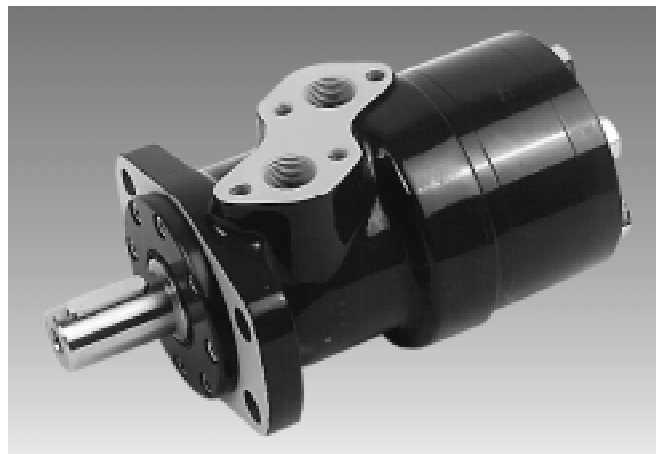


**MANNESMANN
REXROTH****Gerotormotors (Low Speed High Torque Motors)
Type GMP, GMR, GMVD****RE
14 070/11.96****Replaces: 03.96****Characteristics:**

- Very smooth running, even at low speeds
- Wide speed range
- Constant output torque over a wide speed range
- High starting torque
- Robust design capable of withstanding tough operating conditions
- Favorable power-to-weight ratio
- Operation without a leakage oil line, even when exposed to high backflow pressures
- Can be connected in series



Gerotormotors Type GMR

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Functional Description, applications, mode of operation, variants

Gerotor motors are robust hydraulic driveline elements with universal applications.

The Gerotor has a special design feature (Gerotor reduction) that allows low output speeds without the need for additional gear stages. In many cases, this can help to reduce costs and cut down weight.

Gerotor motors are self-lubricating and practically maintenance-free, merely requiring a regular oil change.

Gerotor motors cover a torque spectrum from 10 daNm to 100 daNm and operate in a power range from 10 kW to 30 kW.

Applications:

- Agricultural and forestry vehicles
- Conveyor systems
- Cranes and transport systems
- Municipal vehicles (road sweepers, snow clearers, road gritters, etc.)
- Construction machinery
- Mining equipment
- Winch drives
- Plastics machinery
- Wood processing machinery
- Machine tools
- Shipbuilding

Mode of operation:

Gerotor motors are internally geared motors that convert hydraulic energy into mechanical energy.

The Gerotor consists of a ring with an internal gear profile, and an eccentric pinion mounted in this internal ring gear. The pinion has one tooth less than the internal ring gear and so only advances by one tooth space every time it rotates within the ring. This effect gives rise to a reduction ratio, which is the basis for the excellent slow-running characteristics of this motor design.

A cardan shaft with crowned profile on either end transmits the power from the pinion to the output shaft.

Series GMP, GMR and GMVD motors are controlled using the control grooves in a drum valve. This drum valve is a part of the shaft in GMP and GMR motors, whereas the shaft in the GMVD model draws the drum valve with it.

Motor torque is dependent on the size of motor (cm³ per revolution) and the pressure differential between the inlet and outlet connections

Variants:

Gerotormotors offers a wide choice of special versions for particular applications in addition to its comprehensive range of standard motors.

- Wheel motors with recessed mounting flange
- Two-stage switching motors with variable intake volumes
- Motors with a speedo connection for measuring speeds
- Motors with integrated shock valves

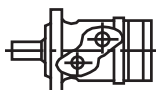
Ordering code and sample order (Type GMP, GMR, GMVD)

				GM	/	-	*
GMP-motor	=	Type	P	Series	610		
GMR-motor (side port version)	=	R	620				
GMRE-motor (end port version)	=	RE	621				
GMVD-motor	=	VD	630				
Displacement (cm ³ per revolution)							
Type	GMP	GMR GMRE	GMVD				
	50,9	51,8	51,8	50	C		
	78,7	81,4	81,4	80	F		
	98,9	103,7	103,7	100	G		
	123,6	125,9	125,9	125	H		
	158,5	162,9	162,9	160	K		
	197,8	203,6	203,6	200	L		
	247,2	251,7	251,7	250	M		
	316,9	325,8	325,8	320	N		
	-	407,2	407,2	400	P		
				Size			
					Code letter		

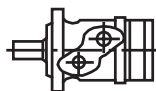
Further details in clear text	
Shaft	
2-hole flange SAE	
01 =	cylindrical shaft 32 mm
02 =	cylindrical shaft 25 mm
03 =	tapered shaft 1:10
04 =	Involute splined shaft SAE 6b
05 =	cylindrical shaft 1 inch
4-hole flange SAE	
06 =	cylindrical shaft 32 mm
07 =	cylindrical shaft 25 mm
08 =	tapered shaft 1:10
09 =	Involute splined shaft SAE 6b
10 =	cylindrical shaft 1 inch
Connection thread	
1 =	Metric
2 =	Pipe thread

Sample order:

- GMP 80 (displacement = 78,7cm³ per revolution)
- cylindrical shaft Ø 32mm
- Connection thread M22x1,5 / M14x1,5
- **Ordering code: GMP 80 /610-F101**

Ordering code and weights (Type GMP)**GMP-Motors with 2-hole flange, side port version, series 610**

Shaft	Connections	GMP 50	GMP 80	GMP 100	GMP 125	GMP 160	GMP 200	GMP 250	GMP 320
Cyl. shaft Ø 32mm	M22x1,5 M14x1,5	610-C101	610-F101	610-G101	610-H101	610-K101	610-L101	610-M101	610-N101
	G1/2 G1/4	610-C201	610-F201	610-G201	610-H201	610-K201	610-L201	610-M201	610-N201
Cyl. shaft Ø 25mm	M22x1,5 M14x1,5	610-C102	610-F102	610-G102	610-H102	610-K102	610-L102	610-M102	610-N102
	G1/2 G1/4	610-C202	610-F202	610-G202	610-H202	610-K202	610-L202	610-M202	610-N202
Tepered shaft 1:10	M22x1,5 M14x1,5	610-C103	610-F103	610-G103	610-H103	610-K103	610-L103	610-M103	610-N103
	G1/2 G1/4	610-C203	610-F203	610-G203	610-H203	610-K203	610-L203	610-M203	610-N203
Involute splinted shaft SAE 6b	M22x1,5 M14x1,5	610-C104	610-F104	610-G104	610-H104	610-K104	610-L104	610-M104	610-N104
	G1/2 G1/4	610-C204	610-F204	610-G204	610-H204	610-K204	610-L204	610-M204	610-N204
Cyl. shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	610-C105	610-F105	610-G105	610-H105	610-K105	610-L105	610-M105	610-N105
	G1/2 G1/4	610-C205	610-F205	610-G205	610-H205	610-K205	610-L205	610-M205	610-N205
Weight (kg)		5,4	5,6	5,8	5,9	6,2	6,5	6,8	7,4

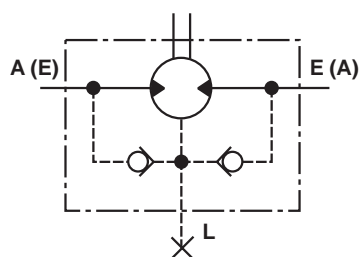
**GMP-Motors with 4-hole flange, side port version, series 610**

Shaft	Connections	GMP 50	GMP 80	GMP 100	GMP 125	GMP 160	GMP 200	GMP 250	GMP 320
Cyl. shaft Ø 32mm	M22x1,5 M14x1,5	610-C106	610-F106	610-G106	610-H106	610-K106	610-L106	610-M106	610-N106
	G1/2 G1/4	610-C206	610-F206	610-G206	610-H206	610-K206	610-L206	610-M206	610-N206
Cyl. shaft Ø 25mm	M22x1,5 M14x1,5	610-C107	610-F107	610-G107	610-H107	610-K107	610-L107	610-M107	610-N107
	G1/2 G1/4	610-C207	610-F207	610-G207	610-H207	610-K207	610-L207	610-M207	610-N207
Tepered shaft 1:10	M22x1,5 M14x1,5	610-C108	610-F108	610-G108	610-H108	610-K108	610-L108	610-M108	610-N108
	G1/2 G1/4	610-C208	610-F208	610-G208	610-H208	610-K208	610-L208	610-M208	610-N208
Involute- splinted shaft SAE 6b	M22x1,5 M14x1,5	610-C109	610-F109	610-G109	610-H109	610-K109	610-L109	610-M109	610-N109
	G1/2 G1/4	610-C209	610-F209	610-G209	610-H209	610-K209	610-L209	610-M209	610-N209
Cyl. shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	610-C110	610-F110	610-G110	610-H110	610-K110	610-L110	610-M110	610-N110
	G1/2 G1/4	610-C210	610-F210	610-G210	610-H210	610-K210	610-L210	610-M210	610-N210
Weight (kg)		5,4	5,6	5,8	5,9	6,2	6,5	6,8	7,4

Sample order: – GMP 160 (displacement = 160cm³ per revolution)
 – 2-hole flange, cyl. shaft Ø 32mm
 – connections G1/2; G1/4
 – **Ordering code: GMP 160 / 610-K201**

Technical data GMP (For applications outside these parameters, please consult us !)

Motor size		50	80	100	125	160	200 ¹⁾	200 ²⁾	250 ¹⁾	250 ²⁾	320 ¹⁾	320 ²⁾	
Geometric displacement	cm ³	50,9	78,7	98,9	123,6	158,5	197,8	197,8	247,2	247,2	316,9	316,9	
Max. speed	min ⁻¹	continuous	1000	810	650	520	400	325	325	250	250	210	210
		intermittent ³⁾	1200	960	770	600	480	385	385	320	320	245	245
Max. torque	daNm	continuous	9	14	18	22,5	29	29,5	28	32,5	29,5	30	28
		intermittent ³⁾	10,5	17,5	21,5	27,5	35,5	42,5	42,5	43,5	41	46,5	39
		peak ⁴⁾	14	22	27	37	43	54	54	55	48	60	60
Max. power output	kW	continuous	8	10	11	10	10	8,2	8	8	7	4,5	3,8
		intermittent ³⁾	10	12	13	12	12	12	10	10	8,3	8	6
Max. pressure	bar	continuous	140	140	140	140	140	120	115	105	95	75	70
		intermittent ³⁾	175	175	175	175	175	175	140	140	125	125	100
		peak ⁴⁾	225	225	225	225	225	225	225	180	160	160	160
Max. oil flow	L/min	continuous	50	65	65	65	65	65	65	65	65	65	65
		intermittent ³⁾	60	75	75	75	75	75	75	75	75	75	75
Max. input pressure	bar	continuous	160										
		intermittent ³⁾	180										
		peak ⁴⁾	225										
Max. return pressure without drain line or max. pressure in drain line ⁵⁾ (0-100 min ⁻¹)	bar	continuous	75 125 ⁷⁾										
		(100-300 min ⁻¹)	50 75 ⁷⁾										
		(300-1000 min ⁻¹)	25 50 ⁷⁾										
		(0-1200 min ⁻¹)	75										
Max. return pressure with drain line	bar	continuous	160										
		intermittent ³⁾	175										
		peak ⁴⁾	225										
Max. strat pressure with unloaded shaft	bar	10	10	10	10	8	8	8	6	6	6	6	
Min. start torque	daNm	continuous	7	12	15	19	26	27	25,5	30	27,5	27,5	27
		intermittent ³⁾	9	15,5	19	25	33	40	31,5	43	38,5	45	37
Min. speed ⁶⁾	min ⁻¹	10	10	10	10	10	10	10	10	10	10	10	



GMP has built-in non-return valves⁵⁾

- 1) Cilindric shaft Ø 32mm
- 2) Cilindric shaft Ø 25mm and Ø 25,4mm (1inch) Tapered shaft and involute splined shaft
- 3) Intermittent operation: operation max. 10 % per minute
- 4) Peak load: max. 1 % of every minute
- 5) Pressure of the shaft seal is identical to the output pressure
- 6) You must expect that the motor will run less smoothly at speeds below those specified here
- 7) Operation of the motors at these pressures at quasi-static load and after consultation of the manufacturer

Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

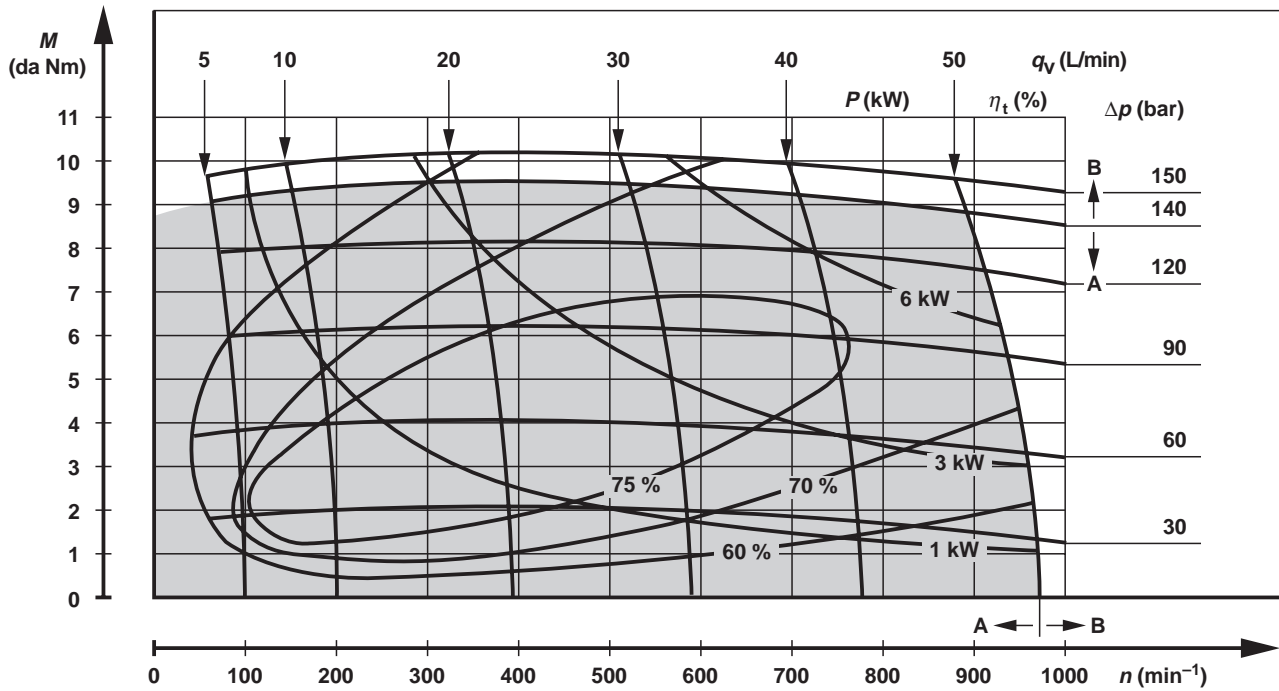
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

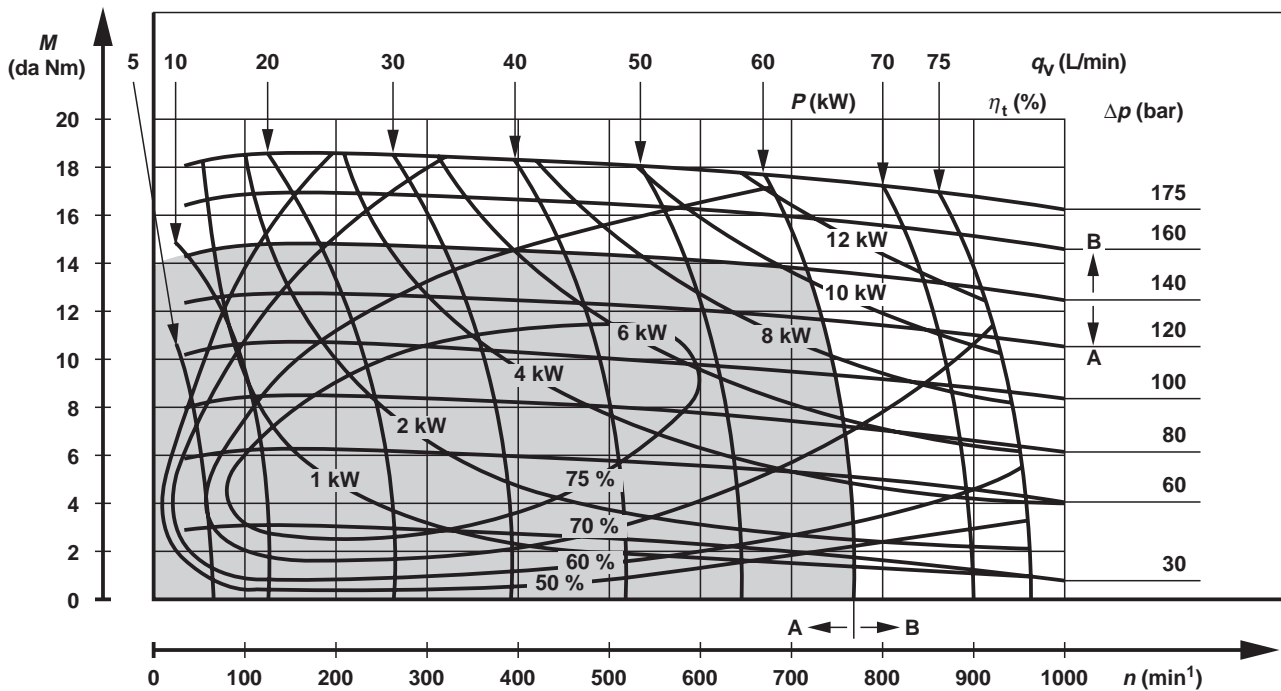
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMP 50



Type GMP 80



Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at 50°C .

