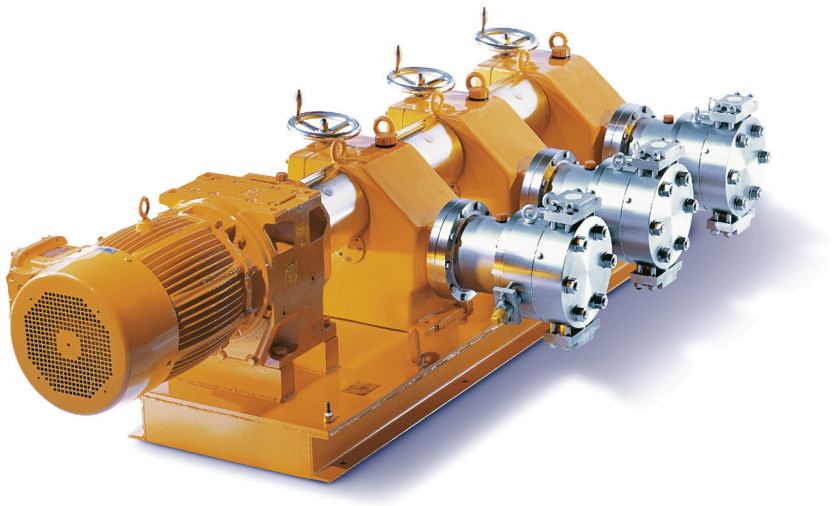
Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure



Capacity range of single pump: 0 – 13,000 l/h, 700 – 6 bar

ORLITA® MF hydraulic diaphragm metering pumps (MFS 18 to MFS 1400) with a stroke length of 15 to 60 mm provide a capacity ranging from 0 to 13,000 l/h at 700 – 6 bar. A wide range of drive versions is available, including some for use in Zone 1 or Zone 2 areas at risk from explosion with ATEX certification. The Orlita® MF product range is designed to comply with API 675. Its modular construction permits the free combination of drives, power ends and dosing heads, producing a pump for a range of different feed rates and media operating at different working pressures.

Your benefits

Excellent process safety and reliability:

- PTFE double diaphragm with integrated diaphragm rupture warning system ensures precise and low-wear operation despite high pressures
- The product chamber is hermetically separated from the hydraulic part
- Integrated hydraulic relief valve and automatic bleed valve for the hydraulic chamber
- Wear-free, valveless enforced anti-cavitation of the hydraulic leakage guarantees optimum dosing precision
- Cone valves for use as suction and/or discharge valves with minimal wear, good self-cleaning and low pressure loss (NPSHR)

Excellent flexibility:

- The modular construction allows a wide range of uses. In multiple pump systems it is possible to combine up to 6 metering units, even with different pump capacities. In single pumps the drive arrangement may be either vertical or horizontal.

Field of application

- Oil/ gas production (onshore/offshore)
- Refineries
- Chemical/Petrochemical industry
- Pharmaceuticals & cosmetics
- Food production
- Packaging industry (bottling pumps)

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Technical Data

Triplex Metering Pumps

With triplex metering pumps, the pressure stroke of each liquid end occurs through 120° of crank travel. This results in a metering flow free of pulsation without the use of elaborate pulsation dampers. This design of process diaphragm pump is preferred in the chemical and petro-chemical industries.

Multiplexed Metering Pumps

The Orlita® MF range's modular construction permits a variable combination of drives, motors and liquid ends e.g. quadruple MF metering pumps with central drive.

Actuation of ORLITA® MF, MH, PS, DR

Control drive consisting of an actuator with servo motor and integral servo controller for stroke length adjustment via a standard signal. Standard signal current input 0/4 – 20 mA, corresponds to stroke length 0 – 100%, switch for manual/automatic operation; key switch for stroke adjustment in manual mode, mechanical status display of actual stroke length value output 0/4 – 20 mA for remote display. Control drives can also be designed with bus systems, like HART, PROFIBUS, Fieldbus Foundation ...

Variable speed motors with integrated frequency converter (identity code specification V)

Power supply 1 ph 230 V, 50/60 Hz (up to 3 kW). Externally controllable with 0/4 - 20 mA.
The following functions are integrated in the terminal box cover:

- Start/stop switch
- Switch for manual/external operation
- Potentiometer for speed control in manual mode

Speed controllers with frequency converter (identity code specification Z)

The frequency converter is accommodated in an IP 55 rated protective housing with integral control unit and main switch, suitable for max. 0.37/0.75 kW motor capacity.

Externally controllable with 0/4 - 20 mA or 0 - 10 V corresponding to 0 - 50 (60) Hz output frequency.

