Product Tech Data

Hydraulic motors overview

Motor Type	Displacement cm^3/rev.[in^3 /rev]	Pressure Drop (continuous/Intermittent/Peak) bar [PSI]	Oil Flow (continuous) l/min [US gal/min]	Max. Output (Intermittent) kW [hp]
MM MLHM	8-50 [0.5-3.05]	105/140/200 [1500/2030/2900]	20 [5.5]	3,2 [4.3]
MP MLHP	25-630 [1.52-38.05]	140/175/225 [2030/2540/3260]	60 [16]	12,8 [17.1]
MR, RW MLHR, MLHRW	50-400 [3.14-24.4]	175/200/225 [2540/2900/3260]	60 [16]	15 [20.1]
HP	25-630 [1.52-38.05]	125/175 [1815/2540]	60 [16]	14,7 [19.7]
HR	50-400 [3.14-24.4]	140/175 [2030/2540]	60 [16]	15 [20.1]
MH MLHH	200-500 [12.3/30.7]	175/200/225 [2540/2900/3260]	75 [20]	18,5 [24.8]
HW	125-550 [7.69-33.55]	205/225 [2970/3260]	75 [20]	21,6 [29]
MS MLHS	80-565 [4.91-34.47]	210/275/295 [3050/3990/4280]	75 [20]	23 [30.8]
MSY MLHSY	200-475 [12.2-28.96]	200/225 [2900/3270]	75 [20]	24 [32.2]
MT MLHT	160-725 [9.83-44.2]	200/240/280 [2900/3450/4050]	125 [33]	40 [54]
MTM MLHTM	200-725 [12.29-44.2]	250/350/400 [3600/5080/5800]	125 [33]	70 [94]
MV MLHV	315-800 [19.18-48.91]	200/240/280 [2900/3450/4050]	200 [53]	56 [76]
MVM MLHVM	315-800 [19.18-48.91]	250/350/400 [3600/5080/5800]	200 [53]	112 [150]

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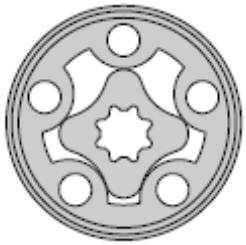
MM
Orbitmotoren



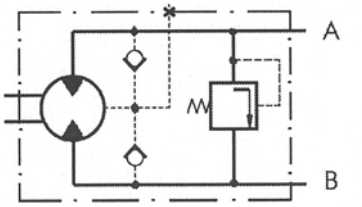
Deze mini-hydrauliekmotoren zetten een onder druk toegevoerde oliestroom om in mechanische energie. Ondanks de kleine afmetingen onderscheid deze motor zich door een hoog vermogen, hoog draaimoment en een hoog toerental.

Deze motoren worden toegepast in conveyers, ventilatoren, aandrijving scheepsbesturing en dergelijken.

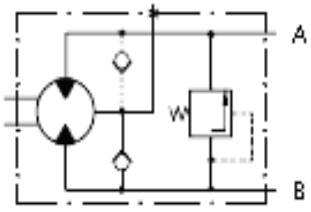
Algemene informatie:

Displacement,	[cm³ / rev.]	8,2 ÷ 50
Max. Speed,	[RPM]	400 ÷ 1950
Max. Torque,	[daNm]	1, 1 ÷ 4,5
Max. Output,	[KW]	1,8 ÷ 2,4
Max. Pressuredrop	[bar]	70 ÷ 100
Max. Oil Flow,	[L/min]	16 ÷ 20
Min. Speed,	[RPM]	20 ÷ 50
Pressure fluid		Miniral based - HLP(DIN 51524) or HM (ISO 6743/4)
Temperature range,	[º C]	-30 ÷ 90
Optimal Viscosity range,		20 ÷ 75
Filtration		ISO code 20/16 (min recommended fluid filtration of 25 micron)

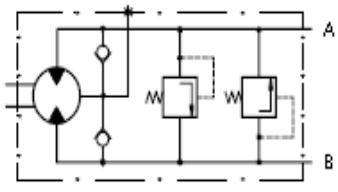
MMP met ingebouwd Drukbegrenzingsventiel A→B, Δ p=100 bar (50bar)

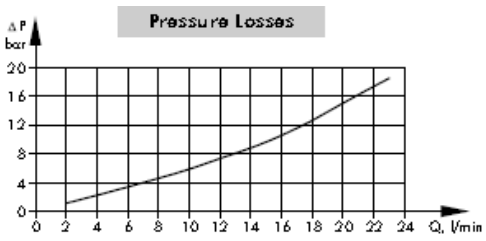


MMP met ingebouwd drukbegrenzingsventiel B→A, Δ p=100 bar (50bar)



MMD met ingebouwd drukbegrenzingsventiel B→A, Δ p=100 bar (50bar)





MM
Orbitmotoren

Technische Informatie

Type		MM 8	MM 12,5	MM 20	MM 32	MM 40	MM 50
Displacement [cm³/rev.]		8,2	12,9	20	31,8	40	50
Max. Speed,	cont.	1950	1550	1000	630	500	400
[RPM]	int.*	2440	1940	1250	790	625	500
Max. Torque	cont.	1,1	1,6	2,5	4	4,1	4,5
[daNm]	int.*	1,5	2,3	3,5	5,7	5,7	5,8
	peak**	2,1	3,3	5,1	6,4	6,6	8
Max. Output	cont.	1,8	2,4	2,4	2,4	1,8	1,7
[kW]	int.*	2,6	3,2	3,2	3,2	3,0	2,1
Max. Pressure Drop	cont.	100	100	100	100	80	70
[bar]	int.*	140	140	140	140	110	90
	peak**	200	200	200	200	140	125
Max. Oil Flow	cont	16	20	20	20	20	20
[l/min]	int.*	20	25	25	25	25	25
Max. Inlet Pressure,	cont.	140	140	140	140	140	140
[bar]	int.*	175	175	175	175	175	175
	peak**	225	225	225	225	225	225
Max. Return Pressure	cont. 0-100 RPM	140	140	140	140	140	140
w/o Drain Line or	cont. 100-400 RPM	100	100	100	100	100	100
Max. Pressure in	cont. 400-800 RPM	50	50	50	50	50	-
Drain Line, [bar]	cont. >800 RPM	20	20	20	-	-	-
	int.* 0-max. RPM	140	140	140	140	140	140
Max. Return Pressure	cont.	140	140	140	140	140	140
with Drain Line	int.*	175	175	175	175	175	175
[bar]	peak**	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shift, [bar]		4	4	4	4	4	4
Min. Starting Torque	at max. press. drop cont.	0,7	1,2	2,1	3,4	3,3	3,7
[daNm]	at max. press. drop int.*	1,0	1,7	2,9	4,8	4,6	4,8
Min. Speed***, [RPM]		50	40	30	30	25	20
Weight, avg. [kg]	MM	1,9	2,0	2,1	2,2	2,3	2,5
For "F" flange:	MMS	2,0	2,1	2,2	2,3	2,4	2,6
+0,2 kg	MMP	2,2	2,3	2,4	2,5	2,6	2,8
	MMD	2,6	2,7	2,8	2,9	3,0	3,2

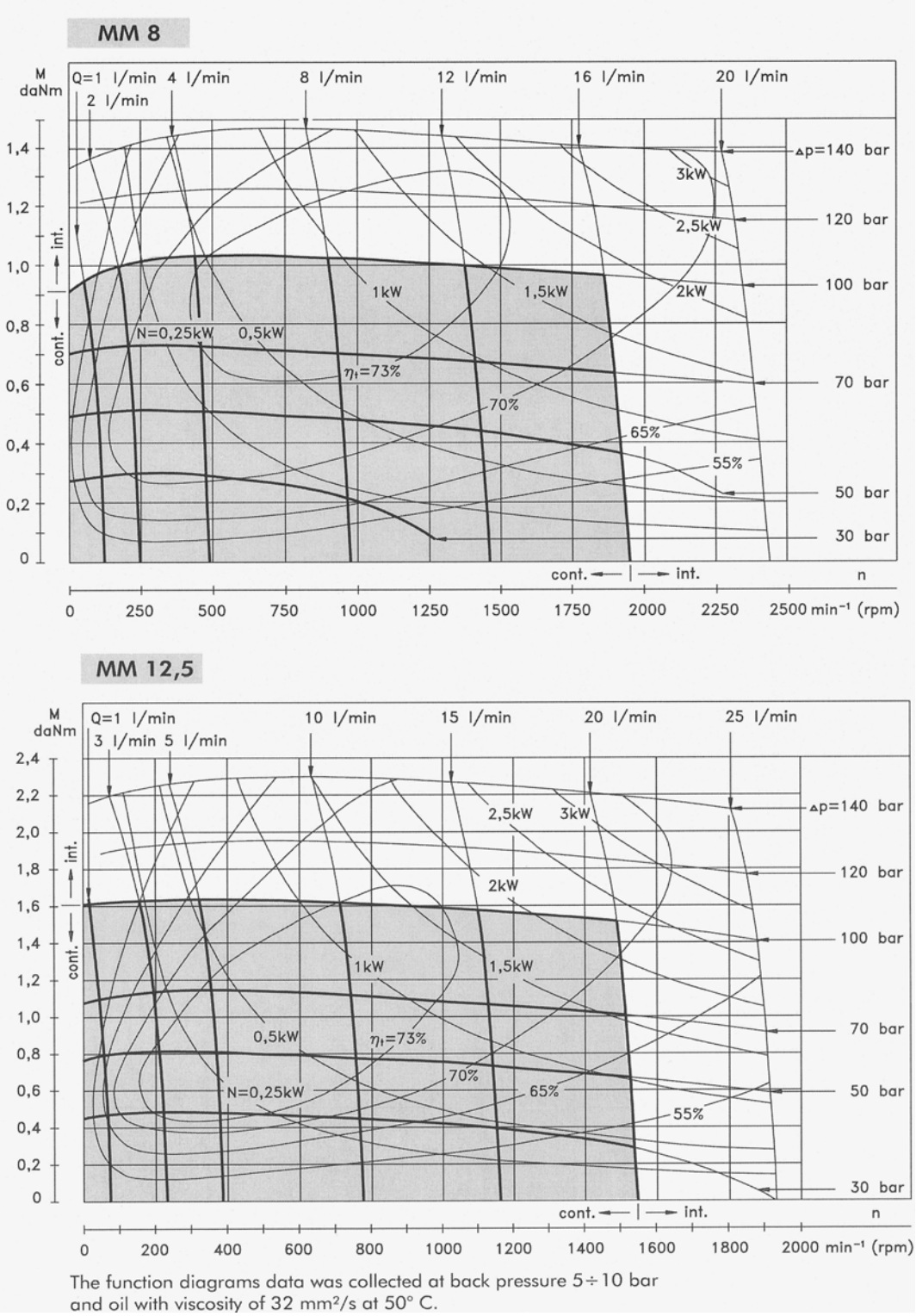
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

1. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
2. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
3. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
4. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
5. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
6. De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MM

Orbitmotoren

Functiediagrammen

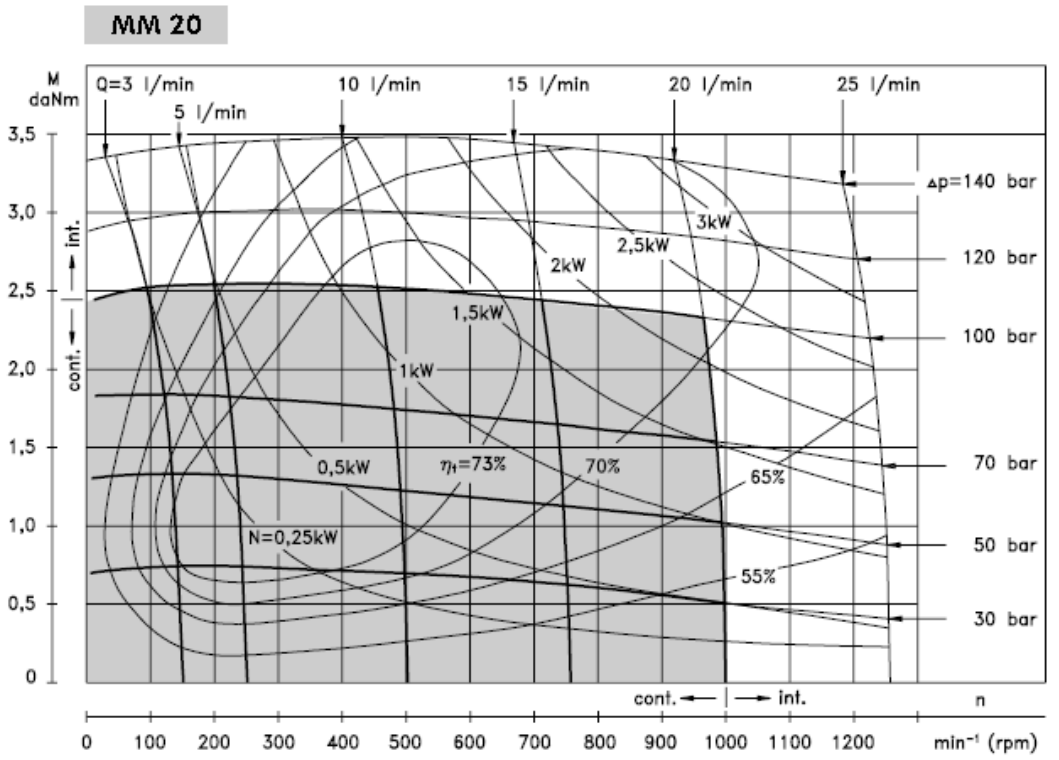


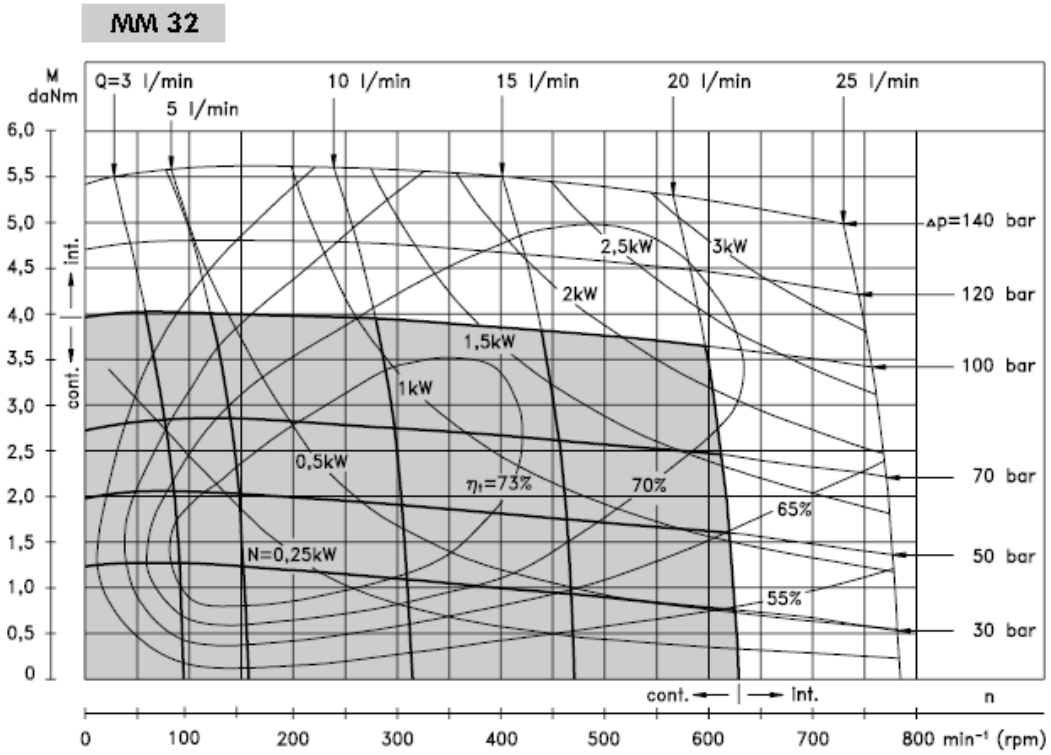
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MM

Orbitmotoren

Functiediagrammen





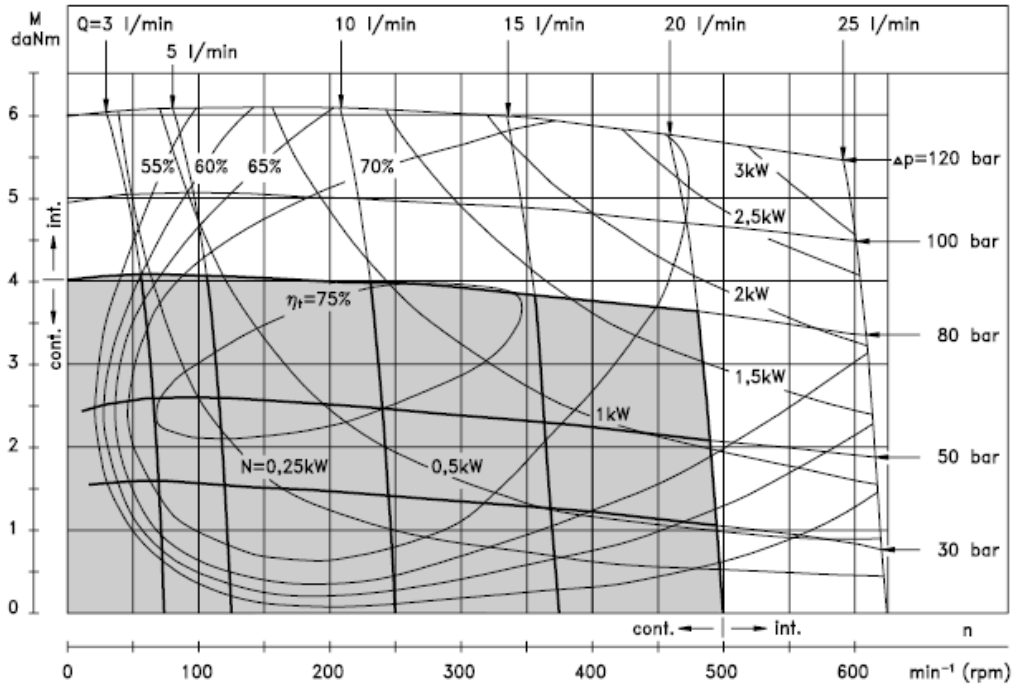
The function diagrams data was collected at back pressure 5 : 10 bar and oil with viscosity of 32 mm²/s at 50° C.

MM

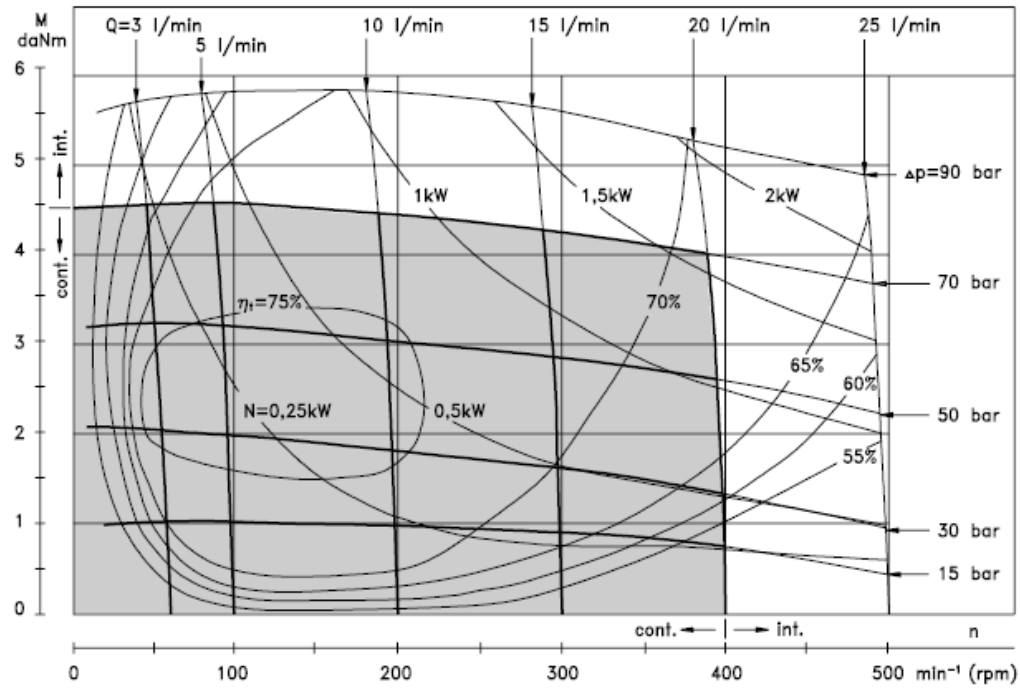
Orbitmotoren

Functiediagrammen

MM 40



MM 50

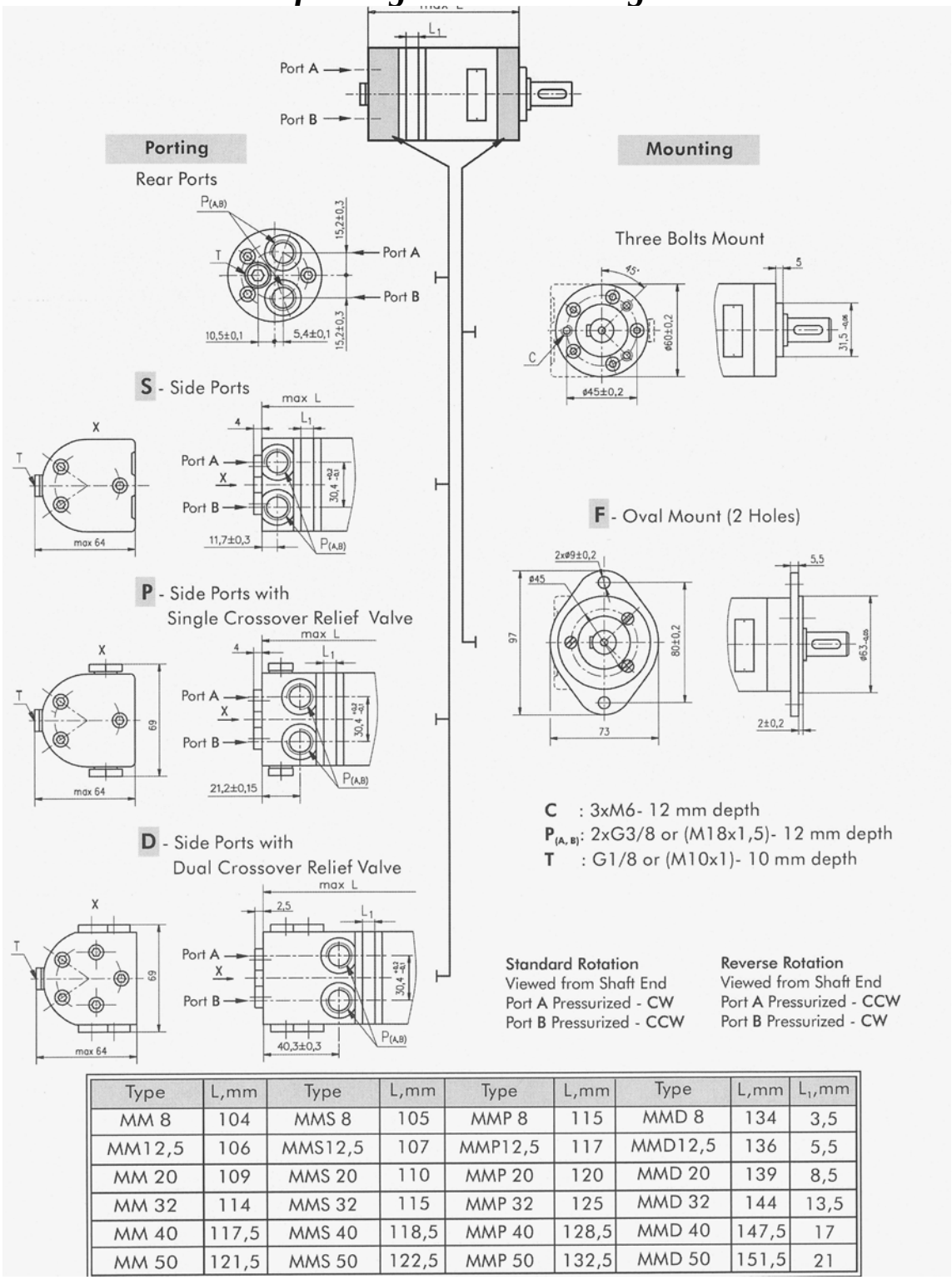


The function diagrams data was collected at back pressure 5 : 10 bar and oil with viscosity of 32 mm²/s at 50° C.

MM

Orbitmotoren

Afmetingen en uitvoeringen

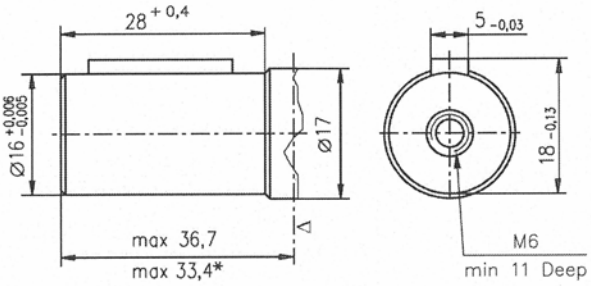


Type	L,mm	Type	L,mm	Type	L,mm	Type	L,mm	L_1,mm
MM 8	104	MMS 8	105	MMP 8	115	MMD 8	134	3,5
MM12,5	106	MMS12,5	107	MMP12,5	117	MMD12,5	136	5,5
MM 20	109	MMS 20	110	MMP 20	120	MMD 20	139	8,5
MM 32	114	MMS 32	115	MMP 32	125	MMD 32	144	13,5
MM 40	117,5	MMS 40	118,5	MMP 40	128,5	MMD 40	147,5	17
MM 50	121,5	MMS 50	122,5	MMP 50	132,5	MMD 50	151,5	21

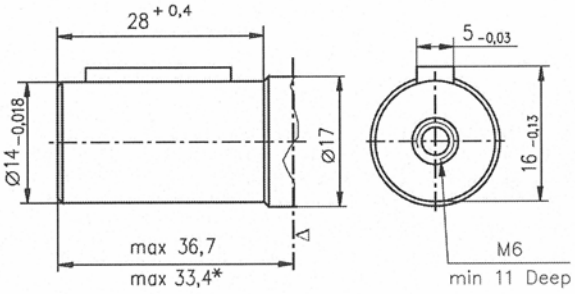
MM

Orbitmotoren mogelijke assen.

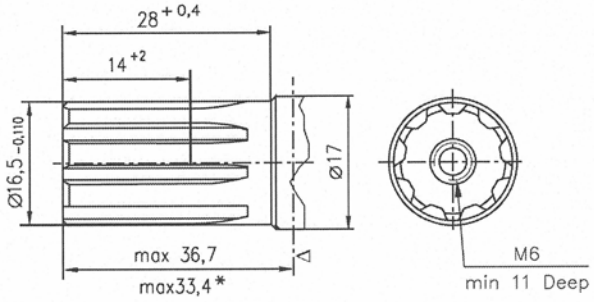
C - ø16 straight, Parallel key 5x5x16 DIN 6885
Max. Torque 3,9 daNm



CK - ø14 Straight, Parallel key 5x5x16 DIN 6885
Max. Torque 3 daNm

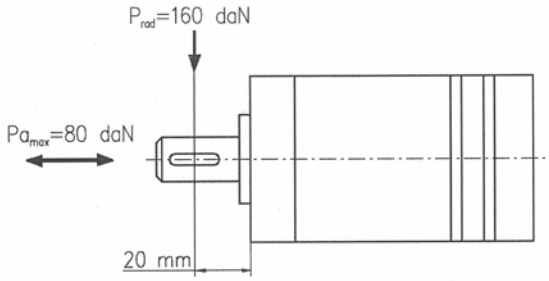


SH - ø16,5 Splined, B17x14 DIN 5482
Max. Torque 4,4 daNm



∇ - Motor Mounting Surface
* For **F** Mounting

PERMISSIBLE SHAFT LOAD



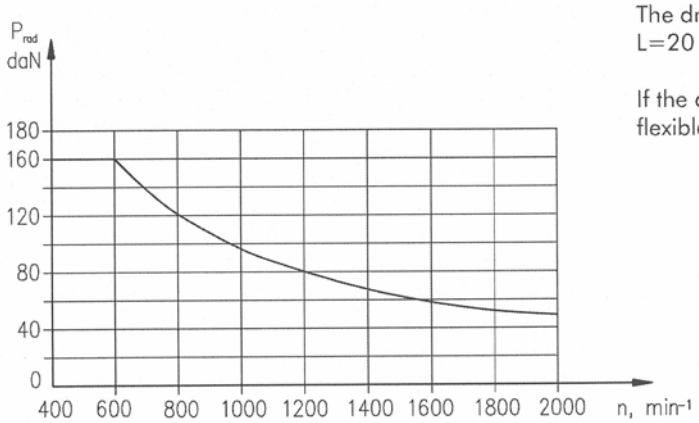
The permissible radial shaft load [Prad] is calculated from the distance [L] between the point of load application and the mounting surface:

$$P_{rad} = \frac{600}{n} \times \frac{13040}{(61{,}5+L)}\ , [daN]$$

[L in mm; L≤80]

The drawing shows the permissible radial load when L=20 mm.

If the calculated shaft load exceeds the permissible, a flexible coupling must be used.



MM

Orbitmotoren bestelcodes

	1	2	3	4	5	6	7	8	9	10
M M										

Pos.1 - Adjustment Option

omit - without valve
P - Side ports with single crossover relief valve
D - Side ports with dual crossover relief valve

Pos.2 - Mounting Flange

omit - Three bolts mount
F - Oval mount, two holes

Pos.3 - Port type (not valid for **P** and **D** version)

omit - Rear ports
S - Side ports

Pos.4 - Displacement code

8 - 8,2 [cm³/rev]
12,5 - 12,9 [cm³/rev]
20 - 20,0[cm³/rev]
32 - 31,8[cm³/rev]
40 - 40,0[cm³/rev]
50 - 50,0[cm³/rev]

Pos. 5 - Shaft Extensions*

C - ø16 straight, Parallel key 5x5x16 DIN 6885
VC - ø16 straight, Parallel key 5x5x16 DIN 6885 with corrosion resistant bushing
CK - ø14 straight, Parallel key 5x5x16 DIN 6885
SH - ø16,5 splined, B17x14 DIN 5482

Pos. 6 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos. 7 - Line to controled ** (see page 4)

/L - B→A (left running)
/R - A→B (right running)

Pos. 8 - Valve Rated Pressure ***

/50 - Δp=50 bar
/100 - Δp=100 bar

Pos. 9 - Special Features (see page 46)

Pos.10 - Design Series

omit - Factory specified

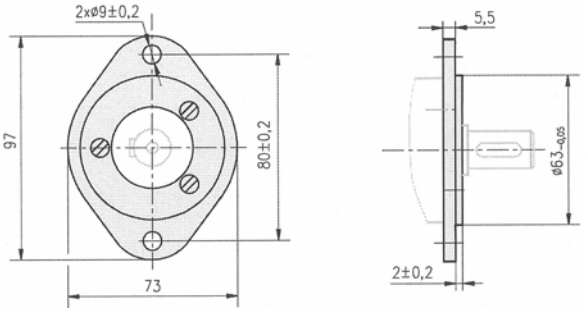
NOTES:

* The permissible output torque for shafts must not be exceeded!
** For **"P"** option useful only.
*** For **"P"** and **"D"** option useful only.

The hydraulic motors are mangano-phosphatized as standard.

F - FLANGE KIT (2 Holes)

Order No:48443 014 00

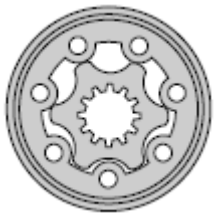


Flange Kit includes 3 screws - M6x14 for attaching flange to the motor.

MP
Orbitmotoren

Deze hydrauliek motoren produceren een hoog Draaimoment bij lage toerentallen en worden ingezet waar een vermogen tot circa 11 KW verlangt wordt.

Deze motoren worden toegepast in conveyers, aanvoersystemen voor robots en manipulatoren, metaal bewerking machines, gras maaiers etc.



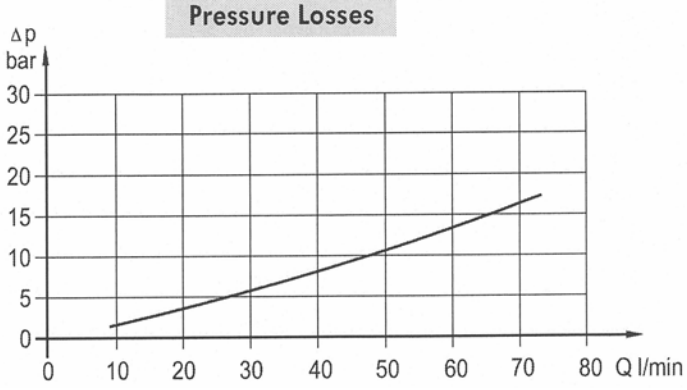
Algemene informatie:

Displacement,	[cm^3/rev.]	25÷623,6
Max. Speed,	[RPM]	95÷1600
Max. Torque,	[daNm]	3,3÷50
Max. Output,	[kW]	3,3÷10,5
Max. Pressure Drop,	[bar]	55÷140
Max. Oil Flow,	[l/min]	40÷60
Min. Speed,	[RPM]	10
Pressure fluid		Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range,	[°C]	-30÷90
Optimal Viscosity range,	[mm^2/s]	20÷75
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm^2/s)	Oil flow in drain line (l/min)
100	20	2,5
	35	1,8
140	20	3,5
	35	2,8

Pressure Losses



MP
Orbitmotoren

Technische informatie

Informatie voor MP… motors met C, CO, SH, K en SA AS (ø28.56 SEAL DIAMETER)

Type		MP													
		25	32	40	50	80	100	125	160	200	250	315	400	500	630
Displacement, [cm³/rev.]		25	32	40	49,5	79,2	99	123,8	158,4	198	247,5	316,8	396	495	623,6
Max. Speed,	cont.	1600	1560	1500	1210	755	605	486	378	303	242	190	150	120	95
[RPM]	int.*	1800	1720	1750	1515	945	755	605	472	378	303	236	189	150	120
Max.	cont.	3,3	4,3	6,2	9,4	15,1	19,3	23,7	31,3	36,6	38	38	36	39	44
Torque	int.*	4,7	6,1	8,2	11,9	19,5	23,7	29,8	37,8	45,6	58,3	56	59	57	64
[daNm]	peak**	6,7	8,6	10,7	14,3	22,4	27,5	36,5	43,8	55	68,5	85	85,4	78	82
Max. Output,	cont.	4,5	5,8	8,4	10,1	10,2	10,5	10	10,1	10	7,5	5,7	4,6	3,5	3,3
[kW]	int.*	6,1	7,8	11,6	12,2	12,5	12,8	12	12,1	12	12	9	7,8	7,2	5,6
Max. Pressure	cont.	100	100	120	140	140	140	140	140	140	110	90	70	60	55
Drop	int.*	140	140	155	175	175	175	175	175	175	175	140	115	90	80
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	180	130	110
Max. Oil Flow	cont.	40	50	60	60	60	60	60	60	60	60	60	60	60	60
[l/min]	int.*	45	55	70	70	70	70	70	70	70	70	70	70	70	70
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175	175	175	175	140	140
Pressure	int.*	200	200	200	200	200	200	200	200	200	200	200	200	175	175
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175	175	175	175	140	140
with Drain Line	int.*	200	200	200	200	200	200	200	200	200	200	200	200	175	175
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	10	10	10	9	8	7	6	5	5	5	5
Min. Starting Torque	at max. press. drop cont.	3	4	5,4	7,8	13,2	16,6	20,7	28,2	33,5	33,6	34,4	34,5	36	41,5
[daNm]	at max. press. drop int.*	4,2	5,6	6,9	10	16,8	21	26,6	35,5	42,6	54,2	61,9	60,8	54	62
Min. Speed***, [RPM]		20	15	10	10	10	10	10	10	10	10	10	10	10	10
Weight, avg. [kg]	MP(F)	5,6	5,6	5,7	5,8	5,9	6,1	6,2	6,4	6,6	6,8	7,1	7,6	8,9	9,5
	MPQ(N)	5,0	5,0	5,1	5,2	5,3	5,5	5,6	5,8	6,0	6,2	6,5	6,8	8,3	9,0
	MP(F)(N)E	6,1	6,1	6,2	6,3	6,4	6,6	6,7	6,9	7,1	7,3	7,6	8,1	9,3	10
	MPW(N)	5,3	5,3	5,4	5,5	5,6	5,8	5,9	6,1	6,3	6,5	6,8	7,2	8,6	9,2
	MPQ(N)E	5,5	5,5	5,6	5,7	5,8	6,0	6,1	6,3	6,5	6,7	7,0	7,3	8,8	8,5

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

7. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
8. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
9. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
10. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
11. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
12. De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MP
Orbitmotoren

Technische informatie

Informatie voor MP… motors met CB, KB,OB en HB assen (ø35 SEAL DIAMETER)

	Type	MP													
		25	32	40	50	80	100	125	160	200	250	315	400	500	630
Displacement, [cm³/rev.]		25	32	40	49,5	79,2	99	123,8	158,4	198	247,5	316,8	396	495	623,6
Max. Speed,	cont.	1600	1560	1500	1210	755	605	486	378	303	242	190	150	120	95
[RPM]	int.*	1800	1720	1750	1515	945	755	605	472	378	303	236	189	150	120
Max.	cont.	3,3	4,3	6,2	9,4	15,1	19,3	23,7	31,3	36,6	47	48,6	50	39	44
Torque	int.*	4,7	6,1	8,2	11,9	19,5	23,7	29,8	37,8	45,6	58,3	56	59	57	64
[daNm]	peak**	6,7	8,6	10,7	14,3	22,4	27,5	36,5	43,8	55	68,5	85	85,4	78	82
Max. Output,	cont.	4,5	5,8	8,4	10,1	10,2	10,5	10	10,1	9,5	9,5	7,6	6,2	3,5	3,3
[kW]	int.*	6,1	7,8	11,6	12,2	12,5	12,8	12	12,1	12,5	12	9	7,8	7,2	5,6
Max. Pressure	cont.	100	100	120	140	140	140	140	140	140	140	120	95	60	55
Drop	int.*	140	140	155	175	175	175	175	175	175	175	140	115	90	80
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	180	130	110
Max. Oil Flow	cont.	40	50	60	60	60	60	60	60	60	60	60	60	60	60
[l/min]	int.*	45	55	70	70	70	70	70	70	70	70	70	70	70	70
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175	175	175	175	140	140
Pressure	int.*	200	200	200	200	200	200	200	200	200	200	200	200	175	175
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175	175	175	175	140	140
with Drain Line	int.*	200	200	200	200	200	200	200	200	200	200	200	200	175	175
[bar]	peak**	225	225	225	225	225	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	10	10	10	9	8	7	6	5	5	5	5
Min. Starting Torque	at max. press. drop cont.	3	4	5,4	7,8	13,2	16,6	20,7	28,2	33,5	42,8	45,8	46,8	36	41,5
[daNm]	at max. press. drop int.*	4,2	5,6	6,9	10	16,8	21	26,6	35,5	42,6	54,2	61,9	60,8	54	62
Min. Speed***, [RPM]		20	15	10	10	10	10	10	10	10	10	10	10	10	10
Weight, avg. [kg]	MP(F)…B	5,6	5,6	5,7	5,9	6	6,2	6,3	6,5	6,7	6,9	7,2	7,7	9	9,6
	MP(F)E…B	6,1	6,1	6,2	6,4	6,5	6,7	6,8	6,9	7,2	7,4	7,7	8,2	9,4	10,1

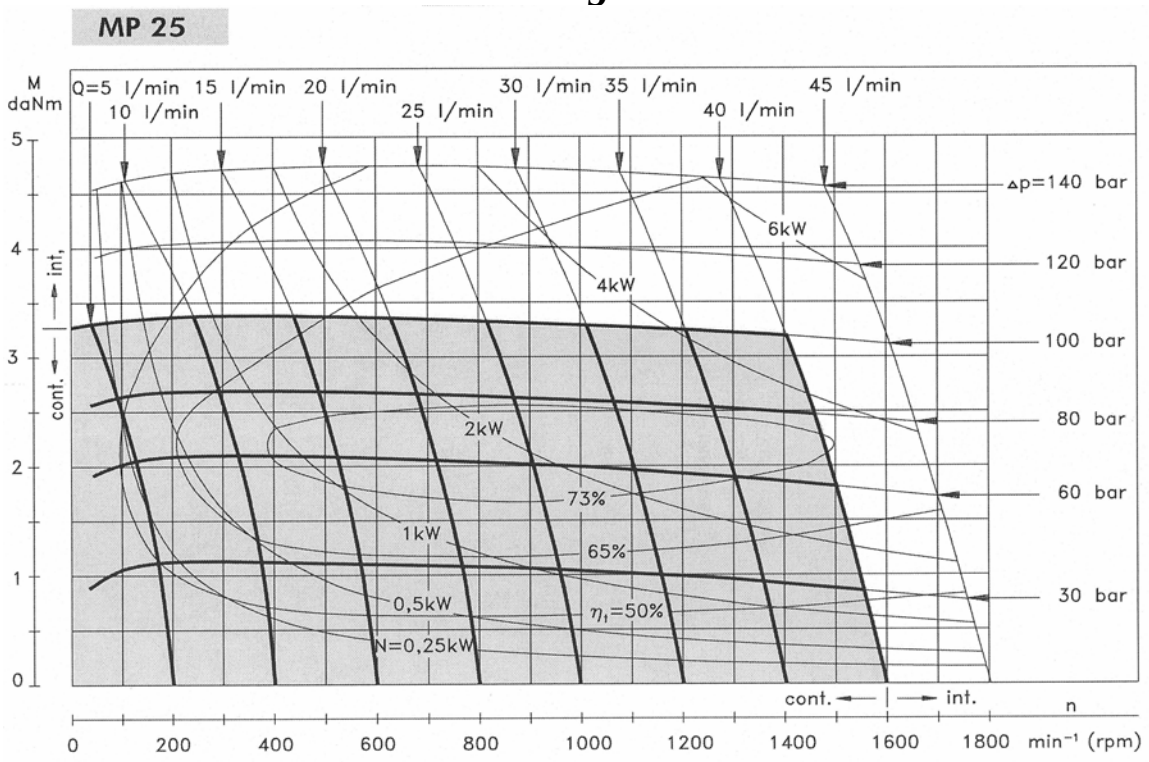
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

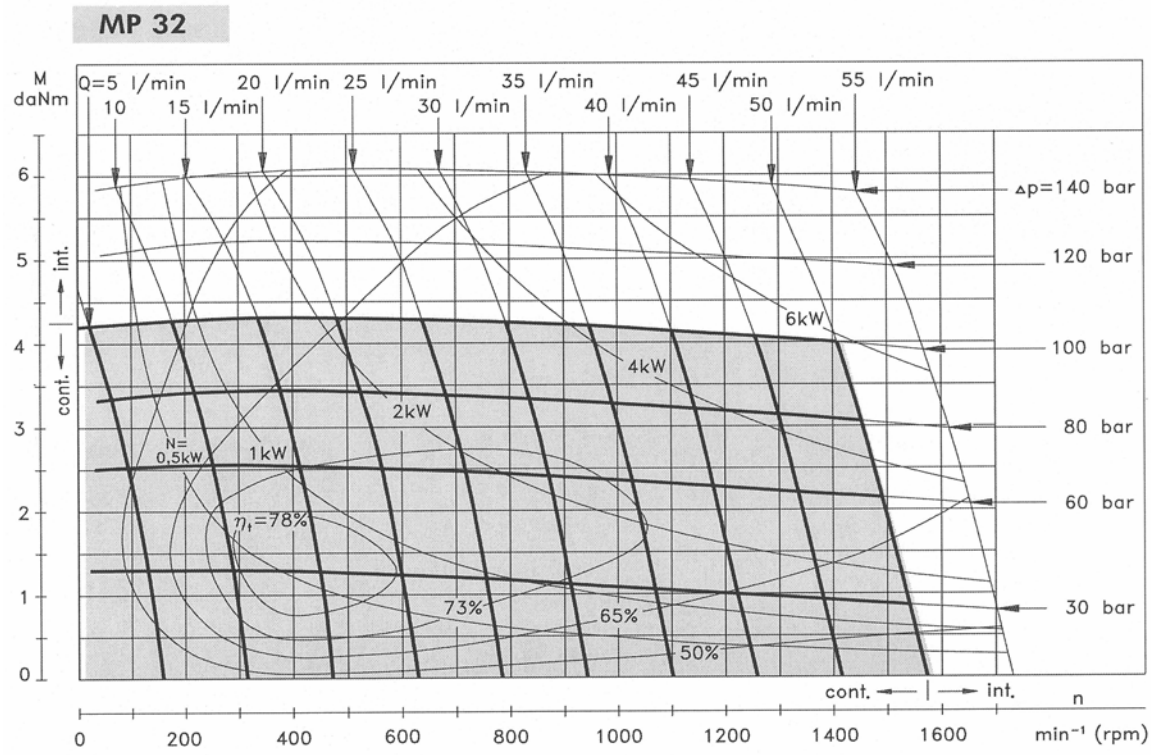
13. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
14. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
15. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
16. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
17. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
18. De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MP

Orbitmotoren

Functiediagrammen



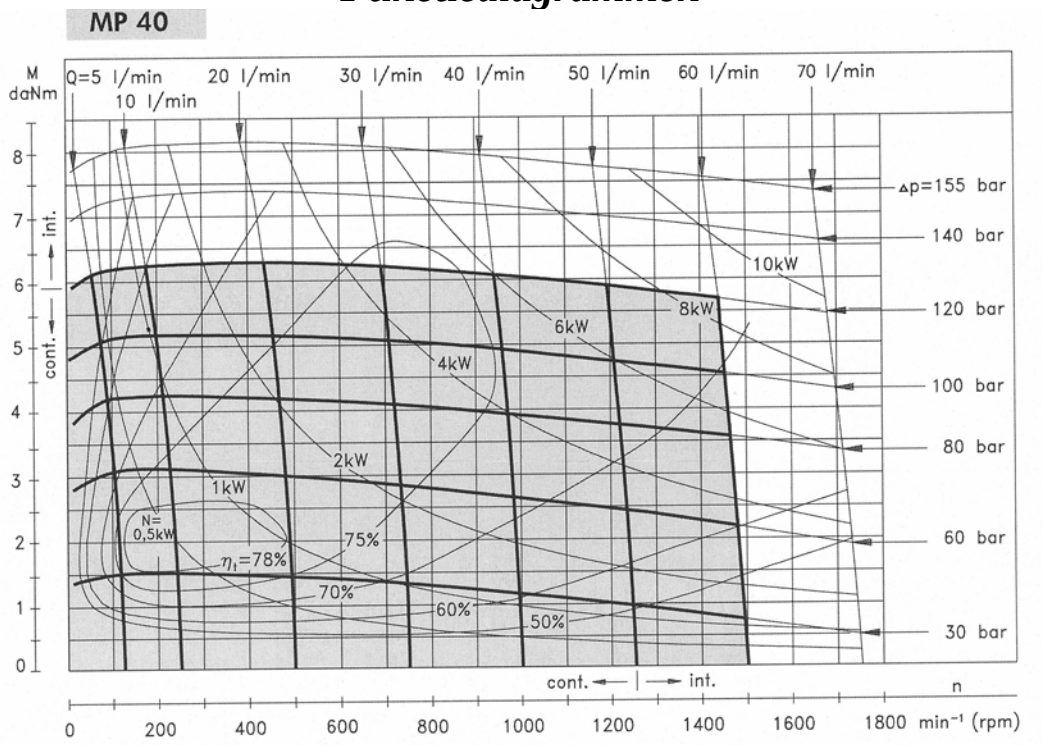


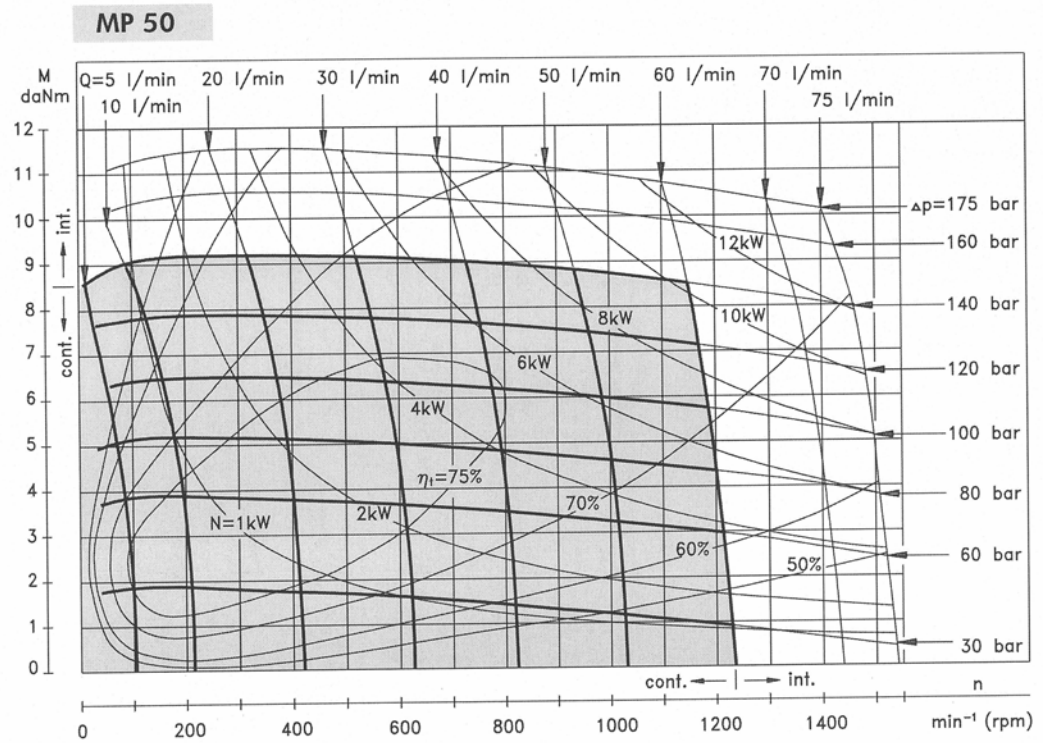
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen



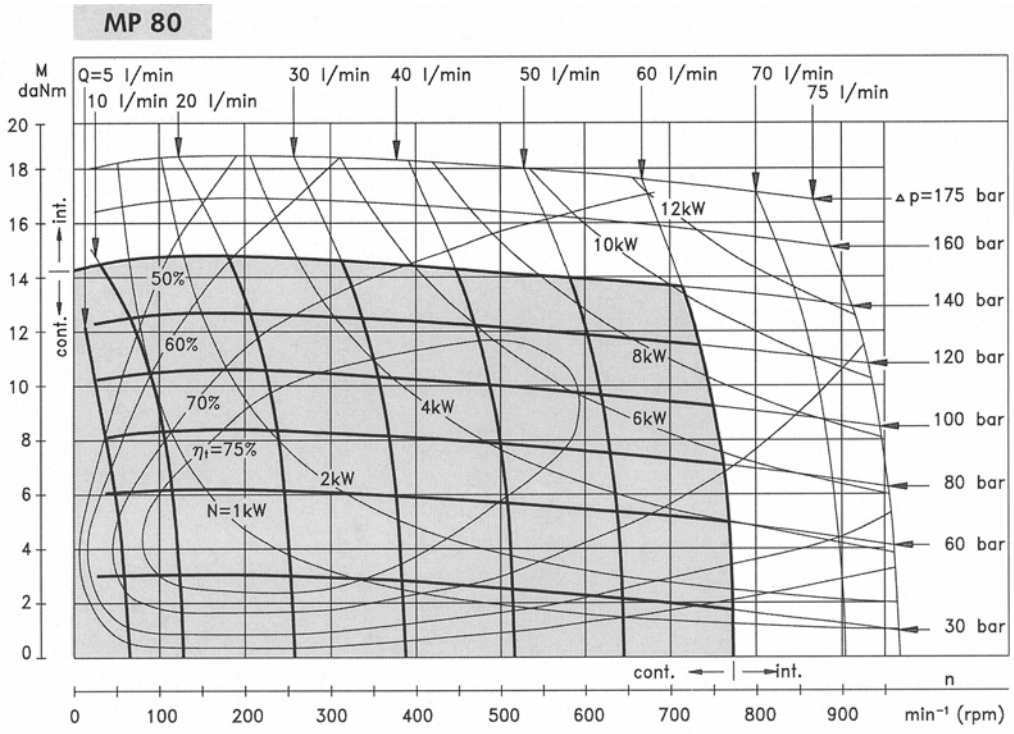


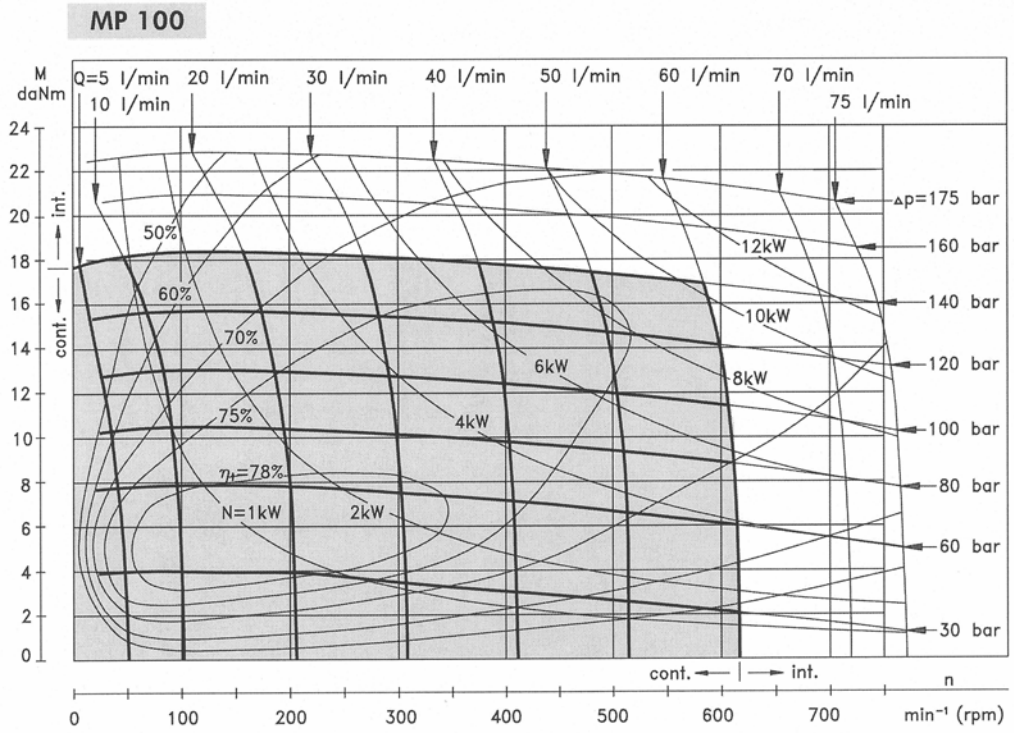
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen



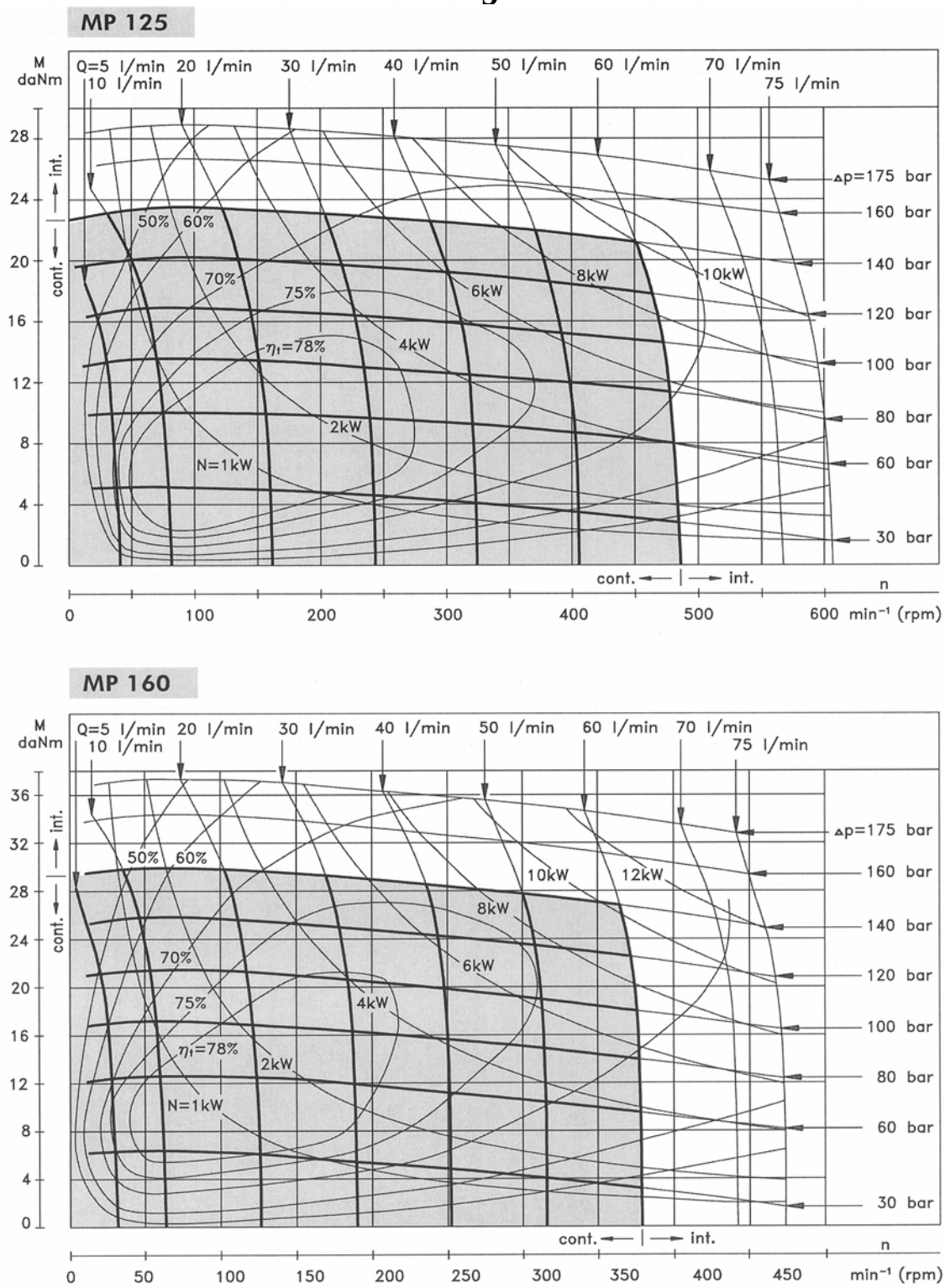


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen

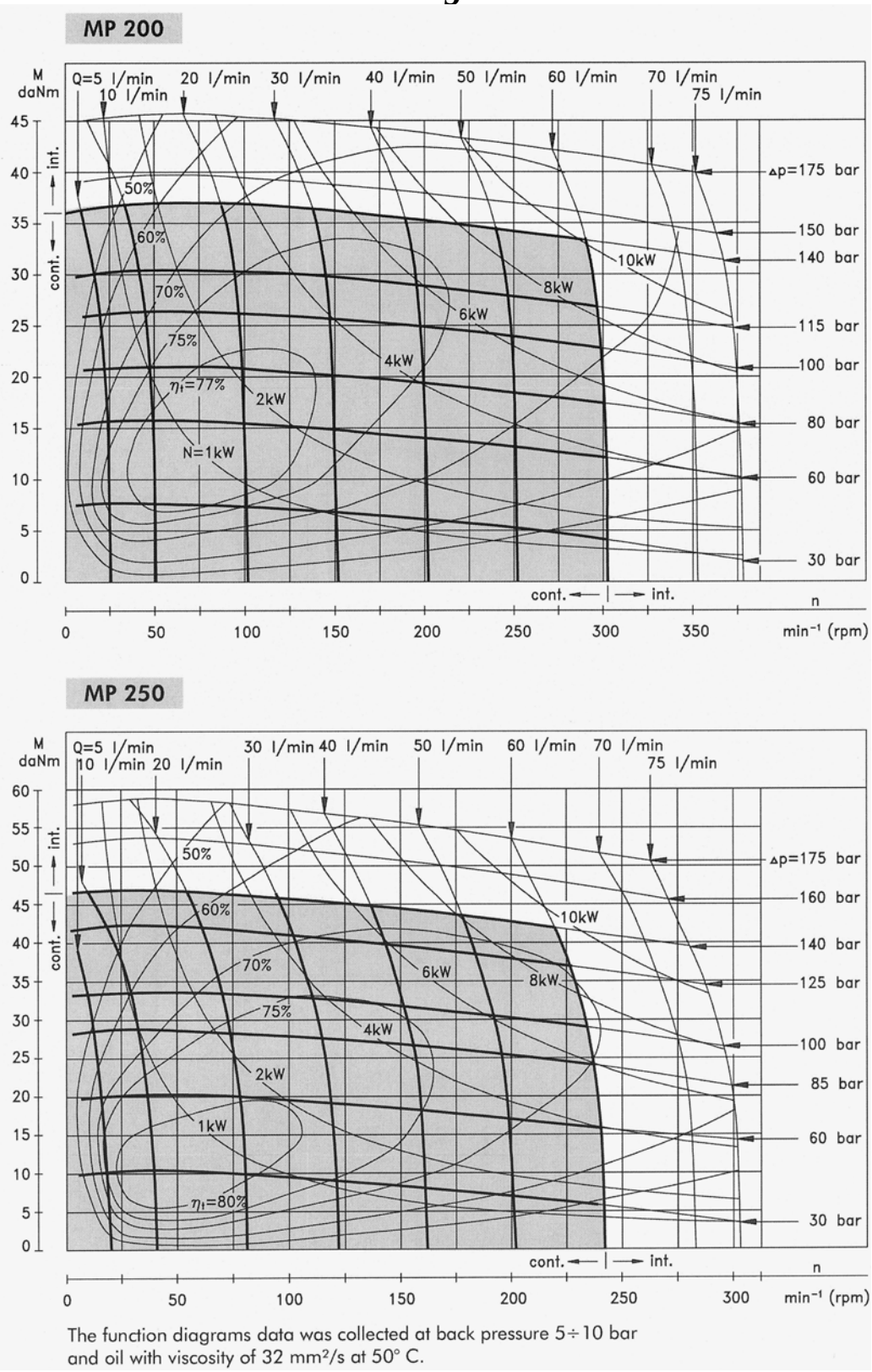


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen

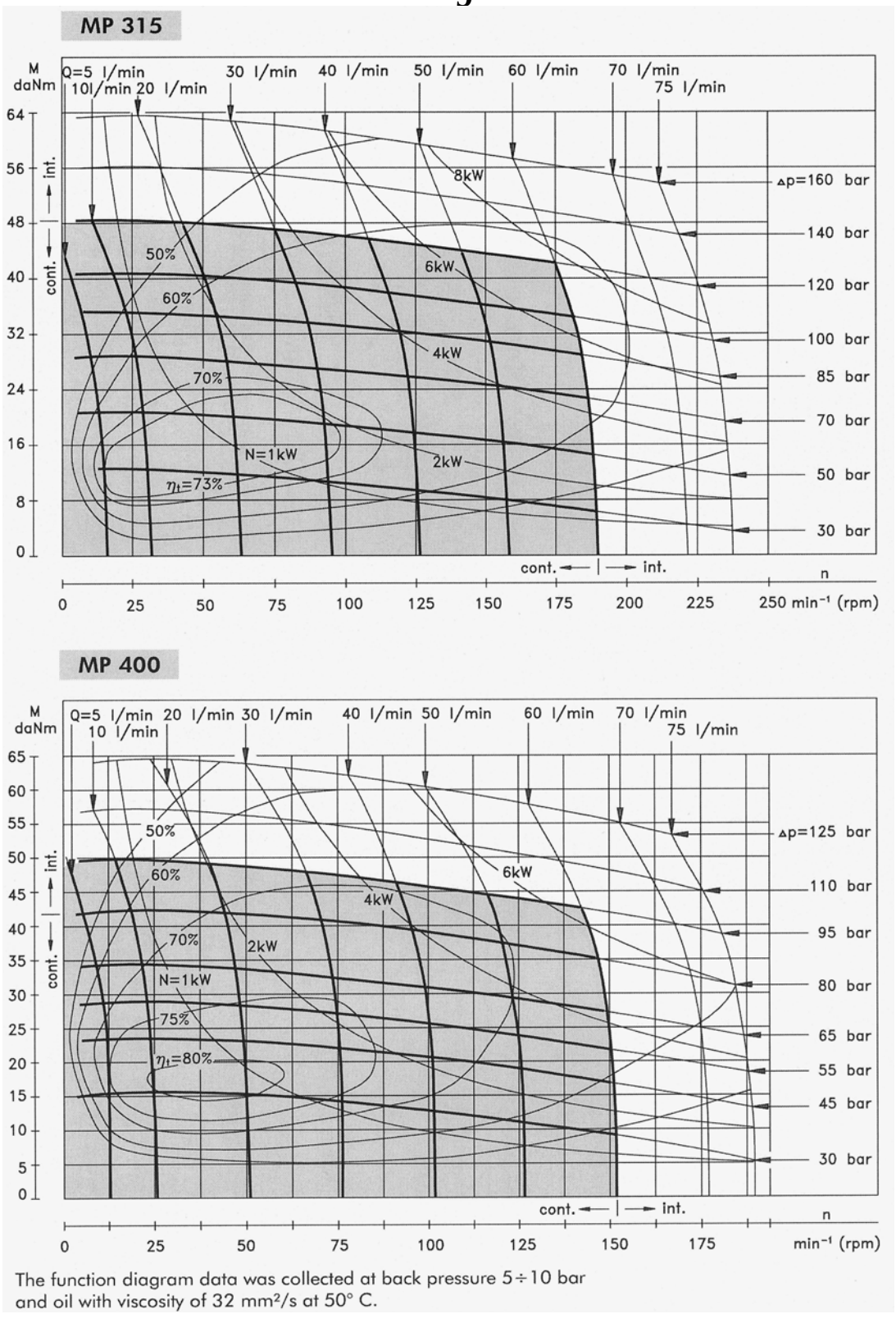


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen

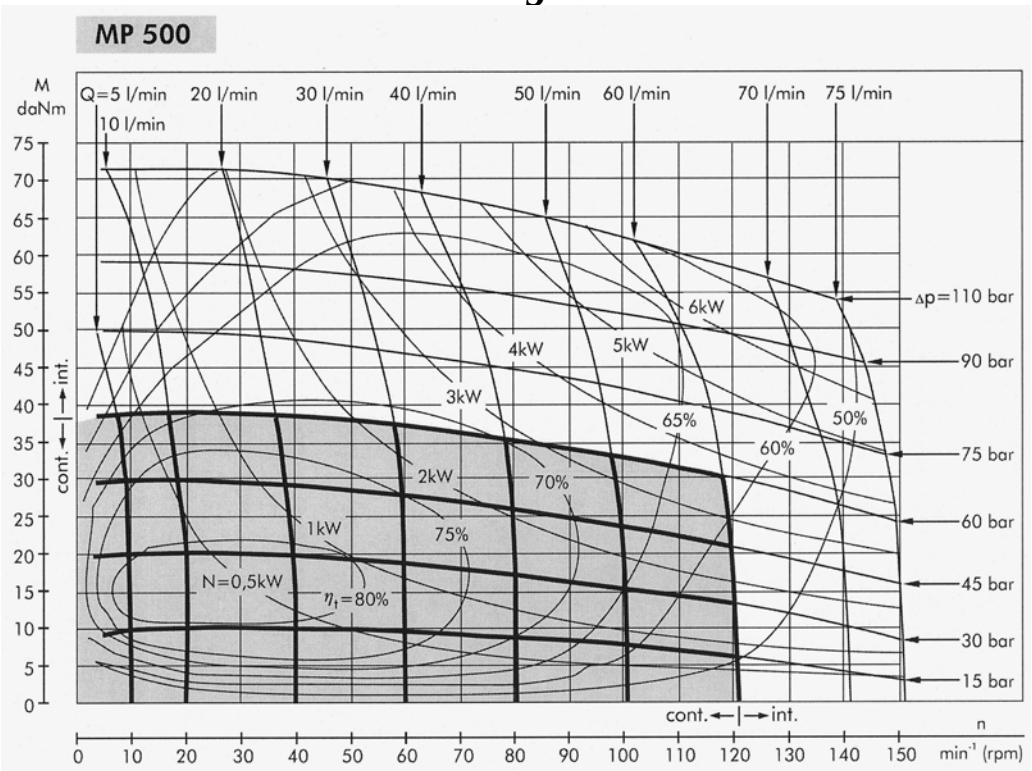


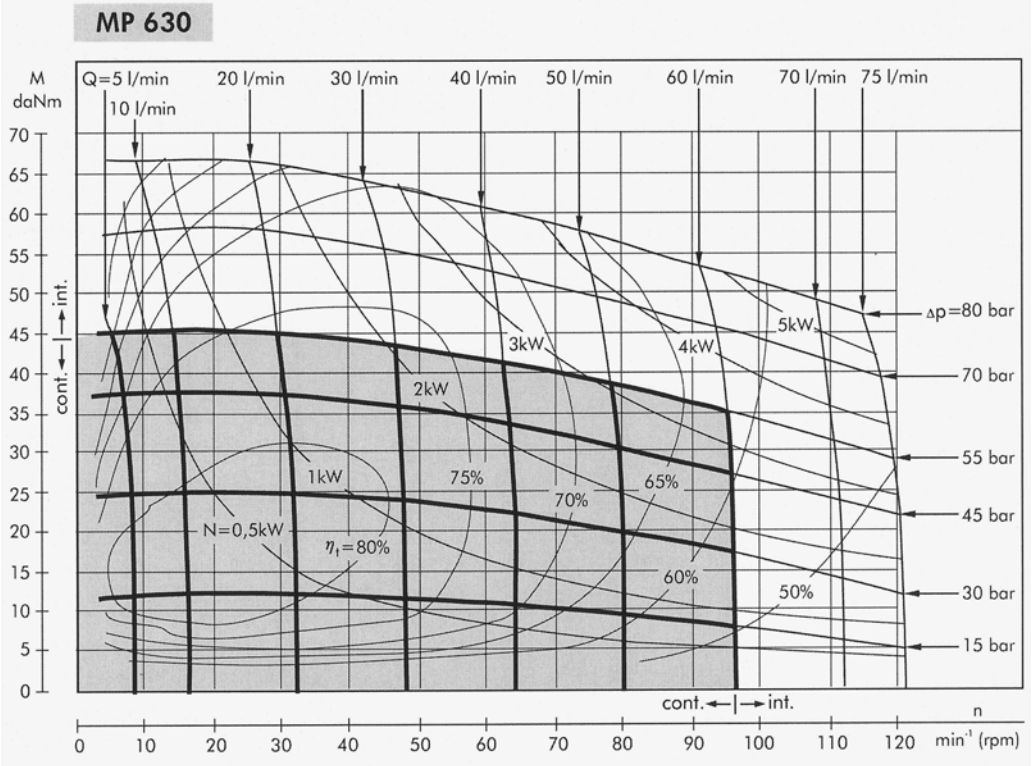
The function diagram data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Functiediagrammen



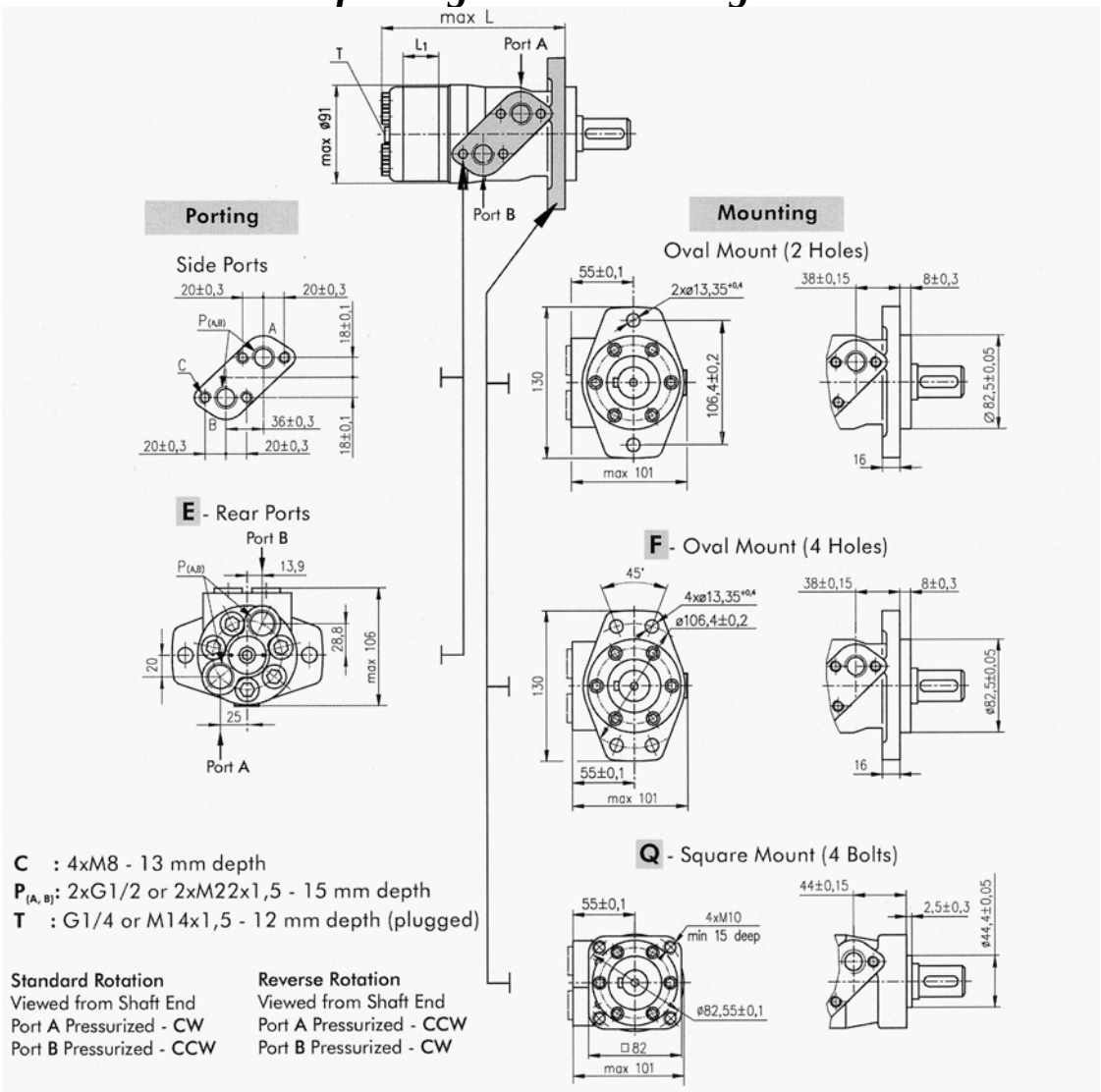


The function diagram data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MP

Orbitmotoren

Afmetingen en uitvoeringen



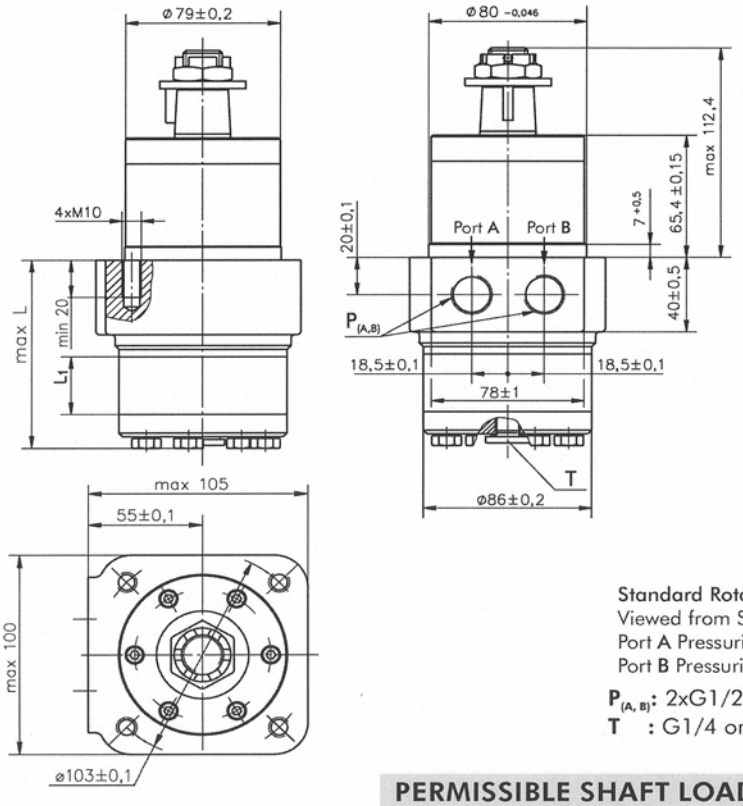
Type	L, mm	Type	L, mm	Type	L, mm	Type	L, mm	L_1, mm
MP(F) 25	134,0	MPQ 25	140,5	MP(F)E 25	151,5	MPQE 25	158,0	5,20
MP(F) 32	135,0	MPQ 32	141,5	MP(F)E 32	152,5	MPQE 32	159,0	6,30
MP(F) 40	136,5	MPQ 40	142,5	MP(F)E 40	154,0	MPQE 40	160,0	7,40
MP(F) 50	135,5	MPQ 50	142,0	MP(F)E 50	153,0	MPQE 50	159,5	6,67
MP(F) 80	139,5	MPQ 80	146,0	MP(F)E 80	157,0	MPQE 80	163,0	10,67
MP(F) 100	142,0	MPQ 100	148,5	MP(F)E 100	160,0	MPQE 100	166,0	13,33
MP(F) 125	145,5	MPQ 125	152,0	MP(F)E 125	163,0	MPQE 125	169,5	16,67
MP(F) 160	150,0	MPQ 160	156,5	MP(F)E 160	168,0	MPQE 160	174,0	21,33
MP(F) 200	155,5	MPQ 200	162,0	MP(F)E 200	173,0	MPQE 200	179,5	26,67
MP(F) 250	162,0	MPQ 250	168,5	MP(F)E 250	180,0	MPQE 250	186,0	33,33
MP(F) 315	171,5	MPQ 315	178,0	MP(F)E 315	189,0	MPQE 315	195,5	42,67
MP(F) 400	182,0	MPQ 400	188,5	MP(F)E 400	200,0	MPQE 400	206,0	53,33
MP(F) 500	195,5	MPQ 500	202,0	MP(F)E 500	213,0	MPQE 500	219,5	66,63
MP(F) 630	213,0	MPQ 630	219,0	MP(F)E 630	230,5	MPQE 630	236,5	84,00

MP

Orbitmotoren

Afmetingen en uitvoeringen MPW

W - Wheel Mount



Type	L, mm	L_1, mm
MPW(N) 25	77,0	5,2
MPW(N) 32	78,0	6,3
MPW(N) 40	79,5	7,4
MPW(N) 50	78,5	6,67
MPW(N) 80	82,5	10,67
MPW(N) 100	85,0	13,33
MPW(N) 125	88,5	16,67
MPW(N) 160	93,0	21,33
MPW(N) 200	98,5	26,67
MPW(N) 250	105,0	33,33
MPW(N) 315	114,5	42,67
MPW(N) 400	125,0	53,33
MPW(N) 500	138,5	66,63
MPW(N) 630	156,0	84,0

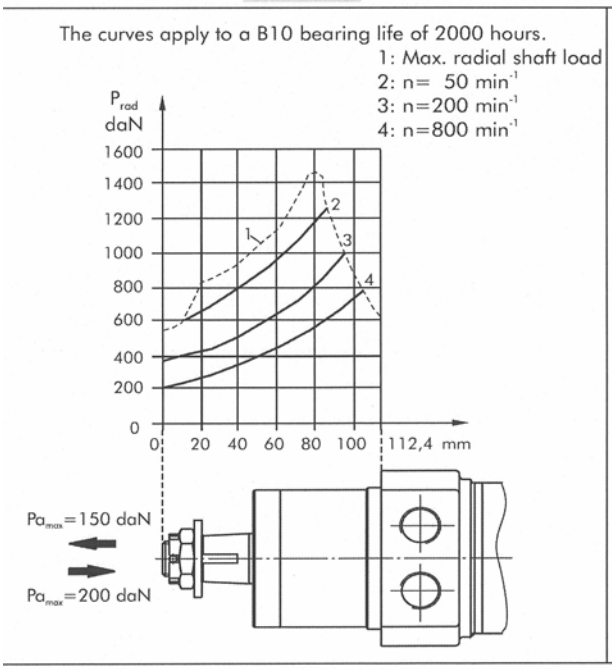
Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

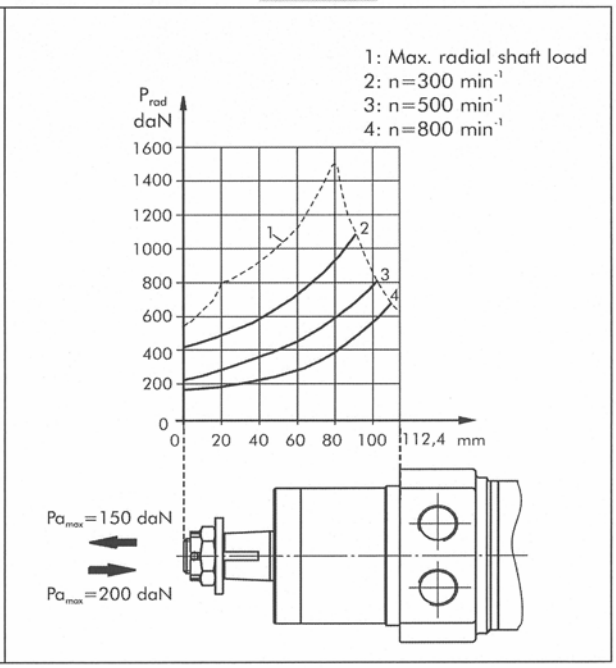
$P_{(A,B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm depth
T : G1/4 or M14x1,5 - 12 mm depth (plugged)

PERMISSIBLE SHAFT LOADS

MPWN



MPW

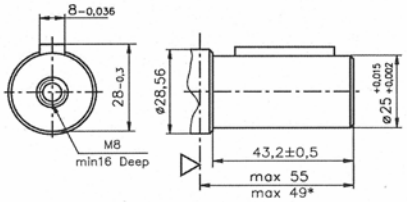


MP+MR

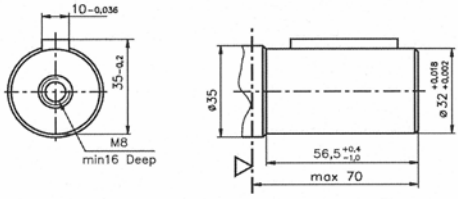
Orbitmotoren

Mogelijke assen

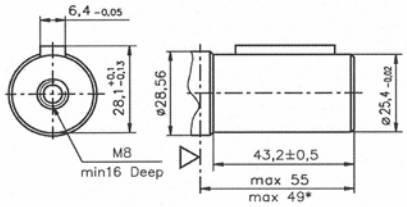
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm



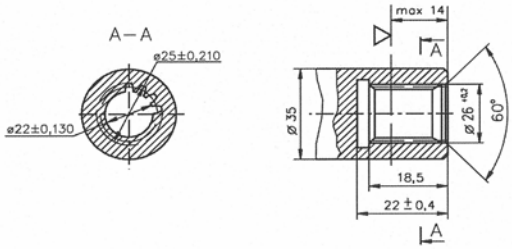
CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



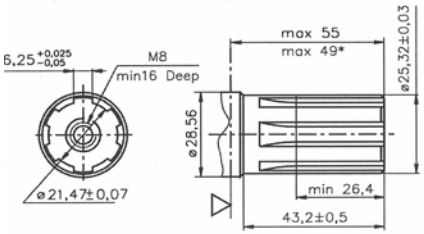
CO - ø1" straight, Parallel key ¼"x¼"x1 ¼" BS46
Max. Torque 34 daNm



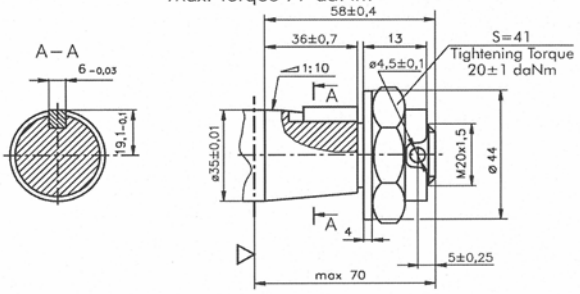
SB - splined A25x22xH10 DIN 5482
Max. Torque 34 daNm



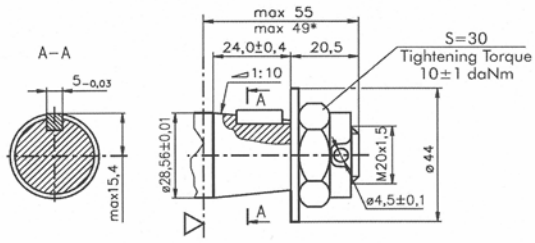
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm



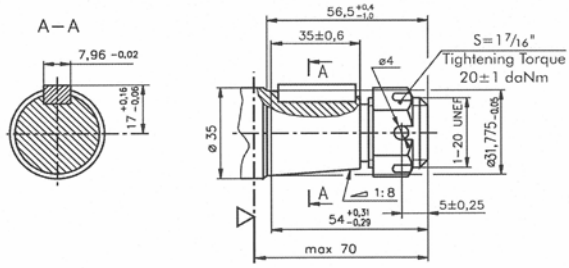
KB - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 77 daNm



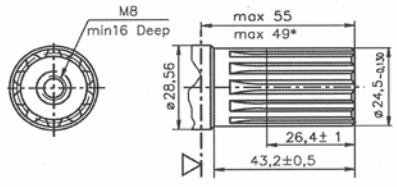
K - tapered 1:10, Parallel key B5x5x14 DIN 6885
Max. Torque 40 daNm



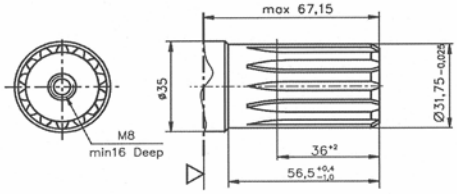
OB - tapered 1:8 SAEJ 501, Parallel key 5/16"x5/16"x1 ¼" BS46
Max. Torque 77 daNm



SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm



HB - ø1 ¼" splined 14T, ANSI B92.1-1976 Norm
Max. Torque 77 daNm



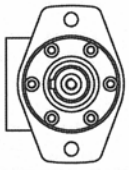
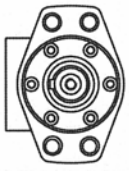
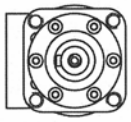
▽ - Motor Mounting Surface

MP/MR

Orbitmotoren

Toegestane asbelasting

De toegestane radiale as belasting Prad hangt af van de snelheid (RPM) en de afstand (L) van de plaats van de belasting t.o.v. de montageflens.

Mounting Flange			
Shaft Version	cylindrical - C, CO tapered - K, splined - SH	splined - HB cylindrical - CB	cylindrical - C, CO
Radial Shaft Load P^{*}_{rad}	$\frac{800}{n} \times \frac{25000}{95+L}$, daN	$\frac{800}{n} \times \frac{18750}{95+L}$, daN	$\frac{800}{n} \times \frac{25000}{101+L}$, daN

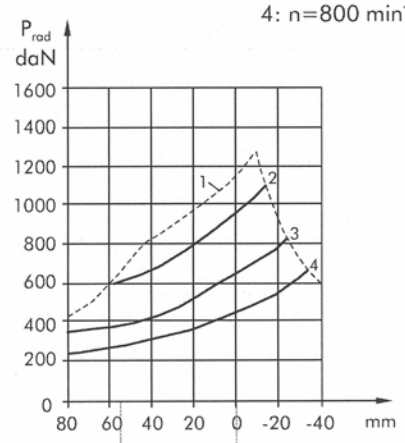
$n<200\ min^{-1}$; max $P_{rad}=800$ daN

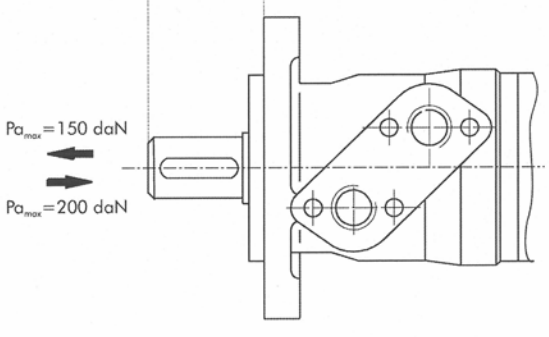
*$n\geq200\ min^{-1}$; $L<55$ mm

MPN and MRN

The curves apply to a B10 bearing life of 2000 hours.

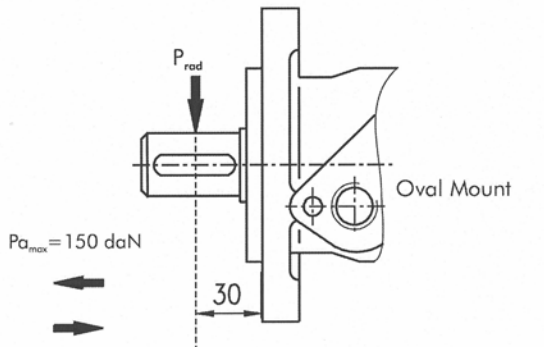
1: Max. radial shaft load
2: n= 50 min^{-1}
3: n=200 min^{-1}
4: n=800 min^{-1}

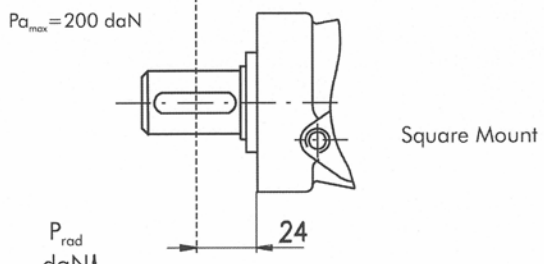


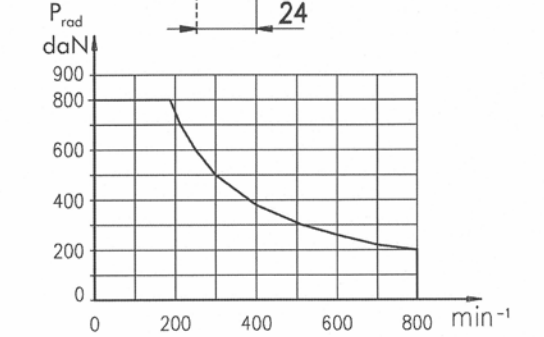


MP and MR

Radial Shaft Load P_{rad} for C, CO Shaft Extensions by L=30 (24) mm







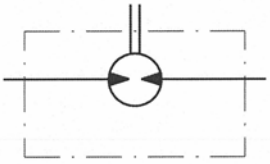
MP+MR

Orbitmotoren, maximaal toegestane druk op de as-afdichting

MP/MR...U1 motors with high pressure seal and without drain connection:

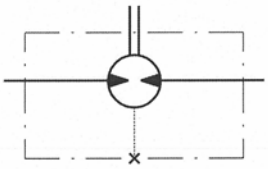
The shaft seal pressure equals the average of input pressure and return pressure.

$$P_{seal} = \frac{P_{input} + P_{return}}{2}$$



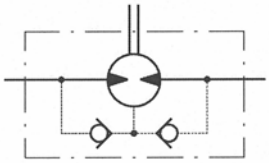
MP/MR...U motors with high pressure seal and drain connection:

The shaft seal pressure equals the pressure in the drain line.



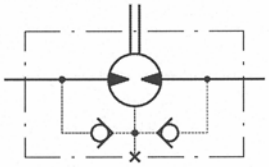
MP/MR...1 motors with low pressure seal or standard shaft seal and without drain connection:

The shaft seal pressure never exceeds the pressure in the return line.

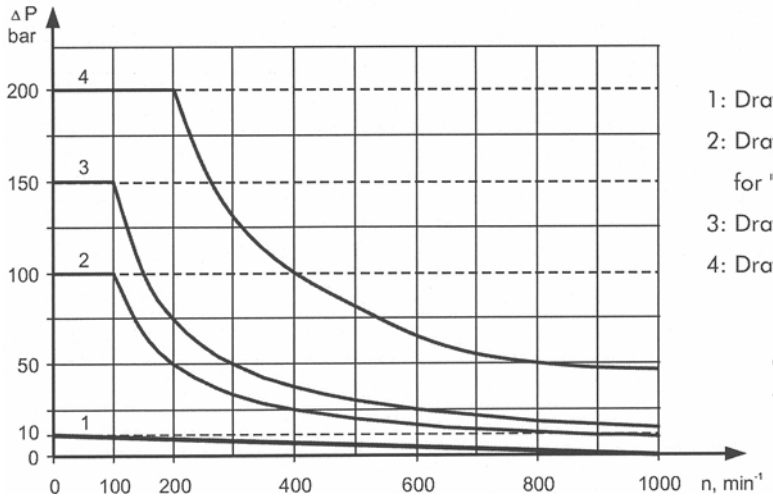


MP/MR... motors with low pressure seal or standard shaft seal and with drain connection:

The shaft seal pressure equals the pressure in the drain line.



Max. return pressure without drain line or max. pressure in the drain line



1: Drawing for Low Pressure Seal
2: Drawing for Standard Shaft Seal for "...B" shafts
3: Drawing for Standard Shaft Seal ("**D**" Seal)
4: Drawing for High Pressure Seal ("**U**" Seal)

——— - continuous operations
- - - - - - intermittent operations

MP

Orbitmotoren, bestelgegevens

	1	2	3	4	5	6	7	8	9	10
M P										

Pos.1 - Mounting Flange

omit - Oval mount, two holes
F - Oval mount, four holes
Q - Square mount, four bolts
W - Wheel mount

Pos.2 - Option (needle bearings)

omit - none
N - with needle bearings

Pos.3 - Port type

omit - Side ports
E - Rear ports

Pos.4 - Displacement code

25*	- 25,0 [cm³/rev]
32*	- 32,0 [cm³/rev]
40*	- 40,0 [cm³/rev]
50	- 49,5 [cm³/rev]
80	- 79,2 [cm³/rev]
100	- 99,0 [cm³/rev]
125	- 123,8 [cm³/rev]
160	- 158,4 [cm³/rev]
200	- 198,0 [cm³/rev]
250	- 247,5 [cm³/rev]
315	- 316,8 [cm³/rev]
400	- 396,0 [cm³/rev]
500	- 495,0 [cm³/rev]
630	- 623,6 [cm³/rev]

Pos.5 - Shaft Extensions** (see page 24)

C	- ø25 straight, Parallel key A8x7x32 DIN6885
VC	- ø25 straight, Parallel key A8x7x32 DIN6885 with corrosion resistant bushing
CO	- ø1" straight, Parallel key ¼"x¼"x1¼" BS46
VCO	- ø1" straight, Parallel key ¼"x¼"x1¼" BS46 with corrosion resistant bushing
SH	- ø25,32 splined BS 2059 (SAE 6B)
VSH	- ø25,32 splined BS 2059 (SAE 6B) with corrosion resistant bushing
K	- ø28,56 tapered 1:10, Parallel key B5x5x14 DIN6885
SA	- ø24,5 splined B 25x22 DIN 5482
VSA	- ø24,5 splined B 25x22 DIN 5482 with corrosion resistant bushing
CB	- ø32 straight, Parallel key A10x8x45 DIN6885
KB	- ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
SB	- splined A 25x22 DIN 5482
OB	- ø1¼" tapered1:8, Parallel key 5/16"x5/16"x1¼" BS46
HB	- ø1¼" splined 14T ANSI B92.1 - 1976

Pos. 6 - Shaft Seal Version (see page 26)

omit - Low pressure shaft seal or Standard shaft seal for **"...B"** shaft
D - Standard shaft seal
U - High pressure shaft seal (without check valves)

Pos. 7 - Drain Port

omit - with drain port
1 - without drain port

Pos. 8 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos. 9 - Special Features (see page 46)

Pos.10 - Design Series

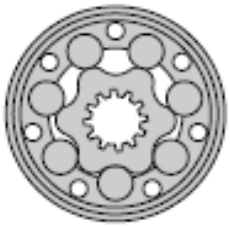
omit - Factory specified

* Not with Low Pressure Seal
** The permissible output torque for shafts must not be exceeded!

NOTES: The following combinations are not allowed:
- **Q** flange with **"...B"** shafts;
- **W** flange with **"...B"** shafts or **E** rear ports;
- **N** option with **"...B"** shafts, Low Pressure Seal or **U** option;
- **"...B"** shafts with **D** and **U** shaft seals.

The hydraulic motors are mangano-phosphatized as standard.

MR
Orbitmotoren



Deze hydrauliek motoren gebruikt men in een rijaandrijving voor langzaamrijdende voertuigen.
Deze motoren worden toegepast in conveyers, aanvoersystemen voor robots en manipulatoren, metaal bewerking machines, gras maaiers etc.