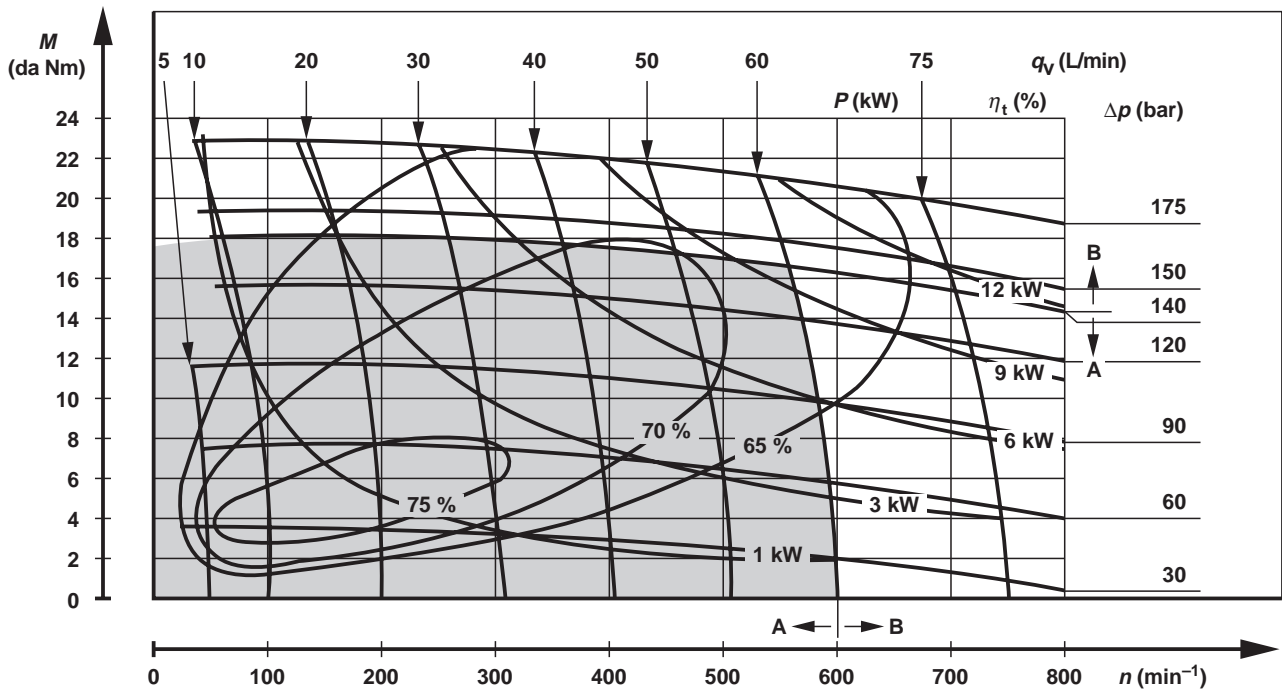
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

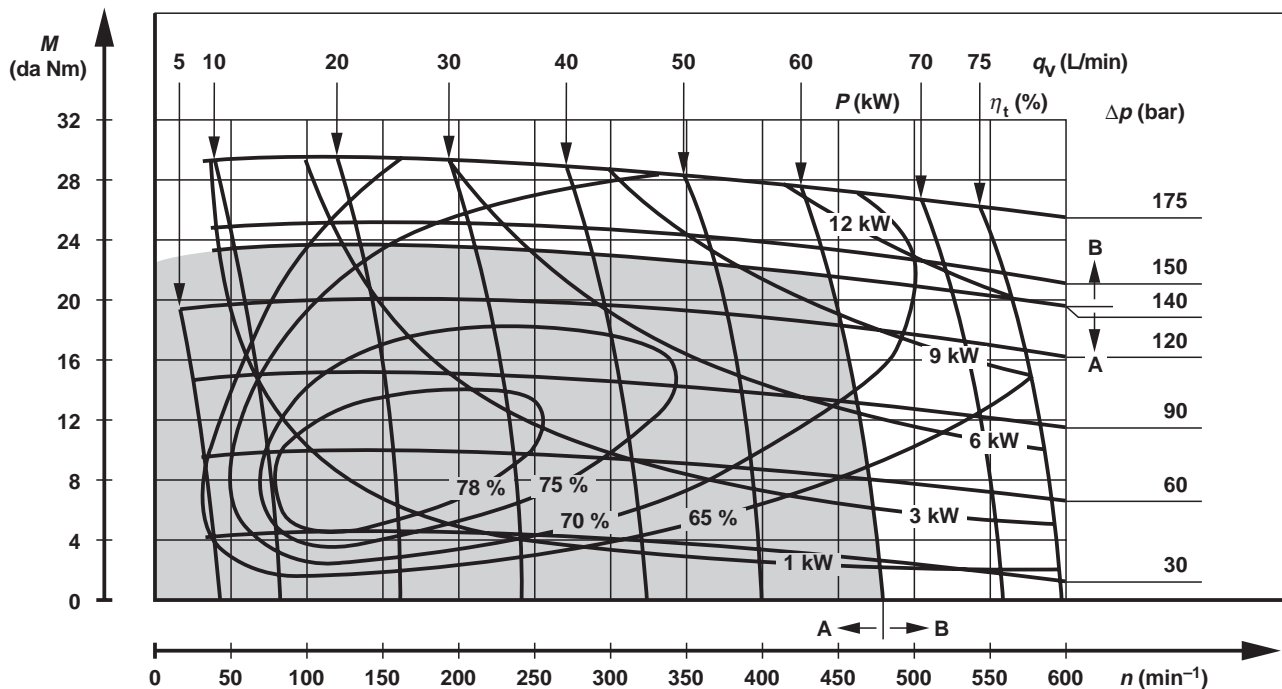
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMP 100



Type GMP 125



Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

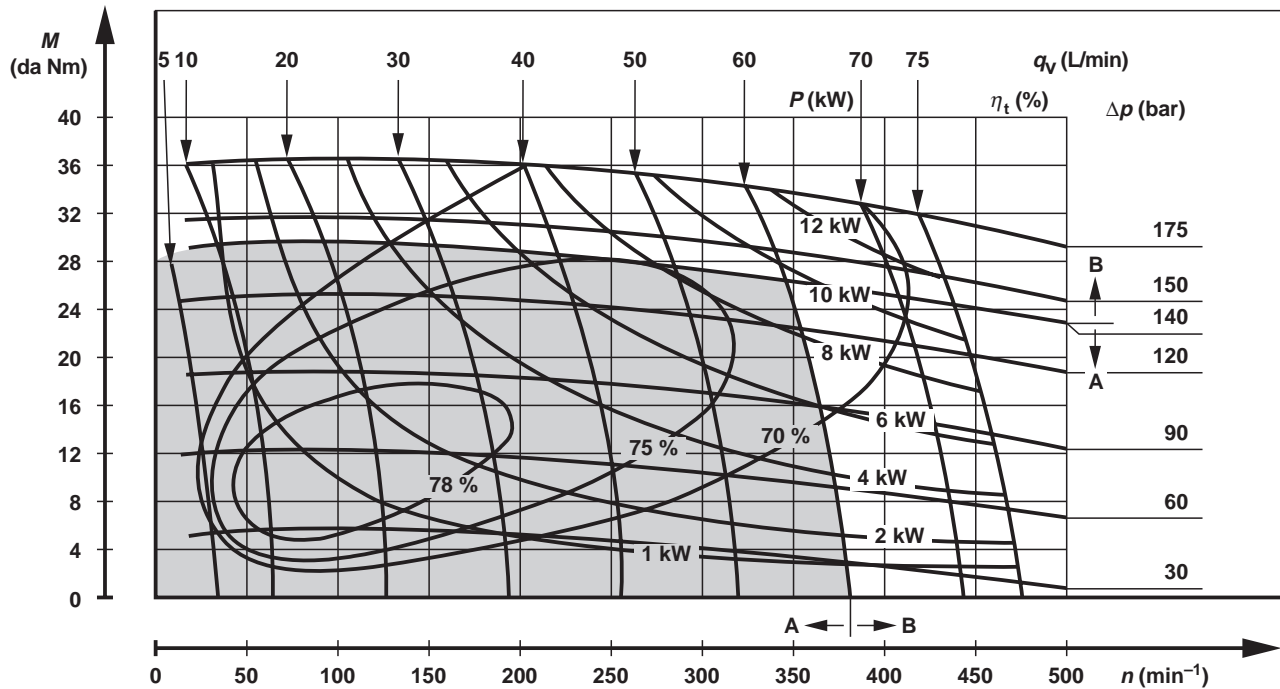
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

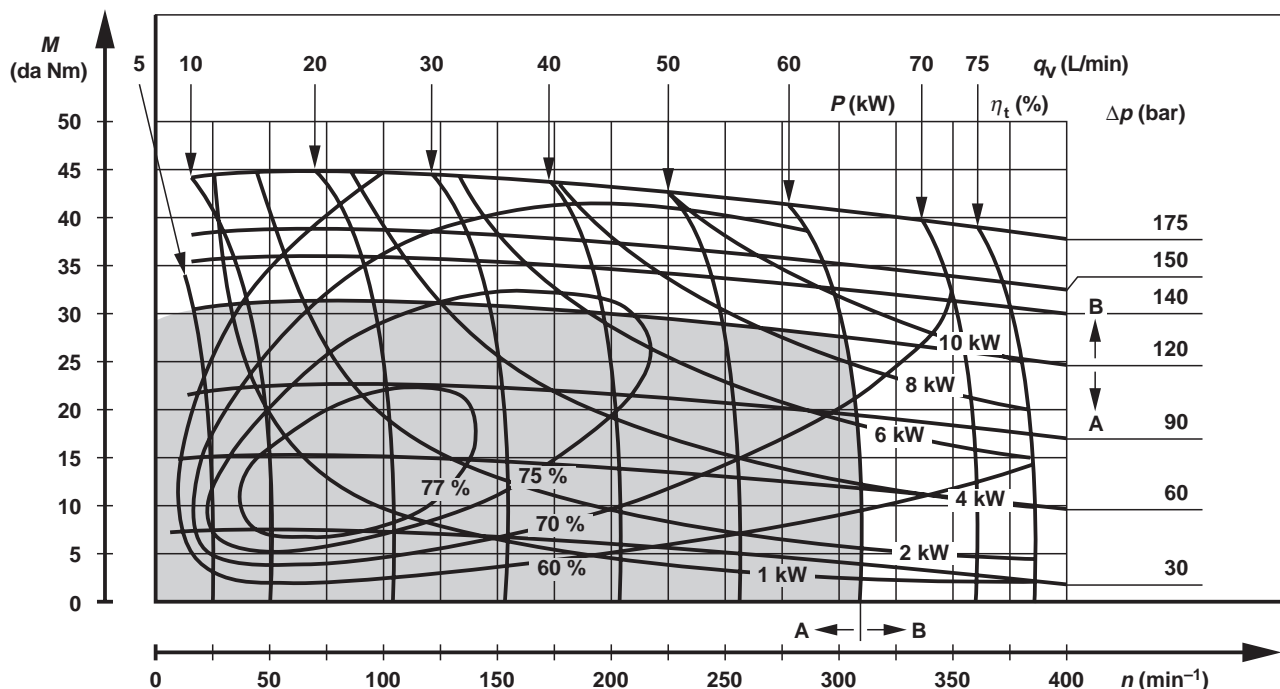
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMP 160



Type GMP 200



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

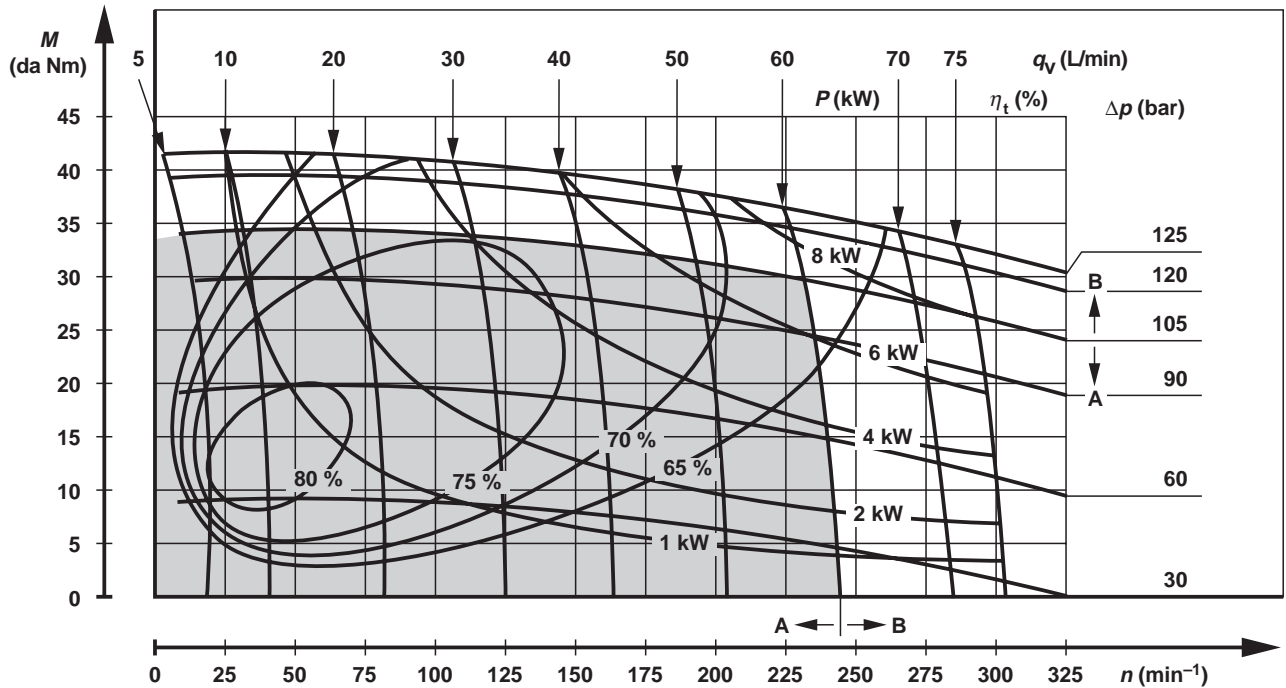
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

