



Butterfly valves
Metal-Metal

TTV
Valves & Technology

► Technical Details

Rango de fabricación	DN32 – DN1600
Manufacturing range	EN 558 Series 20 ISO 5752 Series 20 API 609 EN 593
Mounting between flanges	PN10/16-ANSI150 Lbs.
Flanges	ISO 7005, DIN 2501, EN 1092-1 ANSI Class 150: ANSI B16.5
Top flange connection	ISO 5211
Tests	EN 12266-1
Paint	Heat-resistant
Leakage rates	0.5% - 1%



► Characteristics

- Certified and approved valves for different applications.
- Bidirectional flow.
- Self-cleaning.
- Easy installation.
- Easy maintenance.
- Possibility of operation with different controls (lever control, reducer, pneumatic, electric, hydraulic actuator, etc.).
- Aerodynamic disc design that minimises pressure loss.
- Low torque design.
- Assembly with heat sink from 200°C.
- Certified heat-resistant paint.

► General Applications

High temperature without the need for 100% sealing:

- Corrosive gas installations: (sulphuric, phosphoric, hydrofluoric, etc.)



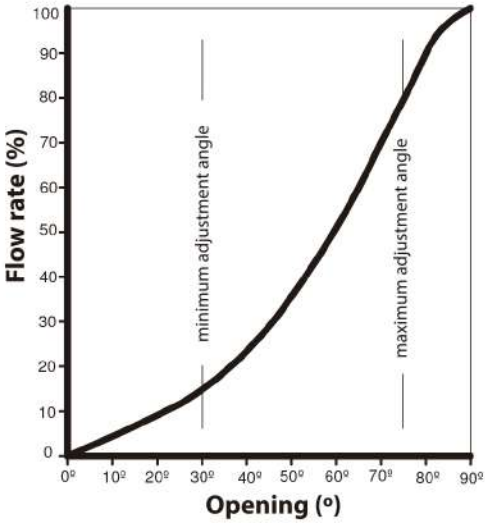
Valve torque (Nm)

DN		Below 180°C	Higher than 180°C
mm	in		
32	1 1/4"	0	5
40	1 1/2"	0	5
50	2"	0	5
65	2 1/2"	5	10
80	3"	5	15
100	4"	5	25
125	5"	10	45
150	6"	10	60
200	8"	15	80
250	10"	25	110
300	12"	35	120
350	14"	35	140
400	16"	45	160
450	18"		250
500	20"		300
600	24"		450
700	28"		950
750	30"		1050
800	32"		1100
900	36"		1150
1000	40"		1200
1100	44"		1300
1200	48"		1800
1300	52"		1900
1400	56"		2000
1600	64"		2600

Kv Data

Flow coefficient Kv					
DN	10°	30°	50°	70°	90°
32-40	3	10	26	35	35
50	10	19	61	61	61
65	12	27	64	109	109
80	14	47	118	246	246
100	16	59	143	265	345
125	39	110	253	500	598
150	45	149	302	702	1072
200	61	260	638	1388	1751
250	95	407	1015	2062	2993
300	135	508	1490	3013	4507
350	153	766	1772	3963	6199
400	202	1081	2687	5482	8792
450	284	1287	3198	6526	9429
500	314	1416	3844	8019	12485
600	399	2234	5941	10763	15020
700	659	3164	8133	16764	26463
750	687	3326	8994	18743	30946
800	727	4151	10671	22030	35596
900	996	5318	13070	26600	40712
1000	1144	6116	15789	32589	50452
1100	1622	7459	19495	36539	68797
1200	1463	8810	22800	40812	75485
1300	2378	10736	28441	53171	84294
1400	2608	11895	31295	65106	117171
1600	2537	14229	35968	77558	136209

Relationship between valve opening degrees and flow



Kv: Volume of water in m³/h, which will flow through a restriction or valve with a pressure drop of 1 bar at 20°C

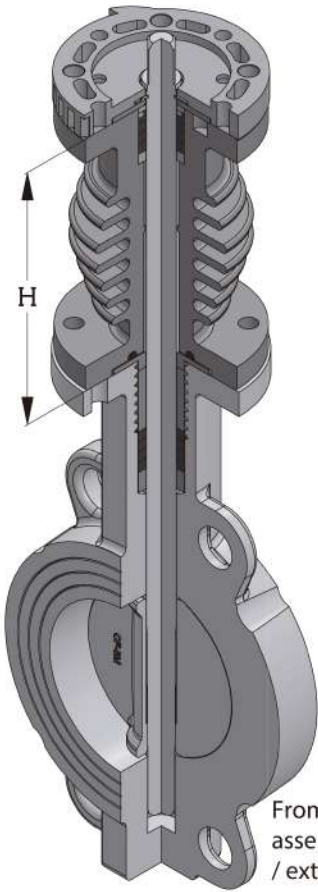
Cv= 1.16 • Kv

Heat sink

Installation of heat sink in valves with metal closure up to 600°C. Design made with microfusion in a single piece (without welding). It is recommended to install the heatsink from 220°C.

