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SELF-CENTERING DISC OBTURATOR®

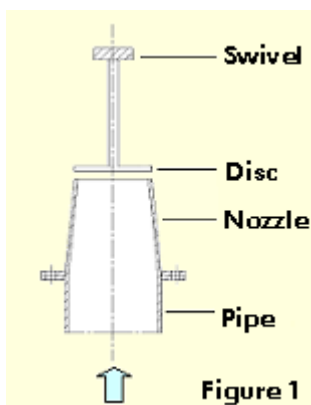
Regulation of
downstream level at the
end of under pressure
pipeline

The Self-Centering Disc Obturator® is placed at the end of a pressure pipeline; it controls the water level within the reservoir, where it is installed, regardless of the flow variations. Thus, it has both functions of:

- Adjusting the upstream pipeline flow rate with the downstream side consumed flow rate.
- Local energy dissipation under the best possible conditions.

Principle

The upstream pipeline is connected to a vertical orifice (nozzle) at its end, above which is placed a flat disc linked with a operating rod.



Self-Centering Disc Obturator®
are trademark.



When exposed to the jet of water, the disc centers itself even in the absence of any lateral guiding. Using a rocker arm, the disc is operated by a cylindrical float having a vertical axis; the float moves in a chamber communicated with the downstream reservoir.

The advantages:

- No friction,
- No cavitation,
- Perfectly tight in closed position,
- Sensitivity and progressiveness on operation,
- Wear resistant,
- No water hammer,
- Can be used at the highest heads and for any flow,
- Extensive range of types and sizes.

The applications:

- Water supply of reservoirs,

- Flow regulation of bottom off takes from dams,
- Flow regulation at the intake of water treatment plants,
- As energy breakers on downstream controlled water supply mains.

Two types of obturators are available:

The hooded disc obturator® type

- OBCA:

The orifice and disc are located above the water level to be controlled. The orifice is a sharp-lipped nozzle and the disc is flat.

The submerged disc obturator® type OBNO:

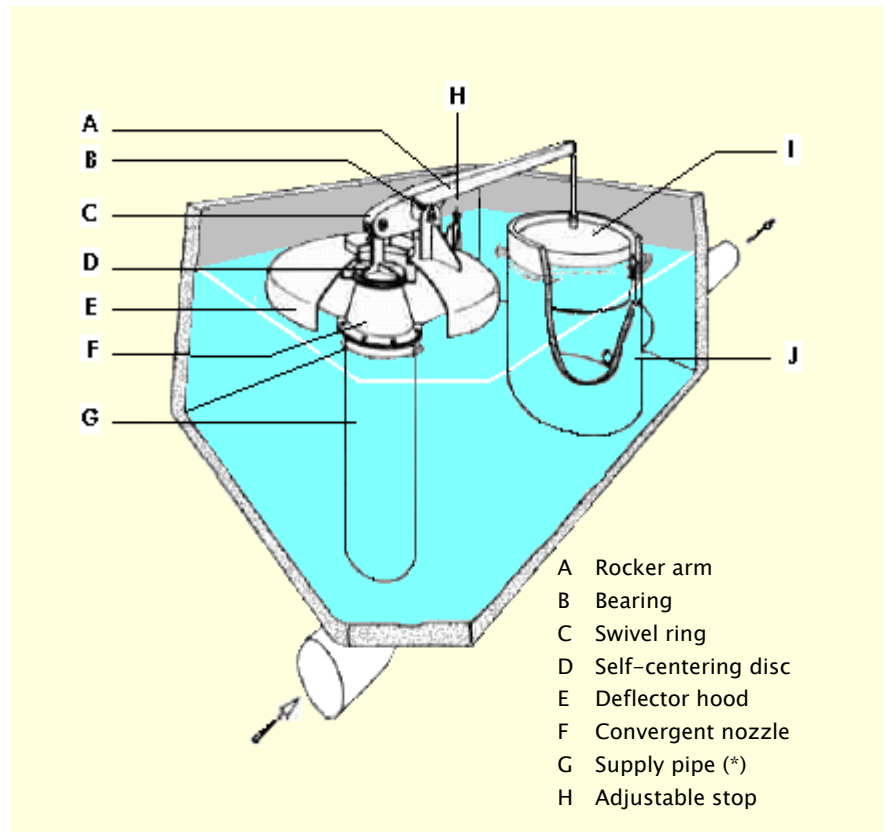
The orifice and disc are located below the water level surface to be controlled. The orifice is special structured nozzle and the disc has a conical shape.

