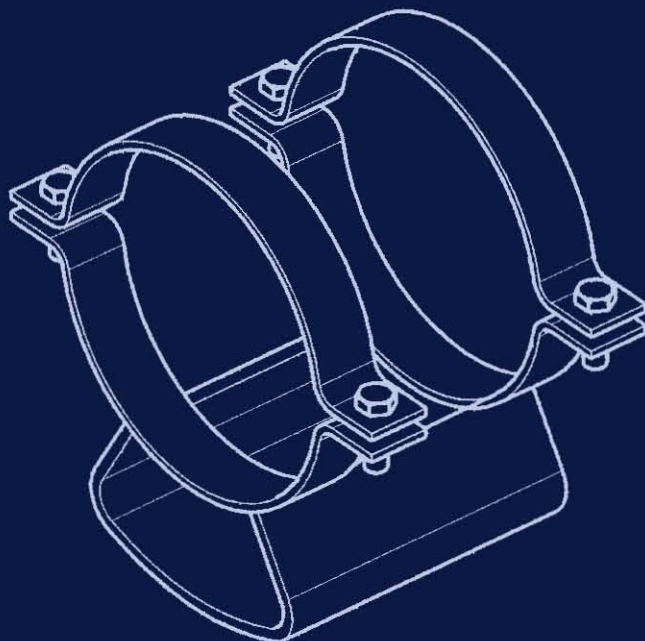
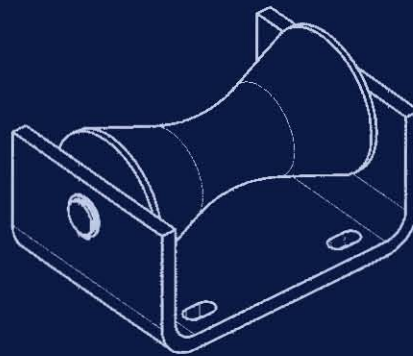
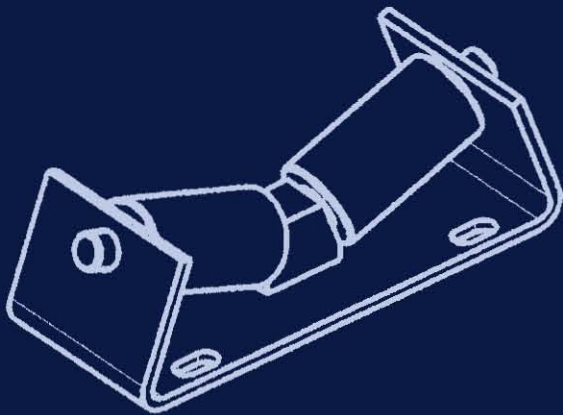
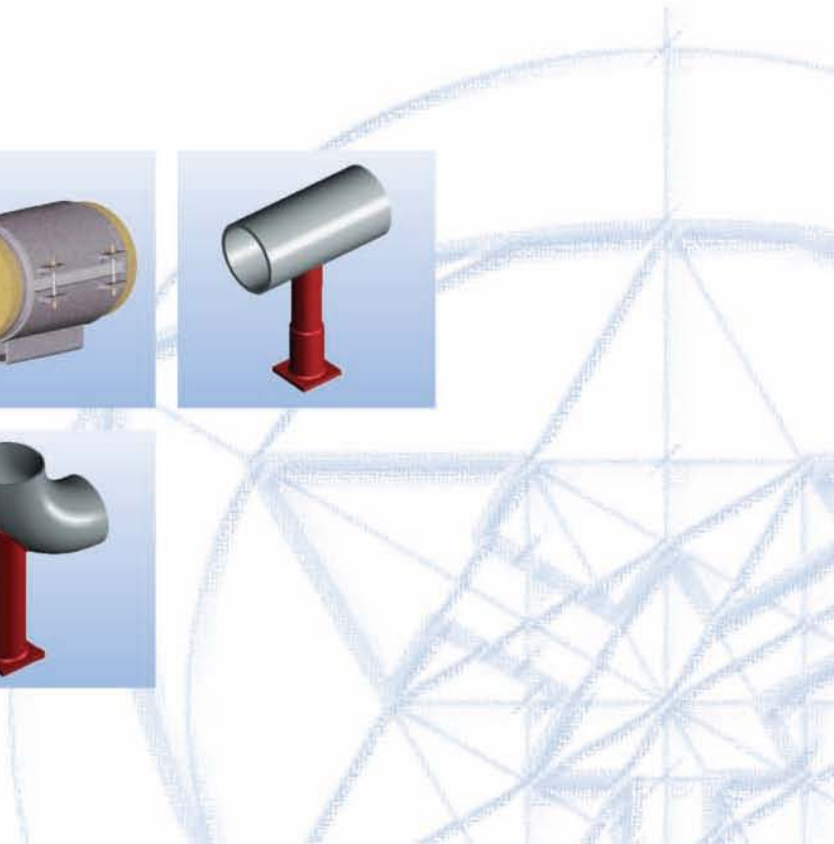


PIPE BEARING AND SADDLE COMPONENTS

5



PRODUCT
GROUP



PIPE BEARINGS AND SADDLE COMPONENTS

5

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PRODUCT GROUP 5

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ROLLER BEARINGS TYPE 51 TO 53

Piping systems arranged horizontally over long stretches are placed on supports. To allow normal thermal movement, the support points are designed as either sliding or roller types.

For larger diameter piping and especially when fluids and insulation produce high loads, roller bearings provide the optimum solution.

LISEGA – Standard Roller Bearings & Pipe Saddles

These items are standardized in LISEGA Product Group 5 for a wide range of applications.

For applications outside the standard range, special designs can be offered.

Specification and design of roller bearings

In the design of standard components, practical requirements find special consideration.

The standard roller bearing is hot-dip galvanized and provides optimum corrosion protection. Except for the movable double cylinder roller bearing Type 53 .. 29, weldings have been dispensed with.

The bearing axles are made from austenitic material and have a polished surface. The slide bearings incorporate bushings made from a Teflon bronze sintered compound material fitted into the roller. The bearings are maintenance free and guarantee dry running qualities. The formed shoulder of each bushing minimizes the stick-slip drag effect on lateral loading. The bearing axles are permanently fixed in the middle section of the base. Special locking on the side bracket is not required.

The rollers are made from high tensile carbon steel. Their outer surfaces are machined.

To compensate for misaligned anchor bolts, on site, the base holes are slotted for additional adjustment.

The height dimensions (E) within a load group range are identical for all roller bearings, including the lateral movement type.

Information regarding material codes, standards, calculations and weldings are given in the **Technical Specification** on page 0.9 and 0.10

Manufacture and Storing

For frequently used items, efficient serial production and stocking can be achieved through standardization.

Modern order logistics is possible through a single fabrication process or in small lots, thus ensuring short fabrication and delivery times.

Technical Data for Roller Bearings

- rolling resistance of the rollers max 4%
- rolling resistance on lateral movement max 4%
- temperature range at nominal load -30°C to 80°C
- permissible lateral loading 35% of nominal load
- permissible lift-off load 10% of nominal load





INSTALLATION INSTRUCTIONS

Roller Bearings

The roller bearings can be fixed by simple bolt connections or welded to the contact surface of the pipe support. In each case the complete width of the base plate must be supported and secured.

Due to the slotted holes, roller bearings can easily be adjusted even with slightly misaligned anchor bolts.

Pipe Saddles

Welded pipe saddles are supplied coated with a weldable primer (30µm) (see **Technical Specification** page 0.10).

Care must be taken that the specified minimum weld size is applied.

Pipe saddles with clamps are supplied ready to install.

Care must be taken to ensure the correct positioning and adequate presetting of the bolts.

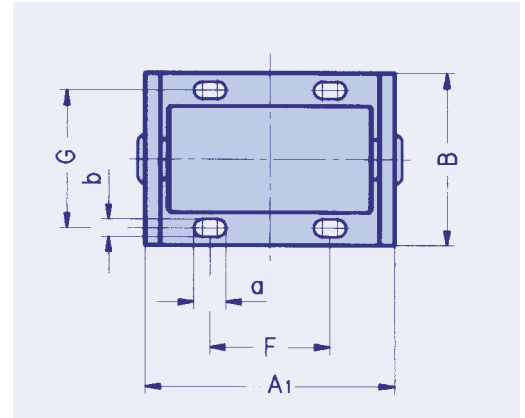
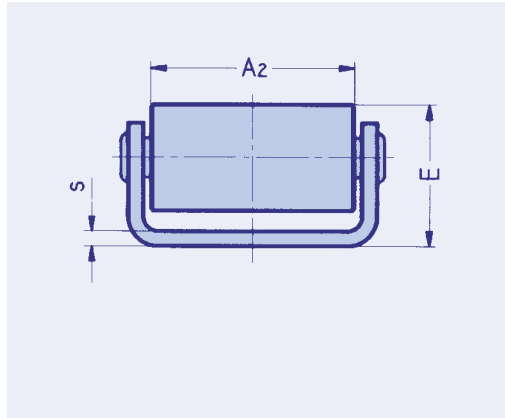
Lift-off restraints

When installing the lift-off restraint plate, care must be taken to ensure that the gap between plate and roller is sufficient for normal movement along the whole travel range.