Integrated control unit with versatile functions, such as switching between external/internal control; frequency input using arrow keys with internal control, multilingual fault message display etc. and motor temperature monitoring (thermistor protection).

The speed controller assembly consists of a frequency converter and a variable speed motor.

When ordering a multiplexed pump, the main and/or all externally mounted pumps require a separate Identity code.

For example a triplex pumpe (1.) : MF_aH3.....MF_aAR.....MF_aAR.....

Materials in Contact With the Medium

	Liquid end	Suction/discharge valve housing	Valve seals	Valve	Valve seat	Range
S1 (DIN)	1.4404	None	1.4571	Ceramic	1.4404	DN 3
S1 (ANSI)	A 316 L	N/A	A 316 Ti	Ceramic	A 316 L	
S1 (DIN)	1.4404	1.4404	1.4571	1.4462	1.4462	≥ DN6
S1 (ANSI)	A 316 L	A 316 L	A 316 Ti	Duplex SS	Duplex SS	
S2 (DIN)	1.4462	1.4462	1.4571	1.4462	1.4462	≥ DN6
S2 (ANSI)	Duplex SS	Duplex SS	A 316 Ti	Duplex SS	Duplex SS	
S3 (DIN)	1.4539	1.4539	2.4610	1.4539	1.4539	≥ DN6
S3 (ANSI)	A904L	A904L	Hastelloy C	A904L	A904L	

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Motor Data

A	50 Hz	3 ph. 230/400 V	3 ph. 500 V	3 ph. 380/660 V
		3 ph. 400/690 V	3 ph. 415 V	
B (adjustable 1:5)	50 Hz	3 ph. 230/400 V	3 ph. 500 V	3 ph. 380/660 V
		3 ph. 400/690 V	3 ph. 415 V	
H	60 Hz	3 ph. 220/380 V	3 ph. 400 V	
K (adjustable 1:5)	60 Hz	3 ph. 220/380 V	3 ph. 400 V	

Technical data for MFS 18 single head pump 50 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		45 [3]	58 [4]	73 [5]	91 [6]	112 [7]	145 [8]	207 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
7	0.58	1.5	2.0	2.5	3.1	3.8	5.0	7.1	400	0.50	0.70	DK DN 3
8	0.75	2.0	2.6	3.2	4.1	5.0	6.5	9.3	348	0.55	0.72	DK DN 3
10	1.18	3.2	4.1	5.1	6.4	7.8	10.2	14.6	222	0.67	0.79	Ke DN 6
11	1.43	3.8	4.9	6.2	7.7	9.5	12.4	17.7	184	0.67	0.79	Ke DN 6
12	1.70	4.6	5.9	7.3	9.2	11.3	14.7	21.0	154	0.84	0.88	Ke DN 6
14	2.31	6.2	8.0	10.0	12.5	15.4	20.0	28.7	113	0.85	0.88	Ke DN 6
16	3.02	8.2	10.5	13.1	16.4	20.1	26.2	37.4	87	0.86	0.88	Ke DN 6
18	3.82	10.3	13.2	16.6	20.7	25.5	33.2	47.4	68	0.87	0.88	Ke DN 6
20	4.71	12.8	16.4	20.5	25.6	31.5	41.0	58.5	55	0.88	0.89	Ke DN 6
22	5.70	15.5	19.8	24.8	31.0	38.1	49.6	70.8	46	0.88	0.89	Ke DN 10/6
25	7.36	20.0	25.6	32.0	40.0	49.2	64.0	91.5	35	0.89	0.89	Ke DN 10
27	8.59	23.3	29.8	37.3	46.7	57.4	74.7	106.7	30	0.89	0.89	Ke DN 10
29	9.91	26.9	34.4	43.1	53.8	66.3	86.2	123.1	26	0.89	0.89	Ke DN 10
30	10.60	28.8	36.9	46.1	57.6	70.9	92.2	131.7	24	0.89	0.89	Ke DN 10
36	15.27	41.5	53.1	66.4	83.0	102.1	132.8	189.7	17	0.89	0.89	Ke DN 16
40	18.85	51.2	65.6	82.0	102.4	126.1	163.9	234.2	13	0.89	0.89	Ke DN 16
44	22.81	62.0	79.3	99.2	124.0	152.6	198.4	283.4	11	0.89	0.90	Ke DN 16
50	29.45	80.0	102.4	128.1	160.1	197.1	256.2	366.0	8	0.89	0.90	Ke DN 16