Installation principle:

**The hooded disc obturator®-
OBCA:**

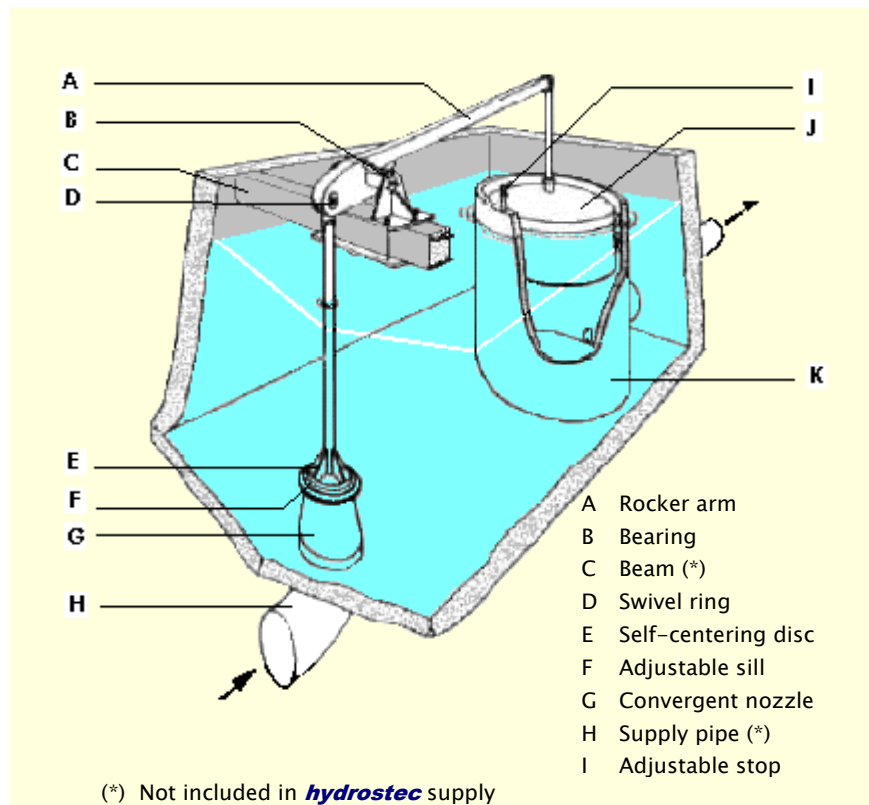
The hooded disc obturator® is supplied as a monoblock construction, facilitating its site installation.

A completely watertight seal is provided by a reinforced rubber lining on the underside of the disc.



**The submerged disc obturator®-
OBNO:**

The submerged disc obturator rocker arm bearings are set on a fixed horizontal concreted beam, which is sized to support the combined thrusts of disc and float.



(*) Not included in **hydrostec** supply

Operation principle

Through the rock arm, the float controls the self-centering disc, which regulates the aperture through the water flows. When the water level in the reservoir rises, the float is lifted thus tending to close the obturator. The float chamber communicates with the reservoir through an orifice, which is equipped with a control valve, thus providing and adjustable damping effect.

Standard material features

Hooded disc obturator®:

- Nozzle $\varnothing = 32 - 50 - 80 - 125 - 160 - 200 - 250 - 315 - 400 - 500 - 630$ mm.
- Maximum static pressure:
 - . 250 mcw for $\varnothing 32$ to 160,
 - . 160 mcw for $\varnothing 200$ to 250,
 - . 100 mcw for $\varnothing 315$ to 500.

Submerged disc obturator®:

- Nozzle $\varnothing = 125 - 160 - 200 - 250 - 315 - 400 - 500 - 630 - 800 - 1000$ mm.
- Maximum static pressure: 60 mcw

Larger devices or devices for use with higher pressures than the specified limits can be supplied upon request.

Equipment choice

In order to size an obturator, the following shall be known:

- Q_{max} : Maximum discharge to be controlled.
- H_r : Residual head or minimum net head available at maximum discharge (with $H_r \leq 2$ mcw)
- H_s : Maximum static head at zero discharge.

