SECTION B

PIPING SUPPORTS

CLAMP BASE

SLIDING PLATES

WELDED PIPE STRAP

U-BOLTS

ROLLERS

SADDLES

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CONTENTS

CLAMP BASE

FIG.: 2134

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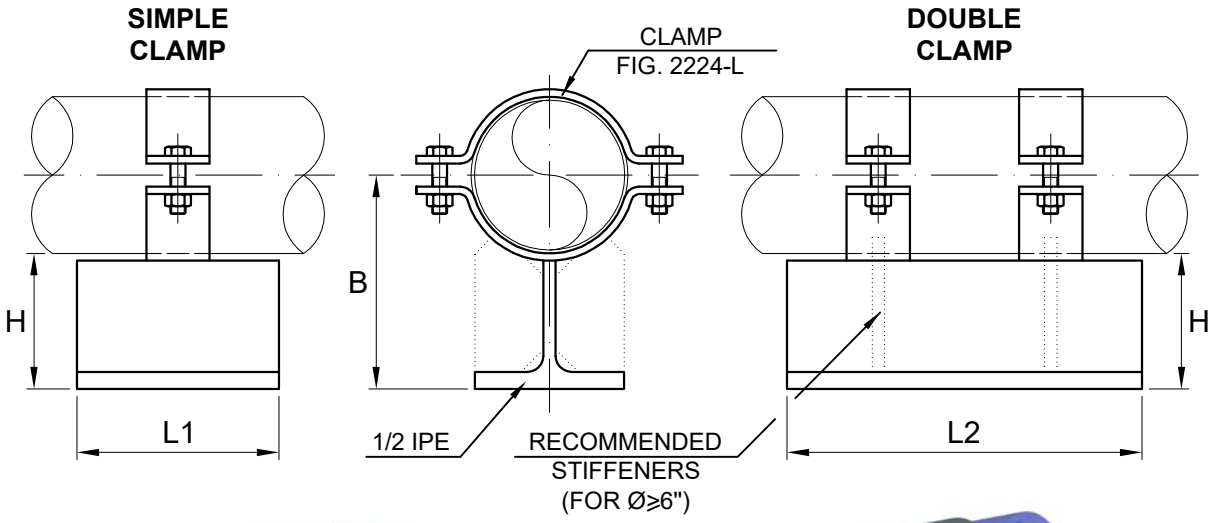
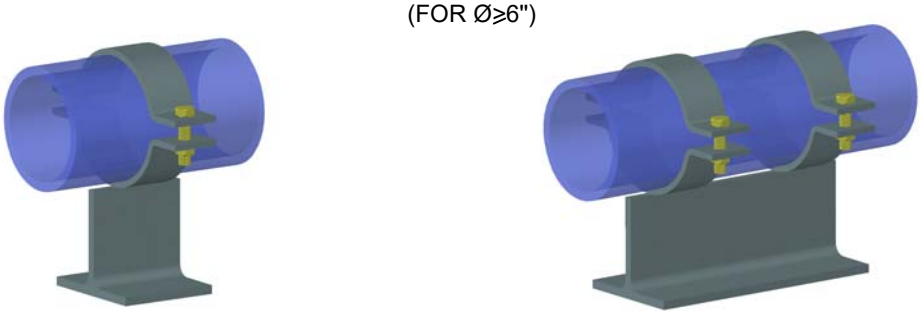
1





PIPE D.N.	B (mm) IPE 160	IPE 200	IPE 240	IPE 270	L1 (mm)	L2 (mm)	MAX. REC. OPERATING LOAD (Kg)
1/2"	93	113	-	-	100	200	250
3/4"	96	116	-	-	100	200	250
1"	99	119	-	-	100	200	250
1 1/4"	103	123	-	-	100	200	250
1 1/2"	108	128	-	-	100	200	350
2"	114	134	-	-	150	200	350
2 1/2"	121	141	-	-	150	250	400
3"	129	149	169	-	150	250	500
4"	141	161	181	-	150	250	500
5"	-	175	195	210	150	250	650
6"	-	190	210	225	150	300	1150
8"	-	216	236	251	150	300	1150
10"	-	245	265	280	150	300	1400
12"	-	270	290	305	-	350	1650
14"	-	288	308	323	-	350	1950
16"	-	313	333	348	-	400	1950
18"	-	339	359	374	-	400	2250
20"	-	367	387	402	-	400	2650

APPLICATION: Pipe shoes with clamps to act as sliding supports for medium-low operating loads. Valid for pipes with or without insulation. They can be used as guided pipe shoes, by means of lateral stops or by welding two, three or four bases to the clamps rotated through 45º.

ORDER FORM:

- Name.
- Figure and type of clamp (Simple/Double)
- Pipe diameter.
- Height "B" or "H".
- Length "L" if not standard.
- Option "G" if clamps are rotated or "SS" if the base is in stainless steel.
- Temperature or pipe quality.

MATERIAL: Carbon steel or alloy steel. In the case of alloy steel, "T" sections are to be manufactured with equivalent plates.

*** N.B.:** For stainless steel piping, clamps in stainless steel, in carbon steel/alloy steel with stainless lining, with elastomeric materials or any other type can be manufactured to avoid direct contact.

*** N.B.:** This can be manufactured with dimensions other than those indicated, as well as with the clamps rotated through 30º to 45º. In order to improve friction on the support base, they can be supplied with stainless steel sheet welded to the base (2 mm thick sheet and 2B finish).

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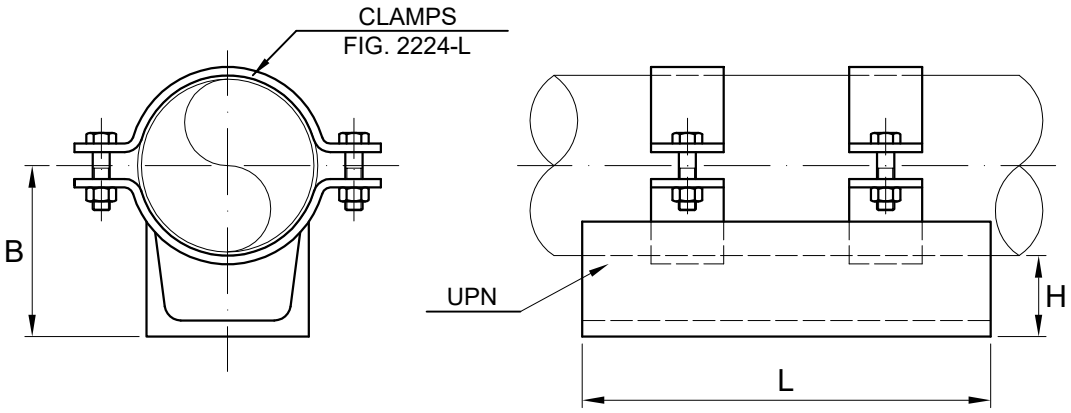
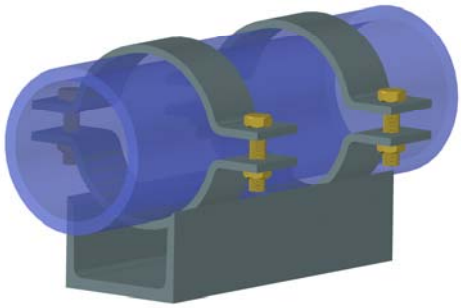
CLAMP BASE

FIG.: 2135

SECTION B 2



PIPE D.N.	UPN	B (mm)	L (mm)	MAX. REC. OPERATING LOAD (Kg)
2"	60	53	200	400
2 1/2"	80	60	250	550
3"	80	77	250	550
4"	100	89	250	750
5"	100	109	250	750
6"	120	125	300	1000
8"	140	155	300	1500
10"	140	189	300	1500
12"	160	217	350	2050
14"	160	237	350	2050
16"	200	265	400	3250
18"	200	282	400	3250
20"	240	326	400	4500



APPLICATION: Pipe shoes with clamps to act as sliding supports for medium-low operating loads. Valid for uninsulated pipe only. Can be used as guided pipe shoes by means of lateral stops.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.
- Height "B" or "H".
- Length "L" if not standard.
- Option "G" if clamps are rotated or "SS" if the base is in stainless steel.

MATERIAL: Carbon Steel.

N.B.: This can be manufactured with dimensions other than those indicated, as well as with clamps rotated 30º or 45º (when the UPN allows it). In order to improve the friction on the support base, they can be supplied with stainless steel sheet welded to the base (2 mm thick base with 2B finish).

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CLAMP BASE

FIG.: 2136

SECTION B
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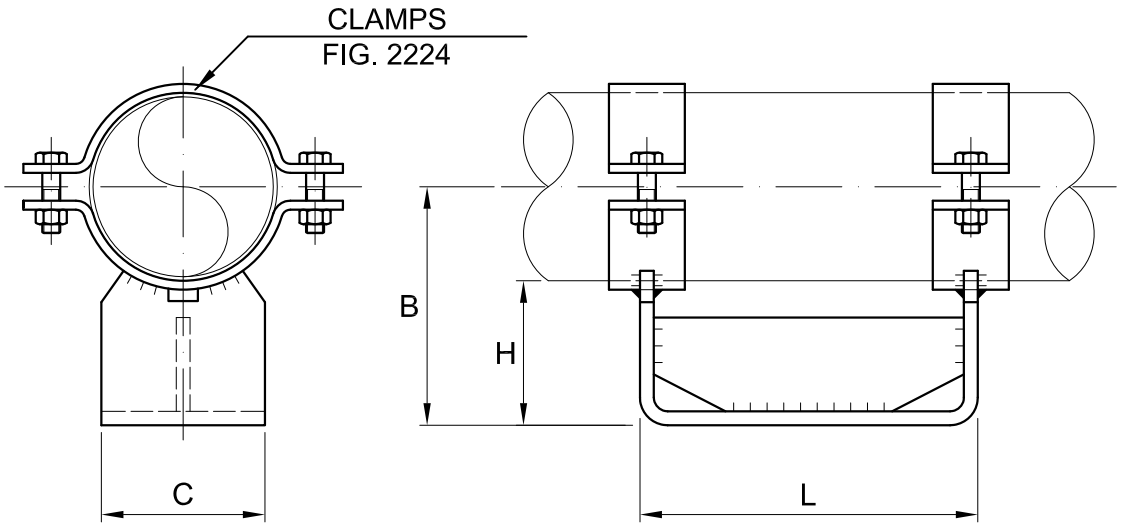

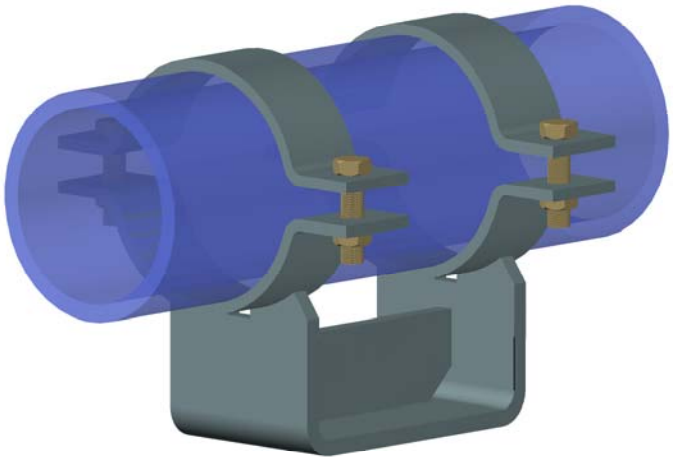

APPLICATION: Pipe shoes with clamps to act as sliding supports for any type of operating load. Valid for pipes with or without insulation, either in carbon steel, alloy steel or stainless steel. Can be used as guided pipe shoe by means of lateral stops or double, triple or quadruple bases.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.
- Height "B" o "H".
- Length "L" if not standard.
- Option "G" if clamps are rotated or "SS" if the base is stainless steel.
- Indicate configuration: double, triple or quadruple.
- Temperature or pipe quality.

