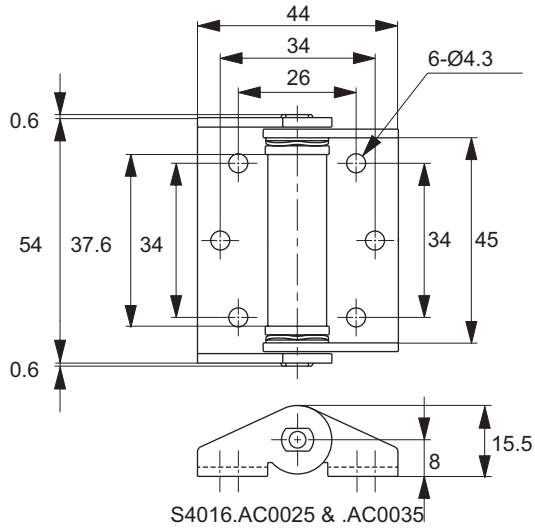
Technical Notes
For plain/flush mounted doors, as well as electrical panels and covers. Opening angle 180°.

Order No.	Size	h_1	h_2	l_2	w_1	w_2	F_x kN	F_y kN	d_1	d_2	d_3
S0563.AW0040	40 x 40	9.8	5	25	40	25	-	-	10.5	5.3	6
S0563.AW0050	50 x 50	11.5	5	30	50	30	1.2	1.3	12.5	6.3	6

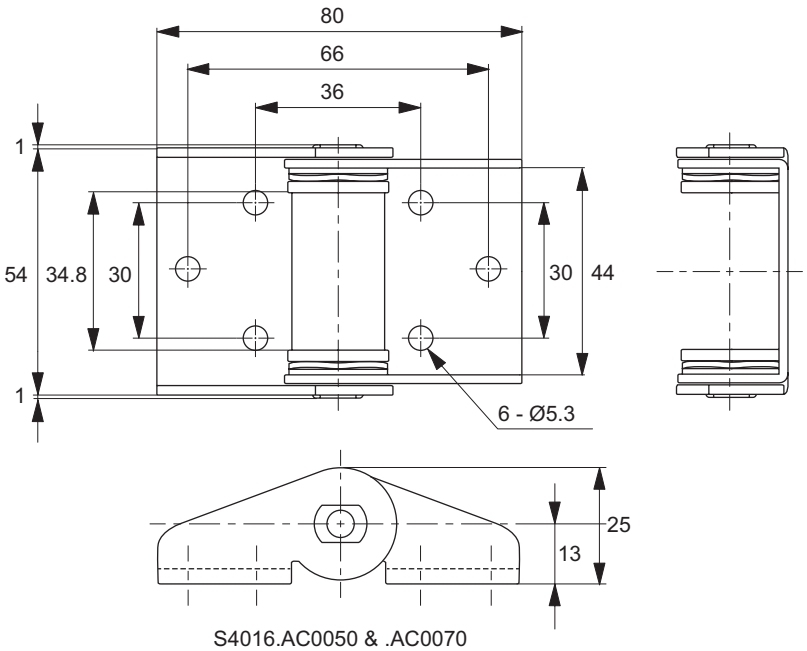
Constant Torque - Friction Hinges

screw mount - stainless

S4016



S4016.AC0025 & .AC0035



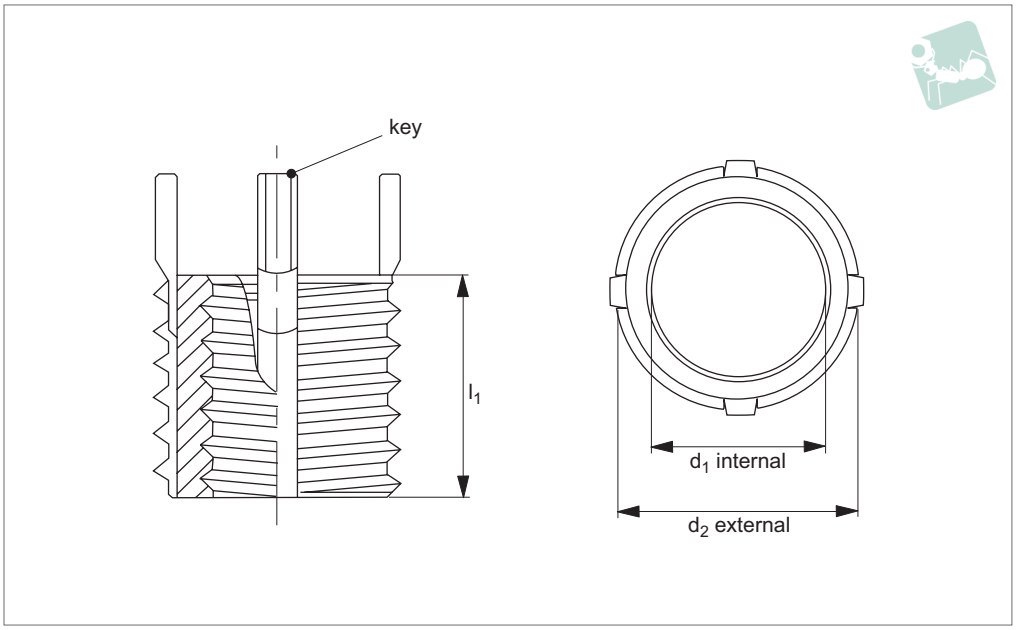
S4016.AC0050 & .AC0070

Material
Body: stainless steel, AISI 304, polished.
Shaft: stainless steel, AISI 303.
Washer: phosphor bronze.
Spring washer: steel.

Technical Notes
Friction torque hinge designed for holding monitors, displays etc in position.

Important Notes
Applicable torque range 180°. Tested to 20,000 cycles, based on movement within a 45° range of movement. Temperature range -10 to +50°C.

Order No.	Torque kgf/cm ±20%	Weight g
S4016.AC0025	25	50
S4016.AC0035	35	50
S4016.AC0050	50	130
S4016.AC0070	70	130



TR1510

Material
Inserts: stainless steel (AISI 303) or equivalent. Passivated.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

Technical Notes
General tolerances:
±0.25, unless specified.

