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PRODUCT CATALOGUE 2020/2021

Typical pipe sizes used in construction: Gas, Water, Sewerage. (outside diameter and wall thickness)

DN		Steel pipes	Cast-Iron K9	PE 100			PE 80		PCV sewage pipes		PCV pressure pipes type 125 PN10 (SDR 26)	PRAGMA pipes	SPIRO pipes			Polyester pipes PN 10	Ceramic pipes	Concrete pipes
mm	inches			SDR 26	SDR 17	SDR 11	SDR 17,6	SDR 11	N (SDR41 S20)	S (SDR34 S16,7)			SN 2	SN 4	SN 8			
25	1	33,7 x 3,2			32 x 2,0	32 x 3,0	32 x 2,3	32 x 3,0										
32	1 1/4	42,4 x 3,2			40 x 2,4	40 x 3,7	40 x 2,3	40 x 3,7										
40	1 1/2	48,3 x 3,2			50 x 3,0	50 x 4,6	50 x 2,9	50 x 4,6										
50	2	60,3 x 3,6		63 x 2,5	63 x 3,8	63 x 5,8	63 x 3,6	63 x 5,8			63 x 2,5							
65	2 1/2	76,1 x 3,6		75 x 2,9	75 x 4,5	75 x 6,8	75 x 4,3	75 x 6,8										
80	3	88,9 x 4,0	98 x 6,0	90 x 3,5	90 x 5,4	90 x 8,2	90 x 5,2	90 x 8,2			90 x 3,5							
100	4	114,3 x 4,0	118 x 6,0	110 x 4,2	110 x 6,6	110 x 10,0	110 x 6,3	110 x 10,0		110 x 3,2	110 x 4,2	110 x 7,5					131 x 15,5	
125	5	139,7 x 4,0	144 x 6,0	125 x 4,8	125 x 7,4	125 x 11,8	125 x 7,1	125 x 11,8									159 x 17,0	
140	5 1/2			140 x 5,4	140 x 8,3	140 x 12,7	140 x 8,0	140 x 12,7										
150	6	168,3 x 4,5	170 x 6,0	160 x 6,2	160 x 9,5	160 x 14,6	160 x 9,1	160 x 14,6	160 x 4,0	160 x 4,7	160 x 6,2	160 x 11,0				168 x 4,0	186 x 18,0	
180	7			180 x 6,9	180 x 10,7	180 x 16,4	180 x 10,3	180 x 16,4										
		193,7 x 5,6		200 x 7,7	200 x 11,9	200 x 18,2	200 x 11,4	200 x 18,2	200 x 4,9	200 x 5,9		200 x 13,0						
200	8	219,1 x 6,3	222 x 6,3	225 x 8,6	225 x 13,4	225 x 20,5	225 x 12,8	225 x 20,5			225 x 8,6					220 x 5,8	242 x 21,0	276 x 38
250	10	273,0 x 7,1	274 x 6,8	250 x 9,6	250 x 14,8	250 x 22,7	250 x 14,2	250 x 22,7	250 x 6,2	250 x 7,3		250 x 16,0				272 x 6,9	299 x 24,5	
280	11			280 x 10,7	280 x 16,6	280 x 25,4	280 x 16,0	280 x 25,4			280 x 10,8							
300	12	323,9 x 8,0	326 x 7,2	315 x 12,1	315 x 18,7	315 x 28,6	315 x 17,9	315 x 28,6	315 x 7,7	315 x 9,2	315 x 12,1	315 x 19,5			340 x 20,0	324 x 7,9	355 x 27,5	400 x 50
350	14	355,6 x 8,0	378 x 7,7	355 x 13,6	355 x 21,1	355 x 32,3	355 x 20,2	355 x 32,3							402 x 26,0	376 x 9,0	417 x 33,5	
400	16	406,4 x 8,8	429 x 8,1	400 x 15,3	400 x 23,7	400 x 36,4	400 x 22,8	400 x 36,4	400 x 9,8	400 x 11,7	400 x 15,3	400 x 26,0			452 x 26,0	427 x 10,1	486 x 43,0	510 x 55
450	18	457,0 x 10,0		450 x 17,2	450 x 26,7	450 x 41,0	450 x 25,6	450 x 41,0			450 x 17,3		492 x 21,0	504 x 27,0	508 x 29,0	478 x 10,9	548 x 49,0	
500	20	508,0 x 11,0	532 x 9,0	500 x 19,1	500 x 27,9	500 x 45,5	500 x 28,5	500 x 45,5	500 x 12,2	500 x 14,6	500 x 19,2	500 x 33,0	548 x 24,0	560 x 30,0	563 x 31,5	530 x 12,1	609 x 54,5	630 x 65
550	22			560 x 21,4	560 x 33,2	560 x 51,0	560 x 31,9	560 x 51,0										
600	24	610,0 x 11,0	635 x 9,9	630 x 24,1	630 x 37,4	630 x 57,3	630 x 35,8	630 x 57,3	630 x 15,4	630 x 18,4		630 x 42,0	655 x 27,5	665 x 32,5	678 x 39,0	616 x 13,8	721 x 60,5	750 x 75
700	28	711,0 x 11,0	738 x 10,8	710 x 27,2	710 x 42,1	710 x 64,6	710 x 40,2	710 x 64,6					766 x 33,0	781 x 40,5	792 x 46,0	718 x 15,6	831 x 65,5	
800	32	813,0 x 11,0	842 x 11,7	800 x 30,6	800 x 47,4		800 x 45,3						866 x 33,0	894 x 47,0	904 x 52,0	820 x 17,0	941 x 70,5	980 x 90
900	36	914,0 x 14,2	945 x 12,6	900 x 34,4	900 x 53,3		900 x 51,0						982 x 41,0	1007 x 53,5	1018 x 59,0	924 x 19,2		
1000	40	1016,0 x 14,2	1048 x 13,5	1000 x 38,2	1000 x 59,3		1000 x 56,6						1096 x 48,0	1121 x 60,5	1130 x 65,0	1026 x 21,2		1220 x 110
1100	44	1118,0 x 14,2	1152 x 14,4										1146 x 48,0	1171 x 60,5	1180 x 65,0	1099 x 23,0		
1200	48	1219,0 x 14,2	1255 x 15,3	1200 x 45,9									1310 x 55,0	1335 x 67,5	1356 x 78,0	1229 x 25,0		1460 x 130
1300	52	1320,0 x 16,0																
1400	56	1420,0 x 16,0	1462 x 17,1	1400 x 53,5									1536 x 68,0	1561 x 80,5	1582 x 91,0	1434 x 29,1		
1500	60	1520,0 x 16,0											1637 x 68,5	1687 x 93,5	1688 x 94,0	1499 x 30,6		



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BENEFITS & ADVANTAGES of using easy feed casing spacers inside ducts/casings.

Simple installation of a new carrier pipes inside a new or old duct or split casing.

Quick positioning of the carrier pipe. Excellent insulation properties.

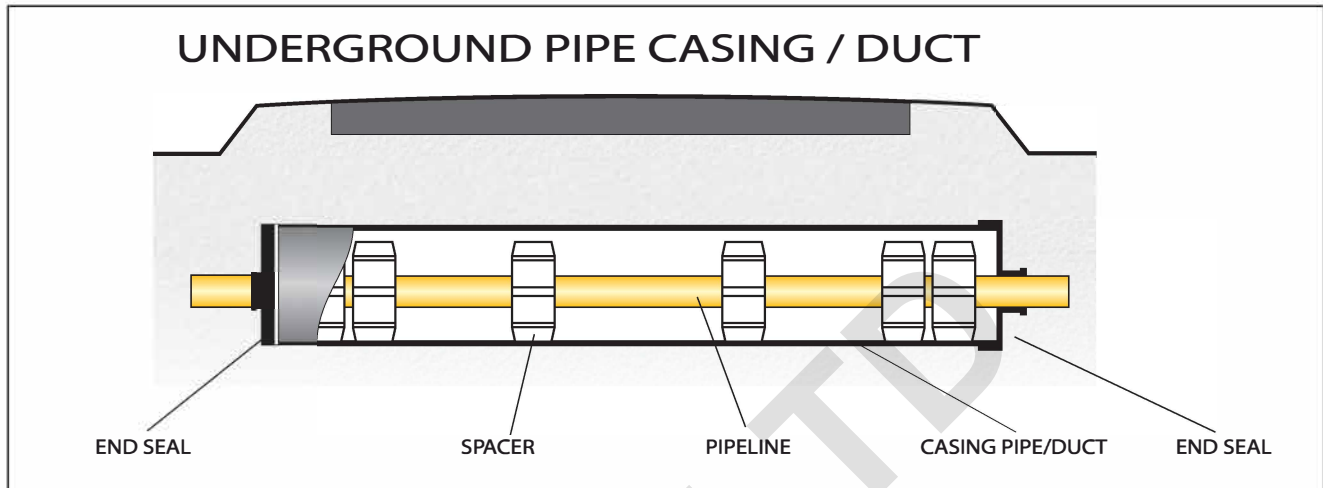
No interference with the cathodic protection plus protection of paint and insulation coatings.

Damage protection of the external surface.

Casing Spacers may be used for PE, PVC, Steel and other types of pipe, in a wide range of diameters.

Installation without specialised tools.

CASING SPACERS GUIDE CALCULATOR



Size calculation guide.

The height of spacers can be calculated in the following way

$$(ID - OD) : 2 = \text{height}$$

ID = Inner Diameter of casing pipe,

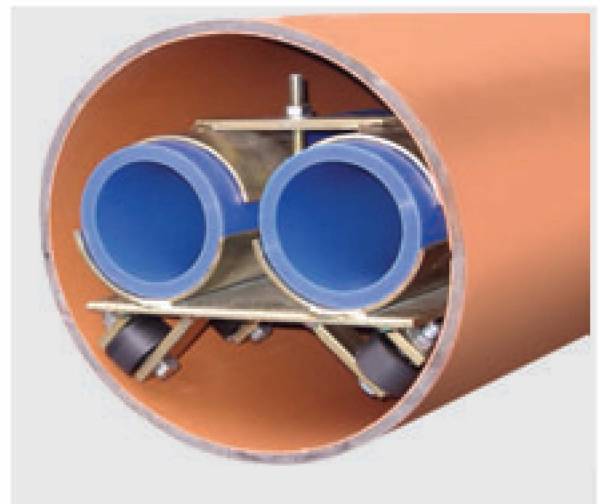
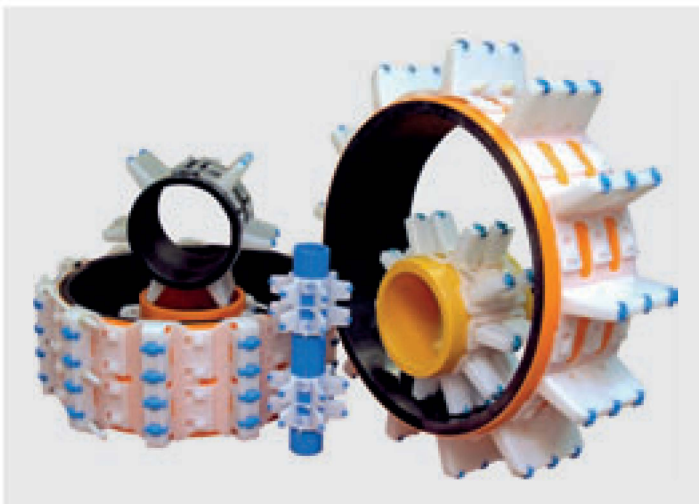
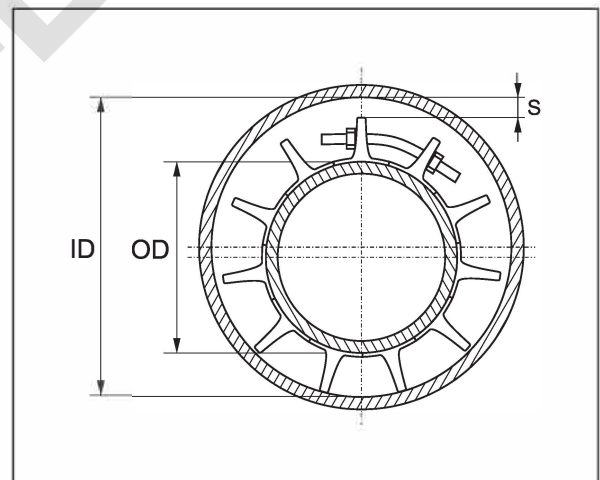
OD = Outer Diameter of carrier pipe
+ possible insulation.

The total height of elements has to be lower than the calculated dimension $S > 0$.

The number of casing spacers needed is determined by the formula below:

$$L \div 1.5 + 3 = \text{number of ring sets}$$

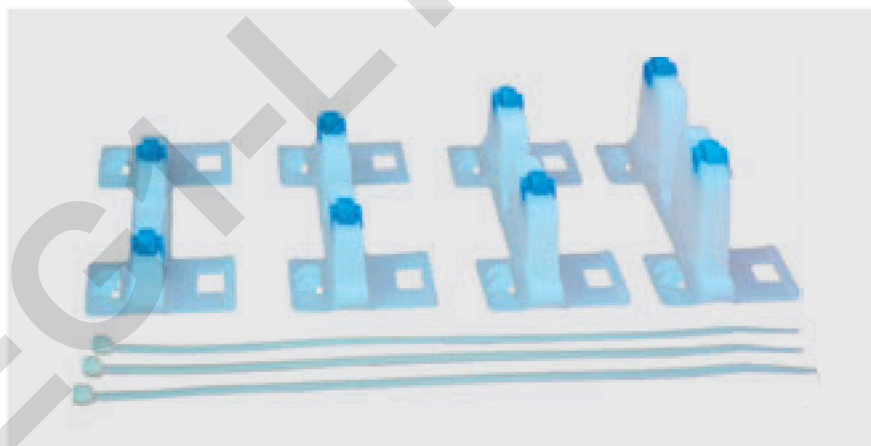
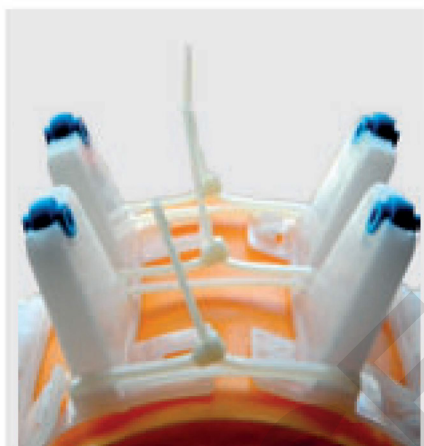
Where **L** equals the length of casing / duct in meters, we add 3 spacer ring sets to the total, so that the beginning and the end of the carrier pipe line is properly supported by two spacer ring sets.





TYPE BR CASING SPACER

PATENTED



Type BR spacers are designed for small carrier pipes. Rollers reduce friction while feeding new pipes into new or old ducts / casings, allowing the pipe to move freely during installation. Connecting the spacer units together round the pipe is done by tough snap connectors on each of the units ensuring a strong and firm connection of each unit on the pipe. See the guide chart opposite for how many units per set are needed. After the spacer set rings are wrapped around the pipe and 3 nylon straps clamp them firmly to the pipe. Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.

Pipe diameter range:	32 to 173 mm
Unit heights including rollers:	15, 25, 35, 45 mm
Unit width:	100 mm
Unit material:	HDPE
Clamping straps:	Nylon
Working temperature:	-20°C to 60°C
Standard distance between spacer sets:	1.5 m
Maximum static load each set:	200 KG
Metal components:	None

Spacer selection guide chart

Outer diameter of the carrier pipe [mm]	Number of units per ring set
32 - 37	3
38 - 48	4
49 - 58	5
59 - 69	6
70 - 79	7
80 - 90	8
91 - 101	9
102 - 111	10
112 - 121	11
122 - 132	12
133 - 142	13
143 - 152	14
153 - 163	15
164 - 173	16



TYPE L CASING SPACER

PATENTED



Type L spacers are for medium size diameter carrier pipes. Rollers reduce friction while feeding new pipes into new or old ducts / casings, allowing the new pipe to move freely during installation. Each spacer unit has 2 tough oblong holes which slot over the legs and click in place on the next unit and then wrap round the pipe, then 2 strong nylon threaded bars with washers and nuts clamp the ring set to the pipe, holding them firmly in place.

See the chart below for the number of units needed.

When clamping together the ends of the ring sets it may be necessary to cut / trim off the unused parts of the connector to make it fit flat and better on the pipe. Spacer ring set are delivered with all required units and fixings for the OD and length of the pipe.



Pipe diameter range: 110 to 400 mm.
Unit heights including rollers: 24, 40, 60, 80 mm
Unit width: 125 mm
Standard space between ring sets: 1.5 m
Working temperature: -20°C to 60 °C

Unit material: HDPE
Clamping system: Threaded bars, nuts and washers: Nylon
Maximum static load each set: 300 KG
Metal parts: None

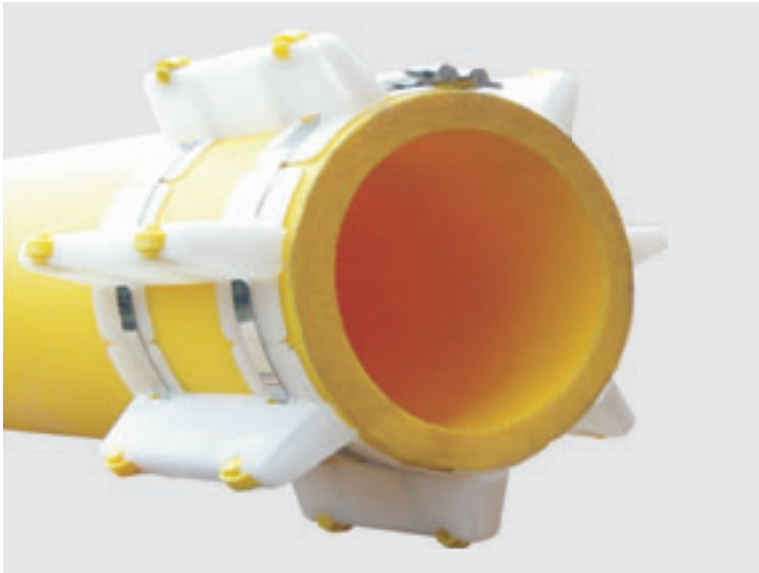
Spacer selection guide chart.

Outer diameter of carrier pipe [mm]	Number of units per ring set	Outer diameter of carrier pipe [mm]	Number of units per ring set
110 - 137	6	261 - 280	13
138 - 159	7	281 - 300	14
160 - 179	8	301 - 320	15
180 - 199	9	321 - 340	16
200 - 220	10	341 - 360	17
221 - 240	11	361 - 380	18
241 - 260	12	381 - 400	19



TYPE R CASING SPACER

PATENTED

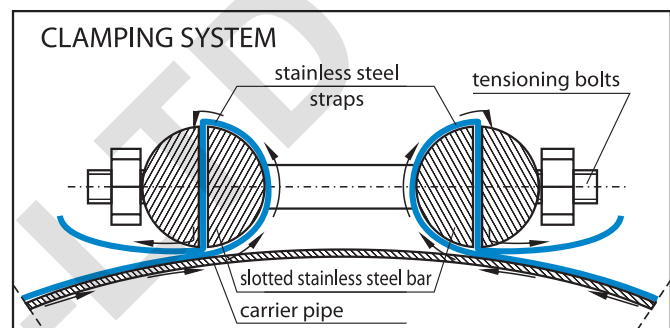


Type **R** spacers are used for medium to large diameter pipes. They are also designed to be use for very long carrier pipes, where it is very important to reduce friction when feeding a new pipe through new or old casings/ducts, the rollers help the new pipe to move easier during the installation. The fitting of the spacers are made easy as each unit butts up against the other. The units are clamped round the pipe by 2 stainless steel straps, which are threaded through the units and joined by 2 slotted bars with 2 bolts which clamps them firmly to the pipe.

When clamping together the ends it may be necessary to cut / trim off the unused parts of the unit so it lays flat on the carrier pipe this ensures that the units grip firmly on to the surface.

Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.

The easy to install clamping system is shown opposite.



Pipe diameter range: 160 to 420 mm
Unit heights incl. rollers: 28, 42, 58, 72, 88 mm
Unit width: 145 mm
Unit material: HDPE

Spacer selection guide chart.

Outer diameter of carrier pipe [mm]	Number of units per ring set
160 - 190	4
191 - 225	5
226 - 255	6
256 - 290	7
291 - 325	8
326 - 355	9
356 - 390	10
391 - 420	11

Clamping system.

Straps:

Stainless Steel.

Clamp bars, bolts, nuts

washers, standard:

Galvanized steel

Spacial order:

Stainless steel

Operating temperature:

-20°C to 60°C

Standard space between spacer sets: 1.5 m

Maximum static load each set:

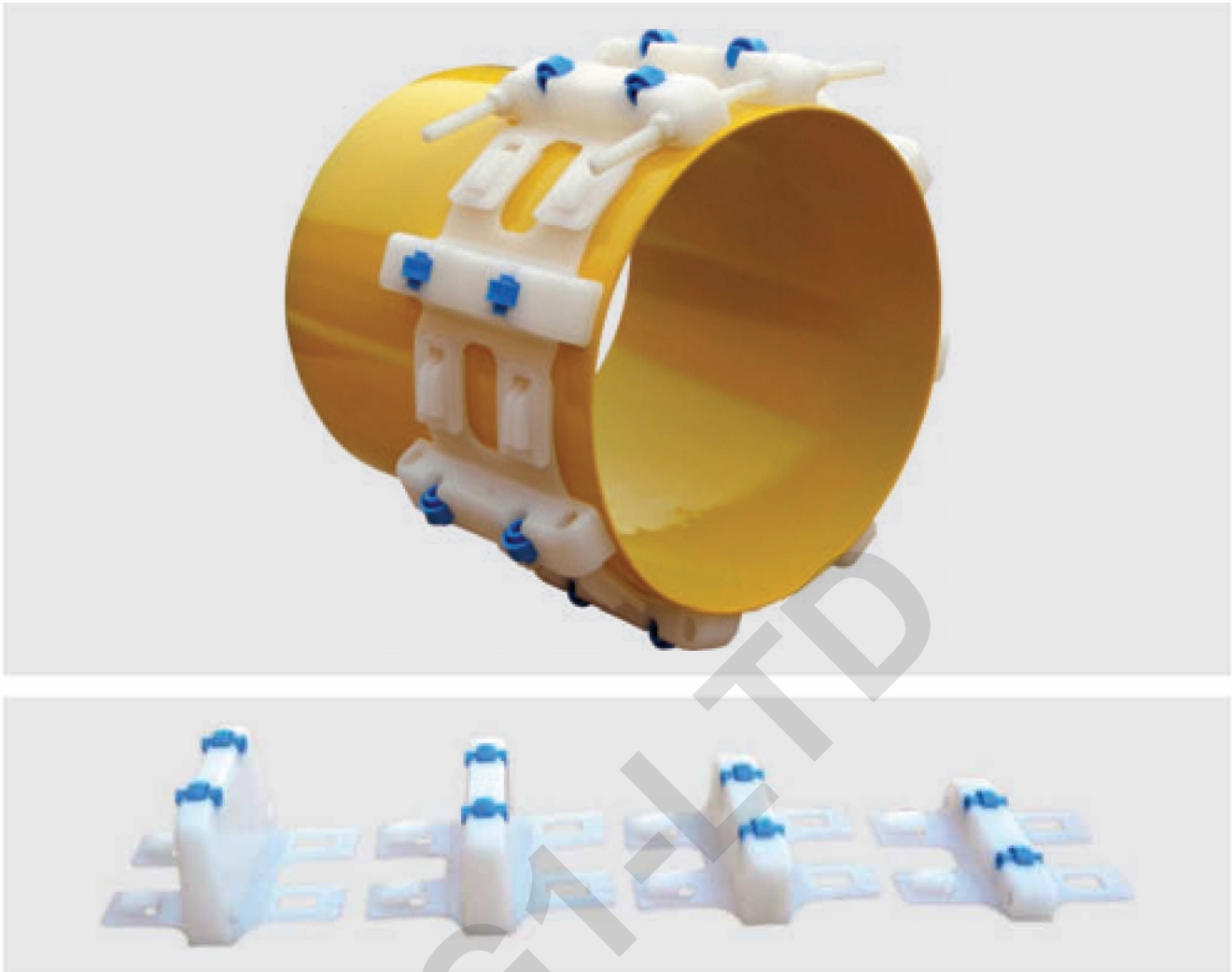
400 KG.





TYPE TR CASING SPACER

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Type **TR** spacers are for medium to large diameter pipes. They are also designed to be used for long carrier pipes, where it is very important to reduce friction when feeding a new pipe through new or old casings / ducts, the rollers help the new pipe to move easier during the installation. Fitting the spacer unit sets is made easy by a snap on system, which goes round the pipe then 2 nylon threaded bars, nuts and washers holds them firmly on. Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.

Spacer selection guide chart.

Outer diameter of the carrier pipe. [mm]	Number of units per ring set
151 - 183	5
184 - 216	6
217 - 249	7
250 - 282	8
283 - 315	9
316 - 348	10
349 - 381	11
382 - 414	12



When clamping together the ends of the ring sets it may be necessary to cut / trim off the unused parts of the connector to make it fit flat and better on the pipe.

Pipe diameter range:	151 to 414 mm
Unit height including rollers:	30: 50: 70: 90 mm
Unit width:	140 mm
Unit material:	HDPE
Clamping system:	
Threaded bars, nuts and washers:	Nylon
Operating temperature:	-20°C to 60°C
Standard distance between spacers set:	1.5 m
Maximum load:	700 KG



PATENTED



Type **ZR** spacers are intended for large and extra large diameter pipes, where it is very important to reduce friction in the casing/duct when feeding a new pipe through, the rollers on the unit help to move it easier during the installation. The fitting of the spacer units is made easy by a snap on system. The ring sets are held round the pipe by 2 nylon threaded bars, nuts and washers, which clamps them firmly on. When clamping together the ends it may be necessary to cut/trim off the unused connector peaces to make it fit better on the pipe. Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.

Pipe diameter range: 300 to 805 mm
Unit height including rollers: 35, 60, 90 mm.
Unit width: 180 mm.
Operating temperature: -20° to 60°C.
Unit material: HDPE
Clamping device:
Threaded bars, nuts, washers: Nylon
Up to 553 mm diameter: M10
Over 554 mm: M12
Standard distance between spacers: 1.5 m
Maximum load: 1500 KG



Spacer selection guide chart.

Outer diameter of carrier pipe [mm]	Number of units per ring set	Threaded bar
300 - 343	8	M10
344 - 385	9	M10
386 - 427	10	M10
428 - 469	11	M10
470 - 511	12	M10
512 - 553	13	M10

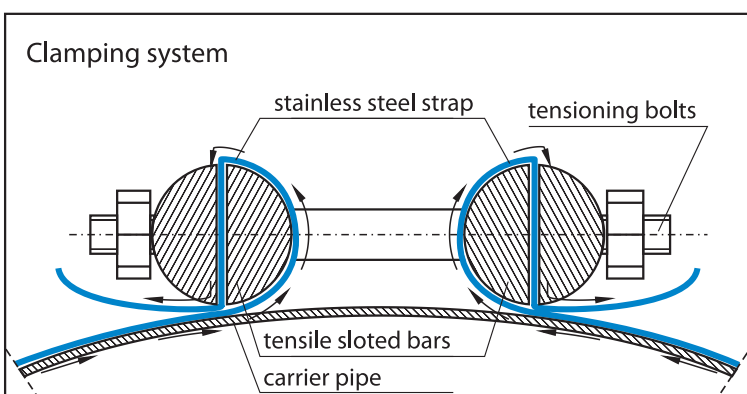
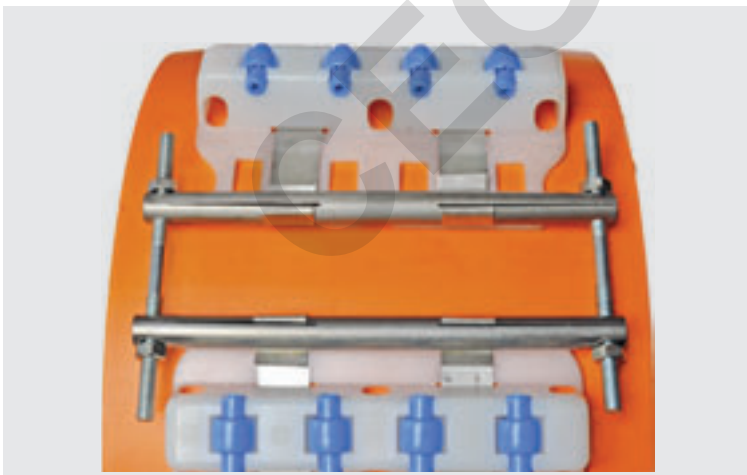
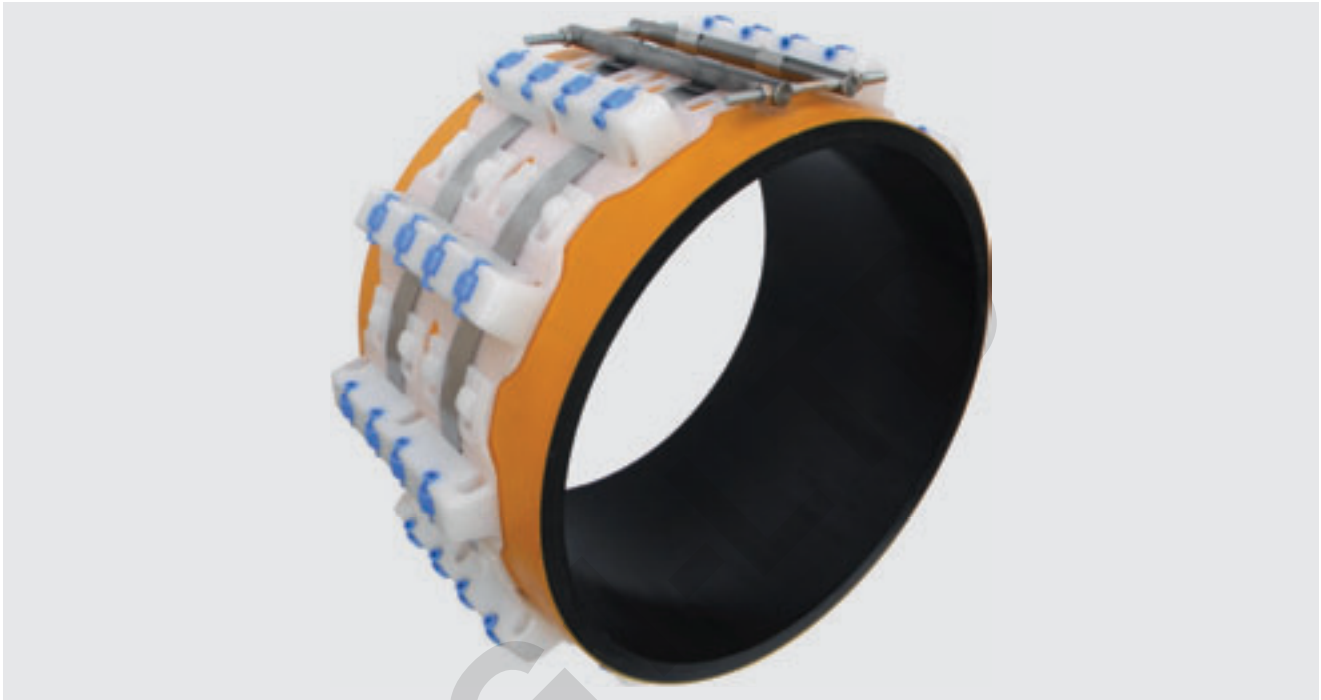
Outer diameter of carrier pipe [mm]	Number of units per ring set	Threaded bar
554 - 595	14	M12
596 - 637	15	M12
638 - 679	16	M12
680 - 721	17	M12
722 - 763	18	M12
764 - 805	19	M12



TYPE **SM DUO** VERSION 1 CASING SPACER

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SM DUO V1 is designed for extra large diameter pipes from 500 mm. Each unit has 4 rollers for high capacity loads. This is very important to reduce friction in the casing/duct when feeding a new pipe through. The rollers help to move the carrier pipe easier during the installation. Fitting the spacer units is made easy by a very strong snap on system. The ring sets are held round the pipe by 2 stainless steel straps, which are feed through units. Then a spacial steel clamping system with 2 slotted bars and 2 threaded steel rods with nuts and washers clamp the units firmly to the pipe. Call our technical team for advice larger sizes. When clamping together the ends of the ring sets it may be necessary to cut/trim off the unused parts of the corrector to make it fit flat on the pipe. Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.



Spacer selection guide chart.

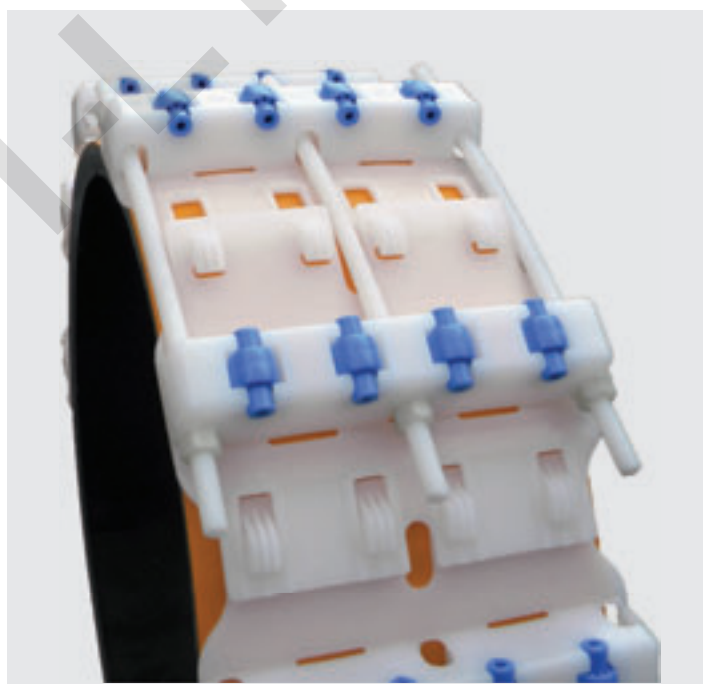
Outer diameter of carrier pipe [mm]	Number of units per ring set
DN 500	9
DN 550	10
DN 600	11
DN 650 (630)	12
DN 700	13
DN 800	15
DN 900	17
DN 1000	19
DN 1100	21
DN 1200	23
DN 1300	25
DN 1400	27
DN 1500	29

When assembling the clamping mechanism together, thread the stainless steel straps round and through the slots as showed on the diagram.



