



The HYDROMAT®

Technical Information

Since 1953



Product overview + Supply capability

Nominal diameters	DN150 - DN1200
Nominal pressure stages	PN10 and PN16

These nominal diameters and nominal pressure stages are available from the Heidelberg warehouse (DN150-DN600 several units each, DN700-DN1200 one unit each)

Nominal diameters	> DN1200
Nominal pressure stages	> PN16

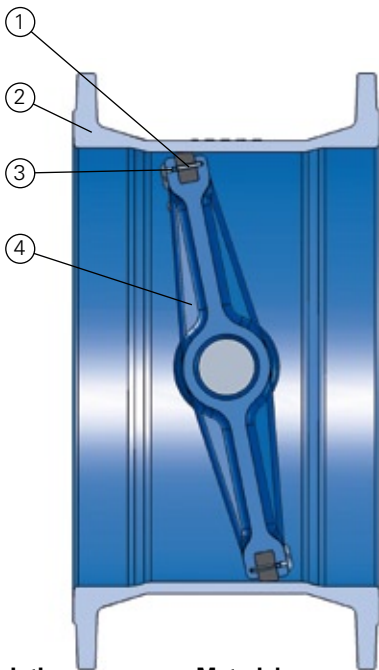
Nominal diameters greater than DN1200 and nominal pressure stages greater than PN16 are manufactured project-specifically (complete manufacture within Germany and the resulting short transport distances allow manufacture within six weeks).



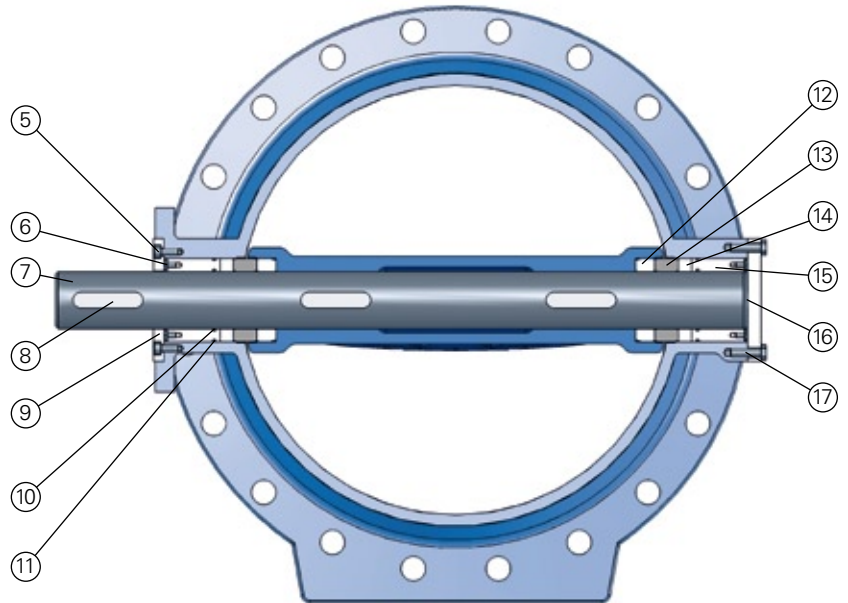
Basics from A to Z

Applications	For the recovery, transport and distribution of suitable media, as well as for process plants and industrial applications	
Cavitation	The expected limit cases are investigated and calculated on a project-specific basis	
Type	According to DIN EN 593 (replaces DIN 3354)	
Connections	PN 2.5 - 40 according to the current DIN EN ISO standards	
Limit speed	Assignment of limit speeds to the pressure stages in accordance with DIN EN 1074, PN10 max. 3m/s, PN16 max. 4m/s	
Media	Aqueous media, without solid matter	
Overall lengths	Basic series 14 according to DIN EN 558-1	F4, short overall length
	Basic series 15 according to DIN EN 558-1	F5, long overall length, overall length of gate valve
Pressure testing	Following final assembly, each HYDROMAT is subjected to 1.8 times the nominal pressure rating.	
Temperature range	-25°C to 125°C	
Certification	Company: Hydromats:	DIN EN ISO 9001: 2000 DVGW



