

Multi-outlet radial piston pumps

Type MRK701/702

700 bar
0,16 to 3,62 cm³/rev
per circuit

Features

- High volumetric efficiency
- Self venting and self-priming
- Outlets with different displacements in the same pump possible on request
- Combination with gear pump on request
- Pulsations are minimized

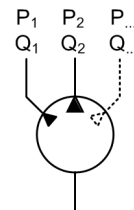


Applications

- Multiple hydraulic outlets are needed in one pump
- Power units
- Test stands
- Synchronised moving and lifting systems (bridge building, ship building, railway yards, etc.)

Design

- With multiple pumping elements which are led into two or more pressure ports
- Radial piston pump of modular design



Technical Data

Hydraulic fluid	mineral oil according to DIN 51524 (other fluids on request)	
Fluid temperature range	-20 up to 80 °C	
Ambient temperature range	-30 to 50 °C	
Viscosity range	5 to 220 mm ² /s	
Max. operating pressure	700 bar continuous pressure (S1)	
Suction pressure	-0,2 bar to 0,5 bar relative	
Filtration recommendation	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12	
Displacement	from 0.16 to 3.62 cm ³ /rev	
Weight	see product information	
Installation position	any	
Axial force onto driving shaft	not allowed	
Radial force onto driving shaft	on request	
Max. speed range	2000 rpm	
Direction of rotation	any	
Suction height	max. 500 mm	
Material	pressure flange:	steel
	driving shaft:	steel
	cover:	diecast aluminium

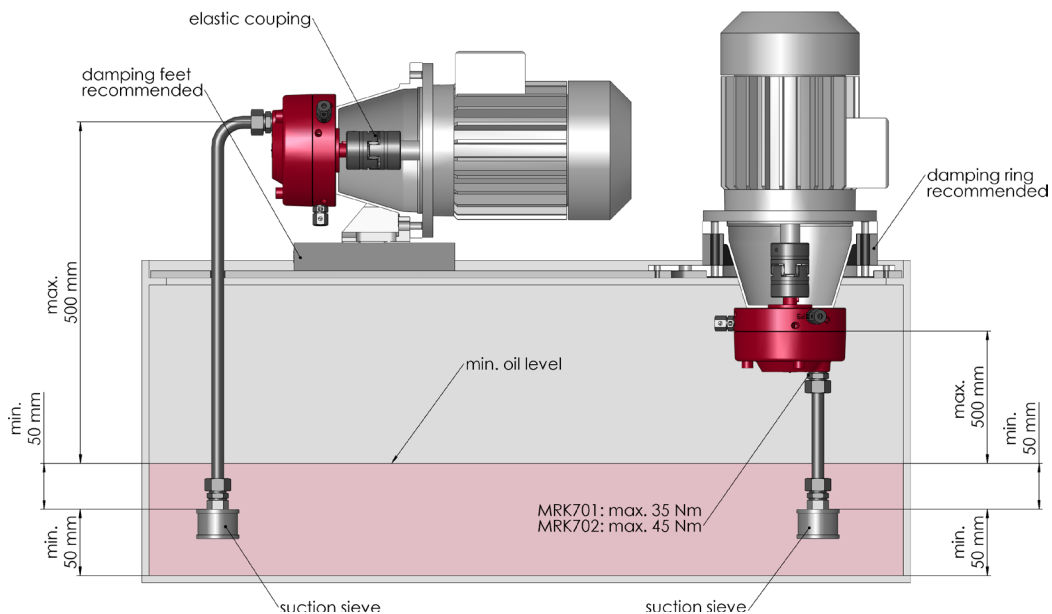
Type MRK701/702

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per circuit

Ordering code

Example	MRK 701 - 2 x 0,31 - 700 - V -	00
Multi-outlet radial piston pump		Design 00 ... 99 for internal purposes
Size	701 702	
Number of circuits	2 up to 9	
Displacement per circuit [cm³/rev]	see product information	
Max. operating pressure per circuit [bar]	see product information	
Seal material	V [FPM] other seal materials on request	Index Please leave it blank for internal purposes
		Design revision Please leave it blank for internal purposes