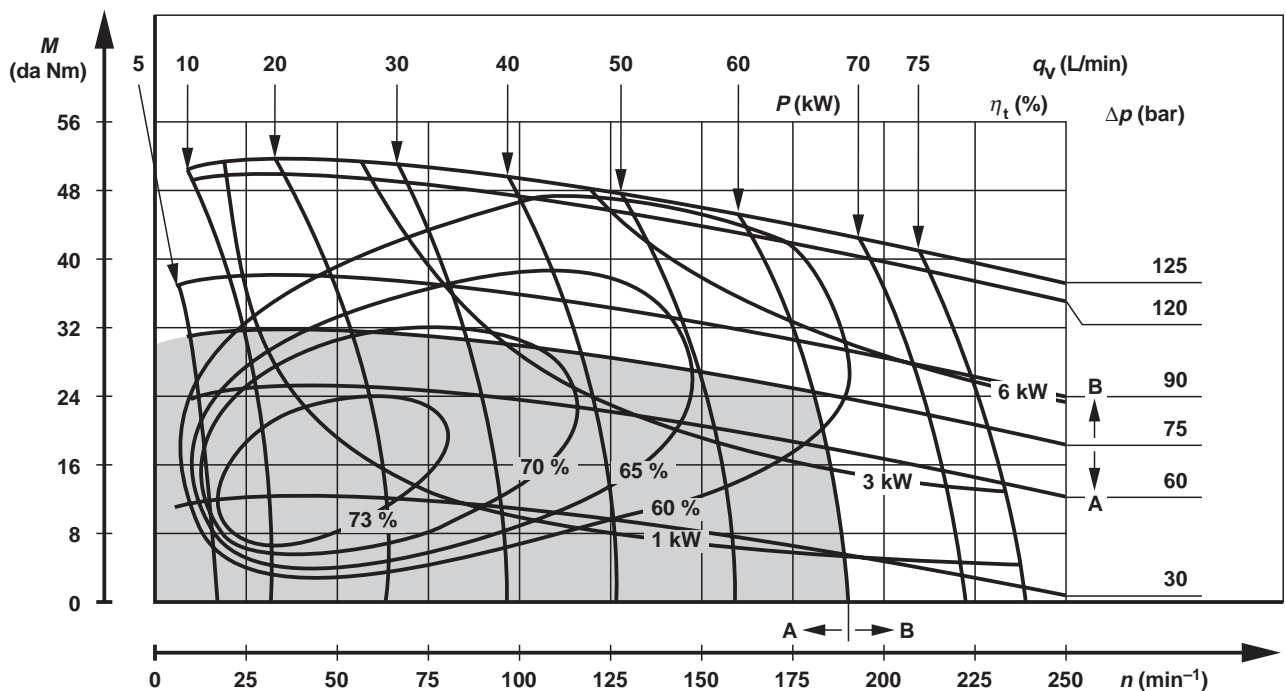
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMP 250



Type GMP 320



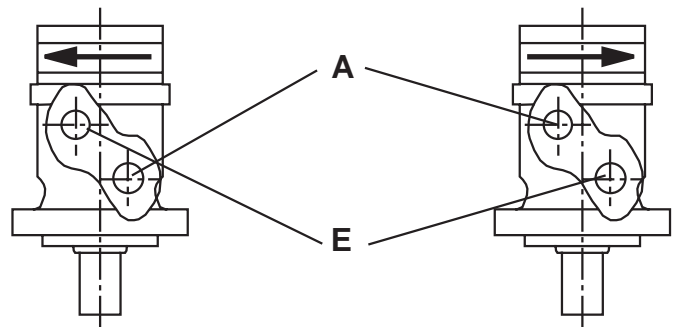
Direction of shaft rotation (looking at shaft end)

Permissible shaft load for GMP:

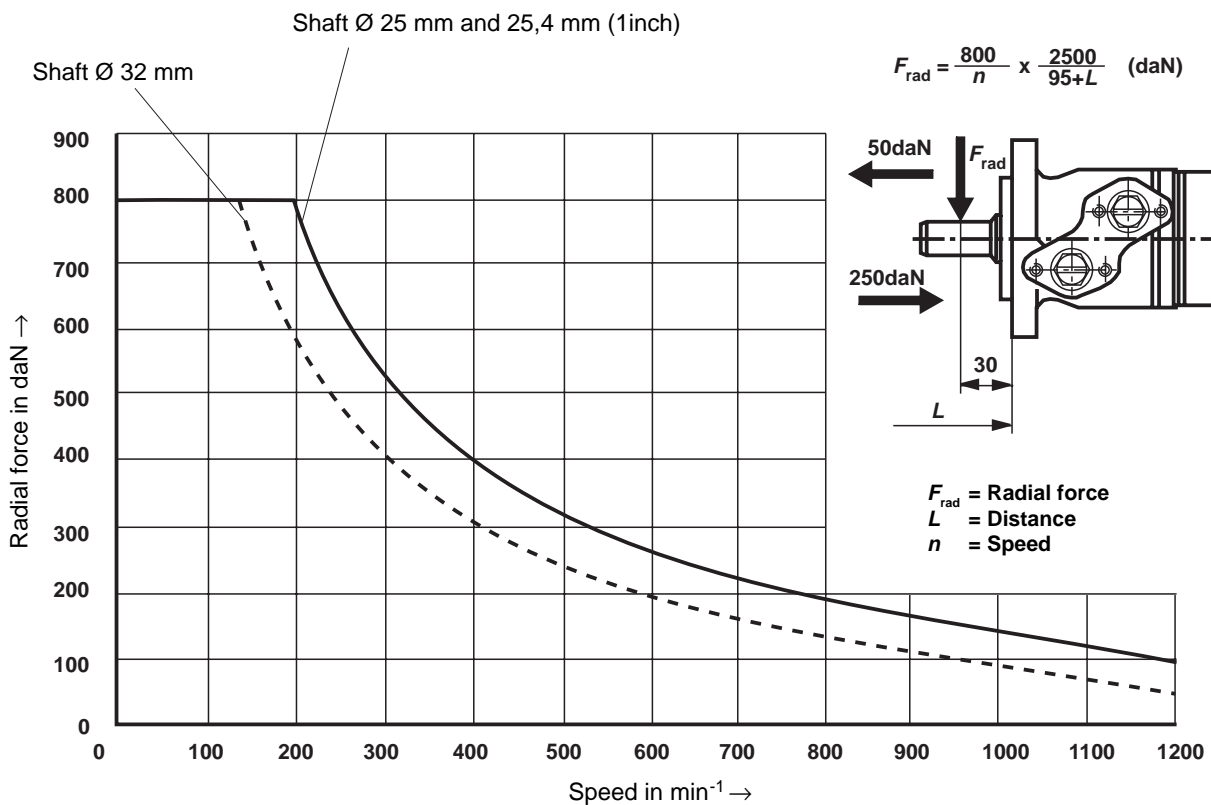
The allowed radial shaft load depends on the speed n , on the distance between the point of application of force and the mounting flange, and on the shaft design.

Direction of rotation (allocation of ports)

E = Inlet
A = Outlet

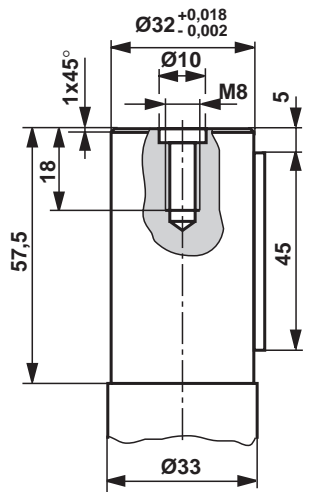


Permissible shaft load

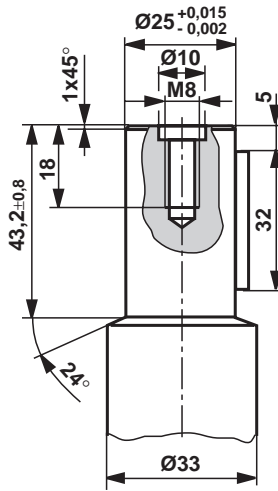


Shaft version: Type GMP, GMR, GMVD

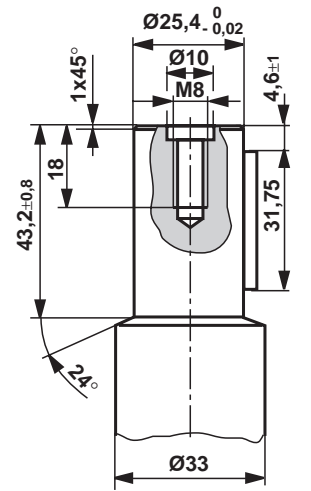
(Dimensions in mm)



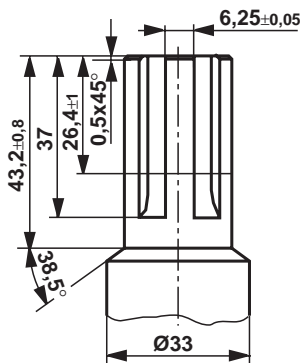
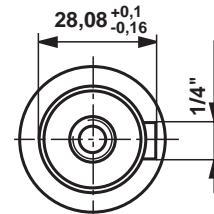
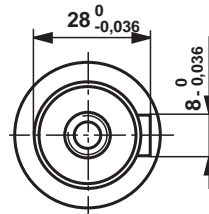
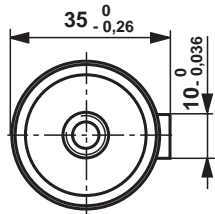
Cylindrical shaft $\varnothing 32$ mm
Parallel key A10x8x45; DIN 6885



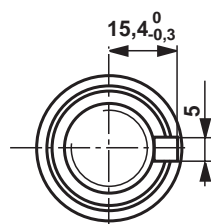
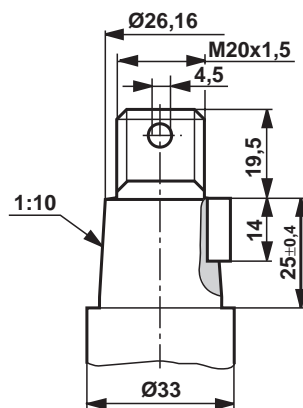
Cylindrical shaft $\varnothing 25$ mm
Parallel key A8x7x32; DIN 6885



Cylindrical shaft $\varnothing 25,4$ mm
Parallel key 1/4x1/4x1 1/4 Inch
B. S. 46



Involute splined shaft
B. S. 2059
SAE 6b



Tapered shaft
(ISO / R 775)
Parallel key B5x5x14; DIN 6885

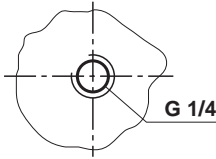
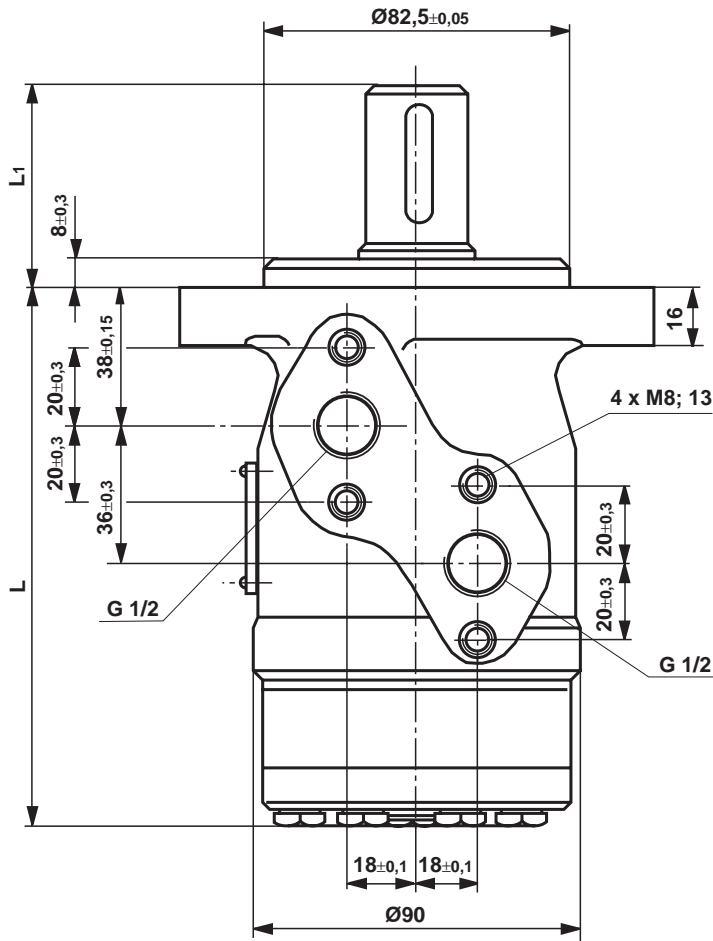
Unit Dimensions: Type GMP

(Dimensions in mm)

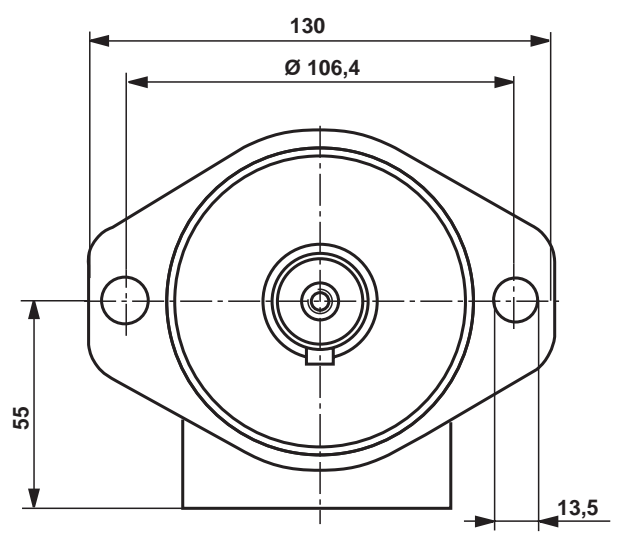
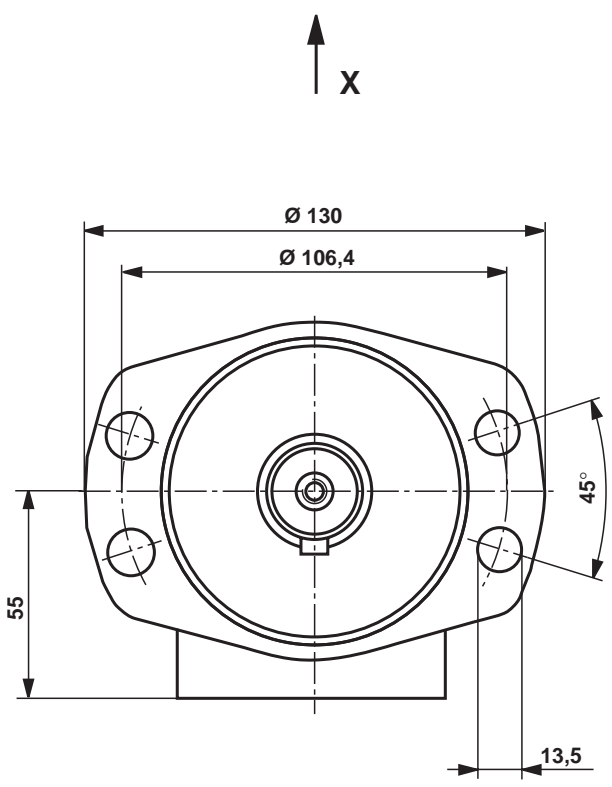
(Shaft versions see page 11)

Type	L (-1,5)
GMP 050	134
GMP 080	138
GMP 100	141
GMP 125	143,5
GMP 160	149
GMP 200	154,5
GMP 250	161
GMP 320	171

Shaft	L ₁
Ø 32 mm	max. 68,3
Ø 25 mm	54±0,6
Ø 25,4 mm	54±0,6
SAE 6b	max. 55,3
Tapered shaft	68 ₋₁



X detail

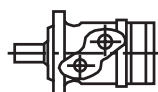


Item numbers and weights (Type GMR-side port version)



GMR-Motors with 2-hole flange, side port version, series 620

Shaft	Connections	GMR 50	GMR 80	GMR 100	GMR 125	GMR 160	GMR 200	GMR 250	GMR 320	GMR 400
Cyl. shaft Ø 32mm	M22x1,5 M14x1,5	620-C101	620-F101	620-G101	620-H101	620-K101	620-L101	620-M101	620-N101	620-P101
	G1/2 G1/4	620-C201	620-F201	620-G201	620-H201	620-K201	620-L201	620-M201	620-N201	620-P201
Cyl. shaft Ø 25mm	M22x1,5 M14x1,5	620-C102	620-F102	620-G102	620-H102	620-K102	620-L102	620-M102	620-N102	620-P102
	G1/2 G1/4	620-C202	620-F202	620-G202	620-H202	620-K202	620-L202	620-M202	620-N202	620-P202
Tapered shaft 1:10	M22x1,5 M14x1,5	620-C103	620-F103	620-G103	620-H103	620-K103	620-L103	620-M103	620-N103	620-P103
	G1/2 G1/4	620-C203	620-F203	620-G203	620-H203	620-K203	620-L203	620-M203	620-N203	620-P203
Involute splined shaft SAE 6b	M22x1,5 M14x1,5	620-C104	620-F104	620-G104	620-H104	620-K104	620-L104	620-M104	620-N104	620-P104
	G1/2 G1/4	620-C204	620-F204	620-G204	620-H204	620-K204	620-L204	620-M204	620-N204	620-P204
Cyl. shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	620-C105	620-F105	620-G105	620-H105	620-K105	620-L105	620-M105	620-N105	620-P105
	G1/2 G1/4	620-C205	620-F205	620-G205	620-H205	620-K205	620-L205	620-M205	620-N205	620-P205
Weight (kg)		5,6	5,8	6,0	6,1	6,4	6,7	7,0	7,6	8,2

