

Combination pumps

Type BKP

LP: 250 bar / 4,0 to 61,1 cm³/rev
HP: 500, 700 or 1000 bar
0,24 to 8,14 cm³/rev

Features

- Compact design
- Self-priming and venting (gear pump and BRK)
- Various combinations
- Combination with MRK Multi-outlet radial piston pump as MKP on request

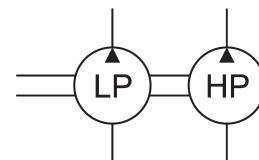


Design

- Combination pump consists of an external gear pump and a BRK (501, 502, 701, 702, 11 oder 12) pump from Bieri
- Each pump provided with a suction and pressure connection
- BRK pump is coupled through an intermediate flange and coupling onto the gear pump (primary pump)
- Completely assembled
- Special combination with 2-fold gear pump available on request

Applications

- For two different hydraulics circuits with different pressures and displacements
- Presses
- Lifting and advancing systems



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 up to 50 °C		
Viscosity range	12 to 220 mm ² /s		
Max. operating pressure	500, 700 or 1000 bar		
Suction pressure	-0,2 bar up to 0,5 bar relative		
Filtration (recommendation)	According to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12		
Weight	see product information		
Radial force / Axial force onto driving shaft	Not allowed		
Installation position	Any		
Max. speed	2000 rpm		
Direction of rotation	Clockwise		
Suction height	Max. 500 mm		
Material	Gear pump:	Housing:	aluminium
		Gear:	steel
		Shaft:	steel
	Radial piston pump:	see data sheet BRK pumps	

LP: 250 bar / 4,0 to 61,1 cm³/rev
HP: 500, 700 or 1000 bar
0,24 to 8,14 cm³/rev

Example	BKP	501	-	0,24	-	500	-	4,0	-	250	-	V	-	C		00
Combination pump																
Size (BRK pump)	501 502 701 702 11 12															
Displacement of the BRK pump [cm³/rev]	see product inform.															
Max. operating pressure of the BRK pump [bar]	see product information															
Displacement of the gear pump [cm³/rev]	see product information															
Max. operating pressure of the gear pump [bar]	see product information															
Seal material	V [FPM] other seal materials on request															

Special design
01 ... 99
(00 for Standard)

Part index
Please leave it blank
(small letters a-z;
different letters do
not effect
interchangeability)

Design revision
see dimension drawings
(capital letters A-Z; identical
letters equal same
connecting dimensions)

$$M_{\text{Total}} = M_{\text{BRK}} + M_{\text{ZP}}$$

$M_{BRK} = \frac{p_{BRK} \cdot V_{\xi BRK} \cdot k}{62,8 \cdot \eta_{BRK}}$	$M_{ZP} = \frac{p_{ZP} \cdot V_{\xi ZP}}{62,8 \cdot \eta_{ZP}}$
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- | | |
|------------------|--|
| M | Torque [Nm] |
| P | Driving power [kW] |
| n | Speed [rpm] |
| V _g | Displacement [cm ³ /rev] |
| p | Operating pressure [bar] |
| η _{BRK} | Efficiency BRK approx. 0,8 |
| η _{ZP} | Efficiency ZP approx. 0,7 |
| k | Degree of uniformity
(see product info) |

