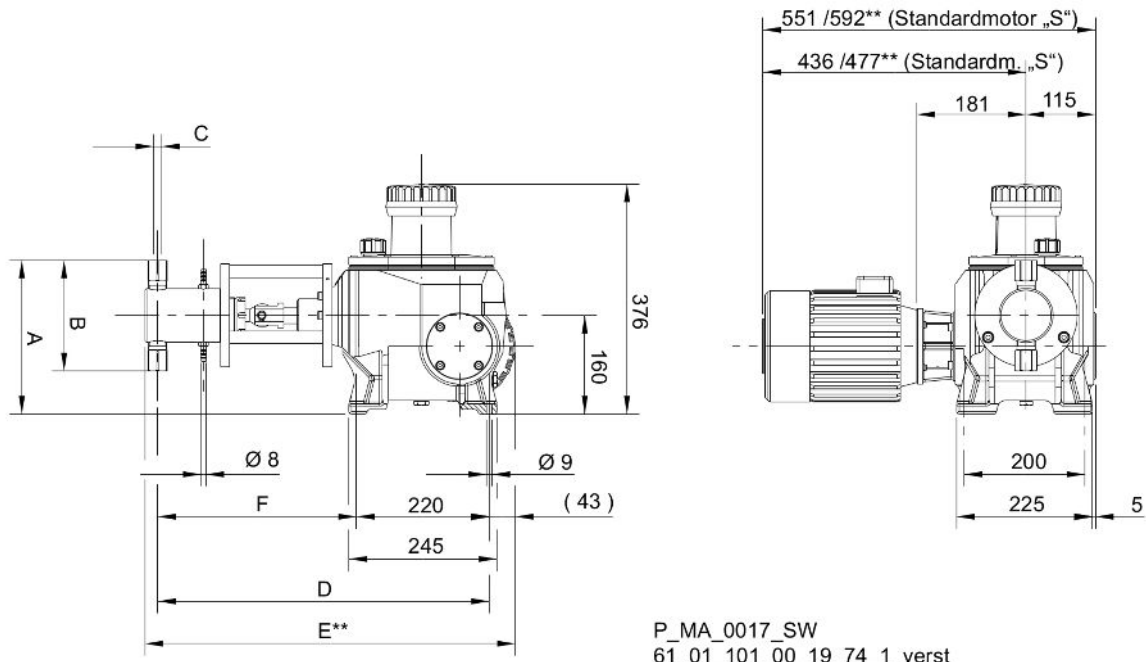


Plunger Metering Pump Makro TZ

Powerful, built to last with a plunger



Exemplary representation. The dimensions depend on the configuration chosen.

The plunger metering pump Makro TZ impresses with its excellent process reliability, outstanding flexibility and its modular construction enables it to be outstandingly adapted to the performance requirements of the respective application.

Technical Details

- Stroke length: 0-20 mm
- Rod force: 8000 N
- Stroke length adjustment range: 0 – 100%
- Stroke length adjustment: manually using shift ring in 0.5% increments (optionally with electric actuator or control drive)
- Metering reproducibility is better than $\pm 0.5\%$ within the 10 – 100% stroke length range under defined conditions and with proper installation. Observe the information in the operating instructions.
- High-performance ceramic-coated stainless steel plunger Wetted materials: Stainless steel 1.4571. Special materials are available on request
- A wide range of drive versions is available: Three-phase standard AC motors, motors for use in areas at risk from explosion and different flange designs for use in customer-specific motors
- Degree of protection: IP 55
- Salt water-resistant, acrylic resin-coated cast aluminium housing
- Provide suitable overflow equipment in all plunger metering pumps during installation for safety reasons