The special design and quality of manufacture provide the following application benefits:

- maintenance of minimum roll resistance (max 4%)
- takeover of realistic lateral loading for double taper and double cylinder roller bearings (35% of the support load)
- whole support load can be carried by just one roller of the double cylinder type
- absorption of lateral displacements by sideways sliding designs
- simple and safe design of lift-off restraints
- use of pipe saddles enables favorable load transfer into the pipe wall
- design of pipe saddles minimizes heat transfer
- hot dip galvanized corrosion protection for all roller bearings
- maintenance free operation
- stainless steel roller axle
- Teflon bronze compound bushes
- large range of sizes OD 60mm – OD 1350mm)
- large load range (max support load 120kN)
- short support height (see selection chart for E dimension)

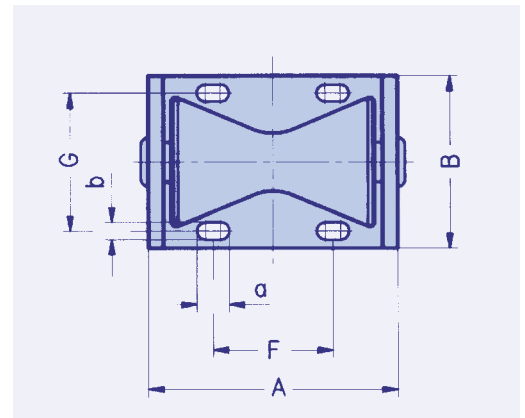
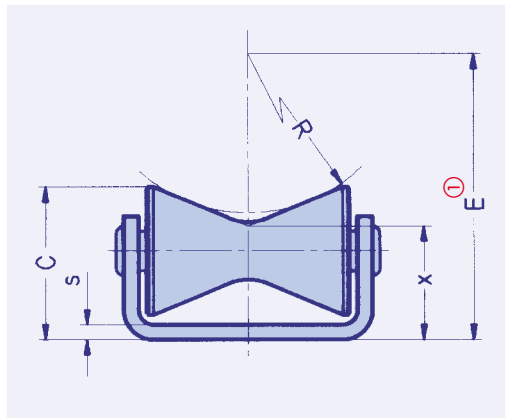
Single cylinder roller bearing type 51 08 19 to 51 35 19



Type	Load F_N (kN)	A1	A2	B	E	F	G	a	b	s	Weight (kg)
51 08 19	8	90	70	80	50	35	60	20	10	5	1.2
51 16 19	16	120	100	100	60	55	75	24	12	6	2.4
51 35 19	35	145	120	130	85	60	95	26	14	10	5.5

Order details:
Type 51 .. 19

Double taper roller bearing (single) type 52 04 19 to 52 35 19

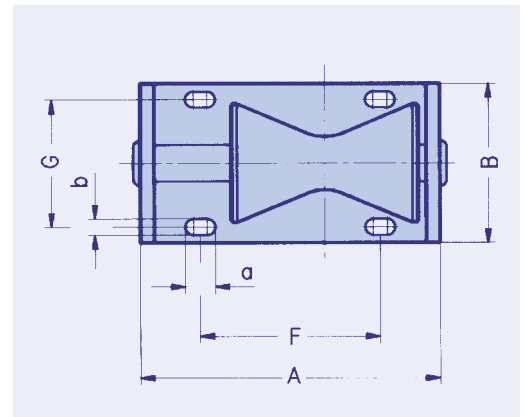
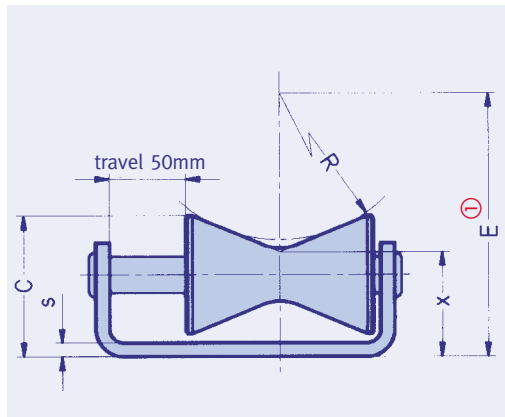


Type	Load F_N (kN)	R	A	B	C	E ①		F	G	a	b	s	x	Weight (kg)
						min.	max.							
52 04 19	4	27 - 100	105	90	70	83	160	55	70	20	10	4	54	1.8
52 08 19	8	84 - 130	135	100	85	153	202	75	75	20	10	6	64	3.3
52 16 19	16	110 - 165	165	120	100	191	250	90	90	24	12	8	74	5.4
52 35 19	35	136 - 230	230	160	135	247	347	130	120	26	14	12	102	14.0

① $E = 1.064 \cdot R + x$

Order details:
Type 52 .. 19

Double taper roller bearing (sideways movable) type 52 04 29 to 52 35 29



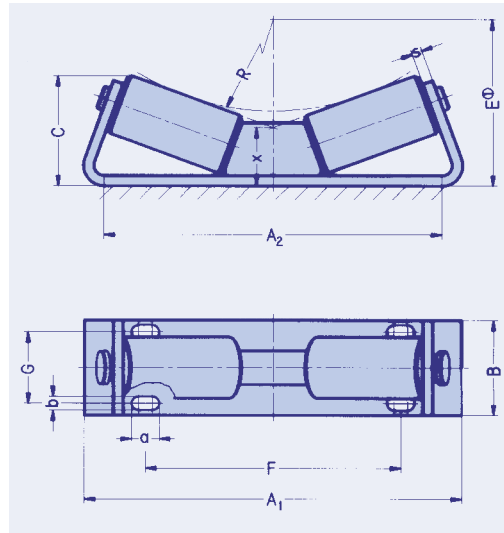
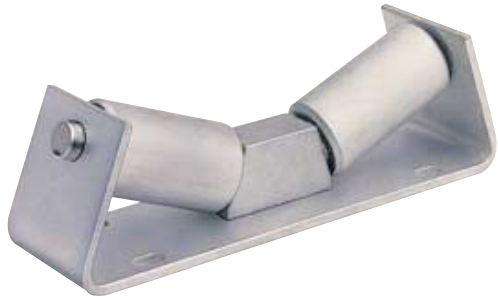
Type	Load F_N (kN)	R	A	B	C	E ①		F	G	a	b	s	x	Weight (kg)
						min.	max.							
52 04 29	4	27 - 100	155	90	70	83	160	105	70	20	10	4	54	2.0
52 08 29	8	84 - 130	185	100	85	153	202	120	75	20	10	6	64	3.6
52 16 29	16	110 - 165	215	120	100	191	250	140	90	24	12	8	74	6.0
52 35 29	35	136 - 230	280	160	135	247	347	180	120	26	14	12	102	15.5

① $E = 1.064 \cdot R + x$

Order details:
Type 52 .. 29

DOUBLE CYLINDER ROLLER BEARING TYPE 53

5

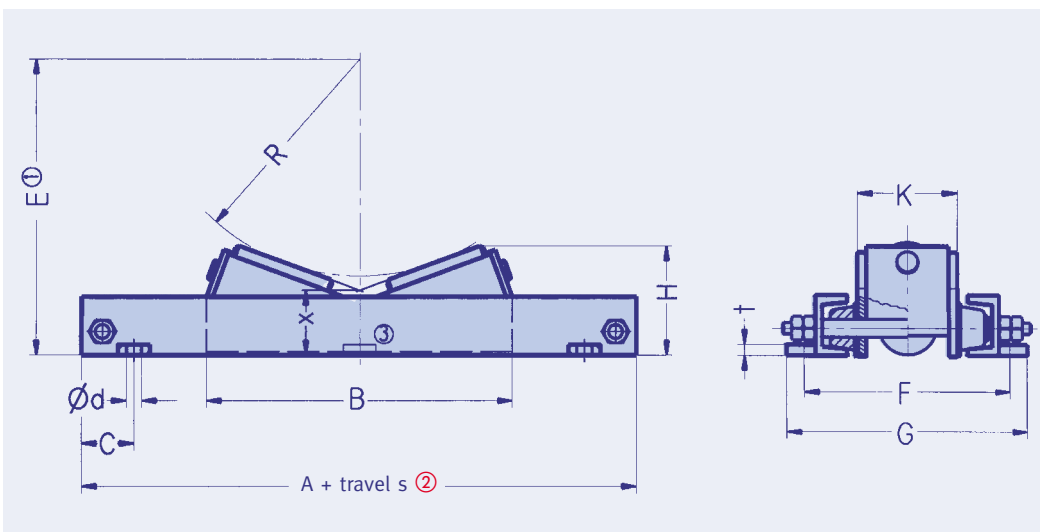


Double cylinder roller bearing
type 53 08 19 to 53 12 19

Type	Load F_N (kN)	R	A ₁	A ₂	B	C	E ^①		F	G	a	b	s	x	Weight (kg)
							min.	max.							
53 08 19	8	30 - 190	210	190	80	65	72	242	140	60	20	10	5	40	2.5
53 16 19	16	85 - 310	310	285	100	90	135	375	230	75	24	12	6	45	5.5
53 35 19	35	175 - 440	420	370	130	110	240	520	320	90	26	14	10	53	14.0
53 60 19	60	250 - 520	490	430	150	135	329	615	370	100	31	18	12	63	23.0
53 12 19	120	400 - 675	620	525	180	165	495	785	460	115	31	22	18	70	48.0