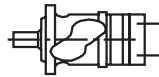


GMR-Motors with 4-hole flange, side port version, series 620

Shaft	Connections	GMR 50	GMR 80	GMR 100	GMR 125	GMR 160	GMR 200	GMR 250	GMR 320	GMR 400
Cyl. shaft Ø 32mm	M22x1,5 M14x1,5	620-C106	620-F106	620-G106	620-H106	620-K106	620-L106	620-M106	620-N106	620-P106
	G1/2 G1/4	620-C206	620-F206	620-G206	620-H206	620-K206	620-L206	620-M206	620-N206	620-P206
Cyl. shaft Ø 25mm	M22x1,5 M14x1,5	620-C107	620-F107	620-G107	620-H107	620-K107	620-L107	620-M107	620-N107	620-P107
	G1/2 G1/4	620-C207	620-F207	620-G207	620-H207	620-K207	620-L207	620-M207	620-N207	620-P207
Tapered shaft1:10	M22x1,5 M14x1,5	620-C108	620-F108	620-G108	620-H108	620-K108	620-L108	620-M108	620-N108	620-P108
	G1/2 G1/4	620-C208	620-F208	620-G208	620-H208	620-K208	620-L208	620-M208	620-N208	620-P208
Involute splined shaft SAE 6b	M22x1,5 M14x1,5	620-C109	620-F109	620-G109	620-H109	620-K109	620-L109	620-M109	620-N109	620-P109
	G1/2 G1/4	620-C209	620-F209	620-G209	620-H209	620-K209	620-L209	620-M209	620-N209	620-P209
Cyl. shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	620-C110	620-F110	620-G110	620-H110	620-K110	620-L110	620-M110	620-N110	620-P110
	G1/2 G1/4	620-C210	620-F210	620-G210	620-H210	620-K210	620-L210	620-M210	620-N210	620-P210
Weight (kg)		5,6	5,8	6,0	6,1	6,4	6,7	7,0	7,6	8,2

Sample order: – GMR 80 (displacement = 80cm³ per revolution)
 – 4-hole, tapered shaft
 – connections G1/2; G1/4
 – **Ordering code: GMR 80 / 620-F208**

Item numbers and weights (Type GMR-end port version)



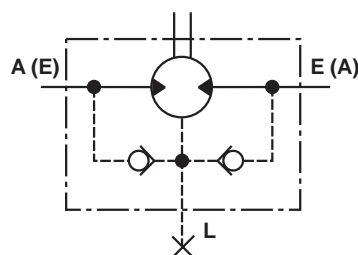
GMR-Motors with 4-hole flange, end port version, series 621

Shaft	Connections	GMR 50	GMR 80	GMR 100	GMR 125	GMR 160	GMR 200	GMR 250	GMR 320	GMR 400
Cyl. Shaft Ø 32mm	M22x1,5 M14x1,5	621-C106	621-F106	621-G106	621-H106	621-K106	621-L106	621-M106	621-N106	621-P106
	G1/2 G1/4	621-C206	621-F206	621-G206	621-H206	621-K206	621-L206	621-M206	621-N206	621-P206
Cyl. Shaft Ø 25mm	M22x1,5 M14x1,5	621-C107	621-F107	621-G107	621-H107	621-K107	621-L107	621-M107	621-N107	621-P107
	G1/2 G1/4	621-C207	621-F207	621-G207	621-H207	621-K207	621-L207	621-M207	621-N207	621-P207
Tapered shaft1:10	M22x1,5 M14x1,5	621-C108	621-F108	621-G108	621-H108	621-K108	621-L108	621-M108	621-N108	621-P108
	G1/2 G1/4	621-C208	621-F208	621-G208	621-H208	621-K208	621-L208	621-M208	621-N208	621-P208
Involute splined shaft SAE 6b	M22x1,5 M14x1,5	621-C109	621-F109	621-G109	621-H109	621-K109	621-L109	621-M109	621-N109	621-P109
	G1/2 G1/4	621-C209	621-F209	621-G209	621-H209	621-K209	621-L209	621-M209	621-N209	621-P209
Cyl. Shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	621-C110	621-F110	621-G110	621-H110	621-K110	621-L110	621-M110	621-N110	621-P110
	G1/2 G1/4	621-C210	621-F210	621-G210	621-H210	621-K210	621-L210	621-M210	621-N210	621-P210
Weight (kg)		6,9	7,1	7,2	7,4	7,7	8,2	8,7	9,3	9,7

Sample order: – GMR 250 (displacement = 250cm³ per revolution)
 – 2-hole flange, cylindrical shaft Ø 25mm
 – connections G1/2; G1/4; end port version
 – **Ordering number: GMR 250 / 621-M202**

Technical Data GMR (For applications outside these parameters, please consult us !)

Motor size		50	80	100	125	160 ¹⁾	160 ²⁾	200 ¹⁾	200 ²⁾	250 ¹⁾	250 ²⁾	320 ¹⁾	320 ²⁾	400 ¹⁾	400 ²⁾	
Geometric displacement min ⁻¹		51,8	81,4	103,7	125,9	162,9	162,9	203,6	203,6	251,7	251,7	325,8	325,8	407,2	407,2	
Max. speed	min ⁻¹ continuous	775	750	600	475	375	375	300	300	240	240	190	190	170	170	
	intermittent ³⁾	970	940	750	600	470	470	375	375	300	300	240	240	200	200	
Max. torque	daNm continuous	10	16	20	25	32	27	33	29	36	30	35	28	33	27,5	
	intermittent ³⁾	13	20	24	30	38	38	45	39	47	38	51	38	46	41	
	peak ⁴⁾	17	27	32	37	46	46	56	56	71	71	84	84	70	70	
Max. power output	kW continuous	7	10	11	11	11	9	9	7,5	7	6	5,5	4,5	4,8	4	
	intermittent ³⁾	8,5	12,5	13	12,5	12,5	13	11	10	9,5	8	8,5	6	6,6	5,8	
Max. pressure	bar continuous	140	140	140	140	140	120	120	105	100	80	80	65	60	50	
	intermittent ³⁾	175	175	175	175	175	175	175	140	140	110	125	90	85	75	
	peak ⁴⁾	225	225	225	225	225	225	225	225	225	225	210	210	135	135	
Max. oil flow	L/min continuous	40	60	60	60	60	60	60	60	60	60	60	60	70	70	
	intermittent ³⁾	50	75	75	75	75	75	75	75	75	75	75	75	75	75	
Max. input pressure	bar continuous	160														
	intermittent ³⁾	175														
	peak ⁴⁾	225														
Max. return pressure without drain line or max. pressure in drain line ⁵⁾ (0-100 min ⁻¹)	bar continuous	75 125 ⁷⁾														
	(100-300 min ⁻¹)	bar continuous	50 75 ⁷⁾													
	(300-775 min ⁻¹)	bar continuous	25 50 ⁷⁾													
	(0-970 min ⁻¹)	bar intermittent ³⁾	75													
Max. return pressure with drain line	bar continuous	160														
	intermittent ³⁾	175														
	peak ⁴⁾	225														
Max. start pressure with unloaded shaft	bar	10	10	10	10	8	8	8	8	6	6	6	6	6	6	
Min. start torque	daNm continuous	7,5	11,5	14,5	19,5	25	22	25	23	27	21	29	22	25	20	
	at max. pressure drop	intermittent ³⁾	9,5	14,5	19,5	24,5	31	31	40	32	38	30	45	32	38	33
Min. speed ⁶⁾	min ⁻¹	10	10	10	10	10	10	10	10	10	10	10	10	10	10	



GMR has built-in non-return valves⁵⁾

- 1) Cilindric shaft Ø 32mm
- 2) Cilindric shaft Ø 25mm and Ø 25,4mm (1inch) Tapered shaft and involute splined shaft
- 3) Intermittent operation: operation max. 10 % per minute
- 4) Peak load: max. 1 % of every minute
- 5) Pressure of the shaft seal is identical to the output pressure
- 6) You must expect that the motor will run less smoothly at speeds below those specified here
- 7) Operation of the motors at these pressures at quasi-static load and after consultation of the manufacturer.

Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

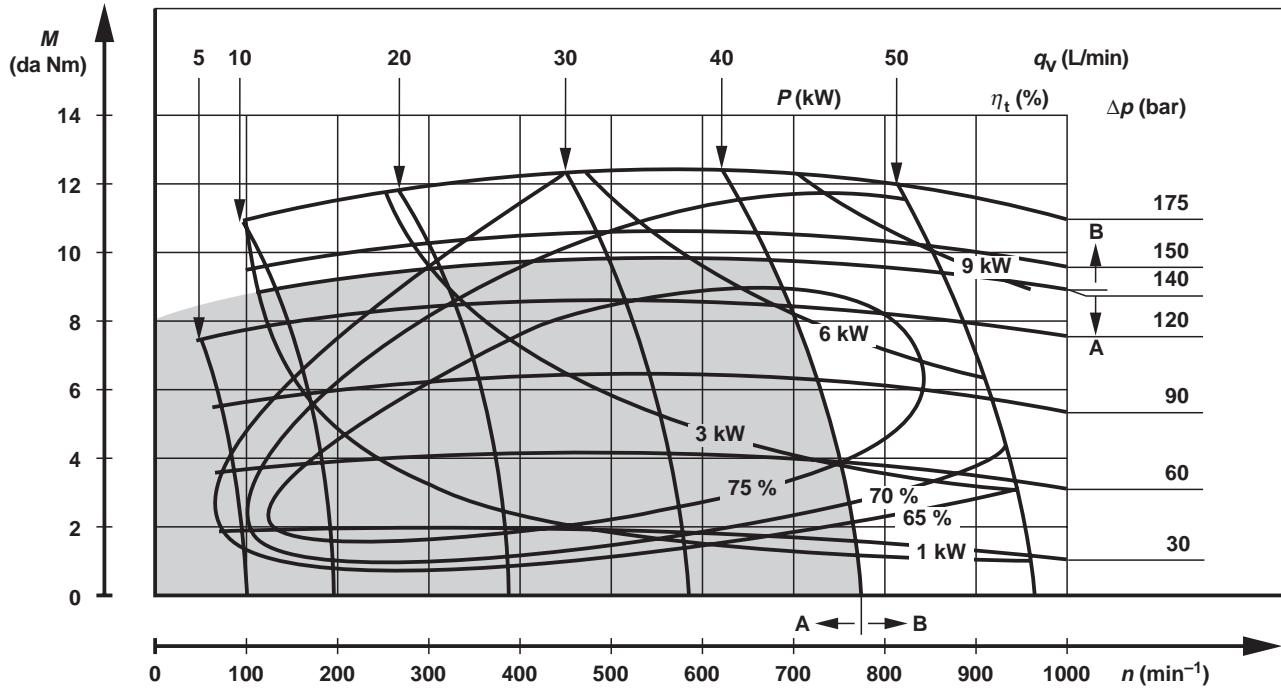
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

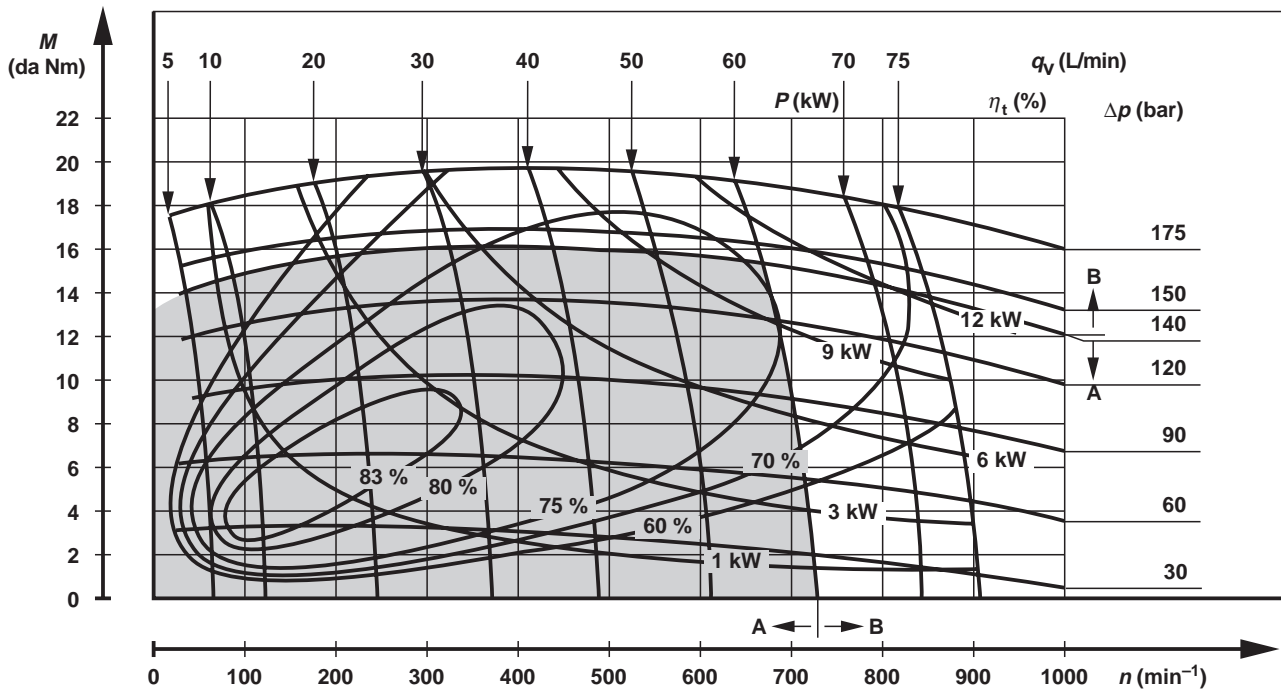
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMR 50



Type GMR 80



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at 50°C .

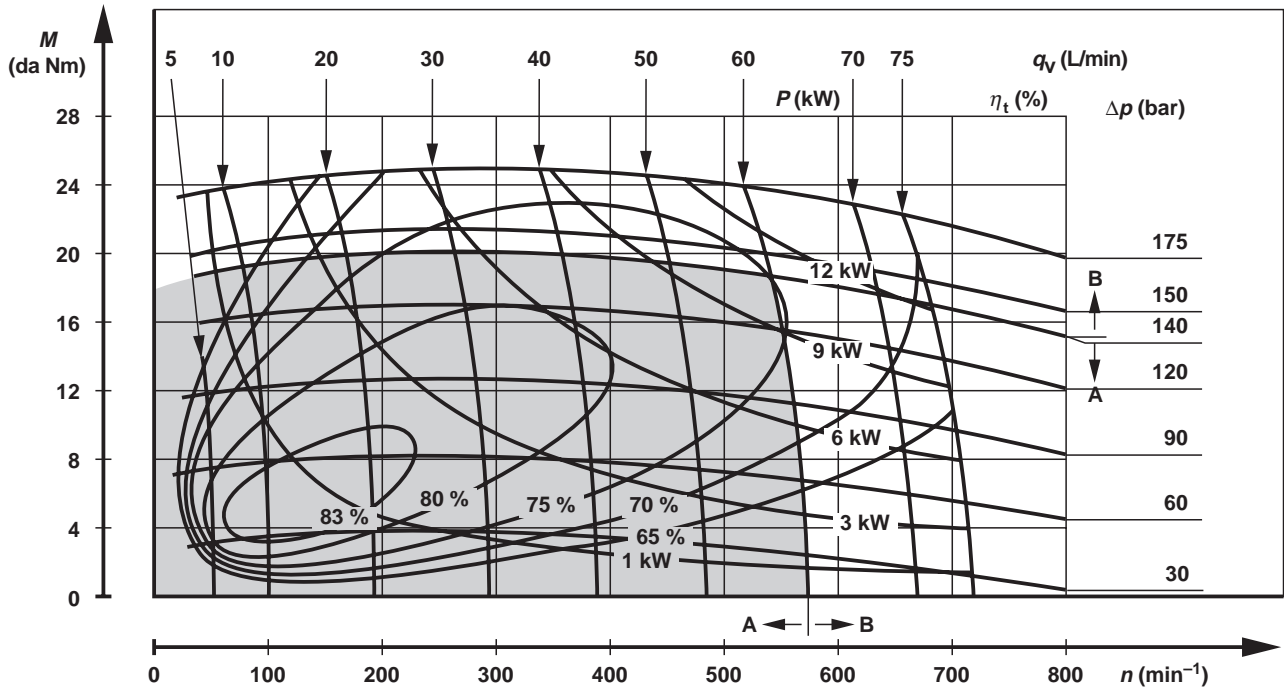
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