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Technical Data

Type	Capacity at max. back pressure with 1500 rpm motor at 50 Hz				Capacity at max. back pressure at 60 Hz			Suction lift m WC	Connector Suction/ Discharge Side	Shipping weight kg	Plunger Ø mm
	l/h	bar	ml/stroke	Max. stroke rate Strokes/min	psi	l/h / gph (US)	Max. stroke rate Strokes/min				
320009 *	8.7	320	2.0	72	4,627	10/2.6	86	4.0	Rp 1/4-8	50	12
320012 *	11.6	320	2.0	96	4,627	14/3.7	115	4.0	Rp 1/4-8	50	12
320014 *	14.5	320	2.0	120	4,627	17/4.5	144	4.0	Rp 1/4-8	50	12
320017 *	17.4	320	2.0	144	4,627	21/5.5	173	4.0	Rp 1/4-8	50	12
320018 *	17.7	320	4.1	72	4,627	21/5.5	86	4.0	Rp 1/4-8	50	17
320024 *	23.6	320	4.1	96	4,627	28/7.4	115	4.0	Rp 1/4-8	54	17
320030 *	29.5	320	4.1	120	4,627	35/9.2	144	4.0	Rp 1/4-8	54	17
313035 *	35.4	313	4.1	144	4,526	42/11.1	173	4.0	Rp 1/4-8	54	17
192033 *	32.9	192	7.6	72	2,776	39/10.3	86	4.0	Rp 3/8-10	55	23
192044 *	43.9	192	7.6	96	2,776	59/15.6	115	4.0	Rp 3/8-10	55	23
192055 *	54.8	192	7.6	120	2,776	66/17.4	144	4.0	Rp 3/8-10	55	23
168066 *	65.8	168	7.6	144	2,437	79/20.9	173	4.0	Rp 3/8-10	55	23
113057 *	57.5	113	13.3	72	1,634	69/18.2	86	4.0	Rp 3/8-10	56	30
113077 *	76.6	113	13.3	96	1,634	92/24.3	115	4.0	Rp 3/8-10	56	30
113096 *	95.8	113	13.3	120	1,634	115/30.4	144	4.0	Rp 3/8-10	56	30
096115 *	114.9	96	13.3	144	1,392	138/36.5	173	4.0	Rp 3/8-10	56	30
063104	104.3	63	24.2	72	911	125/33.0	86	4.0	G 1 1/4-20	58	40
063139	139.0	63	24.2	96	911	167/44.1	115	4.0	G 1 1/4-20	58	40
063174	173.8	63	24.2	120	914	209/55.2	144	4.0	G 1 1/4-20	58	40
052208	208.5	52	24.2	144	754	250/66.0	173	4.0	G 1 1/4-20	58	40
040163	162.9	40	37.7	72	578	195/51.5	86	4.0	G 1 1/4-20	58	50
040217	217.2	40	37.7	96	578	261/68.9	115	4.0	G 1 1/4-20	58	50
040271	271.5	40	37.7	120	580	326/86.1	144	4.0	G 1 1/4-20	58	50
033326	325.8	33	37.7	144	479	391/103.3	173	4.0	G 1 1/4-20	58	50
028237	237.0	28	54.9	72	405	284/75.0	86	4.0	G 1 1/2-25	62	60
028316	315.9	28	54.9	96	405	379/100.1	115	4.0	G 1 1/2-25	62	60
027395	394.9	27	54.9	120	392	474/125.2	144	4.0	G 1 1/2-25	62	60
022474	473.9	22	54.9	144	319	569/150.3	173	4.0	G 1 1/2-25	62	60
020322	322.5	20	74.7	72	289	387/102.2	86	4.0	G 1 1/2-25	62	70
020430	430.0	20	74.7	96	289	516/136.3	115	4.0	G 1 1/2-25	62	70
020538	537.6	20	74.7	120	290	645/170.4	144	4.0	G 1 1/2-25	62	70
016645	645.1	16	74.7	144	232	774/204.5	173	4.0	G 1 1/2-25	62	70
014475	475.1	14	110.0	72	202	571/150.8	86	4.0	G 2 1/4-40	68	85
014634	634.1	14	110.0	96	202	761/201.0	115	4.0	G 2 1/4-40	68	85
013793	792.6	13	110.0	120	189	951/251.2	144	4.0	G 2 1/4-40	68	85
011951	951.1	11	110.0	144	160	1,141/301.4	173	4.0	G 2 1/4-40	68	85

* The suction and discharge side Rp 1/4 and Rp 3/8 connectors have an internal thread connection and are configured as double ball valves.

Other gear reduction ratios are available upon request.

The permissible priming pressure on the suction side is approximately 50% of the max. permitted back pressure.



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Materials in Contact with the Medium

Identity code of material	Hydraulic Ø mm	Dosing head	Connection on suction/ discharge side	Ball seat	Valve balls	Plungers
SST	...12 S to 50 S	Stainless steel 1.4571/1.4404	Stainless steel 1.4571/1.4404	Stainless steel/ PTFE	Oxide ceramic	Stainless steel/ceramic
SST	...60 S to 70 S	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE	Stainless steel 1.4404	Stainless steel/ceramic
SST	...85 S	Stainless steel 1.4571/1.4404	Stainless steel 1.4581	PTFE	Stainless steel 1.4404 (plate)/Hastelloy C (spring)	Stainless steel/ceramic

Motor Data

Identity code specification		Power supply		Remarks
S	3-phase, IP 55'	230 V/400 V	50 Hz	1.5 kW
R	3-phase, IP 55'	230 V/400 V	50/60 Hz	2.2 kW With PTC, speed control range 1:20, with external fan 1-phase 230 V; 50/60 Hz
V0	3-phase, IP 55'	400 V	50 Hz	3.0 kW Variable speed stroke control motor with integrated frequency converter
L1	3-phase, II 2G Ex eb IIC T3 Gb	220 – 240 V/380 – 420 V	50 Hz	1.5 kW
L2	3-phase, II 2G Ex db IIC T4 Gb	220 – 240 V/380 – 420 V	50 Hz	1.5 kW With PTC, speed control range 1:5
P1	3-phase, II 2G Ex e IIC T3	250 – 280 V/440 – 480 V	60 Hz	2.0 kW On request
P2	3-phase, II 2G Ex de IIC T4	250 – 280 V/440 – 480 V	60 Hz	1.5 kW With PTC, speed control range 1:5, available on request

Motor data sheets can be requested for more information. Versions 265/460V - 60Hz, special motors or special motor flanges are available on request.

Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 2014/34/EC in premises at risk from explosion. Ensure that the explosion group, category and degree of protection specified on the label correspond to or are superior to the conditions prevalent in the intended application.