Temperature table:

Name	Temp. Range
EN 1563 GJS500-7	-15°C to 400°C
ASTM A216 Gr. WCB	-29°C to 360°C
ASTM A352 Gr. LCB	-60°C to 360°C
ASTM A217 Gr. CA15	-29°C to 700°C
ASTM A351 Gr. CF8M	-50°C to 600°C
ASTM A351 Gr. CF3M	-50°C to 425°C
ASTM A182 F51 1.4462	-50°C to 800°C



DN	H
40	124
50	124
65	124
80	124
100	124
125	125
150	125
200	150
250	175
300	175
350	175
400	200
450	200
500	250
600	250

From DN700 they are assembled with heatsink / extension.



To obtain additional data and more information, please contact the Technical Department.

Short code: E.g.:20WM9540

Frame Material		Series		Valve Type		Shaft Material		Disc Material		Seat Material	
20		W		M		95		40			
20	GJS500-7	W	Wafer	M	METAL/METAL	30	AISI 304	20	GJS500-7		
40	CF-8M					40	AISI 316	40	CF-8M		
4L	CF-3M					90	AISI 420	4L	CF-3M		
50	A216 WCB					95	17 4PH	50	A216 WCB		
51	LCB					D0	1.4462	51	LCB		
91	CA-15							91	CA-15		
D0	1.4470							D0	1.4470		

► Valve assembly and position

1.- Wafer valve assembly

Valves are normally supplied slightly open.

Check that they are like this before proceeding to assemble them. Once the space to house the valve has been verified, it is placed in line with the pipe and we introduce sealing joints.

Next, some studs are positioned to connect it to the pipe.

Subsequently, the butterfly is completely opened to 90° and the rest of the studs are placed with their nuts. Finally, all the nuts are tightened by triangulation in order to uniformly tighten all of the studs and not produce - produce deformations in the elastomer.

Finally, it is verified that the valve closes and opens normally.



2.- Flanged valve mounting

The same as with the wafer valves, with the exception that these valves must be assembled with screws with a length that enables perfect tightness between the flanges of the pipe, and cannot be longer than what corresponds.



