HYDRAULIC MOTORS OSY

NEW

OSY is the new hydraulic motor in a family of "disc valve" series which has dimensions and mounting data the same as at hydraulic motors type OS.

This motor is described with 15÷20% hidger technical data-max. Torque and max. Pressure drop, thereby higher power. This makes it suitable for vehicles with greater loads and speed drop.

CONTENTS

OPTIONS

- » Model- Disc valve, roll-gerotor
- » Flange and wheel mount;
- » Short motor;
- » Side and rear ports
- » Shafts- straight, splined and tapered;
- » Other special features.

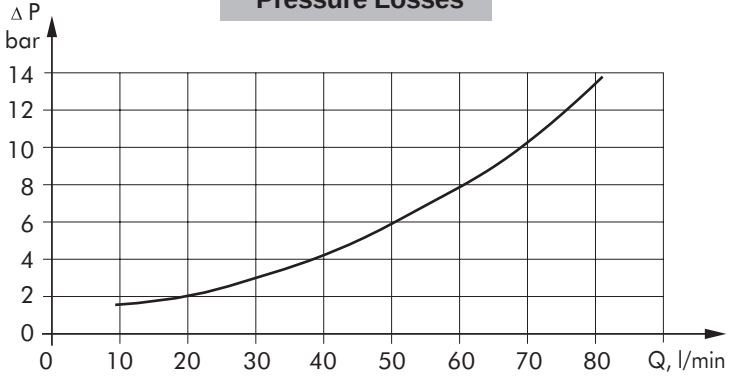
GENERAL

Displacement, [cm^3/rev.]	159,7÷397
Max. Speed, [RPM]	470÷185
Max. Torque, [daNm]	46,1÷90
Max. Output, [kW]	11÷19,5
Max. Pressure Drop, [bar]	205÷160
Max. Oil Flow, [l/min]	75
Min. Speed, [RPM]	8÷5
Permissible Shaft Loads, [daN]	P_{rad}=1500; 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



SPECIFICATION DATA FOR OSY

Type		OSY 160	OSY 200	OSY 250	OSY 315	OSY 400
Displacement [cm³/rev.]		159,7	200	250	314,9	397
Max. Speed,	cont.	470	375	300	240	185
[RPM]	Int.*	560	450	360	285	225
Max. Torque	cont.	46,1	58,0	72,5	92,2	90,0
[daNm]	Int.*	51,5	64,5	80,6	96,0	97,0
Max. Output	cont.	19,5	19,5	18,5	16	11,0
[kW]	int.*	24,0	24,0	23	17,5	12
Max. Pressure Drop	cont.	205	205	205	205	160
[bar]	Int.*	225	225	225	220	175
Max. Oil Flow	cont.	75	75	75	75	75
[l/min]	Int.*	90	90	90	90	90
Max. Inlet Pressure	cont.	225	225	225	225	225
[bar]	Int.*	250	250	250	250	250
Max. Return Pressure	cont. 0-100 RPM	100	100	100	100	100
without Drain Line or	cont. 100-300 RPM	50	50	50	50	50
Max. Pressure	cont. >300 RPM	20	20	-	-	-
in Drain Line, [bar]	Int.* 0-max. RPM	100	100	100	100	100
Max. Return Pressure	cont.	140	140	140	140	140
with Drain Line, [bar]	Int.*	175	175	175	175	175
Max. Starting Pressure with Unloaded Shaft, [bar]		8	8	8	8	8
Min. Starting Torque	at max. press. drop cont.	36,9	46,2	58,0	73,8	72,0
[daNm]	at max. press. drop Int.*	40,5	50,7	63,6	79,2	78,7
Min. Speed, [RPM]**		8	6	6	5	5
Weight, [kg]	**OSYF**	10,8	11,2	11,7	12,4	13,3
For rear ports:	**OSYW**	11,3	11,7	12,2	12,9	13,8
+0,400 kg	**OSYQ**	11,2	11,6	12,1	12,8	13,7

* 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.

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 13mm²/s at operating temperatures.
5) Recommended maximum system operating temperature is 82°C.
6) To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

SPECIFICATION DATA for OSY...LSV

Low Speed Valve (LSV) "LSV" Series hydraulic motors have been designed to operate with normal pressure drop and to ensure smooth run at low speed (up to 200 min $^{-1}$), as the best security for operation is guaranteed at frequency of rotation 20 ÷ 50 min $^{-1}$. They have an increased starting pressure drop and are not recommended for using at pressure less than 40 bars.

