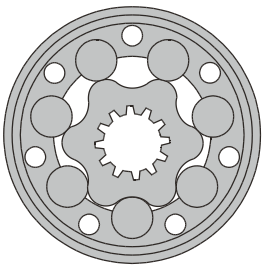
HYDRAULIC MOTORS RW

APPLICATION

» Conveyors
» Feeding mechanism of robots and manipulators
» Metal working machines
» Textile machines
» Machines for agriculture
» Food industries
» Grass cutting machinery etc.



CONTENTS

OPTIONS

» Model- Spool valve, roll-gerotor
» Wheel mount
» Shafts- straight and tapered
» Metric and BSPP ports
» Other special features

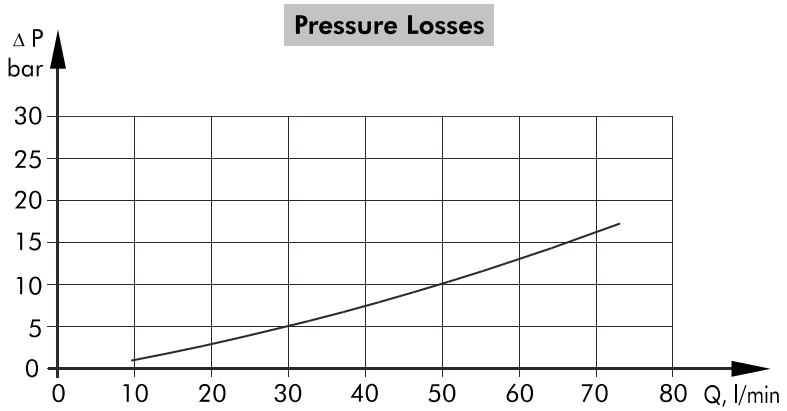
GENERAL

Displacement, [cm^3/rev.]	51,5÷397
Max. Speed, [RPM]	150÷775
Max. Torque, [daNm]	10÷61
Max. Output, [kW]	7÷13
Max. Pressure Drop, [bar]	110÷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



RW MOTORS

SPECIFICATION DATA

Type		RW								
		50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**
Displacement, [cm^3/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]		10,4	10,5	10,6	10,8	11,1	11,6	12,1	12,6	13,3

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

** Peak load: the permissible values may occur for max. 1% for every minute.

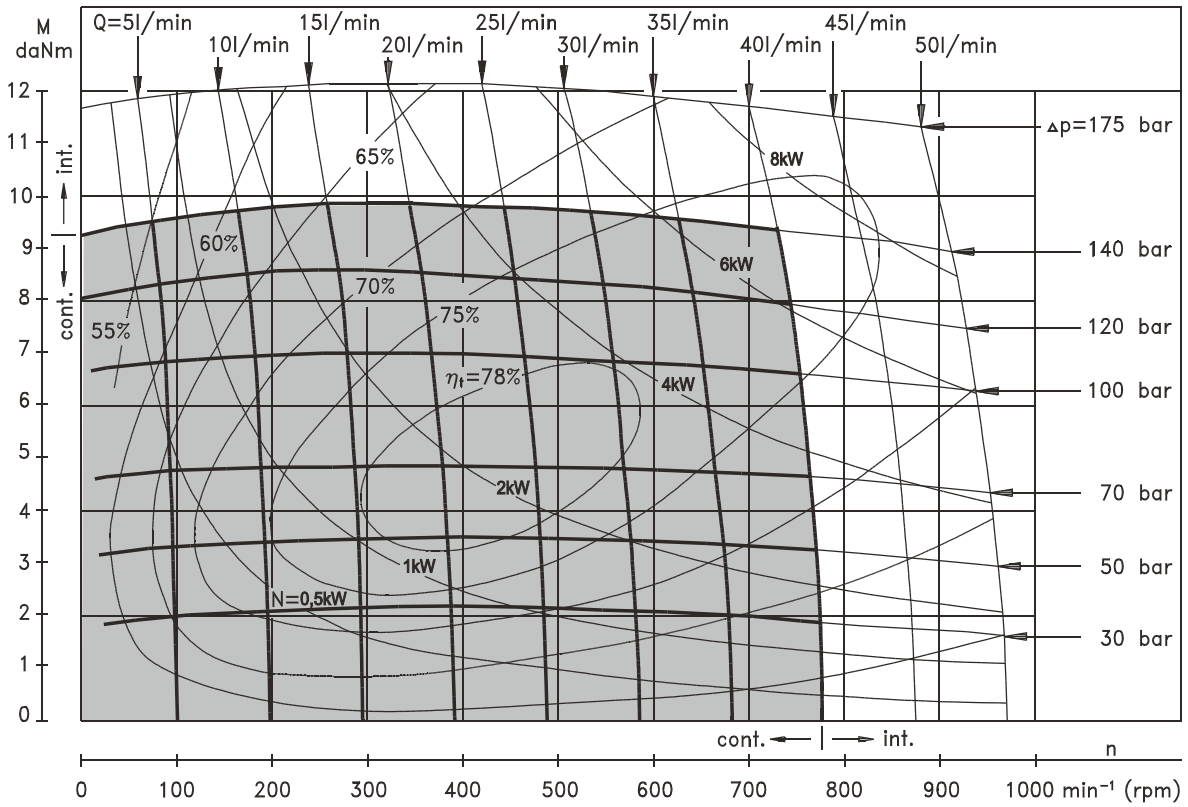
*** For speeds of 10 RPM or lower, consult factory or your regional manager.

1. Intermittent speed and intermittent pressure drop must not occur simultaneously!
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommended 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 mm^2/s at operating temperatures.
5. Recommended maximum system operating temperature - 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 min.