Mounting



Product information

size	number of circuits	number of pumping elements per circuit	operating pressure max.[bar]	displacement per outlet [cm ³ /rev]							pulsation	weight [kg]	part. nr.
				V _g 1	V _g 2	V _g 3	V _g 4	V _g 5	V _g 6	V _g 7			
701	2	2	700	0,31	0,31						high	7,1	3830417
701	2	2	700	0,45	0,45						high	7,1	3830421
701	2	2	700	0,63	0,63						high	7,1	3830422
701	2	2	700	0,80	0,80						high	7,1	3830423
701	2	2	700	1,02	1,02						high	7,1	3830424
701	2	2	700	1,26	1,26						high	7,1	3830435
701	2	3	700	1,53	1,53						low	8,7	3830436
701	2	2	700	1,81	1,81						high	7,1	3830437
701	2	3	700	1,88	1,88						low	8,7	3830439
701	2	3	700	2,71	2,71						low	8,7	3830442
701	3	1	700	0,40	0,40	0,40					very high	7,0	3830456
701	3	2	700	0,80	0,80	0,80					high	8,7	3830459
701	3	2	700	1,14	1,14	1,14					high	8,7	3830461
701	3	2	700	1,81	1,81	1,81					high	8,7	3830469
701	4	1	700	0,16	0,16	0,16	0,16				very high	7,2	3830472
701	4	1	700	0,23	0,23	0,23	0,23				very high	7,2	3830473
701	4	1	700	0,40	0,40	0,40	0,40				very high	7,2	3830474
701	4	1	700	0,51	0,51	0,51	0,51				very high	7,2	3830485
701	4	1	700	0,63	0,63	0,63	0,63				very high	7,2	3830486
701	4	1	700	0,90	0,90	0,90	0,90				very high	7,2	3830487
701	5	1	700	0,16	0,16	0,16	0,16	0,16			very high	7,4	3830489
701	5	1	700	0,23	0,23	0,23	0,23	0,23			very high	7,4	3830491
701	5	1	700	0,40	0,40	0,40	0,40	0,40			very high	7,4	3830492
701	5	1	700	0,51	0,51	0,51	0,51	0,51			very high	7,4	3830494
701	5	1	700	0,63	0,63	0,63	0,63	0,63			very high	7,4	3830515
701	5	1	700	0,90	0,90	0,90	0,90	0,90			very high	7,4	3830516
701	6	1	700	0,16	0,16	0,16	0,16	0,16	0,16		very high	7,5	3830518
701	6	1	700	0,23	0,23	0,23	0,23	0,23	0,23		very high	7,5	3830519
701	6	1	700	0,40	0,40	0,40	0,40	0,40	0,40		very high	7,5	3830520
701	6	1	700	0,51	0,51	0,51	0,51	0,51	0,51		very high	7,5	3830523
701	6	1	700	0,90	0,90	0,90	0,90	0,90	0,90		very high	7,5	3830546

Note: Size MRK701 can be fitted with up to 7 pumping elements.

Pumping elements are available with the following displacements: 0,16 / 0,23 / 0,40 / 0,51 / 0,63 / 0,90 cm³/rev.