Tap drill hole tolerances:
6.9 to 10.8 = +0.10/-0.025.
12.8 and over = +0.13/-0.025.

Tips
Order installation tool separately, as identified by „Inst. tool ref." in table.

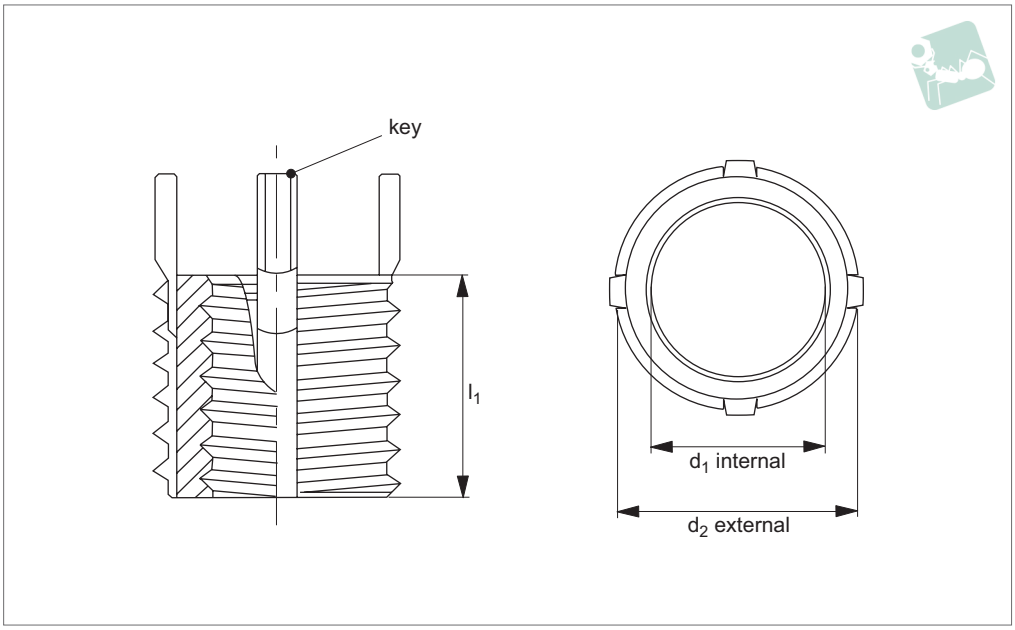
Important Notes
Four locking keys on internal threads M 8 and over. Two locking keys on internal threads smaller than M 8.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.

Order No.	Int. d_1 tol. 6H	Int. thread type d_1	Ext. d_2 tol. 6g	Ext. thread type d_2	l_1	Inst. tap drill size	**Inst. tool ref. 22060**	Inst. c'sink dia. ±0.25|± 0.000	Inst. thread tap tol. 6H	Inst. thread depth min.	Removal drill size	Removal drill depth
TR1510.66351	M 5x0.80	Coarse	M 8x1.25	Coarse	8	6.9	.W0510	8.3	M 8x1.25	9.5	5.5	4.0
TR1510.66352	M 6x1.00	Coarse	M 10x1.25	Fine	10	8.8	.W0520	10.3	M 10x1.25	11.5	7.5	4.8
TR1510.66353	M 8x1.25	Coarse	M 12x125	Fine	12	10.8	.W0530	12.3	M 12x1.25	13.5	9.5	4.8
TR1510.66553	M 8x1.00	Fine	M 12x125	Fine	12	10.8	.W0530	12.3	M 12x1.25	13.5	9.5	4.8
TR1510.66355	M 10x1.50	Coarse	M 14x150	Fine	14	12.8	.W0550	14.3	M 14x1.50	15.5	11.5	4.8
TR1510.66555	M 10x1.25	Fine	M 14x150	Fine	14	12.8	.W0550	14.3	M 14x1.50	15.5	11.5	4.8
TR1510.66356	M 12x1.75	Coarse	M 16x150	Fine	16	14.2	.W0560	14.3	M 16x1.50	17.5	13.5	4.8
TR1510.66556	M 12x1.25	Fine	M 16x150	Fine	16	14.8	.W0560	16.3	M 16x1.50	17.5	13.5	4.8

Threaded Insert - Metric

heavy duty - stainless steel

TR1515



Material
Inserts: stainless steel (AISI 303) or equivalent. Passivated.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

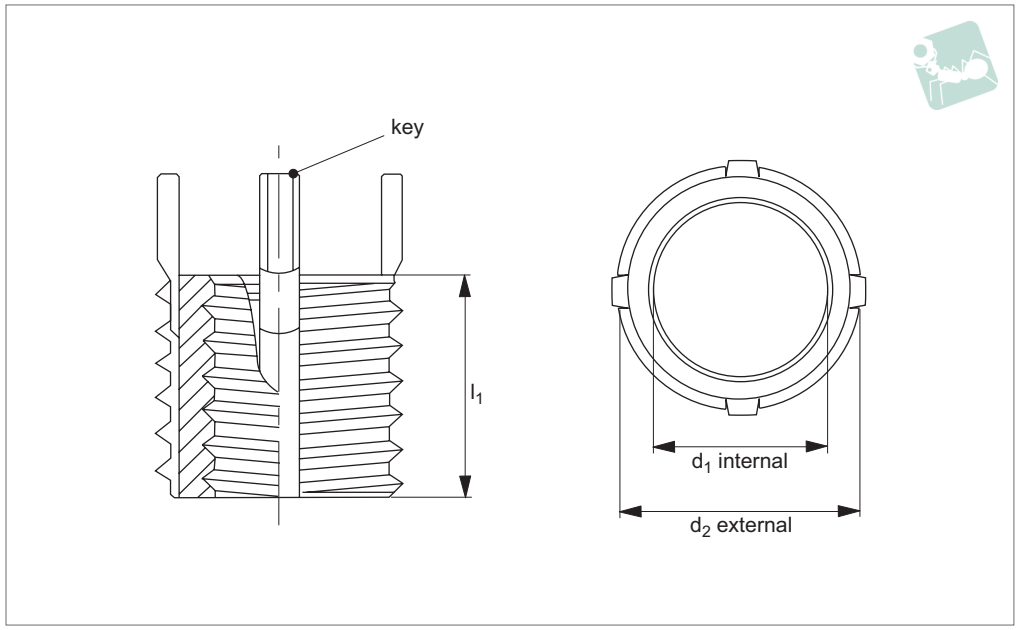
Technical Notes
General tolerances:
±0.25, unless specified.