Spacer selection guide chart.

Outer diameter of carrier pipe. [mm]	Number of units per ring set	Threaded bar
500-525	10	M12
526-575	11	M12
576-625	12	M12
626-675	13	M12
676-725	14	M12
726-775	15	M12
776-825	16	M12
826-875	17	M12
876-925	18	M12
926-975	19	M12
976-1025	20	M12
1026-1075	21	M14
1076-1125	22	M14
1126-1175	23	M14
1176-1225	24	M14
1226-1275	25	M14
1276-1325	26	M14
1326-1375	27	M14
1376-1425	28	M14
1426-1475	29	M14
1476-1525	30	M14

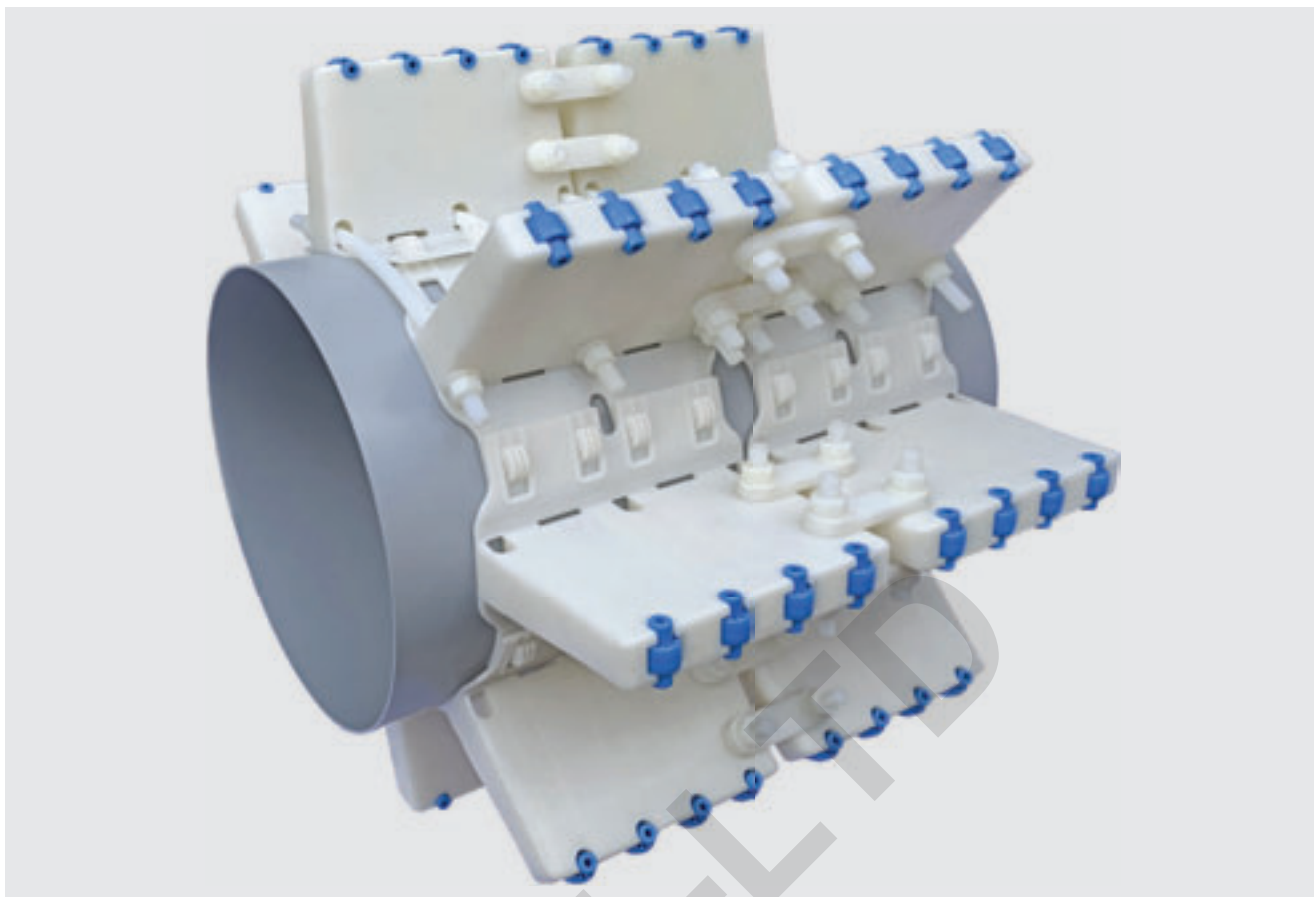


Diameter range:	from 500 mm.
Unit height with rollers:	32, 50, 70, 100, 160, 210 mm
Unit width:	240 mm
Unit material:	HDPE
Clamping system:	
Threaded bars, nuts and washers:	Nylon
Operating temperature:	-20° to 60°C
Standard space between set:	1.5m
Maximum static load per set:	3200 KG

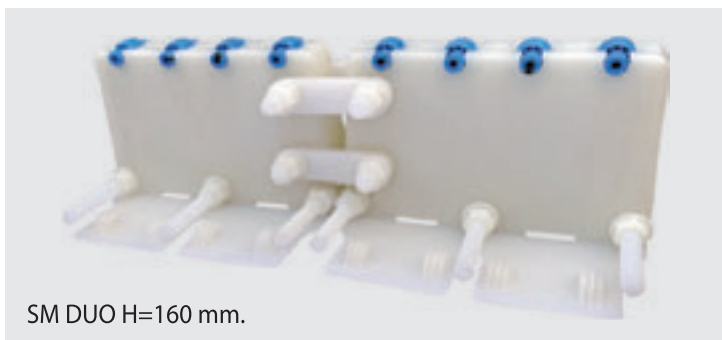
Assemble the spacer units by snapping them together and putting them round the pipe. Then put the nuts and washers on one end of the 3 threaded bars. Now thread them through the 2 end units and put the other nuts and washers on. Finally tighten them firmly on the pipe.



PATENTED



SM DUO H=100 mm.

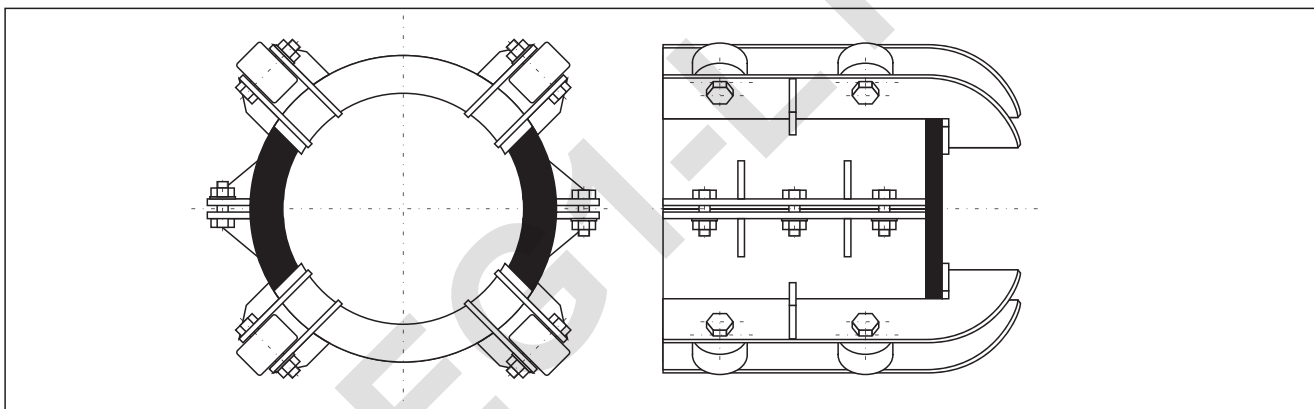
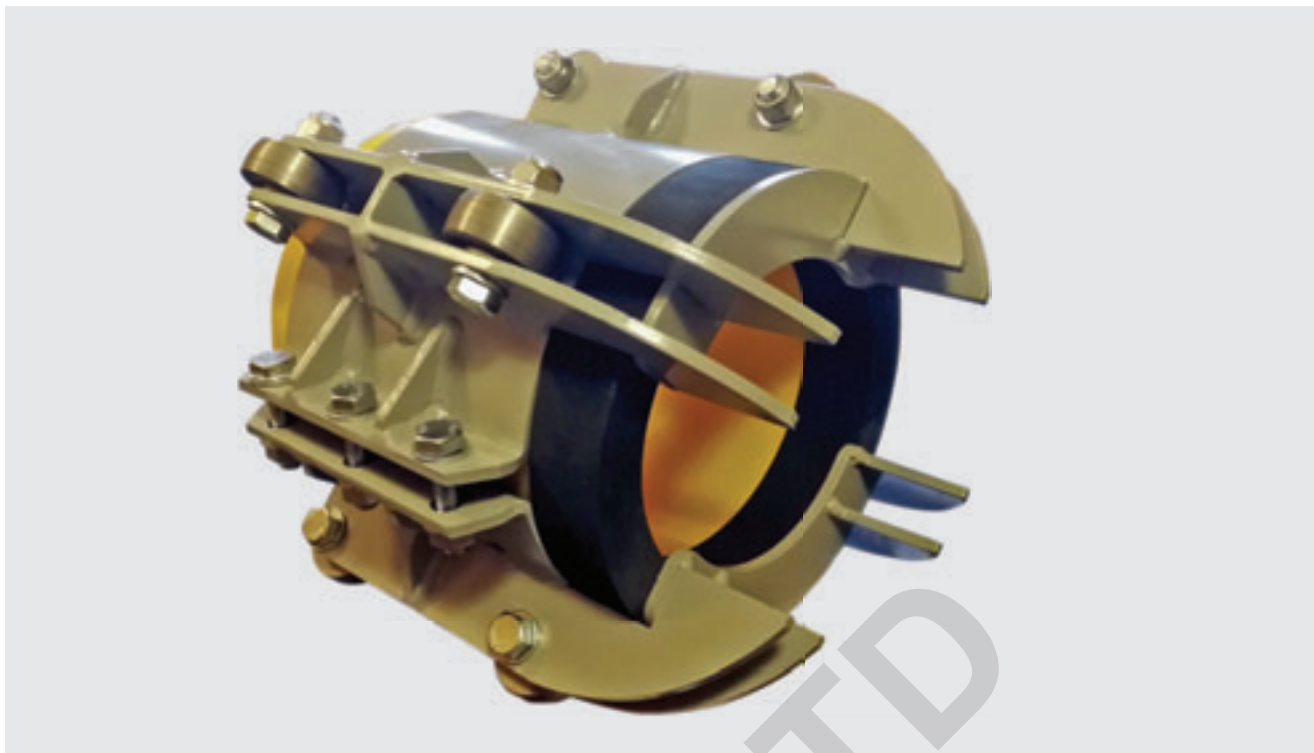


SM DUO H=160 mm.

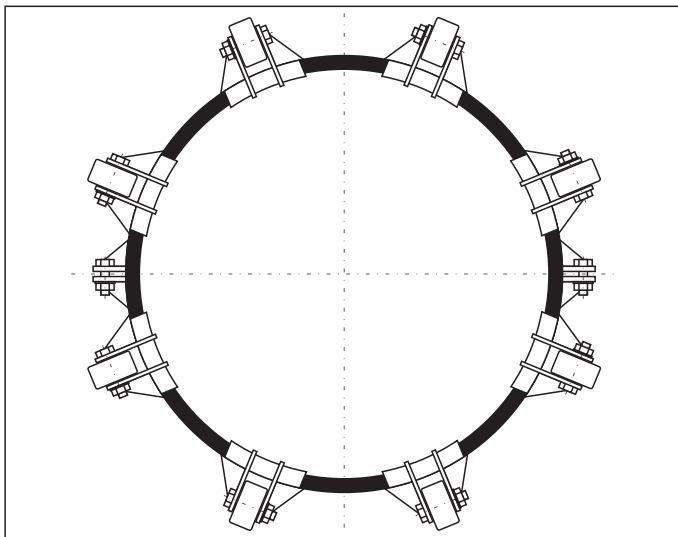
This spacer support system was designed for extra large and heavy diameter pipes, using the SM-DUO 100-160 mm units and ZR 90 mm spacers. Each SM DUO unit has 8 rollers and ZR 90 has 6 rollers to carry high capacity loads. They are joined by strong flat bars each side and bolted together. This is very important to reduce stress on the units when moving very heavy carrier pipes through a casing/duct. Fitting the spacer SM DUO and ZR unit ring sets is made easy by a very strong snap on system which joins them together. The ring sets are clamped at each end round the pipe and held together by nylon threaded bars, nuts and washers. 6 on SM DUO and 4 on ZR, which clamps the ring sets firmly to the pipe. When clamping together the ends of the ring sets it may be necessary to cut/trim off the unused parts of the connector to make it fit flat on the pipe. Spacer ring sets are delivered with all required units and fixings for the OD and length of the pipe.



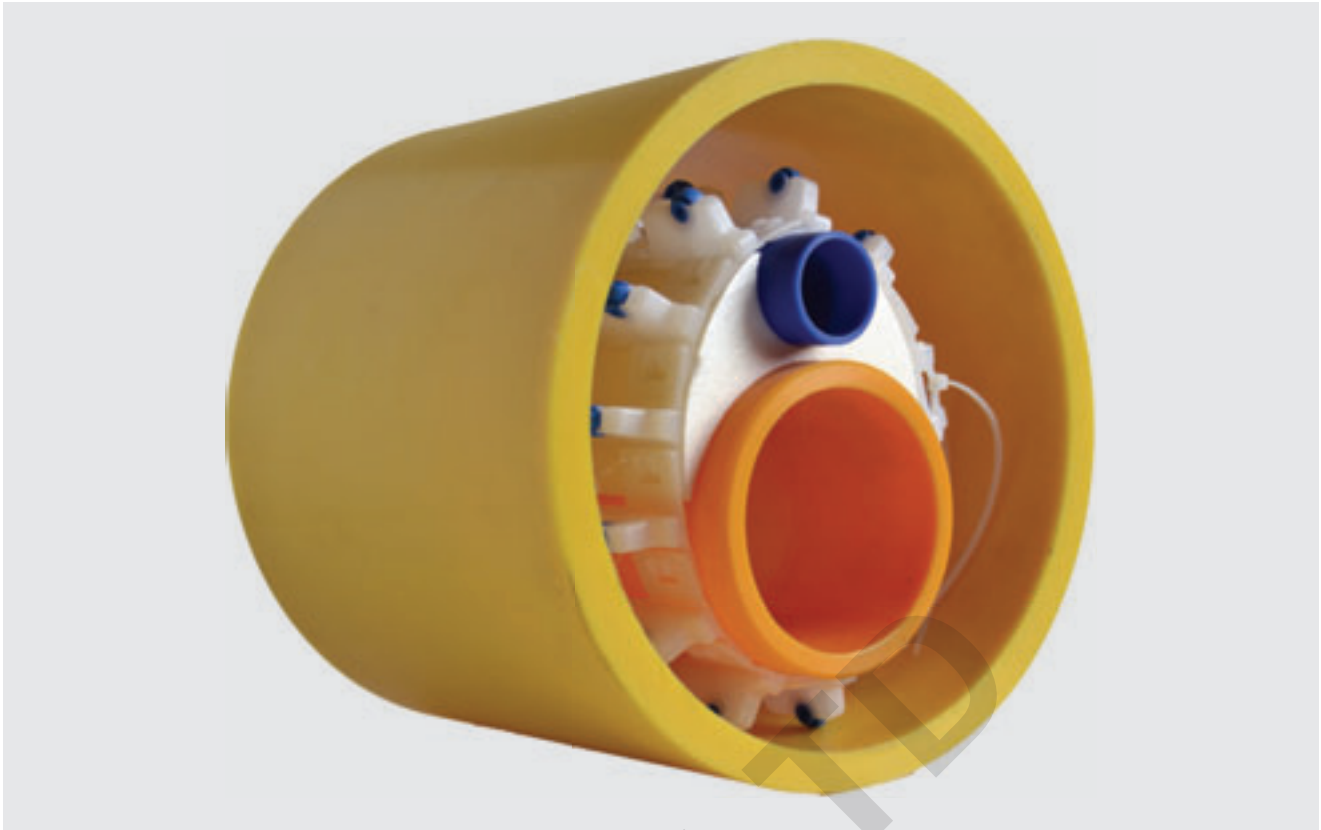
PATENTED



Due to many problems when feeding carrier pipes through small or large casings/ducts over long distances, we have designed a very special lead spacer. The spacer protects the casing/duct, carrier pipe and spacers from damage while installing a new carrier pipe. It carries the weight and reduces friction which improves and makes the installation smoother. The Lead spacer frame is made from steel with steel wheels and a large rubber pressure ring which protects the end of the pipe from damage and is clamped to the pipe firmly. Each spacer is made especially to suit the installation. The Lead spacer is slightly bigger which protects the normal spacers and guides it through and over any unexpected bumps and round bends.



As standard, the lead spacer has curved ends to deal with bends and has appropriate size wheels depending on the diameter of the carrier pipe. If there are cables and small pipes to be fitted they can be placed between the spacer legs and also clamped to the lead spacer. It is a universal system fully adaptable. After installation of the pipe in the duct the lead spacer must be removed. One of the most important aspect and advantage is that it can be used many times on the same size pipe.



Type **BR** spacers are made of HDPE for Multi-pipe installations when a casing/duct contains more pipes of different sizes. The units are made up of **BR** spacers with separators from polystyrene or rubber inserts, which are used to separate the pipes and hold them firmly in place. The inserts are designed to ensure the correct distance between the pipes and to keep them in alignment.

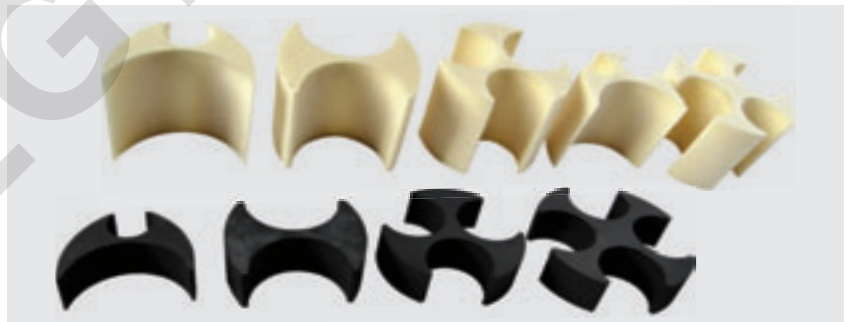
The maximum diameter of the type **BR** spacers are determined by the size of the pipes and combination of pipes that are required.

Maximum pipe diameter: 200 mm

Materials used.

Spacers: HDPE

Inserts: Polystyrene or rubber

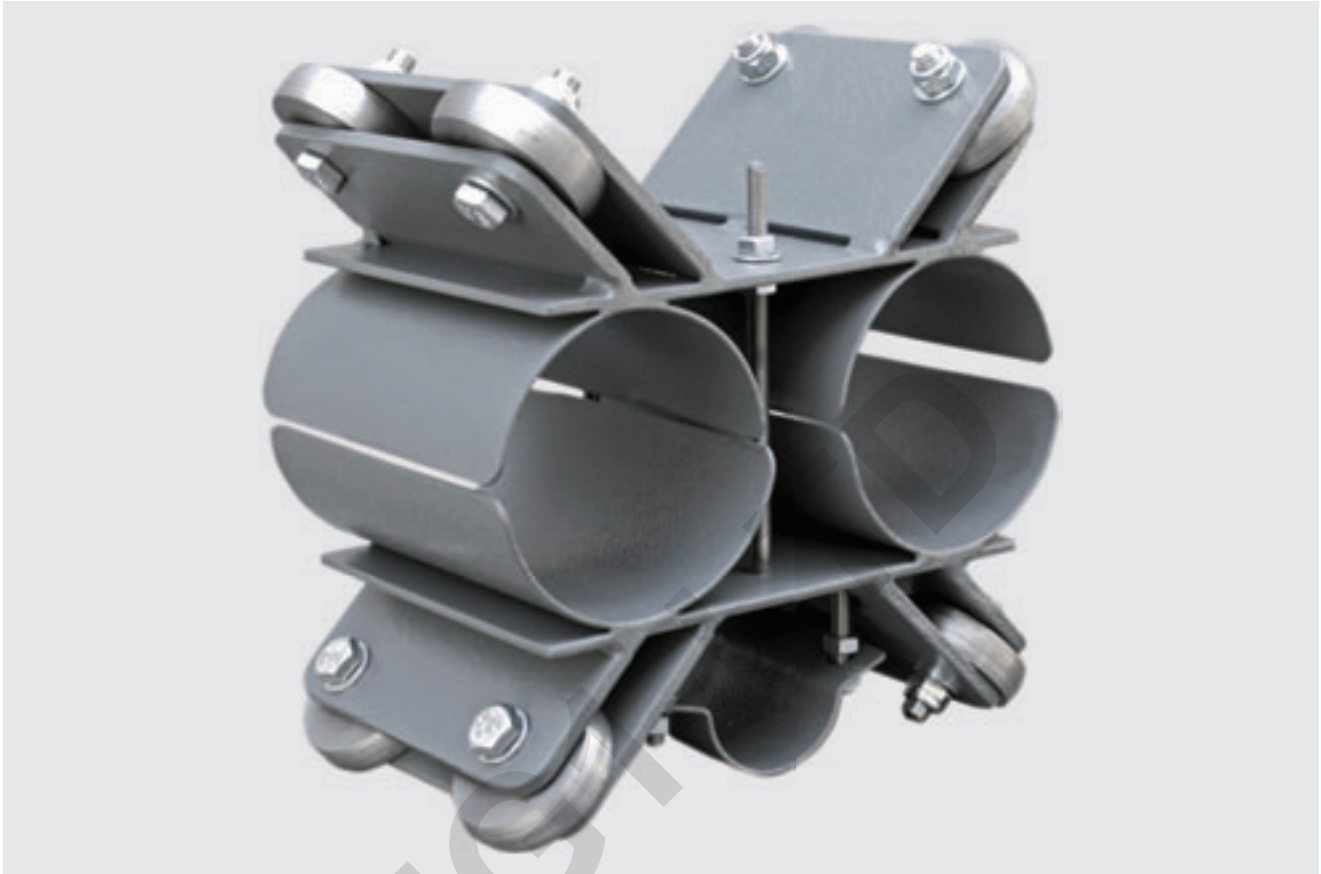




MULTI PURPOSE STEEL SPACERS

These steel roller spacers are used when several types of pipes are laid in one casing pipe. The use of these gives a more precise way to locate pipes in the casings/ducts and maintains the separation of pipelines. They take into account the number, diameter and arrangement of pipes / cables. The structure is made up from steel by support plates, pipe clamps and wheels depending on the sizes required.

Special order only.





PS roller spacers are designed for use on large and heavy pipelines. They are made of steel flat bar with a thickness adapted to the size and weight of the pipeline. A very significant point is that the spacers can be made for any height and situation, (minimum height 40 mm).

Special order only.



TYPE STE SPACERS



The sliding elements are made of hard polyethylene and bolted to the steel legs. This solution has a high shearing force resistance which can occur during pushing the pipeline through the duct / casing. This type of spacer can be used to strengthen and support other types of spacer systems, placing them between the solid polyethylene spacers for instance, every 3rd or 4th ring set.

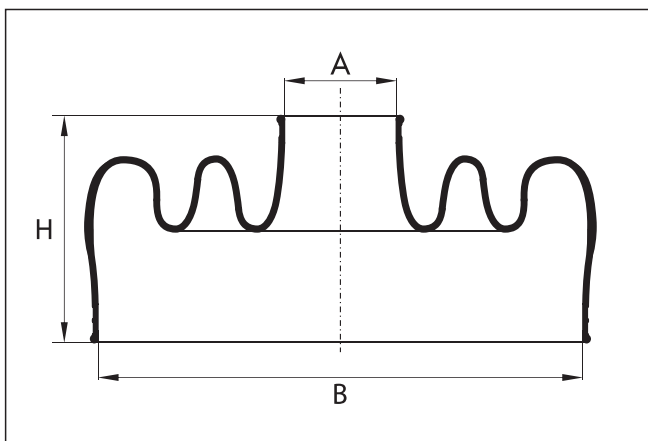
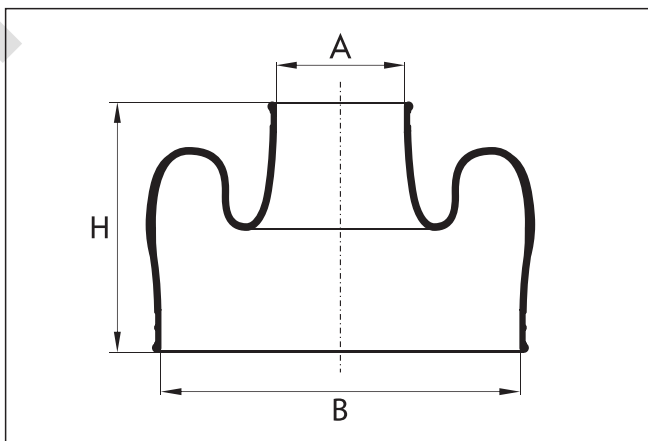
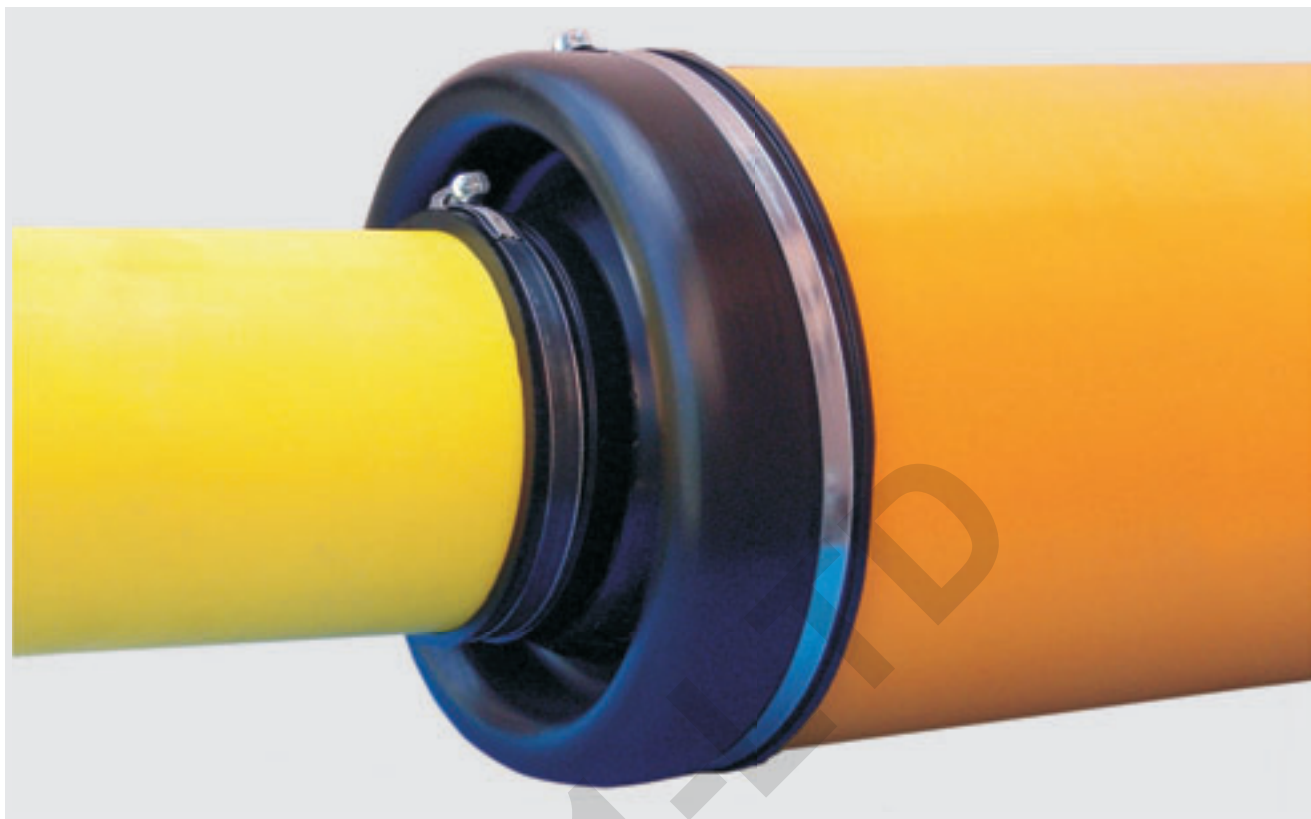
WARNING! These spacer skids are not a dielectric. They do not isolate electrically the carrier pipes from the casing / duct.

Special order only.



TYPE N END SEALS

The seals are used in many different areas, such as district heating systems, gas, water and sewerage networks. The end seals protect the space between the carrier pipe and casing from filling up with unwanted materials which may damage the carrier pipe. They are highly durable and also compensate for thermal changes in the pipes.



Technical data:
Materials: EPDM rubber and stainless steel jubilee clips.
Operating temperature: -30°C to 100°C.
Height H = up to 125 mm.



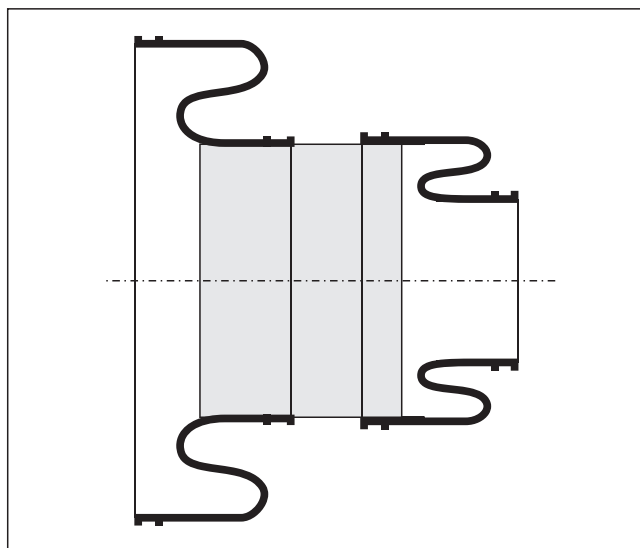
TYPE N END SEALS

Size guide chart.

Pipe diameters DN	Real dimensions of end seal [mm]		Range of use	
	A	B		
20 x 50	26	64	24-28	60-68
25 x 50	33	64	31-36	60-68
25 x 80	33	92	31-36	86-98
25 x 100	33	112	31-36	104-120
25 x 150	33	165	31-36	154-176
32 x 80	41	92	38-44	86-98
32 x 100	41	112	38-44	104-120
32 x 150	41	165	38-44	154-176
40 x 100	50	112	47-54	104-120
40 x 125	50	135	47-54	127-144
40 x 150	50	165	47-54	154-176
50 x 100	64	112	60-68	104-120
50 x 125	64	135	60-68	127-144
50 x 150	64	165	60-68	154-176
65 x 125	78	135	73-83	127-144
65 x 150	78	165	73-83	154-176
65 x 200	78	225	73-83	211-240
80 x 150	92	165	86-98	154-176
80 x 180	92	190	86-98	178-203
80 x 200	92	225	86-98	211-240
80 x 240	92	252	86-98	237-269
80 x 250	92	275	85-98	259-294
100 x 150	112	165	104-120	154-176
100 x 180	112	190	104-120	178-203
100 x 200	112	225	104-120	211-240
100 x 240	112	252	104-120	237-269
100 x 250	112	275	104-120	259-294

Pipe diameters DN	Real dimensions of end seal [mm]		Range of use	
	A	B		
100 x 300	112	330	104-120	310-350
125 x 200	131	225	123-140	211-240
125 x 240	131	252	123-140	237-269
125 x 250	131	275	123-140	259-294
150 x 200	162	225	152-173	211-240
150 x 240	162	252	152-173	237-269
150 x 250	162	275	152-173	259-294
150 x 300	162	330	152-173	310-350
180 x 250	190	275	178-203	255-294
180 x 300	190	330	178-203	310-350
200 x 250	225	275	211-240	255-294
200 x 300	225	330	211-240	310-350
200 x 350	225	362	211-240	340-385
200 x 400	225	415	211-240	390-440
240 x 300	252	330	234-269	310-350
240 x 350	252	362	234-269	340-385
240 x 400	252	415	234-269	390-440
250 x 300	275	330	259-294	310-347
250 x 350	275	362	259-294	336-385
250 x 400	275	415	259-294	390-440
300 x 400	325	415	310-347	390-440
300 x 450	325	455	310-347	425-480
300 x 500	325	513	310-347	485-540
400 x 500	410	513	390-440	485-540
400 x 600	410	615	390-440	580-640
500 x 600	510	615	485-540	580-640

End seals are made of highly durable rubber so they can shrink or stretch either way by approximately 7%.



The reducer seal unit is used where there is a large pipe with a smaller than usual pipe installed and needed to be sealed. This is done by two seals and a short steel sleeve connecting the two seals together as illustrated above.



TYPE N END SEALS



In addition to EPDM rubber, we also supply end seals made from other types of material.

Operating temperatures:

Silicon: -55°C to 230°C

NBR: -20°C to 90°C

NBR rubber is resistant to any petroleum based compounds.
Special order only.



TYPE U END SEALS

The Type **U** seals are designed for large diameter pipes and for non-standard pipe sizes. The seals are made of EPDM rubber in a cone format.