① $E = 1.064 \cdot R+x$

Order details:
Type 53 .. 19



Double cylinder roller bearing (sideways movable)
type 53 08 29 to 53 12 29

Type	Load F_N (kN)	R	A	B	C	$\varnothing d$	E ^①		F	G	H	K	t	x	Weight (kg)
							min.	max.							
53 08 29	8	30 - 190	260	210	50	10	72	242	145	165	65	60	5	40	6
53 16 29	16	85 - 310	350	300	50	12	135	375	160	185	90	75	5	45	10
53 35 29	35	175 - 440	475	410	60	14	240	520	215	245	110	100	6	53	23
53 60 29	60	250 - 520	530	465	70	18	329	615	250	290	130	120	8	63	35
53 12 29	120	400 - 675	700	635	80	23	495	785	315	360	160	145	10	70	70

① $E = 1.064 \cdot R+x$

② Travel $s = 100 \dots 600 \text{ mm}$

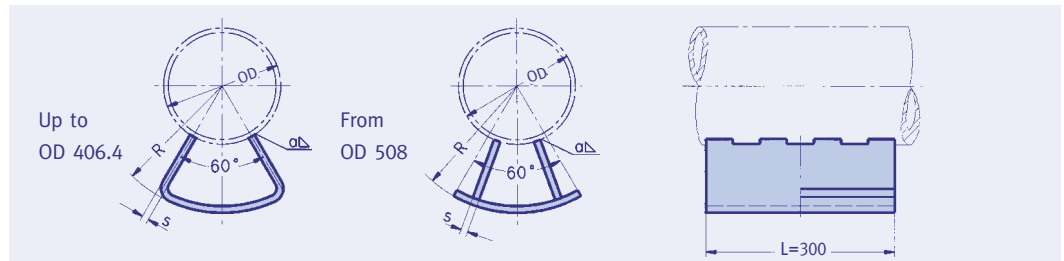
③ Centre fixing point from
Travel $s = 300 \text{ mm}$

Weight at $s = 100 \text{ mm}$

Order details:
Type 53 .. 29
with $s = \dots \text{ mm}$

WELD-ON PIPE SADDLES TYPE 54

Weld-on pipe saddle type 54 06 19 to 54 81 19



① Load at pipe temperature 150°C.

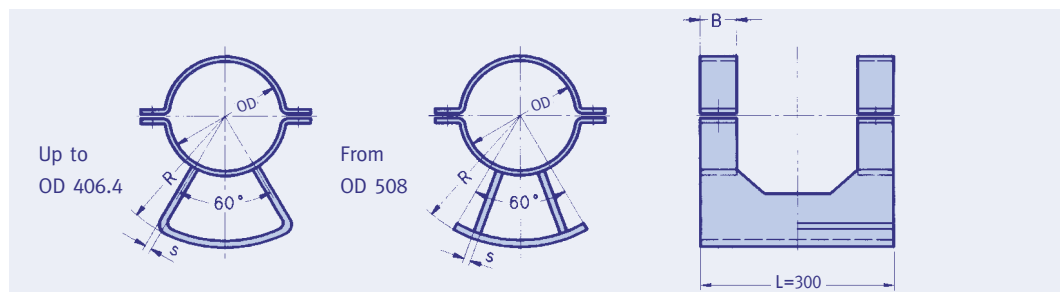
Type	Load F _N (kN) ①	OD	R	a	s	Weight (kg)
54 06 19	1.4	60.3	80 - 180	3	3	1.4 - 3.5
54 08 19	1.4	76.1	90 - 190	3	3	1.5 - 3.7
54 09 19	1.4	88.9	95 - 195	3	3	1.5 - 3.8
54 11 19	1.8	114.3	110 - 210	3	3	1.5 - 4.0
54 14 19	4	139.7	120 - 220	3	4	2.0 - 5.0
54 17 19	4	168.3	135 - 235	3	5	3.0 - 6.5
54 19 19	5	193.7	150 - 250	3	5	3.0 - 6.8
54 22 19	8	219.1	160 - 260	4	6	4.0 - 8.0
54 27 19	12	273	190 - 290	4	10	6.7 - 13.5
54 32 19	20	323.9	215 - 315	4	12	9.6 - 18
54 36 19	20	355.6	230 - 330	4	12	10 - 18
54 41 19	38	406.4	255 - 355	5	15	13 - 25
54 51 19	50	508	325 - 415	5	10	10 - 16
54 61 19	65	609.6	375 - 465	5	12	12 - 21
54 71 19	100	711.2	430 - 520	6	15	16 - 26
54 81 19	120	812.8	480 - 570	6	20	19 - 33

Order details:

Type 54 .. 19

R = ... mm

Pipe saddle with pipe clamp type 54 06 29 to 54 81 29



① Load at pipe temperature 150°C.

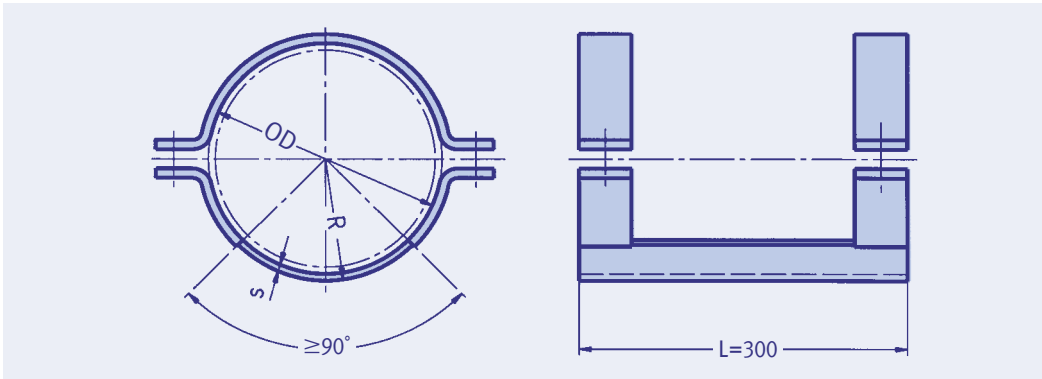
Type	Load F _N (kN) ①	OD	R	B	s	Weight (kg)
54 06 29	1.4	60.3	80 - 180	40	3	2.5 - 4.8
54 08 29	1.4	76.1	90 - 190	40	3	2.8 - 5.8
54 09 29	1.4	88.9	95 - 195	40	3	3.1 - 6.0
54 11 29	1.8	114.3	110 - 210	50	3	5 - 7
54 14 29	4	139.7	120 - 220	50	4	6 - 9
54 17 29	4	168.3	135 - 235	50	5	7 - 12
54 19 29	5	193.7	150 - 250	50	5	8 - 13
54 22 29	8	219.1	160 - 260	50	6	9 - 15
54 27 29	12	273	190 - 290	60	10	15 - 20
54 32 29	20	323.9	215 - 315	60	12	19 - 26
54 36 29	20	355.6	230 - 330	60	12	21 - 30
54 41 29	38	406.4	255 - 355	70	15	30 - 40
54 51 29	50	508	325 - 415	70	10	32 - 38
54 61 29	65	609.6	375 - 465	90	12	63 - 72
54 71 29	100	711.2	430 - 520	90	15	75 - 86
54 81 29	120	812.8	480 - 570	90	20	84 - 98

Order details:

Type 54 .. 29

R = ... mm

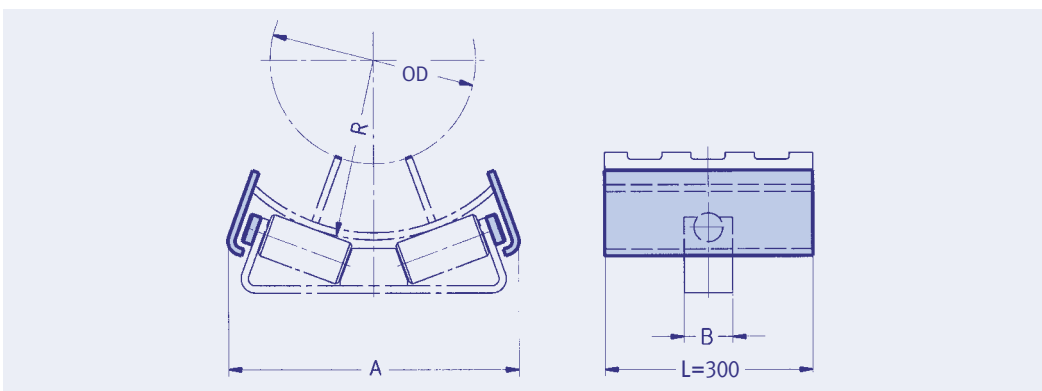
PIPE TRAY WITH PIPE CLAMPS TYPE 54 LIFT-OFF RESTRAINT TYPE 55



Pipe tray with pipe clamps
type 54 06 39 to 54 81 39

Type	Load F _N (kN)	OD	R	s	Weight (kg)
54 06 39	0.8	60.3	34	3	1.7
54 08 39	0.8	76.1	41	3	2.0
54 09 39	1.2	88.9	48	5	2.6
54 11 39	1.5	114.3	62	5	4.7
54 14 39	4.0	139.7	75	5	5.4
54 17 39	4.0	168.3	90	5	5.9
54 19 39	5.0	193.7	102	5	6.6
54 22 39	8.0	219.1	116	6	7.5
54 27 39	10	273.0	143	6	11
54 32 39	15	323.9	170	8	14
54 36 39	20	355.6	188	10	16
54 41 39	35	406.4	214	10	24
54 51 39	40	508.0	264	10	28
54 61 39	60	609.6	317	12	56
54 71 39	80	711.2	370	15	68
54 81 39	100	812.8	421	15	75