MATERIAL:
Carbon steel or alloy steel.

DIMENSIONS TABLE ON SHEET B-4

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CLAMP BASE

FIG.: 2136

SECTION B 4

PIPE D.N.	B (mm)			C (mm)	L (mm)	MAX. REC. OPERATING LOAD (Kg)			
						SERIES 1	SERIES 2	SERIES 3	SERIES 4
2"	130	180	230	70	200	575	-	-	-
2 1/2"	137	187	237	80	250	650	-	-	-
3"	144	194	244	100	250	750	1100	-	-
4"	157	207	257	110	250	800	1250	-	-
5"	170	220	270	130	250	900	1350	-	-
6"	184	234	284	150	300	1250	1600	2350	-
8"	210	260	310	175	300	1500	2000	2750	-
10"	237	287	337	200	300	2000	3500	4500	-
12"	262	312	362	230	350	2500	3250	4750	6500
14"	278	328	428	250	350	2750	3900	5000	7150
16"	303	403	453	280	400	-	4150	5750	7250
18"	329	429	529	300	400	-	4500	6000	7500
20"	354	454	554	315	400	-	5100	6500	8800
22"	380	480	580	325	450	-	5400	7200	9450
24"	455	505	605	340	450	-	6250	7500	10150
26"	480	530	630	360	450	-	6500	7950	10500
28"	506	556	656	375	450	-	-	8500	11250
30"	531	581	681	400	450	-	-	9100	11800
32"	556	606	706	425	500	-	-	9500	12400
34"	582	632	732	440	500	-	-	10050	12950
36"	607	657	757	440	500	-	-	10050	12950

N.B.: This can be manufactured with dimensions other than those indicated. They can be manufactured with clamps rotated 30º or 45º. For pipe shoes in high temperature service, both in carbon steel and in alloy steel, loads must consider correction factors depending on the temperature and quality of the steel.

See the table shown on sheet A-20.

In order to improve the friction on the support base, they can be supplied with stainless steel sheet welded to the base (2 mm thick sheet and finish 2B).

For stainless steel piping, clamps can be manufactured in stainless steel, in carbon steel/alloy steel with stainless steel lining, with elastomeric materials or in any other type that avoids direct contact.

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CLAMP BASE

FIG.: 2137

SECTION B
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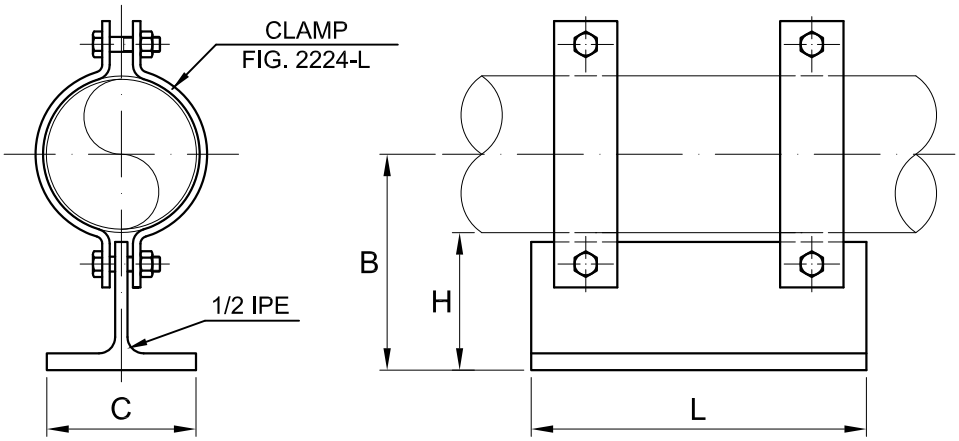
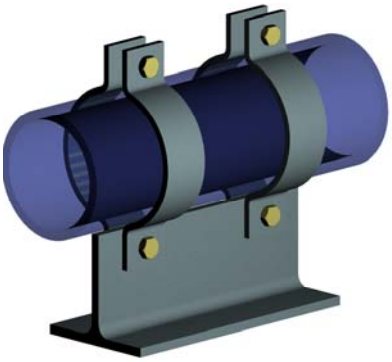


PIPE D.N.	B (mm)				L (mm)	MAX. REC. OPERATING LOAD (Kg)
	IPE-160	IPE-200	IPE-240	IPE-270		
1/2"	95	115	-	-	200	250
3/4"	98	118	-	-	200	250
1"	101	121	-	-	200	250
1 1/4"	105	125	-	-	200	250
1 1/2"	107	127	-	-	200	350
2"	113	133	153	-	200	450
2 1/2"	121	141	161	-	250	500
3"	129	149	169	-	250	500
4"	138	158	178	-	250	500
5"	-	173	193	208	250	650
6"	-	191	211	226	300	750
8"	-	217	237	252	300	750
10"	-	243	263	278	300	850
12"	-	269	289	304	350	950



APPLICATION: Pipe shoes with clamps to act as sliding supports for medium-low operating loads. Piping with or without insulation. Can be used as a guide by fitting double, triple or quadruple base pipe shoes.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.
- Height "B" or "H".
- Length "L" if not standard.

MATERIAL: Carbon steel.

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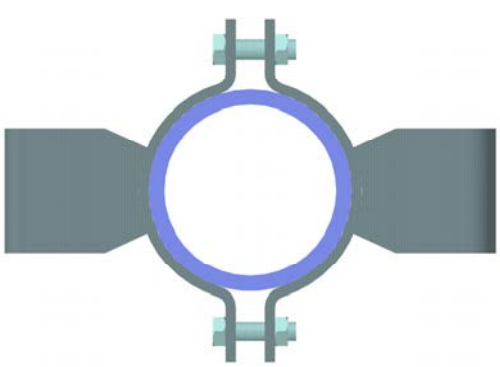
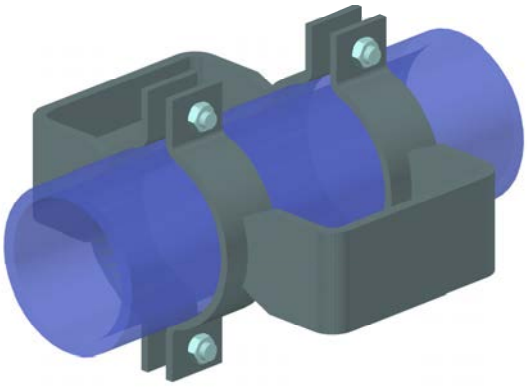
CLAMP BASE VARIATIONS

180º DOUBLE PIPE SHOES

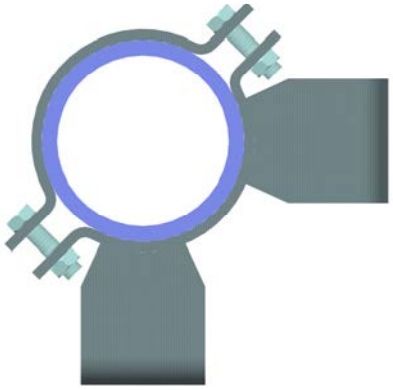


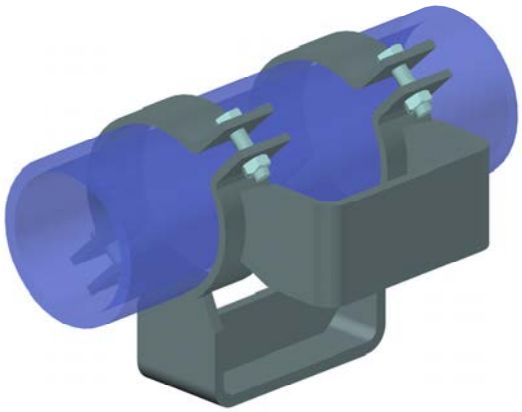


TO SUPPORT EITHER VERTICAL LOADS OR LATERAL LOADS IN BOTH DIRECTIONS.

e.g.: Fig. 2136 180º Double.

90º DOUBLE PIPE SHOES





TO SUPPORT VERTICAL LOADS AND LATERAL LOADS IN A SINGLE DIRECTION.
e.g.: Fig. 2136 90º Double.

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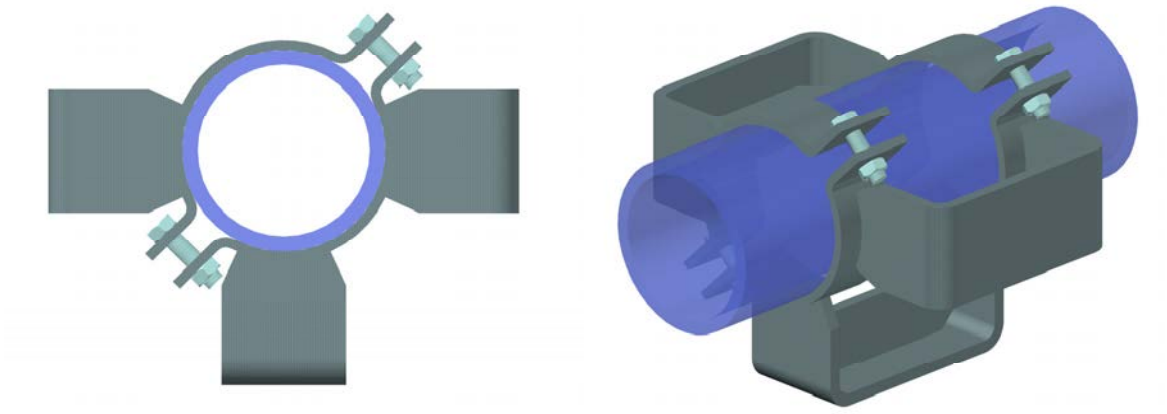
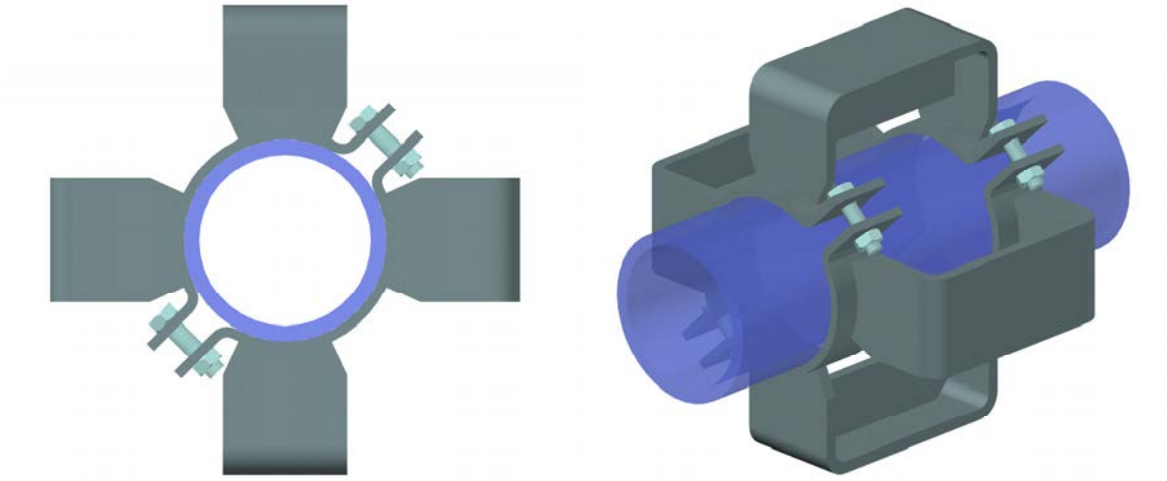
CLAMP BASE VARIATIONS

TRIPLE PIPE SHOES



TO SUPPORT VERTICAL LOADS IN A SINGLE DIRECTION AND LATERAL LOADS IN BOTH DIRECTIONS.
e.g.: Fig. 2136 Triple.