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Technical data for MFS 18 single head pump 60 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 2 to 8]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		44 [2]	55 [3]	70 [4]	88 [5]	110 [6]	135 [7]	176 [8]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
7	0.58	1.5	1.9	2.4	3.0	3.8	4.6	6.1	400	0.50	0.70	DK DN 3
8	0.75	1.9	2.4	3.1	3.9	4.9	6.1	7.9	348	0.55	0.72	DK DN 3
10	1.18	3.1	3.8	4.9	6.2	7.7	9.5	12.4	222	0.67	0.79	Ke DN 6
11	1.43	3.7	4.7	6.0	7.5	9.4	11.5	15.0	184	0.67	0.79	Ke DN 6
12	1.70	4.4	5.6	7.1	8.9	11.2	13.7	17.9	154	0.84	0.88	Ke DN 6
14	2.31	6.1	7.6	9.7	12.1	15.2	18.7	24.3	113	0.85	0.88	Ke DN 6
16	3.02	7.9	9.9	12.7	15.9	19.9	24.5	31.8	87	0.86	0.88	Ke DN 6
18	3.82	10.0	12.6	16.1	20.1	25.1	31.0	40.3	68	0.87	0.88	Ke DN 6
20	4.71	12.4	15.5	19.9	24.8	31.1	38.2	49.7	55	0.88	0.89	Ke DN 6
22	5.70	15.0	18.8	24.0	30.1	37.6	46.3	60.2	46	0.88	0.89	Ke DN 10/6
25	7.36	19.4	24.3	31.1	38.8	48.6	59.8	77.7	35	0.89	0.89	Ke DN 10
27	8.59	22.6	28.3	36.2	45.3	56.6	69.7	90.6	30	0.89	0.89	Ke DN 10
29	9.91	26.1	32.7	41.8	52.3	65.3	80.4	104.6	26	0.89	0.89	Ke DN 10
30	10.60	27.9	34.9	44.7	55.9	69.9	86.1	111.9	24	0.89	0.89	Ke DN 10
36	15.27	40.3	50.3	64.4	80.6	100.7	124.0	161.2	17	0.89	0.89	Ke DN 16
40	18.85	49.7	62.2	79.6	99.5	124.4	153.1	199.0	13	0.89	0.89	Ke DN 16
44	22.81	60.2	75.2	96.3	120.1	150.5	185.2	240.8	11	0.89	0.90	Ke DN 16
50	29.45	77.7	97.1	124.4	155.5	194.3	239.2	311.0	8	0.89	0.90	Ke DN 16

DK Double ball valve, Ke Conical valve

Important note:

- Abridged presentation of our complete product range. Other types on request
- Allow for a minimum 10% power reserve when designing in accordance with API
- All hydraulic performance data is based on water at 20 °C

Hydraulic Diaphragm Metering Pump Orlita® MF

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ProMinent®

Technical data for MFS 35 single head pump 50 Hz

Plunger Ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		45 [3]	58 [4]	73 [5]	91 [6]	112 [7]	145 [8]	207 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
7	0.77	2.0	2.6	3.3	4.1	5.1	6.7	9.5	400	0.50	0.70	DK DN 3
8	1.01	2.7	3.5	4.3	5.4	6.7	8.7	12.4	400	0.50	0.70	DK DN 3
10	1.57	4.2	5.4	6.8	8.5	10.5	13.6	19.5	400	0.50	0.70	Ke DN 6
11	1.90	5.1	6.6	8.2	10.3	12.7	16.5	23.6	368	0.79	0.85	Ke DN 6
12	2.26	6.1	7.8	9.8	12.3	15.1	19.6	28.1	309	0.79	0.85	Ke DN 6
14	3.08	8.3	10.7	13.3	16.7	20.6	26.7	38.2	227	0.81	0.85	Ke DN 6
16	4.02	10.9	13.9	17.4	21.8	26.9	34.9	49.9	174	0.83	0.86	Ke DN 6
18	5.09	13.8	17.7	22.1	27.6	34.0	44.2	63.2	137	0.84	0.87	Ke DN 6
20	6.28	17.0	21.8	27.3	34.1	42.0	54.6	78.0	111	0.86	0.88	Ke DN 6
22	7.60	20.6	26.4	33.0	41.3	50.8	66.1	94.4	92	0.86	0.88	Ke DN 10/6
25	9.82	26.6	34.1	42.7	53.3	65.7	85.4	122.0	71	0.87	0.88	Ke DN 10
27	11.45	31.1	39.8	49.8	62.2	76.6	99.6	142.3	61	0.87	0.88	Ke DN 10
30	14.14	38.4	49.2	61.5	76.8	94.6	122.9	175.7	49	0.88	0.89	Ke DN 10
36	20.36	55.3	70.8	88.5	110.6	136.2	177.1	253.0	34	0.88	0.89	Ke DN 16
40	25.13	68.3	87.4	109.3	136.6	168.2	218.6	312.3	27	0.89	0.89	Ke DN 16
44	30.41	82.6	105.8	132.2	165.3	203.5	264.5	377.9	23	0.89	0.89	Ke DN 16
50	39.27	106.7	136.6	170.8	213.5	262.8	341.6	488.0	17	0.89	0.89	Ke DN 16
60	56.55	153.7	196.7	245.9	307.4	378.4	491.9	702.8	12	0.89	0.90	Ke DN 16/25
65	66.37	180.4	230.9	288.6	360.8	444.1	577.3	824.8	10	0.89	0.90	Ke DN 16/25
80	100.53	273.3	349.8	437.3	546.6	672.7	874.6	1,249.4	6	0.89	0.90	Ke DN 25