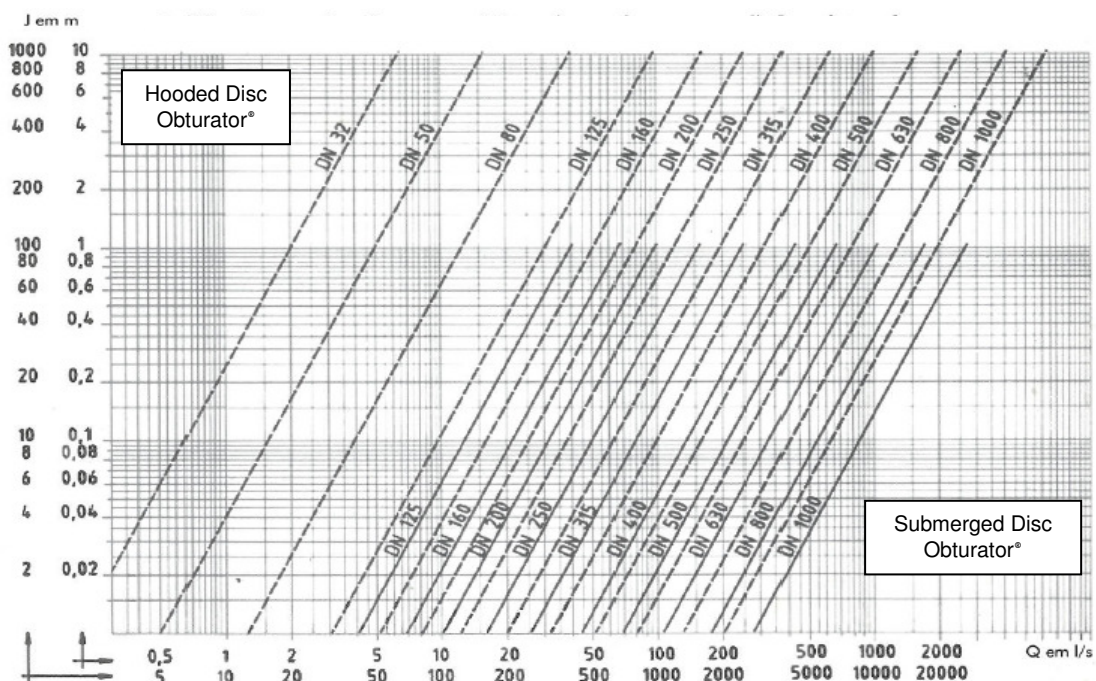
The hydrostatic head shall be less than or equal to the standardized hydrostatic head of the equipment, listed in the table for characteristics and dimensions. The obturator diameter shall be sufficient to allow the discharge Q_{max} under the residual head of H_r , and the own head loss J shall be less than or equal to H_r .

The chart below shows an easy way to size the equipment.

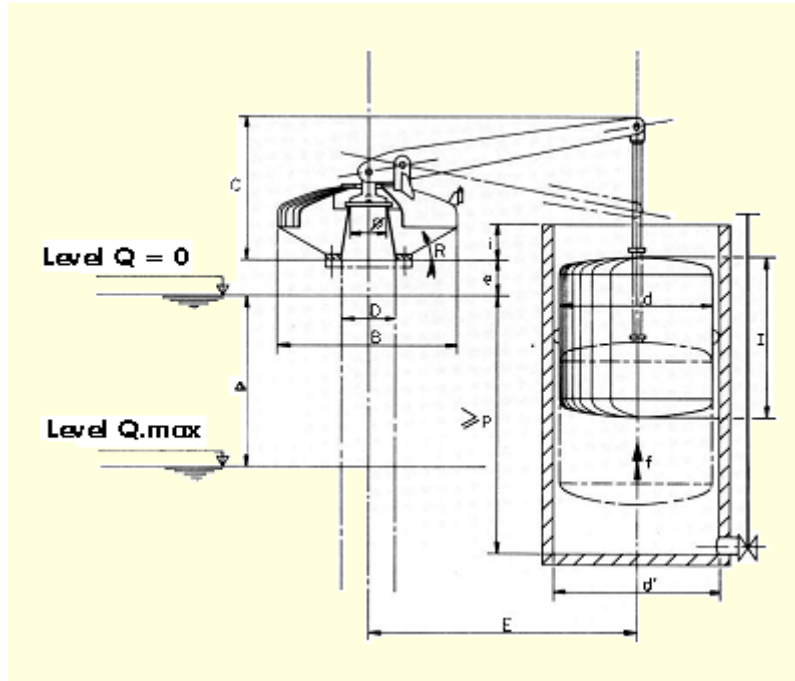
In order to calculate the return reservoir volume, the following dissipated power values are typically employed per m^3 :

- 7,5 kW for Hooded Disk Obturator®.
- 2,2 kW for Submerged Disc Obturator®.

Chart of minimum head losses (at full opening) for Obturators:



Hooded Disc Obturator® : Characteristics and Dimensions



Ø mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
32	25	32	250	250	50	450	80	35	420	6,3	275	220	300	180	4	20
	40	250	270	50	600	80	35	470	6,3	275	220	300	240	5	20	
	50	250	240	50	420	100	35	460	8	275	250	300	200	5	20	
	60	250	270	50	520	100	35	470	8	275	250	300	230	6	20	
	80	250	250	50	460	125	35	480	10	275	300	300	240	6	20	
	100	250	230	50	400	125	35	550	12,5	300	360	350	230	7	20	
	125	250	250	50	500	160	35	580	12,5	300	360	350	270	8	25	
	160	250	240	50	460	160	35	510	16	350	310	400	260	10	25	
	200	250	240	50	440	200	35	560	20	350	370	400	290	12	25	
250	250	260	50	540	200	35	600	20	350	370	400	300	14	25		