More versions on request

Type MRK701/702
700 bar
0,16 to 3,62 cm ³ /rev per circuit

size	number of circuits	number of pumping elements per circuit	operating pressure max.[bar]	displacement per circuit [cm ³ /rev]									pulsation	weight [kg]	part. nr.	
				V _{g1}	V _{g2}	V _{g3}	V _{g4}	V _{g5}	V _{g6}	V _{g7}	V _{g8}	V _{g9}				
702	2	4	700	2,04	2,04									low	16,5	3830559
702	2	4	700	3,07	3,07									low	16,5	3830779
702	2	4	700	3,62	3,62									low	16,5	3830561
702	3	3	700	1,88	1,88	1,88								low	21,6	3830564
702	3	3	700	2,71	2,71	2,71								low	21,6	3830578
702	4	2	700	0,80	0,80	0,80	0,80							high	21,4	3830584
702	4	2	700	1,02	1,02	1,02	1,02							high	21,4	3830585
702	4	2	700	1,26	1,26	1,26	1,26							high	21,4	3830586
702	4	2	700	1,41	1,41	1,41	1,41							high	21,4	3830588
702	4	2	700	1,81	1,81	1,81	1,81							high	21,4	3830589
702	8	1	700	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	very high	16,5	3830591
702	8	1	700	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	very high	16,5	3830592
702	8	1	700	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	very high	16,5	3830593
702	8	1	700	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	very high	16,5	3830594
702	8	1	700	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	very high	16,5	3830595
702	8	1	700	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	very high	16,5	3830596
702	9	1	700	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	very high	16,7	3830598
702	9	1	700	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	very high	16,7	3830599
702	9	1	700	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	0,40	very high	16,7	3830600
702	9	1	700	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	0,51	very high	16,7	3830601
702	9	1	700	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	0,63	very high	16,7	3830602
702	9	1	700	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	0,90	very high	16,7	3830603

Note: Size MRK702 can be fitted with up to 9 pumping elements.
Pumping elements are available with the following displacements: 0,16 / 0,23 / 0,40 / 0,51 / 0,63 / 0,90 cm³/rev.

More versions on request

Calculation of driving motor power

$$P = \frac{p \cdot V_g \cdot n \cdot k}{\eta_t \cdot 600 \cdot 10^3}$$

P = driving power [kW]
p = operating pressure [bar]
V_g = displacement [cm³/rev]
n = speed [rpm]
η_t = overall efficiency approx. 0,8

k = pulsation factor
- with 2 pumping elements: k approx. 1,60
- with 3 pumping elements: k approx. 1,05
- with 4 pumping elements: k approx. 1,10
- with 5 pumping elements: k approx. 1,00
- with 6 pumping elements: k approx. 1,05
- with 7 pumping elements: k approx. 1,00
- with 8 pumping elements: k approx. 1,05
- with 9 pumping elements: k approx. 1,00

Calculation of driving motor torque

$$M = \frac{p \cdot V_g}{62,8 \cdot \eta}$$

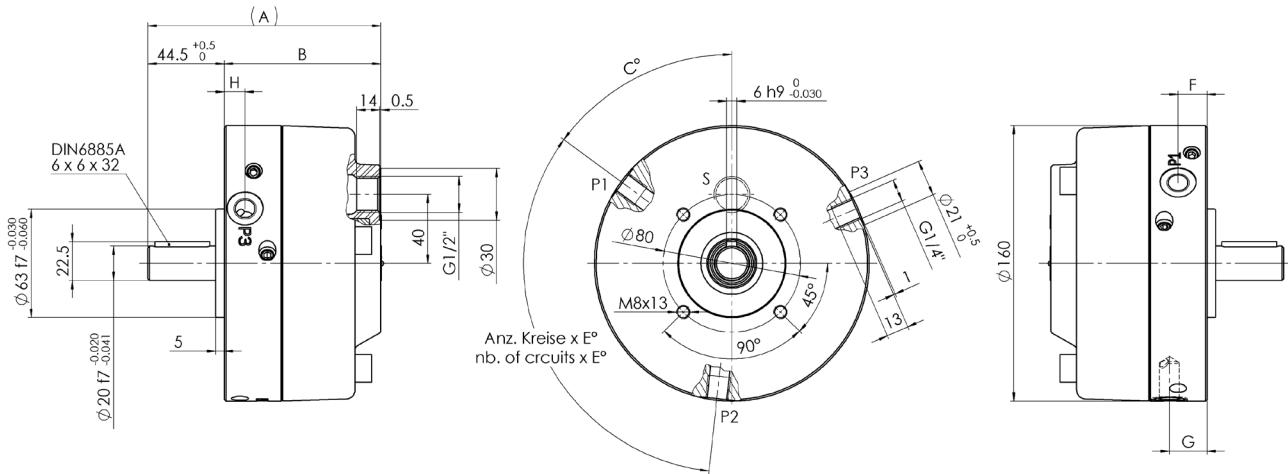
M torque [Nm]
V_g displacement volume [cm³/rev]
η efficiency approx. 0,8

seals kit for MRK701	4006555
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seals kit for MRK702	4006559
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Dimensional drawings

Size MRK701



Note: Illustration of a pump with 3 circuits! Further drawings on request.