QUADRUPLE PIPE SHOES



TO SUPPORT LATERAL AND VERTICAL LOADS IN BOTH DIRECTIONS.
e.g.: Fig. 2136 Quadruple.

CLAMP BASE VARIATIONS

SECTION B
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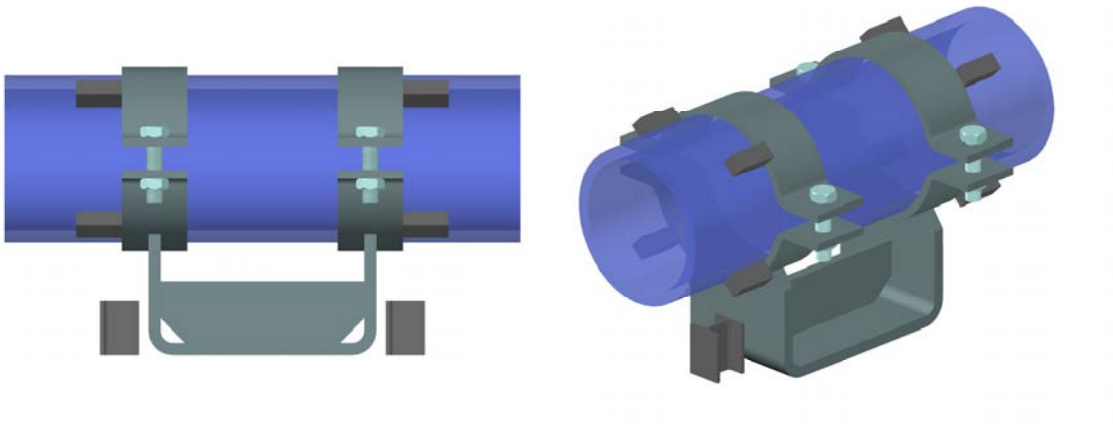
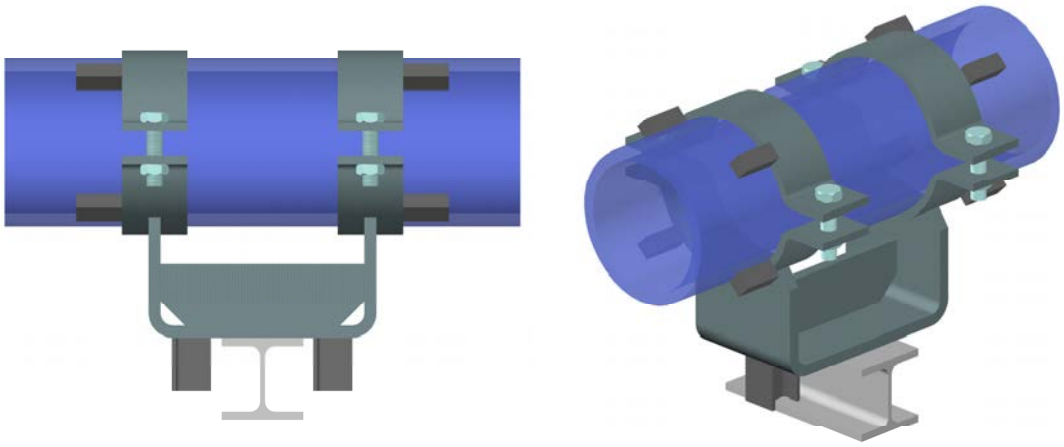
PIPE SHOES FOR AXIAL LOADS

- WITH LUGS WELDED TO THE PIPE



e.g.: Fig. 2136 FOR AXIAL STOP WITH LUGS. OPTION 1.



e.g.: Fig. 2136 FOR AXIAL STOP WITH LUGS. OPTION 2

N.B.: The dimensions of the welded lugs and stop beams shall depend on the axial load.

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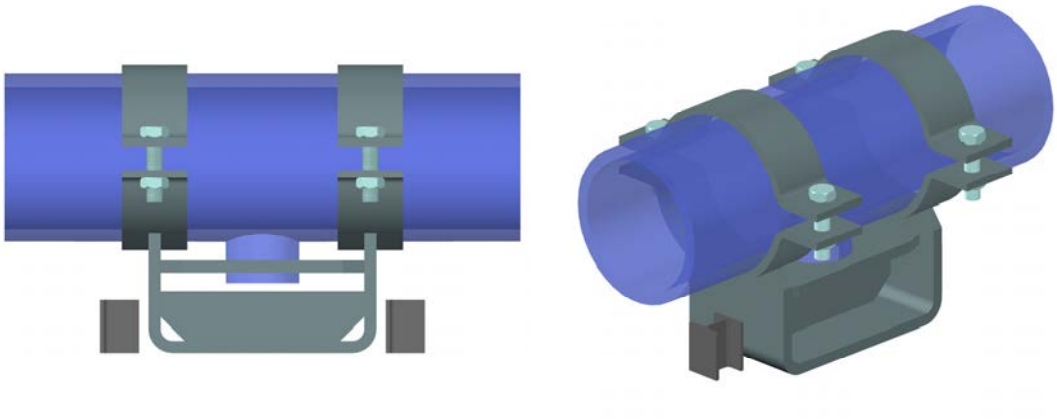
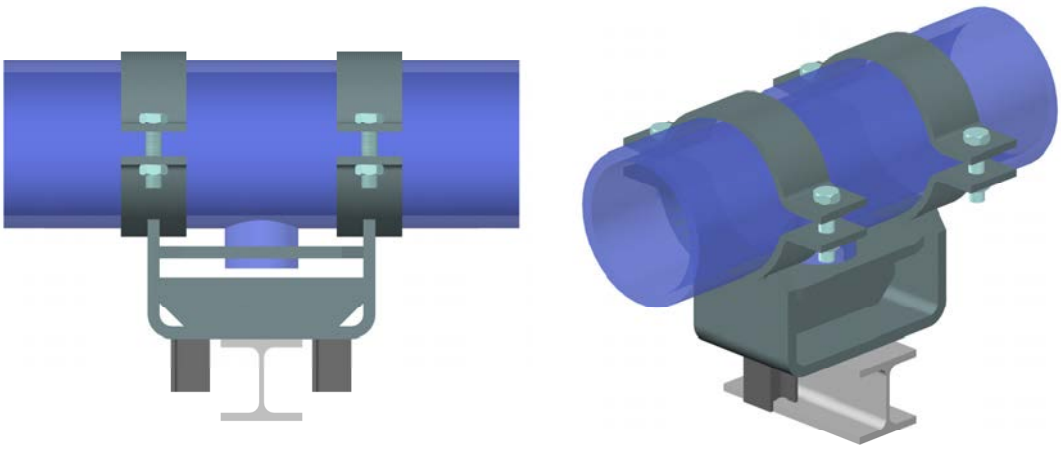
PIPE SHOES FOR AXIAL LOADS

- WITH TRUNNION WELDED TO THE PIPE.



e.g.: Fig. 2136 FOR AXIAL STOP WITH TRUNNION. OPTION 1.



e.g.: Fig. 2136 FOR AXIAL STOP WITH TRUNNION. OPTION 2.

N.B.: The dimensions of the trunnions and the stop beams shall depend on the axial load.

CLAMP BASE VARIATIONS

SECTION B
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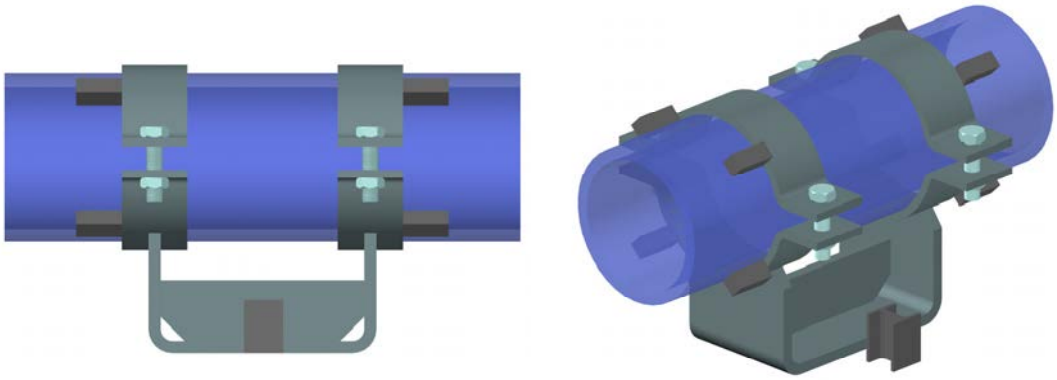
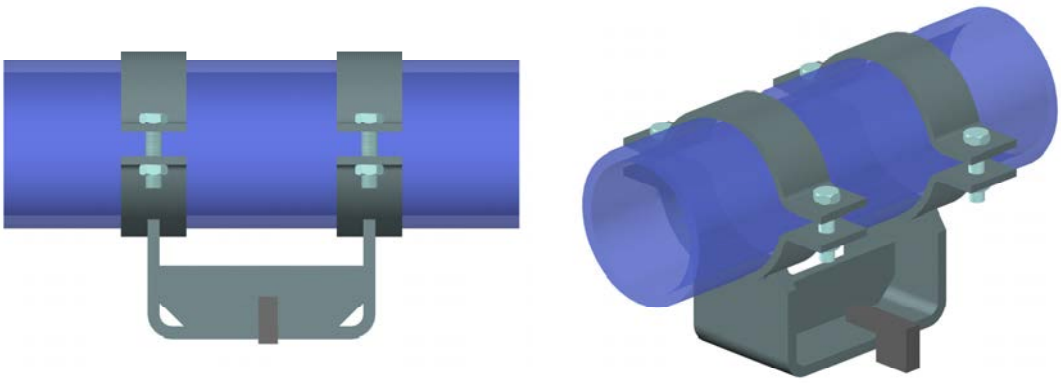
GUIDED CLAMP BASES

- WITH LUGS WELDED TO THE CLAMPS AND TO THE PIPE.



e.g.: Fig. 2136 FOR GUIDED CLAMP BASE WITH ANTI-ROTATING LUGS.



e.g.: Fig. 2136 WITH LIFT-OFF GUIDES.