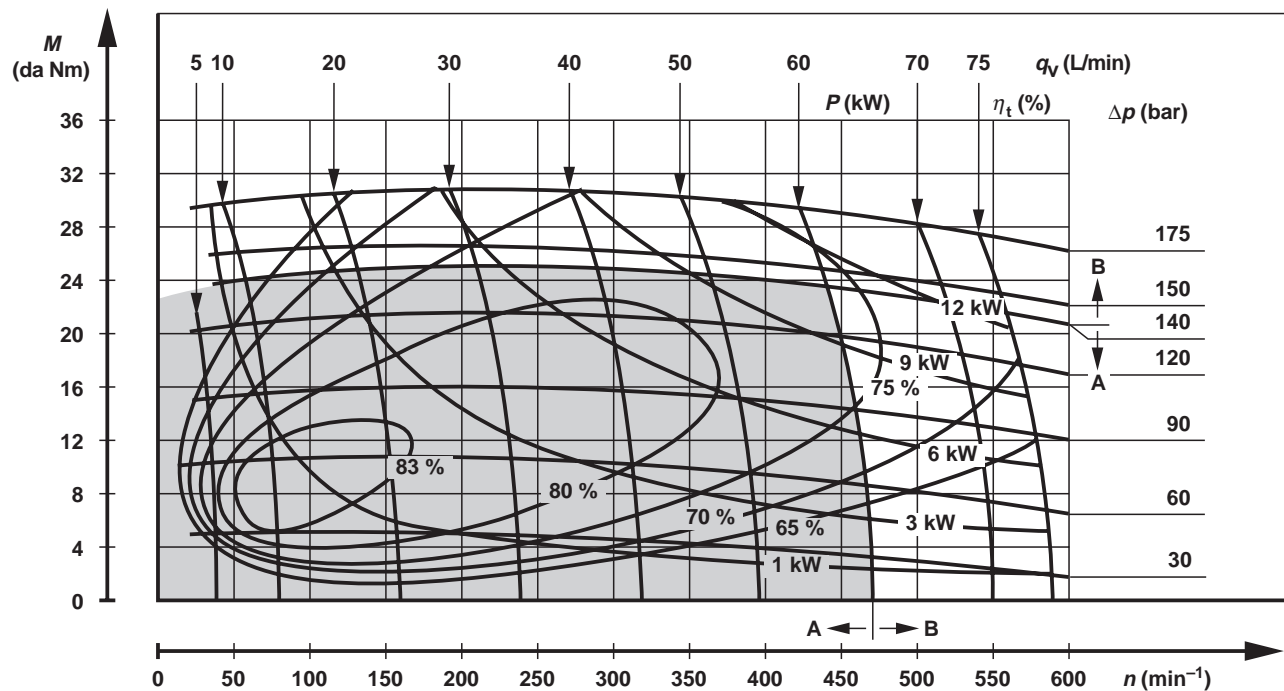
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMR 100



Type GMR 125



Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

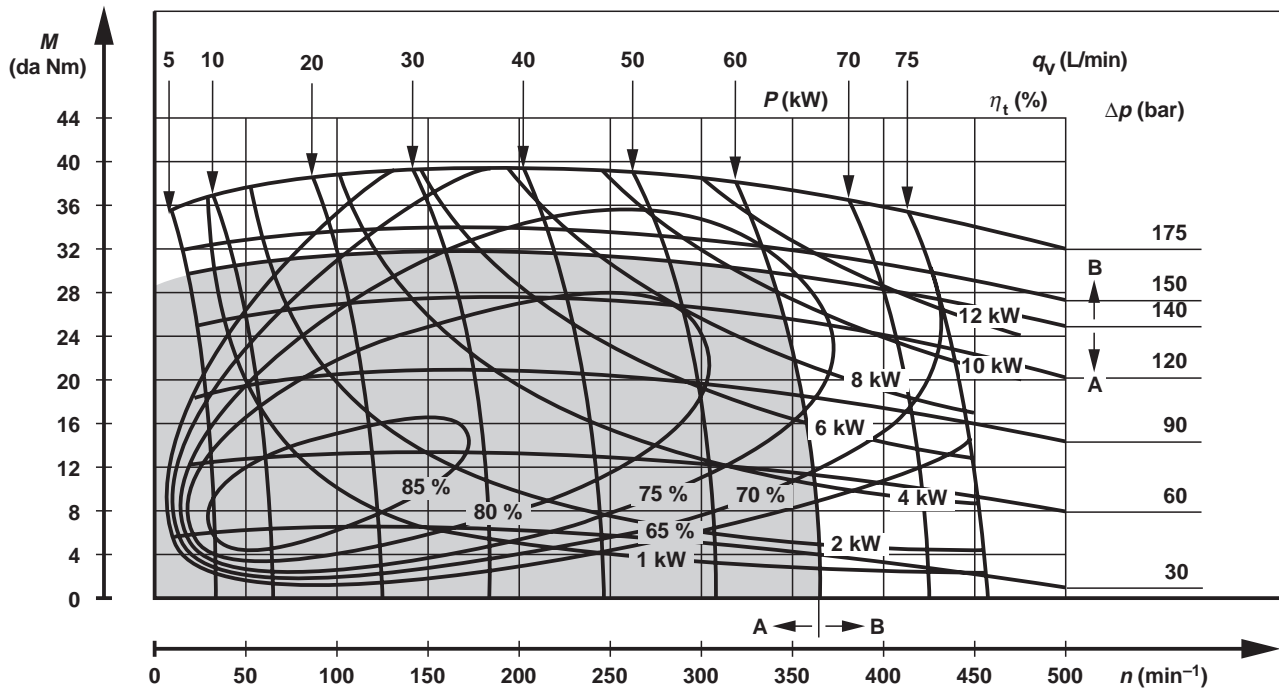
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

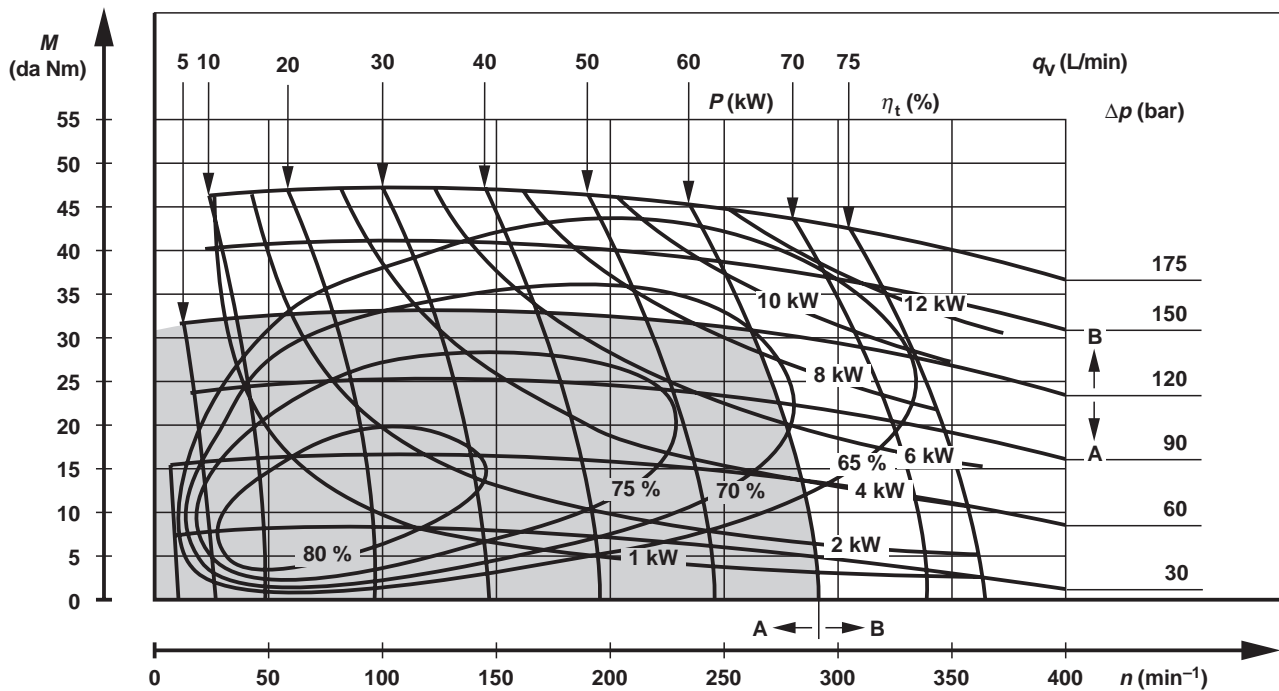
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMR 160



Type GMR 200



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

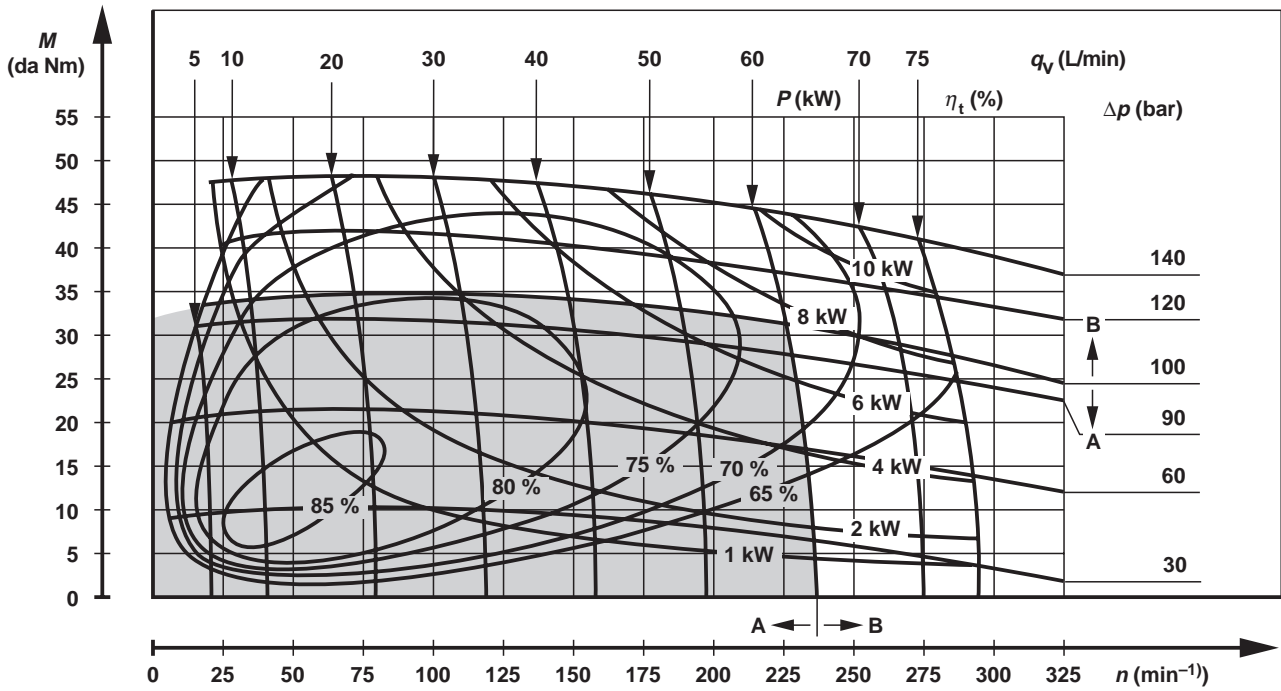
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

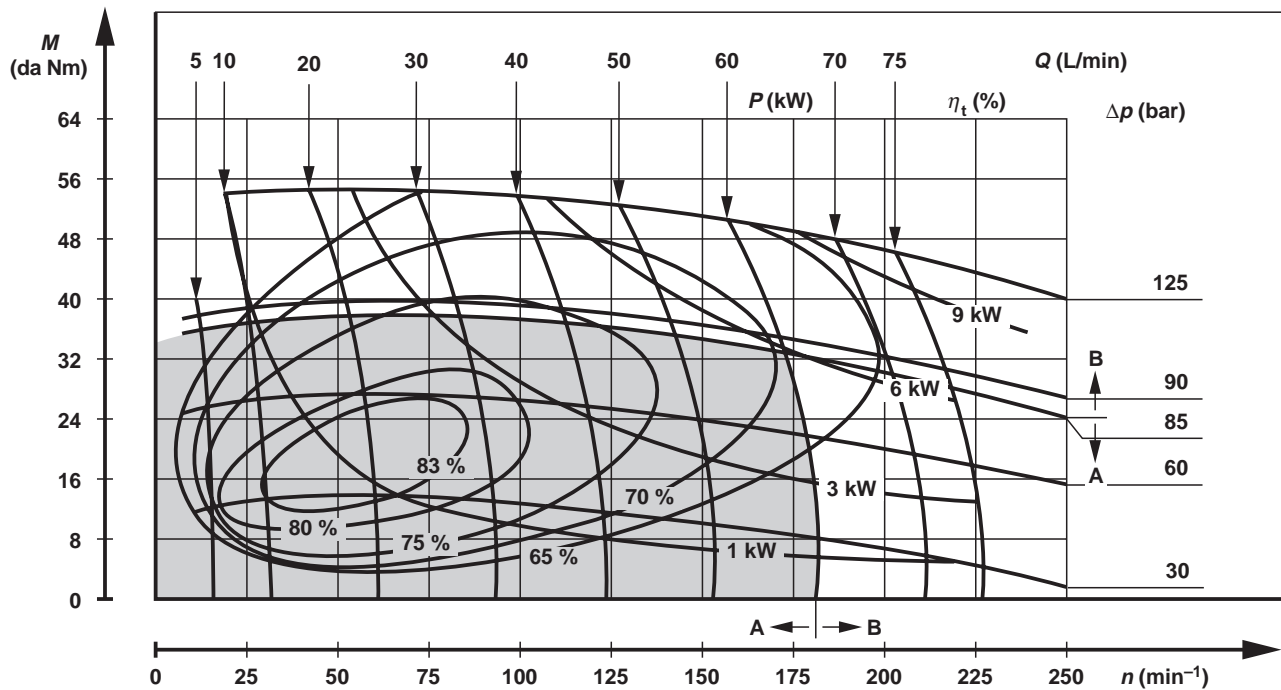
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMR 250



Type GMR 320



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at 50°C .

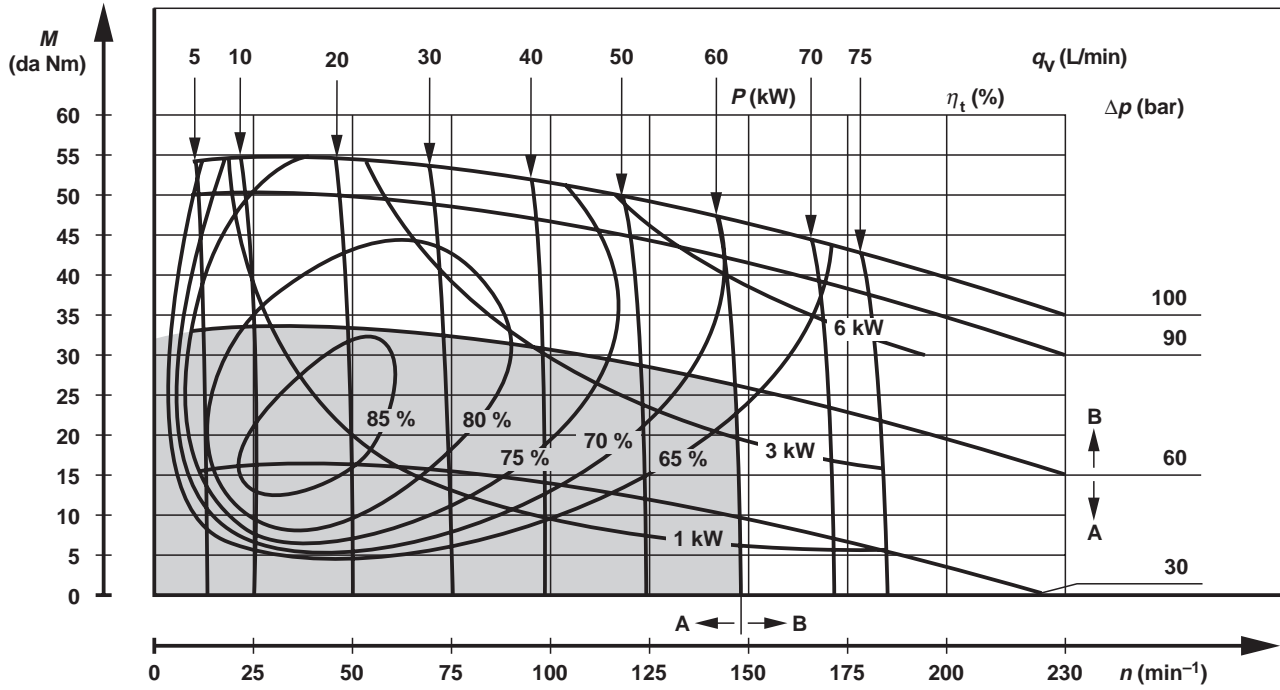
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMR 400



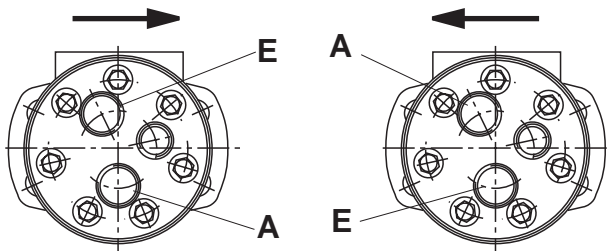
Direction of shaft rotation (looking at shaft end)

Permissible shaft load for GMR:

The allowed radial shaft load depends on the speed n , on the distance between the point of application of force and the mounting flange, and on the shaft design.