$P_{BRK} = \frac{p_{BRK} \cdot V_{gBRK} \cdot n \cdot k}{600 \cdot 10^3 \cdot \eta_{BRK}}$	$P_{ZP} = \frac{p_{ZP} \cdot V_{gZP} \cdot n}{600 \cdot 10^3 \cdot \eta_{ZP}}$
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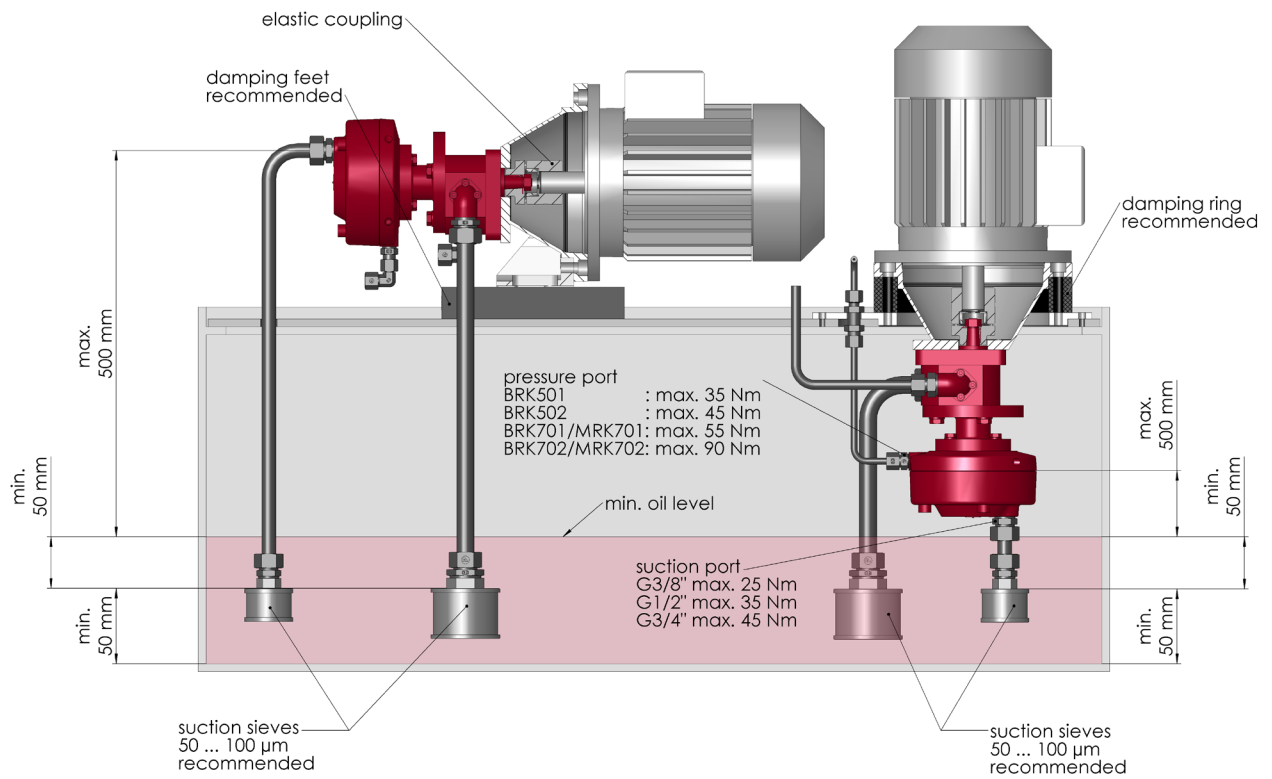
Type BKP

LP: 250 bar / 4,0 to 61,1 cm³/rev

HP: 500, 700 or 1000 bar

0,24 to 8,14 cm³/rev

Mounting



Type BKPLP: 250 bar / 4,0 to 61,1 cm³/rev

HP: 500, 700 or 1000 bar

0,24 to 8,14 cm³/rev**Product information****combination gear pump Type 2SP with: BRK501, 701 or 11****Technical data gear pump Type 2SP, including adapter and coupling**

Type	Displacement [cm ³ /rev]	Dim. A [mm]	Dim. B [mm]	Dim. C [mm]	Dim. K [mm]	Dim. L [mm]	Dim. H [mm]	Dim. M [mm]	Operating pressure max. [bar]	Weight ca. [kg]
A4	4,0	51	210,5	25,4	G 1/2"	61,0	G 1/2"	61,0	250	3,8
A6	6,0	54,3	213,8	27,0	G 1/2"	61,0	G 1/2"	61,0	250	3,9
A8	8,5	58,5	218,0	29,1	G 1/2"	61,0	G 1/2"	61,0	250	4,1
A11	11,0	62,6	222,1	31,2	G 1/2"	61,0	G 3/4"	65,0	250	4,4
A14	14,0	67,6	227,1	33,7	G 1/2"	61,0	G 3/4"	65,0	250	4,5
A16	16,5	71,8	231,3	35,8	G 1/2"	61,0	G 3/4"	65,0	230	4,6
A19	19,5	76,8	236,3	38,3	G 1/2"	61,0	G 3/4"	65,0	210	4,8
A22	22,5	81,8	241,3	40,8	G 1/2"	61,0	G 3/4"	65,0	190	4,9
A26	26,0	87,6	247,1	43,7	G 1/2"	61,0	G 3/4"	65,0	170	5,1

Note All combinations are possible. However, the working conditions in regard to pressures and displacements for both pumps have to be determined carefully so that the **max. permissible torque of 98 Nm** on the driving shaft is not exceeded. Observe direction of rotation!