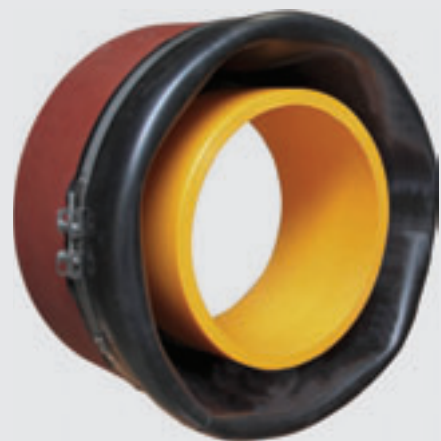
The sleeve is clamped on to the casing pipe firmly by a stainless steel strap, as seen in diagram 1. The smaller clamping strap must be loose so you can push it into the carrier pipe, then tighten the small clamping strap firmly on to the carrier pipe, as seen in diagram 2.

It is important that the seal is pushed inside the casing /duct so no weight is on the rubber.

Diagram 1



Diagram 2



Size guide chart.

The outer diameter of the carrier pipe [mm]	The outer diameter of the casing pipe [mm]
200	360
300	540
400	720
500	900
600	1080

The outer diameter of the carrier pipe [mm]	The outer diameter of the casing pipe [mm]
700	1260
800	1440
900	1620
1000	1800
1100	1980



TYPE **G-S-G** AND **G-S-W** GASKETS

Type **G-S** steel re-enforced gaskets are used on flanged pipes in city and district, gas, water and sewer systems and networks.



They can be used for steel and PE pipeline joints. Due to the quality of the materials, the shape and durability is maintained giving a longer life to the gasket and a more positive and improved connection to the flanged link. The cost of pipelines are reduced by installing **G-S-G** and **G-S-W** gaskets. Construction design and sizes enable quick and easy gasket installation between the flanges.

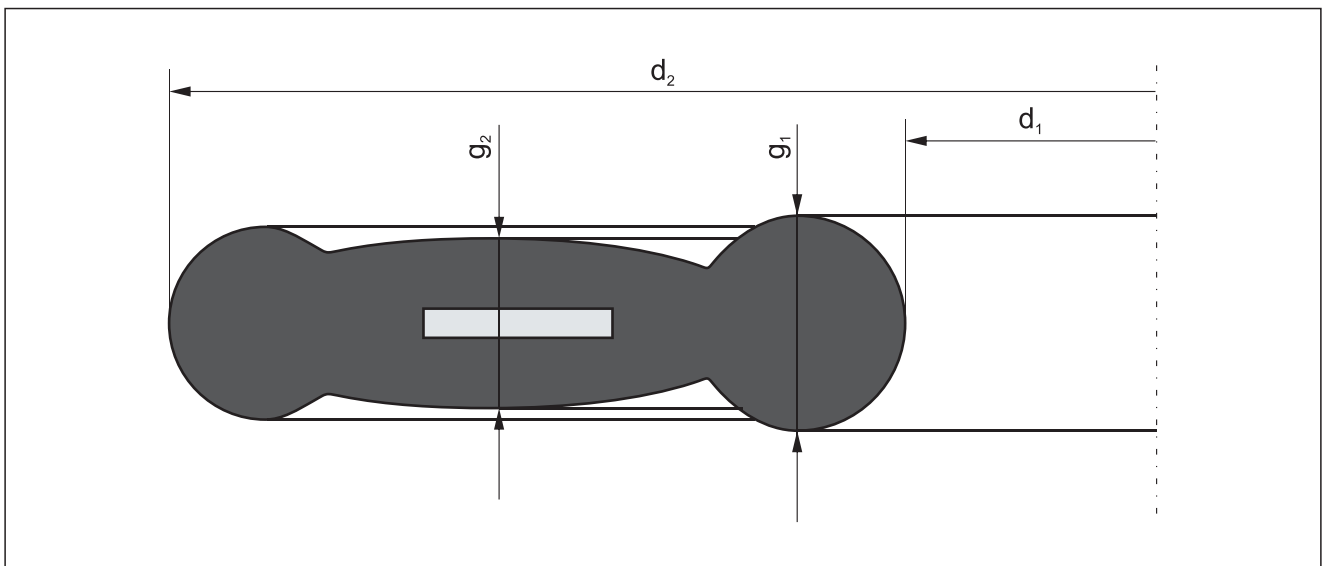
Type **G-S** gasket basic features:

The vulcanized steel ring prevents any shape changes.

Optimal shape guarantees a perfect tightness with less tension on the bolts.

Shape and size ensures the gasket centers between flanges.

The stiffness of the gasket allows a quick and easy installation between flanges.





Size guide chart.

DN	d ₁ [mm]	d ₂ [mm]	g ₁ [mm]	g ₂ [mm]	Pressure [bar]	DN	d ₁ [mm]	d ₂ [mm]	g ₁ [mm]	g ₂ [mm]	Pressure [bar]
20	28	60	4	3	10 - 40	350	368	445	9	7	16
25	35	70	4	3	10 - 40	350	368	458	9	7	25
32	43	82	4	3	10 - 40	400	420	490	9	7	10
40	49	92	4	3	10 - 40	400	420	497	9	7	16
50	61	107	5	4	10 - 40	400	420	515	9	7	25
65	77	127	5	4	10 - 40	400	420	547	9	7	40
80	90	142	5	4	10 - 40	450	470	540	9	7	10
100	115	162	6	5	10 - 16	500	520	595	9	7	10
125	141	192	6	5	10 - 16	500	520	618	9	7	16
150	169	218	7	6	10 - 16	500	520	625	9	7	25
200	220	273	7	6	10 - 16	600	620	695	9	7	10
250	274	328	7	6	10	600	620	734	10	7	16
250	274	330	7	6	16	600	620	730	10	7	25
300	325	378	7	6	10	700	720	810	10	7	10
300	325	385	7	6	16	800	820	915	10	7	10
300	325	402	7	6	25	1000	1020	1120	11	8	10
350	368	438	9	7	10	1200	1220	1340	11	8	10 - 16

Torque settings for tightening bolts on flanged pipe joints using **G-S-G** and **G-S-W** type gaskets are in accordance with the bolt type classification.

Size guide chart.

Bolt	5,6	8,8	10,9
M 8	10 Nm	18 Nm	25 Nm
M 10	20 Nm	35 Nm	50 Nm
M 12	30 Nm	60 Nm	80 Nm
M 14	50 Nm	90 Nm	140 Nm
M 16	75 Nm	140 Nm	200 Nm
M 18	100 Nm	200 Nm	300 Nm
M 20	140 Nm	290 Nm	400 Nm
M 22	200 Nm	380 Nm	550 Nm
M 24	250 Nm	500 Nm	700 Nm
M 27	370 Nm	700 Nm	900 Nm
M 30	500 Nm	950 Nm	1400 Nm
M 33	650 Nm	1300 Nm	1900 Nm

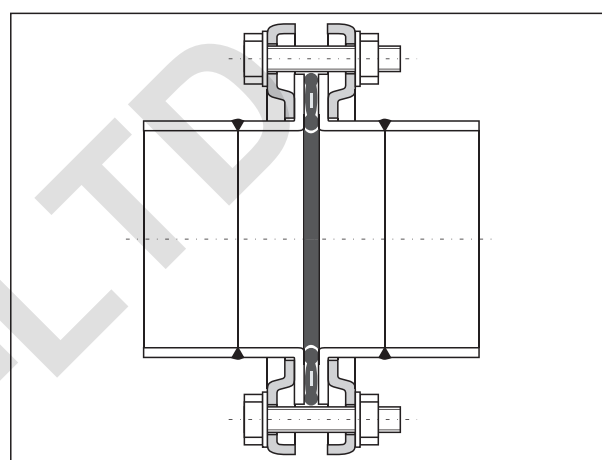
Information on types of rubber, application, operating temperature and hardness.

Gasket type	Rubber type	Application	Operating temperature C °C			°shore'a (A) hardness
			continuous operation	1 hour	1 minute	
G-S-G	NBR Nitrile rubber	Gas, gasoline, oils, greases, compressed air	-20 to +90	-30 to +110	-40 to +130	70±5°
G-S-W	EPDM ethylene- propylene rubber	Drinking water, municipal waste water, diluted acids and bases, alcohols, compressed air	-30 to +100	-35 to +130	-40 to +160	70±5°

Gaskets have quality certificates for the materials used, certification also for material usage with drinking water and portable water applications.



The profile compressed flange is designed for low-pressure stub end pipes and is made of stainless steel to a maximum of PN10 pressure. They are used for water, air and gas pipeline ends. Their purpose is to reduce weight and are much easier to install than the heavy and expensive solid flange. They are manufactured in a range of diameters from: DN 32 to DN 300 and are in accordance with ISO 7005 BSi-EN 1092-1 2007 norms. They are made of stainless steel 1.4307, 1.4404 other grades are available such as 1.4571; 1.4541 on special order.



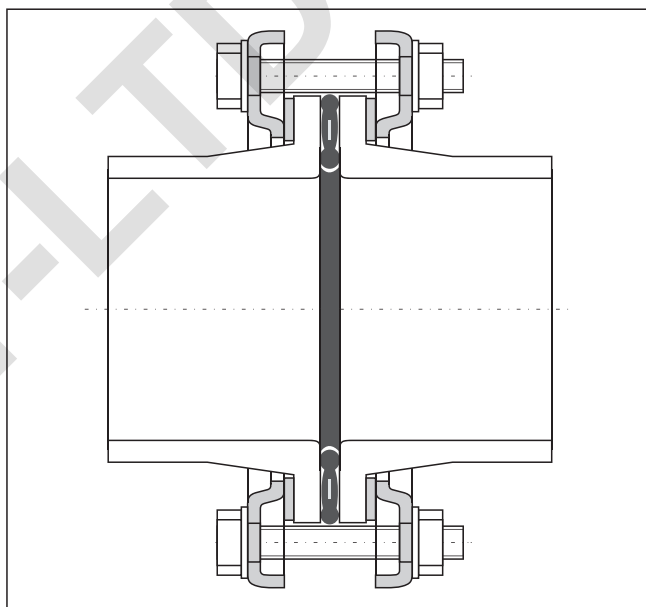
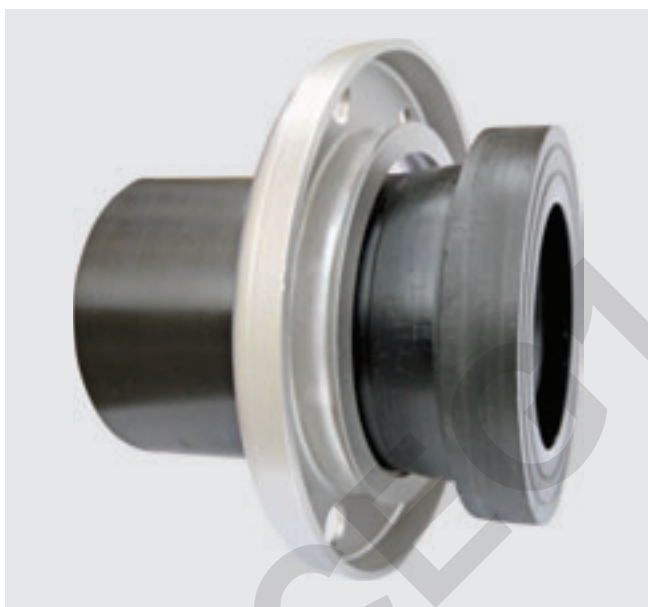
Specification size guide chart.

DN	Outer diameter of the pipe	Outer diameter of the flange	Inner diameter of the flange	Drilled pitch diameter	Flange thickness	Number of holes	Hole diameter
32	40; 41; 42.3; 43	140	47	100	3	4	18
40	44.5; 48.3	150	53	110	4	4	18
50	50; 52; 54	165	59	125	4	4	18
50	57	165	62	125	4	4	18
50	60.3	165	65	125	4	4	18
65	70; 73	185	78	145	4	4 or 8	18
65	76.1	185	81	145	4	4 or 8	18
80	80; 83; 84	200	89	160	4	8	18
80	88.9	200	94	160	4	8	18
100	104; 106; 108	220	113	180	4	8	18
100	114.3	220	119	180	4	8	18
125	129; 133	250	137	210	4	8	18
125	139.7	250	145	210	4	8	18
150	154; 156	285	161	240	5	8	22
150	159	285	164	240	5	8	22
150	168.3	285	173	240	5	8	22
200	204; 206; 208	340	213	295	5	8	22
200	219.1	340	224	295	5	8	22
250	254; 256	395	261	350	6	12	22
250	273	395	279	350	6	12	22
300	304; 306; 308	445	314	400	6	12	22
300	323.9	445	329	400	6	12	22



PRESSED FLANGES FOR PE SLEEVES

PATENTED



Specification size guide chart.

DN	Pipe outer diameter	Flange outer diameter	Pressure ring diameter	Drilled pitch diameter	Flange thickness	Number of holes	Hole diameter
32	40	140	43/70	100	3	4	18
40	50	150	53/78	110	4	4	18
50	63	165	80/102	125	4	4	18
65	75	185	88/125	145	4	4 or 8	18
80	90	200	110/138	160	4	8	18
100	110	220	131/158	180	4	8	18
100	125	220	141/158	180	4	8	18
125	140	250	156/164	210	4	8	18
150	160	285	182/214	240	5	8	22
150	180	285	202/214	240	5	8	22
200	200	340	229/270	295	5	8	22
200	225	340	243/270	295	5	8	22
250	250	395	270/314	350	6	12	22
250	280	395	300/314	350	6	12	22
300	315	445	343/374	400	6	12	22



TYPE **GZ** SEWER PIPE CONNECTORS

Type **GZ** Connectors are designed to join ends of sewage pipes of the same diameter. The connector consists of an EPDM sleeve (NBR and silicon on request) and four stainless steel straps and one and one center band. The smaller outer straps are responsible for gripping the two pipes firmly, while the wide center band ensures the pipes have a level connection and prevents blockages of the pipeline. This extremely reliable and strong method of gripping the pipes in a rubber sleeve allows the use of GZ connectors on sewage pipes made of PCV, PE, concrete and cast iron pipes. They can also be used to connect sewage pipes made of other materials. This is a non-pressurized connection.



GZ 110 to GZ 180 sewer pipe connectors



GZ 200 to GZ 380 sewer pipe connectors



GZ 450 and bigger sewer pipe connectors

Suitable for pressure up to 0.5 bar.

Operating temperature depends on the material used:

EPDM -30°C to +100°C, NBR -20°C to +90°C

Specification size guide chart.

Type	Diameter range [mm]	Connector length [mm]	Working pressure [bar]	Type	Diameter range [mm]	Connector length [mm]	Working pressure [bar]
GZ 110	100 - 110	100	0.5	GZ 330	316 - 340	200	0.5
GZ 120	111 - 125	120	0.5	GZ 360	341 - 365	200	0.5
GZ 140	126 - 145	120	0.5	GZ 380	366 - 395	200	0.5
GZ 160	146 - 165	150	0.5	GZ 450*	396 - 480	250	0.25
GZ 180	166 - 185	150	0.5	GZ 500*	481 - 720	250	0.25
GZ 200	186 - 200	150	0.5	GZ 750*	721 - 960	250	0.25
GZ 220	201 - 220	180	0.5	GZ 1000*	961 - 1200	250	0.25
GZ 240	221 - 235	180	0.5	GZ 1250*	1201 - 1440	250	0.25
GZ 250	236 - 245	180	0.5	GZ 1500*	1441 - 1680	250	0.25
GZ 260	246 - 265	180	0.5	GZ 1750*	1681 - 1920	250	0.25
GZ 280	266 - 290	200	0.5	GZ 2000*	1921 - 2160	250	0.25
GZ 310	291 - 315	200	0.5	GZ 2250*	2161 - 2400	250	0.25

* - special order only.



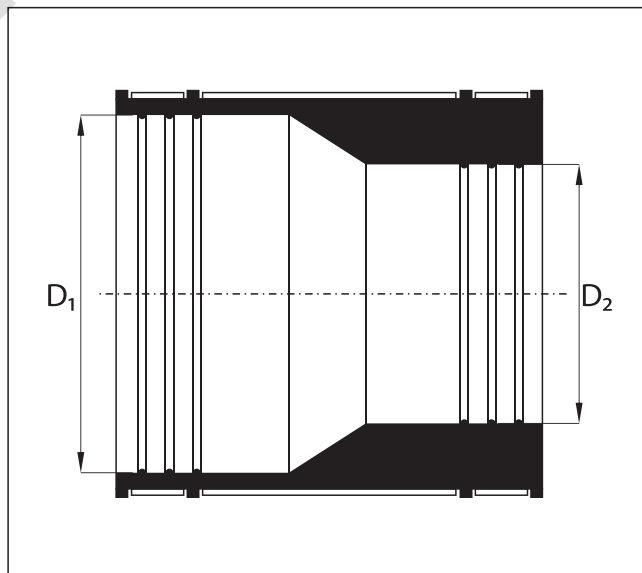
TYPE **GZ** SEWER PIPE REDUCTION CONNECTORS

Type **GZ** reduction connectors are designed to join ends of pipes with different diameters, where the pipe sizes differ by 8 mm either way.



The reduction element is a thick rubber ring that fits on to a smaller or bigger pipe using GZ connectors. EPDM sleeves standard or NBR / Silicon special order only have four stainless steel straps and one center band. The smaller outer straps are responsible for gripping the two pipes firmly, while the wide center band ensures the pipes have a level connection and prevents blockages of the pipeline. This extremely reliable and strong method of gripping the pipes in a rubber sleeve allows the use of **GZ** connectors on sewage and drainage pipes made of PCV, PE, concrete and cast iron pipes. They can also be used to connect pipes made of other materials. This is a none pressurized connection.

MOUDLED REDUCTION CONNECTOR



We stock standard dimensions of the most used reduction units for sewage pipe sizes from: GZ:

Specification size guide chart.

Type	Actual diameter range [mm]	Dimensions D_1 range [mm]	Dimensions D_2 range [mm]	Length of Reducer [mm]
GZ 110/90	110 / 90	106 - 114	88 - 92	100
GZ 220/200	220 / 200	215 - 225	198 - 202	180
GZ 240/200	240 / 200	234 - 246	198 - 202	180
GZ 260/200	260 / 200	253 - 267	198 - 202	180
GZ 280/242	280 / 242	272 - 288	240 - 244	200



TYPE ZW SEALS

It is a non-pressure seal for entering a pipeline into a concrete enclosure, especially for sewer and drainage systems access points. It protects from groundwater migration as well as from spilling sewage outside the sewer network. This seal allows angular movement of the pipeline up to 12 degrees in all directions plus linear movements up to 25 mm.

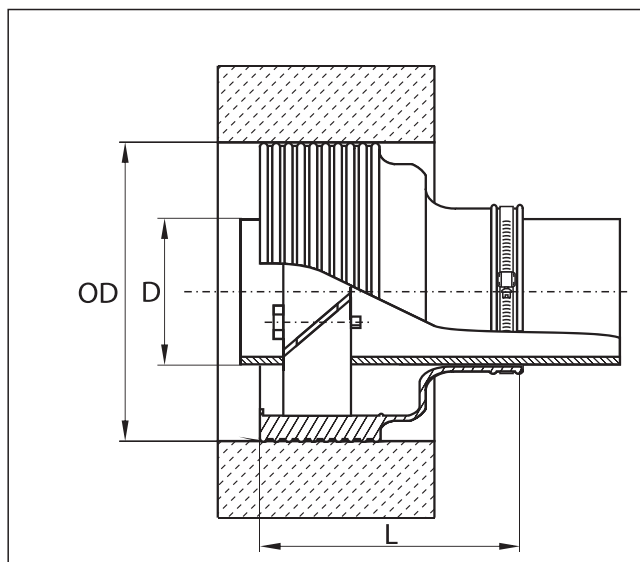


Materials:

EPDM Rubber, stainless steel expanding ring and jubilee clip.

Specification size guide chart.

DN	D [mm]	OD [mm]	L [mm]
80	78 - 96	≈ 160	120
100	108 - 118	≈ 200	120
150	155 - 170	≈ 250	120
200	200 - 225	≈ 300	120
250	250 - 280	≈ 350	120
300	310 - 330	≈ 400	120





TYPE **WGC** EXTERIOR WALL PIPE SEALS

PATENTED

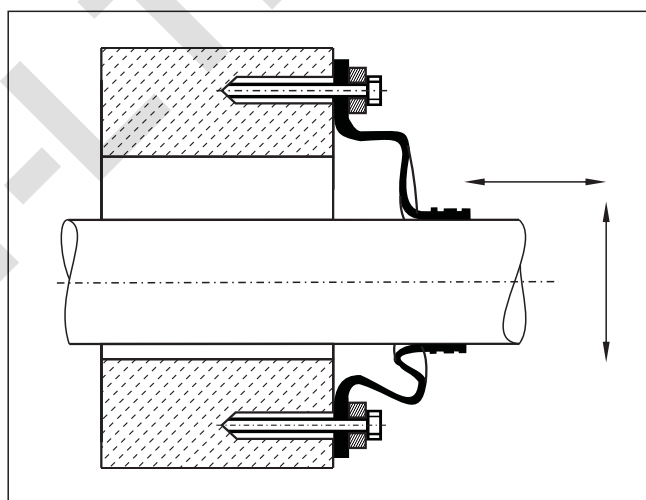
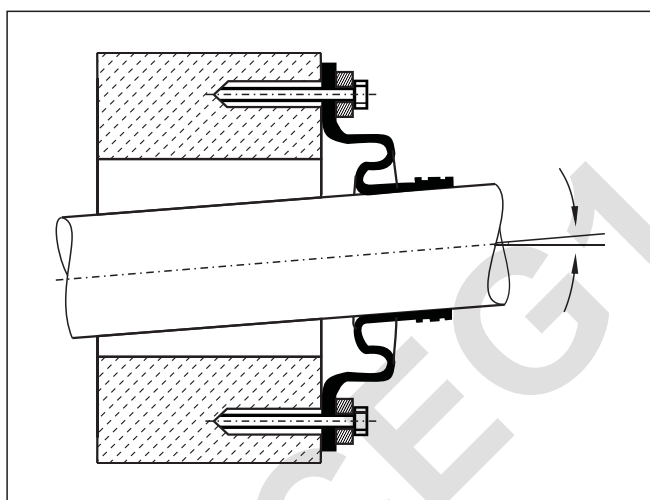
Type **WGC** seals are designed for non-pressure installations that are water and gas proof. Their main application is for heating distribution of, gas, water and sewage supply networks. This kind of seal allows pipes to move relative to the structure without the seal leaking at the joints.



Advantages:

It enables the movement of pipes in ducts in any direction without the seal leaking, e.g. movement due to temperature changes which may happen with insulated heat distribution pipelines. In places where subsidence may happen between a building and a new pipeline which has been put in a building or a new build.

There is no need to use a protective sleeve or drill a opening with high precision. An easy installation, service-free, corrosion resistance. The pipe can be placed at a maximum of 12 degrees at any angle

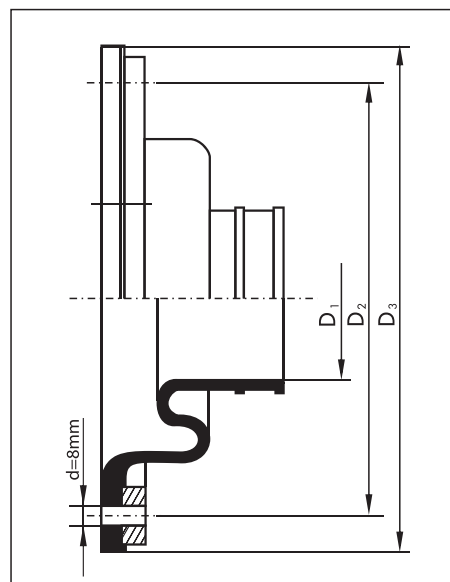


Materials used: EPDM rubber, (NBR to order only)

Stainless steel 304 or 316 clamping ring, jubilee clip, and fixing bolts with plastic rawl plugs.

Specification size guide chart.

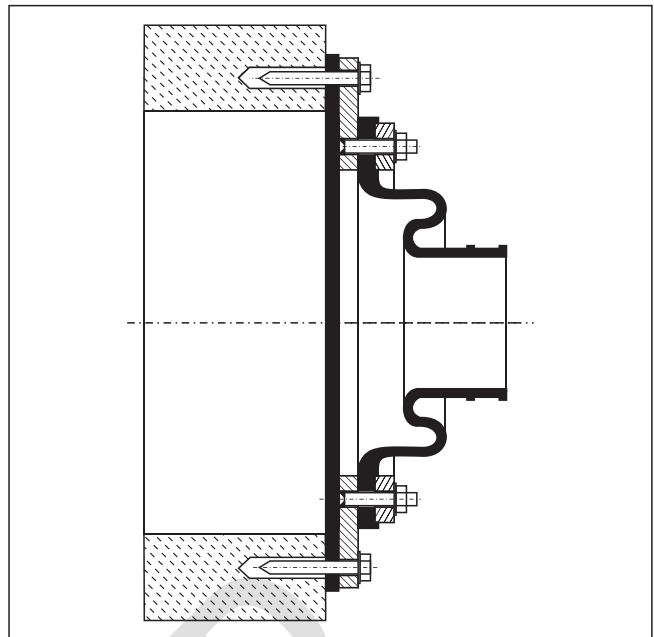
DN	D ₁ [mm]	D ₂ [mm]	D ₃ [mm]	Range of use [mm]	Max. diameter of the opening [mm]
25	30	126	150	32 - 35	65
32	38	135	159	40 - 44	70
40	46	142	167	48 - 52	80
50	57	150	180	60 - 65	90
65	72	167	193	75 - 78	110
80	84	184	209	88 - 94	120
100	104	220	251	108 - 116	150
125	121	237	270	125 - 140	170
150	155	275	307	158 - 172	200
200	196	328	360	200 - 225	250
250	248	410	440	250 - 280	320





TYPE **WGC** EXTERIOR WALL PIPE SEALS

TYPE **WGC** EXTERIOR WALL SURFACE PIPE SEALS



When there is an opening much larger than the pipe this type of seal reduces the hole with a steel plate to suit a smaller standard seal and still keeps the Integrity of the seal.



Two pipe version can be made for even larger holes and pipe diameters. Other sizes are available. Both sizes are made to order. Standard sizes for two pipes of the same size below.

Specification size guide chart .

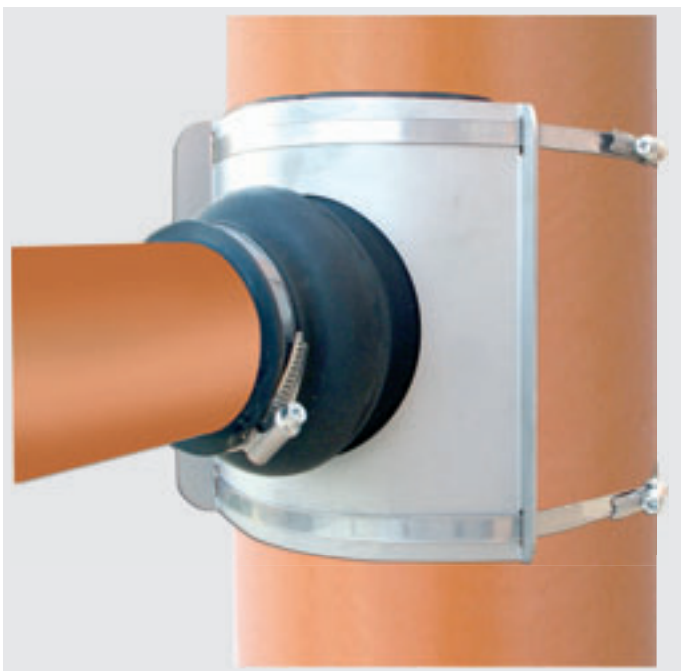
WGC	Minimum distance between center of pipes [mm]
2 x DN25	160
2 x DN32	170
2 x DN40	180
2 x DN50	190
2 x DN65	210
2 x DN80	220

WGC	Minimum distance between center of pipes [mm]
2 x DN100	260
2 x DN125	280
2 x DN150	320
2 x DN200	370
2 x DN250	450

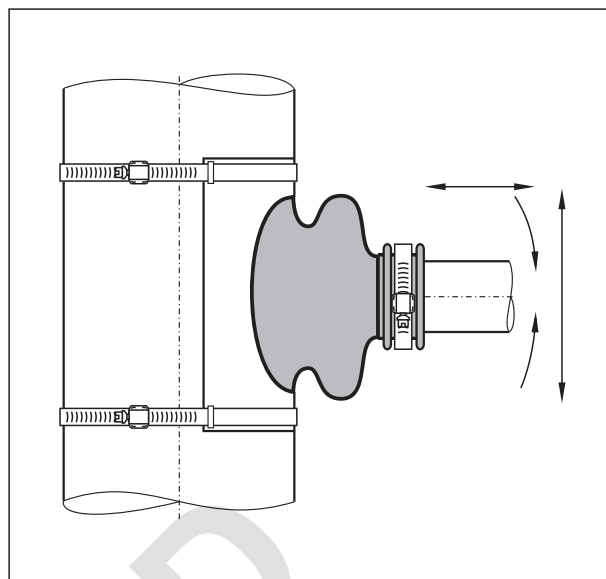


TYPE RTR EXTERIOR SEALS

Type **RTR** seals are designed for non-pressure entrance of a pipe into all kinds of tanks, wells, manholes, pipes that have round cross-section. The system fits and seals tightly to the pipe or tank diameters.



Type **A** bracket attachment.



The seal allows angles up to 12 degrees and linear movement of 25 mm of the attached pipe.



Type **B** bracket for fitting to concrete.

Specification size guide chart.

DN	Diameter of pipeline [mm]	Outer dimension of flange [mm]
25	32 - 35	135 x 135
32	40 - 44	135 x 135
40	48 - 52	150 x 150
50	60 - 65	170 x 170
65	75 - 78	180 x 180
80	88 - 94	195 x 195
100	108 - 116	220 x 220
125	125 - 140	230 x 230
150	158 - 172	275 x 275
200	200 - 225	335 x 335

Materials:
EPDM rubber and stainless steel



Type **B** square frame fittings can be used on concrete roofs.



TYPE KG RUBBER PUDDLE FLANGES

Puddle flanges are designed to seal pipelines and pipes set in concrete going into and through walls of buildings, like tanks, swimming pools, foundations, partition walls, floors and ceilings etc.



Advantages:

Prevention of water and gas penetration through point of entry.

Easily installed and suitable for every kind of pipe.

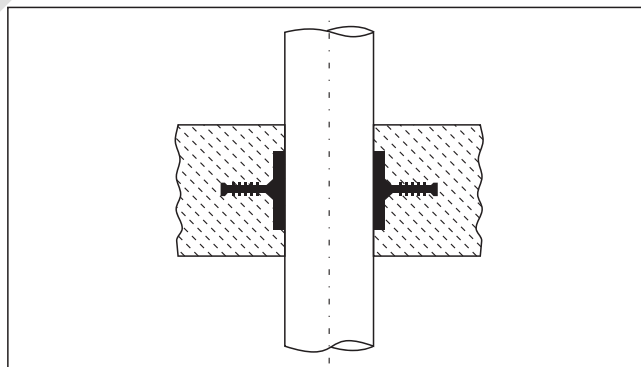
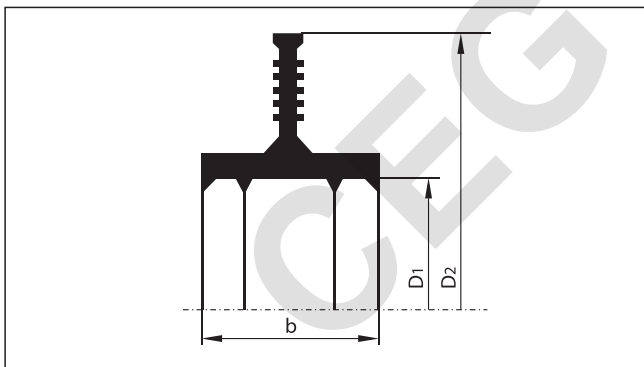
Especially suitable for entry into a foundation wall or floor, horizontal or vertical.

Technical data:

Materials: EPDM rubber, stainless steel jubilee clips.

Maximum operating pressure: 2.5 bar.

The rubber puddle flange is installed by sliding it on to the pipe and placing it where the pipe, will go through the planned concrete wall between the shuttering and tightening it with the jubilee clips. After that you can pour the concrete, care should be taken not to pour the concrete directly on the rubber flange. This kind of seal is permanent and cannot be removed. EPDM Puddle flanges are not suitable for existing walls.



Specification size guide chart.

DN	d [mm]	D1 [mm]	D2 [mm]	b [mm]
25	32	29	127	60
32	40	38	136	60
40	50	48	146	60
50	63	60	158	60
65	75	71	169	60
80	90	84	182	60
100	110	105	203	60
125	125	120	218	60
125	140	120	218	60
150	160	154	252	60
180	200	195	293	60
200	225	215	315	60
250	250	245	343	60

DN	d [mm]	D1 [mm]	D2 [mm]	b [mm]
250	280	245	343	60
300	315	310	408	60
350	355	352	435	75
400	400	395	480	75
450	450	442	530	75
500	500	480	580	75
550	560	547	640	75
600	630	613	710	75
700	710	690	790	75
800	800	775	880	75
900	900	870	980	75
1000	1000	965	1080	75
1200	1200	1155	1280	75



TYPE LU SEALING CHAINS

Type **LU** sealing chains are a simple but very effective way of sealing the space between carrier pipes and ducts/casing pipes or holes drilled through concrete walls in buildings.



The sealing chain is built up from elements that interlock with each other making a perfect seal. When fitted and put round the pipe and pushed into the hole and tightened by the bolts they expand evenly round the pipe and the wall of the hole making a perfect seal.