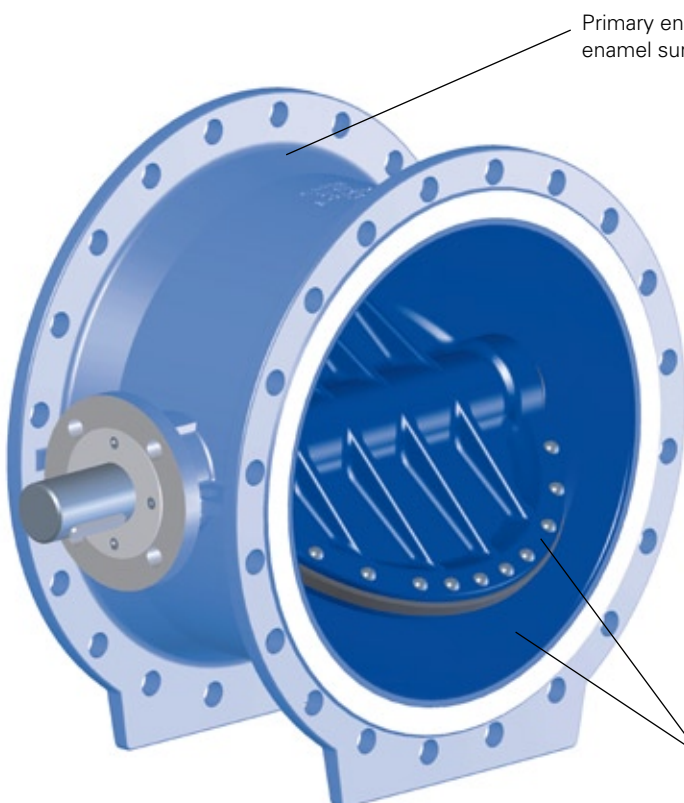


No.	Description	Material
1	Straight grooved pin	X14CrMoS17
2	Housing	EN-GJS-500-7
3	Oval head cap screw	A2 / A4-70
4	Valve disk	EN-GJS-500-7



No.	Description	Material
5	Cheese head screw	A2 / A4-70
6	Hexagon bolt	A2 / A4-70
7	Disk shaft	X20Cr13
8	Fitted key	X17CrNi16-2
9	Joining ring	S235JR
10	O-Ring	EPDM
11	O-Ring	EPDM
12	Junk ring	CuSn7ZnPb
13	Seal	EPDM
14	Spacerband	CuSn7ZnPb
15	Bearing bush (maintenance-free)	CuSn7ZnPb
16	Cover plate	S235JR
17	Hexagon bolt	A2 / A4-70

Surfaces



Primary enamel coating + impact-resistant 2K epoxy resin enamel surface coating or electrostatic plastic coating (EPC)

The standard HYDROMAT® is a completely enamelled valve assembly. The outer surface of the housing has a primary enamel coating and a rugged, impact-resistant 2K epoxy resin enamel surface coating. The interior of the housing and the valve disk are coated with impact-resistant enamel.

According to requirements and condition of the medium or budget, on request the surfaces can be treated with:

- Wet-paint enamel
- EPC
- EPC / enamel
- Enamel

Special coatings or special linings are available on request.