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Technical data for MFS 35 single head pump 60 Hz

Plunger Ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 2 to 8]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		44 [2]	55 [3]	70 [4]	88 [5]	110 [6]	135 [7]	176 [8]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
7	0.77	2.0	2.5	3.2	4.0	5.0	6.2	8.1	400	0.50	0.70	DK DN 3
8	1.01	2.6	3.3	4.2	5.3	6.6	8.1	10.6	400	0.50	0.70	DK DN 3
10	1.57	4.1	5.1	6.6	8.2	10.3	12.7	16.5	400	0.50	0.70	Ke DN 6
11	1.90	5.0	6.2	8.0	10.0	12.5	15.4	20.0	368	0.79	0.85	Ke DN 6
12	2.26	5.9	7.4	9.5	11.9	14.9	18.3	23.8	309	0.79	0.85	Ke DN 6
14	3.08	8.1	10.1	13.0	16.2	20.3	25.0	32.5	227	0.81	0.85	Ke DN 6
16	4.02	10.6	13.2	16.9	21.2	26.5	32.6	42.4	174	0.83	0.86	Ke DN 6
18	5.09	13.4	16.7	21.5	26.8	33.5	41.3	53.7	137	0.84	0.87	Ke DN 6
20	6.28	16.5	20.7	26.5	33.1	41.4	51.0	66.3	111	0.86	0.88	Ke DN 6
22	7.60	20.0	25.0	32.1	40.1	50.1	61.7	80.2	92	0.86	0.88	Ke DN 10/6
25	9.82	25.9	32.4	41.4	51.8	64.8	79.7	103.6	71	0.87	0.88	Ke DN 10
27	11.45	30.2	37.7	48.3	60.4	75.5	93.0	120.9	61	0.87	0.88	Ke DN 10
30	14.14	37.3	46.6	59.7	74.6	93.3	114.8	149.2	49	0.88	0.89	Ke DN 10
36	20.36	53.7	67.1	85.9	107.4	134.3	165.3	214.9	34	0.88	0.89	Ke DN 16
40	25.13	66.3	82.9	106.1	132.7	165.8	204.1	265.4	27	0.89	0.89	Ke DN 16
44	30.41	80.2	100.3	128.4	160.5	200.7	247.0	321.1	23	0.89	0.89	Ke DN 16
50	39.27	103.6	129.5	165.8	207.3	259.1	318.9	414.6	17	0.89	0.89	Ke DN 16
60	56.55	149.2	186.6	238.8	298.5	373.2	459.3	597.1	12	0.89	0.90	Ke DN 16/25
65	66.37	175.2	219.0	280.3	350.4	438.0	539.1	700.8	10	0.89	0.90	Ke DN 16/25
80	100.53	265.4	331.7	424.6	530.8	663.5	816.6	1,061.6	6	0.89	0.90	Ke DN 25

DK Double ball valve, Ke Conical valve

Important note:

- Abridged presentation of our complete product range. Other types on request
- Allow for a minimum 10% power reserve when designing in accordance with API
- All hydraulic performance data is based on water at 20 °C