N.B.: The dimensions of the welded lugs, stop beams and lift-off guides will depend on the axial load.

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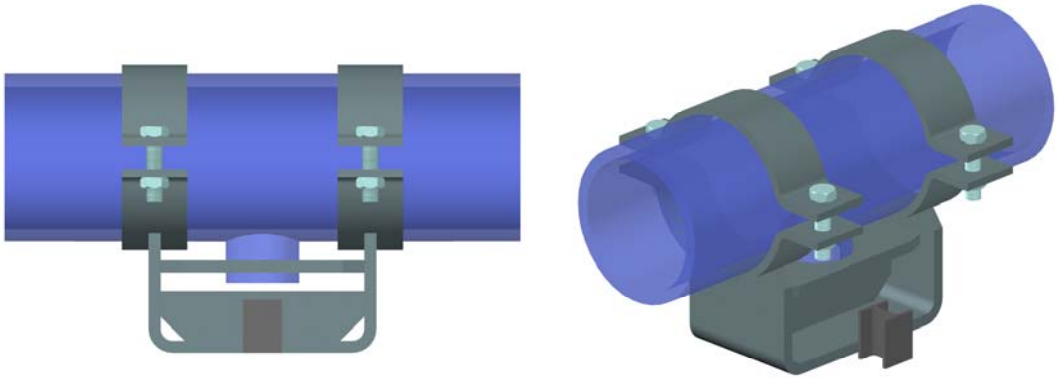
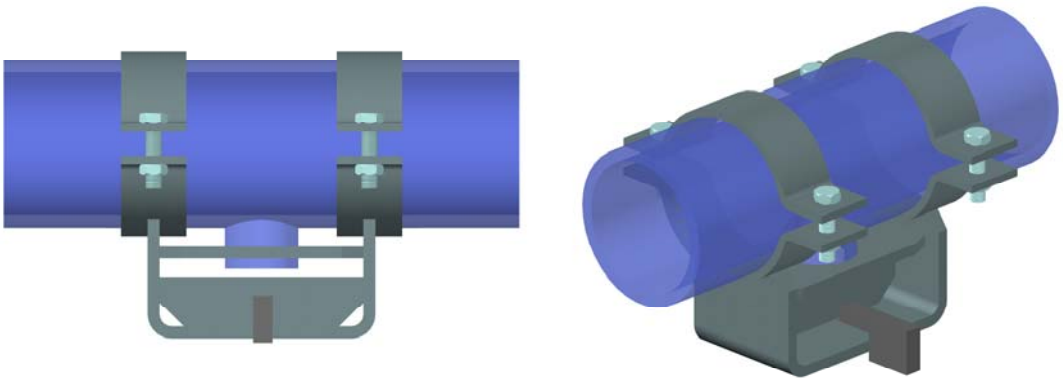
GUIDED CLAMP BASES

- WITH TRUNNION WELDED TO THE PIPE.



e.g.: Fig. 2136 FOR GUIDED CLAMP BASE WITH ANTI-ROTATION LUGS.



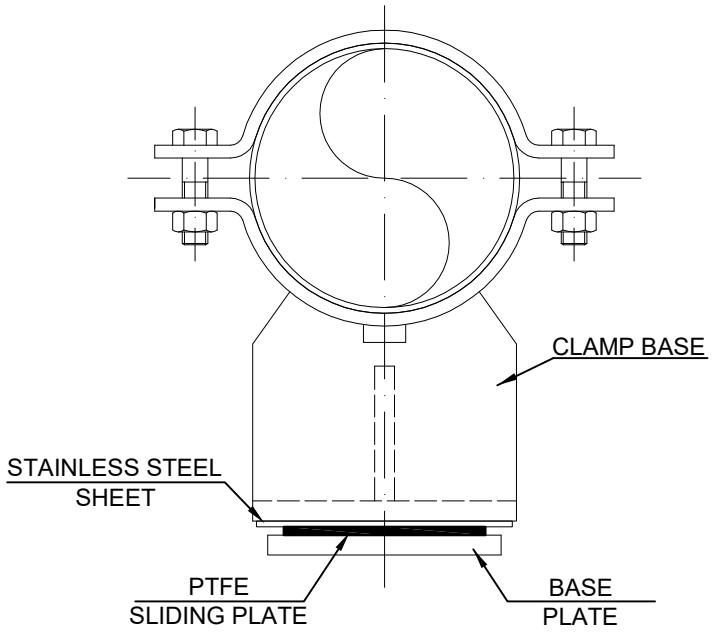
e.g.: Fig. 2136 WITH LIFT-OFF GUIDES

N.B.: The dimensions of the trunnions, anti-rotating lugs, stop beams and lift-off guides will depend on the lateral load.

PTFE SLIDING PLATES

FIG.: 2138

SECTION B 12



APPLICATION: Appropriate for coupling sliding supporting points. These are usually fitted under the pipe shoes, on plates according to Fig. 2138 (enclosed sheets) or also on the loading plate of the variable load springs type F. The maximum permanent contact temperature recommended is 120ºC.

ASSEMBLY: The PTFE can be fitted onto different sized seating plates. Between PTFE and the support, generally, a stainless steel upper plate is fitted, with a polished or semi-polished finish (minimum recommended: 2B finish).

CHARACTERISTICS:

- Low friction coefficient.
- Chemically inert.
- High non-stick properties.
- Chemical stability between -180ºC and +280ºC.
- Good resilience to fragility at high and low temperatures.
- Maximum recommended operating stress: 10Mpa.

ORDER FORM:

- Name.
- Figure.
- Dimensions or number.

N.B.: Depending on customer requirements, PIHASA will send more complete details and make the appropriate design. The design of the figure is only representative since the assembly of the PTFE plate can be made in different ways, depending on the particular design for each case.

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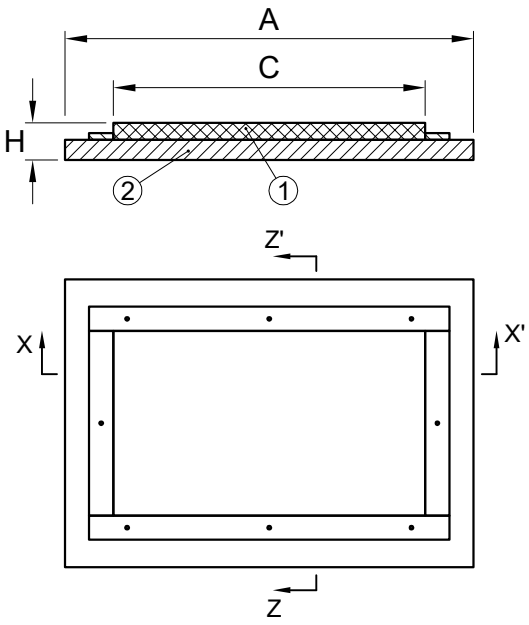
PTFE SLIDING PLATES

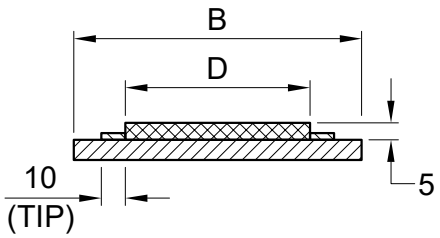
FIG.: 2138

SECTION B 13

VIEW X-X'



VIEW Z-Z'



① PTFE plate treated on the side for bonding

② Carbon steel seating plate with the frame for inserting the PTFE plate.

No.	A (mm)	B (mm)	C (mm)	D (mm)	H (mm)	CALCULATED LOAD FOR 5 Mpa. (Kg)
01	80	80	50	50	13	1250
02	105	80	75	50	13	1875
03	130	80	100	50	13	2500
04	155	80	125	50	13	3125
05	180	80	150	50	13	3750
06	105	105	75	75	13	2810
07	130	105	100	75	13	3750
08	180	105	150	75	13	5265
09	230	105	200	75	13	7500
10	130	130	100	100	13	5000
11	180	130	150	100	13	7500
12	230	130	200	100	13	10000
13	280	130	250	100	13	12500
14	330	130	300	100	13	15000
15	180	180	150	150	15	11250

No.	A (mm)	B (mm)	C (mm)	D (mm)	H (mm)	CALCULATED LOAD FOR 5 Mpa. (Kg)
16	230	180	200	150	15	15000
17	280	180	250	150	15	18750
18	330	180	300	150	15	22500
19	430	180	400	150	15	30000
20	230	230	200	200	15	20000
21	330	230	300	200	15	30000
22	430	230	400	200	15	40000
23	280	280	250	250	15	31250
24	330	280	300	250	15	37500
25	430	280	400	250	15	50000
26	530	280	500	250	15	62500
27	330	330	300	300	15	45000
28	430	330	400	300	15	60000
29	530	330	500	300	15	75000
30	430	430	400	400	15	80000

N.B.:

- The standard assembly is to support the PTFE plate against a polished or semi-polished stainless steel plate, obtaining a friction coefficient of less than 0.1.
  The dimensions of the stainless steel plate should be larger than the PTFE, depending on the expected movements.

- Support can also be made against another PTFE plate as upper sliding plate. With the oiled surface, the friction coefficient should not exceed a value of 0.05.

- The joint below the structure is made by applying alternate welding beads, with controlled thermal contribution, in order to avoid transmitting excessive heat to the PTFE plate.

- It may be manufactured in intermediate sizes and in any dimension, both the base plate and the PTFE, as well as in any thickness on the condition that it be greater than or equal to 8 mm.

- It is advisable not to exceed 120ºC as continuous operating temperature.

- Other options:
  - Plates incorporating restrictions on movement.
  - Plates that allow for swinging (by cylindrical or spherical supports).
  - Special plates according to the design supplied by the customer.