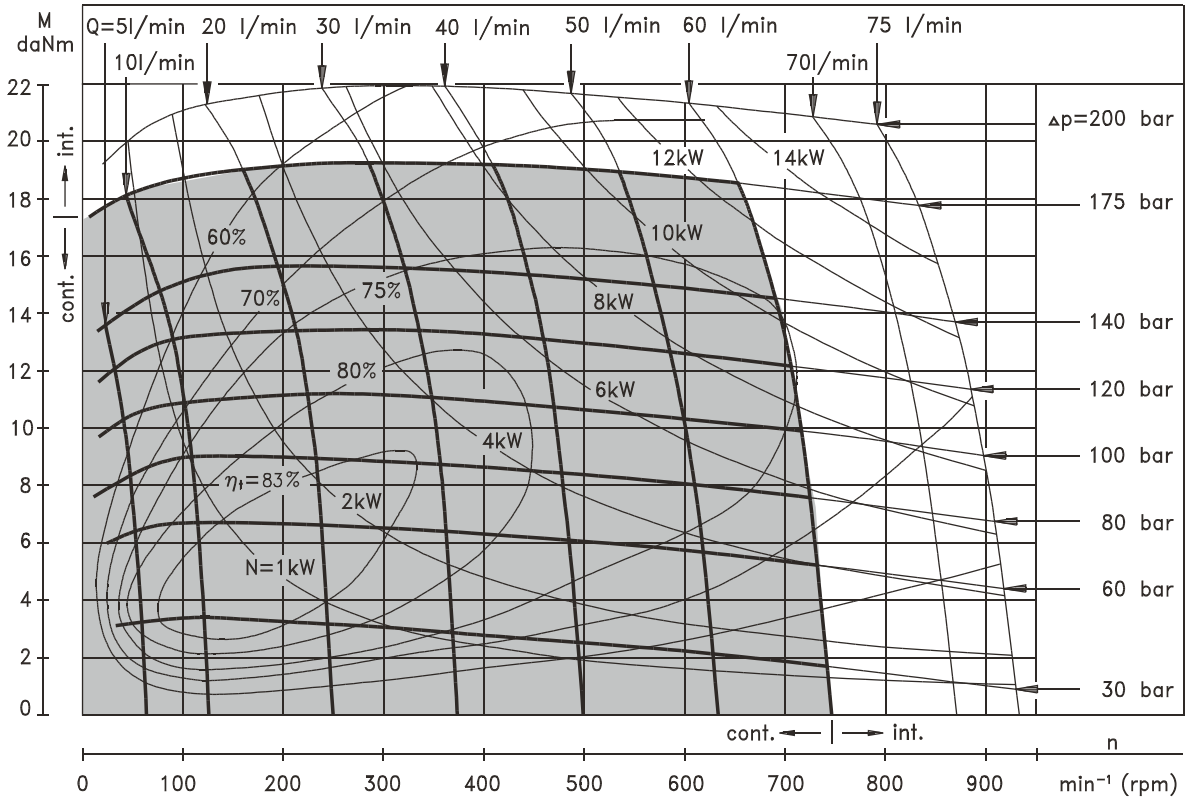
RW MOTORS

FUNCTION DIAGRAMS

RW 50



RW 80

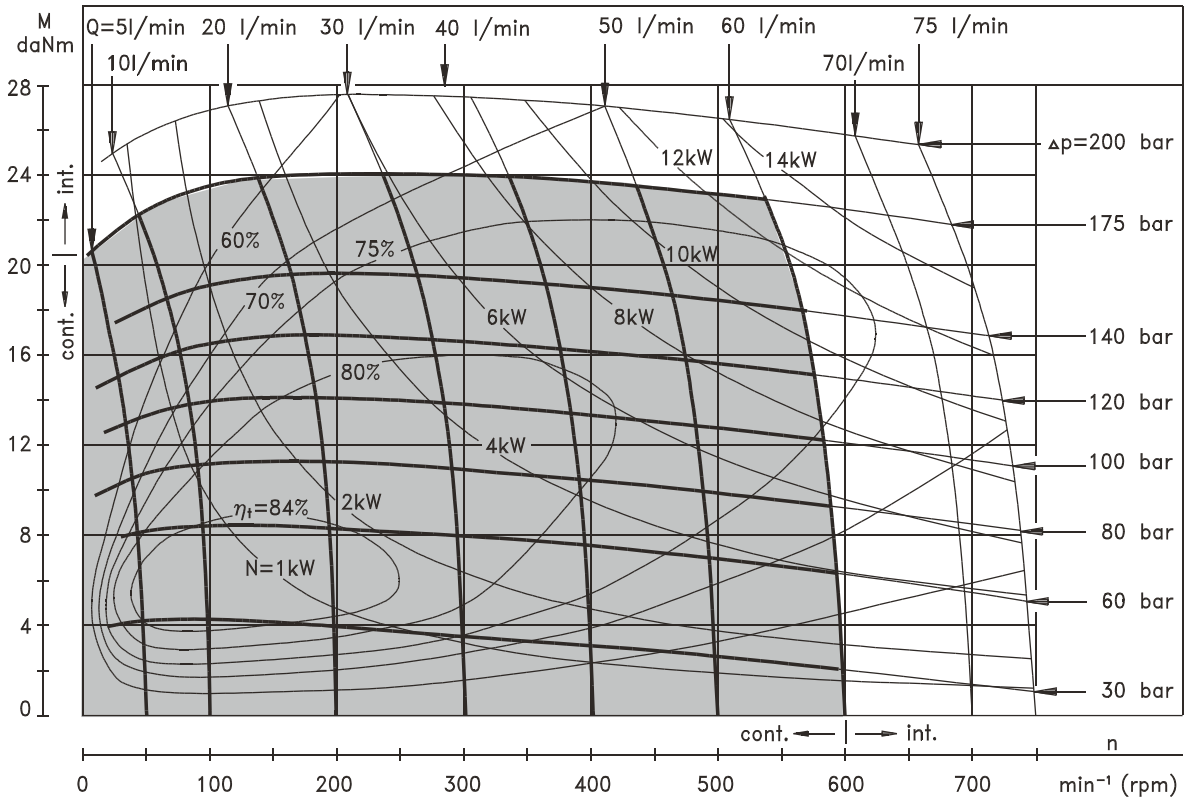


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

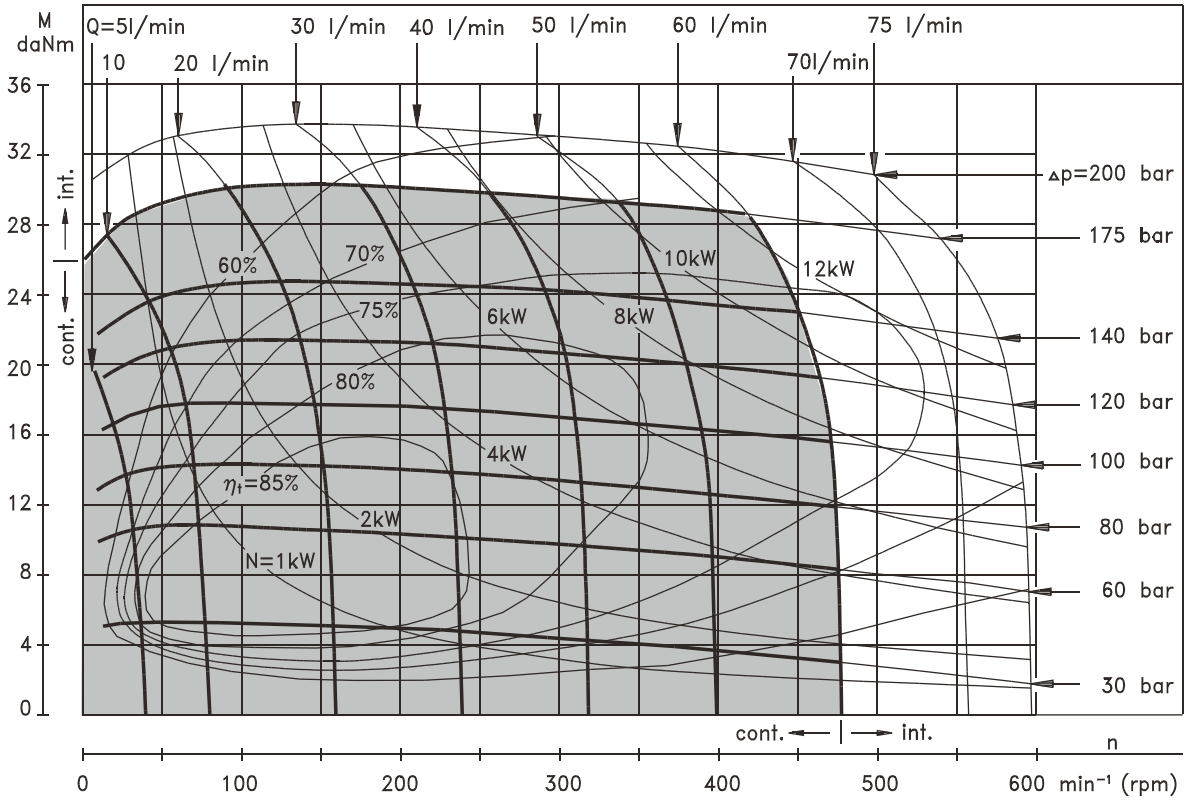
RW MOTORS

FUNCTION DIAGRAMS

RW 100



RW 125

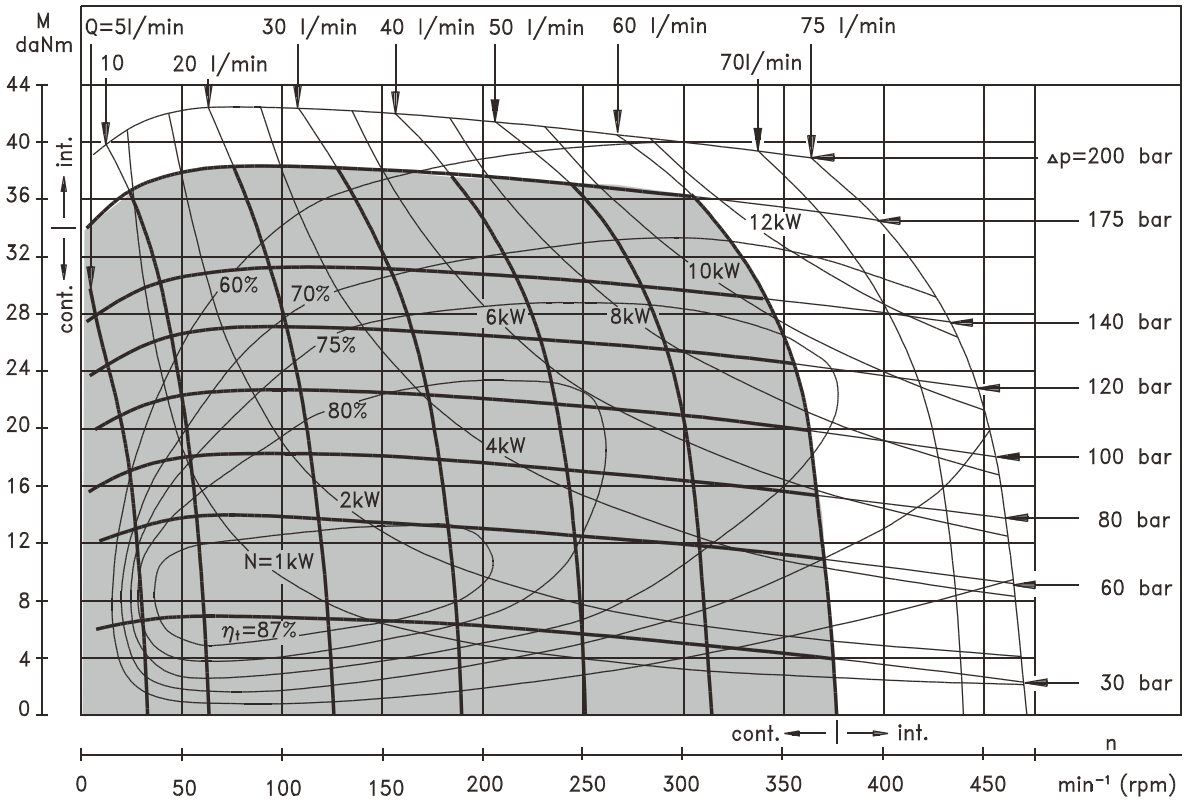


