

MANNESMANN REXROTH	Variable Pump A2VK series 1 and 4		RE 94000/05.85
	Model for Pumping Plastics Components Axial Piston, Bent Axis Design		
Brueninghaus Hydromatik	NG 12 ... 107	Nominal Pressure 250 bar Peak Pressure 315 bar	Replaces 06.79



Axial Piston high pressure variable pumps are used for the pumping and metering of polyurethane components..

The particular advantages offered by the A2VK variable pumps are:

- High metering accuracy and repeatability of the variable flows
- Manual control via handwheel with built-in-precision measuring scale or alternatively mechanical rod control, for mounting pneumatic or hydraulic control cylinders (remote control)
- Operating pressure up to 250 bar
- Low suction pressure, even when pumping highly viscous fluids
- Very little pulsation of flow
- Compatibility of pump components with materials to be pumped (Polyol, Isocyanat) through use of specially matched materials and special seals
- Quiet operation
- Optimum volumetric efficiency

For certain applications:

Constant capacity models available.

Please consult our industrial transmissions sales dept.

Ordering Code

Short Code

A2VK	55	MA	O	R	1	G	1	P	E	1
------	----	----	---	---	---	---	---	---	---	---

Pump TypeVariable pump **Size**11,6 cm≈ 28,1 cm≈ 54,8 cm≈ 107,0 cm≈

(Displacement)

Control DeviceManual control Mechanical rod control **Type of Circuit**open circuit closed circuit **Direction of Rotation** (View on drive shaft)Clockwise Anti-clockwise **Assembly Design**MA-handwheel on left

GE-mechanical rod on left

MA-handwheel on right

GE-mechanical rod on right

Viewed on drive shaft

Swivel Movementto one side only **Shaft End**Parallel, keyed **Valve Assembly**without valve assembly built-on-pressure relief valve **Design**Housed pump **Series**Size 28 - 107 Size 12 **Ordering Example:**

A2VK.55.MA.O.R.1.G.1.P.E.1

Variable pump A2VK,
size 55,
with manual control MA,
open circuits, clockwise rotation,
series 1, design G, built-on
pressure relief valve,
parallel shaft with key, swivel
to one side only,
assembly design 1

Technical Data

Mounting Position: Optional; the unit must always be filled with oil.

With MA control device: axis of handwheel must be horizontal, because of position indicator.

Direction of Flow

Swivel Direction	Clockwise	Rotation	Anti-Clockwise	Rotation
	open circuit	closed circuit	open circuit	closed circuit
clockwise	S to B A plugged	A to B	S to A B plugged	B to A
Anti-clockwise	S to A	B to A B plugged	S to B	A to B A plugged

Operating Pressure Range - inlet side

Open circuit:

Prefill pressure 1 - 3 bar absolute at suction port S

Closed circuit:

Sum of combined pressures at A and B ≤ 250 bar (315 bar for short period), fit leakage line at port T.

Operating Pressure Range - outlet side

Pressure at port A or B

Nominal pressure _____ $p_N = 250$ bar

Peak pressure _____ $p_{max} = 315$ bar

(Pressure data to DIN 24312)

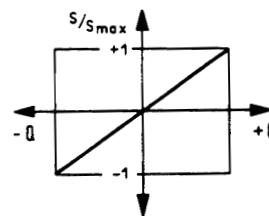
Table of Values

Size		12	28	55	107	
Displacement $V_{g\ max}$	cm ³	11,6	28,1	54,8	107	
Flow Q_{max} in open circuit and at speed (at a viscosity of $\nu = 36$ mm ² /s)	$n = 735$ rpm	l/min	8,3	20	39	76
	$n = 970$ rpm	l/min	10,9	26	51	100
	$n = 1450$ rpm	l/min	16,3	39	77	150
Power at $\Delta p = 250$ bar and speed	$n = 735$ rpm	kW	4	9	17	33
	$n = 970$ rpm	kW	5	12	22	43
	$n = 1450$ rpm	kW	7	17	33	65

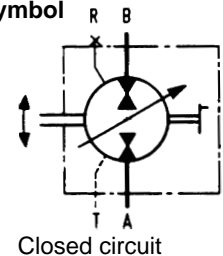
MA Manual Control

By turning the handwheel, the pump swivel body and thus the displacement or output flow is infinitely varied within the range Q_0 to Q_{max} via a self-locking threaded spindle.