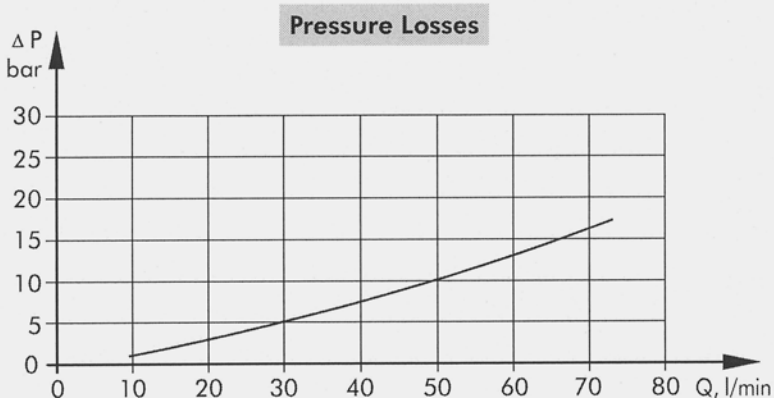
Algemene informatie:

Displacement, [cm^3/rev.]	51,5÷397
Max. Speed, [RPM]	150÷775
Max. Torque, [daNm]	10,1÷61
Max. Output, [kW]	5÷13
Max. Pressure Drop, [bar]	70÷175
Max. Oil Flow, [l/min]	40÷60
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm^2/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm^2/s)	Oil flow in drain line (l/min)
100	20	2,5
	35	1,8
140	20	3,5
	35	2,8

Pressure Losses



MR
Orbitmotoren

Technische Informatie

Informatie voor MR… motors met C,CO,SH, K en SH assen (ø28,56 SEAL DIAMETER)

Type		MR								
		50	80	100	125	160	200	250	315	400
Displacement, [cm³/rev.]		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
Max. Speed,	cont.	775	750	600	475	375	300	240	190	150
[RPM]	int.*	970	940	750	600	470	375	300	240	190
Max.	cont.	10	20	24	30	39	38,5	39	36	38
Torque	int.*	13	22	28	34	43	46	47	47	47
[daNm]	peak**	17	27	32	37	46	56	60	61	61
Max. Output,	cont.	7	12,5	13	12,5	11,5	9	8	5	4,8
[kW]	int.*	8,5	15	15	14,5	14	12	9,5	8	6,8
Max. Pressure	cont.	140	175	175	175	175	140	110	85	65
Drop	int.*	175	200	200	200	200	175	140	115	90
[bar]	peak**	225	225	225	225	225	225	200	150	115
Max. Oil Flow	cont.	40	60	60	60	60	60	60	60	60
[l/min]	int.*	50	75	75	75	75	75	75	75	75
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175
Pressure	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175
with Drain Line	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	9	7	5	4	3	3
Min. Starting Torque	at max. press. drop cont.	8	15	20	25	32	33	31	31,5	31,5
[daNm]	at max. press. drop int.*	10	17	23	28	37	40	48	50	50
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, avg. [kg]	MR(F)	6,8	6,9	7,2	7,3	7,5	8	8,4	9,1	9,8
For rear ports: +0,650 kg	MRQ(N)	6,2	6,3	6,6	6,8	7,0	7,2	7,8	8,6	9,3

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

1 Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50º C.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MR

Orbitmotoren

Technische Informatie

Informatie voor MR… motors met CB, KB,OB en HB assen (ø35 SEAL DIAMETER)

Type		MR								
		50	80	100	125	160	200	250	315	400
Displacement, [cm³/rev.]		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
Max. Speed,	cont.	775	750	600	475	375	300	240	190	150
[RPM]	int.*	970	940	750	600	470	375	300	240	190
Max.	cont.	10	20	24	30	39	45	54	55	61
Torque	int.*	13	22	28	34	43	50	61	69	69
[daNm]	peak**	17	27	32	37	46	56	71	84	87
Max. Output,	cont.	7	12,5	13	12,5	11,5	11	10	9	7,8
[kW]	int.*	8,5	15	15	14,5	14	13	12	10	10,6
Max. Pressure	cont.	140	175	175	175	175	175	175	135	110
Drop	int.*	175	200	200	200	200	200	200	175	140
[bar]	peak**	225	225	225	225	225	225	225	210	175
Max. Oil Flow	cont.	40	60	60	60	60	60	60	60	60
[l/min]	int.*	50	75	75	75	75	75	75	75	75
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175
Pressure	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175
with Drain Line	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	9	7	5	4	3	3
Min. Starting Torque	at max. press. drop cont.	8	15	20	25	32	41	50	50	50
[daNm]	at max. press. drop int.*	10	17	23	28	37	46	55	66	61
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, avg. [kg] For rear ports: +0,650 kg	MR(F)	6,9	7	7,3	7,4	7,6	8,1	8,5	9,2	9,9

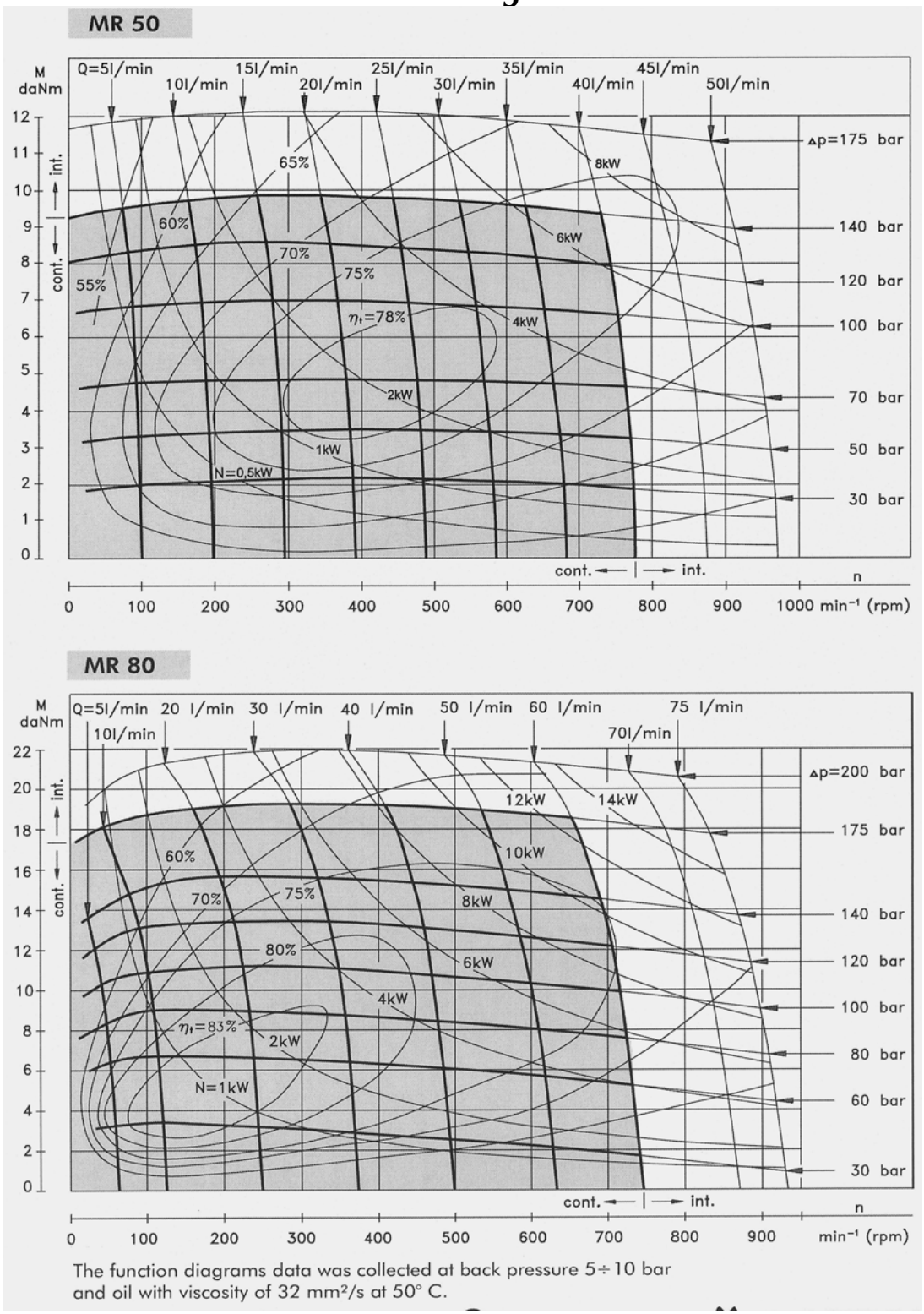
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

1. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
2. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
3. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
4. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
5. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
6. De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MR

Orbitmotoren

Functiediagram

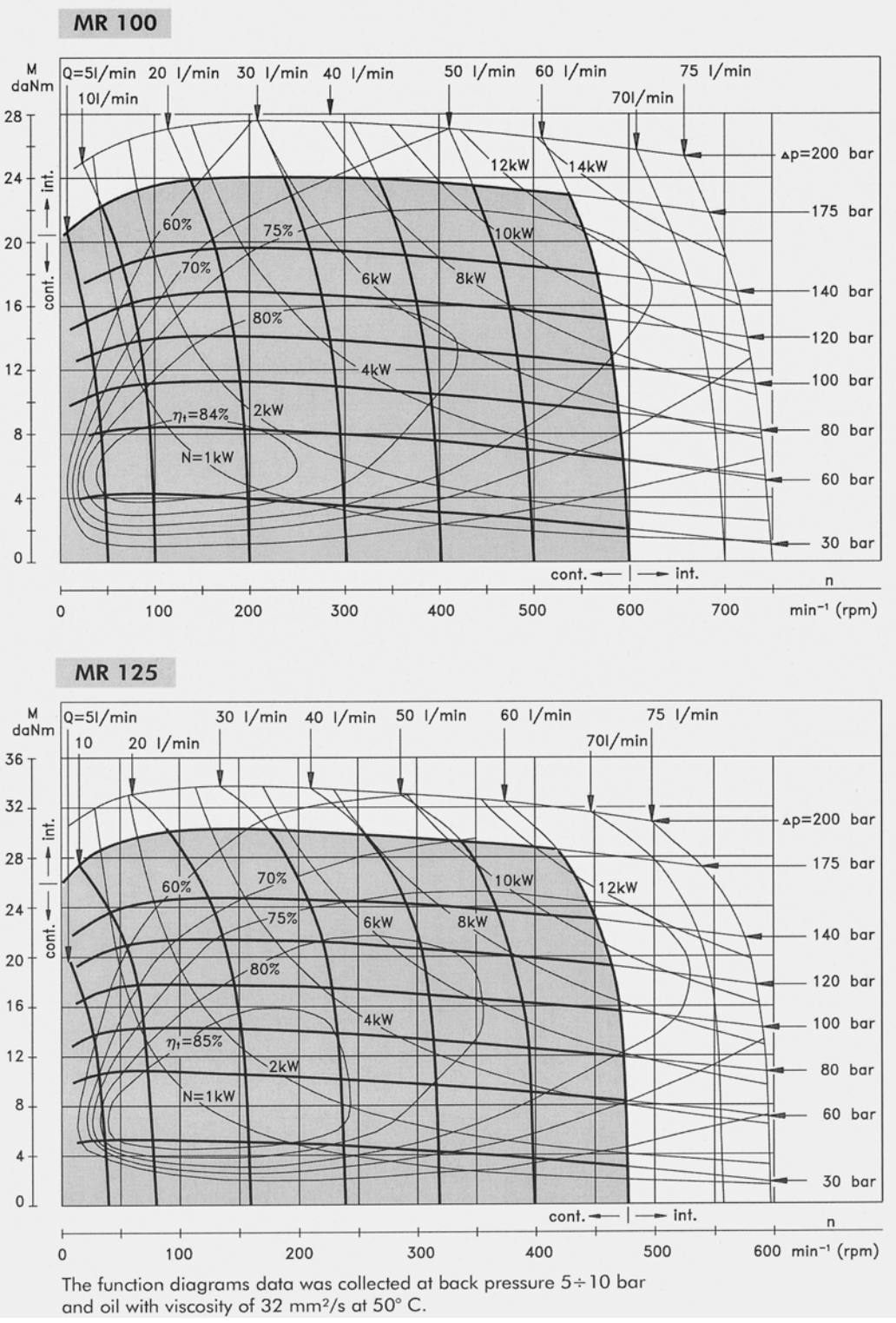


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MR

Orbitmotoren

Functiediagrammen

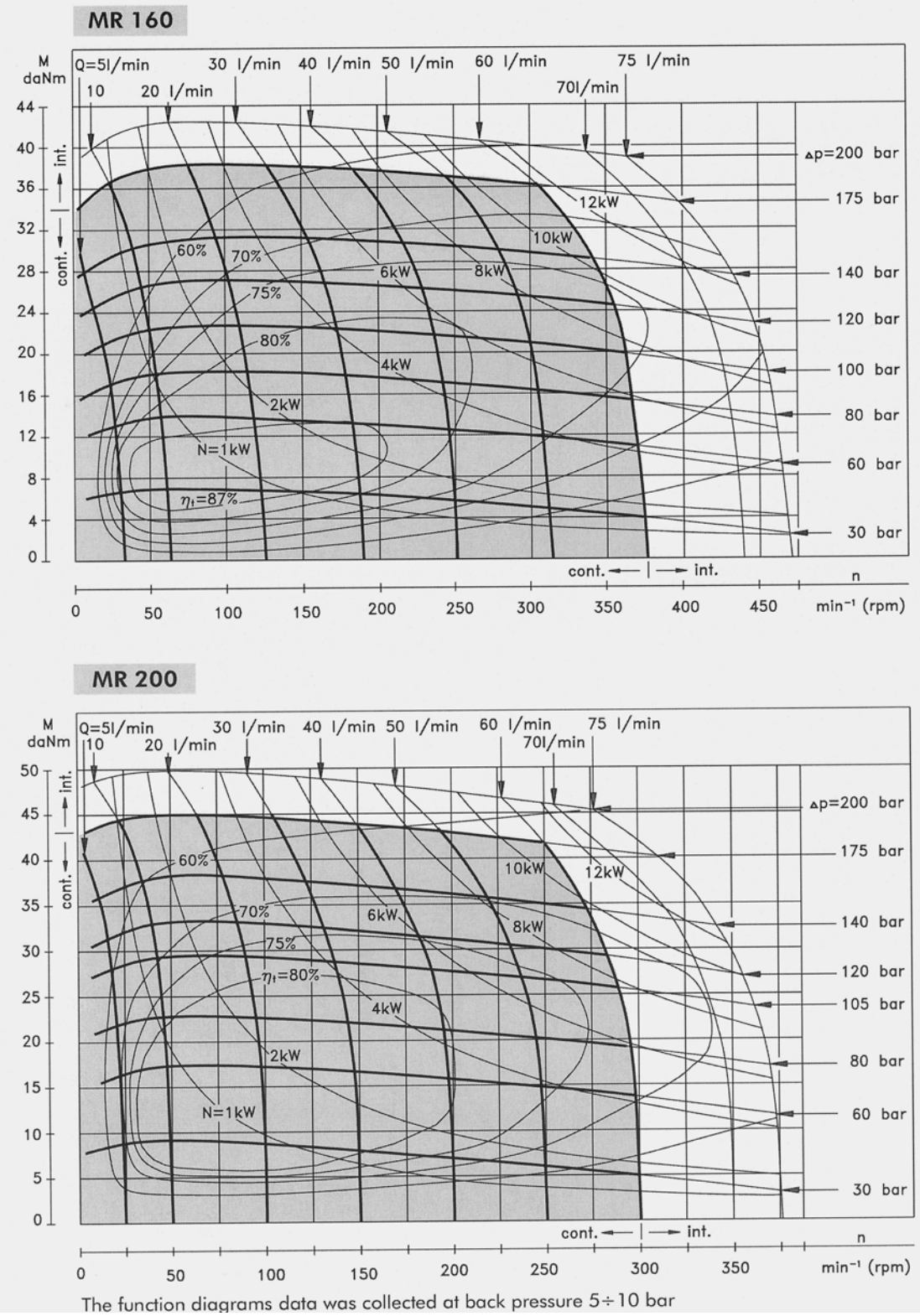


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MR

Orbitmotoren

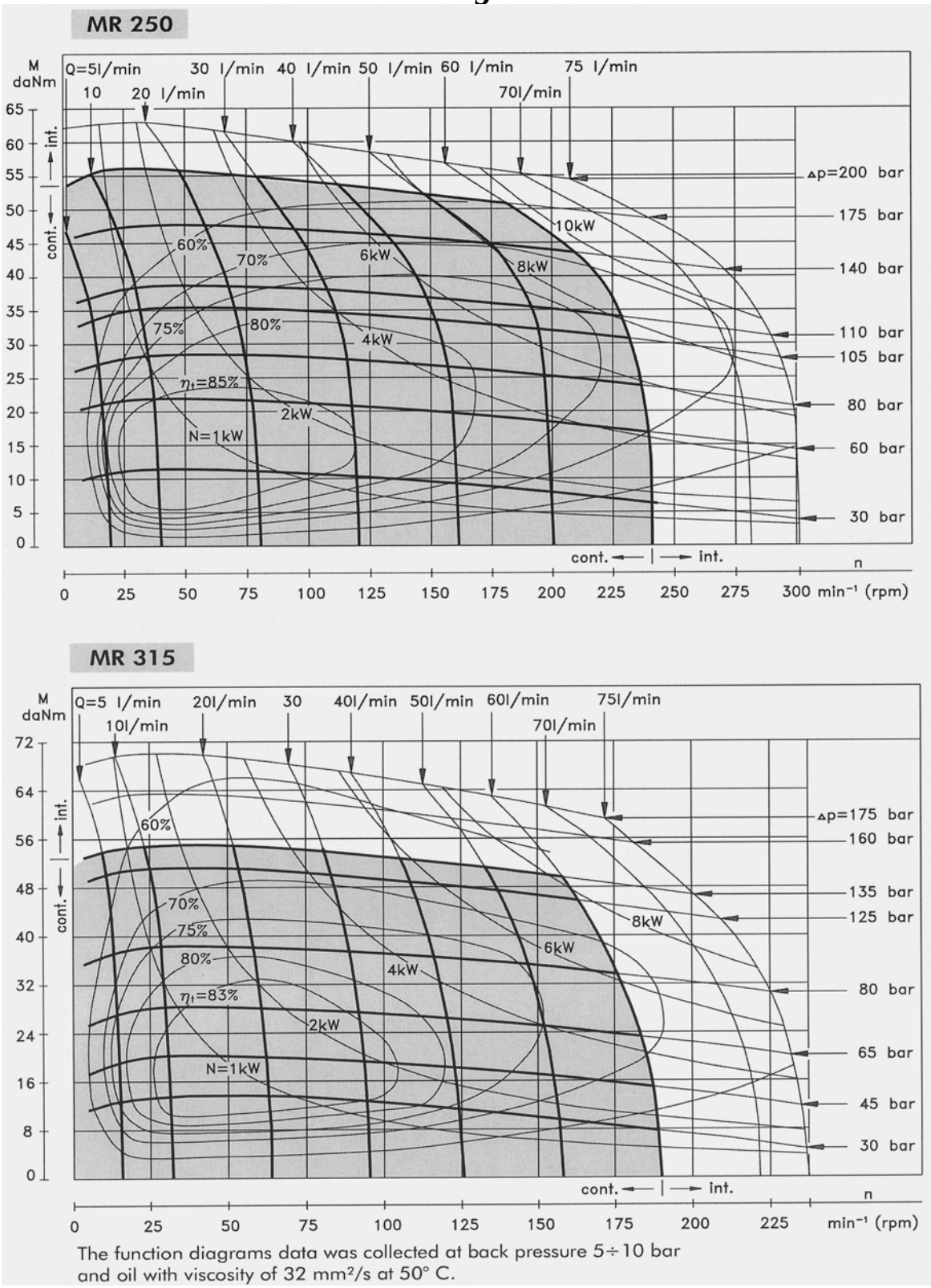
Functiediagrammen



MR

Orbitmotoren

Functiediagrammen

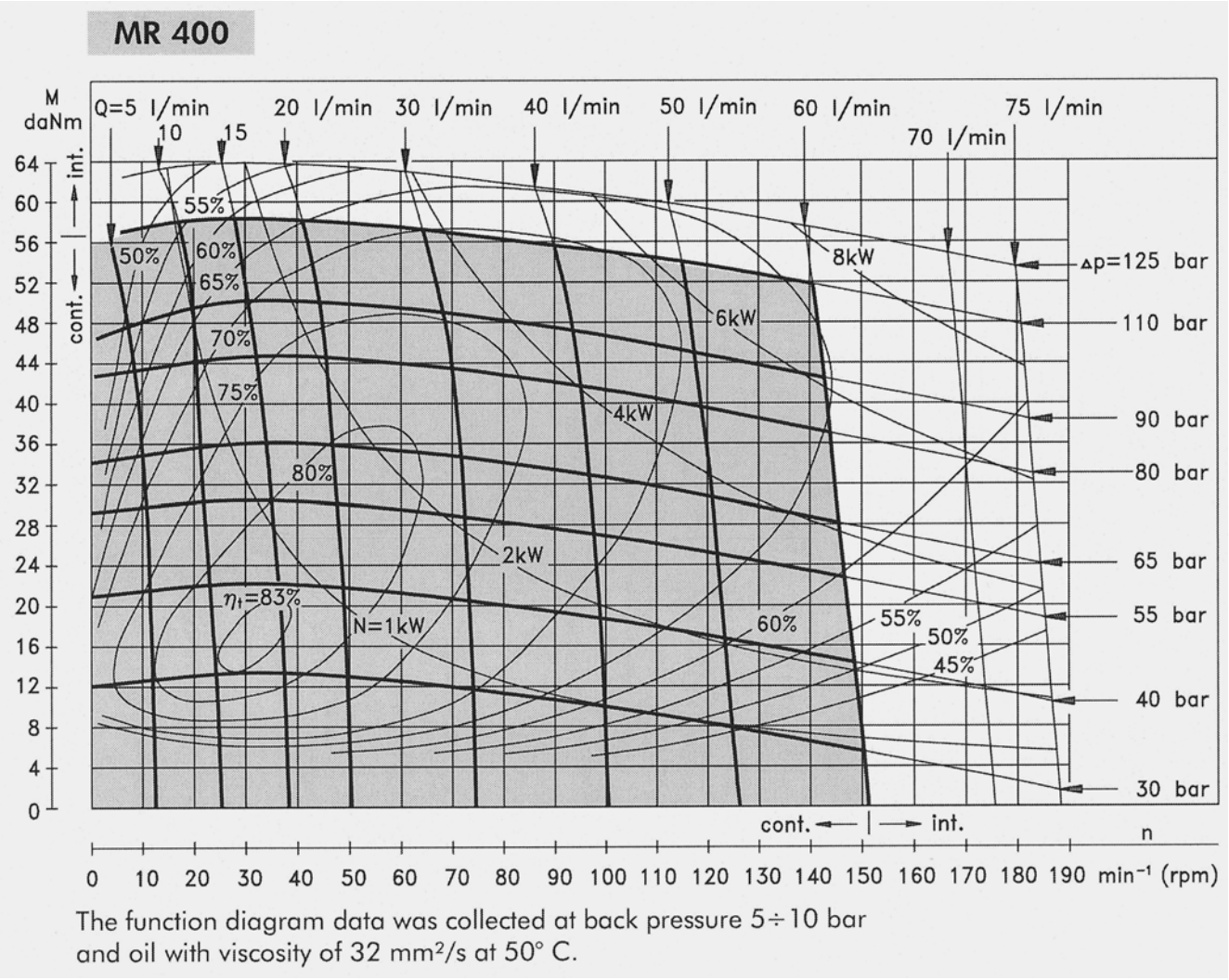


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MR

Orbitmotoren

Functiediagram

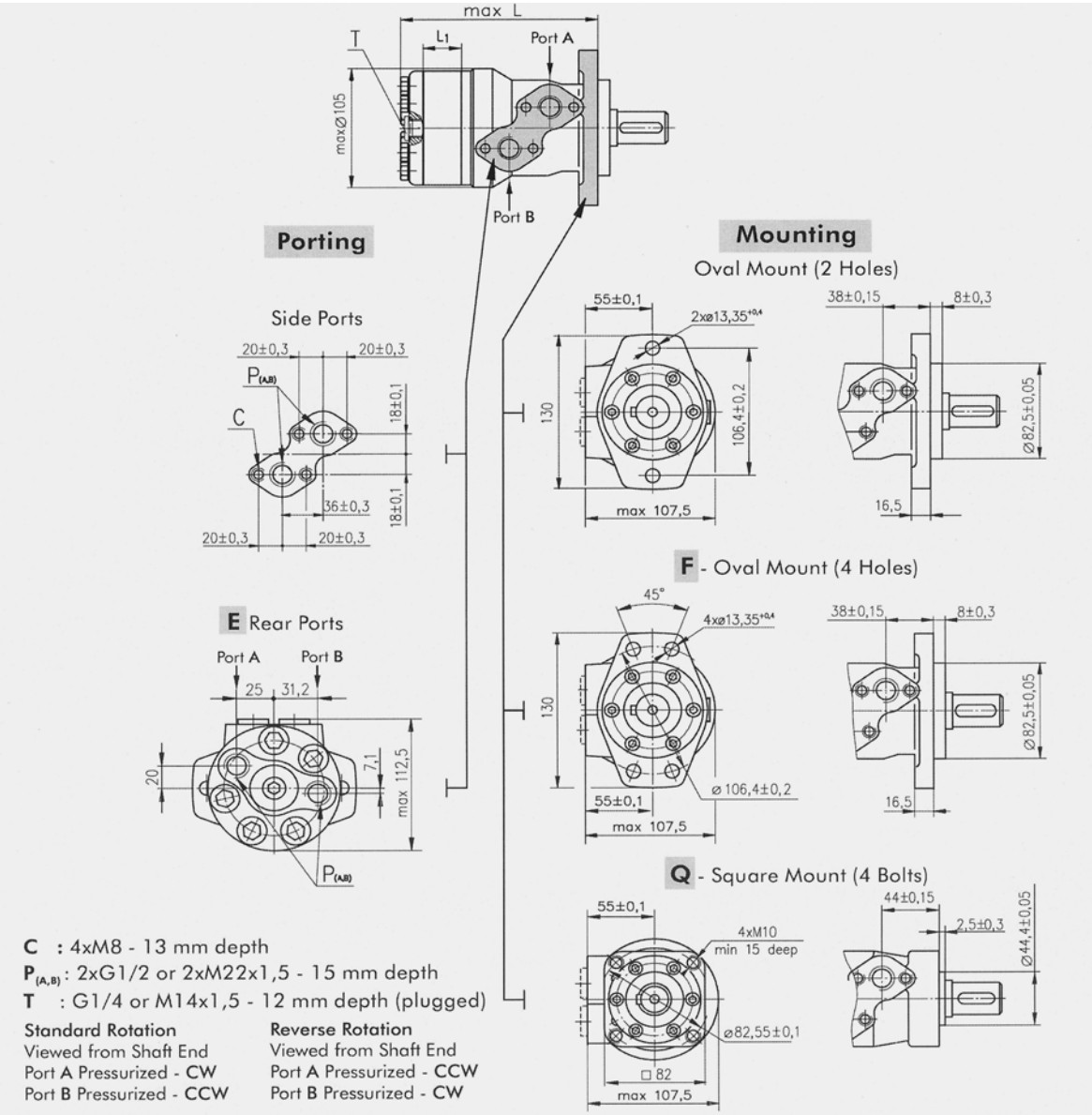


The function diagram data was collected at back pressure 5÷10 bar
and oil with viscosity of 32 mm²/s at 50° C.

MR

Orbitmotoren

Afmetingen en uitvoeringen



Type	L, mm	Type	L, mm	Type	L, mm	Type	L, mm	L_1, mm
MR(F) 50	138,0	MRQ 50	143,5	MR(F)E 50	157,5	MRQE 50	163,5	9,0
MR(F) 80	143,0	MRQ 80	148,5	MR(F)E 80	162,5	MRQE 80	168,5	14,0
MR(F) 100	146,0	MRQ 100	152,0	MR(F)E 100	165,5	MRQE 100	171,5	17,4
MR(F) 125	150,5	MRQ 125	156,5	MR(F)E 125	170,0	MRQE 125	176,0	21,8
MR(F) 160	156,5	MRQ 160	162,5	MR(F)E 160	176,0	MRQE 160	182,0	27,8
MR(F) 200	163,5	MRQ 200	169,5	MR(F)E 200	183,0	MRQE 200	189,0	34,8
MR(F) 250	172,0	MRQ 250	179,0	MR(F)E 250	192,0	MRQE 250	198,0	43,5
MR(F) 315	183,0	MRQ 315	189,0	MR(F)E 315	204,0	MRQE 315	210,0	54,8
MR(F) 400	198,0	MRQ 400	204,0	MR(F)E 400	218,0	MRQE 400	224,0	69,4

MR

Orbitmotoren

Bestelgegevens

	1	2	3	4	5	6	7	8	9	10
M R										

Pos.1 - Mounting Flange

omit - Oval mount, two holes
F - Oval mount, four holes
Q - Square mount, four bolts

Pos.2 - Option (needle bearings)

omit - none
N - with needle bearings

Pos.3 - Port type

omit - Side ports
E - Rear ports

Pos.4 - Displacement code

50 - 51,5 [cm³/rev]
80 - 80,3 [cm³/rev]
100 - 99,8 [cm³/rev]
125 - 125,7 [cm³/rev]
160 - 159,6 [cm³/rev]
200 - 199,8 [cm³/rev]
250 - 250,1 [cm³/rev]
315 - 315,7 [cm³/rev]
400 - 397,0 [cm³/rev]

Pos.5 - Shaft Extensions* (see page 24)

C - ø25 straight, Parallel key A8x7x32 DIN6885
VC - ø25 straight, Parallel key A8x7x32 DIN6885 with corrosion resistant bushing
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
VCO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46 with corrosion resistant bushing
SH - ø25,32 splined BS 2059 (SAE 6B)
VSH - ø25,32 splined BS 2059 (SAE 6B) with corrosion resistant bushing
K - ø28,56 tapered 1:10, Parallel key B5x5x14 DIN6885
SA - ø24,5 splined B 25x22 DIN 5482
VSA - ø24,5 splined B 25x22 DIN 5482 with corrosion resistant bushing
CB - ø32 straight, Parallel key A10x8x45 DIN6885
KB - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
SB - splined A 25x22 DIN 5482
OB - ø1¼" tapered1:8, Parallel key 5/16"x5/16"x1¼" BS46
HB - ø1¼" splined 14T ANSI B92.1 - 1976

Pos. 6 - Shaft Seal Version (see page 26)

omit - Low pressure shaft seal or Standard shaft seal for **"...B"** shaft
D - Standard shaft seal
U - High pressure shaft seal (without check valves)

Pos. 7 - Drain Port

omit - with drain port
1 - without drain port

Pos. 8 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos. 9 - Special Features (see page 46)

Pos.10 - Design Series

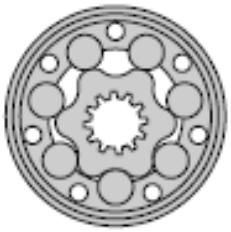
omit - Factory specified

* The permissible output torque for shafts must not be exceeded!

NOTES: 1. The following combinations are not allowed:- **Q** flange with **"...B"** shafts;
- **N** option with **"...B"** shafts, Low Pressure Seal or **U** option;
- **"...B"** shafts with **D** and **U** shaft seals.

The hydraulic motors are mangano-phosphatized as standard.

MH
Orbitmotoren



Deze hydrauliek motoren worden toegepast in een rijaandrijving voor rijdende voertuigen. Deze motoren worden toegepast in conveyers, aanvoersystemen voor robots en manipulatoren, metaal bewerking machines, landbouwmachines etc.

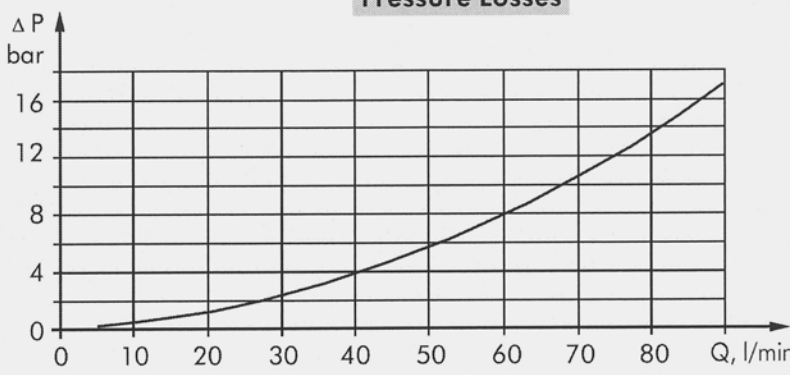
Algemene informatie:

Displacement, [cm^3/rev.]	201,3÷502,4
Max. Speed, [RPM]	150÷370
Max. Torque, [daNm]	51÷85
Max. Output, [kW]	11÷16
Max. Pressure Drop, [bar]	175÷125
Max. Oil Flow, [l/min]	75
Min. Speed, [RPM]	5÷10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm^2/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm^2/s)	Oil flow in drain line (l/min)
100	20	2,5
	35	1,8
140	20	3,5
	35	2,8

Pressure Losses



MH

Orbitmotoren

Technische informatie

Type		MH				
		200	250	315	400	500
Displacement, [cm³/rev.]		201,3	252	314,9	396,8	502,4
Max. Speed,	cont.	370	295	235	185	150
[RPM]	int.*	445	350	285	225	180
Max. Torque	cont.	51	61	74	84	85
[daNm]	int.*	58	70	82	98	104
	peak**	64	79	98	109	117
Max. Output,	cont.	16	16	14	12,5	11
[kW]	int.*	18,5	18,5	15,5	15	14
Max. Pressure Drop	cont.	175	175	175	155	125
[bar]	int.*	200	200	200	190	160
	peak**	225	225	225	210	180
Max. Oil Flow	cont.	75	75	75	75	75
[l/min]	int.*	90	90	90	90	90
Max. Inlet Pressure	cont.	200	200	200	200	200
[bar]	int.*	225	225	225	225	225
	peak**	250	250	250	250	250
Max. Starting Pressure with Unloaded Shaft, [bar]		5	5	5	5	5
Min. Starting Torque	at max. press. drop cont.	39	52	66	72	72
[daNm]	at max. press. drop int.*	45	59	73	88	88
Min. Speed***, [RPM]		10	10	8	5	5
Weight, avg. [kg]		10,5	11	11,5	12,3	13

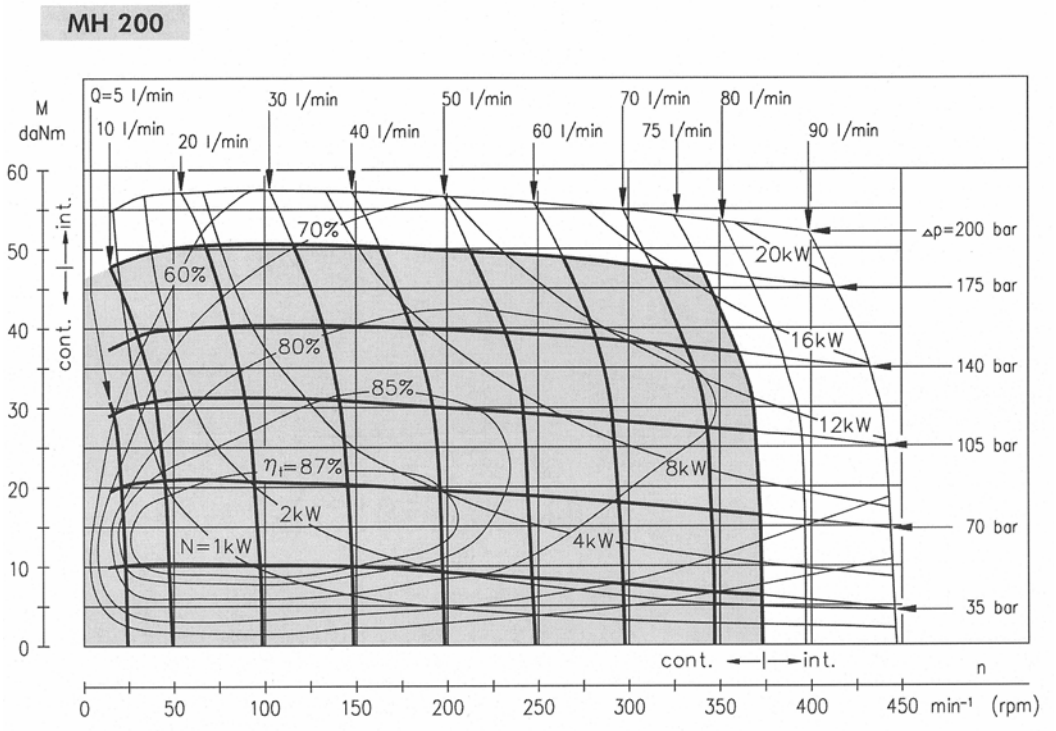
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

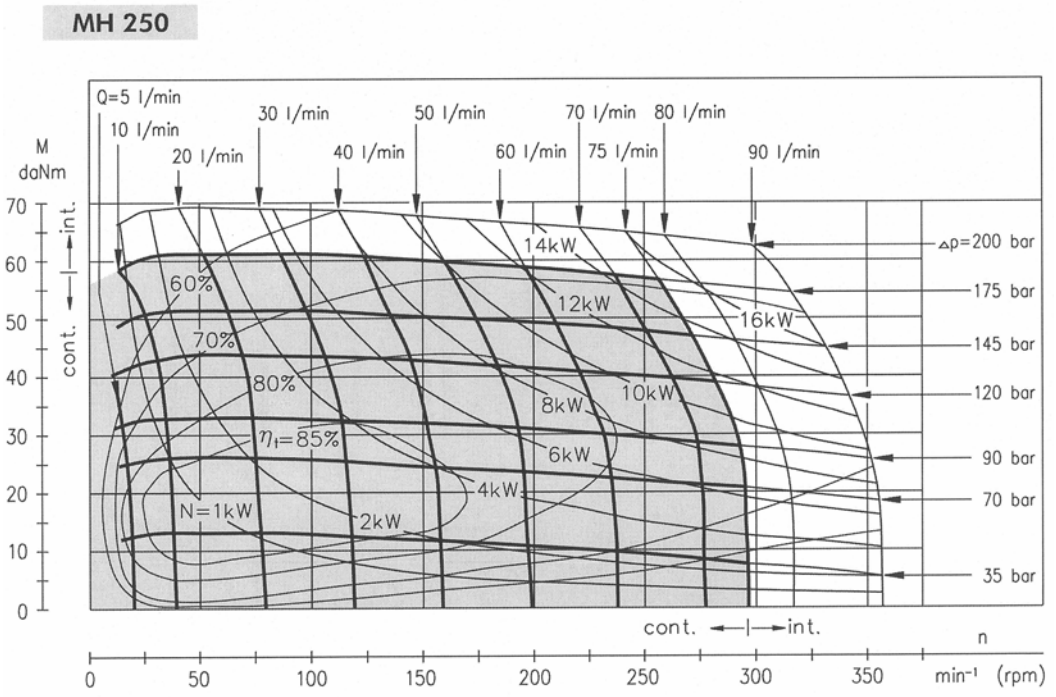
1 Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
7 Aanbevolen minerale viscositeit is 13mm² bij 50º C.
8 Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.
9 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MH

Orbitmotoren

Functiediagrammen



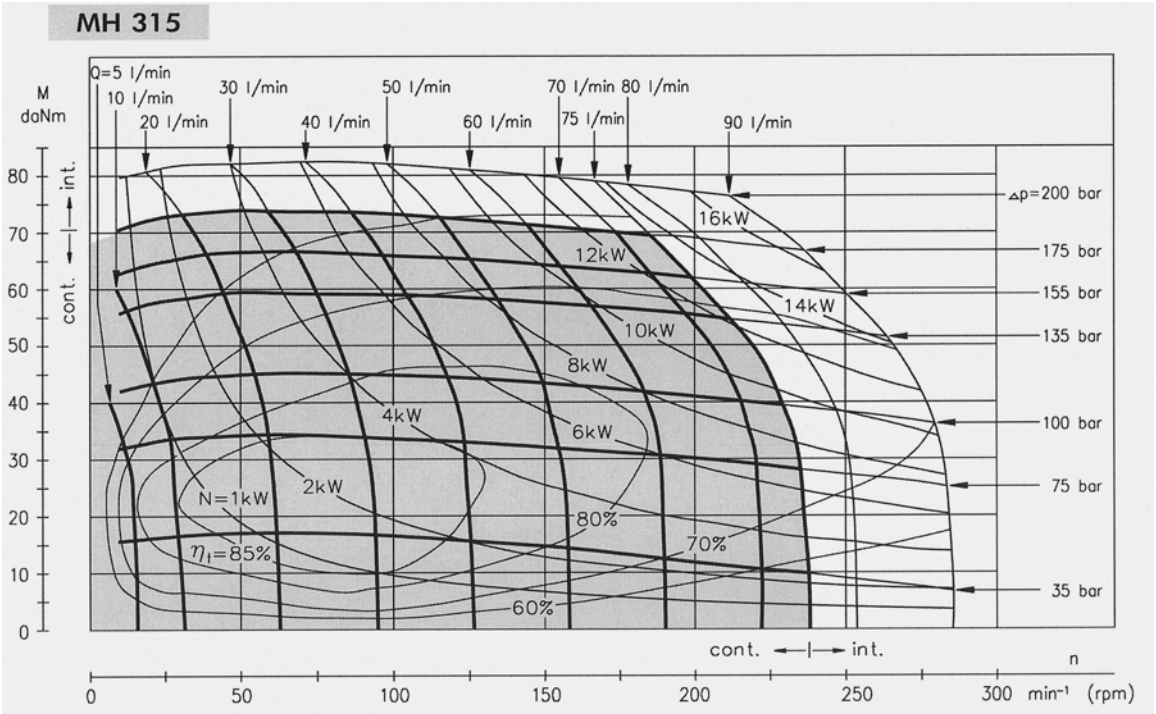


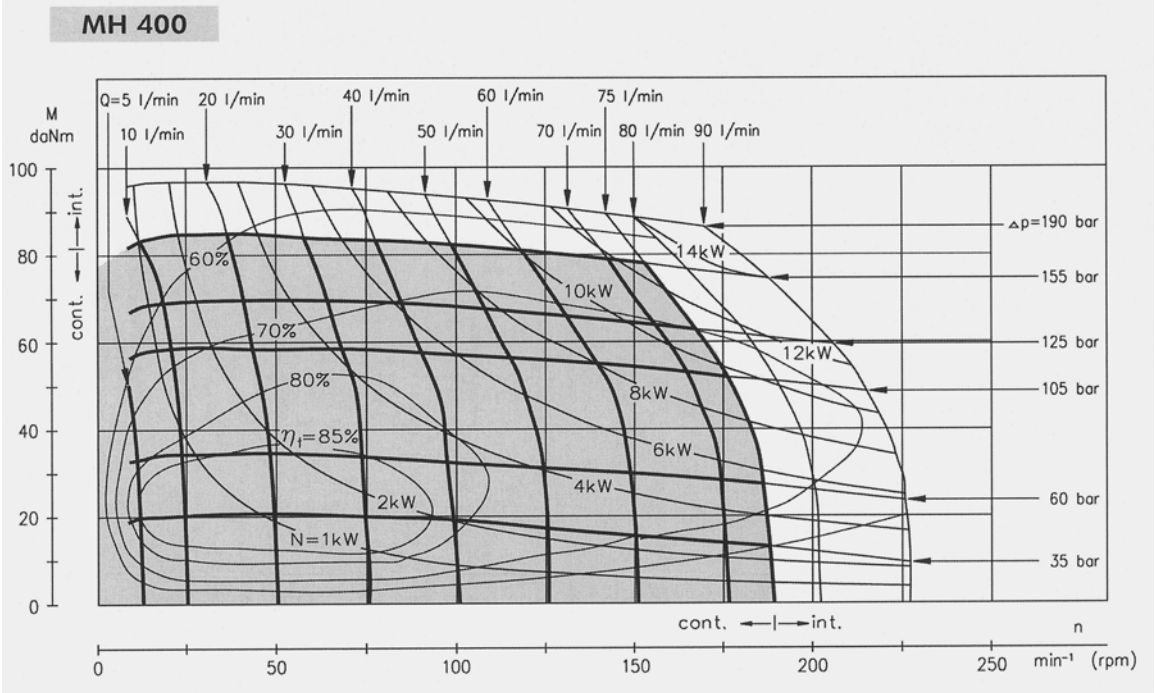
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MH

Orbitmotoren

Functiediagrammen

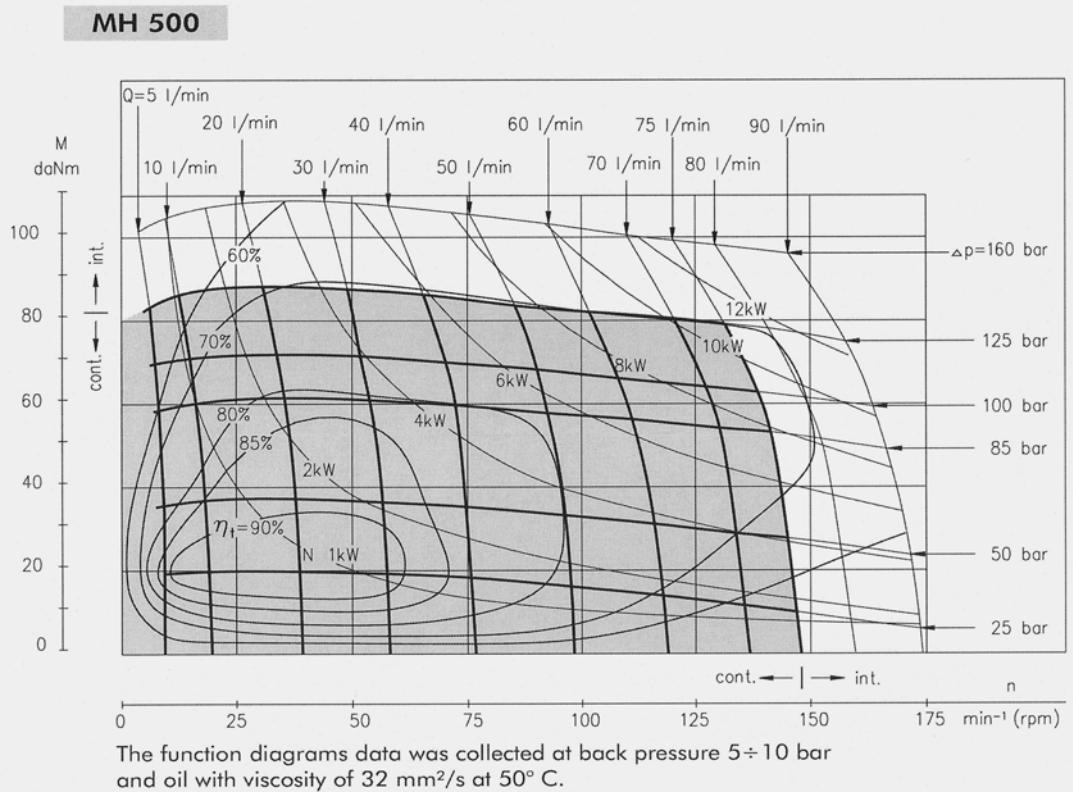




The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

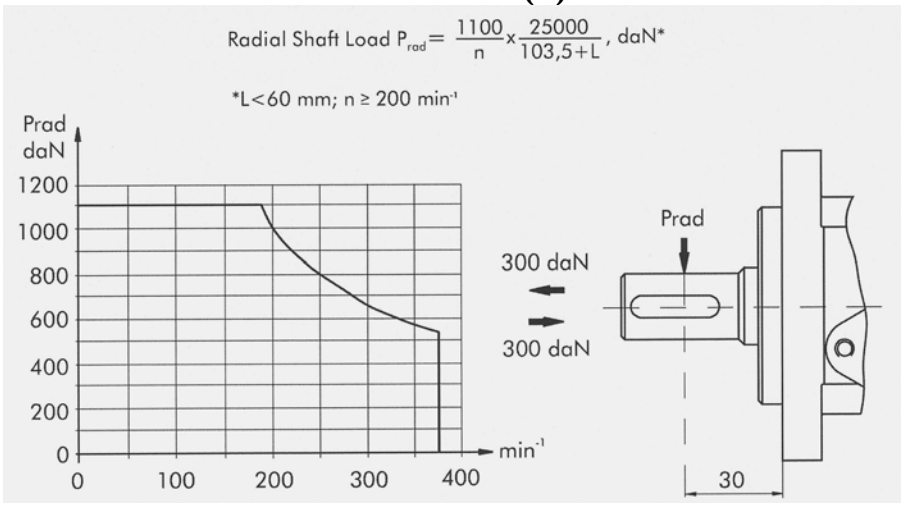
MH
Orbitmotoren

Functiediagrammen



Toegestane asbelasting MH motoren

De toegestane radiale asbelasting (Prad) hangt af van de snelheid RPM en afstand van de last t.o.v. de flens (L)

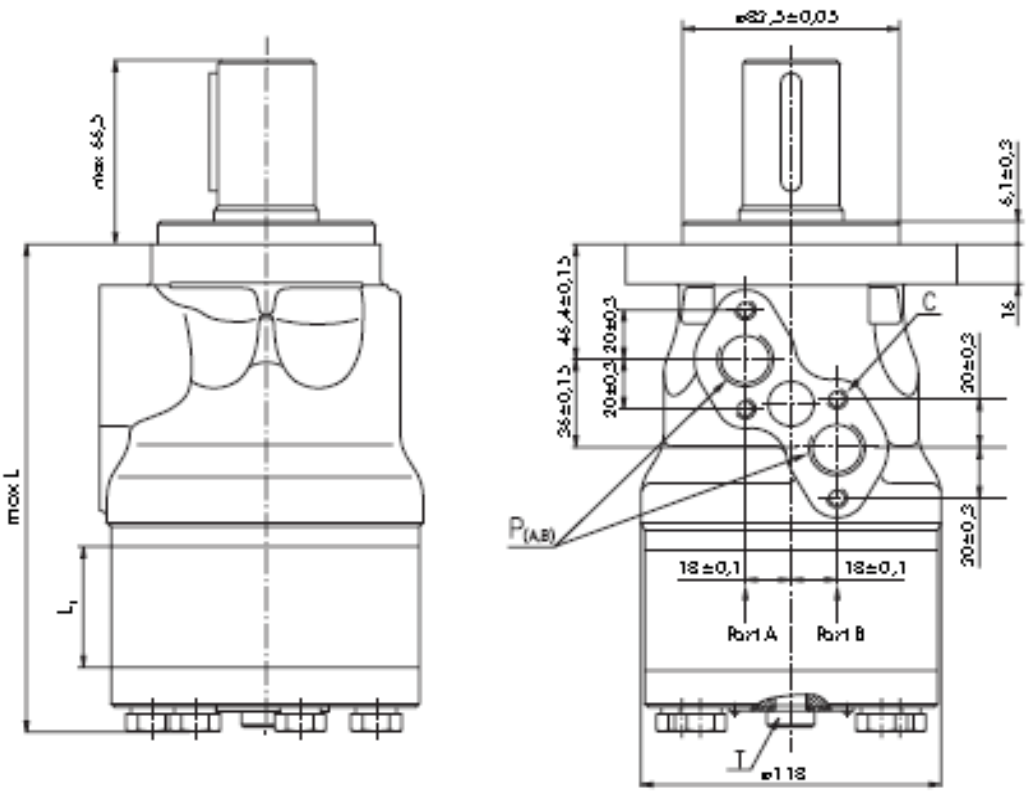


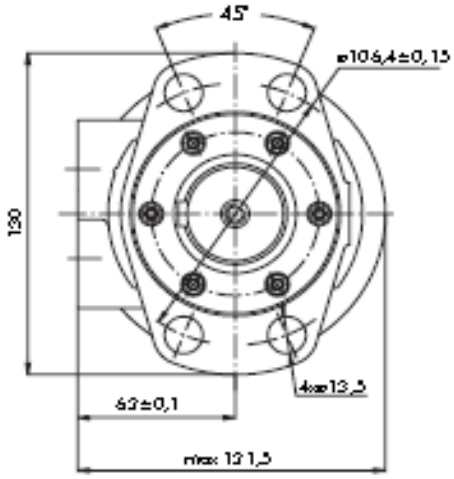
MH

Orbitmotoren

Afmetingen en uitvoeringen

Magneto Mount (4 holes)





Type	L, mm	L1, mm
MH 200	169	27,8
MH 250	176	34,8
MH 315	184	43,5
MH 400	196	54,8
MH 500	211	69,4

C : 4xM8 13 mm depth
P(A,B): 2xG1/2 or 2xM22x1,5 15 mm depth
T : G1/4 or M14x1,5 12 mm depth (plugged)

Standard Rotation	Reverse Rotation
Viewed from Shaft End	Viewed from Shaft End
Port A Pressurized - CW	Port A Pressurized - CCW
Port B Pressurized - CCW	Port B Pressurized - CW

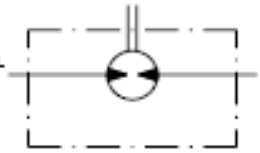
MH
Orbitmotoren

Maximaal toegestane druk op de asafdichting

MH...UT motors with high pressure seal and without drain connection:

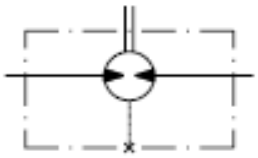
The shaft seal pressure equals the average of input pressure and return pressure.

$$P_{seal} = \frac{P_{input} + P_{return}}{2}$$



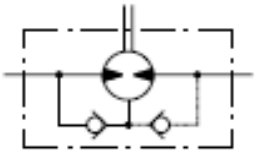
MH...U motors with high pressure seal and drain connection:

The shaft seal pressure equals the pressure in the drain line.



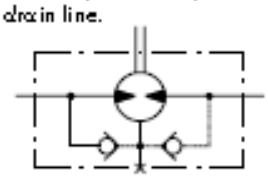
MH...T motors with standard shaft seal and without drain connection:

The shaft seal pressure never exceeds the pressure in the return line.

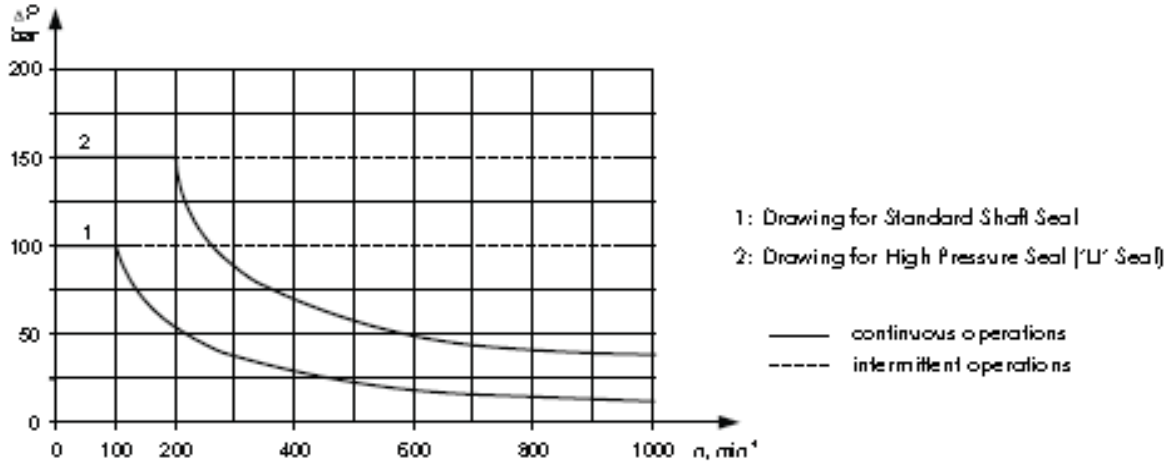


MH... motors with standard shaft seal and with drain connection:

The shaft seal pressure equals the pressure in the drain line.



Max. return pressure without drain line or max. pressure in the drain line

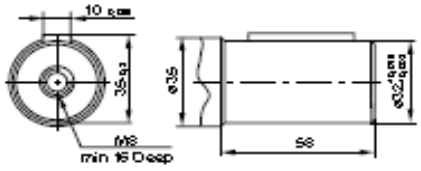


MH

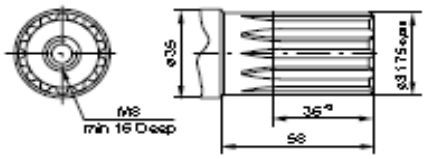
Orbitmotoren

Mogelijke assen

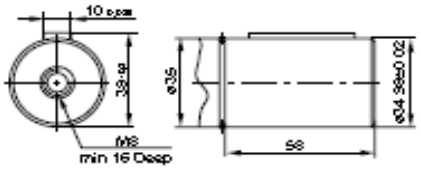
C - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



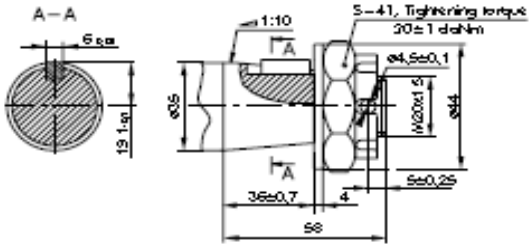
SH - ø1 ¼" splined 14T, DP 12/24 ANSI B92.1-1976
Max. Torque 95 daNm



CB - ø35 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 95 daNm



K - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm



Bestelgegevens

	1	2	3	4	5	6	7
MH							

Pos.1	Displacement code
200	201,3 [cm³/rev]
250	252,0 [cm³/rev]
315	314,9 [cm³/rev]
400	396,8 [cm³/rev]
500	502,4 [cm³/rev]

Pos.2	Shaft Extensions *
C	ø32 straight, Parallel key A10x8x45 DIN 6885
SH	ø1¼ splined 14T ANSI B92.1 1970
CB	ø35 straight, Parallel key A10x8x45 DIN 6885
K	ø35 tapered 1:10, Parallel key B6x6x20 DIN 6885

Pos. 3	Shaft Seal Version (see page 44)
omit	Standard shaft seal
U	High pressure shaft seal (without check valves)

Pos. 4	Drain Port
omit	with drain port
1	without drain port

Pos. 5	Ports
omit	BSPP (ISO 228)
M	Metric (ISO 262)

Pos. 6	Special Features (see page 46)

Pos. 7	Design Series
omit	Factory specified

MM, MP,MR, MH

Orbitmotoren

SPECIALS

Special Feature Description	Order Code	Motor type						
		MM	MP	MPN	MPW	MR	MRN	MH
Motor for Speed Sensor*	RS	O	O	-	-	O	-	O
Low Leakage	LL	O	O	-	O	O	-	O
Low Speed Valving	LSV	-	-	-	O	O	-	O
Free Running	FR	O	O	-	O	O	-	O
Reverse Rotation	R	O	O	O	O	O	O	O
Paint**	P	O	O	O	O	O	O	O
Corrosion Protected Paint**	PC	O	O	O	O	O	O	O
Check Valves		S	S***	S	S	S***	S	S

O Optional
- Not applicable
S Standard

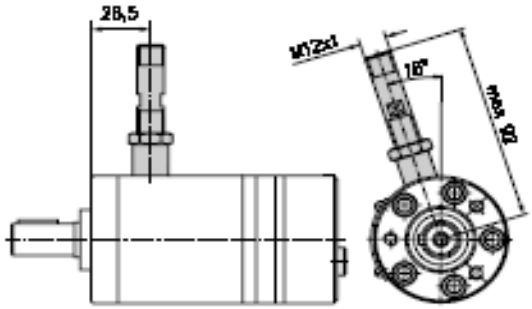
* for sensor ordering see pages 47-48
** color at customer's request.
*** without check valves for "U" shaft seal versions (see page 26)

MM, MP,MR, MH

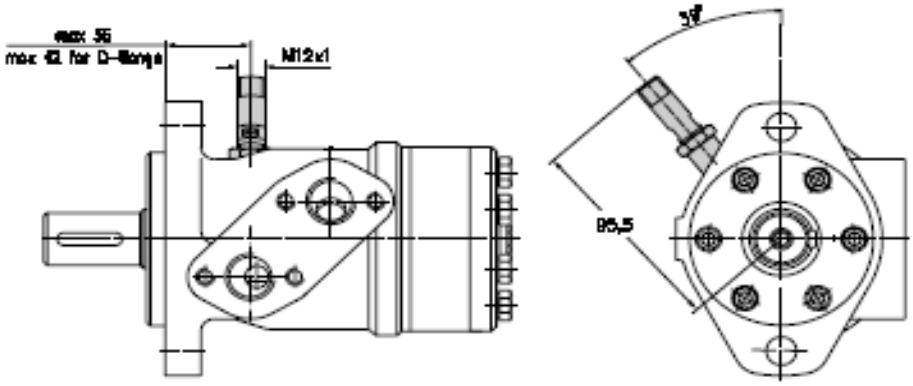
Orbitmotoren

MET SPEEDSENSOR

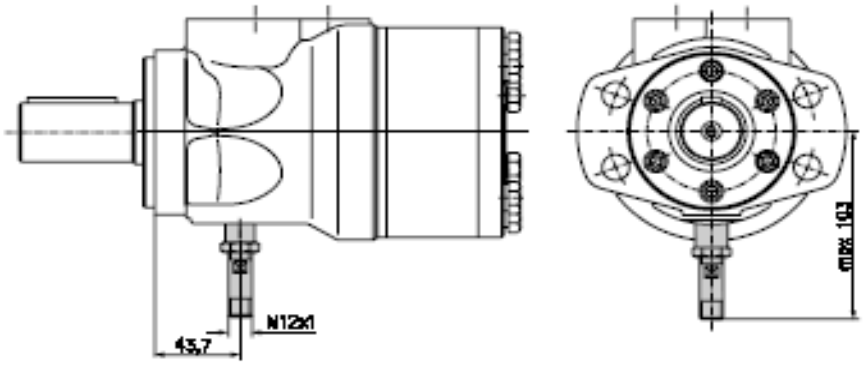
MM...RS



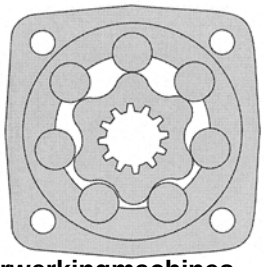
MP...RS and MR...RS



MH...RS



MS
Orbitmotoren



De MS motoren zijn met 7 rollen in tandkransen 6 tanden in een sterwiel uitgerust. Deze rollen en de effectieve hydraulische smering van de lagerset beperken de wrijving bij de tandwieldraaiing tot een minimum.

De MS motoren worden toegepast op Conveyors, metaal verwerkingmachines, Landbouwmachines etc.

De MS motor is met de volgende opties verkrijgbaar ; standaard, wielflens, korte uitvoering, motor met rem, tacho aansluiting, speed sensor, poorten achter en zijaansluiting, as recht, splined en taps.

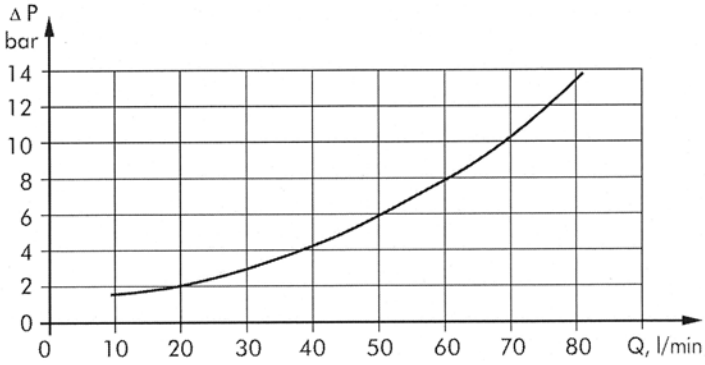
Algemene informatie

Displacement, [cm^3/rev.]	80,5÷564,9
Max. Speed, [RPM]	130÷810
Max. Torque, [daNm]	23÷85
Max. Output, [kW]	18÷6,9
Max. Pressure Drop, [bar]	105÷210
Max. Oil Flow, [l/min]	75
Min. Speed, [RPM]	5÷10
Permissible Shaft Loads, [daN]	P_a=500
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm^2/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm^2/s)	Oil flow in drain line (l/min)
140	20	1,5
	35	1
210	20	3
	35	2

Pressure Losses



MS
Orbitmotoren

Technische informatie

Type		MS 80	MS 100	MS 125	MS 160	MS 200
Displacement [cm³/rev.]		80,5	100	125,7	159,7	200
Max. Speed,	cont.	810	750	600	470	375
[RPM]	Int.*	1000	900	720	560	450
Max. Torque	cont.	24	30,5	37,5	49	61
[daNm]	Int.*	31	39	49	60	72
Max. Output	cont.	15,5	18	18	16,5	16,5
[kW]	int.*	19,5	22,5	22,5	23	22
Max. Pressure Drop	cont.	210	210	210	210	210
[bar]	Int.*	275	275	275	260	250
	peak**	295	295	295	280	270
Max. Oil Flow	cont.	65	75	75	75	75
[l/min]	Int.*	80	90	90	90	90
Max. Inlet Pressure	cont.	230	230	230	230	230
[bar]	Int.*	295	295	295	295	295
	peak**	300	300	300	300	300
Max. Return Pressure	cont.	140	140	140	140	140
with Drain Line	Int.*	175	175	175	175	175
[bar]	peak**	210	210	210	210	210
Max. Starting Pressure with Unloaded Shaft, [bar]		12	10	10	8	8
Min. Starting Torque	at max. press. drop cont.	18	23	29	37	47
[daNm]	at max. press. drop Int.*	23,5	30	38	46	56
Min. Speed***, [RPM]		10	10	8	8	6
Weight, [kg]	MS(F)	9,9	10,1	10,4	10,8	11,2
	MSW	10,4	10,6	10,9	11,3	11,7
For Rear Ports	MSS	7,9	8,1	8,4	8,8	9,2
+0,4 kg	MSV	5,8	6	6,3	6,7	7,1
	MSQ	10,3	10,5	10,8	11,2	11,6
	MSB	16,9	17,1	17,4	17,8	18,2

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

MS
Orbitmotoren

Technische informatie

Type		MS 250	MS 315	MS 400	MS 475	MS 525	MS 565
Displacement [cm³/rev.]		250	314,9	397	474,6	522,7	564,9
Max. Speed,	cont.	300	240	190	160	145	130
[RPM]	Int.*	360	290	230	190	175	160
Max. Torque	cont.	72	82,5	86,5	85	85	85
[daNm]	Int.*	87	100	99	99	99	99
Max. Output	cont.	15,5	15	11	8,4	7,6	6,9
[kW]	int.*	18	17	12,5	11,3	10,4	9,6
Max. Pressure Drop	cont.	200	200	160	130	115	105
[bar]	Int.*	250	240	190	150	135	125
	peak**	270	260	210	170	155	145
Max. Oil Flow	cont.	75	75	75	75	75	75
[l/min]	Int.*	90	90	90	90	90	90
Max. Inlet Pressure	cont.	230	230	230	230	230	230
[bar]	Int.*	295	295	295	295	295	295
	peak**	300	300	300	300	300	300
Max. Return Pressure	cont.	140	140	140	140	140	140
with Drain Line	Int.*	175	175	175	175	175	175
[bar]	peak**	210	210	210	210	210	210
Max. Starting Pressure with Unloaded Shaft, [bar]		8	8	8	8	8	8
Min. Starting Torque	at max. press. drop cont.	56	71	71	71	71	71
[daNm]	at max. press. drop Int.*	70	85	84	84	84	84
Min. Speed***, [RPM]		6	5	5	5	5	5
Weight, [kg]	MS(F)	11,7	12,4	13,3	14,4	14,6	15
	MSW	12,2	12,9	13,8	14,6	15,1	15,5
For Rear Ports	MSS	9,7	10,4	11,3	12,1	12,6	13
+0,4 kg	MSV	7,6	8,3	9,2	10	10,5	10,9
	MSQ	12,1	12,8	13,7	14,5	15,0	15,4
	MSB	18,7	19,4	20,3	21,1	21,6	23

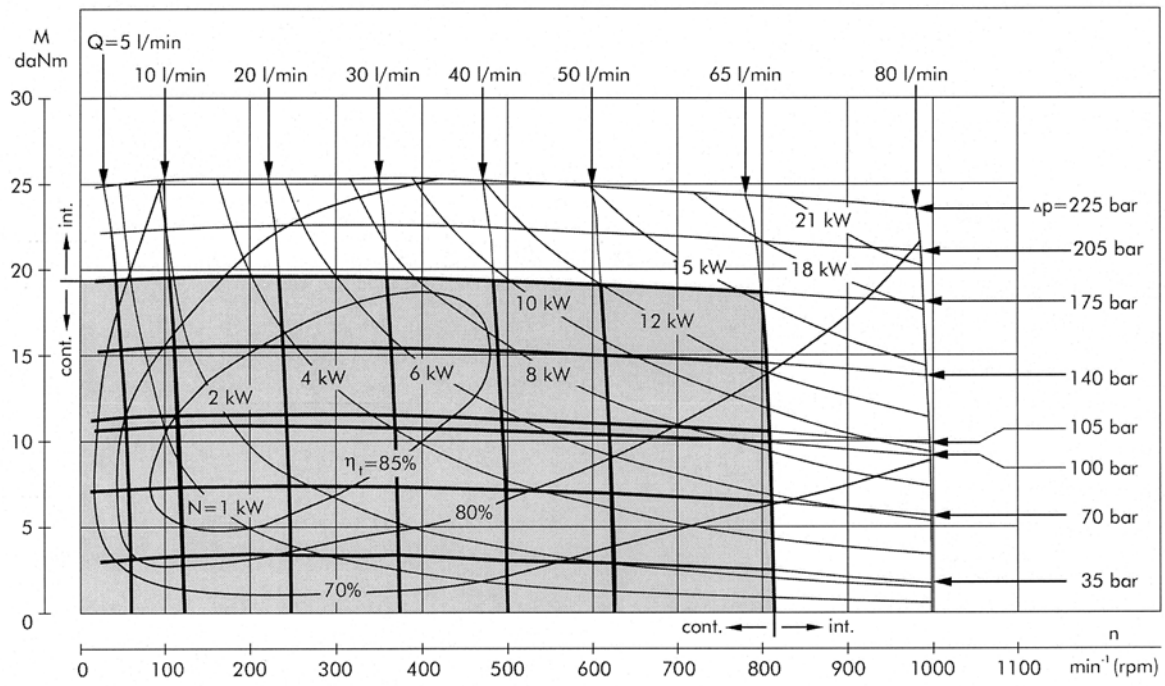
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

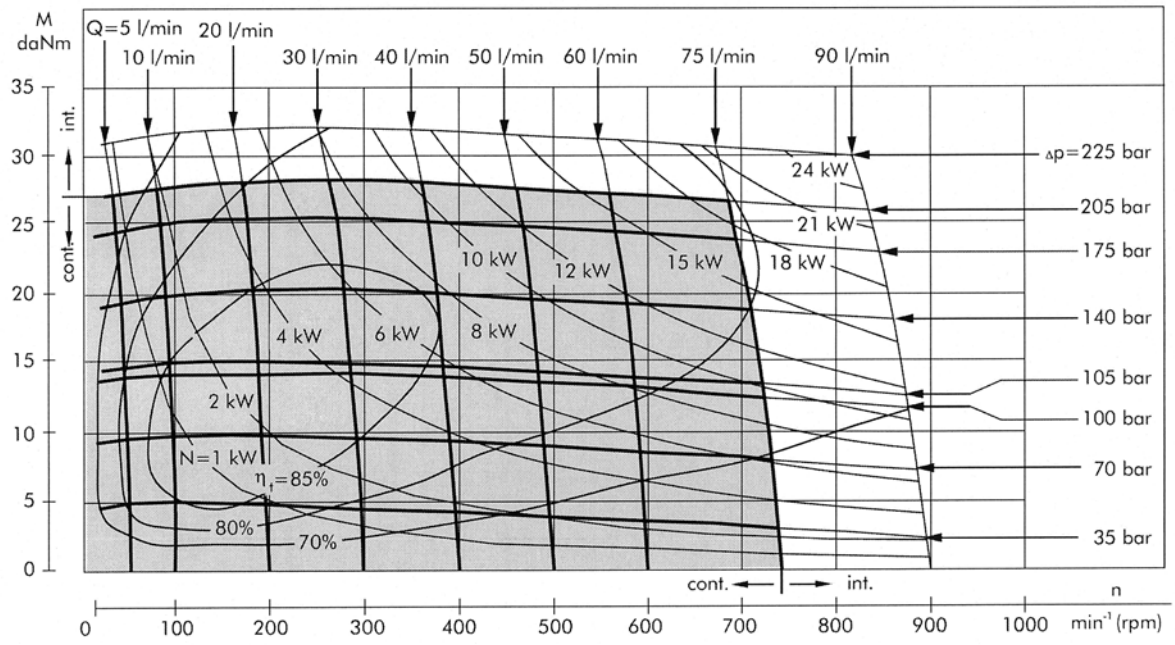
MS
Orbitmotoren

Functiediagrammen

MS 80



MS 100

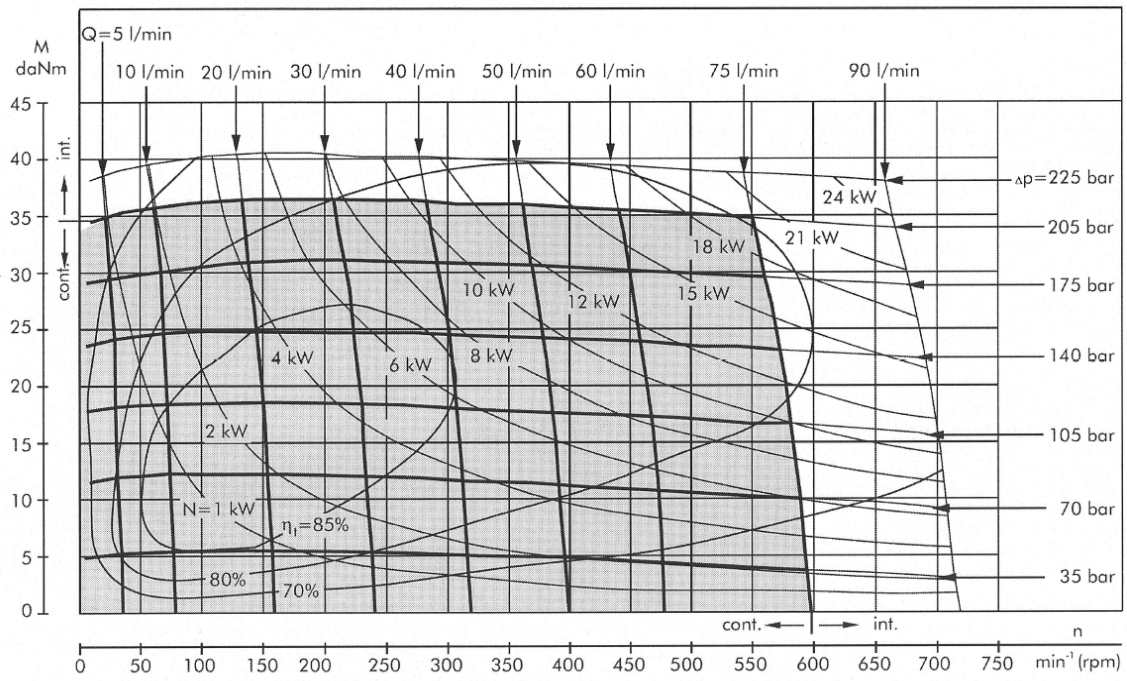


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

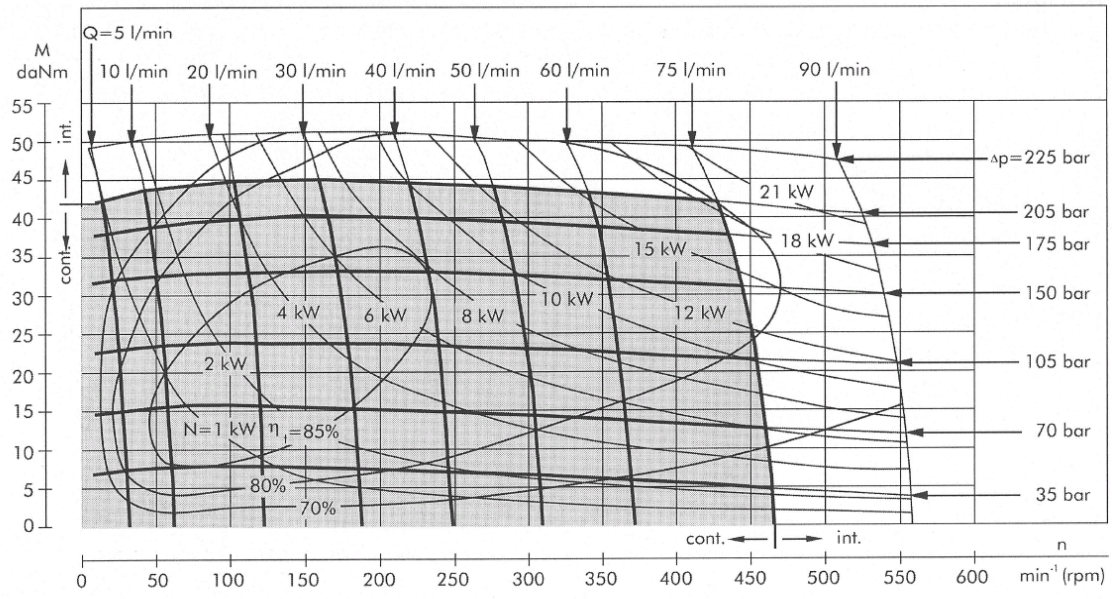
MS
Orbitmotoren

Functiediagrammen

MS 125



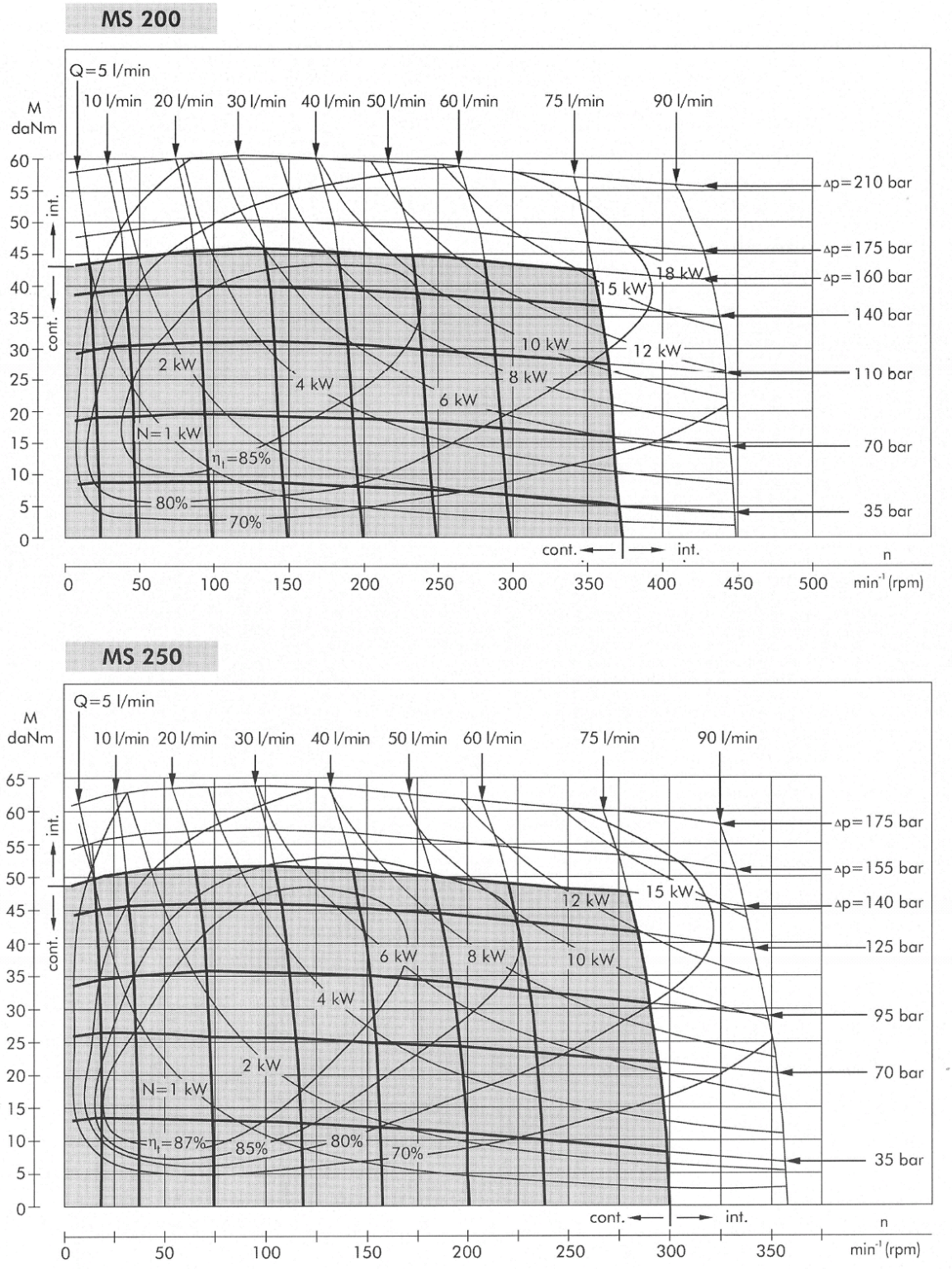
MS 160



The function diagrams data was collected at back pressure 5÷10 bar
and oil with viscosity of 32 mm²/s at 50° C.

MS
Orbitmotoren

Functiediagrammen



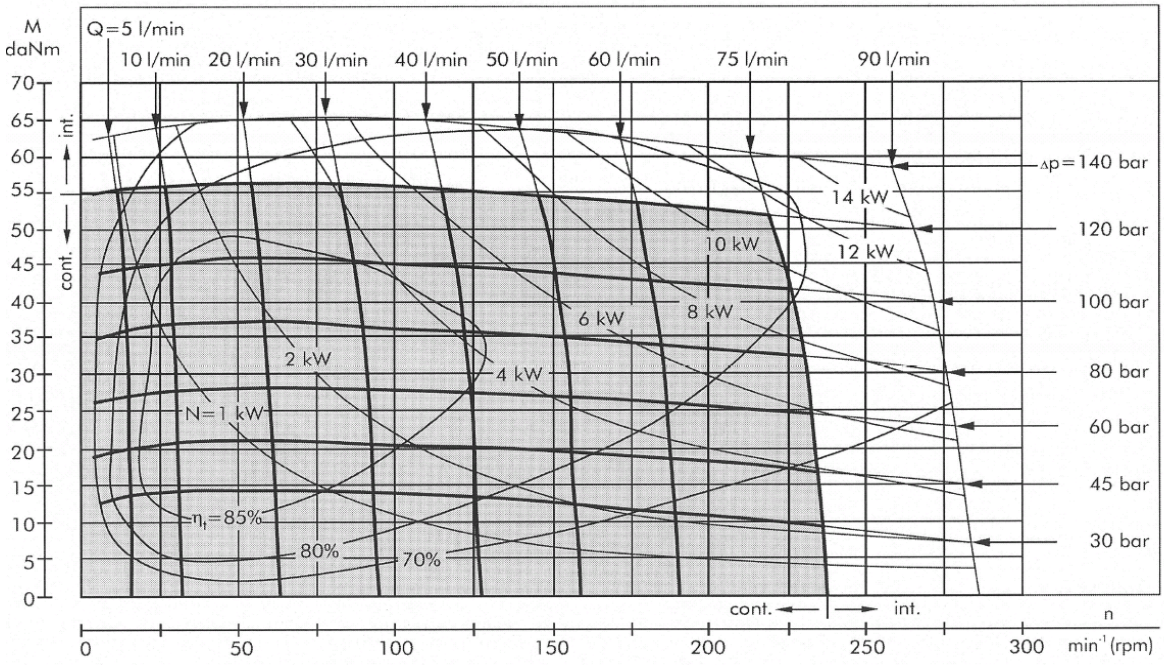
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MS

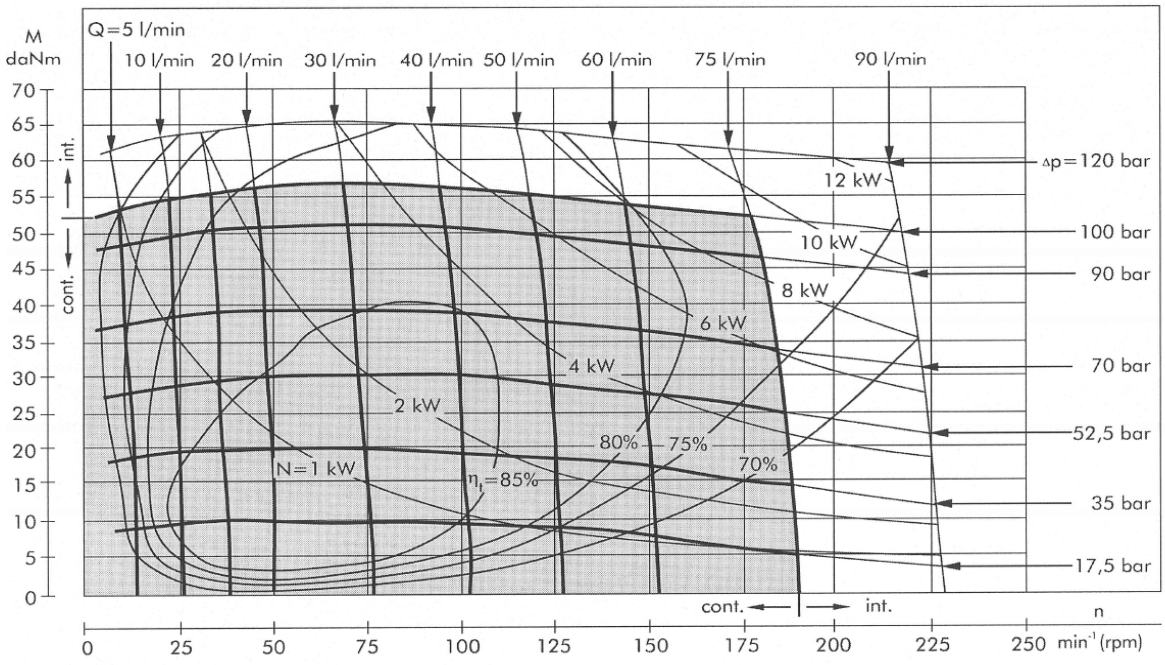
Orbitmotoren

Functiediagrammen

MS 315



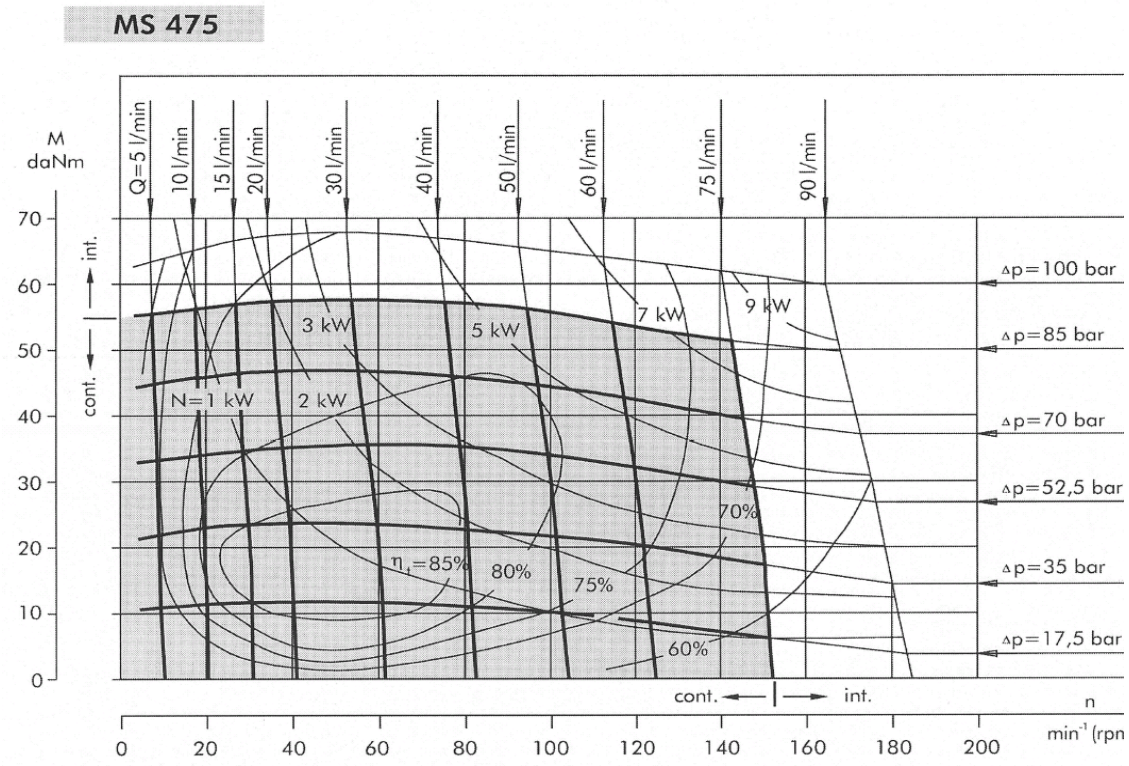
MS 400

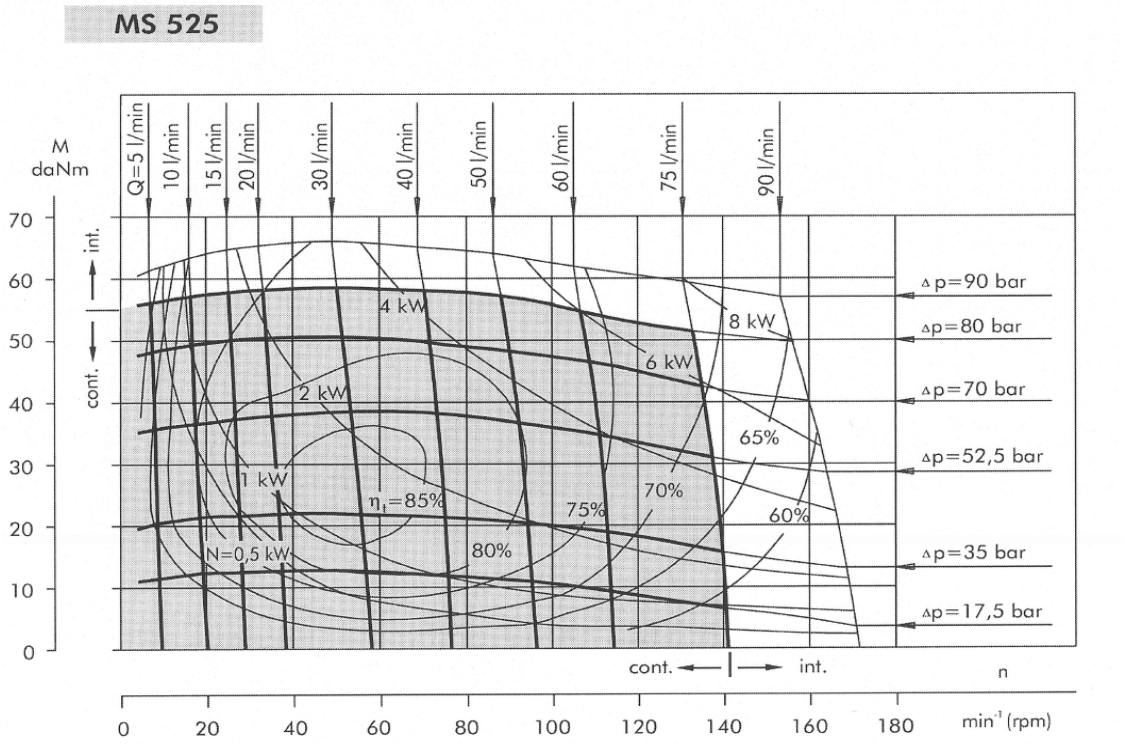


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MS
Orbitmotoren

Functiediagrammen



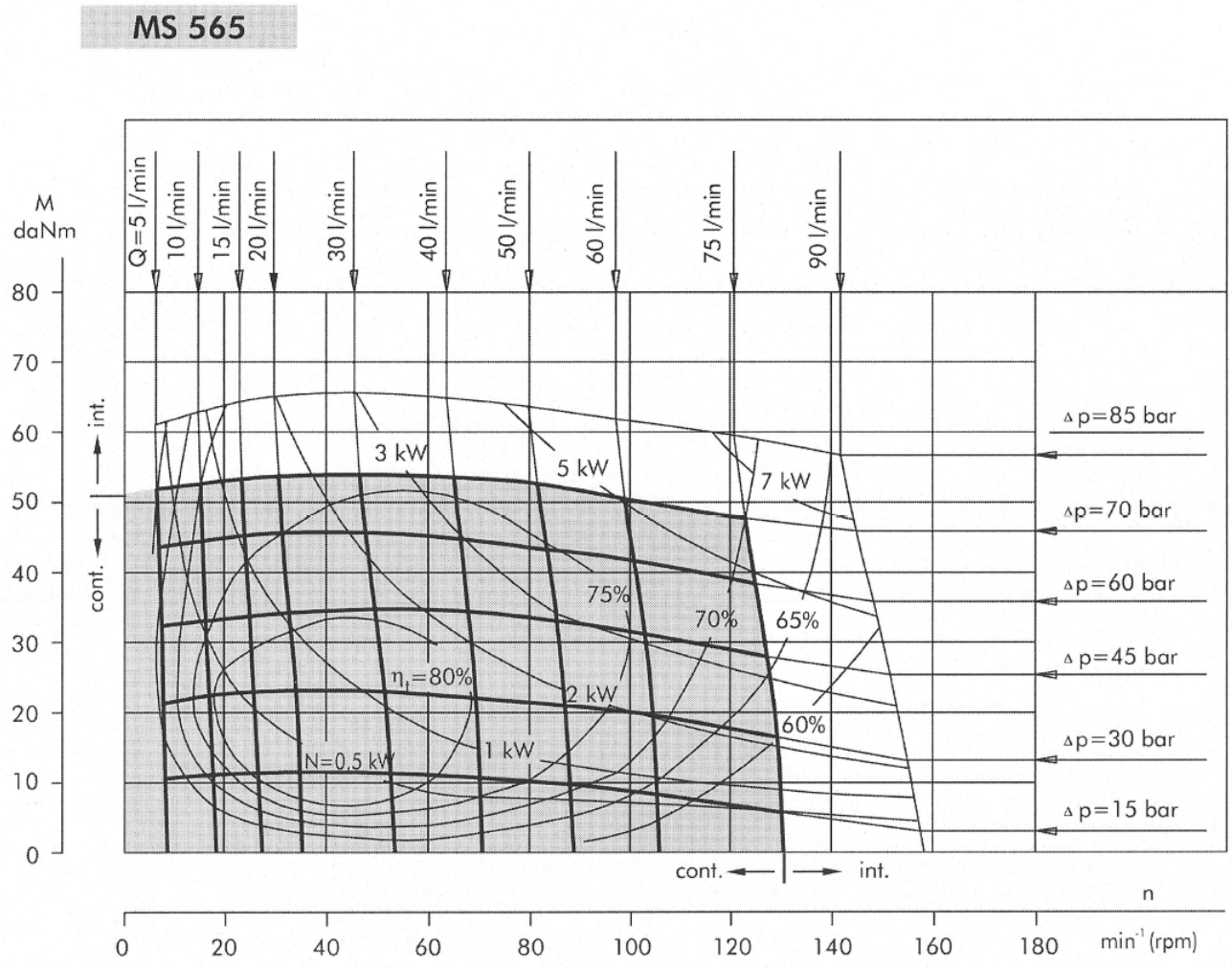


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MS

Orbitmotoren

Functiediagrammen

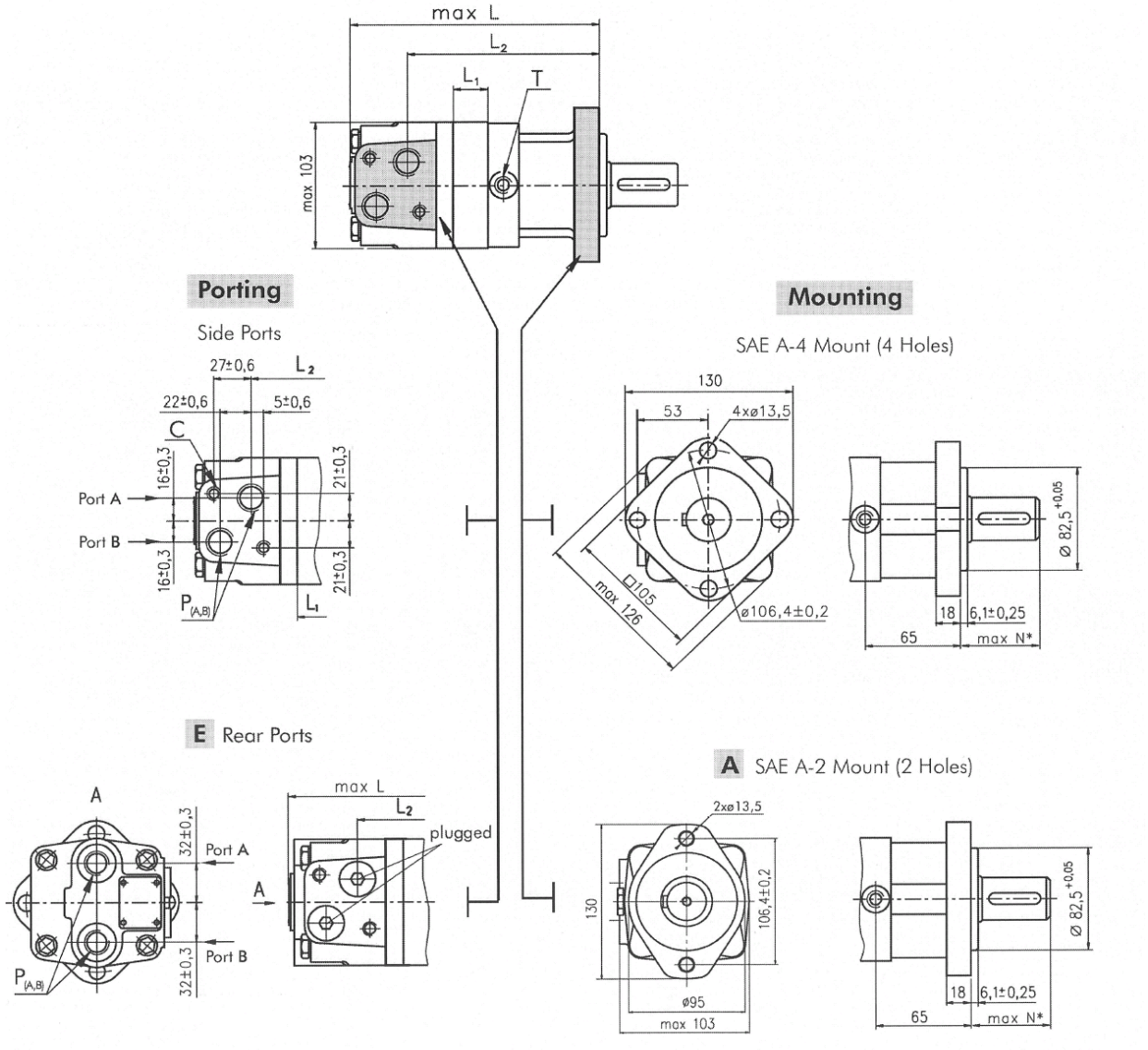


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MS

Orbitmotoren

Afmetingen en uitvoeringen



*For **N** see page 17

C: 2xM10-12 mm depth
P$_{(A,B)}$: 2xG1/2 or 2xM22x1,5-15 mm depth
T: G ¼ or M14x1,5- 12 mm depth (plugged)