Order details:
Type 54 .. 39



Lift-off restraint
type 55 08 19 to 55 12 19

Type	compatible with roller bearing, type	A	B	R
55 08 19	53 08 19	226	80	30 - 190
55 16 19	53 16 19	335	100	85 - 310
55 35 19	53 35 19	455	130	175 - 440
55 60 19	53 60 19	560	150	250 - 520
55 12 19	53 12 19	700	180	400 - 675

Order details:
Type 55 .. 19
for type 54 .. 39
R = ... mm

INSULATED PIPE SUPPORTS TYPE 56



Pipe Supports for Cryogenic Applications

LISEGA offer a complete range of insulated pipe supports for all types of cryogenic piping applications. Typically, these include industrial processes involving the production, transportation and distribution of liquefied gases including methane, propane, butane (LNG), ethylene, oxygen, nitrogen and ammonia (LPG).

LISEGA standard insulated pipe supports are designed in accordance with recognized engineering specifications and international standards for pipes ranging in size from OD 21.3mm to OD 914mm with insulation thicknesses from 25mm up to 250mm. The supports are manufactured using materials suitable for the loads specified and for temperatures ranging from ambient to -196°C .

Insulation Material



The insulation material that forms an integral part of the insulated pipe support assembly is manufactured using fire-retarding high-density polyurethane (PUF) foam. For the supply of the PUF components and consumables, LISEGA have formed an alliance with **Bains Harding Industries Pty. Ltd., Australia**. With more than twenty five years experience in industrial insulation, the company has extensive experience in the manufacture of rigid polyurethane insulation materials including highdensity moulded products and provide construction and maintenance services to the liquefied natural gas industry (LNG) in Australia and South East Asia.

PUF Manufacture

The PUF is monolithically molded in heavy duty steel molds under carefully controlled temperature and humidity conditions. This ensures compliance with dimensional specifications and provides clean, sharp edges that fit neatly with the adjacent line insulation material on site. Careful attention is given to the curing of the PUF after molding to ensure dimensional stability.

Both single and multilayer PUF cradle systems are manufactured in accordance

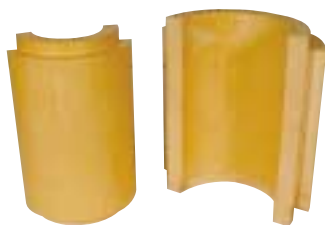


with ASTM C-585 and incorporate stepped radial and offset longitudinal joints. This provides a reliable interlocking interface with each layer of the adjacent line insulation on site and prevents a direct vapor path to the insulation surface.

All exposed PUF cradle surfaces are sealed with cryogenic fire-retarding elastomeric vapor barrier mastic to prevent moisture ingress. A laminated aluminum/polyester foil is bonded to the outermost surface of the PUF cradle assembly. This has an overlap allowance designed to cover the adjacent line insulation material on site. Finally, a sheet metal jacket forms part of the PUF cradle assembly and fits over the aluminum/polyester foil to provide additional support and insulation protection.

The PUF cradles are available in three standard densities to provide for varying load requirements –

160 kg/m³,
224 kg/m³,
320 kg/m³.





Material properties of the insulation						
		Unit	Test standard			
Density		kg/m ³	ASTM D1622	160	224	320
Compressive strength	20°C	MPa	ASTM D1621	≥ 2.0	≥ 4.0	≥ 7.0
	-165°C	MPa	D1621	≥ 3.675	≥ 5.75	≥ 12.25
Linear coefficient of expansion		1/K	BS 4370	≤ 70x10 ⁻⁶	≤ 70x10 ⁻⁶	≤ 70x10 ⁻⁶
Closed cell content		%	ASTM D2856	≥ 90	≥ 90	≥ 90
Thermal conductivity	20°C	W/mK	ASTM C177	≤ 0.032	≤ 0.035	≤ 0.041
	-165°C	W/mK	C177	≤ 0.021	≤ 0.027	≤ 0.034

Steel Clamp Base

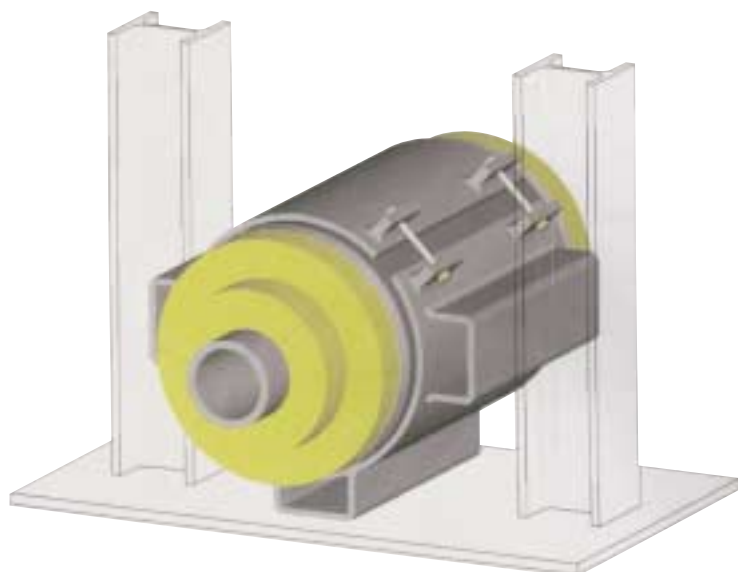
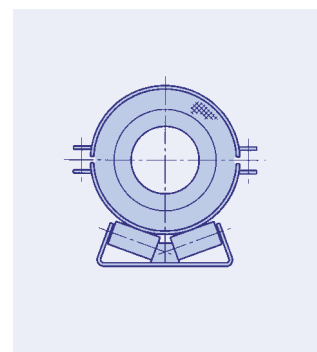
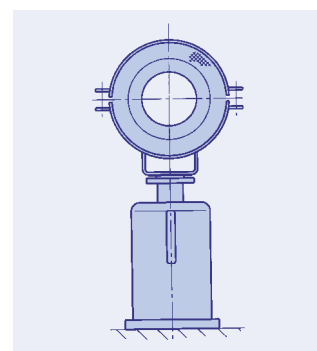
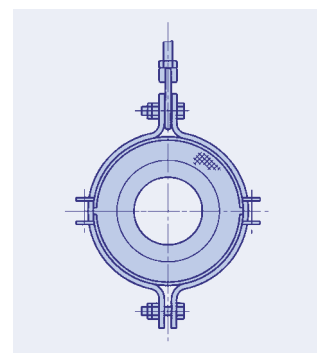
LISEGA standard insulated pipe supports are designed to clamp onto the pipe mechanically.

The steel clamp base support that the PUF cradle assembly fits into is manufactured from carbon steel and supplied with a hot dip galvanized finish as standard.

Material grades, welding and surface treatment are in accordance with the LISEGA standard specifications shown on pages 0.9 and 0.10 of the catalog.

The quality control system employed by LISEGA in the manufacture and assembly of pipe supports is described on page 0.15. The inspection and test procedure includes a trial fitting of each pipe support to a suitable section of pipe to ensure compliance with the specification.