Curve



Symbol

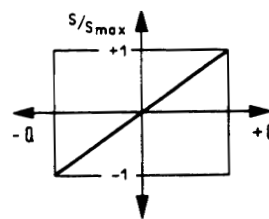


Rotations of handwheel V_{g0} to $V_{g\ max}$	Us	10,6	12,7	16	13,4
Max. operating force on handwheel	kp	7	7	8	12
Approx. weight (pump with control device)	kg	19	36	64	117

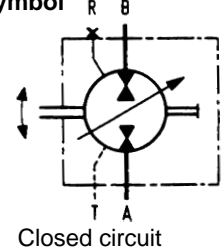
GE Mechanical Rod Control

By means of the positioning rod, the pump swivel body and thus the displacement or output flow is infinitely varied within the range Q_0 to Q_{max} .

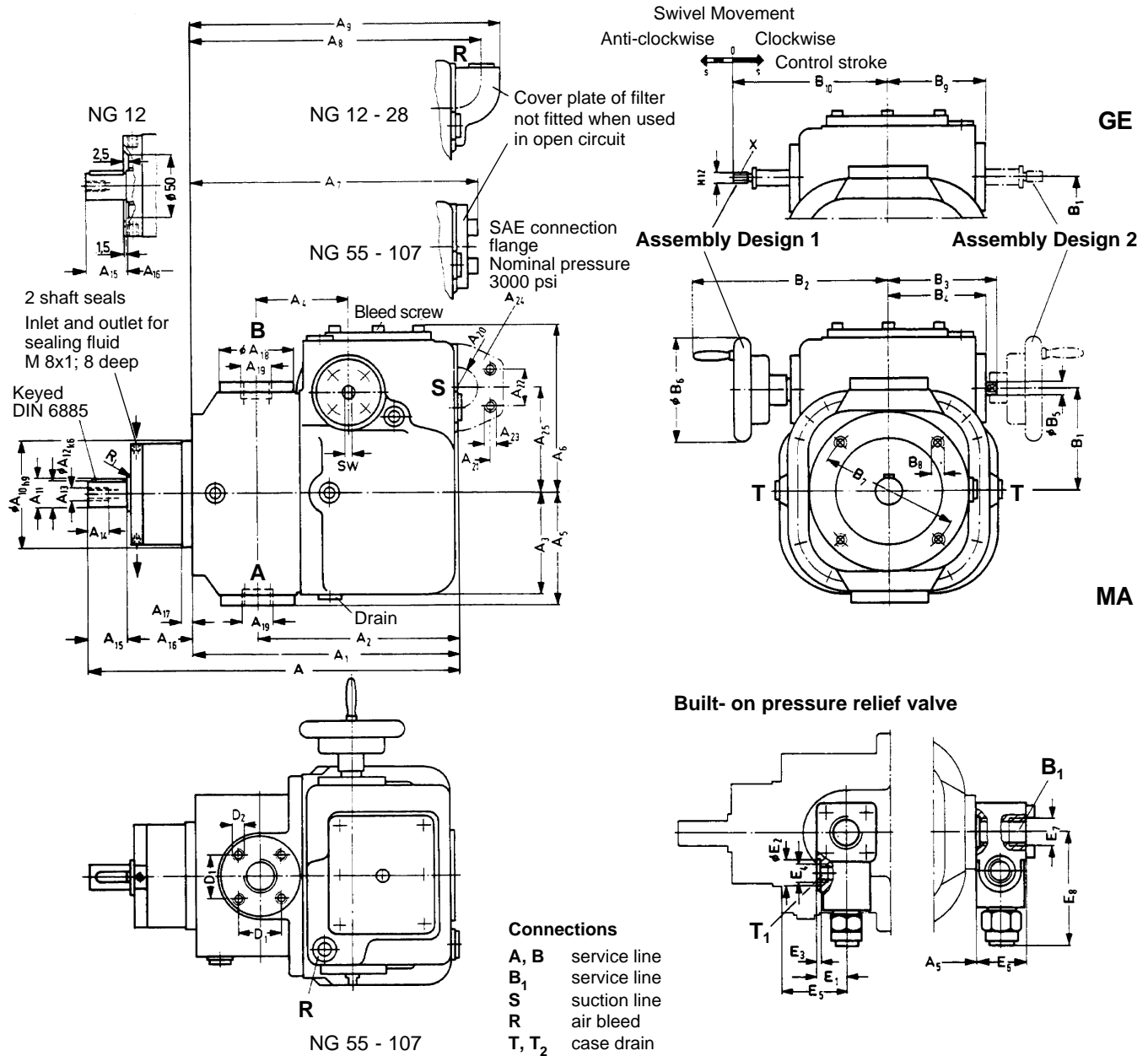
Curve



Symbol



Control stroke s V_{g0} to $V_{g\ max}$	mm		25,3	31,7	40,1
Operating force F (internal operating force of pump without accelerating force) at operating pressure	$p = 100$ bar	kp	23	35	56
	$p = 150$ bar	kp	34,5	54	84
	$p = 200$ bar	kp	46	73	112
	$p = 250$ bar	kp	57,5	92	140
Min. perm. control times t_{min} V_{g0} to $V_{g\ max}$	s		0,03	0,004	0,005
Approx. weight (pump with control device)	kg		30	57	105



Size	A	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	A ₇	A ₈	A ₉	A ₁₀	A ₁₁	A ₁₂	A ₁₃	A ₁₄	A ₁₅	A ₁₆	A ₁₇	A ₁₈	A ₁₉ thread	depth	A ₂₀
12	302	222	172	75	80	85	132	-	248	270	80	22,5	20	M 6	16	30	50	6	60	M 22x1,5	14	32