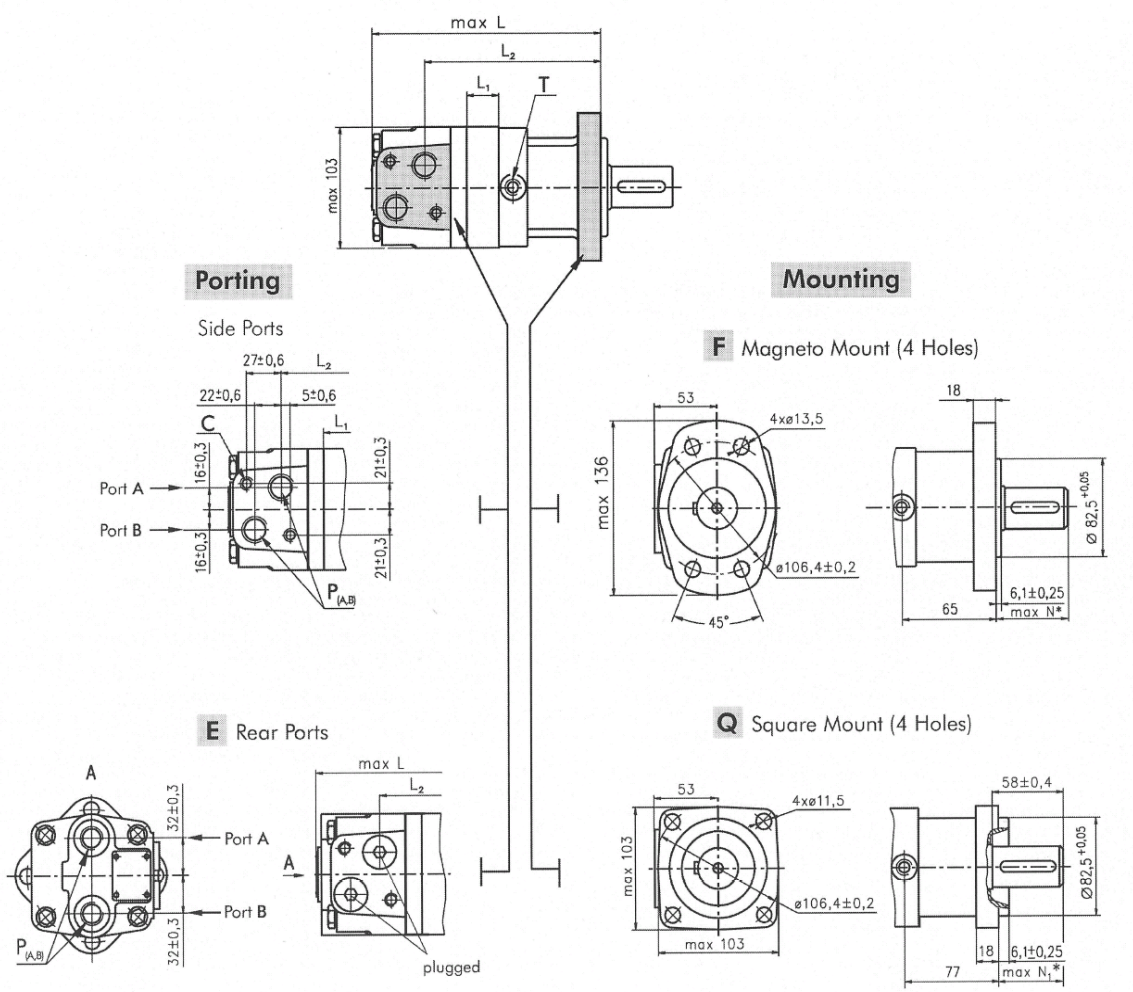
Type	L, mm	L$_2$, mm	Type	L, mm	L$_1$, mm
MS(A) 80	168	124	MS(A)E 80	173	14
MS(A) 100	171	129	MS(A)E 100	177	17,4
MS(A) 125	176	132	MS(A)E 125	181	21,8
MS(A) 160	182	138	MS(A)E 160	187	27,8
MS(A) 200	189	145	MS(A)E 200	194	34,8
MS(A) 250	197	154	MS(A)E 250	203	43,5
MS(A) 315	209	165	MS(A)E 315	214	54,8
MS(A) 400	223	179	MS(A)E 400	228	69,4
MS(A) 475	237	193	MS(A)E 475	242	82,6
MS(A) 525	229	185	MS(A)E 525	234	74,5
MS(A) 565	235	191	MS(A)E 565	240	80,2

Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

MS
Orbitmotoren

Afmetingen en uitvoeringen



*For **N** and **N**$_1$ see page 17

C: 2xM10-12 mm depth
P$_{(A,B)}$: 2xG1/2 or 2xM22x1,5-15 mm depth
T: G ¼ or M14x1,5- 12 mm depth (plugged)

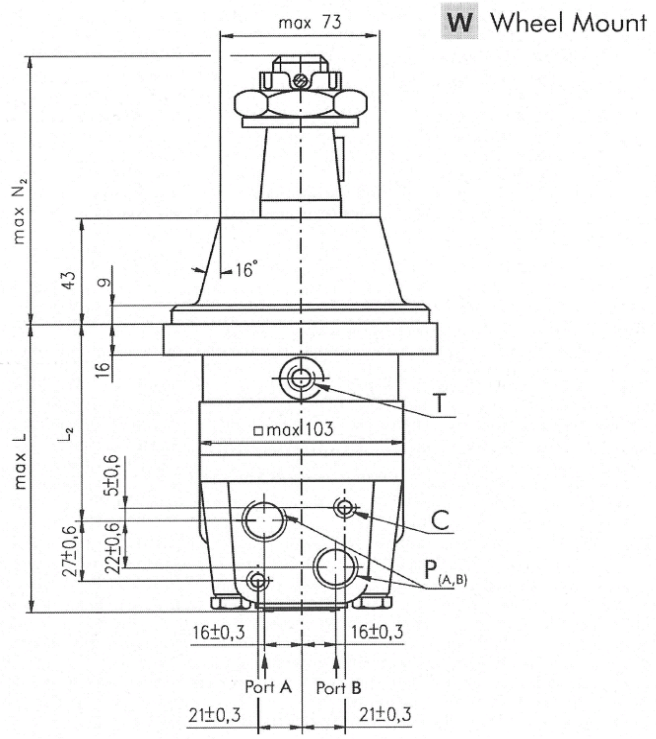
Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

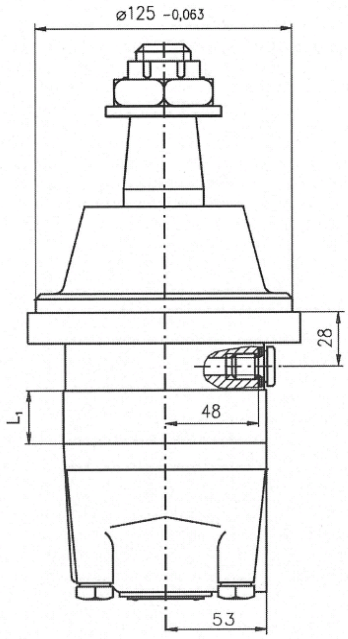
Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

Type	L, mm	L$_2$, mm	Type	L, mm	L$_2$, mm	Type	L, mm	Type	L, mm	L$_1$, mm
MSF 80	168	124	MSQ 80	179	136	MSFE 80	173	MSQE 80	185	14
MSF 100	171	129	MSQ 100	183	140	MSFE 100	177	MSQE 100	189	17,4
MSF 125	176	132	MSQ 125	187	144	MSFE 125	181	MSQE 125	193	21,8
MSF 160	182	138	MSQ 160	193	150	MSFE 160	187	MSQE 160	199	27,8
MSF 200	189	145	MSQ 200	200	157	MSFE 200	194	MSQE 200	206	34,8
MSF 250	197	154	MSQ 250	209	166	MSFE 250	203	MSQE 250	215	43,5
MSF 315	209	165	MSQ 315	220	177	MSFE 315	214	MSQE 315	226	54,8
MSF 400	223	179	MSQ 400	235	192	MSFE 400	228	MSQE 400	241	69,4
MSF 475	237	193	MSQ 475	247	205	MSFE 475	242	MSQE 475	254	82,6
MSF 525	229	185	MSQ 525	240	197	MSFE 525	234	MSQE 525	246	74,5
MSF 565	235	191	MSQ 565	246	203	MSFE 565	240	MSQE 565	252	80,2

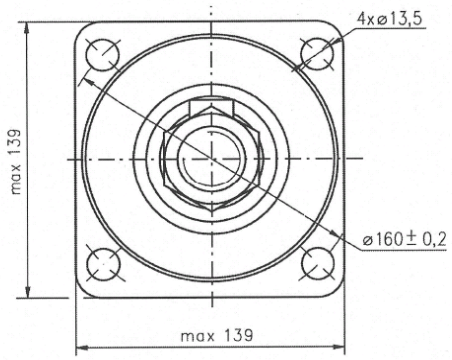
MS
Orbitmotoren

Afmetingen en uitvoeringen MSW

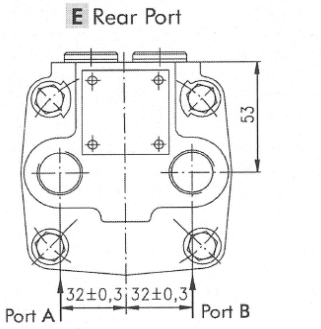


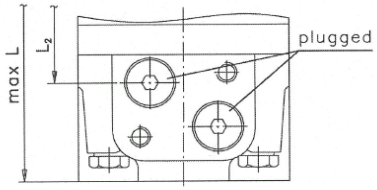


C: 2xM10-12 mm depth
P(A,B): 2xG1/2 or 2xM22x1,5-15 mm depth
T: G ¼ or M14x1,5 - 12 mm depth(plugged)



*For **N2** see page 17





Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

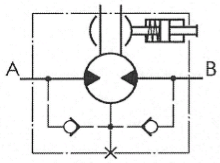
Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

Type	L, mm	L_1, mm	L_2, mm	Type	L, mm
MSW 80	129	14	87	MSWE 80	138
MSW100	133	17,4	91	MSWE 100	142
MSW 125	137	21,8	95	MSWE 125	146
MSW 160	143	27,8	101	MSWE 160	152
MSW 200	150	34,8	108	MSWE 200	159
MSW 250	159	43,5	117	MSWE 250	168
MSW 315	170	54,8	128	MSWE 315	179
MSW 400	184	69,4	143	MSWE 400	194
MSW 475	198	82,6	156	MSWE 475	207
MSW 525	190	74,5	148	MSWE 525	199
MSW 565	196	80,2	154	MSWE 565	205

MS
Orbitmotoren

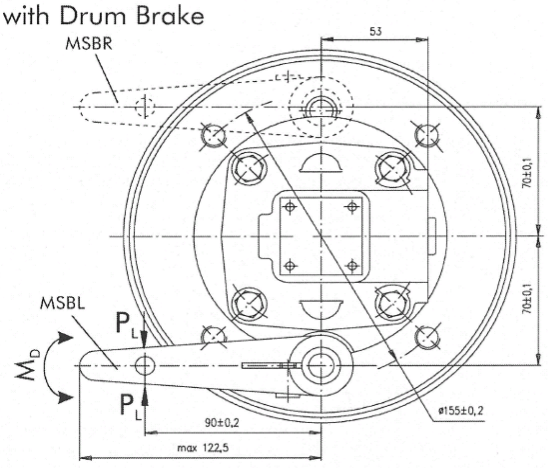
Afmetingen en uitvoeringen MSB

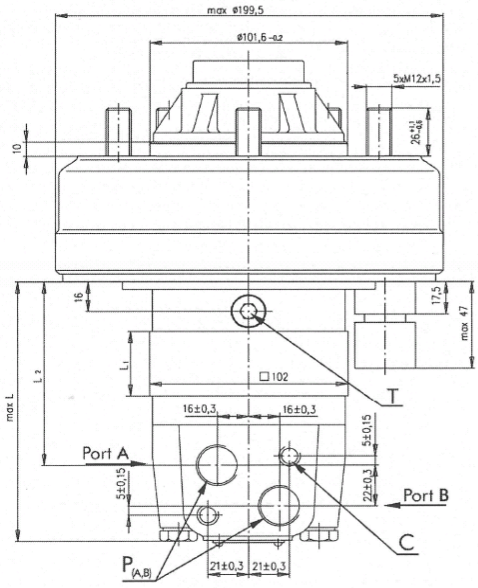
B Motor with Drum Brake

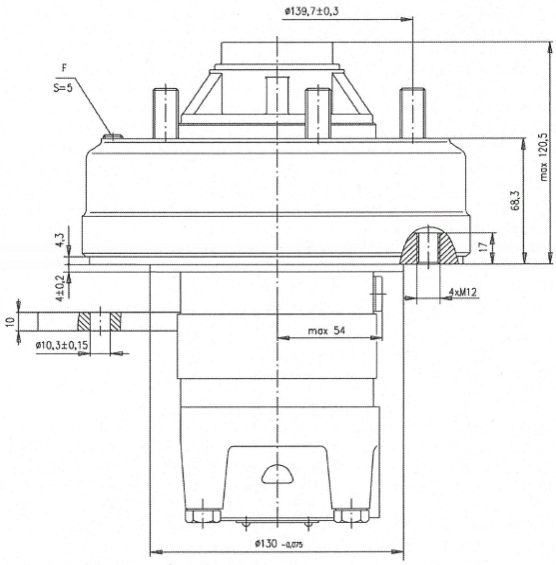


Actuating the brake level, the brake shaft is turned. The rectangular shape of the inner part of this shaft forces the brake pads to be pressed against the brake drum. This brakes the wheel or the winch drum.

Releasing the level, the springs pull it and the brake pads back to the initial position. The motor output shaft is released. Minimum angle adjustment is 10°. It can be adjusted by dismounting the level. Depending on the application You can choose the actuating direction of the brake level. The rod connection actuating the brake should be capable of moving at last 25 mm from neutral to extreme position.

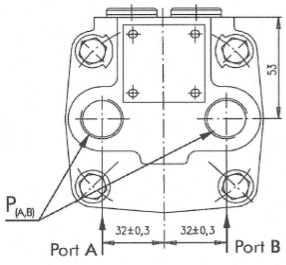






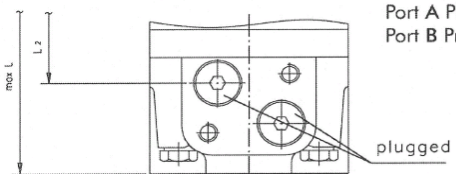
C: 2xM10-12 mm depth
F: Inspection hole for checking brake lining
T: G 1/4 or M14x1,5 - 12 mm depth (plugged)
$P_{(A,B)}$: 2xG1/2 or 2xM22x1,5-15 mm depth

E Rear Port



Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

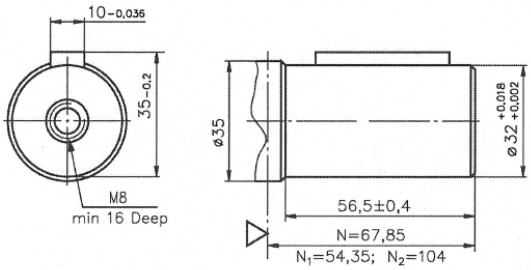


Type	L, mm	L_1, mm	L_2, mm	Type	L, mm
MSB 80	119	14	74	MSBE 80	127
MSB100	122	17,4	77	MSBE 100	130
MSB 125	126	21,8	82	MSBE 125	134
MSB 160	132	27,8	88	MSBE 160	140
MSB 200	139	34,8	95	MSBE 200	147
MSB 250	148	43,5	110	MSBE 250	156
MSB 315	159	54,8	115	MSBE 315	167
MSB 400	174	69,4	130	MSBE 400	182
MSB 475	188	82,6	143	MSBE 475	196
MSB 525	180	74,5	135	MSBE 525	188
MSB 565	186	80,2	141	MSBE 565	192

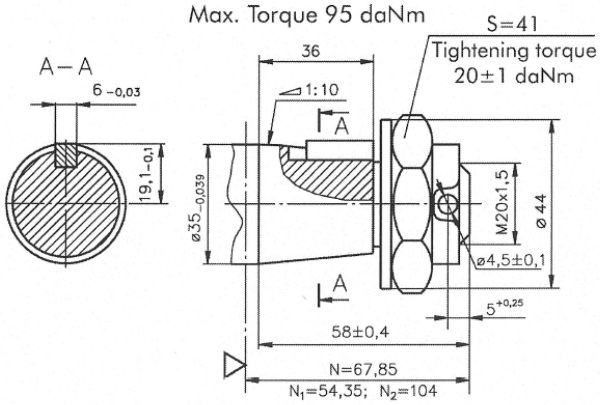
MS
Orbitmotoren

Mogelijke assen

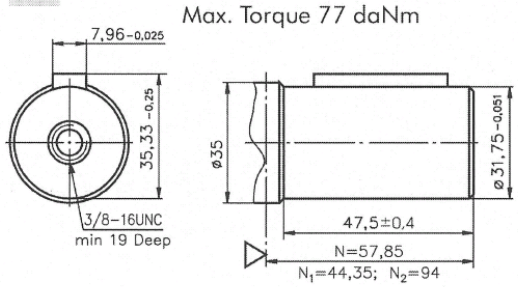
C - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



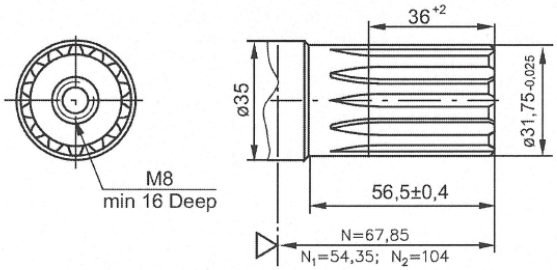
K - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm



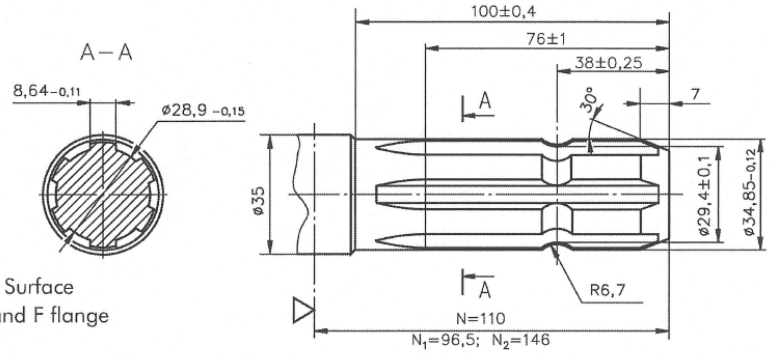
CO- ø1¼" straight, Parallel key 5/16"x 5/16"x 1¼"BS46
Max. Torque 77 daNm



SH - ø1¼" splined 14T, DP12/24 ANSI B92.1-1976
Max. Torque 95 daNm



SL - ø34,85 p.t.o. DIN 9611 Form 1
Max. Torque 77 daNm



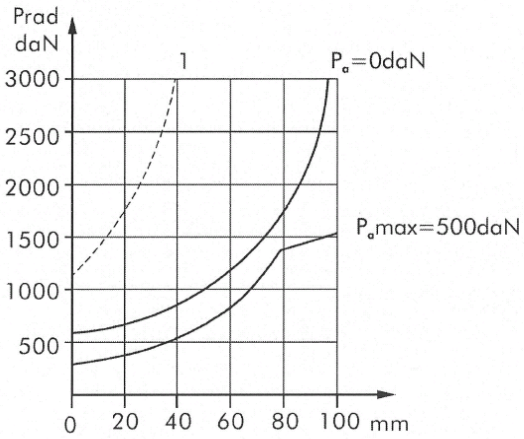
▽ - Motor Mounting Surface
N - for standart,A and F flange
N_1 - for Q flange
N_2 - for W flange

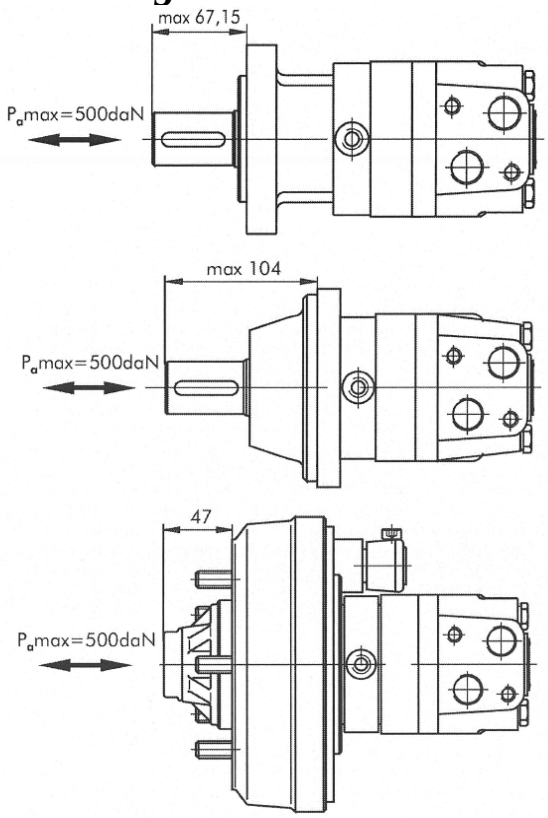
MS

Orbitmotoren

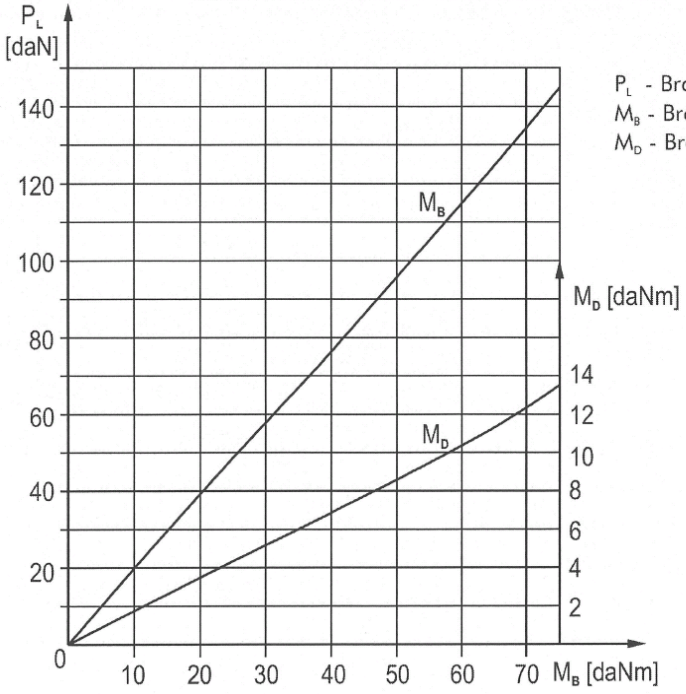
Mogelijke as belasting

The output shaft runs in tapered bearings that permit high axial and radial forces.
Curve "1" shows max. radial shaft load. Any shaft load exceeding the values quoted in the curve will seriously reduce motor life. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.





FUNCTION DIAGRAM MSB

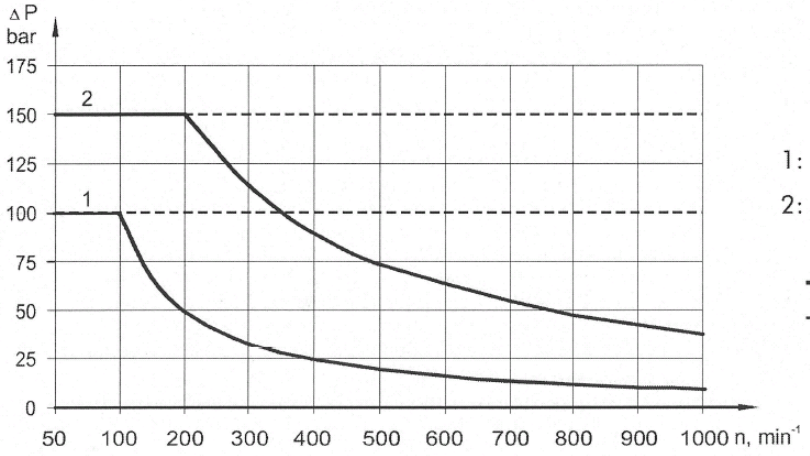


P_L - Brake Lever Load
M_B - Brake Torque
M_D - Brake Lever Torque

MS
Orbitmotoren

Maximale druk asafdichting

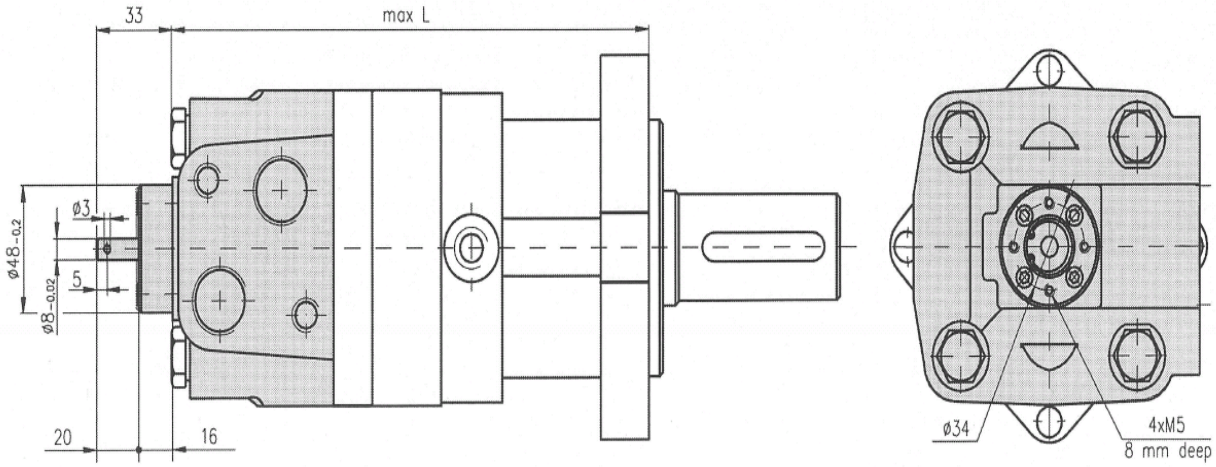
Max. return pressure without drain line or max. pressure in the drain line



1: Drawing for Standard Shaft Seal
2: Drawing for High Pressure Seal ("**U**" Seal)

——— - continuous operations
----- - intermittent operations

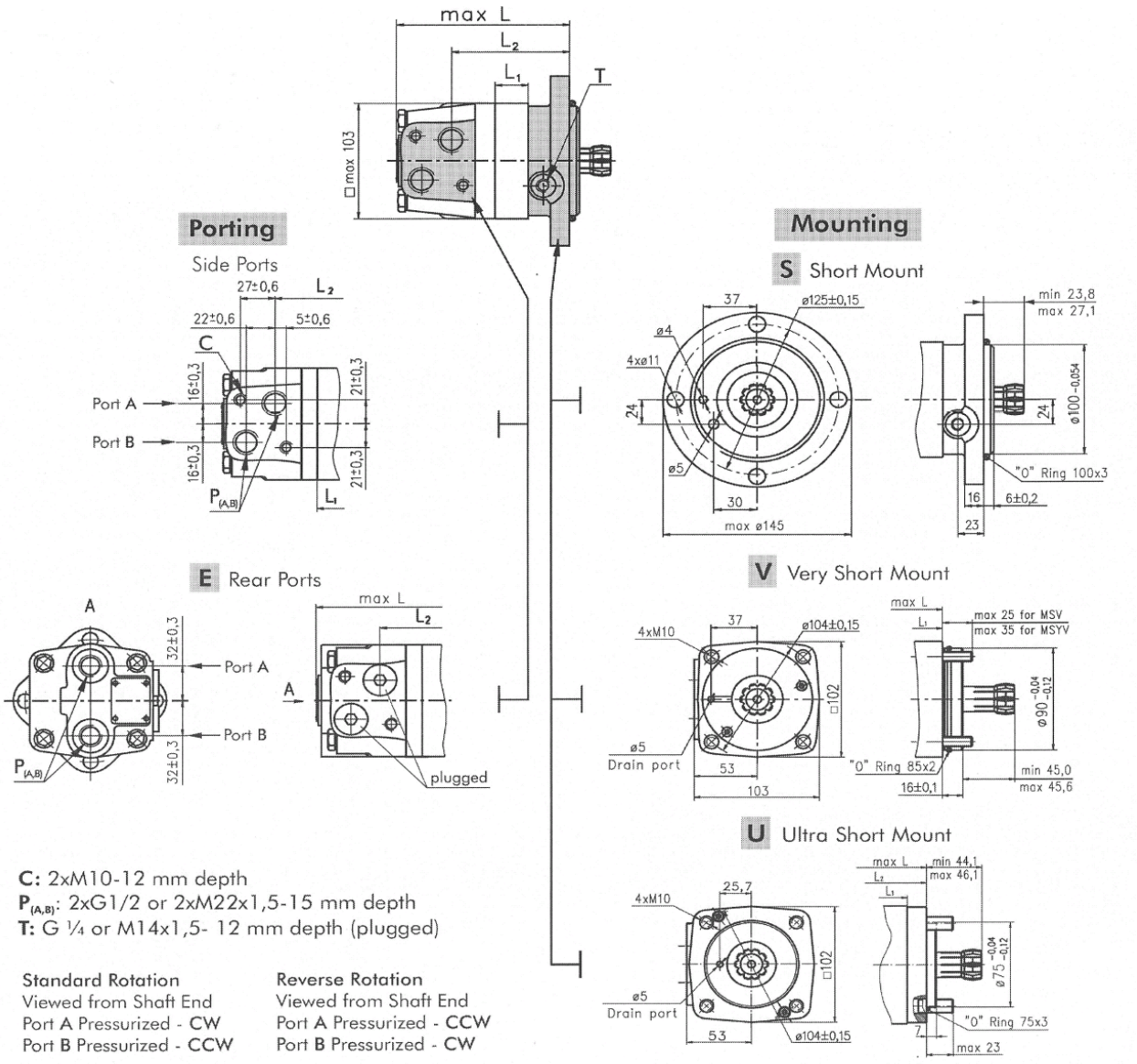
Motor met tachoaansluiting



MS

Orbitmotoren

Afmetingen en uitvoeringen MSS, MSV en MSU



C: 2xM10-12 mm depth
P(A,B): 2xG1/2 or 2xM22x1,5-15 mm depth
T: G ¼ or M14x1,5- 12 mm depth (plugged)

Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

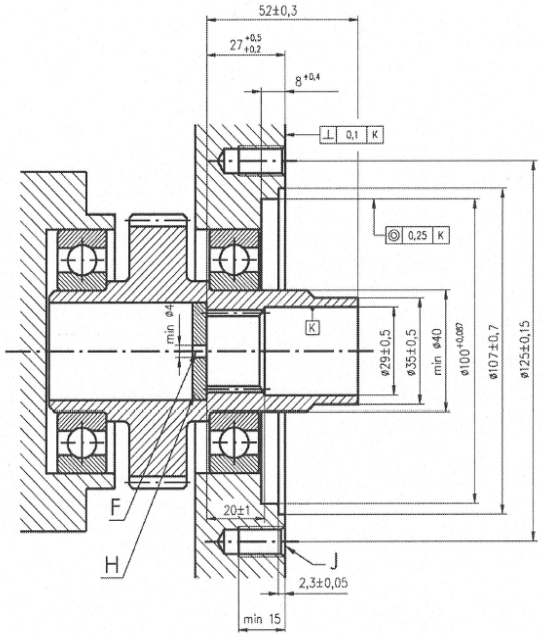
Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

Type	L, mm	L2, mm	Type	L, mm	Type	L, mm	L2, mm	Type	L, mm	Type	L, mm	L2, mm	Type	L, mm	L1, mm
MSS 80	125	83	MSSE 80	134	MSV 80	91	47	MSVE 80	97	MSU 80	105,5	63	MSUE 80	111,5	14
MSS 100	129	87	MSSE 100	138	MSV 100	94	50,5	MSVE 100	100	MSU 100	109	66,5	MSUE 100	115	17,4
MSS 125	133	90	MSSE 125	141	MSV 125	100	55	MSVE 125	105	MSU 125	113	71	MSUE 125	119	21,8
MSS 160	139	96	MSSE 160	147	MSV 160	106	61	MSVE 160	111	MSU 160	119	77	MSUE 160	125	27,8
MSS 200	146	103	MSSE 200	154	MSV 200	113	68	MSVE 200	118	MSU 200	126	84	MSUE 200	132	34,8
MSS 250	155	112	MSSE 250	163	MSV 250	121	76,5	MSVE 250	126	MSU 250	135	92,5	MSUE 250	141	43,5
MSS 315	166	123	MSSE 315	174	MSV 315	133	88	MSVE 315	138	MSU 315	146	104	MSUE 315	152	54,8
MSS 400	181	138	MSSE 400	189	MSV 400	147	103	MSVE 400	153	MSU 400	160	119	MSUE 400	167	69,4
MSS 475	194	152	MSSE 475	203	MSV 475	161	116	MSVE 475	166	MSU 475	174	132	MSUE 475	180	82,6
MSS 525	186	144	MSSE 525	195	MSV 525	153	108	MSVE 525	158	MSU 525	166	124	MSUE 525	172	74,5
MSS 565	192	150	MSSE 565	201	MSV 565	159	114	MSVE 565	164	MSU 565	172	130	MSUE 565	178	80,2

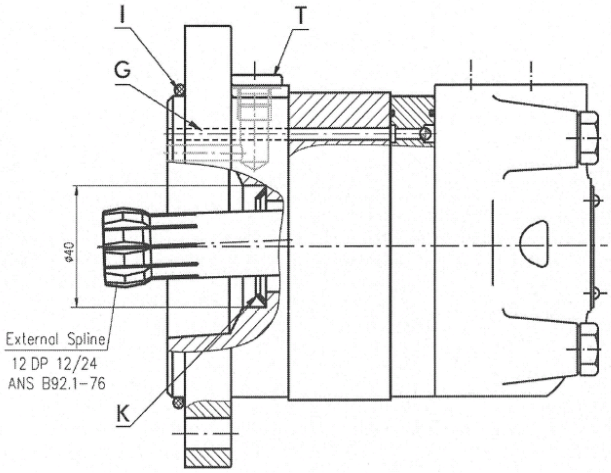
MS
Orbitmotoren

Afmetingen

For MSS

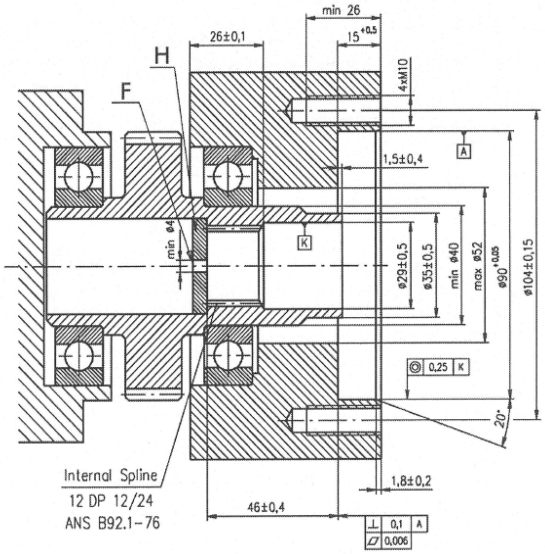


F: Oil circulation hole
H: Hardened stop plate
J: 4xM10-16 mm depth, 90°

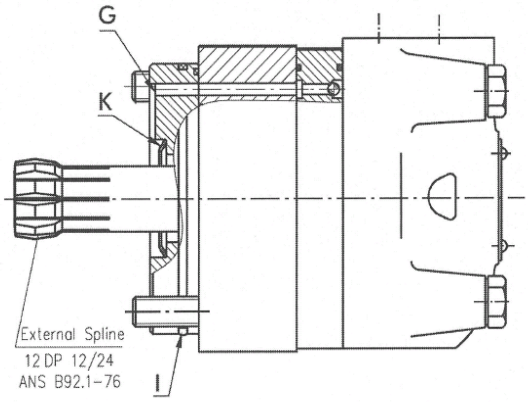


G: Internal drain channel
I : O- Ring 100x3mm
K: Conical seal ring
T: Drain connection G1/4 or M14x1,5

For MSV



F: Oil circulation hole
H: Hardened stop plate

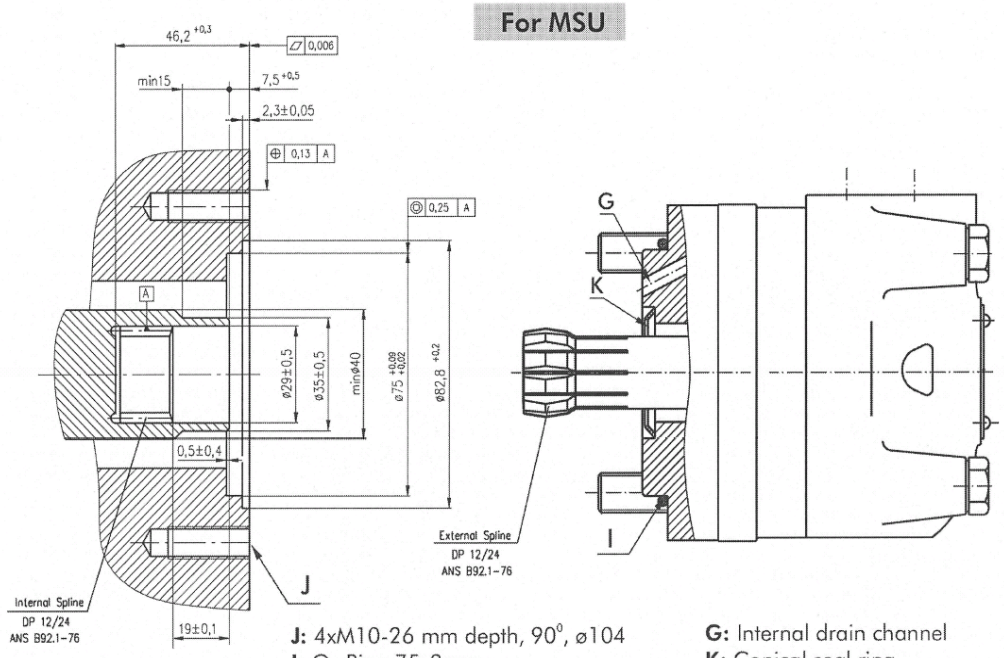


G: Internal drain channel
I: O- Ring 85x2 mm
K: Conical seal ring

MS
Orbitmotoren

Afmetingen

For MSU



J: 4xM10-26 mm depth, 90°, ø104
I: O- Ring 75x3 mm

G: Internal drain channel
K: Conical seal ring

DRAIN CONNECTION

A drain line ought to be used when pressure in the return line can exceed the permissible pressure. It can be connected:

- For MSS at the drain port of the motor;
- For MSV and MSU at the drain connection of the attached component. The maximum pressure in the drain line is limited by the attached component and its shaft seal.

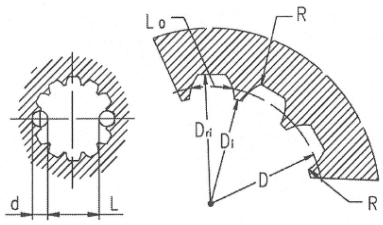
The drain line must be possible for oil to flow freely between motor and attached component and must be led to the tank. The maximum pressure in the drain line is limited by the attached component and its seal.

INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

Standard ANS B92.1-1976, class 5
[m=2.1166; corrected x.m=+0,8]

Fillet Root Side Fit		mm
Number of Teeth	z	12
Diametral Pitch	DP	12/24
Pressure Angle		30°
Pitch Dia.	D	25,4
Major Dia.	Dri	$28,0_{-0,1}$
Minor Dia.	Di	$23,0^{+0,033}$
Space Width [Circular]	Lo	4,308±0,020
Fillet Radius	R	0,2
Max. Measurement between Pin	L	$17,62^{+0,15}$
Pin Dia.	d	4,835±0,001

Above are when hardened



Hardening Specification:
HV=750±50 on the surface
HV=560 at 0,7±0,2 mm case depth
Material 20 MoCr4 EN 10084 or better

MS
Orbitmotoren

Bestelcode

	1	2	3	4	5	6	7	8	9
MS									

Pos.1 - Mounting Flange

omit - SAE A-4 mount, four holes
A - SAE A-2 mount, two holes
F - Magneto mount, four holes
Q - Square mount, four holes
B - Motor with drum brake
S - Short mount
V - Very short mount
U - Ultra short mount
W - Wheel mount

Pos.2 - Port type

omit - Side ports
E - Rear ports

Pos.3 - Displacement code

80 - 80,5 [cm³/rev]
100 - 100,0 [cm³/rev]
125 - 125,7 [cm³/rev]
160 - 159,7 [cm³/rev]
200 - 200,0 [cm³/rev]
250 - 250,0 [cm³/rev]
315 - 314,9 [cm³/rev]
400 - 397,0 [cm³/rev]
475 - 474,6 [cm³/rev]
525 - 522,7 [cm³/rev]
565 - 564,9 [cm³/rev]

Pos.4 - Shaft Extensions*

omit - for **B**, **S**, **U** and **V** mounting flange
C - ø32 straight, Parallel key A10x8x45 DIN6885
CO - ø1¼" straight, Parallel key $^{5}/_{16}$"x$^{5}/_{16}$"x1¼" BS46
K - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
SL - ø34,85 p.t.o. DIN 9611 Form 1
SH - ø1¼" splined 14T ANSI B92.1-1976

Pos. 5 - Shaft Seal Version (see page 19)

omit - Low pressure seal
U - High pressure seal

Pos. 6 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos. 7 - Actuating Direction**

/R - Right
/L - Left

Pos. 8 - Special Features (see page 65)

Pos. 9 - Design Series

omit - Factory specified

NOTES:
* The permissible output torque for shafts must not be exceeded!
** Only for MSB

The hydraulic motors are mangano-phosphatized as standard.

MSY

Orbitmotoren

De MSY motor is een motor vergelijkbaar met de MS motoren maar met een hogere drukval en grotere maximale torque, dus groter vermogen

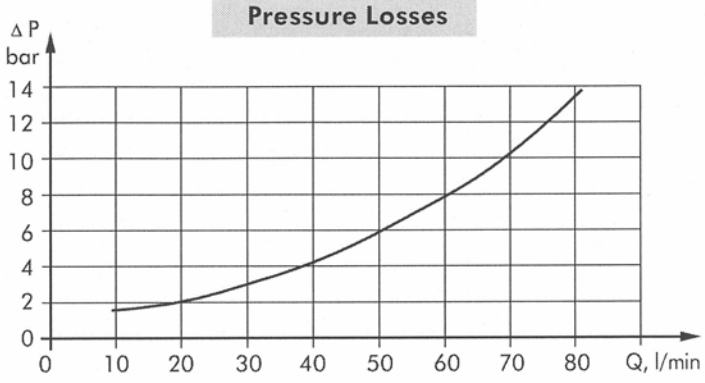
Algemene informatie

Displacement, [cm^3/rev.]	200÷474,6
Max. Speed, [RPM]	155÷375
Max. Torque, [daNm]	56,6÷91
Max. Output, [kW]	9÷18,1
Max. Pressure Drop, [bar]	140÷200
Max. Oil Flow, [l/min]	75
Min. Speed, [RPM]	5÷8
Permissible Shaft Loads, [daN]	P_a=500
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm^2/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm^2/s)	Oil flow in drain line (l/min)
140	20	1,5
	35	1
210	20	3
	35	2

Pressure Losses



MSY

Orbitmotoren

Technische Informatie

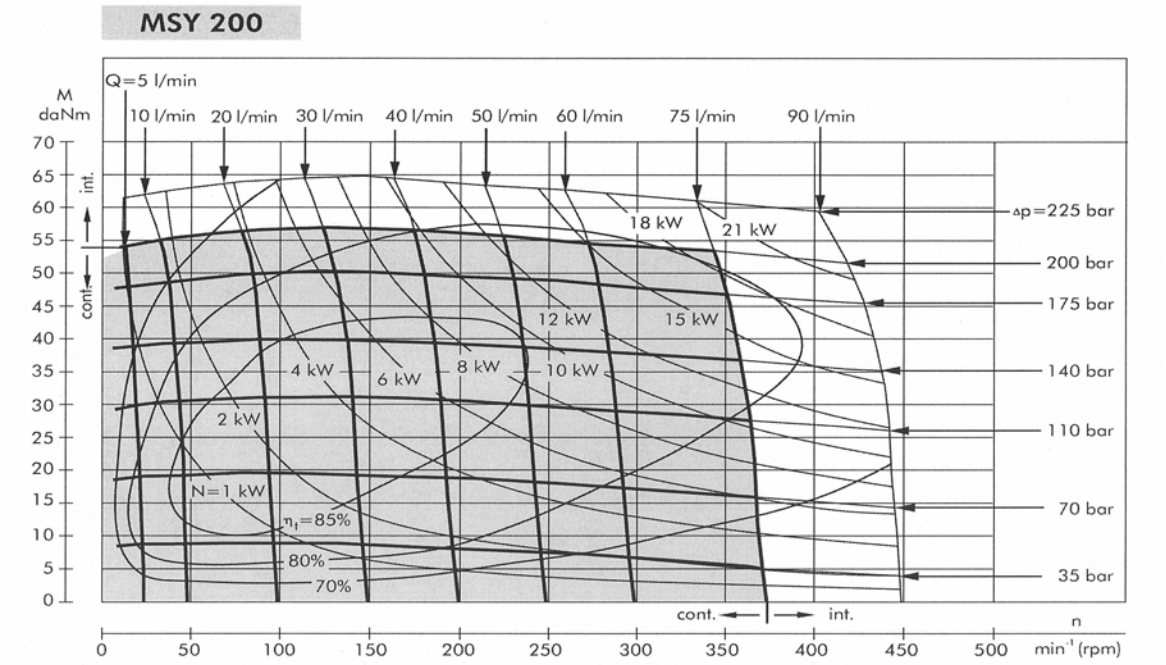
Type		MSY 200	MSY 250	MSY 315	MSY 400	MSY 475
Displacement [cm³/rev.]		200	250	314,9	397	474,6
Max. Speed,	cont.	375	300	240	185	155
[RPM]	Int.*	450	360	285	225	185
Max. Torque	cont.	56,6	70,8	90,0	90,0	91
[daNm]	Int.*	64,5	80,6	96,0	97,0	96
	peak**	65	80,6	108	110	100
Max. Output	cont.	18,1	18,0	17	11,0	9,0
[kW]	int.*	24,0	23,8	20,2	12	11,0
Max. Pressure Drop	cont.	200	200	200	160	140
[bar]	Int.*	225	225	220	175	150
	peak**	225	225	225	200	175
Max. Oil Flow	cont.	75	75	75	75	75
[l/min]	Int.*	90	90	90	90	90
Max. Inlet Pressure	cont.	210	210	210	210	210
[bar]	Int.*	250	250	250	250	250
	peak**	300	300	300	300	300
Max. Return Pressure	cont.	140	140	140	140	140
with Drain Line	Int.*	175	175	175	175	175
[bar]	peak**	210	210	210	210	210
Max. Starting Pressure with Unloaded Shaft, [bar]		8	8	8	8	8
Min. Starting Torque	at max. press. drop cont.	46,2	58,0	73,8	72,0	47
[daNm]	at max. press. drop Int.*	50,7	63,6	79,2	78,7	55
Min. Speed***, [RPM]		6	6	5	5	5
Weight, [kg]	MSY (F)	11,2	11,7	12,4	13,3	14,4
For Rear Ports	MSYW	11,7	12,2	12,9	13,8	15,0
+0,4 kg	MSYQ	11,6	12,1	12,8	13,7	14,9

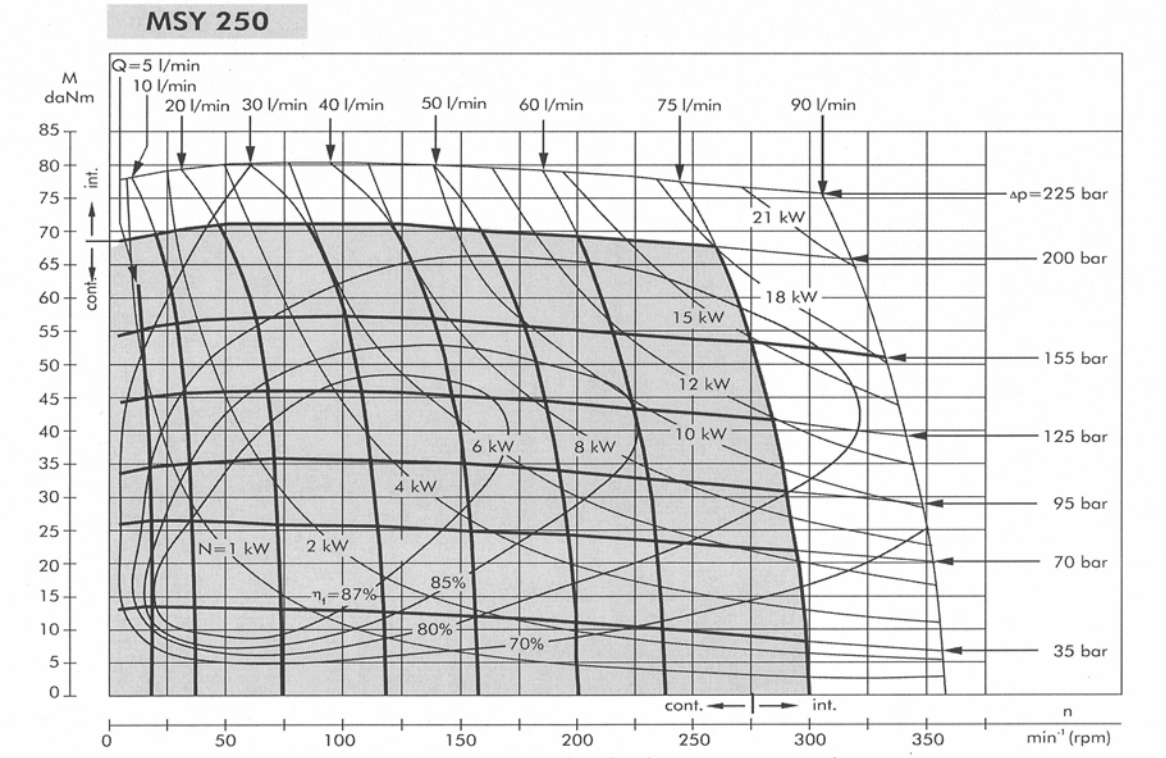
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 10 tot 15 minuten onbelast laat draaien voor de motor volledig te belasten.

MSY

Orbitmotoren

Functiediagrammen



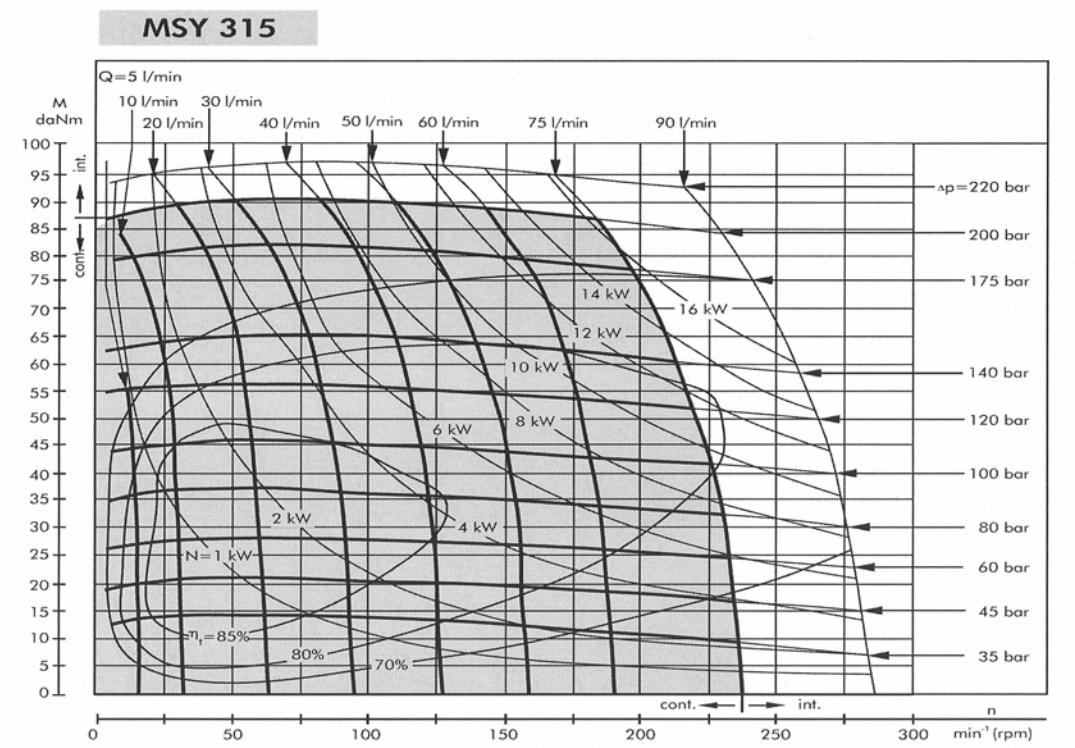


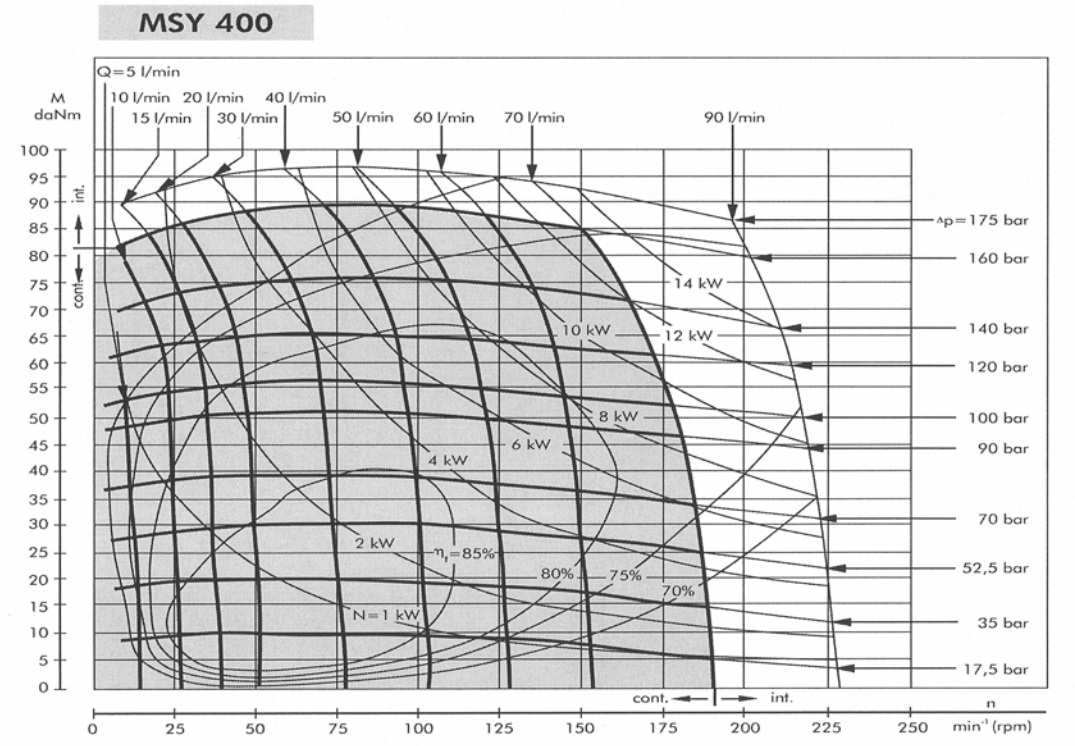
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MSY

Orbitmotoren

Functiediagrammen



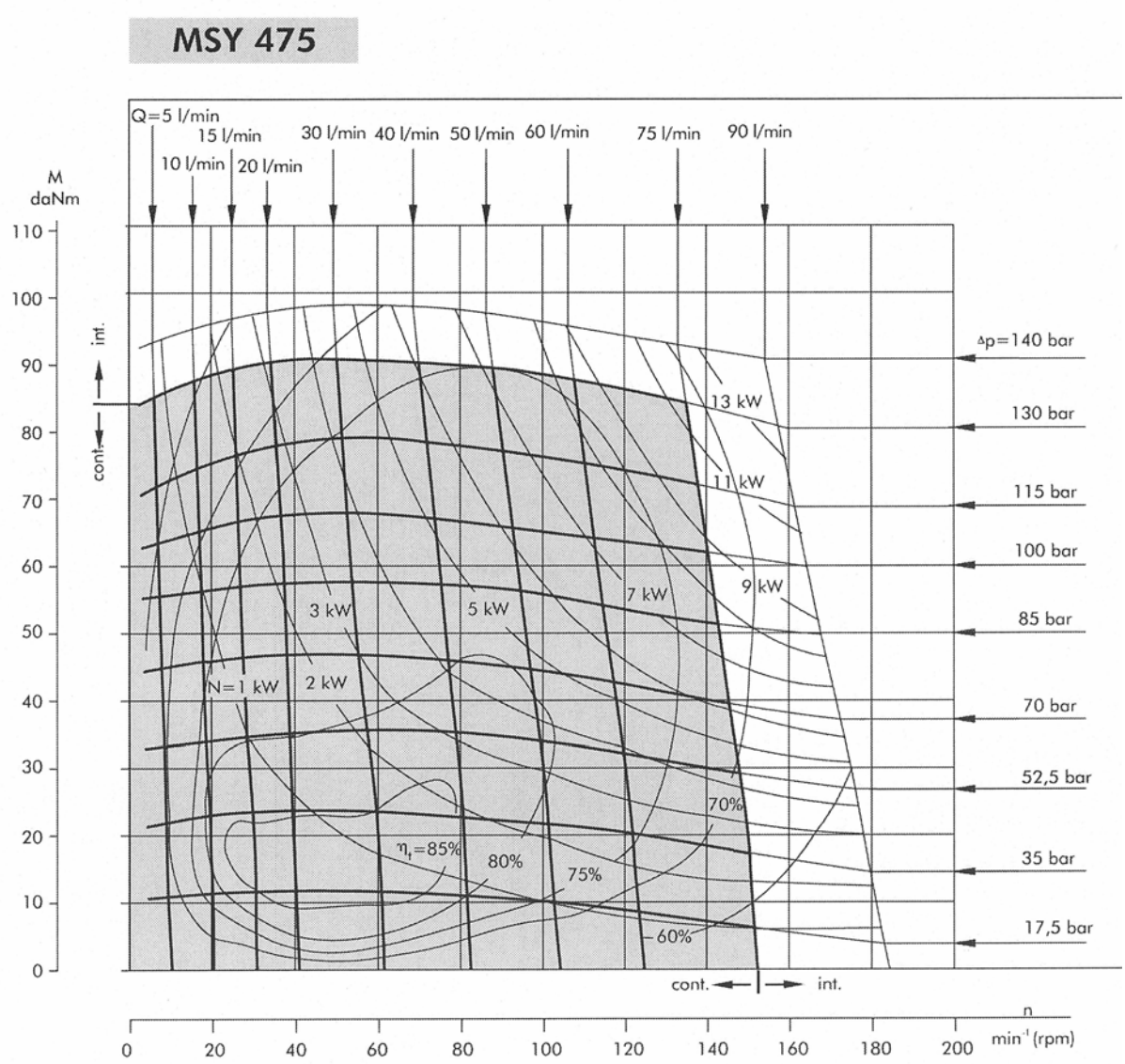


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MSY

Orbitmotoren

Functiediagrammen



The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MSY

Orbitmotoren

Bestelgegevens

	1	2	3	4	5	6	7	8	9
MSY									

Pos.1 - Mounting Flange

omit - SAE A-4 mount, four holes
A - SAE A-2 mount, two holes
F - Magneto mount, four holes
Q - Square mount, four holes
B - Motor with drum brake
S - Short mount
V - Very short mount
W - Wheel mount

Pos.2 - Port type

omit - Side ports
E - Rear ports

Pos.3 - Displacement code

200 - 200,0 [cm^3/rev]
250 - 250,0 [cm^3/rev]
315 - 314,9 [cm^3/rev]
400 - 397,0 [cm^3/rev]
475 - 474,5 [cm^3/rev]

Pos. 4 - Shaft Extensions*

omit - for **B**, **S** and **V** mounting flange
C - ø32 straight, Parallel key A10x8x45 DIN6885
K - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
SL - ø34,85 p.t.o. DIN 9611 Form 1
SH - ø1¼" splined 14T ANS B92.1-1976

Pos. 5 - Shaft Seal Version (see page 19)

omit - Low pressure seal
U - High pressure seal

Pos. 6 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos. 7 - Actuating Direction**

/R - Right
/L - Left

Pos. 8 - Special Features (see page 65)

Pos. 9 - Design Series

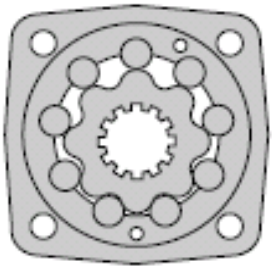
omit - Factory specified

NOTES:

* The permissible output torque for shafts must not be exceeded!
** Only for MSYB

The hydraulic motors are mangano-phosphatized as standard.

MT
Orbitmotoren



De krachtige MT motoren worden geleverd in de bouwgrote van 160 tot 725 cm³ en biedt een vermogen tot 40kW.

De MT is zeer geschikt in systemen met een piekdruk tot 250 bar.

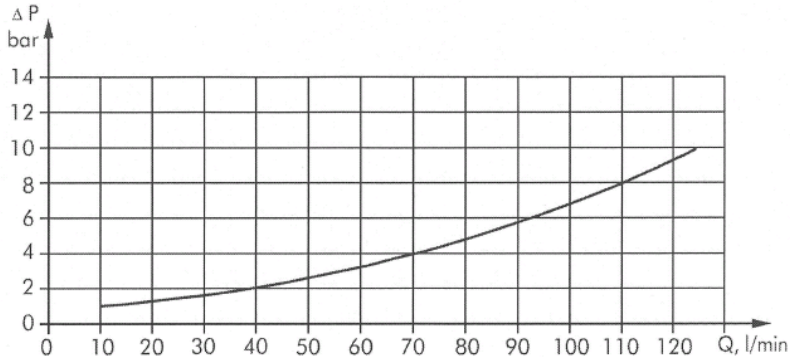
Algemene informatie

Displacement, [cm³/rev.]	161,1÷724,3
Max. Speed, [RPM]	172÷625
Max. Torque, [daNm]	47÷122
Max. Output, [kW]	20,2÷33,5
Max. Pressure Drop, [bar]	120÷200
Max. Oil Flow, [l/min]	100÷125
Min. Speed, [RPM]	5÷10
Permissible Shaft Loads, [daN]	P_a=1000
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm²/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm²/s)	Oil flow in drain line (l/min)
140	20	2,5
	35	1,5
210	20	5
	35	3

Pressure Losses



MT
Orbitmotoren

Technische informatie

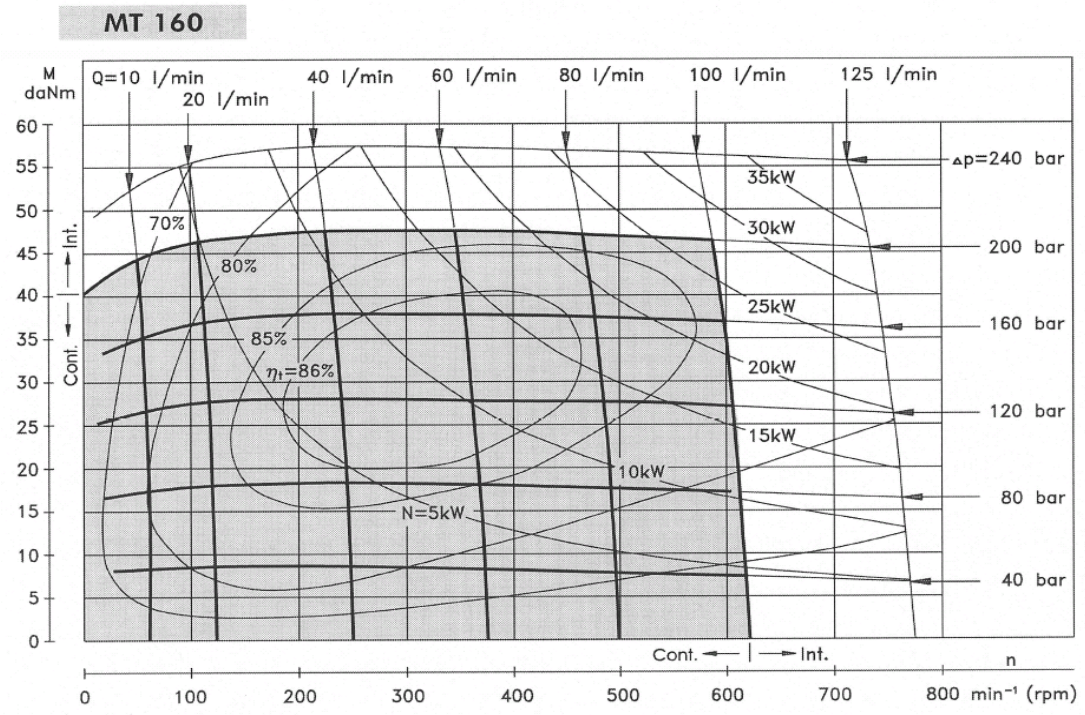
Type		MT 160	MT 200	MT 250	MT 315	MT 400	MT 500	MT 630	MT 725
Displacement [cm³/rev.]		161,1	201,4	251,8	326,3	410,9	523,6	631,2	724,3
Max. Speed,	cont.	625	625	500	380	305	240	197	172
[RPM]	Int.*	780	750	600	460	365	285	240	210
Max. Torque	cont.	47	59	73	95	108	122	122	120
[daNm]	Int.*	56	71	88	114	126	137	140	140
	peak**	66	82	102	133	144	160	165	165
Max. Output	cont.	26,5	33,5	33,5	33,5	30	26,5	24,3	20,2
[kW]	int.*	32	40	40	40	35	30	27,5	26,8
Max. Pressure Drop	cont.	200	200	200	200	180	160	140	120
[bar]	Int.*	240	240	240	240	210	180	160	140
	peak**	280	280	280	280	240	210	190	165
Max. Oil Flow	cont.	100	125	125	125	125	125	125	125
[l/min]	Int.*	125	150	150	150	150	150	151,4	151,4
Max. Inlet Pressure	cont.	210	210	210	210	210	210	210	210
[bar]	Int.*	250	250	250	250	250	250	250	250
	peak**	300	300	300	300	300	300	300	300
Max. Return Pressure	cont.	140	140	140	140	140	140	140	140
with Drain Line	Int.*	175	175	175	175	175	175	175	175
[bar]	peak**	210	210	210	210	210	210	210	210
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	10	10	10	10	10
Min. Starting Torque	at max. press. drop cont.	34	43	53	74	84	95	95	95
[daNm]	at max. press. drop Int.*	41	52	63	89	97	106	110	115
Min. Speed***, [RPM]		10	9	8	7	6	5	5	5
Weight, [kg]	MT	20	20,5	21	22	23	24	23,5	24,5
For Rear Ports	MTW	22	22,5	23	24	25	26	25,5	26,5
+0,45 kg	MTS	15	15,5	16	17	18	19	18,5	19,5
	MTV	11	11,5	12	13	14	15	14,5	15,5

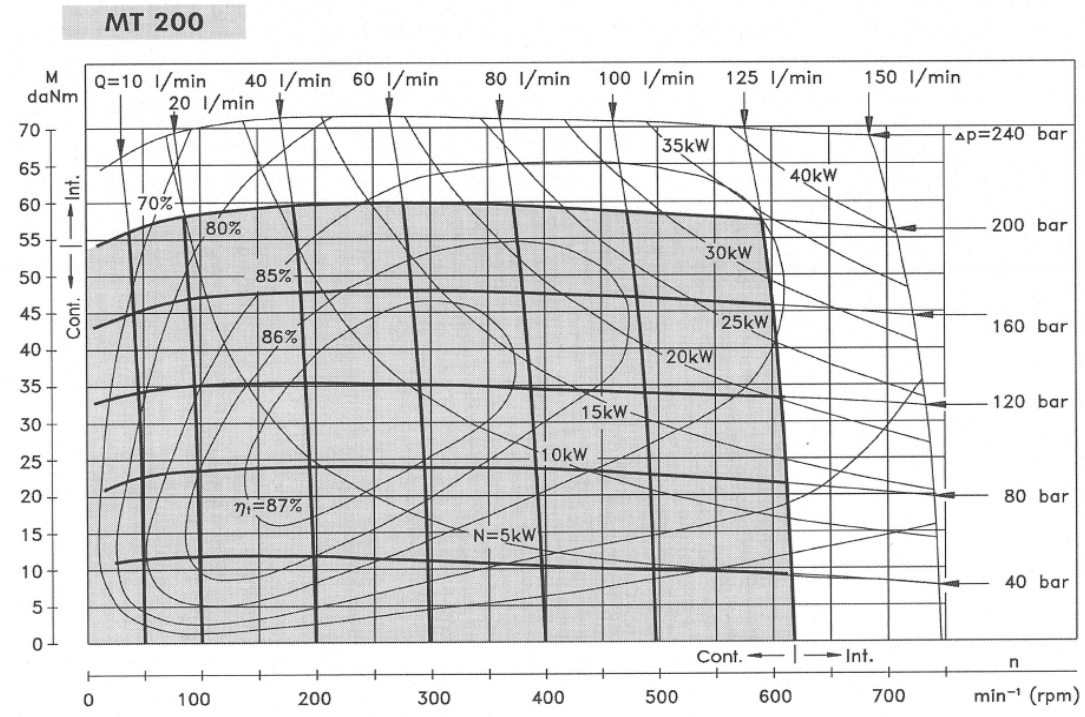
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 10 tot 15 minuten onbelast laat draaien voor de motor volledig te belasten.

MT

Orbitmotoren

Functiediagrammen





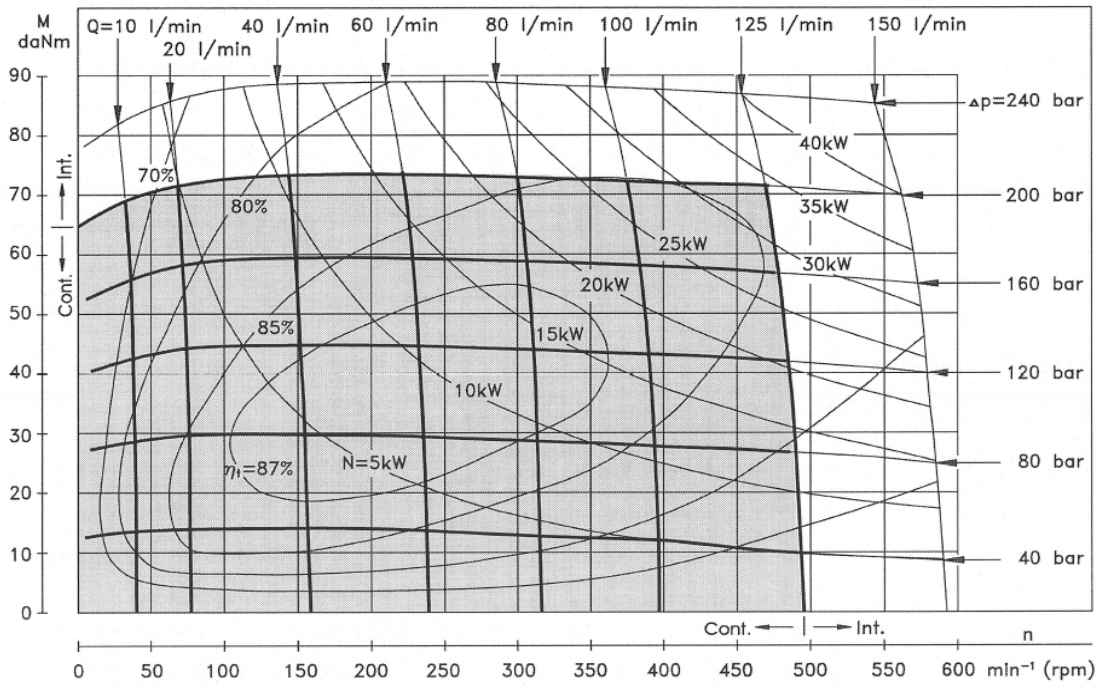
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MT

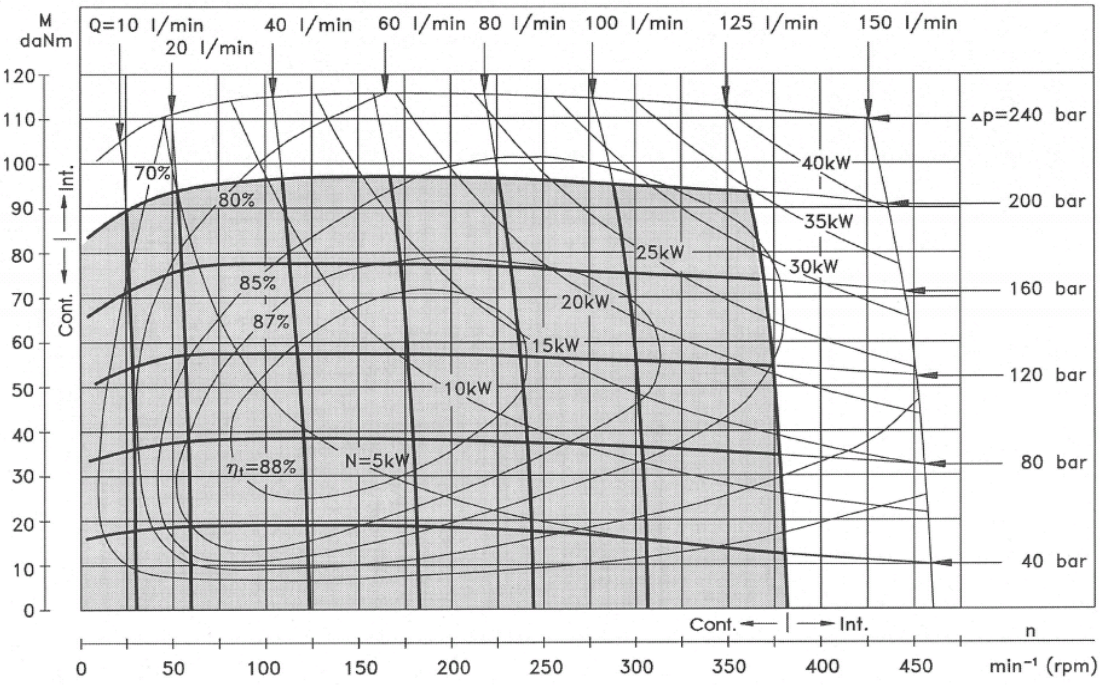
Orbitmotoren

Functiediagrammen

MT 250



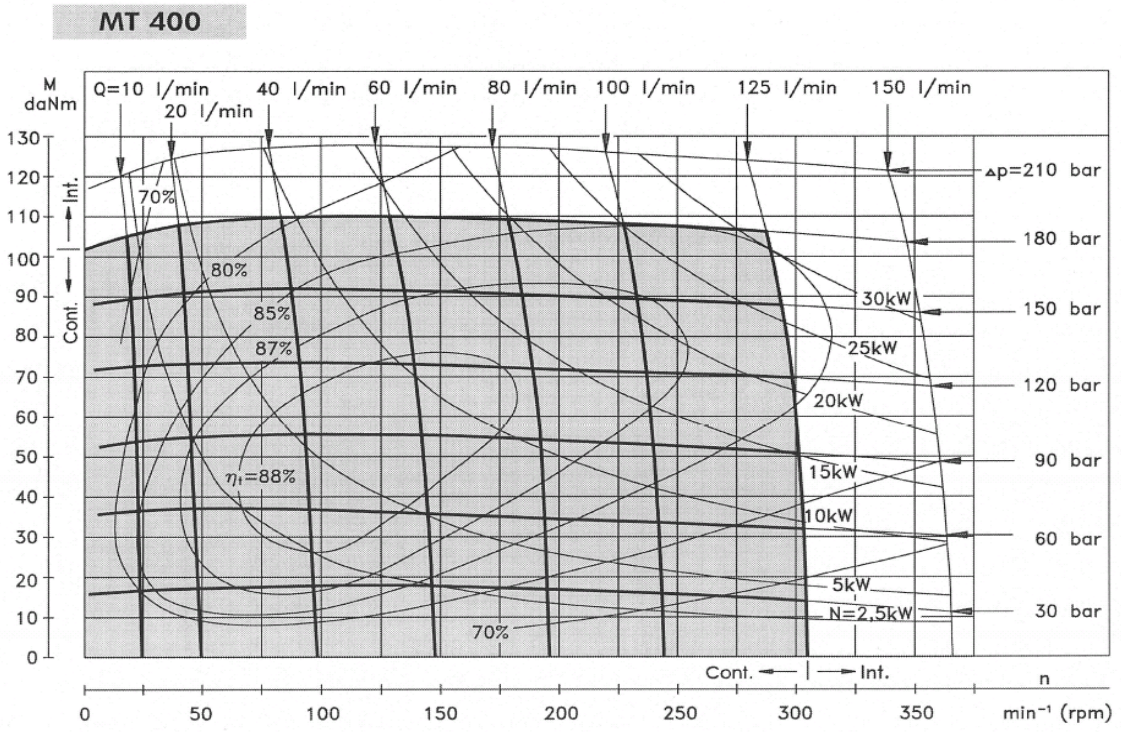
MT 315

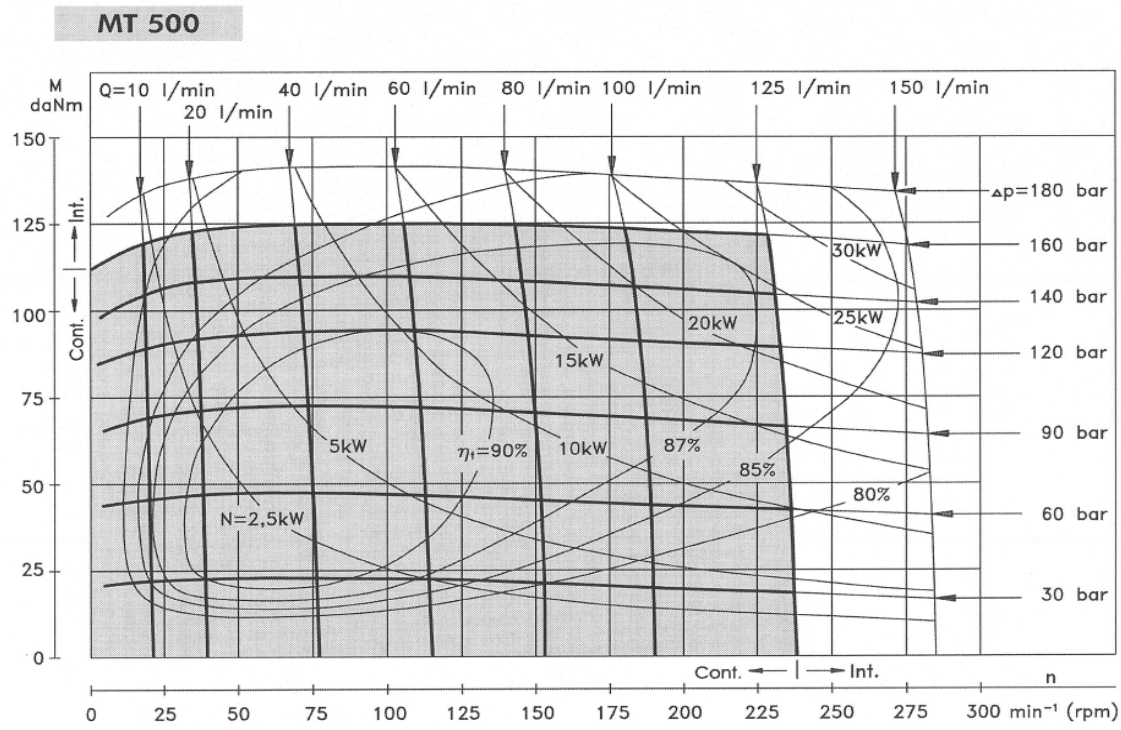


MT

Orbitmotoren

Functiediagrammen





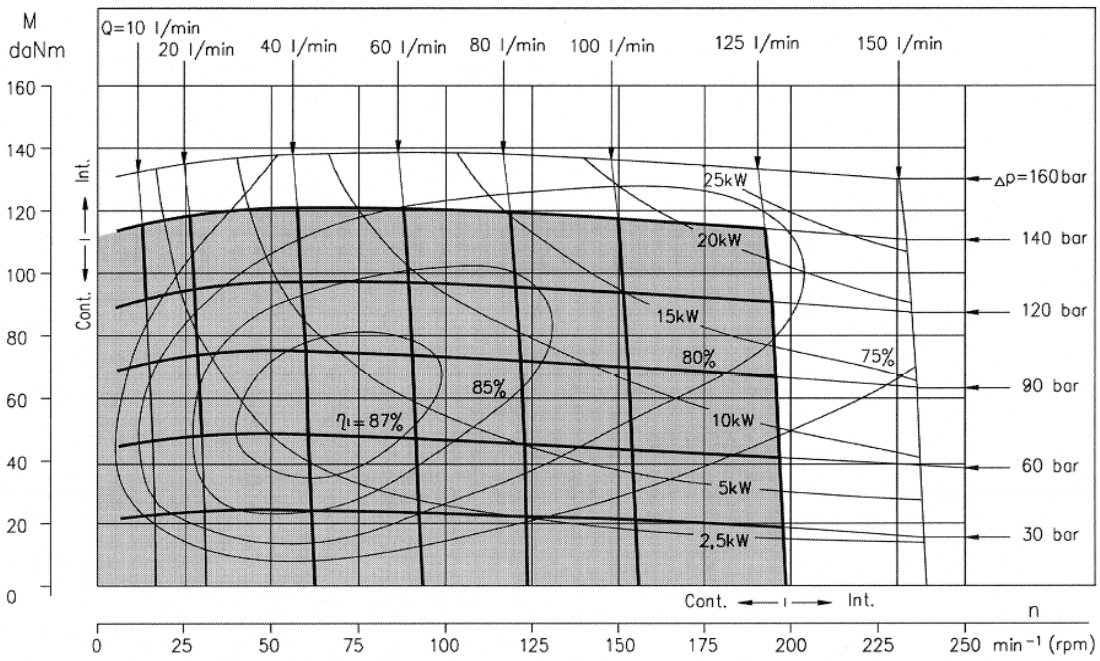
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MT

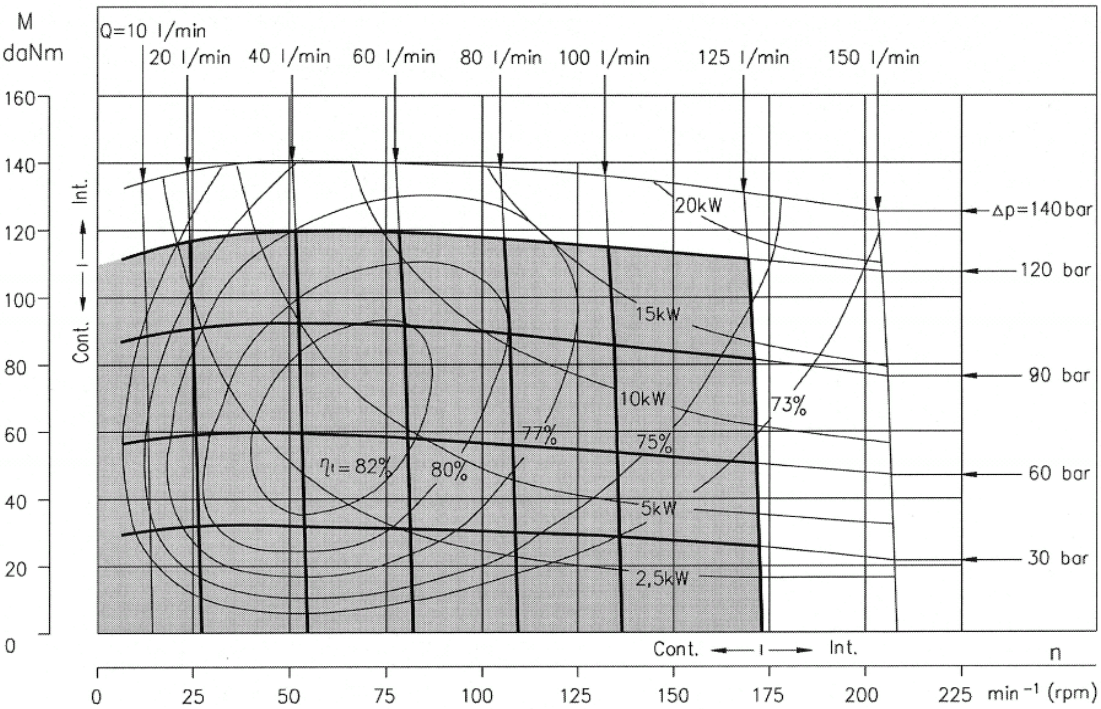
Orbitmotoren

Functiediagrammen

MT 630



MT 725

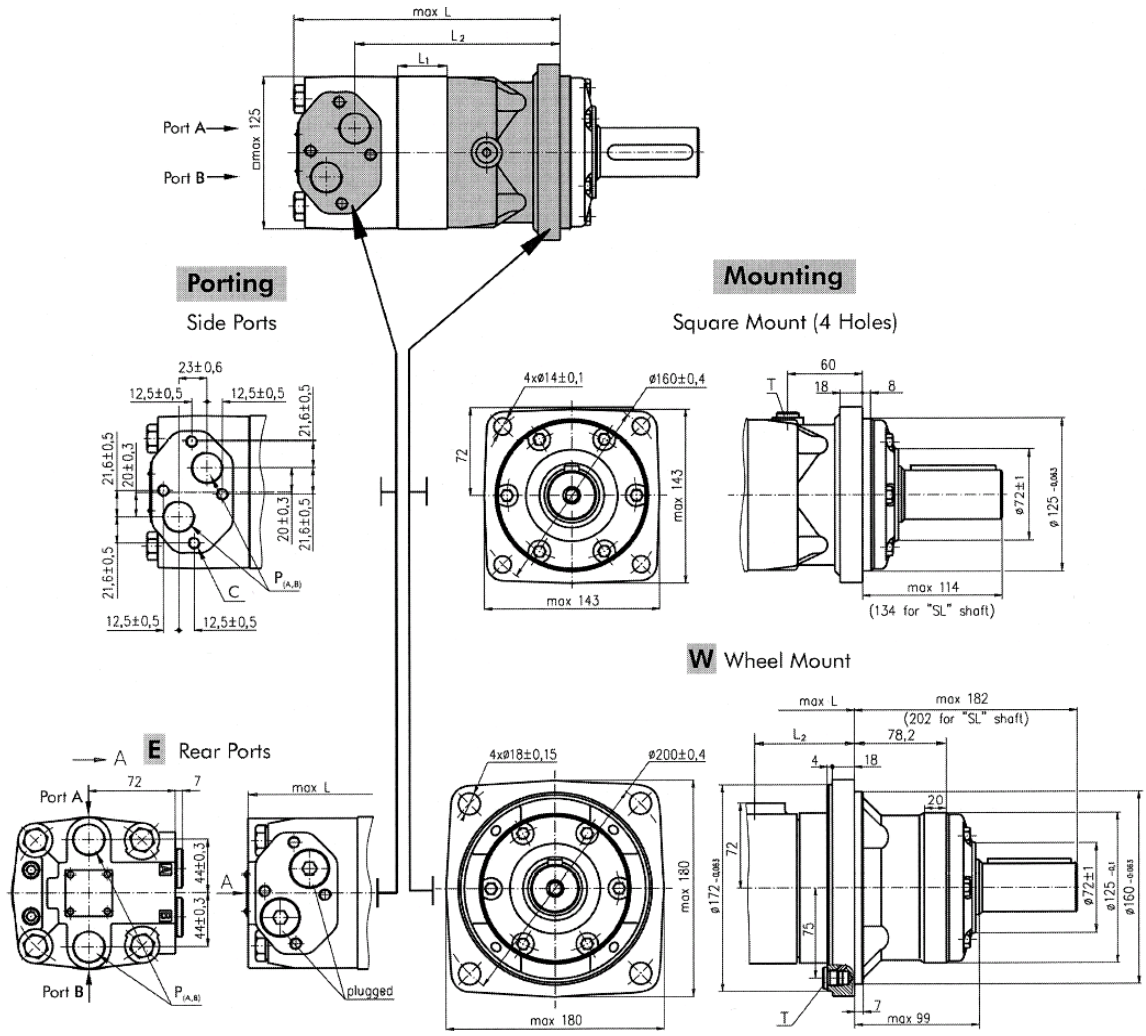


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MT

Orbitmotoren

Afmetingen en uitvoeringen



Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

C: 4xM10-10 mm depth
$P_{(A,B)}$: 2xG3/4 or 2xM27x2-17 mm depth
T: G 1/4 or M14x1,5 - 12 mm depth (plugged)

Type	L, mm	Type	L, mm	L_2, mm	Type	L, mm	Type	L, mm	L_2, mm	*L_1, mm
MT 160	190	MTE 160	200	140	MTW 160	123	MTWE 160	133	73	16,5
MT 200	195	MTE 200	205	145	MTW 200	128	MTWE 200	138	78	21,5
MT 250	201	MTE 250	211	151	MTW 250	134	MTWE 250	144	84	27,8
MT 315	211	MTE 315	221	161	MTW 315	144	MTWE 315	154	94	37,0
MT 400	221	MTE 400	231	171	MTW 400	154	MTWE 400	164	104	47,5
MT 500	235	MTE 500	245	185	MTW 500	168	MTWE 500	178	118	61,5
MT 630	231	MTE 630	241	181	MTW 630	164	MTWE 630	174	114	57,5
MT 725	240	MTE 725	250	190	MTW 725	173	MTWE 725	183	123	66,5

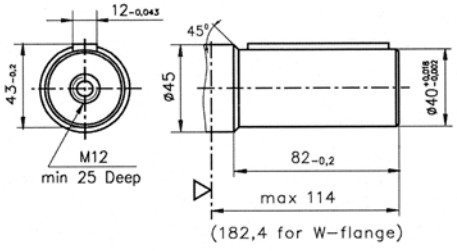
* The width of the roll-gerotor is 3,5 mm greater than L_1.

MT

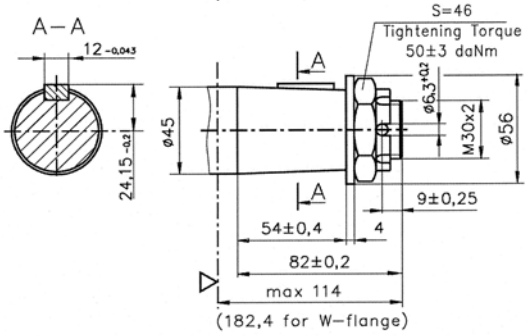
Orbitmotoren

Mogelijke assen

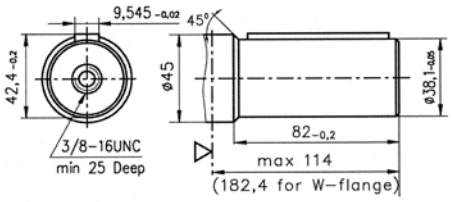
C -ø40 straight, Parallel key A12x8x70 DIN 6885
Max. Torque 132,8 daNm



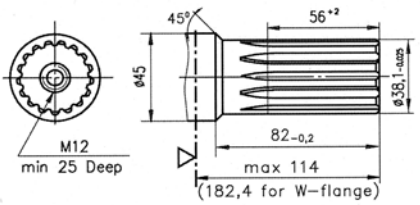
K -tapered 1:10, Parallel key B12x8x28 DIN 6885
Max. Torque 210,7 daNm



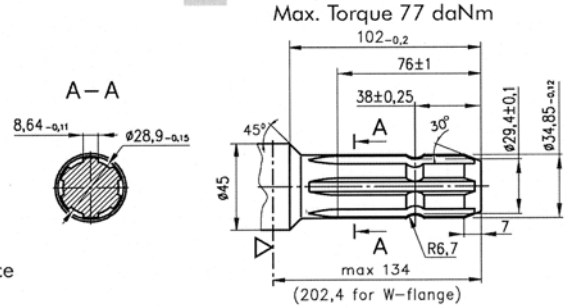
CO -ø1½" straight, Parallel key ⅜"x ⅜"x 2¼" BS46
Max. Torque 132,8 daNm



SH -ø1½" splined 17T, DP 12/24 ANSI B92.1-1976
Max. Torque 132,8 daNm



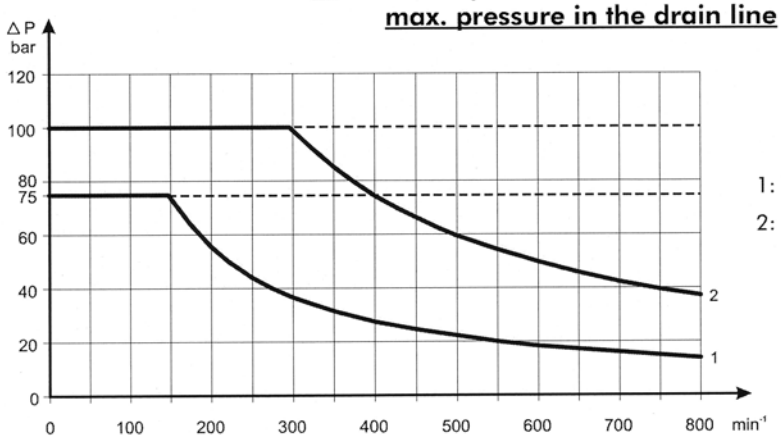
SL -ø34,85 p.t.o. DIN 9611 Form 1
Max. Torque 77 daNm



▽ - Motor Mounting Surface

MAX. PERMISSIBLE SHAFT SEAL PRESSURE for MT motors

Max. return pressure without drain line or max. pressure in the drain line



1: Drawing for Standard Shaft Seal
2: Drawing for High Pressure Seal ("**U**" Seal)

——— - continuous operations
- - - - - - intermittent operations

MT

Orbitmotoren

Bestelgegevens

ORDER CODE

	1	2	3	4	5	6	7	8
M T								

Pos.1 - Mounting Flange

omit - Square mount, four holes
S - Short mount
V - Very short mount
W - Wheel mount

Pos.2 - Port type

omit - Side ports
E - Rear ports

Pos.3 - Displacement code

160 - 161,1 [cm³/rev]
200 - 201,4 [cm³/rev]
250 - 251,8 [cm³/rev]
315 - 326,3 [cm³/rev]
400 - 410,9 [cm³/rev]
500 - 523,6 [cm³/rev]
630 - 631,2 [cm³/rev]
725 - 724,3 [cm³/rev]

Pos.4 - Shaft Extensions*

omit - for **S** and **V** mounting flange
C - ø40 straight, Parallel key A12x8x70 DIN6885
CO - ø1½ " straight, Parallel key $^{3}/_{8}$"x$^{3}/_{8}$"x2¼" BS46
K - ø45 tapered 1:10, Parallel key B12x8x28 DIN6885
SL - ø34,85 p.t.o. DIN 9611 Form 1
SH - ø1½" splined 17T ANS B92.1-1976

Pos.5 - Shaft Seal Version (see page 38)

omit - Low pressure seal
U - High pressure seal

Pos.6 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

Pos.7 - Special Features (see page 65)

Pos.8 - Design Series

omit - Factory specified

NOTES:

* The permissible output torque for shafts must not be exceeded!