Look at specification data for hydraulic motors standard version. The modification concerns only the following parameters : maximum speed , maximum output, maximum Oil flow and maximum starting pressure.

Type		OSY 160	OSY 200	OSY 250	OSY 315	OSY 400
Max. Speed,	Cont.	200	200	200	200	185
[RPM]	Int.*	250	250	250	250	225
Max. Output	Cont.	8,0	8,0	8,8	10,6	9,5
[kW]	Int.*	12,2	12,4	13,4	15,0	12,8
Max. Oil Flow	Cont.	32	40	50	65	75
[l/min]	Int.*	40	50	62,5	80	90
Max. Starting Pressure with Unloaded Shaft, [bar]		15	15	15	15	15

SPECIFICATION DATA for OSY...LL

Low Leakage (LL) "LL" Series hydraulic motors have been designed to operate at the whole standard range of working conditions (pressure drop and frequency of rotation) , but with considerable decreased volumetric losses in the drainage ports. Their main purpose is to operate as series-connected motors in hydraulic systems.

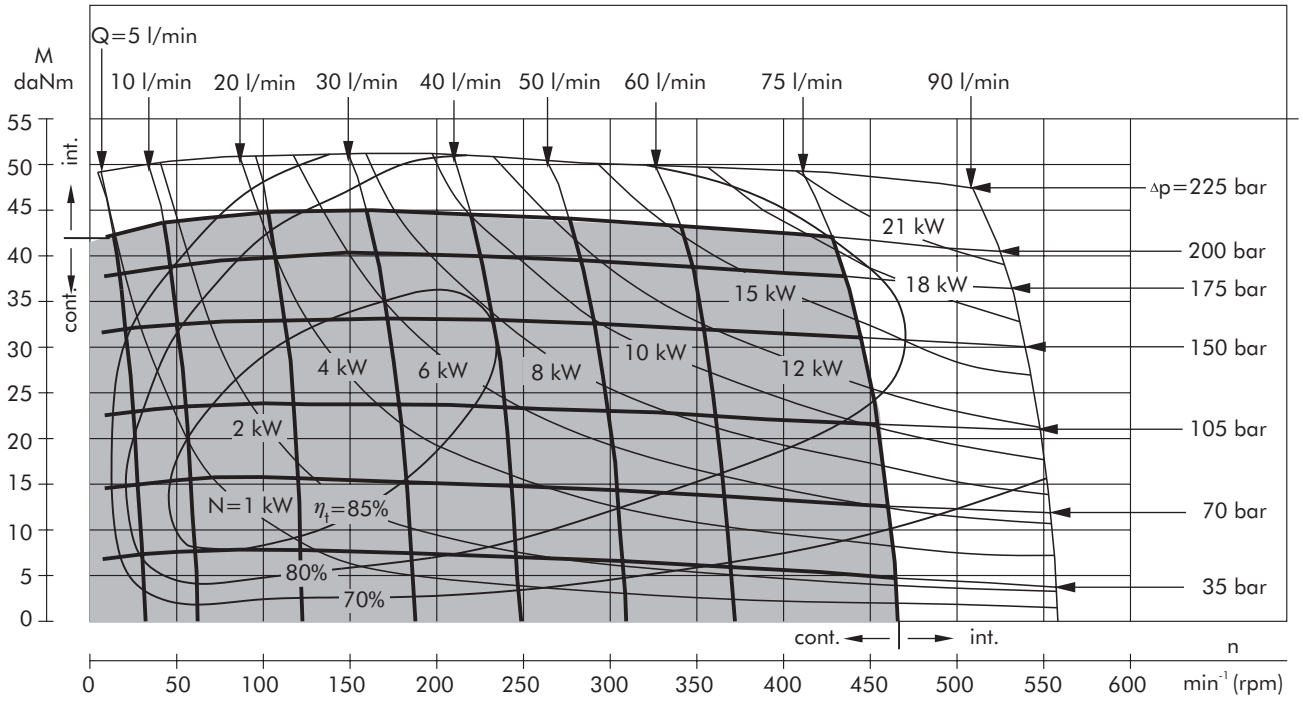
For this version is permissible decreasing of the maximal torque with up to 5% (at middle speed) and up to 10% (at high speed) in comparison to the standard versions of motors.

Look at specification data for hydraulic motors standard version. The modification concerns only the parameters: maximum torque, maximum output, minimum starting torque.