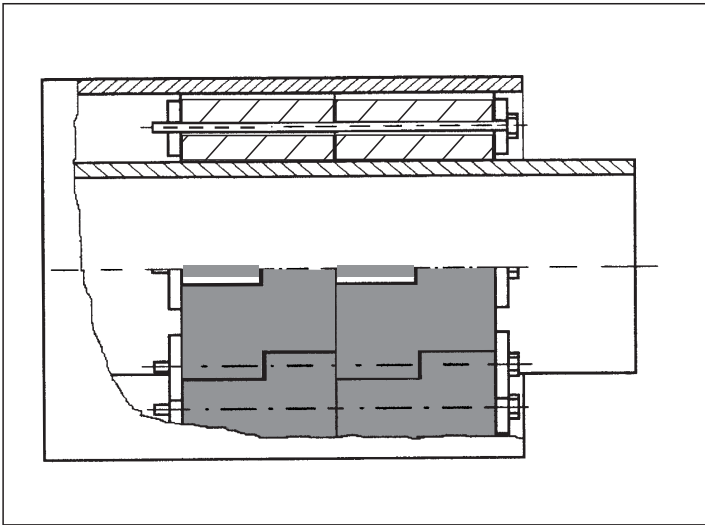
Sealing chains are used for sealing pipes in the walls of concrete tanks, foundations, swimming pools, pump houses and many other situations, such as cathodic protection of the pipes, noise reduction and for clean rooms. Protection against liquids, fumes, smoke and gases.



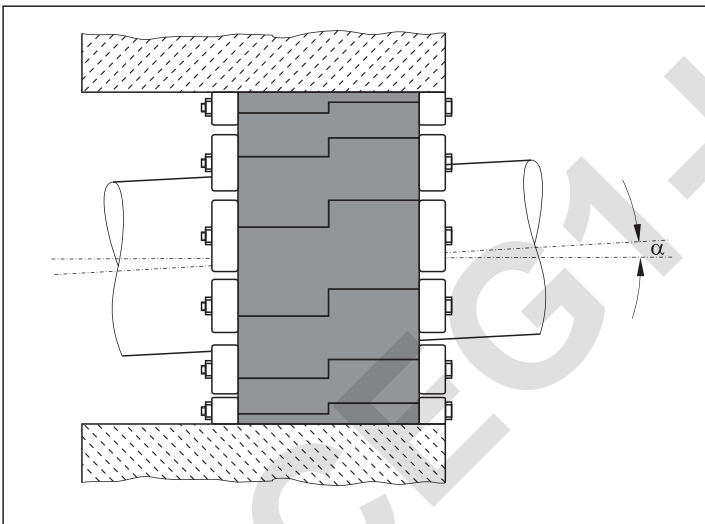


TYPE LU SEALING CHAINS

Type **LU** sealing chains can be used to seal pipe diameters from 50 mm to extremely large diameters. You can seal steel, cast iron, plastic and concrete pipes. **LU** sealing chains can handle pressures up to 2.5 bars. We recommend using a double sealing chain called 2 **LU** for pressure up to 5 bars.



This type of seal uses 2 sets of **LU** called 2 **LU** with double length bolts and stainless steel plates.



To provide a 100% seal the maximum angel aloud cannot exceed 1.25 degrees
See the diagram.

Installation guide:



Place the sealing chain round the pipe and connect both ends.



Slid the chain inside the opening till it is flush with the surface.



Tighten the bolts evenly till firm round the carrier pipe.

Sealing chains work perfect with casing pipes and opening made in a concrete wall. The hole should be as smooth as possible to get a perfect seal.



Choosing a sealing chain example:

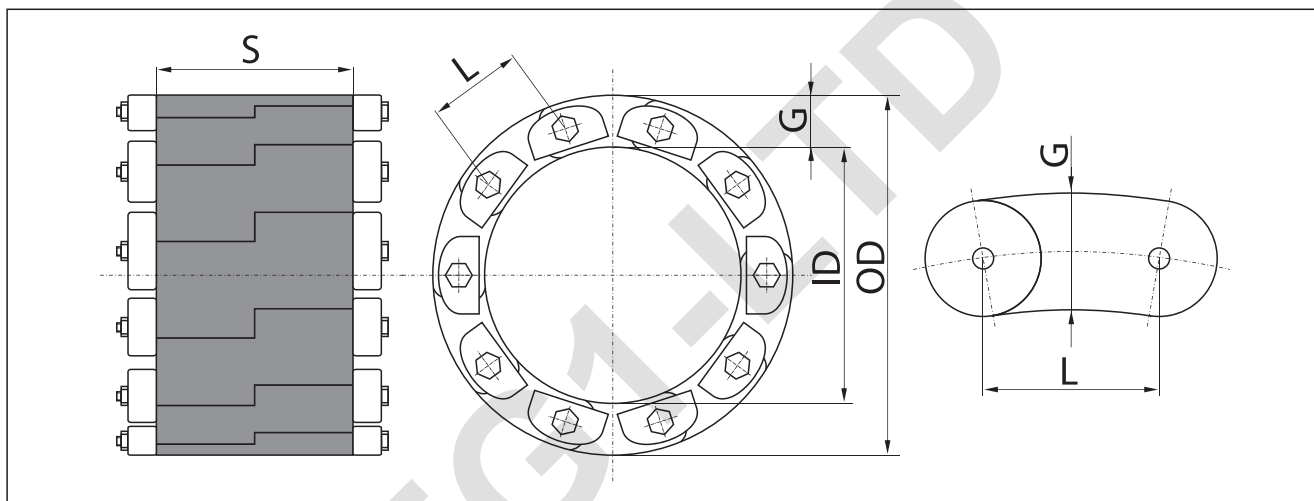
1. Inner diameter of casing pipe:
Outer diameter of carrier pipe with any possible insulation:
Size of the gap to be sealed:

OD = 400 mm
ID = 315 mm
Gap = 85 mm
2. Based on the size to be sealed a certain model of the sealing chain is to be selected from the chart below. (column 2). For Gap = 85 mm Type **LU6** should be used.
3. Overall length of sealing chain needed:

$$\frac{(400 + 315)}{2} \times 3.14 = 1122.55 \text{ mm.}$$
4. Defining the number of links:

$$1122.55 \div 68 = 16.508 \text{ pcs.}$$

where 68 mm is the length of link form the table - column 3 for chain **LU6**.
5. The number of links should be expressed in a round numbers. That is why in point 4. 16.508 has to be a round number. For example decimal values less than 0.49 must be rounded down where 0.5 is rounded up. In the case above the number of links will be 17.



Specification guide chart.

1	2	3	4	5	6
Type	Gap size to seal, the difference between hole diameter and pipe diameter.	L length of link [mm]	G thickness of link [mm]	S width of link [mm]	Maximum bolt size
LU-1	26 - 31.9	30	13	44	M5 x 60 mm
LU-2	32 - 39.9	35	16	44	M5 x 60 mm
LU-3	40 - 49.9	40	20	63	M8 x 90 mm
LU-4	50 - 61.9	48	25	72	M8 x 110 mm
LU-5	62 - 75.9	56	31	88	M10 x 140 mm
LU-6	76 - 91.9	68	38	88	M10 x 140 mm
LU-7	92 - 111.9	82	46	90	M10 x 150 mm
LU-8	112 - 131.9	99	56	98	M12 x 170 mm
LU-9	132 - 155.9	104	66	98	M12 x 170 mm
LU-10	156 - 179.9	104	78	106	M12 x 190 mm
LU-11	180 - 207.9	114	90	110	M12 x 190 mm



Maximum torque values for bolts.

Sealing chain	LU-1	LU-2	LU-3	LU-4	LU-5	LU-6	LU-7	LU-8	LU-9	LU-10	LU-11
Maximum torque - Nm	10	10	20	20	30	30	30	50	50	50	50

Optimizing of sealing chain selection:

In the range of diameters up to DN 100 we recommend to make the opening according to the following formula:

Opening diameter = Outer pipe diameter x 1.4 to 1.6.

In the range of diameters up to DN 400 we recommend to make the opening according to the following formula:

Opening diameter = Outer pipe diameter x 1.25 to 1.4.

Above diameter DN 400 we suggest to make the opening according to the following formula:

Opening diameter = Outer pipe diameter + 100 to 200 mm.

CAUTION:

Sealing chains cannot carry the weight of the carrier pipe and its contents.

Installation tips:

1. The size and the number of links must be chosen correctly, the minimum amount of links 6.
2. Axis of carrier pipe must coincide with axis of the casing pipe or opening.
3. Wrap the chain round the pipe and join both ends with the bolts supplied.
4. Move the chain on the pipe so all of it is in the casing pipe or opening.
5. Tighten the bolts evenly on the ring, one turn at a time to the correct torque.

CAUTION:

Do not use pneumatic or electric nut runners.

Types and materials:

When ordering the chain, apart from giving number of links it is necessary to add the letter to define the material.

Type **A2** Standard solution, EPDM rubber, plastic plate, stainless steel 304L (1.4307) bolts.

Type **KTW** Use in drinking water and food production, tested EPDM rubber, stainless steel 316L (1.4404) bolts.

Type **O-A2** Oil resistant, NBR rubber, plastic plate, stainless steel 304L (1.4307) bolts.

Type **T** Resistant to both high and low temperatures, hard to burn, silicon, stainless steel 304L (1.4307) plates, bolts, nuts and washers. Working temperature -55°C to 230°C. Special to order only.



TYPE GP DISK COMPRESSION SEALS

Type **GP** sealing systems are designed for non or pressured entries through concrete walls/ducts for pipes and cables passing through all kinds construction partitions, concrete tanks, ducts and structures. The seals are made from rubber and 2 stainless steel rings which clamp them together. After tightening with the bolts, nuts and washers the rubber expands, sealing the opening and holding them firmly in place. This kind of seal can be used for pipes made of steel, cast iron, PVC, PE and cables.



TECHNICAL DATA:

OD = outer diameter.

ID = inner diameter.

A = thickness of rubber.

B = total dimension.

C = width rubber.

OD	ID	A [mm]	B [mm]
According to the project	According to the project	40	65

OD and ID dimensions have to meet the following condition:

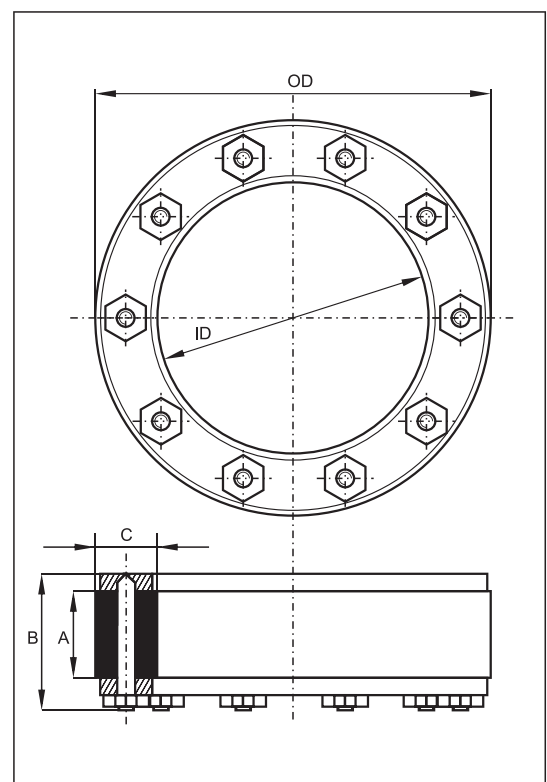
$$\frac{OD - ID}{2} \geq C$$

$$ID < 100\text{mm} \quad C \geq 15.0 \text{ mm}$$

$$ID < 250\text{mm} \quad C \geq 20.0 \text{ mm}$$

$$ID < 500\text{mm} \quad C \geq 25.0 \text{ mm}$$

$$ID > 500\text{mm} \quad C \geq 30.0 \text{ mm}$$





Specification:

Seals up to 2.5 bar.

Prevent liquids, gases and smoke migration.

Suppresses noise.

Allows sealing the ducts where there is a large difference between the carrier pipe/cable and duct diameter.

Allows sealing of multiple pipe and cables.

Seals are made to order.

To provides a 100% seal, maximum angel deviation of the pipeline cannot exceed 2.0°.

Materials:

EPDM, NBR rubber or silicon.

Pressure plate disks, bolts, nuts & washers stainless steel 1.4307 & 1.4404.

Operating temperature: from – 30°C to 100°C (EPDM)



Bolt size	S [cm ²]
M 5	9
M 6	16
M 8	25
M 10	64

Best conditions for compressing the rubber with the pressure plates is based on the size of bolts.
For EPDM rubber 50° Shore A.

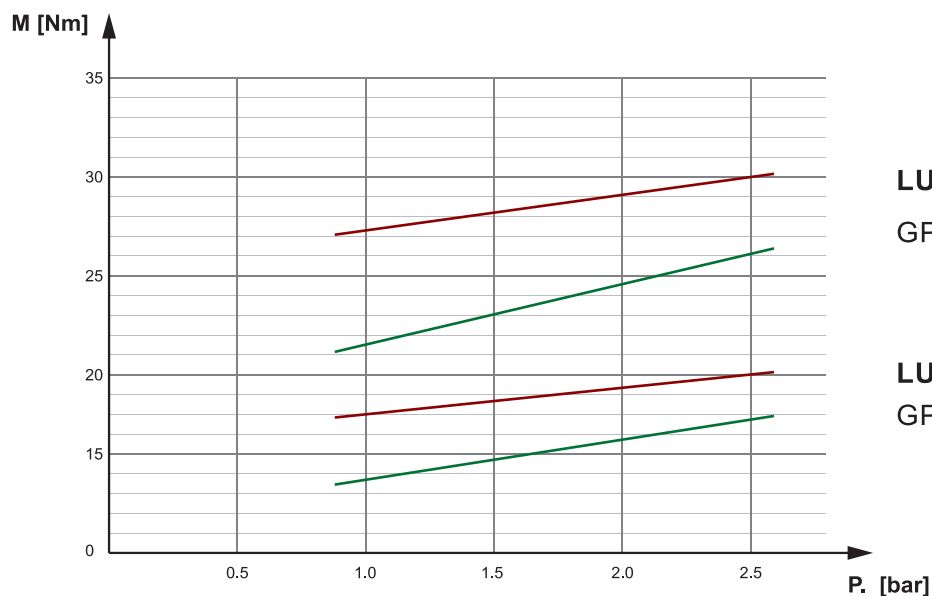
Calculation of the bolts torque to obtain the correct pressure on the seal for GP-SR seals and sealing chains.

1. Outer pipe diameter 159 mm, opening diameter 200 mm.

LU-3 sealing chain with 14 links and GP-SR seal 160x198

2. Outer pipe diameter 406 mm, opening diameter 500 mm,

LU-7 sealing chain with 17 links and GP-SR 408x498

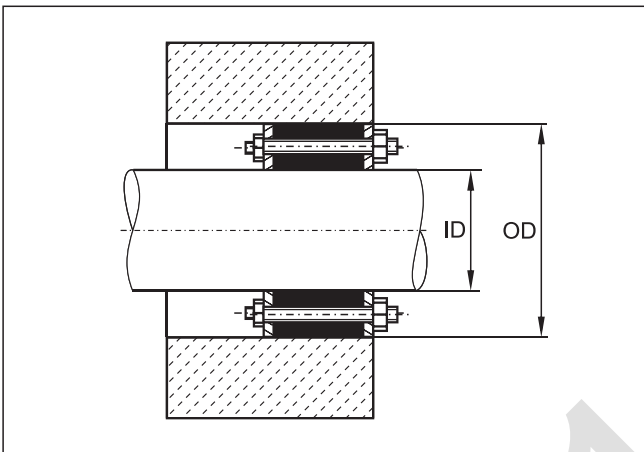


LU-7 - 17 links
GP-SR - 408x498 } 2

LU-3 - 14 links
GP-SR - 160x198 } 1



TYPE **GP-SR** DISK COMPRESSION SEALS



It is the most used solution.

Applications:

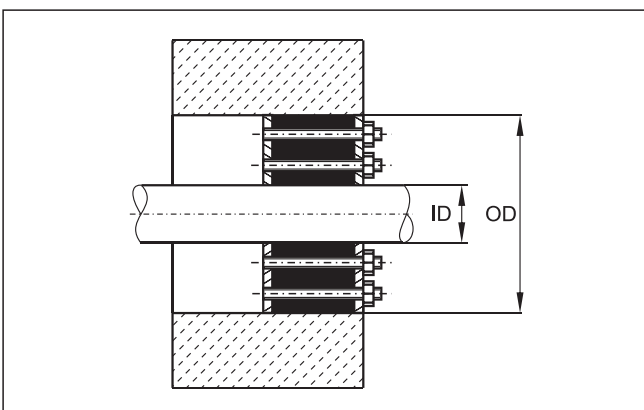
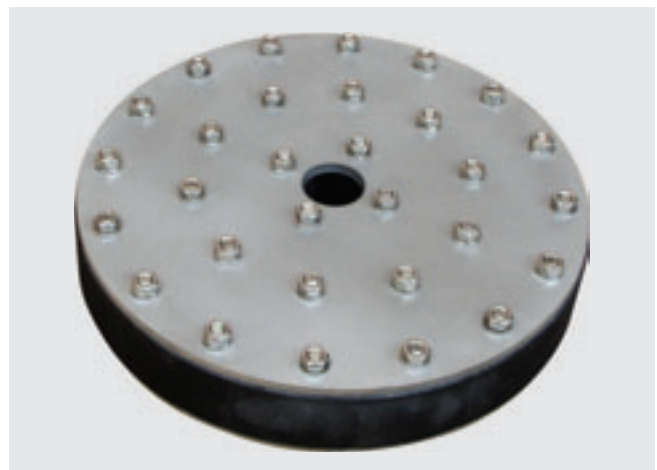
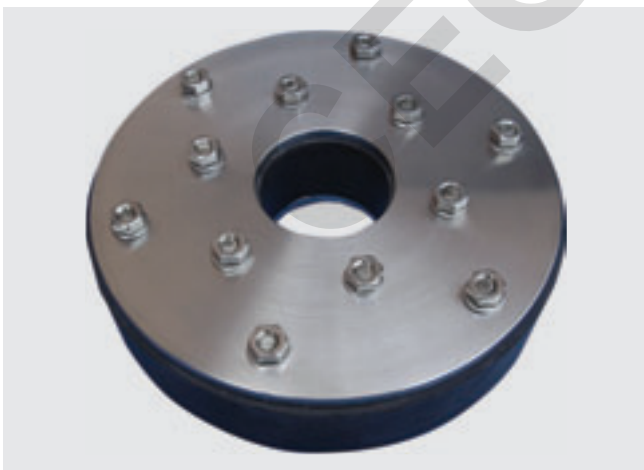
GP-SR seals are designed for sealing carrier pipes or electric cables through an opening.

They also work well with protective sleeves and openings made directly in the wall.

Pressure rings and rubber can be split, when needed to be installed on an existing pipeline.



TYPE **GP-SD** DISK COMPRESSION SEALS

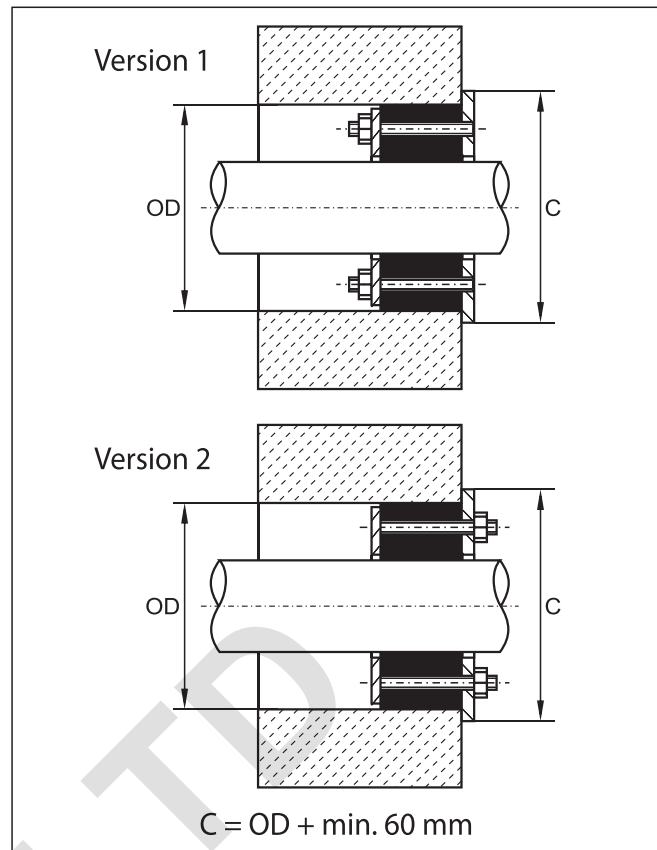
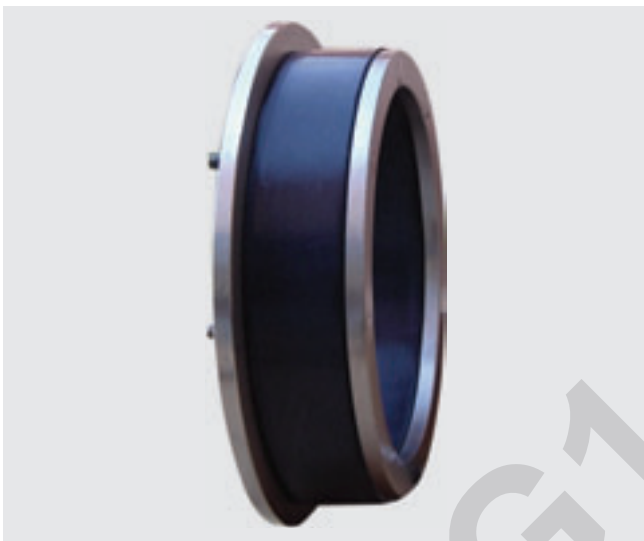
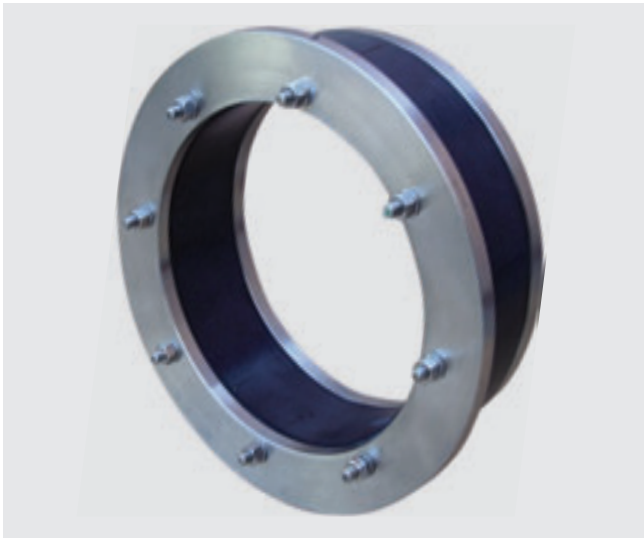


Type **GP-SD** are used when there is a large difference between the carrier pipe size and the opening diameter. Double or even triple rings of bolts are used to properly compress the rubber creating a very good seal in the wall/duct.

Pressure plates and rubber can be split to install on an existing pipes.



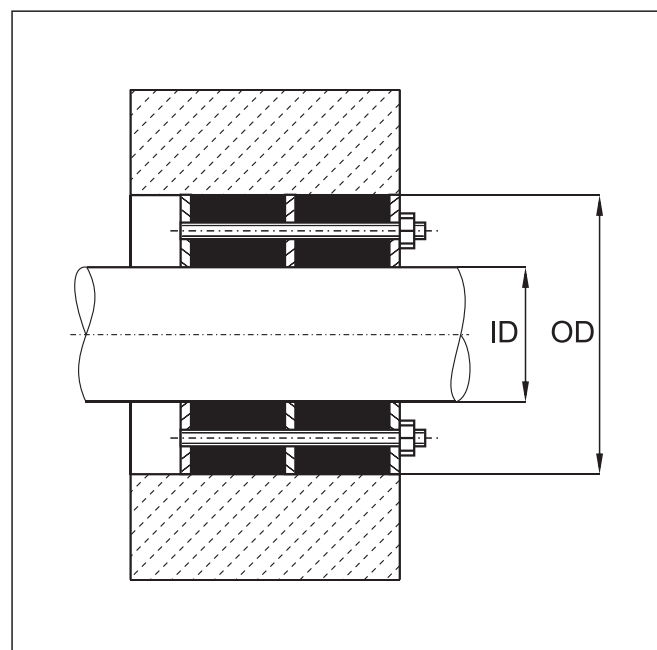
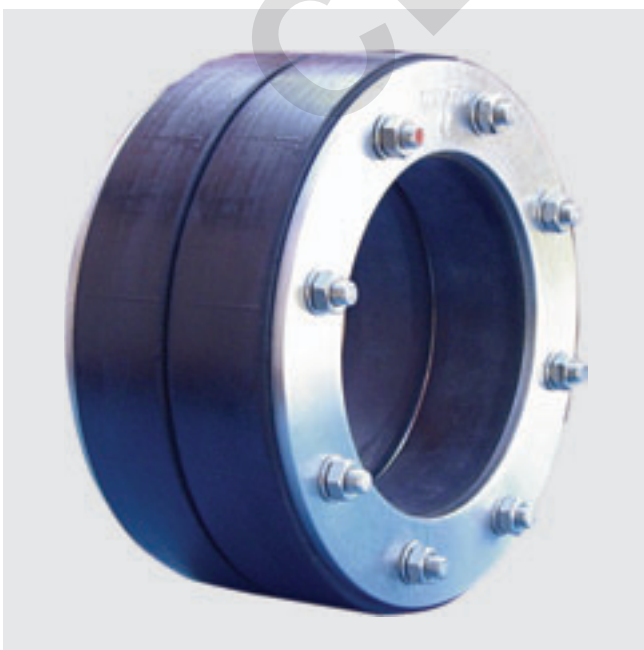
TYPE **GP-LR** DISK COMPRESSION SEALS



Type **GP-LR** compression seal has a larger plate on one side and smaller on the other. It is used in tanks where the volume of liquid changes rapidly. The large plate is mounted always on the inside of the tank. This kind of larger plate can be also used on other types of seals.



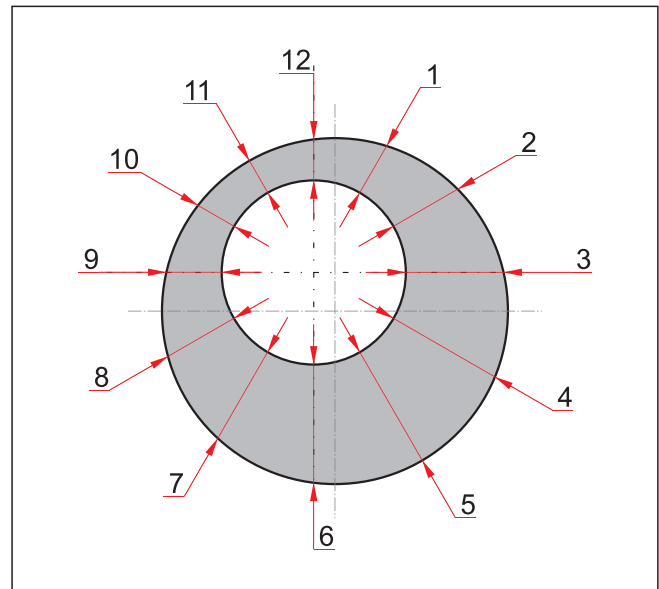
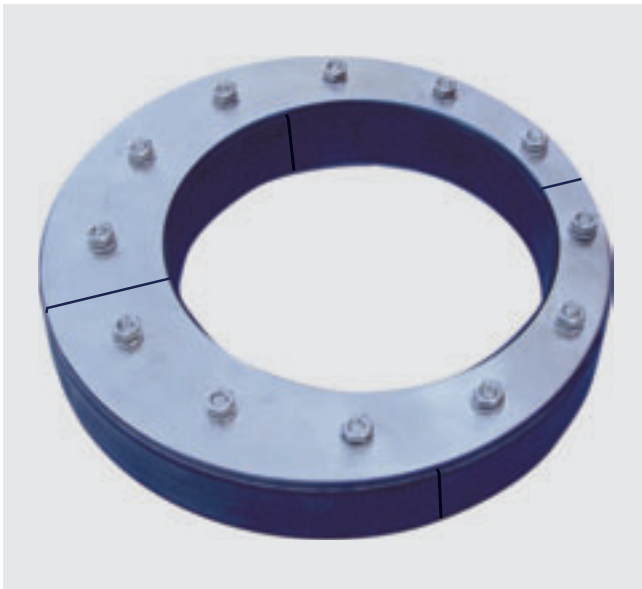
TYPE **GP-DL** DISK COMPRESSION SEALS



Type GP-DL seals were created for higher pressures up to 5 bar. This is made up from two **GP-SR** seals. Pressure plates and the rubber can be split, so it can be installed on an existing pipe.



TYPE **GP-UM** DISK COMPRESSION SEALS



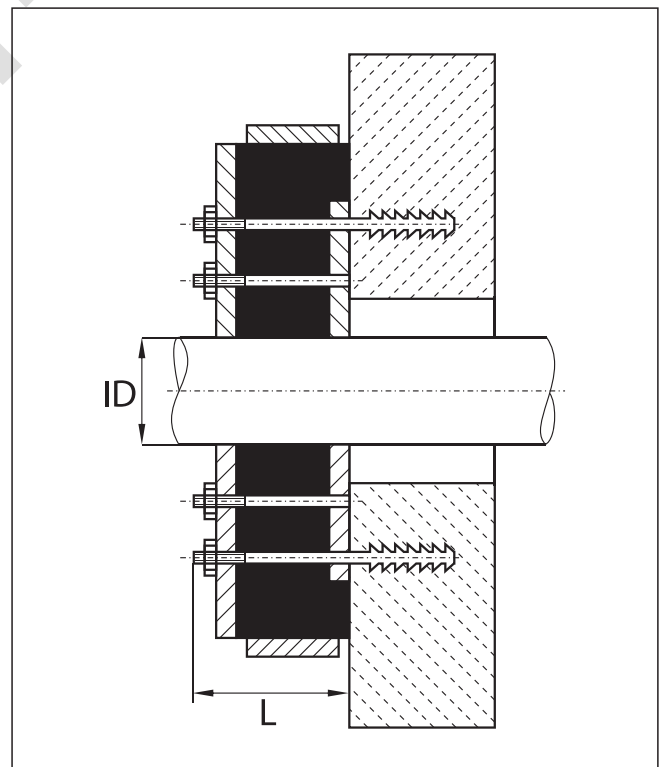
Type GP-UM is an off centered compression seal. They are used when the carrier pipe is not centered in the duct/casing. It is necessary to make an exact measurement from twelve positions (see the picture above).

This type of compression seal can be split or in one piece.



TYPE **GP-B** DISK COMPRESSION SEALS

PATENTED



Type GP-B seals are designed for existing pipelines. They are bolted to the wall and where there is no possibility to place a seal between the pipe and opening. It can be used only on flat walls.

Specification:

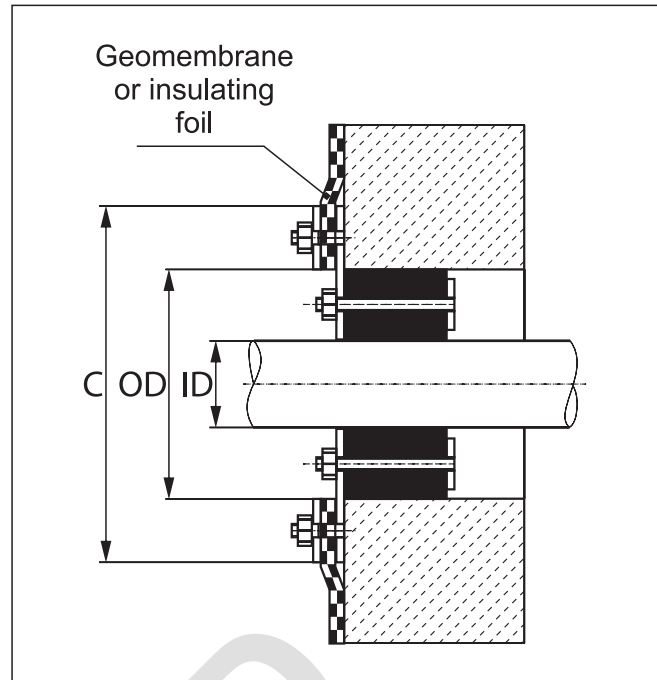
Unit thickness 60mm.

Pressure plates and rubber are split.

Used for all types of pipelines and cables.



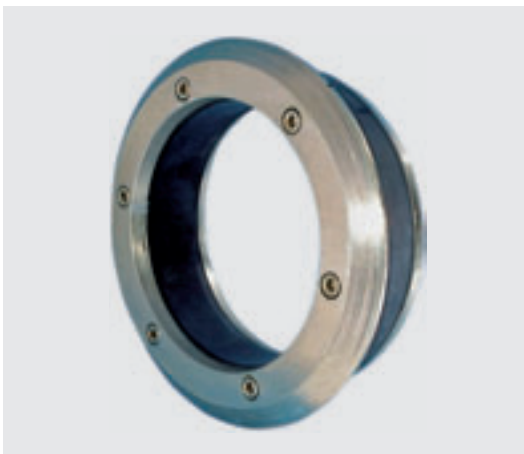
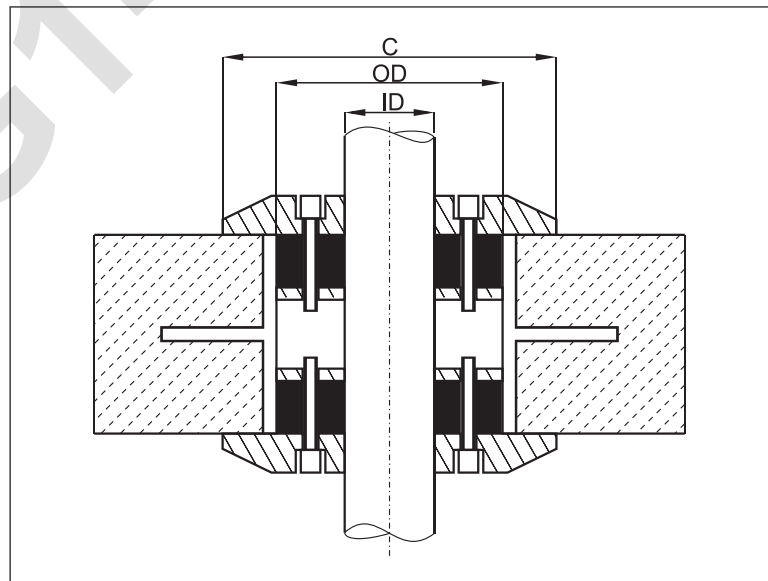
TYPE **GP-F** DISK COMPRESSION SEALS



Type GP-F compression seals are used with Geo or water proof membranes or other types of insulation, for example to cover bumps. Standard size: $C = OD + 100 \text{ mm}$.
Special order only.