Hydraulic Diaphragm Metering Pump Orlita® MF

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Technical data for MFS 80 single head pump 50 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 4 to 9; F]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		104 [4]	122 [5]	134 [6]	155 [7]	160 [8]	182 [9]	193 [F]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
16	4.02	25	29	32	37	38	43	46	400	0.75	0.83	Ke DN 6
20	6.28	39	46	50	58	60	68	72	400	0.75	0.83	Ke DN 6
22	7.60	47	55	61	70	73	82	87	360	0.79	0.80	Ke DN 10/6
25	9.82	61	71	79	91	94	107	113	285	0.79	0.85	Ke DN 10
27	11.45	71	83	92	106	109	125	132	244	0.81	0.85	Ke DN 10
29	13.21	82	96	106	122	126	144	152	211	0.82	0.85	Ke DN 10
30	14.14	88	103	113	131	135	154	163	198	0.83	0.86	Ke DN 10
36	20.36	126	149	164	189	195	222	235	137	0.85	0.87	Ke DN 16
40	25.13	156	184	202	233	241	274	290	111	0.86	0.88	Ke DN 16
44	30.41	189	222	245	282	292	331	351	98	0.86	0.88	Ke DN 16
46	33.24	207	243	268	309	319	362	384	84	0.86	0.88	Ke DN 16
50	39.27	244	287	316	365	377	428	453	71	0.87	0.88	Ke DN 16
60	56.55	352	414	455	526	543	617	653	50	0.88	0.89	Ke DN 16/25
65	66.37	413	486	535	617	637	724	766	40	0.88	0.89	Ke DN 16/25
80	100.53	626	736	810	935	965	1,097	1,161	25	0.89	0.89	Ke DN 25
100	157.08	979	1,150	1,266	1,461	1,508	1,714	1,814	17	0.89	0.89	Ke DN 32

Technical data for MFS 80 single head pump 60 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		119 [3]	126 [4]	148 [5]	163 [6]	188 [7]	194 [8]	221 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
16	4.02	28	30	35	39	45	46	53	400	0.75	0.83	Ke DN 6
20	6.28	44	47	55	61	70	73	83	400	0.75	0.83	Ke DN 6
22	7.60	54	57	67	74	85	88	100	360	0.79	0.80	Ke DN 10/6
25	9.82	70	74	87	96	110	114	130	285	0.79	0.85	Ke DN 10
27	11.45	81	86	101	112	129	133	151	244	0.81	0.85	Ke DN 10
29	13.21	94	100	117	129	149	153	175	211	0.82	0.85	Ke DN 10
30	14.14	101	107	125	138	159	164	187	198	0.83	0.86	Ke DN 10
36	20.36	145	154	180	199	229	237	269	137	0.85	0.87	Ke DN 16
40	25.13	179	190	223	245	283	292	333	111	0.86	0.88	Ke DN 16
44	30.41	217	230	270	297	343	354	402	98	0.86	0.88	Ke DN 16
46	33.24	237	251	295	325	375	387	440	84	0.86	0.88	Ke DN 16
50	39.27	280	297	349	384	443	457	520	71	0.87	0.88	Ke DN 16
60	56.55	404	428	502	553	638	659	749	50	0.88	0.89	Ke DN 16/25
65	66.37	474	502	589	649	749	773	879	40	0.88	0.89	Ke DN 16/25
80	100.53	718	761	893	983	1,134	1,171	1,332	25	0.89	0.89	Ke DN 25
100	157.08	1,123	1,189	1,396	1,537	1,774	1,830	2,081	17	0.89	0.89	Ke DN 32

Ke Conical valve

Hydraulic Diaphragm Metering Pump Orlita® MF

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Technical data for MFS 180 single head pump 50 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 4 to 9; F]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		92 [4]	107 [5]	117 [6]	134 [7]	152 [8]	171 [9]	200 [F]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
25	19.63	107	126	138	157	178	201	235	366	0.77	0.83	Ke DN 16
30	28.27	155	181	199	226	257	290	339	254	0.81	0.85	Ke DN 16
36	40.72	223	262	286	326	370	417	489	176	0.83	0.86	Ke DN 16
40	50.27	276	323	353	403	457	515	604	143	0.85	0.87	Ke DN 25
44	60.82	334	391	428	488	553	623	730	118	0.85	0.87	Ke DN 25
50	78.54	431	505	552	630	714	805	943	91	0.86	0.88	Ke DN 25
55	95.03	521	611	668	762	864	974	1,141	75	0.87	0.88	Ke DN 32
60	113.10	621	727	796	907	1,029	1,160	1,359	63	0.87	0.89	Ke DN 32
65	132.73	729	854	934	1,065	1,207	1,361	1,594	54	0.88	0.89	Ke DN 32
70	153.94	845	990	1,083	1,235	1,400	1,579	1,849	46	0.88	0.89	Ke DN 40
75	176.71	970	1,137	1,243	1,418	1,608	1,812	2,123	40	0.88	0.89	Ke DN 40
80	201.06	1,104	1,293	1,415	1,613	1,829	2,062	2,416	35	0.88	0.89	Ke DN 40
85	226.98	1,246	1,460	1,597	1,821	2,065	2,328	2,727	31	0.88	0.89	Ke DN 40
90	254.47	1,397	1,637	1,791	2,042	2,315	2,610	3,057	28	0.89	0.89	Ke DN 40
95	283.53	1,557	1,824	1,995	2,275	2,590	2,908	3,407	25	0.89	0.89	Pt DN 50
100	314.16	1,725	2,021	2,211	2,521	2,858	3,223	3,775	22	0.89	0.89	Pt DN 50
115	415.48	2,281	2,673	2,924	3,334	3,781	4,262	4,992	17	0.89	0.89	Pt DN 65
125	490.87	2,696	3,158	3,455	3,939	4,467	5,036	–	14	0.89	0.90	Pt DN 65
135	572.56	3,144	3,684	4,030	4,595	5,210	5,874	6,880	12	0.89	0.90	Pt DN 65
142	633.47	3,479	4,076	4,458	5,084	5,764	6,499	7,612	11	0.89	0.90	Pt DN 65