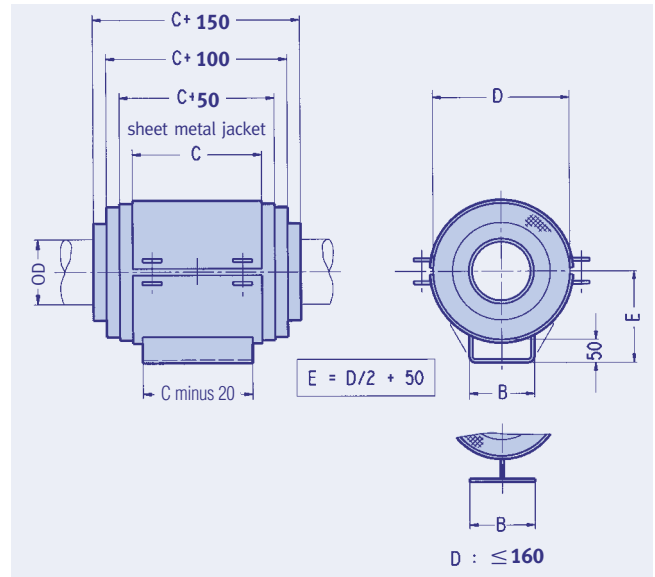
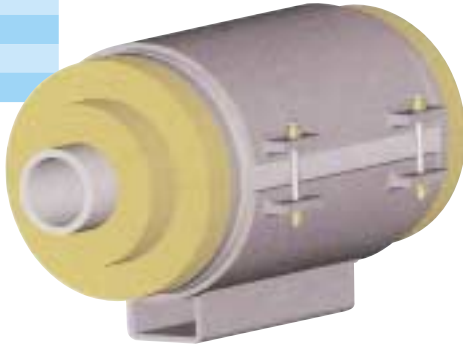
Nominal thickness of insulation	Thickness of the layering
80	40 / 40
100	50 / 50
130	30 / 50 / 50
150	50 / 50 / 50
180	50 / 80 / 50
200	50 / 100 / 50
250	50 / 50 / 100 / 50



CRYOGENIC CLAMP BASES TYPE 56 .. 10 TO 56 .. 69

Cryogenic clamp bases Type 56 01 10 to 56 91 69

D	Width of the clamp base B
75 ... 230	100
>230 ... 300	150
>300 ... 450	200
>450 ... 600	300
>600 ... 800	400
>800	500



Type	Table of outer diameter D of the insulation (excluding sheet metal jacket)											Permissible load (kN) at -170°C ①			
	OD	Nominal insulation thickness													
		25	40	50	80	100	130	150	180	200	250				
56 01 ..	21.3	71	101	121	181	221						2.3	2.3		
56 02 ..	26.9	77	107	127	187	227	287					2.9	2.9		
56 03 ..	33.7	84	114	134	194	234	294					3.7	3.7		
56 06 ..	60.3	110	140	160	220	260	320	360				6.7	6.7		
56 09 ..	88.9	139	169	189	249	289	349	689	449			9.8	9.8		
56 11 ..	114.3	164	194	214	274	314	374	414	474	514	614	12	21		
56 17 ..	168.3	218	248	268	328	368	428	468	528	568	668	18	31		
56 22 ..	219.1	269	199	319	379	419	479	519	579	619	719	24	40		
56 27 ..	273.0	323	353	373	433	473	533	573	633	673	773	30	50		
56 32 ..	323.9		404	424	484	524	584	624	684	724	824	36	60		
56 36 ..	355.6			456	516	556	616	659	716	756	856	39	65	105	
56 41 ..	406.4				566	606	666	706	766	806	906	45	75	120	
56 46 ..	457.2					657	717	757	817	857	957	50	84	135	
56 51 ..	508.0					708	768	808	868	908	1008	56	94	150	265
56 56 ..	558.8					759	918	859	919	959	1059	62	100	165	290
56 61 ..	609.6					810	870	910	970	1010	1110	67	110	180	320
56 66 ..	660.4					860	920	960	1020	1060	1160	73	120	195	345
56 71 ..	711.2					911	971	1011	1071	1111	1211	79	130	210	370
56 76 ..	762.0					962	1022	1062	1122	1162	1262	84	140	225	400
56 81 ..	812.8					1013	1073	1113	1173	1213	1313	90	150	240	425
56 91 ..	914.4					1114	1174	1214	1274	1314	1414	100	165	275	480

6th digit of type designation 5th digit of type designation

56 .. .0 56 .. .1 56 .. .2 56 .. .3 56 .. .4 56 .. .5 56 .. .6 56 .. .7 56 .. .8 56 .. .9 56 .. 1. 56 .. 2. 56 .. 4. 56 .. 6.

- 1. Length C: 300; density of insulation 160kg/m³
- 2. Length C: 500; density of insulation 160kg/m³
- 4. Length C: 500; density of insulation 224kg/m³
- 6. Length C: 500; density of insulation 320kg/m³

① Maximum lateral loading 30% of vertical load

COLD BLOCK PIPE SUPPORTS TYPE 56 .. 91

5

Pipe Supports for Cryogenic Applications

LISEGA standard cold block pipe supports are designed in accordance with recognized engineering specifications and international standards for pipes ranging in size from OD 21.3mm to OD 914mm. The supports are manufactured using materials that are suitable for the loads specified and temperatures ranging from ambient to -196°C .

Cold Block Material

The cold block insulation material forming an integral part of the cold block pipe support assembly is designed to provide a sufficient thermal insulation barrier between the pipe operating at subzero temperatures and the supporting structure that is at ambient temperature.

LISEGA standard cold block supports incorporate **Lignostone**[®] densified wood blocks that are manufactured from selected beech veneers, impregnated under vacuum with thermosetting synthetic resin and densified under heat and pressure. The **Lignostone**[®] blocks combine high strength with low thermal conductivity, have proven cryogenic capability and are used exclusively for cold pipe applications throughout the world.

Alternative cold block insulation materials suitable for cryogenic applications are available on request.

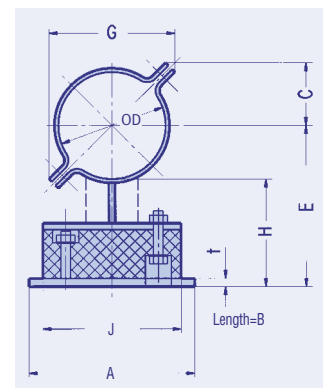
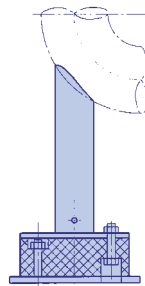
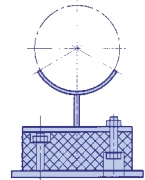
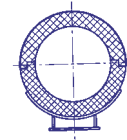
Steel Clamp Bases

LISEGA standard cold block pipe supports are designed to mechanically clamp onto the pipe. The steel clamp base support is manufactured from stainless steel and is supplied self-color as standard. The cold block is bolted between the underside of the clamp base and a carbon steel base plate. Material grades, welding and surface treatment are in accordance with the LISEGA standard specifications.

Other pipe support configurations can be supplied (pipe support stanchions, cradles, anchors) on request.

LISEGA cold block pipe supports are supplied with detailed installation instructions. Each pipe support is clearly marked in accordance with the LISEGA Type Designation System.

LISEGA cold block pipe supports are supplied fully assembled and packed to protect the finished product from superficial damage and moisture ingress during storage and transportation.



① permissible loads at cryogenic temperature

Type	OD	permissible load in kN ①	Temperature $^{\circ}\text{C}$							
			A	B	H	E	G	C	t	J
56 01 91	21.3	1.3	175	200	100	111	73	36	10	135
56 02 91	26.9	1.6	175	200	100	113	80	40	10	135
56 03 91	33.7	2.1	175	200	100	117	84	42	10	135
56 06 91	60.3	3.7	175	200	100	130	117	58	10	135
56 09 91	88.9	5.5	175	200	100	144	139	70	10	135
56 11 91	114.3	7.1	175	200	150	207	183	92	10	135
56 17 91	168.3	10	175	200	150	234	223	111	10	135
56 22 91	219.1	13	240	200	150	260	258	129	10	200
56 27 91	273.0	17	240	200	150	287	315	158	15	200
56 32 91	323.9	20	360	400	150	312	354	177	15	320
56 36 91	355.6	22	360	400	150	328	375	187	15	320
56 41 91	406.4	25	360	400	150	353	438	219	15	320
56 46 91	457.2	28	410	400	150	379	477	239	15	370
56 51 91	508.0	31	440	400	150	404	528	264	20	400
56 56 91	558.8	34	490	400	150	429	598	299	20	450
56 61 91	609.6	38	490	400	150	455	640	320	20	450
56 66 91	660.4	41	590	400	150	480	690	345	20	550
56 71 91	711.2	44	590	400	150	506	741	371	20	550
56 76 91	762.0	47	590	400	150	531	792	396	20	550
56 81 91	812.8	50	590	400	150	556	843	421	20	550
56 91 91	914.4	57	690	400	150	607	944	472	25	650

WELD-ON PIPE SHOES TYPE 57 .. 11 AND 57 .. 12

Weld-on pipe shoes made from T/C section

For use with small pipe loads and temperature $\leq 80^{\circ}\text{C}$

type 57 .. 11 to 57 .. 12

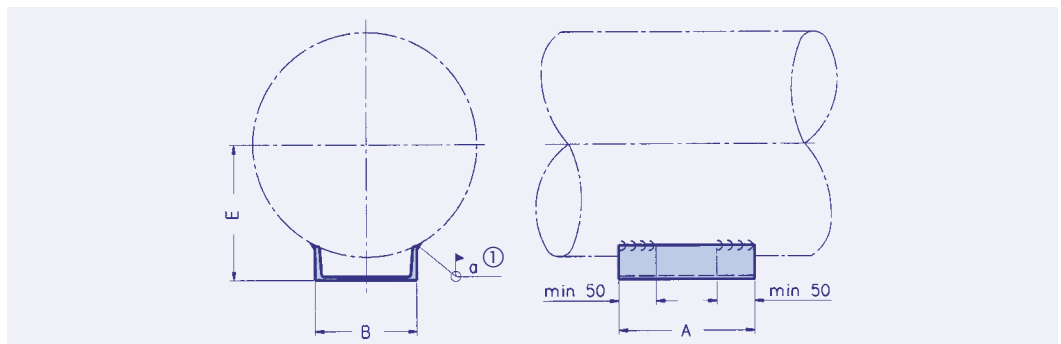
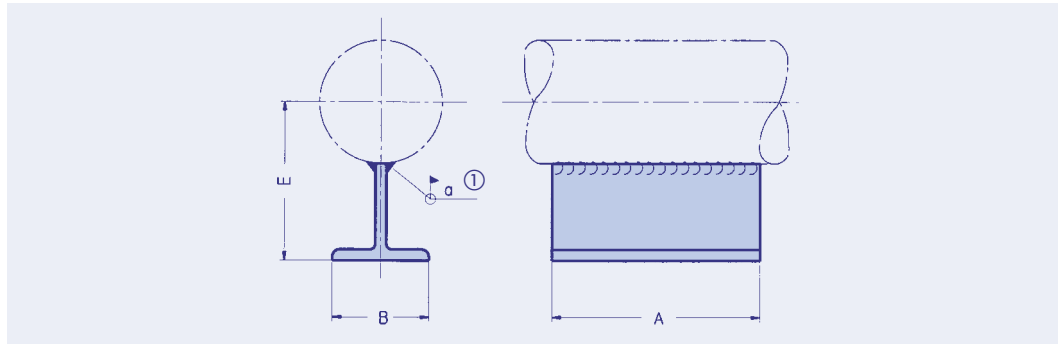
Material: S235JRG2

