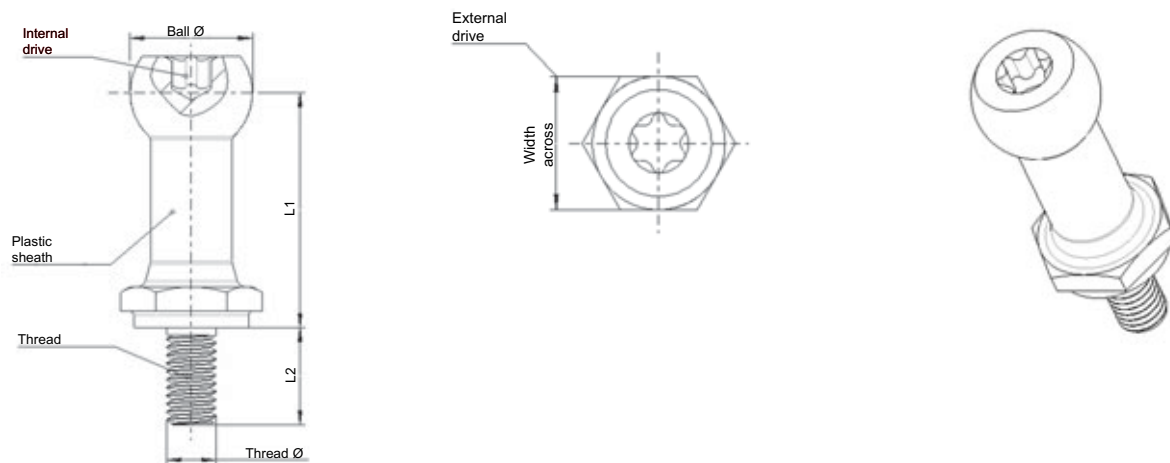


Studs with metrical external thread



Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4039 015 0602	7	11.9	metrical	M 6	10	–
4030 007 0006	7	11.9	metrical	M 6	9	–
4039 007 0604	8	9.9	metrical	M 6	9	–
4039 008 0016	8	18	metrical	M 6	14	–
4039 008 0045	8	26.2	metrical	M 6	8	–
4039 008 0041	8	30.8	metrical	M 6	16	–
4039 008 0047	8	40	metrical	M 6	15	–
4031 100 3905	10	16	metrical	M 6	12	–
4039 007 0605	10	19.4	metrical	M 6	8	–
4030 010 0040	10	23	metrical	M 6	12	–
4039 006 0601	10	28	metrical	M 6	12	–
4039 010 0057	10	34	metrical	M 6	10	–
4030 010 0049	10	35.1	metrical	M 6	12	–
4039 017 0603	10	43.5	metrical	M 6	12	–
4039 001 0602	10	51	metrical	M 6	8	–
4030 015 0007	15	12	metrical	M 6	8	40
4039 005 0602	15	18	metrical	M 6	12	40
4030 015 0005	15	21	metrical	M 6	12	40
4039 015 0018	15	24	metrical	M 6	12	–
4034 150 3901	15	29	metrical	M 6	12	40
4039 005 0605	15	32	metrical	M 6	12	40
4039 003 0604	15	61	metrical	M 6	12	–



	External drive	Material	Property class	Thread surface	Colour bolt
	WS 10	PPA-GF50	solid plastics	Zn/Ni	black
	WS 10	PPA-GF50	4.8	Zn/Ni	black
	WS 10	PPA-GF50	4.8	Zn/Ni	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 17	PPA-GF50	4.8	Zn/Ni	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 10	PA66-GF50	8.8	Zn/Ni	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 13	PPA-GF50	4.8	Zn/Ni	black
	WS 12	PA66-GF50	8.8	Zn	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 12	PPA-GF50	8.8	Zn/Ni	black
	WS 12	PPA-GF50	8.8	Zn/Ni	black
	WS 13	PPA-GF50	8.8	Zn/Ni	black
	WS 15	PPA-GF50	4.8	Zn/Ni	black
	WS 15	PPA-GF50	4.8	Zn/Ni	black
	WS 15	PPA-GF50	4.8	Zn/Ni	black
	-	PPA-GF50	4.8	Zn/Ni	grey
	WS 15	PPA-GF50	4.8	Zn/Ni	black
	WS 15	PPA-GF50	4.8	Zn/Ni	black
	WS 15	PA66-GF30	8.8	Zn	black