Ø mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
50	10	25	300	300	80	660	80	50	570	10	275	300	300	280	9	30
	32	300	280	80	550	80	50	600	12,5	300	360	350	270	9	30	
	40	300	260	80	480	80	50	500	16	350	310	400	250	10	30	
	50	300	290	80	610	100	50	560	16	350	310	400	290	13	35	
	60	300	280	80	540	100	50	600	20	350	370	400	310	15	35	
	80	300	280	80	540	125	50	560	25	400	330	450	300	18	35	
	100	300	270	80	510	125	50	580	31,5	400	390	450	340	21	40	
	25	125	300	300	80	630	160	50	630	31,5	400	390	450	380	26	40
	160	300	300	80	600	160	50	600	40	450	370	500	380	31	40	
	200	300	290	80	590	200	50	700	50	450	450	500	420	38	40	
	250	300	280	80	550	200	50	640	63	550	410	600	490	45	55	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
80	10	25	400	360	125	730	100	80	600	25	400	330	450	360	24	50
		32	400	350	125	700	100	80	660	31,5	400	390	450	390	29	50
		40	400	350	125	660	100	80	600	40	450	370	500	390	35	50
		50	400	340	125	640	125	80	700	50	450	450	500	430	41	55
		60	400	370	125	760	125	80	730	50	450	450	500	470	50	55
		80	400	360	125	770	160	80	700	63	550	410	600	440	62	70
		100	400	370	125	750	160	80	800	80	550	500	600	490	96	70
	16	125	500	430	125	750	200	80	880	100	550	600	600	550	120	85
		160	500	450	125	750	200	80	900	125	650	630	700	530	155	100
	25	200	550	450	125	930	250	80	900	160	750	600	800	520	190	150
	250	550	450	125	880	250	80	1000	200	750	700	800	570	225	150	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
125	6	25	650	530	200	960	125	125	760	63	550	410	600	490	80	110
		32	650	530	200	950	125	125	860	80	550	500	600	550	100	120
		40	650	540	200	970	125	125	960	100	550	600	600	610	125	120
		50	650	540	200	940	160	125	980	125	650	630	700	570	155	130
		60	650	530	200	900	160	125	950	160	750	600	800	550	190	140
	10	80	650	630	200	1160	200	125	1030	160	750	600	800	640	250	180
		100	650	630	200	1130	200	125	1100	200	750	700	800	700	290	180
	16	125	750	680	200	1140	250	125	1170	250	850	740	900	690	370	240
		160	750	680	200	1150	250	125	1260	315	850	870	900	790	470	250
	25	200	900	700	200	1340	315	125	1400	400	900	980	1000	830	690	360
	250	900	700	200	1340	315	125	1400	500	1000	1000	1100	750	860	380	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
160	4	16	800	600	250	1060	160	160	900	80	550	500	600	560	110	160
		20	800	600	250	1060	160	160	1000	100	550	600	600	620	135	160
		25	800	600	250	1040	160	160	1000	125	650	630	700	590	170	170
		32	800	630	250	1260	160	160	1100	125	650	630	700	660	210	180
		40	800	650	250	1270	160	160	1070	160	750	600	800	740	260	190
	6	50	800	680	250	1240	200	160	1150	200	750	700	800	720	330	210
		60	800	680	250	1280	200	160	1170	250	850	740	900	700	410	240
	10	80	800	750	250	1220	250	160	1320	315	850	870	900	800	500	280
		100	800	750	250	1500	250	160	1370	315	850	870	900	900	610	290
	16	125	1000	770	250	1470	315	160	1500	400	900	980	1000	940	750	390
	160	1000	770	250	1500	315	160	1530	500	1000	1000	1100	950	950	400	
25	200	1200	820	250	1550	400	160	1700	630	1000	1190	1100	1070	1250	530	
	250	1200	820	250	1520	400	160	1800	800	1100	1290	1200	1110	1590	600	