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

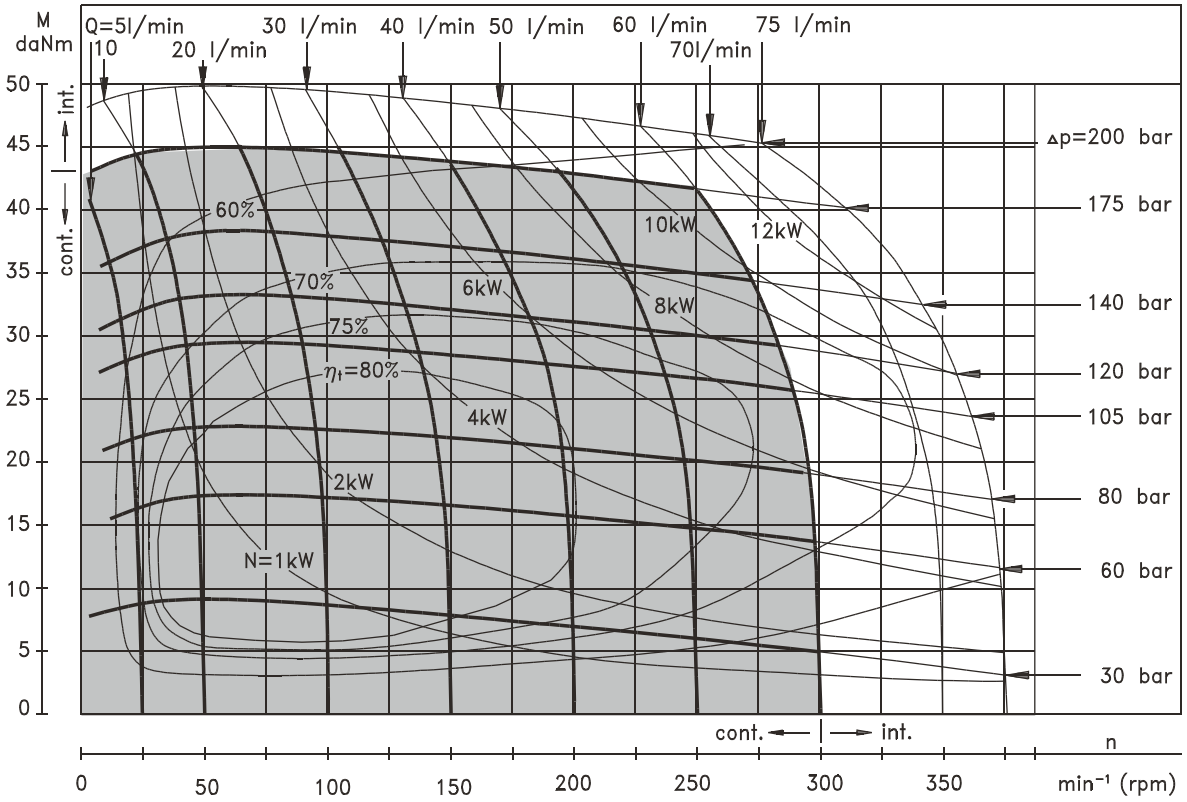
RW MOTORS

FUNCTION DIAGRAMS

RW 160



RW 200

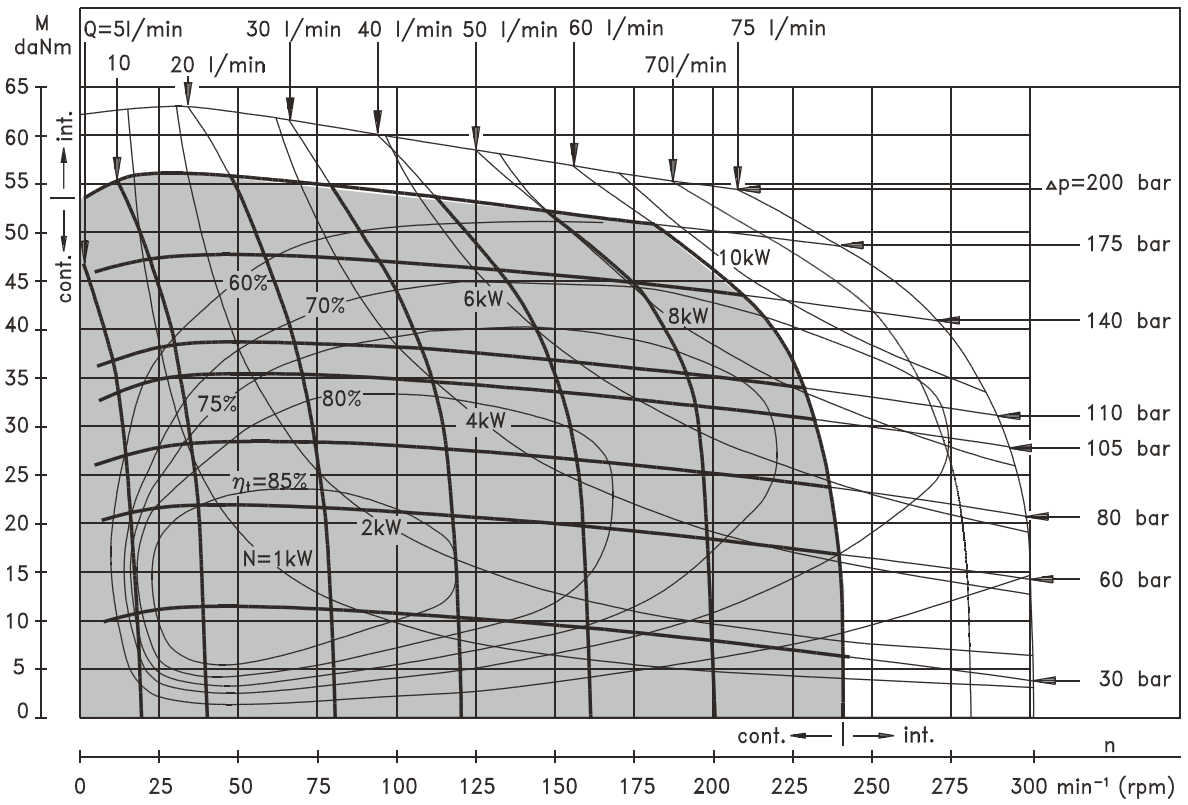


The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

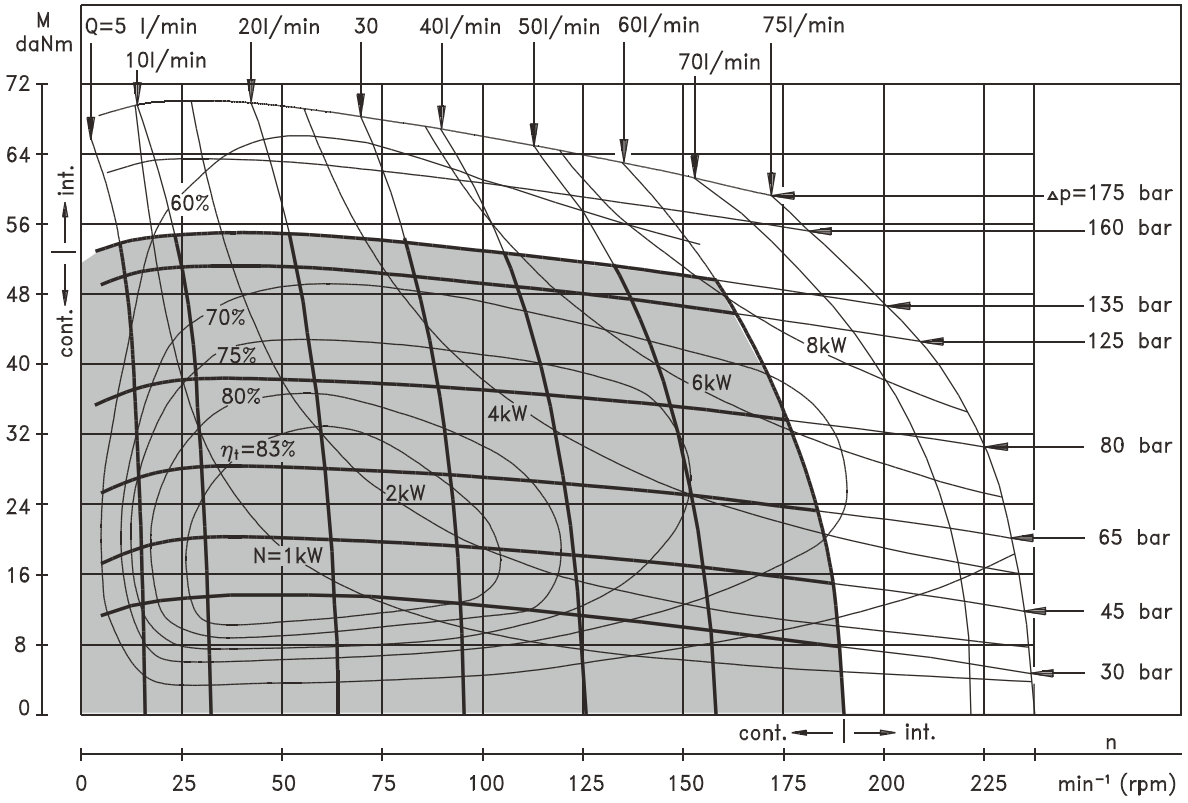
RW MOTORS

FUNCTION DIAGRAMS

RW 250