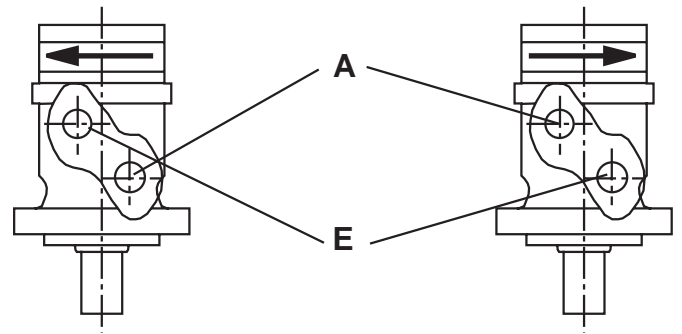
Direction of rotation, side port version (allocation of ports)

E = Inlet
A = Outlet

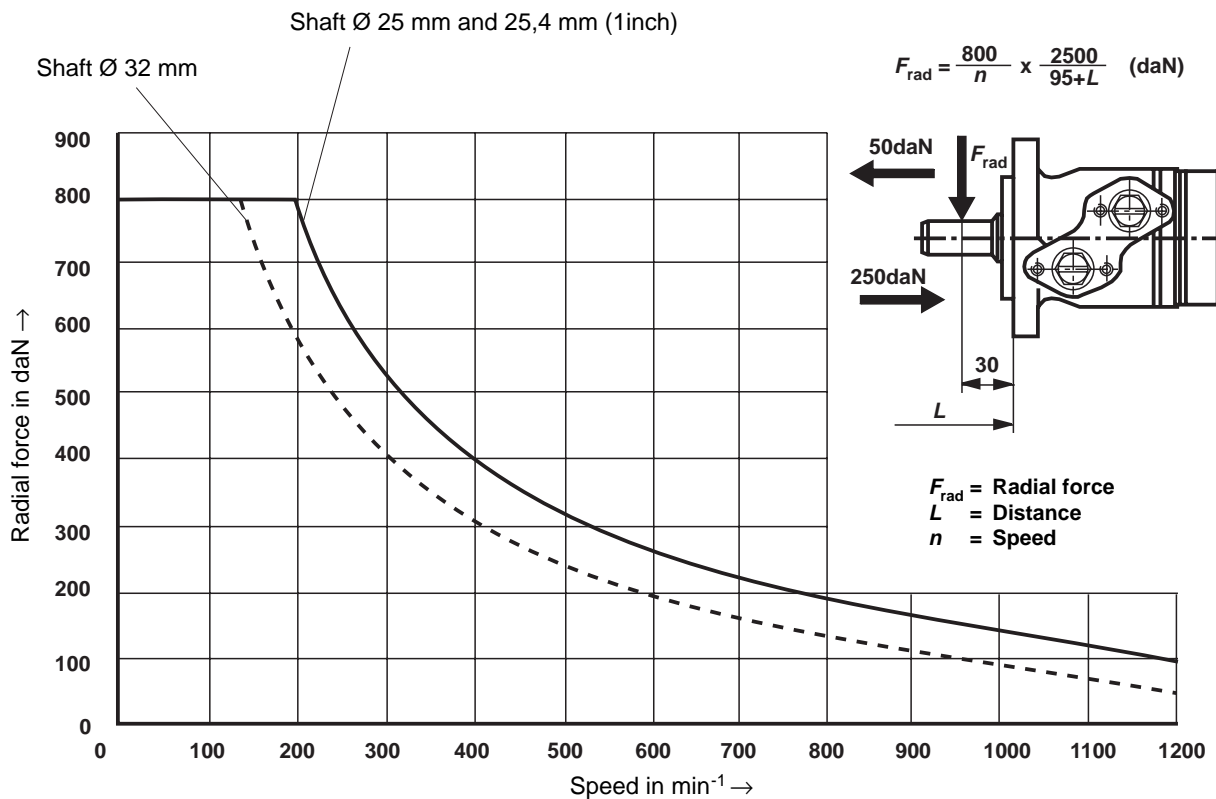


Direction of rotation, side port version (allocation of ports)

E = Inlet
A = Outlet



Permissible shaft load



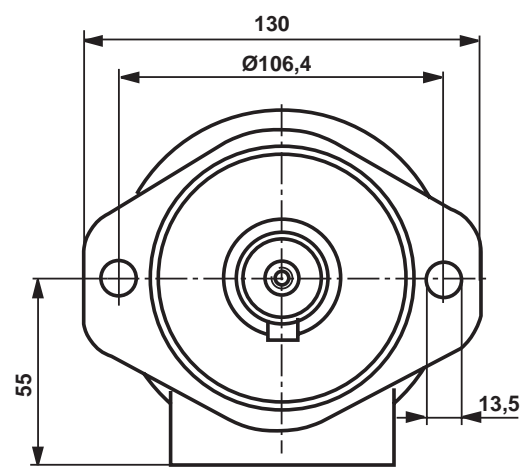
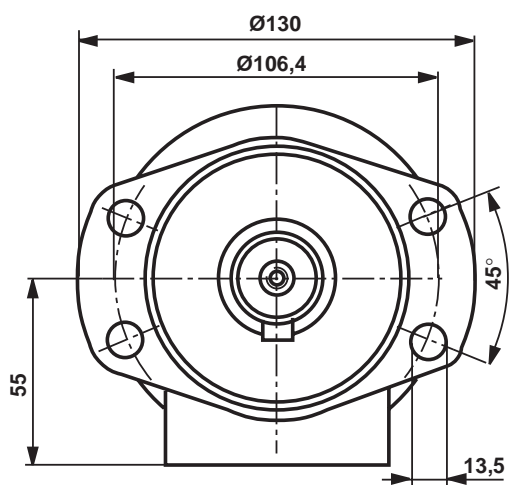
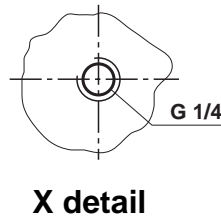
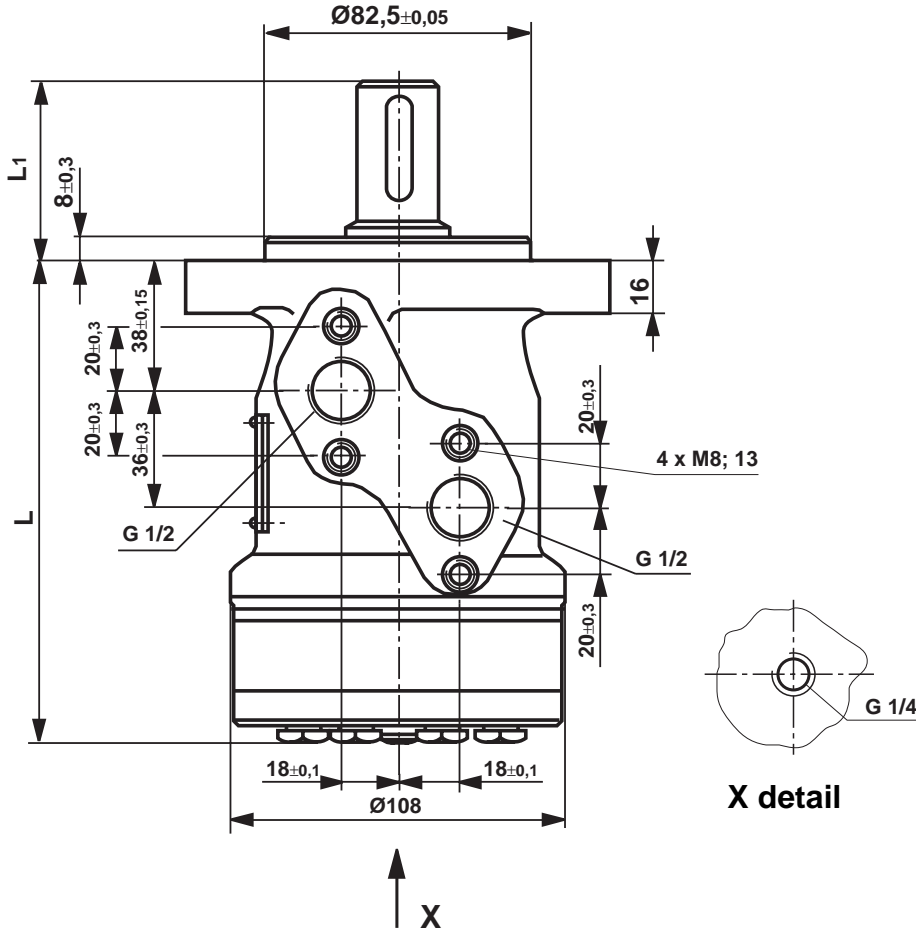
Unit Dimensions: Type GMR-Side port version

(Dimensions in mm)

(Shaft versions see page 11)

Type	L (- 1,5)
GMR 050	139
GMR 080	143
GMR 100	146
GMR 125	149
GMR 160	154
GMR 200	159,5
GMR 250	166
GMR 320	176
GMR 400	187

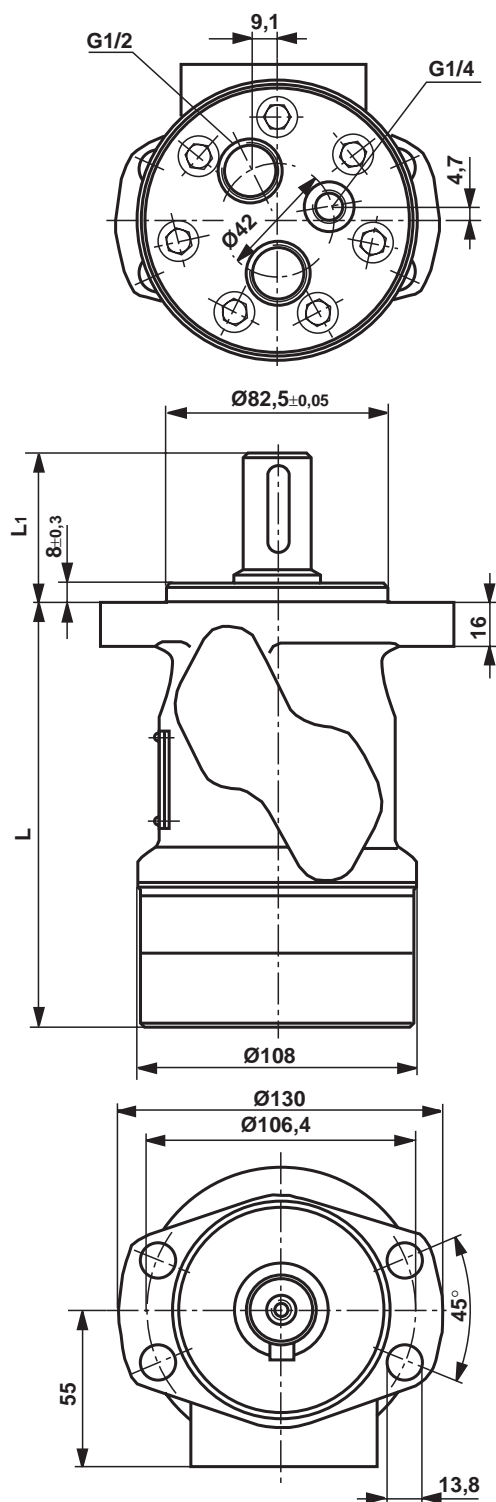
Shaft	L ₁
Ø 32 mm	max. 68,3
Ø 25 mm	54±0,6
Ø 25,4 mm	54±0,6
SAE 6b	max. 55,3
Tapered Shaft	68 ₋₁



Unit Dimensions: Type GMR-End port version

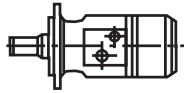
(Dimensions in mm)

(Shaft versions see page 11)

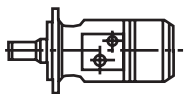


Type	L (- 1,5)
GMR 050	149
GMR 080	153
GMR 100	156
GMR 125	159
GMR 160	164
GMR 200	169,5
GMR 250	176
GMR 320	186
GMR 400	197

Shaft	L ₁
Ø 32 mm	max. 68,3
Ø 25 mm	54±0,6
Ø 25,4 mm	54±0,6
SAE 6b	max. 55,3
Tapered shaft	68 ₋₁

Ordering code and weights (Type GMVD)**GMVD-Motors with 2-hole flange, side port version, series 630**

Shaft	Connections	GMVD 50	GMVD 80	GMVD 100	GMVD 125	GMVD 160	GMVD 200	GMVD 250	GMVD 320	GMVD 400
Cyl. Shaft Ø 32mm	M22x1,5 M14x1,5	630-C101	630-F101	630-G101	630-H101	630-K101	630-L101	630-M101	630-N101	630-P101
	G1/2 G1/4	630-C201	630-F201	630-G201	630-H201	630-K201	630-L201	630-M201	630-N201	630-P201
Cyl. Shaft Ø 25mm	M22x1,5 M14x1,5	630-C102	630-F102	630-G102	630-H102	630-K102	630-L102	630-M102	630-N102	630-P102
	G1/2 G1/4	630-C202	630-F202	630-G202	630-H202	630-K202	630-L202	630-M202	630-N202	630-P202
Tapered Shaft 1:10	M22x1,5 M14x1,5	630-C103	630-F103	630-G103	630-H103	630-K103	630-L103	630-M103	630-N103	630-P103
	G1/2 G1/4	630-C203	630-F203	630-G203	630-H203	630-K203	630-L203	630-M203	630-N203	630-P203
Involute splined shaft SAE 6b	M22x1,5 M14x1,5	630-C104	630-F104	630-G104	630-H104	630-K104	630-L104	630-M104	630-N104	630-P104
	G1/2 G1/4	630-C204	630-F204	630-G204	630-H204	630-K204	630-L204	630-M204	630-N204	630-P204
Cyl. Shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	630-C105	630-F105	630-G105	630-H105	630-K105	630-L105	630-M105	630-N105	630-P105
	G1/2 G1/4	630-C205	630-F205	630-G205	630-H205	630-K205	630-L205	630-M205	630-N205	630-P205
Weight (kg)		8,5	8,7	8,9	9,1	9,4	9,6	9,9	10,5	11,1

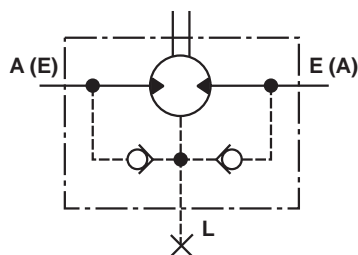
**GMVD-Motors with 4-hole flange, side port version, series 630**

Shaft	Connections	GMVD 50	GMVD 80	GMVD 100	GMVD 125	GMVD 160	GMVD 200	GMVD 250	GMVD 320	GMVD 400
Cyl. Shaft Ø 32mm	M22x1,5 M14x1,5	630-C106	630-F106	630-G106	630-H106	630-K106	630-L106	630-M106	630-N106	630-P106
	G1/2 G1/4	630-C206	630-F206	630-G206	630-H206	630-K206	630-L206	630-M206	630-N206	630-P206
Cyl. Shaft Ø 25mm	M22x1,5 M14x1,5	630-C107	630-F107	630-G107	630-H107	630-K107	630-L107	630-M107	630-N107	630-P107
	G1/2 G1/4	630-C207	630-F207	630-G207	630-H207	630-K207	630-L207	630-M207	630-N207	630-P207
Tapered Shaft 1:10	M22x1,5 M14x1,5	630-C108	630-F108	630-G108	630-H108	630-K108	630-L108	630-M108	630-N108	630-P108
	G1/2 G1/4	630-C208	630-F208	630-G208	630-H208	630-K208	630-L208	630-M208	630-N208	630-P208
Involute- splined shaft SAE 6b	M22x1,5 M14x1,5	630-C109	630-F109	630-G109	630-H109	630-K109	630-L109	630-M109	630-N109	630-P109
	G1/2 G1/4	630-C209	630-F209	630-G209	630-H209	630-K209	630-L209	630-M209	630-N209	630-P209
Cyl. Shaft Ø 1inch (25,4mm)	M22x1,5 M14x1,5	630-C110	630-F110	630-G110	630-H110	630-K110	630-L110	630-M110	630-N110	630-P110
	G1/2 G1/4	630-C210	630-F210	630-G210	630-H210	630-K210	630-L210	630-M210	630-N210	630-P210
Weight (kg)		8,5	8,7	8,9	9,1	9,4	9,6	9,9	10,5	11,1

Sample order: – GMVD 100 (displacement = 100cm³ per revolution)
 – 4-hole flange, cyl. shaft Ø 32mm
 – connections G1/2; G1/4
 – **Ordering code: GMVD 100 / 630-G206**

Technical data GMVD (For applications outside these parameters, please consult us !)