**Metal/plastic combination
ball studs with self-tapping external thread**

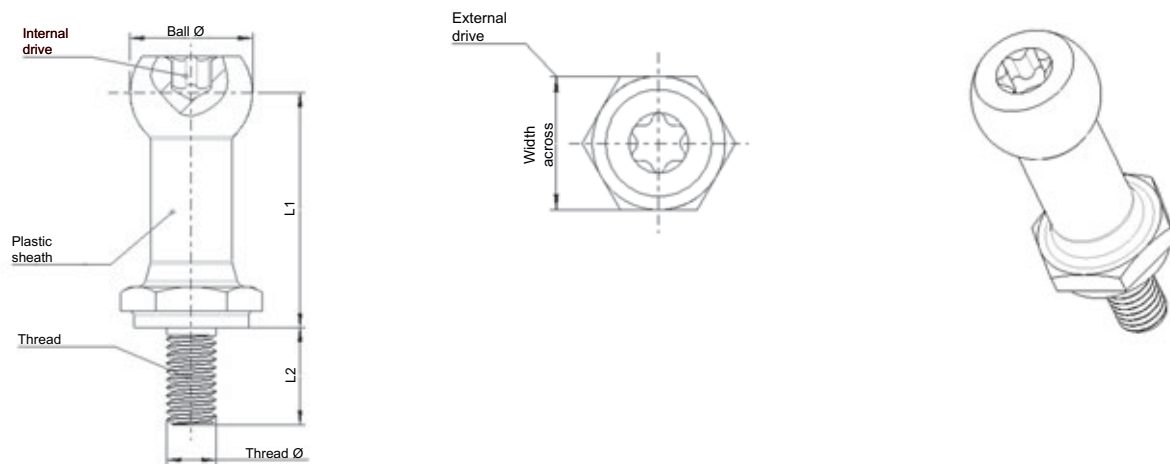


Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4030 007 0027	7	11.9	self-tapping	6	13.7	–
4039 007 0032	7	22	self-tapping	ST 4.2	13	–
4030 080 3902	8	9.9	self-tapping	6	13.7	–
4039 008 0048	8	20	self-tapping	5	20	–
4030 010 0019	10	16	self-tapping	6	13.7	–
4030 010 0039	10	20.3	self-tapping	6	13.7	–
4032 150 3904	15	18	self-tapping	ST 6.3 DIN ISO 1478	30	40
4039 019 0601	15	61	self-tapping	6	13.7	–

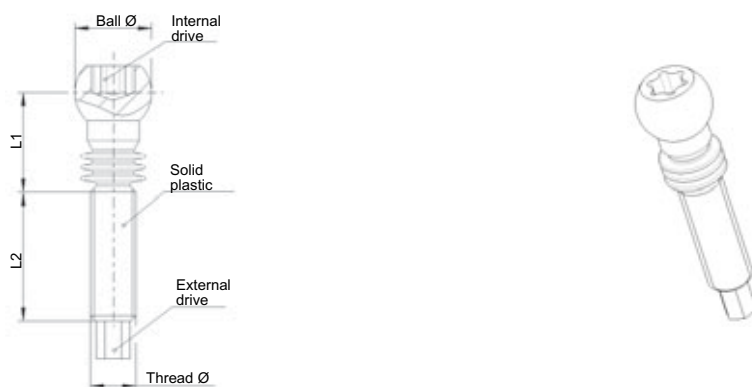
Adjustable solid plastic ball studs



Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4039 007 0601	10	12	metrical	M 6	21	25
4039 010 0031	10	13.1	metrical	M 6	14.4	30



External drive	Material	Property class	Thread surface	Colour bolt
WS 10	PPA-GF50	–	ZNS 3	black
–	PA66-GF30	–	ZNS 3	black
WS 10	PPA-GF50	–	Zn	black
WS 13	PPA-GF50	–	Zn/Ni	black
WS 13	PPA-GF50	–	ZNS 3	black
WS 13	PPA-GF50	–	Zn/Ni	black
WS 15	PPA-GF50	–	ZNS 3	black
WS 15	PA66-GF30	–	Zn/Ni	black