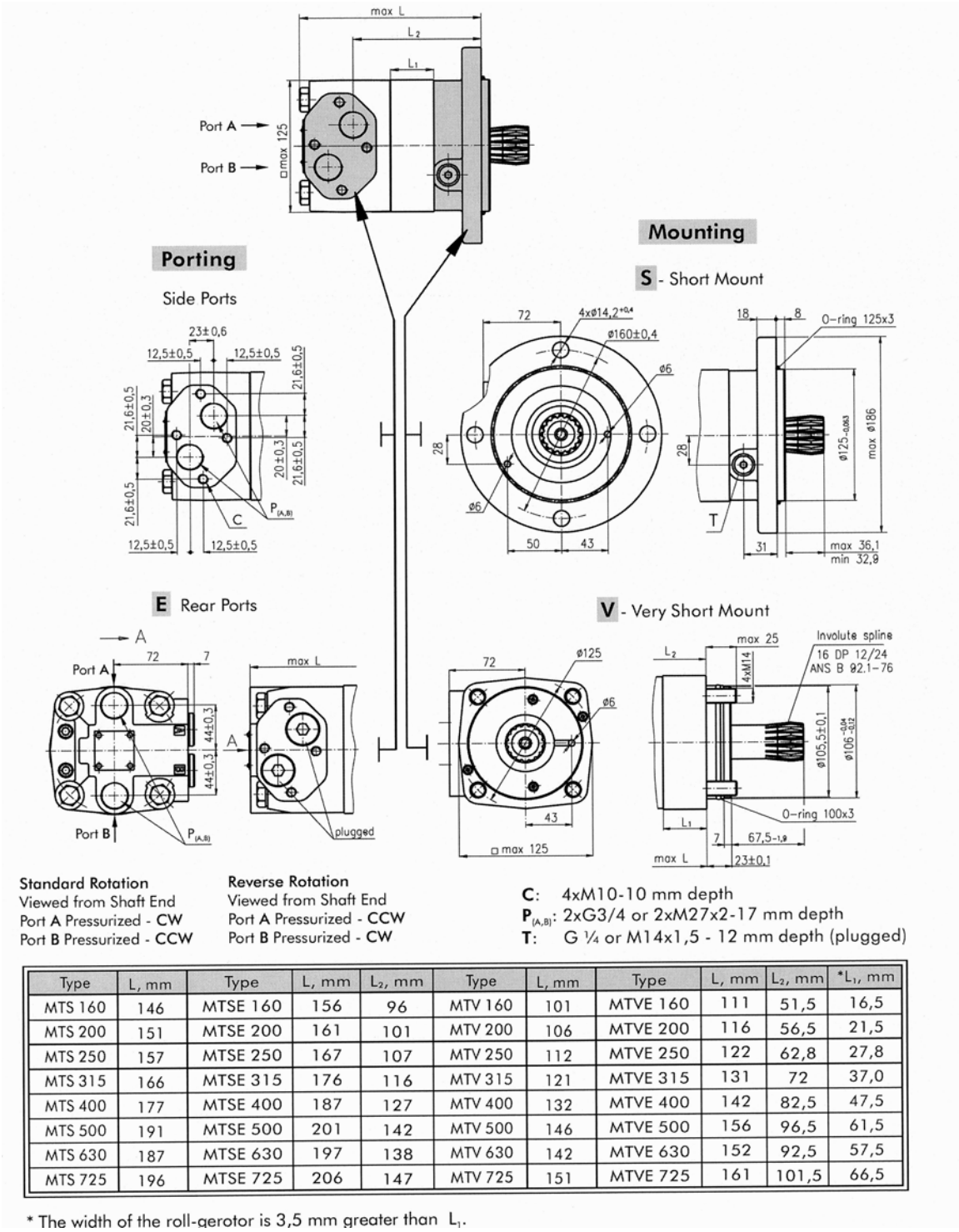
The hydraulic motors are mangano-phosphatized as standard.

Overige gegevens op aanvraag leverbaar

MTS, MTV

Orbitmotoren

Afmetingen en uitvoeringen MTS, MTV



Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW

C: 4xM10-10 mm depth
$P_{(A,B)}$: 2xG3/4 or 2xM27x2-17 mm depth
T: G ¼ or M14x1,5 - 12 mm depth (plugged)

Type	L, mm	Type	L, mm	L_2, mm	Type	L, mm	Type	L, mm	L_2, mm	*L_1, mm
MTS 160	146	MTSE 160	156	96	MTV 160	101	MTVE 160	111	51,5	16,5
MTS 200	151	MTSE 200	161	101	MTV 200	106	MTVE 200	116	56,5	21,5
MTS 250	157	MTSE 250	167	107	MTV 250	112	MTVE 250	122	62,8	27,8
MTS 315	166	MTSE 315	176	116	MTV 315	121	MTVE 315	131	72	37,0
MTS 400	177	MTSE 400	187	127	MTV 400	132	MTVE 400	142	82,5	47,5
MTS 500	191	MTSE 500	201	142	MTV 500	146	MTVE 500	156	96,5	61,5
MTS 630	187	MTSE 630	197	138	MTV 630	142	MTVE 630	152	92,5	57,5
MTS 725	196	MTSE 725	206	147	MTV 725	151	MTVE 725	161	101,5	66,5

* The width of the roll-gerotor is 3,5 mm greater than L_1.

Overige gegevens op aanvraag verkrijgbaar

MTM
Orbitmotoren

De krachtige nieuwe MTM motoren worden geleverd in de bouwgrote van 200 tot 725 cm³ en biedt een vermogen tot 41kW.
De MTM is zeer geschikt in een systeem met drukken tot 420 bar.

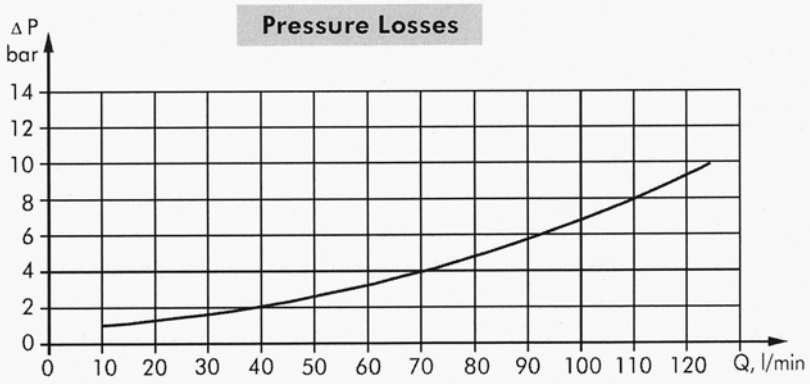
Algemene informatie

Displacement,	[cm³/rev.]	201,4÷724,3
Max. Speed,	[RPM]	625÷170
Max. Torque,	[daNm]	72÷175
Max. Output,	[kW]	28÷41
Max. Pressure Drop,	[bar]	250÷160
Max. Oil Flow,	[l/min]	125
Min. Speed,	[RPM]	5
Permissible Shaft Loads,	[daN]	P_a=1000
Pressure fluid		Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range,	[°C]	-30÷90
Optimal Viscosity range,	[mm²/s]	20÷75
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm²/s)	Oil flow in drain line (l/min)
140	20	2,5
	35	1,5
210	20	5
	35	3

Pressure Losses



MTM

Orbitmotoren

Technische informatie

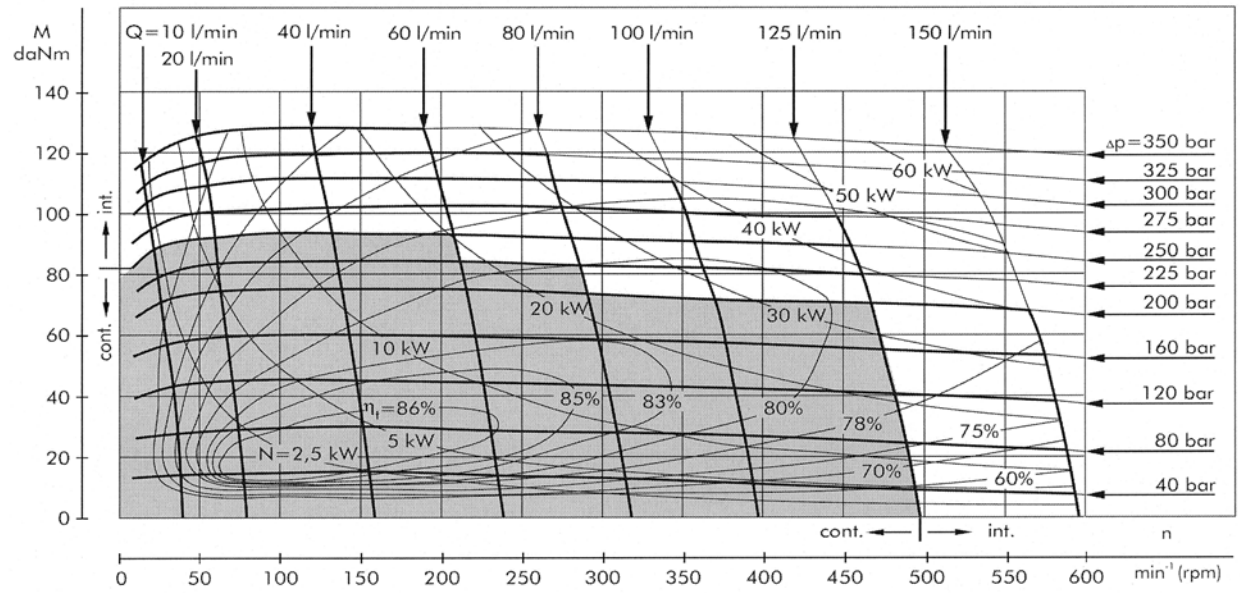
Type		MTM 200	MTM 250	MTM 315	MTM 400	MTM 470	MTM 500	MTM 630	MTM 725
Displacement [cm³/rev.]		201,4	251,8	326,3	410,9	475	523,6	631,2	724
Max. Speed, [RPM]	cont.	625	500	380	305	260	240	185	170
	Int.*	750	600	460	365	315	285	225	215
Max. Torque [daNm]	cont.	72	90	116	147	171	172	175	160
	Int.*	102	128	163	206	215	215	215	192
	peak**	115	144	186	235	240	240	250	240
Max. Output [kW]	cont.	41	41	41	41	41	37,5	28	26
	int.*	65	70	70	75	55	51	42	40
Max. Pressure Drop [bar]	cont.	250	250	250	250	250	230	185	160
	Int.*	350	350	350	350	315	280	225	210
	peak**	400	400	400	400	350	320	270	260
Max. Oil Flow [l/min]	cont.	125	125	125	125	125	125	125	125
	Int.*	150	150	150	150	150	150	150	150
Max. Inlet Pressure [bar]	cont.	270	270	270	270	270	270	270	270
	Int.*	370	370	370	370	370	370	370	370
	peak**	420	420	420	420	420	420	420	420
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line , [bar]	cont. 0-100 RPM	75	75	75	75	75	75	75	75
	cont. 100-300 RPM	40	40	40	40	40	40	40	40
	cont. >300 RPM	20	20	20	20	20	-	-	-
	Int.* 0-max. RPM	75	75	75	75	75	75	75	75
Max. Return Pressure with Drain Line [bar]	cont.	270	270	270	270	270	270	270	270
	Int.*	370	370	370	370	370	370	370	370
	Peak**	420	420	420	420	420	420	420	420
Max. Starting Pressure with Unloaded Shaft, [bar]		6	6	6	6	6	6	6	6
Min. Starting Torque [daNm]		60	75	97	122	142	143	145	148
Min. Speed***, [RPM]		5	5	5	5	5	5	5	5
Weight, [kg]	MTM	26,9	27,3	28,1	29	29,7	30,2	29,7	31
	MTMW	27,4	27,8	28,6	29,5	30,2	30,7	30,2	31,5
	MTMV	15,7	16,1	16,9	17,8	18,5	19	18,5	19,8

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 10 tot 15 minuten onbelast laat draaien voor de motor volledig te belasten.

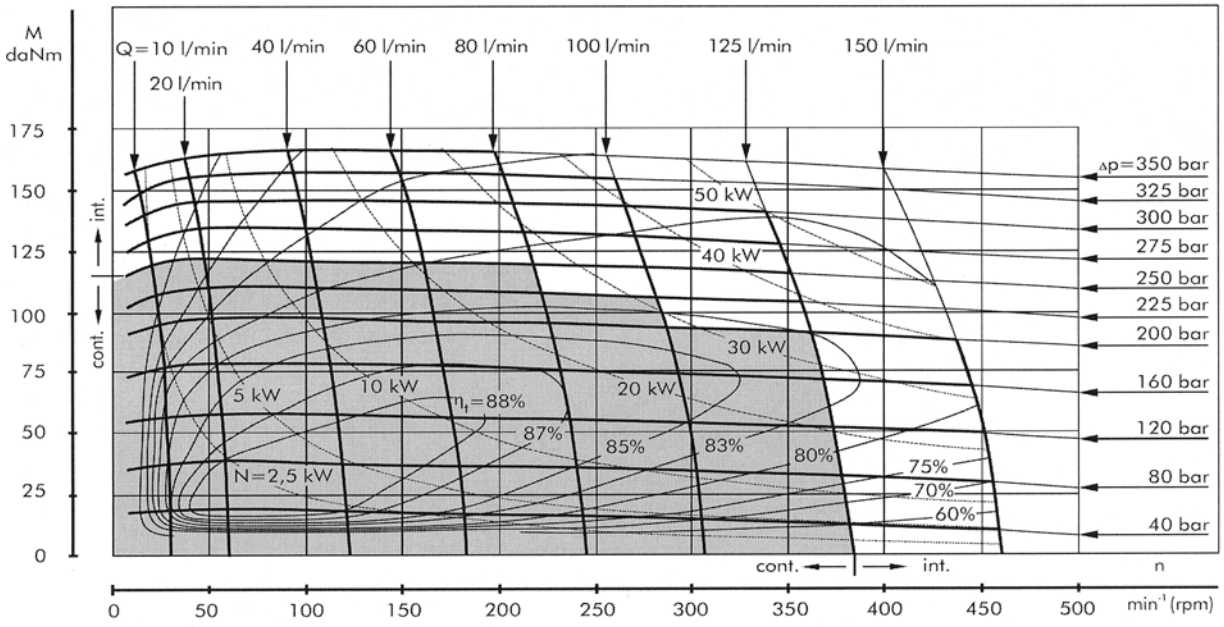
MTM
Orbitmotoren

Functiediagrammen

MTM 250



MTM 315

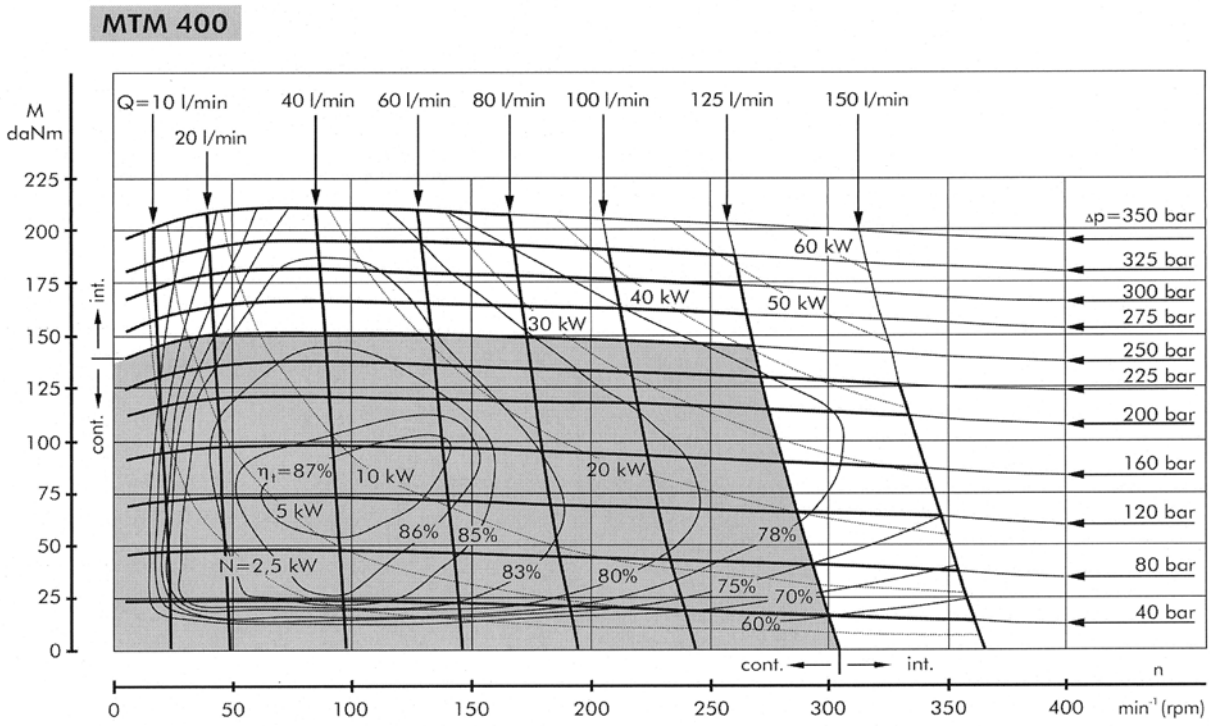


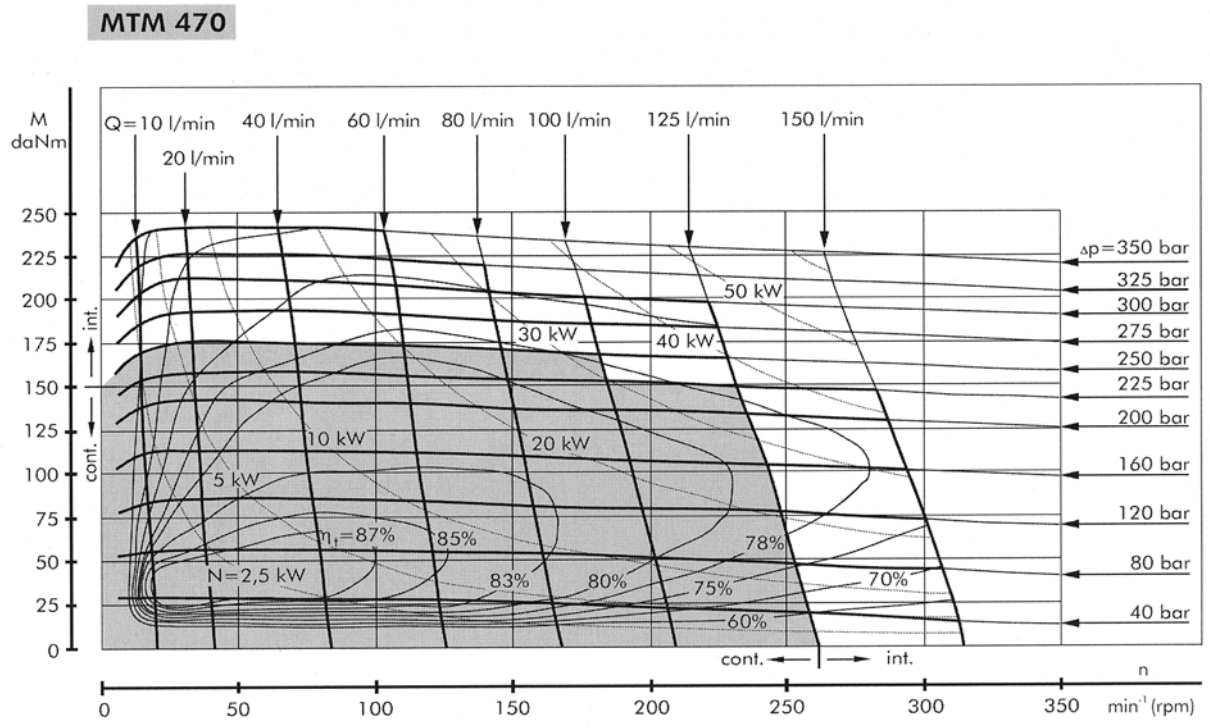
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MTM

Orbitmotoren

Functiediagrammen



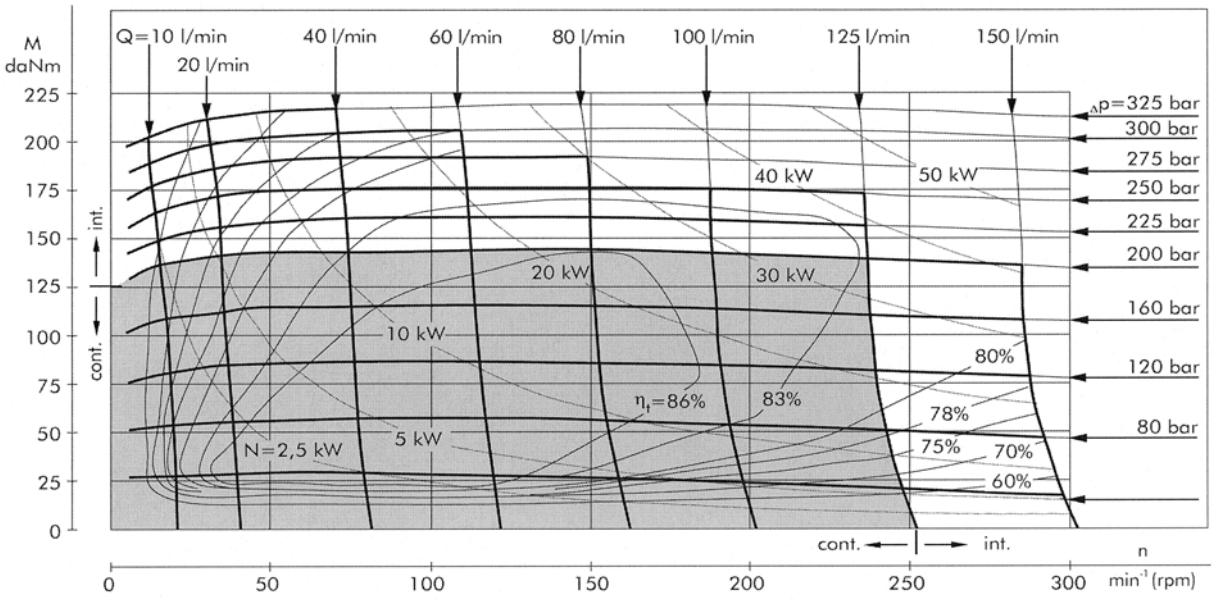


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

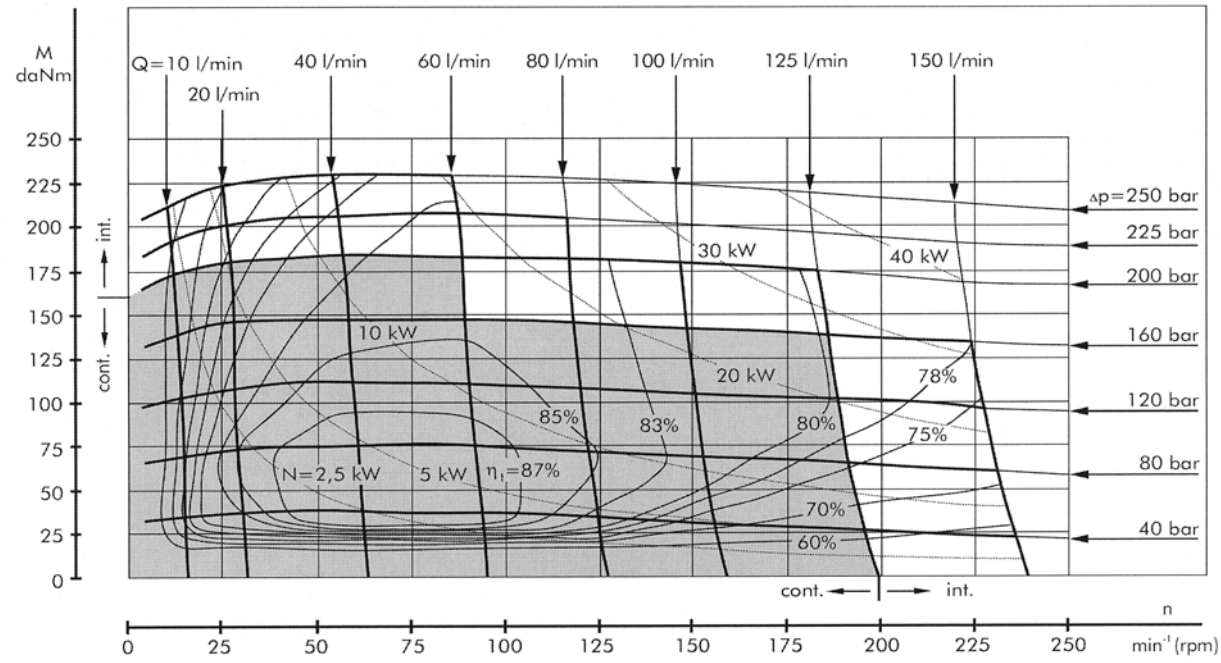
MTM
Orbitmotoren

Functiediagrammen

MTM 500



MTM 630



The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MTM

Orbitmotoren

Bestelgegevens

ORDER CODE

	1	2	3	4	5	6
MTM						

Pos.1 - Mounting Flange

- omit - 4-Bolt flange, spigot dia. ø160, BC ø200
- C - 4-Bolt flange, spigot dia. ø125, BC ø160
- W - Wheel motor
- V - Very short mount, 9xM12 mounting bolts
- 6V - Very short mount, 6xM12 mounting bolts

Pos.2 - Displacement code

- 200 - 201,4 [cm³/rev]
- 250 - 251,8 [cm³/rev]
- 315 - 326,3 [cm³/rev]
- 400 - 410,9 [cm³/rev]
- 470 - 475,0 [cm³/rev]
- 500 - 523,6 [cm³/rev]
- 630 - 631,2 [cm³/rev]
- 725 - 724,3 [cm³/rev]

Pos. 3 - Shaft Extensions*

- C - ø40 straight, Parallel key A12x8x70 DIN6885
- K - ø45 tapered 1:10, Parallel key B12x8x28 DIN6885
- SH - ø1½" splined 17T ANSI B92.1-1976

Pos. 4 - Ports

- omit - BSPP (ISO 228)

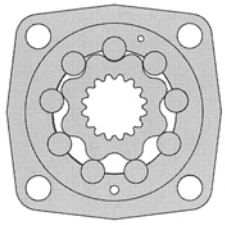
Pos. 5 - Special Features (see page 65)

Pos. 6 - Design Series

- omit - Factory specified

Overige gegevens op aanvraag beschikbaar

MV
Orbitmotoren



De MV motor is een zeer krachtige motor van
315 tot 800 cm³ en is verkrijgbaar tot 64KW

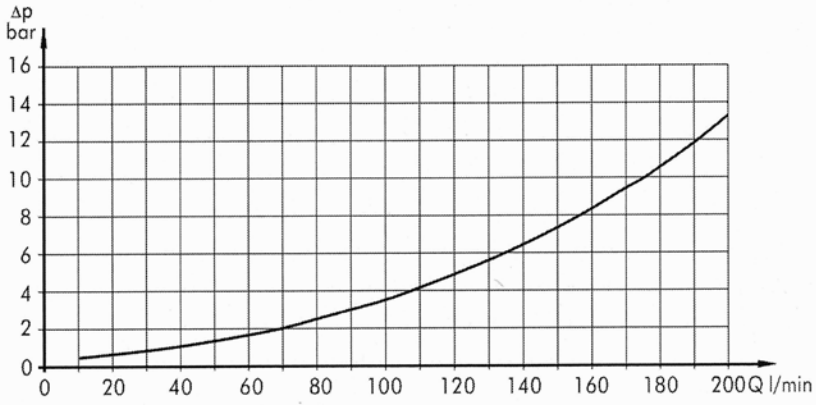
Algemene informatie

Displacement, [cm³/rev.]	314,5÷801,8
Max. Speed, [RPM]	250÷510
Max. Torque, [daNm]	92÷188
Max. Output, [kW]	42,5÷53,5
Max. Pressure Drop, [bar]	160÷200
Max. Oil Flow, [l/min]	160÷200
Min. Speed, [RPM]	5÷10
Permissible Shaft Loads, [daN]	P_a=1500
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, [°C]	-30÷90
Optimal Viscosity range, [mm²/s]	20÷75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop (bar)	Viscosity (mm²/s)	Oil flow in drain line (l/min)
140	20	3
	35	2
210	20	6
	35	4

Pressure Losses



MV

Orbitmotoren

Technische Informatie

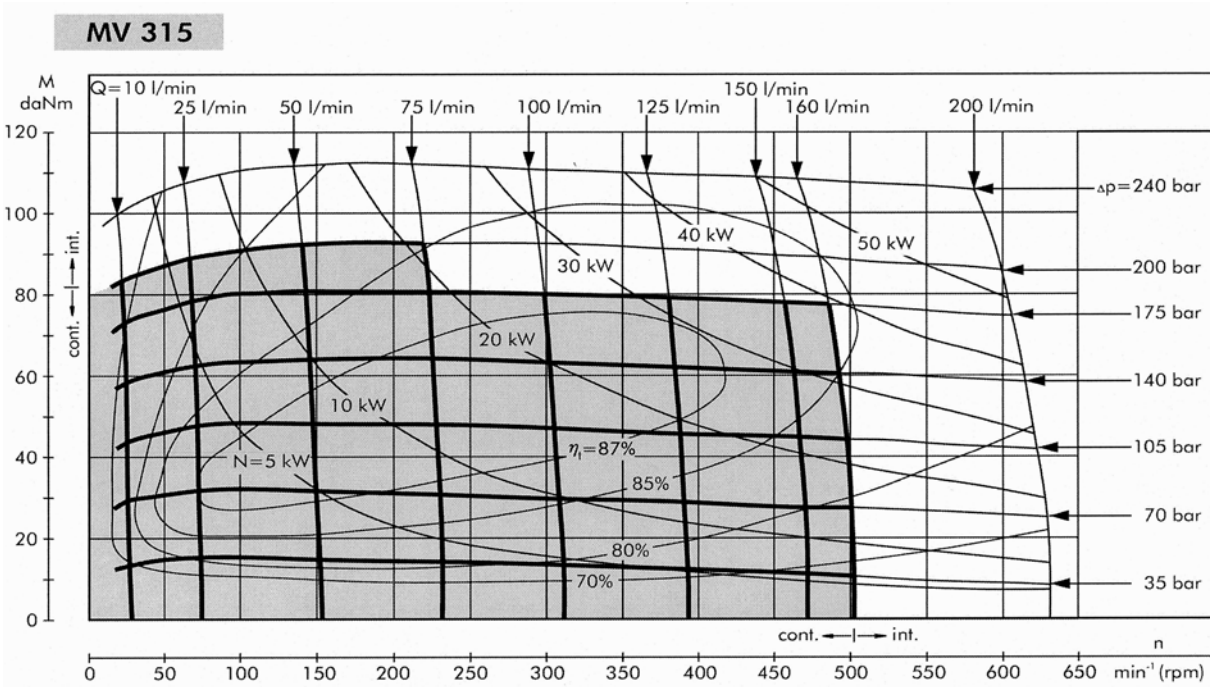
Type		MV 315	MV 400	MV 500	MV 630	MV 800
Displacement [cm³/rev.]		314.5	400,9	499,6	629,1	801,8
Max. Speed, [RPM]	cont.	510	500	400	315	250
	Int.*	630	600	480	380	300
Max. Torque [daNm]	cont.	92	118	146	166	188
	Int.*	111	141	176	194	211
	peak**	129	164	205	221	247
Max. Output [kW]	cont.	42,5	53,5	53,5	48	42,5
	int.*	51	64	64	56	48
Max. Pressure Drop [bar]	cont.	200	200	200	180	160
	Int.*	240	240	240	210	180
	peak**	280	280	280	240	210
Max. Oil Flow [l/min]	cont.	160	200	200	200	200
	Int.*	200	240	240	240	240
Max. Inlet Pressure [bar]	cont.	210	210	210	210	210
	Int.*	250	250	250	250	250
	peak**	300	300	300	300	300
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line , [bar]	cont. 0-100 RPM	60	60	60	60	60
	cont. 100-300 RPM	30	30	30	30	30
	cont. >300 RPM	20	20	20	20	20
	Int.* 0-max. RPM	75	75	75	75	75
Max. Return Pressure with Drain Line [bar]	cont.	140	140	140	140	140
	Int.*	175	175	175	175	175
	peak**	210	210	210	210	210
Max. Starting Pressure with Unloaded Shaft, [bar]		8	8	8	8	8
Min. Starting Torque [daNm]	at max. press. drop cont.	71	91	113	133	151
	at max. press. drop Int.*	85	109	136	155	170
Min. Speed***, [RPM]		10	9	8	6	5
Weight, avg. [kg]	MV	31,8	32,6	33,5	34,9	36,5
	MVW	32,4	33,2	34,1	35,5	37,1
	MVS	22,7	23,5	24,4	25,6	27,7

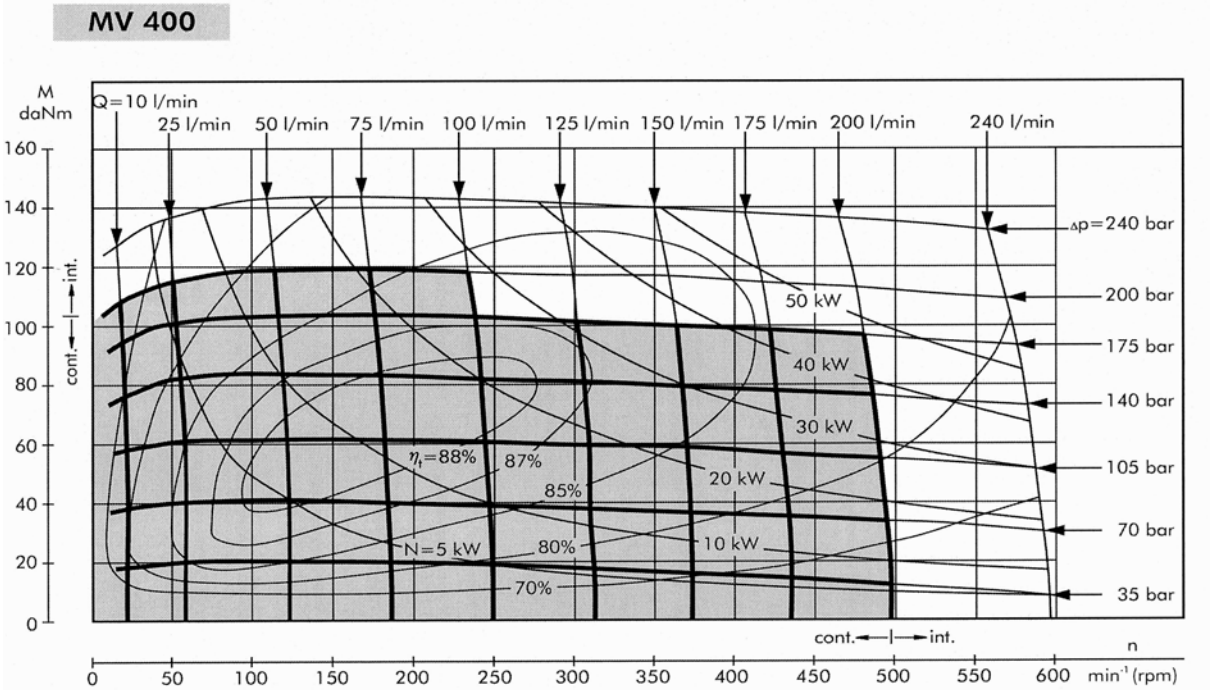
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 10 tot 15 minuten onbelast laat draaien voor de motor volledig te belasten.

MV

Orbitmotoren

Functiediagrammen



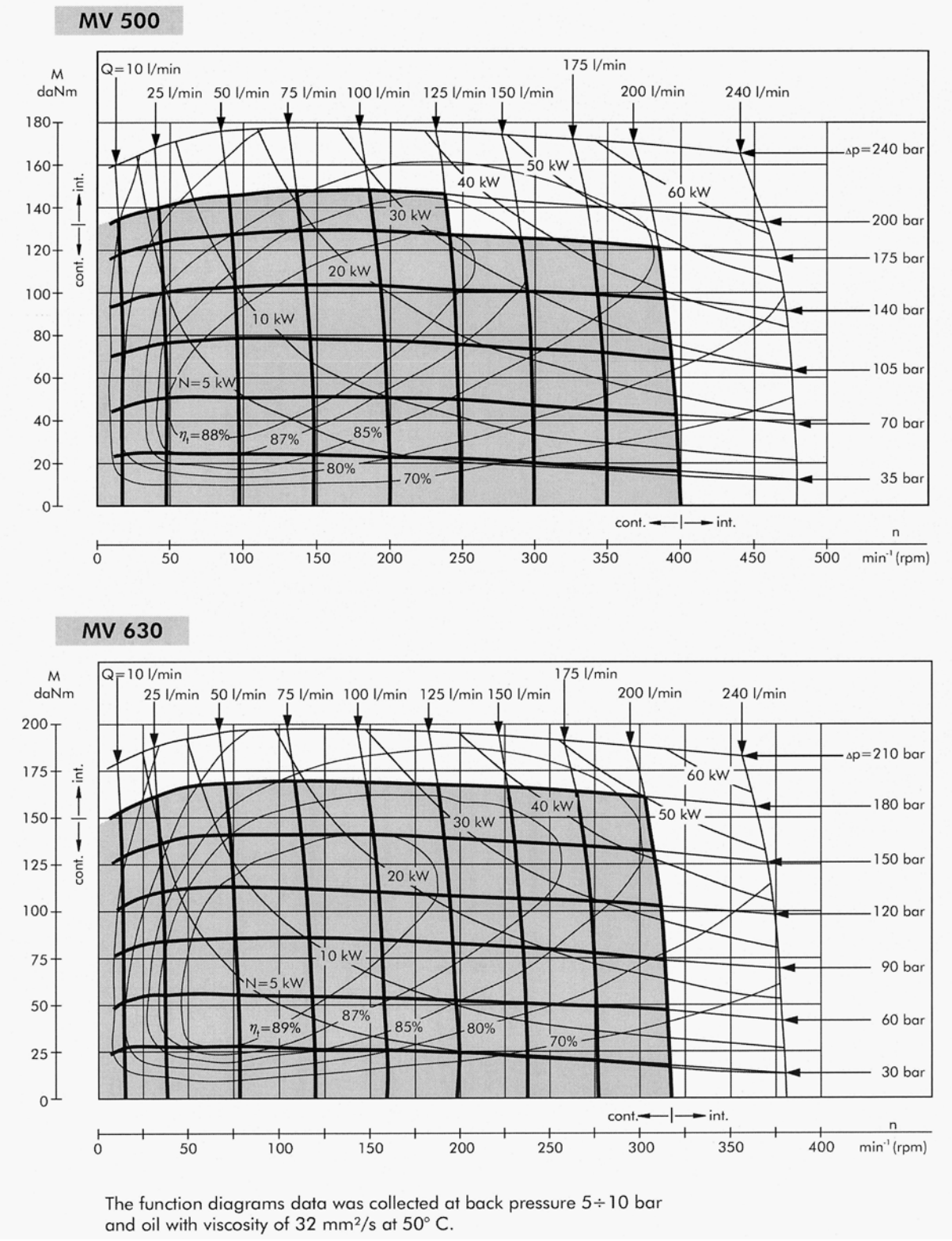


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MV

Orbitmotoren

Functiediagrammen

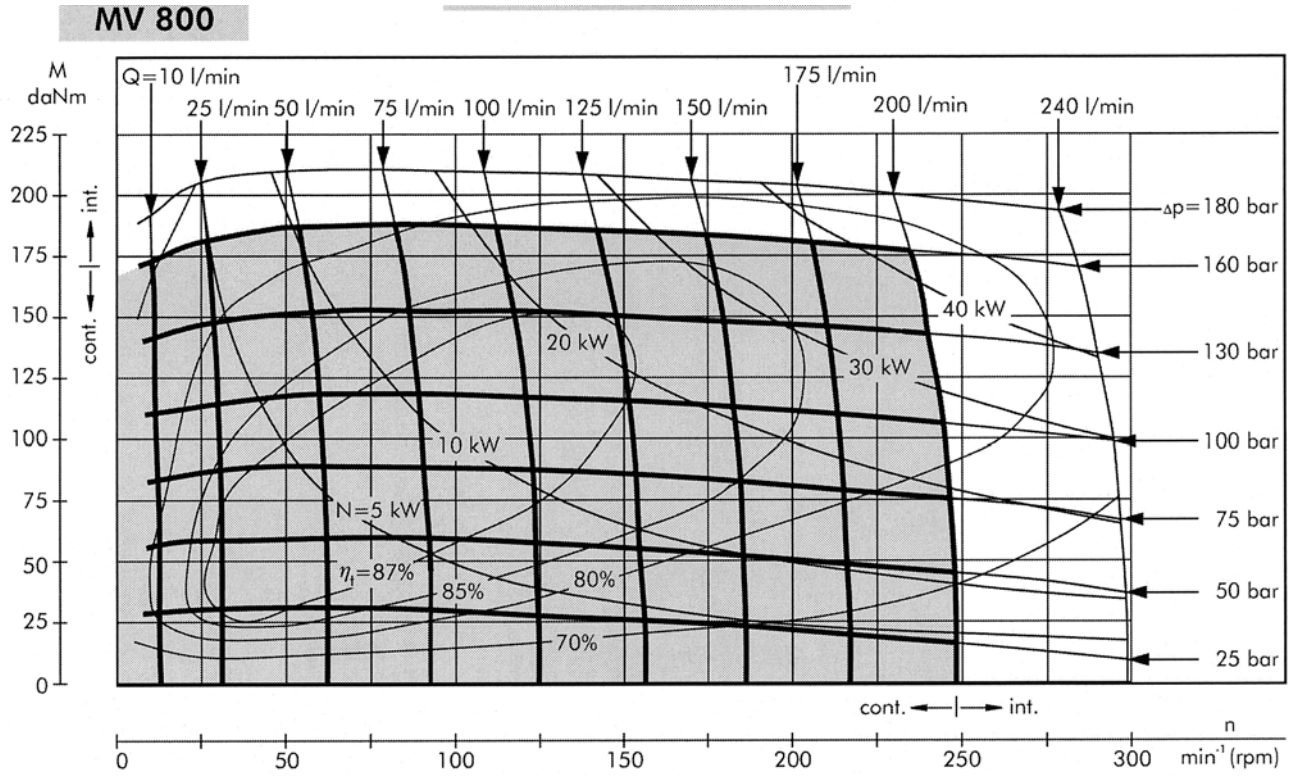


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MV

Orbitmotoren

Functiediagram

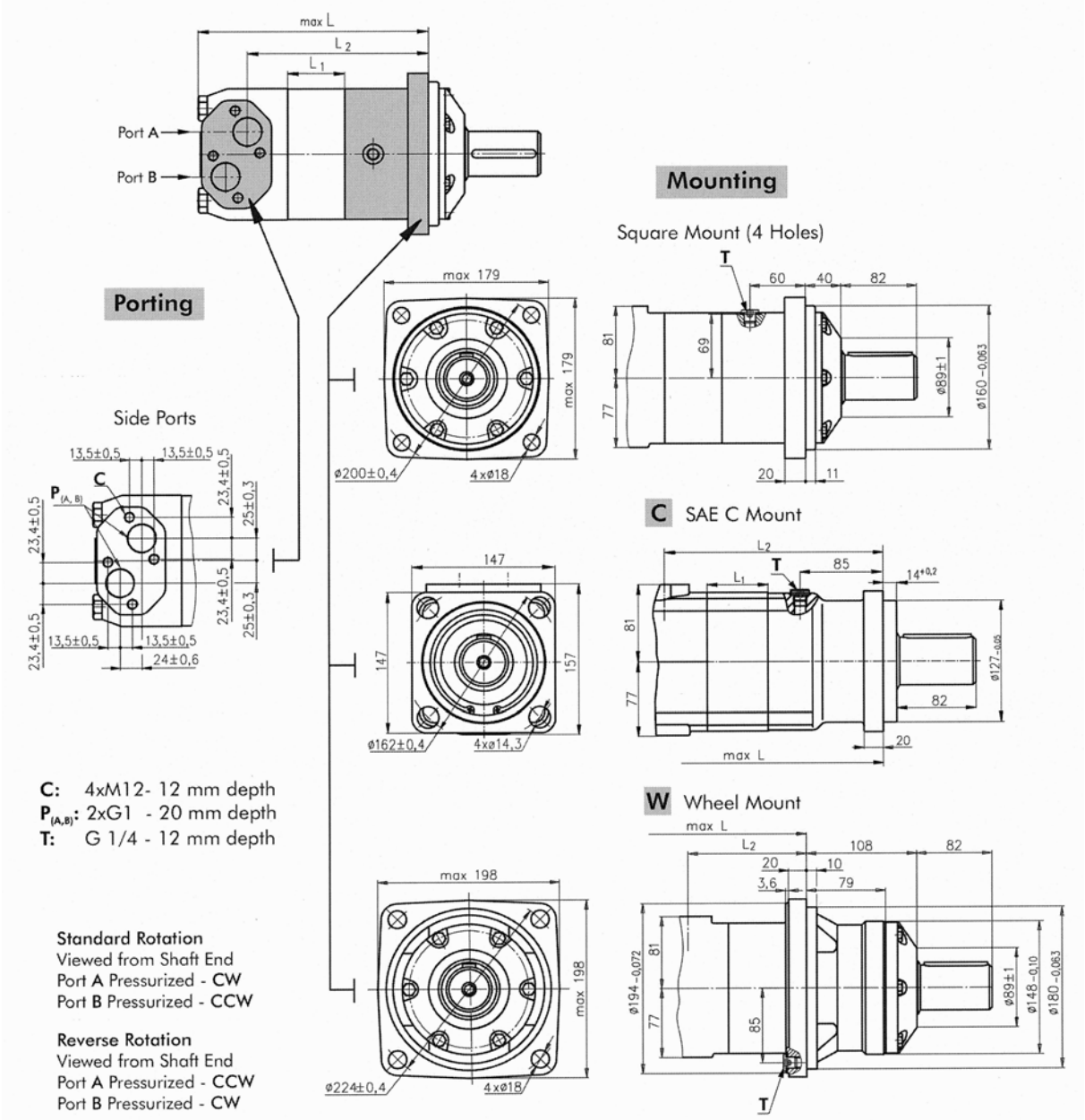


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MV

Orbitmotoren

Afmetingen en uitvoeringen



Type	L, mm	L_2, mm	Type	L, mm	L_2, mm	Type	L, mm	L_2, mm	$*L_1$, mm
MV 315	214,5	160	MVC 315	238,25	184,26	MVW 315	146	92	21,5
MV 400	221,5	167	MVC 400	245,25	191,26	MVW 400	153	99	28,5
MV 500	229,5	175	MVC 500	253,25	199,26	MVW 500	161	107	36,5
MV 630	240,0	186	MVC 630	263,75	209,76	MVW 630	172	118	47,0
MV 800	254,0	200	MVC 800	277,75	223,76	MVW 800	185	132	61,0

* The width of the roll-gerotor is 4 mm greater than L_1.

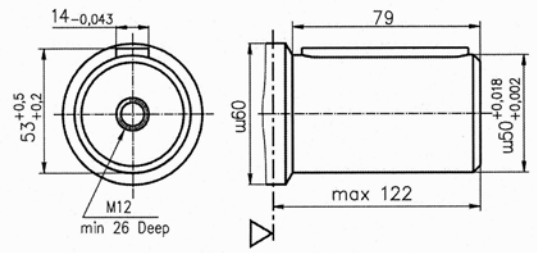
Gegevens MVS en MVV op aanvraag leverbaar

MV

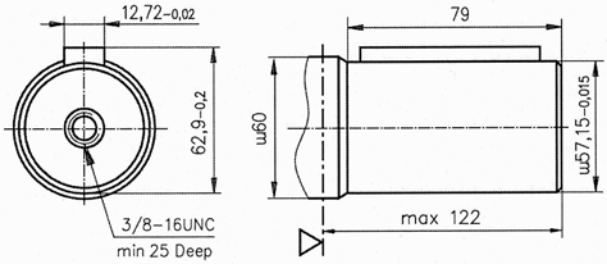
Orbitmotoren

Mogelijke assen

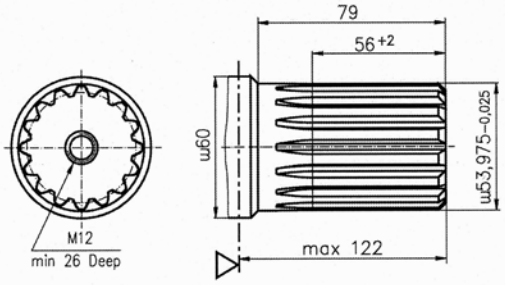
C - ø50 straight, Parallel key A14x9x70 DIN 6885



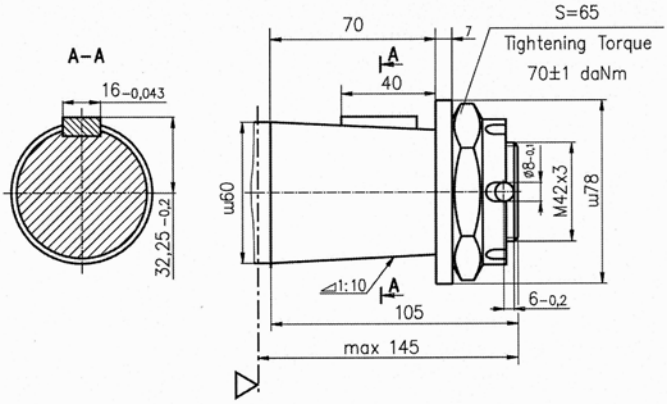
CO - ø2¼"[57,15] straight,Parallel key ½ "x½"x 2¼" BS46



SH -ø2 1/8"splined, 16 DP 8/16 ANS B92.1-1976



K -tapered 1:10, Parallel key B16x10x32 DIN 6885



▽ - Motor Mounting Surface

Bestelcodes

	1	2	3	4	5
MV					

Pos.1 - Mounting Flange

omit	- Square mount, four holes
C	- SAE C mount
W	- Wheel mount
S	- Short mount
V	- Very short mount

Pos.2 - Displacement code

315	- 314,5 [cm³/rev]
400	- 400,9 [cm³/rev]
500	- 499,6 [cm³/rev]
630	- 629,1 [cm³/rev]
800	- 801,8 [cm³/rev]

Pos. 3 - Shaft extensions*

omit	- for **S** and **V** mounting flange
C	- ø50 straight, Parallel key A14x9x70 DIN6885
CO	- ø2¼" straight, Parallel key ½ "x½"x 2¼" BS46
SH	- ø2⅛" splined, ANS B92.1-1976
K	- ø60 tapered 1:10, Parallel key B16x10x32 DIN6885

Pos. 4 - Special Features (see page 65)

Pos. 5 - Design Series

omit - Factory specified

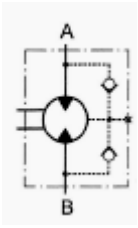
NOTES:

* The permissible output torque for shafts must not be exceeded!

The hydraulic motors are mangano- phosphatized as standard.

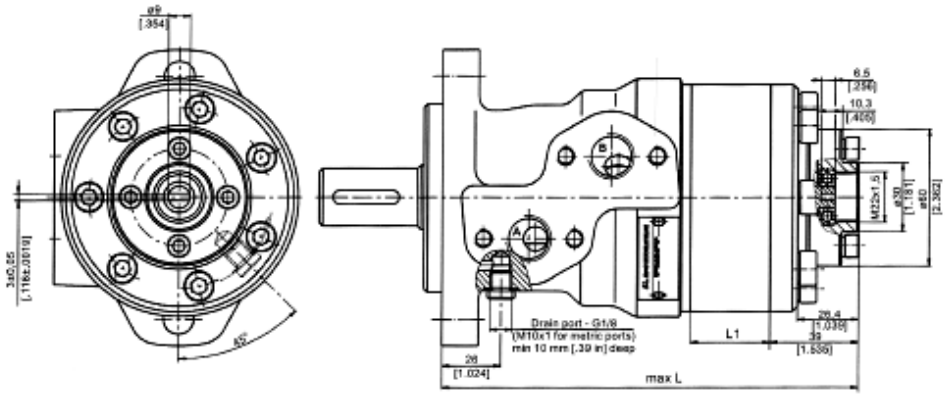
MR…T

Orbitmotor MR met tacho aansluiting



MR motoren zijn verkrijgbaar met een tacho aandrijfas. Met tacho aansluiting kunt u de snelheid van de motor registreren. De tacho as gaat 6x zo snel als de uitgaande as.

OUTLINE DIMENSIONS REFERENCE



Type	L, mm [in]	L1, mm [in]
MR 50	157 [6.18]	9,0 [.35]
MR 80	162 [6.38]	14,0 [.55]
MR 100	165 [6.50]	17,4 [.69]
MR 125	170 [6.69]	21,8 [.86]
MR 160	176 [6.93]	27,8 [1.09]
MR 200	183 [7.20]	34,8 [1.37]
MR 250	192 [7.56]	43,5 [1.71]
MR 315	204 [8.03]	54,8 [2.16]
MR 400	218 [8.58]	69,4 [2.73]

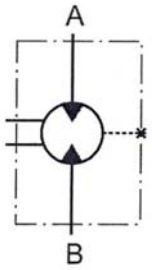
mm [in]

Let op !! Radiale en axiale krachten aan de tacho as moeten ten alle tijden worden voorkomen. Maximale torque aan de tacho as 0.1 daNm (.885 lb-in) Maximale continue retour druk zonder lekleiding is 20 bar (290 PSI)

De algemene technische kenmerken komen overeen met de standaard MR motoren. Er zijn geen veranderingen in de totale en aansluitmaten. Voor technische gegevens kijk vanaf pagina 7.21

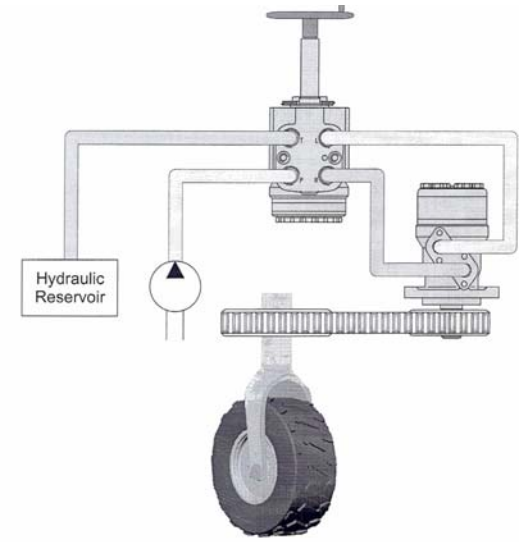
MRNA

Orbitmotor



De MRNA is geschikt voor rij mechanismen waarbij er vraag is naar een soepele werking bij lage snelheid en hoge druk.

Goede opstart eigenschappen
Precieze controle over de torgue bij kleine flow.
Soepele werking bij hoge druk en kleine olie flow.



De algemene technische gegevens komen overeen met de standaard MR motors met een seal van 28.56 doorsnee. Voor technische en aansluit gegevens verwijzen wij u naar pagina 7.21

SPECIFICATIES.

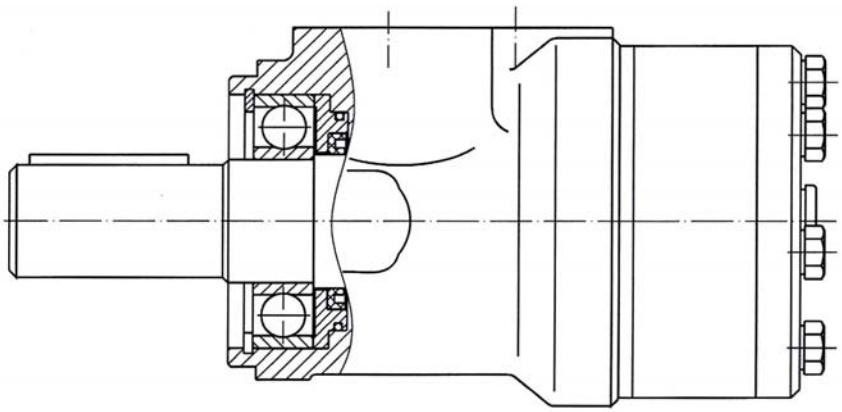
Code	Displa-cement cm^3/rev [in^3/rev]	Max. Speed [RPM]	Max. Torque daNm [lb-in] C, CO shafts		SH, SA shafts		Max. Output kW [HP] C, CO shafts		SH, SA shafts		Max. Pressure Drop, bar [PSI] C, CO shafts		SH, SA shafts		Max. Oil Flow, lpm [GPM]
		cont.	cont.	int*	cont.	int*	cont.	int*	cont.	int*	cont.	int*	cont.	int*	cont.
MRNA 50	51,5 [3.14]	200	10 [885]	13 [1150]	10 [885]	13 [1150]	2,0 [2.68]	2,5 [3.35]	2,0 [2.68]	2,5 [3.35]	140 [2030]	175 [2540]	140 [2030]	175 [2540]	10,5 [2.8]
MRNA 80	80,3 [4.9]	200	20 [1770]	22 [1940]	20 [1770]	22 [1940]	3,0 [4.02]	3,5 [4.69]	3,0 [4.02]	3,5 [4.69]	175 [2540]	200 [2900]	175 [2540]	200 [2900]	16 [4.2]
MRNA 100	99,8 [6.09]	200	24 2120	28 [2480]	24 2120	28 [2480]	4,5 [6.03]	5,0 [6.71]	4,5 [6.03]	5,0 [6.71]	175 [2540]	200 [2900]	175 [2540]	200 [2900]	20 [5.3]
MRNA 125	125,7 [7.67]	200	30 [2650]	34 [3000]	30 [2650]	34 [3000]	5,5 [7.37]	6,0 [8.05]	5,5 [7.37]	6,0 [8.05]	175 [2540]	200 [2900]	175 [2540]	200 [2900]	25 [6.6]
MRNA 160	159,6 [9.74]	200	29 [2560]	39 [3450]	39 [3450]	43 [3800]	5,0 [6.71]	6,5 [8.05]	6,0 [8.05]	7,5 [10.05]	120 [1740]	175 [2540]	175 [2540]	200 [2900]	32 [8.5]
MRNA 200	199,8 [12.19]	200	29 [2560]	38,5 [3400]	38,5 [3400]	46 [4070]	5,0 [6.71]	7,0 [9.39]	6,5 [8.72]	9,0 [12.06]	105 [1520]	140 [2030]	140 [2030]	175 [2540]	40 [10.5]
MRNA 250	250,1 [15.26]	200	30 [2650]	39 [3450]	39 [3450]	47 [4160]	5,0 [6.71]	7,0 [9.39]	6,0 [8.05]	9,0 [12.06]	80 [1160]	110 [1600]	110 [1600]	140 [2030]	50 [13.2]
MRNA 315	315,7 [19.26]	190	30 [2650]	42 [3720]	36 [3450]	47 [4160]	5,0 [6.71]	7,5 [10.05]	6,0 [8.05]	8,5 [11.4]	70 [1020]	100 [1450]	85 [1230]	115 [1670]	65 [17.2]
MRNA 400	397,0 [24.4]	150	30 [2650]	40 [3540]	38 [3260]	47 [4160]	4,0 [[5.36]	6,5 [8.72]	6,0 [8.05]	7,0 [9.39]	55 [800]	70 [1015]	65 [940]	90 [1300]	60 [15.8]

* Intermittent operation: the permissible values may occur for max. 10% of every minute.

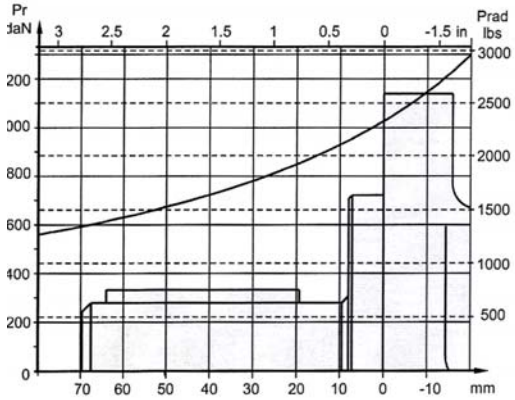
MRFL

Orbitmotor

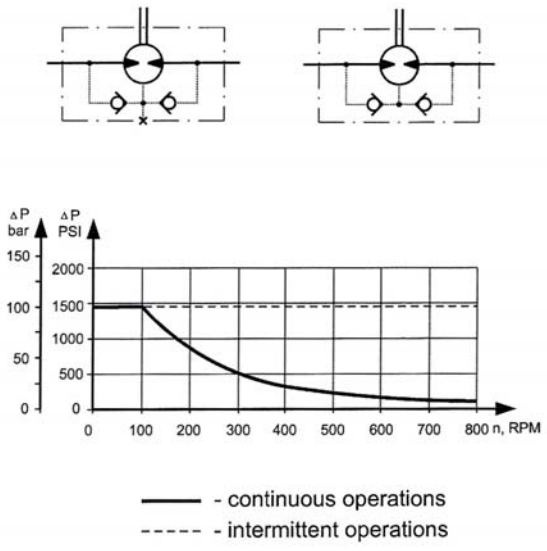
De hydraulische motor type MRFL… en MLHRFL… zijn ontworpen voor radiale piek belasting op de aandrijfas (speciaal tijdens het starten en stoppen). Om de radiale krachten te weerstaan is er een radiale kogellager gemonteerd op de as van hydraulische motor. De algemene technische gegevens komen overeen met de standaard MRF ø35 afdichting diameter.



PERMISSIBLE SHAFT LOADS

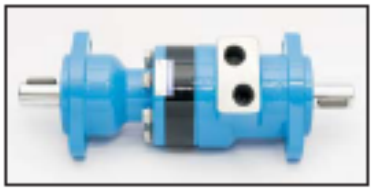


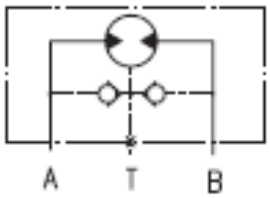
MAX. PERMISSIBLE SHAFT SEAL PRESSURE



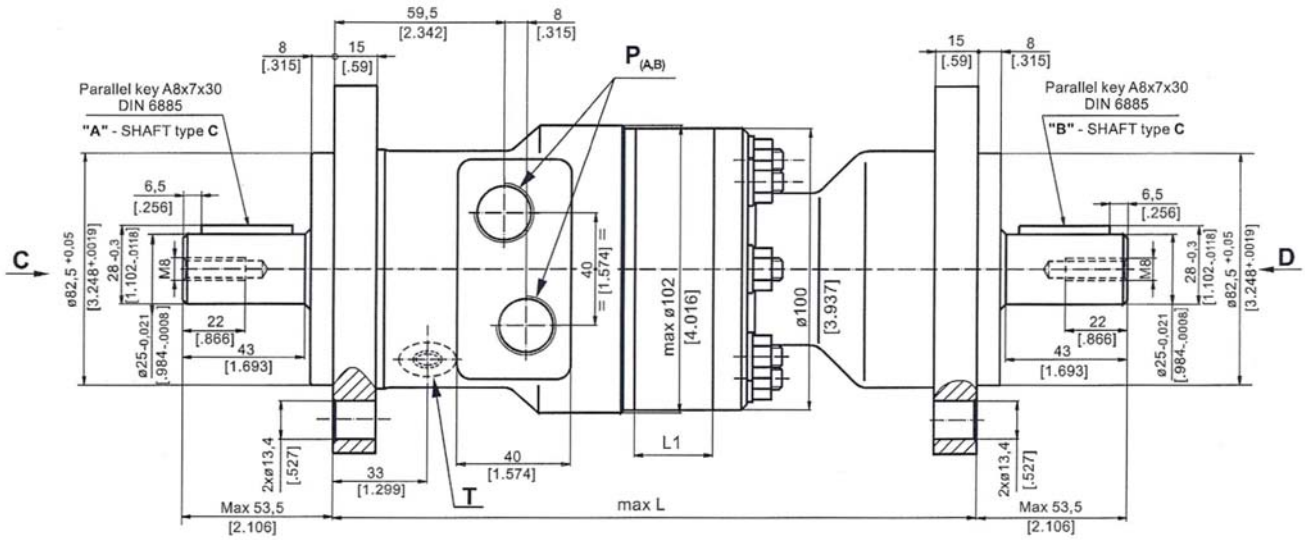
MRB

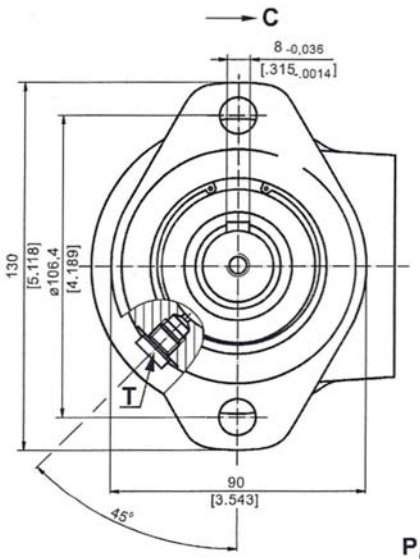
Orbitmotor met dubbele uitgaande as



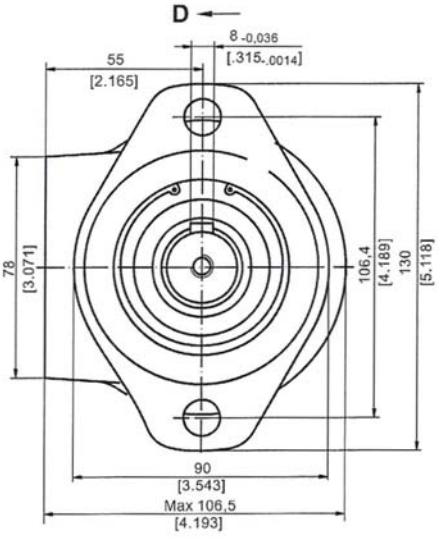


OUTLINE DIMENSINS REFERENCE





Type	L, mm [in]	L1, mm[in]
MRB 50	208,0 [8.19]	9,0 [.35]
MRB 80	213,0 [8.39]	14,0 [.55]
MRB 100	216,0 [8.50]	17,4 [.69]
MRB 125	220,5 [8.68]	21,8 [.86]
MRB 160	226,5 [8.92]	27,8 [1.09]
MRB 200	233,5 [9.19]	34,8 [1.37]
MRB 250	242,5 [9.55]	43,5 [1.71]
MRB 300	253,5 [9.98]	54,8 [2.16]
MRB 400	268,0 [10.55]	69,4 [2.73]



$P_{(A,B)}$: 2xG1/2 - 18 mm [.71 in] depth
T : G1/8 - 9 mm [.35 in] depth (plugged)

mm [in]

MRB
Orbitmotor

Specificaties

SPECIFICATION DATA

Type		MRB 50 C/C	MRB 80 C/C	MRB 100 C/C	MRB 125 C/C	MRB 160 C/C	MRB 200 C/C	MRB 250 C/C	MRB 315 C/C	MRB 400 C/C
Displacement, cm³/rev [in³/rev]		51,5[3.14]	80,3[4.9]	99,8[6.09]	125,7[7.67]	159,6[9.74]	199,8[12.19]	250,1[15.26]	315,7[19.26]	397 [24.4]
Max. Speed,	cont.	775	750	600	475	375	300	240	190	150
RPM	int.*	970	940	750	600	470	375	300	240	190
Max. Torque,	cont.	10 [885]	19,5 [1725]	24 [2125]	30 [2655]	30 [2655]	30 [2655]	30 [2655]	30 [2655]	30 [2655]
daNm [lb-in]	int.*	13 [1150]	22 [1947]	28 [2480]	34 [3010]	39 [3450]	39 [3450]	38 [3360]	42 [3720]	43 [3805]
Max. Torque "A"Shaft,	cont.	8 [710]	11,5 [1000]	12 [1060]	20 [1770]	20 [1770]	20 [1770]	20 [1770]	20 [1770]	20 [1770]
daNm [lb-in]	int.*	9,5 [840]	13 [1150]	14 [1240]	23 [2035]	23 [2035]	23 [2035]	23 [2035]	23 [2035]	23 [2035]
Max. Torque "B"Shaft,	cont.	4 [355]	11,5 [1000]	12 [1060]	20 [1770]	20 [1770]	20 [1770]	20 [1770]	20 [1770]	20 [1770]
daNm [lb-in]	int.*	5 [440]	13 [1150]	14 [1240]	23 [2035]	23 [2035]	23 [2035]	23 [2035]	23 [2035]	23 [2035]
Max. Output,	cont.	7 [9.5]	12,5 [17]	13 [1150]	12,5 [17]	10 [13.4]	8 [10.7]	6 [8.0]	5 [6.7]	4 [5.4]
[kW] [HP]	int.*	8,5 [11.9]	15 [20.1]	15 [20.1]	14,5	12,5 [17]	10 [13.4]	8 [10.7]	6,5 [8.7]	6 [8.0]
Max. Pressure Drop,	cont.	140 [2030]	175 [2540]	175 [2540]	175 [2540]	130 [1885]	110 [1600]	80 [1160]	70 [1020]	55 [800]
bar [PSI]	int.*	175 [2540]	200 [2900]	200 [2900]	200 [2900]	175 [2540]	140 [2030]	110 [1600]	100 [1450]	80 [1160]
Max. Oil Flow,	cont.	40 [10.5]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
lpm [GPM]	int.*	50 [13.2]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]
Max. Return	cont. 0 - 100 RPM	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]
Pressure without	cont. 100-200 RPM	50 [730]	50 [730]	50 [730]	50 [730]	50 [730]	50 [730]	50 [730]	50 [730]	50 [730]
Drain Line, bar [PSI]	cont. 200-500 RPM	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]
	int.* 0 - max RPM	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]

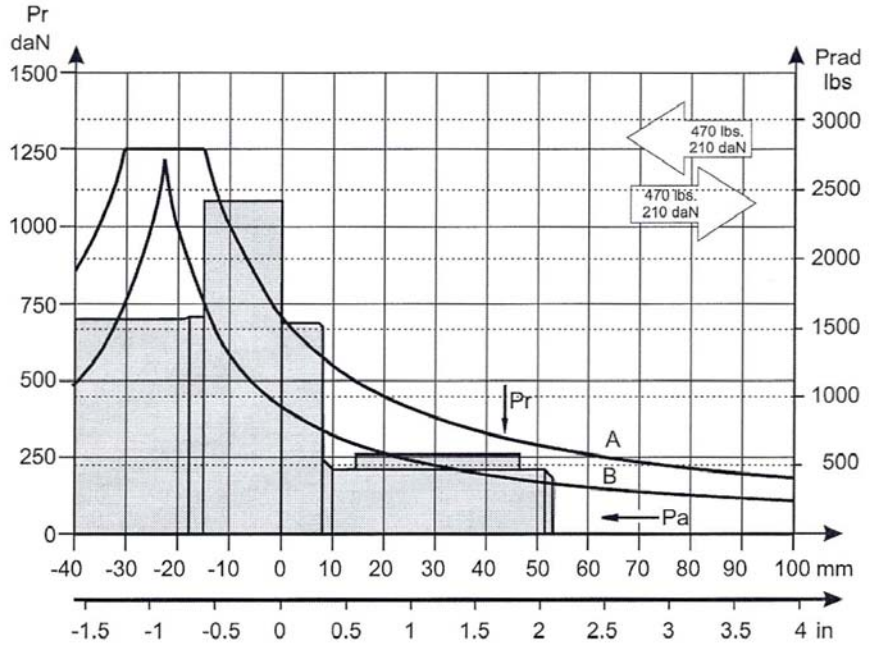
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

1. Intermittent speed and intermittent pressure must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4). If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 13 mm²/s [70 SUS] at 50°C [122°F].
5. Recommended maximum system operating temperature is 82°C [180°F].
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

MRB

Orbitmotor

Het belastingsdiagram is gegeven voor een gemiddelde levensduur van de afdichting van 1600 uur bij 200 toeren per minuut met een minerale olie die additieven bevat volgens ISO 281 (3.3) standaard.
De A curve geeft de maximale statische belasting weer toegestaan bij afdichtingen. De B curve geeft de maximale radiale piekbelasting bij een axiale belasting van 200 daN.



Bestelgegevens

	1	2		3	4	5	6
MRB			/				

Pos.1 - Displacement code

50	- 51,5 cm³/rev [3.14 in³/rev]
80	- 80,3 cm³/rev [4.90 in³/rev]
100	- 99,8 cm³/rev [6.09 in³/rev]
125	- 125,7 cm³/rev [7.67 in³/rev]
160	- 159,6 cm³/rev [9.74 in³/rev]
200	- 199,8 cm³/rev [12.19 in³/rev]
250	- 250,1 cm³/rev [15.26 in³/rev]
315	- 315,7 cm³/rev [19.26 in³/rev]
400	- 397,0 cm³/rev [24.40 in³/rev]

Pos.2 - "A" Shaft Extensions*

C - ø25 straight, Parallel key A8x7x30 DIN6885

Pos.3 - "B" Shaft Extensions*

C - ø25 straight, Parallel key A8x7x30 DIN6885

Pos. 4 - Special Features

omit - none
LSV - Low Speed Valve

Pos. 5 - Option (Paint)**

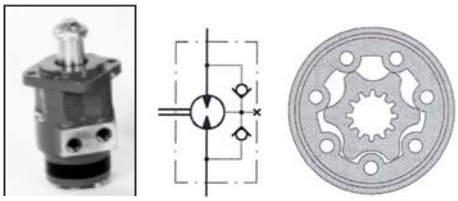
omit - no Paint
P - Painted
PC - Corrosion Protected Paint

Pos. 6 - Design Series

omit - Factory specified

NOTES:
* For other shaft extensions please contact with "M+S Hydraulic".
** Color at customer's request.
The hydraulic motors are mangano-phosphatized as standard.

PL
Orbitmotor



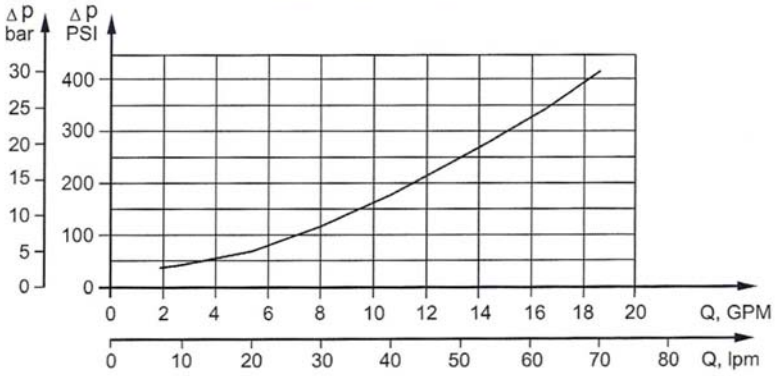
Algemene informatie

Max Displacement, cm^3/rev [in^3/rev]	396 [24.16]
Max. Speed, [RPM]	1515
Max. Torque, daNm [lb-in]	cont.: 50 [4415] int.: 59 [5222]
Max. Output, kW [HP]	17,5 [23.5]
Max. Pressure Drop, bar [PSI]	cont.: 140 [2030] int.: 175 [2540]
Max. Oil Flow, lpm [GPM]	75 [20]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



PL
Orbitmotor

Technische informatie

Type		PL 50	PL 80	PL 100	PL 125	PL 160	PL 200	PL 250	PL 315	PL 400
Displacement, in³/rev. [cm³/rev]		49,5 [3.02]	79,2 [4.83]	99 [6.04]	123,8 [7.55]	158,4 [9.66]	198 [12.1]	247,5 [15.1]	316,8 [19.3]	396 [24.16]
Max. Speed,	Cont.	1210	755	605	485	378	303	242	190	150
[RPM]	Int.*	1515	945	755	605	472	378	303	236	189
Max. Torque	Cont.	9,4 [832]	15,1 [1336]	19,3 [1708]	23,7 [2100]	31,3 [2770]	36,6 [3240]	47 [4160]	48,6 [4300]	50 [4425]
in-lb [daNm]	Int.*	11,9 [1054]	19,5 [1725]	23,7 [2097]	29,8 [2637]	37,8 [3345]	45,6 [4035]	58,3 [5160]	56 [4956]	59 [5222]
	Peak**	14,0 [1240]	22,0 [1947]	27,0 [2390]	36,5 [3230]	42 [3717]	53 [4700]	67 [5930]	85 [7523]	85,4 [7560]
Max. Output	Cont.	9,9 [13.3]	9,9 [13.3]	9,9 [13.3]	9,9 [13.3]	11,7 [15.7]	10,3 [13.8]	9,8 [13.1]	7,6 [10.2]	6,6 [8.9]
HP [kW]	Int.*	12,5 [16.8]	12,5 [16.8]	12,5 [16.8]	12,5 [16.8]	12,5 [16.8]	15,5 [20.8]	17,5 [23.5]	8,2 [11]	9,2 [12.3]
Max. Pressure Drop	Cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	120 [1300]	95 [1015]
PSI [bar]	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	140 [2030]	115 [1665]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	180 [2610]
Max. Oil Flow	Cont.	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]
GPM [lpm]	Int.*	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
Max. Inlet Pressure	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
PSI [bar]	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Return Pres-	Cont. 0-100 RPM	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]
sure without Drain	Cont. 100-300 RPM	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]
Line or Max. Pres-	Cont. 300-600 RPM	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]
sure in Drain Line,	Cont. >600 RPM	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]
PSI [bar]	Int.* 0-max. RPM	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]
Max. Return Pres-	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
sure with Drain Line	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
PSI [bar]	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Starting Pressure with Unloaded Shaft, PSI [bar]		10 [145]	10 [145]	10 [145]	9 [131]	8 [116]	7 [100]	6 [87]	5 [73]	5 [73]
Min. Starting Torque in-lb [daNm]		7,7 [681]	13 [1150]	16,8 [1487]	21,0 [1860]	28,0 [2478]	32,2 [2850]	41,4 [3665]	43,0 [3805]	44,0 [3900]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, lb [kg]		8,4 [18.5]	8,5 [18.7]	8,8 [19.4]	8,9 [19.6]	9,1 [20]	9,5 [20.9]	10,0 [22]	10,7 [23.6]	11,4 [25.1]

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

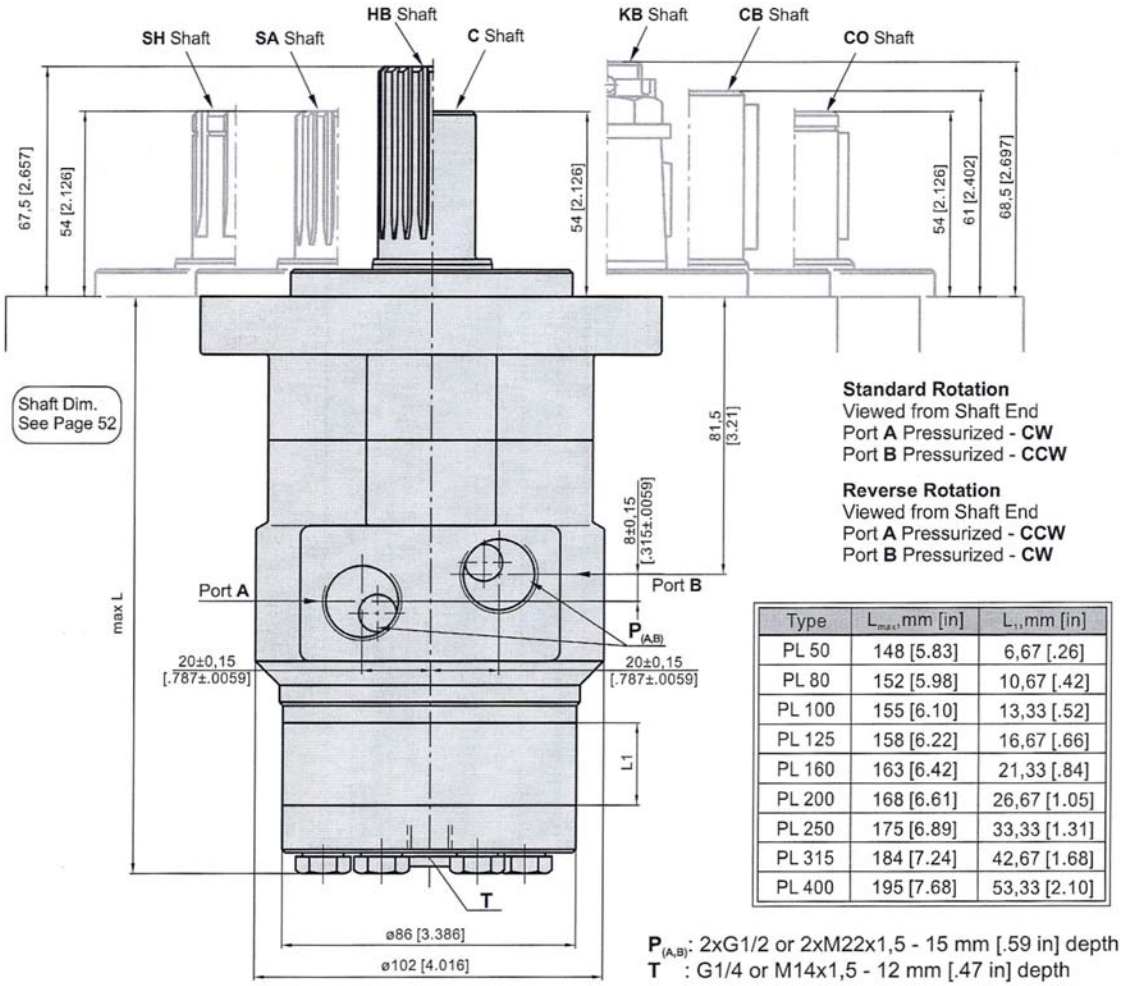
1. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
2. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
3. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
4. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
5. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

PL

Orbitmotor

Afmetingen en uitvoeringen

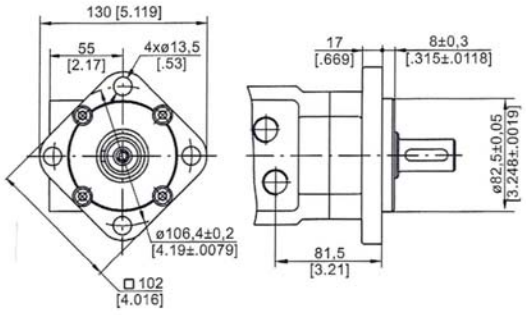


Type	L_{max} mm [in]	L_1 mm [in]
PL 50	148 [5.83]	6,67 [.26]
PL 80	152 [5.98]	10,67 [.42]
PL 100	155 [6.10]	13,33 [.52]
PL 125	158 [6.22]	16,67 [.66]
PL 160	163 [6.42]	21,33 [.84]
PL 200	168 [6.61]	26,67 [1.05]
PL 250	175 [6.89]	33,33 [1.31]
PL 315	184 [7.24]	42,67 [1.68]
PL 400	195 [7.68]	53,33 [2.10]

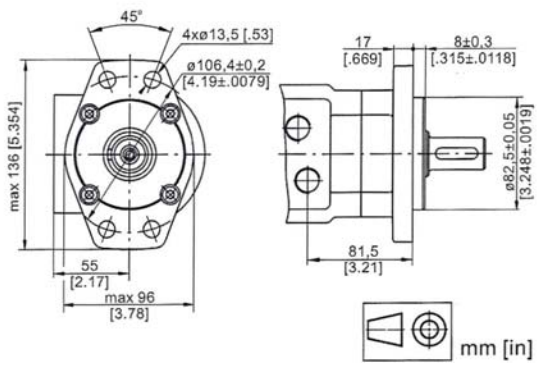
$P_{(A,B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm [.59 in] depth
T : G1/4 or M14x1,5 - 12 mm [.47 in] depth

MOUNTING

Square Mount (4 Holes)



F Oval Mount (4 Holes)

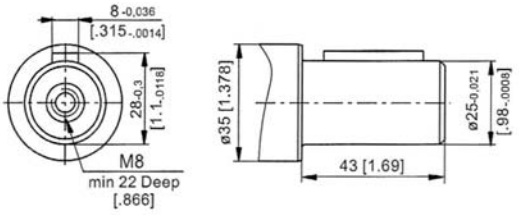


PL

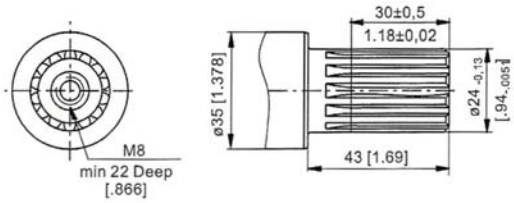
Orbitmotor

Mogelijke assen

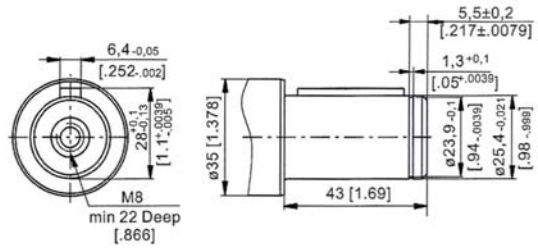
C - ø25 straight, Parallel key A8x7x30 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



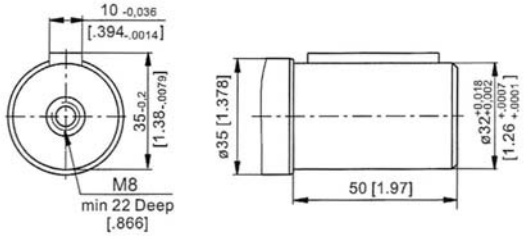
SA - splined B25x22 DIN 5482
Max. Torque 40 daNm [3540 lb-in]



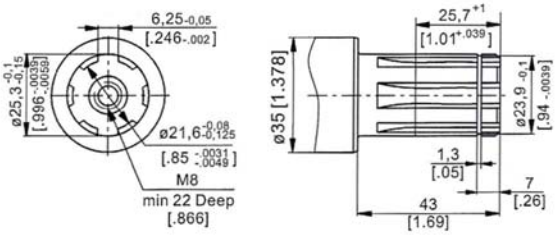
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



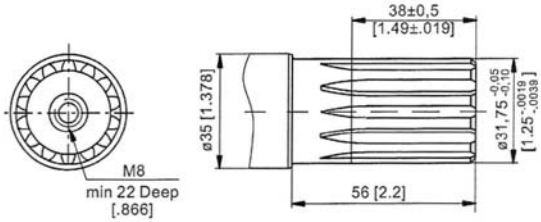
CB - ø32 straight, Parallel key A10x8x40 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



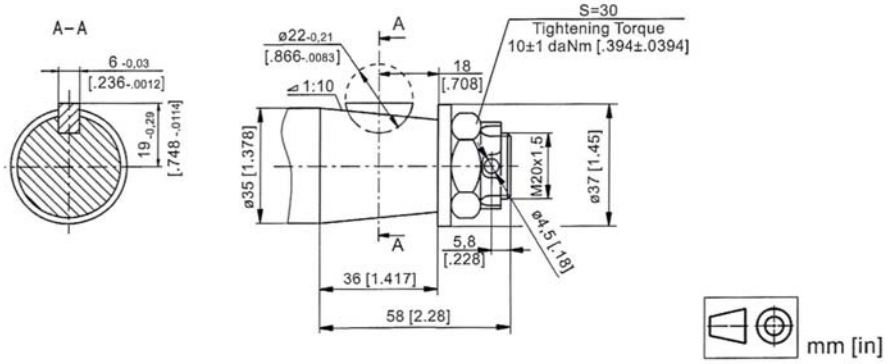
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



HB - ø1¼" splined 14T, DP12/24 ANSI B92.1-1976
Max. Torque 95 daNm [8410 lb-in]



KB - tapered 1:10, Woodruff key 6x9 DIN6888
Max. Torque 95 daNm [8410 lb-in]



PL

Orbitmotor

Bestelcode

	1	2	3	4	5	6
P L						

Pos.1 - Mounting Flange

omit - Square mount, four holes

F - Oval mount, four holes

Pos.2 - Displacement code*

50	- 49,5 cm³/rev [3.02 in³/rev]
80	- 79,2 cm³/rev [4.83 in³/rev]
100	- 99,0 cm³/rev [6.04 in³/rev]
125	- 123,8 cm³/rev [7.55 in³/rev]
160	- 158,4 cm³/rev [9.66 in³/rev]
200	- 198,0 cm³/rev [12.10 in³/rev]
250	- 247,5 cm³/rev [15.10 in³/rev]
315	- 316,8 cm³/rev [19.30 in³/rev]
400	- 396,0 cm³/rev [24.16 in³/rev]

Pos.3 - Shaft Extensions**

B	- ø25 straight, Parallel key A8x7x30 DIN6885
CO	- ø1" straight, Parallel key 1/4"x1/4"x1 1/4" BS46
SH	- ø25,3 splined, BS 2059 (SAE 6B)
SA	- ø24 splined, B 25x22 DIN 5482
CB	- ø32 straight, Parallel key A10x8x40 DIN6885
HB	- ø1 1/4" splined 14T ANSI B92.1-1976
KB	- ø35 tapered 1:10, Woodruff key 6x9 DIN6888

Pos.4 - Ports

omit - BSPP (ISO 228)

M - Metric (ISO 262)

Pos.5 - Special Features (see page 98)

Pos.6 - Design Series

omit - Factory specified

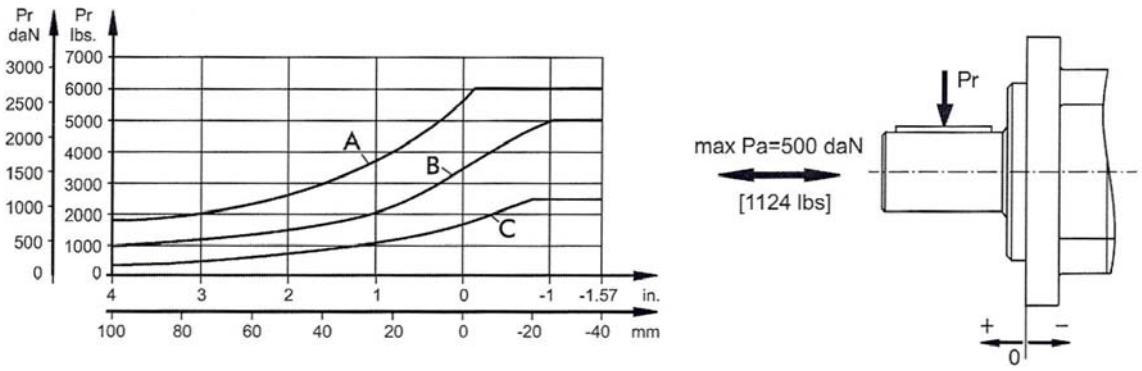
NOTES:

* For the Function Diagrams data please look at "M+S Hydraulic" Catalogue for MP motors, pages 19÷23.

** The permissible output torque for shafts must not be exceeded!

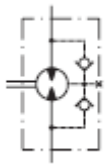
The hydraulic motors are mangano-phosphatized as standard.

Toegestane as belasting PL en RL



A - Max. static load affordable by the bearings.
B - Max. radial load at an axial load Pa=200 daN [450 lbs]
C - Max. radial load at an axial load Pa=500 daN [1124 lbs]

RL
Orbitmotor


Deze motoren worden gebruikt bij Conveyors, aanvoer mechanisme voor de robot, metaalverwerkingsmachines etc.

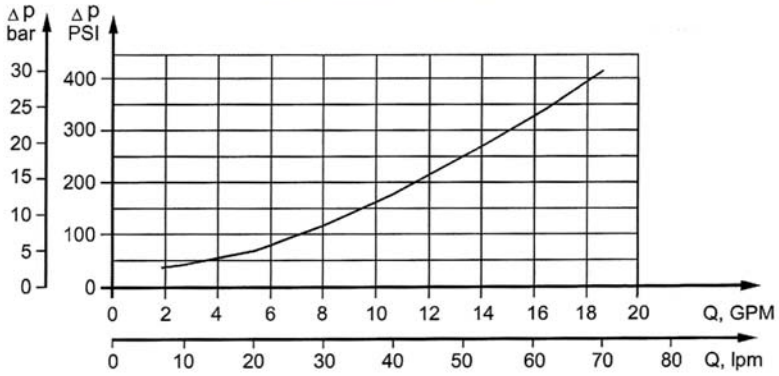
Algemene informatie

Max. Displacement,	cm^3/rev. [in^3/rev.]	397 [24.4]
Max. Speed,	[RPM]	970
Max. Torque,	daNm [lb-in]	cont.: 61 [5400] int.: 69 [6100]
Max. Output,	kW [HP]	16 [21.5
Max. Pressure Drop,	bar [PSI]	cont.:175 [2540] int.: 200 [2900]
Max. Oil Flow,	lpm [GPM]	75 [20]
Min. Speed,	[RPM]	10
Permissible Shaft Loads,	daN [lbs]	P_a=500 [1124]
Pressure fluid		Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range,	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range,	mm^2/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



RL
Orbitmotor

Specificaties

Type		RL 50	RL 80	RL 100	RL 125	RL 160	RL 200	RL 250	RL 315	RL 400
Displacement, cm³/rev [in³/rev]		51,5 [3.14]	80,3 [4.90]	99,8 [6.09]	125,7 [7.67]	159,6 [9.74]	199,8[12.19]	250,1[15.26]	315,7[19.26]	397 [24.4]
Max. Speed,	Cont.	775	750	600	475	375	300	240	190	150
[RPM]	Int.*	970	940	750	600	470	375	300	240	190
Max. Torque,	Cont.	10,1 [900]	20 [1770]	24 [2125]	30 [2655]	39 [3450]	45 [4000]	54 [4780]	55 [4870]	61 [5400]
daNm [lb-in]	Int.*	13 [1150]	22,0 [1947]	28 [2480]	34 [3010]	43 [3805]	50 [4425]	61 [5400]	63 [5580]	69 [6100]
	Peak**	17 [1505]	27,0 [2390]	32 [2832]	37 [3275]	46 [4070]	56 [4960]	71 [6280]	83 [7350]	87 [7700]
Max. Output	Cont.	7 [9.5]	12,5 [17]	13 [17.4]	12,5 [16.8]	11,5 [15.4]	11 [14.8]	10 [13.4]	9 [12]	7,8 [10.5]
kW [HP]	Int.*	8,5 [11.9]	15 [20.1]	15 [20.1]	16 [21.5]	14 [18.8]	13 [17.4]	12 [16.1]	11 [14.8]	10,6 [14.2]
Max. Pressure Drop	Cont.	140 [2030]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	135 [1960]	115 [1670]
bar [PSI]	Int.*	175 [2540]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	160 [2320]	140 [2030]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	210 [3045]	175 [2540]
Max. Oil Flow	Cont.	40 [11]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]	60 [16]
lpm [GPM]	Int.*	50 [13]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
Max. Inlet Pressure	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
bar [PSI]	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Return Pres-	Cont. 0-100 RPM	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]
sure without Drain	Cont. 100-300 RPM	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]
Line or Max. Pres-	Cont. 300-600 RPM	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]	25 [365]
sure in Drain Line,	Cont. >600 RPM	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]
bar [PSI]	Int.* 0-max. RPM	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]	100 [1450]
Max. Return Pres-	Cont.	140 [2030]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
sure with Drain Line	Int.*	175 [2540]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
bar [PSI]	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	9 [130]	102 [7]	5 [73]	4 [58]	3 [44]	3 [44]
Min. Starting Torque daNm [lb-in]		8 [710]	15 [1330]	20 [1770]	25 [2215]	2835 [32]	37 [3275]	45 [4000]	45 [4000]	49 [4340]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, kg [lb]		8,5 [18.7]	8,6 [19]	8,9 [19.6]	9,0 [19.8]	9,2 [20.3]	9,6 [21.2]	10,1 [22.3]	10,8 [23.8]	11,5 [25.4]

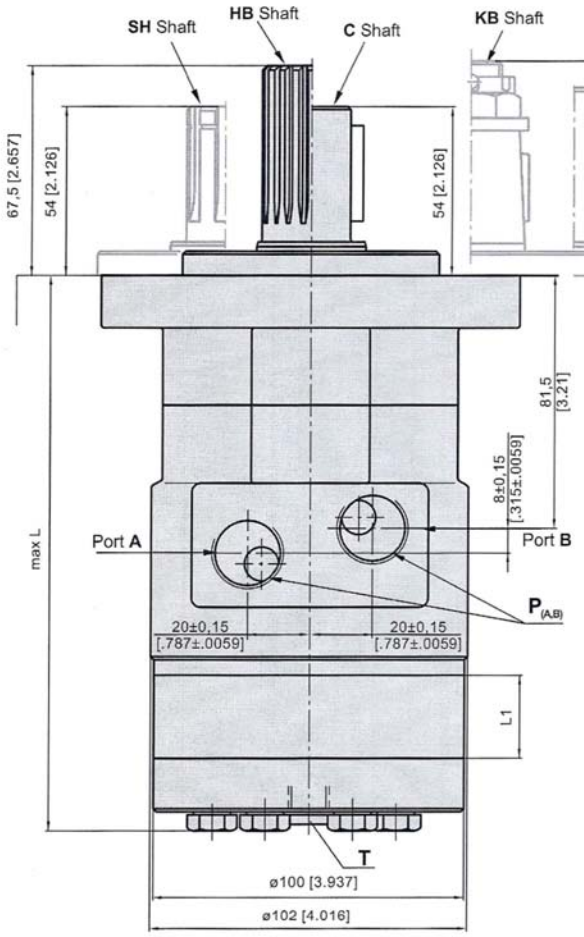
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

6. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
7. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
8. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
9. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
10. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

RL
Orbitmotor

Afmetingen en uitvoeringen



Shaft Dim. See Page 57

Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

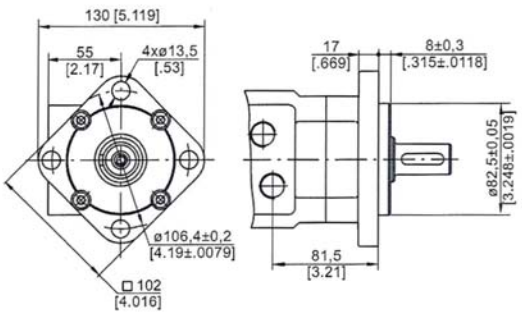
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

Type	L ,mm [in]	L,,mm [in]
RL 50	152 [5.98]	9,0 [.35]
RL 80	157 [6.18]	14,0 [.55]
RL 100	160 [6.30]	17,4 [.69]
RL 125	165 [6.50]	21,8 [.86]
RL 160	171 [6.73]	27,8 [1.09]
RL 200	178 [7.01]	34,8 [1.37]
RL 250	187 [7.36]	43,5 [1.71]
RL 315	198 [7.80]	54,8 [2.16]
RL 400	212 [8.35]	69,4 [2.73]

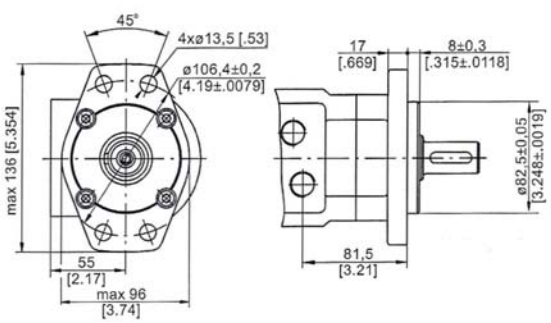
$P_{(A,B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm [.59 in] depth
T : G1/4 or M14x1,5 - 12 mm [.47 in] depth

MOUNTING

Square Mount (4 Holes)



F Oval Mount (4 Holes)

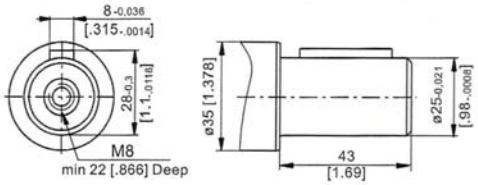


mm [in]

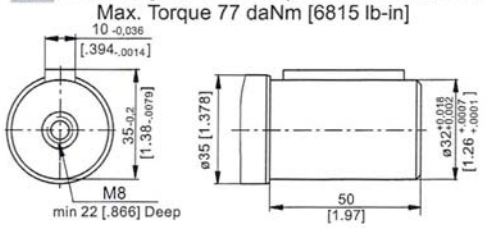
RL
Orbitmotor

Mogelijke assen

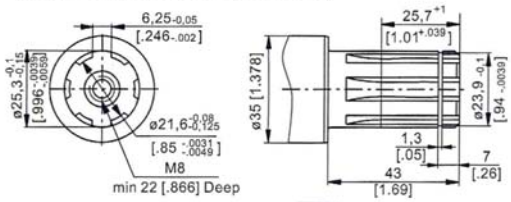
C - ø25 straight, Parallel key A8x7x30 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



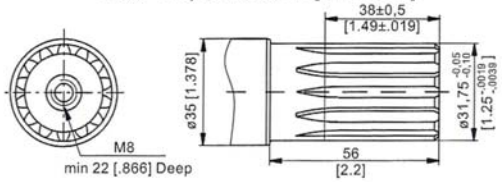
CB - ø32 straight, Parallel key A10x8x40 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



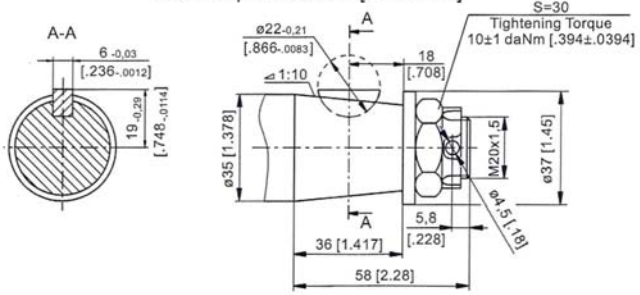
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



HB - ø1¼" splined 14T, DP12/24 ANSI B92.1-1976
Max. Torque 95 daNm [8410 lb-in]



KB - tapered 1:10, Woodruff key 6x9 DIN6888
Max. Torque 95 daNm [8410 lb-in]



mm [in]

ORDER CODE

	1	2	3	4	5	6
R L						

Pos.1 - Mounting Flange

omit - Square mount, four holes
F - Oval mount, four holes

Pos.2 - Displacement code*

50	- 51,5 cm³/rev [3.14 in³/rev]
80	- 80,3 cm³/rev [4.90 in³/rev]
100	- 99,8 cm³/rev [6.09 in³/rev]
125	- 125,7 cm³/rev [7.67 in³/rev]
160	- 159,6 cm³/rev [9.74 in³/rev]
200	- 199,8 cm³/rev [12.19 in³/rev]
250	- 250,1 cm³/rev [15.26 in³/rev]
315	- 315,7 cm³/rev [19.26 in³/rev]
400	- 397,0 cm³/rev [24.40 in³/rev]

Pos.3 - Shaft Extensions**

C	- ø25 straight, Parallel key A8x7x30 DIN6885
CB	- ø32 straight, Parallel key A10x8x40 DIN6885
SH	- ø25,3 splined, BS 2059 (SAE 6B)
HB	- ø1¼" splined 14T ANSI B92.1-1976
KB	- ø35 tapered 1:10, Woodruff key 6x9 DIN6888

Pos.4 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)

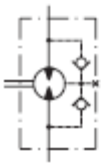
Pos.5 - Special Features (see page 98)

Pos.6 - Design Series

omit - Factory specified

NOTES:
* For the Function Diagrams data please look at "M+S Hydraulic" Catalogue for MR motors, pages 37÷41.
** The permissible output torque for shafts must not be exceeded!
The hydraulic motors are mangano-phosphatized as standard.