Technical data BRK501

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
501	0,24	500	1.05	3,9
501	0,34	500	1.05	3,9
501	0,47	500	1.05	3,9
501	0,60	500	1.05	3,9
501	0,68	500	1.05	3,9
501	0,76	500	1.05	3,9
501	0,94	500	1.05	3,9
501	1,13	500	1.02	4,4
501	1,21	500	1.05	3,9
501	1,31	500	1.05	3,9
501	1,53	500	1.05	3,9
501	1,88	500	1.05	3,9
501	2,01	500	1.02	4,4
501	2,54	500	1.02	4,4
501	2,71	500	1.05	3,9
501	3,14	500	1.02	5,4
501	3,56	500	1.01	5,7
501	4,52	400	1.02	5,4

Technical data BRK701

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
701	0,24	700	1.05	6,1
701	0,34	700	1.05	6,1
701	0,47	700	1.05	6,2
701	0,60	700	1.05	6,1
701	0,68	700	1.05	6,2
701	0,76	700	1.05	6,1
701	0,79	700	1.02	6,6
701	0,94	700	1.05	6,1
701	1,03	700	1.05	6,2
701	1,13	700	1.02	6,6
701	1,21	700	1.05	6,2
701	1,31	700	1.05	7,2
701	1,36	700	1.05	6,1
701	1,53	700	1.05	7,2
701	1,66	700	1.05	6,4
701	1,88	700	1.05	6,4
701	2,01	700	1.02	6,9
701	2,54	700	1.02	6,9
701	2,71	700	1.05	6,5
701	2,81	700	1.01	7,2
701	3,14	700	1.02	6,9
701	4,40	500	1.01	7,2
701	4,52	500	1.02	6,9

Size	Displacement [cm³/rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
11	0,47	1000	1.05	7,0
11	0,68	1000	1.05	7,0
11	0,79	1000	1.02	7,5
11	1,13	1000	1.02	7,5
11	1.21	1000	1.05	7,0
11	1,53	1000	1.05	7,0
11	1,88	900	1.05	7,0
11	2,01	1000	1.02	7,5
11	2,54	900	1.02	7,5
11	2,71	850	1.05	7,5

2SP-A...

Lager 1:8
M max. 98 Nm
key; 3.165 x 6.5

Konus 1:8
M max. 98 Nm
Postfeder; 3.165 x 6.5

Ø 56.5

M 12 x 1.5

M 25 Nm

9.4

15.8

5

C

A

39.5

19

B

P HP

70

G1/4" x 1.6
BRK501: max. 35 Nm

0.5

S HP

40

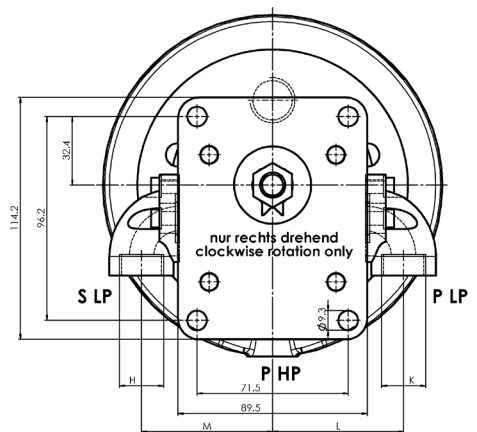
G1/2" x 1.4
max. 65 Nm

Ø 140

BRK501
BRK701

57.5

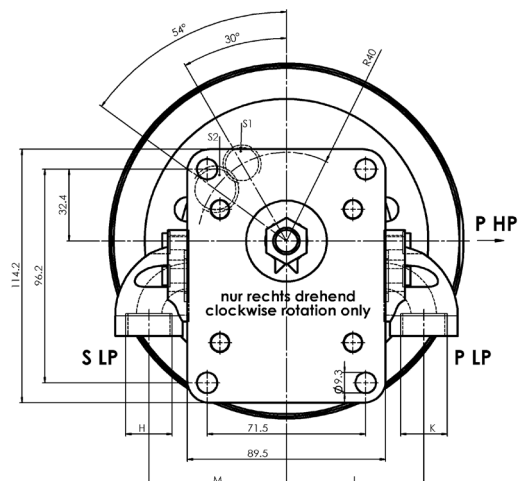
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Technical drawing of the BRK11 brake assembly, showing side and front views with dimensions and labels.