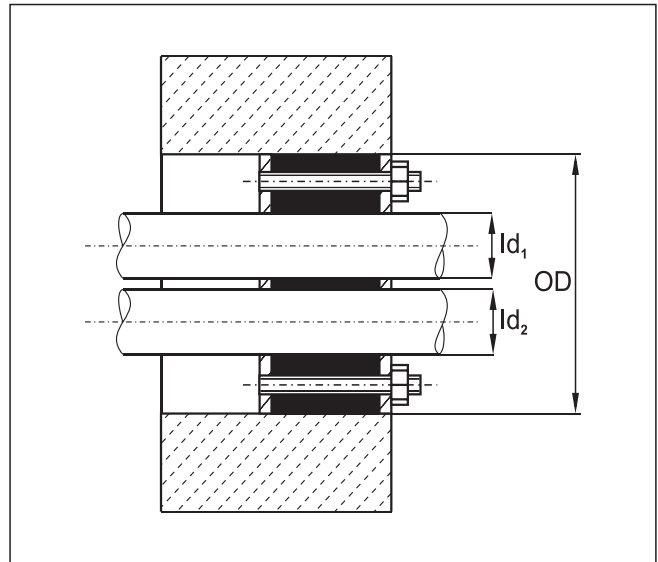
TYPE **GP-SP** DISK COMPRESSION SEALS



Type **GP-SP** seals are for openings to seal pipes or cables going through floors and ceilings.
They are used for casing pipes concreted in the ceiling or directly into the opening.
This type of seal protects against liquids, smoke and gas penetration.
Pressure plates and rubber can be split for existing pipe and cables.



TYPE **GP-W** DISK COMPRESSION SEALS



Type **GP-W** seals are for sealing multi-pipe installations.

It is important to give the OD of the seal and the number of the holes with diameter.

Remember.

It is important to calculate the surface of the holes, they cannot exceed 30% of the whole seal.



TYPE **GP-P** DISK COMPRESSION SEALS



This seal is non-metallic.

Compression disks are made of a plastic and the seal is from EPDM or NBR rubber. Bolts, nuts and washers are made of nylon. They are intended to seal cables and pipes in walls and ducts and insulate them from electrical contact.

Pressure is up to 1 bar.

Operating temperature depends on materials used.



TYPE **GP-WK** DISK COMPRESSION SEALS



These seals are for cables or pipes in concrete walls or ducts.
Pressure plates and rubber are always split.

Remember:
It is important to calculate the surface of the holes, they cannot exceed 30% of the whole seal.



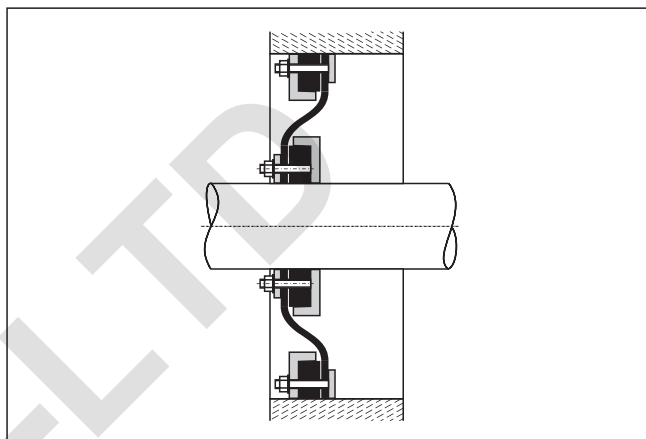
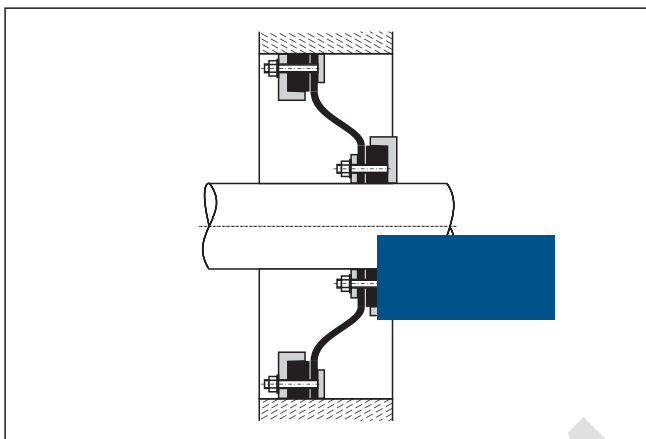
TYPE **GP-WP** DISK COMPRESSION SEALS



This type is used to seal power cables in square or rectangular openings in walls .
Special order only.



TYPE **GP-AM** DISK COMPRESSION SEALS

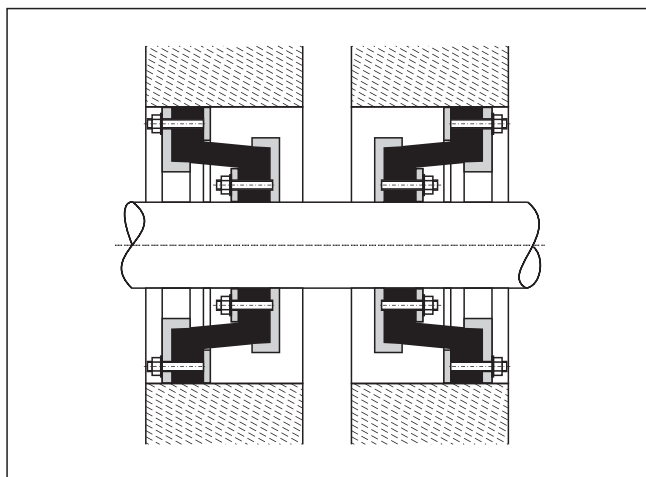
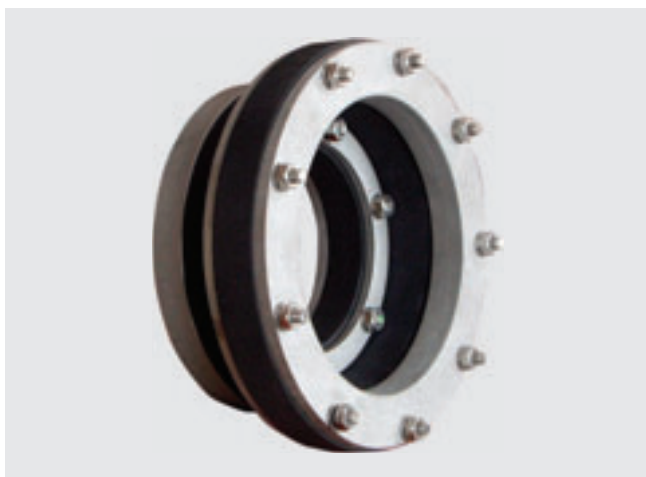


Type **GP-AM** seals consist of two **GP-SR** seals plus a rubber membrane between them. Tight passage construction allows axis movement of the pipeline preserving full seal tightness up to 1 bar. Range of movement depends on the difference in diameters of the opening and the pipeline. Maximum value is ± 50 mm. To use this type of seal the opening has to be bigger at least 150 - 300 mm than the outer diameter of the pipeline. Maximum pipe sizes DN 500. This kind of seal cannot be made in a split version. Special order only.



TYPE **GP-NS** DISK COMPRESSION SEALS

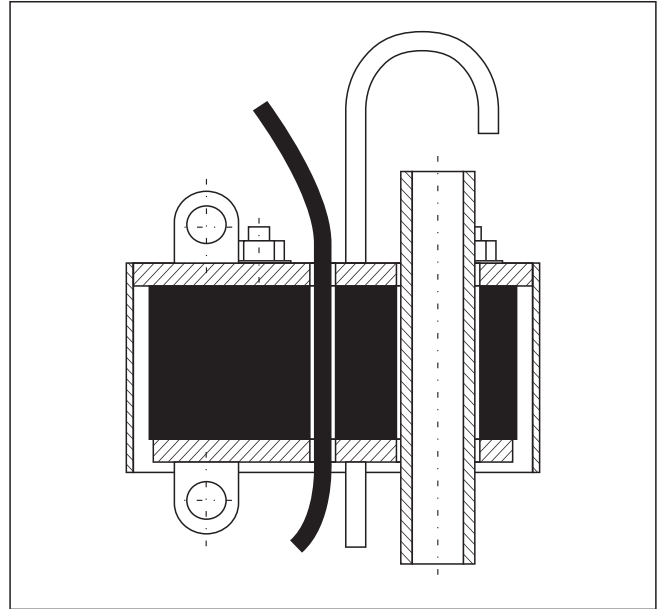
PATENTED



The flexibility of the seal's construction allows movement between 2 walls in a horizontal and vertical plane of 10-12 mm, which could shear a pipe in normal circumstances, while maintaining the seals integrity up to 1.5 bars. The best application of this seal, the opening should be at least 100 mm bigger than the outer diameter of the pipe. Maximum pipe size DN 300. This seal cannot be split. Special order only.



TYPE **GP-AJ** DISK COMPRESSION SEALS



Type **GP-AJ** is a sealing head for drilled water wells. It is used to close drain pipes. It has separate openings for carrier pipe, pump power cable and vent. In the lower part there is a hook to hang the pump.

Materials: Stainless steel, EPDM rubber.

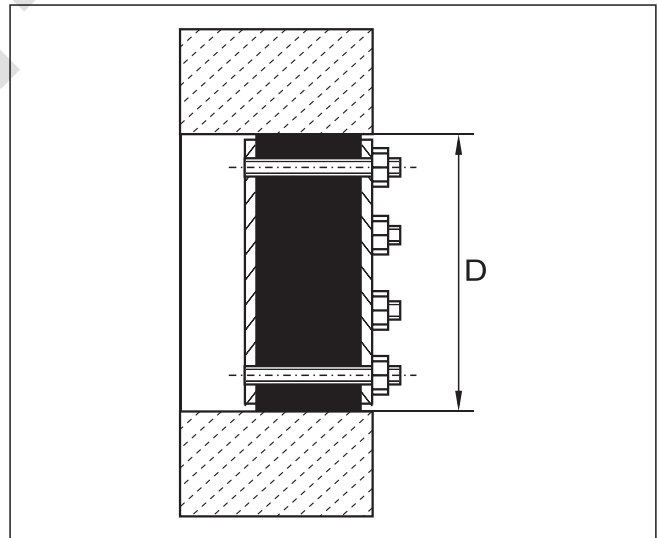
Special order only.



TYPE **GP-Z** DISK COMPRESSION SEALS



Version 1, diameters up to 200 mm



Version 2, diameters over 200 mm

These types of seals are used for plugging holes after removing redundant pipes and making access entry's in walls, tanks and foundations plus adding a drainage plug.

The materials guarantee a permanent seal.

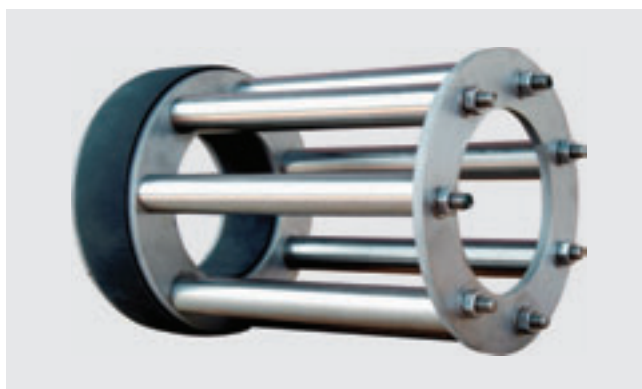
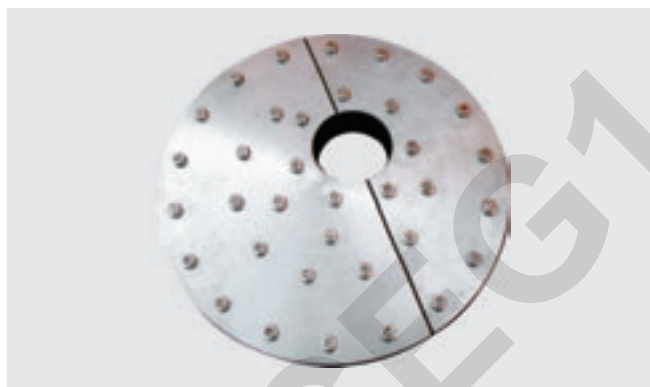
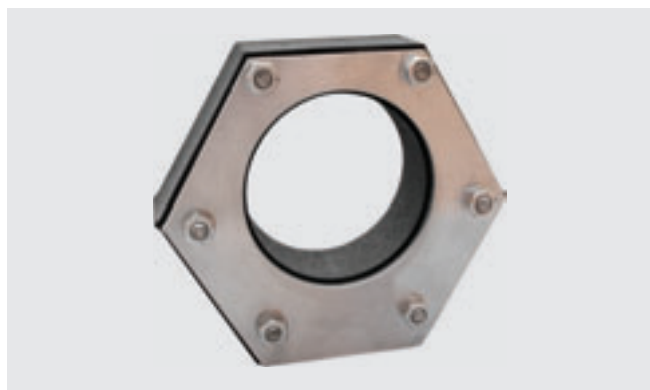
Maximum operating pressure 1 bar.

Special order only.



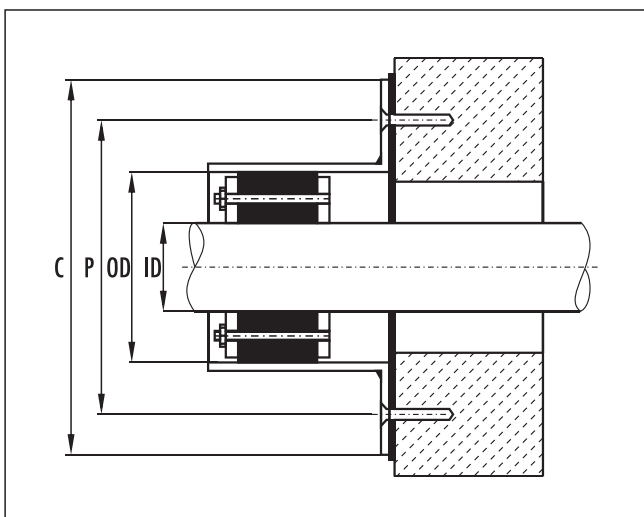
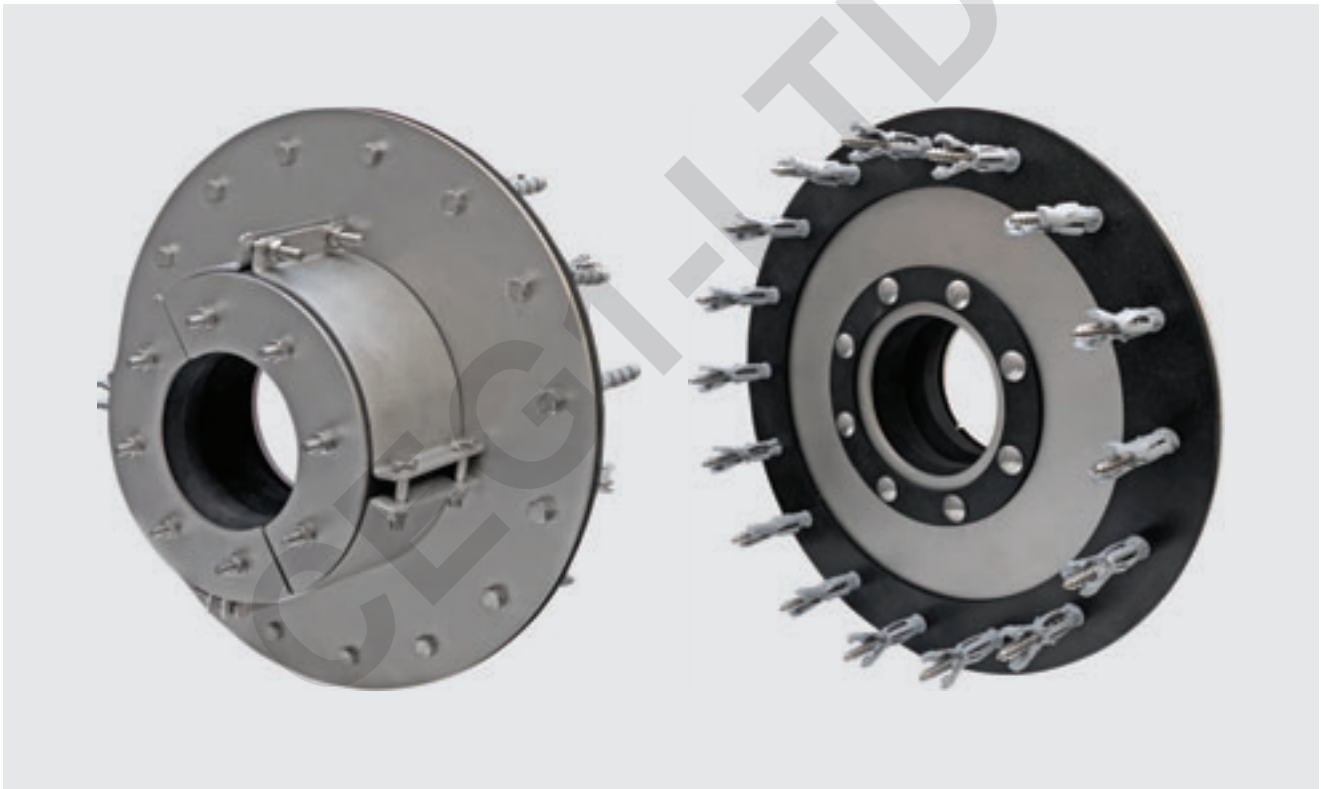
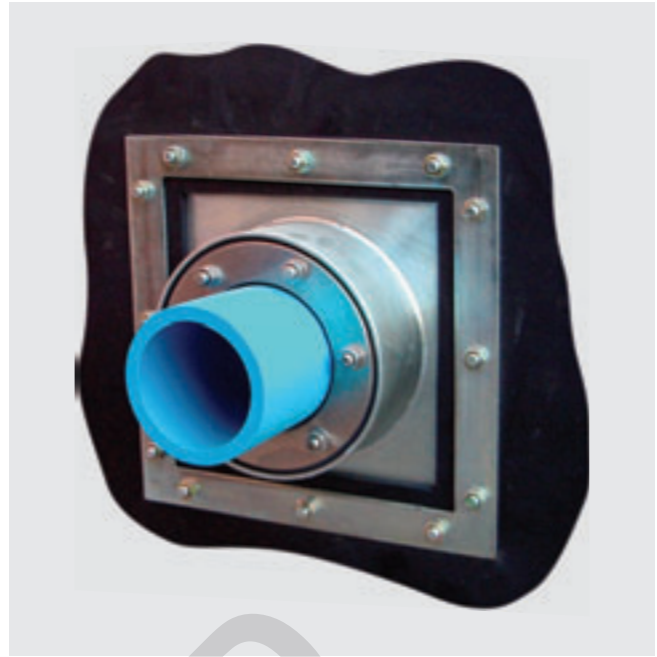
TYPE **GP** SERIES OF SEALS

These are examples of the types of **GP** seals which are produced for special projects and the individual requirements of clients. Special order only.





TYPE GP-T SEALS



These types of seals can be bolted on to walls with anchor bolts or screwed using rawl plugs, depending on the thickness and type of wall, on buildings, foundations, tanks, floors and ceilings. This type of seal is used when there is no possibility to place a seal directly in the wall. These types of seals can be fitted on round tanks or concrete walls and foundations with insulation. In some cases there is an existing pipe so they can be split, depending on the pressure. Special order only.



TYPE PD-GP WALL SLEEVES

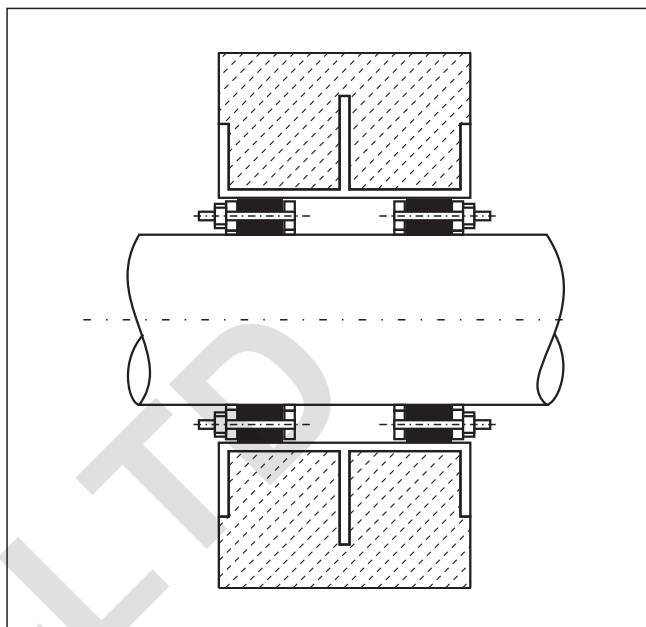
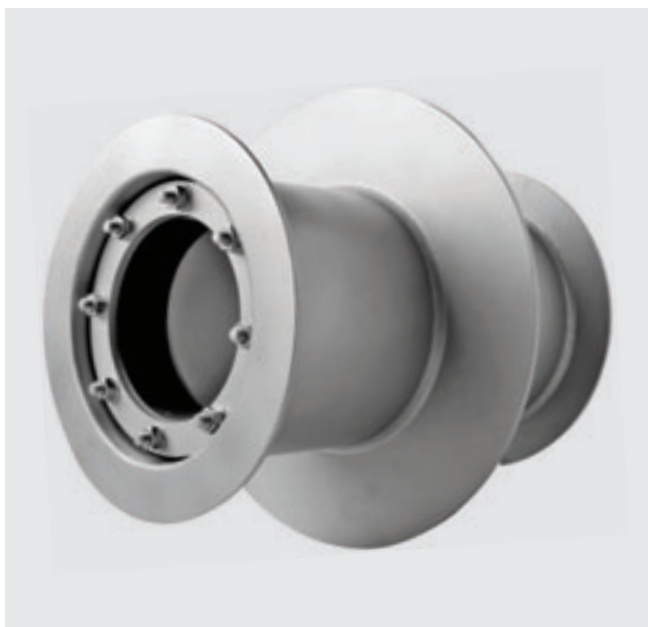
It is a wall sleeve with a flat steel face on each side and a central collar to hold it firmly in place, in concrete walls, foundations or concrete tanks. A double seal to make tight passages for a pipeline going through. It consists of a steel sleeve and 2 seals type GP-SR system.

Technical data:

Sleeve, Galvanized steel, Stainless steel 304L (1.4307) 316L (1.4404).

Rubber: EPDM or NBR.

Can be used for pipes up to DN 1000. Special order only.

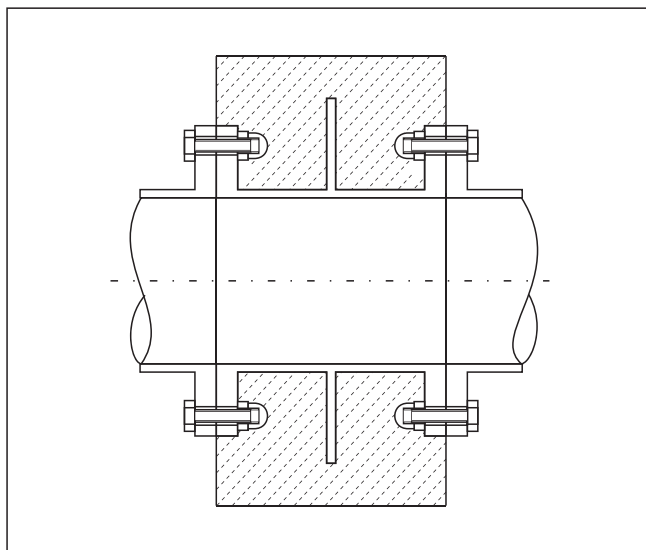


TYPE EL WALL SLEEVES

Type EL Wall sleeves are used to eliminate the horizontal movement of pipelines. These units can be used in concrete walls or tanks for intake or outlet.

Can be used for pipes up to DN 1000.

Materials: Galvanized or stainless steel 304L or 316L (1.4307; 1.4404).



During installation pay special attention to the supporting wall and that the pipeline is perpendicular to resistant surfaces. Special order only.

CAUTION!

Forces carried by the pipeline on the supporting construction need to be given in the building calculations.



STANDARD WALL SLEEVES

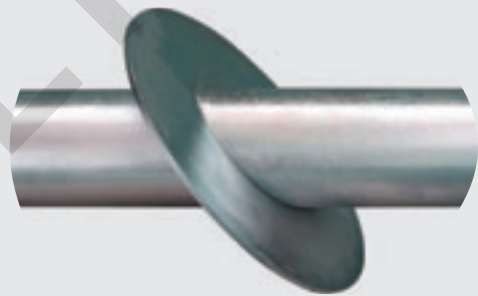
Steel casing sleeves are used to make a clean entry into walls, foundations, floors and ceilings made of concrete, so pipes and cables can pass through and be sealed.



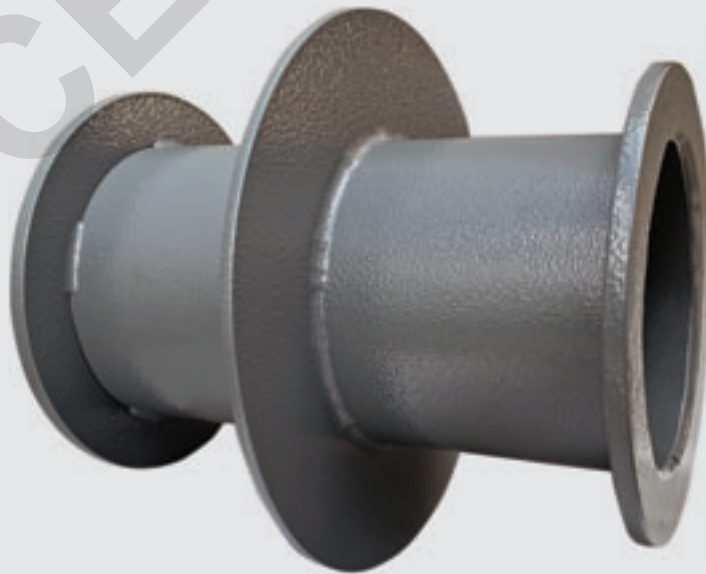
Type I



Type II



Special made



Type III

Diameter range:

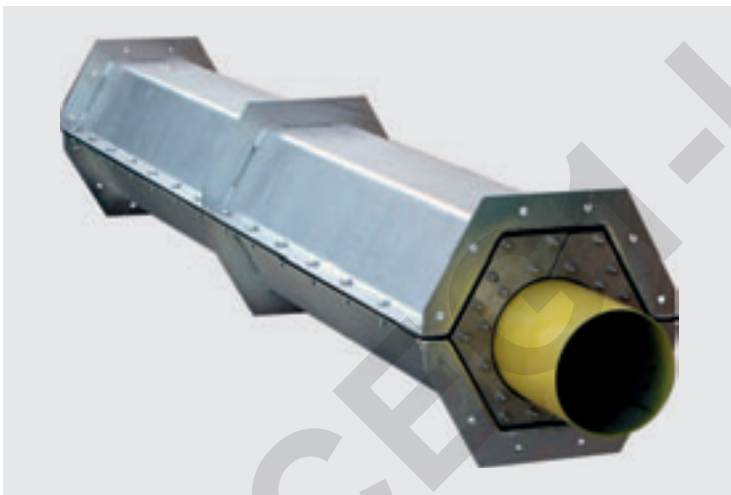
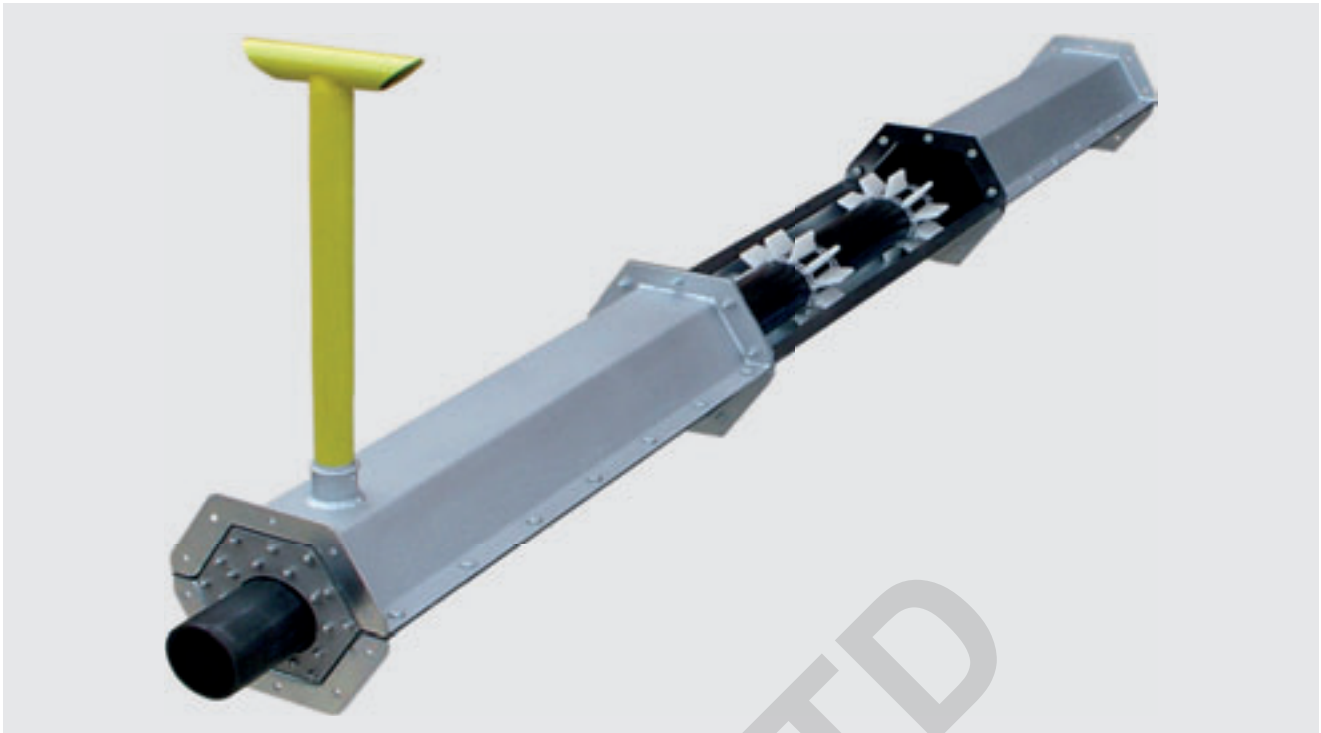
From 50 mm up to 2000 mm, steel wall thickness from 2 to 8 mm for CB steel galvanized, stainless steel, from 2 to 8 mm, maximum length stock pipe 6 m rolled 2 m.

Materials: Carbon steel, Stainless steel 304L, 316L.

All sleeves special order only.



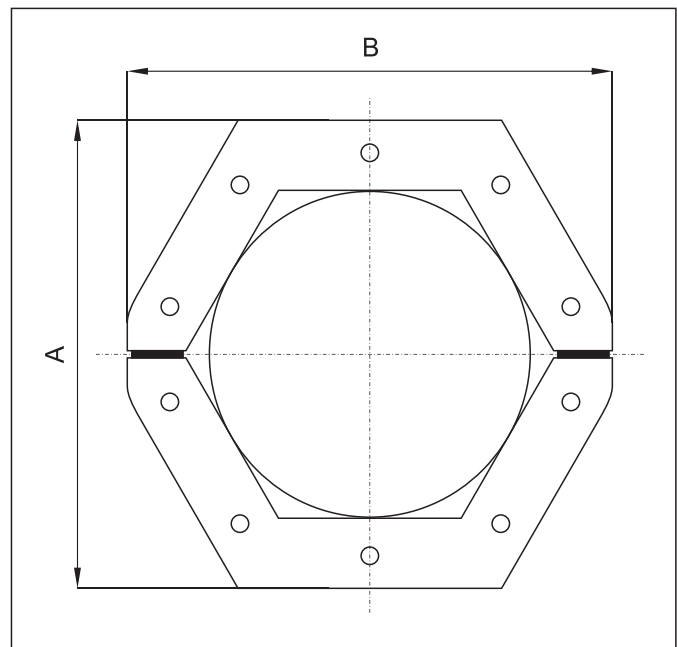
PATENTED



Split casing pipe with support ribs.

Split elbow.

Intended to make a duct/casing round existing pipelines so other cables or pipes can be laid. Technical approval allows the use of Integral split casing pipes as a duct/protection for existing pipelines under the roads. Split pipes are made from Carbon Steel and galvanized according to the requirements and categories, EN ISO 12944-2:2001) or from stainless steel of different types. Made in lengths 2 m (DN 800 and bigger maximum length 1 m). Individual pieces are connected with special collar connections. It is necessary to use spacers. With split casings we recommend to use 2 spacers per 2 metre section due to the joints. the distance between spacers are calculated by the weight of the pipe, contents and ground conditions. Special order only.