∅ mm	PN Bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
200	2,5	16	1000	750	300	1310	125	200	1100	125	650	630	700	660	210	250
		20	1000	750	300	1260	125	200	1050	160	750	600	800	640	250	260
		25	1000	800	300	1530	125	200	1150	160	750	600	800	750	320	260
	4	32	1000	900	300	1520	160	200	1250	200	750	700	800	810	390	300
		40	1000	900	300	1550	160	200	1300	250	850	740	900	810	500	330
	6	50	1000	900	300	1530	200	200	1450	315	850	870	900	890	620	360
		60	1000	900	300	1450	200	200	1500	400	900	980	1000	950	780	380
	10	80	1000	950	300	1500	250	200	1550	500	1000	1000	1100	950	955	430
		100	1000	950	300	1500	250	200	1700	630	1000	1190	1100	1080	1210	450
	16	125	1200	1000	300	1820	315	200	1850	630	1000	1190	1100	1190	1460	580
	160	1200	1000	300	1830	315	200	1950	800	1100	1290	1200	1220	1900	650	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
250	1,6	16	1300	1020	400	1700	160	250	1200	160	750	600	800	820	350	420
	2,5	20	1300	1020	400	1700	160	250	1300	200	750	700	800	900	440	460
		25	1300	1020	400	1700	160	250	1300	250	850	740	900	890	550	490
	4	32	1300	1050	400	1700	200	250	1450	315	850	870	900	990	690	540
		40	1300	1050	400	1700	200	250	1600	400	900	980	1000	1050	870	550
	6	50	1300	1070	400	1700	250	250	1600	500	1000	1000	1100	1050	1090	600
		60	1300	1070	400	1700	250	250	1750	630	1000	1190	1100	1160	1370	620
	10	80	1300	1080	400	1700	315	250	1850	800	1100	1290	1200	1230	1770	730
		100	1300	1080	400	1700	315	250	1900	1000	1200	1330	1300	1270	2180	770
	16	125	1500	1200	400	2130	400	250	2050	1000	1200	1330	1300	1390	2720	1000
	160	1500	1220	400	2210	400	250	2050	1250	1400	1290	1500	1340	3540	1110	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
315	1	10	1600	1270	500	2170	160	315	1300	160	750	600	800	960	450	630
	1,6	12,5	1600	1270	500	2140	160	315	1400	200	750	700	800	1030	550	680
		16	1600	1280	500	2220	160	315	1500	250	850	740	900	1040	710	720
	2,5	20	1600	1280	500	2190	160	315	1650	315	850	870	900	1130	880	760
		25	1600	1280	500	2170	160	315	1700	400	900	980	1000	1180	1110	780
	4	32	1600	1300	500	2170	200	315	1700	500	1000	1000	1100	1200	1380	830
		40	1600	1300	500	2190	200	315	1900	630	1000	1190	1100	1330	1760	850
	6	50	1600	1300	500	2170	250	315	2000	800	1100	1290	1200	1350	2260	970
		60	1600	1300	500	2170	250	315	2050	1000	1200	1330	1300	1360	2770	1010
	10	80	1600	1350	500	2220	315	315	2050	1250	1400	1290	1500	1340	3550	1180
	100	1600	1320	500	2170	315	315	2300	1600	1400	1570	1500	1510	4440	1250	

∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
400	1	10	2000	1450	600	2350	200	400	1650	315	850	870	900	1140	950	990
	1,6	12,5	2000	1450	600	2300	200	400	1700	400	900	980	1000	1190	1180	1040
		16	2000	1450	600	2375	200	400	1800	500	1000	1000	1100	1220	1510	1060
	2,5	20	2000	1450	600	2350	200	400	1950	630	1000	1190	1100	1340	1890	1130
		25	2000	1450	600	2300	200	400	2000	800	1100	1290	1200	1350	2350	1200
	4	32	2000	1450	600	2300	250	400	2100	1000	1200	1330	1300	1420	2930	1290
		40	2000	1550	600	2800	250	400	2250	1000	1200	1330	1300	1590	3570	1310
	6	50	2000	1550	600	2825	315	400	2250	1250	1400	1290	1500	1530	4530	1490
		60	2000	1550	600	2800	315	400	2500	1600	1400	1570	1500	1520	5700	1570
	8	80	2000	1600	600	2850	400	400	2450	2000	1600	1500	1700	1680	7260	1700
	100	2000	1600	600	2850	400	400	2850	2500	1600	1790	1700	1910	9100	1940	