Labels and Dimensions:

- 2SP-A...**: Label for the top part of the assembly.
- taper 1:8**: Taper specification for the top part.
- M max. 98 Nm**: Maximum torque for the top part.
- key: 3.165 x 6.5**: Key dimensions for the top part.
- Konus 1:8**: Taper specification for the bottom part.
- M max. 98 Nm**: Maximum torque for the bottom part.
- Passfeder: 3.165 x 6.5**: Key dimensions for the bottom part.
- Ø 36.5**: Outer diameter of the top part.
- M12 x 1.5**: Thread specification for the top part.
- M 25 Nm**: Torque specification for the top part.
- 9.4**: Dimension for the top part.
- 15.8**: Dimension for the top part.
- 5**: Dimension for the top part.
- 39.5**: Dimension for the top part.
- 19**: Dimension for the top part.
- A**: Dimension for the top part.
- 57.5**: Dimension for the top part.
- 71.5**: Dimension for the top part.
- 83.5**: Dimension for the top part.
- Ø 160**: Outer diameter of the bottom part.
- S HP**: Label for the bottom part.
- P HP**: Label for the bottom part.
- G 1/4"x1.6**: Thread specification for the bottom part.
- BRK11**: Label for the bottom part.



Type BKPLP: 250 bar / 4,0 to 61,1 cm³/rev

HP: 500, 700 or 1000 bar

0,24 to 8,14 cm³/rev**Product information****combination gear pump Type 3SP with: BRK501, BRK701 or BRK11****Technical data gear pump Type 3SP, including adapter and coupling**

Type	Displacement [cm ³ /rev]	Dim. A [mm]	Dim. B [mm]	Dim. C [mm]	Dim. K [mm]	Dim. L [mm]	Dim. H [mm]	Dim. M [mm]	Operating pressure max. [bar]	Weight ca. [kg]
A22	22,3	82,9	268,8	41,5	G 3/4"	75,0	G 1"	80,0	240	8,1
A29	29,3	88,9	274,8	44,5	G 3/4"	75,0	G 1"	80,0	220	8,4
A33	32,9	91,9	277,8	46,0	G 3/4"	75,0	G 1"	80,0	220	8,5
A36	36,4	94,9	280,8	47,5	G 3/4"	75,0	G 1"	80,0	210	8,6
A44	43,5	100,9	286,8	50,5	G 3/4"	75,0	G 1"	80,0	200	8,9
A52	51,7	107,9	293,8	54,0	G 3/4"	75,0	G 1"	80,0	200	9,2
A62*	61,1	115,9	301,8	58,0	G 3/4"	75,0	G 1"	80,0	180	9,6

Note All combinations are possible. However, the working conditions in regard to pressures and displacements for both pumps have to be determined carefully so that the **max. permissible torque of 240 Nm** on the driving shaft is not exceeded. Observe direction of rotation!

* only on request

Technical data BRK501

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
501	0,24	500	1.05	3,9
501	0,34	500	1.05	3,9
501	0,47	500	1.05	3,9
501	0,60	500	1.05	3,9
501	0,68	500	1.05	3,9
501	0,76	500	1.05	3,9
501	0,94	500	1.05	3,9
501	1,13	500	1.02	4,4
501	1,21	500	1.05	3,9
501	1,31	500	1.05	3,9
501	1,53	500	1.05	3,9
501	1,88	500	1.05	3,9
501	2,01	500	1.02	4,4
501	2,54	500	1.02	4,4
501	2,71	500	1.05	3,9
501	3,14	500	1.02	5,4
501	3,56	500	1.01	5,7
501	4,52	400	1.02	5,4

Technical data BRK701

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
701	0,24	700	1.05	6,1
701	0,34	700	1.05	6,1
701	0,47	700	1.05	6,2
701	0,60	700	1.05	6,1
701	0,68	700	1.05	6,2
701	0,76	700	1.05	6,1
701	0,79	700	1.02	6,6
701	0,94	700	1.05	6,1
701	1,03	700	1.05	6,2
701	1,13	700	1.02	6,6
701	1,21	700	1.05	6,2
701	1,31	700	1.05	7,2
701	1,36	700	1.05	6,1
701	1,53	700	1.05	7,2
701	1,66	700	1.05	6,4
701	1,88	700	1.05	6,4
701	2,01	700	1.02	6,9
701	2,54	700	1.02	6,9
701	2,71	700	1.05	6,5
701	2,81	700	1.01	7,2
701	3,14	700	1.02	6,9
701	4,40	500	1.01	7,2
701	4,52	500	1.02	6,9
701	6,33	350	1.01	7,2

LP: 250 bar / 4,0 to 61,1 cm³/rev
HP: 500, 700 or 1000 bar
0,24 to 8,14 cm³/rev

Size	Displacement [cm³/rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
11	0,47	1000	1.05	7,0
11	0,68	1000	1.05	7,0
11	0,79	1000	1.02	7,5
11	1,13	1000	1.02	7,5
11	1.21	1000	1.05	7,0
11	1,53	1000	1.05	7,0
11	1,88	900	1.05	7,0
11	2,01	1000	1.02	7,5
11	2,54	900	1.02	7,5
11	2,71	850	1.05	7,5