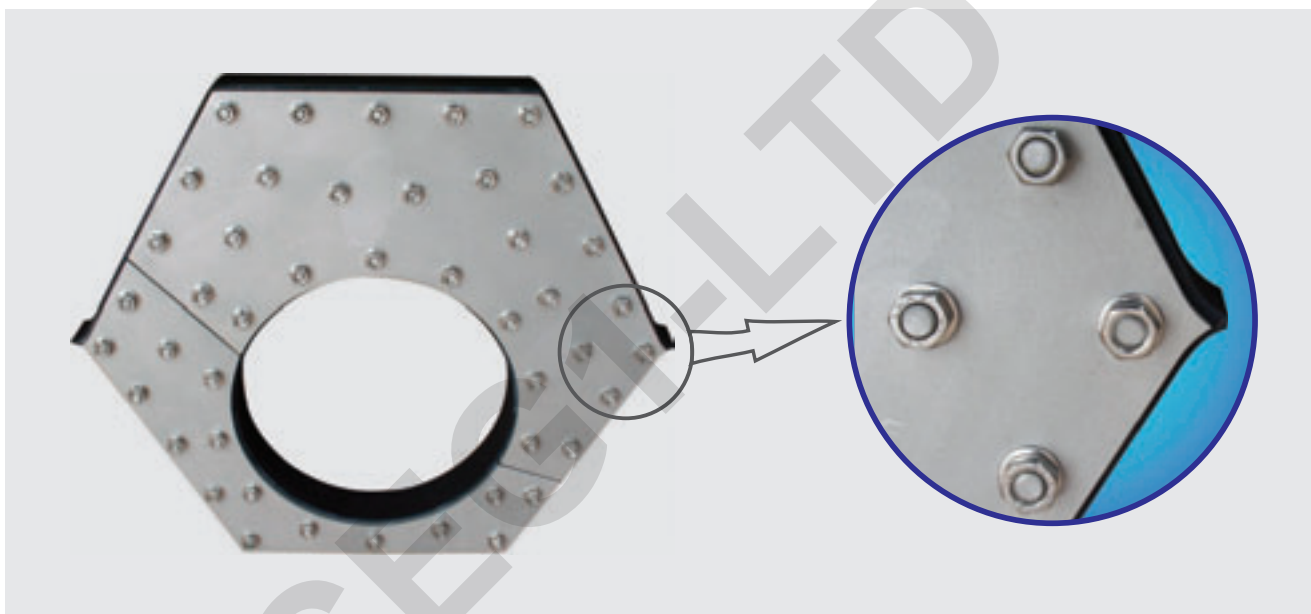


HEXAGONAL SPLIT CASING PIPES

Specyfification guide chart.

Indicative nominal diameter [mm]	Wall Thickness stainless steel [mm]	Wall Thickness galvanized steel [mm]	A [mm]	B [mm]	Indicative nominal diameter [mm]	Wall Thickness stainless steel [mm]	Wall Thickness galvanized steel [mm]	A [mm]	B [mm]
125	3.0	4.0	215	215	400	3.0	4.0	515	540
150	3.0	4.0	245	250	500	4.0	6.0	620	660
200	3.0	4.0	305	320	600	5.0	6.0	735	780
250	3.0	4.0	365	380	800	5.0	8.0	940	1020
300	3.0	4.0	420	440	1000	6.0	8.0	1200	1300
350	3.0	4.0	470	490	1200	6.0	8.0	1380	1500

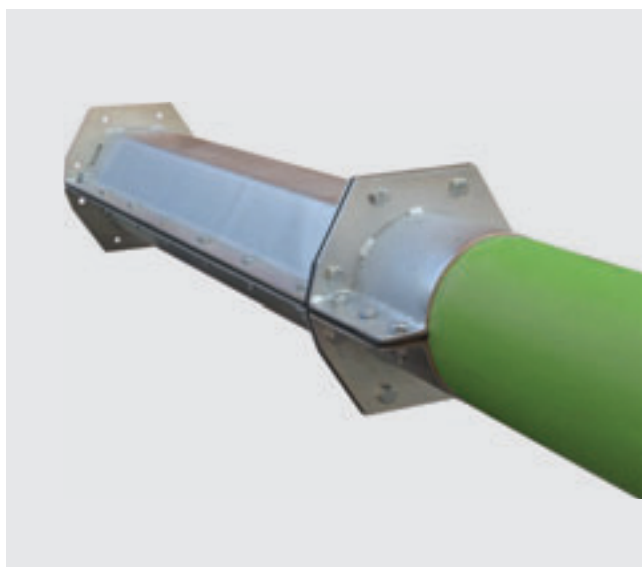
Other sizes available on request. All pipes special order only.



Ends of the pipe are sealed with the use of a hexagonal GP disk compression seals.



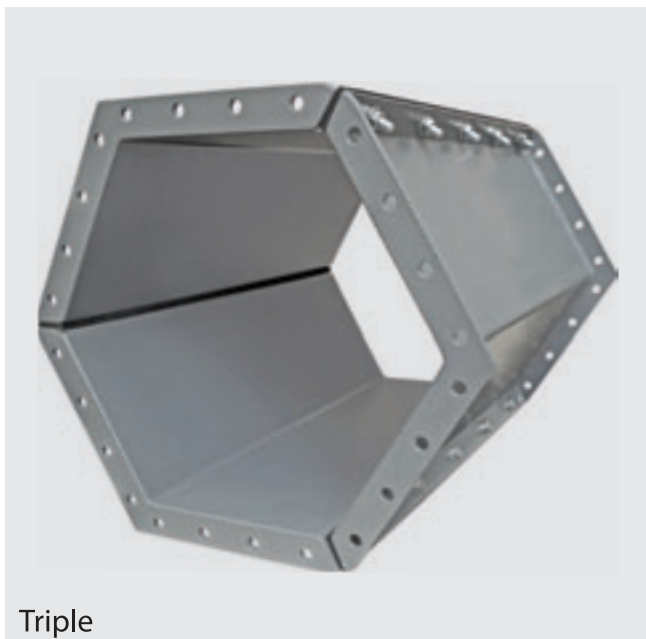
For sealing on the end of a casing with a pipe, using the help of link seals for sizes bigger than 800 DN.



With the help of the hexagonal split casing pipes you can make the existing casing pipe longer.

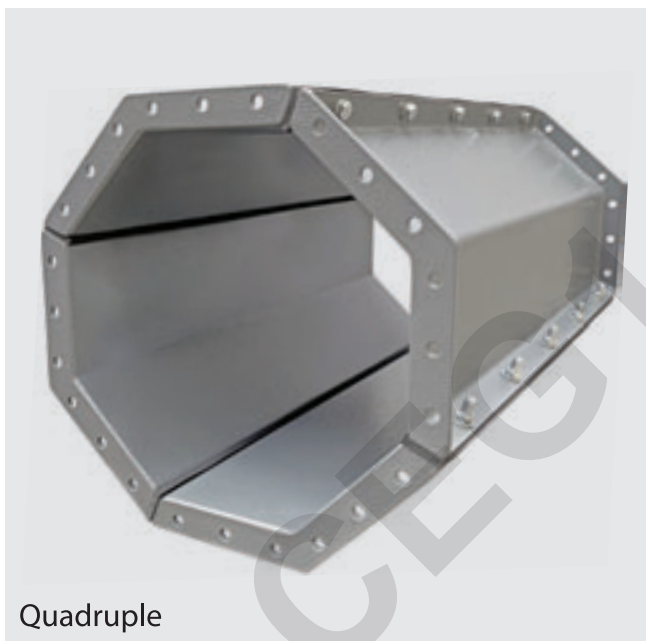


PATENTED

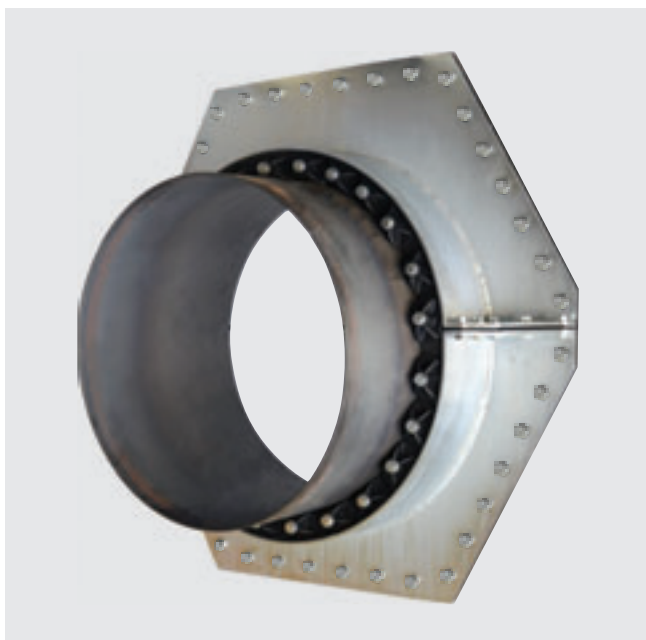
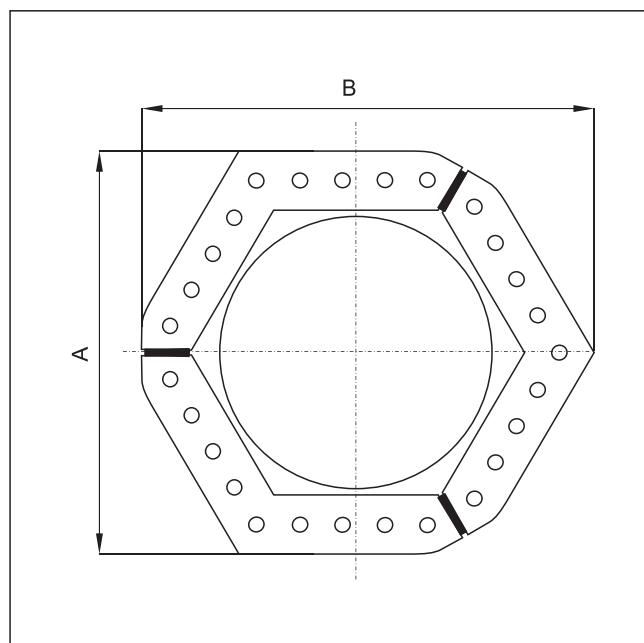


Average size [mm]	Wall Thickness [mm]	Flange Thickness [mm]	A [mm]	B [mm]
1400	8.0	10.0	1580	1820
1500	8.0	10.0	1620	1940
1600	8.0	10.0	1680	2050
1800	8.0	10.0	1980	2290

The hexagonal bolted split version in 3 and 4 sections casing pipe is designed for extra large pipes for protection of all types of exposed carrier pipes. Assembled sections with a length of 1 m is screwed together completely casing pipe. Available in carbon and stainless steel.



Average size [mm]	Wall Thickness [mm]	Flange Thickness [mm]	A [mm]	B [mm]
2000	8.0	10.0	2200	2200
2200	8.0	10.0	2400	2400
2400	8.0	10.0	2600	2600

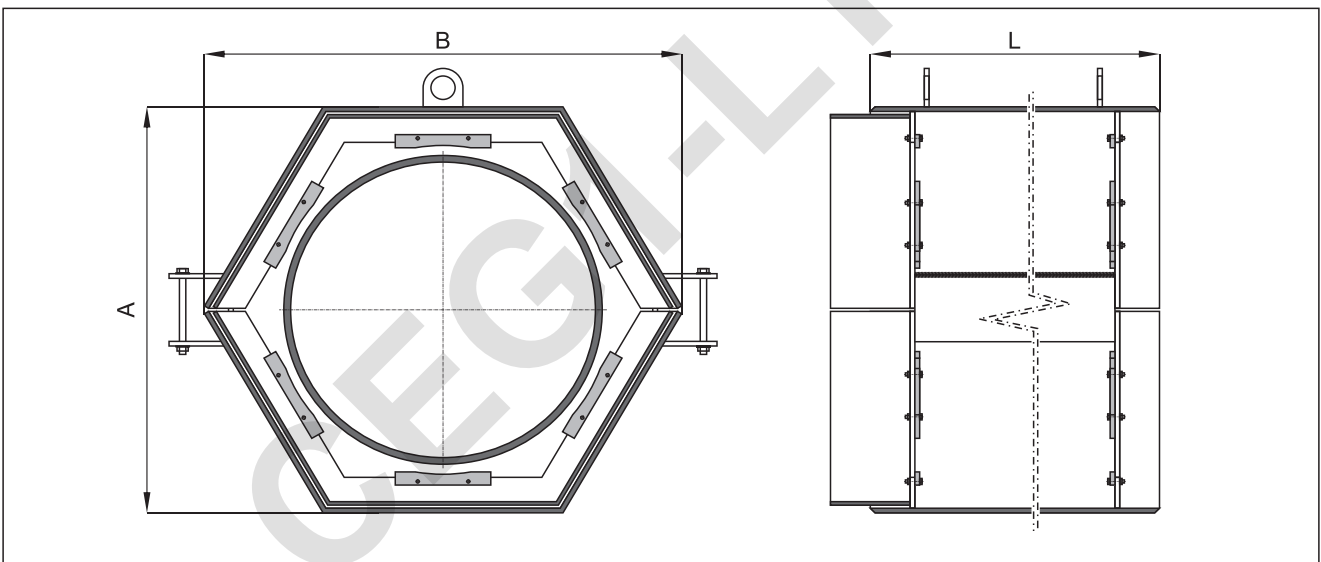
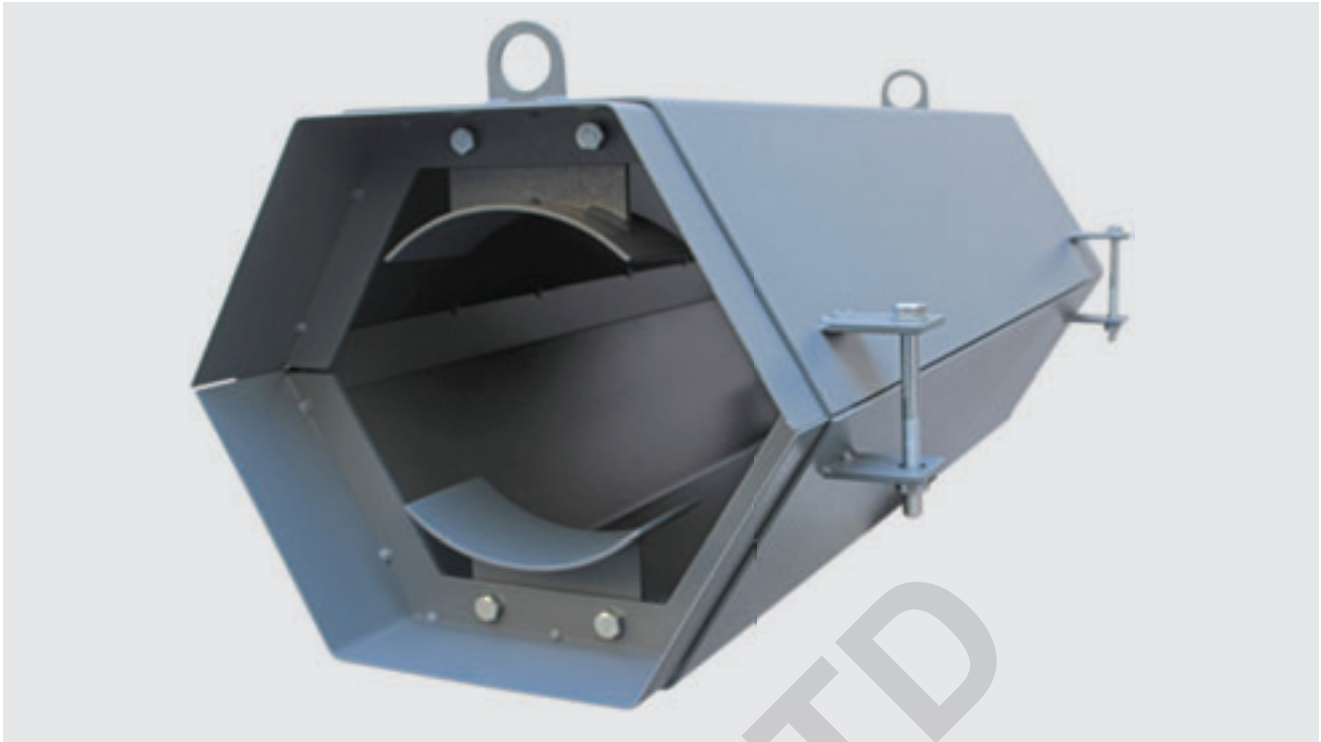


For protection both ends of the cover are special sleeves in which element responsible for tightness are the link seals. Special order only.



WELDED SPLIT CASING PIPES

PATENTED



The hexagonal welded casing pipe is designed to create protection for exposed steel carrier pipes. They are manufactured in a standard 2000 mm length, they can be made to smaller lengths to suit the situation. Each section comes with steel spacers at each end, 4 clamps to hold the section in place for welding, plus lugs for unloading and installation. After installation the lugs and welding clamps should be cut off. The pipe is not protected by the factory with any anti-corrosive coating. Available in carbon steel, for special order stainless steel and other. Special order only.

Chart of sizes for split casings.

Average size [mm]	Wall Thickness [mm]	A [mm]	B [mm]	L [m]	Average size [mm]	Wall Thickness [mm]	A [mm]	B [mm]	L [m]
125	4.0	140	160	2.0	400	4.0	410	480	2.0
150	4.0	170	190	2.0	500	6.0	520	600	2.0
200	4.0	230	260	2.0	600	6.0	620	710	2.0
250	4.0	280	320	2.0	800	8.0	820	940	1.0
300	4.0	330	370	2.0	1000	8.0	1050	1190	1.0
350	4.0	360	410	2.0	1200	8.0	1220	1410	1.0



PATENTED

Plastic split casing pipes are made from PEHD or PCV and are used to cover existing pipes or cables, where there is a danger of damage and rapid corrosion to steel pipes or cables. They are produced in two versions. Version 1. Bolted together with nylon nuts, bolts and washers with or without rubber seals.

Version 2. Welded together and made from PEHD and has profiled edges down each side for ease of welding, plus lugs at each end to hold them in place when joining them together in a line. Both halves have strong ribs which act as spacers to keep the carrier pipe/cables away from the welding area.



Bolted split casing pipes

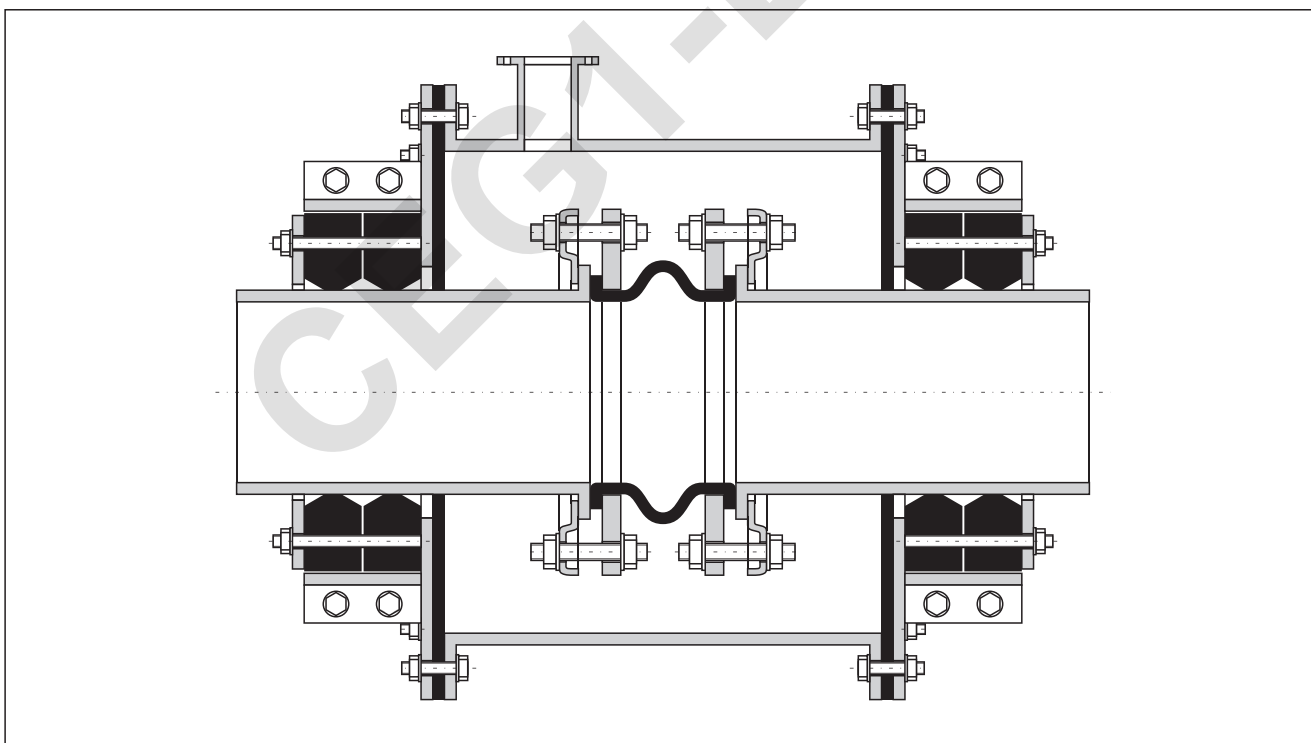
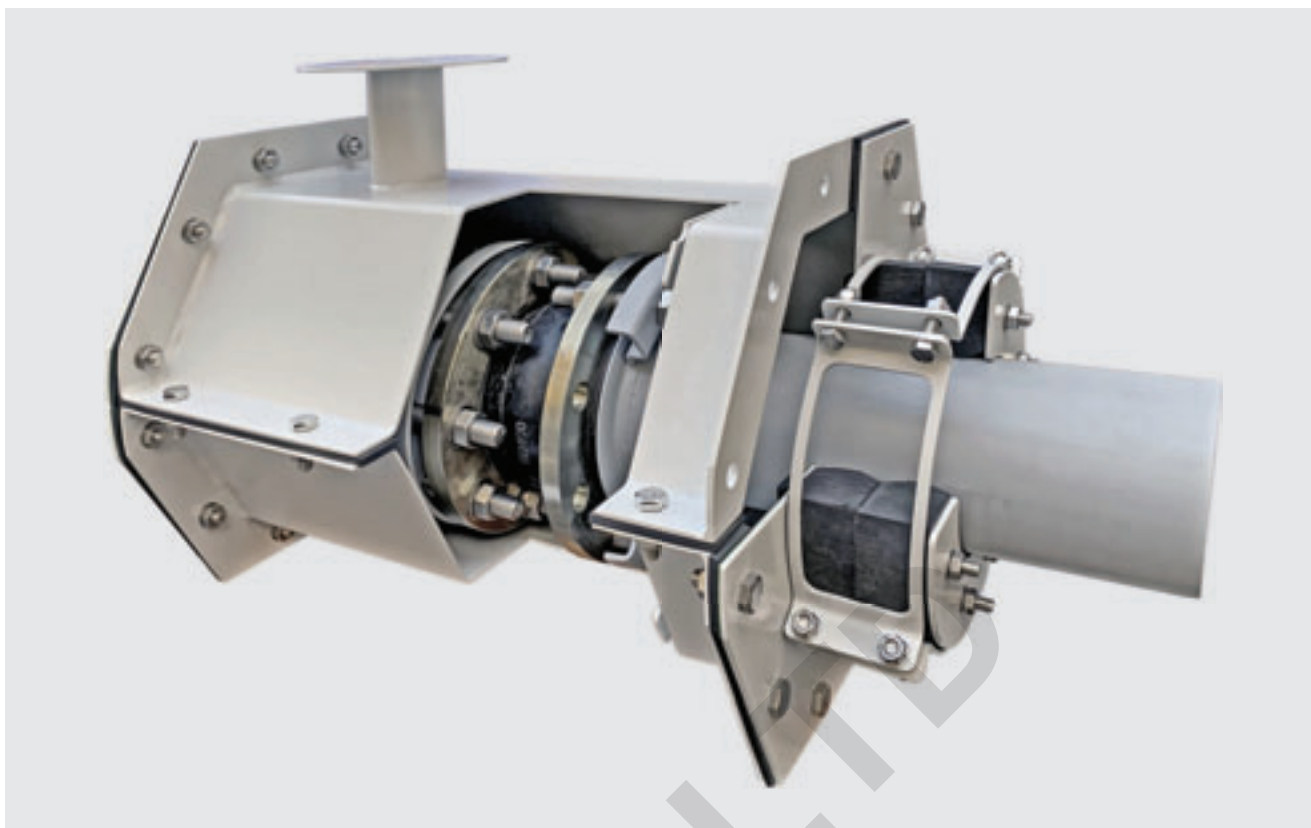
Average size [mm]	Wall Thickness [mm]	Flange Thickness [mm]	A [mm]	B [mm]
200	6.0	8.0	310	320
250	6.0	8.0	370	390
300	8.0	10.0	440	470
350	8.0	10.0	460	500
400	10.0	12.0	530	570
500	10.0	12.0	630	690

Welded split casing pipes

Average size [mm]	Wall Thickness [mm]	A [mm]	B [mm]
200	6.0	230	290
250	6.0	290	350
300	8.0	350	420
350	8.0	370	450
400	10.0	430	510
500	10.0	530	630



PATENTED



The compensator protection and inspection unit has been specially designed with a hexagonal shape to withstand heavy loads, and easy to fit on old and new installations. The split unit is small unlike the old concrete manholes which are very large and costly to build, plus they take a long time to excavate and waiting for the concrete to harden. Our unit can be installed and fitted the same day as the installation of the pipe line and buried, light but very strong. The unit comes with 2 double rubber seals at each end so the pipe can move in any direction, special clamps which can be adjusted hold the rubber seals in place. They are manufactured to individual requirements. Sizes from DN 125 to DN 1000.

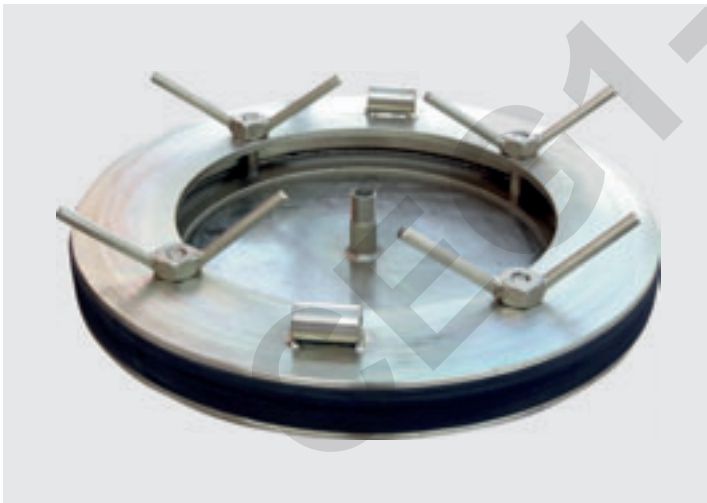


TEMPORARY PLUG SEALS

These items are intended as a temporary closing off of sewage pipes and other low pressure installations up to 0.25 bars. They are a simple construction and easy to install. They can be used with PE, steel, cast iron and concrete pipes Installations. The bung is placed inside the pipeline and screwed tight until the rubber expands and fill the space tightly. The bung can come with a valve or have a valve fitted to release the pressure or monitor and control the pressure in the pipe. All items are made to order only.



Up to DN 250.



Special made.



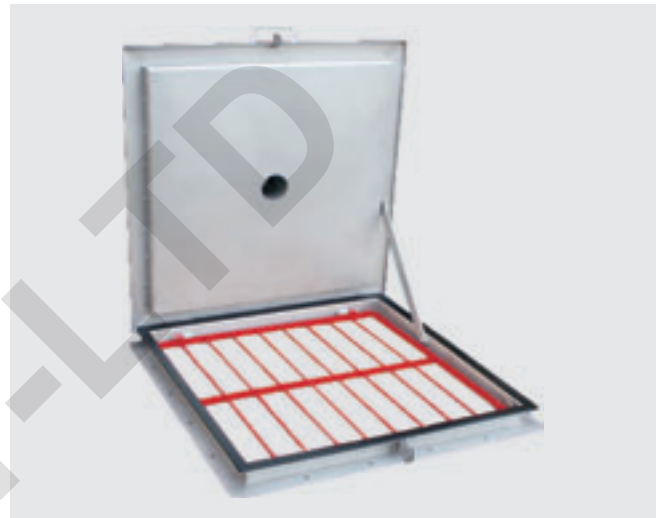
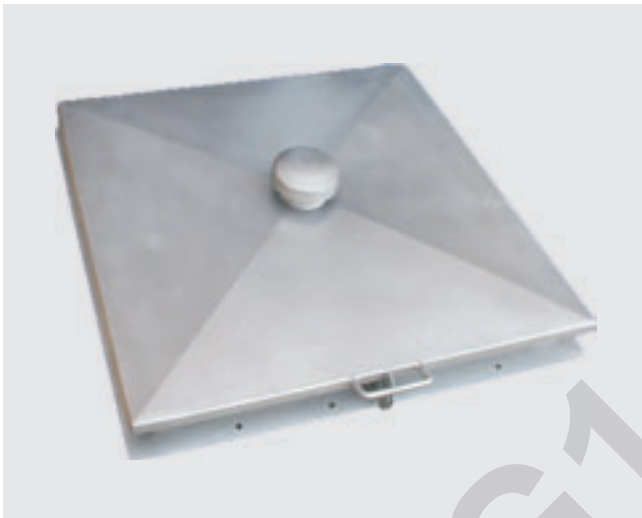
For large diameters.





LOW PRESSURE INSPECTION HATCH TYPE WR-K

Hatches of this type are installed in the upper part of the tank and are used to inspect and change elements installed in the tank. We offer a wide range of hatches made to order according to requirements. The hatch can be installed with additional safety measures such as a grid that prevents accidents, like tools and personnel falling into the tank or building.



Insulated hatches.



Double hatch:

Application:

Water tanks.

Installation chambers.

Water and sewage pump rooms.

Technical data:

Material: stainless steel, Styrofoam thermal insulation seal of the cover EPDM or NBR rubber
Hatches with a special lock or a padlock. Covers are protected with a lever or gas spring against accidental closing. Special order only.



HIGH PRESSURE INSPECTION HATCHES FOR TANKS TYPE WR-S

Inspection hatches are installed to walls of concrete tanks and are used for control, conservation and repairs of the equipment inside the tank. They are most often used to close Separated fermentation chambers in sewage treatment plants. When used in concrete tanks they can be installed only during pouring of the concrete.

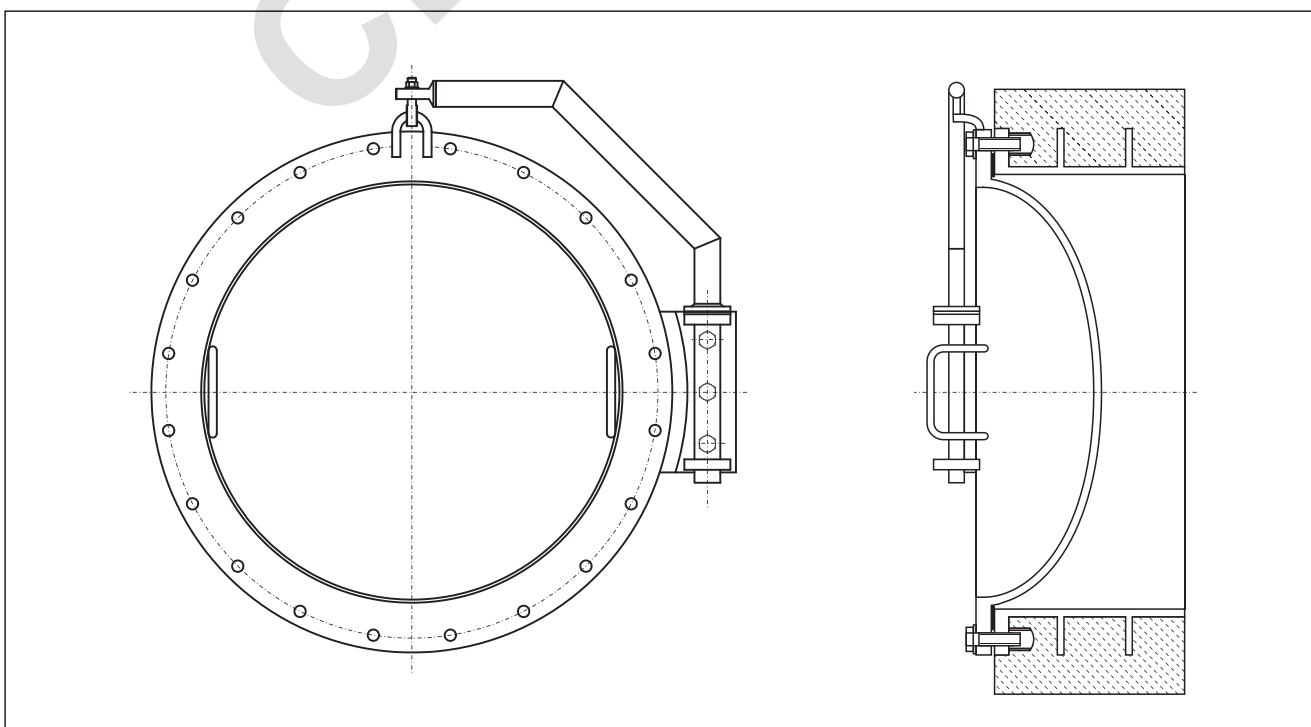
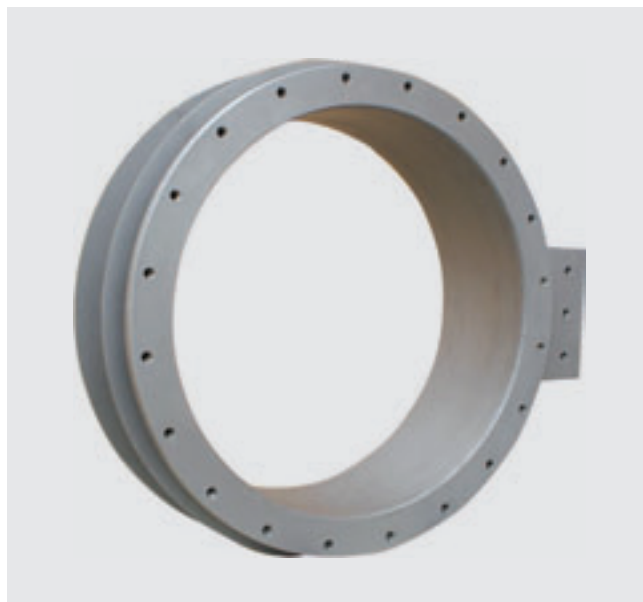
Materials:

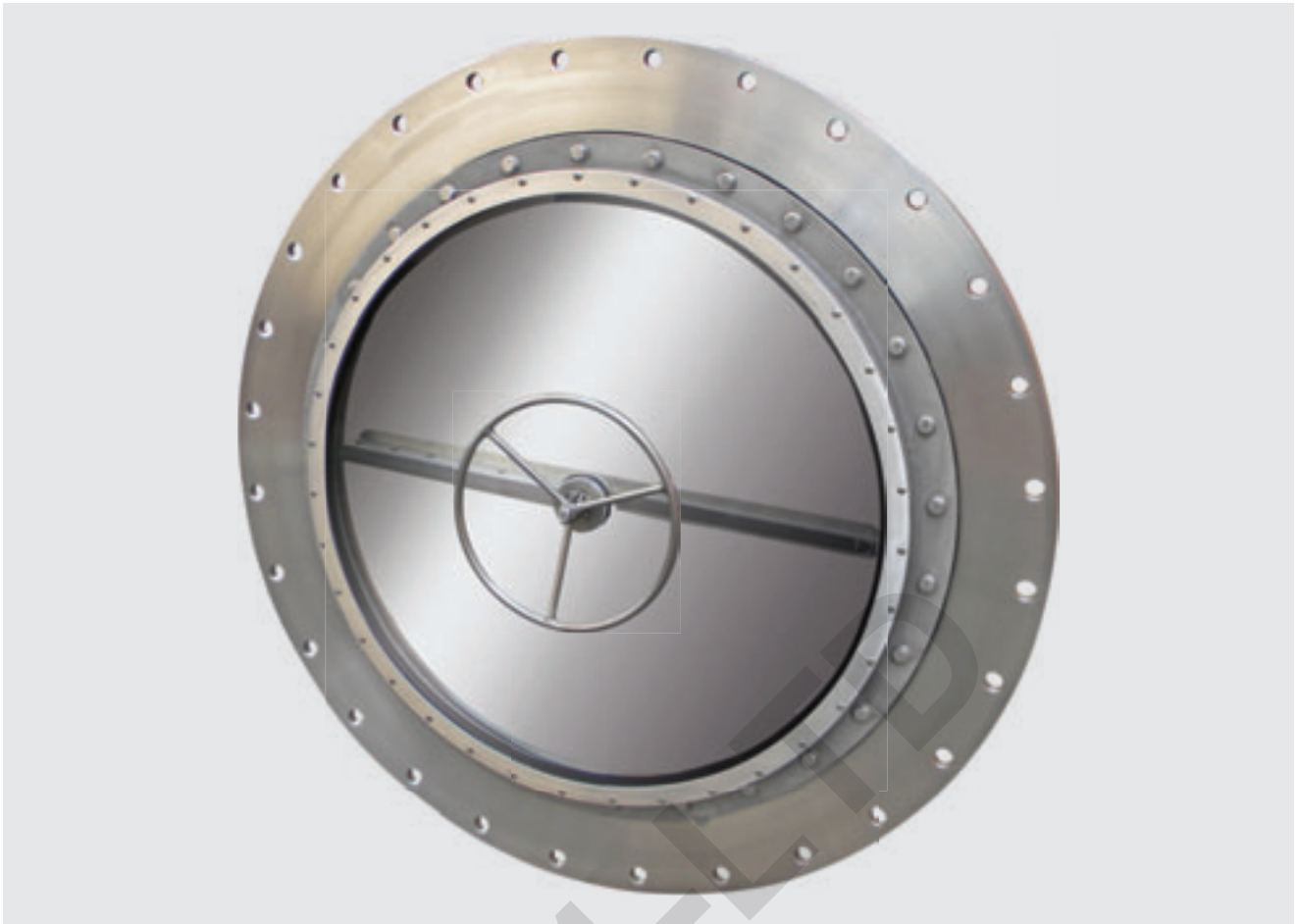
Stainless steel,

EPDM rubber seal.