Tap drill hole tolerances:
6.9 to 10.8 = +0.10/-0.025.
12.8 and over = +0.13/-0.025.

Tips
Order installation tool separately, as identified by „Inst. tool ref." in table.

Important Notes
Four locking keys on internal threads M 8 and over. Two locking keys on internal threads smaller than M 8.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.

Order No.	Int. d_1 tol. 6H	Int. thread type d_1	Ext. d_2 tol. 6g	Ext. thread type d_2	l_1	**Inst. tool ref. 22062**	Inst. tap drill size	Inst. c'sink dia. ±0.25|± 0.000	Inst. thread tap tol. 6H	Inst. thread depth min.	Removal drill size	Removal drill depth
TR1515.66363	M 4x0.70	Coarse	M 8x1.25	Coarse	8	.W0630	6.9	8.3	M 8x1.25	9.5	5.5	4.0
TR1515.66364	M 5x0.80	Coarse	M 10x1.25	Fine	10	.W0640	8.8	10.3	M 10x1.25	12.5	7.5	4.8
TR1515.66365	M 6x1.00	Coarse	M 12x1.25	Fine	12	.W0650	10.8	12.3	M 12x1.25	14.5	9.5	4.8
TR1515.66366	M 8x1.25	Coarse	M 14x1.50	Fine	14	.W0660	12.8	14.3	M 14x1.50	16.5	11.5	4.8
TR1515.66566	M 8x1.00	Fine	M 14x1.50	Fine	14	.W0660	12.8	14.3	M 14x1.50	16.5	11.5	4.8
TR1515.66367	M 10x1.50	Coarse	M 16x1.50	Fine	16	.W0670	14.8	16.3	M 16x1.50	18.5	13.5	4.8
TR1515.66567	M 10x1.25	Fine	M 16x1.50	Fine	16	.W0670	14.8	16.3	M 16x1.50	18.5	13.5	4.8
TR1515.66369	M 12x1.75	Coarse	M 18x1.50	Fine	18	.W0690	16.8	18.3	M 18x1.50	20.5	15.5	4.8
TR1515.66569	M 12x1.25	Fine	M 18x1.50	Fine	18	.W0690	16.8	18.3	M 18x1.50	20.5	15.5	4.8
TR1515.66370	M 14x2.00	Coarse	M 20x1.50	Fine	20	.W0700	18.8	20.3	M 20x1.50	22.5	17.5	4.8
TR1515.66570	M 14x1.50	Fine	M 20x1.50	Fine	20	.W0700	18.8	20.3	M 20x1.50	22.5	17.5	4.8
TR1515.66371	M 16x2.00	Coarse	M 22x1.50	Fine	22	.W0710	20.5	22.3	M 22x1.50	24.5	17.8	6.4
TR1515.66571	M 16x1.50	Fine	M 22x1.50	Fine	22	.W0710	20.5	22.3	M 22x1.50	24.5	17.8	6.4
TR1515.66572	M 18x1.50	Fine	M 24x1.50	Fine	24	.W0720	22.5	24.3	M 24x1.50	26.5	19.8	6.4
TR1515.66373	M 20x2.50	Coarse	M 30x2.00	Non-Std	30	.W0730	28.0	30.3	M 30x2.00	34.5	25.8	6.4
TR1515.66573	M 20x1.50	Fine	M 30x2.00	Non-Std	30	.W0730	28.0	30.3	M 30x2.00	34.5	25.8	6.4
TR1515.66574	M 22x1.50	Fine	M 32x2.00	Non-Std	32	.W0740	30.0	32.3	M 32x2.00	36.5	27.8	6.4
TR1515.66375	M 24x3.00	Coarse	M 33x2.00	Non-Std	33	.W0750	31.0	33.3	M 33x2.00	37.5	28.8	6.4
TR1515.66575	M 24x2.00	Fine	M 33x2.00	Non-Std	33	.W0750	31.0	33.3	M 33x2.00	37.5	28.8	6.4



TR1520

Material
Inserts: carbon steel (C1215) or equivalent. Zinc phosphate.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

Technical Notes
General tolerances:
±0.25, unless specified.

Tap drill hole tolerances:
6.9 to 10.8 = +0.10/-0.025.
12.8 and over = +0.13/-0.025.

Tips
Order installation tool separately, as identified by „Inst. tool ref." in table.

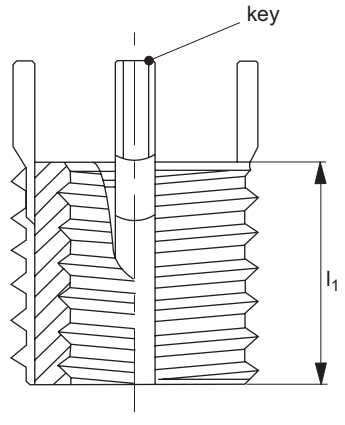
Important Notes
Four locking keys on internal threads M 8 and over. Two locking keys on internal threads smaller than M 8.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.