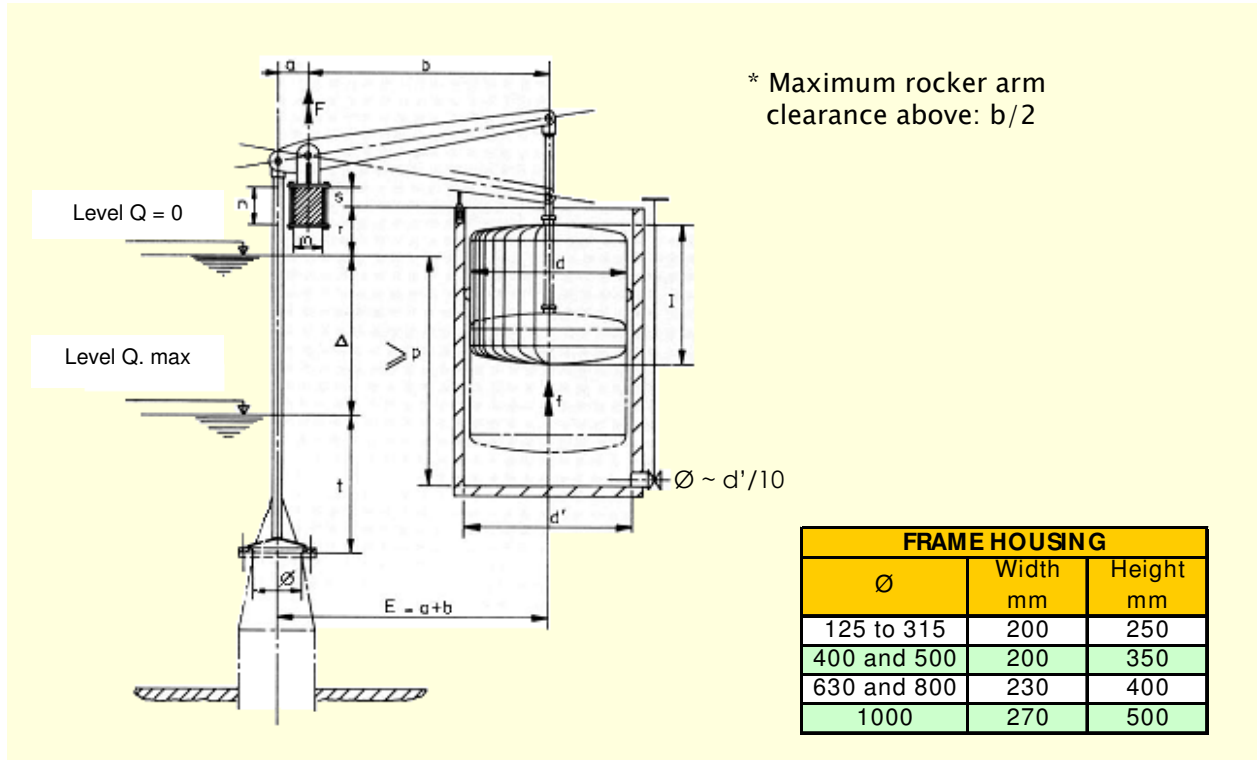
∅ mm	PN bar	Hs m	B mm	C ** mm	D* mm	E mm	e mm	i mm	p mm	f daN	d mm	l mm	d' mm	Δmax mm	R daN.m	Weight kg
500	1	10	2500	2000	800	2875	200	500	2150	500	1000	1000	1100	1410	1830	1920
	1,6	12,5	2500	2000	800	2875	200	500	2300	630	1000	1190	1100	1490	2310	1990
		16	2500	2000	800	2875	200	500	2400	800	1100	1290	1200	1530	3000	2070
	2,5	20	2500	2000	800	2875	200	500	2450	1000	1200	1330	1300	1570	3660	2170
		25	2500	2000	800	2875	200	500	2450	1250	1400	1290	1500	1510	4600	2270
	4	32	2500	2000	800	2850	250	500	2700	1600	1400	1570	1500	1660	5820	2420
		40	2500	2150	800	3475	250	500	3000	1600	1400	1570	1500	2060	7100	2450
	5	50	2500	2200	800	3475	315	500	2950	2000	1600	1500	1700	1960	8870	2610
	6	60	2500	2200	800	3475	315	500	3200	2500	1600	1790	1700	2150	11100	2850
	8	80	2500	2250	800	3500	400	500	3250	3150	1800	1780	1900	2080	14100	3120
	100	2500	2250	800	3450	400	500	3550	4000	1800	2150	1900	2350	17600	3500	

(*) Recommended dimensions: can be changed according to upstream pipeline.

(**) Dimensions corresponding only to recommended D.

Flanges PN10 for nominal pressures until 10 bar; PN 16 and PN25 for pressures from 16 to 25 bar (According to ISO 2531 standard).

Submerged Disc Obturator[®]: Characteristics and Dimensions



Ø mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
125	2,5	10	80	735	815	200	50	100	(1)	700	31,5	400	390	450	0,32	400	(2)	65
	12,5	80	725	805	200	50	100	650		40	450	370	500	0,4	400	70		
	16	80	715	795	200	50	100	700		50	450	450	500	0,5	450	70		
	20	80	890	970	200	50	100	750		50	450	450	500	0,63	500	70		
	25	80	855	935	200	50	100	700		63	550	410	600	0,8	460	85		
	4	31,5	80	830	910	200	50	100		800	80	550	500	600	1	510		95
	40	80	830	910	200	50	100	900		100	550	600	600	1,2	560	100		
	6	50	125	1010	1135	200	50	120		900	160	750	600	800	1,6	480		150
	60	125	960	1085	200	50	120	1050		200	750	700	800	2	540	180		

Ø mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
160	1,6	10	100	875	975	200	60	100	(1)	750	50	450	450	500	0,5	510	(2)	85
	12,5	100	865	965	200	60	100	700		63	550	410	600	0,63	460	100		
	16	100	850	950	200	60	100	800		80	550	500	600	0,8	520	110		
	2,5	20	100	850	950	200	60	100		900	100	550	600	600	1	580		120
	25	100	1050	1150	200	60	100	950		100	550	600	600	1,2	650	120		
	4	31,5	125	1015	1140	200	60	120		1000	160	750	600	800	1,6	550		160
	40	125	1015	1140	200	60	120	1050		200	750	700	800	2	620	160		
	6	50	140	1120	1260	200	60	140		1150	250	850	740	900	2,5	620		240
	60	140	1120	1260	200	60	140	1250		315	850	870	900	3,2	690	250		