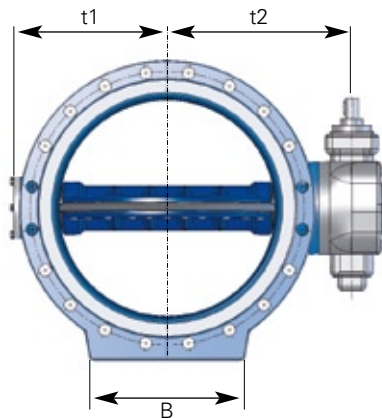
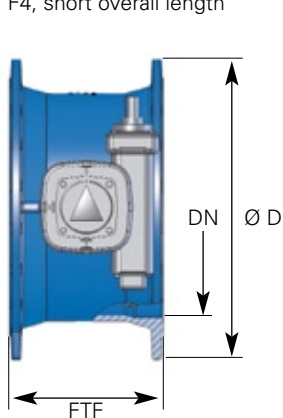
Enamel or EPC

Dimensions and Weights

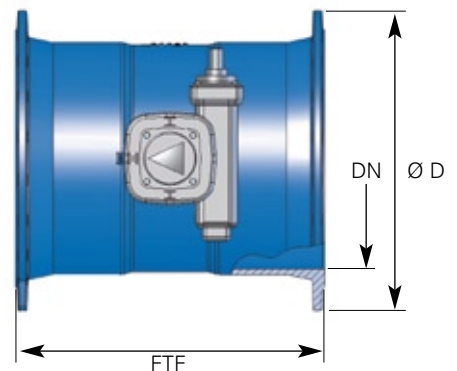
DN	PN	FTF [mm]		ØD [mm]	B [mm]	t1 [mm]	t2 [mm]	Weight [kg]	
		short	long					short	long
150	10	210	350	285	150	155	200	36	41
	16								
200	10	230	400	340	160	175	230	60	70
	16			340					
250	10	250	450	395	180	210	250	75	85
	16			395					
300	10	270	500	445	200	250	290	99	119
	16			460					
350	10	290	550	505	225	280	350	148	183
	16			520					
400	10	310	600	565	300	300	370	158	193
	16			580					
500	10	350	700	670	350	350	420	253	333
	16			715					
600	10	390	800	780	330	450	515	503	563
	16			840					
700	10	430	900	895	400	500	510	580	730
	16			910					
800	10	470	1000	1015	450	570	660	845	1060
	16			1025					
900	10	510	1100	1115	550	620	715	990	1260
	16			1125					
1000	10	550	1200	1230	600	700	823	1440	1840
	16			1255					
1200	10	630	1400	1455	720	825	974	2375	2975
	16			1485					



Basic series 14 according to DIN EN 558-1
F4, short overall length



Basic series 15 according to DIN EN 558-1
F5, long overall length, length of gate valve



The Gearing

② Housing

The housing is made of cast iron or optional of spheroidal cast iron. The gear housing is filled with grease. Therefore an optimal lubrication is guaranteed in any mounting position.

③ Gearing

Principal item is the worm gearing, which enables a high reduction ratio in one stage.

④ End stops

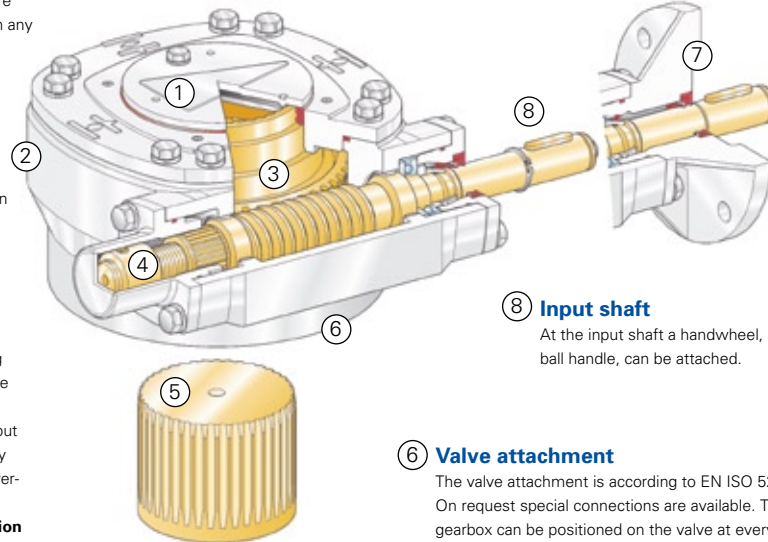
The internal end stops limit the swing angle. The significant advantage of the AUMA design: Not the high output torques but the comparatively low input torques act on the end stops. Thereby high safety against damage due to overload is assured. **Even when the end stops get damaged the basic function of the gearbox is maintained.**

① Mechanical position indicator

The mechanical position indicator is coupled directly to the output drive and therefore to the valve shaft.