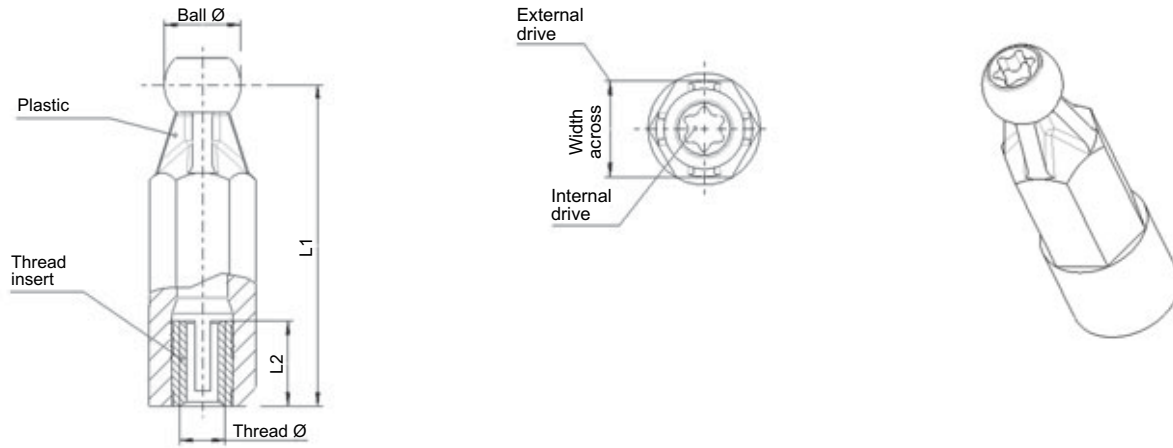


External drive	Material	Property class	Thread surface	Colour bolt
–	PA66-GF30	solid plastics	Iges = 60	black
–	PA66/6GF30	solid plastics	Iges = 14.4	black

**Metal/plastic combination
ball studs with internal thread**



Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664	
4029 005 0601	8	18	metrical	M 6	10	-	
4029 008 0002	8	25	metrical	M 6	17	-	
4029 013 0504	10	37	metrical	M 5	10	-	
4020 010 0009	10	42	metrical	M 6	10	-	
4029 029 0601	10	54	metrical	M 6	11	-	
4020 010 0006	10	62.6	metrical	M 6	10	-	
4029 016 0604	10	78	metrical	M 6	11	-	
4029 016 0605	10	113	metrical	M 6	11	-	
4029 007 0601	15	12	metrical	M 6	8	-	
4029 001 0601	15	97	metrical	M 6	11	40	



	External drive	Material	Property class	Thread surface
	WS 13	PA6-GF50	plastics	black
	WS 10	PA6-GF50	plastics	black
	WS 12	PA66-GF30	CuZn38Pb2	black
	WS 12	PA66-GF30	CuZn38Pb2	black
	WS 13	PA66-GF30	CuZn38Pb2	natural-coloured
	WS 12	PA66-GF50	CuZn38Pb2	black
	WS 15	PPA-GF50	CuZn38Pb2	black
	WS 15	PPA-GF50	CuZn38Pb2	natural-coloured
	WS 15	PA66-GF30	plastics	black
	-	PA66-GF30	CuZn38Pb2	black

Solid plastic ball studs with K' in K' thread



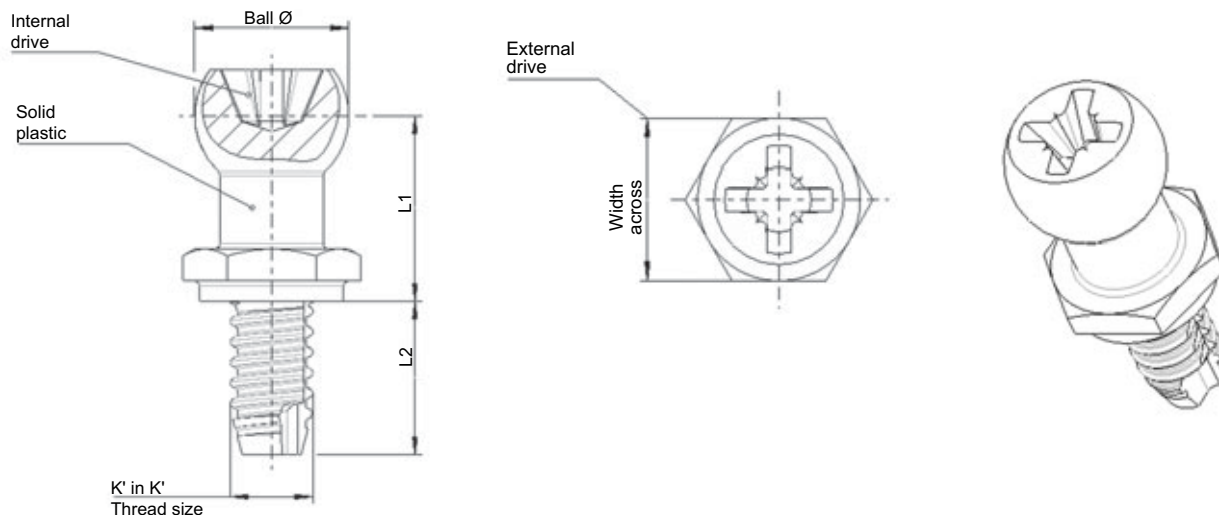
Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4019 007 0601	7	11.7	K' in K'	Size 6	10	–
4010 081 3612	8	9.9	K' in K'	Size 6	12	–
4019 008 0009	8	21	K' in K'	Size 8	12	–
0419 008 0801	10	16	K' in K'	Size 8	15	–
0419 008 0801	15	14.5	K' in K'	Size 8	15	Form Z size 4*
4012 150 3815	15	18	K' in K'	Size 8	15	Form Z size 4*