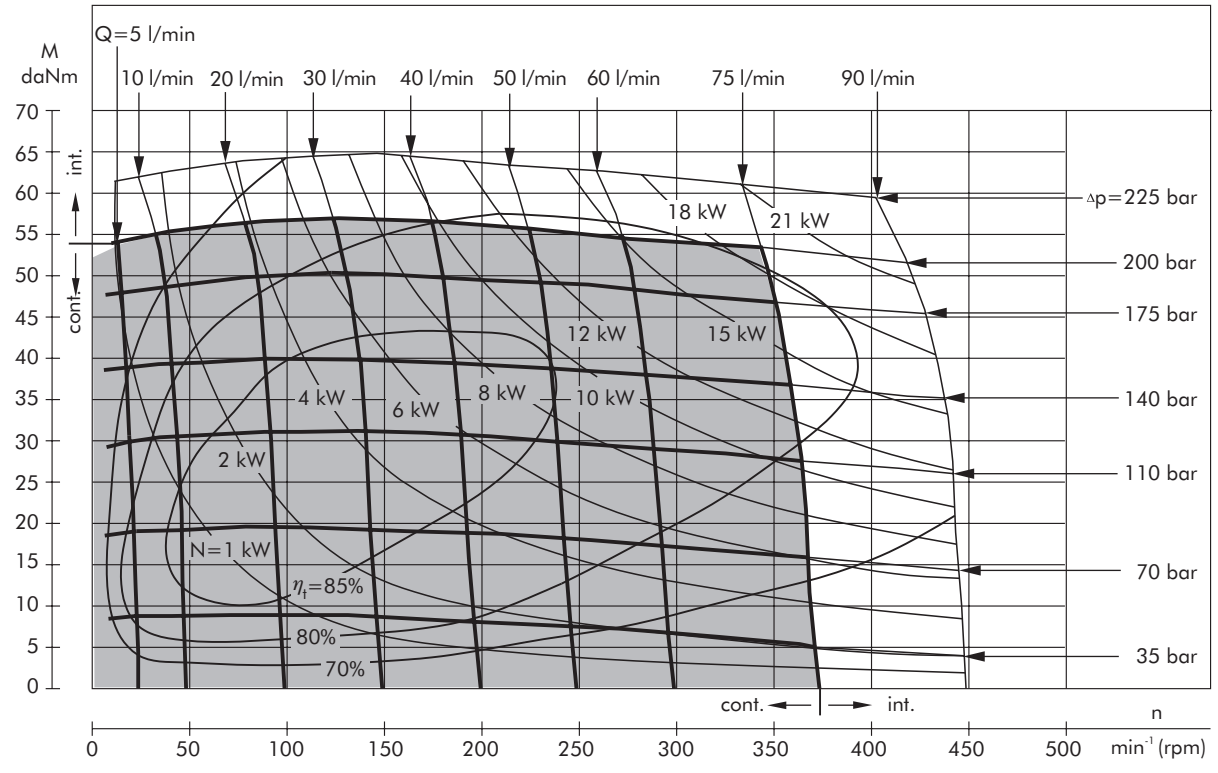
Type		OSY 160	OSY 200	OSY 250	OSY 315	OSY 400
Max. Torque	Cont.	43,8	55,1	68,8	87,6	85,5
[daNm]	Int.*	48,9	61,3	76,6	91,2	92,2
Max. Output	Cont.	17,6	17,6	16,7	14,7	10,0
[kW]	Int.*	21,8	21,8	20,7	15,8	10,9
Min. Starting Torque	Cont.	35,9	45,1	56,4	71,8	70,2
[daNm]	Int.*	39,6	49,7	62,0	73,9	74,7

