

Multi-outlet radial piston pumps

Type MRK701/702

up to **700 bar**

0.16 to 3.62 cm³/rev
per circuit

Features

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

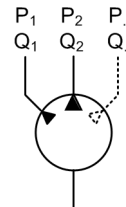


Applications

- Multiple hydraulic outlets are needed in one pump
- Power units
- Test benches
- 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
- Valve-controlled, radial piston pump of modular design



Technical Data

Hydraulic fluid	mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	-20 to 80 °C
Ambient temperature range	-30 to 50 °C
Viscosity range	5 to 220 mm ² /s
Max. operating pressure	700 bar
Operating pressure suction side	-0.2 bar to 0.5 bar gauge pressure (up to 5 bar on request)
Displacement volume	0.16 to 3.62 cm ³ /rev
Filtration (recommendation)	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
Axial force onto driving shaft	can't be taken up
Radial force onto driving shaft	on request
Max. rotation speed	2000 rpm
Direction of rotation	any
Suction height	max. 500 mm
Weight	see overview "Product information"
Materials	pressure flange: steel driving shaft: steel cover: diecast aluminium

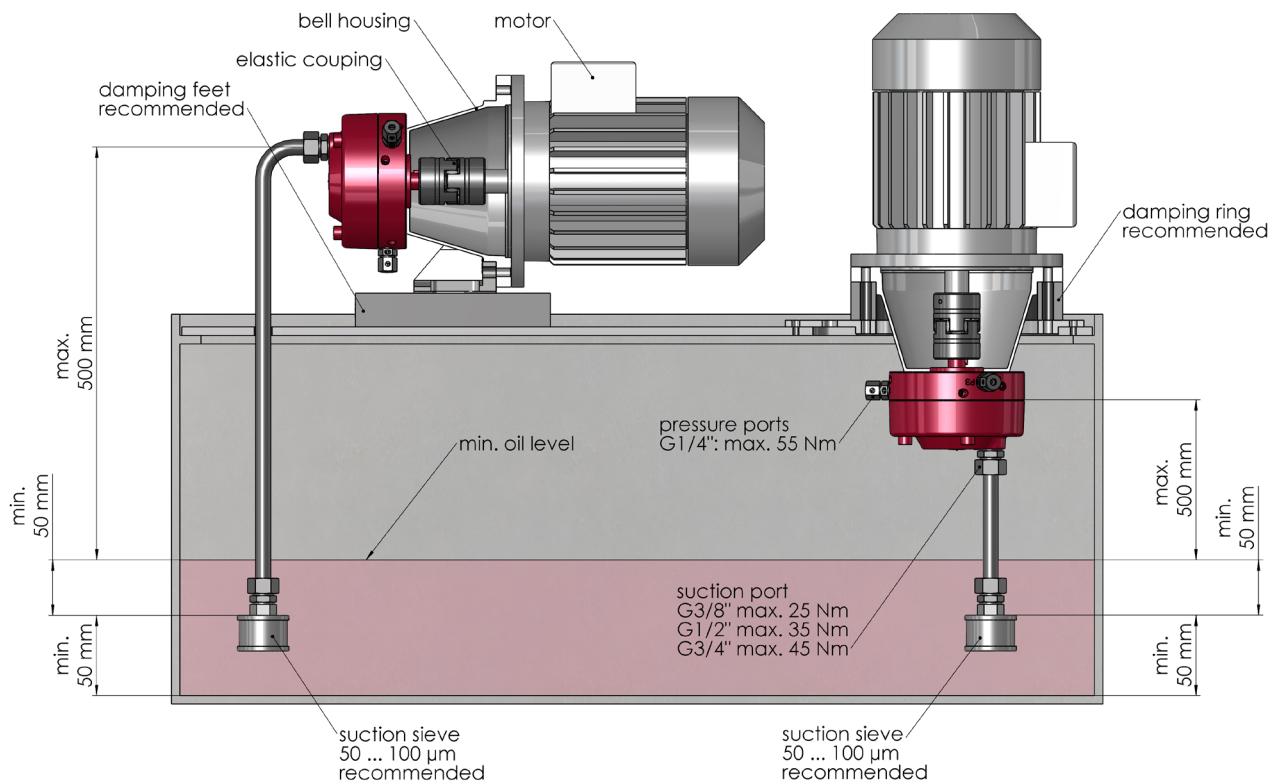
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per circuit