Solid plastic-ball studs in clip form

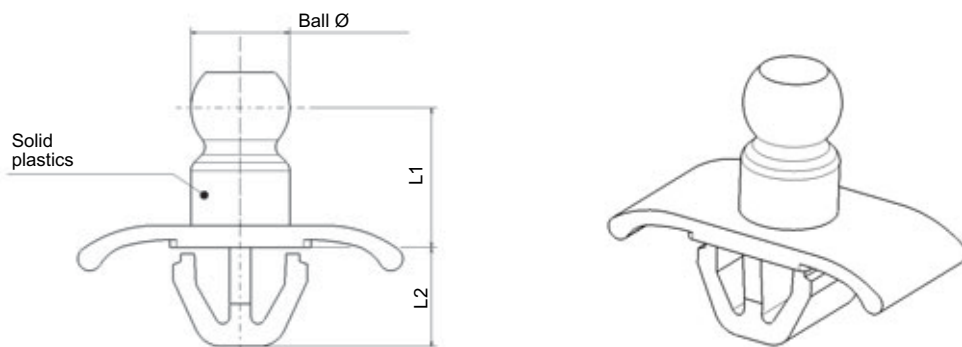


Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4009 018 1301	7	11	d = 10 mm	t = 2-3 mm	–	–
4001 082 3084	8	10	8 x 10	t = 2+0,3 mm	–	–

* Here cross recess as internal drive



External drive	Material	Property class	Thread surface
WS 10	PPA-GF50	solid plastics	black
WS 8	PEI-GF30	solid plastics	black
WS 12	PPA-GF50	solid plastics	black
WS 13	PPA-GF50	solid plastics	black
WS 15	PPA-GF45	solid plastics	black
WS 15	PPA-GF50	solid plastics	black



External drive	Material	Property class	Thread surface
-	PA6-GF50	solid plastics	black
-	PA6-GF50	solid plastics	black

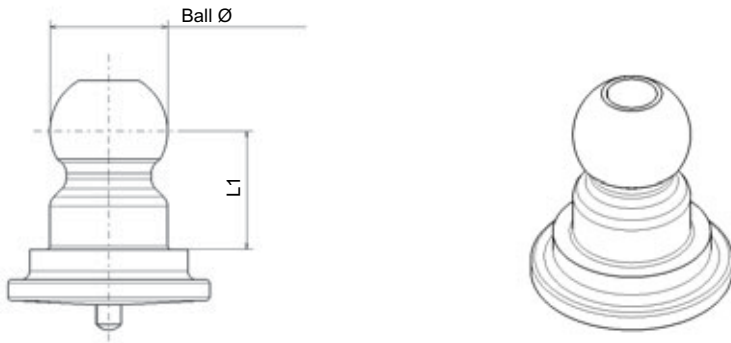
Solid plastic-ball studs for injection moulding



Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
0499 085 0003	7	7	-	plate d = 12	-	-
4099 007 0001	7	11.2	-	plate d = 12	-	-

Solid plastic-ball studs for insertion

Part number	Ball Ø in mm	Depth L1 (to ball center)	Type of thread	Thread dimensions	Thread length	Internal hex socket round ISO 10664
4009 007 0001	7	9.2	-	b = 5	-	-
40290 100 001	7	10	-	b = 4	-	-