⑦ Flange for mounting of multi-turn actuator

The flange sizes are according to EN ISO 5210 (option DIN 3210). A primary reduction gearing can be fitted at the gearbox input side to increase the reduction ratio.



⑧ Input shaft

At the input shaft a handwheel, on request with ball handle, can be attached.

⑥ Valve attachment

The valve attachment is according to EN ISO 5211. On request special connections are available. The gearbox can be positioned on the valve at every 90°.

⑤ Coupling

The separate coupling facilitates easy mounting of the gearbox. It is placed on the valve shaft, subsequently the gearbox is fitted on the valve mounting flange.

HYDROMAT		Transmission/ Reducing gears	Valves/fittings Connection	Coupling/ Shaft	open/ shut	Drive torques for mechanical drives	
Nominal dia. DN	Press. stage PN	AUMA GS - VZ/GZ	DIN EN ISO 5211	Drilling with groove Ø [mm]	U	from [Nm]	to [Nm]
150	10	GS 50.3	F10	22	12	15	30
	16	GS 50.3	F10	22	12	18	30
200	10	GS 63.3	F10	40	12	20	60
	16	GS 63.3	F10	40	12	30	60
250	10	GS 63.3	F10	40	12	32	60
	16	GS 63.3	F10	40	12	48	60
300	10	GS 63.3	F12	45	12	42	60
	16	GS 80.3	F12	45	12	78	110
350	10	GS 80.3	F14	50	12	65	110
	16	GS100.3 VZ 4:1	F14	50	47	35	57
400	10	GS100.3 VZ 4:1	F14	50	47	35	57
	16	GS100.3 VZ 4:1	F14	50	47	48	57
500	10	GS100.3 VZ 4:1	F16	65	47	48	57
	16	GS125.3 VZ 4:1	F16	65	47	76	110
600	10	GS125.3 VZ 4:1	F25	80	47	68	110
	16	GS160.3 GZ 8:1	F25	80	100	65	90
700	10	GS160.3 GZ 8:1	F25	80	100	46	90
	16	GS160.3 GZ 8:1	F25	80	100	75	90
800	10	GS160.3 GZ 8:1	F30	100	100	70	90
	16	GS200.3 GZ16:1	F30	100	193	81	104
900	10	GS200.3 GZ16:1	F30	100	193	65	104
	16	GS200.3 GZ16:1	F30	100	193	92	104
1000	10	GS200.3 GZ16:1	F35	125	193	80	104
	16	GS250.3 GZ16:1	F35	125	193	163	213
1200	10	GS250.3 GZ16:1	F35	140	193	120	213
	16	GS250.3 GZ16:1	F35	140	193	200	213

Calculations

Resistance values for 100% open

DN	200	250	300	350	400	500	600	700	800	900	1000	1100	1200
PN10	0,22	0,26	0,29	0,26	0,23	0,29	0,17	0,15	0,14	0,13	0,11	0,10	0,09
PN16	0,25	0,29	0,32	0,29	0,26	0,32	0,20	0,18	0,17	0,16	0,14	0,13	0,12

Pressure loss

ζ = resistance value of valve assembly [-] from table above

v = Flow rate [m/s]

Δp = Pressure loss [Pa] -105 Pa $\hat{=}$ 1 bar

ρ = Density of water [kg/m³]

$$\Delta p = \zeta \cdot \frac{\rho}{2} \cdot v^2$$

Accessories

Handwheels
according to DIN / UVV



Gully lid
according to DIN with inscription
W – Hydromat



The gully lid indicates to the operator that a Hydromat® is installed below.

Tele installation
kit with indicator
mechanism



Tele
installation kit



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