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
200	1	10	125	1000	1125	200	80	100	(1)	850	80	550	500	600	0,8	580	(2)	110
	1,6	12,5	125	1000	1125	200	80	100		950	100	550	600	600	1	650		120
		16	125	1000	1125	200	80	100		1000	125	650	630	700	1,2	620		130
	2,5	20	125	1250	1375	200	80	120		1050	125	650	630	700	1,6	700		150
		25	125	1225	1350	200	80	120		1000	160	750	600	800	2	680		160
	4	31,5	140	1100	1240	250	80	140		1150	250	850	740	900	2,5	670		230
		40	140	1130	1270	250	80	140		1350	315	850	870	900	3,2	770		250
	6	50	180	1370	1550	250	80	140		1400	400	900	980	1000	4	830		320
		60	180	1410	1590	250	80	140		1450	500	1000	1000	1100	5	810		340

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
250	1	10	160	1375	1535	200	100	100	(1)	1100	125	650	630	700	1,2	700	(2)	150
	1,6	12,5	160	1325	1485	200	100	120		1050	160	750	600	800	1,6	660		180
		16	160	1350	1510	200	100	120		1150	200	750	700	800	2	740		190
	2,5	20	160	1350	1510	250	100	140		1200	250	850	740	900	2,5	750		260
		25	160	1290	1450	250	100	140		1300	315	850	870	900	3,2	830		280
	4	31,5	180	1460	1640	250	100	140		1550	400	900	980	1000	4	890		340
		40	180	1460	1640	250	100	140		1550	500	1000	1000	1100	5	900		360
	6	50	200	1610	1810	320	100	160		1750	630	1000	1190	1100	6,3	1030		450
		60	200	1570	1770	320	100	160		1850	800	1100	1290	1200	8	1050		520

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight Kg
315	1	10	200	1775	1975	250	125	120	(1)	1300	200	750	700	800	2	880	(2)	250
	1,6	12,5	200	1700	1900	250	125	140		1300	250	850	740	900	2,5	860		330
		16	200	1700	1900	250	125	140		1450	315	850	870	900	3,2	960		350
	2,5	20	200	1675	1875	320	125	140		1500	400	900	980	1000	4	1000		410
		25	200	1650	1850	320	125	140		1600	500	1000	1000	1100	5	1000		420
	4	31,5	200	1650	1850	320	125	160		1750	630	1000	1190	1100	6,3	1130		510
		40	200	1600	1800	320	125	160		1850	800	1100	1290	1200	8	1170		590
	6	50	220	1790	2010	320	125	180		2050	1000	1200	1330	1300	10	1200		710
		60	220	1790	2010	320	125	180		2050	1250	1400	1290	1500	12,5	1110		810

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight Kg
400	1	10	250	2225	2475	320	160	140	(1)	1650	315	850	870	900	3,2	1100	(2)	380
	1,6	12,5	250	2100	2350	320	160	140		1650	400	900	980	1000	4	1150		460
		16	250	2100	2350	320	160	140		1750	500	1000	1000	1100	5	1160		480
	2,5	20	250	2025	2275	320	160	160		1850	630	1000	1190	1100	6,3	1280		580
		25	250	2000	2250	320	160	160		1850	800	1100	1290	1200	8	1310		650
	4	31,5	250	2000	2250	400	160	180		2000	1000	1200	1330	1300	10	1380		800
		40	250	2000	2250	400	160	180		1950	1250	1400	1290	1500	12,5	1300		900
	5	50	250	2500	2750	400	160	200		2100	1250	1400	1290	1500	16	1460		1000
	6	60	280	2240	2520	400	160	220		2350	2000	1600	1500	1700	20	1400		1160

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight Kg
500	1	10	315	2575	2890	320	200	140	(1)	1900	500	1000	1000	1100	5	1320	(2)	540
	1,6	12,5	315	2550	2865	320	200	160		2100	630	1000	1190	1100	6,3	1430		640
		16	315	2570	2885	320	200	160		2200	800	1100	1290	1200	8	1470		710
	2,5	20	315	2550	2865	320	200	180		2200	1000	1200	1330	1300	10	1500		870
		25	315	2525	2840	320	200	180		2200	1250	1400	1290	1500	12,5	1440		970
	3,15	31,5	315	2510	2825	400	200	200		2400	1600	1400	1570	1500	16	1600		1170
	4	40	315	2525	2840	400	200	220		2350	2000	1600	1500	1700	20	1580		1380
	5	50	315	2475	2790	400	200	240		2700	2500	1600	1790	1700	25	1780		1660
	6	60	355	2820	3175	400	200	260		2900	3150	1800	1780	1900	32	1730		2070