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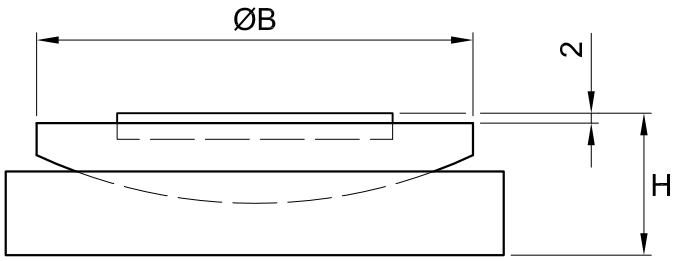
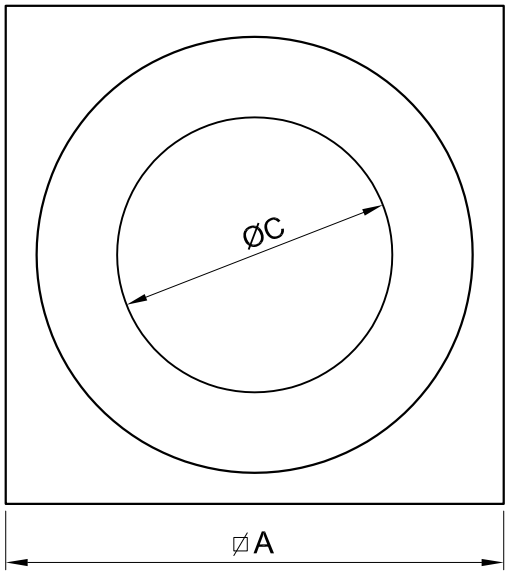
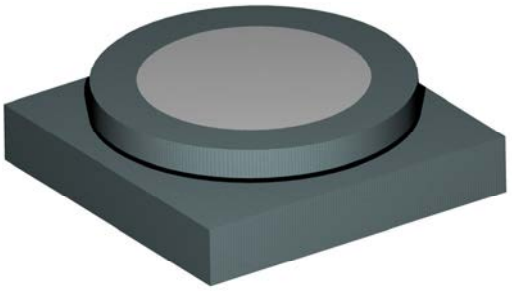
PTFE SPHERICAL SLIDING PLATES

FIG.: 2138 SPH

SECTION B 14







No.	⍁A (mm)	ØB (mm)	ØC (mm)	H (mm)	MAX. REC. LOAD (Kg)
1	90	80	50	32	975
2	115	105	75	35	2200
3	140	130	100	38	3900
4	160	150	120	37	5650
5	190	180	150	44	8825
6	220	210	200	44	15700

N.B.:

- Maximum angling ± 2º in all directions.
- On special request, this angling may be increased, but the dimensions may be affected.

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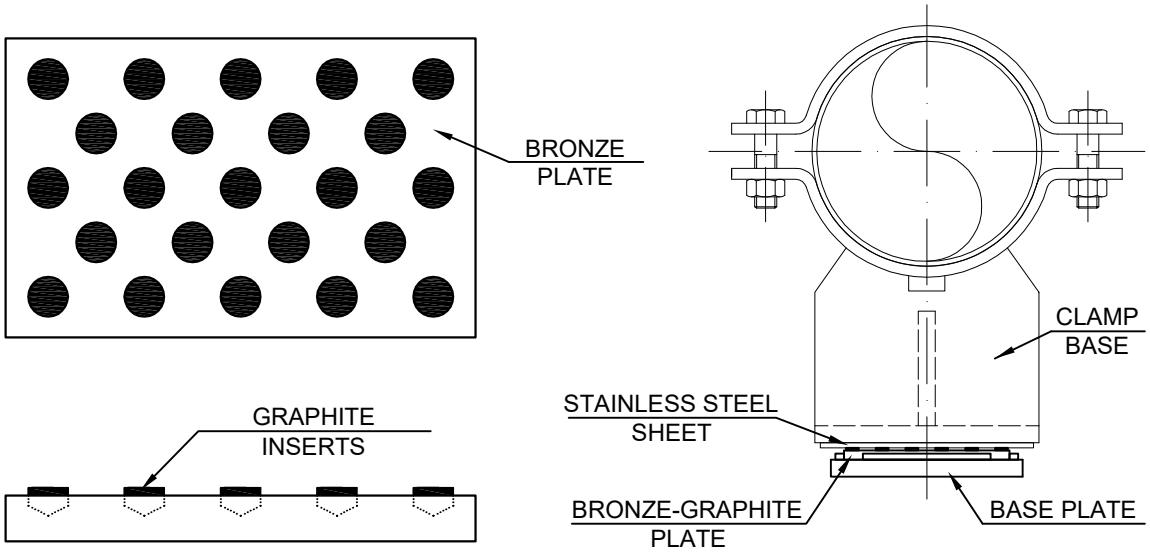
SELF-LUBRICATING GRAPHITE-BRONZE PLATES

FIG.: 2139

SECTION B 15



MATERIAL: The base element is a bronze alloy with small amounts of other materials (Pb, Zn, etc.). The lubricant element comprises graphite as the base element, with the addition of small amounts of metals, metal oxides and other lubricant elements.

APPLICATIONS: This material is specially appropriate for coupling to points where the support may need to be made sliding, due to it slow friction coefficient. This has a good response in adverse environmental conditions (sandy areas, etc.), a high resistance against abrasion and a high load capacity.

ASSEMBLY: The graphite-bronze strips can be fitted onto the support plates or profiles in different materials, depending on the design. A stainless steel plate should be fitted between the graphite-bronze strip and the support itself.

GEOMETRICAL FORMS: These supports can be supplied in the form of:
- Square or rectangular plate.
- Circular crown.
- Bushings.
- Rotating joints.

CHARACTERISTICS: The essential characteristic is its low friction coefficient:
- For high loads: 0.04 to 0.08.
- For low loads: 0.09 to 0.1.

The sliding speed between plates should be less than 150 metres per minute. It has a high resilience to use.
Working stress should not exceed 15 MPa.
The range of temperature use is very broad, with very high temperatures (600ºC).

ORDER FORM: In accordance with customer technical requirements, PIHASA will present full details, fitting the most adequate plate in each particular case.

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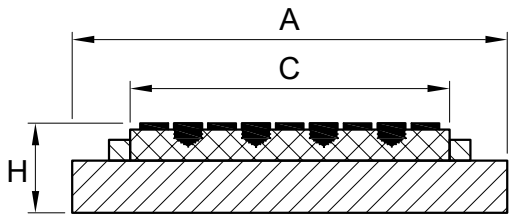
SELF-LUBRICATING GRAPHITE-BRONZE PLATES

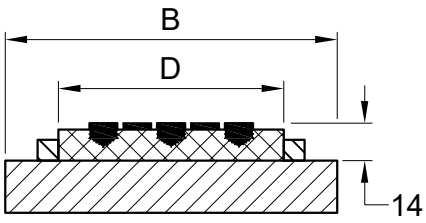
FIG.: 2139

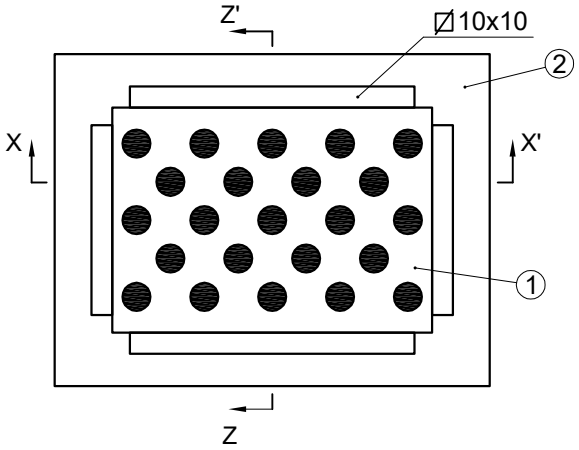
SECTION B 16

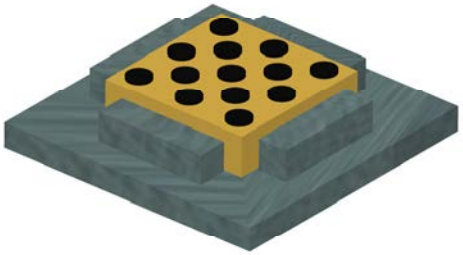
VIEW X-X'



VIEW Z-Z'







No.	A (mm)	B (mm)	C (mm)	D (mm)	H (mm)	NUMBER OF PLATES	MAX. REC. LOAD (Kg)
01	90	90	50	50	22	1	3750
02	115	90	75	50	22	1	5625
03	140	90	100	50	22	1	7500
04	190	90	150	50	22	1	11250
05	115	115	75	75	22	1	8435
06	140	115	100	75	22	1	11250
07	190	115	150	75	22	1	16875
08	240	115	200	75	22	1	22500
09	340	115	300	75	22	2	33750
10	140	140	100	100	24	1	15000
11	190	140	150	100	24	1	22500
12	240	140	200	100	24	1	30000
13	340	140	300	100	24	2	45000
14	190	190	150	150	24	1	33750
15	240	190	200	150	24	1	45000
16	340	190	300	150	24	2	67500
17	440	190	400	150	24	2	90000
18	240	240	200	200	26	1	60000
19	340	240	300	200	26	2	90000
20	440	240	400	200	26	2	120000
21	540	240	500	200	26	3	150000

① Self-lubricating bronze plate with graphite inserts.

② Carbon steel plate with 10x10 square frame for fitting graphite-bronze plate.

N.B.:

- The installation is made by welding to the supporting structure.
- This can be manufactured in intermediary sizes and in any dimension, both the base plate and the graphite-bronze, as well as any thickness, on the condition that it be greater than or equal to 15 mm.
- It allows for an operating temperature of up to 500ºC - 600ºC.

- Other options:
* Plates incorporating restrictions on movement.
* Plates that allow for swinging (by means of cylindrical or spherical supports).
* Special plates, following the design supplied by the customer.

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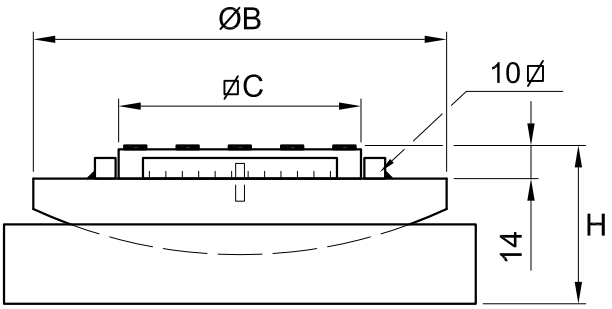
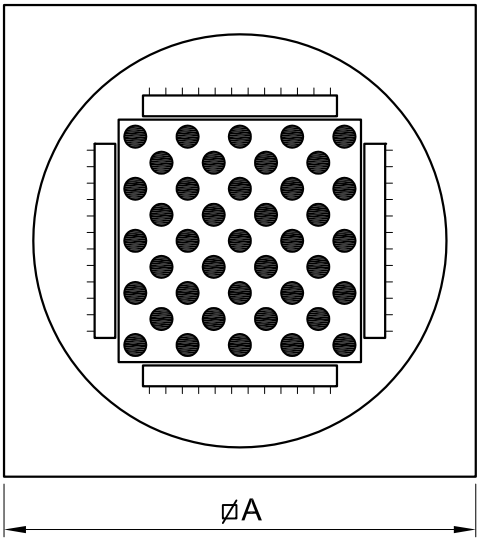
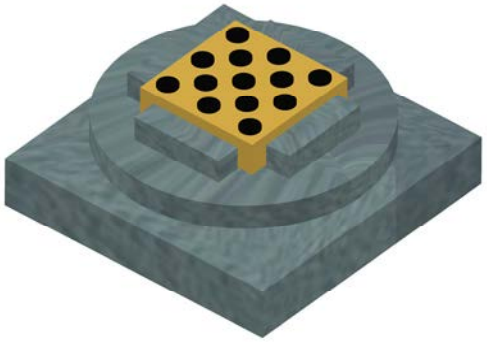
SELF-LUBRICATING SPHERICAL GRAPHITE-BRONZE PLATES

FIG.: 2139 SPH

SECTION B 17







No.	⌀A (mm)	ØB (mm)	⌀C (mm)	H (mm)	MAX. REC. LOAD (Kg)
1	100	90	50	39	2250
2	130	120	75	42	5050
3	170	160	100	50	9000
4	200	190	120	54	12750
5	240	230	150	61	20000

N.B.:

- Maximum angling ±2º in all directions.
- On special request, this angling may be increased, but the dimensions may be affected.