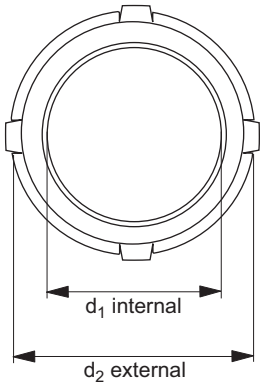
Order No.	Int. d_1 tol. 6H	Int. thread type d_1	Ext. d_2 tol. 6g	Ext. thread type d_2	l_1	Inst. tap drill size	**Inst. tool ref. 22060**	Inst. c'sink dia. ±0.25|± 0.000	Inst. thread tap tol. 6H	Inst. thread depth min.	Removal drill size	Removal drill depth
TR1520.65951	M 5x0.80	Coarse	M 8x1.25	Coarse	8	6.9	.W0510	8.3	M 8x1.25	9.5	5.5	4.0
TR1520.65952	M 6x1.00	Coarse	M 10x1.25	Fine	10	8.8	.W0520	10.3	M 10x1.25	11.5	7.5	4.8
TR1520.65953	M 8x1.25	Coarse	M 12x1.25	Fine	12	10.8	.W0530	12.3	M 12x1.25	13.5	9.5	4.8
TR1520.65153	M 8x1.00	Fine	M 12x1.25	Fine	12	10.8	.W0530	12.3	M 12x1.25	13.5	9.5	4.8
TR1520.65955	M 10x1.50	Coarse	M 14x1.50	Fine	14	12.8	.W0550	14.3	M 14x1.50	15.5	11.5	4.8
TR1520.65155	M 10x1.25	Fine	M 14x1.50	Fine	14	12.8	.W0550	14.3	M 14x1.50	15.5	11.5	4.8
TR1520.65956	M 12x1.75	Coarse	M 16x1.50	Fine	16	14.8	.W0560	16.3	M 16x1.50	17.5	13.5	4.8
TR1520.65156	M 12x1.25	Fine	M 16x1.50	Fine	16	14.8	.W0560	16.3	M 16x1.50	17.5	13.5	4.8

Threaded Insert - Metric

heavy duty - carbon steel

TR1525





Material
Inserts: carbon steel (C1215) or equivalent. Zinc phosphate.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

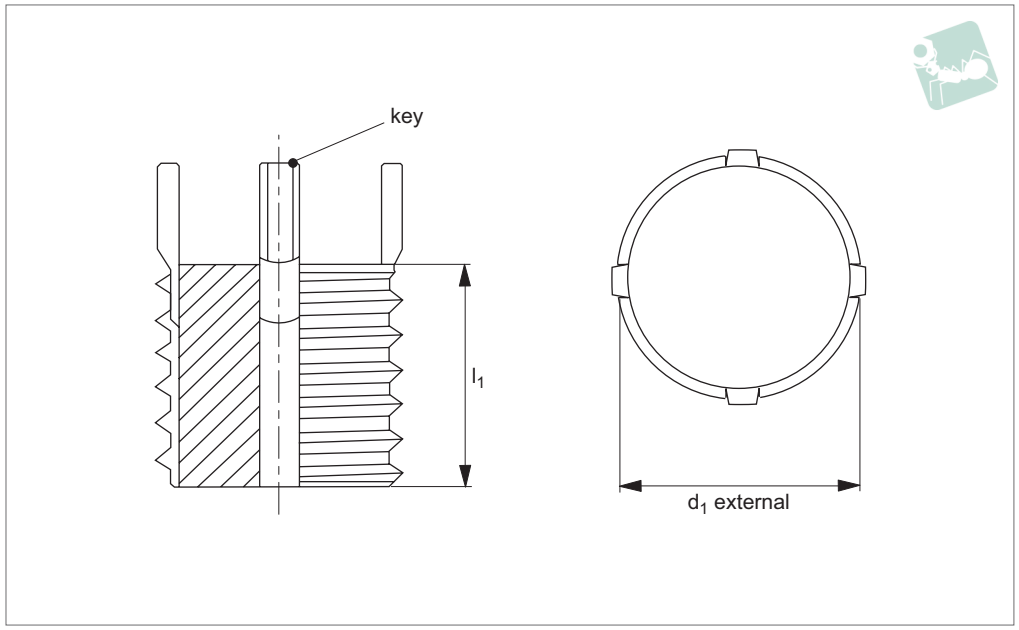
Technical Notes
General tolerances:
±0.25, unless specified.

Tap drill hole tolerances:
6.9 to 10.8 = +0.10/-0.025.
12.8 and over = +0.13/-0.025.

Tips
Order installation tool separately, as identified by „Inst. tool ref." in table.

Important Notes
Four locking keys on internal threads M 8 and over. Two locking keys on internal threads smaller than M 8.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.

Order No.	Int. d_1 tol. 6H	Int. thread type d_1	Ext. d_2 tol. 6g	Ext. thread type d_2	l_1	**Inst. tool ref. 22062**	Inst. tap drill size	Inst. c'sink dia. ±0.25|± 0.000	Inst. thread tap tol. 6H	Inst. thread depth min.	Removal drill size	Removal drill depth
TR1525.65963	M 4x0.70	Coarse	M 8x1.25	Coarse	8	.W0630	6.9	8.3	M 8x1.25	9.5	5.5	4.0
TR1525.65964	M 5x0.80	Coarse	M 10x1.25	Fine	10	.W0640	8.8	10.3	M 10x1.25	12.5	7.5	4.8
TR1525.65965	M 6x1.00	Coarse	M 12x1.25	Fine	12	.W0650	10.8	12.3	M 12x1.25	14.5	9.5	4.8
TR1525.65966	M 8x1.25	Coarse	M 14x1.50	Fine	14	.W0660	12.8	14.3	M 14x1.50	16.5	11.5	4.8
TR1525.66166	M 8x1.00	Fine	M 14x1.50	Fine	14	.W0660	12.8	14.3	M 14x1.50	16.5	11.5	4.8
TR1525.65967	M 10x1.50	Coarse	M 16x1.50	Fine	16	.W0670	14.8	16.3	M 16x1.50	18.5	13.5	4.8
TR1525.66167	M 10x1.25	Fine	M 16x1.50	Fine	16	.W0670	14.8	16.3	M 16x1.50	18.5	13.5	4.8
TR1525.65969	M 12x1.75	Coarse	M 18x1.50	Fine	18	.W0690	16.8	18.3	M 18x1.50	20.5	15.5	4.8
TR1525.66169	M 12x1.25	Fine	M 18x1.50	Fine	18	.W0690	16.8	18.3	M 18x1.50	20.5	15.5	4.8
TR1525.65970	M 14x2.00	Coarse	M 20x1.50	Fine	20	.W0700	18.8	20.3	M 20x1.50	22.5	17.5	4.8
TR1525.66170	M 14x1.50	Fine	M 20x1.50	Fine	20	.W0700	18.8	20.3	M 20x1.50	22.5	17.5	4.8
TR1525.65971	M 16x2.00	Coarse	M 22x1.50	Fine	22	.W0710	20.5	22.3	M 22x1.50	24.5	17.8	6.4
TR1525.66171	M 16x1.50	Fine	M 22x1.50	Fine	22	.W0710	20.5	22.3	M 22x1.50	24.5	17.8	6.4
TR1525.66172	M 18x1.50	Fine	M 24x1.50	Fine	24	.W0720	22.5	24.3	M 24x1.50	26.5	19.8	6.4
TR1525.65973	M 20x2.50	Coarse	M 30x2.00	Non-Std	30	.W0730	28.0	30.3	M 30x2.00	34.5	25.8	6.4
TR1525.66173	M 20x1.50	Fine	M 30x2.00	Non-Std	30	.W0730	28.0	30.3	M 30x2.00	34.5	25.8	6.4
TR1525.66174	M 22x1.50	Fine	M 32x2.00	Non-Std	32	.W0740	30.0	32.3	M 32x2.00	36.5	27.8	6.4
TR1525.65975	M 24x3.00	Coarse	M 33x2.00	Non-Std	33	.W0750	31.0	33.3	M 33x2.00	37.5	28.8	6.4
TR1525.66175	M 24x2.00	Fine	M 33x2.00	Non-Std	33	.W0750	31.0	33.3	M 33x2.00	37.5	28.8	6.4