Type code

Example	MRK 701 - 2 x 0,31 - 700 - V - C 00																																										
Multi-outlet radial piston pumps	<table border="1"> <tr> <td>Design</td> <td colspan="10">00 ... 99 For internal purposes</td> </tr> <tr> <td>Index</td> <td colspan="10">Please leave blank For internal purposes</td> </tr> <tr> <td>Design revision</td> <td colspan="10">For internal purposes</td> </tr> </table>										Design	00 ... 99 For internal purposes										Index	Please leave blank For internal purposes										Design revision	For internal purposes									
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Design revision	For internal purposes																																										
Size	701 702																																										
Number of circuits	see overview "Product information"																																										
Displacement volume per circuit [cm³/rev]	see overview "Product information"																																										
Max. operating pressure [bar]	see overview "Product information"																																										
Seal material	V FKM other seal materials on request																																										

Mounting



Product information size 701

type code	number of circuits	number of pumping elements per circuit	max. operating pressure [bar]	displacement volume per circuit [cm ³ /rev]	pulsation	weight [kg]	part no.
MRK701-2x0,31-700-V-C*00	2	2	700	0.31	high	7.1	on request
MRK701-2x0,45-700-V-C*00	2	2	700	0.45	high	7.1	on request
MRK701-2x0,63-700-V-C*00	2	2	700	0.63	high	7.1	on request
MRK701-2x0,80-700-V-C*00	2	2	700	0.80	high	7.1	on request
MRK701-2x1,02-700-V-C*00	2	2	700	1.02	high	7.1	on request
MRK701-2x1,26-700-V-C*00	2	2	700	1.26	high	7.1	on request
MRK701-2x1,53-700-V-C*00	2	3	700	1.53	low	8.7	on request
MRK701-2x1,81-700-V-C*00	2	2	700	1.81	high	7.1	on request
MRK701-2x1,88-700-V-C*00	2	3	700	1.88	low	8.7	on request
MRK701-2x2,71-700-V-C*00	2	3	700	2.71	low	8.7	on request
MRK701-3x0,40-700-V-C*00	3	1	700	0.40	very high	7.0	on request
MRK701-3x0,80-700-V-C*00	3	2	700	0.80	high	8.7	on request
MRK701-3x1,14-700-V-C*00	3	2	700	1.14	high	8.7	on request
MRK701-3x1,81-700-V-C*00	3	2	700	1.81	high	8.7	on request
MRK701-4x0,16-700-V-C*00	4	1	700	0.16	very high	7.2	on request
MRK701-4x0,23-700-V-C*00	4	1	700	0.23	very high	7.2	on request
MRK701-4x0,40-700-V-C*00	4	1	700	0.40	very high	7.2	on request
MRK701-4x0,51-700-V-C*00	4	1	700	0.51	very high	7.2	on request
MRK701-4x0,63-700-V-C*00	4	1	700	0.63	very high	7.2	on request
MRK701-4x0,90-700-V-C*00	4	1	700	0.90	very high	7.2	on request
MRK701-5x0,16-700-V-C*00	5	1	700	0.16	very high	7.4	on request
MRK701-5x0,23-700-V-C*00	5	1	700	0.23	very high	7.4	on request
MRK701-5x0,40-700-V-C*00	5	1	700	0.40	very high	7.4	on request
MRK701-5x0,51-700-V-C*00	5	1	700	0.51	very high	7.4	on request
MRK701-5x0,63-700-V-C*00	5	1	700	0.63	very high	7.4	on request
MRK701-5x0,90-700-V-C*00	5	1	700	0.90	very high	7.4	on request
MRK701-6x0,16-700-V-C*00	6	1	700	0.16	very high	7.5	on request
MRK701-6x0,23-700-V-C*00	6	1	700	0.23	very high	7.5	on request
MRK701-6x0,40-700-V-C*00	6	1	700	0.40	very high	7.5	on request
MRK701-6x0,51-700-V-C*00	6	1	700	0.51	very high	7.5	on request
MRK701-6x0,90-700-V-C*00	6	1	700	0.90	very high	7.5	on request

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

Pumping elements are available with 0.16 / 0.23 / 0.40 / 0.51 / 0.63 / 0.90 cm³/rev.