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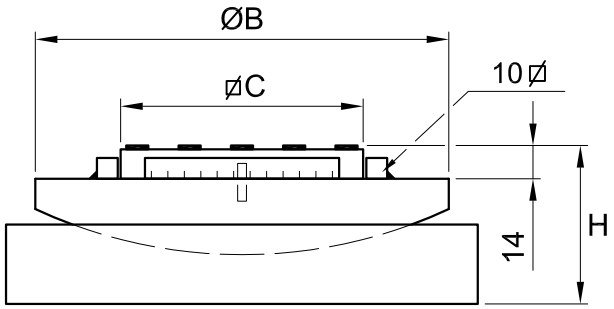
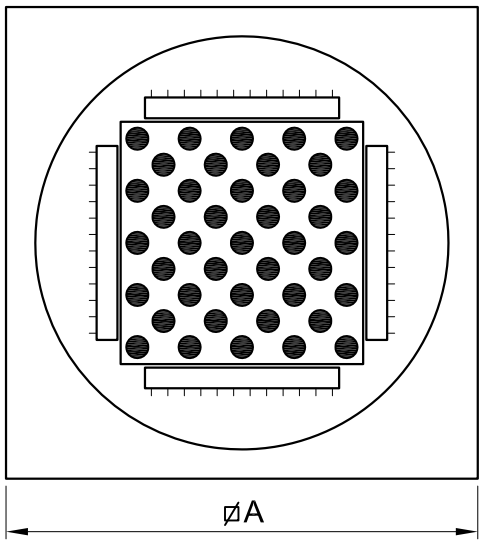
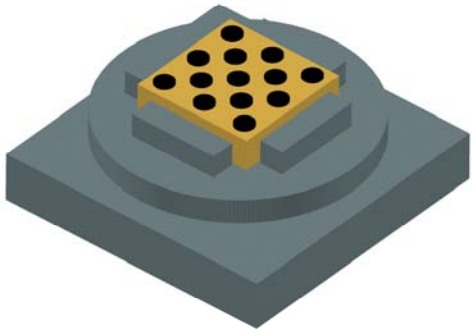
SELF-LUBRICATING SPHERICAL GRAPHITE-BRONZE PLATES

FIG.: 2139 SPH

SECTION B 17-BIS







No.	⌀A (mm)	ØB (mm)	⌀C (mm)	H (mm)	MAX. REC. LOAD (Kg)
1 E	120	110	50	42	2250
2 E	150	140	75	45	5050
3 E	200	190	100	48	9000
4 E	230	220	120	52	12750
5 E	260	250	150	58	20000

N.B.:

- Maximum angling ±4° in all directions.
- On special request, this angling may be increased, but the dimensions may be affected.

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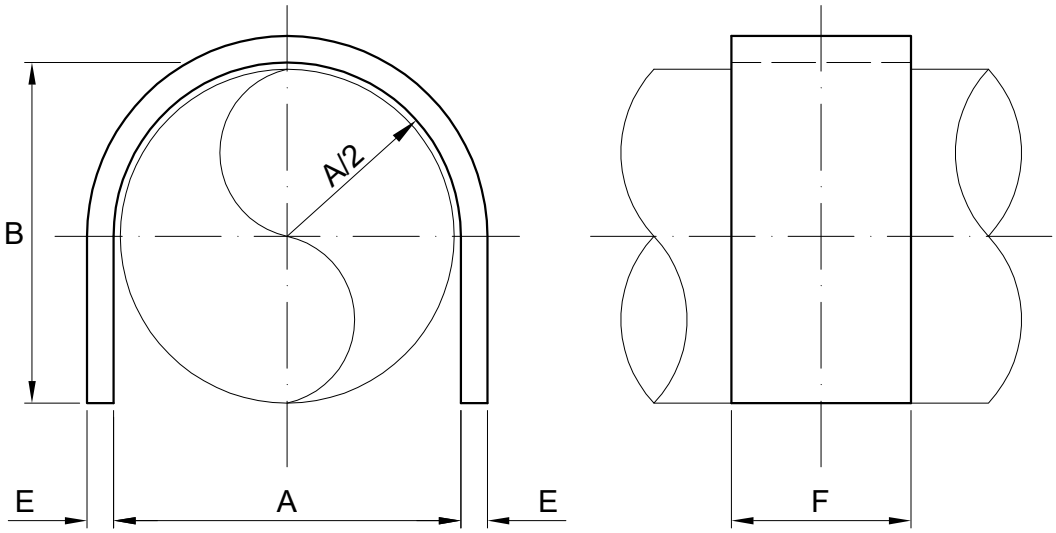
WELDED PIPE STRAP
DIAM. Ø ≤ 6"

FIG.: 2250

SECTION B
18



PIPE Ø	A (mm)	B (mm)	E (mm)	F (mm)	WEIGHT (Kg)	MAX. REC. LATERAL LOAD (Kg)
1/2"	23	23	6	30	0,1	150
3/4"	28	28	6	30	0,12	150
1"	35	35	6	40	0,2	200
1 1/4"	44	43	6	40	0,25	200
1 1/2"	50	49	8	50	0,45	250
2"	62	61	8	50	0,55	250
2 1/2"	75	74	8	50	0,7	250
3"	91	90	10	60	1,2	300
4"	117	116	10	60	1,5	300
5"	145	144	10	60	1,9	300
6"	172	171	12	70	3,1	375

APPLICATION: For guiding uninsulated pipes.

ORDER FORM:
- Name.
- Figure.
- Pipe diameter.

N.B.: - Can be manufactured in greater diameters (not recommended) by similar parts with side stiffeners.

- Vertical orientated loads are far greater than the lateral loads indicated (not less than 4 times that indicated).

- Tolerances at levels A and B $^{+1,5}_{-0}$

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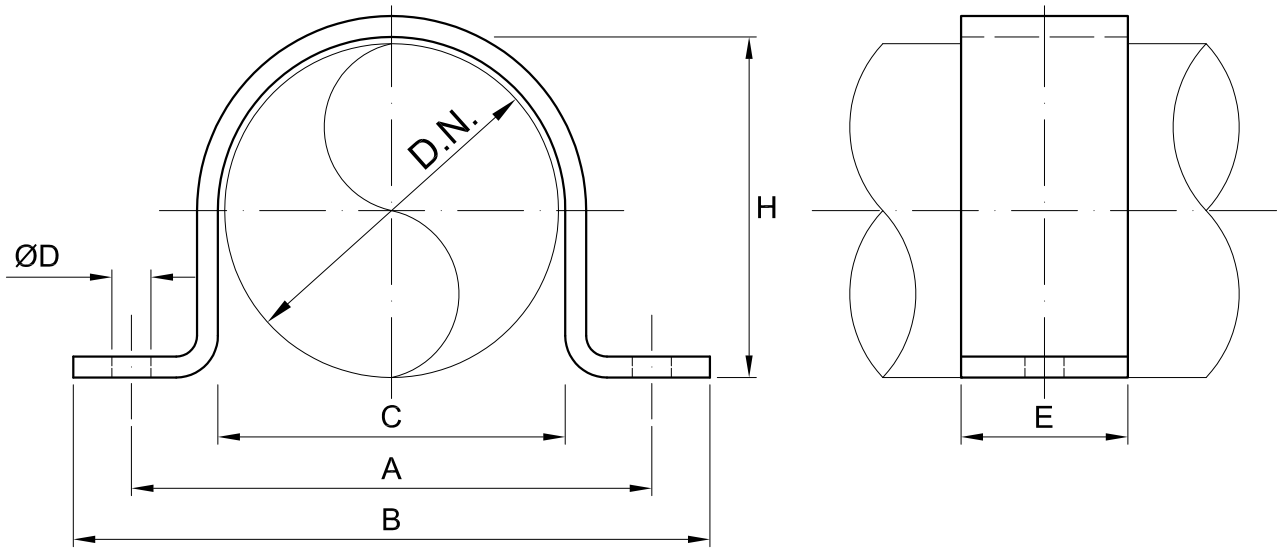
GUIDE CLAMP

FIG.: 2251

SECTION B 19



No.	D.N.	A (mm)	B (mm)	C (mm)	ØD (mm)	E (mm)	H (mm)	WEIGHT (Kg)
1	1/2"	70	110	25	11,5	30	23	0,18
2	3/4"	75	115	31	11,5	30	29	0,2
3	1"	85	135	38	11,5	35	35	0,28
3 a	1 1/4"	95	145	47	11,5	35	44	0,32
4	1 1/2"	110	170	53	13,5	60	50	0,65
5	2"	140	200	65	13,5	60	62	0,8
6	2 1/2"	155	215	77	13,5	60	75	0,9
7	3"	170	240	93	15,5	60	91	1
8	4"	196	266	118	15,5	60	116	1,6
8 a	5"	222	292	146	15,5	60	144	1,8
9	6"	250	320	174	15,5	60	171	2,1
10	8"	312	382	225	17,5	60	222	2,7
11	10"	375	445	279	17,5	80	276	5,3
12	12"	416	486	330	17,5	80	327	6,2
13	14"	460	530	362	19,5	80	359	8,5
14	16"	514	584	412	19,5	80	409	9,2
15	18"	565	635	463	19,5	80	460	10,5
16	20"	617	687	514	19,5	80	511	11,5

APPLICATION: For guiding the pipe in lines on the ground or on a structure.

MATERIAL: Carbon steel, alloy steel and stainless steel.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.

N.B.: Can be manufactured in other diameters, special or greater, than those indicated.

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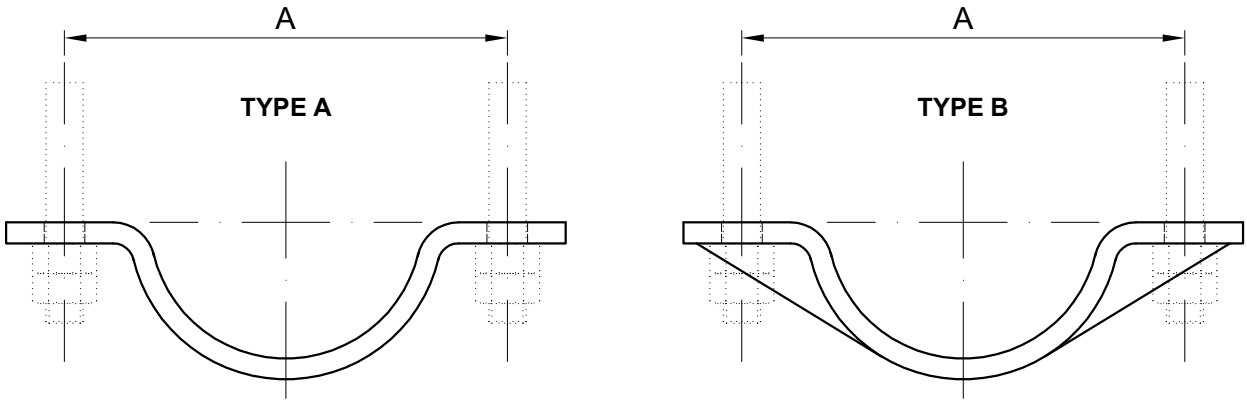
SEMI-CLAMP

FIG.: 2252

SECTION B
20



APPLICATION: hanging piping by hanger rods, coupled to the ends of the semi-clamp. Requires little space between the structure and the piping.