TR1690

Material
Inserts: stainless steel (AISI 303) or equivalent. Passivated.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

Technical Notes
General tolerances:
± 0.25 unless specified.

Tap drill hole tolerances:
6.9 to 10.8 = +0.10/-0.025.
12.8 and over = +0.13/-0.025.

Tips
Order installation tool separately, as identified by „Inst. tool ref." in table.

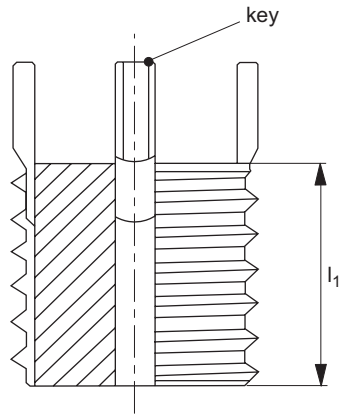
Important Notes
Four locking keys on external threads M12 and over. Two locking keys on external threads smaller than M12.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.
External metric thread allows you to machine your internal thread.

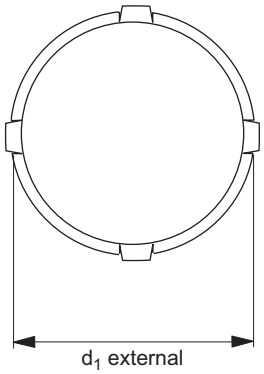
Order No.	d_1 tol. 6g	Thread type d_1	l_1	Inst. tool ref. 22052	Inst. tap drill size	Inst. c'sink dia. +0.25|-0.00	Inst. thread tap tol. 6H	Inst. thread tap depth min.	Removal drill size	Removal drill depth
TR1690.66421	M 8x1.25	Coarse	8	.W0210	6.9	8.3	M 8x1.25	9.5	5.50	4.0
TR1690.66422	M 10x1.25	Fine	10	.W0220	8.8	10.3	M 10x1.25	12.5	7.50	4.8
TR1690.66423	M 12x1.25	Fine	12	.W0230	10.8	12.3	M 12x1.25	14.5	9.50	4.8
TR1690.66424	M 14x1.50	Fine	14	.W0240	12.8	14.3	M 14x1.50	16.5	11.50	4.8
TR1690.66425	M 16x1.50	Fine	16	.W0250	14.8	16.3	M 16x1.50	18.5	13.50	4.8
TR1690.66426	M 18x1.50	Fine	18	.W0260	16.8	18.3	M 18x1.50	20.5	15.50	4.8
TR1690.66427	M 20x1.50	Fine	20	.W0270	18.8	20.3	M 20x1.50	22.5	17.50	4.8
TR1690.66428	M 22x1.50	Fine	22	.W0280	20.5	22.3	M 22x1.50	24.5	17.75	6.4
TR1690.66429	M 24x1.50	Fine	24	.W0290	22.5	24.3	M 24x1.50	26.5	19.75	6.4
TR1690.66430	M 30x2.00	Non-Std	30	.W0300	28.0	30.3	M 30x2.00	34.5	25.75	6.4
TR1690.66431	M 32x2.00	Non-Std	32	.W0310	30.0	32.3	M 32x2.00	36.5	27.75	6.4
TR1690.66432	M 33x2.00	Non-Std	33	.W0320	31.0	33.3	M 33x2.00	37.5	28.75	6.4

Threaded Insert - Solid - Inch

stainless steel

TR1696





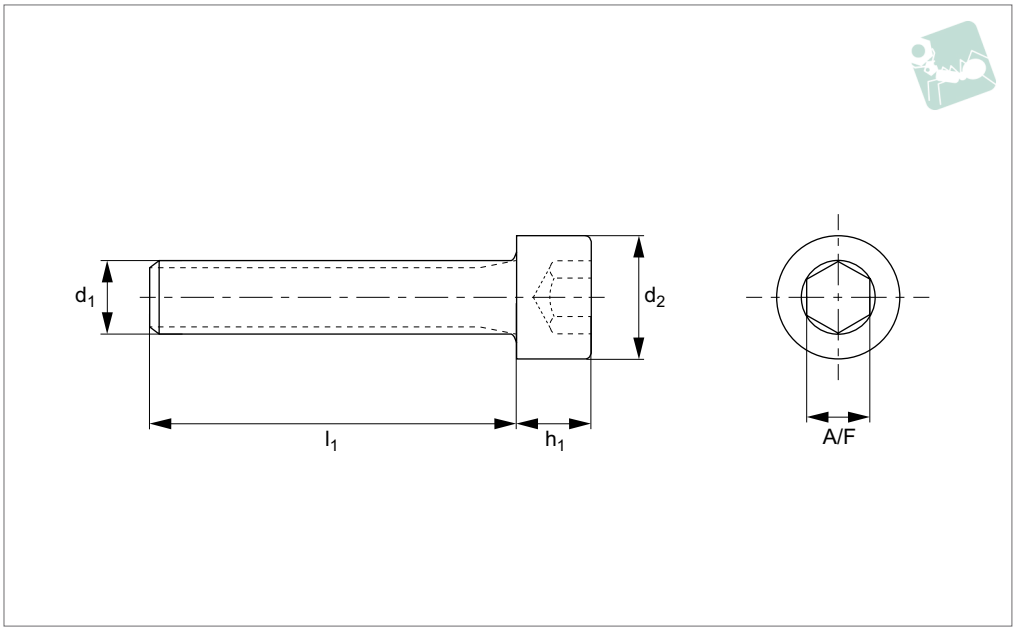
Material
Inserts: stainless steel (AISI 303) or equivalent. Passivated.
Keys: stainless steel (302 CRES) or equivalent. Passivated.