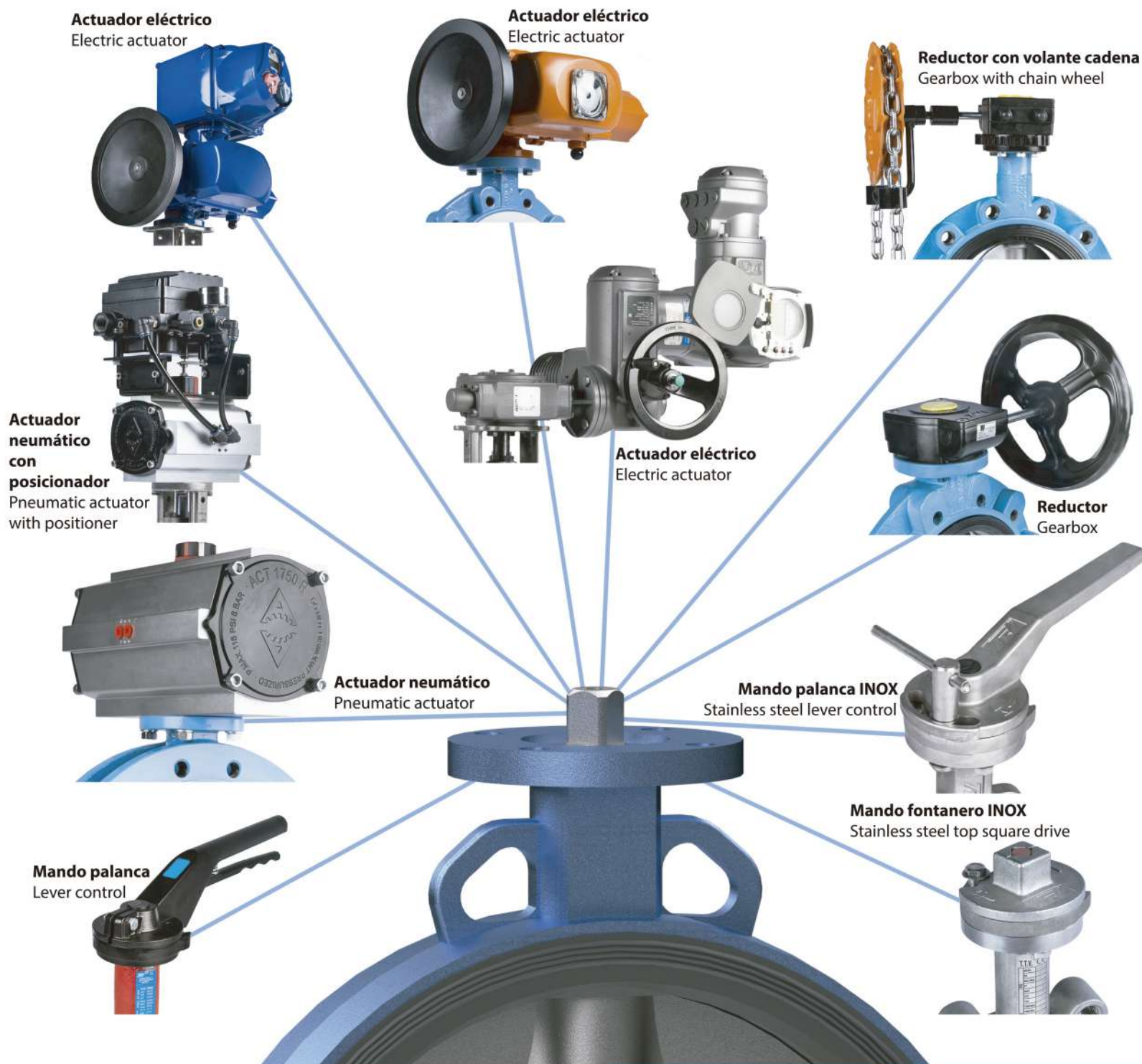
Installation position

The valves are bidirectional. They can be assembled on the desired side, since it is not necessary to maintain the direction of flow.

► Assembly warnings

- The valve surfaces must be clean and free of dirt.
- The space to house the valve must be wide enough to avoid damaging the joints when inserting the valve.
- Be careful not to hit or scratch the valve during assembly; it could the paint.
- When assembling heavy valves, make sure that the eyebolts and slings comply with the corresponding safety approvals.





All our valves can be operated through different manual operators and actuators.

We offer assembly, adjustment and testing services for electric or pneumatic actuators and accessories, such as positioners, limit switch boxes or solenoid valves.

Different types of drive:

1. Coupling flange ISO 5211
2. Structural for controls and accessories.
3. Colossus ISO 5211 valve support with multiple connections.
4. Coupling bushings for controls and accessories.





► Dimensiones válvulas / Valve dimensions

FIG. 1 DN32-400

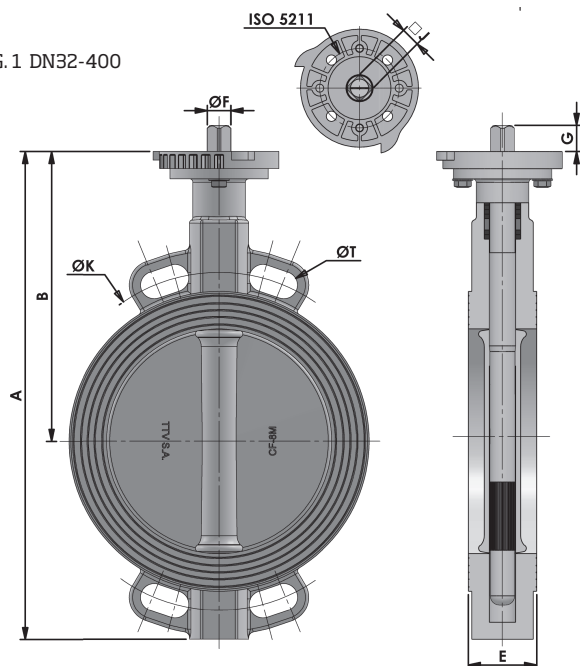
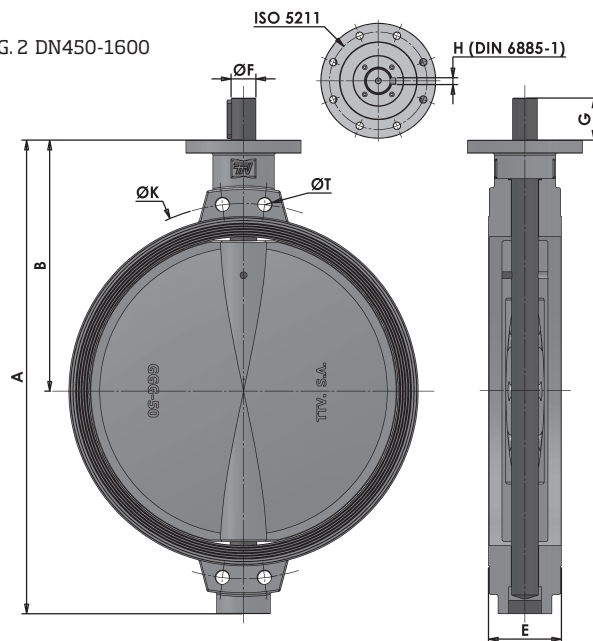