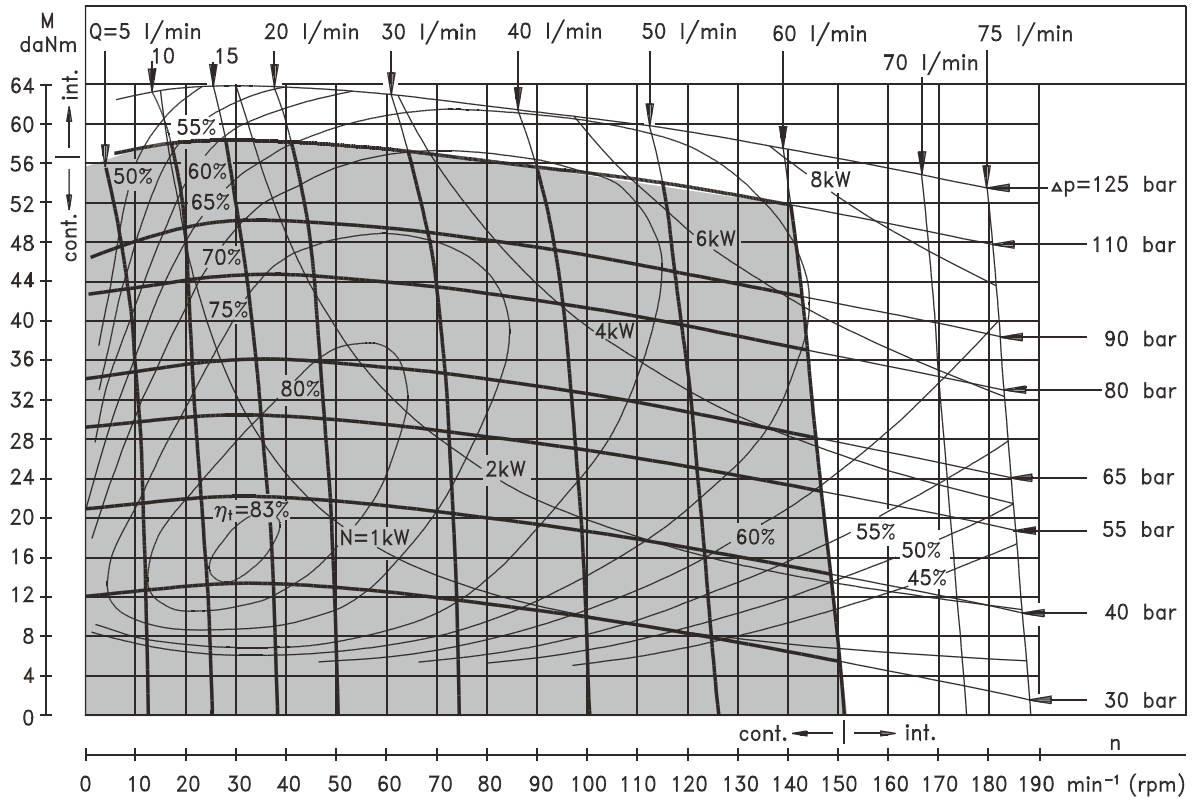
RW 315



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

FUNCTION DIAGRAM

RW 400

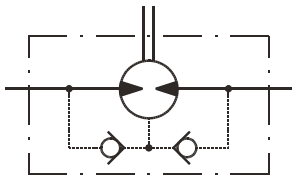


The function diagram data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

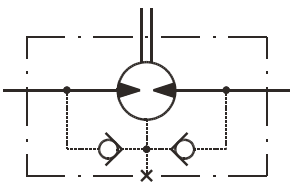
RW...1 motors without drain connection:

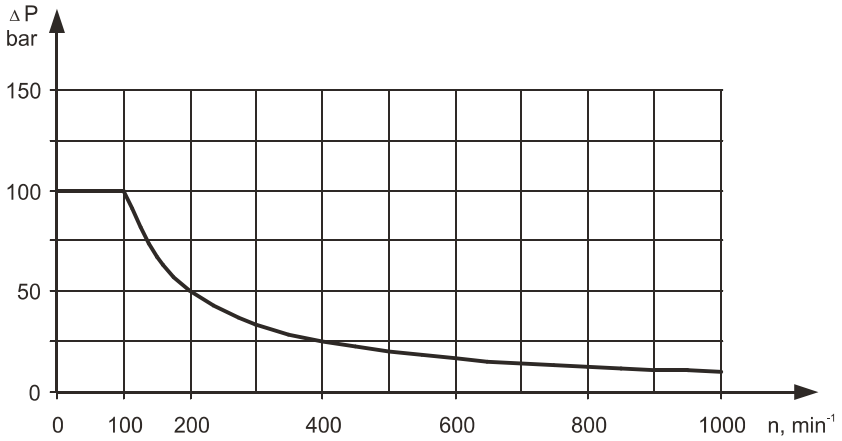
The shaft seal pressure never exceeds the pressure in the return line.



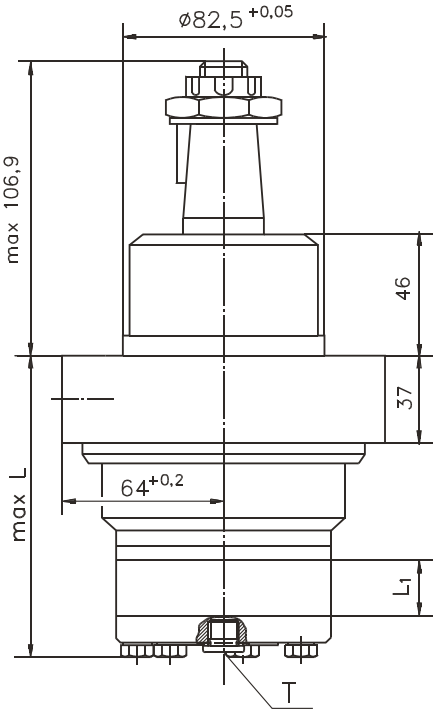
RW... motors with drain connection:

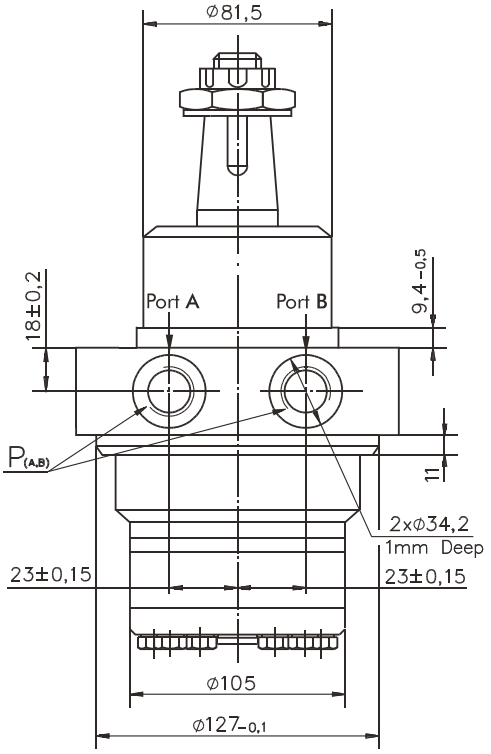
The shaft seal pressure equals the pressure in the drain line.





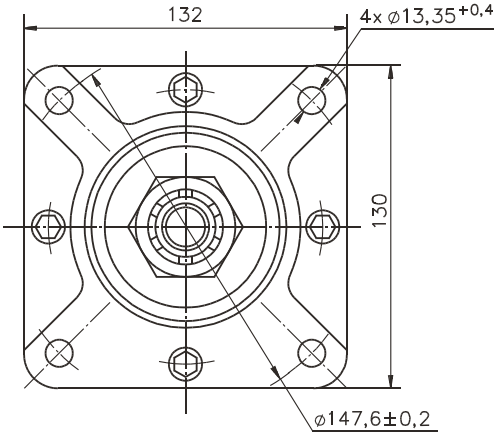
DIMENSIONS AND MOUNTING DATA



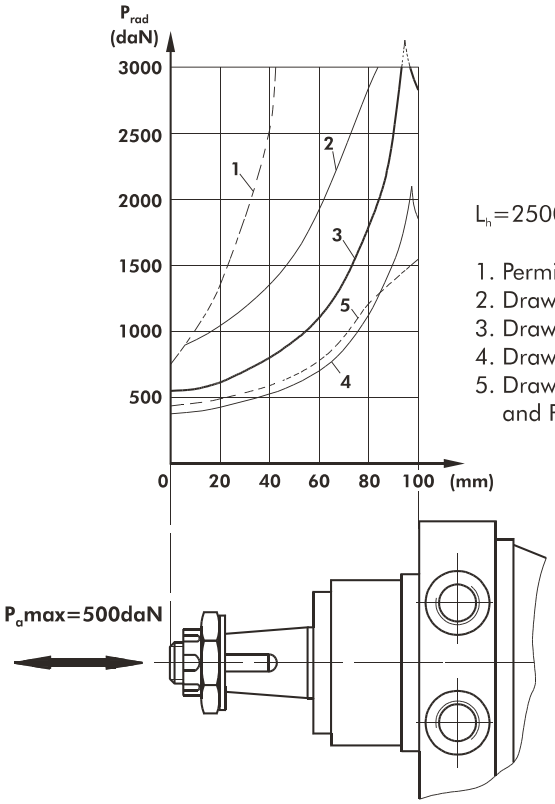


$P_{(A,B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm depth
T : G1/4 or M14x1,5 - 12 mm depth (plugged)

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**



Permissible Shaft Loads



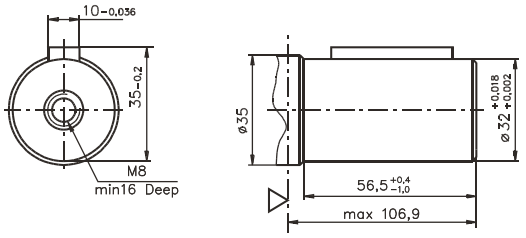
L_h=2500 h

1. Permissible radial shaft load
2. Drawing by n= 50 min^{-1}
3. Drawing by n=200 min^{-1}
4. Drawing by n=800 min^{-1}
5. Drawing by n=200 min^{-1} and $P_a$max=500 daN