External drive	Material	Thread surface
-	PA66-GF30	black
-	PA6-F50	black

External drive	Material	Thread surface
-	PA66-GF30	black
-	PPA-GF50	black

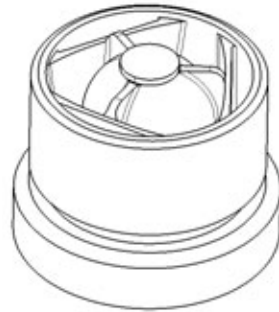
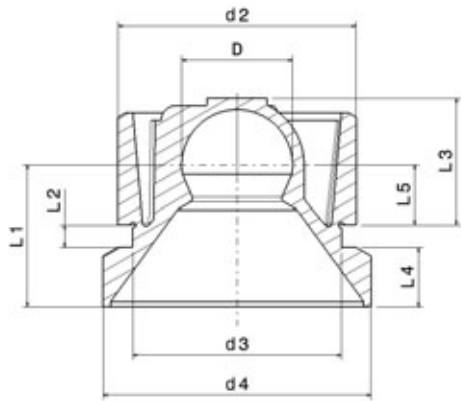
Couplings with collar for mounting dome



Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4040 100 2324	collared	10	24	22	32	16
4040 100 3024	collared	10	24	22	32	16
4040 101 3024	collared	10	24	22	32	16
4040 010 0012	collared	10	26	22	32	16
4050 015 0040	collared	15	31.5	27	34	26
4040 150 3032	collared	15	32	28	36	19
4040 153 3032	collared	15	32	28	36	19

**Coupling with collar for mounting dome
High temperature applications**

Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4040 010 0001	collared	10	24	22	32	16



Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
3	12	7	6	EPDM-X+PP	59 Shore A	black
3	12	7	6	EPDM-X+PP	78 Shore A	black
3	12	7	6	EPDM-X+PP	86 Shore A	black
3	12	7	6	EPDM-X+PP	78 Shore A	black
3 – 3.5	ca. 17.7	3.5	8	EPDM-X+PP	86 Shore A	black
3	15	8	8	EPDM-X+PP	78 Shore A	black
3	15	8	8	EPDM-X+PP	93 Shore A	black

Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
3	12	7	6	EPDM peroxide	70 Shore A	black

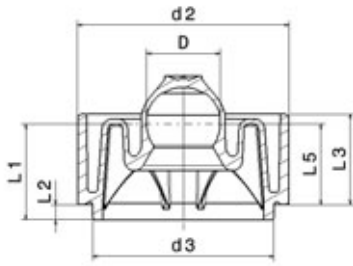
Coupling without collar for mounting dome



Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4041 080 3018	collarless	8	18	14	–	7.9
4041 100 3024	collarless	10	24	22	–	9
4041 101 3024	collarless	10	24	22	–	9
4041 152 3032	collarless	15	32	28	–	11
4041 150 3032	collarless	15	32	28	–	11

**Couplings without collar for mounting dome
High temperature applications**

Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4041 080 7318	collarless	8	18	14	–	7.9
4041 108 3024	collarless	10	24	22	–	9
4040 015 0010	collarless	15	40	36	–	21
4040 015 0011	collarless	15	32	28	–	10.3



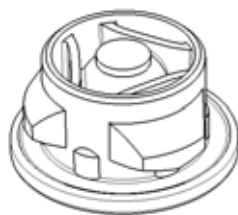
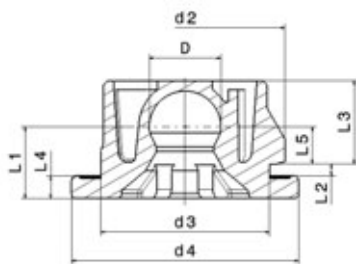
Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
3	10	–	4,9	EPDM-X+PP	78 Shore A	black
3	12	–	6	EPDM-X+PP	78 Shore A	black
3	12	–	6	EPDM-X+PP	86 Shore A	black
3	15	–	8	EPDM-X+PP	59 Shore A	black
3	15	–	8	EPDM-X+PP	78 Shore A	black

Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
3	10	–	4.9	TPE-E	38 Shore D	black
3	12	–	6	EPDM peroxide	70 Shore A	black
3	18	–	16	EPDM peroxide	70 Shore A	black
3	15	–	7.3	VMQ	60 Shore A	grey