Motor size		50	80	100	125	160 ¹⁾	160 ²⁾	200 ¹⁾	200 ²⁾	250 ¹⁾	250 ²⁾	320 ¹⁾	320 ²⁾	400 ¹⁾	400 ²⁾
Geometric displacement min ⁻¹		51,8	81,4	103,6	125,9	162,9	162,9	203,6	203,6	251,7	251,7	325,75	325,8	407,2	407,2
Max. speed	min ⁻¹ continuous	775	810	650	520	400	400	325	325	250	250	210	210	170	170
	intermittent ³⁾	970	940	750	600	470	470	375	375	300	300	240	240	200	200
Max. torque	daNm continuous	10	16	20	25	32	27	33	29	36	30	32,5	28	33	27,5
	intermittent ³⁾	13	10	24	30	38	38	45	39	47	38	51	42	53,5	40
	peak ⁴⁾	17	27	32	37	46	46	56	56	71	71	84	84	70	70
Max. power output	kW continuous	7	10	11	11	11	9	9	7,5	7	6	5	4,5	4,8	4
	intermittent ³⁾	8,5	12,5	13	12,5	12,5	13	11	10	9,5	8	8,5	7,5	7,5	7,5
Max. pressure	bar continuous	140	140	140	140	140	120	120	105	105	80	75	65	60	50
	intermittent ³⁾	175	175	175	175	175	175	175	140	140	110	125	100	100	75
	peak ⁴⁾	225	225	225	225	225	225	225	225	225	225	210	210	135	135
Max. oil flow	L/min continuous	40	70	70	70	70	70	70	70	70	70	70	70	70	70
	intermittent ³⁾	50	75	75	75	75	75	75	75	75	75	75	75	75	75
Max. input pressure	bar continuous	160													
	intermittent ³⁾	180													
	peak ⁴⁾	225													
Max. return pressure without drain line or max. pressure in drain line ⁵⁾ (0-100 min ⁻¹)	bar continuous	75 125 ⁷⁾													
	(100-300 min ⁻¹) bar continuous	50 75 ⁷⁾													
	(300-810 min ⁻¹) bar continuous	25 50 ⁷⁾													
	(0-970 min ⁻¹) bar intermittent ³⁾	75													
	Max. return pressure with drain line	bar continuous	160												
	intermittent ³⁾	175													
	peak ⁴⁾	225													
Max. start pressure with unloaded shaft	bar	10	10	10	10	8	8	8	8	6	6	6	6	6	6
Min. start torque	daNm continuous	7,5	11,5	14,5	19,5	25,5	22,5	25,5	23,5	28	21,5	26	23	30	24
	intermittent ³⁾	9,5	14,5	19,5	24,5	31,5	31,5	40,5	32,5	38,5	30,5	45	33	50	37,5
Min. speed ⁶⁾	min ⁻¹	10	10	10	10	10	10	10	10	10	10	10	10	10	10



GMVD has built-in non-return valves⁵⁾

- 1) Cilindrical shaft Ø 32mm
- 2) Cilindrical shaft Ø 25mm and Ø 25,4mm (1inch) Tapered shaft and involute splined shaft
- 3) Intermittent operation: operation max. 10 % per minute
- 4) Peak load: max. 1 % of every minute
- 5) Pressure of the shaft seal is identical to the output pressure
- 6) You must expect that the motor will run lees smoothly at speeds below those specified here
- 7) Operation of the motors at these pressures at quasi-static load and after consultation of the manufacturer.

Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

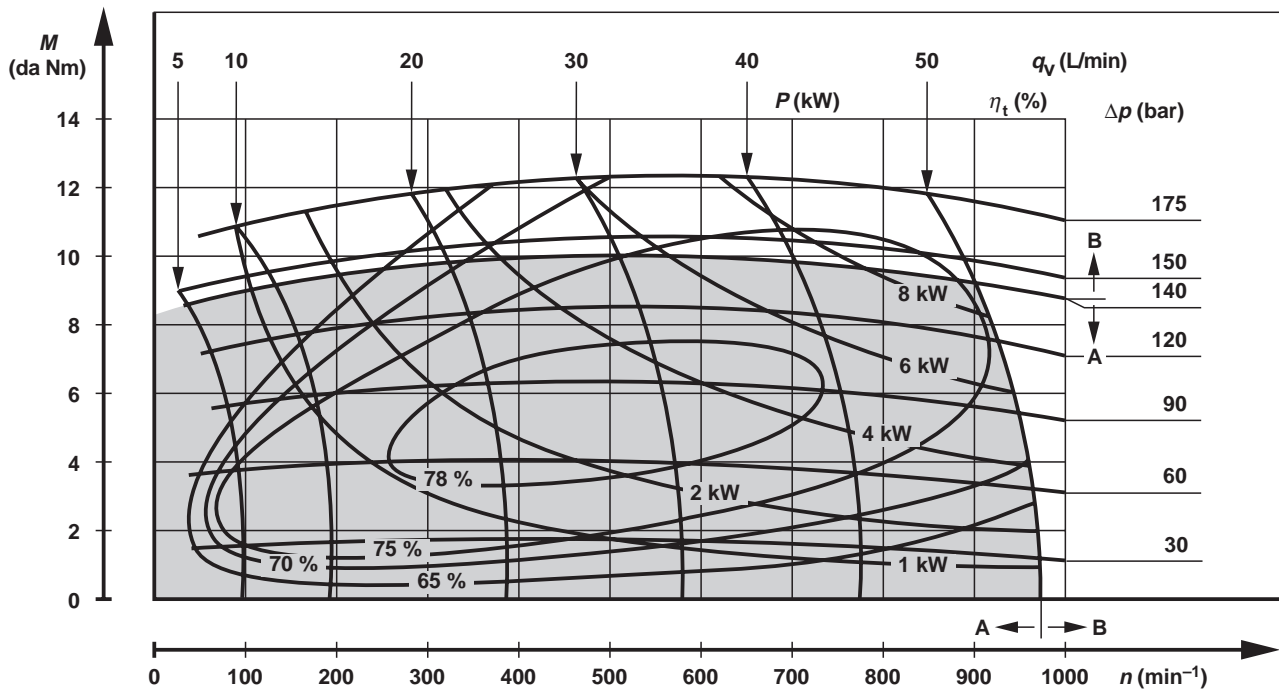
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

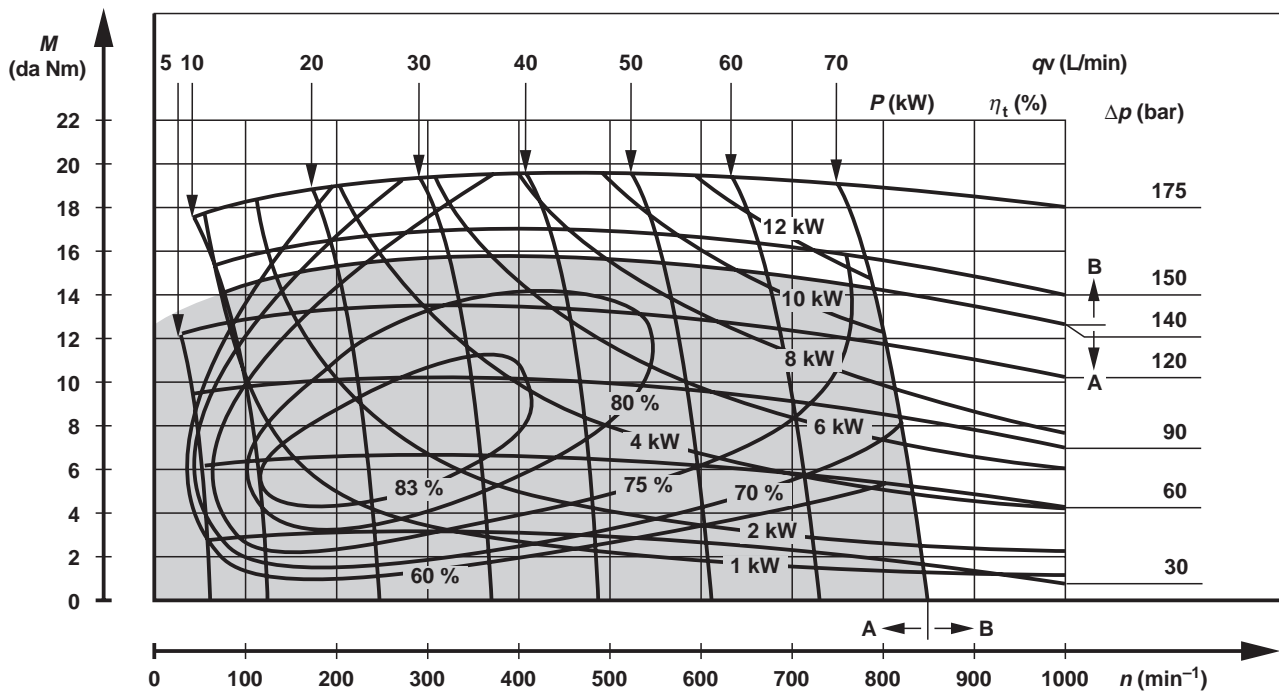
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMVD 50



Type GMVD 80

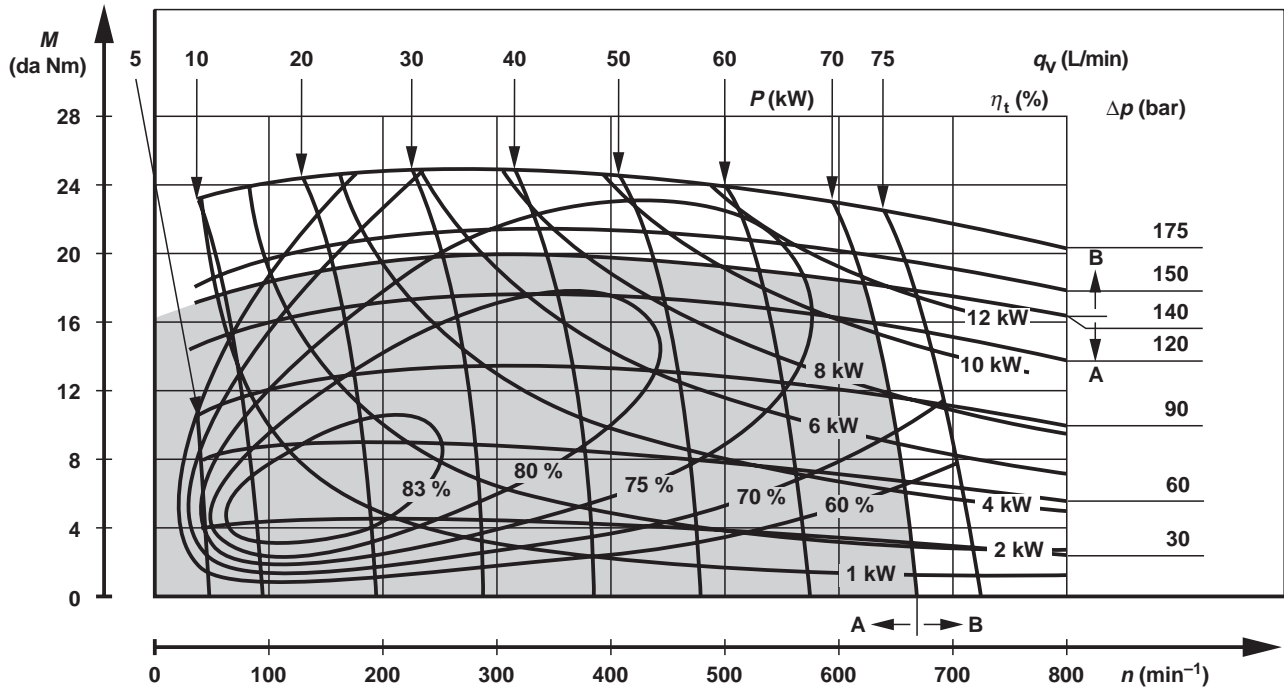


Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

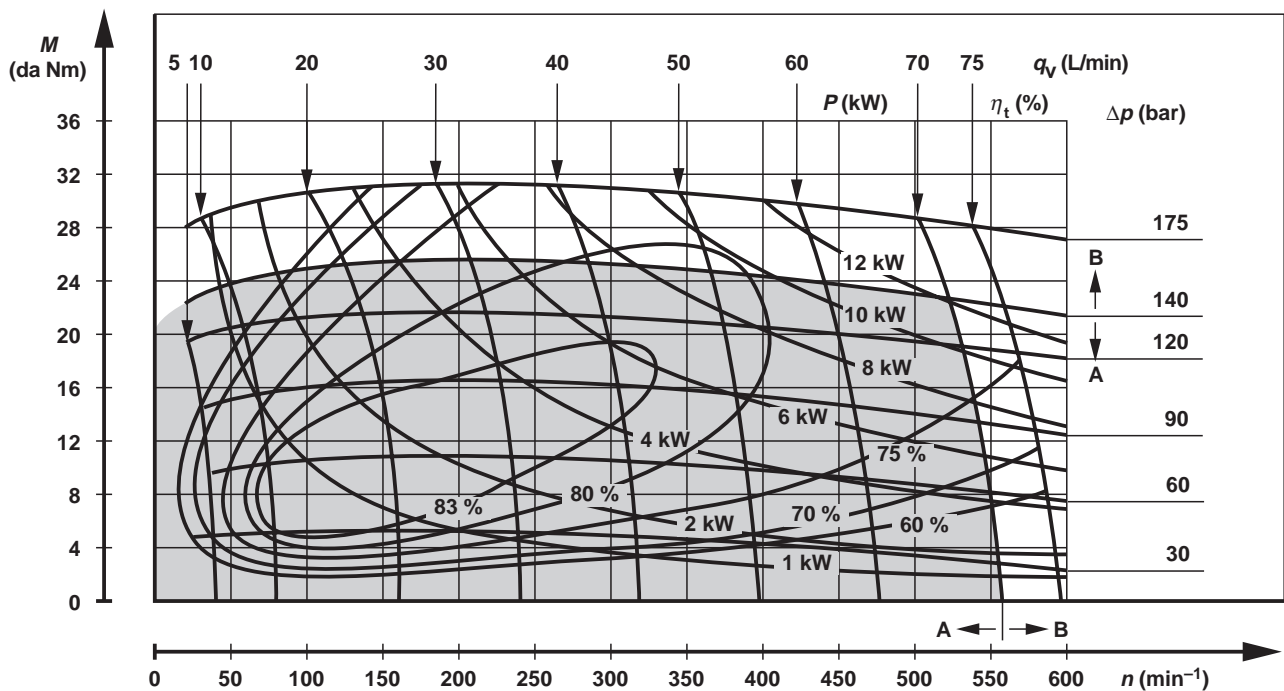
This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

A: Endurance operation
B: Intermittent operation (operation max. 10 % per minute)
Note:
 Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMVD 100



Type GMVD 125



Operating Curves (measured at $v = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at $50\text{ }^\circ\text{C}$.