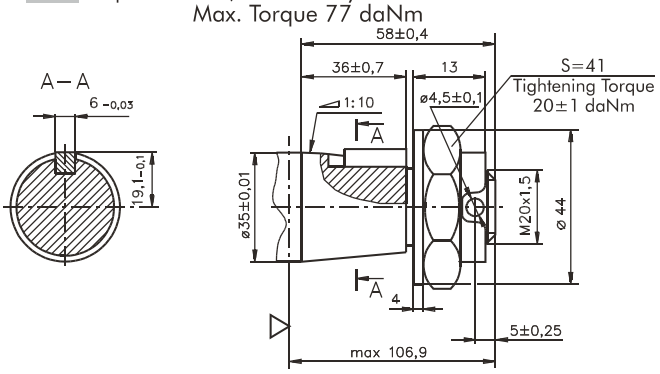
Type	L, mm	L_1, mm
RW 50	108,0	9,0
RW 80	113,0	14,0
RW 100	116,5	17,4
RW 125	121,0	21,8
RW 160	127,0	27,8
RW 200	134,0	34,8
RW 250	142,5	43,5
RW 315	154,0	54,8
RW 400	168,5	69,4

SHAFT EXTENSIONS

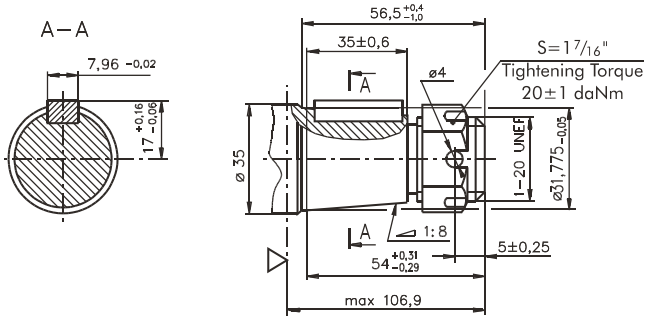
CB - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



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



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



▽ - Motor Mounting Surface

ORDER CODE

	1	2	3	4	5	6
R W						

Pos.1 - 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.2 - Shaft Extensions*

CB	- ø32 straight, Parallel key A10x8x45 DIN6885
KB	- ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
OB	- ø1¼" tapered1:8, Parallel key 5/16"x5/16"x1¼" BS46

Pos. 3 - Drain Port

omit	- with drain port
1	- without drain port

Pos. 4 - Ports

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

Pos. 5 - Special Features (see page 53)

Pos. 6 - Design Series

omit - Factory specified

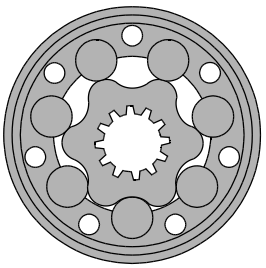
NOTE: * The permissible output torque for shafts must not be exceeded!

The hydraulic motors are mangano-phosphatized as standard.

HYDRAULIC MOTORS HW

APPLICATION

» Conveyors
» Feeding mechanism of robots and manipulators
» Metal working machines
» Textile machines
» Machines for agriculture
» Food industries
» Grass cutting machinery etc.



CONTENTS

OPTIONS

» Model- Spool valve, roll-gerotor
» Wheel mount
» Shafts- straight, splined and tapered
» BSPP ports
» Other special features

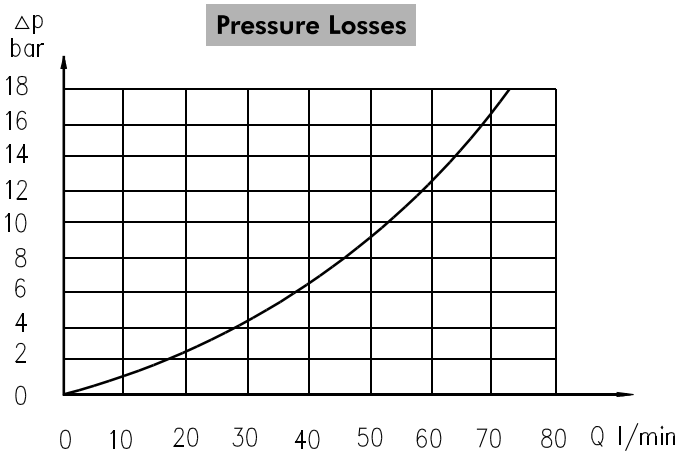
GENERAL

Displacement, [cm^3/rev.]	126÷550
Max. Speed, [RPM]	136÷380
Max. Torque, [daNm]	35÷96
Max. Output, [kW]	9÷17,6
Max. Pressure Drop, [bar]	125÷205
Max. Oil Flow, [l/min]	45÷75
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



HW MOTORS

SPECIFICATION DATA

Type		HW						
		125	160	200	235	250	300	315
Displacement, [cm^3/rev.]		126	157,8	201,3	235,3	252	300	314,9
Max. Speed,	cont.	357	380	348	298	298	250	238
[RPM]	int.*	476	475	422	361	357	300	286
Max. Torque	cont.	35	44	55	64,5	69	81	85
[daNm]	int.*	38,5	48	60	70	75	89	93
Max. Output,	cont.	16,2	17,6	17,4	17	16,8	16,5	16,4
[kW]	int.*	19,8	21,6	19,6	19,2	18,7	18,7	18,7
Max. Pressure	cont.	205	205	205	205	205	205	205
Drop, [bar]	int.*	225	225	225	225	225	225	225
Max. Oil Flow	cont.	45	60	70	70	75	75	75
[l/min]	int.*	60	75	85	85	90	90	90
Max. Inlet	cont.	210	210	210	210	210	210	210
Pressure, [bar]	int.*	250	250	250	250	250	250	250
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	10	10	10	10
Min. Starting Torque	at max. press. drop cont.	28,7	36	41,5	52,8	56,5	66,4	69,7
[daNm]	at max. press. drop int.*	31,5	39,3	49,2	57,4	61,5	72,9	76,2
Min. Speed**, [RPM]		10	10	10	10	10	10	10
Weight, avg. [kg]		14,3	14,6	15,3	15,7	15,9	16,3	16,5

* Intermittent operation: the permissible values may occur for max. 10% of every minute.
** For speeds of 10 RPM or lower, consult factory or your regional manager.

1. Intermittent speed and intermittent pressure drop must not occur simultaneously!
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommended 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 mm^2/s at operating temperatures.
5. Recommended maximum system operating temperature - 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 min.