PK
Orbitmotor


De hydraulische motor type PK wordt toegepast voor Conveyors, metaalbewerking machines etc.

De motor heeft de volgende mogelijkheden, antifrictie conische lagering, flens, as recht, splines en taps, poorten metrisch en bspp.

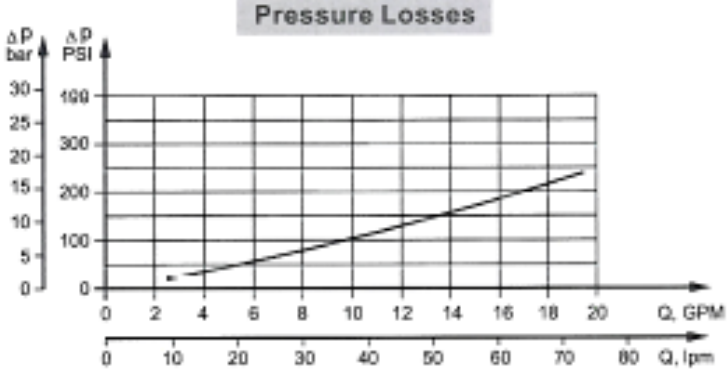
Algemene informatie

Max. Displacement, cm³/rev [in³/rev]	396 [24.16]
Max. Speed, [RPM]	1010
Max. Torque, daNm [lb-in]	cont.: 40,8 [3611] int.: 55,6 [4921]
Max. Output, kW [HP]	8,6 [11.5]
Max. Pressure Drop, bar [PSI]	cont.:105 [1520] int.: 140 [2030]
Max. Oil Flow, lpm [GPM]	50 [13.2]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm²/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm²/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



PK
Orbitmotor

Technische informatie

Type		PK 50	PK 80	PK 100	PK 125	PK 160	PK 200	PK 250	PK 315	PK 400
Displacement, cm³/rev [in³/rev]		49,5[3.02]	79,2 [4.83]	99 [6.04]	123,8 [7.55]	158,4 [966]	198 [12.1]	247,5 [15.1]	316,8 [19.3]	396 [24.16]
Max. Speed, [RPM]	Cont.	808	505	404	323	252	202	160	126	100
	Int.*	1010	630	505	403	315	252	202	157	126
Max. Torque daNm [lb-in]	Cont.	7 [619]	10,8 [956]	14,4 [1274]	17 [1504]	22 [1974]	27,5 [2434]	30,1 [2664]	31,7 [2805]	40,8 [3611]
	Int.*	9,2 [814]	14,6 [1292]	18,3 [1619]	22,9 [2026]	29,3 [2593]	36,6 [3239]	37,6 [3328]	44 [3894]	55,6 [4921]
	Peak**	13,6 [1203]	21,4 [1894]	26,1 [2310]	32,6 [2885]	41,8 [3700]	52,2 [4620]	51,5 [4558]	64,3 [5691]	80 [7080]
Max. Output kW [HP]	Cont.	5,2 [7.0]	5,2 [7.0]	5,2 [7.0]	5,2 [7.0]	5,2 [7.0]	5,2 [7.0]	4,6 [6.2]	3,4 [4.6]	3,4 [4.6]
	Int.*	8,6 [11.5]	8,6 [11.5]	8,6 [11.5]	8,6 [11.5]	8,6 [11.5]	8,6 [11.5]	7 [9.3]	5,8 [7.8]	5,8 [7.8]
Max. Pressure Drop bar [PSI]	Cont.	105 [1520]	105 [1520]	105 [1520]	105 [1520]	105 [1520]	105 [1520]	90 [1305]	70 [1015]	70 [1015]
	Int.*	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	115 [1665]	105 [1520]	105 [1520]
	Peak**	215 [3120]	215 [3120]	215 [3120]	215 [3120]	215 [3120]	215 [3120]	170 [2470]	170 [2470]	170 [2470]
Max. Oil Flow lpm [GPM]	Cont.	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]	40 [10.5]
	Int.*	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]	50 [13.2]
Max. Inlet Pressure bar [PSI]	Cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]
	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Return Pressure with Drain Line or Max. Pressure in Drain Line, bar [PSI]	Cont. 0-100 RPM	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]
	Cont. 100-300 RPM	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]
	Cont. 300-600 RPM	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]
	Cont. >600 RPM	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]
	Int.* 0-max. RPM	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min. Starting Torque, daNm [lb-in]		5,8 [513]	9,1 [805]	12,2 [1079]	14,5 [1283]	19,5 [1725]	24,8 [2195]	27,5 [2433]	29 [2567]	35,9 [3278]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, kg [lb]		5 [11.1]	5,1 [11.2]	5,3 [11.7]	5,4 [11.9]	5,6 [12.3]	5,8 [12.8]	6 [13.2]	6,3 [13.9]	6,8 [15]

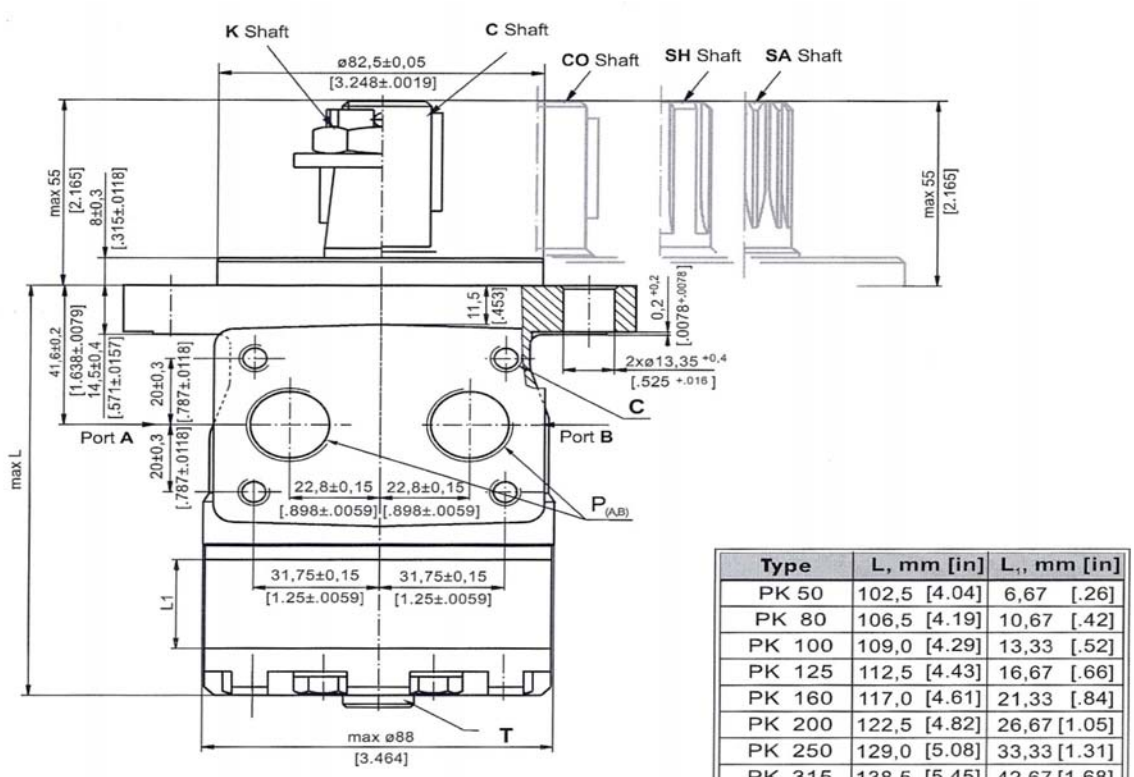
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

11. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
12. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
13. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
14. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
15. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

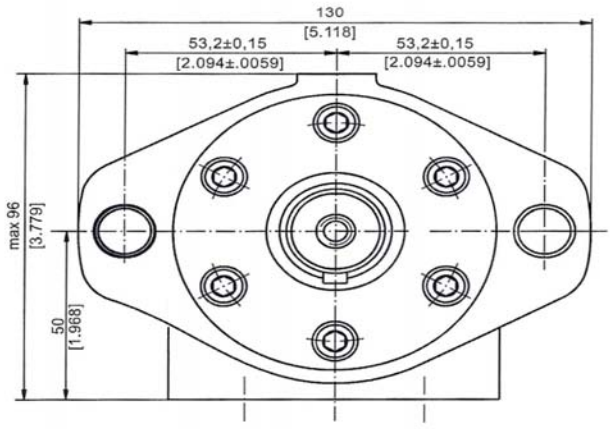
De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

PK
Orbitmotor

Afmetingen en uitvoeringen



Type	L, mm [in]	L1, mm [in]
PK 50	102,5 [4.04]	6,67 [.26]
PK 80	106,5 [4.19]	10,67 [.42]
PK 100	109,0 [4.29]	13,33 [.52]
PK 125	112,5 [4.43]	16,67 [.66]
PK 160	117,0 [4.61]	21,33 [.84]
PK 200	122,5 [4.82]	26,67 [1.05]
PK 250	129,0 [5.08]	33,33 [1.31]
PK 315	138,5 [5.45]	42,67 [1.68]
PK 400	149,0 [5.87]	53,33 [2.10]



Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

C : 4xM8 - 13 mm [.51 in] depth
P(A, B): 2xG1/2 or 2xM22x1,5 - 15 mm [.59 in] depth
T : G1/4 or M14x1,5 - 8,5 mm [.33 in] depth (plugged)

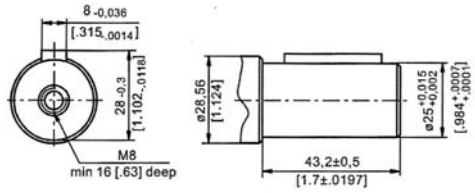
mm [in]

PK

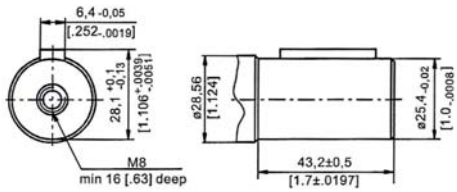
Orbitmotor

Mogelijke assen

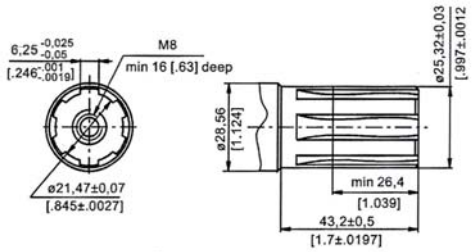
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



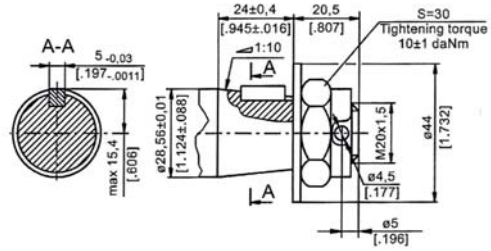
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



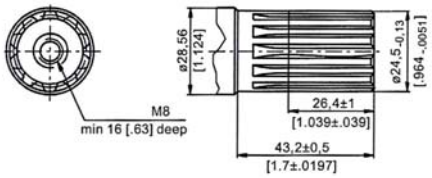
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



K - tapered 1:10, Parallel key B5x5x14 DIN 6885
Max. Torque 40 daNm [3540 lb-in]



SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]



mm [in]

ORDER CODE

	1	2	3	4	5
P K					

Pos.1 - Displacement code

50	- 49,5 cm³/rev [3.02 in³/rev]
80	- 79,2 cm³/rev [4.83 in³/rev]
100	- 99,0 cm³/rev [6.04 in³/rev]
125	- 123,8 cm³/rev [7.55 in³/rev]
160	- 158,4 cm³/rev [9.66 in³/rev]
200	- 198,0 cm³/rev [12.10 in³/rev]
250	- 247,5 cm³/rev [15.10 in³/rev]
315	- 316,8 cm³/rev [19.30 in³/rev]
400	- 396,0 cm³/rev [24.16 in³/rev]

Pos.2 - Shaft Extensions*

C	- ø25 straight, Parallel key A8x7x32 DIN6885
CO	- ø25,4 straight, Parallel key ¼"x¼"x1¼" BS46
SH	- ø25,32 splined BS 2059 (SAE 6B)
K	- ø28,56 tapered 1:10, Parallel key, B5x5x14 DIN6885
SA	- ø24,5 splined B25x22h9 DIN 5482

Pos. 3 - Ports

omit - BSPP (ISO 228)

M - Metric (ISO 262)

Pos. 4 - Special Features (see page 98)

Pos 5 - Design Series

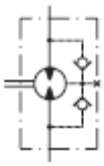
omit - Factory specified

NOTE:

* The permissible output torque for shafts must be not exceeded!

The hydraulic motors are mangano-phosphatized as standard.

RK
Orbitmotor


De hydraulische motor type RK wordt toegepast voor Conveyors, metaalbewerking machines etc.

De motor heeft de volgende mogelijkheden, antifrictie conische lagering, flens, as recht, splines en taps, poorten metrisch en bspp.

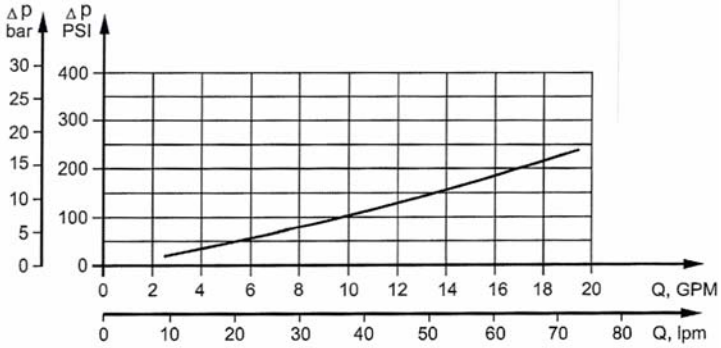
Algemene informatie

Max. Displacement, cm^3/rev [in^3/rev]	397 [24.4]
Max. Speed, [RPM]	970
Max. Torque, daNm [lb-in]	cont.: 40 [3540] int.: 50 [4425]
Max. Output, kW [HP]	12,8 [17.2]
Max. Pressure Drop, bar [PSI]	cont.: 140 [2030] int.: 175 [2540]
Max. Oil Flow, lpm [GPM]	75 [18.5]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



RK
Orbitmotor

Technische informatie

Type		RK 50	RK 80	RK 100	RK 125	RK 160	RK 200	RK 250	RK 315	RK 400
Displacement, cm³/rev [in³/rev]		51,5 [3.14]	80,3 [4.9]	99,8 [6.09]	125,5[7.67]	159,6[9.74]	199,8[12.19]	250,1[15.26]	315,7[19.26]	397 [24.4]
Max. Speed, [RPM]	Cont.	775	750	600	475	375	300	240	190	150
	Int.*	970	940	750	600	470	375	300	240	185
Max. Torque daNm [lb-in]	Cont.	10 [850]	15,7 [1390]	19,8 [1750]	25 [2210]	32 [2830]	34 [3010]	40 [3540]	40 [3540]	40 [3540]
	Int.*	13 [1150]	19,5 [1725]	24 [2125]	30 [2655]	39 [3450]	42 [3717]	47 [4160]	50 [4425]	50 [4425]
	Peak**	17 [1505]	27 [2390]	32 [2830]	37 [3275]	46 [4070]	56 [4960]	64 [5665]	65 [5755]	65 [5755]
Max. Output kW [HP]	Cont.	9 [12.1]	10,4 [13.9]	10,8 [14.4]	10,8 [14.4]	10,4 [13.9]	8,8 [11.8]	8,1 [10.9]	7,4 [9.9]	6,2 [8.3]
	Int.*	10,4 [13.9]	12,6 [16.9]	12,8 [17.2]	12,5 [16.8]	11,5 [15.4]	10,2 [13.7]	9,4 [12.6]	7,8 [10.5]	7,1 [9.5]
Max. Pressure Drop bar [PSI]	Cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	125 [1810]	110 [1600]	[1300]	75 [1090]
	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	155 [2250]	140 [2030]	125 [1810]	90 [1305]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	200 [2900]	150 [2175]	120 [1740]
Max. Oil Flow lpm [GPM]	Cont.	40 [10.5]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]	60 [15.9]
	Int.*	50 [13.2]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]	75 [18.5]
Max. Inlet Pressure bar [PSI]	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Return Pressure with Drain Line or Max. Pressure in Drain Line, bar [PSI]	Cont. 0-100 RPM	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]	150 [2180]
	Cont. 100-300 RPM	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]	75 [1090]
	Cont. 300-600 RPM	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]	50 [725]
	Cont. >600 RPM	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]	20 [290]
	Int.* 0-max. RPM	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]	15 [220]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min. Starting Torque, daNm [lb-in]		8 [710]	12 [1060]	16 [1420]	20 [1770]	25 [2215]	29 [2570]	28 [2480]	32 [2832]	35 [3100]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, kg [lb]		6,2 [13.7]	6,3 [13.9]	6,6 [14.6]	6,7 [14.8]	6,9 [15.2]	7,4 [16.3]	7,8 [17.2]	8,5 [18.7]	9,3 [20.5]

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers

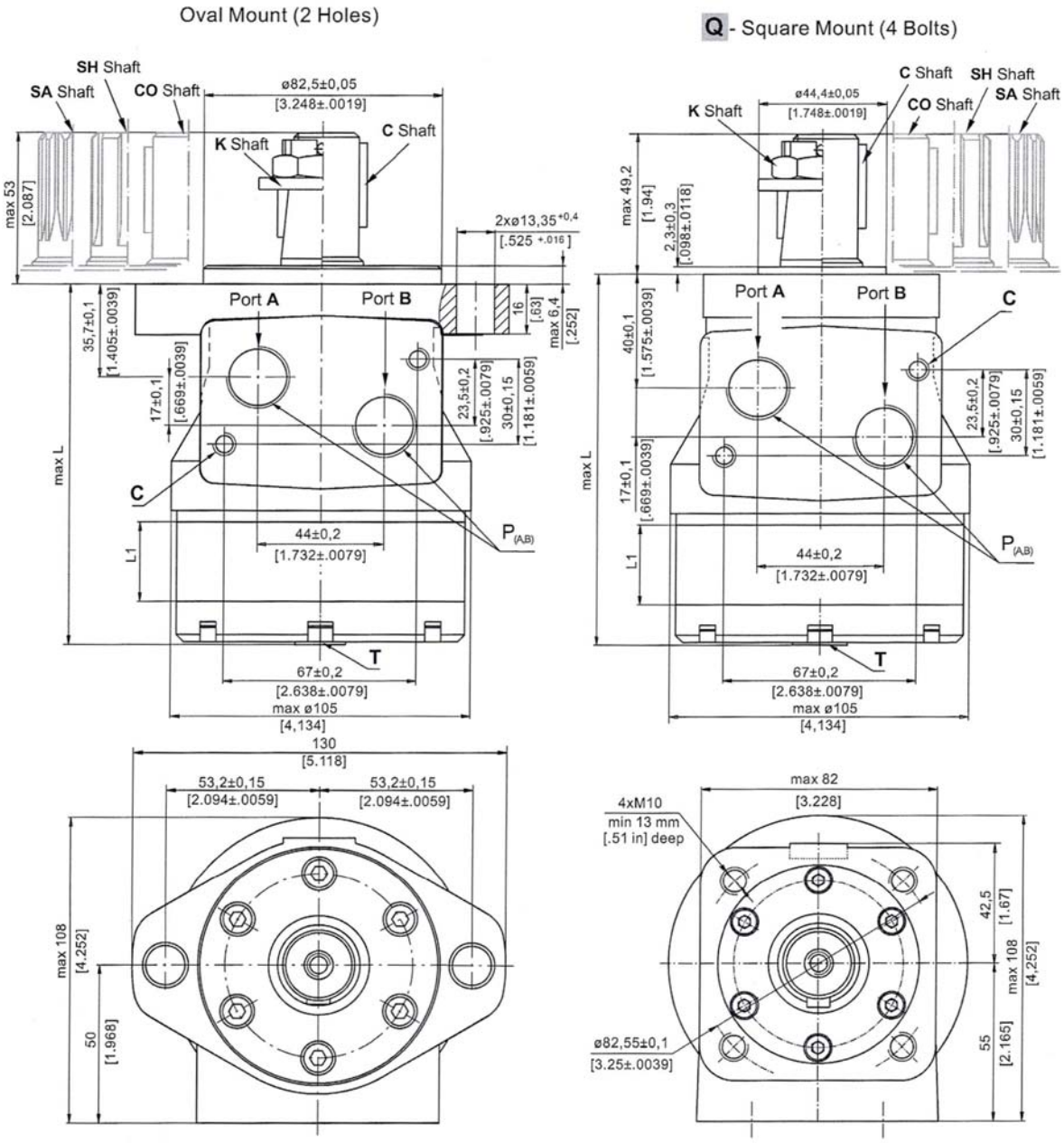
16. Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
17. Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
18. Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
19. Aanbevolen minerale viscositeit is 13mm² bij 50º C.
20. Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

RK

Orbitmotor

Afmetingen en uitvoeringen



Type	L, mm [in]	Type	L, mm [in]	L1, mm [in]
RK 50	109,5[4.31]	RKQ 50	113,8 [4.48]	9,0 [.35]
RK 80	114,5[4.51]	RKQ 80	118,8 [4.68]	14,0 [.55]
RK 100	118,0[4.65]	RKQ 100	122,3 [4.82]	17,4 [.69]
RK 125	122,5[4.82]	RKQ 125	126,8 [4.99]	21,8 [.86]
RK 160	128,5[5.06]	RKQ 160	132,8 [5.23]	27,8 [1.09]
RK 200	135,5[5.33]	RKQ 200	139,8 [5.50]	34,8 [1.37]
RK 250	144,0[5.67]	RKQ 250	148,3 [5.84]	43,5 [1.71]
RK 315	155,5[6.12]	RKQ 315	159,8 [6.29]	54,8 [2.16]
RK 400	170,0[6.69]	RKQ 400	174,3 [6.86]	69,4 [2.73]

C : 4xM8 - 13 mm [.51 in] depth
P$_{(A, B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm [.59 in] depth
T : G1/4 or M14x1,5 - 8,5 mm [.33 in] depth (plugged)

Standard Rotation	Reverse Rotation
Viewed from Shaft End	Viewed from Shaft End
Port **A** Pressurized - **CW**	Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CCW**	Port **B** Pressurized - **CW**

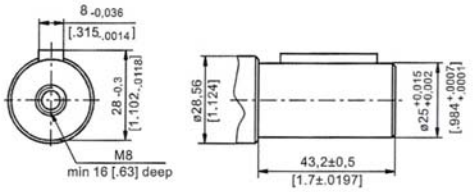
mm [in]

RK

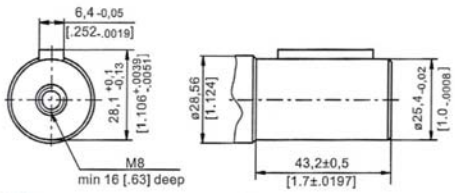
Orbitmotor

Mogelijke assen

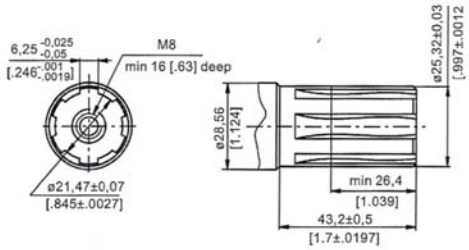
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



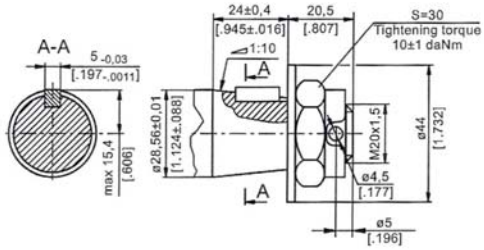
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



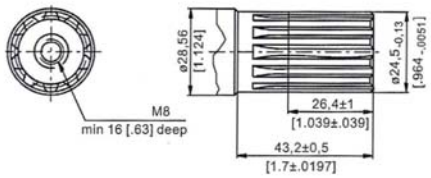
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



K - tapered 1:10, Parallel key B5x5x14 DIN 6885
Max. Torque 40 daNm [3540 lb-in]



SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]



mm [in]

ORDER CODE

	1	2	3	4	5	6
R K						

Pos.1 - Mounting Flange

omit - Oval mount, two holes

Q - Square mount, four bolts

Pos.2 - Displacement code

50	- 51,5 cm³/rev [3.14 in³/rev]
80	- 80,3 cm³/rev [4.90 in³/rev]
100	- 99,8 cm³/rev [6.09 in³/rev]
125	- 125,7 cm³/rev [7.67 in³/rev]
160	- 159,6 cm³/rev [9.74 in³/rev]
200	- 199,8 cm³/rev [12.19 in³/rev]
250	- 250,1 cm³/rev [15.26 in³/rev]
315	- 315,7 cm³/rev [19.26 in³/rev]
400	- 397,0 cm³/rev [24.40 in³/rev]

Pos.3 - Shaft Extensions*

C	- ø25 straight, Parallel key A8x7x32 DIN6885
CO	- ø25,4 straight, Parallel key ¼"x¼"x1¼" BS46
SH	- ø25,32 splined BS 2059 (SAE 6B)
K	- ø28,56 tapered 1:10, Parallel key, B5x5x14 DIN6885
SA	- ø24,5 splined B25x22h9 DIN 5482

Pos.4 - Ports

omit - BSPP (ISO 228)

M - Metric (ISO 262)

Pos.5 - Special Features (see page 98)

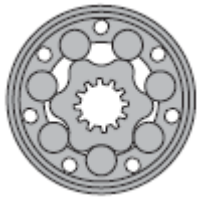
Pos.6 - Design Series

omit - Factory specified

NOTE:
* The permissible output torque for shafts must be not exceeded!

The hydraulic motors are mangano-phosphatized as standard.

RW
Orbitmotor



De hydraulische motor type RW wordt toegepast voor Conveyors, metaalbewerking machines etc.

De motor heeft de volgende mogelijkheden, roll-gorotor, wielflens, as afdichting voor hoge en lage drukken, as recht, splines en taps, poorten metrisch en bspp.

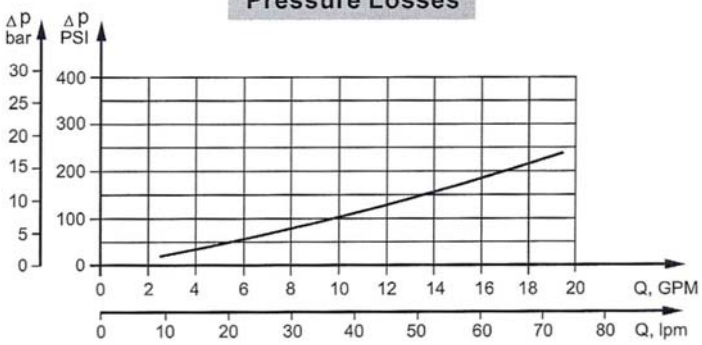
Algemene informatie

Max. Displacement, cm^3/rev [in^3/rev]	397 [24.4]
Max. Speed, [RPM]	1029
Max. Torque, daNm [lb-in]	cont.: 61 [5400] int.: 69 [6100]
Max. Output, kW [HP]	15 [20.1]
Max. Pressure Drop, bar [PSI]	cont.: 175 [2540] int.: 200 [2900]
Max. Oil Flow, lpm [GPM]	90 [23.8]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



RW
Orbitmotor

Technische informatie

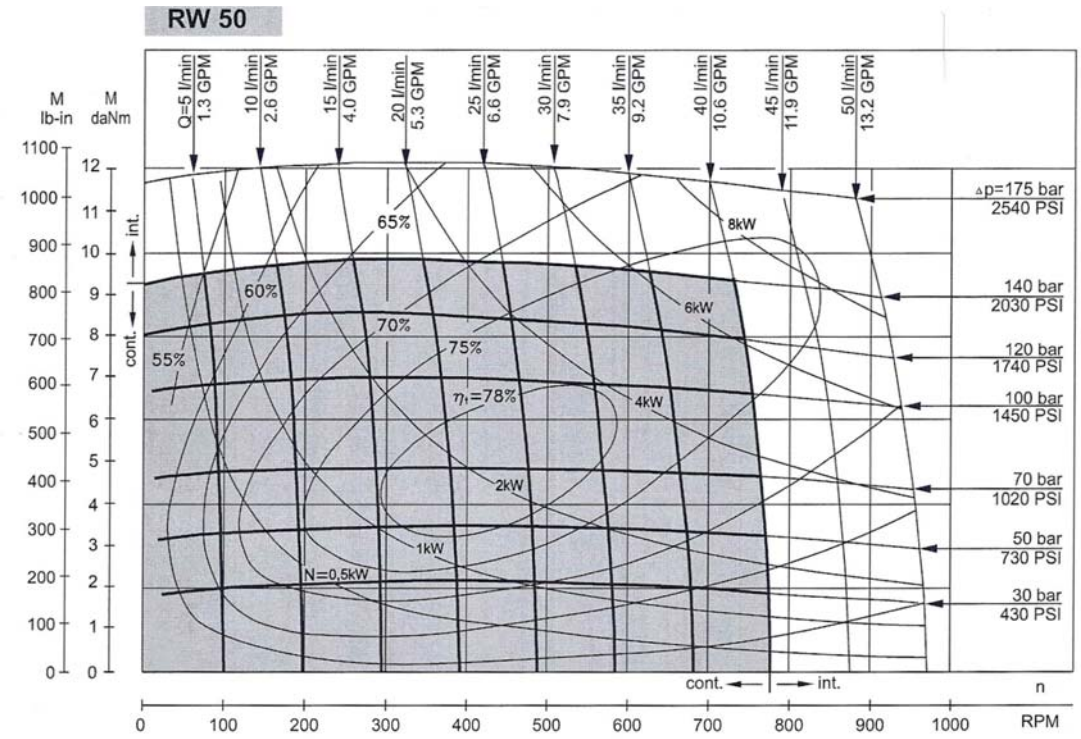
Type		RW 50	RW 80	RW 100	RW 125	RW 160	RW 200	RW 250	RW 315	RW 400
Displacement, cm³/rev.		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
[in³/rev.]		[3.14]	[4.90]	[6.09]	[7.67]	[9.74]	[12.19]	[15.26]	[19.26]	[24.4]
Max. Speed,	Cont.	775	750	600	475	375	300	300	240	190
[RPM]	Int.*	1029	940	750	600	470	375	360	285	226
Max. Torque	Cont.	10 [900]	20 [1770]	24 [2125]	30 [2655]	39 [3450]	45 [4000]	54 [4780]	55 [4870]	61 [5400]
daNm [lb-in]	Int.*	13 [1150]	22 [1947]	28 [2480]	34 [3010]	43 [3805]	50 [4425]	61 [5400]	69 [6100]	69 [6100]
	Peak**	17 [1505]	27 [2390]	32 [2832]	37 [3275]	46 [4070]	56 [4960]	71 [6280]	84 [7430]	87 [7700]
Max. Output	Cont.	7 [9.5]	12,5 [17]	13 [17.4]	12,5 [16.8]	11,5 [15.4]	11 [14.8]	10 [13.4]	9 [12]	7,8 [10.5]
kW [HP]	Int.*	8,5 [11.9]	15 [20.1]	15 [20.1]	14,5 [19.5]	14 [18.8]	13 [17.4]	12 [16.1]	10 [13.4]	10,6 [14.2]
Max. Pressure Drop	Cont.	140 [2030]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	135 [1960]	110 [1600]
bar [PSI]	Int.*	175 [2540]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	175 [2540]	140 [2030]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	210 [3045]	175 [2540]
Max. Oil Flow	Cont.	40 [10,6]	60 [15,9]	60 [15,9]	60 [15,9]	60 [15,9]	60 [15,9]	75 [19,8]	75 [19,8]	75 [19,8]
lpm [GPM]	Int.*	50 [13,2]	75 [19,8]	75 [19,8]	75 [19,8]	75 [19,8]	75 [19,8]	90 [23.8]	90 [23.8]	90 [23.8]
Max. Inlet Pressure	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
bar [PSI]	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Return Pres-	Cont.	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
sure with Drain Line	Int.*	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]	200 [2900]
bar [PSI]	Peak**	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	9 [130]	7 [102]	5 [73]	5 [73]	5 [73]	5 [73]
Min. Starting Torque	At max.press.									
daNm [lb-in]	drop Cont.	8 [710]	15 [1330]	20 [1770]	25 [2215]	32 [2832]	41 [3630]	50 [4425]	50 [4425]	50 [4425]
	At max.press.									
	drop Int.*	10 [885]	17 [1505]	23 [2035]	28 [2480]	37 [3275]	46 [4070]	55 [4870]	66 [5840]	61 [5400]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, kg [lb]		9,6 [21.2]	9,7 [21.4]	9.8 [21.7]	10,0 [22.1]	10,3 [22.7]	10,8 [23.8]	11,3 [24.9]	11,8 [26]	12,5 [27.63]

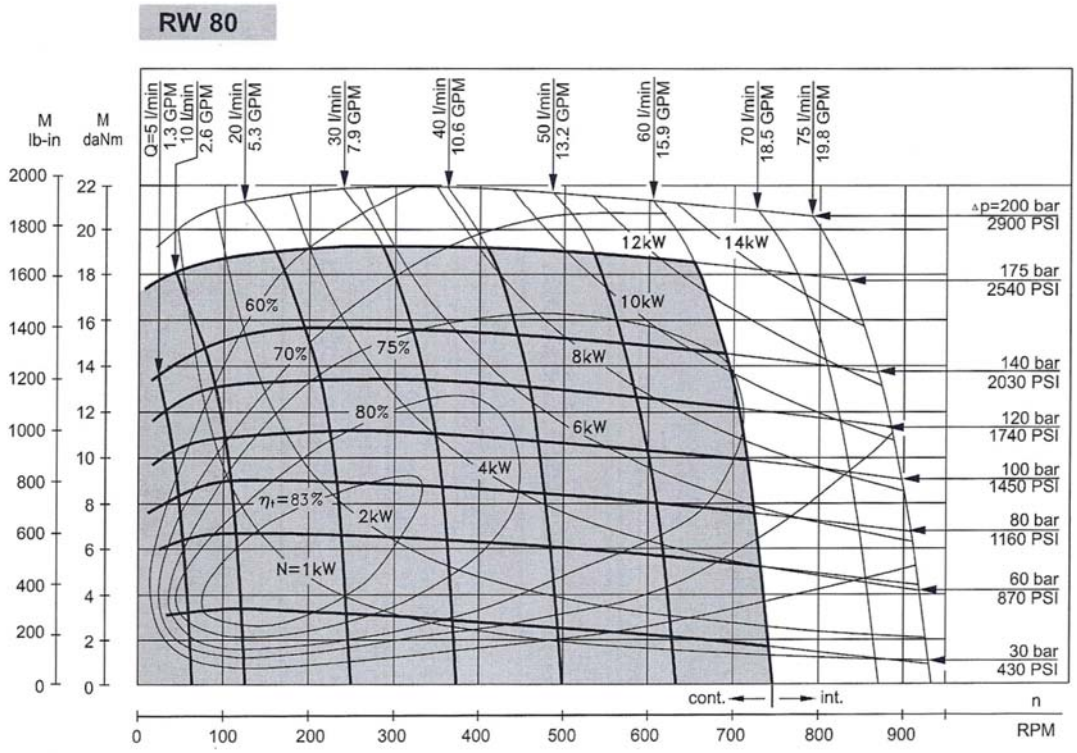
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers
-Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
- Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
- Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
- Aanbevolen minerale viscositeit is 13mm² bij 50º C.
- Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

RW
Orbitmotor

Functiediagrammen

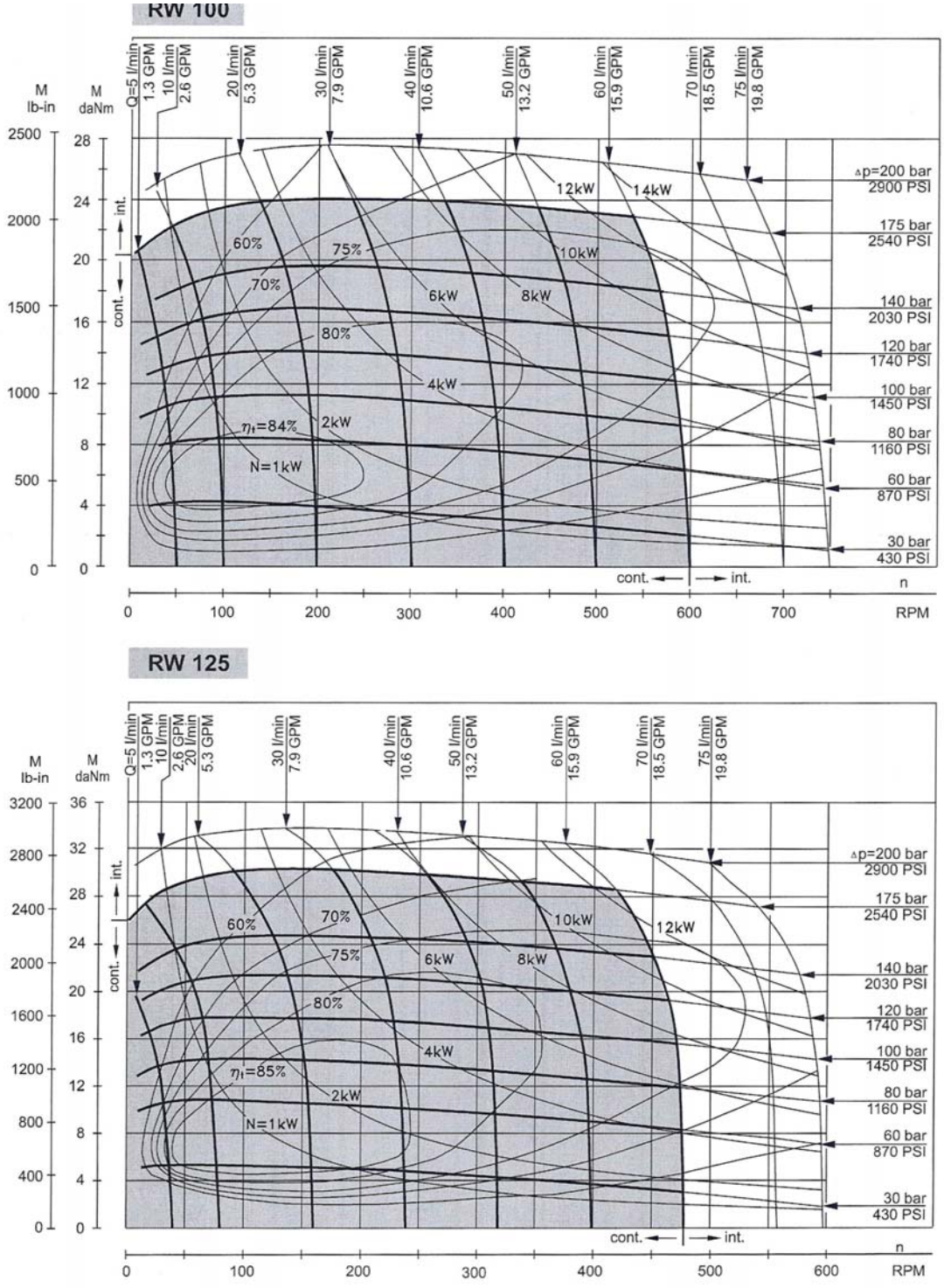




The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

RW
Orbitmotor

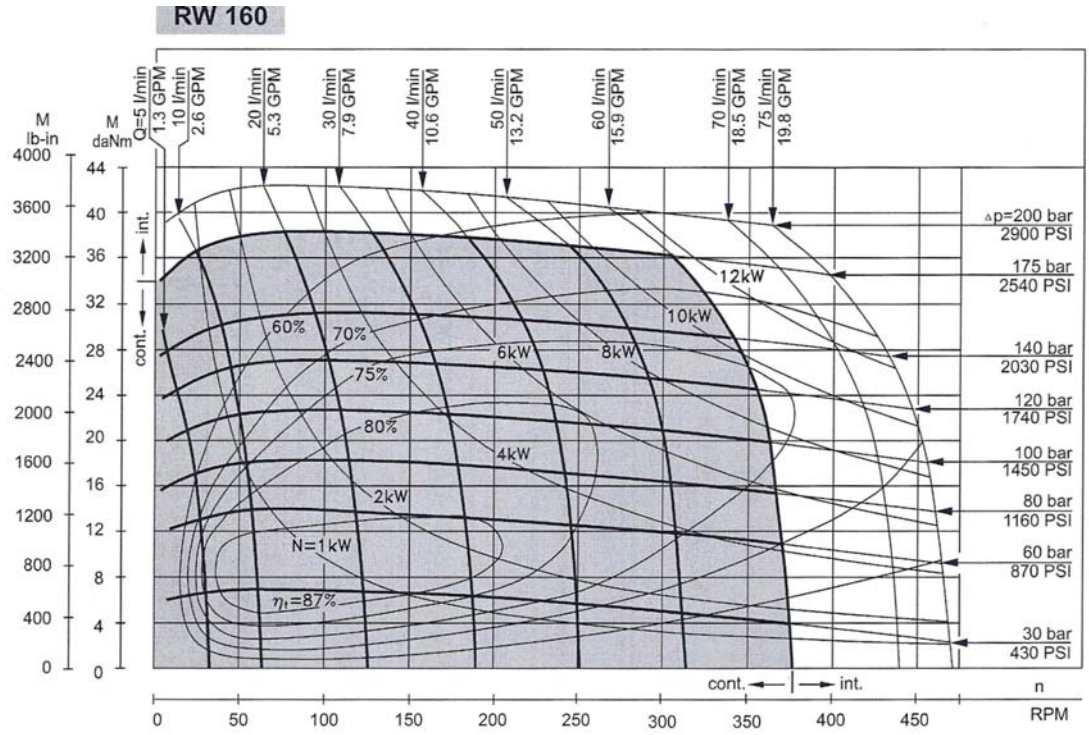
Functiediagrammen

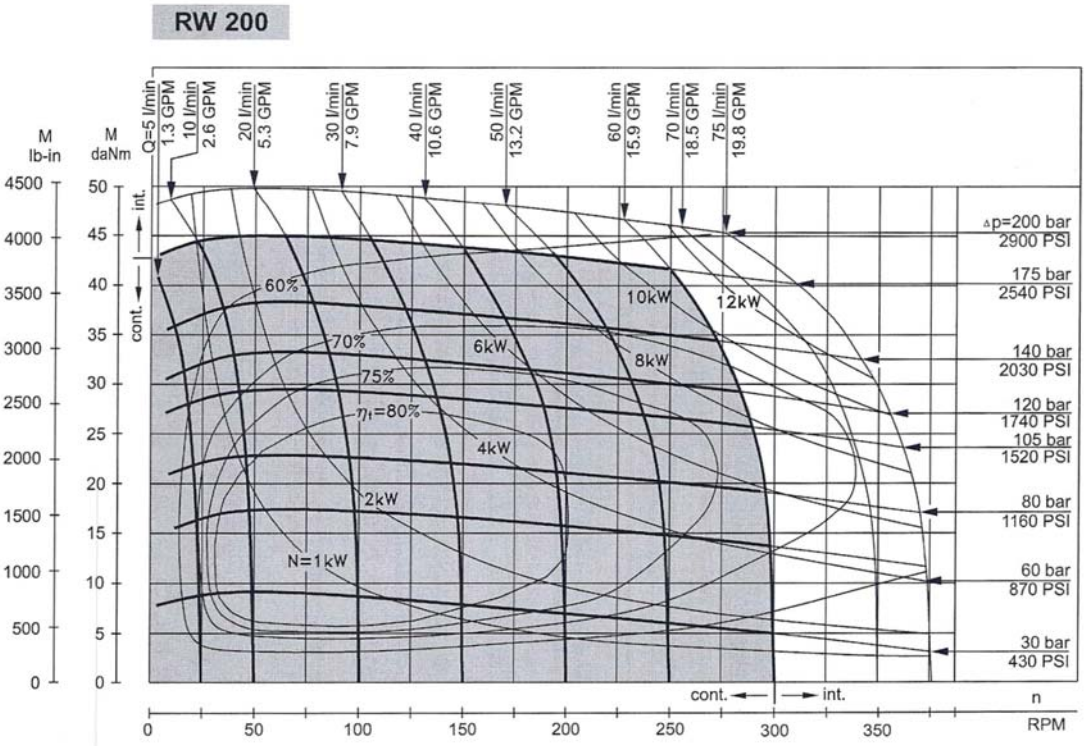


The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

RW
Orbitmotor

Functiediagrammen

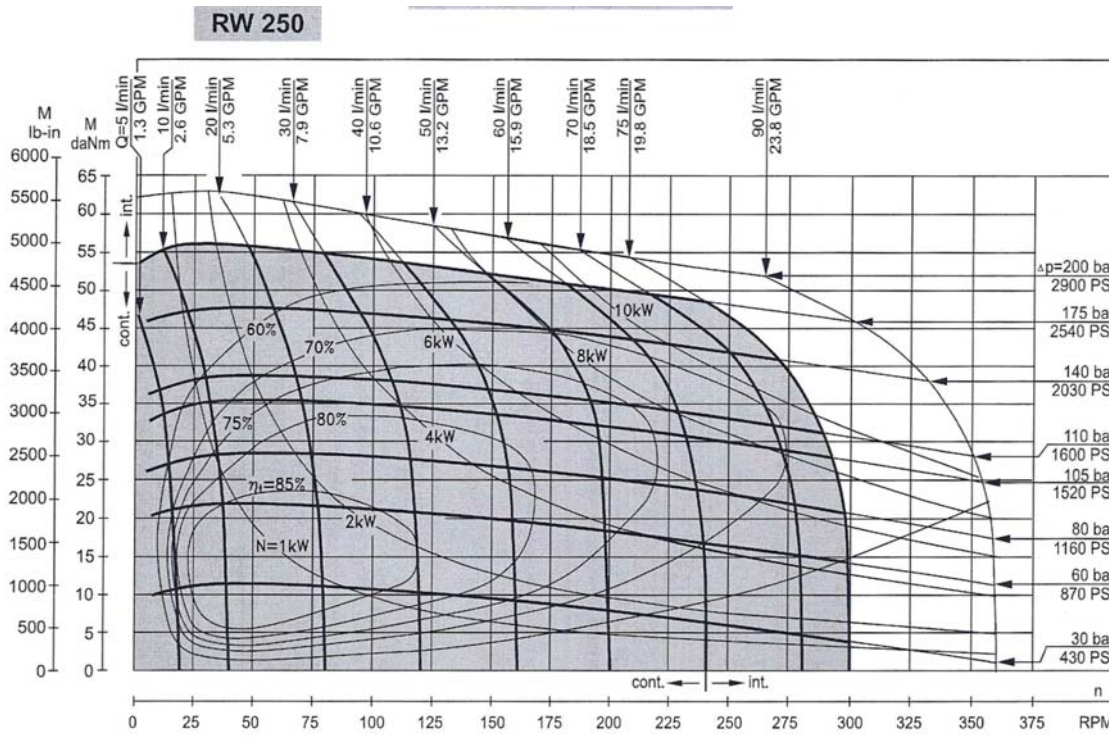


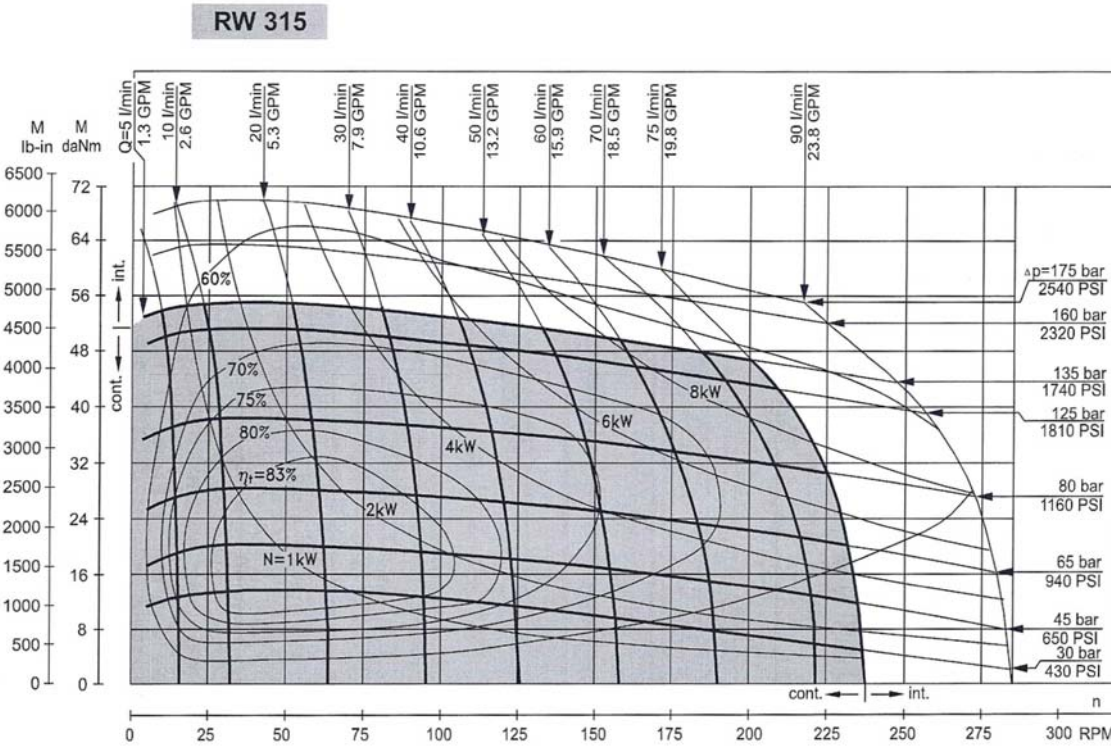


The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

RW
Orbitmotor

Functiediagrammen

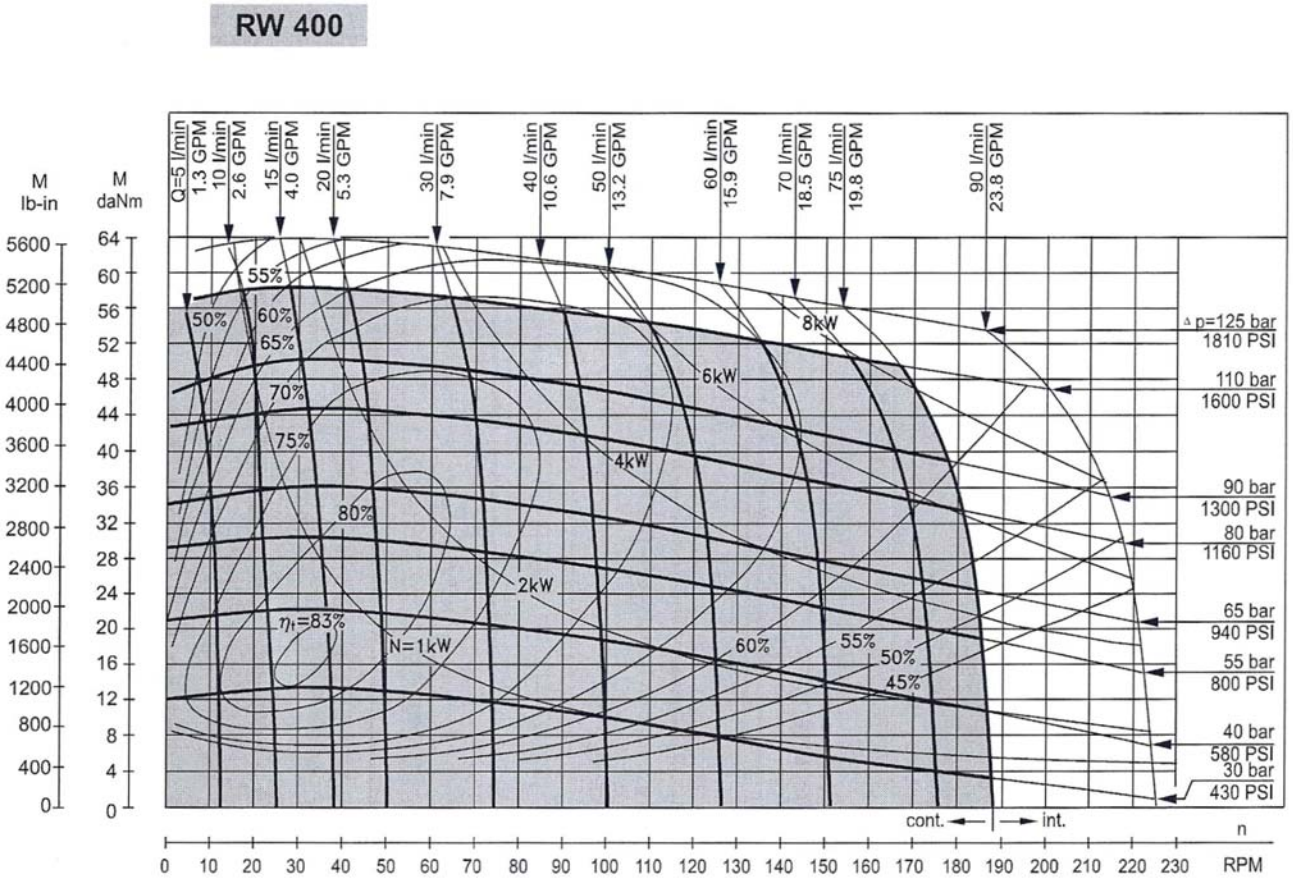




The function diagrams data is for average performance of randomly selected motors at back pressure 5±10 bar [72.5±145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

RW
Orbitmotor

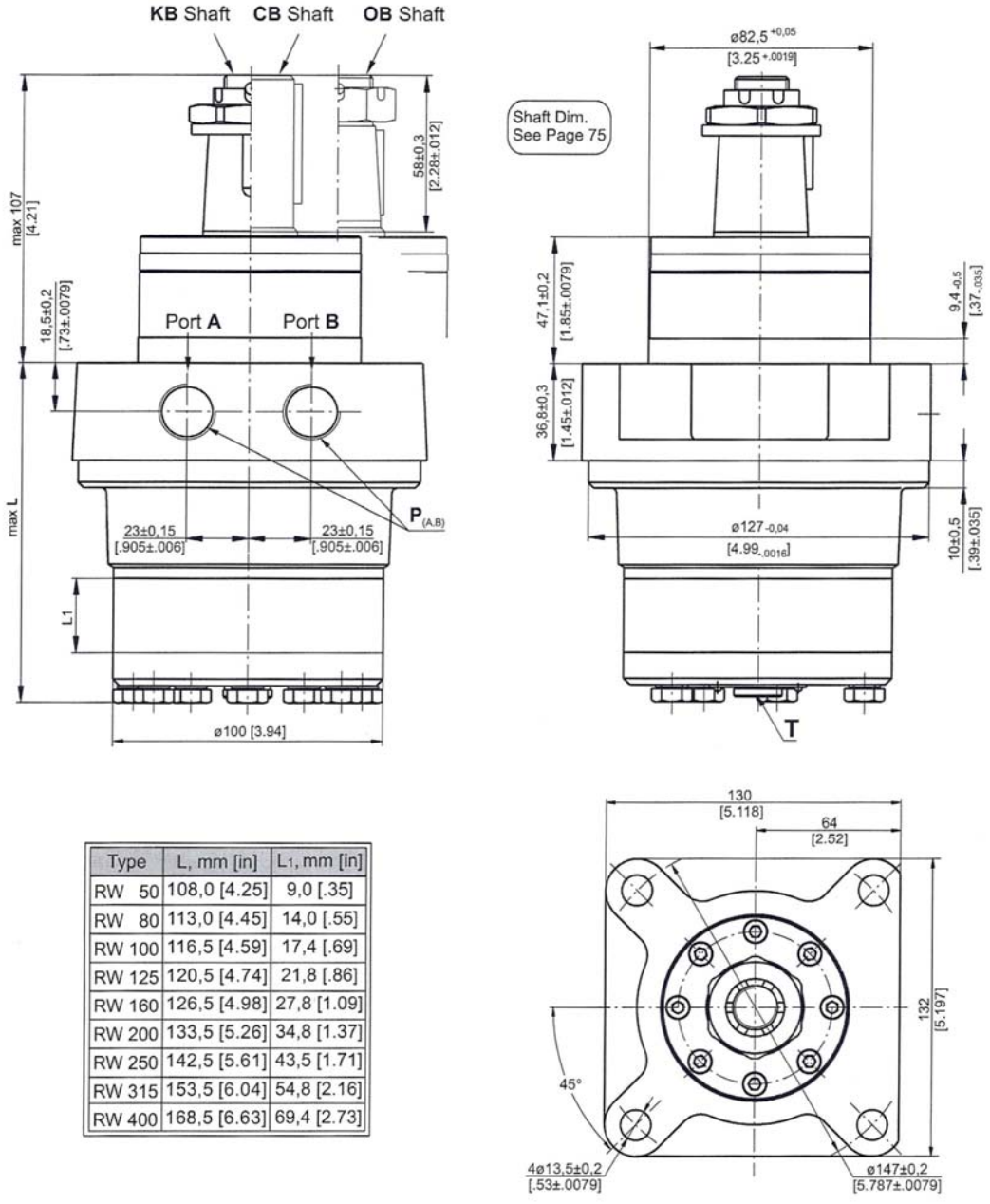
Functiediagram



The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

RW
Orbitmotor

Afmetingen en uitvoeringen



Type	L, mm [in]	L1, mm [in]
RW 50	108,0 [4.25]	9,0 [.35]
RW 80	113,0 [4.45]	14,0 [.55]
RW 100	116,5 [4.59]	17,4 [.69]
RW 125	120,5 [4.74]	21,8 [.86]
RW 160	126,5 [4.98]	27,8 [1.09]
RW 200	133,5 [5.26]	34,8 [1.37]
RW 250	142,5 [5.61]	43,5 [1.71]
RW 315	153,5 [6.04]	54,8 [2.16]
RW 400	168,5 [6.63]	69,4 [2.73]

P(A,B): 2xG1/2 or 2xM22x1,5 - 17 mm [.67 in.] depth
T : G1/4 or M14x1,5 - 12 mm [.47 in.] depth (plugged)

Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

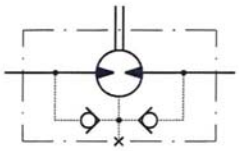
mm [in]

RW
Orbitmotor

Maximaal toegestane druk as afdichting

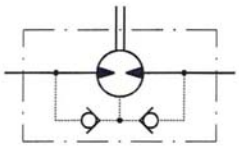
RW...; RW...UK motors with drain connection:

The shaft seal pressure equals the pressure in the drain line.



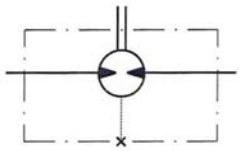
RW...1 motors without drain connection:

The shaft seal pressure never exceeds the pressure in the return line.

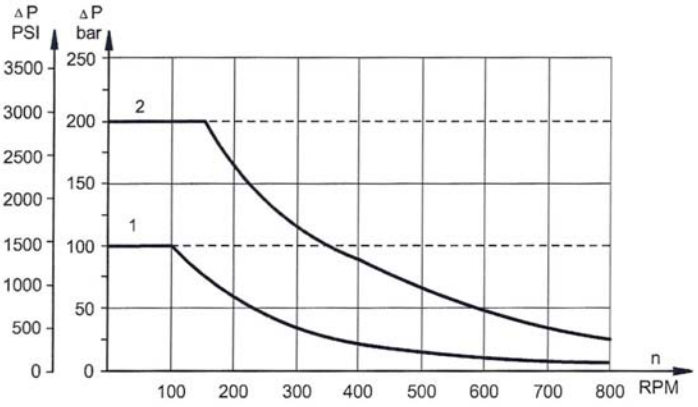


RW...U motors with high pressure seal and drain connection:

The shaft seal pressure equals the pressure in the drain line.



Max. return pressure without drain line or max. pressure in the drain line

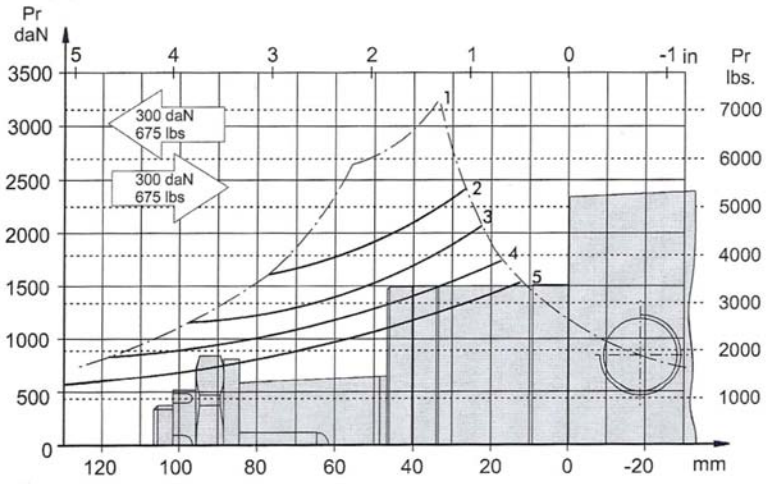


1: Drawing for Standard Shaft Seal
2: Drawing for High Pressure Seal (**"U"** Seal)

——— - continuous operations
- - - - - - - intermittent operations

PERMISSIBLE SHAFT LOADS

The curve applies to a B10 bearing life of 2000 hours.

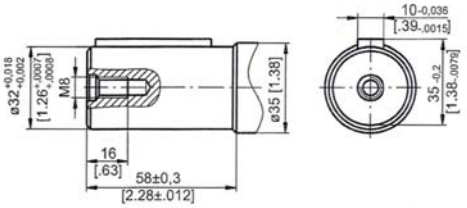


1. Permissible radial shaft load
2. Drawing by n= 50 rpm
3. Drawing by n=100 rpm
4. Drawing by n=200 rpm
5. Drawing by n=400 rpm

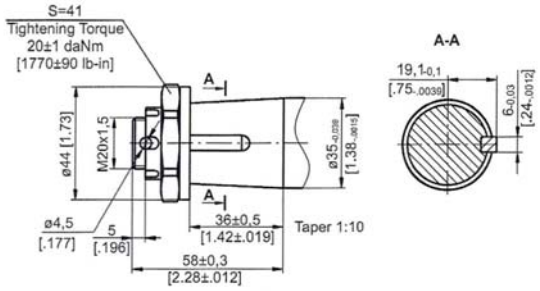
RW
Orbitmotor

Mogelijke assen

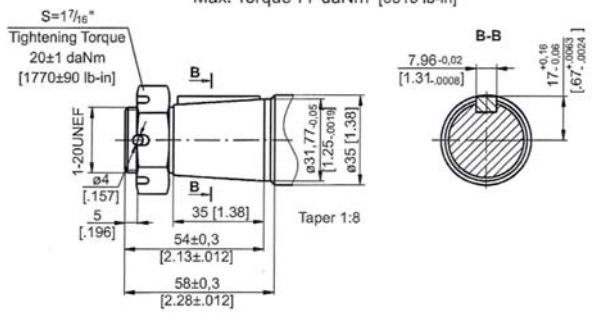
CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



KB - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



OB - tapered 1:8 SAEJ 501, Parallel key 5/16"x5/16"x1¼" BS46
Max. Torque 77 daNm [6815 lb-in]



mm [in]

ORDER CODE

	1	2	3	4	5	6	7
R W							

Pos.1 - Displacement code

50	- 51,5 cm³/rev [3.14 in³/rev]
80	- 80,3 cm³/rev [4.90 in³/rev]
100	- 99,8 cm³/rev [6.09 in³/rev]
125	- 125,7 cm³/rev [7.67 in³/rev]
160	- 159,6 cm³/rev [9.74 in³/rev]
200	- 199,8 cm³/rev [12.19 in³/rev]
250	- 250,1 cm³/rev [15.26 in³/rev]
315	- 315,7 cm³/rev [19.26 in³/rev]
400	- 397,0 cm³/rev [24.40 in³/rev]

Pos.2 - Shaft Extensions*

CB	- ø32 straight, Parallel key A10x8x45 DIN6885
KB	- ø35 tapered 1:10, Parallel key B6x6x20 DIN6888
HB	- ø1 1/4" tapered1:8, Parallel key 5/16"x5/16"x1¼" BS46

Pos.3 - Shaft Seal Pressure

omit	- Standard shaft seal
U	- High pressure shaft seal without check valves
UK	- High pressure shaft seal with check valve

Pos.4 - Drain Port

omit	- with drain port
1	- without drain port

Pos.5 - Ports

omit	- BSPP (ISO 228)
M	- Metric (ISO 262)

Pos.6 - Special Features (see page 98)

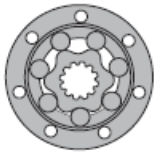
Pos.7 - Design Series

omit - Factory specified

NOTE:
* The permissible output torque for shafts must not be exceeded!

The hydraulic motors are mangano-phosphatized as standard.

HW
Orbitmotor



De hydraulische motor type HW wordt toegepast voor Conveyors, metaalbewerking machines etc.

De motor heeft de volgende mogelijkheden, roll-gorotor, wielflens en flensaansluiting, as recht, splines en taps, poorten bspp.

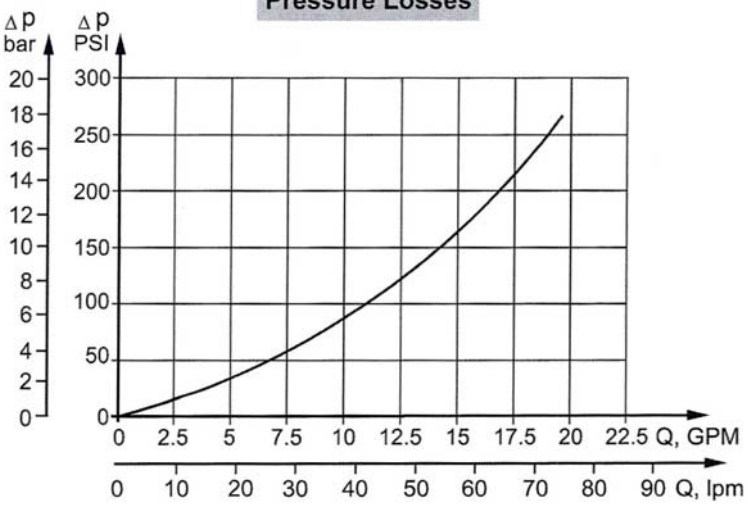
Algemene informatie

Max. Displacement, cm^3/rev [in^3/rev]	550 [33.55]
Max. Speed, [RPM]	497
Max. Torque, daNm [in-lb]	cont.: 96 [8500] int.: 105 [9293]
Max. Output, kW [HP]	23,1 [31]
Max. Pressure Drop, bar [PSI]	cont.: 205 [3000] int.: 225 [3260]
Max. Oil Flow, lpm [GPM]	115 [30.4]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



HW

Orbitmotor

Algemene informatie

Type		HW 125	HW 160	HW 200	HW 235	HW 250	HW 300	HW 315
Displacement, cm³/rev [in³/rev]		126 [7.69]	157,8 [9.64]	201,3 [12.28]	235,3 [14.33]	252 [15.37]	300 [18.3]	314,9 [19.21]
Max. Speed,	cont.	357	380	373	319	298	250	238
[RPM]	int.*	476	475	497	425	397	333	318
Max. Torque	cont.	35 [3098]	44 [3894]	55 [4868]	64,5 [5710]	69 [6107]	81 [7170]	85 [7523]
daNm [in-lb]	int.*	38,5 [3408]	48 [4248]	60 [5310]	70 [6196]	75 [6638]	89 [7877]	93 [8230]
Max. Output,	cont.	16,2 [21.7]	17,6 [23.6]	18,6 [24.9]	18,2 [24.4]	16,8 [22.5]	16,5 [22]	16,4 [21.9]
kW [HP]	int.*	19,8 [26.6]	21,6 [29]	23,1 [31]	22,6 [30.3]	20,8 [27.9]	20,8 [27.9]	20,8 [27.9]
Max. Pressure	cont.	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]
Drop, bar [PSI]	int.*	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
Max. Oil Flow	cont.	45 [12]	60 [16]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
lpm [GPM]	int.*	60 [16]	75 [20]	100 [26.4]	100 [26.4]	100 [26.4]	100 [26.4]	100 [26.4]
Max. Inlet Pressure,	cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
bar [PSI]	int.*	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min. Starting Torque	at max. press. drop cont.	28,7 [2540]	36 [3186]	45,1 [3991]	52,8 [4673]	56,5 [5000]	66,4 [5877]	69,7 [6169]
daNm [in-lb]	at max. press. drop int.*	31,5 [2788]	39,3 [3478]	49,2 [4355]	57,4 [5080]	61,5 [5443]	72,9 [6452]	76,2 [6744]
Min. Speed**, [RPM]		10	10	10	10	10	10	10
Weight, avg. kg [lb]	HW	14,3 [31.5]	14,6 [32.2]	15,1 [33.3]	15,5 [34.2]	15,7 [34.6]	16,1 [35.5]	16,3 [35.9]
	HWF	12,8 [28.2]	13,1 [28.9]	13,6 [30]	14,0 [30.9]	14,2 [31.3]	14,6 [32.2]	14,8 [32.6]
	HWS	14 [30.9]	14,3 [31.5]	14,8 [32.6]	15,2 [33.5]	15,4 [34]	15,8 [34.8]	16 [35.3]

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers
-Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
- Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
- Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
- Aanbevolen minerale viscositeit is 13mm² bij 50º C.
- Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

HW
Orbitmotor

Algemene informatie

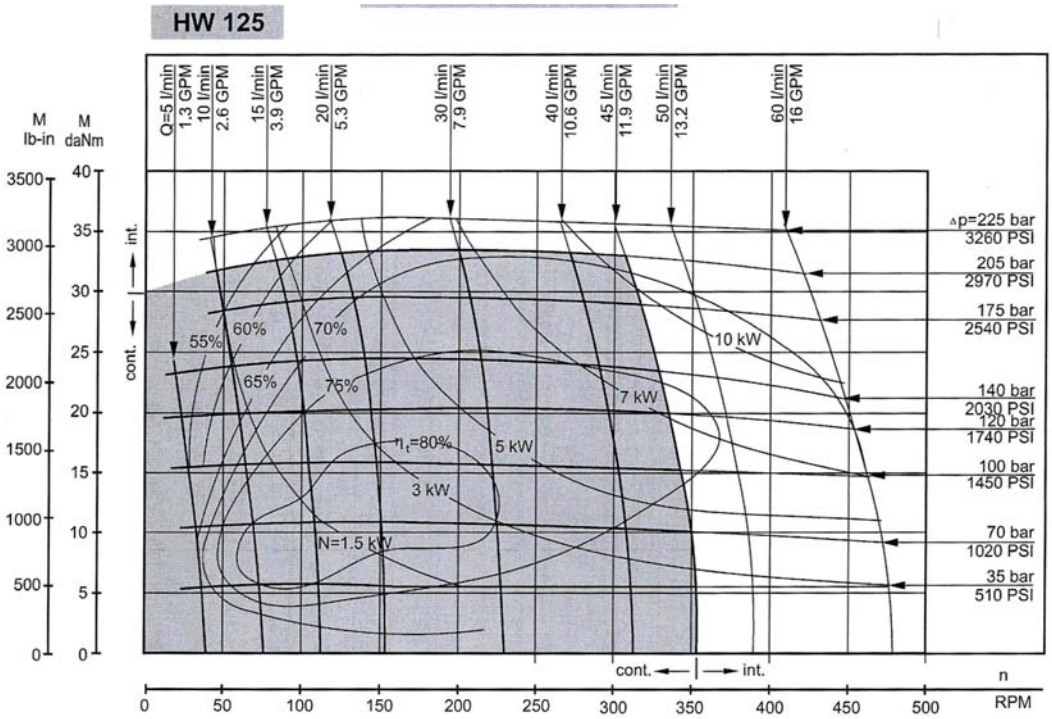
Type		HW 350	HW 370	HW 400	HW 470	HW 500	HW 535	HW 550
Displacement, cm^3/rev [in^3/rev]		347,8 [21.21]	369,2 [22.51]	396,8 [24.2]	470,6 [28.71]	502,4 [30.65]	535 [32.7]	550 [33.55]
Max. Speed,	cont.	216	203	189	159	149	140	136
[RPM]	int.*	288	271	252	244	229	215	209
Max. Torque	cont.	94 [8320]	96 [8497]	96 [8497]	92 [8143]	91 [8054]	90 [7966]	89 [7877]
daNm [in-lb]	int.*	102 [9028]	105 [9293]	98 [8674]	101 [8939]	101 [8939]	104 [9205]	105 [9293]
Max. Output,	cont.	16,5 [22]	13,2 [17.7]	12,5 [16.8]	10,6 [14.2]	10,8 [14.5]	9,4 [12.6]	9 [12]
kW [HP]	int.*	20,8 [27.9]	19,2 [25.7]	18,5 [24.8]	17,4 [23.3]	17,8 [23.9]	16,4 [22]	15,8 [21.2]
Max. Pressure	cont.	205 [2970]	205 [2970]	185 [2680]	150 [2180]	140 [2030]	130 [1885]	125 [1815]
Drop, bar [PSI]	int.*	225 [3260]	225 [3260]	190 [2760]	165 [2390]	155 [2250]	150 [2180]	145 [2105]
Max. Oil Flow	cont.	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
lpm [GPM]	int.*	100 [26.4]	100 [26.4]	100 [26.4]	115 [30.4]	115 [30.4]	115 [30.4]	115 [30.4]
Max. Inlet Pressure,	cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
bar [PSI]	int.*	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
Min. Starting Torque	at max. press. drop cont.	77 [6815]	79,5 [7036]	78,7 [6966]	75,4 [6674]	74,6 [6603]	73,8 [6532]	72,9 [6452]
daNm [in-lb]	at max. press. drop int.*	83,6 [7400]	86 [7612]	80,3 [7107]	82,8 [7328]	82,8 [7328]	85,2 [7540]	84,4 [7470]
Min. Speed**, [RPM]		8	8	8	8	8	5	5
Weight, avg. kg [lb]	HW	16,7 [36.8]	16,9 [37.3]	17,3 [38.1]	18,1 [39.9]	18,4 [40.6]	18,8 [41.5]	18.9 [41.7]
	HWF	15,2 [33.5]	15,4 [34]	15,8 [34.8]	16,6 [36.6]	16,9 [37.3]	17,3 [38.1]	17,4 [38.3]
	HWS	16,4 [36.2]	16,6 [36.6]	17 [37.5]	17,8 [39.2]	18.1 [39.9]	18,5 [40.8]	18,6 [41]

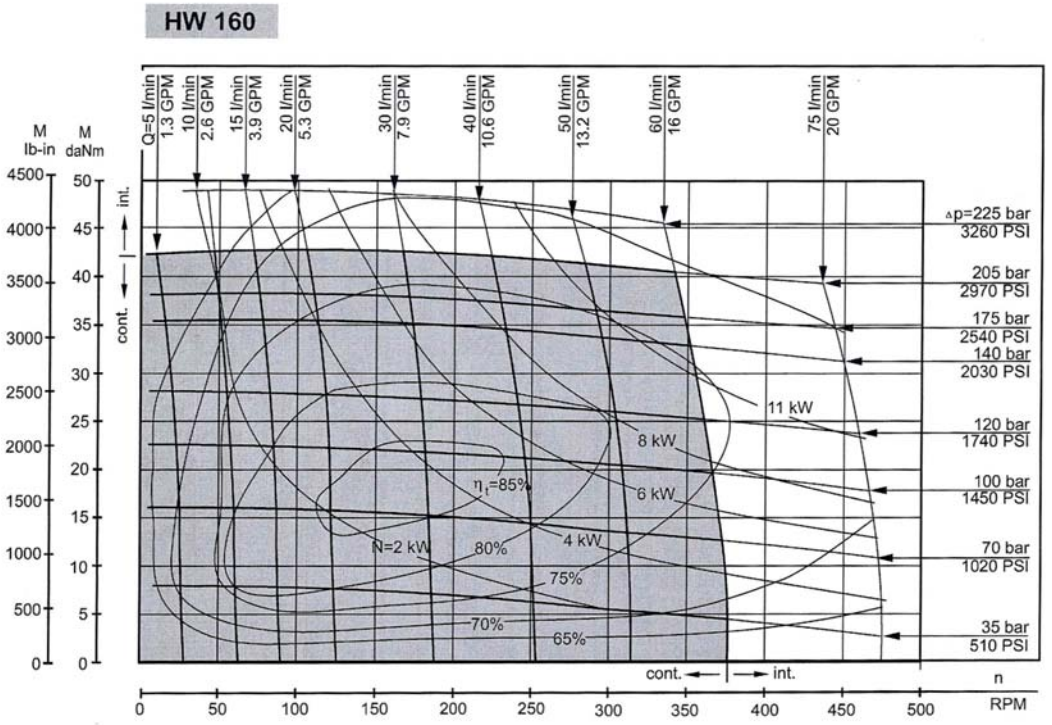
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting: max. 1% per minuut.
*** Voor toerentallen van 20ltr./min of minder neem contact op met onze medewerkers
-Tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen.
- Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering 25 micon of beter.
- Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN 51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals synthetische olieën, dient er overlegt te worden.
- Aanbevolen minerale viscositeit is 13mm^2 bij 50º C.
- Aanbevolen maximum olietemperatuur tijdens gebruik is 82º C.

De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

HW
Orbitmotor

Fuctiediagram

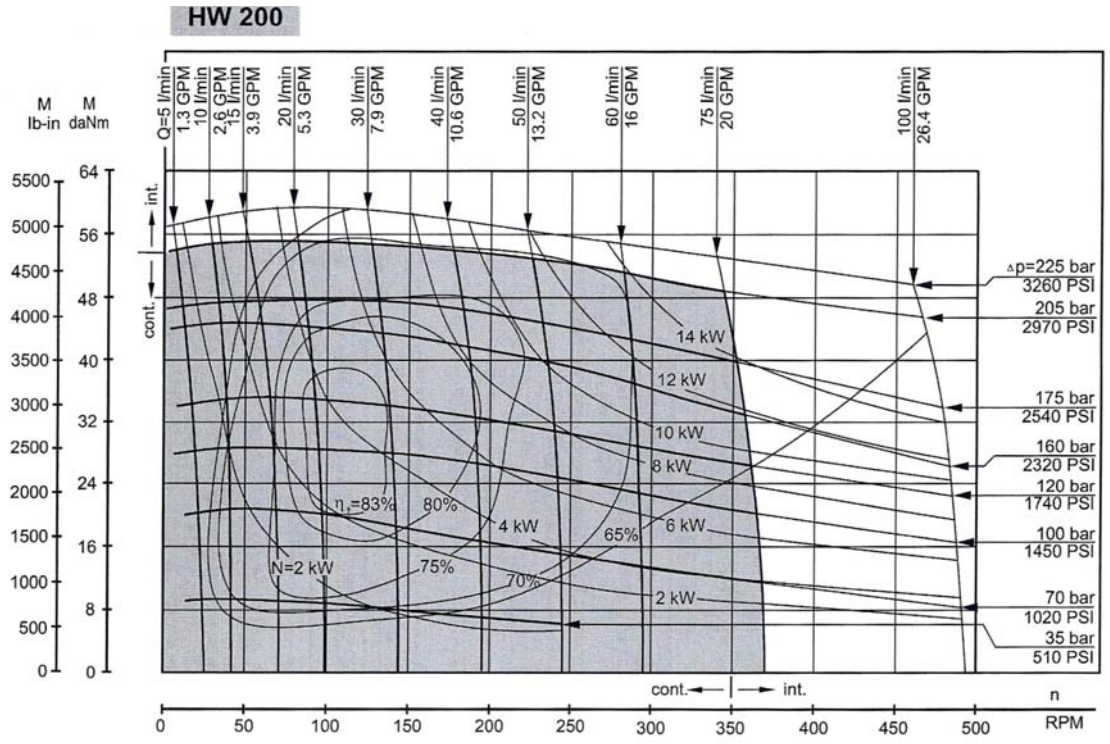


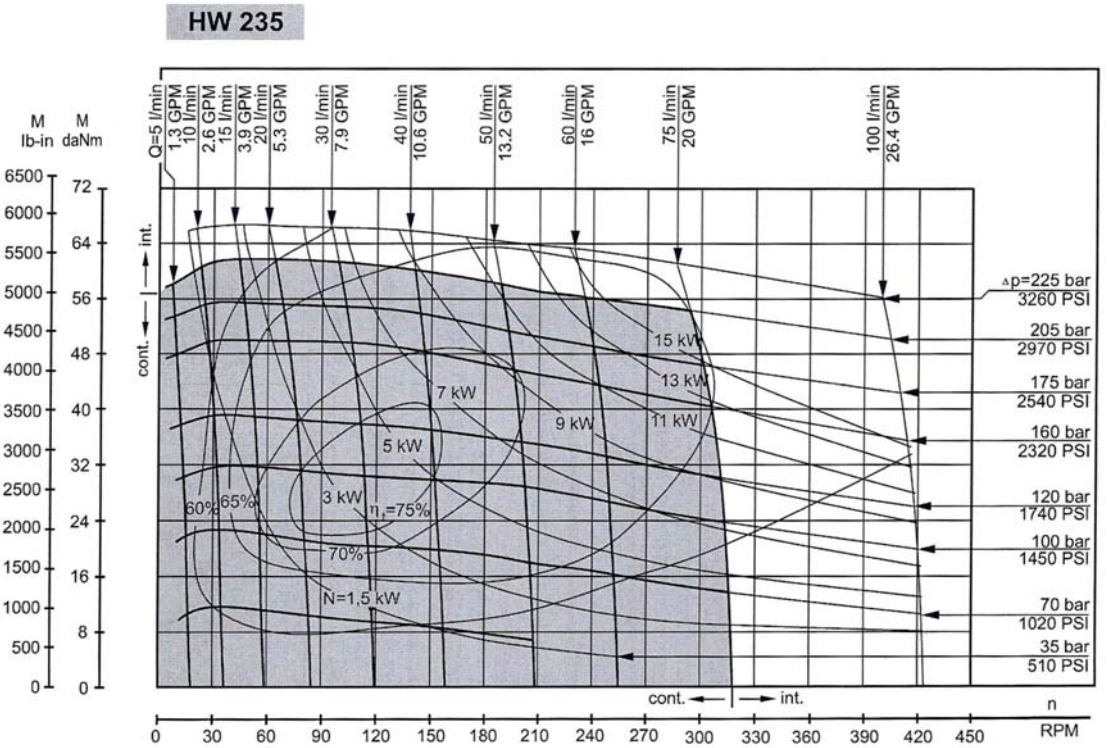


The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

Functiediagrammen

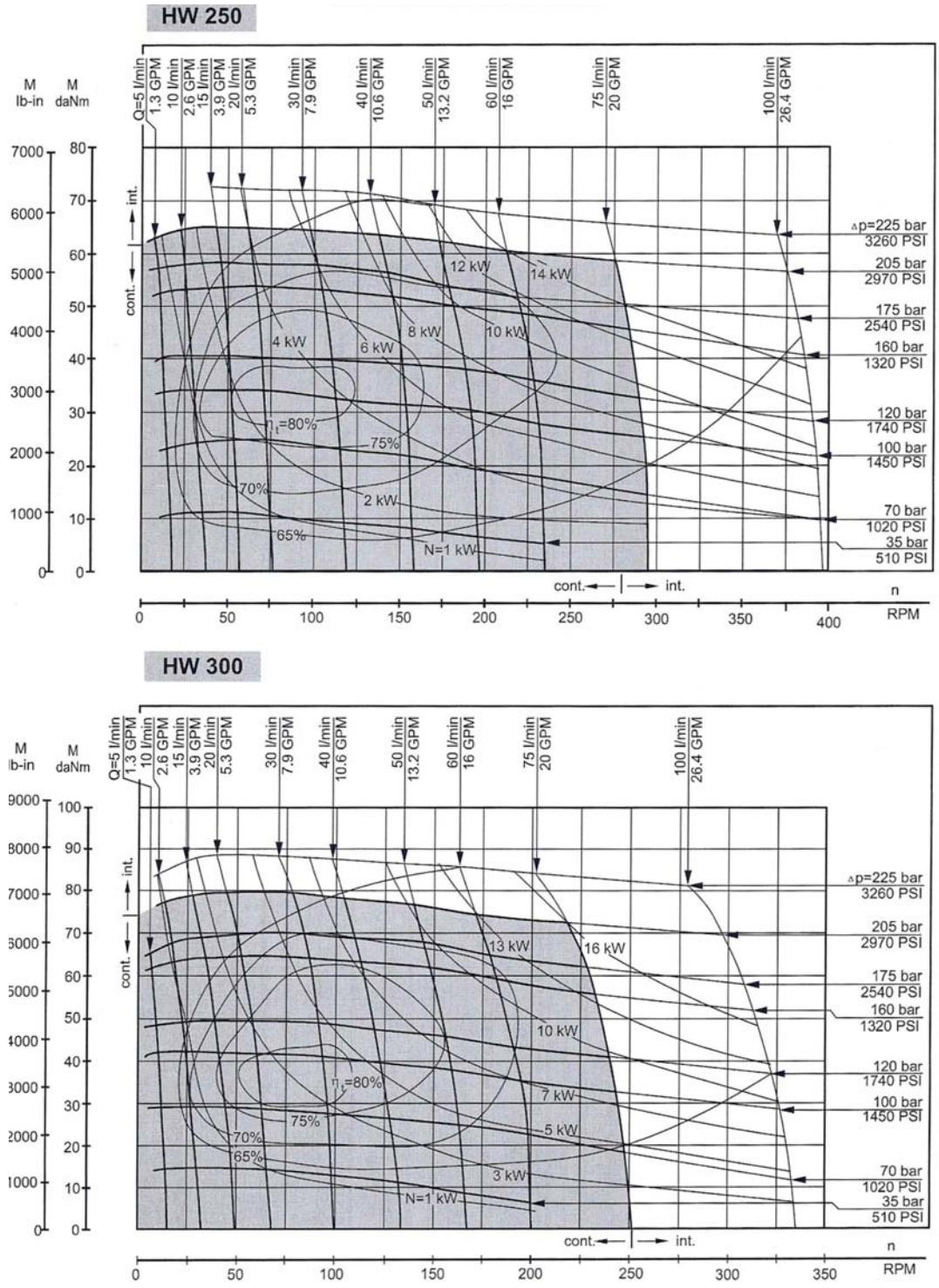




The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

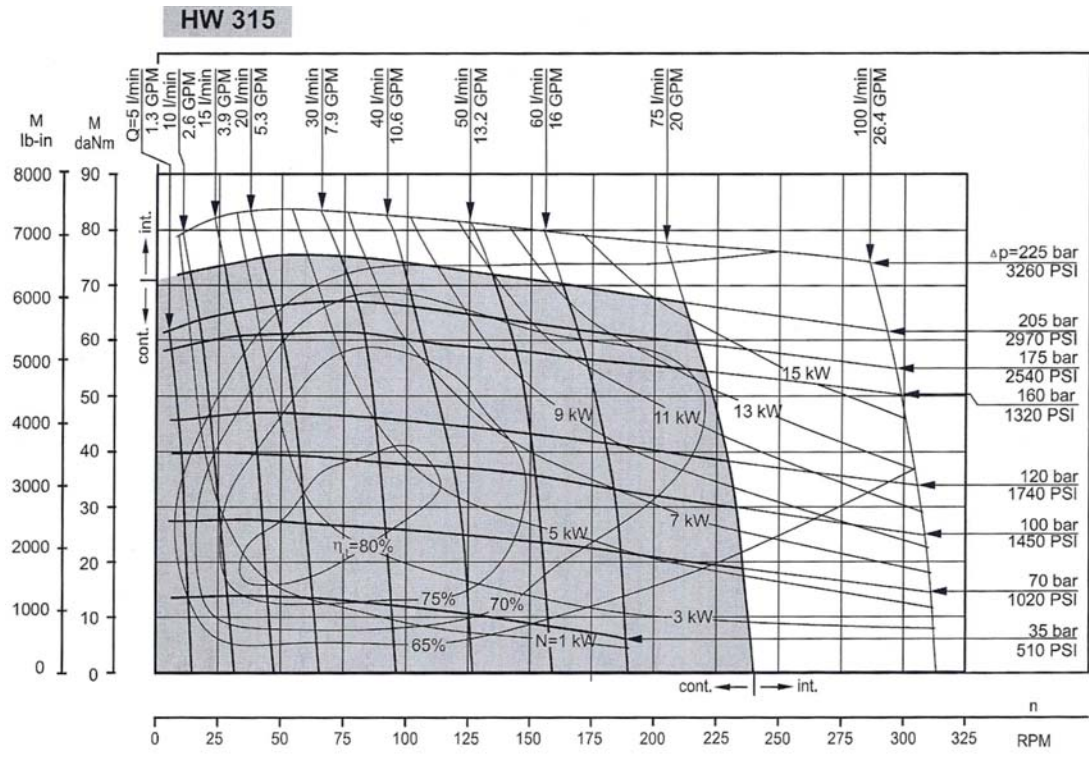
Functiediagrammen

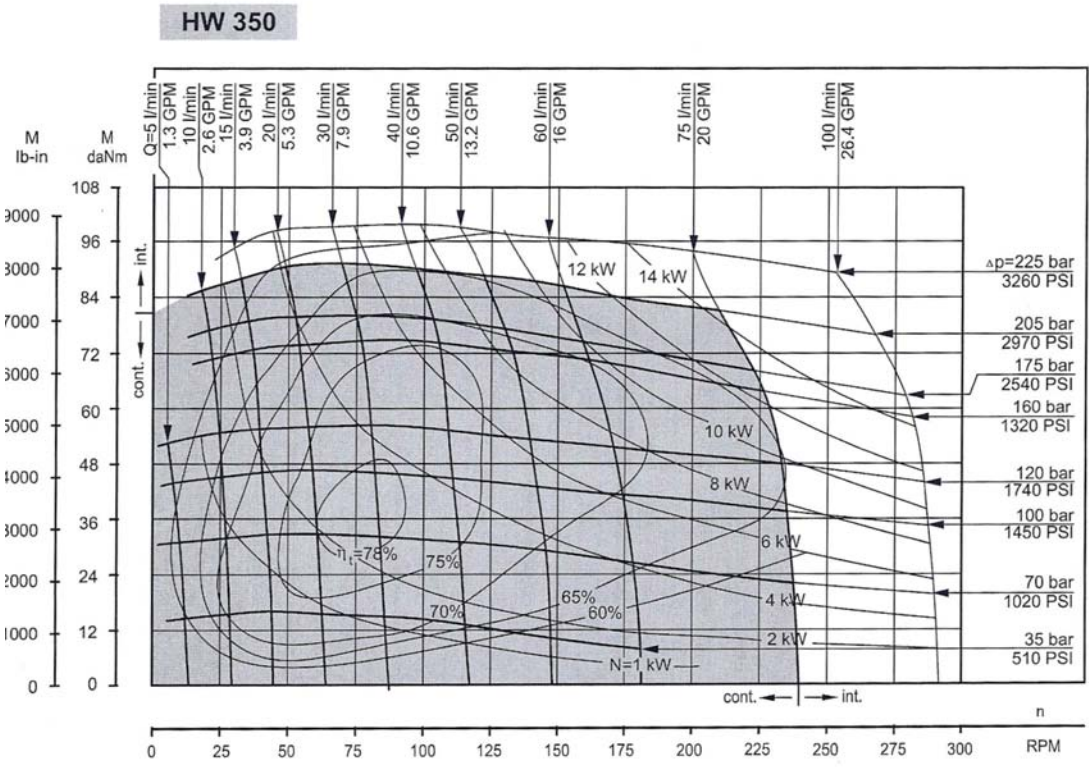


The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

Functiediagrammen



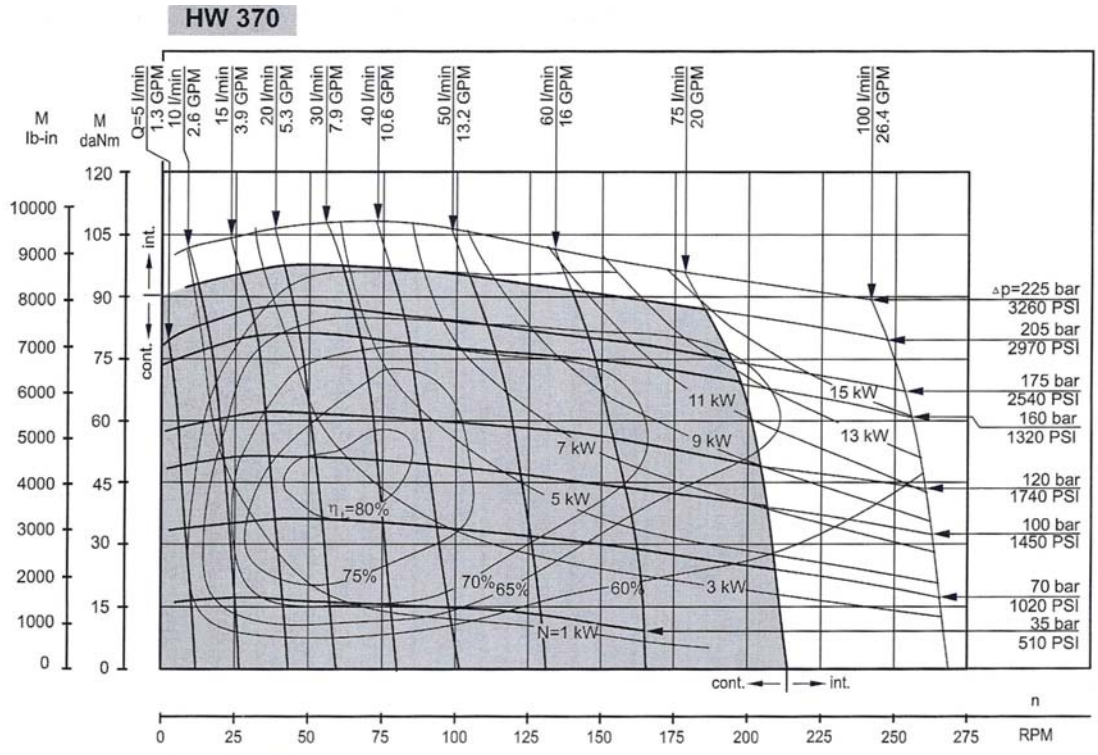


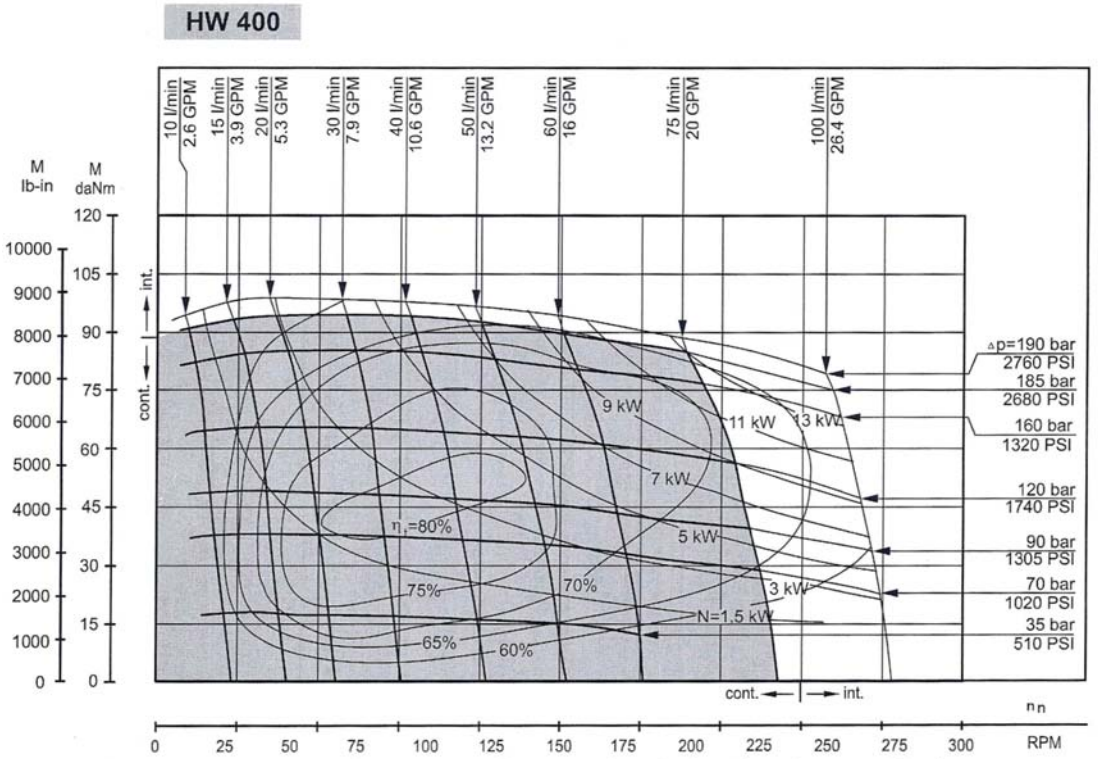
The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW

Orbitmotor

Functiediagrammen

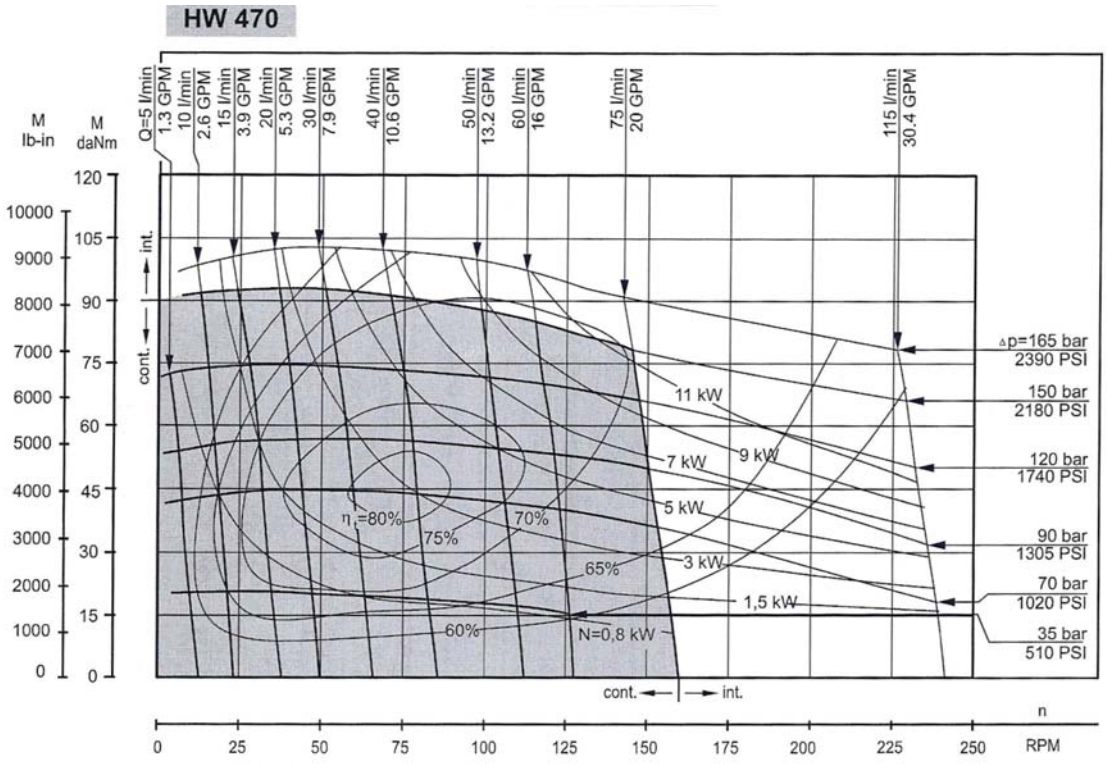


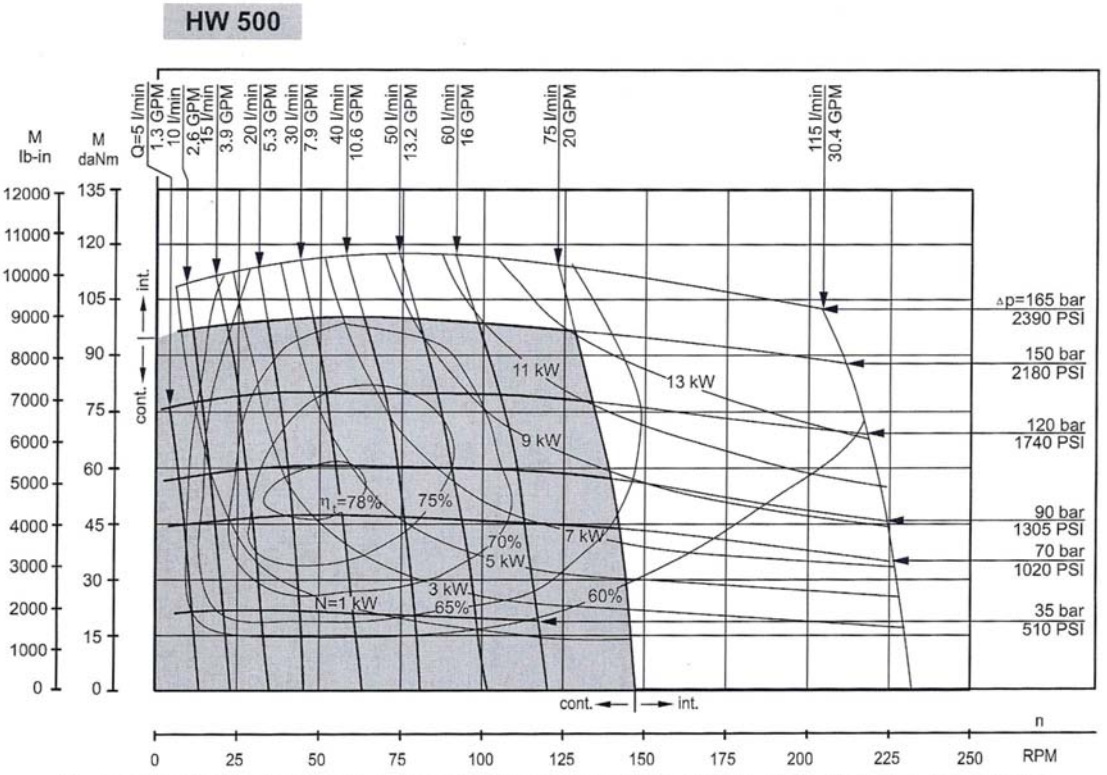


The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

Functiediagrammen

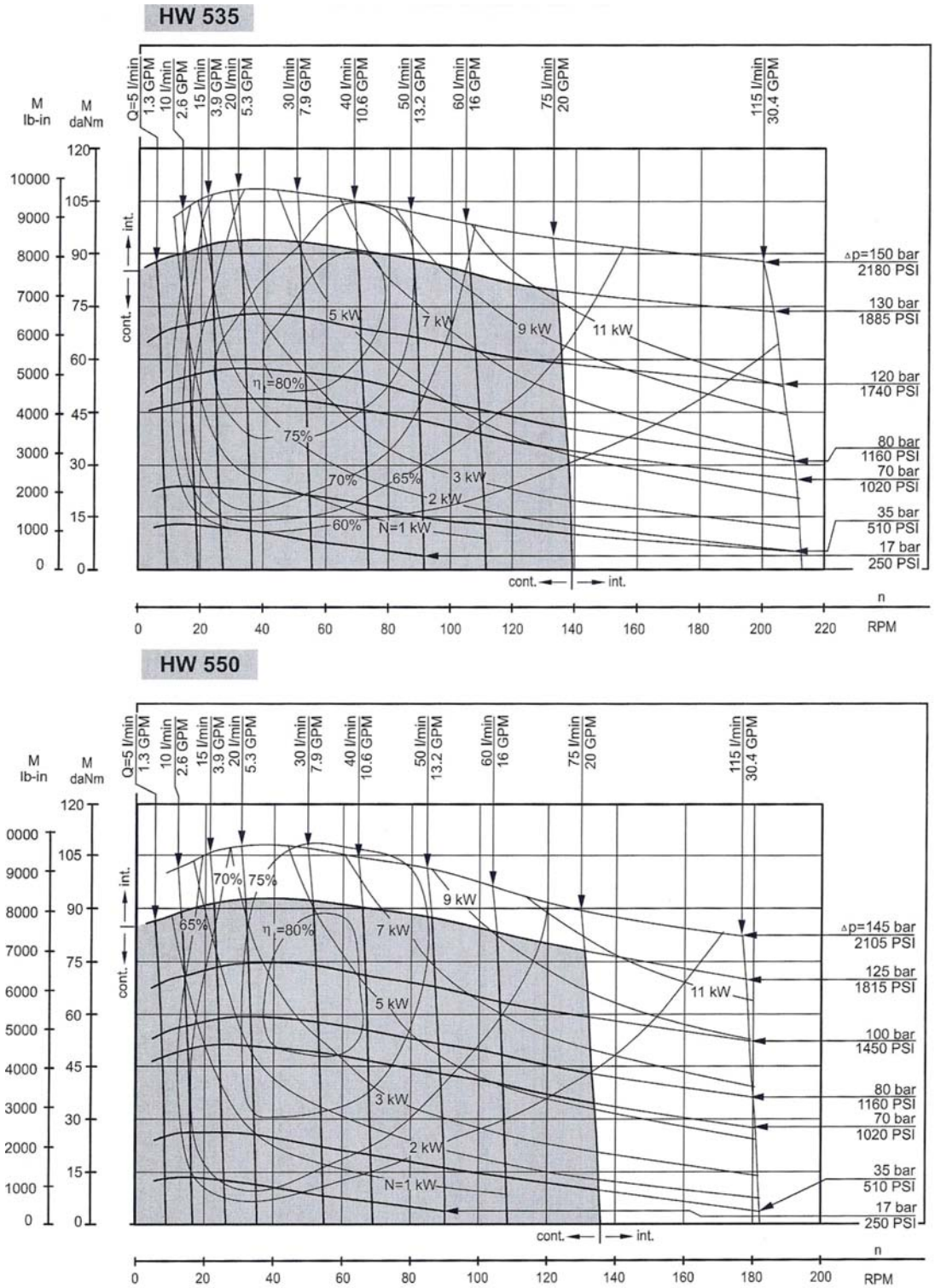




The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

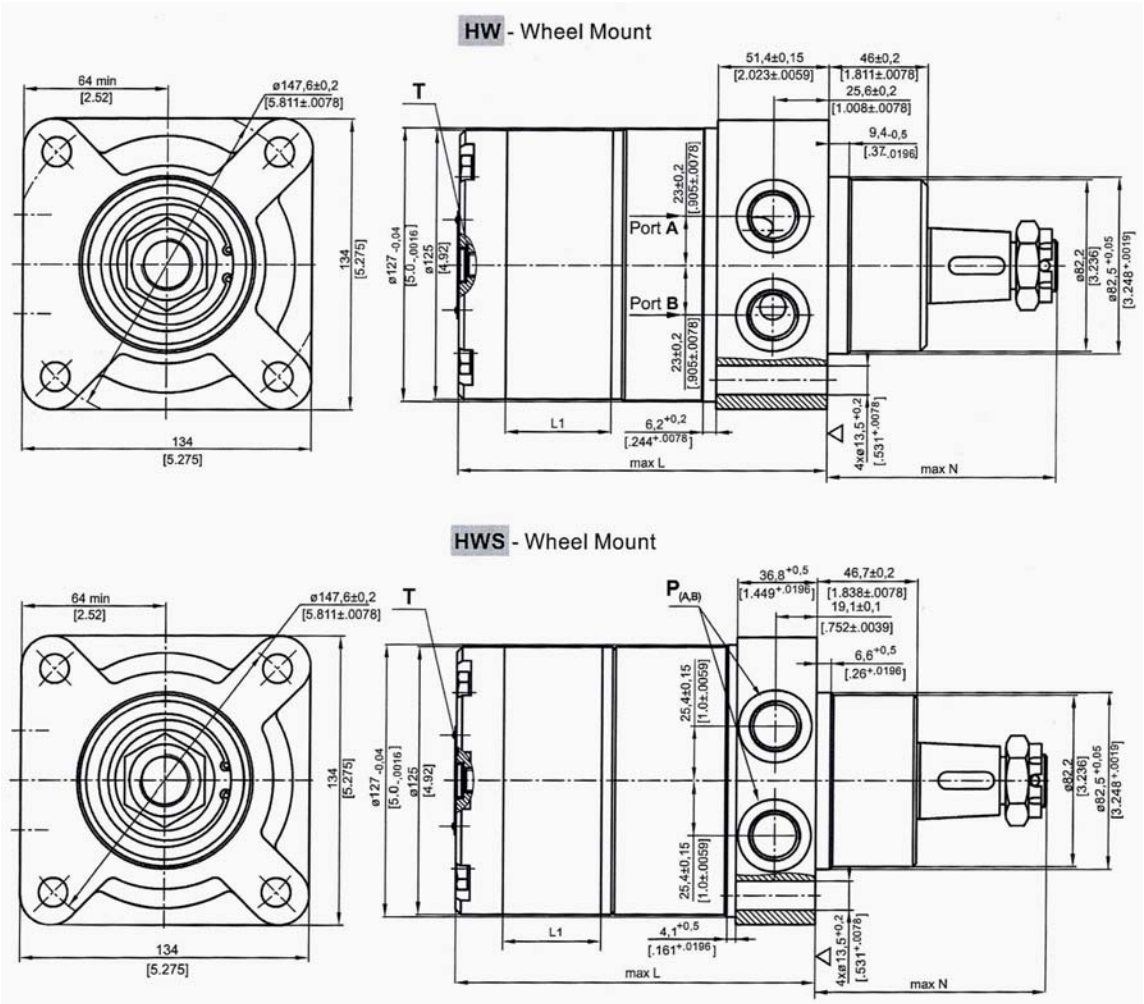
Functiediagrammen



The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

HW
Orbitmotor

Afmetingen en uitvoeringen



Type	*L, mm [in.]	L1,mm [in.]
HW 125	140,5 [5.51]	17,4 [.68]
HW 160	145,0 [5.71]	21,8 [.86]
HW 200	151,0 [5.95]	27,8 [1.09]
HW 235	155,5 [6.12]	32,5 [1.28]
HW 250	158,0 [6.22]	34,8 [1.37]
HW 300	164,5 [6.48]	41,4 [1.63]
HW 315	166,5 [6.56]	43,5 [1.71]
HW 350	171,0 [6.73]	48,0 [1.89]
HW 370	174,0 [6.85]	51,0 [2.01]
HW 400	178,0 [7.01]	54,8 [2.16]
HW 470	188,0 [7.40]	65,0 [2.56]
HW 500	192,5 [7.58]	69,4 [2.73]
HW 535	197,0 [7.76]	74,1 [2.92]
HW 550	199,0 [7.84]	76,0 [2.99]

* For **LSV** option the dimension **L** is 3 mm [.118 in] greater.

Note: For N see page 96.

▽ - Motor Mounting Surface

	Versions	
	2	4
P(A,B)	2xG½	2x⅞-14UNF, O-ring
T	G ¼	7/16-20UNF, O-ring

Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

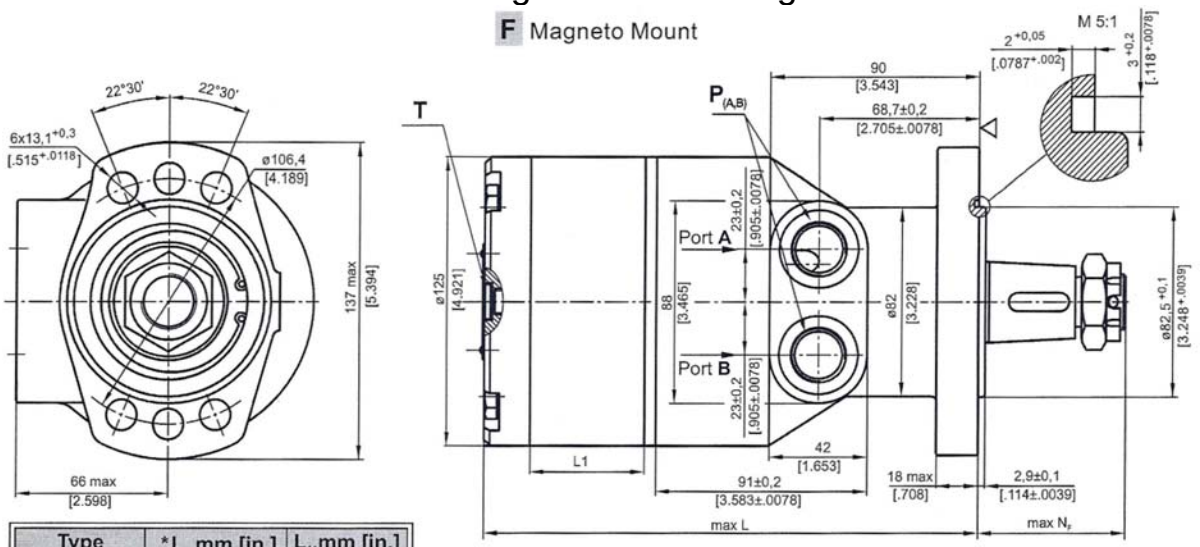
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

mm [in]

HW

Orbitmotor

Afmetingen en uitvoeringen



Type	*L, mm [in.]	L_1,mm [in.]
HWF 125	184,0 [7.24]	17,4 [.68]
HWF 160	188,5 [7.42]	21,8 [.86]
HWF 200	194,5 [7.66]	27,8 [1.09]
HWF 235	199,0 [7.84]	32,5 [1.28]
HWF 250	201,5 [7.93]	34,8 [1.37]
HWF 300	208,0 [8.20]	41,4 [1.63]
HWF 315	210,0 [8.27]	43,5 [1.71]
HWF 350	214,5 [8.45]	48,0 [1.89]
HWF 370	217,5 [8.56]	51,0 [2.01]
HWF 400	221,5 [8.72]	54,8 [2.16]
HWF 470	231,5 [9.11]	65,0 [2.56]
HWF 500	236,0 [9.29]	69,4 [2.73]
HWF 535	240,5 [9.47]	74,1 [2.92]
HWF 550	242,5 [9.55]	76,0 [2.99]

* For **LSV** option the dimension **L** is 3 mm [.118 in] greater.

Note: For N_F see page 96.

▽ - Motor Mounting Surface

	Versions	
	2	4
$P_{(A,B)}$	2xG½	2x⅞-14UNF, O-ring
T	G ¼	7/16-20UNF, O-ring

Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

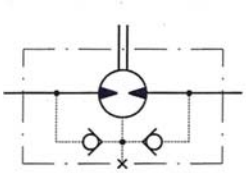
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

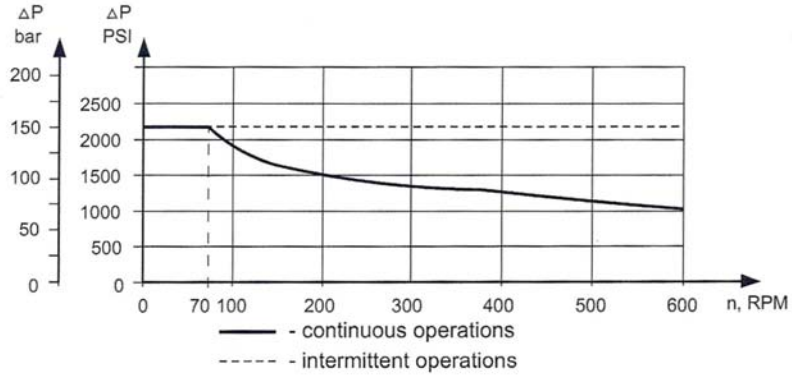
mm [in]

Maximaal toegestane druk op as afdichting

HW... motors with drain connection:

The shaft seal pressure equals the pressure in the drain line.

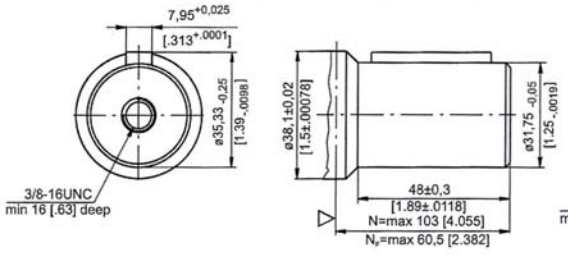




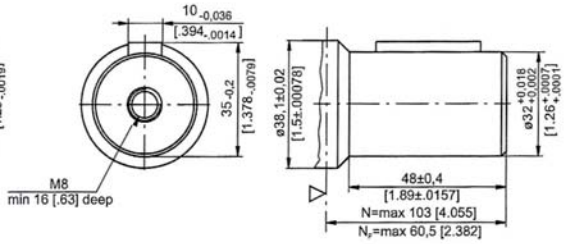
HW
Orbitmotor

Mogelijke assen

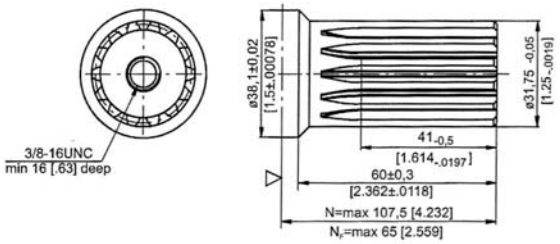
K - 1 ¼" straight, Parallel key 5/16"x 5/16"x 1 ½" BS46
Max. Torque 77 daNm [6815 in-lb]



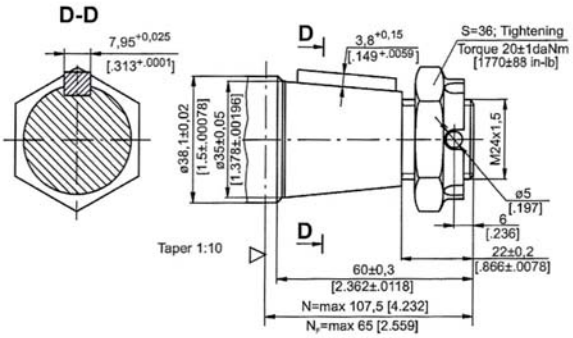
M - ø32 straight, Parallel key A10x8x32 DIN 6885
Max. Torque 77 daNm [6815 in-lb]



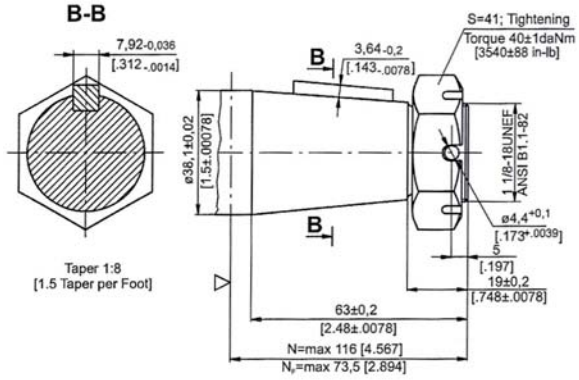
L - ø1 ¼" splined 14T, DP12/24 ANSI B92.1-1976 Norm
Max. Torque 77 daNm [6815 in-lb]



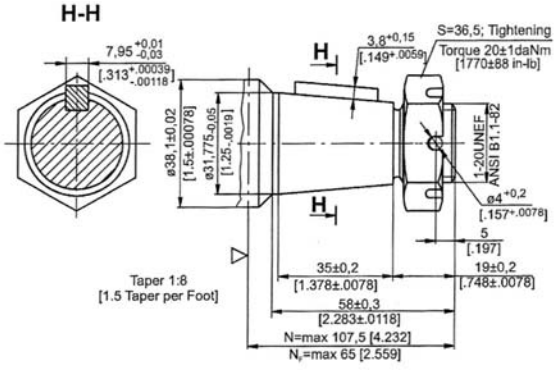
KB - ø35 tapered 1:10 , Parallel key 5/16"x5/16"x1¼" BS46
Max. Torque 95 daNm [8410 in-lb]



T - 1 ½" tapered 1:8 , Parallel key 5/16"x5/16"x1 ¼" Bs46
Max. Torque 120 daNm [10620 in-lb]



R - 1 ¼" tapered 1:8 , Parallel key 5/16"x5/16"x1" BS46
Max. Torque 77 daNm [6815 in-lb]

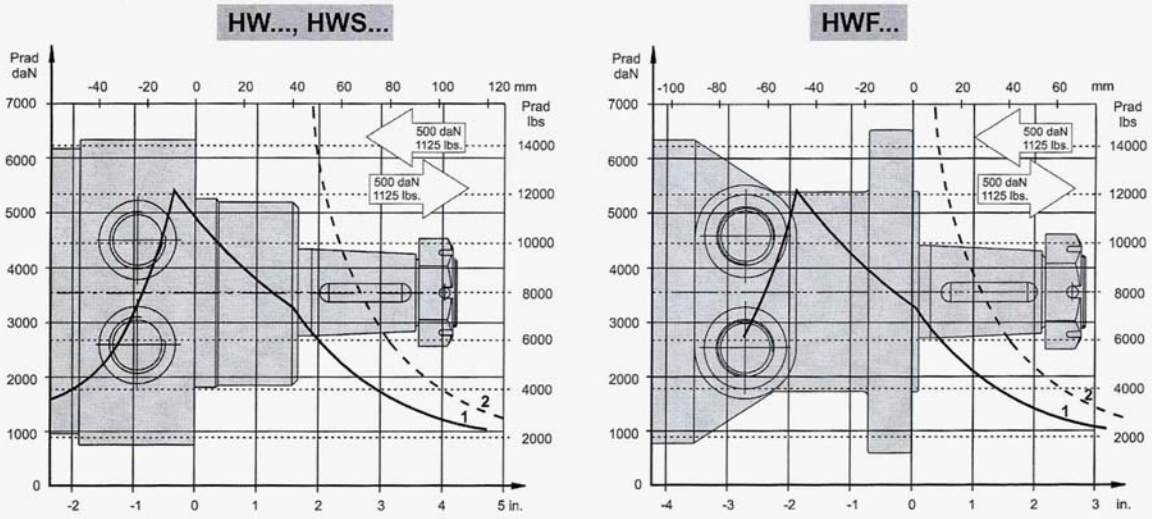


▽ - Motor Mounting Surface
N - for standart and **S** flange
N_F - for **F** flange

mm [in]

HW
Orbitmotor

Toegestane as belasting



1 - Bearing curve: The curve applies to a B10 bearing life of 2000 hours at 100 RPM.
2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 3:1.

ORDER CODE

	1	2	3	4	5	6
HW						

Pos.1 - Mounting Flange

omit - Wheel mount, four holes
F - Oval mount, six holes
S - Wheel mount, four holes

Pos.2 - Displacement code

125	- 126,0 cm³/rev [7.69 in³/rev]
160	- 158,0 cm³/rev [9.64 in³/rev]
200	- 201,3 cm³/rev [12.28 in³/rev]
235	- 235,0 cm³/rev [14.33 in³/rev]
250	- 252,0 cm³/rev [15.37 in³/rev]
300	- 300,0 cm³/rev [18.30 in³/rev]
315	- 314,9 cm³/rev [19.21 in³/rev]
350	- 347,8 cm³/rev [21.21 in³/rev]
370	- 369,0 cm³/rev [22.51 in³/rev]
400	- 396,8 cm³/rev [24.20 in³/rev]
470	- 470,6 cm³/rev [28.71 in³/rev]
500	- 502,4 cm³/rev [30.65 in³/rev]
535	- 536,0 cm³/rev [32.70 in³/rev]
550	- 550,0 cm³/rev [33.55 in³/rev]

Pos.3 - Shaft Extensions*

K	- 1¼"[31,75] straight, Parallel key 5/16"x5/16"x1½" BS46
KB	- ø35 tapered 1:10, Parallel key 5/16"x5/16"x1¼" BS46
L	- 1¼"[31,75] splined 14T, ANSI B92.1-1976
M	- ø32 straight, Parallel key A10x8x32 DIN 6885
R	- 1¼"[31,75] Tapered 1:8, Parallel key 5/16"x5/16"x1" BS46
T	- 1½"[38,1] Tapered 1:8, Parallel key 5/16"x5/16"x1¼" BS46

Pos.4 - Ports

2	- BSPP (ISO 228)
4	- SAE (ANSI B1.1-1982)

Pos.5 - Special Features [see page 98]

Pos.6 - Design Series

omit - Factory specified

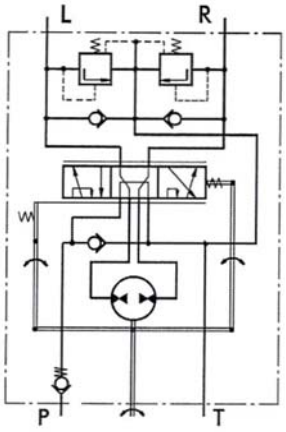
NOTE: * The permissible output torque for shafts must not be exceeded!

The hydraulic motors are mangano-phosphatized as standard.

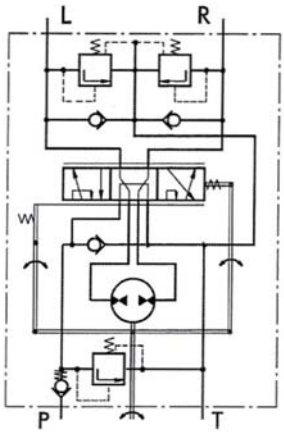
XY
Orbitrol

De M+S orbitrols worden gebruikt voor machines met een snelheid tot 60km zoals bouwmachines, heftrucks, rooimachines etc.

De XY orbitrol heeft inwendig een axiaal verplaatsende zoekklep en een metende pomp in één huis. De oliestroom naar de stuurcilinders wordt geleverd door een afgescheiden pomp die aangestuurd wordt door de metende pomp.
De XY orbitrol is uitgerust met een terugslag ventiel en er is een mogelijkheid voor een overdrukventiel



Open center – Load reaction
Versie 1-XY…-0/1



Open center – Load reaction
Versie 1-XY…-…1

Technische informatie

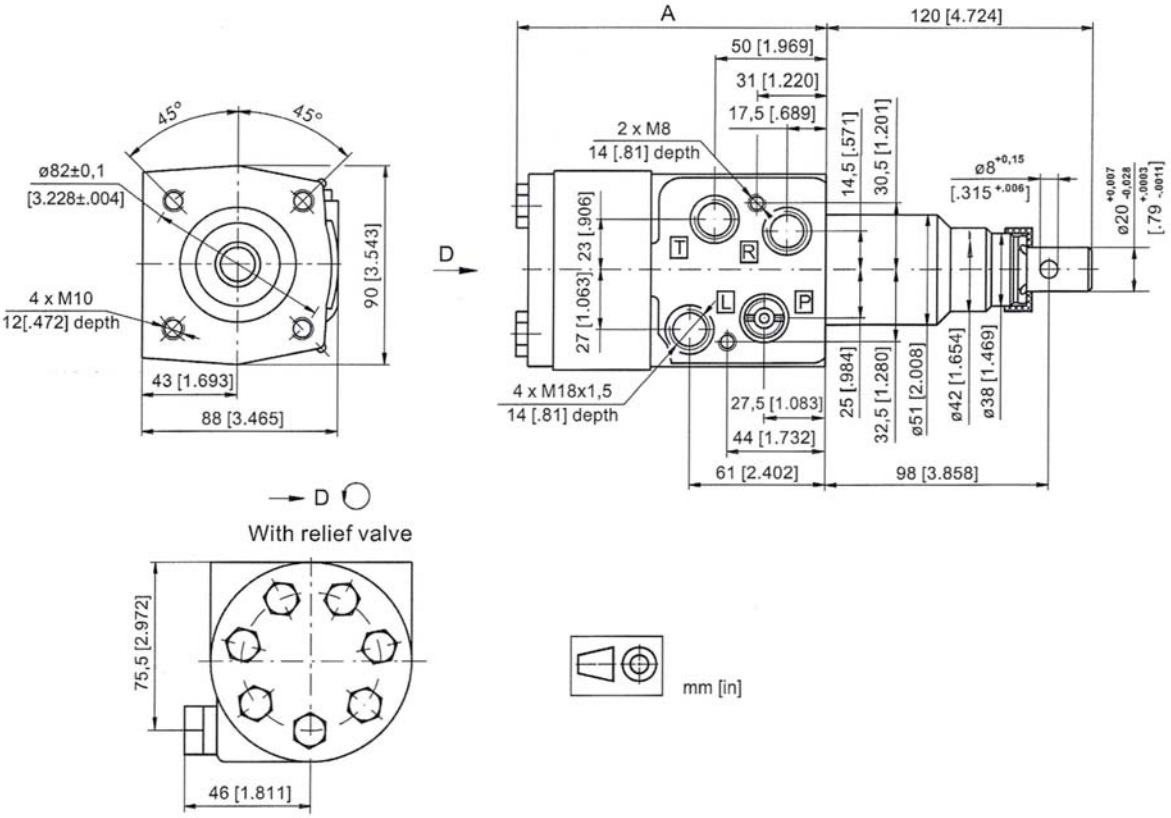
Parameters		Type XY 85.../1	Type XY 120.../1	Type XY 145.../1
Displacement	cm^3/rev [in^3/rev]	84 [5.13]	120 [7.32]	144 [8.79]
Rated Flow*	lpm [GPM]	9 [2.4]	12 [3.2]	15 [4.0]
Rated Pressure	bar [PSI]	150 [2175]		
Relief Valve Pressure Settings**	bar [PSI]	80 [1160]	100 [1450]	125 [1810] / 150 [2175]
Shock Valves Pressure Settings***	bar [PSI]	200 [2900]		
Max. Cont. Pressure in Line T	bar [PSI]	20 [290]		
Max. Torque at Servoamplifing	Nm [lb - in]	3,5 [31]		
Max. Torque w/o Servoamplifing	Nm [lb - in]	120 [1065]		
Weight	kg [lb]	6,4 [14.1]	6,6 [14.6]	6,8 [15.0]
Dimension A	mm [in]	136,3 [5.37]	141.5 [5.57]	144.5 [5.69]

* Rated Flow at 100 RPM.
** Pressure Settings are at Rated Flow (as in the table) and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].
***Pressure Settings are at flow rate of 4 lpm [1.06 GPM] and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].

XY

Orbitrol

Afmetingen en uitvoeringen



ORDER CODE

1	2		3	4	5
XY		-	/	1		

Pos.1 - Displacement code

85	-	84,0 [5.13]	cm^3/rev	[in^3/rev]
120	-	120,0 [7.32]	cm^3/rev	[in^3/rev]
145	-	144,0 [8.79]	cm^3/rev	[in^3/rev]

Pos.2 - Relief Valve Pressure Settings

8	-	80 [1160]	bar [PSI]
10	-	100 [1450]	bar [PSI]
12,5	-	125 [1810]	bar [PSI]
15	-	150 [2175]	bar [PSI]
0	-	without Relief Valve	

Pos.3 - Versions

1	-	Version 1 *"Open Center - Load Reaction"*

Pos.4 - Option (Paint)*

omit	-	No Paint
P	-	Painted
PC	-	Corrosion Protected Paint

Pos.5 - Design Series

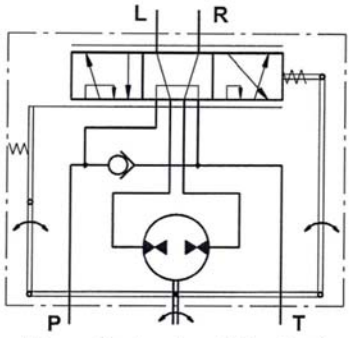
omit - Factory specified

NOTES:
* Colour at customer's request.
The steering units are mangano-phosphatized as standard.

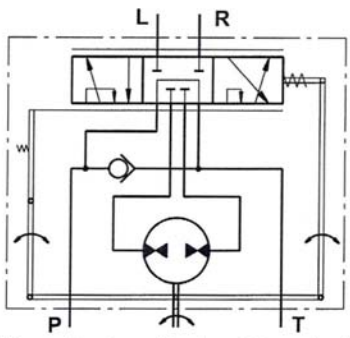
HKU…/ 3, 4

Orbitrol

De nieuw ontwikkelde HKU orbitrol, met radiale verplaatsingen, bevat twee draaiende zoekkleppen die de metende pomp aanzetten.



"Open Center - Load Reaction"
Version 3 - HKU.../3



"Open Center - Non Load Reaction"
Version 4 - HKU.../4

Technische informatie

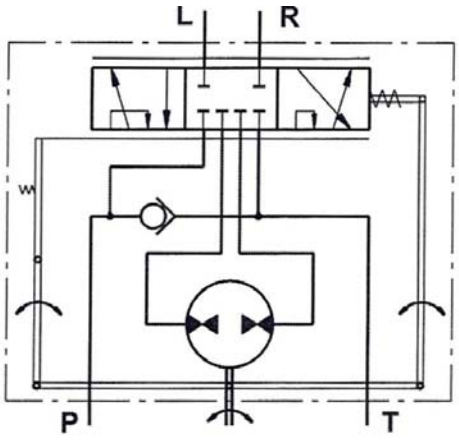
Parameters	Type														
	HKU 40/3 HKU 40/4	HKU 50/3 HKU 50/4	HKU 63/3 HKU 63/4	HKU 80/3 HKU 80/4	HKU 100/3 HKU 100/4	HKU 125/3 HKU 125/4	HKU 160/3 HKU 160/4	HKU 200/3 HKU 200/4	HKU 250/3 HKU 250/4	HKU 320/3 HKU 320/4	HKU 400/3 HKU 400/4	HKU 500/4	HKU 630/4	HKU 800/4	HKU 1000/4
Displacement cm^3/rev	39,6	49,5	65,6	79,2	99,0	7.56	9.67	198	247,5	316,8	396	495	623,6	793	990
$[in^3/rev]$	[2.42]	[3.0]	[4.0]	[4.83]	[6.04]	[123,8]	[158,4]	[12.1]	[15.1]	[19.3]	[24.2]	[30.2]	[38.05]	[48.4]	[60.4]
Rated Flow* lpm	4	5	6	8	10	13	16	20	25	32	40	50	63	70	
[GPM]	[1.1]	[1.3]	[1.6]	[2.1]	[2.6]	[3.4]	[4.2]	[5.3]	[6.6]	[8.4]	[10.6]	[13.2]	[16.6]	[18.5]	
Rated Pressure bar	140	170											140	100	
[PSI]	[2030]	[2465]											[2030]	[1450]	
Max. Cont. Pressure in Line T bar [PSI]															
- standard	25 [363]														
- high pressure (H option)	40 [580]														
Max. Torque at Servoamplifing Nm [lb - in]															
-with standard springs	3,0 [26]								3,0 [26]						
-with soft springs (LT option)	1,8 [16]								-						
Max. Torque w/o Servoamplifing Nm [lb - in]	120 [1065]														
Weight kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0	8,7	9,6	10,6
[lb]	[11.7]	[11.9]	[12.2]	[12.4]	[12.6]	[12.8]	[13.2]	[13.9]	[14.3]	[15.4]	[16.3]	[17.6]	[19.2]	[21.2]	[23.4]
Dimension A mm	5.15	5.20	5.27	5.36	5.47	5.60	5.78	5.99	6.25	6.62	7.04	7.56	8.24	9.14	10.18
[in]	[130,8]	[132,2]	[133,9]	[136,2]	[138,8]	[142,2]	[146,8]	[152,2]	[158,8]	[168,2]	[178,8]	[192]	[209,3]	[232,2]	[258,6]

* Inlet flow providing maximum speed of rotation:
- 100 RPM - from HKU40 to HKU630;
- 87 RPM - for HKU800;
- 70 RPM - for HKU1000.

HKU…/7

Orbitrol

De HKU…/7 is een orbitrol “closed center – non load reaction”, gemaakt voor integratie in systemen met een ingebouwde accumulator, ter voorkoming van teveel energieverlies.



"Closed Center - Non Load Reaction"
Version 7 - HKU.../7

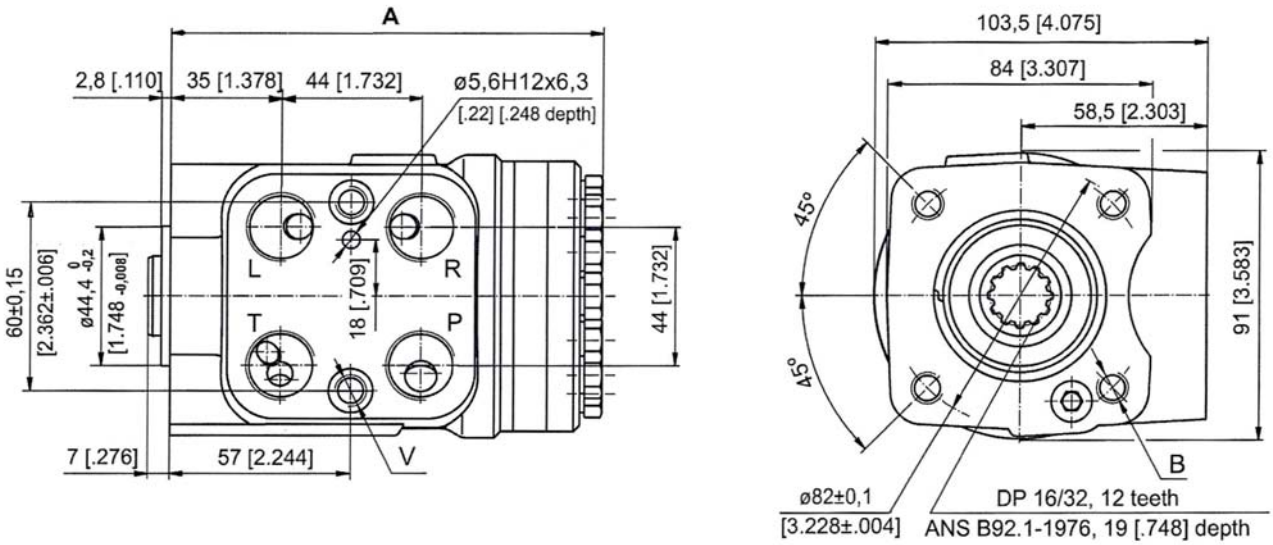
Algemene informatie

Parameters	Type													
	HKU 40/7	HKU 50/7	HKU 63/7	HKU 80/7	HKU 100/7	HKU 125/7	HKU 160/7	HKU 200/7	HKU 250/7	HKU 320/7	HKU 400/7	HKU 500/7	HKU 630/7	HKU 800/7
Displacement cm^3/rev	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495	623,6	793
$[in^3/rev]$	[2.42]	[3.0]	[4.0]	[4.83]	[6.04]	[7.56]	[9.67]	[12.1]	[15.1]	[19.3]	[24.2]	[30.2]	[38.05]	[48.4]
Rated Flow* lpm	4	5	6	8	10	13	16	20	25	32	40	50	63	80
[GPM]	[1.1]	[1.3]	[1.6]	[2.1]	[2.6]	[3.4]	[4.2]	[5.3]	[6.6]	[8.4]	[10.6]	[13.2]	[16.6]	[21.1]
Rated Pressure bar	1810	2030	2540											
[PSI]	[125]	[140]	[175]											
Max. Cont. Pressure in Line T bar [PSI]														
- standard	25 [363]													
- high pressure (H option)	40 [580]													
Max. Torque at Servoamplifing Nm [in - lb]														
-with standard springs	3,0 [26]								3,0 [26]					
-with soft springs (LT option)	1,8 [16]								-					
Max. Torque w/o Servoamplifing Nm [in - lb]	120 [1065]													
Weight kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0	8,7	9,6
[lb]	[11.7]	[11.9]	[12.2]	[12.4]	[12.6]	[12.8]	[13.2]	[13.9]	[14.3]	[15.4]	[16.3]	[17.6]	[19.2]	[21.2]
Dimension A mm	130,8	132,2	133,9	136,2	138,8	142,2	146,8	152,2	158,8	168,2	178,8	192	209,3	232,2
[in]	[5.15]	[5.20]	[5.27]	[5.36]	[5.47]	[5.60]	[5.78]	[5.99]	[6.25]	[6.62]	[7.04]	[7.56]	[8.24]	[9.14]

* Inlet flow providing maximum speed of rotation:
- 100 RPM - from HKU40 to HKU630;
- 87 RPM - for HKU800.

HKU…/3, 4, 7
Orbitrol

Afmetingen en uitvoeringen



mm [in]

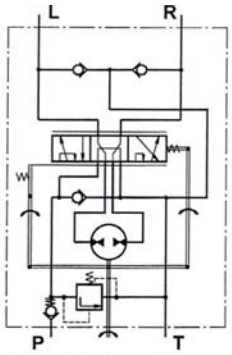
code	Ports - P, T, R, L Thread	Column Mounting Thread - B	Valve Mounting Thread - V
-	G1/2 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16[.63] depth
M	M22x1,5 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
A	3/4 - 16 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth
BA*	9/16 - 18 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth

* These threads are for displacements from HKU40 to HKU200 only.

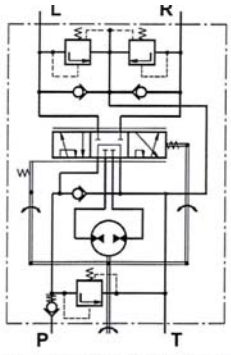
HKUS…/3, 4, 8

Orbitrol

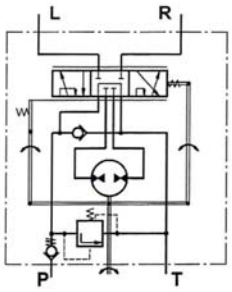
De HKUS orbitrols zij gebaseerd op de HKU maar met ingebouwde terugslagkleppen en overdruk. M+S heeft een compacte orbitrol ontwikkeld waarbij geen extra componenten nodig zijn.



'Open Center - Load Reaction"
With Built-in Valves
Version 3 - HKUS.../3



"Open Center - Non Load Reaction"
With Built-in Valves
Version 4 - HKUS.../4



"Open Center - Non Load Reaction"
With Built-in Valve
Version 8 - HKUS.../8

Algemene informatie

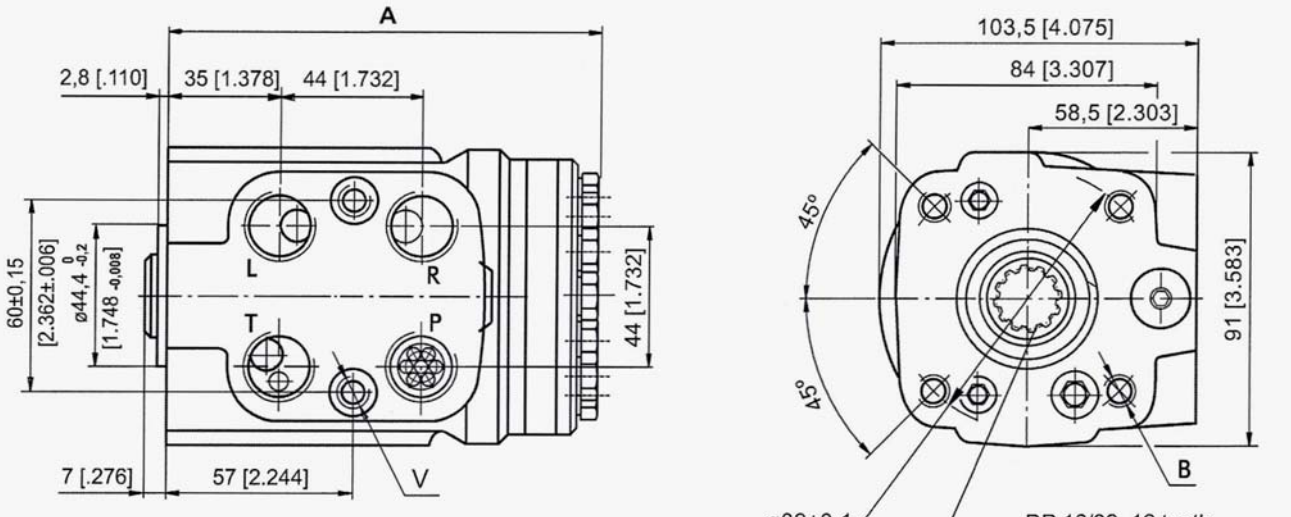
Parameters	Type											
	HKUS 40/3,4,8	HKUS 50/3,4,8	HKUS 63/3,4,8	HKUS 80/3,4,8	HKUS 100/3,4,8	HKUS 125/3,4,8	HKUS 160/3,4,8	HKUS 200/3,4,8	HKUS 250/3,4,8	HKUS 320/3,4,8	HKUS 400/3,4,8	HKUS 500/3,4,8
Displacement cm^3/rev	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495
[in^3/rev]	[2.42]	[3.0]	[4.0]	[4.83]	[6.04]	[7.56]	[9.67]	[12.1]	[15.1]	[19.3]	[24.2]	[30.2]
Rated Flow* lpm	4	5	6	8	10	13	16	20	25	32	40	50
[GPM]	[1.1]	[1.3]	[1.6]	[2.1]	[2.6]	[3.4]	[4.2]	[5.3]	[6.6]	[8.4]	[10.6]	[13.2]
Rated Pressure bar	140		170									
[PSI]	[2030]		[2465]									
Relief Valve Pressure Settings** bar [PSI]			80 [1160]		100 [1450]		125 [1810]		150 [2175]		170 [2465]	
Shock Valves Pressure Settings*** bar [PSI]			140 [2030]		160 [2320]		180 [2610]		200 [2900]		220 [3190]	
Max. Cont. Pressure in Line T bar [PSI]												
- standard					25 [363] (50 [725] by HKUS.../8)							
- high pressure (H option)					40 [580]							
Max. Torque at Servoamplifing Nm [lb - in]												
-with standard springs												
-with soft springs (LT option)			3,0 [26] 1,8 [16]						3,0 [26] -			
Max. Torque w/o Servoamplifing Nm [lb - in]												
					120 [1065]							
Weight kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0
[lb]	[11.7]	[11.9]	[12.2]	[12.4]	[12.6]	[12.8]	[13.2]	[13.9]	[14.3]	[15.4]	[16.3]	[17.6]
Dimension A mm	130,8	132,2	133,9	136,2	138,8	142,2	146,8	152,2	158,8	168,2	178,8	192
[in]	[5.15]	[5.20]	[5.27]	[5.36]	[5.47]	[5.60]	[5.78]	[5.99]	[6.25]	[6.62]	[7.04]	[7.56]

* Rated Flow at 100 RPM.
** Pressure Settings are at Rated Flow (as in the table) and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].
***Pressure Settings are at flow rate of 2 lpm [.53 GPM] and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].

HKUS…/3, 4, 8

Orbitrol

Afmetingen en uitvoeringen



mm [in]

code	Ports - P*, T, R, L Thread	Column Mounting Thread - B	Valve Mounting Thread - V
-	G1/2 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16[.63] depth
M	M22x1,5 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
A	3/4 - 16 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth

*Threaded Ports P min 16 [.63] depth for pipe mounting.

HKU, HKUS

Orbitrol

Bestelgegevens

1	2	3	4	5	6	7	8
HKU		/		-				

Pos.1 - Displacement code (see Specification Data)

40	-	39,6	[2.42]	cm³/rev [in³/rev]
50	-	49,5	[3.00]	cm³/rev [in³/rev]
63	-	65,6	[4.00]	cm³/rev [in³/rev]
80	-	79,2	[4.83]	cm³/rev [in³/rev]
100	-	99,0	[6.04]	cm³/rev [in³/rev]
125	-	123,8	[7.56]	cm³/rev [in³/rev]
160	-	158,4	[9.67]	cm³/rev [in³/rev]
200	-	198,0	[12.10]	cm³/rev [in³/rev]
250	-	247,5	[15.10]	cm³/rev [in³/rev]
320	-	316,8	[19.30]	cm³/rev [in³/rev]
400	-	396,0	[24.20]	cm³/rev [in³/rev]
500	-	495,0	[30.20]	cm³/rev [in³/rev]
630	-	623,6	[38.05]	cm³/rev [in³/rev]
800	-	793,0	[48.40]	cm³/rev [in³/rev]
1000	-	990,0	[60.40]	cm³/rev [in³/rev]

Pos.2 - Versions

- 3 - Version 3 *"Open Center - Load Reaction"*
- 4 - Version 4 *"Open Center - Non Load Reaction"*
- 7 - Version 7 *"Closed Center - Non Load Reaction"*

Pos.3 - Ports

- omit - BSPP (ISO 228)
- M - Metric (ISO 262)
- A - SAE (ANSI B 1.1 - 1982)
- BA* - SAE (ANSI B 1.1 - 1982)

Pos.4 - Max. Cont. Pressure in line T

- omit - Standard
- H - High pressure

Pos.5 - Input torque

- omit - Standard
- LT* - Low

Pos.6 - Noise level

- omit - Standard
- LN** - Low

Pos.7 - Option (Paint)***

- omit - No Paint
- P - Painted Low Gloss Color
- PC - Corrosion Protected Paint

Pos.8 - Design Series

- omit - Factory specified

Notes: * Available only for displacement from 40 to 200.
** Available only for versions 3 and 4 with displacements from 40 to 200.
*** Colour at customer's request.
The steering units are mangano-phosphatized as standard.

ORDER CODE

1	2	3	4	5	6	7	8	9
HKUS		/		-		-			

Pos.1 - Displacement code (see Specification Data)

40	-	39,6	[2.42]	cm³/rev [in³/rev]
50	-	49,5	[3.00]	cm³/rev [in³/rev]
63	-	65,6	[4.00]	cm³/rev [in³/rev]
80	-	79,2	[4.83]	cm³/rev [in³/rev]
100	-	99,0	[6.04]	cm³/rev [in³/rev]
125	-	123,8	[7.56]	cm³/rev [in³/rev]
160	-	158,4	[9.67]	cm³/rev [in³/rev]
200	-	198,0	[12.10]	cm³/rev [in³/rev]
250	-	247,5	[15.10]	cm³/rev [in³/rev]
320	-	316,8	[19.30]	cm³/rev [in³/rev]
400	-	396,0	[24.20]	cm³/rev [in³/rev]
500	-	495,0	[30.20]	cm³/rev [in³/rev]

Pos.2 - Versions

- 3 - Version 3 *"Open Center - Load Reaction"*
- 4 - Version 4 *"Open Center - Non Load Reaction"*
- 8 - Version 8 *"Open Center - Non Load Reaction"*

Pos.3 - Relief Valve Pressure Settings, bar

80, 100, 125, 150, 170

Pos.4 - Ports

- omit - BSPP (ISO 228)
- A - SAE (ANSI B 1.1 - 1982)
- M - Metric (ISO 262)

Pos.5 - Max. Cont. Pressure in line T

- omit - Standard
- H - High pressure

Pos.6 - Input torque

- omit - Standard
- LT* - Low

Pos.7 - Noise level

- omit - Standard
- LN* - Low

Pos.8 - Option (Paint)**

- omit - No Paint
- P - Painted Low Gloss Color
- PC - Corrosion Protected Paint

Pos.9 - Design Series

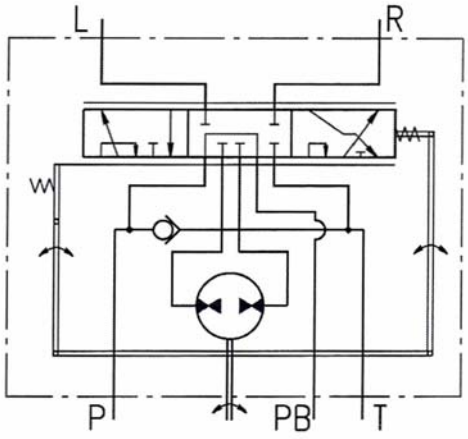
- omit - Factory specified

Version	Manual Steering Check Valve	Relief Valve	Inlet Check Valve	Cylinder Relief Valve	Anti-Cavitation Valve
3	•	•	•		•
4	•	•	•	•	•
8	•	•	•		

Notes: * Available only for displacement from 40 to 200.
** Colour at customer's request.
The steering units are mangano-phosphatized as standard.

HKU…/4PB

Orbitrol



"Open Center - Non Load Reaction"
HKU.../4PB - Power Beyond

De orbitrol is geschikt voor gemiddelde en grote machines. De HKU…/4pb werkt als een standaard orbitrol, maar met uitwendige poorten voor het bedienen van andere functies op de machine. Als het stuurwiel niet wordt gedraaid, loopt de olie via poort PB terug in het systeem. Als het stuurwiel wordt gedraaid zal een gedeelte van de olie gebruikt worden voor het sturen. Het is daarom niet aan te bevelen om de orbitrol te gebruiken in functies die tegelijk met het sturen bediend worden.

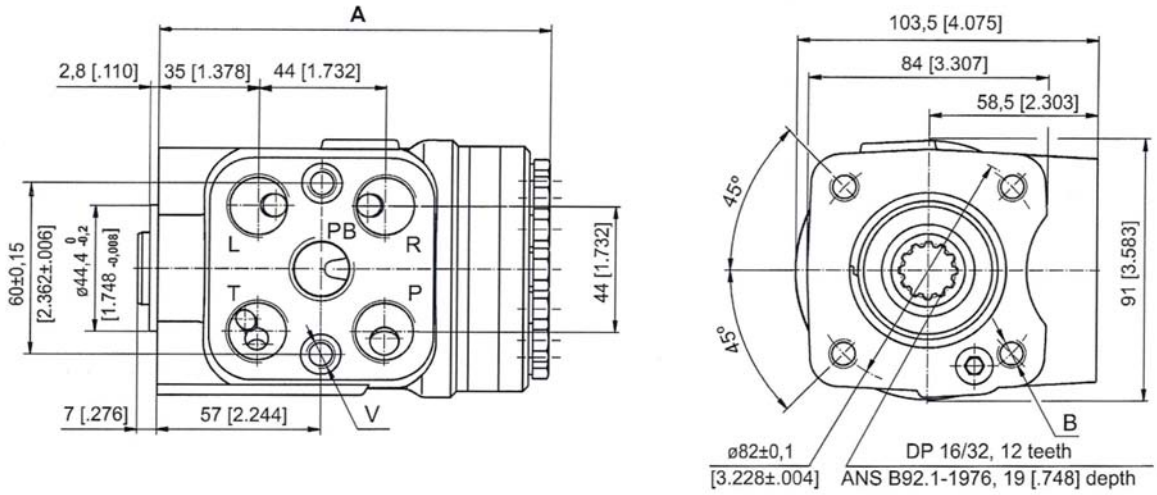
Algemene informatie

Parameters	Type					
	HKU 40/4PB	HKU 50/4PB	HKU 63/4PB	HKU 80/4PB	HKU 100/4PB	HKU 125/4PB
Displacement cm^3 /rev [In^3 /rev]	39,6 [2.42]	49,5 [3.0]	65,6 [4.0]	79,2 [4.83]	99,0 [6.04]	123,8 [7.56]
Rated Flow-5 Port (Power Beyond) lpm [GPM]	15 [3.96]					
Rated Pressure bar [PSI]	125 [1813]					
Max. Pressure in line PB, bar [PSI]	125 [1813]					
Max. Cont. Pressure in Line T - P_T bar [PSI]	10 [145]					
Max. Torque at Servoamplifing Nm [lb - in]	2,8 (by PT max) [25]					
Max. Torque w/o Servoamplifing Nm [lb - in]	135 [1195]					
Weight kg [lb]	5,3 [11.7]	5,4 [11.9]	5,5 [12.2]	5,6 [12.4]	5,7 [12.6]	5,8 [12.8]
Dimension A mm [in]	130,8 [5.15]	132,2 [5.20]	133,9 [5.27]	136,2 [5.36]	138,8 [5.47]	142,2 [5.60]

HKU…/4PB

Orbitrol

Afmetingen en uitvoeringen



mm [in]

code	Ports - P, T, R, L, PB Thread	Column Mounting Thread - B	Valve Mounting Thread - V
-	G3/8 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
A	9/16 - 18 UNF O-ring 17 [.67] depth	4x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth

ORDER CODE for HKU.../4PB

1		2		3	4	5
HKU		/	4PB	-		

Pos.1 - Displacement code (see Specification Data)

40	- 39,6	[2.42]	cm^3/rev [in^3/rev]
50	- 49,5	[3.00]	cm^3/rev [in^3/rev]
63	- 65,6	[4.00]	cm^3/rev [in^3/rev]
80	- 79,2	[4.83]	cm^3/rev [in^3/rev]
100	- 99,0	[6.04]	cm^3/rev [in^3/rev]
125	- 123,8	[7.56]	cm^3/rev [in^3/rev]

Pos.2 - Versions

4PB - Version 4 *"Open Center - Non Load Reaction" with 5 ports (Power Beyond)*

Pos.3 - Ports

omit - BSPP (ISO 228)

A - SAE (ANSI B 1.1 - 1982)

Pos.4 - Option (Paint)*

omit - No Paint

P - Painted Low Gloss Color

PC - Corrosion Protected Paint

Pos.5 - Design Series

omit - Factory specified

NOTES:

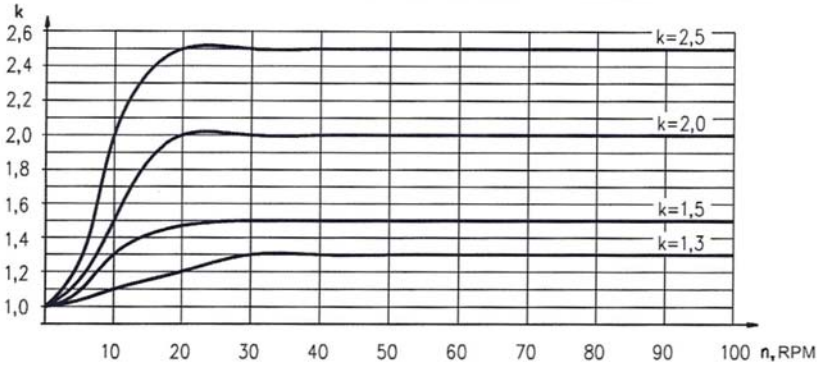
* Colour at customer's request.

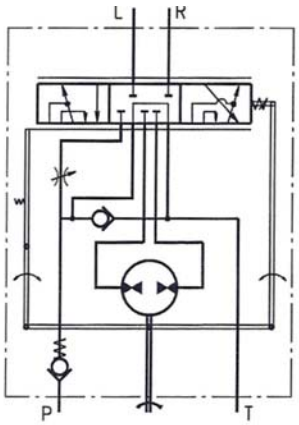
The steering units are mangano-phosphatized as standard.

HKUQ…/…/4

Orbitrol

VARIABLE AMPLIFYING FACTOR





"Open Center - Non Load Reaction"
HKUQ.../4

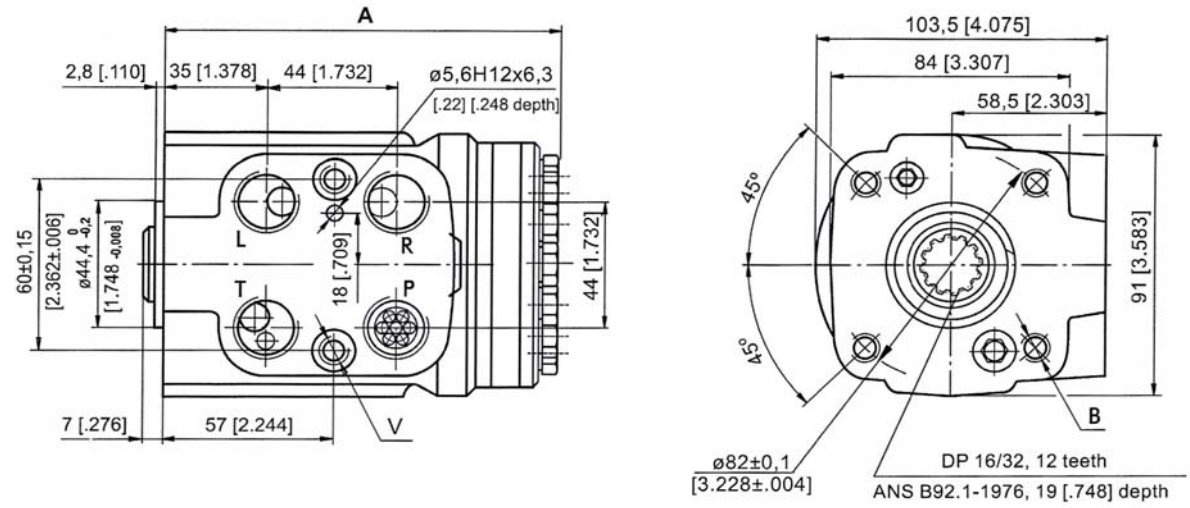
SPECIFICATION DATA

Parameters	Type																			
	HKUQ 80/.../4				HKUQ 100/.../4				HKUQ 125/.../4				HKUQ 160/.../4				HKUQ 200/.../4			
Displacement - without servo-amplifying (in emergency mode) cm^3/rev	79,2 [4.83]				99,0 [6.04]				123,8 [7.56]				158,4 [9.67]				198 [12.08]			
- with servo-amplifing [in^3]	100 [6.10]	125 [7.62]	160 [9.76]	200 [12.2]	125 [7.62]	160 [9.76]	200 [12.2]	250 [15.25]	160 [9.76]	200 [12.2]	250 [15.25]	320 [19.52]	200 [12.2]	250 [15.25]	320 [19.52]	400 [24.4]	250 [15.25]	320 [19.52]	400 [24.4]	500 [30.5]
Rated Flow* l/min [GPM]	10 [2.64]	12,5 [3.30]	16 [4.22]	20 [5.28]	12,5 [3.30]	16 [4.22]	20 [5.28]	25 [6.60]	16 [4.22]	20 [5.28]	25 [6.60]	32 [8.45]	20 [5.28]	25 [6.60]	32 [8.45]	40 [10.57]	25 [6.60]	32 [8.45]	40 [10.57]	50 [13.21]
Amplifying Factor (at shaft revolution over 20 min^{-1})	1,3	1,5	2,0	2,5	1,3	1,5	2,0	2,5	1,3	1,5	2,0	2,5	1,3	1,5	2,0	2,5	1,3	1,5	2,0	2,5
Rated Pressure bar [PSI]	170 [2465]																			
Max. Cont. Pressure in Line T bar [PSI]	25 [363]																			
Max. Torque at Servoamplifing Nm [lb - in]	3 [26]																			
Max. Torque w/o Servoamplifing Nm [lb - in]	120 [1065]																			
Weight, avg. kg [lb]	5,6 [12.4]				5,7 [12.6]				5,8 [12.8]				6,0 [13.2]				6,3 [13.9]			
Dimension A mm [in]	136,2 [5.36]				138,8 [5.47]				142,2 [5.60]				146,8 [5.78]				152,2 [5.99]			

HKUQ…/…/4

Orbitrol

Afmetingen en uitvoeringen



code	Ports - P*, T, R, L Thread	Column Mounting Thread - B	Valve Mounting Thread - V
-	G1/2 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16[.63] depth
M	M22x1,5 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
A	3/4 - 16 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth

mm [in]

*Threaded Ports P min 16 [.63] depth for pipe mounting.

ORDER CODE for HKUQ...

1	2	3	4	5	6
HKUQ	/	/	4	-	

Pos.1 - Displacement code

80	-	79,2 [4.83]	cm^3/rev	[in^3/rev]
100	-	99,0 [6.04]	cm^3/rev	[in^3/rev]
125	-	123,8 [7.56]	cm^3/rev	[in^3/rev]
160	-	158,4 [9.67]	cm^3/rev	[in^3/rev]
200	-	198,0 [12.10]	cm^3/rev	[in^3/rev]

Pos.2 - Displacement with amplifying factor 1,3; 1,5; 2,0 or 2,5

	80	100	125	160	200
100	■				
125	■	■			
160	■	■	■		
200	■	■	■	■	
250		■	■	■	■ k=1,3
320			■	■	■ k=1,5
400				■	■ k=2,0
500					■ k=2,5

Pos.3 - Versions

4 - Version 4 *"Open Center - Non Load Reaction"*

Pos.4 - Ports

omit - BSPP (ISO 228)
A - SAE (ANSI B 1.1 - 1982)
M - Metric (ISO 262)

Pos.5 - Option (Paint)**

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

Pos.6 - Design Series

omit - Factory specified

NOTES:

* Exemplary designation of steering unit with displacement 200 cm^3 and amplifying factor 2,5: HKUQ 200/500/4

** Colour at customer's request.

The steering units are mangano-phosphatized as standard.

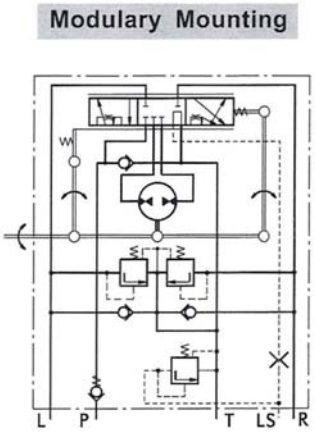
HKU(S)…/5(D)(T)(TU)

Orbitrol

Deze serie orbitrols is een uitbreiding op de range “closed center – non reaction and load Sensing outlet” (statische en dynamische verbinding met de prioriteitsklep) De range is ontwikkeld in twee versies; modulair en leidingmontage en daarvoor zijn twee versies overdruk (tracing) kleppen ontwikkeld: PRD… en PRT…
HKU…/5 is ontwikkeld om zo weinig mogelijk energie te gebruiken in verschillende hydraulische systemen zoals een heftruck, landbouwmachines en constructie machines.

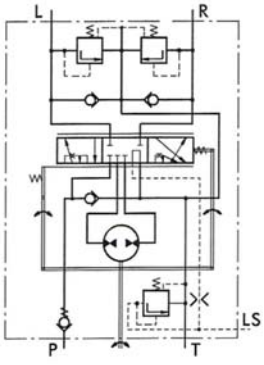
De HKU…/5TU is een orbitrol waarbij de poorten R en L in neutrale positie zijn verbonden met de retourleiding T. Dit draagt bij voor het snel verlagen van de restdruk in R en L dat normaal “locked”als het stuurwiel is teruggebracht in de neutrale positie. Deze orbitrol sturen niet direct de stuurcilinders aan, maar zijn aangesloten op het hydraulische systeem om flow amplifiers te bekrachtigen.

HKUS…/5D(DT).. is een nieuwe generatie orbitrol waarbij de dynamische flow naar de LS leiding een snelle en gelijkmatige controle tijdens het begin van het sturen mogelijk maakt. De algemene kenmerken zijn; Lage torque van het stuurwiel 0.5÷2.0 Nm (4.5÷18 lb-in) in normale werk condities; hoge stuursnelheid, alleen begrenst door de werkdruk en flow van de toevoerpomp; constante olieflow in LS leiding in neutrale positie 0.45÷0.9 lpm. De eenheid werkt in een systeem met een dynamisch prioriteitsventiel en is geschikt om de energievraag van de machine te verlagen.
M+S produceert ook de orbitrol HKUS…/5E(5TE). Dit is een orbitrol met een EL poort, zodat een elektrisch hydraulisch relay, gemonteerd in de poort, het hydraulische systeem kan aansturen.

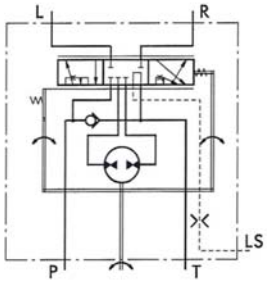


HKUS.../5

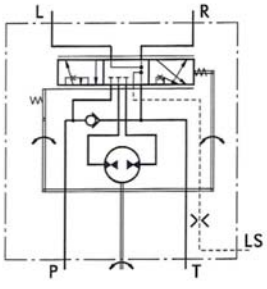
Leiding montage



HKUS.../5T



HKU.../5T



HKU.../5TU

HKUS…/5

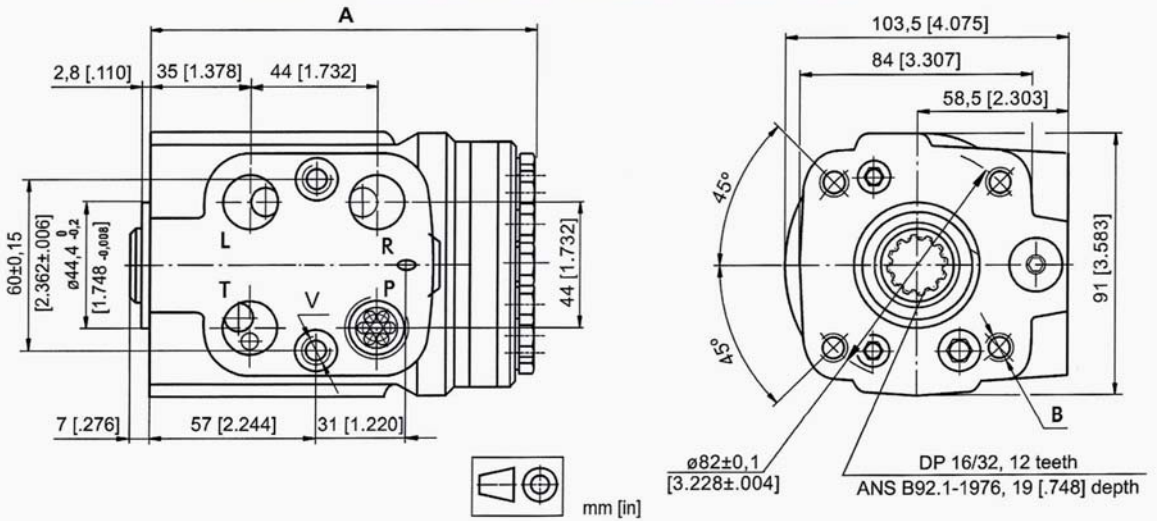
Orbitrol

Algemene informatie

Parameters		Type												
		HKU 40/5T HKUS 40/5...	HKU 50/5T HKUS 50/5...	HKU 63/5T HKUS 63/5...	HKU 80/5T HKUS 80/5...	HKU 100/5T HKUS 100/5..	HKU 125/5T HKUS 125/5..	HKU 160/5T HKUS 160/5..	HKU 200/5T HKUS 200/5...	HKU 250/5T HKUS 250/5...	HKU 320/5T HKUS 320/5...	HKU 400/5T HKUS 400/5...	HKU 500/5T	HKU 630/5T
Displacement	cm^3/rev	39,6	49,5	65,6	79,2	99,0	123,8	158,4	198	247,5	316,8	396	495	623,6
	[in^3/rev]	[2.42]	[3.0]	[4.0]	[4.83]	[6.04]	[7.56]	[9.67]	[12.1]	[15.1]	[19.3]	[24.2]	[30.2]	[38.05]
Rated Flow*	lpm	4	5	6	8	10	13	16	20	25	32	40	50	63
	[GPM]	[1.1]	[1.3]	[1.6]	[2.1]	[2.6]	[3.4]	[4.2]	[5.3]	[6.6]	[8.4]	[10.6]	[13.2]	[16.6]
Rated Pressure	bar	125	150	175										
	[PSI]	[1810]	[2175]	[2540]										
LS-Valve Pressure Settings**	bar [PSI]	80 [1160]				100 [1450]		125 [1810]		150 [2175]		175 [2540]		
Shock Valves Pressure Settings***	bar [PSI]	140 [2030]				160 [2320]		180 [2610]		200 [2900]		240 [3480]		
Max. Cont. Pressure in Line T	bar [PSI]													
- standard		20 [290]												
- high pressure (H option)		40 [580]												
Max. Torque at Servoamplifing	Nm [lb-in]													
-with standard springs		3,0 [26]								3,0 [26]				
-with soft springs (LT option)		1,8 [16]								-				
Max. Torque w/o Servoamplifing	Nm [lb-in]	120 [1065]												
Weight	kg	5,3	5,4	5,5	5,6	5,7	5,8	6,0	6,3	6,5	7,0	7,4	8,0	8,7
	[lb]	[11.7]	[11.9]	[12.2]	[12.4]	[12.6]	[12.8]	[13.2]	[13.9]	[14.3]	[15.4]	[16.3]	[17.6]	[19.2]
Dimension A	mm	130,8	132,2	133,9	136,2	138,8	142,2	146,8	152,2	158,8	168,2	178,8	192	209,3
	[in]	[5.15]	[5.20]	[5.27]	[5.36]	[5.47]	[5.60]	[5.78]	[5.99]	[6.25]	[6.62]	[7.04]	[7.56]	[8.24]

* Rated Flow at 100 RPM.
** Pressure Settings are at flow rate of 25 lpm [6.6 GPM] and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F], supplied through priority valve.
***Pressure Settings are at flow rate of 2 lpm [.53 GPM] and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].

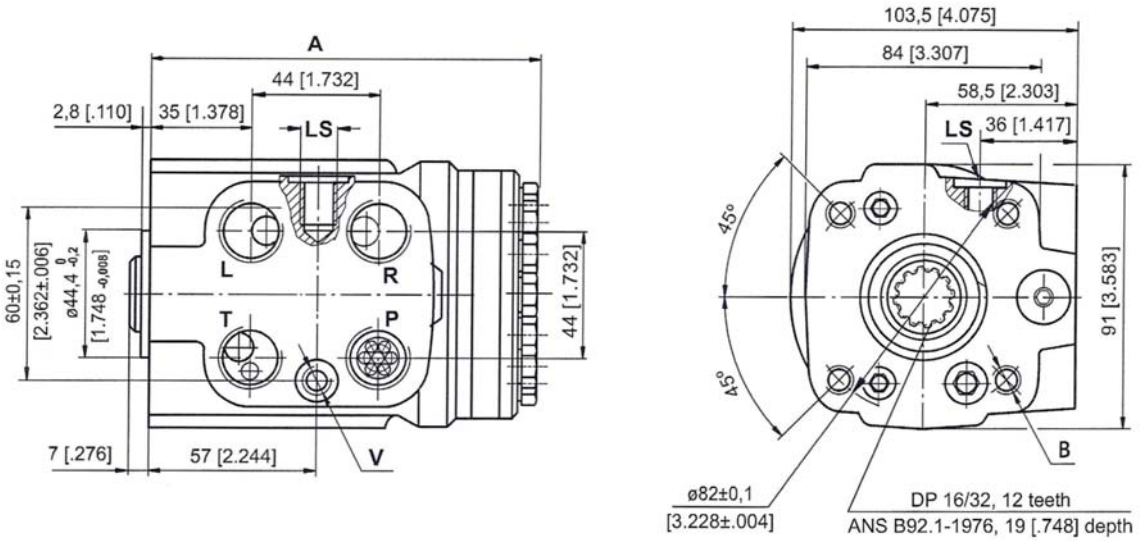
DIMENSIONS AND MOUNTING DATA - HKUS.../5(D)



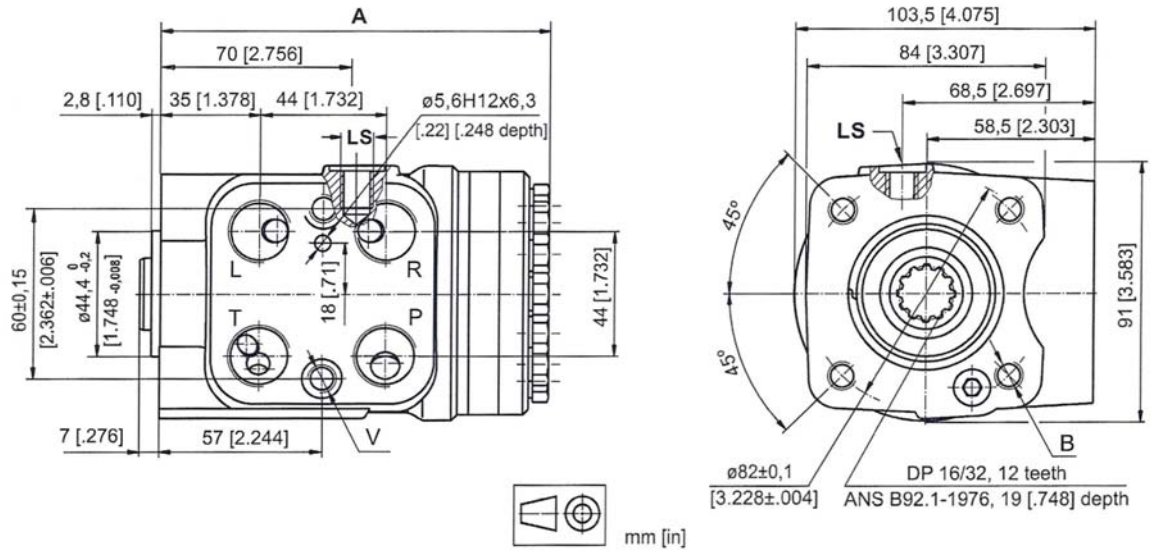
HKU(S)…/5T

Orbitrol

Afmetingen en uitvoeringen



DIMENSIONS AND MOUNTING DATA - HKU.../5T(TU)



mm [in]

code	Ports - P*, T, R, L Thread	Column Mounting Thread - B	Valve Mounting Thread- V	LS - Port
-	G1/2 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16[.63] depth	G1/4 14 [.55] depth
M	M22x1,5 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth	G1/4 .14 [.55] depth
A	3/4 - 16 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth	7/16 - 20 UNF O-ring 12,7 [.50] depth

*Threaded Ports P min 16 [.63] depth for pipe mounting.

HKUS…/5…

Orbitrol

Bestelgegevens

1		2	3	4	5		6		7	8	9	10	11
HKUS		/	5				-		-				

Pos.1 - Displacement code (see Specification Data)

40	-	39,6	[2.42]	cm^3/rev [in^3/rev]
50	-	49,5	[3.00]	cm^3/rev [in^3/rev]
63	-	65,6	[4.00]	cm^3/rev [in^3/rev]
80	-	79,2	[4.83]	cm^3/rev [in^3/rev]
100	-	99,0	[6.04]	cm^3/rev [in^3/rev]
125	-	123,8	[7.56]	cm^3/rev [in^3/rev]
160	-	158,4	[9.67]	cm^3/rev [in^3/rev]
200	-	198,0	[12.10]	cm^3/rev [in^3/rev]
250	-	247,5	[15.10]	cm^3/rev [in^3/rev]
320	-	316,8	[19.30]	cm^3/rev [in^3/rev]
400	-	396,0	[24.20]	cm^3/rev [in^3/rev]

Pos.2 - Versions

5 - Version 5 *"Closed Center - Non Reaction and Load Sensing Outlet"*

Pos.3 - Signal Type

omit - Static Load Signal
D - Dynamic Load Signal

Pos.4 - Priority Valve Connection

omit - Modulary Mounting
T - Pipe Mounting

Pos.6 - LS - Valve Pressure Settings, bar

80 | 100 | 125 | 150 | 175

Pos.7 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)
A - SAE (ANSI B 1.1 - 1982)

Pos.8 - Max. Cont. Pressure in line T

omit - Standard
H - High pressure

Pos.9 - Input torque

omit - Standard
LT* - Low

Pos.10 - Option (Paint)**

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

Pos.11 - Design Series

omit - Factory specified

Notes:
* Available only for displacement from 40 to 200.
** Colour at customer's request.
The steering units are mangano-phosphatized as standard.

ORDER CODE for HKU.../5T...

1		2	3		4	5	6	7	8
HKU		/	5	T	-				

Pos.1 - Displacement code (see Specification Data)

40	-	39,6	[2.42]	cm^3/rev [in^3/rev]
50	-	49,5	[3.00]	cm^3/rev [in^3/rev]
63	-	65,6	[4.00]	cm^3/rev [in^3/rev]
80	-	79,2	[4.83]	cm^3/rev [in^3/rev]
100	-	99,0	[6.04]	cm^3/rev [in^3/rev]
125	-	123,8	[7.56]	cm^3/rev [in^3/rev]
160	-	158,4	[9.67]	cm^3/rev [in^3/rev]
200	-	198,0	[12.10]	cm^3/rev [in^3/rev]
250	-	247,5	[15.10]	cm^3/rev [in^3/rev]
320	-	316,8	[19.30]	cm^3/rev [in^3/rev]
400	-	396,0	[24.20]	cm^3/rev [in^3/rev]
500	-	495,0	[30.20]	cm^3/rev [in^3/rev]
630	-	623,6	[38.05]	cm^3/rev [in^3/rev]

Pos.2 - Versions

5 - Version 5 *"Closed Center - Non Reaction and Load Sensing Outlet"*

Pos.3 - Priority Valve Connection

T - Pipe Mounting (only)
TU - Pipe Mounting (ports R and L in neutral position are connected to the drain line T)

Pos.4 - Ports

omit - BSPP (ISO 228)
A - SAE (ANSI B 1.1 - 1982)
M - Metric (ISO 262)

Pos.5 - Max. Cont. Pressure in line T

omit - Standard
H - High pressure

Pos.6 - Input torque

omit - Standard
LT* - Low

Pos.7 - Option (Paint)**

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

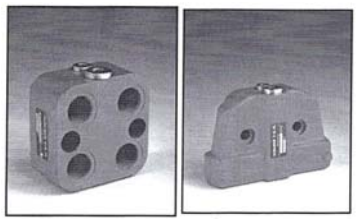
Pos.8 - Design Series

omit - Factory specified

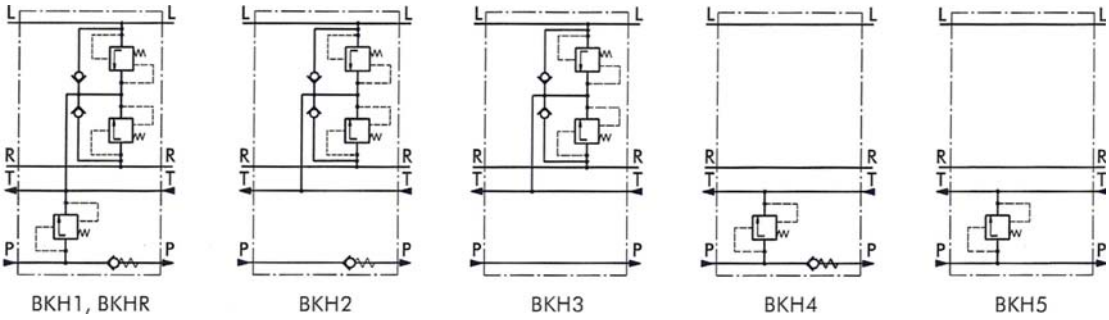
Notes: * Available only for displacement from 40 to 200.
** Colour at customer's request.
The steering units are mangano-phosphatized as standard.

BKH…

Stuurklep



De BKH kleppen zijn ontwikkeld om de componenten in een hydraulisch circuit te beschermen: pomp, orbitrol en cylinders – voor overbelasting, implosie en stoten. Sommige voordelen zijn; makkelijk te integreren in een hydraulisch systeem, makkelijk te monteren op een orbitrol en het is snel en gemakkelijk om slangen te monteren. Afhankelijk van het ontwerp en de ingebouwde kleppen kan de BKH gemonteerd worden in 6 types: BKH1 … BKH5 en BKHR. De BKH5 is speciaal ontwikkeld voor de XY. De maximale flow is gelijk aan de range van de XY en HKU maar nooit meer dan 80 l/min. De druk instelling van de ontlastklep en het prioriteitsventiel zijn weergegeven in de tabel.

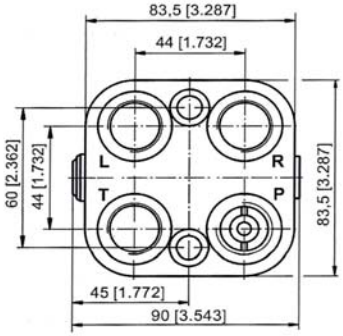


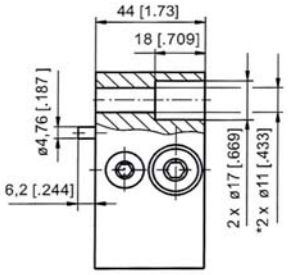
Algemene informatie

Parameters		Type								
		BKH1, BKHR				BKH2	BKH3	BKH4, BKH5		
Rated Flow	lpm [GPM]	80 [21.1]								
Rated Pressure	bar [PSI]	160 [2320]								
Relief Valve Pressure Settings*	bar [PSI]	80 [1160]	100 [1450]	125 [1810]	150 [2175]	-	-	80 [1160]	100 [1450]	125 [1810]	150 [2175]
Shock Valves Pressure Settings**	bar [PSI]	140 [2030]	160 [2320]	180 [2610]	200 [2900]	200 [2900]	240 [3480]	-	-	-	-
Weight	kg [lb]	1,8 , 2,3 [4.0] , [5.1]				1,8 [4.0]		1,8 [4.0]			

* Pressure Settings are at flow rate of 30 lpm [7.92 GPM] and viscosity 21 mm²/s [105 SUS] at 50° C [122°F].
** Pressure Settings are at flow rate of 2 lpm [.53 GPM] and viscosity 21 mm²/s [105 SUS] at 50° C [122°F].

DIMENSIONS AND MOUNTING DATA - BKH1, 2, 3, 4



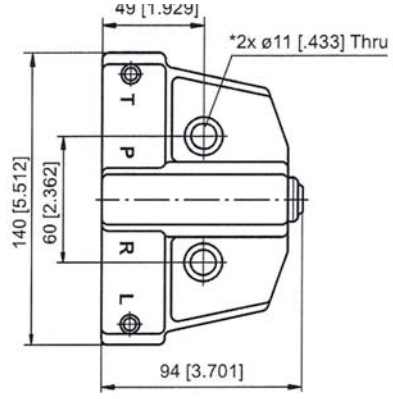


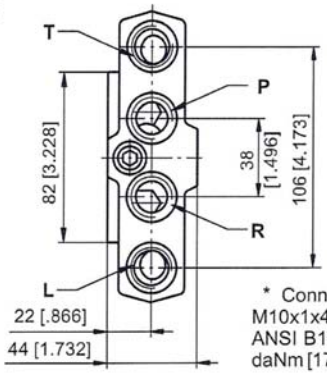
code	Ports - P, T, R, L Thread
-	G1/2 20 [.80] depth
M	M22x1,5 20 [.80] depth
A	3/4 - 16 UNF O-ring 20 [.80] depth

* Connection to the HKU is done with 2 screws M10x1x40 -8.8 DIN 912 or with 2 screws 3/8-24 UNF ANSI B18.3-76, long 1.5". Tightening torque: 2,5±0,5 daNm [177÷265 lb - in].

BKH1…5,R

Orbitrol



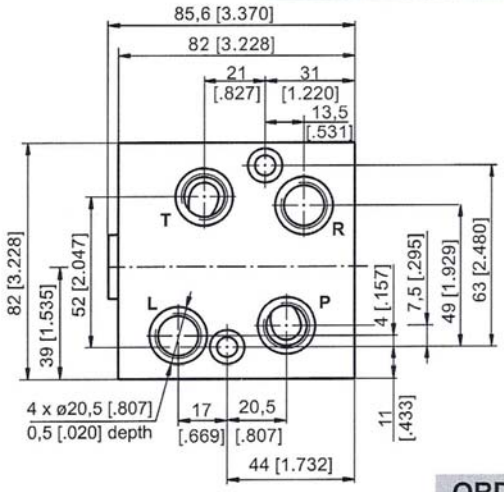


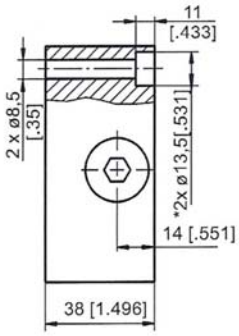
code	Ports - P, T, R, L Thread
M	M18x1,5 22 [.87] depth
A	3/4 - 16 UNF O-ring 22 [.87] depth

* Connection to the HKU is done with 2 screws M10x1x40 -8.8 DIN 912 or with 2 screws 3/8-24 UNF ANSI B18.3-76, long 1.5". Tightening torque: 2,5±0,5 daNm [177÷265 lb - in].

DIMENSIONS AND MOUNTING DATA - BKH5

mm [in]





code	Ports - P, T, R, L Thread
M	M16x1,5 14 [.55] depth

* Connection to the XY is done with 2 screws M8x1x40 -8.8 DIN 912 . Tightening torque: 2,5±0,5 daNm [177÷265 lb - in].

ORDER CODE

1	2	3	4	5
BKH	-	-		

Pos.1 - Versions*

R	1	2	3	4	with built-in valves:
•	•			•	- Input relief valve on line **"P"**
•	•	•		•	- Input check (non-return) valve on line **"P"**
•	•	•	•		- Shock valves on lines **"R"** and **"L"**
•	•	•	•		- Anti-cavitation valves on lines **"R"** and **"L"**

Pos.2 - Relief Valve Pressure Settings, bar**

80	100	125	150

Pos.3 - Ports***

omit - BSPP (ISO 228)
A - SAE (ANSI B 1.1 - 1982)
M - Metric (ISO 262)

Pos.4 - Option (Paint)****

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

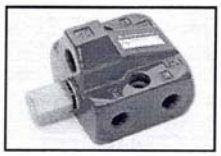
Pos.5 - Design Series

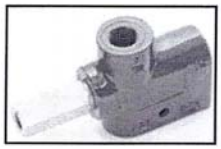
omit - Factory specified

Notes: * Versions **R, 1, 2, 3, 4** -for **HKU**; **5** - for **XY**.
** That does not concern version **2** and **3**.
*** For Port size see drawings on page 19 and 20.
**** Colour at customer's request.

The valve blocks are mangano-phosphatized as standard.

PR
Prioriteitsventiel





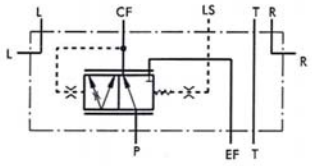
The Priority Valves distribute and trace the hydraulic flow from the supply pump of the hydraulic system to the hydraulic components which control and run the vehicle.

The Priority Valves are used only with the HKUS.../5(D)(T) hydrostatic steering units. When connected, the steering unit and the priority valve represent sophisticated hydraulic tracing system that controls the flow in both main pipelines of the hydraulic system (the working and control one) at any time of its operation.

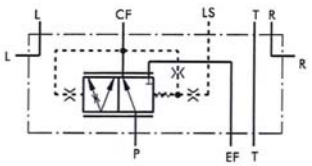
As a static signal, the "LS" signal must be used in systems with circuit stability. The connection between the PRT, PRTA priority valves and the HKUS.../5T steering units has to be as short as possible, but should not exceed 1,5 m [4.92 ft] (for iron pipe with 4 mm [.157 in.] internal diameter). When a rubber hose is used this length have to be even shorter.

Priority valves with dynamic signal work in a system with dynamic hydrostatic steering units type HKUS.../5D (5DT).

Modulary Mounting

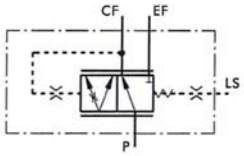


Static signal
PRD 40,80/...

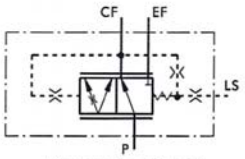


Dynamic signal
PRDD 40,80/...

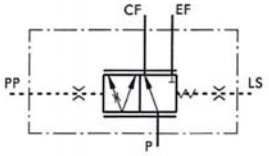
Pipe Mounting



Static signal
PRT 40,80,120/..., PRTA 40,80/...

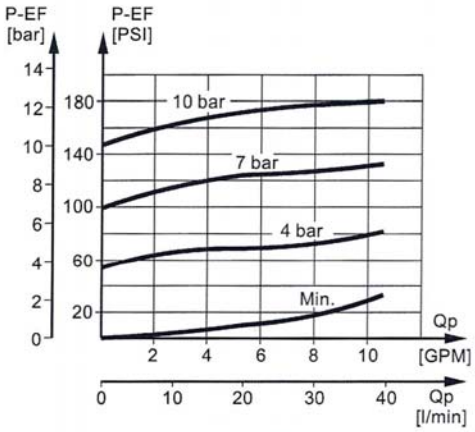


Dynamic signal
PRTD 40,80,120/...,PRTAD40,80/...