FIG. 2 DN450-1600



Dimensiones válvulas / Valves dimensions									PN10		PN16		ANSI150		
DN		A	B	E	F	G	J	ISO 5211	Peso Weight (Kg)	K	Taladros Holes	K	Taladros Holes	K	Taladros Holes
mm	In										N°xT		N°xT		N°xT

FIG. 1 DN32-400

32	1 1/4"	206	140	33	9,8	14	8	F05/07	2	100	4x18	100	4x18	88,9	4x16
40	1 1/2"	206	140	33	9,8	14	8	F05/07	2	110	4x18	110	4x18	98,5	4x16
50	2"	228	156	43	9,8	14	8	F05/07	3,5	125	4x18	125	4x18	120,6	4x19
65	2 1/2"	248	161	46	12	16	9	F05/07	4,5	145	4x18	145	4x18	139,7	4x19
80	3"	265	169	46	14	16	11	F05/07	5	160	4x18	160	4x18	152,4	4x19
100	4"	298	187	52	14	20	11	F05/07	6,5	180	4x18	180	4x18	190,5	4x19
125	5"	331	206	56	18	20	14	F07	8	210	4x18	210	4x18	215,9	4x23
150	6"	349	215	56	18	20	14	F07	9	240	4x23	240	4x23	241,3	4x23
200	8"	430	255	60	22	24	17	F07	15	295	4x23	295	4x23	298,5	4x23
250	10"	461	248	68	25	24	19	F10	21,5	350	4x23	355	4x27	362	4x26
300	12"	524	280	78	28	24	22	F10	30	400	4x23	410	4x27	431,8	4x26
350	14"	570	300	78	28	29	22	F14	39	460	4x23	470	4x27	476,3	4x29
400	16"	644	340	102	35	29	27	F14	52	515	4x27	525	4x30	539,8	4x29

FIG. 2 DN450-1600

450	18"	736	390	114	50	80	-	F14	87	565	4xM24	585	4xM27	577,9	4x1 1/8"
500	20"	825	440	127	50	80	-	F14	117	620	4xM24	650	4xM30	635	4x1 1/8"
600	24"	965	507	154	60	90	-	F16	177	725	4xM27	770	4xM33	749,3	4x1 1/4"
700	28"	1100	575	165	60	90	-	F25	258	840	4xM27	840	4xM33	863	4x1 1/4"
750	30"	1150	600	190	65	110	-	F25	296	900	4xM30	900	4xM33	914	4x1 1/4"
800	32"	1248	655	190	65	110	-	F25	330	950	4xM30	950	4xM36	978	4x1 1/2"
900	36"	1325	685	203	80	110	-	F25	505	1050	4xM30	1050	4xM36	1086	4x1 1/2"
1000	40"	1457	754	216	80	110	-	F25	661	1160	4xM33	1170	4xM39	1200	4x1 1/2"
1100	44"	1580	815	216	80	110	-	F25	840	1270	4xM33	1270	4xM39	1314	4x1 1/2"
1200	48"	1721	873	254	100	110	-	F25	1020	1380	4xM36	1390	4xM45	1422	4x1 1/2"
1300	52"	1910	1005	360	120	120	-	F30	1650	-	-	-	-	1537	4x1 3/4"
1400	56"	1990	1025	360	120	130	-	F30	1900	1590	4xM39	1590	4xM45	1651	4x1 3/4"
1600	64"	2320	1190	360	150	160	-	F35	2350	1820	4xM45	1820	4xM52	1879,6	4x1 7/8"

Valves & Technology



A 3D perspective view of the device. Dimension A is indicated by a red double-headed arrow along the vertical axis, representing the height of the cylindrical body. Dimension B is indicated by a red double-headed arrow along the diagonal axis, representing the length of the handle assembly.