Further versions on request

Type MRK701/702

up to 700 bar
0.16 to 3.62 cm³/rev
per circuit

Product information size 702

type code	number of circuits	number of pumping elements per circuit	max. operating pressure [bar]	displacement volume per circuit [cm ³ /rev]	pulsation	weight [kg]	part. no.
MRK702-2x2,04-700-V-C*00	2	4	700	2.04	low	16.5	on request
MRK702-2x3,07-700-V-C*00	2	4	700	3.07	low	16.5	on request
MRK702-2x3,62-700-V-C*00	2	4	700	3.62	low	16.5	on request
MRK702-3x1,88-700-V-C*00	3	3	700	1.88	low	21.6	on request
MRK702-3x2,71-700-V-C*00	3	3	700	2.71	low	21.6	on request
MRK702-4x0,80-700-V-C*00	4	2	700	0.80	high	21.4	on request
MRK702-4x1,02-700-V-C*00	4	2	700	1.02	high	21.4	on request
MRK702-4x1,26-700-V-C*00	4	2	700	1.26	high	21.4	on request
MRK702-4x1,41-700-V-C*00	4	2	700	1.41	high	21.4	on request
MRK702-4x1,81-700-V-C*00	4	2	700	1.81	high	21.4	on request
MRK702-8x0,16-700-V-C*00	8	1	700	0.16	very high	16.5	on request
MRK702-8x0,23-700-V-C*00	8	1	700	0.23	very high	16.5	on request
MRK702-8x0,40-700-V-C*00	8	1	700	0.40	very high	16.5	on request
MRK702-8x0,51-700-V-C*00	8	1	700	0.51	very high	16.5	on request
MRK702-8x0,63-700-V-C*00	8	1	700	0.63	very high	16.5	on request
MRK702-8x0,90-700-V-C*00	8	1	700	0.90	very high	16.5	on request
MRK702-9x0,16-700-V-C*00	9	1	700	0.16	very high	16.7	on request
MRK702-9x0,23-700-V-C*00	9	1	700	0.23	very high	16.7	on request
MRK702-9x0,40-700-V-C*00	9	1	700	0.40	very high	16.7	on request
MRK702-9x0,51-700-V-C*00	9	1	700	0.51	very high	16.7	on request
MRK702-9x0,63-700-V-C*00	9	1	700	0.63	very high	16.7	on request
MRK702-9x0,90-700-V-C*00	9	1	700	0.90	very high	16.7	on request

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 volume [cm³/rev]
n = speed [rpm]
η_t = overall efficiency approx. 0.8

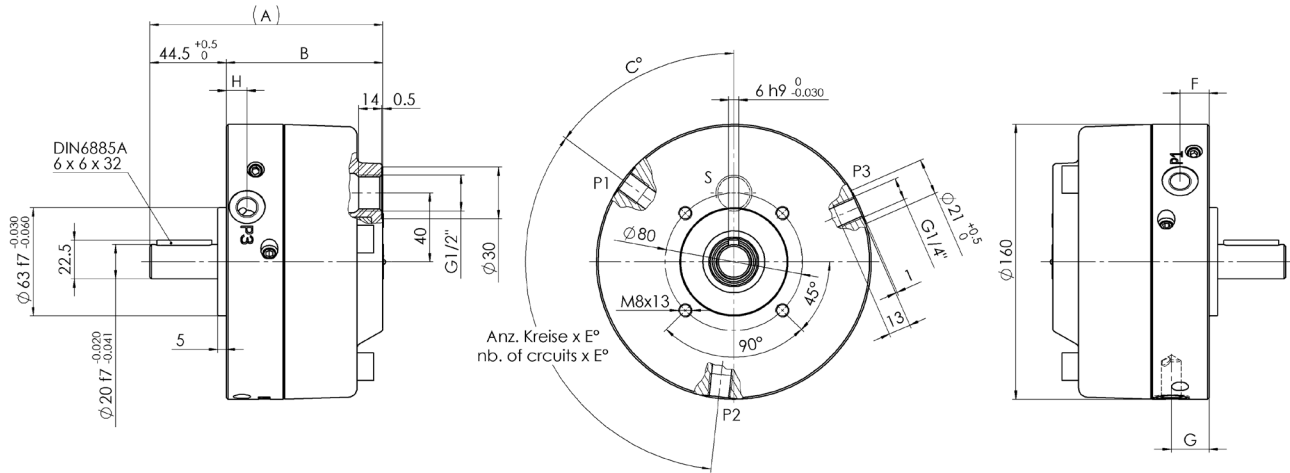
k = pulsation factor
- with 2 pumping elements: k approx. 1.60
- with 3 pumping elements: k approx. 1.05
- with 4 pumping elements: k approx. 1.10
- with 5 pumping elements: k approx. 1.00
- with 6 pumping elements: k approx. 1.05
- with 7 pumping elements: k approx. 1.00
- with 8 pumping elements: k approx. 1.05
- with 9 pumping elements: k approx. 1.00