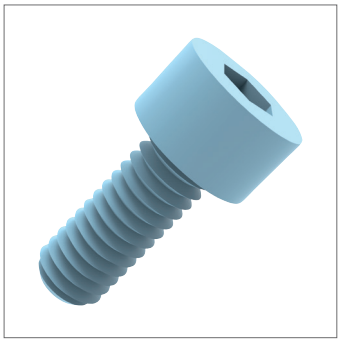
Technical Notes
General tolerances:
± 0.010“ unless specified.
Tap drill hole tolerances:
0.234 to 0.500 = +0.004/-0.001“.
0.500 and over = +0.005/-0.001“.

Tips
Order installation tool separately, as identified by „Inst. tool ref.“ in table.

Important Notes
Four locking keys on external threads 7/16“ and over. Two locking keys on external threads smaller than 7/16“.
Installation (Inst.) drill size, countersink, thread tap and thread depth as specified in table.
Removal drill size and drill depth as specified in table.
External inch thread allows you to machine your internal thread.
*Unified special pitch thread.
All dimensions in inches.

Order No.	d_1 (mod.) tol. 2A	Thread type d_1	l_1	Inst. tool ref. 22050	Inst. tap drill size	Inst. c'sink dia. +0.010|-0.000	Inst. thread tap tol. 2B	Inst. thread tap depth min.	Removal drill size	Removal drill depth
TR1696.66401	5/16“-18	UNC	0.31	.W0010	0.272	0.32	5/16“-18	0.37	7/32“	1/8“
TR1696.66402	3/8“-16	UNC	0.31	.W0020	0.332	0.38	3/8“-16	0.37	9/32“	1/8“
TR1696.66403	7/16“-14	UNC	0.37	.W0030	0.397	0.44	7/16“-14	0.43	11/32“	3/16“
TR1696.66404	1/2“-13	UNC	0.43	.W0040	0.453	0.51	1/2“-13	0.50	13/32“	3/16“
TR1696.66405	9/16“-12	UNC	0.50	.W0050	0.516	0.57	9/16“-12	0.56	15/32“	3/16“
TR1696.66406	5/8“-11	UNC	0.62	.W0060	0.578	0.63	5/8“-11	0.68	17/32“	3/16“
TR1696.66413	11/16“-11*	UNS	0.68	.W0065	0.641	0.70	11/16“-11*	0.75	19/32“	3/16“
TR1696.66407	3/4“-16	UNF	0.68	.W0070	0.703	0.76	3/4“-16	0.75	21/32“	3/16“
TR1696.66414	13/16“-16	UNF	0.81	.W0075	0.766	0.82	13/16“-16	0.94	23/32“	3/16“
TR1696.66408	7/8“-14	UNF	0.87	.W0080	0.828	0.88	7/8“-14	1.00	25/32“	5/16“
TR1696.66409	1“-12	UNF	0.87	.W0090	0.937	1.02	1“-12	1.00	27/32“	5/16“
TR1696.66410	1-1/8“-12	UNF	1.12	.W0100	1.062	1.14	1-1/8“-12	1.31	31/32“	5/16“
TR1696.66411	1-1/4“-12	UNF	1.25	.W0110	1.187	1.27	1-1/4“-12	1.44	1-3/32“	5/16“
TR1696.66412	1-3/8“-12	UNF	1.37	.W0120	1.312	1.39	1-3/8“-12	1.56	1-7/32“	5/16“





N0500.HP

Material
Polyether ether ketone (PEEK). Blue

A high performance plastic with very good durability and wear resistance. PEEK has excellent chemical resistance and performs well at temperatures up to 260°C.

Tensile strength ~116N/mm²

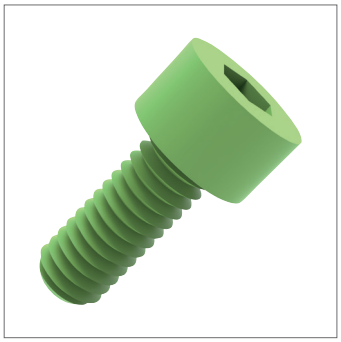
Technical Notes
Manufactured for industries with a hygienic requirement, these products are made with an X-Ray opaque or metal detectable filler, in blue, for optical detection.

For medical industry applications, we can offer these products in a variant of PEEK which is refined for biocompatibilty.

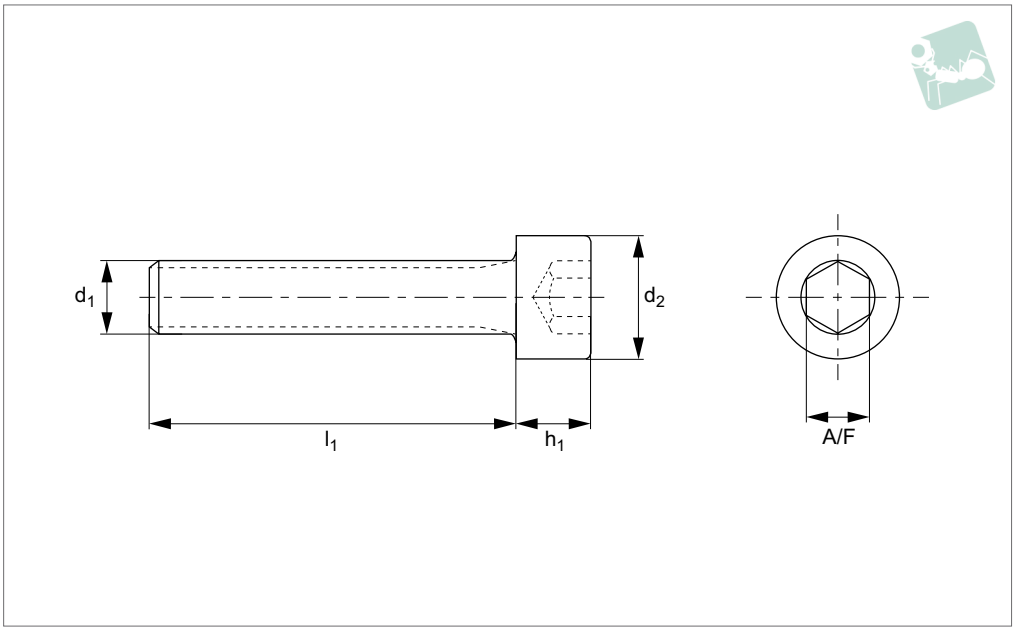
Natural PEEK is used in the aerospace and chemical industries.