Operating pressure up to 10 bars

Size of the hatch up to 1200 mm.





Hatches with tempered laminated glass panel up to 0.5 bars.



For special orders possible any other technical solutions.



TYPE **AR** SUPPORTS WITH REGULATED HEIGHT

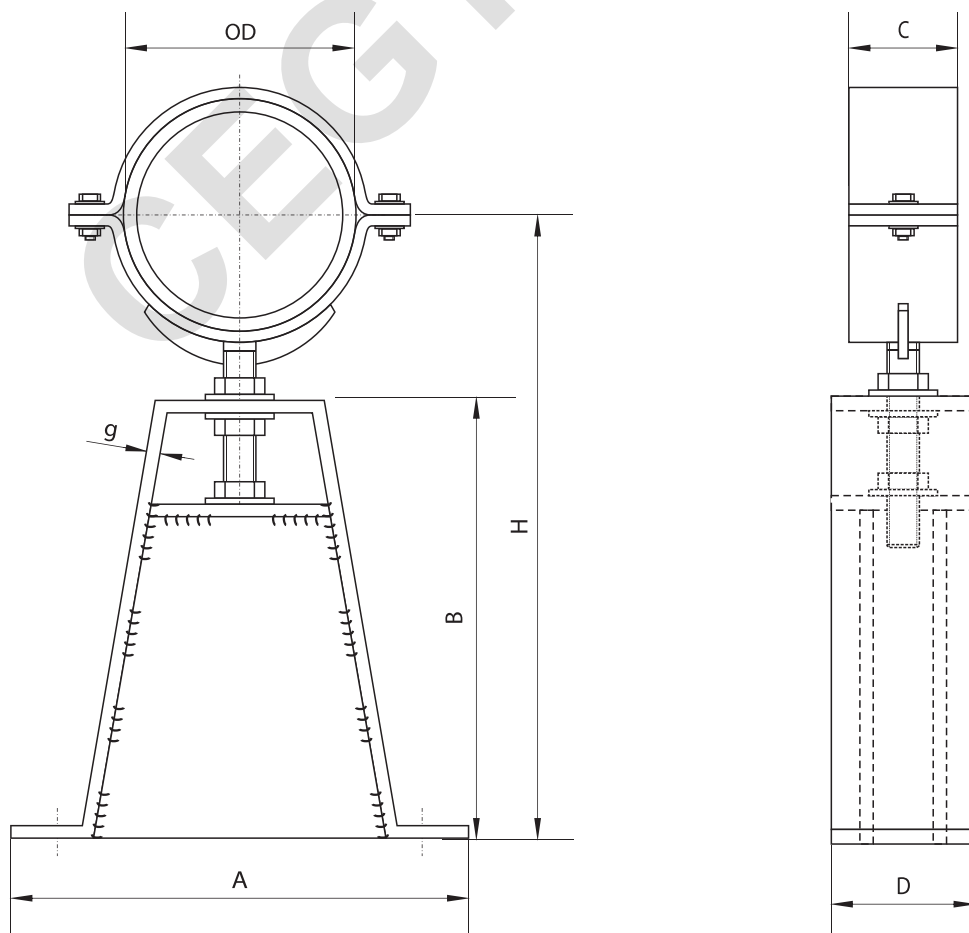
PATENTED



Type **AR** supports are used to support all kinds of pipelines in a large range of diameters. A simple box construction ensures high durability while limiting the weight of the support itself. Distances between supports can be up to 9 meters. In special circumstances up to 12 meters. Height of the support cannot be higher than 1.0 meters.

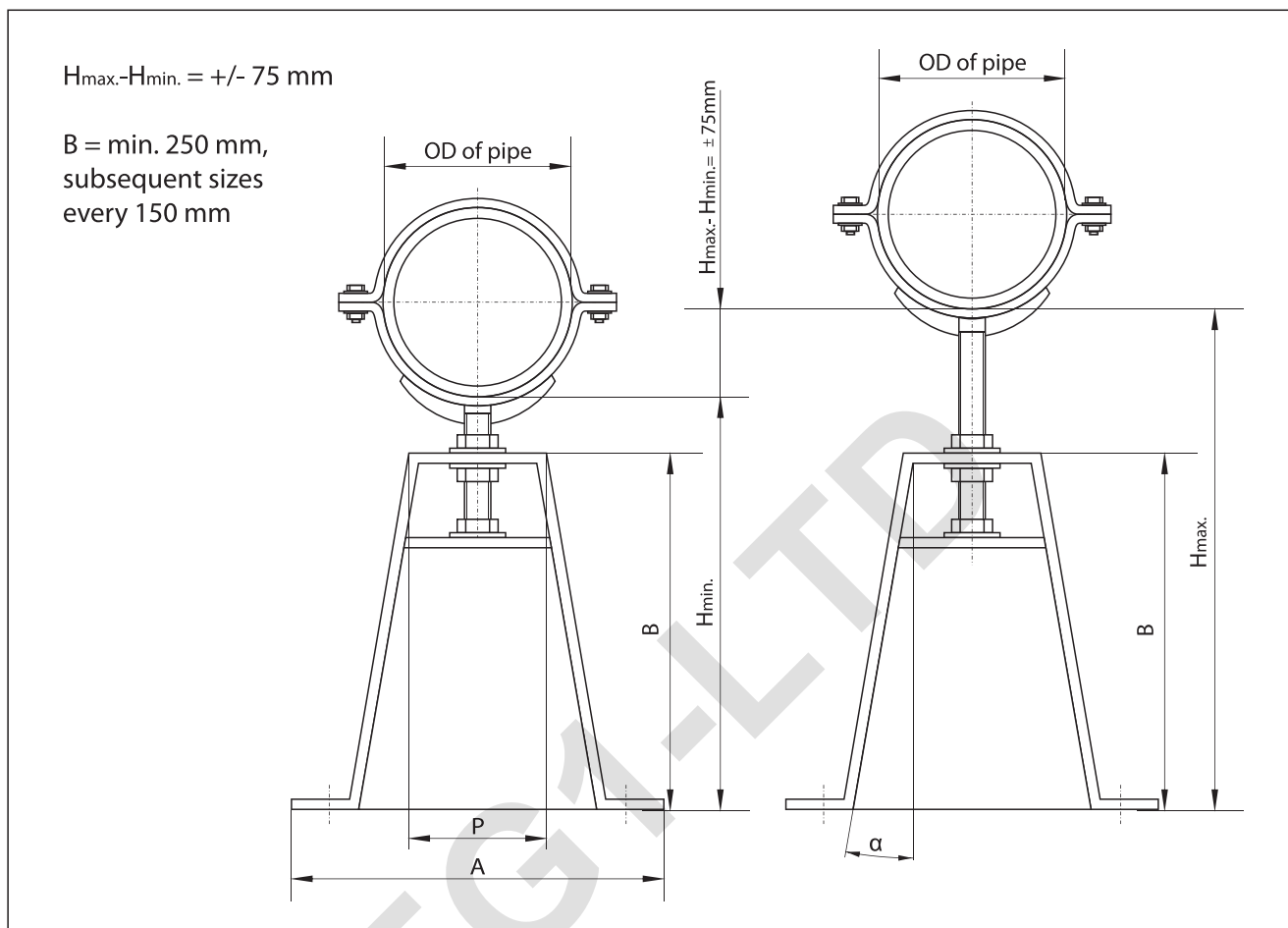
Due to the regulation ability of the height you are able to create a fall in the pipe, which stops any stagnation occurring. Standard height regulation is $\pm 75\text{mm}$. Supports can be placed on all kinds of foundations or pedestals.

Construction of the clamp allows for thermal pipes. Special order only.

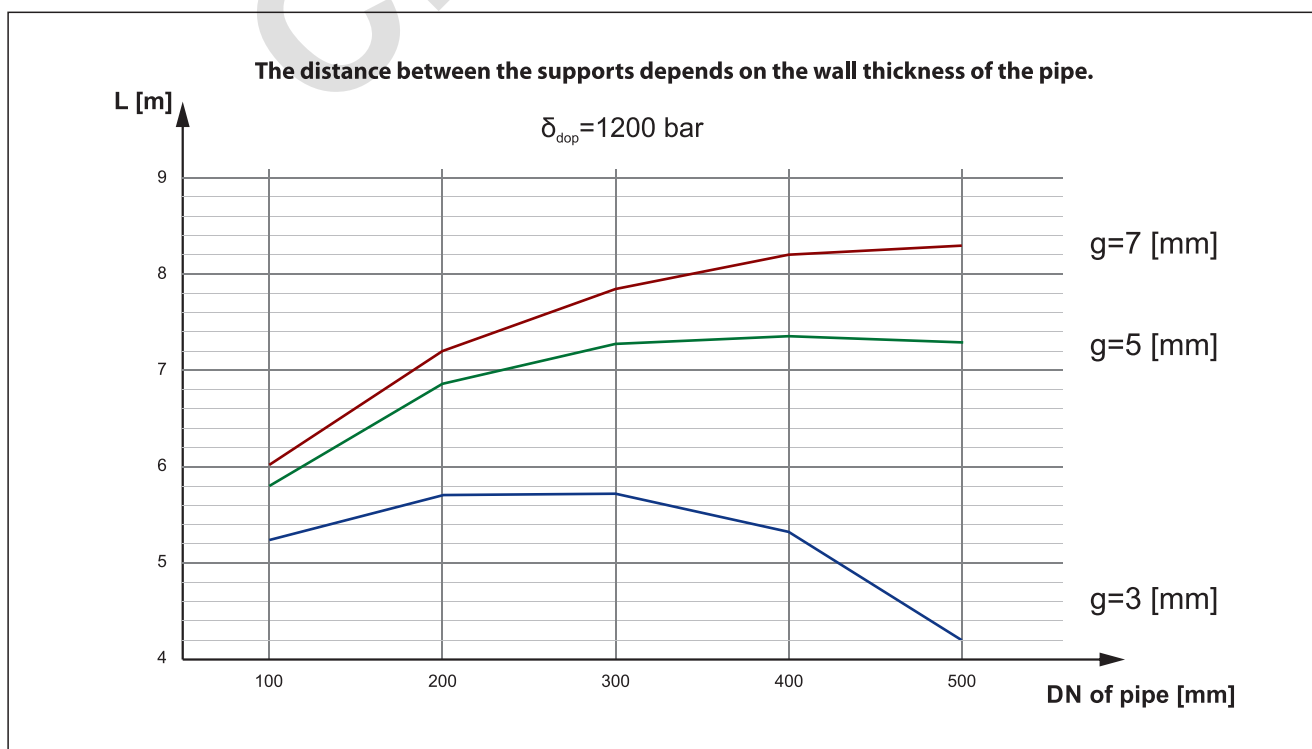


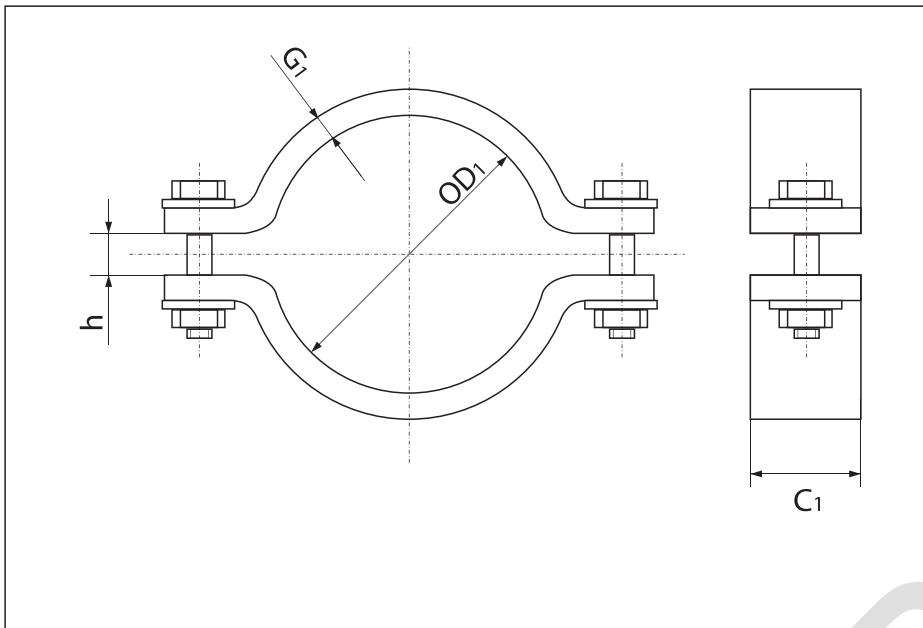


The supports can carry single and multiple pipelines and work with a combination of three types of supports, floor, wall and suspended types. The clamp can be covered with polyethylene or rubber and can be used on thermal and any other type of installations. Supports are made from all types of steel. Special order only.



Supports for low parameter steel pipelines.





Sizes of bracket for steel pipes

OD₁ = outer diameter of the pipe

$C_1 = OD_1 \times 0.4$

$h = OD_1 \times 0.1$

$G_1 = OD_1 \times 0.01 \text{ to } 0.02$

Clamps for steel pipe **Version 1.**

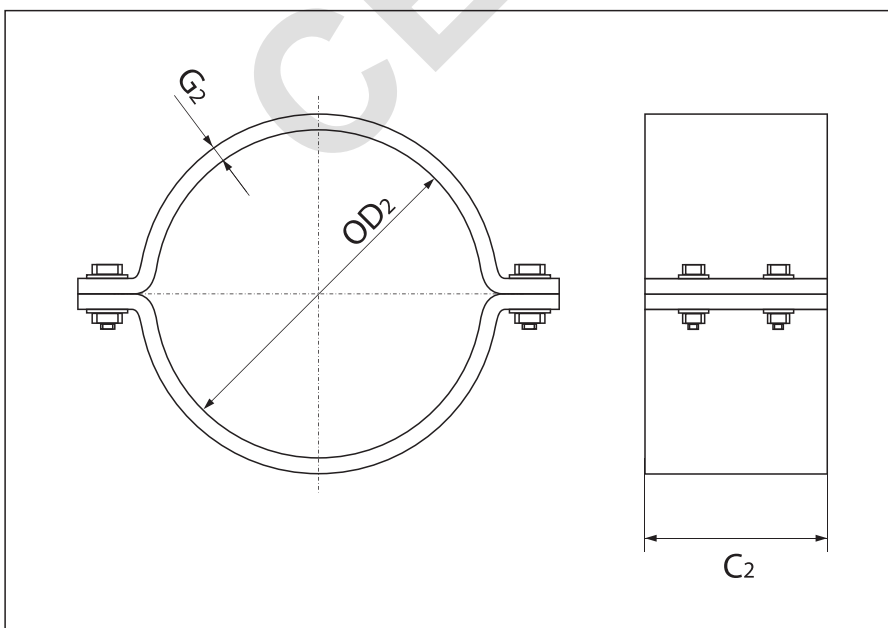
Supports for pipelines made of plastic.

Due to the large thermal expansion coefficients of plastics:

$\alpha = 0.08 \text{ mm/m} \times ^\circ\text{C}$ - for PCV-U

$\alpha = 0.20 \text{ mm/m} \times ^\circ\text{C}$ - for PE-100

Pipelines should be constructed in a way that allows for a free thermal movement with properly placed supports. Internal diameter of the clamp must be bigger than the outer diameter of the pipe around 1%. Edges of the clamps must be rounded so the pipe does not get damage while moving. The inside of the clamp can be coated with PE or rubber completely.



Guide line:

The maximum space between the supports for PE-100 (SDR 17.6) filled with water at 20°C.

See chart below.

DN	OD	L [m]
100	110	1.5
150	160	1.7
200	225	2.0
250	250	2.5
300	315	3.0
400	400	3.5
500	500	4.0

Sizes of clamp for plastic pipes.

OD₂ = outer diameter of the pipe + 1%

$C_2 = OD_2 \times 0.6$

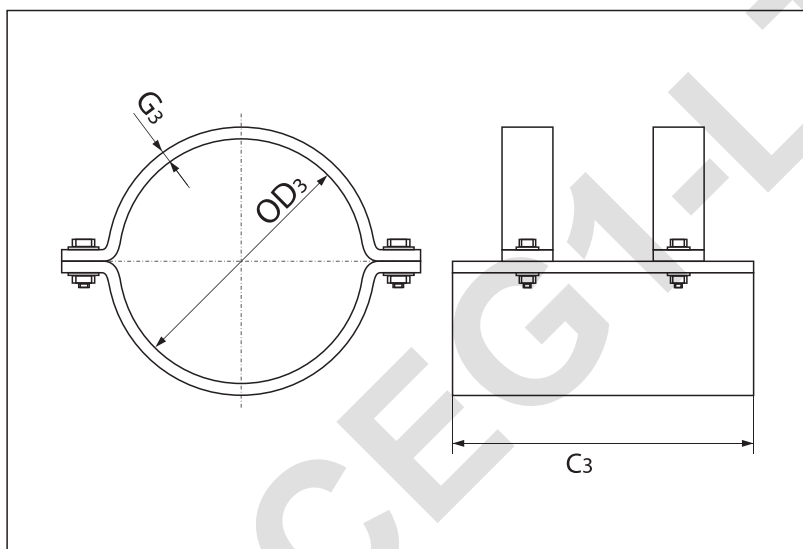
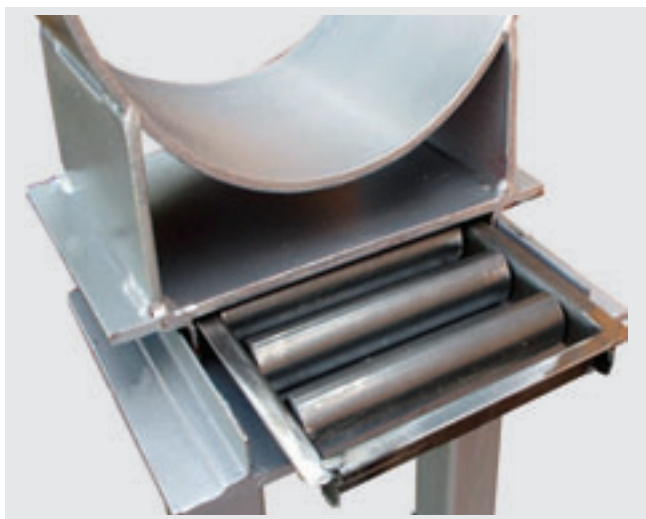
$G_2 = OD_2 \times 0.005 - 0.01$

Special order only.



Supports for insulated pipes.

Due to pipelines operating at huge temperature differences over 120°C and general thermal expansion coefficient of $\alpha = 0.12 \text{ mm/m} \times ^\circ\text{C}$ it is often necessary to use supports with rollers to compensate for the expansion.



Dimensions of clamps for insulated pipes:

OD_3 = outer diameter of the pipe

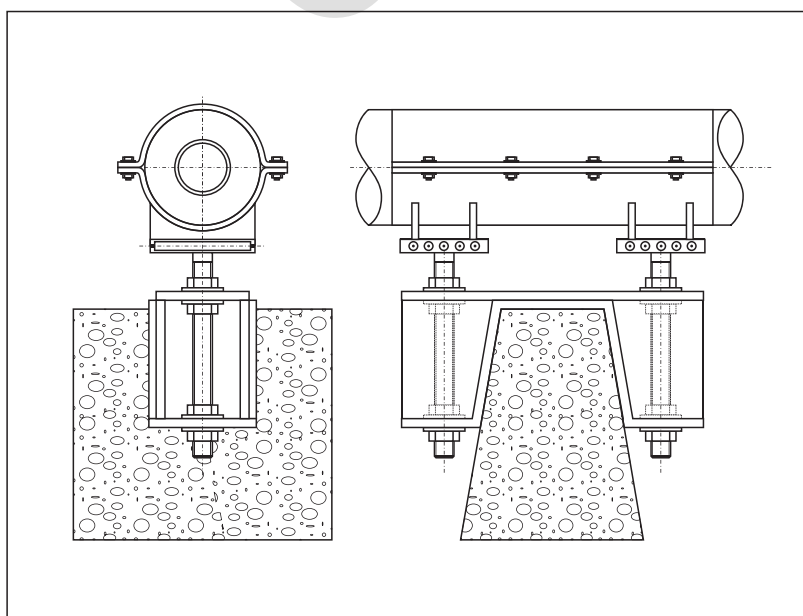
$C_3 = OD_2 \times 1.0 \div 1.5$

$G_3 = OD_1 \times 0.01 \div 0.015$

Maximum space between supports for insulated pipes.

See guide chart below.

DN	OD	L [m]
25	90	3.0
32	110	3.2
40	110	3.5
50	125	4.0
80	160	5.0
100	200	5.5
125	225	6.0
150	250	6.5
200	315	7.0
250	400	7.5
300	450	8.0
400	560	9.0
500	630	9.5
600	800	10.0
700	900	10.5
800	1000	11.0
1000	1200	12.0



Support placed on or in a pedestal.

Special order only.



TYPE AR-L SUPPORT



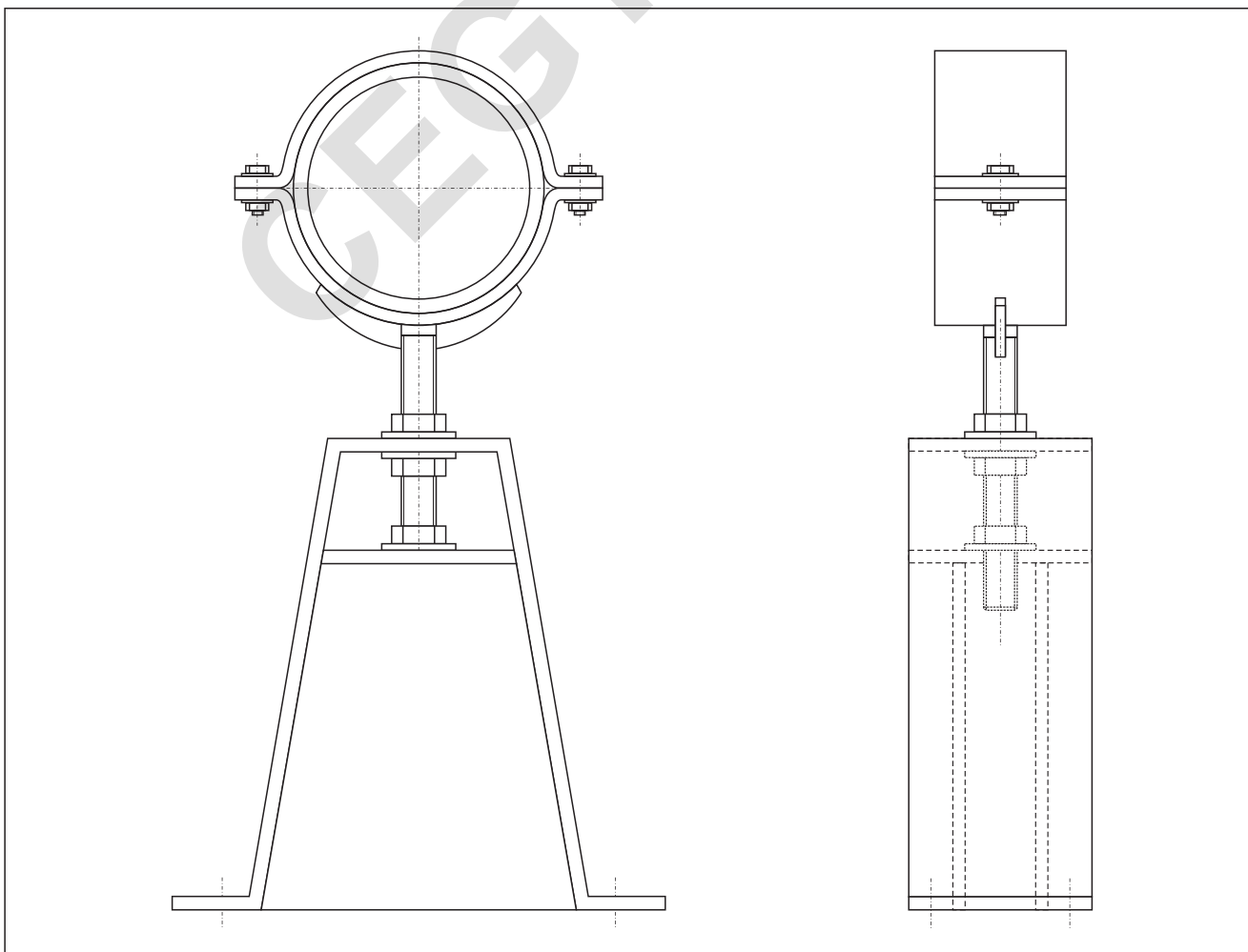
Supports can be used for pipe diameters between 100 and 350 mm. Height can be regulated by the threaded bar and locking nuts. Support is suitable for small extensions of the pipeline. Installation with anchors bolts in the base or sunk into concrete.

They are manufactured to individual requirements.

Sizes from DN 100 to DN 350.

Special order only.

DN	Steel thickness [mm]	Threaded bar	Lifting capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
100	3	M20	2000	400	300
150	3	M20	2000	400	300
200	3	M24	2000	500	400
250	3	M24	2500	500	400
300	3	M30	2500	600	500
350	3	M30	2500	600	500



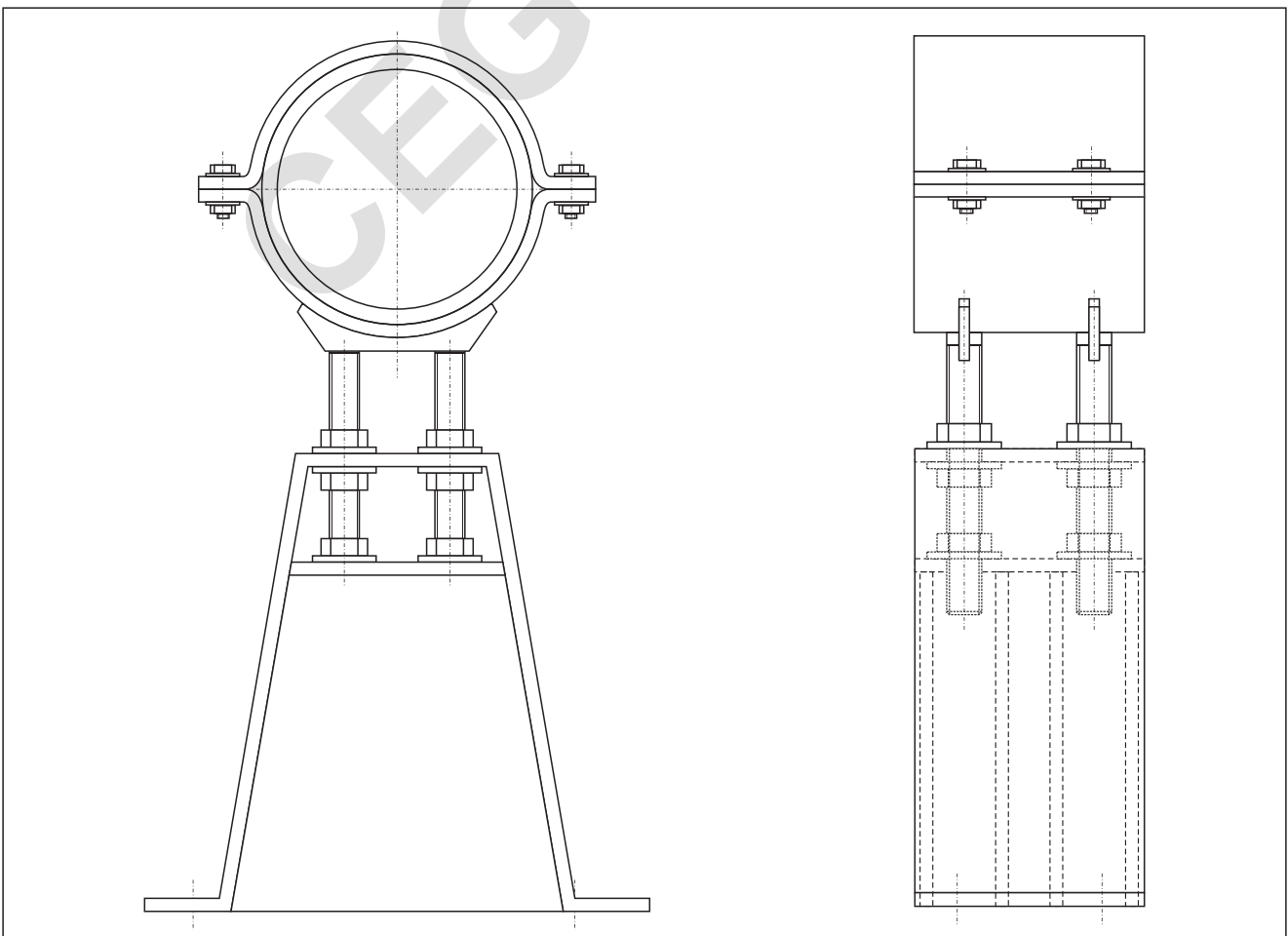


TYPE AR-C SUPPORT



Support can be used for diameters from Regulation of 75 mm is done by 4 threaded bars. This support is suitable for when the weight and sideways force is high. Installation is with anchor bolts to a concrete base, foundation or floor. They are manufactured to individual requirements. Sizes from DN 350 to DN 1200.