Important note:

- Abridged presentation of our complete product range. Other types on request
- Allow for a minimum 10% power reserve when designing in accordance with API
- All hydraulic performance data is based on water at 20 °C

Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure

Technical data for MFS 180 single head pump 60 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		98 [3]	111 [4]	130 [5]	142 [6]	162 [7]	184 [8]	208 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
25	19.63	116	130	153	167	216	244	244	352	0.77	0.83	Ke DN 16
30	28.27	167	188	220	241	275	312	352	254	0.81	0.85	Ke DN 16
36	40.72	240	271	318	347	396	449	507	176	0.83	0.86	Ke DN 16
40	50.27	297	335	392	429	489	555	625	143	0.85	0.87	Ke DN 25
44	60.82	359	405	475	519	592	671	757	118	0.85	0.87	Ke DN 25
50	78.54	464	523	613	671	765	867	978	91	0.86	0.88	Ke DN 25
55	95.03	561	633	742	811	925	1,049	1,183	75	0.87	0.88	Ke DN 32
60	113.10	668	753	883	966	1,101	1,249	1,408	63	0.87	0.89	Ke DN 32
65	132.73	784	884	1,036	1,134	1,293	1,466	1,652	54	0.88	0.89	Ke DN 32
70	153.94	909	1,026	1,202	1,315	1,499	1,700	1,916	46	0.88	0.89	Ke DN 40
75	176.71	1,044	1,178	1,380	1,509	1,721	1,951	2,200	40	0.88	0.89	Ke DN 40
80	201.06	1,188	1,340	1,570	1,717	1,958	2,220	2,503	35	0.88	0.89	Ke DN 40
85	226.98	1,341	1,513	1,772	1,939	2,211	2,507	2,826	31	0.88	0.89	Ke DN 40
90	254.47	1,503	1,696	1,987	2,174	2,478	2,810	3,168	28	0.89	0.89	Ke DN 40
95	283.53	1,675	1,890	2,214	2,422	2,762	3,131	3,530	25	0.89	0.89	Pt DN 50
100	314.16	1,856	2,094	2,453	2,684	3,060	3,470	3,912	22	0.89	0.89	Pt DN 50
115	415.48	2,455	2,769	3,245	3,549	4,047	4,589	5,173	17	0.89	0.89	Pt DN 65
125	490.87	2,900	3,272	3,834	4,193	4,781	5,422	–	14	0.89	0.90	Pt DN 65
135	572.56	3,383	3,817	4,472	4,891	5,577	6,324	–	11	0.89	0.90	Pt DN 65
142	633.47	3,743	4,223	4,947	5,412	6,171	6,997	–	11	0.89	0.90	Pt DN 65

DK Double ball valve, Pt Plate valve

Important note:

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- All hydraulic performance data is based on water at 20 °C

Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure

ProMinent®

Technical data for MFS 600 single head pump 50 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 4 to 9; F]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		90 [4]	99 [5]	117 [6]	134 [7]	156 [8]	173 [9]	204 [F]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
36	40.72	219	242	285	327	381	422	497	392	0.76	0.83	Ke DN 16
38	45.36	244	269	318	364	424	470	554	352	0.77	0.83	Ke DN 16
40	50.27	270	299	352	404	470	521	614	318	0.78	0.84	Ke DN 16
44	60.82	327	361	427	488	569	630	743	263	0.80	0.85	Ke DN 25
46	66.48	357	395	466	534	622	689	812	240	0.81	0.85	Ke DN 25
50	78.54	422	467	551	631	735	814	959	221	0.83	0.86	Ke DN 25
55	95.03	511	565	667	764	889	985	1,161	168	0.84	0.87	Ke DN 25
60	113.10	608	673	794	909	1,059	1,172	1,381	141	0.85	0.87	Ke DN 25
65	132.73	714	789	932	1,067	1,243	1,376	1,621	120	0.85	0.87	Ke DN 32
70	153.94	828	916	1,080	1,237	1,441	1,596	1,880	100	0.90	0.88	Ke DN 32
75	176.71	950	1,051	1,240	1,420	1,654	1,832	2,159	90	0.86	0.88	Ke DN 32
80	201.06	1,081	1,196	1,411	1,616	1,882	2,084	2,456	79	0.87	0.88	Ke DN 40
85	226.98	1,221	1,350	1,593	1,825	2,125	2,353	2,773	70	0.87	0.88	Ke DN 40
90	254.47	1,369	1,514	1,786	2,046	2,383	2,638	3,109	62	0.87	0.88	Ke DN 40
95	283.53	1,525	1,687	1,990	2,279	2,655	2,940	3,464	56	0.87	0.88	Ke DN 50
100	314.16	1,690	1,869	2,205	2,526	2,942	3,257	3,838	50	0.88	0.89	Ke DN 50
115	415.48	2,235	2,472	2,917	3,340	3,890	4,308	5,076	38	0.88	0.89	Ke DN 65
125	490.87	2,641	2,921	3,446	3,946	4,596	5,090	5,998	32	0.89	0.89	Ke DN 65
135	572.56	3,080	3,407	4,020	4,603	5,361	5,937	6,996	26	0.89	0.89	Ke DN 65
142	633.47	3,408	3,769	4,448	5,093	5,932	6,568	7,740	20	0.89	0.89	Ke DN 65

Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure

Technical data for MFS 600 single head pump 60 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		96 [3]	109 [4]	120 [5]	142 [6]	163 [7]	189 [8]	210 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
36	40.72	235	265	294	347	397	462	512	392	0.76	0.83	Ke DN 16
38	45.36	262	296	327	386	442	515	570	352	0.77	0.83	Ke DN 16
40	50.27	291	328	363	428	490	571	632	318	0.78	0.84	Ke DN 16
44	60.82	352	397	439	518	593	691	765	263	0.80	0.85	Ke DN 25
46	66.48	384	434	480	566	648	755	836	240	0.81	0.85	Ke DN 25
50	78.54	454	512	567	669	765	892	988	200	0.83	0.86	Ke DN 25
55	95.03	550	620	686	809	926	1,080	1,196	168	0.84	0.87	Ke DN 25
60	113.10	654	738	816	963	1,102	1,285	1,423	141	0.85	0.87	Ke DN 25
65	132.73	768	866	958	1,131	1,294	1,508	1,670	120	0.85	0.87	Ke DN 40
70	153.94	891	1,005	1,111	1,312	1,501	1,749	1,937	100	0.90	0.88	Ke DN 32
75	176.71	1,023	1,154	1,276	1,506	1,723	2,008	2,224	90	0.86	0.88	Ke DN 32
80	201.06	1,164	1,313	1,452	1,713	1,960	2,285	2,530	79	0.87	0.88	Ke DN 40
85	226.98	1,314	1,482	1,639	1,934	2,213	2,580	2,856	70	0.87	0.88	Ke DN 40
90	254.47	1,473	1,661	1,838	2,168	2,481	2,892	3,202	62	0.87	0.88	Ke DN 40
95	283.53	1,641	1,851	2,047	2,416	2,767	3,222	3,568	56	0.87	0.88	Ke DN 50
100	314.16	1,818	2,051	2,269	2,677	3,063	3,571	3,954	50	0.88	0.89	Ke DN 50
115	415.48	2,405	2,713	3,000	3,541	4,051	4,722	5,229	38	0.88	0.89	Ke DN 65
125	490.87	2,841	3,205	3,545	4,183	4,786	5,579	–	32	0.89	0.89	Ke DN 65
135	572.56	3,314	3,739	4,135	4,879	5,587	6,508	7,206	26	0.89	0.89	Ke DN 65
142	633.47	3,667	4,136	4,575	5,399	6,182	7,200	7,973	20	0.89	0.89	Ke DN 65

DK Double ball valve, Pt Plate valve

Important note:

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Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure

ProMinent®

Technical data for MFS 1400 single head pump 50 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 4 to 9; F]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		80 [4]	93 [5]	106 [6]	125 [7]	143 [8]	169 [9]	191 [F]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
30	42.41	202	235	270	318	364	431	486	630	0.67	0.78	Ke DN 16
40	75.40	360	419	480	565	647	766	864	435	0.75	0.83	Ke DN 25
42	83.13	397	462	529	623	713	844	952	435	0.76	0.83	Ke DN 25
44	91.23	435	507	581	684	783	927	1,045	394	0.76	0.83	Ke DN 25
46	99.71	476	554	635	748	856	1,013	1,142	361	0.77	0.83	Ke DN 25
50	117.81	562	654	750	884	1,011	1,197	1,350	305	0.79	0.84	Ke DN 25
53	132.37	632	735	843	993	1,136	1,345	1,517	271	0.79	0.84	Ke DN 32
55	142.55	681	792	907	1,070	1,224	1,448	1,633	250	0.81	0.85	Ke DN 25
57	153.11	731	851	975	1,149	1,314	1,556	1,754	235	0.81	0.85	Ke DN 32
60	169.65	810	943	1,080	1,273	1,456	1,724	1,944	212	0.82	0.86	Ke DN 25
65	199.10	951	1,106	1,268	1,494	1,709	2,023	2,282	180	0.83	0.87	Ke DN 32
70	230.91	1,103	1,283	1,470	1,733	1,983	2,346	2,646	155	0.84	0.87	Ke DN 40
75	265.07	1,266	1,473	1,688	1,989	2,276	2,694	3,038	135	0.85	0.87	Ke DN 40
80	301.59	1,440	1,676	1,920	2,263	2,590	3,065	3,456	119	0.85	0.87	Ke DN 40
90	381.70	1,823	2,121	2,431	2,865	3,278	3,879	4,375	94	0.90	0.90	Ke DN 50
100	471.24	2,251	2,619	3,001	3,537	4,047	4,789	5,401	76	0.87	0.88	Ke DN 65
120	678.58	3,242	3,772	4,321	5,093	5,827	6,896	7,778	53	0.88	0.89	Ke DN 65
140	923.63	4,412	5,134	5,882	6,933	7,932	9,387	10,587	38	0.88	0.89	Ke DN 80
160	1,206.37	5,763	6,706	7,683	9,055	10,360	12,261	13,827	29	0.89	0.89	Ke DN 80

Hydraulic Diaphragm Metering Pump Orlita® MF

Reliable capacity even at high pressure

ProMinent®

Technical data for MFS 1400 single head pump 60 Hz

Plunger ø	Stroke volume	Pump capacity Q_{th} in l/h per pump head at H/min [Identity code characteristic 3 to 9]:							Max. pressure	Efficiency at	Efficiency at	Standard type of valve
		88 [3]	97 [4]	112 [5]	129 [6]	152 [7]	174 [8]	206 [9]				
mm	ml/stroke	l/h	l/h	l/h	l/h	l/h	l/h	l/h	bar	100% pressure	50% pressure	
30	42.41	223	245	286	327	386	442	523	630	0.67	0.78	Ke DN 16
40	75.40	396	437	508	582	686	785	930	435	0.75	0.83	Ke DN 25
42	83.13	437	482	560	642	757	866	1,025	435	0.76	0.83	Ke DN 25
44	91.23	480	529	615	705	831	951	1,125	394	0.76	0.83	Ke DN 25
46	99.71	524	578	672	770	908	1,039	1,230	361	0.77	0.83	Ke DN 25
50	117.81	619	683	794	910	1,073	1,228	1,453	305	0.79	0.84	Ke DN 25
53	132.37	696	767	893	1,023	1,206	1,379	1,632	271	0.79	0.84	Ke DN 32
55	142.55	750	826	961	1,102	1,298	1,486	1,758	250	0.81	0.85	Ke DN 25
57	153.11	805	887	1,033	1,183	1,394	1,596	1,888	235	0.81	0.85	Ke DN 32
60	169.65	892	983	1,144	1,311	1,545	1,768	2,092	212	0.82	0.86	Ke DN 25
65	199.10	1,047	1,154	1,343	1,539	1,814	2,075	2,456	180	0.83	0.87	Ke DN 32
70	230.91	1,214	1,339	1,558	1,785	2,103	2,407	2,848	155	0.84	0.87	Ke DN 40
75	265.07	1,394	1,537	1,788	2,049	2,415	2,763	3,270	135	0.85	0.87	Ke DN 40
80	301.59	1,586	1,748	2,035	2,331	2,747	3,143	3,720	119	0.85	0.87	Ke DN 40
90	381.70	2,008	2,213	2,575	2,950	3,477	3,979	4,200	94	0.90	0.90	Ke DN 50
100	471.24	2,479	2,732	3,179	3,642	4,293	4,912	4,708	76	0.87	0.88	Ke DN 65
120	678.58	3,570	3,935	4,578	5,245	6,182	7,073	8,371	53	0.88	0.89	Ke DN 65
140	923.21	4,859	5,356	6,232	7,140	8,415	9,628	–	38	0.88	0.89	Ke DN 80
160	1,206.37	6,347	6,995	8,140	9,325	10,991	12,575	–	29	0.89	0.89	Ke DN 80

DK Double ball valve

Ke Conical valve

Important note:

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