Surface: primer

Type designation:

57 .. 11 (T Shoe)

57 .. 12 (C Shoe)



① Field weld – For the weld size and permissible loads specified, the stress in the weld is less than 50 N/mm².

Type	Load F [kN] at 80°C	OD	A	B	E	a ①	Weight (kg)
57 03 11	1.0	21.3	100	70	81	3	0.8
57 03 11	1.0	26.9	100	70	83	3	0.8
57 03 11	1.0	33.7	100	70	87	3	0.8
57 03 11	1.0	42.4	100	70	91	3	0.8
57 03 11	1.0	48.3	100	70	94	3	0.8
57 07 11	1.5	60.3	150	70	100	3	1.2
57 07 11	1.5	73.0	150	70	107	3	1.2
57 07 11	1.5	76.1	150	70	108	3	1.2
57 07 11	1.5	88.9	150	70	115	3	1.2
57 13 11	2.0	108.0	150	100	154	3	2.5
57 13 11	2.0	114.3	150	100	157	3	2.5
57 13 11	2.0	133.0	150	100	167	3	2.5
57 13 11	2.0	139.7	150	100	170	3	2.5
57 13 11	2.0	159.0	150	100	180	3	2.5
57 13 11	2.0	168.3	150	100	184	3	2.5
57 24 12	6.0	193.7	250	100	135	5	2.7
57 24 12	6.0	219.1	250	100	150	5	2.7
57 24 12	6.0	244.5	250	100	163	5	2.7
57 24 12	6.0	267.0	250	100	175	5	2.7
57 24 12	6.0	273.0	250	100	178	5	2.7
57 36 12	8.0	323.9	250	160	210	5	4.7
57 36 12	10	355.6	250	160	226	5	4.7
57 36 12	10	368.0	250	160	233	5	4.7
57 42 12	10	406.4	250	200	255	5	6.3
57 42 12	10	419.0	250	200	262	5	6.3
57 42 12	12	457.2	250	200	283	5	6.3
57 51 12	15	508.0	250	240	312	5	8.3
57 51 12	15	558.8	250	240	340	5	8.3
57 61 12	20	609.6	250	300	370	5	11.6
57 61 12	20	660.4	250	300	400	5	11.6

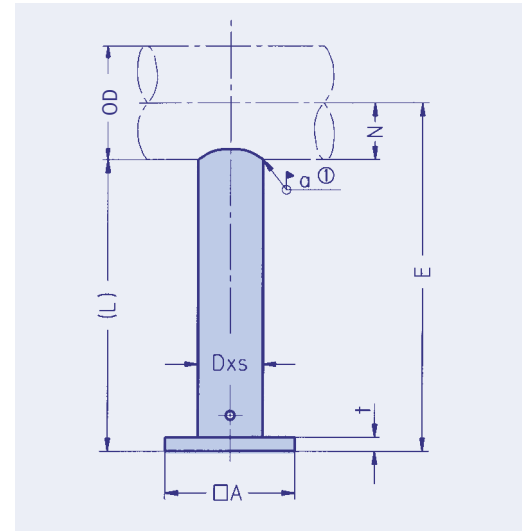
Order details:

Weld-on pipe shoe
type 57 .. 1.

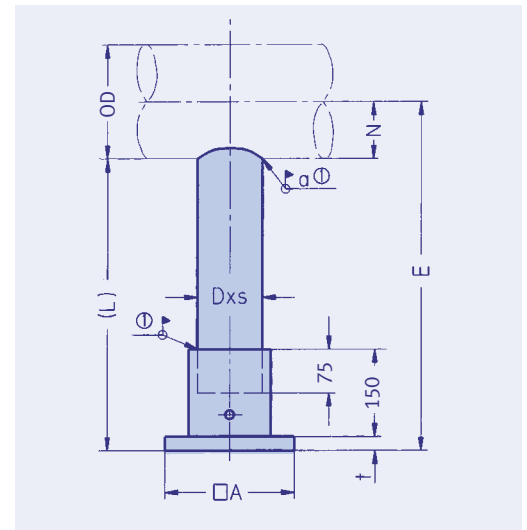
STANCHIONS FOR HORIZONTAL PIPES TYPE 58 .. 1. AND 58 .. 2.

5

Type	OD	D x s	Stanchion type	a ^②	N	E min	E max
58 05.1	48.3	33.7 x 4.5	a	3	24	250	1100
58 06.1	60.3	33.7 x 4.5	a	3	30	250	1100
58 06.2	60.3	48.3 x 5	b	3	30	250	1100
58 07.1	73.0	33.7 x 4.5	a	3	37	250	1100
58 07.2	73.0	48.3 x 5	b	3	37	250	1100
58 08.1	76.1	33.7 x 4.5	a	3	38	250	1100
58 08.2	76.1	48.3 x 5	b	3	38	250	1100
58 09.1	88.9	33.7 x 4.5	a	3	44	250	1100
58 09.2	88.9	48.3 x 5	b	3	44	250	1100
58 10.1	108.0	48.3 x 5	b	3	54	300	1150
58 10.2	108.0	73.0 x 5.6	c	3	54	300	1150
58 11.1	114.3	48.3 x 5	b	3	57	300	1150
58 11.2	114.3	73.0 x 5.6	c	3	57	300	1150
58 13.1	133.0	48.3 x 5	b	3	67	300	1150
58 13.2	133.0	73.0 x 5.6	c	3	67	300	1150
58 14.1	139.7	73.0 x 5.6	c	3	70	300	1150
58 14.2	139.7	88.9 x 5.6	d	3	70	300	1150
58 16.1	159.0	73.0 x 5.6	c	3	80	300	1150
58 16.2	159.0	88.9 x 5.6	d	3	80	300	1150
58 17.1	168.3	73.0 x 5.6	c	3	84	300	1150
58 17.2	168.3	88.9 x 5.6	d	3	84	300	1150
58 19.1	193.7	88.9 x 5.6	d	3	97	350	1150
58 19.2	193.7	114.3 x 8.8	e	5	97	350	1150
58 22.1	219.1	88.9 x 5.6	d	3	110	350	1200
58 22.2	219.1	114.3 x 8.8	e	5	110	350	1200
58 24.1	244.5	88.9 x 5.6	d	3	122	350	1200
58 24.2	244.5	114.3 x 8.8	e	5	122	350	1200
58 26.1	267.0	114.3 x 8.8	e	5	134	350	1200
58 26.2	267.0	139.7 x 10	f	7	134	350	1200
58 27.1	273.0	114.3 x 8.8	e	5	137	350	1200
58 27.2	273.0	139.7 x 10	f	7	137	350	1200
58 32.1	323.9	139.7 x 10	f	7	162	400	1250
58 32.2	323.9	219.1 x 8	g	5	162	400	1250
58 36.1	355.6	139.7 x 10	f	7	178	400	1250
58 36.2	355.6	219.1 x 8	g	5	178	400	1250
58 37.1	368.0	139.7 x 10	f	7	184	400	1250
58 37.2	368.0	219.1 x 8	g	5	184	400	1250
58 41.1	406.4	139.7 x 10	f	7	203	450	1300
58 41.2	406.4	219.1 x 8	g	5	203	450	1300
58 42.1	419.0	139.7 x 10	f	7	210	450	1300
58 42.2	419.0	219.1 x 8	g	5	210	450	1300
58 46.1	457.2	219.1 x 8	g	5	229	500	1300
58 46.2	457.2	323.9 x 10	h	7	229	500	1300
58 51.1	508.0	219.1 x 8	g	5	254	500	1350
58 51.2	508.0	323.9 x 10	h	7	254	500	1350
58 56.1	558.8	219.1 x 8	g	5	279	550	1350
58 56.2	558.8	323.9 x 10	h	7	279	550	1350
58 61.1	609.6	323.9 x 10	h	7	305	550	1400
58 66.1	660.4	323.9 x 10	h	7	330	600	1400
58 71.1	711.2	323.9 x 10	h	7	356	600	1450
58 76.1	762.0	323.9 x 10	h	7	381	650	1450
58 81.1	812.8	323.9 x 10	h	7	406	650	1500
58 91.1	914.4	323.9 x 10	h	7	457	700	1550



Type 58 .. 11
2



Type 58 .. 21
2

① ... ③ see page 5.15

Example: Telescopic stanchion for pipe OD= 244.5mm,
E= 800 (sliding)

The length of the stanchion is: L= E-N see data from
the selection table L=800-122= 678mm.