DN	Steel thickness [mm]	Threaded bar	Lifting capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
400	3	4xM24	5000	1600	1400
500	4	4xM30	6000	2000	1600
600	4	4xM30	6000	2100	1700
800	4	4xM36	7500	2200	1800
1000	5	4xM36	8000	2600	2000

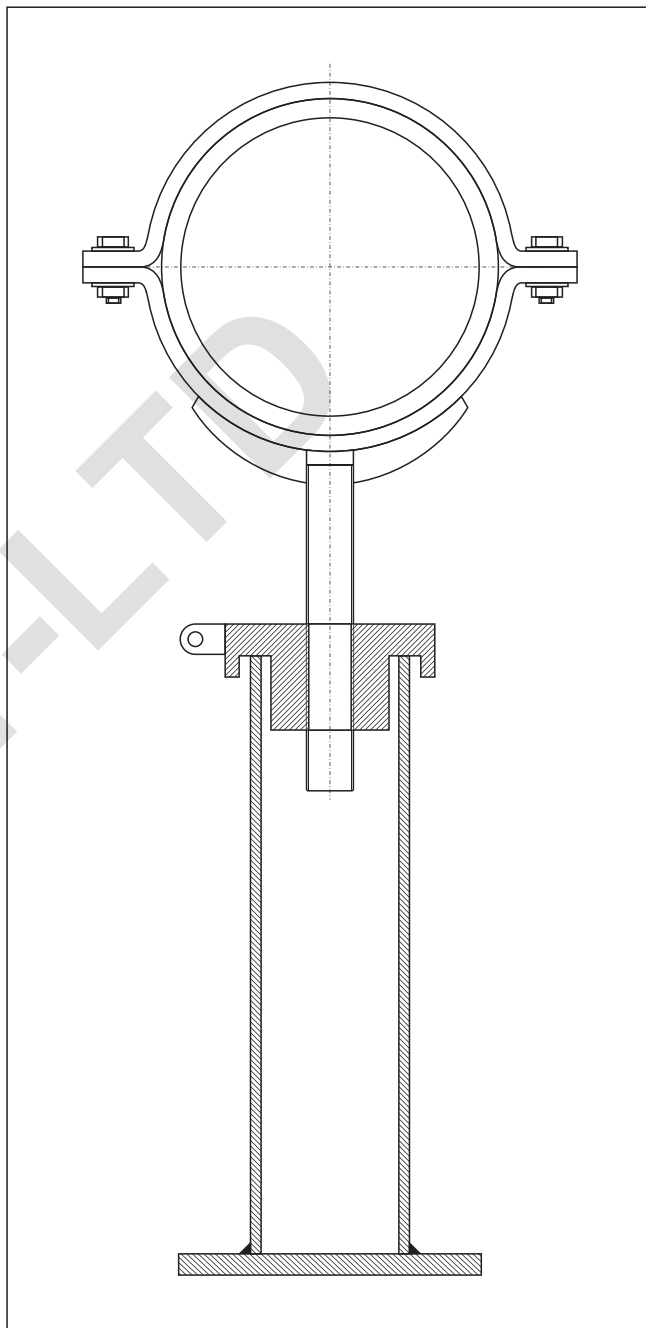




TYPE DR-R SUPPORT

PATENTED

These special supports are in 2 parts, bracket and head which can move orbitally, making it possible for the pipe to move. It can be adjusted up and down by turning the round part by the 2 lugs with a rod, clock or anti clock wise to lower or raise it. Brackets are for pipes that move. Diameters from DN 100 - DN 500, for all types of installations. The bottom section is made from a pipe making the unit light but very strong as the force is downwards only, and capable of carrying heavy loads. The base plate can be bolted to the ground or steel frame. Special order only.

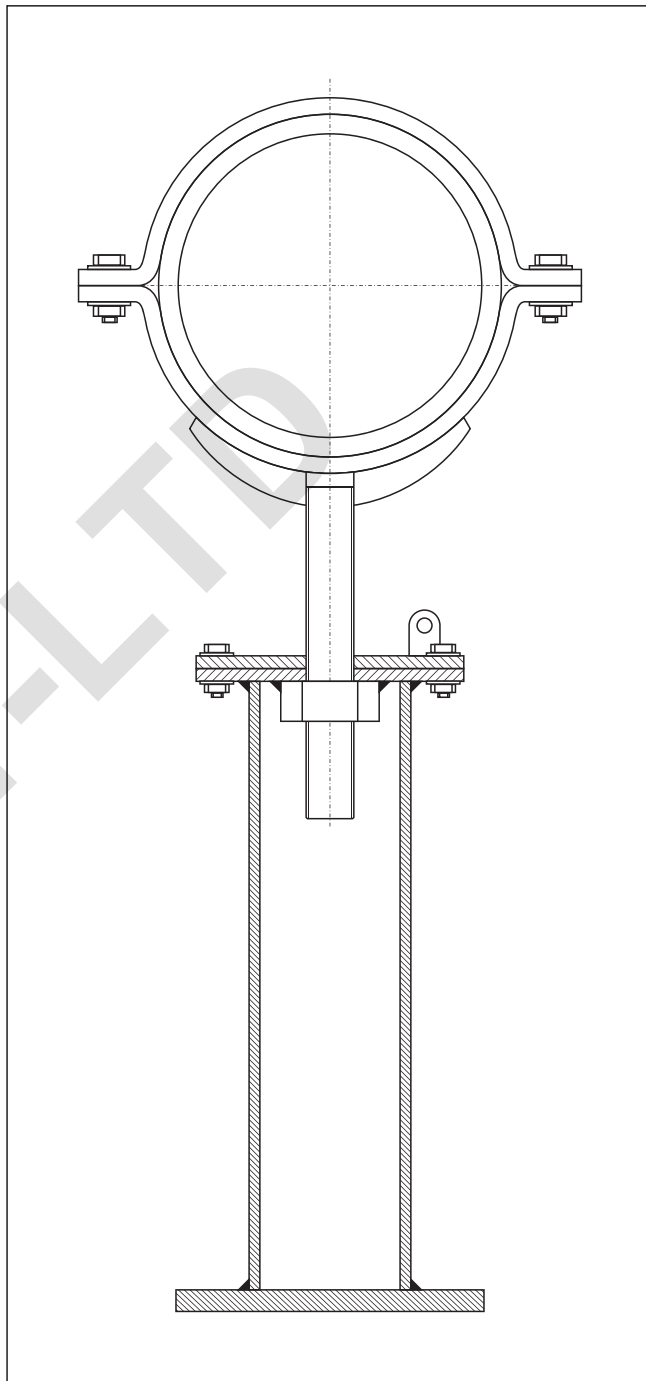


OD of carrier pipeline [mm]	Threaded bar	Body dimensions [mm]		Thickness steel base [mm]	Thickness steel clamp [mm]
		to 500	up to 1000		
do 150	M20	48.3 x 3.2	60.3 x 3.6	8.0	3.0
151 - 200	M24	60.3 x 3.6	76.1 x 3.6	8.0	3.0
201 - 250	M24	76.1 x 3.6	88.9 x 4.0	8.0	4.0
251 - 300	M30	88.9 x 4.0	114.3 x 4.0	10.0	4.0
301 - 400	M30	114.3 x 4.0	139.7 x 4.0	10.0	5.0



TYPE DR-M SUPPORTS

These special supports are in 2 parts the bracket and head make it possible to move the pipe clamp up and down adjustment by turning the square plate clock or anti cock wise to lower or raise it simply. Brackets are for fixed pipes, diameters from DN 100 - DN 500, all types of installations. The bottom section is made from pipe making unit light but very strong as the force is downwards only and capable of carrying heavy loads. The base plate can be bolted to the ground or steel frame. Made to special order only, other sizes on request.



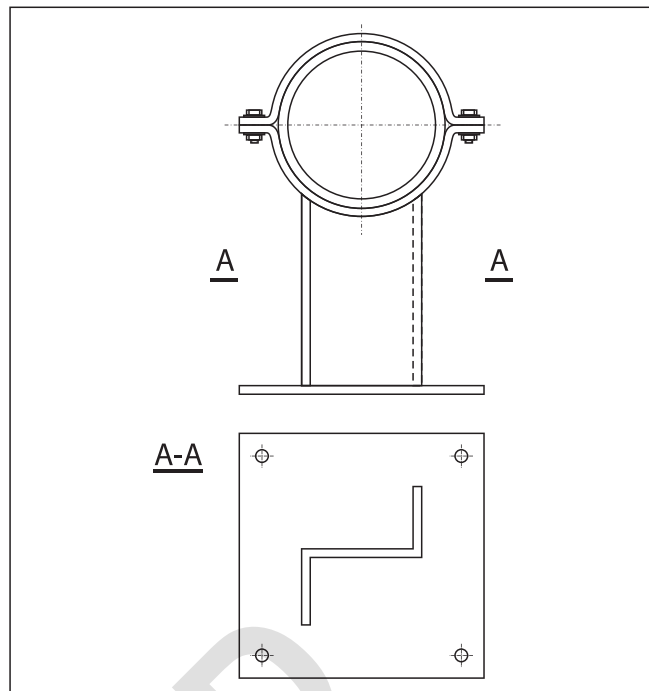
OD of carrier pipeline [mm]	Threaded bar	Body dimensions [mm]		Thickness steel base [mm]	thickness steel of linker [mm]	Bolted of the carrying head to the body	Thickness steel clamp [mm]
		to 500	up to 1000				
to 150	M20	48.3	60.3	8.0	2 x 6.0	4 x M8	3.0
151 - 200	M24	60.3	76.1	8.0	2 x 6.0	4 x M8	3.0
201 - 250	M24	76.1	88.9	8.0	2 x 6.0	4 x M10	4.0
251 - 300	M30	88.9	114.3	10.0	2 x 8.0	4 x M10	4.0
301 - 400	M30	114.3	139.7	10.0	2 x 8.0	4 x M12	5.0



TYPE SP-Z SUPPORT



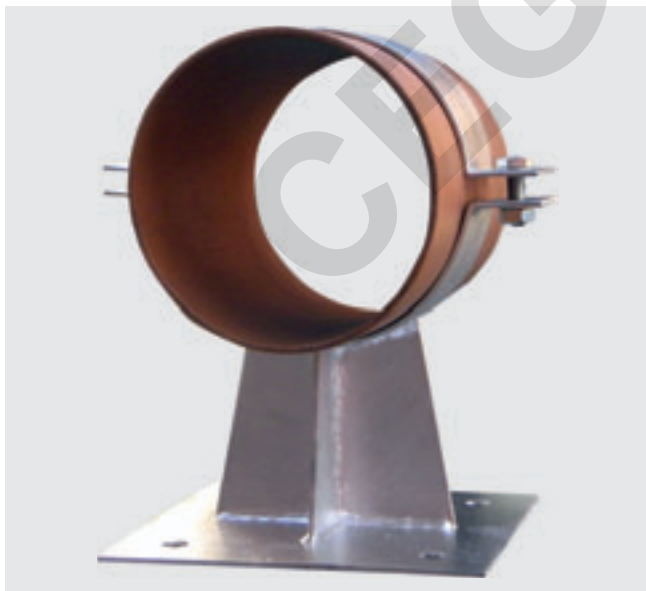
DN	Steel thickness [mm]	Carrying capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
100	3	1500	500	350
150	3	1800	500	350
200	3	1800	500	350
250	4	2300	600	400
300	4	2500	600	400



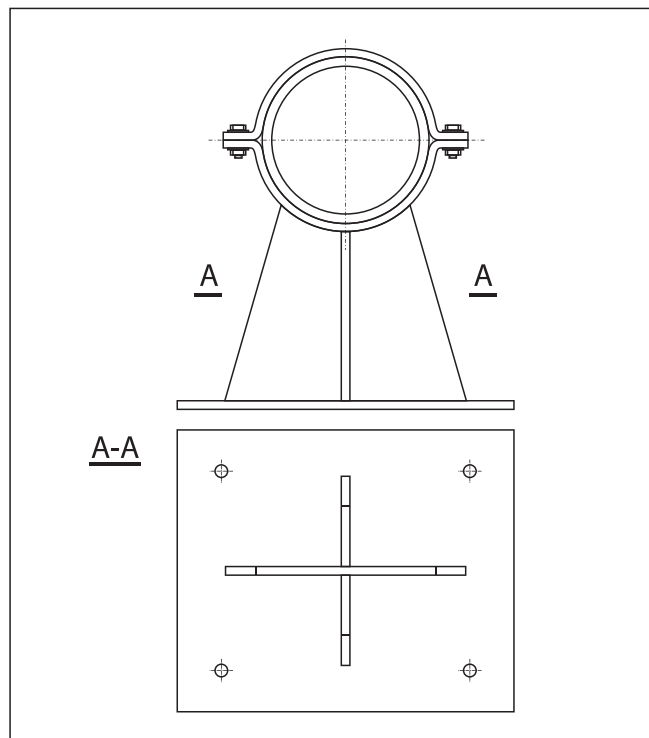
Support can be used for diameters DN 100 - DN 300. They are suitable for a small axis expansion or bulk pipes. Installation with anchors bolts to the floor or sunk into concrete. All brackets are to order only.



TYPE SP-X SUPPORT



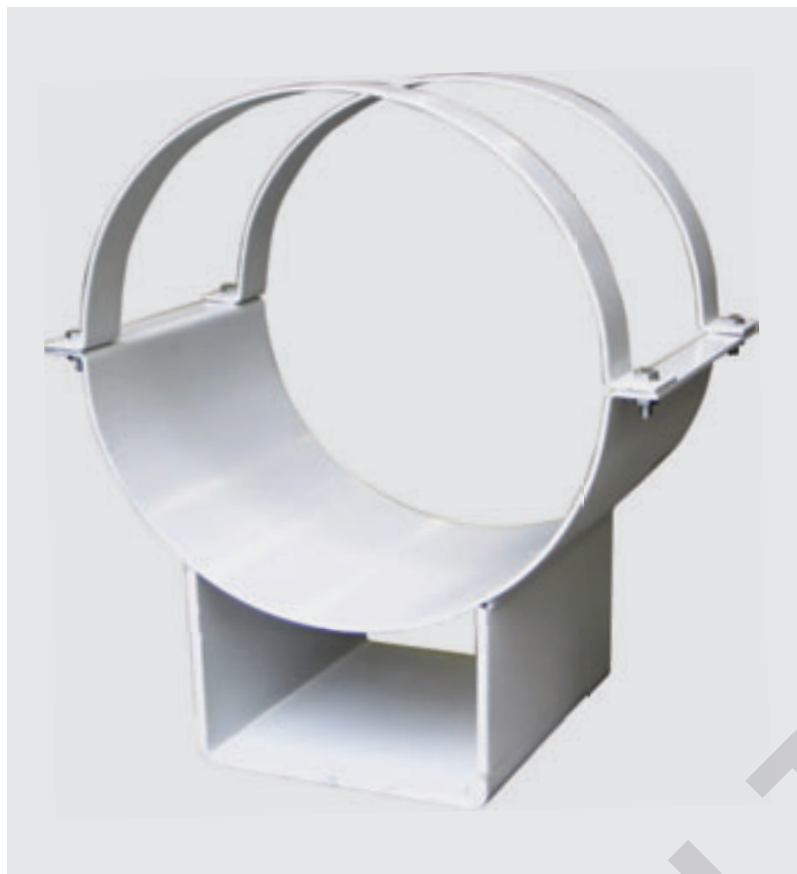
DN	Steel thickness [mm]	Carrying capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
100	2	1500	900	1300
200	3	2500	1200	1800
300	3	2800	1600	2200
400	5	3500	2400	3100
500	5	4500	3200	4000



Support can be used for diameters from DN 100 - DN 500, also suitable for sideway force of the pipes. The support can be strengthened by adding extra ribs where necessary. Made to order only.



MOVING SUPPORTS

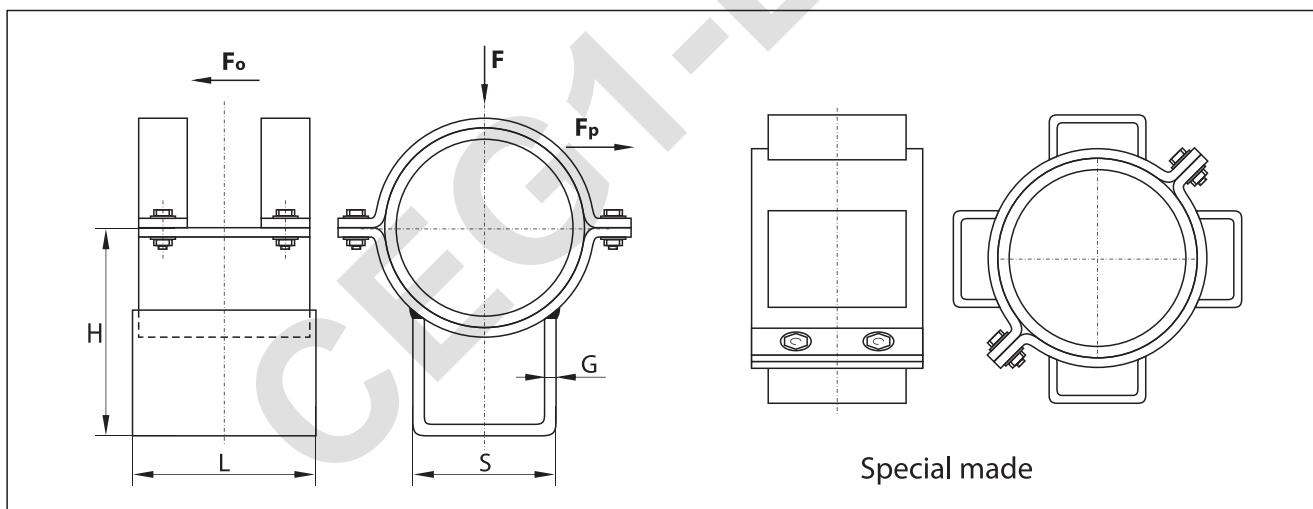


Moving supports are widely used in industry, every where in pipelines where large forces appear. Most commonly used in all weather installations for LNG, LPG, cold water etc.

To insulate pipes from the supports you can use a double coatings of hard polyurethane and sometimes even wooden claddings.

Supports usually have two straps but can be made with up to 4 depending on the force involved, they can be supported by special ribs.

Steel elements on the surface usually have a polyethylene or Teflon coating on the insides. Special order only.



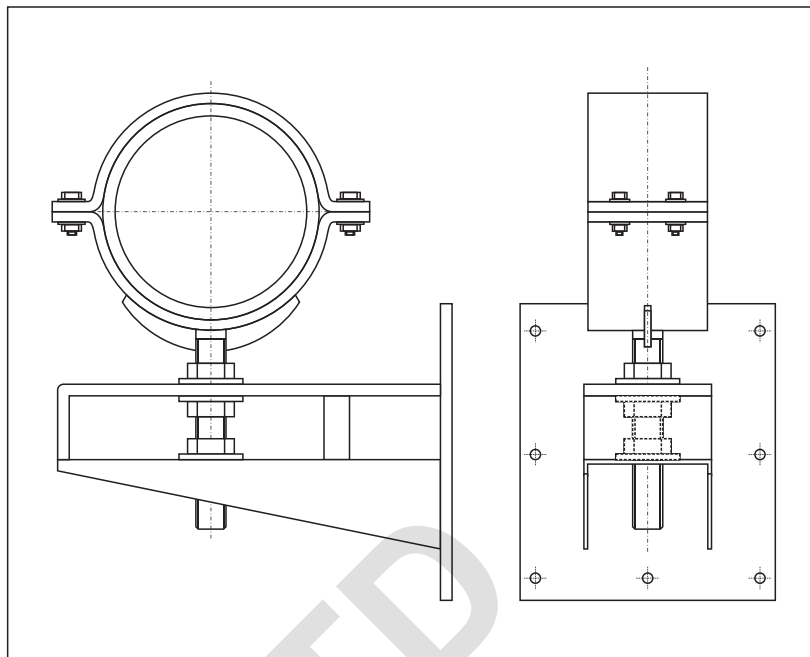
DN	L [mm]	S [mm]	G [mm]	F [kG]	F ₀ [kG]	F _p [kG]
50	120	40	2.5	500	350	250
80	120	60	2.5	680	400	300
100	160	70	3.0	880	600	400
125	160	80	3.0	1000	700	500
150	200	100	3.0	1200	800	600
200	200	140	4.0	1500	900	800
250	280	200	4.0	3500	1800	1500
300	300	250	4.0	4000	2000	1800
350	320	300	5.0	4200	2400	2200
400	340	350	5.0	4400	2700	2400
500	380	400	6.0	4800	3000	2500
600	400	500	6.0	5000	3300	2700



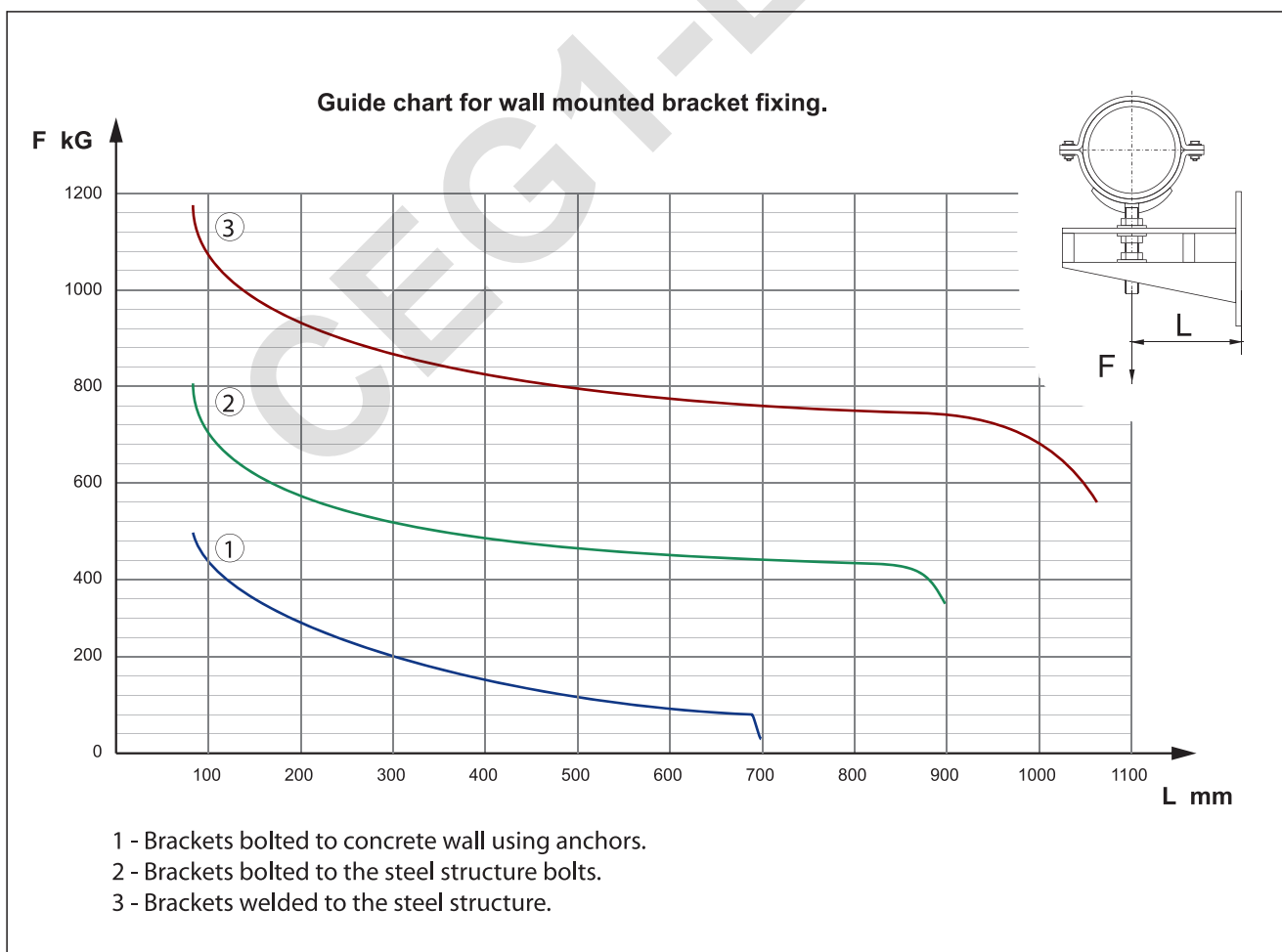
TYPE KR WALL BRACKETS

TYPE KR WALL BRACKETS WITH HEIGHT REGULATION.

PATENTED



This type of brackets are intended for pipes mounted on walls in buildings, inside or outside. They can be attached to concrete, steel by bolts, welded or wood.



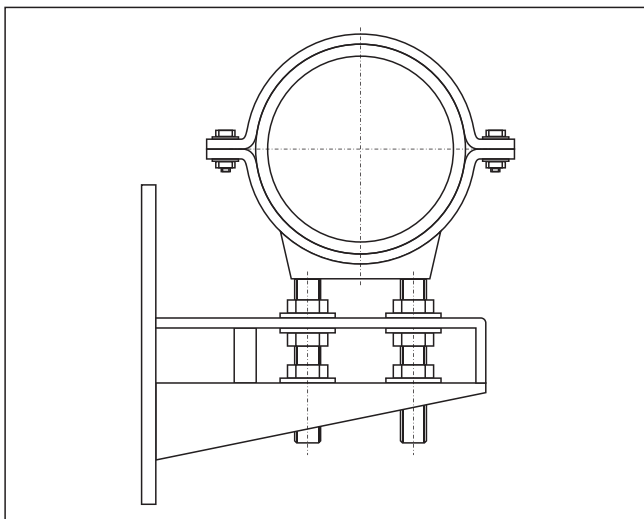
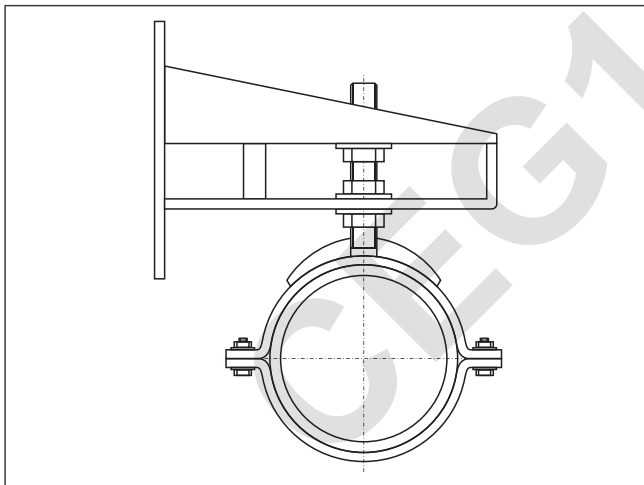
Brackets are suitable for horizontal and vertical pipelines. They can be regulated to suit a fall in the pipe, can be connected in groups allowing sets of pipes and power cables fixed together.



TYPE KR-L WALL BRACKETS



These brackets can be easily used to hang or sit pipes on.

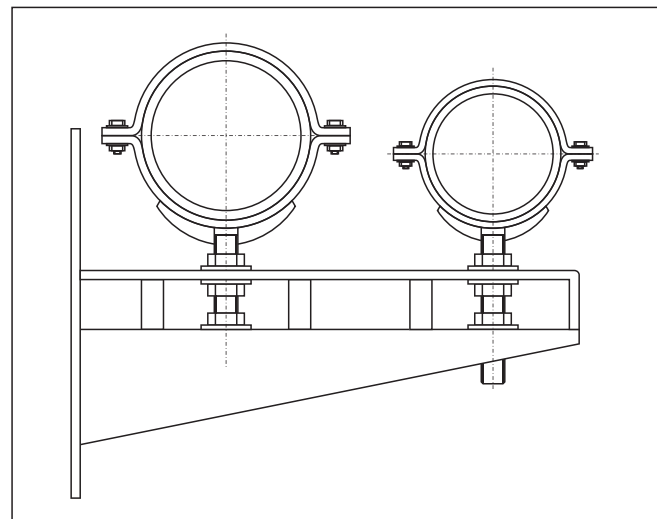
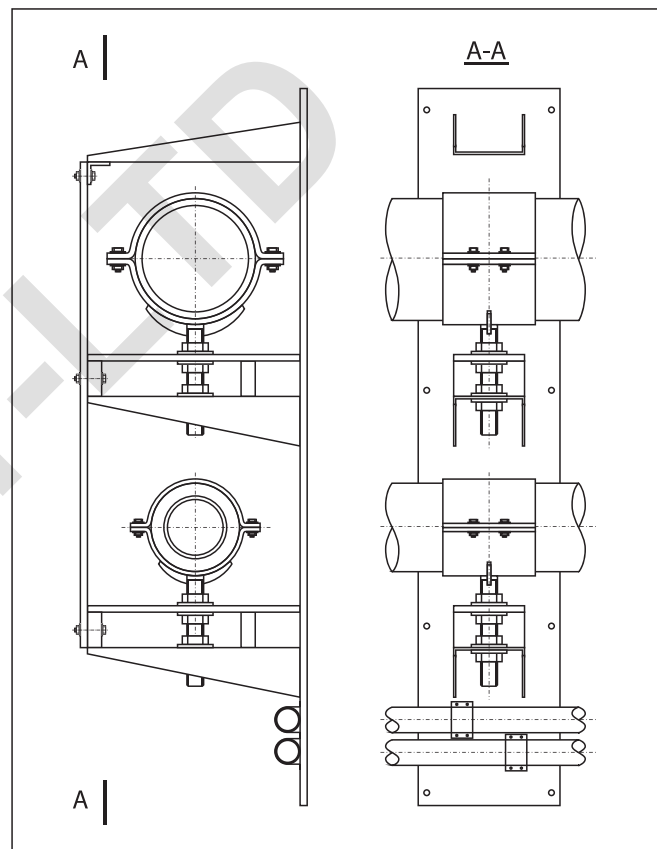


For large sideway forces two regulating threaded bars can be used.

Type **KR-L** is intended to for single pipes along wall in or outside buildings.

Diameter range: DN 50 to DN 250.

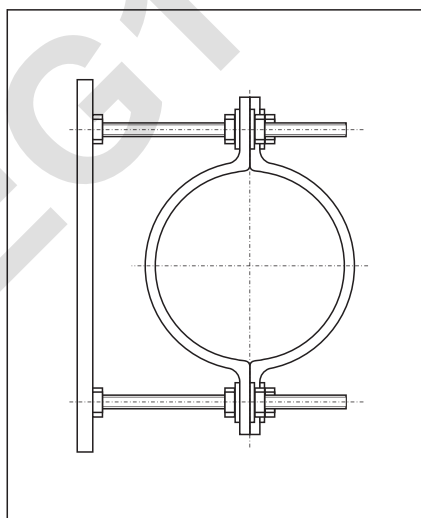
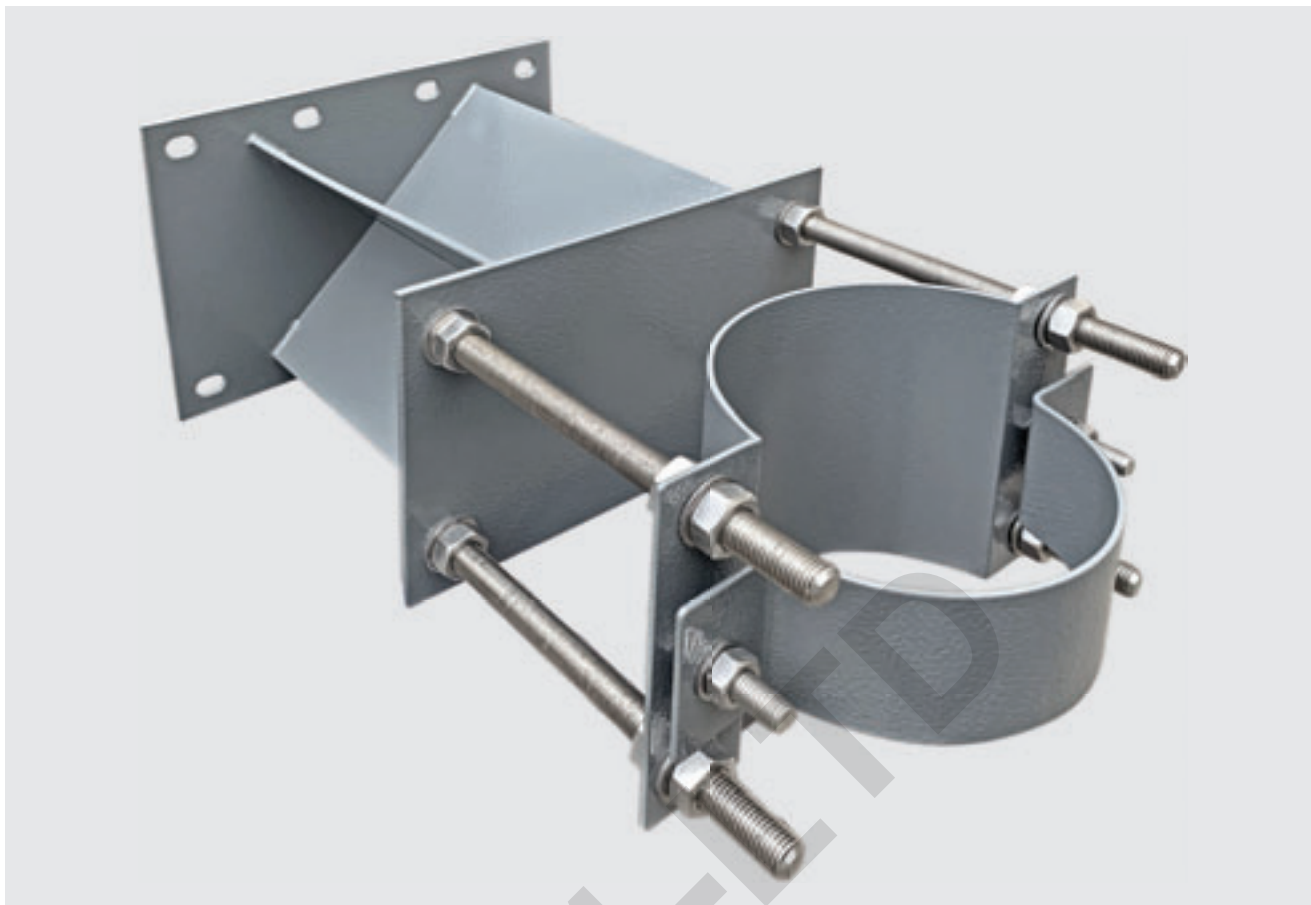
DN	Steel thickness [mm]	Threaded bar	Carrying capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
50	3	M12	500	100	70
80	3	M12	500	100	70
100	3	M16	800	150	90
150	3	M16	800	150	90
200	4	M20	1000	200	110
250	4	M20	1000	200	110



Sets of brackets for holding different types of pipes, power cables and ventilations pipes.



Brackets for vertical pipelines.



Brackets with regulation for uneven wall surfaces or fixed. For pipe diameters sizes up to DN 250. Regulation is done with 4 or 6 threaded bars depending on the weight carried and regulating distance required. Installation can be done with anchors/chemical bolts or rawl plugs with hexagon headed coach screws. They can be welded or bolted to metal constructions



DN	Steel thickness [mm]	Threaded bar	Carrying capacity [kG]	Max. axial force [kG]	Max. lateral force [kG]
50	3	4 x M12	400	400	200
80	3	4 x M12	400	400	200
100	3	4 x M16	600	600	300
150	3	4 x M16	600	600	300
200	4	6 x M20	800	800	600
250	4	6 x M20	800	800	600

Bracket with no regulation