HW MOTORS

SPECIFICATION DATA

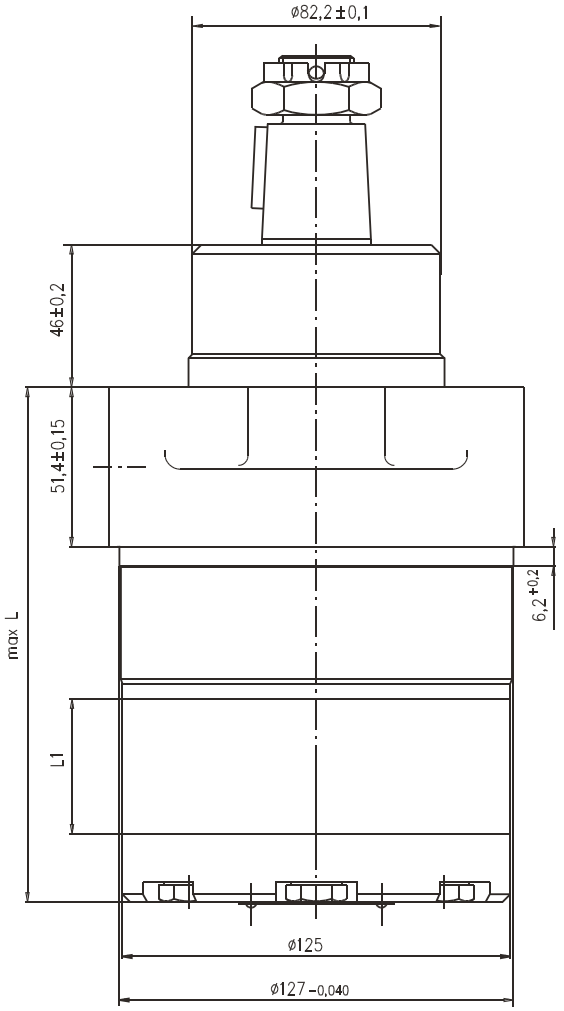
Type		HW						
		350	370	400	470	500	535	550
Displacement, [cm^3/rev.]		347,8	369,2	396,8	470,6	502,4	535	550
Max. Speed,	cont.	216	203	189	159	149	140	136
[RPM]	int.*	259	244	227	191	179	168	164
Max. Torque	cont.	94	96	96	92	91	90	89
[daNm]	int.*	102	105	98	101	101	104	103
Max. Output,	cont.	16,5	13,2	12,5	10,6	10,8	9,4	9,0
[kW]	int.*	18,7	17,3	16,7	13,6	13,9	12,8	12,4
Max. Pressure	cont.	205	200	185	150	140	130	125
Drop, [bar]	int.*	225	225	190	165	155	150	145
Max. Oil Flow	cont.	75	75	75	75	75	75	75
[l/min]	int.*	90	90	90	90	90	90	90
Max. Inlet	cont.	210	210	210	210	210	210	210
Pressure, [bar]	int.*	250	250	250	250	250	250	250
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	10	10	10	10
Min. Starting Torque	at max. press. drop cont.	77	79,5	78,7	75,4	74,6	73,8	72,9
[daNm]	at max. press. drop int.*	83,6	86	80,3	82,8	82,8	85,2	84,4
Min. Speed**, [RPM]		8	8	8	8	8	5	5
Weight, avg. [kg]		16,9	17,1	17,5	18,3	18,6	19,0	19,1

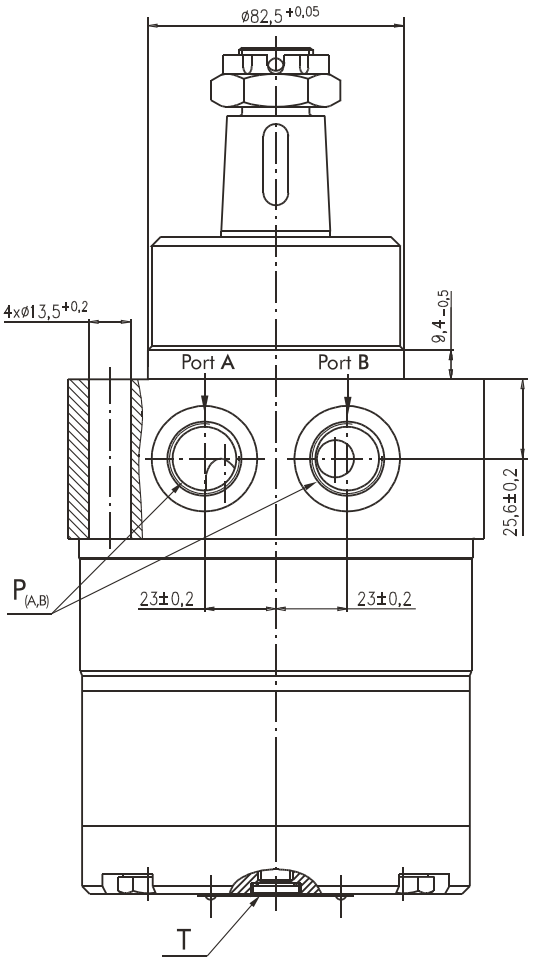
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

** For speeds of 10 RPM or lower, consult factory or your regional manager.

1. Intermittent speed and intermittent pressure drop must not occur simultaneously!
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommended 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 mm^2/s at operating temperatures.
5. Recommended maximum system operating temperature - 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 min.

DIMENSIONS AND MOUNTING DATA

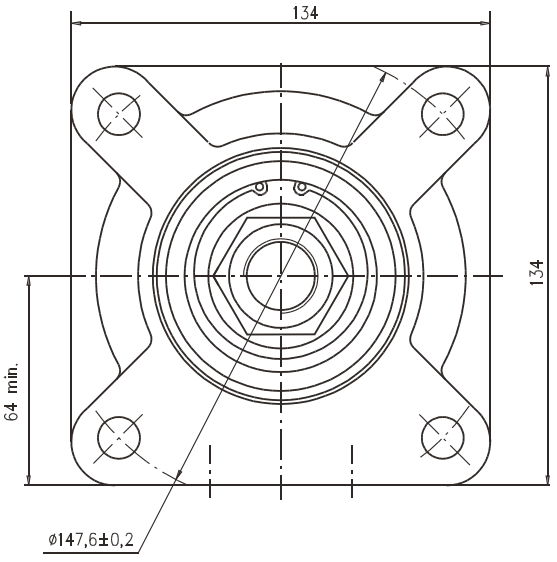




Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

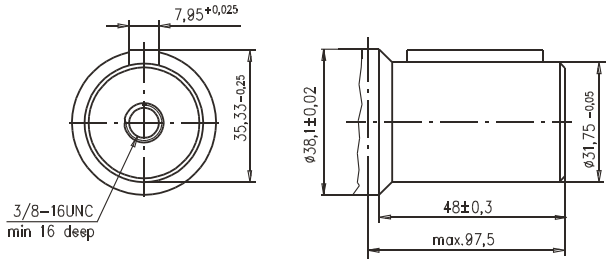
Type	L, mm	L_1, mm
HW 125	140,5	17,4
HW 160	145,0	21,8
HW 200	151,0	27,8
HW 235	155,5	32,5
HW 250	158,0	34,8
HW 300	164,5	41,4
HW 315	166,5	43,5
HW 350	171,0	48,0
HW 370	174,0	51,0
HW 400	178,0	54,8
HW 470	188,0	65,0
HW 500	192,5	69,4
HW 535	197,0	74,1
HW 550	199,0	76,0



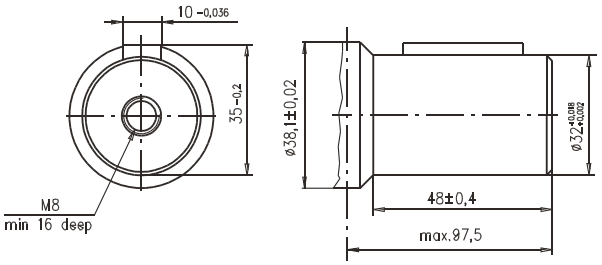
	Versions	
	2	4
$P_{(A,B)}$	2xG½	2x⅞-14UNF, O-ring
T	G ¼	7/16-20UNF, O-ring

SHAFT EXTENSIONS

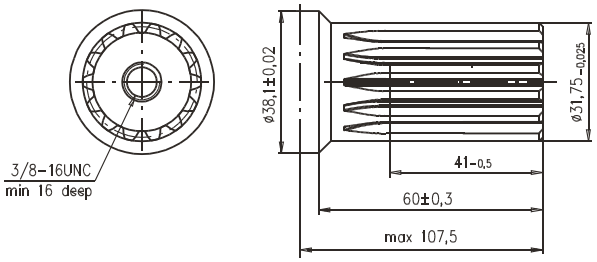
K - 1 1/4" straight, Parallel key 5/16"x5/16"x1 ½" BS46
Max. Torque 77 daNm