TYPES:
"TYPE A".- Semi-clamp with no stiffeners.
"TYPE B".- Semi-clamp with side stiffeners.

SELECTION METHOD: According to the illustration on the following page.
In this illustration, the required flatbar size is obtained in terms of the required load and the distance between the hanger rods (Level “A”). Selection is valid for carbon steel semi-clamps up to temperatures of 300ºC. The same coefficients and qualities as indicated on sheet A-20 will be used for high temperatures.

1º.- At the required load point, a horizontal is traced until it crosses with the vertical traced from the distance between axes (Level “A”) required. The intersection of these two straight lines will give the flatbar to be used.
In the event of this point falling between two flatbar values, the higher of the two is chosen.

2º.- A horizontal is traced through the previous intersection, until it crosses with the scale of hanger rods, at the intersection, giving the rod metric to use.

MATERIAL: Carbon steel, alloy steel and stainless steel.

ORDER FORM:
- Name.
- Figure.
- Pipe diameter.
- Distance between axes on the external bolts (level "A").
- Load.
- Operating temperature on the piping or pipe quality.

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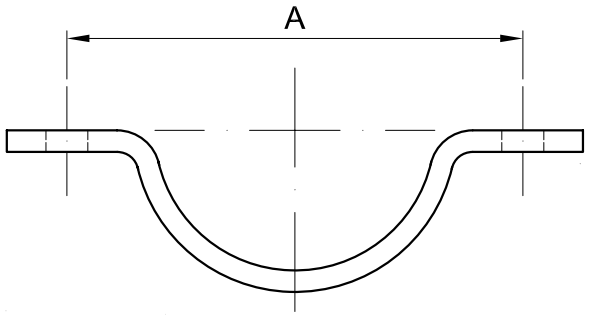
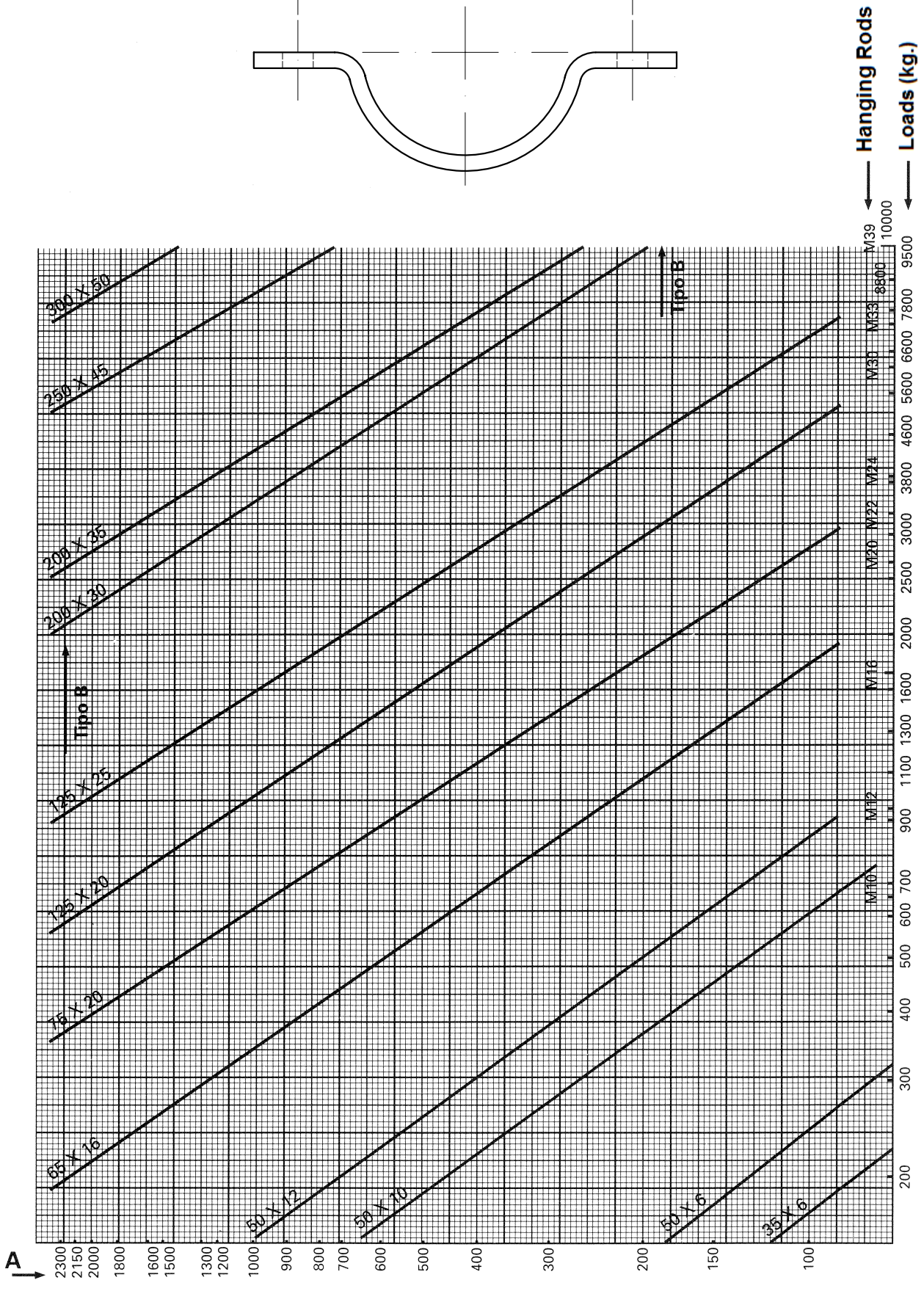
FIG. 2252 GRAPH II Rev.2

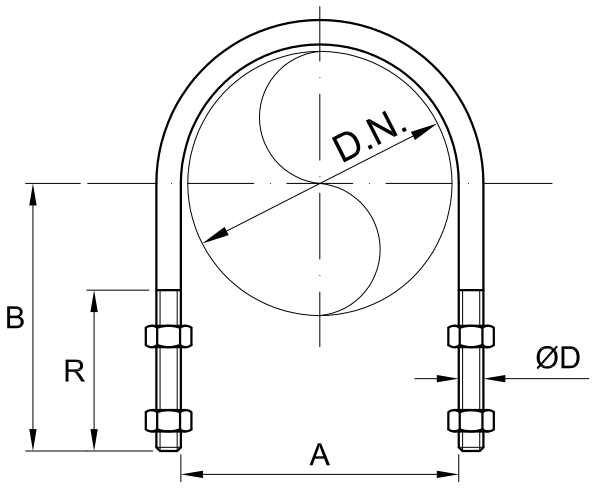




U-BOLT

FIG.: 2280

SECTION B 22



No.	D.N.	A (mm)	B (mm)	R (mm)	THREAD	WEIGHT (Kg)	MAX. REC. LOAD (Kg)
1	1/2"	24	40	35	M6	0,04	300
2	3/4"	29	45	40	M6	0,05	300
3	1"	36	50	40	M8	0,07	500
3 a	1 1/4"	45	50	40	M8	0,09	500
4	1 1/2"	51	55	45	M10	0,17	700
5	2"	64	70	55	M10	0,2	700
6	2 1/2"	76	80	65	M12	0,3	1000
7	3"	92	90	65	M12	0,4	1000
8	4"	118	115	75	M12	0,5	1000
8 a	5"	145	135	85	M12	0,7	1000
9	6"	172	155	95	M16	1,1	2200
10	8"	223	180	95	M16	1,5	2200
11	10"	277	215	100	M20	2,5	3500
12	12"	328	245	105	M24	4,2	5000
13	14"	360	260	105	M24	4,5	5000
14	16"	411	285	105	M24	5	5000
15	18"	462	320	120	M24	5,5	5000
16	20"	512	350	120	M24	6	5000
17	24"	614	400	120	M24	7	5000
18	30"	766	475	120	M24	8	5000

APPLICATION: securing piping to the structure by fitting four nuts. Valid for guiding uninsulated pipes, for low lateral loads (maximum 30% of the given vertical load).

MATERIAL: Carbon steel and stainless steel.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.

N.B.: Can be manufactured in dimensions other than those indicated.

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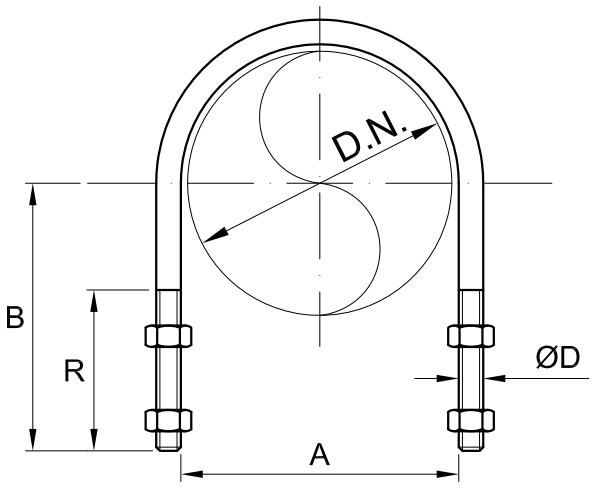
LIGHT U-BOLT

FIG.: 2281

SECTION B 23



No.	D.N.	A (mm)	B (mm)	R (mm)	THREAD	WEIGHT (Kg)	MAX. REC. LOAD (Kg)
1	1/2"	23	25	17	M6	0,03	250
2	3/4"	28	30	19	M6	0,03	250
3	1"	35	39	24	M6	0,04	250
3 a	1 1/4"	43	44	24	M6	0,05	250
4	1 1/2"	51	48	26	M8	0,08	350
5	2"	63	53	26	M8	0,09	350
6	2 1/2"	75	71	35	M10	0,18	550
7	3"	91	76	35	M10	0,20	550
8	4"	117	88	35	M10	0,24	550
8 a	5"	144	105	40	M10	0,28	550
9	6"	171	119	40	M10	0,31	550
10	8"	223	144	40	M10	0,38	550
11	10"	276	171	40	M10	0,45	550
12	12"	327	204	50	M12	0,75	1050
13	14"	360	219	50	M12	0,80	1050
14	16"	411	254	60	M12	0,90	1050
15	18"	460	286	70	M16	1,9	1150
16	20"	513	314	70	M16	2,1	1150

APPLICATION: Securing piping to the structure by fitting four nuts.

MATERIAL: Carbon steel and stainless steel

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.

N.B.: Can be manufactured in dimensions other than those indicated.