FUNCTION DIAGRAMS

OSY 160



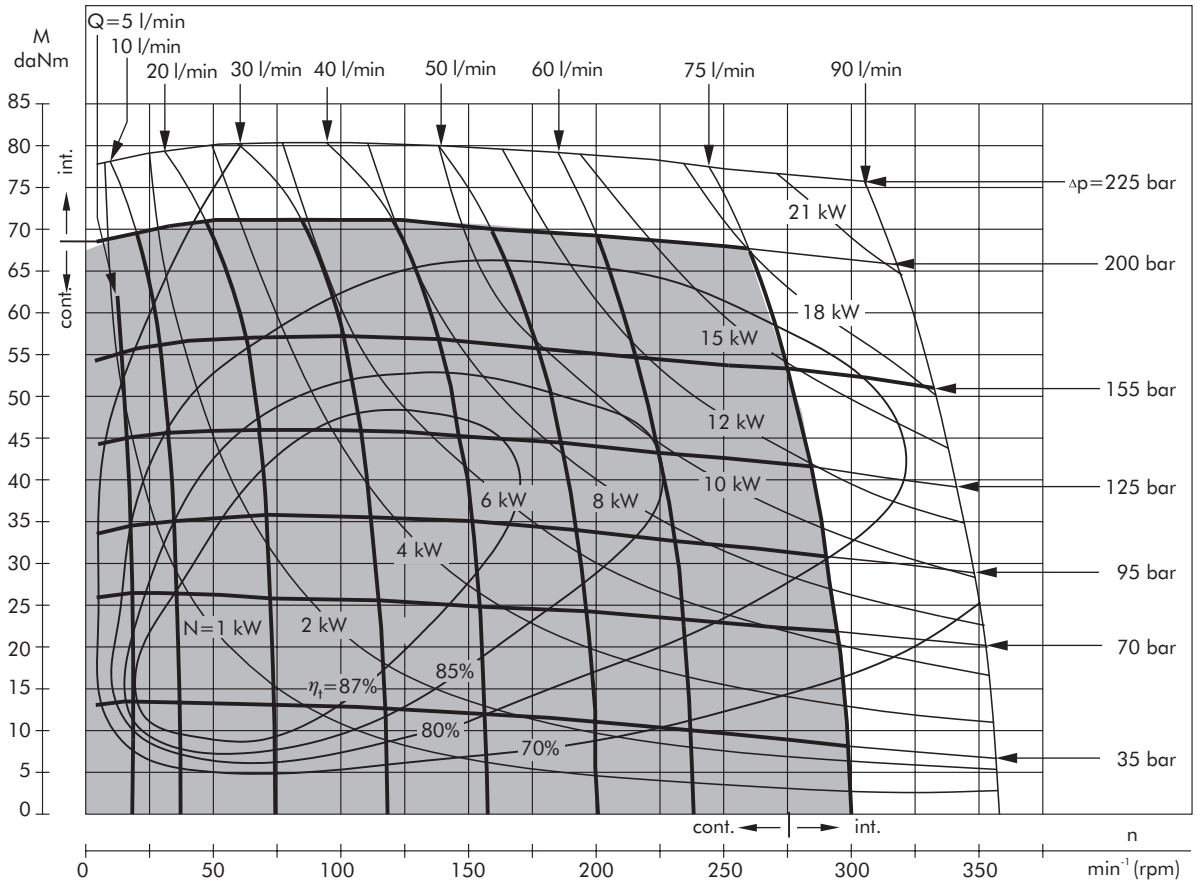
OSY 200



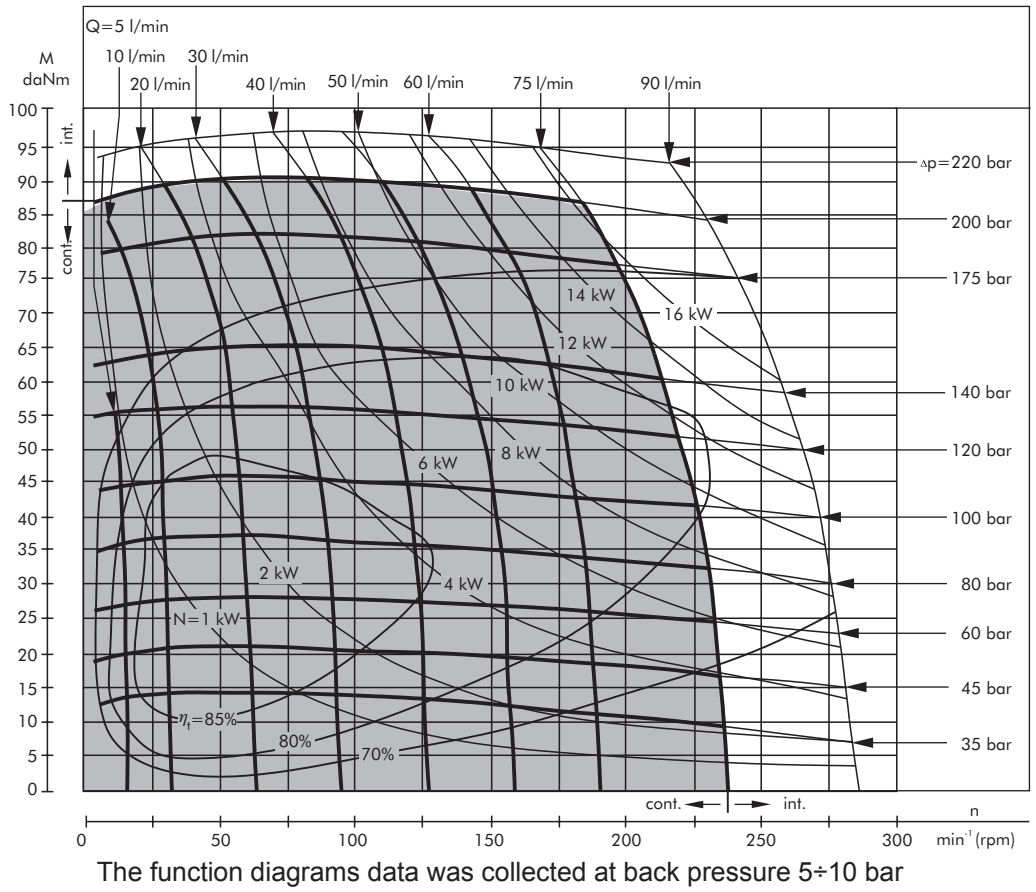
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