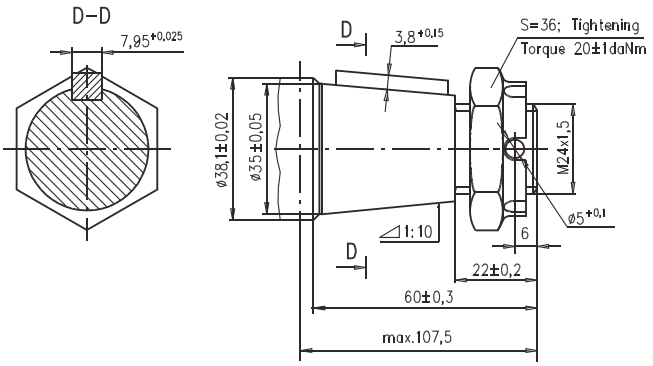
M - ø32 straight, Parallel key A10x8x32 DIN 6885
Max. Torque 77 daNm



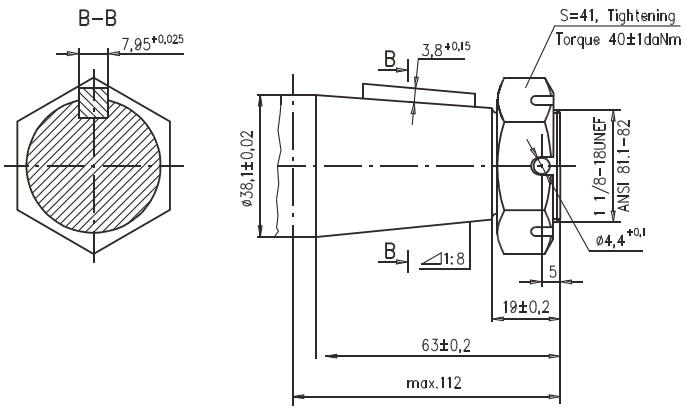
L - ø1¼" splined 14T, DP12/24 ANSI B92.1-1976 Norm
Max. Torque 77 daNm



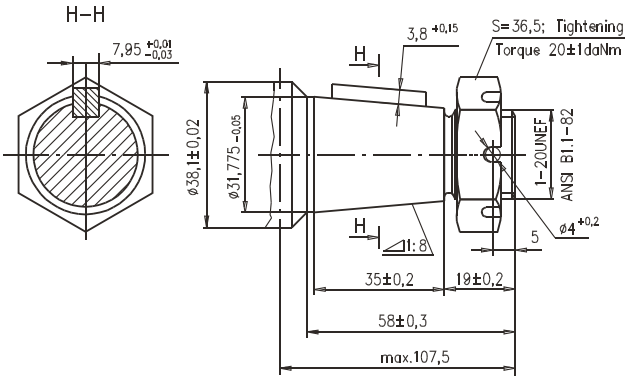
KB - ø35 tapered 1:10 , Parallel key 5/16"x5/16"x1¼" BS46
Max. Torque 95 daNm



T - 1 ½ " tapered 1:8 , Parallel key 5/16"x5/16"x1 ¼" BS46
Max. Torque 120 daNm



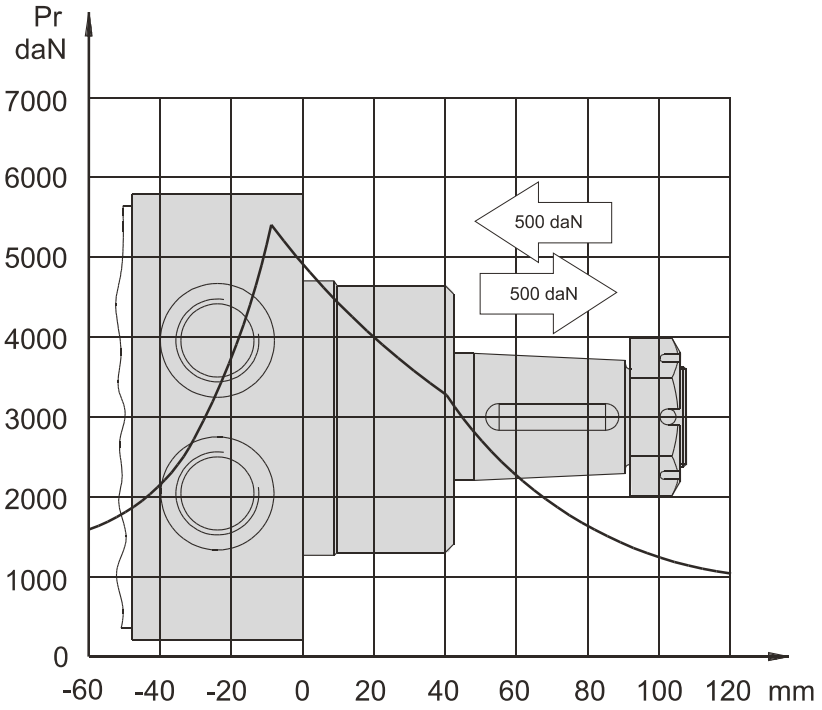
R - 1 ¼ " tapered 1:8 , Parallel key 5/16"x5/16"x1" BS46
Max. Torque 77 daNm



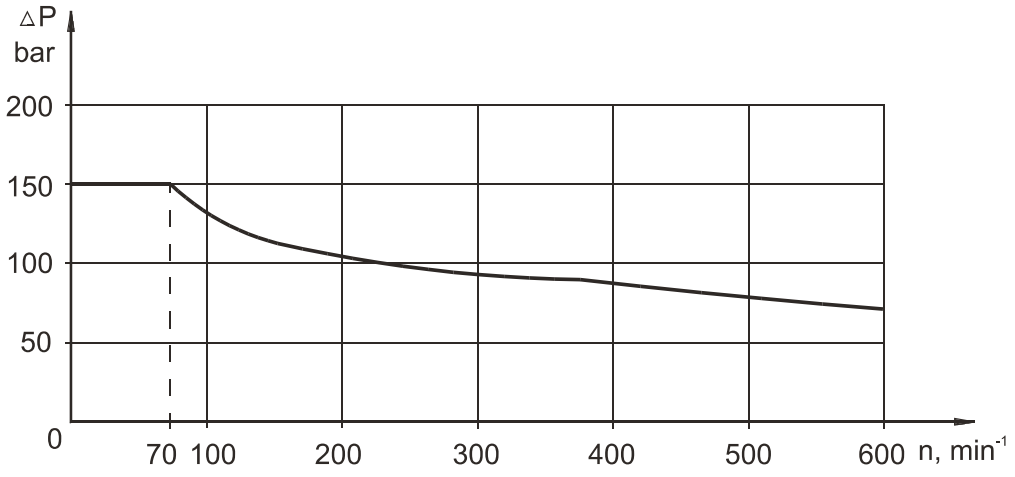
▽ - Motor Mounting Surface

PERMISSIBLE SHAFT LOADS

The curve applies to a B10 bearing life of 2000 hours at 100 RPM.



MAX. PERMISSIBLE SHAFT SEAL PRESSURE



HW MOTORS

ORDER CODE

	1	2	3	4	5
HW					

Pos.1 - Displacement code

125	- 126,00 [cm³/rev]
160	- 158,00 [cm³/rev]
200	- 201,30 [cm³/rev]
235	- 235,00 [cm³/rev]
250	- 252,00 [cm³/rev]
300	- 300,00 [cm³/rev]
315	- 314,90 [cm³/rev]
350	- 347,80 [cm³/rev]
370	- 369,00 [cm³/rev]
400	- 396,80 [cm³/rev]
470	- 470,60 [cm³/rev]
500	- 502,40 [cm³/rev]
535	- 536,00 [cm³/rev]
550	- 550,00 [cm³/rev]

Pos.2 - 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. 3 - Ports

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

Pos. 4 - Special Features (see page 53)

Pos. 5 - Design Series

omit - Factory specified

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

The hydraulic motors are mangano-phosphatized as standard.