Calculation of driving motor torque

$$M = \frac{p \cdot V_g}{62,8 \cdot \eta_t} \quad M \text{ torque [Nm]}$$

Dimensional drawings

Size MRK701



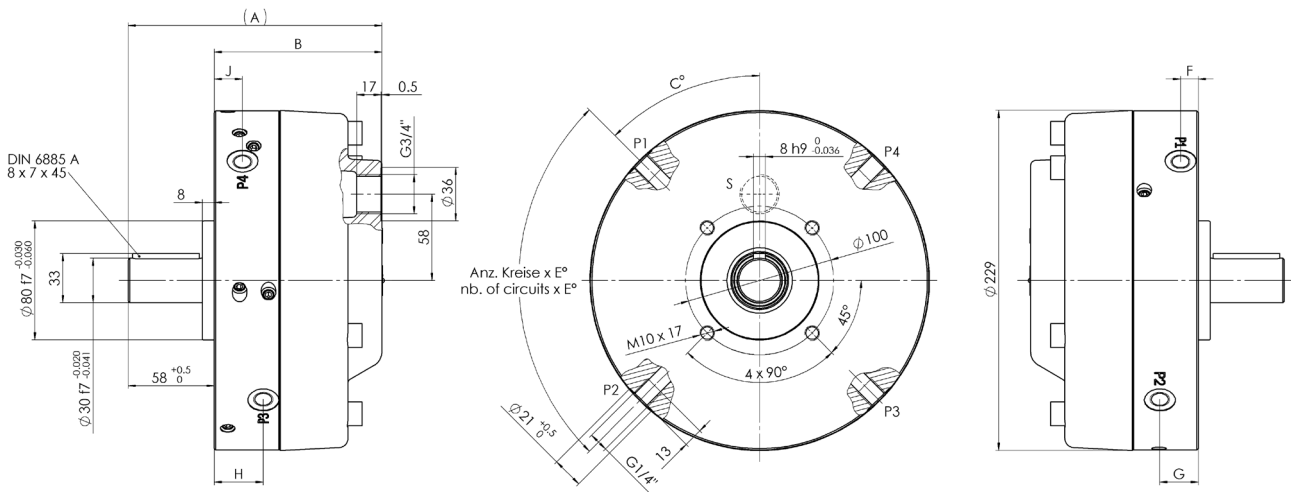
Note: Illustration of a pump with 3 circuits! Further drawings on request.

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

Type MRK701/702

up to 700 bar
0.16 to 3.62 cm³/rev
per circuit

Size MRK702



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

number of circuits	number of pumping elements per circuits	dim. A [mm]	dim. B [mm]	dim. C [°]	dim. E [°]	dim. F [mm]	dim. G [mm]	dim. H [mm]	dim. J [mm]
2	4	155.0	97.0	90	180	12.0	12.0		
3	3	171.0	113.0	60	120	20.5	15.0	20.5	
4	2	171.0	113.0	45	90	12.0	26.0	33.0	19.0
8	1	155.0	97.0	12.5	45	14.0	14.0	14.0	14.0
9	1	155.0	97.0	20	40	14.0	14.0	14.0	14.0

Spare parts

item description	part no.
seals kit for MRK701	4006555
seals kit for MRK702	4006559