Technical drawing of a handwheel valve assembly. The drawing shows a handwheel (black) connected to a valve body (grey). The valve body has a flange with a central opening. Dimensions are indicated by red lines and labels: A (height from flange to top of valve body), B (width of valve body), C (height from handwheel center to top of valve body), and ØD (diameter of handwheel).

[illegible]

Diámetro nominal		Mando palanca			Reductor						Actuador neumático doble efecto					Actuador neumático simple efecto				
Nominal size		Lever-operated			Worm-gear						Double acting actuator					Spring return actuator				
(mm)	In	A	B	Peso Weight	Modelo Model	A	B	C	ØD	Peso Weight	Modelo Model	A	B	C	Peso Weight	Modelo Model	A	B	C	Peso Weight
32	1 1/4"	170	205	2,5	AM1-TTV	213	128	116	140	3,5	ADA20	214	145	76	3,5	ASR40	255	195	91	4,5
40	1 1/2"	170	205	2,5	AM1-TTV	213	128	116	140	3,5	ADA20	214	145	76	3,5	ASR40	255	195	91	4,5
50	2"	186	205	4	AM1-TTV	229	128	116	140	5	ADA20	252	145	76	5	ASR40	271	195	91	6
65	2 1/2"	191	205	5	AM1-TTV	234	128	116	140	6	ADA40	276	158	91	6,5	ASR80	298	217	111	8,5
80	3"	199	205	5,5	AM1-TTV	242	128	116	140	6,5	ADA40	284	158	91	7	ASR130	316	258	122	10
100	4"	217	205	7	AM1-TTV	260	128	116	140	8	ADA80	324	177	111	9,5	ASR130	334	258	122	11,5
125	5"	235	330	9,5	AM1-TTV	279	128	120	200	10	ADA130	353	225	135	12	ASR300	376	348,5	152,5	19
150	6"	245	330	10,5	AM1-TTV	288	128	120	200	11	ADA200	380	225	135	14,5	ASR300	397	348,5	152,5	20
200	8"	285	330	16,5	AM1-TTV	328	128	120	200	17	ADA200	420	225	135	20,5	ASR500	457	397	173	30,5
250	10"	331	600	25	AM2-TTV	352	175	223	300	25,5	ADA300	430	273	152,5	40	ASR850	469	473	191,5	44
300	12"	363	600	33	AM2-TTV	384	175	223	300	34	ADA500	479	304	176	41,5	ASR1200	529	560	212,5	64,5
350	14"	-	-	-	AM3-TTV	427	224	322	400	48,5	ADA1200	549	439	212,5	65	ASR1750	580	601	242,5	85
400	16"	-	-	-	AM3-TTV	467	224	322	400	61,5	ADA1750	620	461	242,5	84,5	ASR2500	759	702	276,5	152
450	18"	-	-	-	ARC10	486	226	381	600	106	ADA2100	703	510	276,5	102	ASR4000	824	940	415	270
500	20"	-	-	-	ARC11	542	258	402	600	144	ADA2500	823	518	356	187	-	-	-	-	-
600	24"	-	-	-	ARC12	630	322,5	447	700	216	ADA2500	863	630	415	247	-	-	-	-	-
700	28"	-	-	-	ARC13	699	390	447	500	307	-	-	-	-	-	-	-	-	-	-
750	30"	-	-	-	ARC14	723	390	447	500	345	-	-	-	-	-	-	-	-	-	-
800	32"	-	-	-	ARC15	779	390	447	700	379	-	-	-	-	-	-	-	-	-	-
900	36"	-	-	-	ARC16	824	469	500	600	580	-	-	-	-	-	-	-	-	-	-
1000	40"	-	-	-	ARC16	894	469	500	600	736	-	-	-	-	-	-	-	-	-	-
1100	44"	-	-	-	ARC16	954	469	500	600	927	-	-	-	-	-	-	-	-	-	-
1200	48"	-	-	-	ARC17	1012	574	556	800	1107	-	-	-	-	-	-	-	-	-	-
1300	52"	-	-	-	ARC18	1237	574	589	700	1882	-	-	-	-	-	-	-	-	-	-
1400	56"	-	-	-	ARC18	1257	713	589	700	2132	-	-	-	-	-	-	-	-	-	-
1600	64"	-	-	-	ARC19	1422	713	589	700	2582	-	-	-	-	-	-	-	-	-	-