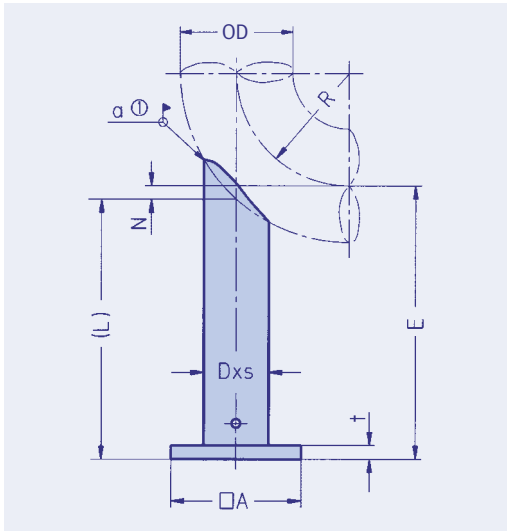
For stanchion D= 88.9mm (designation "d")

Permissible load = 0.36 x 11kN (see tables on
page 5.15) = 3.96kN

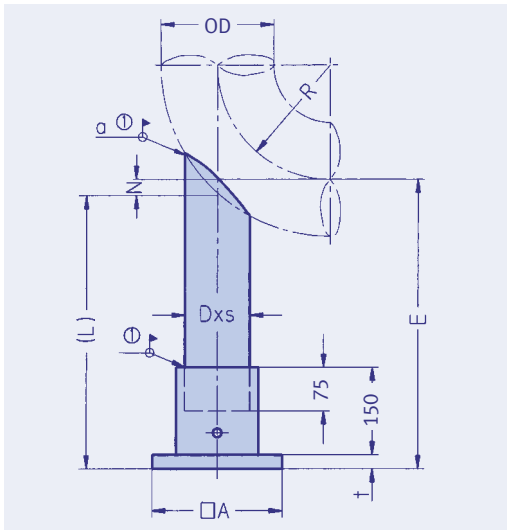
Order details:

Type 58 24 21, E= 800mm

STANCHIONS FOR SHORT RADIUS ELBOWS ($R \approx OD$) TYPE 58 .. 1. AND 58 .. 2.



Type 58 .. 13
4



Type 58 .. 23
4

① ... ③ see page 5.15

Example: Stanchion for short radius elbow $R \approx OD$,
OD= 419mm, E= 750 (anchor)

Length of stanchion: $L = E - N$ (see data from the
selection table), $L = 750 - 50 = 700$ mm.

For stanchion $D = 139.7$ mm (designation "f")

Permissible load = 0.41×22.5 kN (see tables on
page 5.15) = 9.2kN

Order details:

Stanchions for short radius elbows
 $R \approx OD$ type 58 42 23, E = 750mm

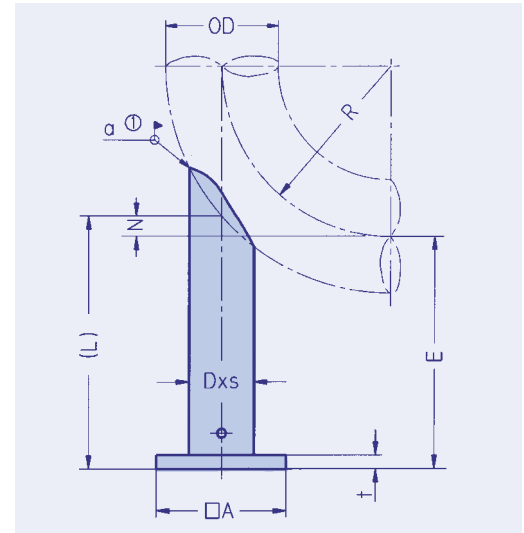
Type	OD	D x s	Stanchion type	a ^②	N	E min	E max
58 05 .3	48.3	33.7 x 4.5	a	3	10	250	1100
58 06 .3	60.3	33.7 x 4.5	a	3	10	250	1100
58 06 .4	60.3	48.3 x 5	b	3	10	250	1100
58 07 .3	73.0	33.7 x 4.5	a	3	15	250	1100
58 07 .4	73.0	48.3 x 5	b	3	15	250	1100
58 08 .3	76.1	33.7 x 4.5	a	3	15	250	1100
58 08 .4	76.1	48.3 x 5	b	3	15	250	1100
58 09 .3	88.9	33.7 x 4.5	a	3	15	250	1100
58 09 .4	88.9	48.3 x 5	b	3	15	250	1100
58 10 .3	108.0	48.3 x 5	b	3	15	250	1100
58 10 .4	108.0	73.0 x 5.6	c	3	15	250	1100
58 11 .3	114.3	48.3 x 5	b	3	20	250	1100
58 11 .4	114.3	73.0 x 5.6	c	3	20	250	1100
58 13 .3	133.0	48.3 x 5	b	3	20	250	1100
58 13 .4	133.0	73.0 x 5.6	c	3	20	250	1100
58 14 .3	139.7	73.0 x 5.6	c	3	25	300	1100
58 14 .4	139.7	88.9 x 5.6	d	3	25	300	1100
58 16 .3	159.0	73.0 x 5.6	c	3	25	300	1100
58 16 .4	159.0	88.9 x 5.6	d	3	25	300	1100
58 17 .3	168.3	73.0 x 5.6	c	3	30	300	1100
58 17 .4	168.3	88.9 x 5.6	d	3	30	300	1100
58 19 .3	193.7	88.9 x 5.6	d	3	30	300	1100
58 19 .4	193.7	114.3 x 8.8	e	5	30	300	1100
58 22 .3	219.1	88.9 x 5.6	d	3	35	300	1100
58 22 .4	219.1	114.3 x 8.8	e	5	35	300	1100
58 24 .3	244.5	88.9 x 5.6	d	3	35	300	1100
58 24 .4	244.5	114.3 x 8.8	e	5	35	300	1100
58 26 .3	267.0	114.3 x 8.8	e	5	40	300	1100
58 26 .4	267.0	139.7 x 10	f	7	40	300	1100
58 27 .3	273.0	114.3 x 8.8	e	5	45	350	1100
58 27 .4	273.0	139.7 x 10	f	7	45	350	1100
58 32 .3	323.9	139.7 x 10	f	7	50	350	1100
58 32 .4	323.9	219.1 x 8	g	5	50	350	1100
58 36 .3	355.6	139.7 x 10	f	7	40	350	1100
58 36 .4	355.6	219.1 x 8	g	5	40	350	1100
58 37 .3	368.0	139.7 x 10	f	7	45	350	1100
58 37 .4	368.0	219.1 x 8	g	5	45	350	1100
58 41 .3	406.4	139.7 x 10	f	7	50	350	1100
58 41 .4	406.4	219.1 x 8	g	5	50	350	1100
58 42 .3	419.0	139.7 x 10	f	7	50	350	1100
58 42 .4	419.0	219.1 x 8	g	5	50	350	1100
58 46 .3	457.2	219.1 x 8	g	5	55	400	1150
58 46 .4	457.2	323.9 x 10	h	7	55	400	1150
58 51 .3	508.0	219.1 x 8	g	5	60	400	1150
58 51 .4	508.0	323.9 x 10	h	7	60	400	1150
58 56 .3	558.8	219.1 x 8	g	5	65	450	1150
58 56 .4	558.8	323.9 x 10	h	7	65	450	1150
58 61 .3	609.6	323.9 x 10	h	7	70	450	1150
58 66 .3	660.4	323.9 x 10	h	7	80	450	1150
58 71 .3	711.2	323.9 x 10	h	7	85	450	1150
58 76 .3	762.0	323.9 x 10	h	7	90	450	1150
58 81 .3	812.8	323.9 x 10	h	7	95	500	1150
58 91 .3	914.4	323.9 x 10	h	7	110	550	1200

STANCHIONS FOR LONG RADIUS ELBOWS

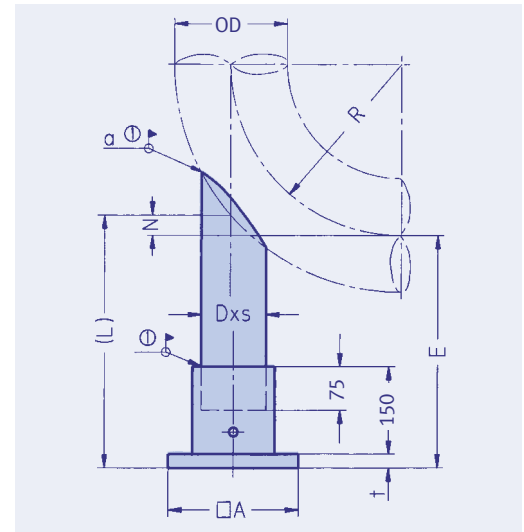
$R \approx 1.5$ OD, TYPE 58 .. 1. AND 58 .. 2.