Couplings for plate fastening



Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4070 070 4312	plate fastening	7	17	14	20	6.7
4070 070 3012	plate fastening	7	17	14	20	6.7
4070 070 1312	plate fastening	7	17	14	20	6.7
0499 085 0006	plate fastening	7	11	10	14	7
0499 085 0001	plate fastening	7	11	10	14	7
4062 070 0310	plate fastening	7	11	10	14	8.2
4050 007 0027	plate fastening	7	11	10	14	8.5
4050 007 0026	plate fastening	7	11	10	14	6.2
4060 070 4310	plate fastening	7	11.5	10	14	8.7
4050 007 0038	plate fastening	7	11	10	14	6.2
4059 011 0801	plate fastening	8	22	18	25	10.9
4050 080 3018	plate fastening	8	22	18	25	7.9
4050 010 0028	plate fastening	10	21.5	18	25	10.9
4059 010 0029	plate fastening	10	21.5	18	25	10.9
4050 010 0007	plate fastening	10	21.5	16 – 18.5	25	10.9
4050 010 0008	plate fastening	10	25.5	22	32	16
4050 015 0009	plate fastening	15	31.5	27	34	16
4250 015 0001	plate fastening	15	37	33	38	13.5



Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
0.8 – 2	–	2.2	4.5 – L2	EPDM-X+PP	69 Shore A	black
0.8 – 2	–	2.2	4.5 – L2	EPDM-X+PP	78 Shore A	black
0.8 – 2	–	2.2	4.5 – L2	EPDM-X+PP	86 Shore A	black
0.9	–	1.5	4.6	EPDM-X+PP	78 Shore A	black
0.9	–	2	4.1	EPDM-X+PP	93 Shore A	black
1.5	–	2	4.7	EPDM-X+PP	78 Shore A	black
1.5	–	2.6	4.6	EPDM-X+PP	86 Shore A	black
2	–	2	4.2	EPDM-X+PP	38 Shore A	black
2	–	2.5	4.2	EPDM-X+PP	69 Shore A	black
2	–	2	4.2	EPDM-X+PP	93 Shore A	black
2	–	5.5	3.4	EPDM-X+PP	69 Shore A	black
2	–	2.5	3.4	EPDM-X+PP	78 Shore A	black
2 – 3	–	3.5	6	EPDM-X+PP	69 Shore A	black
2 – 3	–	3.5	6	EPDM-X+PP	78 Shore A	black
2 – 3	–	3.5	6	EPDM-X+PP	86 Shore A	black
3	–	7	6	EPDM-X+PP	78 Shore A	black
3 – 3.5	–	5.2	8	EPDM-X+PP	78 Shore A	black
2 – 2.5	–	3.5	8	EPDM-X+PP	69 Shore A	black

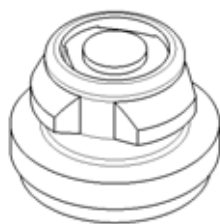
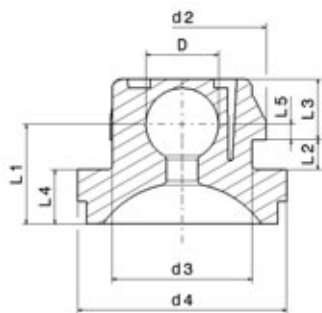
Couplings for plate fastening
High temperature applications



Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4269 023 0701	plate fastening	7	12.4	10	16	8
4059 007 0010	plate fastening	7	16.5	14	20	8
4059 008 0006	plate fastening	8	18.5	16	26	10.5
4050 010 0012	plate fastening	10	22.5	18	25	11

Couplings SNAPLOC® HT-3D plate fastening
High temperature applications

Part number	Design	Ball Ø D	Outer Ø d2	Mounting hole Ø d3	Collar Ø d4	Depth (to ball center L1)
4059 007 0020	plate fastening	7	16	14	18.8	7.2
4252 070 7314	plate fastening	7	17.5	14	25	8
4250 080 7318	plate fastening	7	21	18	25	7.9
4250 081 0318	plate fastening	8	21	18	25	7.9
4250 150 7334	plate fastening	15	37	33	38	13.5



Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
1 – 2	–	1.5	5.2	TPE-E	33 Shore D	black
2 – 2.5	–	3.5	2	ECO according to TL 52052	60 Shore A	black
2 – 2.5	–	3.5	4.75	VMQ	50 Shore A	black
2.5 – 3.2	–	3.5	6	VMQ	70 Shore A	grey

Wall thickness L2	Mounted depth L3	Collar depth L4	Depth L5	Material	Shore hardness	Thread surface
1	–	1.5	4.7	TPE-E	33 Shore D	black
1	–	2.5	4.5	TPE-E	33 Shore D	black
2 – 2.5	–	2.2	3.4	TPE-E	33 Shore D	black
2 – 2.5	–	2.2	3.4	TPE-E	40 Shore D	black
2 – 2.5	–	3.5	8	TPE-E	33 Shore D	black