Dimensions

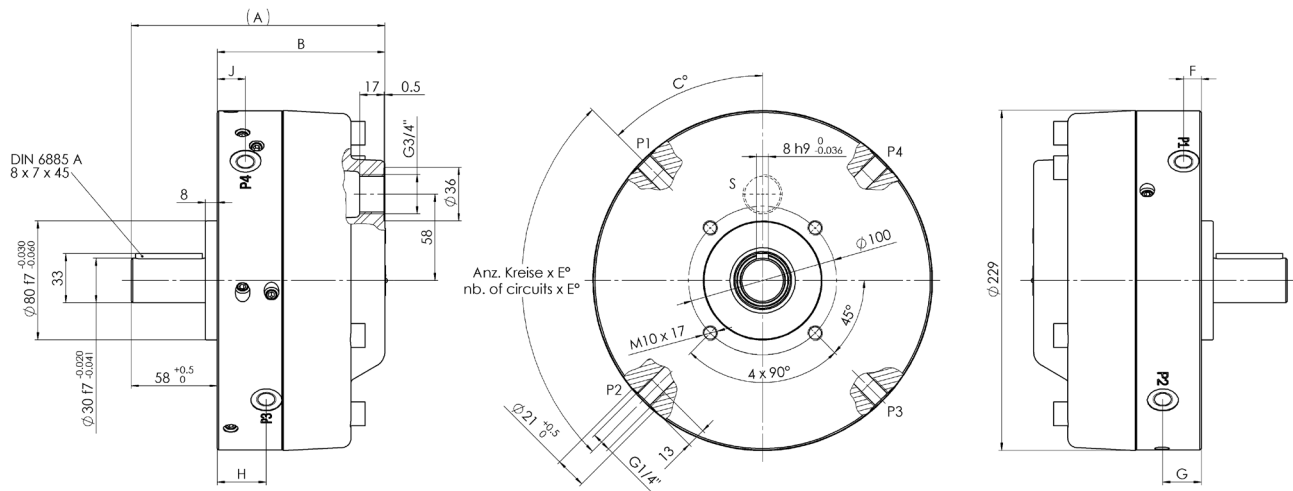
number of circuits	number of pumping elements per circuit	dim. a [mm]	dim. b [mm]	dim. c [°]	dim. e [°]	dim. f [mm]	dim. g [mm]	dim. h [mm]
2	2	127,5	83,0	90	180	12,0	14,0	
2	3	135,5	91,0	90	180	19,0	19,0	
3	1	127,5	83,0	60	120	12,0	12,0	12,0
3	2	135,5	91,0	53,7	120	17,0	22,0	12,0
4	1	127,5	83,0	45	90	12,0	12,0	12,0
5	1	127,5	83,0	36	72	12,0	12,0	12,0
6	1	127,5	83,0	23,7	60	12,0	12,0	12,0
7	1	127,5	83,0	25,7	51,4	12,0	12,0	12,0

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per circuit

Size MRK702



Note: Illustration of a pump with 4 circuits! Further drawings on request.

Dimensions

number of circuits	number of pumping elements per circuits	dim. a [mm]	dim. b [mm]	dim. c [°]	dim. d [mm]	dim. e [°]	dim. f [mm]	dim. g [mm]	dim. h [mm]	dim. j [mm]
2	4	155,0	97,0	90	2,0	180	12,0	12,0		
3	3	171,0	113,0	60	3,0	120	20,5	15,0	20,5	
4	2	171,0	113,0	45	4,0	90	12,0	26,0	33,0	19,0
8	1	155,0	97,0	12,5	8,0	45	14,0	14,0	14,0	14,0
9	1	155,0	97,0	20	9,0	40	14,0	14,0	14,0	14,0

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The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.