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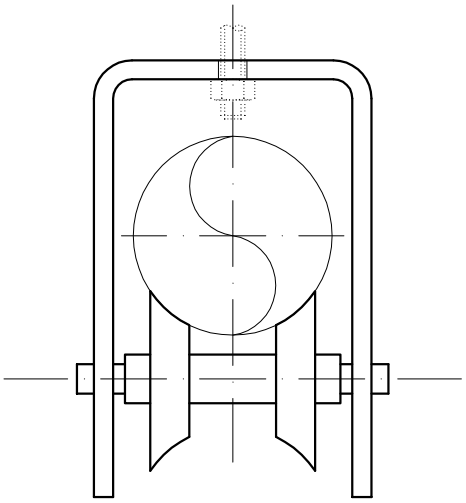
ROLLERS

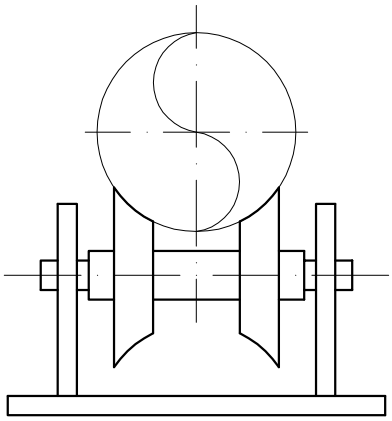
FIG.: 2297

SECTION B
24

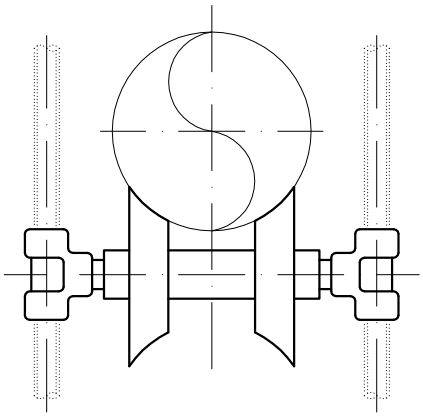
TYPE A
(For hanging with a single rod)



TYPE B
(For supporting on the floor)

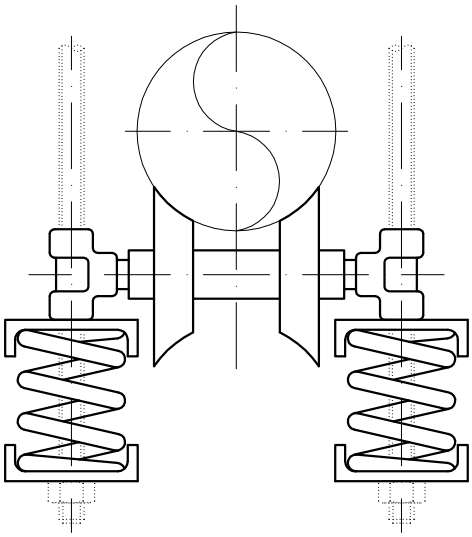


TYPE C
(For hanging with two rods)



TYPE D
(For hanging with springs)

No.	1	2	3
LOAD (Kg)	400	1300	3000



APPLICATION: To allow for axial movements due to thermal dilation of the pipe.

ORDER FORM:
- Name.
- Figure.
- Type.
- Load.
- Pipe diameter.

N.B.: Having received the data on the required roller, the most suitable will be manufactured for the dimensions and loads requested by the client.

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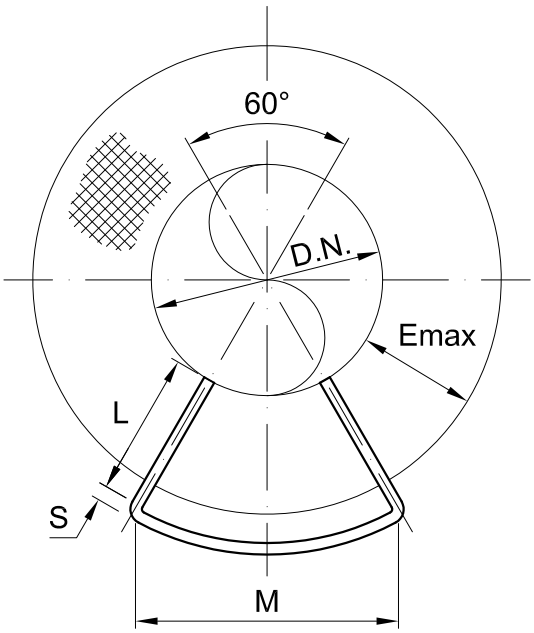
SADDLES

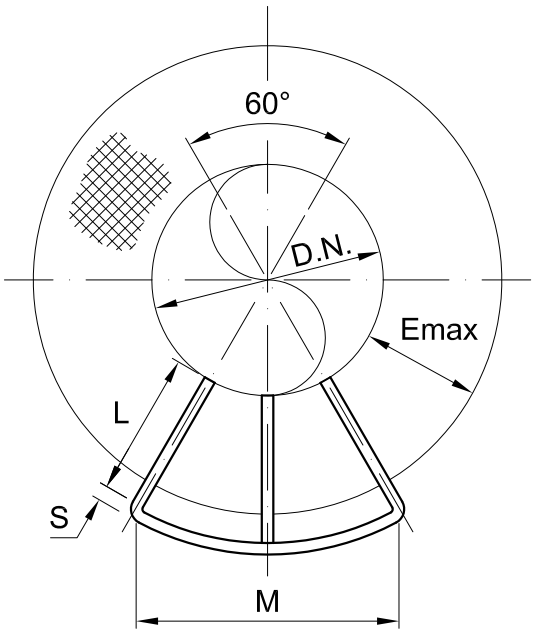
FIG.: 2300 TO 2310

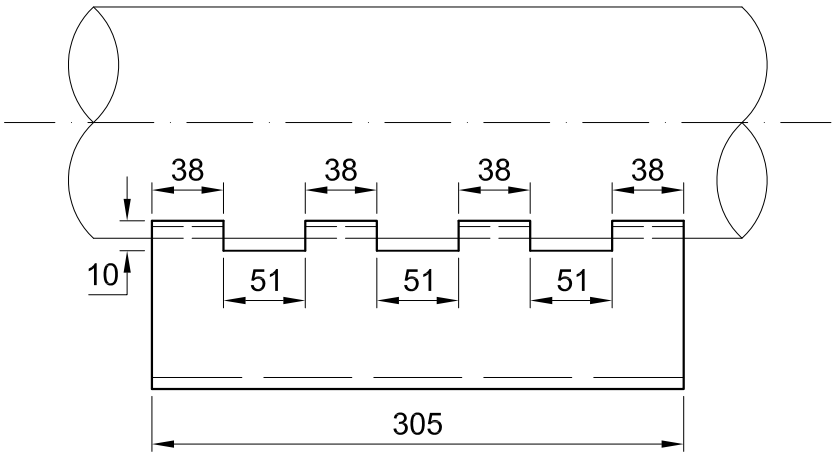
SECTION B 25

NORMAL SADDLE



WIDE SADDLE





APPLICATION: For supporting piping with insulation.

ORDER FORM:

- Name.
- Figure.
- Pipe diameter.

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FIG. 2300 -NORMAL SADDLE - 25 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	3/4"	25	26	40	4	525
2	1"	25	28	45	4	525
3	1 1/2"	25	28	53	4	525
4	2"	25	28	59	4	525
5	2 1/2"	25	28	66	5	525
6	3"	25	28	75	5	525
7	4"	25	28	86	6	800
8	6"	25	32	117	6	800

FIG. 2301 - NORMAL SADDLE - 40 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	3/4"	40	41	55	4	525
2	1"	40	43	60	4	525
3	1 1/2"	40	43	68	4	525
4	2"	40	43	74	4	525
5	2 1/2"	40	43	81	6	525
6	3"	40	43	90	6	800
7	4"	40	43	101	6	800
8	6"	40	43	128	6	800
9	8"	40	44	154	6	800

FIG. 2302 - WIDE SADDLE - 40 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	10"	40	45	182	10	800
2	12"	40	50	213	10	2250
3	14"	40	45	223	12	2250
4	16"	40	50	254	12	2250
5	18"	40	46	269	12	2250
6	20"	40	46	301	15	3250
7	24"	40	46	351	15	3250
8	30"	40	46	426	15	3250
9	36"	40	46	503	15	3250

FIG. 2303 - NORMAL SADDLE - 50 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	3/4"	50	51	65	4	525
2	1"	50	53	70	4	525
3	1 1/2"	50	53	78	5	800
4	2"	50	53	84	6	800
5	2 1/2"	50	53	91	6	800
6	3"	50	55	100	6	800
7	4"	50	55	114	6	800
8	6"	50	57	142	6	800
9	8"	50	54	164	8	800

FIG. 2304 - WIDE SADDLE - 50 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	10"	50	55	192	10	2250
2	12"	50	60	223	10	2250
3	14"	50	55	233	12	2250
4	16"	50	60	264	12	2250
5	18"	50	51	276	15	3250
6	20"	50	56	311	15	3250
7	24"	50	56	361	15	3250
8	30"	50	56	436	15	3250
9	36"	50	56	513	20	3250

SADDLES

FIG.: 2305 TO 2310

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FIG. 2305 - NORMAL SADDLE - 65 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	1 1/2"	65	68	93	5	800
2	2"	65	68	99	5	800
3	2 1/2"	65	68	106	6	800
4	3"	65	68	113	6	800
5	4"	65	68	126	6	800
6	6"	65	70	157	8	800
7	8"	65	70	179	8	800

FIG. 2306 - WIDE SADDLE - 65 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	10"	65	70	207	12	2250
2	12"	65	76	239	12	2250
3	14"	65	71	250	12	2250
4	16"	65	71	276	15	3250
5	18"	65	66	291	15	3250
6	20"	65	71	326	15	3250
7	24"	65	71	376	15	3250
8	30"	65	71	451	20	3250
9	36"	65	71	528	20	3250

FIG. 2307 - NORMAL SADDLE - 75 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	2"	75	78	109	5	800
2	2 1/2"	75	78	116	5	800
3	3"	75	80	125	5	800
4	4"	75	78	136	6	800
5	6"	75	82	167	8	800
6	8"	75	79	189	8	800

FIG. 2308 - WIDE SADDLE - 75 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	10"	75	81	218	12	2250
2	12"	75	86	249	12	2250
3	14"	75	80	258	12	2250
4	16"	75	82	286	15	3250
5	18"	75	76	301	15	3250
6	20"	75	81	336	15	3250
7	24"	75	81	386	20	3250
8	30"	75	81	461	20	3250
9	36"	75	81	538	20	3250

FIG. 2309 - NORMAL SADDLE - 100 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	4"	100	103	161	8	800
2	6"	100	108	193	8	800
3	8"	100	104	214	8	800

FIG. 2310 - WIDE SADDLE - 100 mm. INSULATION

No.	D.N.	Emax. (mm)	L (mm)	M (mm)	S (mm)	MAX. REC. LOAD (Kg)
1	10"	100	106	243	12	2250
2	12"	100	111	274	12	2250
3	14"	100	102	280	15	3250
4	16"	100	107	311	20	3250
5	18"	100	101	326	20	3250
6	20"	100	106	361	20	3250
7	24"	100	106	411	20	3250
8	30"	100	106	486	20	3250
9	36"	100	106	563	20	3250

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