5

Type	OD	D x s	Stanchion type	a ^②	N	E min	E max
58 05 .5	48.3	33.7 x 4.5	a	3	0	200	1100
58 06 .5	60.3	33.7 x 4.5	a	3	0	250	1050
58 06 .6	60.3	48.3 x 5	b	3	0	250	1050
58 07 .5	73.0	33.7 x 4.5	a	3	5	250	1050
58 07 .6	73.0	48.3 x 5	b	3	5	250	1050
58 08 .5	76.1	33.7 x 4.5	a	3	0	250	1050
58 08 .6	76.1	48.3 x 5	b	3	0	250	1050
58 09 .5	88.9	33.7 x 4.5	a	3	5	250	1050
58 09 .6	88.9	48.3 x 5	b	3	5	250	1050
58 10 .5	108.0	48.3 x 5	b	3	5	250	1050
58 10 .6	108.0	73.0 x 5.6	c	3	5	250	1050
58 11 .5	114.3	48.3 x 5	b	3	10	250	1050
58 11 .6	114.3	73.0 x 5.6	c	3	10	250	1050
58 13 .5	133.0	48.3 x 5	b	3	10	250	1050
58 13 .6	133.0	73.0 x 5.6	c	3	10	250	1050
58 14 .5	139.7	73.0 x 5.6	c	3	15	250	1050
58 14 .6	139.7	88.9 x 5.6	d	3	15	250	1050
58 16 .5	159.0	73.0 x 5.6	c	3	15	250	1050
58 16 .6	159.0	88.9 x 5.6	d	3	15	250	1050
58 17 .5	168.3	73.0 x 5.6	c	3	15	250	1050
58 17 .6	168.3	88.9 x 5.6	d	3	15	250	1050
58 19 .5	193.7	88.9 x 5.6	d	3	20	250	1050
58 19 .6	193.7	114.3 x 8.8	e	5	20	250	1050
58 22 .5	219.1	88.9 x 5.6	d	3	25	250	1050
58 22 .6	219.1	114.3 x 8.8	e	5	25	250	1050
58 24 .5	244.5	88.9 x 5.6	d	3	25	250	1050
58 24 .6	244.5	114.3 x 8.8	e	5	25	250	1050
58 26 .5	267.0	114.3 x 8.8	e	5	30	250	1050
58 26 .6	267.0	139.7 x 10	f	7	30	250	1050
58 27 .5	273.0	114.3 x 8.8	e	5	30	250	1050
58 27 .6	273.0	139.7 x 10	f	7	30	250	1050
58 32 .5	323.9	139.7 x 10	f	7	40	300	1050
58 32 .6	323.9	219.1 x 8	g	5	40	300	1050
58 36 .5	355.6	139.7 x 10	f	7	65	250	1000
58 36 .6	355.6	219.1 x 8	g	5	65	250	1000
58 37 .5	368.0	139.7 x 10	f	7	65	250	1000
58 37 .6	368.0	219.1 x 8	g	5	65	250	1000
58 41 .5	406.4	139.7 x 10	f	7	70	300	1000
58 41 .6	406.4	219.1 x 8	g	5	70	300	1000
58 42 .5	419.0	139.7 x 10	f	7	75	300	1000
58 42 .6	419.0	219.1 x 8	g	5	75	300	1000
58 46 .5	457.2	219.1 x 8	g	5	80	300	1000
58 46 .6	457.2	323.9 x 10	h	7	80	300	1000
58 51 .5	508.0	219.1 x 8	g	5	90	350	1000
58 51 .6	508.0	323.9 x 10	h	7	90	350	1000
58 56 .5	558.8	219.1 x 8	g	5	100	350	1000
58 56 .6	558.8	323.9 x 10	h	7	100	350	1000
58 61 .5	609.6	323.9 x 10	h	7	110	400	950
58 66 .5	660.4	323.9 x 10	h	7	115	400	950
58 71 .5	711.2	323.9 x 10	h	7	125	450	950
58 76 .5	762.0	323.9 x 10	h	7	135	450	950
58 81 .5	812.8	323.9 x 10	h	7	145	500	950
58 91 .5	914.4	323.9 x 10	h	7	160	550	900



Type 58 .. 15
6



Type 58 .. 25
6

① ... ③ see page 5.15

Example: Stanchion for long radius elbow $R \approx 1.5$ OD,
OD= 419mm, E= 750 (anchor)

Length of stanchion: $L = E + N$ (see data from the selection table), $L = 750 + 75 = 825$ mm.

For stanchion $D = 139.7$ mm (designation "f")

Permissible load = 0.37×22.5 kN (see tables on page 5.15) = 8.3kN

Order details:

Stanchions for long radius elbows

$R \approx 1.5$ OD

type 58 42 25, E = 750mm

STANCHIONS TYPE 58

① Field weld

② For weld size and permissible loads specified, stress in weld less than 50 N/mm²

③ Type designation:

58 .. 1. Stanchion

58 .. 2. Telescopic stanchion

④ Permissible load for actual stanchion length taken from chart

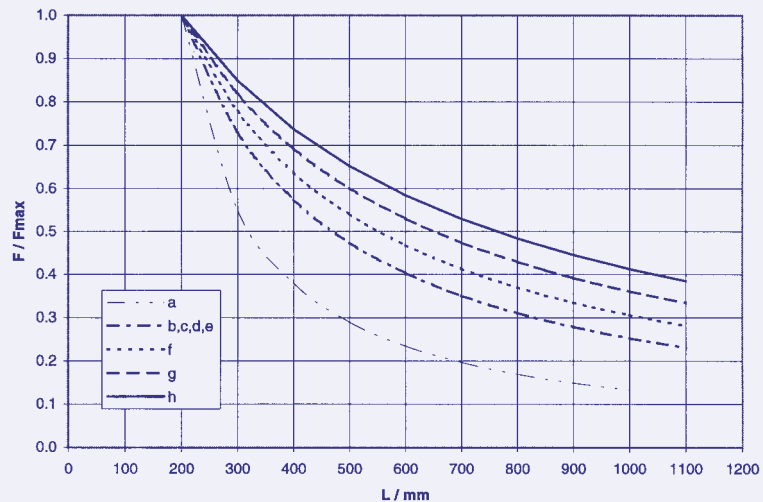
⑤ Maximum lateral load is 100% of specified vertical load

Material: S235

Surface: primer

Type	D x s	A x t	Max. permissible load at 80°C (kN)			Weight (kg)		
			only vertical load	sliding ④	fixed anchor ⑤	for L= 200mm 58 .. 1.	58 .. 2.	per add. 100mm
a	33.7 x 4.5	90 x 10	9.5	1.9	1.1	1.3	1.8	0.32
b	48.3 x 5	115 x 10	22	3.7	2.3	2.1	4.0	0.53
c	73.0 x 5.6	130 x 10	34	7.9	5.0	3.1	4.2	0.9
d	88.9 x 5.6	150 x 10	40	11	7.1	4.0	6.6	1.2
e	114.3 x 8.8	190 x 12	78	25	16.0	7.7	10.8	2.3
f	139.7 x 10	215 x 15	96	35	22.5	11.7	15.8	3.2
g	219.1 x 8	305 x 20	150	69	43.5	22.1	26.8	4.2
h	323.9 x 10	405 x 25	330	185	113.0	45.7	54.1	7.7

Permissible load against length of sliding / fixed (anchor) stanchions.



Elbow pads for long radius elbows ($R \approx 1.5 OD$)

Type 58 06 3. to 58 11 3.

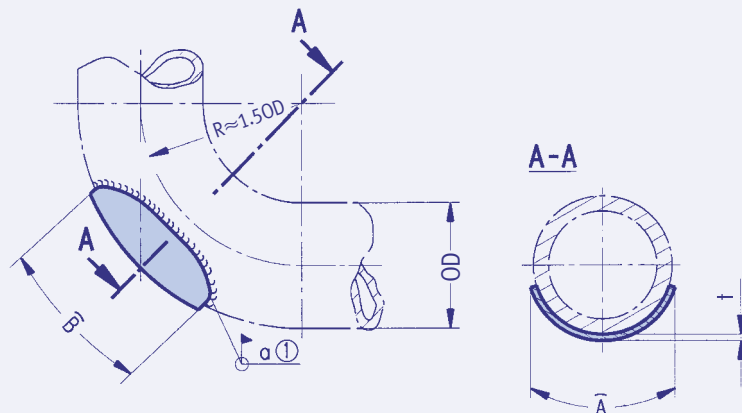
① Field weld

② 6th digit of type designation:

1 = Material: S235JRG2

Surface: primer

2 = Material: 1.4301 (stainless steel)



Type	OD	\hat{A}	\hat{B}	t	Weight (kg)
58 06 3.	60.3	95	95	4	0.25
58 07 3.	73.0	115	105	5	0.40
58 09 3.	88.9	140	125	5	0.60
58 11 3.	114.3	180	165	6	1.15

Order details:

Type 58 .. 3.