Order No.	d_1	l_1 x/-0.2	d_2	h_1	A/F
N0500.030-008-HP	M 3	8	5.5	3	2.5
N0500.030-010-HP	M 3	10	5.5	3	2.5
N0500.030-012-HP	M 3	12	5.5	3	2.5
N0500.030-015-HP	M 3	15	5.5	3	2.5
N0500.030-020-HP	M 3	20	5.5	3	2.5
N0500.030-025-HP	M 3	25	5.5	3	2.5
N0500.040-008-HP	M 4	8	7.0	4	3.0
N0500.040-010-HP	M 4	10	7.0	4	3.0
N0500.040-012-HP	M 4	12	7.0	4	3.0
N0500.040-015-HP	M 4	15	7.0	4	3.0
N0500.040-020-HP	M 4	20	7.0	4	3.0
N0500.040-025-HP	M 4	25	7.0	4	3.0
N0500.050-008-HP	M 5	8	8.5	5	4.0
N0500.050-010-HP	M 5	10	8.5	5	4.0
N0500.050-012-HP	M 5	12	8.5	5	4.0
N0500.050-015-HP	M 5	15	8.5	5	4.0
N0500.050-020-HP	M 5	20	8.5	5	4.0
N0500.050-025-HP	M 5	25	8.5	5	4.0
N0500.050-030-HP	M 5	30	8.5	5	4.0
N0500.060-010-HP	M 6	10	10.0	6	5.0
N0500.060-012-HP	M 6	12	10.0	6	5.0
N0500.060-015-HP	M 6	15	10.0	6	5.0
N0500.060-020-HP	M 6	20	10.0	6	5.0
N0500.060-025-HP	M 6	25	10.0	6	5.5
N0500.060-030-HP	M 6	30	10.0	6	5.5
N0500.080-020-HP	M 8	20	13.0	8	6.0
N0500.080-025-HP	M 8	25	13.0	8	6.0
N0500.080-030-HP	M 8	30	13.0	8	6.0
N0500.080-035-HP	M 8	35	13.0	8	6.0

Cap Head Hexagon Socket
Medical



N0500.MP



Material
Polyether ether ketone (PEEK). Green

A high performance plastic with very good durability and wear resistance. PEEK has excellent chemical resistance and performs well at temperatures up to 260°C.

Tensile strength ~116N/mm².

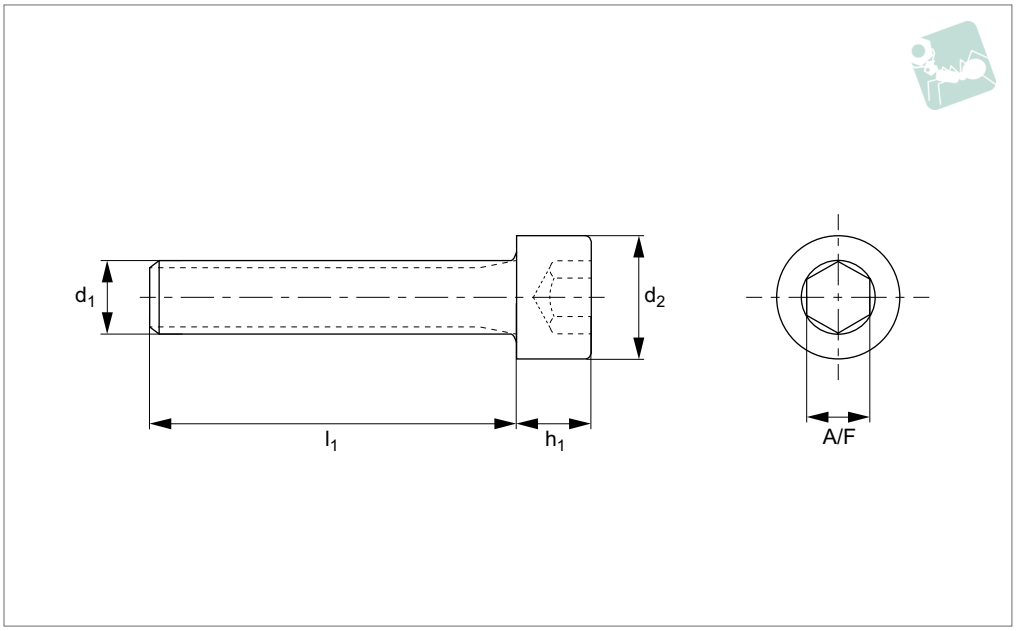
Technical Notes
Manufactured for medical industry applications, these products are in a variant of PEEK which is refined for biocompatibilty.

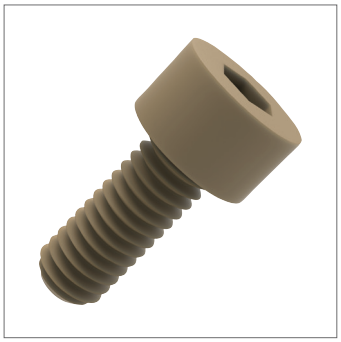
For industries with a hygienic requirement, these products are available with an X-Ray opaque or metal detectable filler, blue in colour, for optical detection.

Natural PEEK is used in the aerospace and chemical industries.