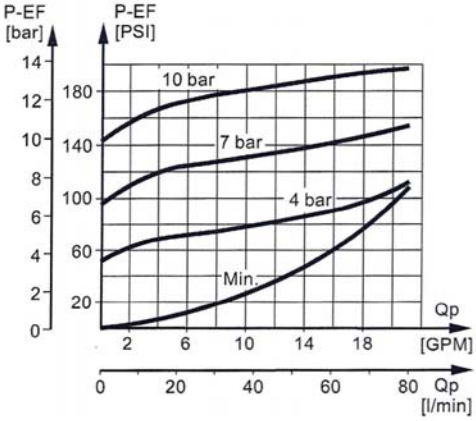


Static signal with External Port
PRTE120/...

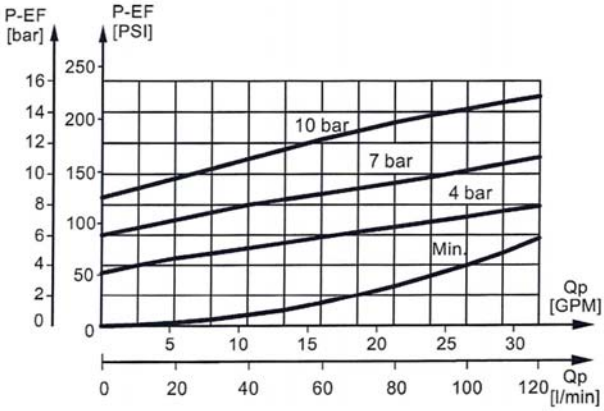
PR...40



PR...80



PRT...120



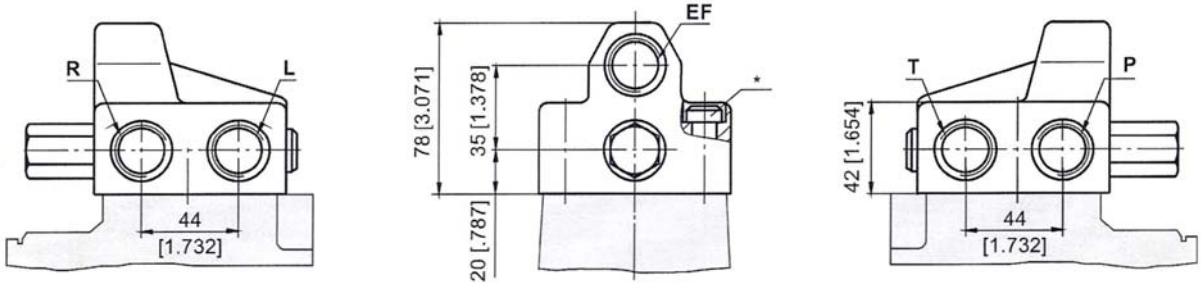
PR

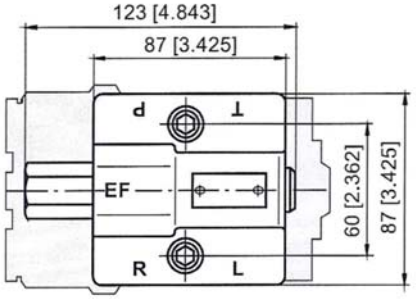
Prioriteitsventiel

Parameters		Type								
		PRD(D), PRT(D)			PRTA(D)			PRT(D)(E)		
Rated Flow	lpm [GPM]	40 [10.6]			80 [21.1]			120 [31.7]		
Control Spring Pressure	bar [PSI]	4 [58]	7 [101.5]	10 [145]	4 [58]	7 [101.5]	10 [145]	4 [58]	7 [101.5]	10 [145]
Max. Pressures in Oil Ports:	P, EF	250 [3625]								
	CF	210 [3045]								
bar [PSI]	R, L	280 [4061]								
	LS	210 [3045]								
	PP							210 [3045]		
	T	20 [290]								
Weight	kg [lb]	2,25 [4.96]			1,3 [2.87]			2,1 [4.6]		

P - pump, **EF** - excess flow, **CF** - control flow (first priority oil flow),
L - left, **R** - right, **LS** - load sensing, **T** - tank, **PP** - pilot pressure (L,R and T - for PRD(D) only).

DIMENSIONS AND MOUNTING DATA - PRD(D) 40, 80/...





code	Ports - P, EF Thread	Ports - T, R, L Thread
-	G1/2 18 [.71] depth	G3/8 18 [.71] depth
M	M22x1,5 18 [.71] depth	M18x1,5 18 [.71] depth
A	7/8 - 14 UNF O-ring 18 [.71] depth	3/4 - 16 UNF O-ring 18 [.71] depth

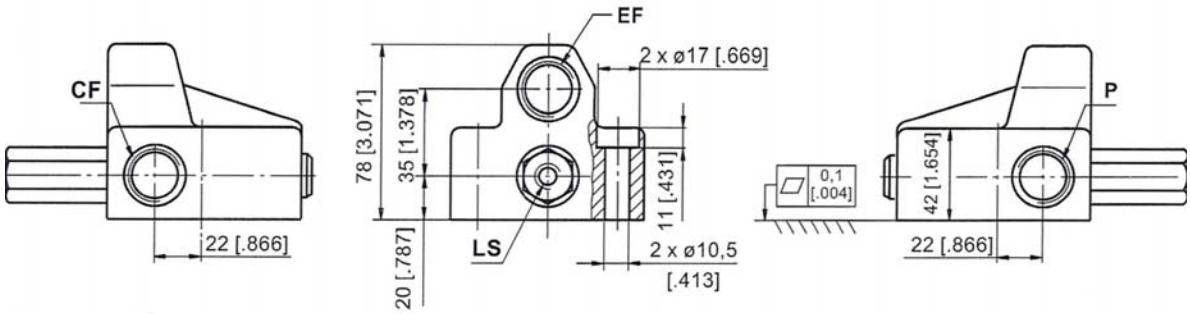
* Connection to the HKUS.../5(D)... is done with 2 screws M10x1x45 -10.9 DIN 912 or with 2 screws 3/8-24 UNF ANSI B18.3-76, 1.75" long.
Tightening torque: 4,5±0,5 daNm [360 ± 440 lb-in].

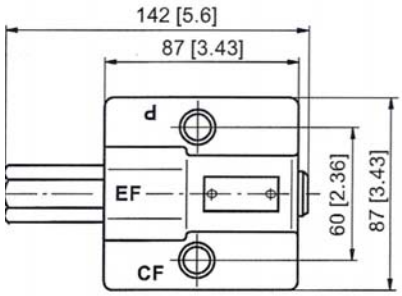
mm [in]

PR

Prioriteitsventiel

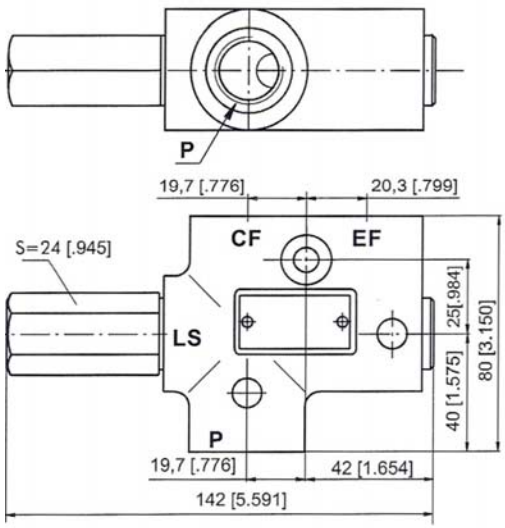
DIMENSIONS AND MOUNTING DATA - PRT(D) 40, 80/...

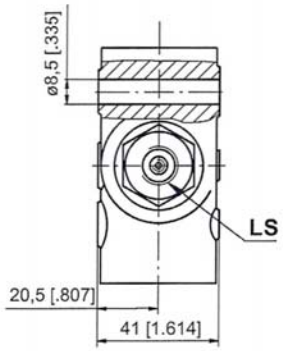


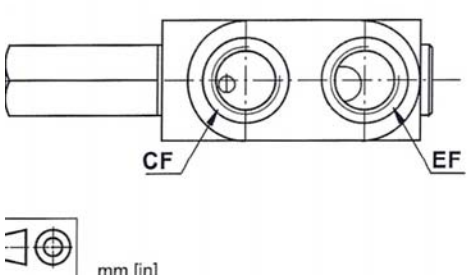


code	Ports - P, EF Thread	Port - CF Thread	LS - Port
-	G1/2 18 mm [.71] depth	G1/2 18 mm [.71] depth	G1/4 14 mm [.55] depth
M	M 22x1,5 18 mm [.71] depth	M 22x1,5 18 mm [.71] depth	G1/4 14 mm [.55] depth
A	7/8 - 14 UNF O-ring 18 [.71] depth	3/4 - 16 UNF O-ring 18 [.71] depth	7/16 - 20 UNF O-ring 12,7 [.50] depth

DIMENSIONS AND MOUNTING DATA - PRTA(D) 40, 80/...





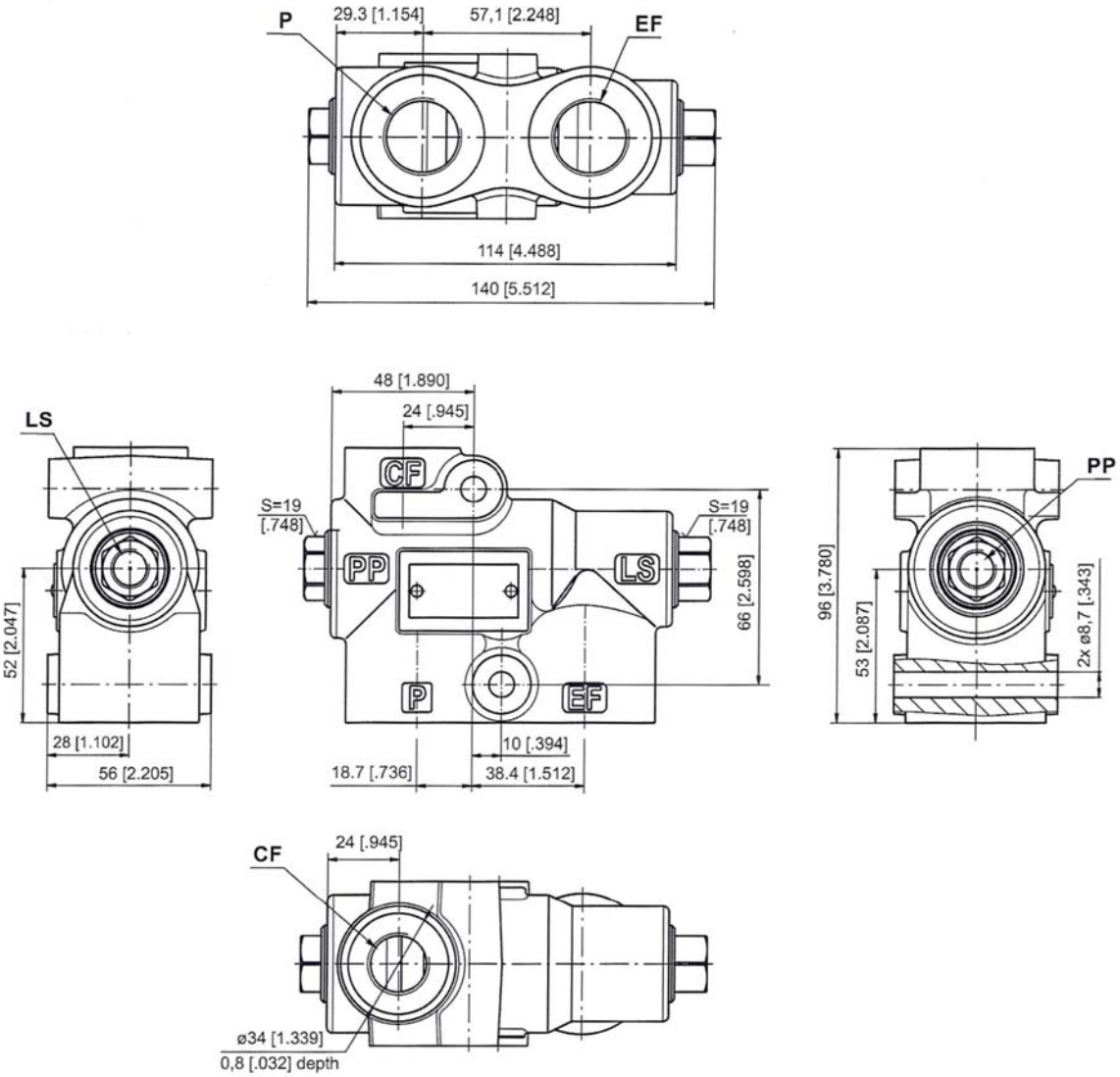


code	Ports - P, EF Thread	Port - CF Thread	LS - Port
-	G1/2 18 mm [.71] depth	G1/2 18 mm [.71] depth	G1/4 14 mm [.55] depth
M	M 22x1,5 18 mm [.71] depth	M 22x1,5 18 mm [.71] depth	G1/4 14 mm [.55] depth
A	7/8 - 14 UNF O-ring 18 [.71] depth	3/4 - 16 UNF O-ring 18 [.71] depth	7/16 - 20 UNF O-ring 12,7 [.50] depth

PR

Prioriteitsventiel

DIMENSIONS AND MOUNTING DATA - PRT...120/...



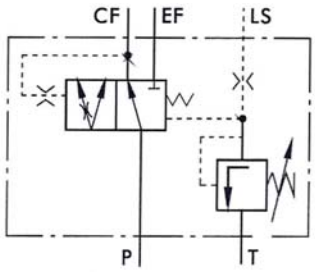
code	Ports - P, EF Thread	Port - CF Thread	LS, PP - Ports
-	G3/4 20,5 [.81] depth	G1/2 18,5 [.73] depth	G1/4 12,5 [.49] depth
M	M27x2 20,5 [.81] depth	M18x1,5 18,5 [.73] depth	M12x1,5 12,5 [.49] depth
A	1 1/16 - 12 UN O-ring 20,5 [.81] depth	3/4 - 16 UNF O-ring 18,5 [.73] depth	7/16 - 20 UNF O-ring 12,5 [.49] depth

mm [in]

PRT…160/…

Prioriteitsventiel voor alleen HKU(S)…/5T…

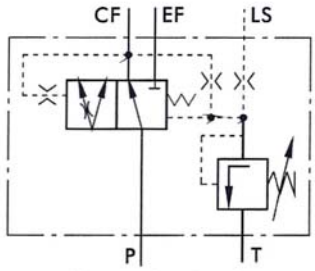
The Priority Valves PRT...160 have built-in a pilot pressure relief valve, who protects the steering unit against excess pressure. The pilot pressure relief valve operates with the Shuttle of the Priority valve to limit the maximum steering pressure P-T measured across the steering units ports.



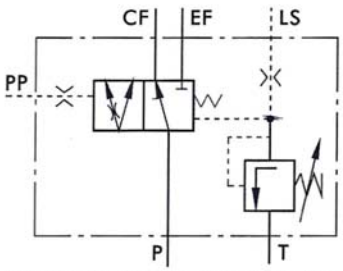
Static signal
PRT 160/...

SPECIFICATION DATA

Parameters		Type PRT(D), PRTE		
Rated Flow	lpm [GPM]	160 [42.3]		
Control Spring Pressure	bar [PSI]	4 [58]	7 [101.5]	10 [145]
Max. Pressures in Oil Ports:				
bar [PSI]	P, EF	350 [5076]		
	CF	210 [3045]		
	LS	210 [3045]		
	PP	210 [3045]		
	T	15 [217]		
Standart Releif Valve Pressure Settings	bar [PSI] *	175 [2540]		
Weight	kg [lb]	4,4 [9.70]		



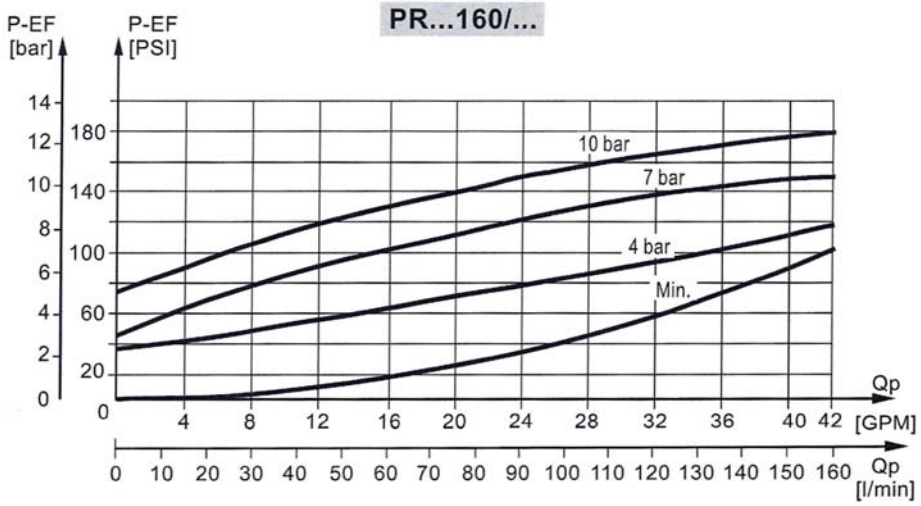
Dynamic signal
PRTD 160/...



Static signal with External Pilot
PRTE 160/...

* - Adjusted valve pressure from 80 bar [1160 PSI] till 210 bar [3045 PSI] upon customer request.
P - pump, **EF** - excess flow, **CF** - control flow (first priority oil flow),
LS - load sensing, **T** - tank, **PP** - pilot pressure

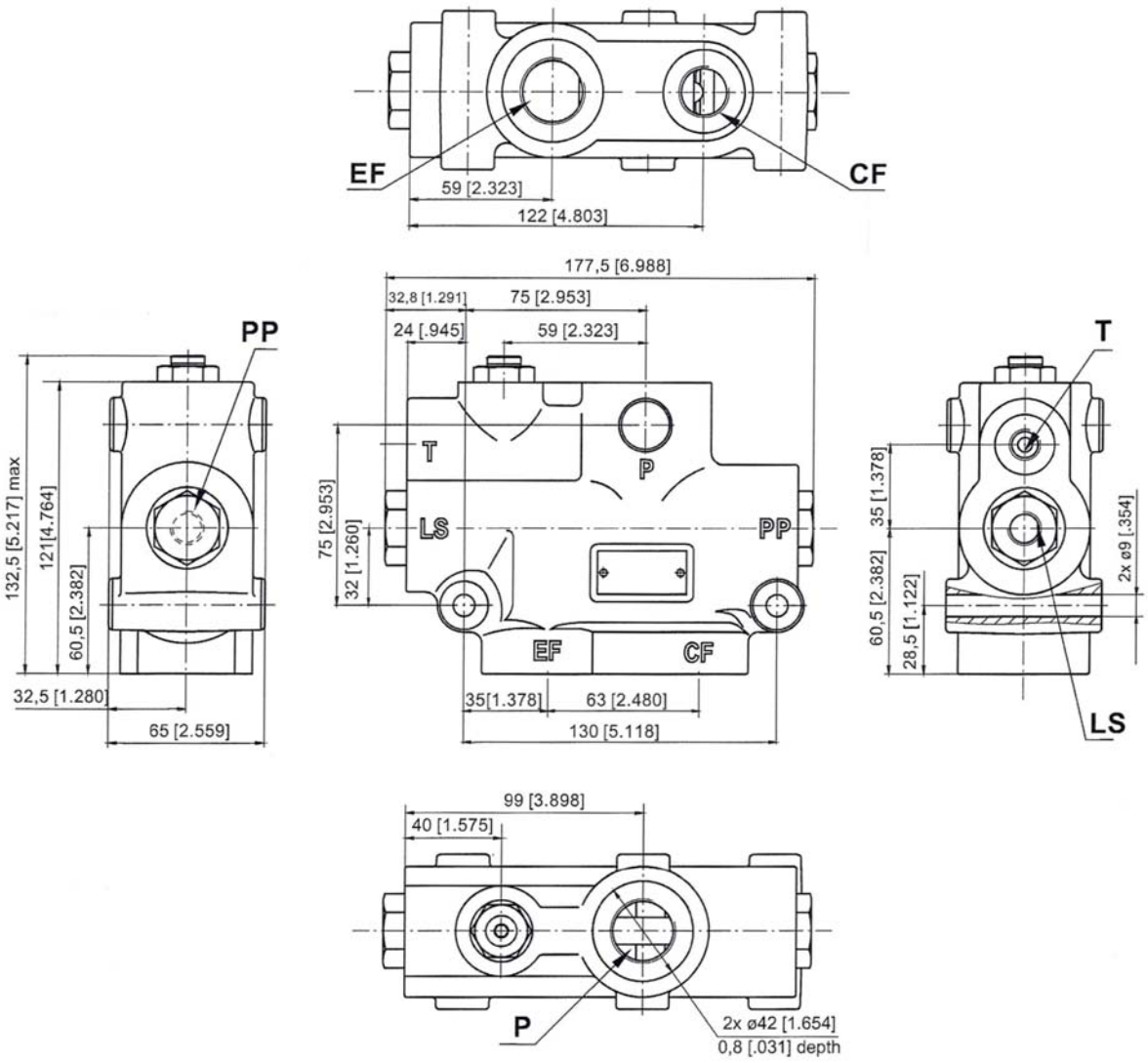
PR...160/...



PRT(D)(E)160/…

Prioriteitsventiel

DIMENSIONS AND MOUNTING DATA - PRT(D)(E)160/...



code	Ports - P, EF Thread	Port - CF Thread	LS, PP, T - Ports
-	G3/4 20,5 [.81] depth	G1/2 18,5 [.73] depth	G1/4 12,5 [.49] depth
M	M27x2 20,5 [.81] depth	M18x1,5 18,5 [.73] depth	M12x1,5 12,5 [.49] depth
A	1 1/16 - 12 UN O-ring 20,5 [.81] depth	3/4 - 16 UNF O-ring 18,5 [.73] depth	7/16 - 20 UNF O-ring 12,5 [.49] depth

mm [in]

PR

Prioriteitsventiel

Bestelgegevens

	1	2	3		4		5	6	7
PR				/		-			

Pos.1 - Mounting

D	- Modularly Mounting
T	- Pipe Mounting (Model 1)
TA	- Pipe Mounting (Model 2)

Pos.2 - Signal Type

omit	- with Static signal
D	- with Dynamic signal
E*	- with Static signal and External Pilot

Pos.3 - Rated Flow, l/min

40	80	120**	160**

Pos.4 - Control Spring Pressure , bar

4	7	10

Pos.5 - Ports

omit	- BSPP (ISO 228)
M	- Metric (ISO 262)
A	- SAE (ANSI B 1.1 - 1982)

Pos.6 - Option [Paint]***

omit	- No Paint
P	- Painted Low Gloss Color
PC	- Corrosion Protected Paint

Pos.7 - Design Series

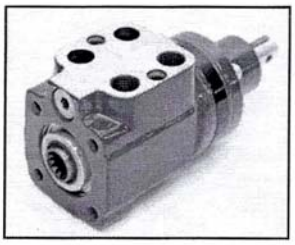
omit - Factory specified

Notes: * For PRT 120/... and PRT 160/... only
** For PRT only
*** Colour at customer's request.

The priority valves are mangano-phosphatized as standard.

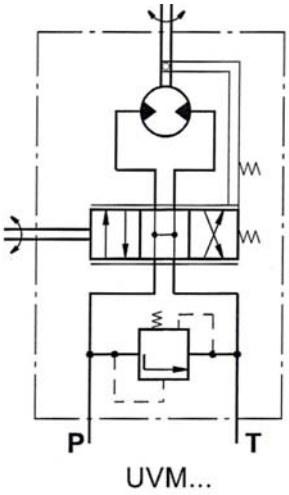
UVM

versterker



The M+S Hydraulic UVM Torque Amplifiers amplify the applied torque to the control shaft and thus ease the running The M+S Hydraulic UVM Torque Amplifiers amplify the applied torque to the control shaft and thus ease the runningof various transport vehicles such as:

-agricultural and wood working machines;
-road rollers and road cleaning machines;
-fork-lift trucks and construction machinery;



UVM...

The totally transferred power in terms of output torque is up to 1,1 kW [1.47 HP].

The UVM torque amplifiers with their simple design, consisted of a pump and an amplifier, ensure 40 times higher output torque than the applied one. The amplifying is achieved as follows; by rotating the input shaft to the left or right the spool and the bushing are displaced, and the hydraulic flow enters the system turning the gerotor set, which transfers the already amplified torque to the output shaft.

One advantage of the UVM torque amplifier is that it allows manual steering in cases of engine (pump) failure.

SPECIFICATION DATA

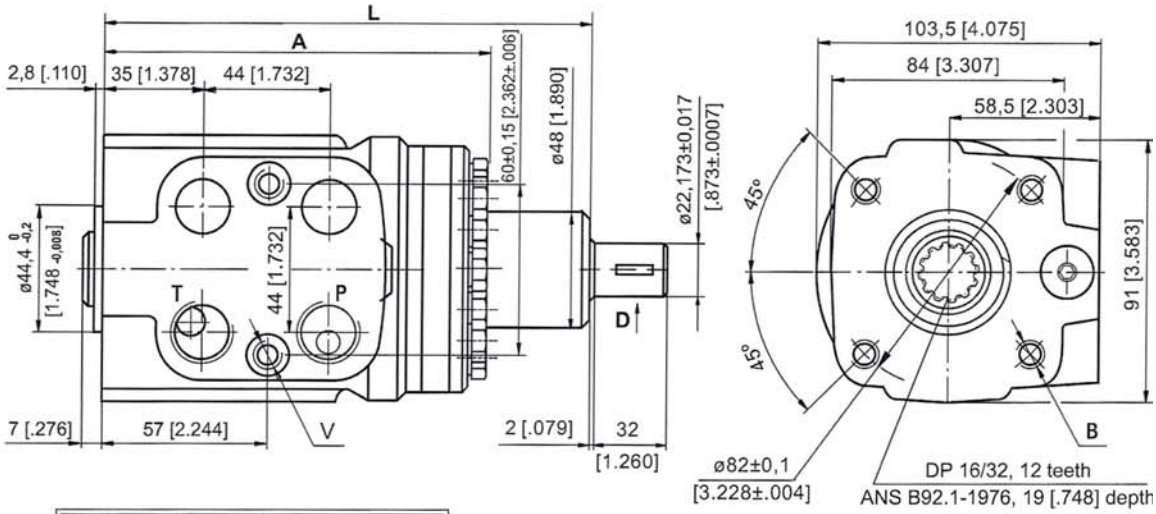
Parameters		Type UVM 100	Type UVM 160
Displacement	cm^3/rev [in^3/rev]	99,0 [6.04]	158,4 [9.67]
Rated Flow*	lpm [GPM]	10 [2.6]	16 [4.2]
Rated Pressure**	bar [PSI]	70 [1015]	70 [1015]
Input Torque	daNm [lb-in]	0,35...0,5 [31...44]	0,35...0,5 [31...44]
Max. Input Torque	daNm [lb-in]	20 [178]	20 [178]
Torque Output at 70 bar [1015 PSI]	daNm [lb-in]	80 [708]	120 [1062]
Pressure Drop between P and T at Rated Flow	bar [PSI]	1... 2 [14.5...29]	1,6...2,5 [23.2...36.3]
Max. Speed of Rotation at Rated Flow and Pressure	RPM	100	100
Max. Continuous Pressure in Line T	bar [PSI]	20 [290]	20 [290]
Weight	kg [lb]	5,8 [12.8]	6,2 [13.7]

* Rated Flow at 100 RPM
** Pressure Settings are at Rated Flow (as in the table) and viscosity 21 mm^2/s [105 SUS] at 50° C [122°F].

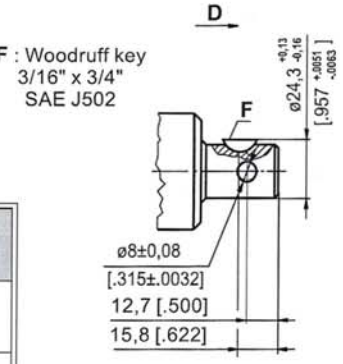
UVM

UVM TORQUE AMPLIFIERS

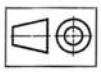
DIMENSIONS AND MOUNTING DATA



Dimensions		Type	
		UVM 100	UVM 160
A	mm	143,3	151,3
	[in]	[5.64]	[5.96]
L	mm	181,2	189,2
	[in]	[7.13]	[7.45]



code	Ports - P, T Thread	Column Mounting Thread - B	Port Mounting Thread - V
-	G1/2 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
M	M22x1,5 17 [.67] depth	4 x M10 18 [.71] depth	2 x M10x1 16 [.63] depth
A	3/4 - 16 UNF O-ring 17 [.67] depth	4 x 3/8 - 16 UNC 15,7 [.62] depth	2 x 3/8 - 24 UNF 14,2 [.56] depth



mm [in]

ORDER CODE

	1	2	3	4
UVM				

Pos.1 - Displacement code

100	- 99,0	[6.04]	cm^3/rev	[in^3/rev]
160	- 158,4	[9.67]	cm^3/rev	[in^3/rev]

Pos.2 - Ports

omit - BSPP (ISO 228)
M - Metric (ISO 262)
A - SAE (ANSI B 1.1 - 1982)

Pos.3 - Option (Paint)*

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

Pos.4 - Design Series

omit - Factory specified

Notes: * Colour at customer's request.

The steering units are mangano-phosphatized as standard.

KK…

Stuurstang

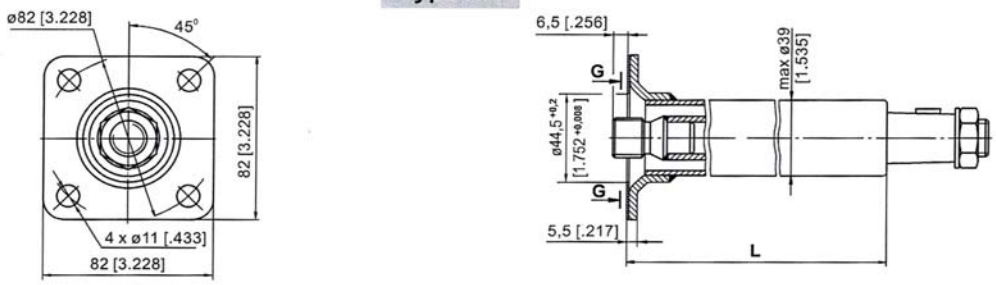
De KK stuurstang verplaatst de torgue van het stuurwiel naar de HKU, HKUS of andere stuureenheid van dezelfde klasse. De KK stuurstang bevat een pijp waarin de controle as is gecentreerd.;
De maximaal toegestane belasting op de stuurkolom is;

Max. torque applied to the steering wheel	24 daNm	[2124 lb-in]
Max. bending moment	20 daNm	[1770 lb-in]
Max. axial load	100 daN	[225 lbs]

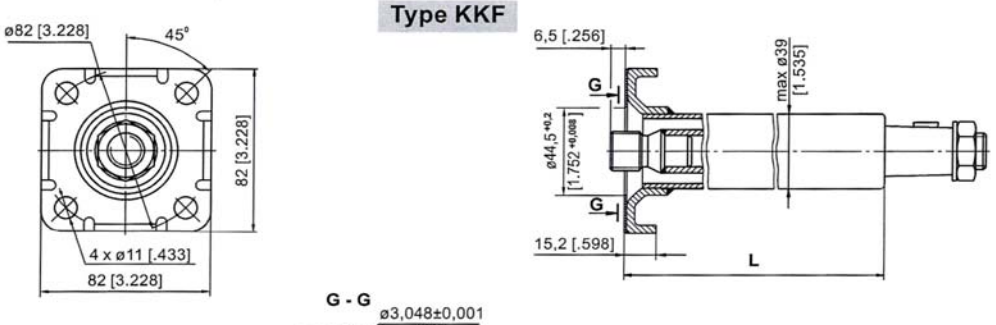
The steering column must be additionally supported when the length L exceeds 150 mm [5.91 in].

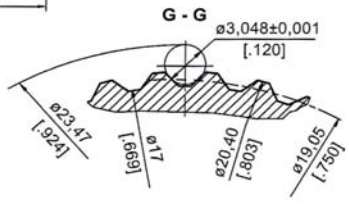
Afmetingen en montage data

Type KK



Type KKF





mm [in]

SPECIFICATION DATA

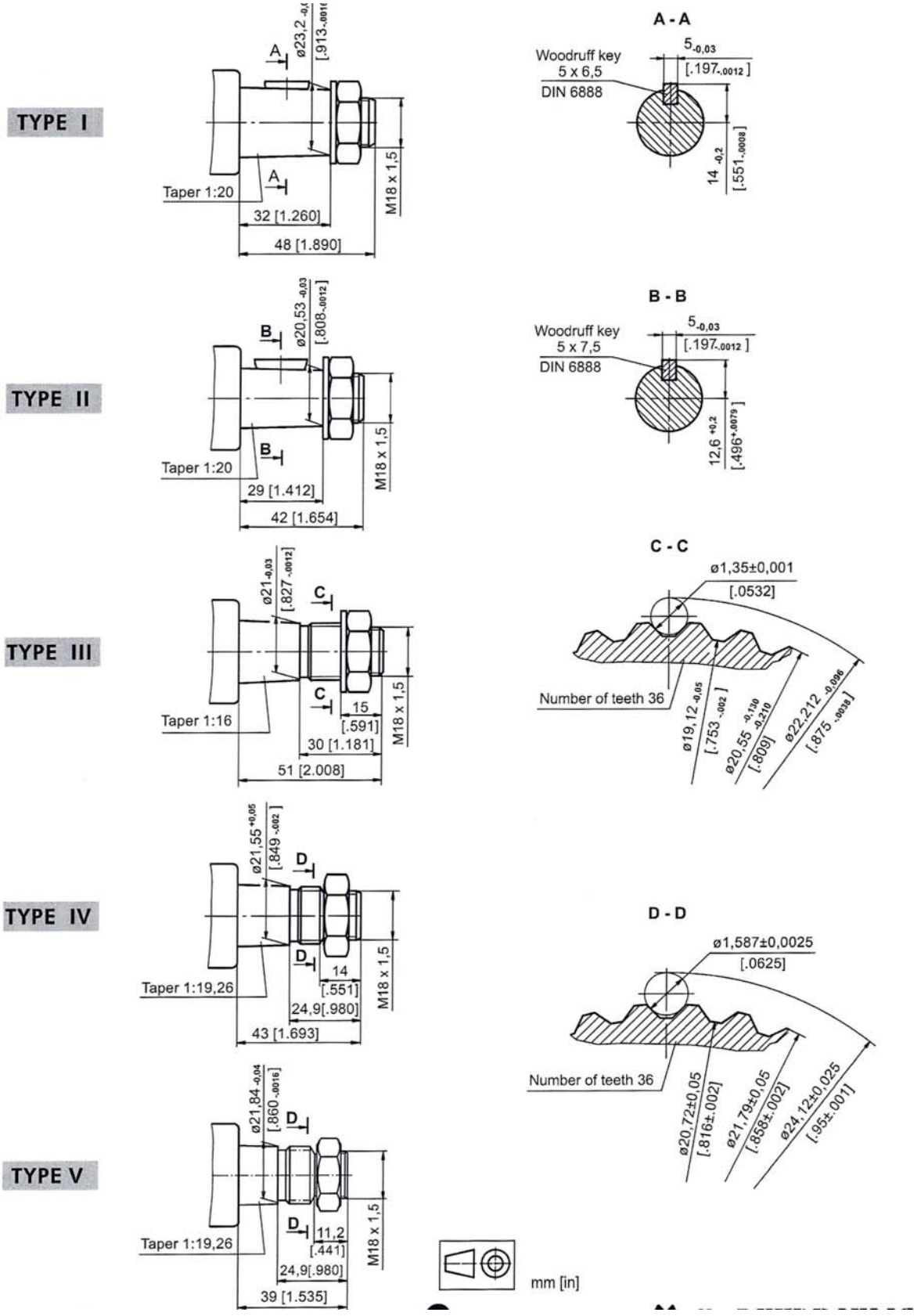
Involute Spline Data		
Modul	m	1.5875
Number of Teeth	z	12
Pressure Angle	α	30°
Diametral Pitch	DP	16/32

Parameters		Type				
		KK 75	KK 150	KK 390	KK 441	KK 750
L	mm [in]	78 [3.07]	168,2 [6.62]	393 [15.47]	441 [17.36]	777,8 [30.62]
Weight	kg [lb]	0,75 [1.65]	1,1 [2.43]	1,9 [4.19]	5,05 [11.13]	3,3 [7.28]

Note: The length L depends on the transport vehicle construction.
For more information regarding other lengths and shaft versions, please refer to M+S Hydraulic.

KK

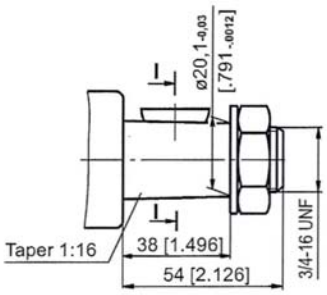
As versies

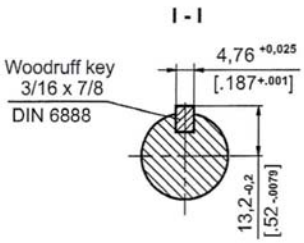


KK

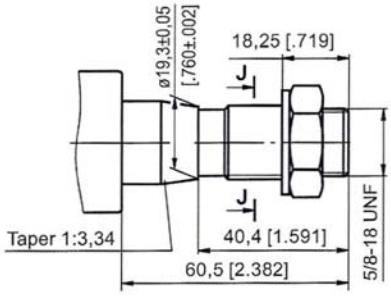
As versies

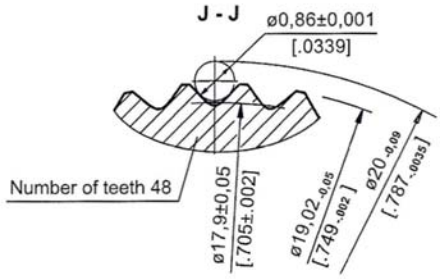
TYPE VI



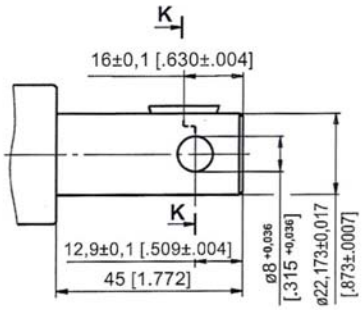


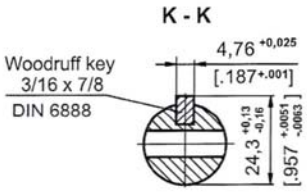
TYPE VII



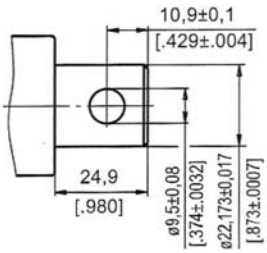


TYPE VIII





TYPE IX

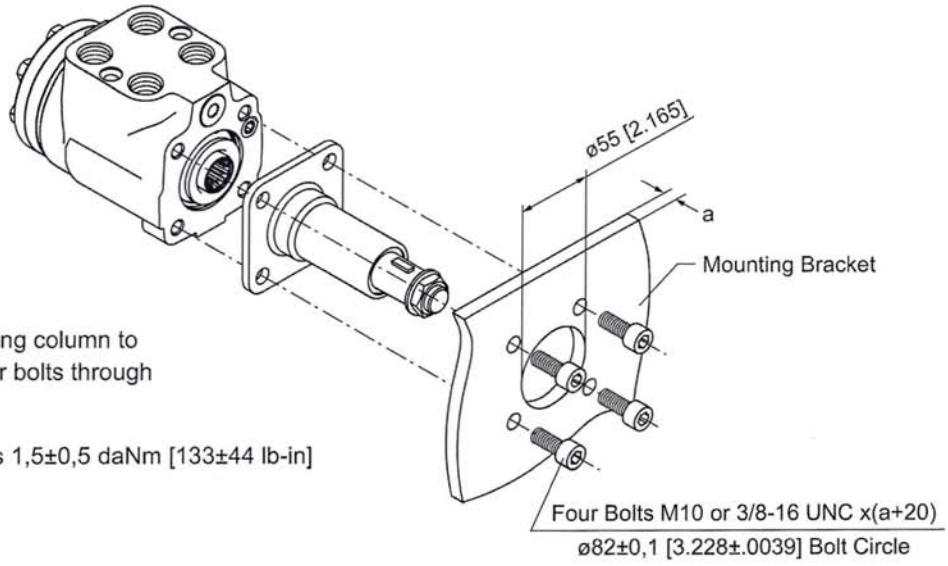


mm [in]

KK

Montagevoorschriften

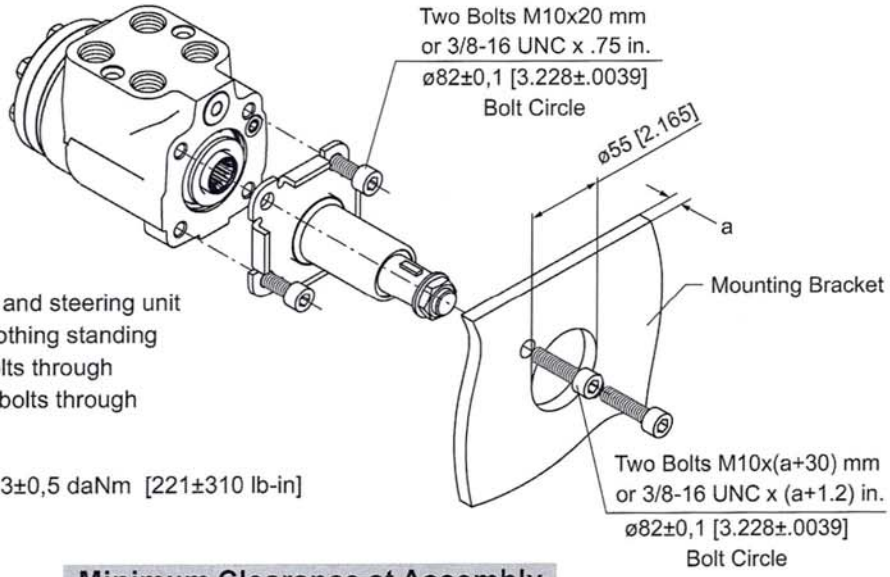
For column type KK



For assembling the Steering column to the Steering units use four bolts through mounting bracket.

Tightening torque for bolts 1,5±0,5 daNm [133±44 lb-in]

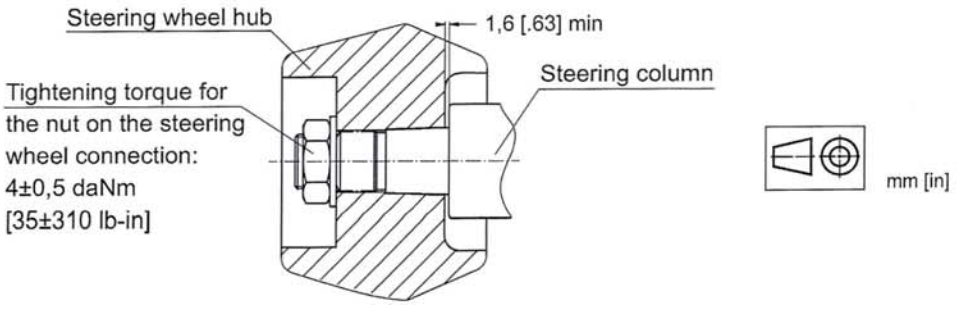
For column type KKF



Steering column type KKF and steering unit must be assembled with nothing standing between them. Use two bolts through mounting bracket and two bolts through just the steering column.

Tightening torque for bolts 3±0,5 daNm [221±310 lb-in]

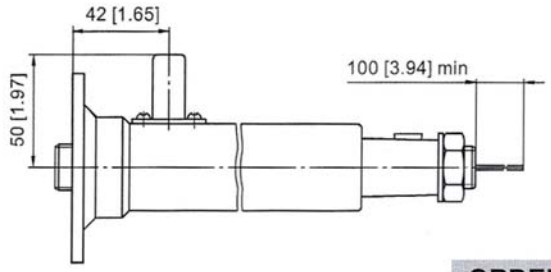
Minimum Clearance at Assembly



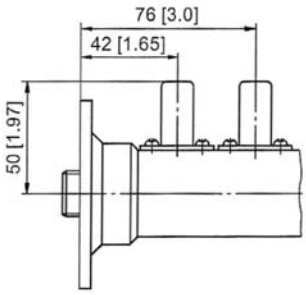
KK

Geluids signaal aansluiting

E Option



EE Option



ORDER CODE

	1	2	3	4	5	6
K K						

Pos.1 - Mounting Flange

omit - Flange without Tabs
F - Flange with Tabs

Pos.2 - Length, mm (acc. to table)

Pos.3 - Shaft Extensions

I, II, III, IV, V, VI, VII, VIII, IX

Pos.4 - Signal Connection (Option)

omit - without electric signal connection
E - with one electric signal connection
EE* - with two electric signal connection

Pos.5 - Option (Paint)**

omit - No Paint
P - Painted Low Gloss Color
PC - Corrosion Protected Paint

Pos.6 - Design Series

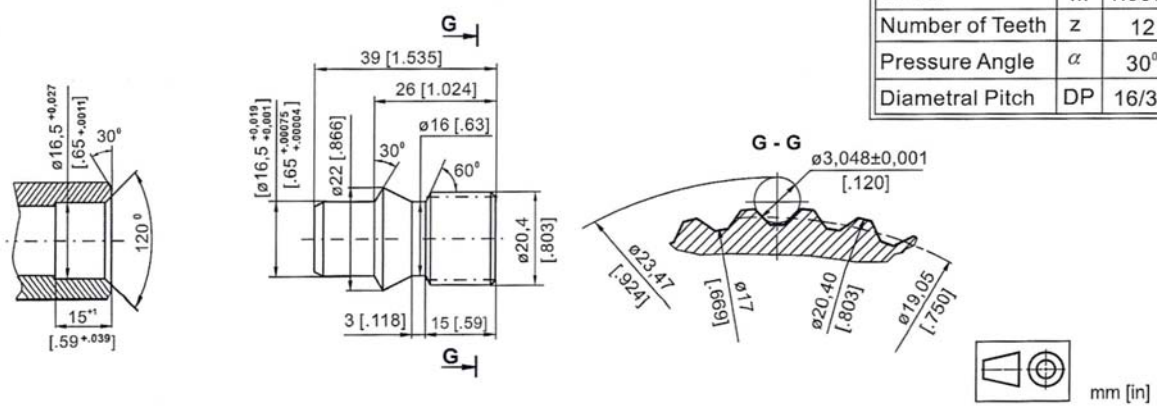
omit - Factory specified

Notes: * For steering column's length 150 mm [L>5.9 in] only.
** Colour at customer's request.
The steering columns are yelow galvanized as standard.

Shaft End Part

Order No: 46415 001 00

Involute Spline Data		
Modul	m	1.5875
Number of Teeth	z	12
Pressure Angle	α	30°
Diametral Pitch	DP	16/32



Orbitrol algemeen

GENERAL APPLICATION AND SPECIFICATION INFORMATION

APPLICATION
(SIZING AND STEERING SYSTEM DESIGN PROCESS)

STEP ONE:
Calculate approximate kingpin torque (M_L).

$$M_L = G \cdot \mu \sqrt{\frac{B^2}{8} + \ell^2}$$

Note: Double M_L if steered wheels are powered.

M_L = Kingpin torque in daNm [*lb-in*].

G = Vehicle weight on steered axle daN [*lbs*] (use maximum estimated overload weight).

μ = Coefficient of friction (use Chart № 1 , dimensionless) determined by ℓ/B (see Diagram № 1).

B = Nominal width of tyre print, m [*in*] (see Diagram № 1).

ℓ = Kingpin offset. The distance between tyre centerline intersection at ground and kingpins centerline intersection at ground in, m [*in*] (see Diagram№1).

Chart № 1

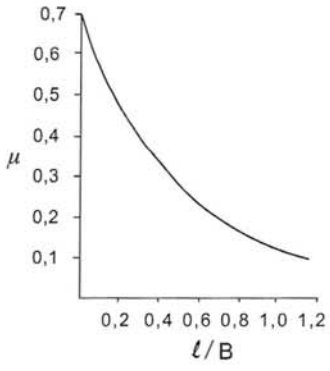


Diagram № 1

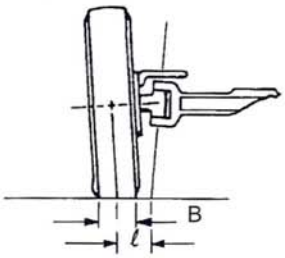
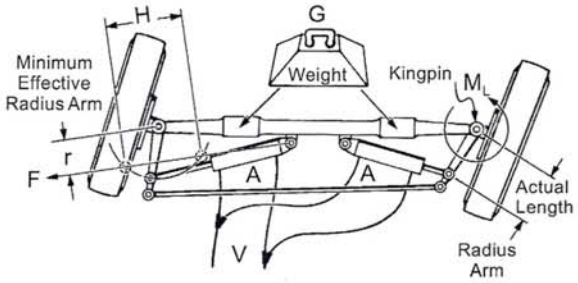


Diagram № 2



STEP TWO:
Calculate approximate cylinder; force-area-stroke-volume.

FORCE $F = \frac{M_L}{r}$

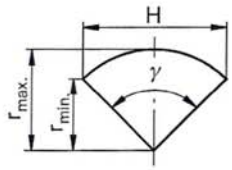
F = Force required daN [*lbs*] to steer axle.

M_L = Kingpin torque in daNm [*lb-in*] from step one. Double M_L if steered wheels are powered.

r = Effective radius Arm mm [*in*] is the minimum distance from the centerline of the cylinders minimum and maximum stroke points parallel to the kingpin center pivot. This is not the physical length of the radius Arm (see Diagram № 2 and Chart № 2).

Chart № 2

$$r_{min.} = r_{max.} \cdot \cos\frac{\gamma}{2}$$



STROKE
H = Stroke, cm [*in*].
Calculate stroke of cylinder using Diagram № 2 and Chart № 2 as shavt.

$$H = 2\, r_{max.} \cdot \sin\frac{\gamma}{2}$$

AREA $A = \frac{F}{\Delta P}$

A = Cylinder area for axle cylinder set, cm^2 [in^2].

F = Force required from step two force formula, daN [*lbs*].

ΔP = Hydraulic pressure bar [*PSI*] use following percentage of relief valve setting by amount of load on steered axle. Severe load 25% - medium load 55% - no load 75% .

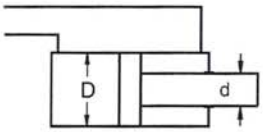
Orbitrol algemeen

DIAMETER
After the cylinder set area is determined, the cylinder diameter can be calculated.

D = Inside diameter of cylinder, cm [*in*].
d = Road diameter of cylinder, cm [*in*].

Choose type of cylinder arrangement and formula shown for that type.

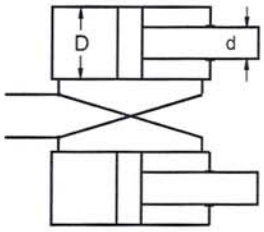
Differential Cylinder



$$D = \sqrt{\frac{4A}{\pi} + d^2}$$

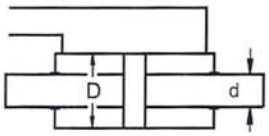
Note: $\left(\frac{d}{D}\right)^2 \leq 0{,}15$

Cross Connected Cylinders



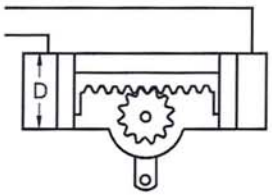
$$D = \sqrt{\frac{2A}{\pi} + \frac{d^2}{2}}$$

Balanced Cylinder



$$D = \sqrt{\frac{4A}{\pi} + d^2}$$

Opposed Cylinder



$$D = \sqrt{\frac{4A}{\pi}}$$

VOLUME $V = H \cdot A$

V = Volume. The total amount of oil required to move the cylinder rod(s) through the entyre stroke, cm^3 [in^3].
H = Stroke, cm [*in*].
A = Area, cm^2 [in^2].
Note: For differential cylinders it is important to calculate average cylinder volume for step three using below formula.

$$V_{avg.} = H \cdot \frac{\pi}{4}(2.D^2 - d^2)$$

STEP THREE:

Selecting displacement of hydrostatic steering unit.

At this point determine number of steering wheel revolutions desired for your application to steer the wheels from one side to the other (lock to lock). Depending on the type of vehicle and its use, this will vary from 3 to 5 turns.

DISPLACEMENT $V_D = \frac{V}{n}$

V_D = Displacement, cm^3/rev [in^3/*rev*].
V = Volume of oil, cm^3 [in^3].
n = Steering wheel turns lock to lock.

After completing the above displacement calculation, choose the closest standard hydrostatic steering unit in displacement size that incorporates circuitry you require. Recalculate the number of steering wheel turns using the displacement of selected standard hydrostatic steering unit outlined above. Use the formula shown below.

$$n = \frac{V}{V_D}$$

V = Volume of oil, cm^3 [in^3].
n = Steering wheel turns lock to lock.
Note: For differential cylinders applications the cylinder volume will be different for left and right turns - this means the value *n* (steering wheel turns lock to lock) will vary when turning to the left or right.

STEP FOUR:

Calculate approximate minimum and maximum steering circuit flow requirements.

$$Q = \frac{V_D \cdot N}{\text{Unit Conversion for Imperial or [1000] Metric}}$$

Q = Steering circuit flow, lpm [*GPM*].
V_D = Unit displacement, cm^3/rev [in^3/*rev*]
N = Steering wheel input speed, RPM.
Recommended steering speed is 50 to 100 *RPM*.

Many variables are involved in sizing the pump. We suggest that the manufacturer test and evaluate for desired performance.

GENERAL INFORMATION

FLUID DATA:
To insure maximum performance and life of the Hydrostatic steering units, use premium quality hydraulic oils. Fluids with effective quantities of anti-wear agents or additives are highly recommended. If using synthetic fluids consult the factory for alternative seal materials.

- **Viscosity**

Viscosity at normal operating temperature should be approx. 20 mm^2/s [100 SUS]. Viscosity range 10 - 300 mm^2/s [60 - 1500 SUS].

- **Temperature**

Normal operating temperature range from +30°C [+85°F] to +60°C [140°F].
Minimum operating temperature -40°C [-40°F].
Maximum operating temperature +80°C [+176°F].
Note: Extended periods of operation at temperature of 60°C and above will greatly reduce life of oil due to oxidation and shorten life of product.

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- **Filtration**

The maximum degree of contamination per ISO 4406 or CETOP RP is:
-20/17 open center units
-19/16 closed center and load sensing
-16/12 priority valves
Return line filtration of 25 μm nominal (40 - 50 μm absolute) or finer is recommended.
In extremely dusty conditions filtration of 10 μm absolute should be used.

START UP

All air must be purged from system before operating unit. It is extremely important that any external lines or units with load sensing or priority feature be completely bled. Lines going to and from cylinders as well as lines to and from pump be purged of all air. It is recommended that a 10-15 μm filter be used between pump and steering unit before start up.

MOUNTING UNITS

All hydrostatic steering units should be installed for ease of access. It is recommended that the steering unit be located outside the vehicle cabin.
It is important that no radial axial load be applied to the hydrostatic steering unit input shaft. Any or all radial and axial loads must be absorbed by the steering column or other operating device supplied by the vehicle manufacture.
Ports on the steering cylinder(s) should face upward to prevent damage.
During installation of the hydrostatic steering unit, cleanliness is of the utmost importance. Pipe plugs should be left in place during mounting and only removed when hydraulic lines are to be connected.

CONVERSIONS

to convert inches and millimeters:
1 in = 25,4 mm
1 mm = .03973 in

to convert gallons per minutes and liters per minutes:
1 GPM = 3,785 lpm
1 lpm = .2642 GPM

to convert pounds per square inch and bar:
1 PSI = 0,0689 bar
1 bar =14,51 PSI

to convert pounds-inch and newton-meters:
1 in - lb = 0,113 Nm
1 Nm = 8.85 lb - in

TORQUE TIGHTENING VALUES

Fluid connections

Fluid connection	Max. tightening torque daNm [lb - in]			
	metal edge	copper washer	aluminum washer	O - ring
G 1/4	4,0 [350]	3,5 [309]	3,5 [309]	
G 3/8	7,0 [620]	4,5 [398]	5,0 [442]	
G 1/2	10,0 [885]	5,5 [486]	8,0 [708]	
G 3/4	18,0 [1593]	9,0 [796]	13,0 [1150]	
M 10 x 1	4,0 [350]	2,0 [180]	3,0 [265]	
M 18 x 1,5	8,0 [708]	5,5 [486]	7,0 [620]	
M 22 x 1,5	10,0 [885]	6,5 [575]	8,0 [708]	
7/16 - 20 UNF				2,0 [180]
9/16 - 18 UNF				5,0 [442]
3/4 - 16 UNF				6,0 [531]
7/8 - 14 UNF				9,0 [796]
1 1/16 - 12 UN				12,0 [1062]

Mounting bolts

Mounting bolts	Tightening torque daNm [lb - in]
3/8 - 16 UNC	3,0 ± 0,5 [230 ÷ 310]
M 10 x 1	6,5 ± 0,5 [540 ÷ 620]
M 10	3,0 ± 0,5 [230 ÷ 310]

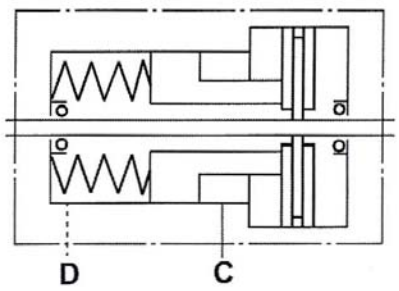
LB, LBS, LBV-WET

Lamellenrem

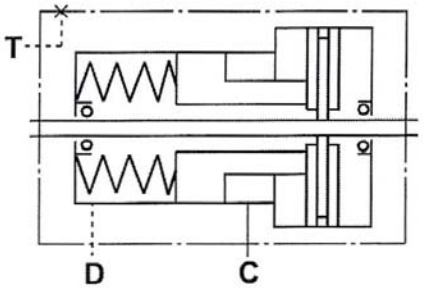
Algemene informatie

Fluid type	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Viscosity range, mm²/s	20÷75 [98÷347]
Filtration	ISO code 20/16 (nominal filtration of 25 micron)
Maintenance	Changed after the first 50-100 h, then after every 500-1500 h.

LB, LBS



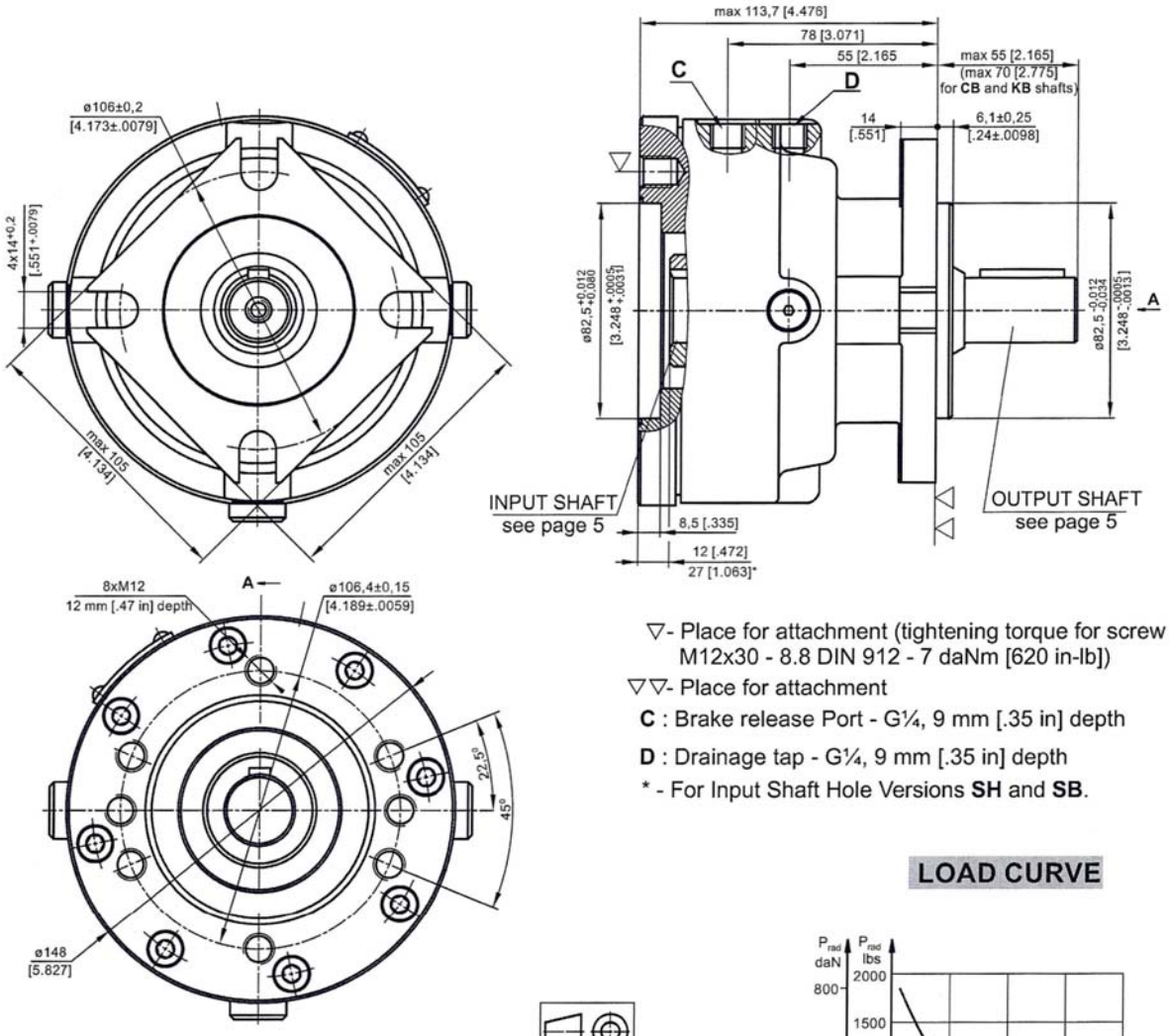
LBV



LB

Hydraulische rem geschikt voor de MP, MR en MS serie

TYPE LB/288



▽- Place for attachment (tightening torque for screw M12x30 - 8.8 DIN 912 - 7 daNm [620 in-lb])

▽▽- Place for attachment

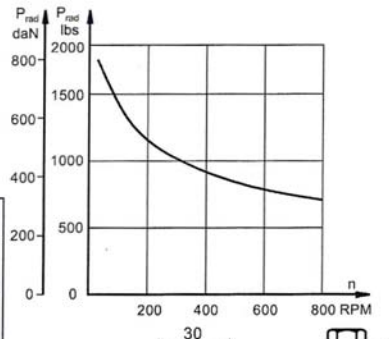
C : Brake release Port - G¼, 9 mm [.35 in] depth

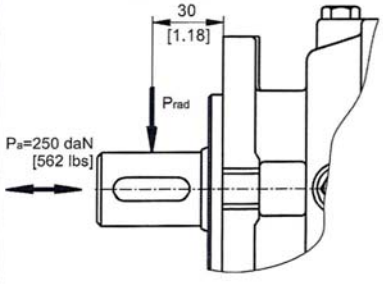
D : Drainage tap - G¼, 9 mm [.35 in] depth

* - For Input Shaft Hole Versions **SH** and **SB**.

mm [in]

LOAD CURVE



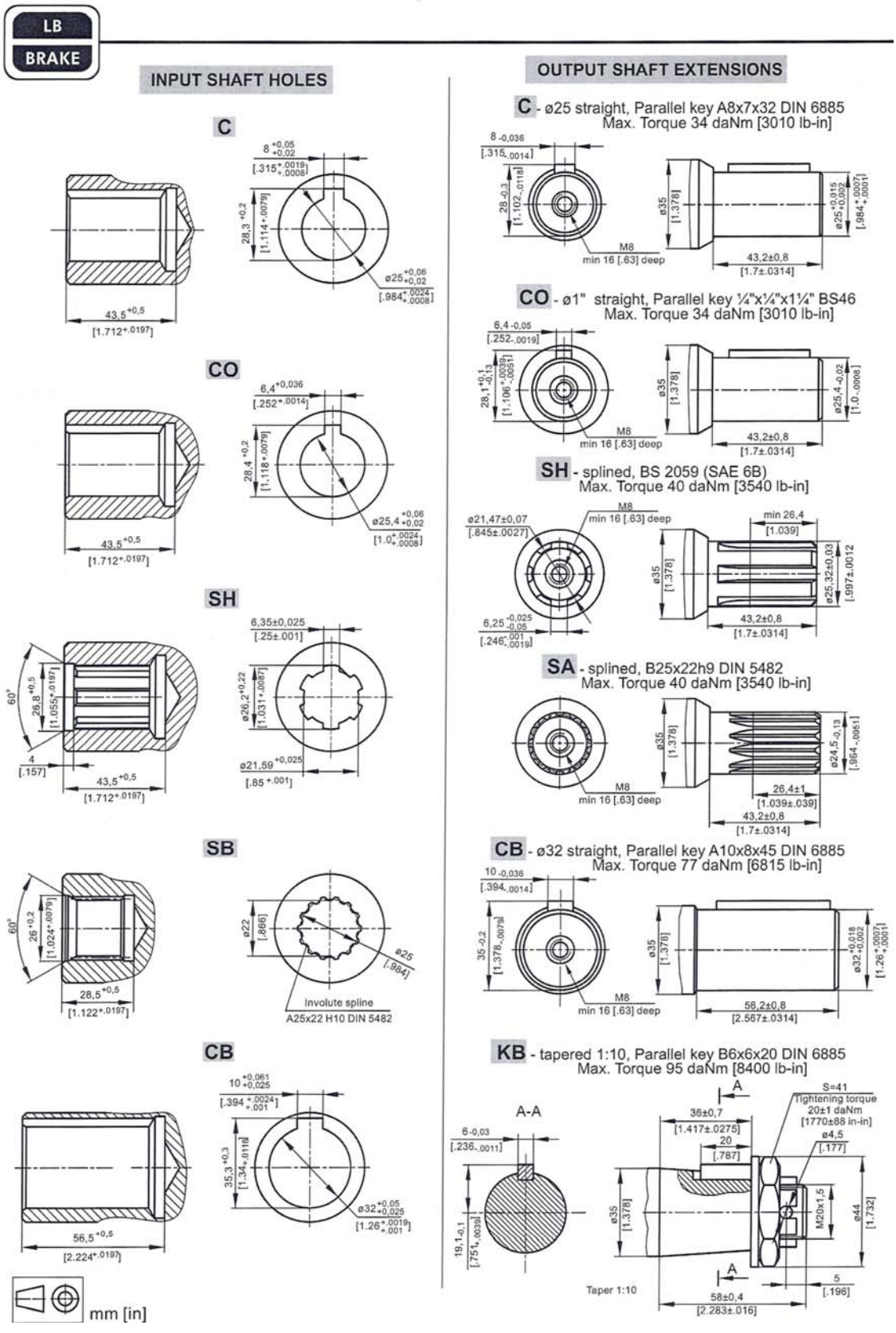


SPECIFICATION DATA

Description **LB/288...**		7	14	21	32	43	63
*Min. Static Torque, daNm [lb-in]		6-8 [531-708]	13-15 [1150-1327]	20-22 [1770-1947]	31-34 [2743-3009]	41-45 [3628-3982]	61-64 [5399-5665]
Opening Pressure bar [PSI]	min	4-8 [58-116]	9-16 [130-232]	17-23 [247-334]			
	max	300 [4350]					
Min. oil quantity for brake releasing	cm³ [in³]	7 - 8 [.427 - .488]					
Oil volume	cm³ [in³]	50 - 120 [3.5 - 7.35]					
Max. Pressure in drain space	bar [PSI]	0,5 [7.25]					
Weight	kg [lb]	9 [19.8]					

*Static torque is obtained at working pressure - 0 bar [0 PSI].

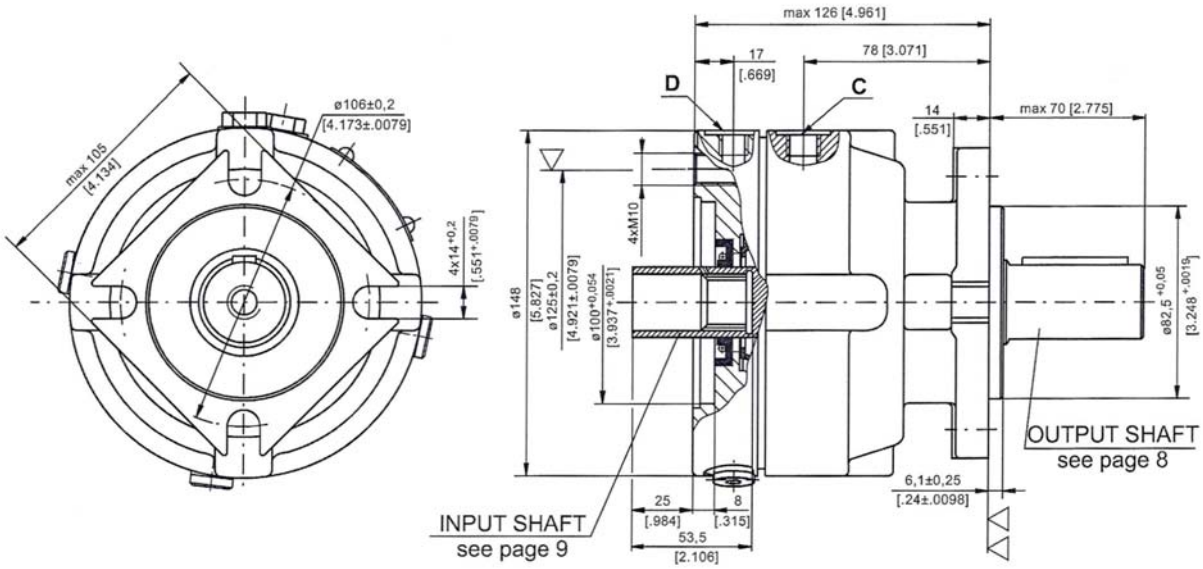
LB


LB
BRAKE
INPUT SHAFT HOLES
C
CO
SH
SB
CB
mm [in]
OUTPUT SHAFT EXTENSIONS
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]
SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]
CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]
KB - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm [8400 lb-in]
Involute spline
A25x22 H10 DIN 5482
A-A
Taper 1:10
Tightening torque
20±1 daNm
[1770±88 in-lb]

LBS, LBV

Hydraulische rem geschikt voor montage op de MSS en MSV motoren

TYPE LBS/289

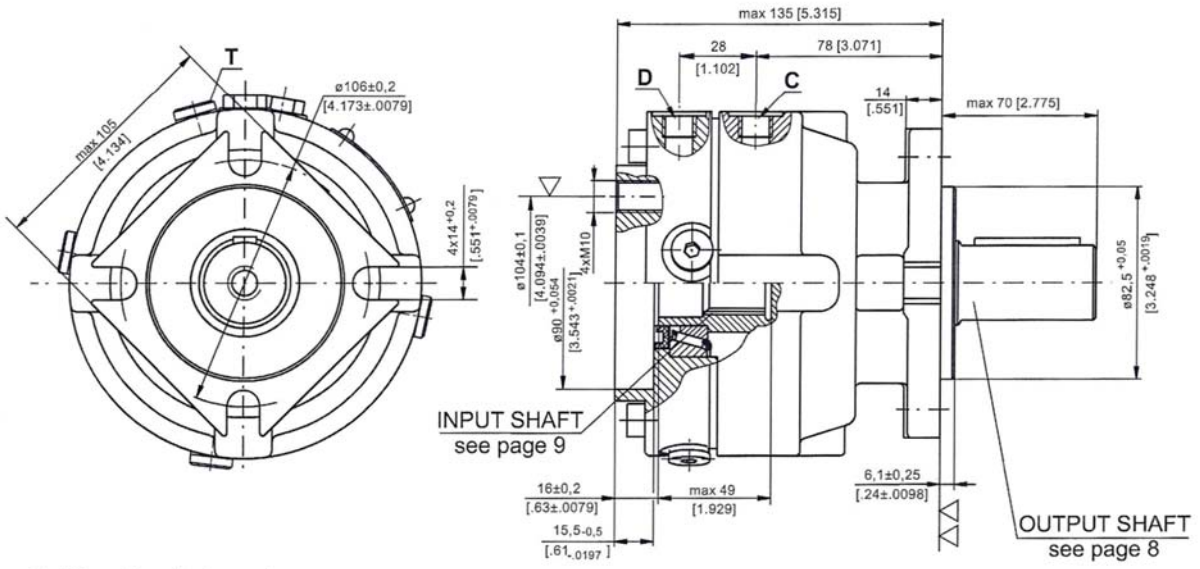


▽ - Place for attachment
(tightening torque for screw M10x35 - 8.8 DIN 912 - 5 daNm [440 lb-in])

▽▽ - Place for attachment

mm [in]

TYPE LBV/289



▽ - Place for attachment
(tightening torque for screw M10 - 8.8 DIN 912 - 5 daNm [440 lb-in])

▽▽ - Place for attachment

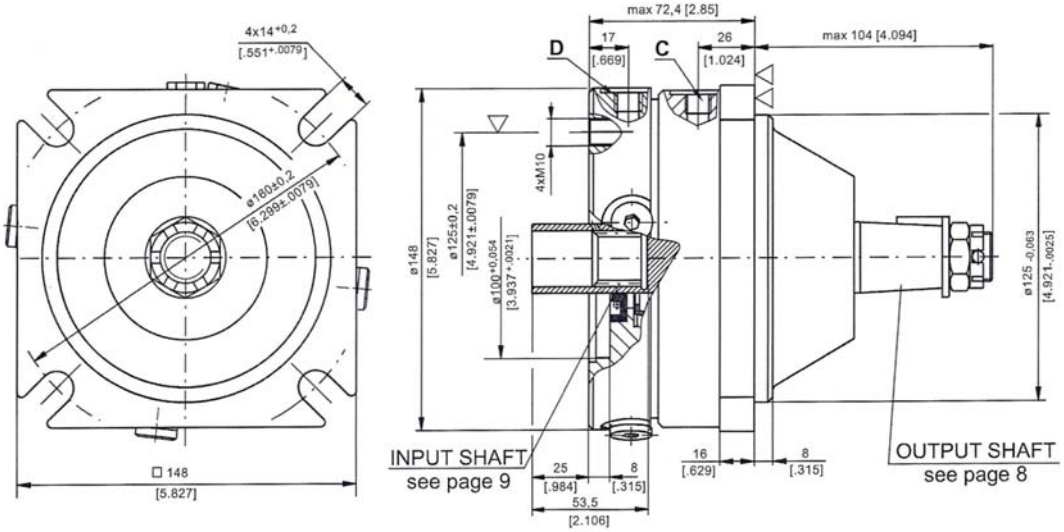
C : Brake release Port - G¼, 9 mm [.35 in] depth

D, T: Drainage tap - G¼, 9 mm [.35 in] depth

LBS, LBV

Hydraulische rem geschikt voor montage op de MSS en MSV motoren

TYPE LBS/290

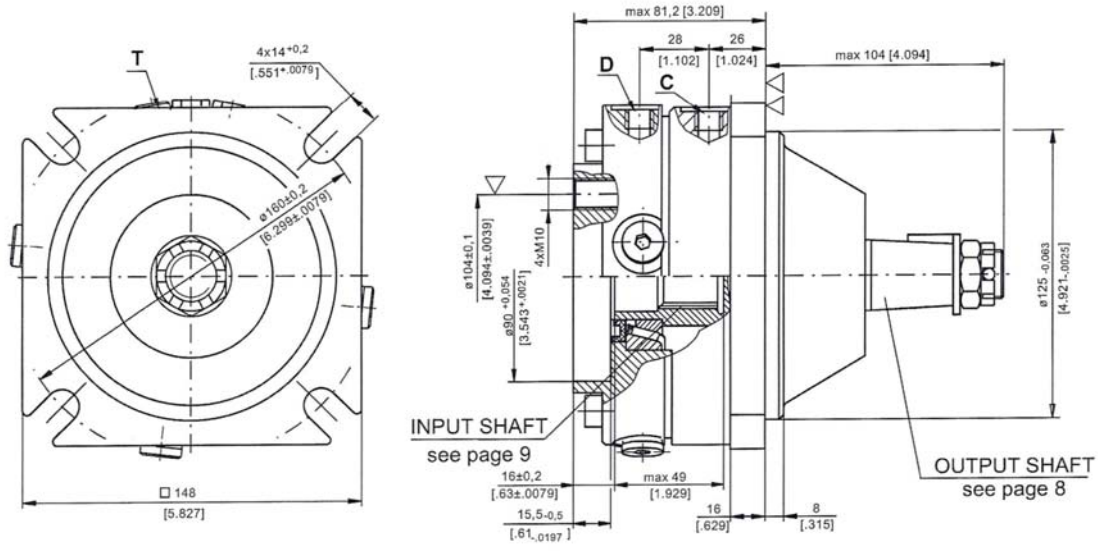


▽ - Place for attachment
(tightening torque for screw M10x35 - 8.8 DIN 912 - 5 daNm [440 lb-in])

▽▽ - Place for attachment

mm [in]

TYPE LBV/290



▽ - Place for attachment
(tightening torque for screw M10 - 8.8 DIN 912
- 5 daNm [440 lb-in])

▽▽ - Place for attachment

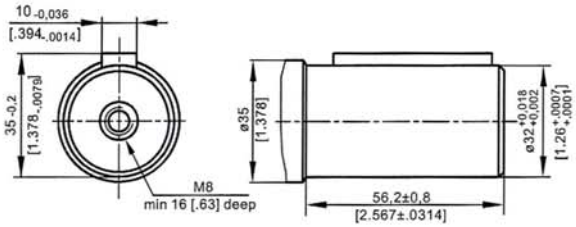
C : Brake release Port - G¼, 9 mm [.35 in] depth

D, T: Drainage tap - G¼, 9 mm [.35 in] depth

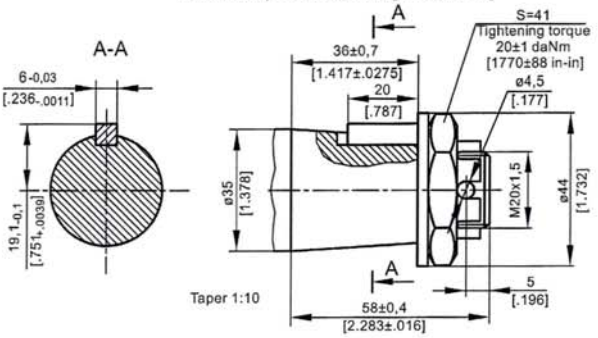
LBS, LBV

Maten uitgaande as

CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



KB - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm [8400 lb-in]



mm [in]

SPECIFICATION DATA

Description **LBS/289(290) LBV/289(290)**	21	32	43	63
*Min. Static Torque, daNm [lb-in]	20-22 [1770-1947]	31-34 [2743-3009]	41-45 [3628-3982]	61-64 [5399-5665]
Opening Pressure bar [PSI] min	17-23 [247-334]			
max	300 [4350]			
Min. oil quantity for brake releasing cm³ [in³]	7 - 8 [.427 - .488]			
Oil volume cm³ [in³]	50 - 120 [3.05 - 7.35]			
Max. Pressure in drain space bar [PSI]	5 [72]			
Weight kg [lb]	9 [19.8]			

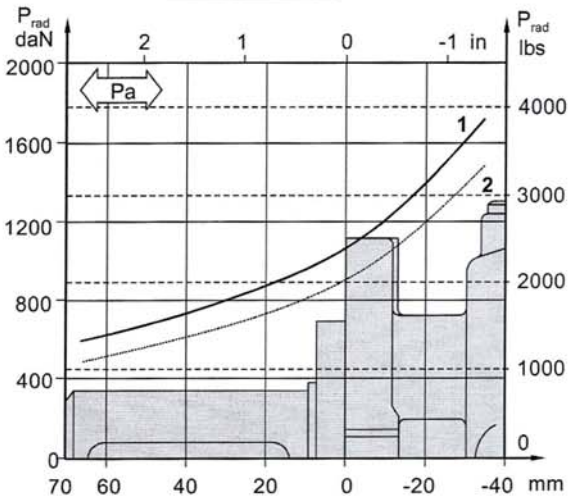
*Static torque is obtained at working pressure - 0 bar [0 PSI].

LOAD CURVE

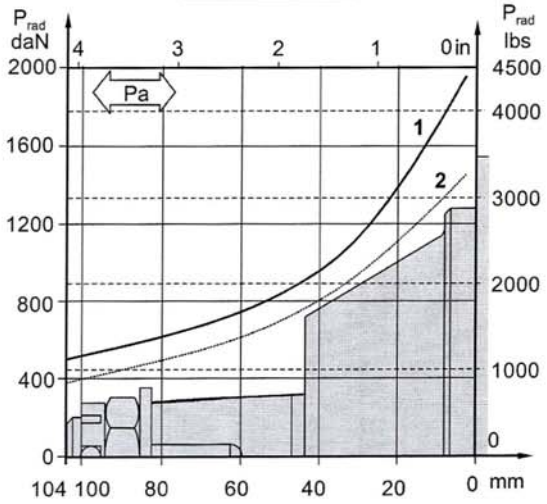
The curve applies to a B10 bearing life of 3000 hours at 200 RPM.

1: Pa<350 daN [787 lbs]
2: Pa=500 daN [1125 lbs]

LBS(V)/289



LBS(V)/290

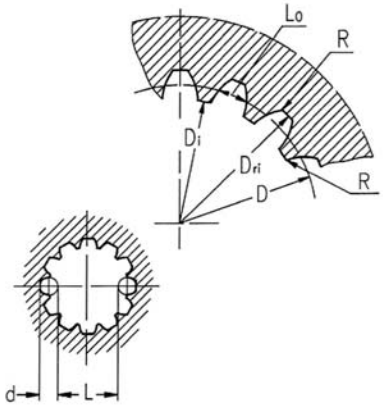


LBS, LBV

Gegevens interne splines voor aan te sluiten componenten

Standard ANS B92.1-1970, class 5
[m=2.1166]

Fillet Root Side Fit		LBS(V)/289 LBS(V)/290		LBS(V)/314 LBS(V)/315	
		mm	inch	mm	inch
Number of Teeth	z	12	12	16	16
Diametral Pitch	DP	12/24	12/24	12/24	12/24
Pressure Angle		30°	30°	30°	30°
Pitch Dia.	D	25,4	1	33,8656	1.3333
Major Dia.	Dri	$28,0_{-0,1}$	1.1 ÷ 1.098	$38,4^{+0,4}$	1.5118±1.5275
Minor Dia.	Di	$23,0^{+0,033}$	.907 ÷ .905	$32,15^{+0,06}$	1.2657±1.2673
Space Width [Circular]	Lo	4,308±0,020	.1704 ÷ .1688	4,516±0,037	.1763±.1791
Fillet Radius	R	0,2	.008	0,5	.02
Max. Measurement between Pins	L	$17,62^{+0,15}$	.699 ÷ .694	$26,9^{+0,10}$	1.063±1.059
Pin Dia.	d	4,835±0,001	.19039÷.19031	4,835±0,001	.19026±.19034
Corrected	x.m	+0,8	+.031	+1,0	+.039



ORDER CODE - LB/288

	1		2	3	4	5
LB/288		-				

Pos.1 - Input Shaft Hole
C, CO, SH, CB, SB

Pos.2 - Static Torque code (See Specification data)
7, 14, 21, 32, 43, 63

Pos.3 - Output Shaft Extensions*
- **C** - ø25 straight, Parallel key A8x7x32 DIN 6885
- **CO** - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
- **SH** - ø25,32 splined BS 2059 (SAE 6B)
- **SA** - ø24,5 splined B25x22 DIN 5482
- **CB** - ø32 straight, Parallel key A10x8x45 DIN 6885
- **KB** - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

Pos.4 - Option (Paint)**
- omit - no Paint
- **P** - Painted
- **PC** - Corrosion Protected Paint

Pos.5 - Design Series
omit - Factory specified

ORDER CODE - LBS, LBV

	1		2		3	4	5	6
LB		/		-				

Pos.1 - Type
- **S** - Disc Brake for short motor S- MSS
- **V** - Disc Brake for very short motor V- MSV

Pos.2 - Design code
- **289** - for MSS and MSV Motors
- **290** - for MSS and MSV Motors (Wheel Mount)

Pos.3 - Static Torque code (See Specification data)
21, 32, 43, 63

Pos.4 - Output Shaft Extensions*
- **CB** - ø32 straight, Parallel key A10x8x45 DIN 6885
- **KB** - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

Pos.5 - Option (Paint)**
- omit - no Paint
- **P** - Painted
- **PC** - Corrosion Protected Paint

Pos.6 - Design Series
omit - Factory specified

NOTES:

* The permissible output torque for shafts must be not exceeded! For Max. Torque values see data on page 5 and 8.
** The color is by customer's request.

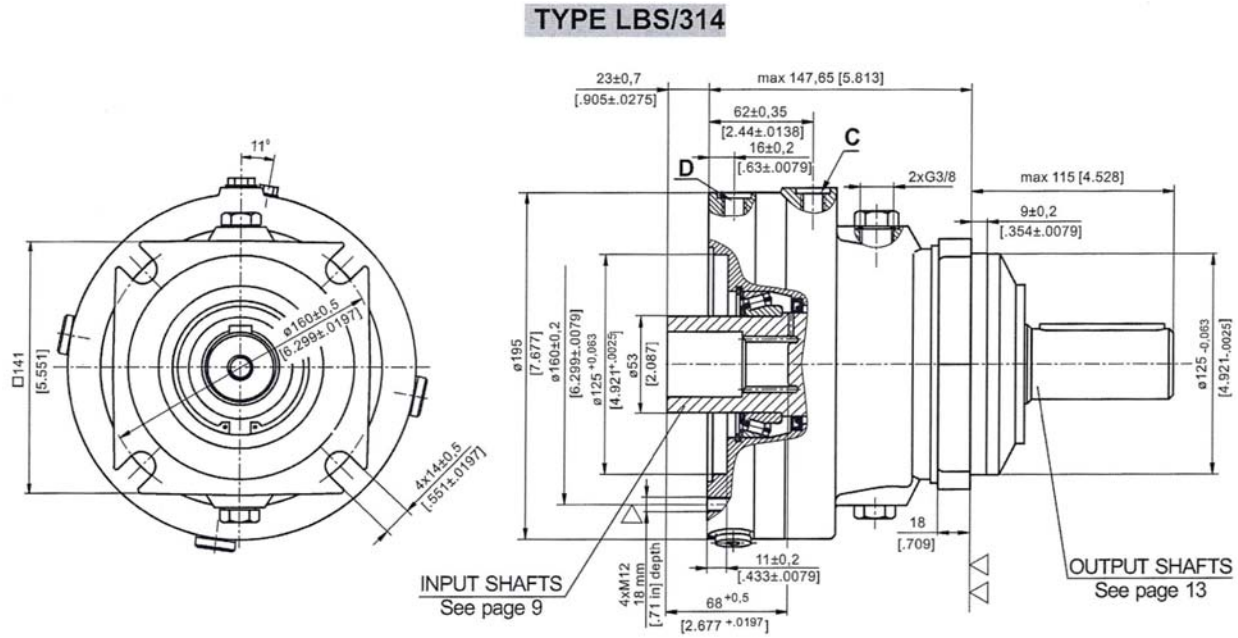
The Disc Brakes are mangano-phosphatized as standard.

ATTENTION:
1. Hydraulic brake is delivered without oil (it is lubricated only).
2. In all brakes, friction discs and separators should be lubricated. Space is filled with 50 ÷ 120 cm^3 [3.05÷7.32 in^3] mineral oil HLP (DIN 51524) or HM (ISO 6743/4). For LB/288 fill oil after hydraulic motor assembly.

LBS, LBV

Hydraulische rem geschikt voor montage aan de MTS en MTV motoren

TYPE LBS/314



▽ - Place for attachment
(tightening torque for screw M12x30- 8.8 DIN 912, 7 daNm [620 lb-in])

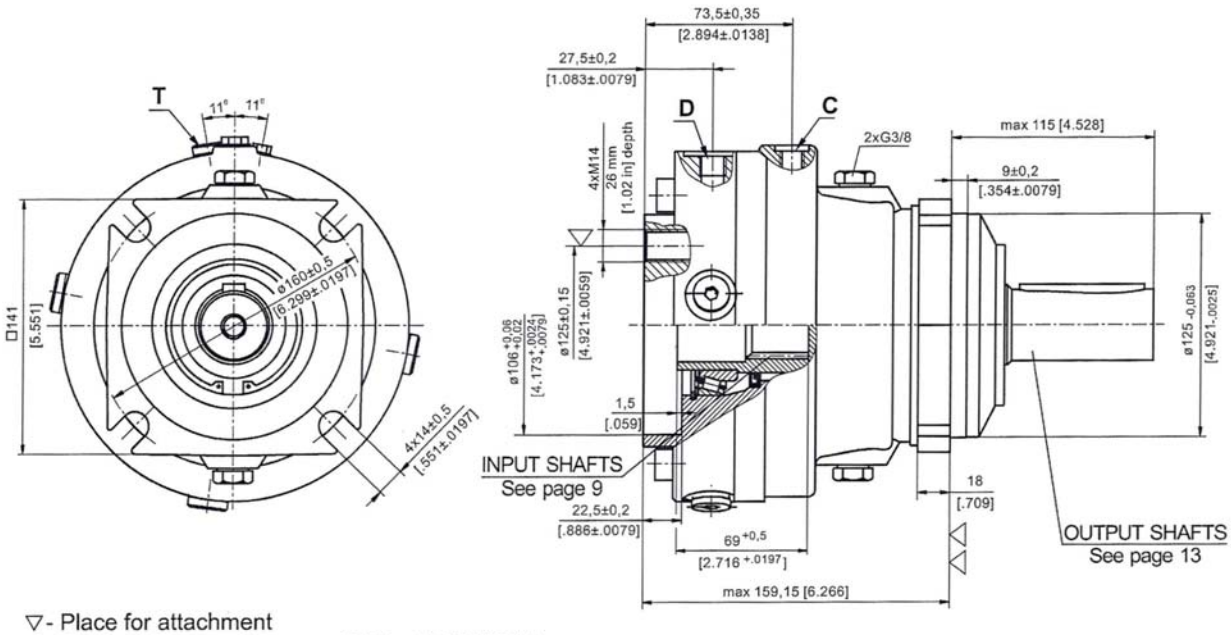
▽▽- Place for attachment

C : Brake release Port - G¼, 12 mm [.47 in] depth

D : Drainage tap - G¼, 12 mm [.47 in] depth

mm [in]

TYPE LBV/314



▽- Place for attachment
(tightening torque for screw M14 - 8.8 DIN 912, 11,5 da Nm [1020 lb-in])

▽▽- Place for attachment

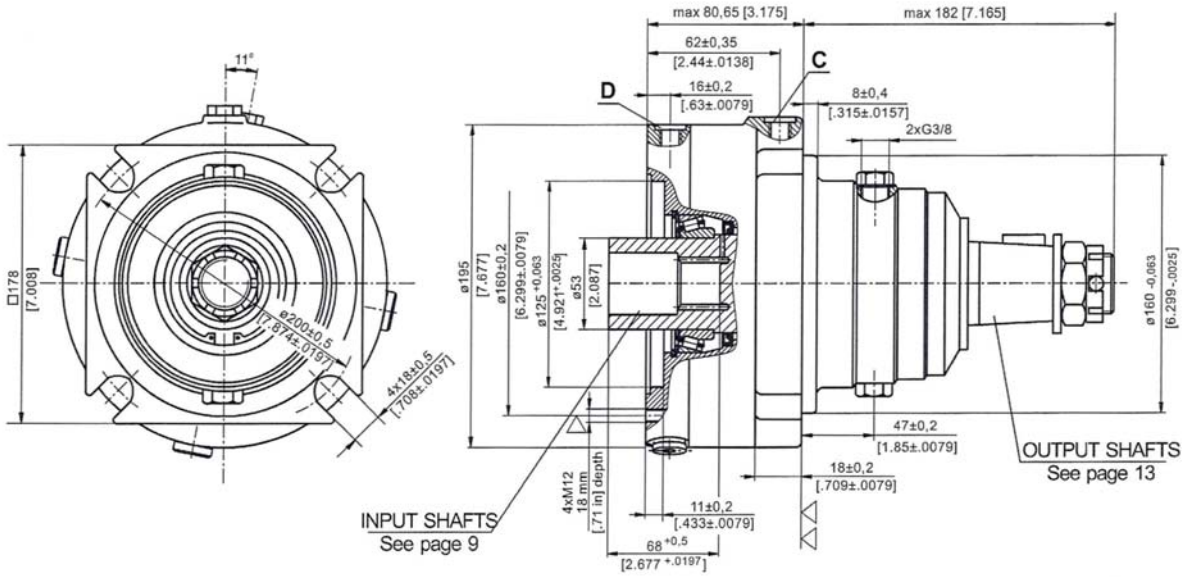
C : Brake release Port - G¼, 12 mm [.47 in] depth

D,T : Drainage tap - G¼, 12 mm [.47 in] depth

LBS, LBV

Hydraulische rem geschikt voor montage aan de MTS en MTV motoren

TYPE LBS/315



▽ - Place for attachment
(tightening torque for screw M12x30- 8.8 DIN 912, 7 daNm [620 lb-in])

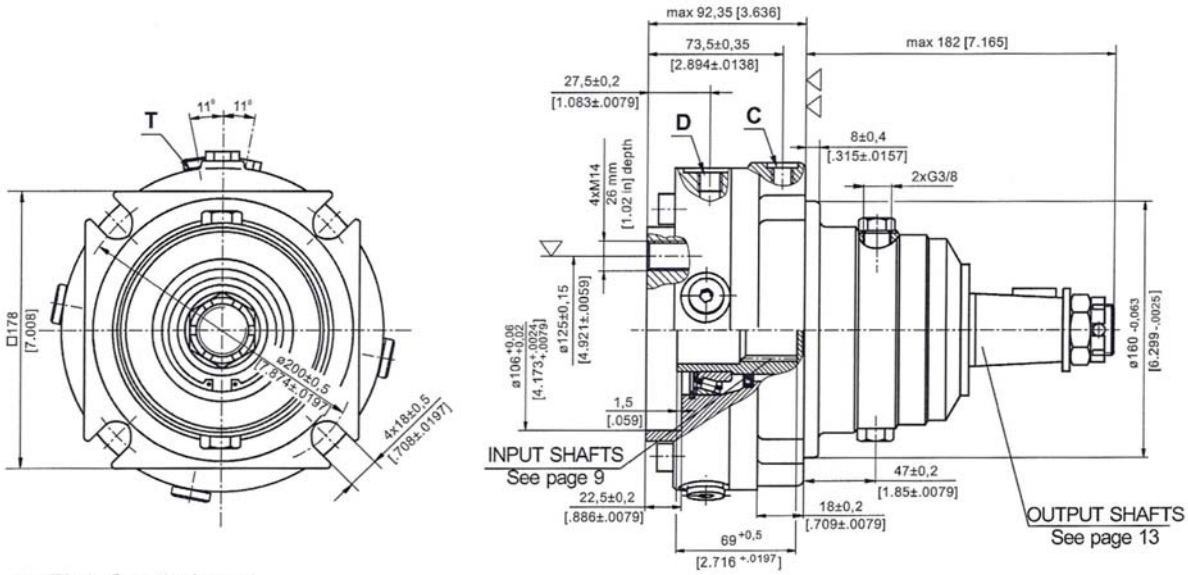
▽▽- Place for attachment

C : Brake release Port - G¼, 12 mm [.47 in] depth

D : Drainage tap - G¼, 12 mm [.47 in] depth

mm [in]

TYPE LBV/315



▽- Place for attachment
(tightening torque for screw M14 - 8.8 DIN 912, 11,5 da Nm [1020 lb-in])

▽▽- Place for attachment

C : Brake release Port - G¼, 12 mm [.47 in] depth

D,T : Drainage tap - G¼, 12 mm [.47 in] depth

LBS, LBV

Specificaties

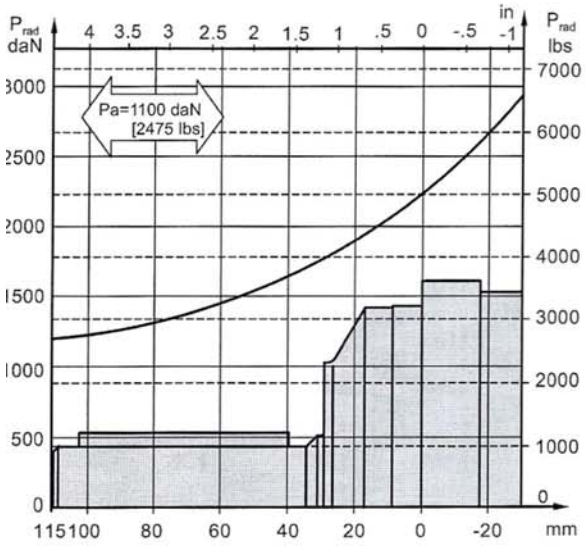
Description LBS/315,315	21	29	43	65	85	110	130
*Min. Static Torque, daNm [lb-in]	18-23 [1593-2036]	28-33 [2478-2921]	42-46 [3717-4071]	61-70 [5399-6196]	83-92 [7346-8143]	108-118 [9559-10444]	126-136 [11152-12037]
Opening Pressure min** bar [PSI]	4-5 [58-72]	6-7 [87-101]	9-10 [130-145]	13-15 [188-217]	18-20 [261-290]	23-25 [333-362]	27-29 [391-420]
max	300 [4350]						
Min. oil quantity for brake releasing cm³ [in³]	8-9 [.488-.549]						
Oil volume cm³ [in³]	250						
Max. Pressure in drain space bar [PSI]	5 [72]						
Weight for .../314 kg [lb] .../315	24 [52.9 25 [55.1]						

*Static torque is obtained at working pressure - 0 bar.