28	357	257	195	95	90	106	142	-	286	308	100	27,9	25	M 8	16	38	62	8	73	M 27x2	16	40
55	440	317	240	120	110	132,5	195	342,5	-	-	125	32,9	30	M 12	28	49	74	10	88	M 33x2	18	50
107	548	388	298	150	148	160	242	413,5	-	-	160	43,1	40	M 12	28	66	94	12	110	M 42x2	20	63

Size	A ₂₁	A ₂₂	A ₂₃ thread	depth	A ₂₄	A ₂₅	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇	B ₈ thread	depth	B ₉	B ₁₀	D ₁	D ₂ thread	depth	E ₁	E ₂
12	58,7	30,2	M 10	15	1 1/4"	71	71	207	102	94	10	125	100	M 8	12	-	-	32	M 6	9	22,5	-
28	69,9	35,7	M 12	18	1 1/2"	80	85	218	110	102	10	125	125	M 10	15	104,5	162	40	M 8	11	27,5	28
55	77,8	42,9	M 12	18	2"	125	120	272	125	115	12	200	160	M 16	24	119,6	180,4	48	M 10	12,5	33	33
107	88,9	50,8	M 12	18	2 1/2"	160	150	303	150	132,5	22	200	200	M 16	24	44,5	222,5	60	M 12	15	40	40

Size	E ₃	E ₄ thread	depth	E ₅	E ₆	E ₇ thread	depth	E ₈	R ₁	Keyed DIN 6885	A/F	Control stroke s	Port T	Port R
12	-	M 18x1,5	12	50	46	M 22x1,5	14	109,5	0,4	A 6x6x25,5	9	-	M 12x1,5	M 27x1,5
28	1	M 22x1,5	14	62	50	M 27x2	16	115,5	0,6	AS 8x7x32,5	9	25,3	M 16x1,5	M 27x1,5
55	1,5	M 27x2	16	77	56	M 33x2	18	133,5	1,6	AS 8x7x43	10	31,7	M 18x1,5	M 27x1,5
107	1,5	M 33x2	18	90	65	M 42x2	20	166	1,6	AS 12x8x57	19	40,1	M 18x1,5	M 42x1,5