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
630	1	10	400	3100	3500	400	250	160	(1)	2300	800	1100	1290	1200	8	1800	(2)	950
	1,6	12,5	400	3050	3450	400	250	180		2400	1000	1200	1330	1300	10	1740		1060
		16	400	3150	3550	400	250	180		2400	1250	1400	1290	1500	12,5	1650		1160
	2	20	400	3050	3450	400	250	200		2600	1600	1400	1570	1500	16	1810		1390
	2,5	25	400	3050	3450	400	250	220		2550	2000	1600	1500	1700	20	1780		1640
	3,15	31,5	400	3080	3480	400	250	240		2900	2500	1600	1790	1700	25	1990		1960
	4	40	400	3100	3500	400	250	260		2900	3150	1800	1780	1900	32	1990		2330
	5	50	400	3055	3455	500	250	280		3300	4000	1800	2150	1900	40	2230		2790
6	60	450	3500	3950	500	250	300	3200	5000	2000	2170	2100	50	2210	3510			

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
800	1	10	500	3820	4320	400	320	180	(1)	2600	1250	1400	1290	1500	12,5	1910	(2)	1330
	1,25	12,5	500	3700	4200	400	320	200		2800	1600	1400	1570	1500	16	2020		1540
	1,6	16	500	3750	4250	400	320	220		2850	2000	1600	1500	1700	20	2060		1790
	2	20	500	3800	4300	500	320	240		3100	2500	1600	1790	1700	25	2270		2160
	2,5	25	500	3725	4225	500	320	260		3100	3150	1800	1780	1900	32	2220		2550
	3,15	31,5	500	3700	4200	500	320	280		3400	4000	1800	2150	1900	40	2480		3090
	4	40	500	3775	4275	500	320	300		3500	5000	2000	2170	2100	50	2560		3740
	5	50	500	3750	4250	500	320	320		3900	6300	2000	2650	2100	63	2910		4260
6	60	530	3760	4290	500	320	360	4050	8000	2400	2430	2600	80	2630	5060			

∅ mm	PN bar	Hs m	a mm	b mm	E mm	r mm	s mm	m mm	n mm	p mm	f daN	d mm	l mm	d' mm	F tf	Δmax mm	t mm	Weight kg
1000	1	10	630	4750	5380	500	400	220	(1)	3150	2000	1600	1500	1700	20	2340	(2)	2100
	1,25	12,5	630	4725	5355	500	400	240		3400	2500	1600	1790	1700	25	2550		2490
	1,6	16	630	4700	5330	500	400	260		3400	3150	1800	1780	1900	32	2560		2930
	2	20	630	4675	5305	500	400	280		3800	4000	1800	2150	1900	40	2813		3450
	2,5	25	630	4675	5305	500	400	300		3800	5000	2000	2170	2100	50	2830		4160
	3,15	31,5	630	4650	5280	500	400	320		4200	6300	2000	2650	2100	63	3185		4810
	4	40	630	4650	5280	500	400	360		4050	8000	2400	2430	2600	80	2980		5580
	5	50	630	4650	5280	630	400	400		4550	10000	2400	2930	2600	100	3360		6780
6	60	630	4650	5280	630	400	400	4600	12500	2700	3000	2900	125	3255	8580			

- (1) "n" dimension should be indicated on the purchase order. The beam should be "m x n" over length not below 4xa.
- (2) Usually "t" is about half of the water depth at minimum level (with Q_{max}), and should never be lower than 1,25∅.



Criteria for choosing between Hooded Disc Obturator® and Submerged Disc Obturator®

Submerged Disc Obturator®:

The Submerged Disc Obturator® has a higher discharge coefficient than the Hooded Disc Obturator®; for the same discharge, the minimum head necessary is almost twice as small.

The Submerged Disc Obturator® is particularly recommended in cases of high discharge, when the available minimum hydrostatic head is low.

Other advantages of the Submerged Disc Obturator® are its silent operation, without splashing up or formation fog.

Hooded Disc Obturator®:

The deflection of the jet by the

hood, added to the distribution of the jet in a circle having a diameter much larger than that of the outlet orifice, provides this type of obturator with an excellent capacity to dissipate the energy. With the same power as a Submerged Disc Obturator®, it requires a dissipation volume three times as small. The Hooded Disc Obturator® is therefore particularly recommended for the equipment of water supply facilities under high heads.

Decrement

The decrement of the obturator is the variation between the two limit levels in the dissipation:

- The minimum level, corresponding to the lowest position of the float, that is, the largest aperture of the disc, and therefore to the maximum discharge under

the lowest head.

- The maximum level, corresponding to the highest position of the float, that is, complete disc closure, and therefore to null discharge under maximum hydrostatic pressure.

The decrement varies according to disc pattern, discharge rate and head. For instance, for a Ø 200 mm disc having a discharge rate of 500l/s under 20 mca, the decrement is 700 mm.

Reducing the decrement

If the actual value of the decrement is considered excessive, it can sometimes be considerably reduced by using a special layout known as regulating gate ("danaïde"), which however causes a small water loss due to a discharge leakage (about 1% to 3% of the total discharge).