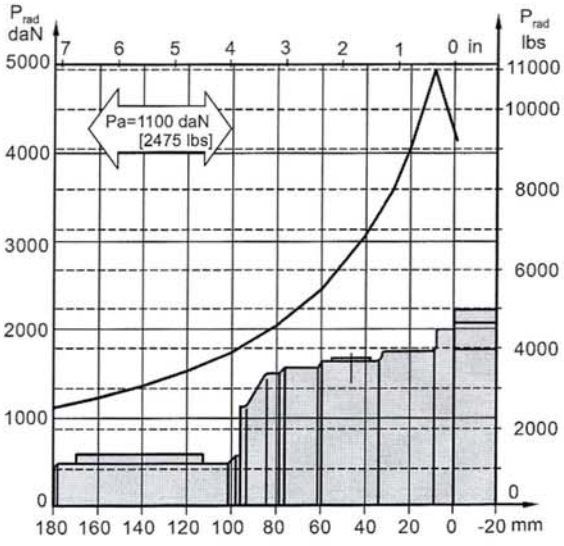
**The indicated value is a difference between the inlet pressure for driving of the brake and the drain pressure.
Brakes must always have a drain line

LOAD CURVE

LBS(V) ... /314



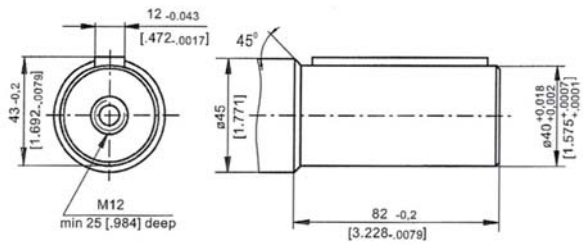
LBS(V) ... /315



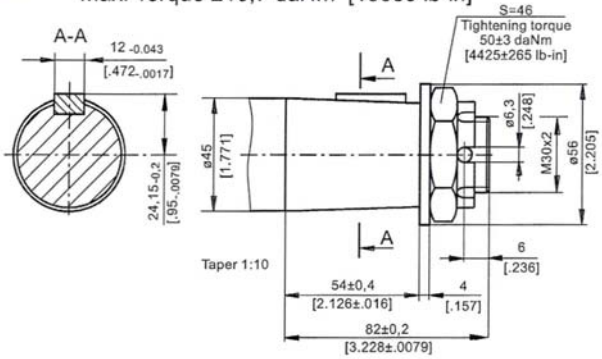
LBS, LBV

Maten uitgaande as

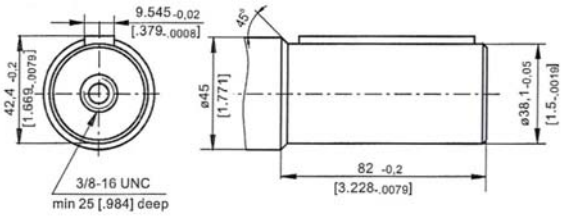
C -ø40 straight, Parallel key A12x8x70 DIN 6885
Max. Torque 132,8 daNm [11755 lb-in]



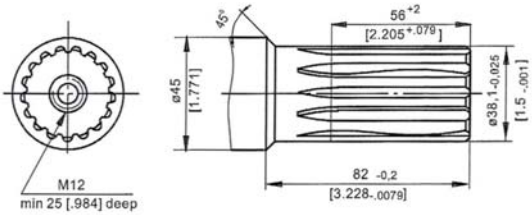
K -tapered 1:10, Parallel key B12x8x28 DIN 6885
Max. Torque 210,7 daNm [18650 lb-in]



CO-ø1½" straight, Parallel key ⅜"x ⅜"x 2¼" BS46
Max. Torque 132,8 daNm [11755 lb-in]



SH -ø1½" splined 17T, DP 12/24 ANSI B92.1-1976
Max. Torque 132,8 daNm [11755 lb-in]



mm [in]

ORDER CODE

1	2		3	4	5	6
LB		/		-			

Pos.1 - Type

S	- Disc Brake for short motor **S** - MTS
V	- Disc Brake for very short motor **V** - MTV

Pos.2 - Design code

314	- for MTS and MTV Motors
315	- for MTS and MTV Motors (Wheel Mount)

Pos.3 - Static Torque code (See Specification data)

21, 29, 43, 65, 85, 110, 130

Pos. 4 - Output Shaft Extensions*

C	- ø40 straight, Parallel key A12x8x70 DIN 6885
CO	- ø1½" straight, Parallel key $^3/_8$"x$^3/_8$"x2$^1/_4$" BS46
SH	- ø1½" splined 17T, ANSI B92.1-1976
K	- ø45 tapered 1:10, Parallel key B12x8x28 DIN6885

Pos. 5 - Option (Paint)**

omit	- no Paint
P	- Painted
PC	- Corrosion Protected Paint

Pos. 6 - Design Series

omit - Factory specified

NOTES:

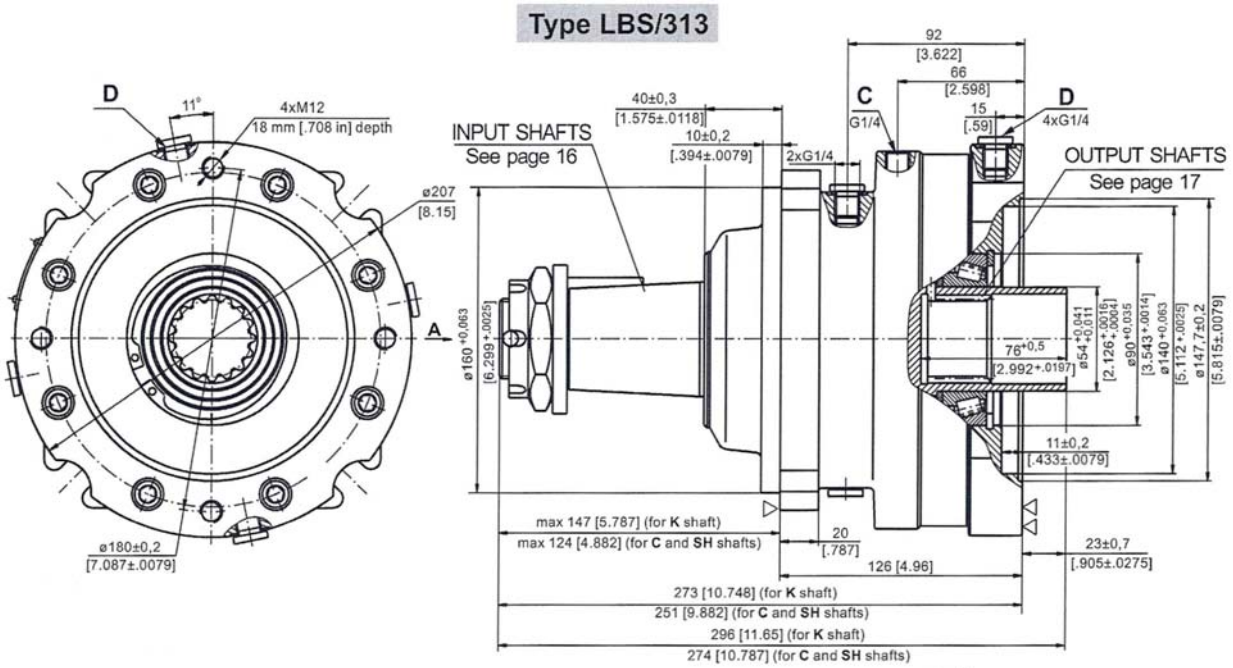
* The permissible output torque for shafts must be not exceeded!
** The color is by customer's request.

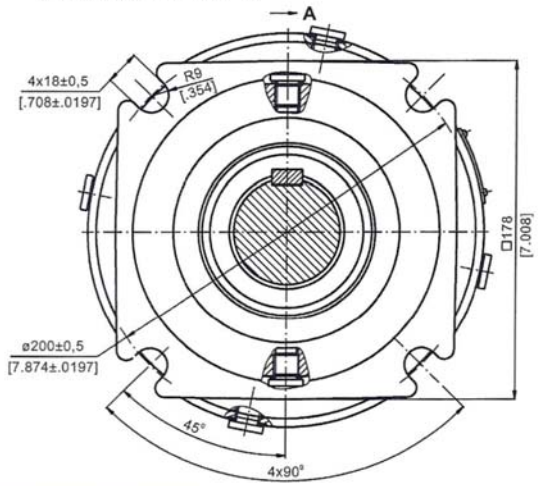
The Disc Brakes are mangano-phosphatized as standard.

ATTENTION:
1. Hydraulic brake is delivered without oil (it is lubricated only).
2. In all brakes, friction discs and separators should be lubricated. Space is filled with 150÷300 cm^3 [9.15÷18.3 in^3] mineral oil HLP (DIN 51524) or HM (ISO 6743/4).

LBS, LBV

Hydraulische rem geschikt voor montage aan de MVS motoren





C : Brake release Port - G¼, 12 mm [.47 in] depth

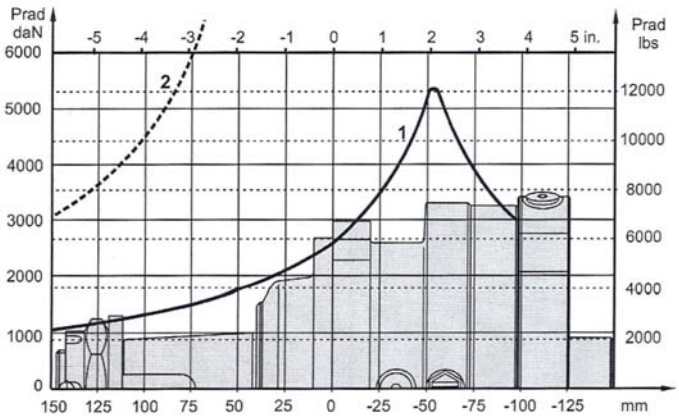
D : Drainage tap - G¼, 12 mm [.47 in] depth

▽- Place for attachment

▽▽- Place for attachment
(tightening torque for screw M12x35 - 8.8 DIN 912,
7 daNm [620 lb-in])

mm [in]

PERMISSIBLE SHAFT LOADS



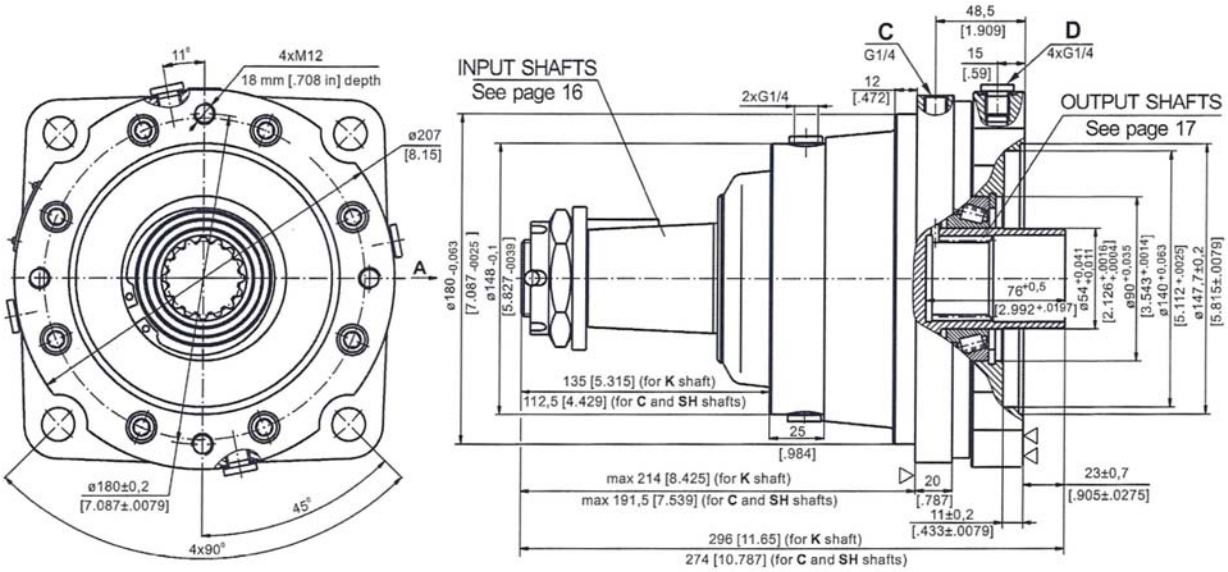
1 - Bearing curve: The curve applies to a B10 bearing life of 3000 hours at 200 RPM.

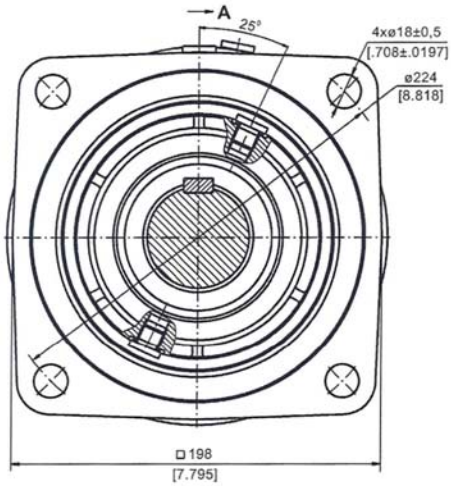
2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 3:1.

LBS, LBV

Hydraulische rem geschikt voor montage aan de MVS motoren

Type LBS/316





C : Brake release Port - G¼, 12 mm [.47 in] depth

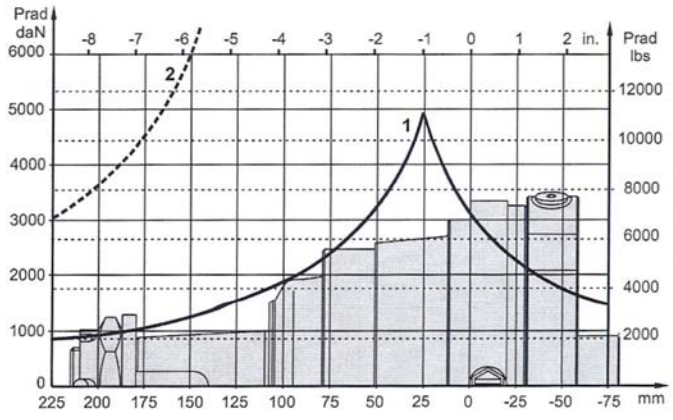
D : Drainage tap - G¼, 12 mm [.47 in] depth

▽- Place for attachment

▽▽- Place for attachment
(tightening torque for screw M12x35 - 8.8 DIN 912,
7 daNm [620 lb-in])

mm [in]

PERMISSIBLE SHAFT LOADS



1 - Bearing curve: The curve applies to a B10 bearing life of 3000 hours at 200 RPM.

2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 3:1.

LBS, LBV

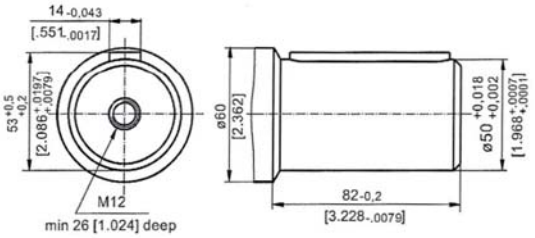
Specificaties

Description **LBS/313,316**	21	29	43	65	85	110	130
*Min. Static Torque, daNm [lb-in]	18-23 [1593-2036]	28-33 [2478-2921]	42-47 [3717-4160]	61-71 [5399-6285]	83-94 [7346-8320]	108-118 [9559-10444]	127-137 [11240-12125]
Opening Pressure min** bar [PSI]	4-5 [58-72]	6-7 [87-101]	9-10 [130-145]	13-15 [188-217]	18-20 [261-290]	23-25 [333-362]	27-29 [391-420]
max	300 [4350]						
Min. oil quantity for brake releasing cm^3 [in^3]	8 ÷ 9 [.488 ÷ .549]						
Oil volume cm^3 [in^3]	250 [15.25]						
Max. Pressure in drain space bar [PSI]	5 [72]						

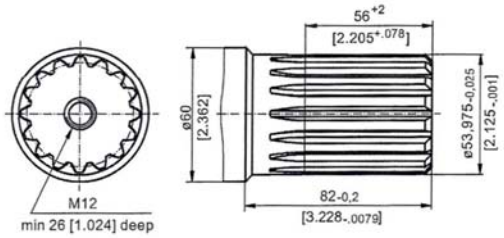
*Static torque is obtained at working pressure - 0 bar.
**The indicated value is a difference between the inlet pressure for driving of the brake and the drain pressure.
Brakes must always have a drain line

SHAFT EXTENSIONS

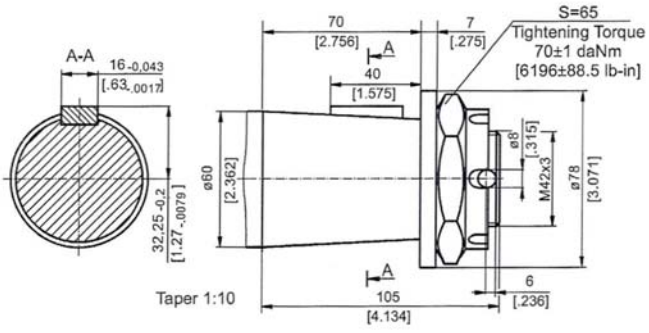
C - ø50 straight, Parallel key A14x9x70 DIN 6885



SH -ø2 1/8"splined, 16 DP 8/16 ANS B92.1-1976



K -tapered 1:10, Parallel key B16x10x32 DIN 6885



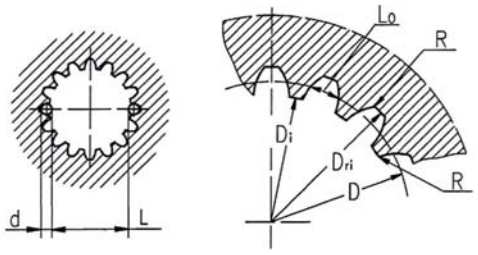
mm [in]

LBS, LBV

Interne splines voor het aan te sluiten component

Standard ANS B92.1-1970, class 5
[m=2.54; corrected x.m=+1,0]

Fillet Root Side Fit		mm	inch
Number of Teeth	z	16	16
Diametral Pitch	DP	10/20	10/20
Pressure Angle		30^0	30^0
Pitch Dia.	D	40,640	1.6
Major Dia.	Dri	$45{,}2^{+0{,}4}$	1.796÷1.780
Minor Dia.	Di	$38{,}5^{+0{,}039}$	1.5175÷1.516
Space Width [Circular]	Lo	5,18±0,037	.2055÷.2025
Fillet Radius	R	0,4	.015
Max. Measurement between Pins	L	$32{,}47^{+0{,}15}$	1.284÷1.278
Pin Dia.	d	5,6±0,001	.22051÷.22043



Hardening Specification:
HV=750±50 on the surface.
HV=560 at 0,7±0,2 mm [.035±.019in] case depth
Material: 20 MoCr4 EN 10084 or better.

ORDER CODE

	1		2	3	4	5
LBS/		-				

Pos.1 - Designe code

313	- for MVS Motors
316	- for MVS Motors (Wheel mount)

Pos.2 - Static Torque code (See Specification data)

21, 29, 43, 65, 85, 110, 130

Pos.3 - Output Shaft Extensions*

C	- ø50 straight, Parallel key A14x9x70 DIN6885
SH	- ø2 1/8" splined, ANSI B92.1-1976
K	- ø60 tapered 1:10, Parallel key B16x10x32 DIN6885

Pos.4 - Option (Paint)**

omit	- no Paint
P	- Painted
PC	- Corrosion Protected Paint

Pos.5 - Design Series

omit - Factory specified

NOTES:

* The permissible output torque for shafts must be not exceeded!
** The color is by customer's request.
The Disc Brakes are mangano-phosphatized as standard.

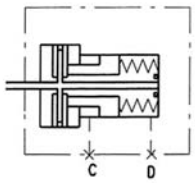
ATTENTION:
1. Hydraulic brake is delivered without oil (it is lubricated only).
2. In all brakes, friction discs and separators should be lubricated. Space is filled with 150 ÷ 300 cm^3 [9.15 ÷ 18.3 in^3] mineral oil HLP (DIN 51524) or HM (ISO 6743/4).

B…R-wet

Rem

B...R brake is designed to be mounted to the wheels of low-speed agricultural and construction vehicles.

The advantage of these brakes is that despite the smallest possible dimensions they preserve long-term life of the bearings at high radial shaft load.

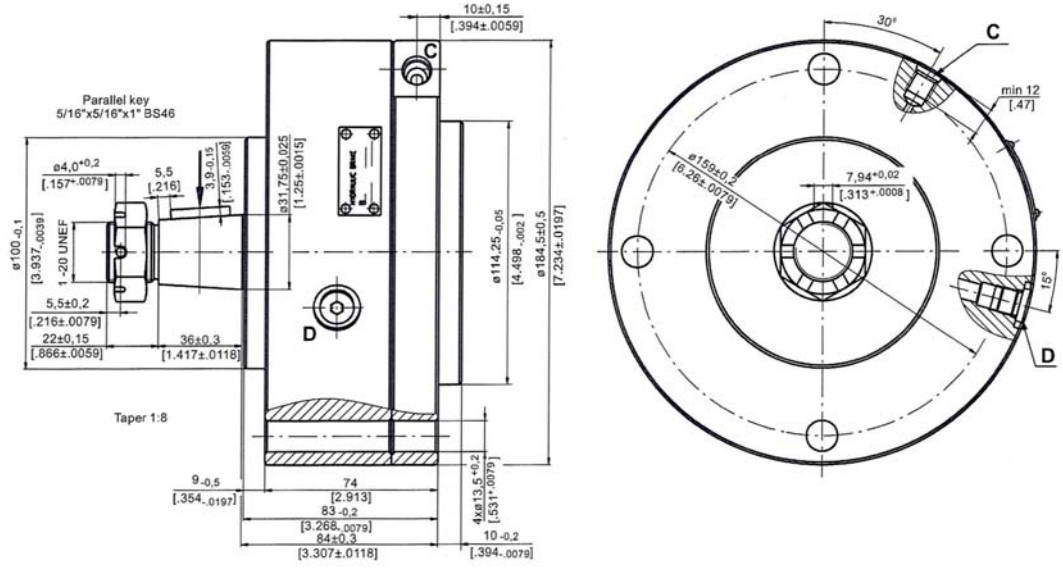


SPECIFICATION DATA

Type	B35R	B55R
Static Torque of Brake, daNm [lb-in]*	35 [3100]	55 [4870]
Initial Release Pressure, bar [PSI]	16 [232]	16 [232]
Full Release Pressure, bar [PSI]	19 [275]	19 [275]
Max. Operating Pressure, bar [PSI]	240 [3480]	240 [3480]
Max. Speed, RPM	90	90
Cont. Radial Shaft Load daN [lbs]**	500 [1125]	500 [1125]
Max. Radial Shaft Load daN [lbs]***	700 [1575]	900 [2030

* At 0 bar [0 PSI] back pressure
** At radial shaft load of 500 daN [1125 lbs], applied at center-line of the key and speed of rotation 90 RPM, the bearing life is 1000 hours.
*** The permissible values of radial shaft load may occur for max. 10% of every minute

DIMENSIONS AND MOUNTING DATA



C : Brake Release Port -7/16-20 UNF
SAE J1926-1/ISO 11926-1
D : Drainage Tap - 7/16-20 UNF

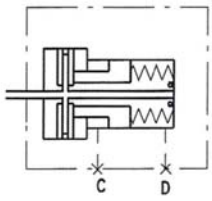
mm [in]

B…T-wet

Rem

B..T brake is designed to be mounted to the wheels of low-speed agricultural and construction vehicles.

The advantage of these brakes is that despite the smallest possible dimensions they preserve long-term life of the bearings at high radial shaft load.

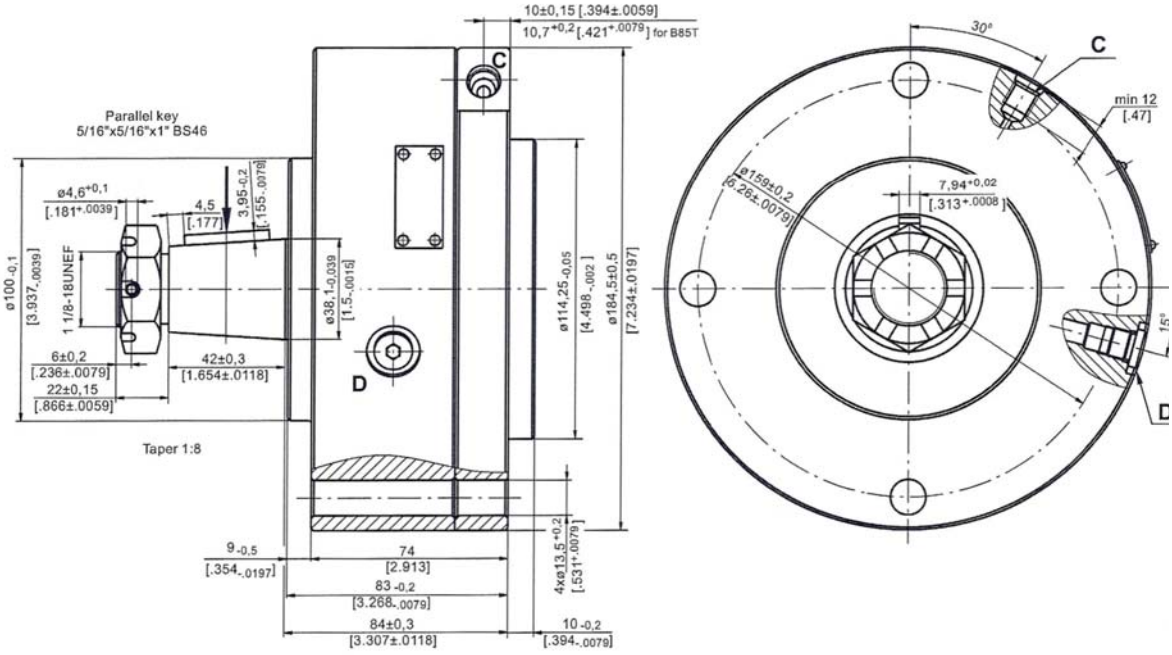


SPECIFICATION DATA

Type	B50T	B55T	B60T	B65T	B85T
Static Torque of Brake, daNm [lb-in]*	50 [4425]	55 [4870]	60 [5310]	65 [5750]	85 [7525]
Initial Release Pressure, bar [PSI]	16 [232]	16 [232]	16 [232]	17 [246]	18 [260]
Full Release Pressure, bar [PSI]	19 [275]	19 [275]	19 [275]	20 [290]	22 [320]
Max. Operating Pressure, bar [PSI]	240 [3480]	240 [3480]	240 [3480]	240 [3480]	240 [3480]
Max. Speed, RPM	60	60	60	60	60
Cont. Radial Shaft Load daN [lbs]**	1000 [2250]	1000 [2250]	1000 [2250]	1000 [2250]	1500 [3370]
Max. Radial Shaft Load daN [lbs]***	2150 [4830]	2150 [4830]	2150 [4830]	2150 [4830]	2250 [5060]

* At 0 bar [0 PSI] back pressure
** At radial shaft load of 1000 daN [2250 lbs], applied at center-line of the key and speed of rotation 60 RPM, the bearing life is 1000 hours.
*** The permissible values of radial shaft load may occur for max. 10% of every minute

DIMENSIONS AND MOUNTING DATA



C : Brake Release Port -7/16-20 UNF
SAE J1926-1/ISO 11926-1
D : Drainage Tap - 7/16-20 UNF

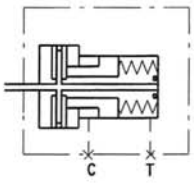
mm [in]

B130K…-wet

Rem

This brake is designed to be mounted to the wheels of low-speed agricultural and construction vehicles.

The advantage of these brakes is that despite the smallest possible dimensions they preserve long-term life of the bearings at high radial shaft load.

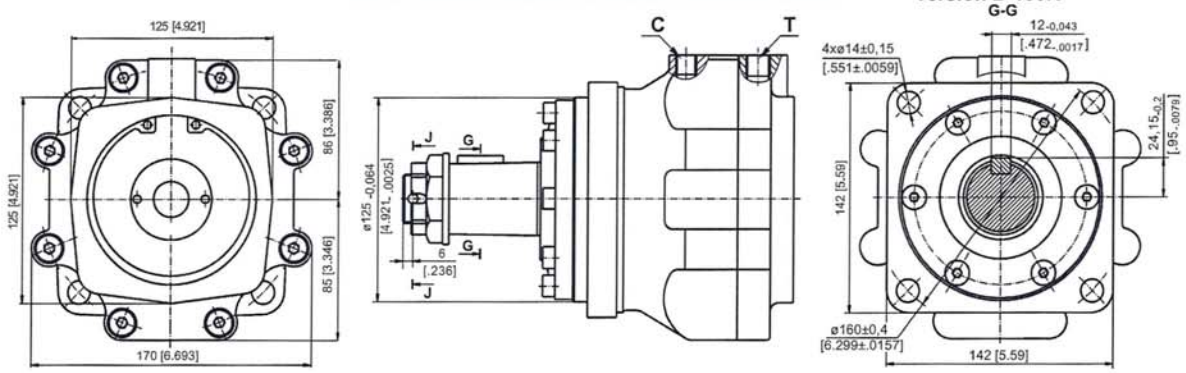


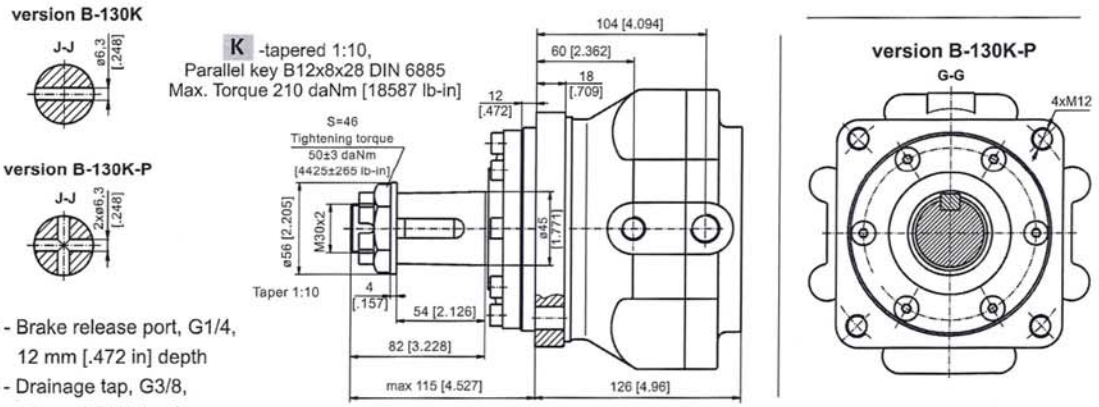
SPECIFICATION DATA

Type	B130K
Static Torque of Brake, daNm [lb-in]*	143 [12565]
Min. Brake Release Pressure, bar [PSI]	31-33 [119-478]
Max. Opening Pressure, bar [PSI]	280 [4060]
Max. Permissible Pressure in Drain Line, bar [PSI]	5 [72]
Weight, kg [lb]]	18,5 [40.8]

* At 0 bar [0 PSI] back pressure

DIMENSIONS AND MOUNTING DATA

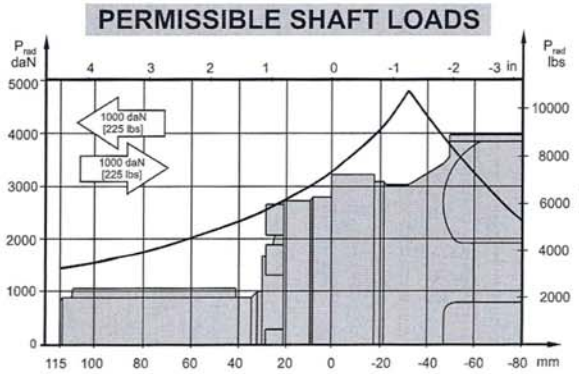




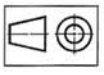
C - Brake release port, G1/4, 12 mm [.472 in] depth

D - Drainage tap, G3/8, 13 mm [.512] depth

PERMISSIBLE SHAFT LOADS



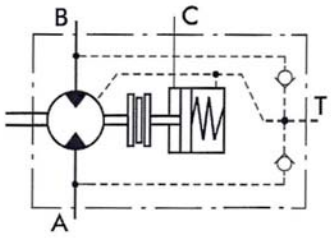
The curve applies to a B10 bearing life of 3000 hours at 200 RPM.

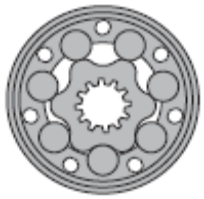


mm [in]

B/MR

Motor met rem





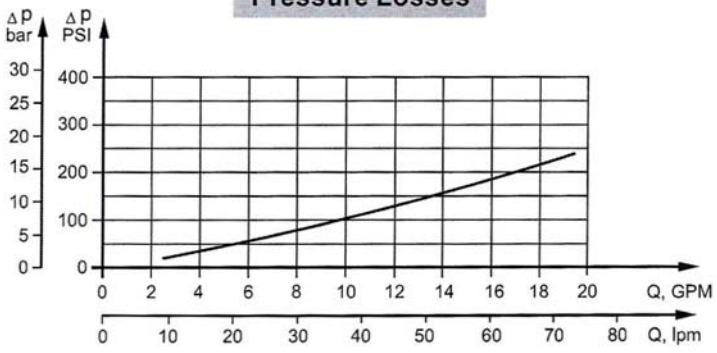
Algemene informatie

Max. Displacement, cm^3/rev [in^3/rev]	397 [24.4]
Max. Speed, [RPM]	600
Max. Torque, daNm [lb-in]	cont.: 61 [5400] int.: 57 [5045]
Max. Output, kW [HP]	14,5 [19.5]
Max. Pressure Drop, bar [PSI]	cont.: 175 [2540] int.: 200 [2900]
Max. Oil Flow, lpm [GPM]	75 [19.8]
Min. Speed, [RPM]	10
Permissible Shaft Loads, daN [lb-in]	P_a=200 [450]
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

Pressure Losses



B/MR

Motor met rem

Technische informatie

Type		B/MR 80	B/MR 100	B/MR 125	B/MR 160	B/MR 160 CB	B/MR 200	B/MR 200 CB
Displacement, cm^3/rev		80,3	99,8	125,7	159,6		199,8	
[in^3/rev]		[4.90]	[6.09]	[7.67]	[9.74]		[12.19]	
Max. Speed,	Cont.	500	500	475	375		300	
[RPM]	Int.*	600	600	600	470		375	
Max. Torque	Cont.	19,5[1725]	24[2125]	30[2655]	30[2655]	39[3450]	30[2655]	45[3980]
daNm [in-lb]	Int.*	22[1947]	28[2480]	34[3010]	39[3450]	43[3805]	39[3450]	50[4425]
	Peak**	27[2390]	32[2832]	37[3275]	46[4070]	46[4070]	56[4960]	56[4955]
Max. Output	Cont.	8,4[11.2]	10,8[14.5]	12,5[16.8]	10 [13.5]	11,5[11.5]	7,8[10.5]	11[14.75]
kW [HP]	Int.*	9,6[12.9]	12[16.1]	14,5[19.5]	12,5[16.8]	14[18.8]	12,4[16.6]	13[17.4]
Max. Pressure	Cont.	175[2540]	175[2540]	175[2540]	135[1960]	175[2540]	105[1523]	175[2540]
Drop,	Int.*	200[2900]	200[2900]	200[2900]	175[2540]	200[2900]	145[2103]	200[2900]
bar [PSI]	Peak**	225[3263]	225[3263]	225[3263]	225[3263]	225[3263]	225[3263]	225[3263]
Max. Oil Flow	Cont.	40 [10.5]	50 [13.2]	60 [15.9]	60 [15.9]		60 [15.9]	
l/min [GPM]	Int.*	48 [12.7]	60 [15.9]	75 [19.8]	75 [19.8]		75 [19.8]	
Max. Inlet	Cont.	175 [2540]						
Pressure	Int.*	200 [2900]						
bar [PSI]	Peak**	225 [3260]						
Max. Starting Pressure bar [PSI]		10 [145]	10 [145]	9 [130]	7 [102]		5 [73]	
Min. Starting	At max.press.drop Cont	15 [1330]	20 [1770]	25 [2215]	24 [2124]	32 [2832]	26 [2301]	41 [3628]
Torque, daNm[in-lb]	At max.press.drop Int.*	17 [1505]	23 [2035]	28 [2480]	32 [2832]	37 [3275]	33 [2920]	46 [4071]
Min. Speed***, [RPM]		10	10	10	10	10	10	10
Static Torque of Brake, daNm [in-lb]		55 [4868]						
Min. Brake Release Pressure****, bar [PSI]		13 [190]						
Max.Opening Pressure, bar [PSI]		200 [2900]						
Weight, kg[lb]		11,0 [24.3]	11,2 [24.7]	11,4 [25.2]	11,6 [25.6]	11,7 [25.8]	12,2 [26.9]	12,3 [27.12]

* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.

** Piekbelasting maximaal 1% per minuut

*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen

2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.

3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.

4 Aanbevolen minerale viscositeit is 13mm^2 bij 50C°.

5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 C°.

6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

B/MR

Motor met rem

Technische informatie

Type		B/MR 250	B/MR 250 CB	B/MR 315	B/MR 315 CB	B/MR 400	B/MR 400 CB
Displacement, cm^3/rev		250,1		315,7		397	
[in^3/rev]		[15.26]		[19.26]		[24.4]	
Max. Speed,	Cont.	240		190		150	
[RPM]	Int.*	300		240		190	
Max. Torque	Cont.	30 [2655]	54 [4780]	30 [2655]	55 [4868]	30 [2655]	55 [4868]
daNm [in-lb]	Int.*	39 [3450]	57 [5045]	42 [3717]	57 [5045]	43 [3805]	57 [5045]
	Peak**	60 [5310]	71 [6285]	61 [5400]	71 [6285]	60 [5310]	70 [6195]
Max. Output	Cont.	6,2 [8.3]	10 [13.4]	4,5 [6.1]	9 [12.1]	2,2 [2.9]	7 [9.4]
kW [HP]	Int.*	9,5 [12.7]	11 [14.7]	7,5 [10.1]	10 [13.4]	5,6 [7.5]	8,7 [11.7]
Max. Pressure	Cont.	85 [1233]	175 [2538]	65 [942]	135 [1958]	45 [652]	105 [1523]
Drop,	Int.*	115 [1668]	185 [2683]	90 [1305]	145 [2103]	75 [1087]	115 [1668]
bar [PSI]	Peak**	200 [2900]	225 [3263]	150 [2175]	180 [2610]	120 [1740]	140 [2030]
Max. Oil Flow	Cont.	60 [15.9]					
l/min [GPM]	Int.*	75 [19.8]					
Max. Inlet	Cont.	175 [2540]					
Pressure	Int.*	200 [2900]					
bar [PSI]	Peak**	225 [3260]					
Max. Starting Pressure bar [PSI]		5 [73]		5 [73]		5 [73]	
Min. Starting	At max.press.drop Cont	24 [2125]	50 [4425]	26 [2300]	50 [4425]	24 [2125]	44 [3895]
Torque, daNm[in-lb]	At max.press.drop Int.*	31 [2745]	51,5 [4560]	35 [3100]	51,8 [4585]	38 [3364]	50 [4425]
Min. Speed***, [RPM]		10	10	10	10	10	10
Static Torque of Brake, daNm [in-lb]		55 [4868]					
Min. Brake Release Pressure****, bar [PSI]		13 [190]					
Max.Opening Pressure, bar [PSI]		200 [2900]					
Weight, kg[lb]		12,6[27.8]	12,7 [28]	13,3[29.3]	13,4[29.5]	14 [30.9]	14,1[31.1]

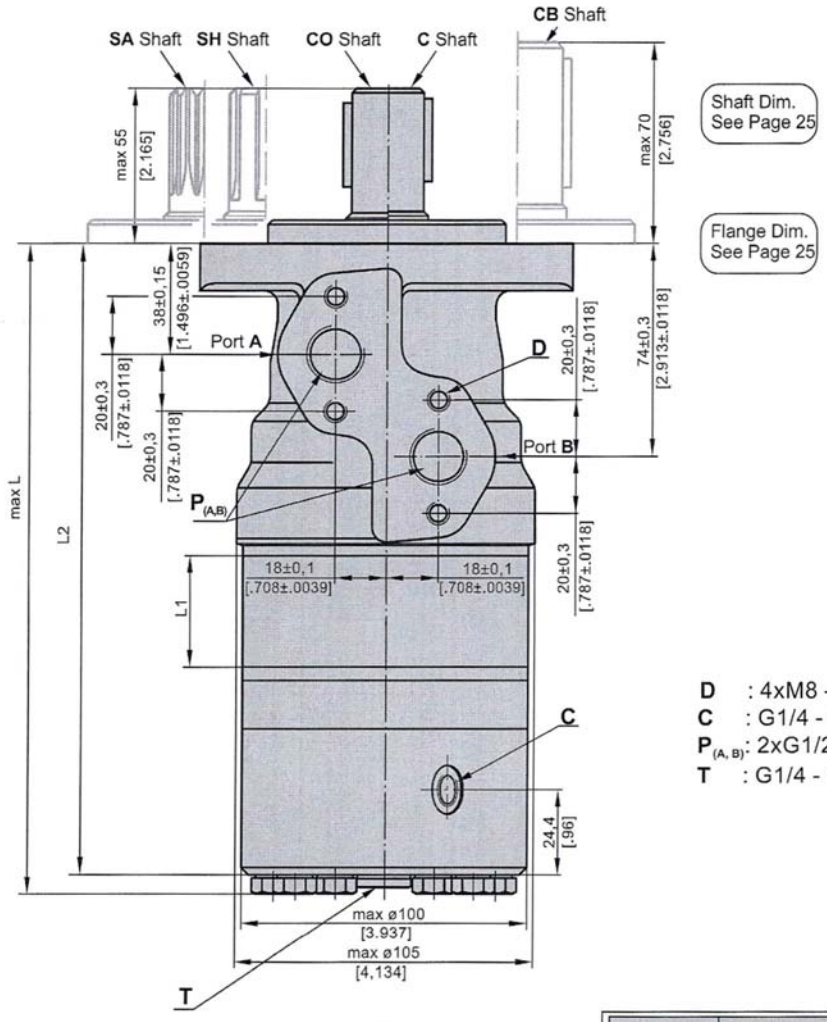
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

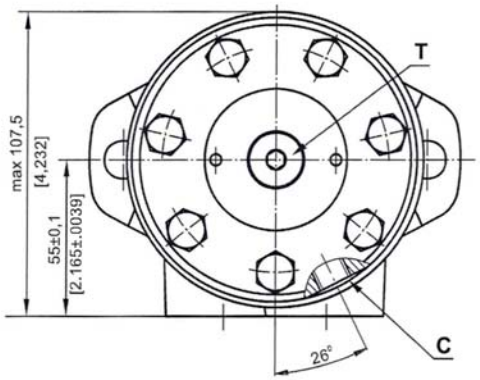
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

B/MR

Motor met rem

Afmetingen en uitvoeringen





D : 4xM8 - 13 mm [.51 in] depth
C : G1/4 - 12 [.47 in] mm depth
P$_{(A, B)}$: 2xG1/2 - 15 [.59 in] mm depth
T : G1/4 - 10 mm [.393 in] depth

Type	L1, mm [in]	L2, mm [in]	L , mm [in]
B/MR 80	14,0 [.551]	205,5 [8.091]	213,5 [8.405]
B/MR 100	17,4 [.685]	209,0 [8.228]	217,0 [8.543]
B/MR 125	21,8 [.858]	213,5 [8.405]	221,5 [8.720]
B/MR 160	27,8 [1.095]	219,5 [8.642]	227,5 [8.957]
B/MR 200	34,8 [1.37]	226,5 [8.917]	234,5 [9.232]
B/MR 250	43,5 [1.713]	235,0 [9.252]	243,0 [9.567]
B/MR 315	54,8 [2.157]	246,5 [9.705]	254,5 [10.02]
B/MR 400	69,4 [2.732]	261,0[10.275]	269,0 [10.59]

Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

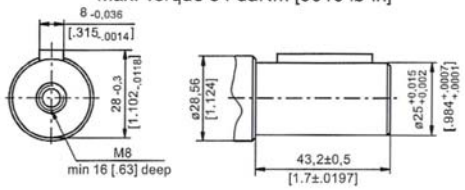
mm [in]

B/MR

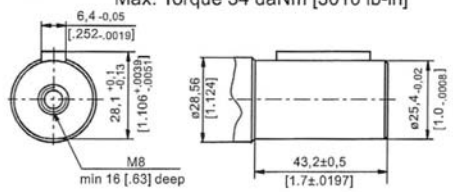
Motor met rem

As afmetingen

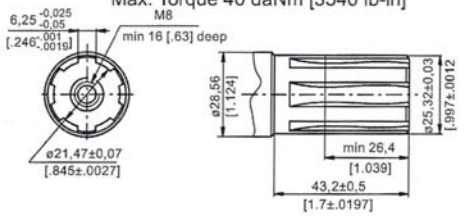
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



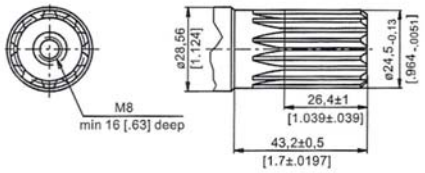
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



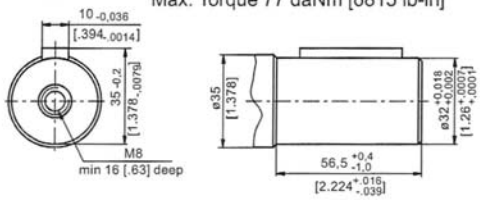
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]

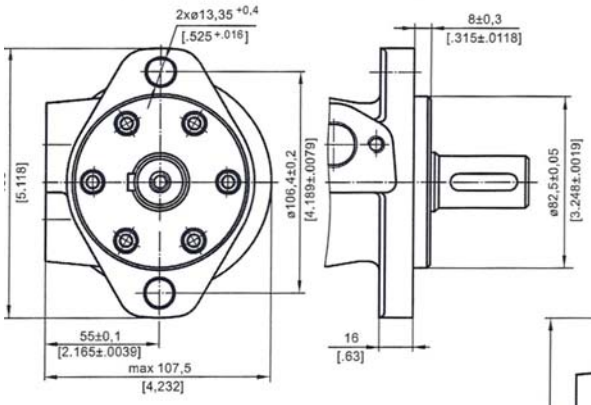


CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]

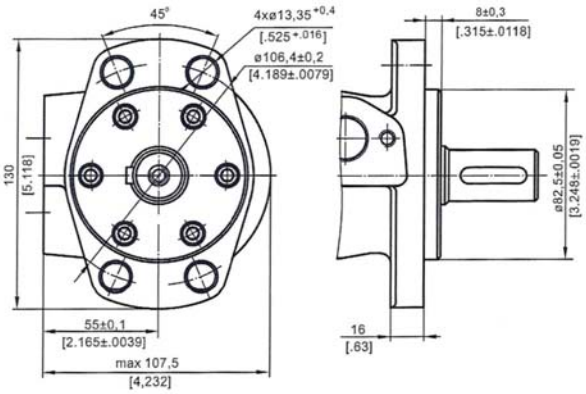


MOUNTING

Oval Mount (2 Holes)



F - Oval Mount (4 Holes)



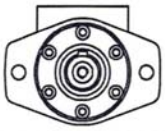
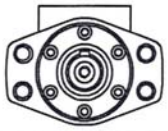
mm [in]

B/MR

Motor met rem

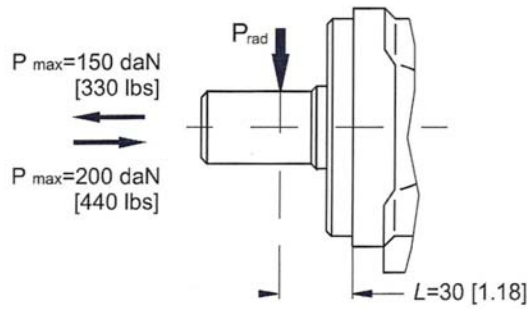
Toegestane asbelasting

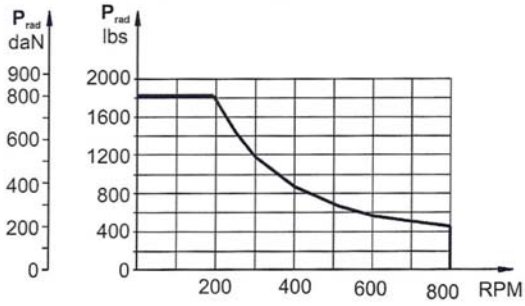
The permissible radial shaft load P_{rad} depends on the speed **n**, RPM , distance **L** from the point of load to the mounting flange and shaft version.

Mounting Flange		
Shaft Version	**cylindrical - C, CO splined - SH, SA**	**cylindrical - CB**
Radial Shaft Load P_{rad}, in mm	$\frac{800}{n} \times \frac{25000}{95+L}$, daN*	$\frac{800}{n} \times \frac{18750}{95+L}$, daN*
Radial Shaft Load P_{rad}, in inch	$\frac{800}{RPM} \times \frac{2215}{3.74+L}$, lbs*	$\frac{800}{RPM} \times \frac{1660}{3.74+L}$, lbs*

* n ≤ 200 RPM; max Prad=800 daN [1800 lbs] n ≥200 RPM; L < 55 mm [2.2 in]

Radial Shaft Load P_{rad} for C, CO Shaft Extensions by L=30 mm [1.18 in]





ORDER CODE

	1	2	3	4	5
B / M R					

Pos.1 - Mounting Flange

omit - Oval mount, two holes

F - Oval mount, four holes

Pos.2 - Displacement code

80	- 80,3 cm³/rev [4.90 in³/rev]
100	- 99,8 cm³/rev [6.09 in³/rev]
125	- 125,7 cm³/rev [7.67 in³/rev]
160	- 159,6 cm³/rev [9.74 in³/rev]
200	- 199,8 cm³/rev [12.19 in³/rev]
250	- 250,1 cm³/rev [15.26 in³/rev]
315	- 315,7 cm³/rev [19.26 in³/rev]
400	- 397,0 cm³/rev [24.40 in³/rev]

Pos.3 - Shaft Extensions*

C	- ø25 straight, Parallel key A8x7x32 DIN6885
CO	- ø1" straight, Parallel key ¼"x¼"x1¼" BS46
SH	- ø25,32 splined BS 2059 (SAE 6B)
SA	- ø24,5 splined B 25x22 DIN 5482
CB	- ø32 straight, Parallel key A10x8x45 DIN 6885

Pos.4 - Special Features (see page 59)

Pos.5 - Design Series

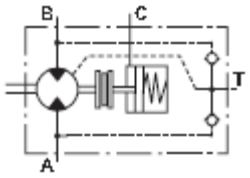
omit - Factory specified

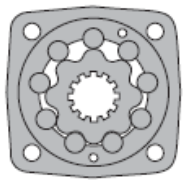
NOTES:

* The permissible output torque for shafts must be not exceeded!
The hydraulic motors are mangano phosphatized as standard.

MT/B

Motor met rem





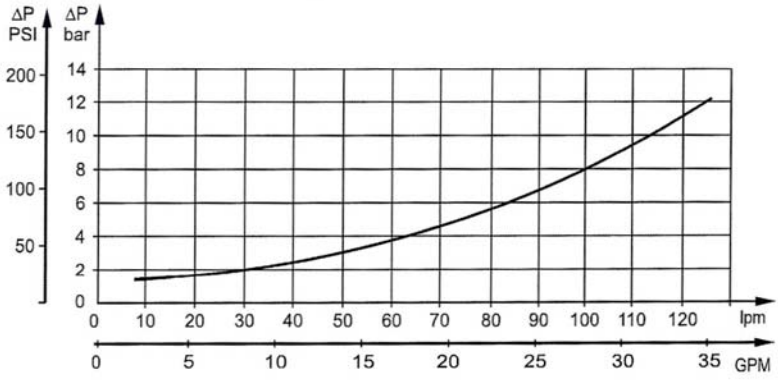
Algemene informatie

Max. Displacement,	cm^3/rev [in^3/rev]	523,6 [31.95]
Max. Speed,	[RPM]	780
Max. Torque,	daNm [lb-in]	cont.: 122 [10780] int.: 137 [12125]
Max. Output,	kW [HP]	40 [54]
Max. Pressure Drop,	bar [PSI]	cont.: 200 [2900] int.: 240 [3450]
Max. Oil Flow,	lpm [GPM]	150 [40]
Min. Speed,	[RPM]	5
Permissible Shaft Loads,	daN [lbs]	P_a=1000 [2248]
Pressure fluid		Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range,	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range,	mm^2/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
140 [2030]	20 [98]	2,5 [.66]
	35 [164]	1,5 [.39]
210 [3045]	20 [98]	5 [1.32]
	35 [164]	3 [.79]

Pressure Losses



MT/B

Motor met rem

Technische informatie

Type		MT/B 160	MT/B 200	MT/B 250	MT/B 315	MT/B 400	MT/B 500
Displacement, cm^3/rev. [in^3/rev.]		161,1 [9.83]	201,4 [12.29]	251,8 [15.36]	326,3 [19.90]	410,9 [25.06]	523,6 [31.95]
Max. Speed,	Cont.	625	625	500	380	305	240
[RPM]	Int.*	780	750	600	460	365	285
Max. Torque	Cont.	47 [4160]	59 [5220]	73 [6460]	95 [8410]	108 [9560]	122 [10800]
daNm [lb-in]	Int.*	56 [4960]	71 [6285]	88 [7790]	114 [10090]	126 [11150]	137 [12125]
Max. Output	Cont.	26,5 [36]	33,5 [45]	33,5 [45]	33,5 [45]	30 [40]	26,5 [36]
kW [HP]	Int.*	32 [43]	40 [54]	40 [54]	40 [54]	35 [45]	30 [40]
Max. Pressure Drop	Cont.	200 [2900]	200 [2900]	200 [2900]	200 [2900]	180 [2600]	160 [2300]
bar [PSI]	Int.*	240 [3450]	240 [3450]	240 [3450]	240 [3450]	210 [3050]	180 [2600]
Max. Oil Flow	Cont.	100 [26.5]	125 [33]	125 [33]	125 [33]	125 [33]	125 [33]
lpm [GPM]	Int.*	125 [33]	150 [40]	150 [40]	150 [40]	150 [40]	150 [40]
Max. Inlet Pressure	Cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
bar [PSI]	Int.*	250 [3600]	250 [3600]	250 [3600]	250 [3600]	250 [3600]	250 [3600]
Max. Return Pressure	Cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]
with Drain Line,bar [PSI]	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [150]	10 [150]	10 [150]	10 [150]	10 [150]	10 [150]
Min. Starting Torque	At max. press. drop Cont.	34 [3010]	43 [3800]	53 [4690]	74 [6550]	84 [7435]	95 [8410]
daNm [lb-in]	At max. press. drop Int.*	41 [3630]	52 [4600]	63 [5580]	89 [7880]	97 [8585]	106 [9380]
Min. Speed**, [RPM]		10	9	8	7	6	5
Static Torque of Brake, daNm [lb-in]		143 [12657]	143 [12657]	143 [12657]	143 [12657]	143 [12657]	143 [12657]
Min. Brake Release Pressure***, bar [PSI]		32-35 [2832-3098]	32-35 [2832-3098]	32-35 [2832-3098]	32-35 [2832-3098]	32-35 [2832-3098]	32-35 [2832-3098]
Max. Opening Pressure, bar [PSI]		280 [24782]	280 [24782]	280 [24782]	280 [24782]	280 [24782]	280 [24782]
Max. Pressure in Drain Line, bar [PSI]		5 [443]	5 [443]	5 [443]	5 [443]	5 [443]	5 [443]
Weight, kg [lb]		27,5 [60.6]	28 [61.7]	28,5 [62.8]	29,5 [65]	30,5 [67.2]	31,5 [69.4]

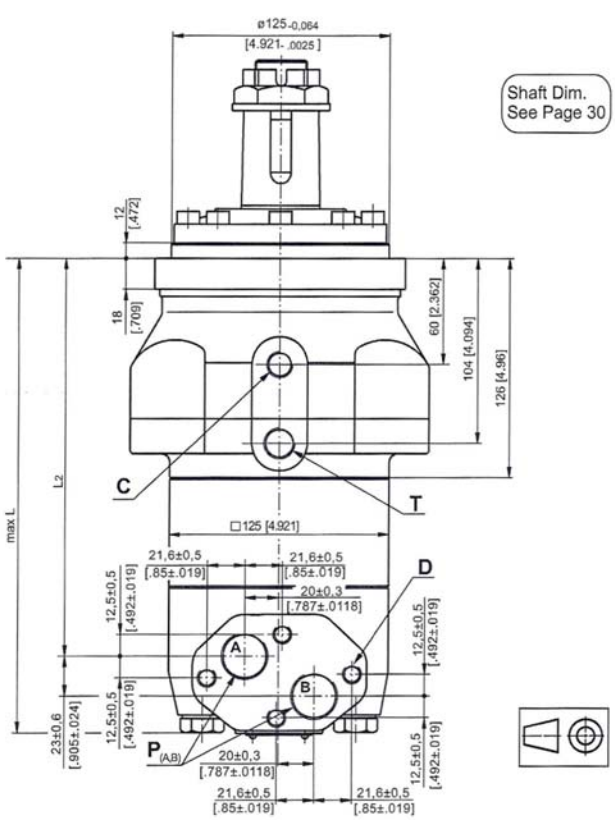
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

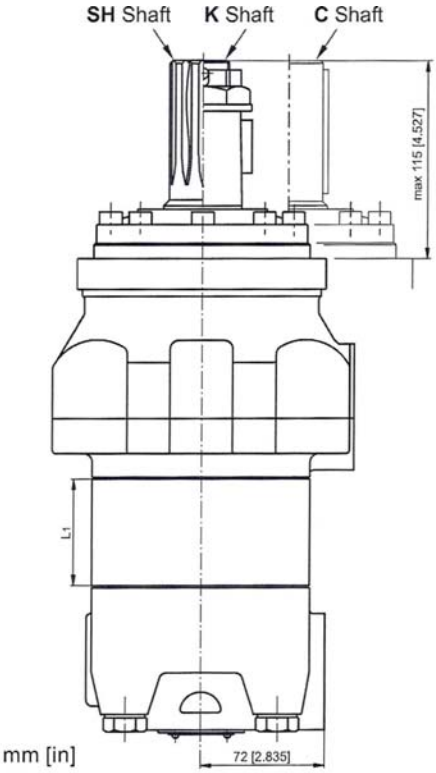
1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm² bij 50Cº.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 Cº.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

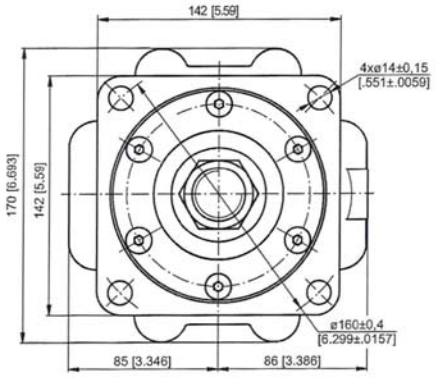
MT/B

Motor met rem

Afmetingen en uitvoeringen

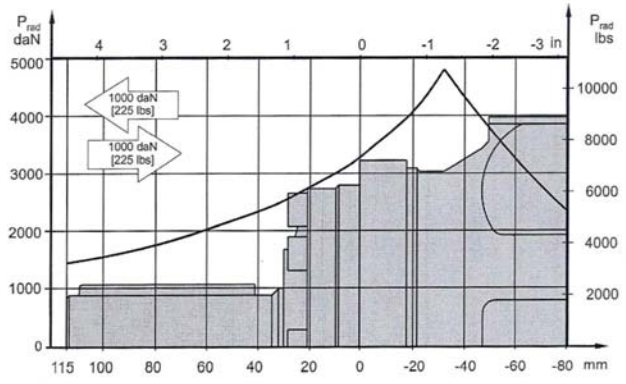






PERMISSIBLE SHAFT LOADS

The curve applies to a B10 bearing life of 3000 hours at 200 RPM.



Warning: Drain line should always be used.

$P_{(A,B)}$ - 2xG3/4, 17 mm [.669] depth
C - Brake release port, G1/4, 12 mm [.472 in] depth
T - Drainage tap, G3/8, 13 mm [.512] depth
D - 2xM10, 10 mm [.394] depth

Type	*L1,mm [in]	L2,mm [in]	L,mm [in]
MT/B 160	16,5 [.65]	178 [7.01]	228 [8.98]
MT/B 200	21,5 [.85]	183 [7.21]	233 [9.17]
MT/B 250	27,8 [1.09]	189,3 [7.45]	239 [9.41]
MT/B 315	37,0 [1.46]	198,5 [7.81]	248 [9.76]
MT/B 400	47,5 [1.87]	209 [8.23]	259 [10.2]
MT/B 500	61,5 [2.42]	223 [8.78]	273 [10.8]

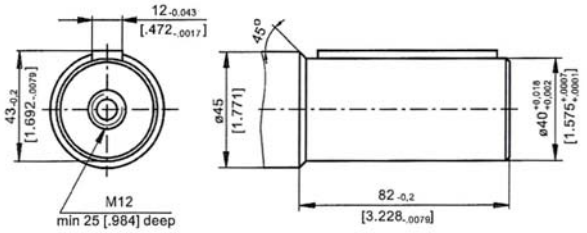
* The width of the gerolor is 3,5 mm [.138 in] greater than L_1.

MT/B

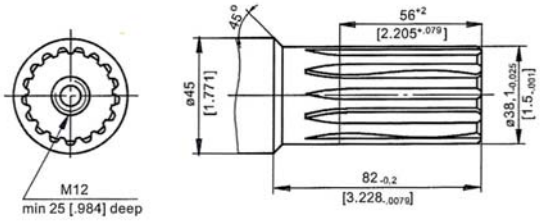
Motor met rem

Afmetingen as

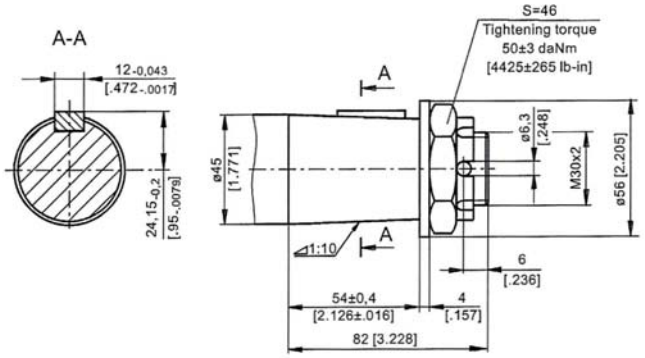
C -ø40 straight, Parallel key A12x8x70 DIN 6885
Max. Torque 123 daNm [10886 lb-in]



SH -ø1½" splined 17T, DP 12/24 ANSI B92.1-1976
Max. Torque 123 daNm [10886 lb-in]



K -tapered 1:10, Parallel key B12x8x28 DIN 6885
Max. Torque 210 daNm [18587 lb-in]



mm [in]

ORDER CODE

	1	2	3	4
M T / B				

Pos.1 - Displacement code

160	- 161,1 cm³/rev [9.83 in³/rev]
200	- 201,4 cm³/rev [12.29 in³/rev]
250	- 251,8 cm³/rev [15.36 in³/rev]
315	- 326,3 cm³/rev [19.9 in³/rev]
400	- 410,9 cm³/rev [25.06 in³/rev]
500	- 523,6 cm³/rev [31.95 in³/rev]

Pos.2 - Shaft Extensions**

C	- ø40 straight, Parallel key A12x8x70 DIN6885
SH	- ø1 ½" splined 17 DP12/24 ANS B922.1-76
K	- ø45 tapered 1:10, Parallel key B12x8x28 DIN 6885

Pos.3 - Special Features (see page 59)

Pos.4 - Design Series

omit - Factory specified

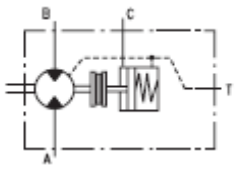
NOTES:

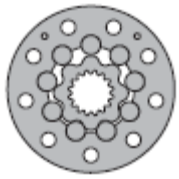
* The permissible output torque for shafts must be not exceeded!

The hydraulic motors are mangano phosphatized as standard.

MTM/B

Motor met rem





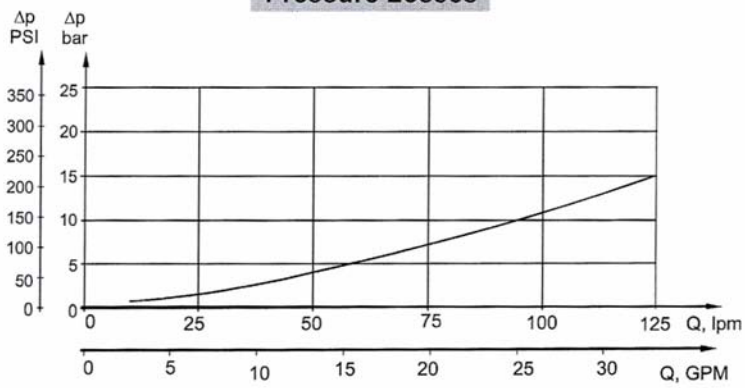
Algemene informatie

Max. Displacement, cm^3/rev [in^3/rev]	724,3 [44.2]
Max. Speed, [RPM]	750
Max. Torque, daNm [in-lb]	cont.: 175 [15490] int.: 215 [16030]
Max. Output, kW [HP]	70 [94]
Max. Pressure Drop, bar [PSI]	cont.: 250 [3600] int.: 350 [5080]
Max. Oil Flow, lpm [GPM]	150 [40]
Permissible Shaft Loads daN [lbs]	P_a=1000 [2250]
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
200 [2900]	20 [98]	2,5 [.660]
	35 [164]	1,5 [.400]
275 [3990]	20 [98]	4 [1.057]
	35 [164]	2,5 [.660]

Pressure Losses



MTM/B

Motor met rem

Technische informatie

Type		MTM/B 200	MTM/B 250	MTM/B 315	MTM/B 400	MTM/B 470	MTM/B 500	MTM/B 630	MTM 725
Displacement, cm^3/rev [in^3/rev]		201,4 [12.29]	251,8 [15.36]	326,3 [19.9]	410,9 [25.06]	475 [28.97]	494,9 [30.17]	631,2 [38.5]	724 [44.2]
Max. Speed, [RPM]	Cont.	625	500	380	305	260	250	196	170
	Int.*	750	600	460	365	315	300	235	215
Max. Torque, daNm [lb-in]	Cont.	72 [6375]	90 [7965]	116 [10265]	147 [13010]	171 [15135]	172 [15225]	175 [15490]	160 [14160]
	Int.*	102 [9030]	128 [11330]	163 [14425]	206 [18232]	215 [16030]	215 [16030]	215 [16030]	192 [17000]
	Peak**	115 [10180]	144 [12745]	186 [16460]	235 [20800]	240 [21240]	240 [21240]	255 [22570]	240 [21240]
Max. Output, kW [HP]	Cont.	41 [55]	41 [55]	41 [55]	41 [55]	41 [55]	37,5 [50]	29 [39]	26 [35]
	Int.*	65 [87]	70 [94]	70 [94]	70 [94]	55 [74]	51 [68]	45 [60]	40 [54]
Max. Pressure Drop, bar [PSI]	Cont.	250 [3600]	250 [3600]	250 [3600]	250 [3600]	250 [3600]	230 [3340]	185 [2680]	160 [2320]
	Int.*	350 [5080]	350 [5080]	350 [5080]	350 [5080]	315 [4570]	280 [4060]	225 [3260]	210 [3045]
	Peak**	400 [5800]	400 [5800]	400 [5800]	400 [5800]	350 [5080]	320 [4640]	270 [3985]	260 [3770]
Max. Oil Flow, lpm [GPM]	Cont.	125 [33]	125 [33]	125 [33]	125 [33]	125 [33]	125 [33]	125 [33]	125 [33]
	Int.*	150 [40]	150 [40]	150 [40]	150 [40]	150 [40]	150 [40]	150 [40]	150 [40]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		6 [87]	6 [87]	6 [87]	6 [87]	6 [87]	6 [87]	6 [87]	6 [87]
Min. Starting Torque, daNm [lb-in]		60 [5310]	75 [6640]	97 [8585]	122 [10800]	142 [12570]	143 [12655]	144 [12745]	148 [13100]
Static Torque of Brake, daNm [lb-in]		200 [17700]							
Min. Brake Release Pressure***, bar [PSI]		14 [203]							
Max. Opening Pressure, bar [PSI]		40 [580]							
Weight, kg [lb]		37,5 [82.7]	37,9 [83.6]	39,1 [86.2]	41,3 [91.1]	44,1 [97.2]	46,0 [101.4]	49,1 [108.2]	52,0 [114.6]

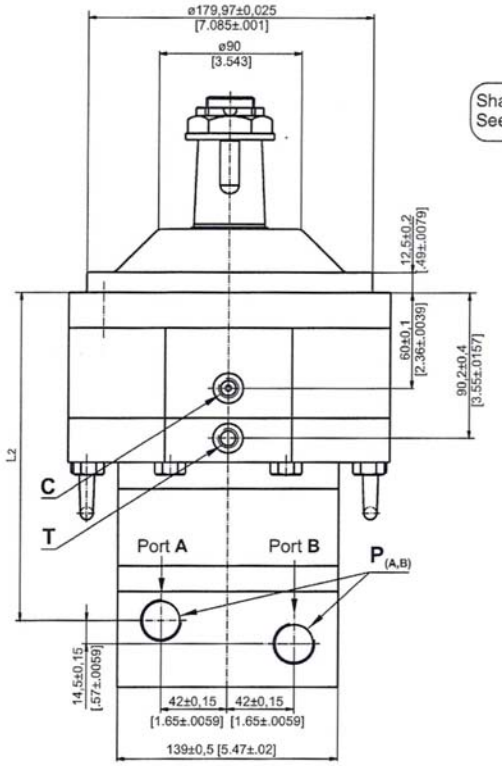
* Tijdelijk gebruik: gebruik gedurende max. 10% per minuut.
** Piekbelasting maximaal 1% per minuut
*** Voor toerentallen van 5 RPM of minder dan opgegeven, neem contact op met M+S of onze medewerkers.

1 tijdelijke hoge drukvallen en hoge oliestromen mogen niet gelijktijdig voorkomen
2 Filtering dient plaats te vinden volgens ISO vervuilingsgraad 20/16. Nominale filtering van 25 micron of beter.
3 Er wordt aanbevolen een hydraulische olie te gebruiken op basis van minerale olie type HPL (DIN51524) of HM (ISO 6743/4) Voordat U alternatieve smeermiddelen gebruikt, zoals syntetische olieën dient er overlegt te worden.
4 Aanbevolen minerale viscositeit is 13mm^2 bij 50C°.
5 Aanbevolen maximum olietemperatuur tijdens gebruik is 85 C°.
6 De levensduur van de motoren kan men verhogen als men de aandrijfas 15 tot 30 minuten onbelast laat draaien voor de motor volledig te belasten.

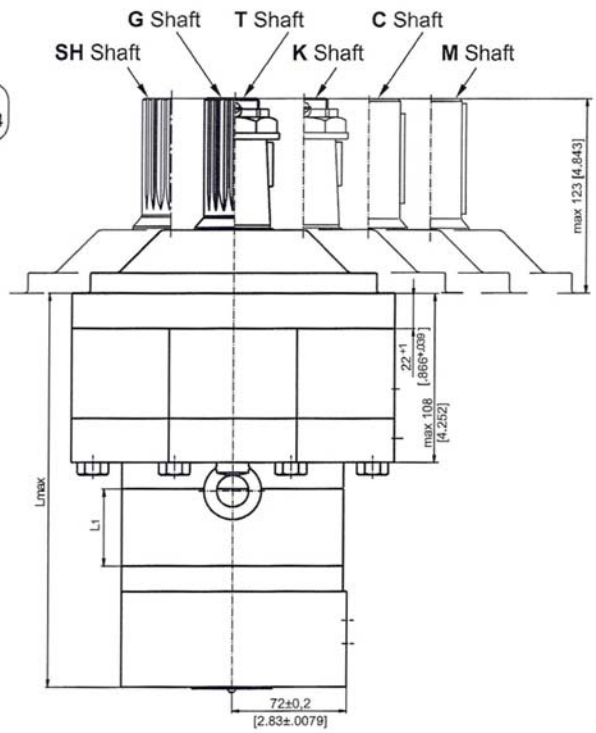
MTM/B

Motor met rem

Afmetingen en uitvoeringen



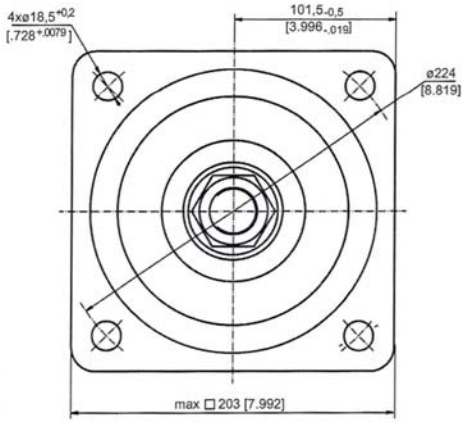
Shaft Dim.
See Page 34



Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

mm [in]



Type	L, mm [in]	L2, mm [in]	L1, mm [in]
MTM/B 200	226 [8.90]	184 [7.24]	25 [.98]
MTM/B 250	232,5 [9.15]	190 [7.48]	31,3 [1.23]
MTM/B 315	241,5 [9.51]	199,5 [7.85]	40,5 [1.59]
MTM/B 400	252 [9.92]	210 [8.27]	51 [2.01]
MTM/B 470	260 [10.24]	218 [8.58]	59 [2.32]
MTM/B 500	249 [9.80]	207 [8.15]	48 [1.89]
MTM/B 630	262 [10.32]	220 [8.66]	61 [2.40]
MTM/B 725	271 [10.67]	229 [9.02]	70 [2.76]

	Versions	
	2	4
P (A,B)	2xG¾	2x1 1/16-12UN
T	G¼	9/16-18 UNF
C	G¼	7/16-20 UNF

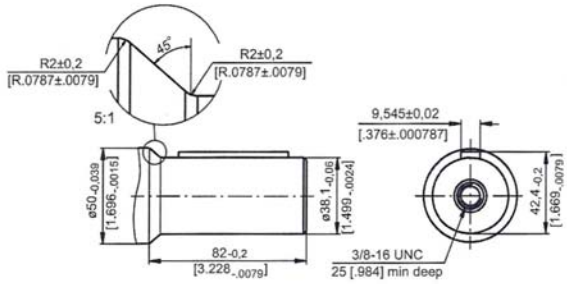
MTM/B

Motor met rem

Afmetingen as

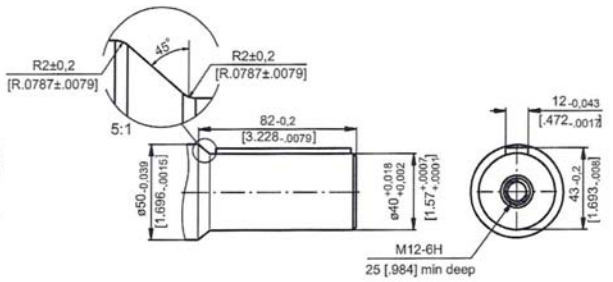
C

1½"[38,1] srtaight, Parallel key ⅜"x ⅜"x 2¼" BS46
Max. Torque 133 daNm [11750 lb-in]



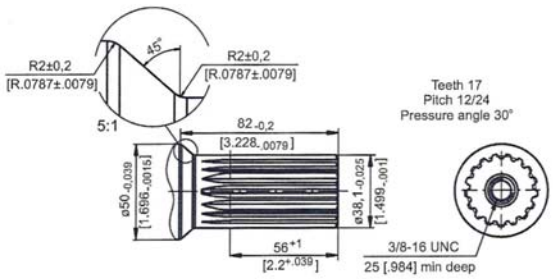
M

ø40 srtaight, Parallel key A12x8x70
Max. Torque 133 daNm [11750 lb-in]



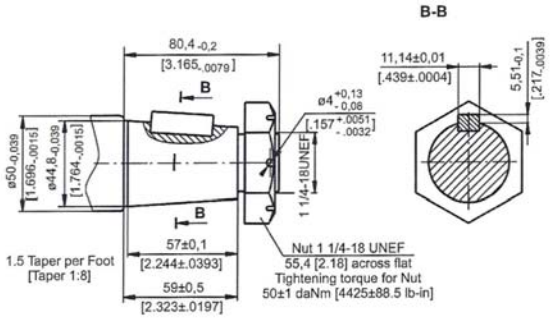
G

17T Splined, 1½" [38,1] ANS B92.1-1976
Max. Torque 133 daNm [11750 lb-in]



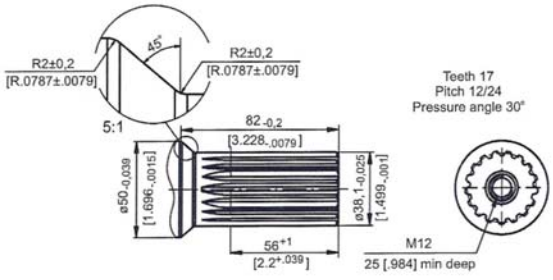
T

1 3/4" [44,5] SAE J501 Tapered 1:8
Parallel key 7/16"x7/16"x 1¼ " BS46
Max. Torque 210 daNm [18650 lb-in]



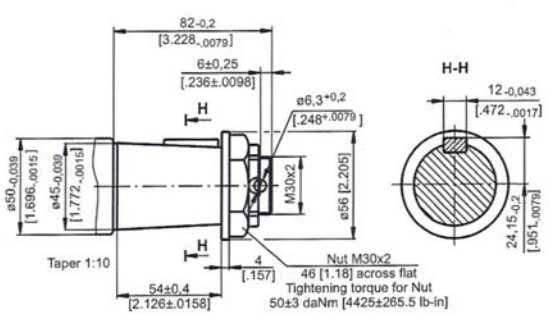
SH

17T Splined, 1½" [38,1] ANS B92.1-1976
Max. Torque 133 daNm [11750 lb-in]



K

ø45 Tapered 1:10
Parallel key 12x8x28 DIN 6885
Max. Torque 211 daNm [18675 lb-in]



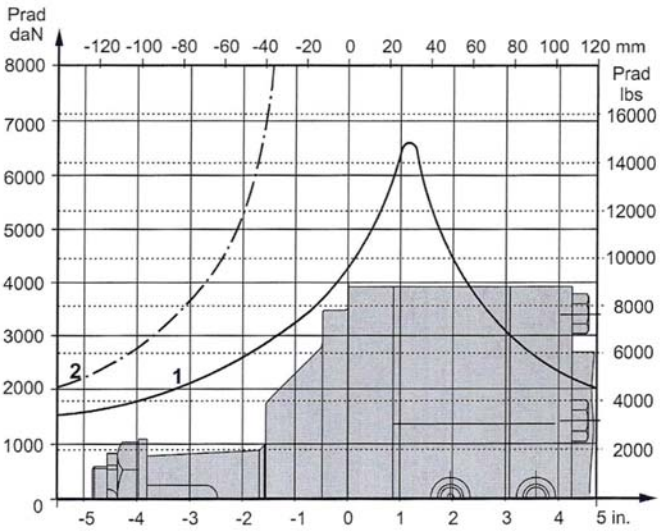
mm [in]

MTM/B

Motor met rem

Toegestane radiale as belasting

PERMISSIBLE RADIAL SHAFT LOADS



1 - Bearing curve: The curve applies to a B10 bearing life of 2000 hours at 100 RPM.

2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 2:1.

ORDER CODE

	1	2	3	4	5
M T M / B					

Pos.1 - Displacement code

200	- 201,4 cm³/rev [12.29 in³/rev]
250	- 251,8 cm³/rev [15.36 in³/rev]
315	- 326,3 cm³/rev [19.90 in³/rev]
400	- 410,9 cm³/rev [25.06 in³/rev]
470	- 475,0 cm³/rev [28.97 in³/rev]
500	- 523,6 cm³/rev [31.95 in³/rev]
630	- 631,2 cm³/rev [38.52 in³/rev]
725	- 724,3 cm³/rev [44.20 in³/rev]

Pos.2 - Shaft Extensions*

C	- 1½" [38,1] straight, Parallel key 3/8x3/8x2 1/4"
G	- 1½" [38,1] 17T Splined (3/8-16 UNC)
M	- 40 mm straight, Parallel key 12x8x70
T	- 1:8 Tapered, Parallel key 7/16x7/16x1 1/4"
SH	- 1½" [38,1] 17T Splined (M12)
K	- 1:10 Tapered, Parallel key 12x8x28

Pos. 3 - Ports

2	- side ports, 2xG 3/4, G1/4, BSP thread, ISO 228
4	- side ports, 2x 1 1/16-12 UN, O-ring, 9/16-18 UNF, 7/16-20UNF

Pos. 4 - Special Features (see page 59)

Pos. 5 - Design Series

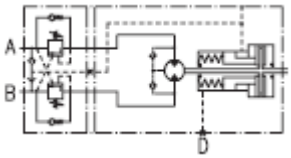
omit - Factory specified

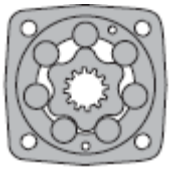
Notes: * The permissible output torque for shafts must be not exceeded!
** Color at customer's request.

The hydraulic motors are mangano phosphatized as standard.

SW500B350V

Motor met rem





Algemene informatie

SPECIFICATION DATA

Type		SW500B350V
Displacement, cm^3/rev [in^3/rev]		475,3 [29]
Max. Speed,	Cont.	16
RPM	Int.*	25
Max. Torque,	Cont.	82 [7260]
daNm [in-lb]	Int.*	95 [8420]
Max. Output,	Cont.	0,9 [1.3]
kW [HP]	Int.*	2,4 [3.3]
Max. Pressure Drop,	Cont.	125 [1800]
bar [PSI]	Int.*	145 [2100]
Max. Oil Flow,	Cont.	8 [2]
lpm [GPM]	Int.*	12 [3]
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, bar [PSI]		100 [1450]
Min. Starting Torque,	At max. press. drop Cont.	72 [6400]
daNm [in-lb]	At max. press. drop Int.*	75 [6650]
Min. Speed**, RPM		5
Static Torque for the Brake***, daNm [in-lb]		164 [14 515]
Release Pressure ±10%,	initial	25...28 [363...406]
bar [PSI]	full	31 [449.6]
Max. Steering Pressure, bar [PSI]		245 [3553]
Max. Pressure in Drain Space for the Brake, bar [PSI]		0,5 [7]
Pilot Ratio for the Valve		4,25:1

* Intermittent operation: the permissible values may occur for max. 10% of every minute.

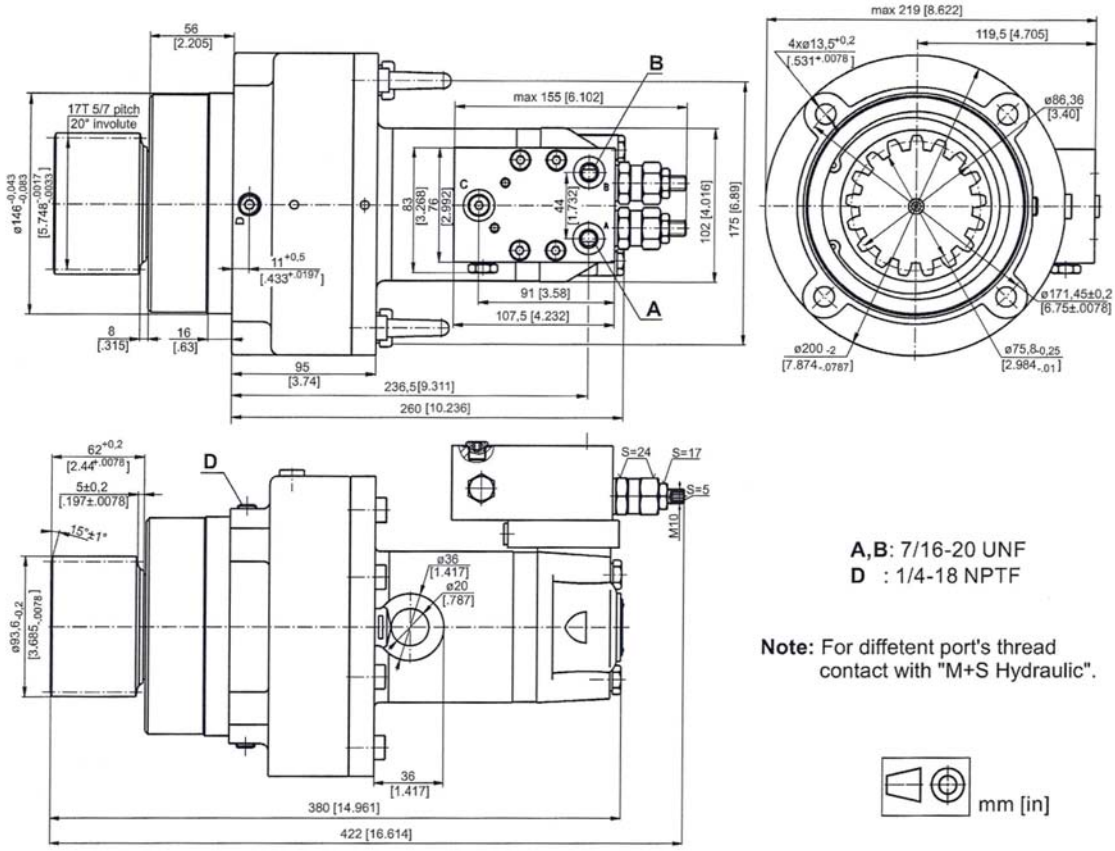
** For speeds of 5 RPM lower than given, consult factory or your regional manager.

*** Static torque is obtained at working pressure - 0 PSI [0 bar].

SW500B350V

Motor met rem

Afmetingen en uitvoeringen



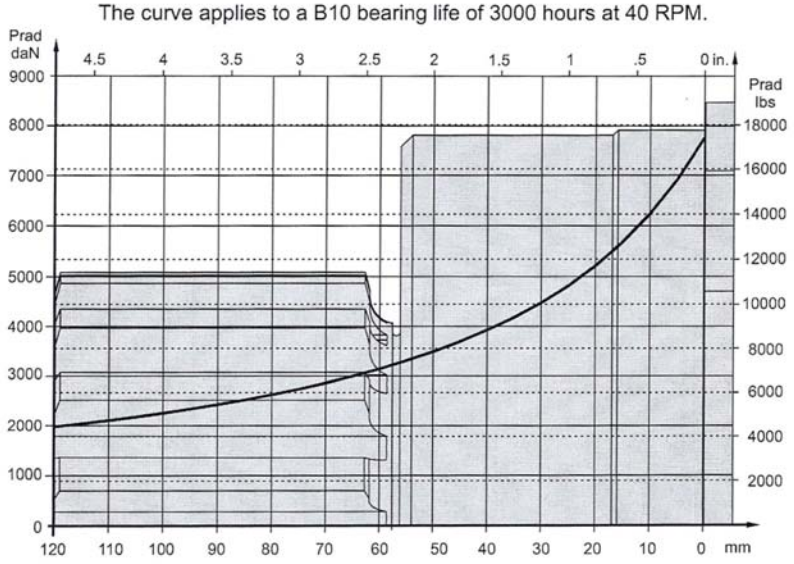
A,B: 7/16-20 UNF
D : 1/4-18 NPTF

Note: For diffetent port's thread contact with "M+S Hydraulic".

mm [in]

PERMISSIBLE SHAFT LOADS

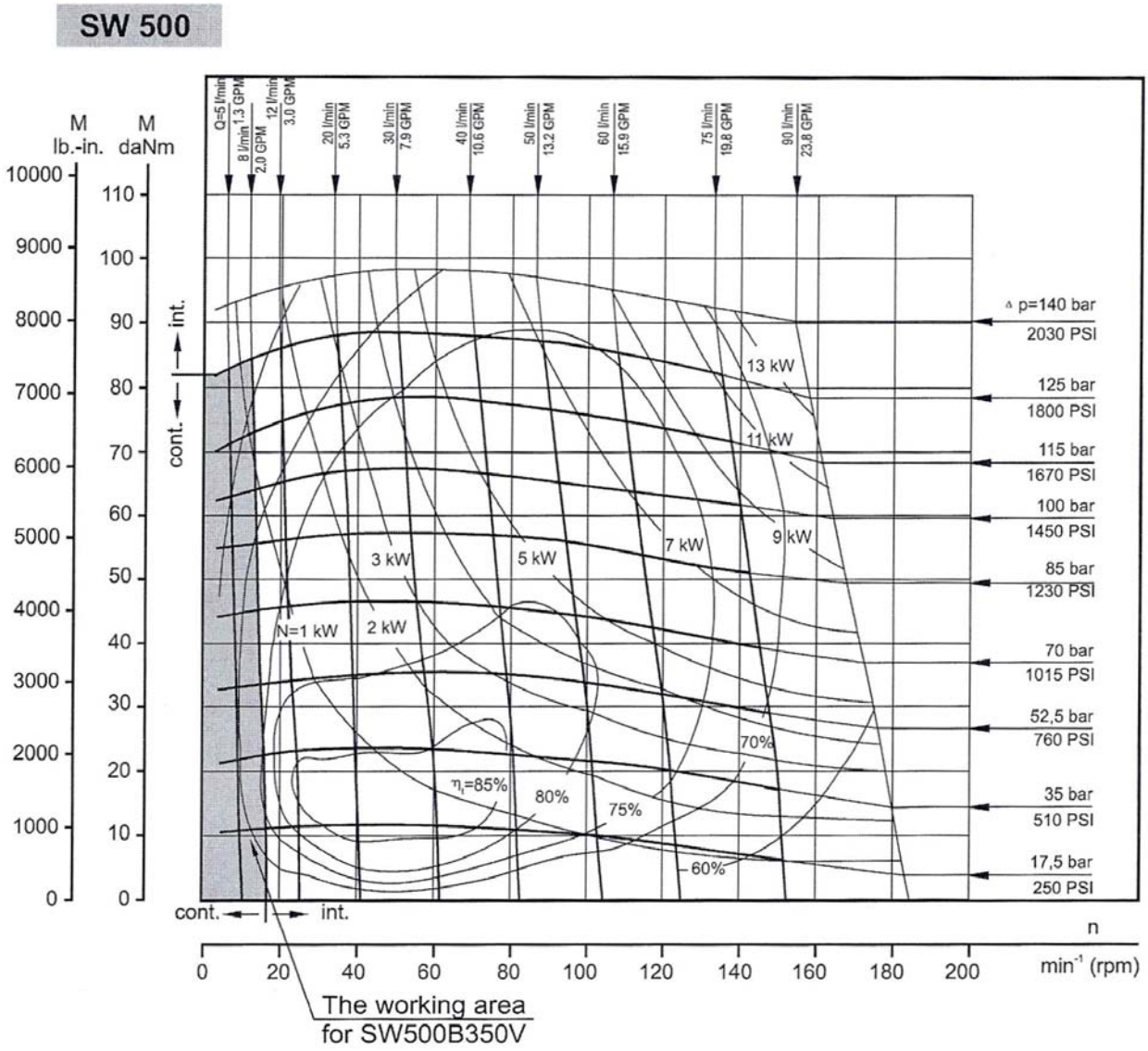
The curve applies to a B10 bearing life of 3000 hours at 40 RPM.



SW500B350V

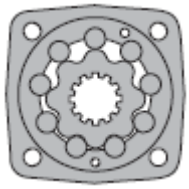
Motor met rem

Functiediagram

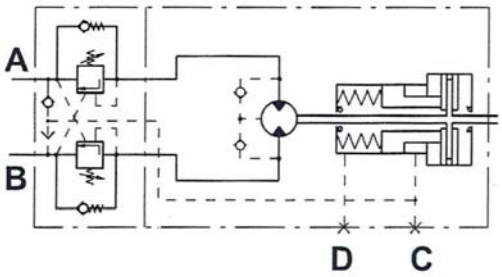


TW500B350…V

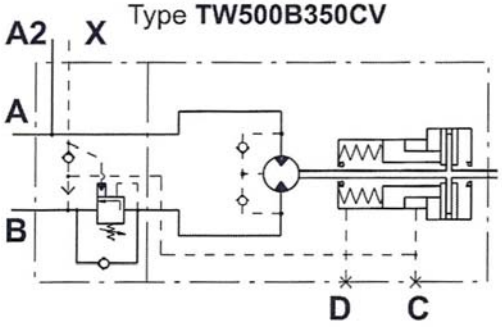
Motor met rem



Motor-Brake
Type **TW500B350V**



Motor-Brake
Type **TW500B350CV**



Algemene informatie

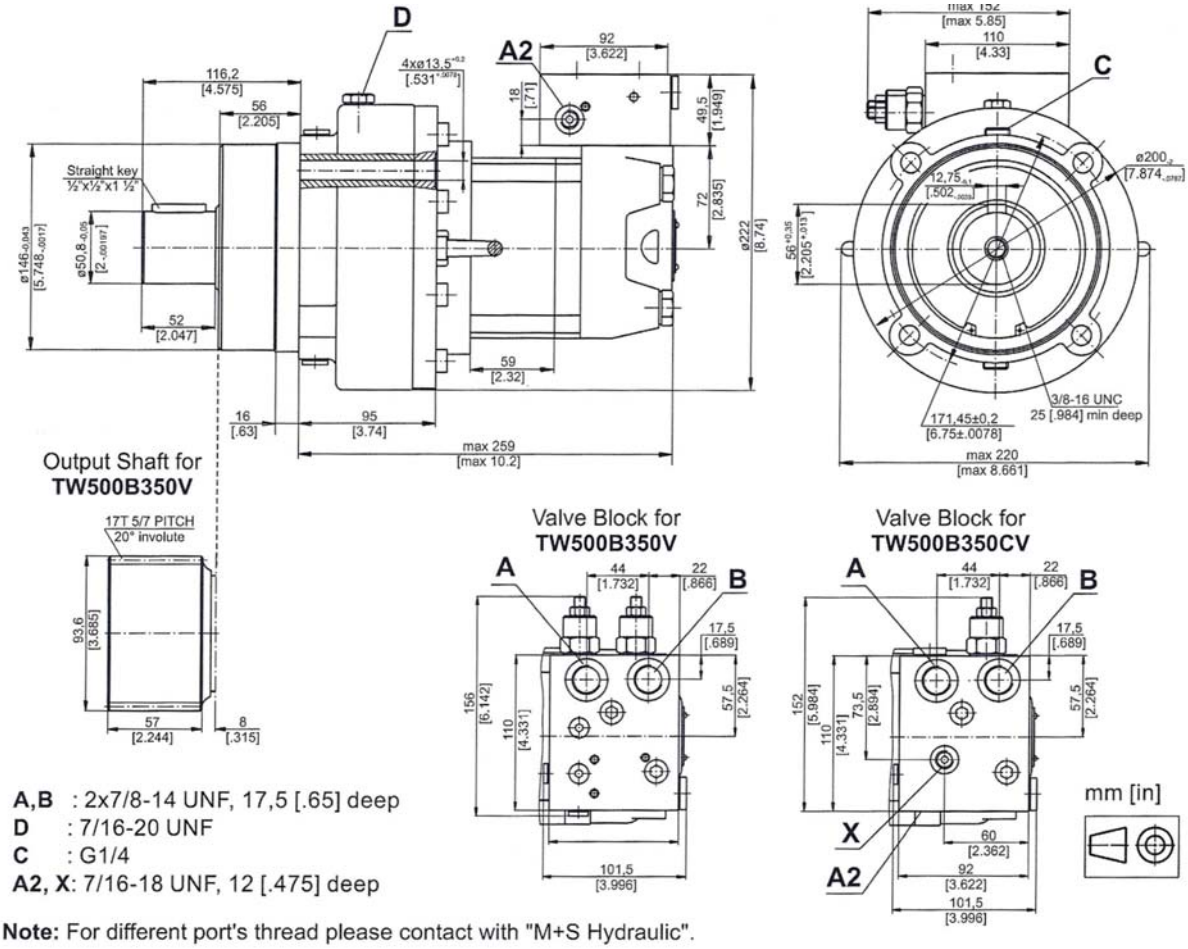
Type		TW500B350...V
Displacement, cm³/rev [in³/rev]		475 [29]
Max. Speed, RPM	Cont.	40
	Int.*	60
Max. Torque, daNm [lb-in]	Cont.	114 [10 000]
	Int.*	135 [12 000]
Max. Output, kW [HP]	Cont.	4,1 [5.4]
	Int.*	7,0 [9.39]
Max. Pressure Drop, bar [PSI]	Cont.	170 [2500]
	Int.*	200 [2900]
Max. Oil Flow, lpm [GPM]	Cont.	20 [5.3]
	Int.*	35 [9.2]
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, bar [PSI]		75 [1088]
Min. Starting Torque, daNm [in-lb]	At max. press. drop Cont.	95 [8400]
	At max. press. drop Int.*	112 [9940]
Min. Speed**, RPM		5
Static Torque for the Brake***, daNm [lb-in]		164 [14515]
Release Pressure ±10%, bar [PSI]	initial	22,5...27,5 [326...400]
	full	28...34 [406...493]
Max. Steering Pressure, bar [PSI]		245 [3553]
Max. Pressure in Drain Space for the Brake, bar [PSI]		0,5 [7]
Pilot Ratio for the Valve		4,25:1

* Intermittent operation: the permissible values may occur for max. 10% of every minute.
** For speeds of 5 RPM lower than given, consult factory or your regional manager.
*** Static torque is obtained at working pressure - 0 bar [0 PSI].

TW500B350…V

Motor met rem

Afmetingen en uitvoeringen



A,B : 2x7/8-14 UNF, 17,5 [.65] deep
D : 7/16-20 UNF
C : G1/4
A2, X: 7/16-18 UNF, 12 [.475] deep

Note: For different port's thread please contact with "M+S Hydraulic".

PERMISSIBLE SHAFT LOADS

The curve applies to a B10 bearing life of 3000 hours at 40 RPM.