[illegible]

BRK11

3SP-A...

taper 1:8
M max. 240 Nm
key 3,958 x 7,5

Konus: 1:8
M max.: 240 Nm
Pinsfeder: 3,958 x 7,5

W 75 Nm

S HP

P HP

G 1/4" x 1,5

nur rechts drehend
clockwise rotation only

S LP

P LP

Dimensions: 71.5, 160, 54°, 30°, 47.63, 150, 128, 98, 120, 80.5, 47.2, 22.4, 11.2, 21.4, 5, C, A, M, L, K, H.

Type BKPLP: 250 bar / 4,0 to 61,1 cm³/rev

HP: 500, 700 or 1000 bar

0,24 to 8,14 cm³/rev**Product information****combination gear pump Type 3SP with: BRK502, BRK702, BRK12****Technical data gear pump Type 3SP**

Type	Displacement [cm ³ /rev]	Dim. A [mm]	Dim. B [mm]	Dim. C [mm]	Dim. K [mm]	Dim. L [mm]	Dim. H [mm]	Dim. M [mm]	Operating pressure max. [bar]	Weight ca. [kg]
A22	22,3	82,9	282,8	41,5	G 3/4"	75,0	G 1"	80,0	240	8,3
A29	29,3	88,9	288,8	44,5	G 3/4"	75,0	G 1"	80,0	220	8,5
A33	32,9	91,9	291,8	46,0	G 3/4"	75,0	G 1"	80,0	220	8,7
A36	36,4	94,9	294,8	47,5	G 3/4"	75,0	G 1"	80,0	210	8,8
A44	43,5	100,9	300,8	50,5	G 3/4"	75,0	G 1"	80,0	200	9,1
A52	51,7	107,9	307,8	54,0	G 3/4"	75,0	G 1"	80,0	200	9,4
A62*	61,1	115,9	315,8	58,0	G 3/4"	75,0	G 1"	80,0	180	9,8

Note: All combinations are possible. However, the working conditions in regard to pressures and displacements for both pumps have to be determined carefully so that the **max. permissible torque of 240 Nm** on the driving shaft is not exceeded. Observe direction of rotation!

* only on request

Technical data BRK502

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
502	4,52	500	1.02	9,0
502	5,65	500	1.00	9,8
502	7,31	500	1.00	9,8

Technical data BRK702

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
702	4,52	700	1.02	15,1
702	5,65	700	1.00	15,7
702	6,33	650	1.01	15,4
702	7,31	550	1.00	15,7
702	8,14	500	1.00	15,7

Technical data BRK12

Size	Displacement [cm ³ /rev]	Operating pressure max. [bar]	k	Weight ca. [kg]
12	1,10	1000	1.01	12,5
12	1,53	1000	1.01	12,5
12	2,81	1000	1.01	12,5
12	3,56	1000	1.01	12,5
12	4,40	900	1.01	12,5

LP: 250 bar / 4,0 to 61,1 cm³/rev
HP: 500, 700 or 1000 bar
0,24 to 8,14 cm³/rev

0,24 to 8,14 cm³/rev

tapper: 1:8
M max.: 240 Nm
 key: 3.958 x 7.5

Konus: 1:8
M max.: 240 Nm
 Pindiameter: 3.958 x 7.5

3SP-A...

S HP

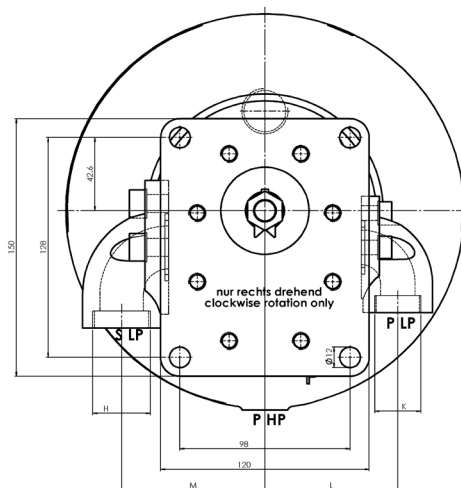
BRK502
 BRK702

P HP

1.6.5
 0.5
 35
 11.2
 21.4
 47.2
 22.4
 A
 15
 83
 97

Ø 50.8
 M 4 x 1.2
 M 75 Nm
 3/16" max. 90 Nm
 Ø 230

80.5

[illegible]