Order No.	d_1	l_1 +/- 0. 2	d_2	h_1	A/F
N0500.030-008-MP	M 3	8	5.5	3	2.5
N0500.030-010-MP	M 3	10	5.5	3	2.5
N0500.030-012-MP	M 3	12	5.5	3	2.5
N0500.030-015-MP	M 3	15	5.5	3	2.5
N0500.030-020-MP	M 3	20	5.5	3	2.5
N0500.030-025-MP	M 3	25	5.5	3	2.5
N0500.040-008-MP	M 4	8	7.0	4	3.0
N0500.040-010-MP	M 4	10	7.0	4	3.0
N0500.040-012-MP	M 4	12	7.0	4	3.0
N0500.040-015-MP	M 4	15	7.0	4	3.0
N0500.040-020-MP	M 4	20	7.0	4	3.0
N0500.040-025-MP	M 4	25	7.0	4	3.0
N0500.050-008-MP	M 5	8	8.5	5	4.0
N0500.050-010-MP	M 5	10	8.5	5	4.0
N0500.050-012-MP	M 5	12	8.5	5	4.0
N0500.050-015-MP	M 5	15	8.5	5	4.0
N0500.050-020-MP	M 5	20	8.5	5	4.0
N0500.050-025-MP	M 5	25	8.5	5	4.0
N0500.050-030-MP	M 5	30	8.5	5	4.0
N0500.060-010-MP	M 6	10	10.0	6	5.0
N0500.060-012-MP	M 6	12	10.0	6	5.0
N0500.060-015-MP	M 6	15	10.0	6	5.0
N0500.060-020-MP	M 6	20	10.0	6	5.0
N0500.060-025-MP	M 6	25	10.0	6	5.0
N0500.060-030-MP	M 6	30	10.0	6	5.0
N0500.080-020-MP	M 8	20	13.0	8	6.0
N0500.080-025-MP	M 8	25	13.0	8	6.0
N0500.080-030-MP	M 8	30	13.0	8	6.0
N0500.080-035-MP	M 8	35	13.0	8	6.0

Cap Head Hexagon Socket
Natural





N0500.NP

Material
Natural Polyether-ether-ketone (PEEK).
Beige

A high performance plastic with very good durability and wear resistance. PEEK has excellent chemical resistance and performs well at temperatures up to 260°C.

Tensile strength ~116N/mm².

Technical Notes
PEEK is used in the aerospace and petrochemical industries.

For medical industry applications, we can offer these products in a variant of PEEK which is refined for biocompatibility.

For industries with a hygienic requirement, these products can be manufactured with an X-Ray opaque or metal detectable filler, as well as a blue colour for optical detection.

Order No.	d_1	l_1 +/- 0. 2	d_2	h_1	A/F
N0500.030-008-NP	M 3	8	5.5	3	2.5
N0500.030-010-NP	M 3	10	5.5	3	2.5
N0500.030-012-NP	M 3	12	5.5	3	2.5
N0500.030-015-NP	M 3	15	5.5	3	2.5
N0500.030-020-NP	M 3	20	5.5	3	2.5
N0500.030-025-NP	M 3	25	5.5	3	2.5
N0500.040-008-NP	M 4	8	7.0	4	3.0
N0500.040-010-NP	M 4	10	7.0	4	3.0
N0500.040-012-NP	M 4	12	7.0	4	3.0
N0500.040-015-NP	M 4	15	7.0	4	3.0
N0500.040-020-NP	M 4	20	7.0	4	3.0
N0500.040-025-NP	M 4	25	7.0	4	3.0
N0500.050-008-NP	M 5	8	8.5	5	4.0
N0500.050-010-NP	M 5	10	8.5	5	4.0
N0500.050-012-NP	M 5	12	8.5	5	4.0
N0500.050-015-NP	M 5	15	8.5	5	4.0
N0500.050-020-NP	M 5	20	8.5	5	4.0
N0500.050-025-NP	M 5	25	8.5	5	4.0
N0500.050-030-NP	M 5	30	8.5	5	4.0
N0500.060-010-NP	M 6	10	10.0	6	5.0
N0500.060-012-NP	M 6	12	10.0	6	5.0
N0500.060-015-NP	M 6	15	10.0	6	5.0
N0500.060-020-NP	M 6	20	10.0	6	5.0
N0500.060-025-NP	M 6	25	10.0	6	5.0
N0500.060-030-NP	M 6	30	10.0	6	5.0
N0500.080-020-NP	M 8	20	13.0	8	6.0
N0500.080-025-NP	M 8	25	13.0	8	6.0
N0500.080-030-NP	M 8	30	13.0	8	6.0
N0500.080-035-NP	M 8	35	13.0	8	6.0

Wixroyd group
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We've had an upgrade!

You may have already noticed some changes to our **Wixroyd**, **Automotion Components** and **Teknipart** websites - that's because we have recently upgraded them to **optimise your online experience** with us.

You can find us at the usual places below:

wixroyd.com
automotioncomponents.co.uk
teknipart.co.uk

- **Large range of products**
- **Free CAD downloads**
- **Great stock availability**
- **Detailed product datasheets**
- **Easily accessible live chat**

Wixroyd group
AN ESSENTRA COMPANY

sales@wixroyd.com

In-House
manufacturing capabilities

Since moving to our Chichester site in 2019, we have brought the manufacture of our range of precision fasteners in-house. Our CNC lathes are working day and night to produce our wide selection of shoulder screws, captive screws, and more in many different sizes and materials!

To ensure we are running as efficiently as possible, we have written custom software that works with our warehouse and ordering system to reduce the average lead time significantly. Our system means that we can offer bespoke variations on our existing products with no hassle, and at lower minimum quantities.

MADE IN BRITAIN®

Our **CNC machined parts**

Sealing Screws
We are the only manufacturers in Europe for integral O-Ring Sealing Screws.

Vented Screws
The highest quality vented fasteners, made in Chichester for your vacuum system.

Captive Screws
Our popular range of captive screws and mounting fittings are ideal for panel applications.

Shoulder Screws
A massive line up of shoulder screws in different materials and head styles.

Wixroyd
wixroyd.com | 0333 207 4497

Automotion Components
automotioncomponents.co.uk | 0333 207 4498

Teknipart
teknipart.co.uk | 0333 207 9969

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