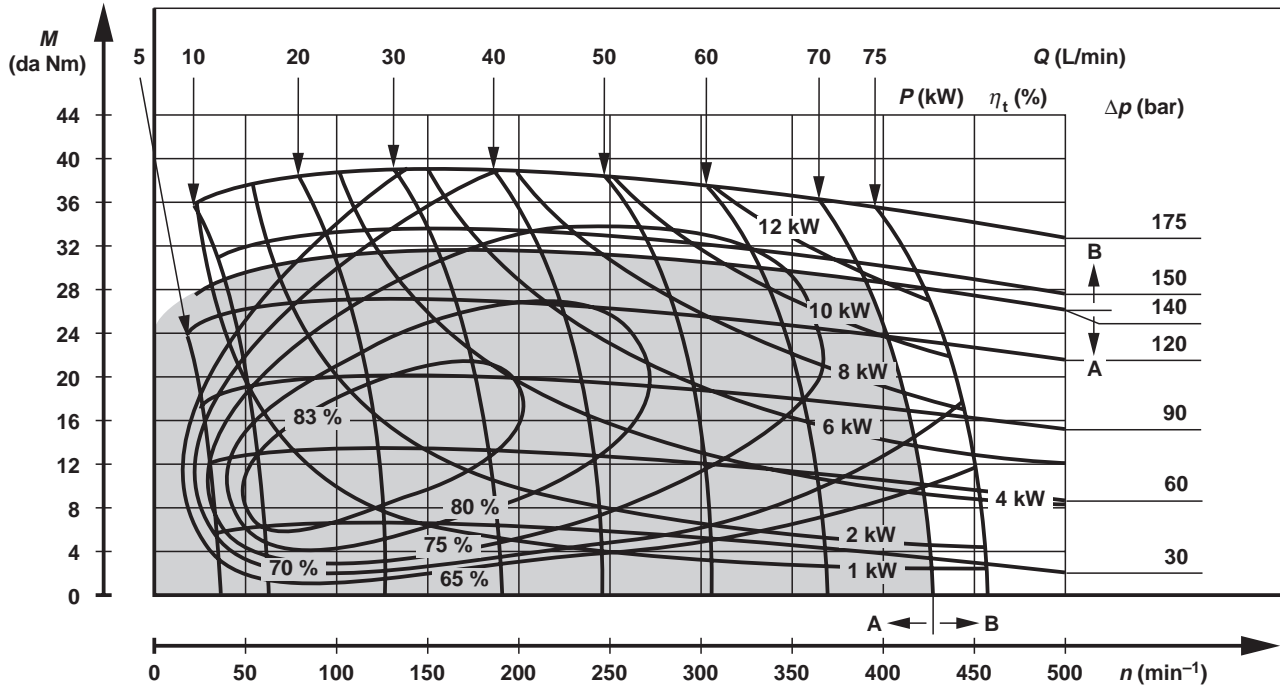
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

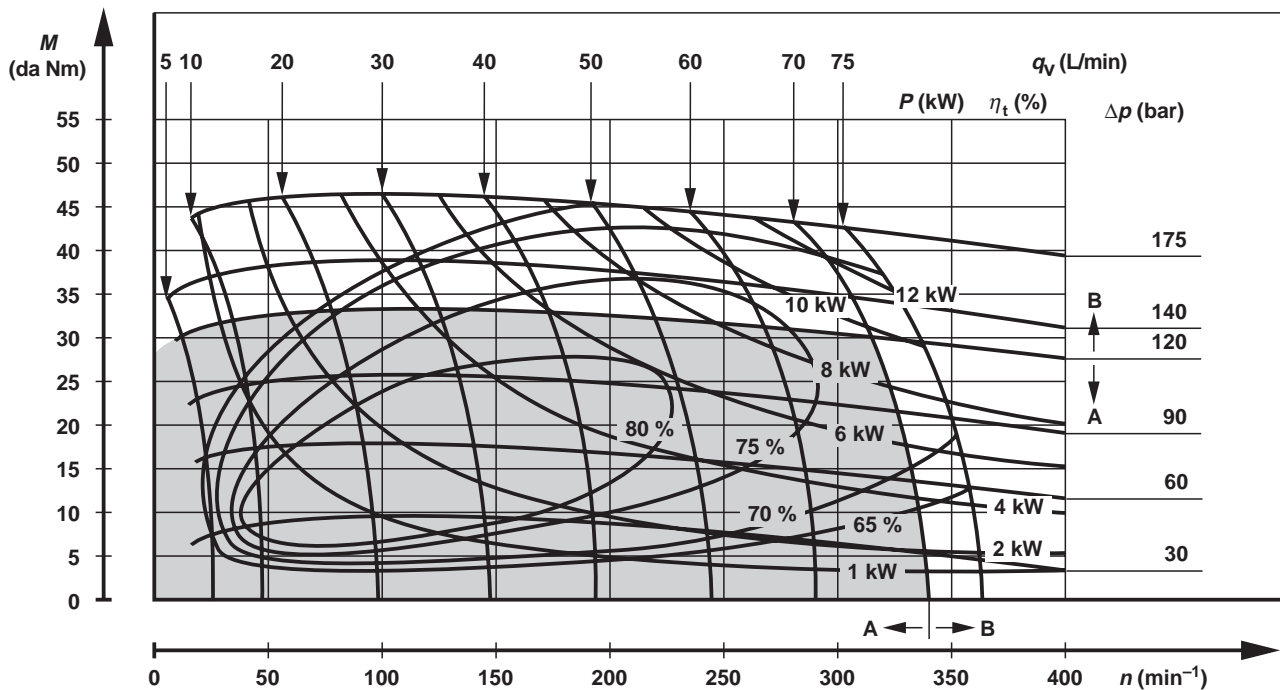
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMVD 160



Type GMVD 200



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at 50°C .

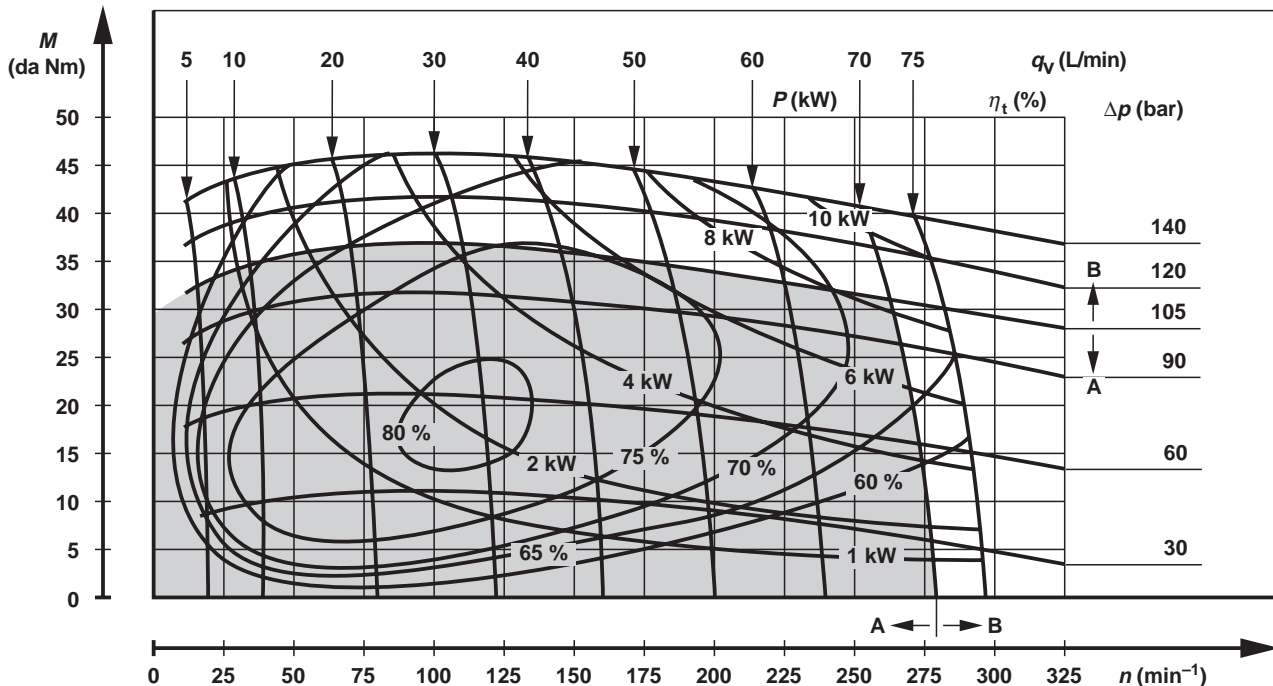
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

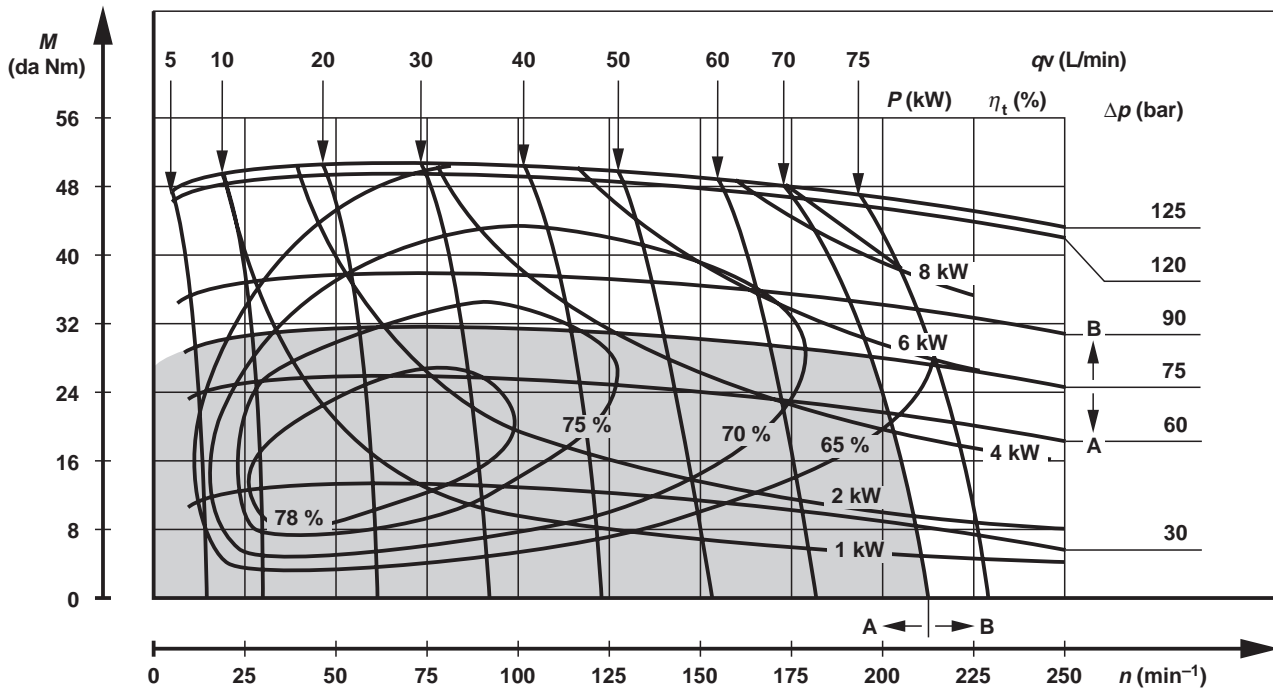
Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

Type GMVD 250



Type GMVD 320



Operating Curves (measured at $\nu = 35\text{mm}^2/\text{s}$ and $t = 50\text{ }^\circ\text{C}$)

This performance data apply with a backflow pressure of 5 - 10 bar, using a mineral oil-based hydraulic oil with a viscosity of $35\text{ mm}^2/\text{s}$ at 50°C .

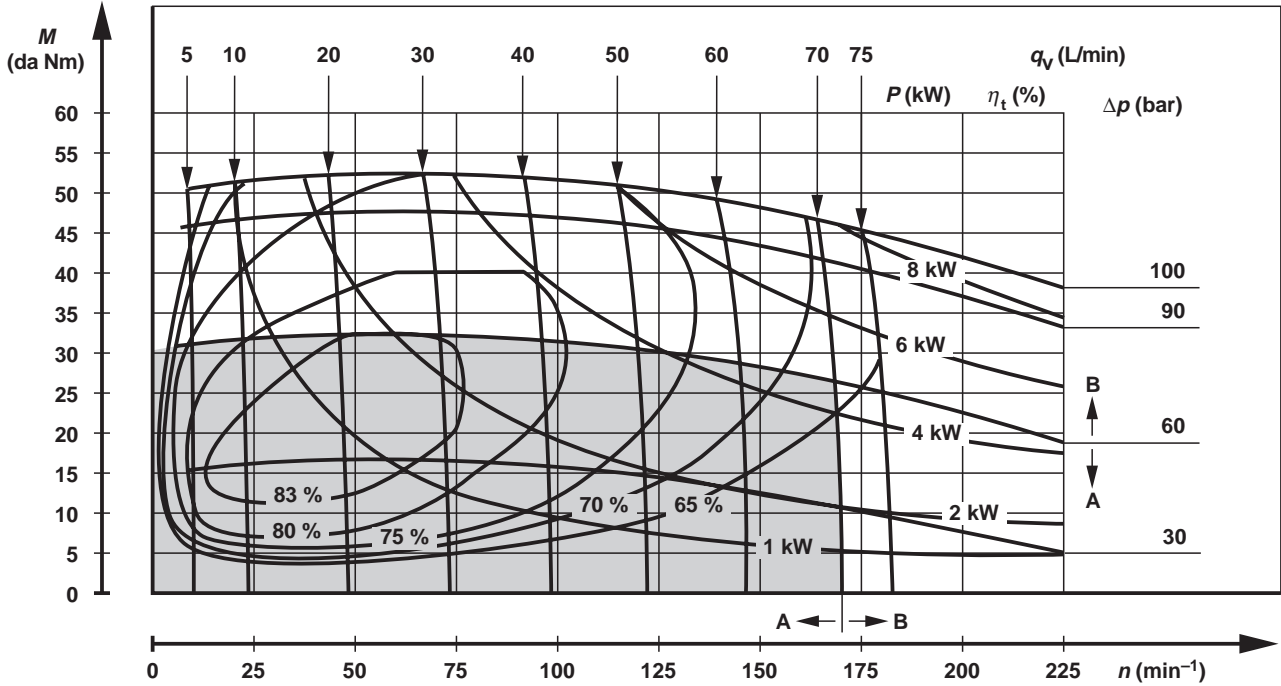
A: Endurance operation

B: Intermittent operation (operation max. 10 % per minute)

Note:

Intermittent pressure drop must not coincide with fluctuations in the oil flow.

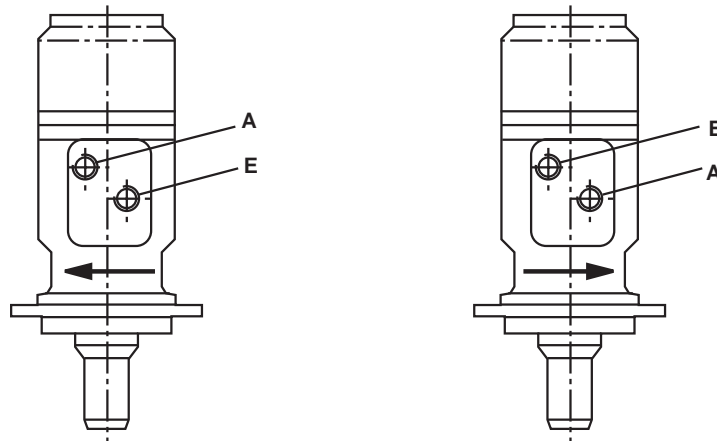
Type GMVD 400



Direction of shaft rotation (looking at shaft end)

Direction of shaft rotation (allocation of ports)

E = Inlet
A = Outlet



Permissible shaft load

Permissible shaft load for GMVD:

The tapered roller bearings on the output shaft mean it can accept high levels of axial and radial shaft load. Radial load starting characteristics are considerably better than motors with plain bearings.

The broken curve plots the maximum permissible radial load. Loads above and beyond this level can lead to breakage. The central solid curves plot the permissible radial loads for a

theoretical service life (B10) of 3000 hours at 200 min⁻¹.

The expected service life can be calculated for different speeds and / or radial loads.

Please refer to the "Gerotormotors Generelles" brochure for more detailed information about the calculation methods.

These data assume the use of a hydraulic fluid with a sufficient anti-wear additive content.