OSY 250



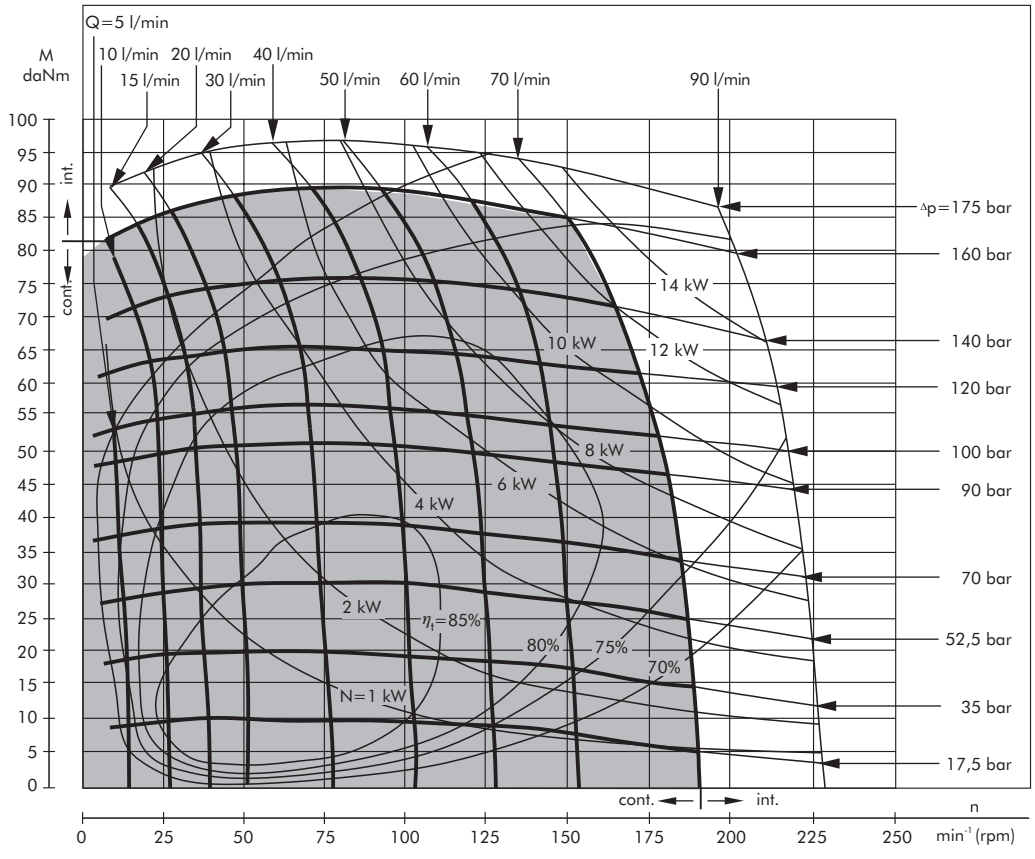
OSY 315



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

FUNCTION DIAGRAMS

OSY 400

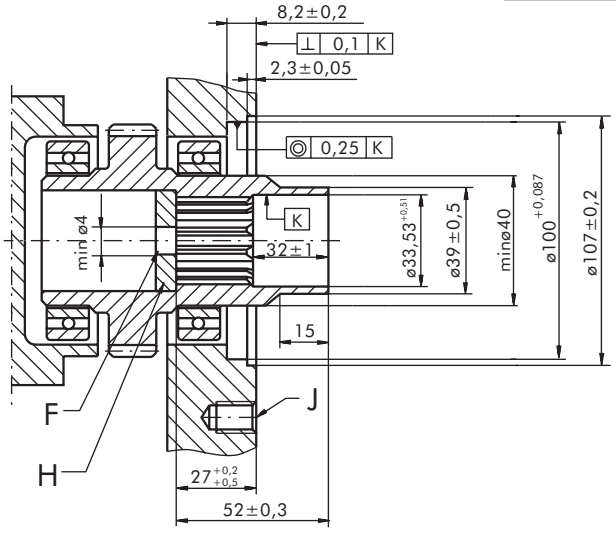


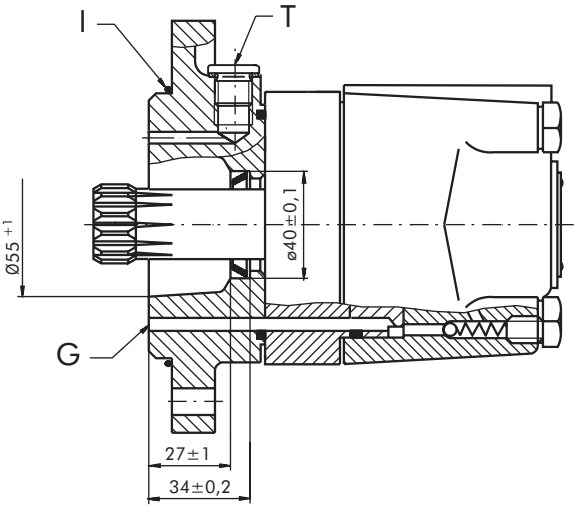
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

The dimensions, mounting data, shaft extensions and permissible shaft loads are the same as at hydraulic motors type OS except following below.

DIMENSIONS OF THE ATTACHED COMPONENT

For OSYS

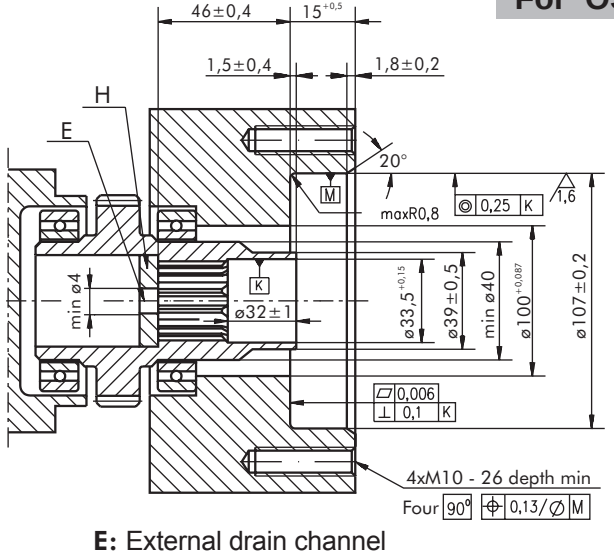


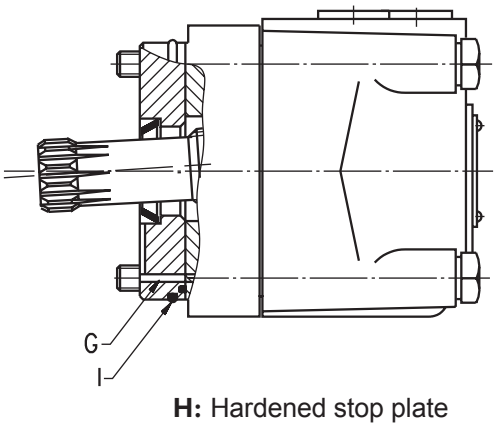


F: Oil circulation hole
G: Internal drain channel
H: Hardened stop plate
I: O- Ring 100x3mm

J: 4xM10-16 mm depth (for OSS)
N: Needle bearing 1 3/8"x1¾"
T: Drain connection G1/4 or M14x1,5

For OSYV





E: External drain channel
G: Internal drain channel

H: Hardened stop plate
I: O- Ring 85x2mm

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 OSYS at the drain port of the motor;
- For OSYV 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.

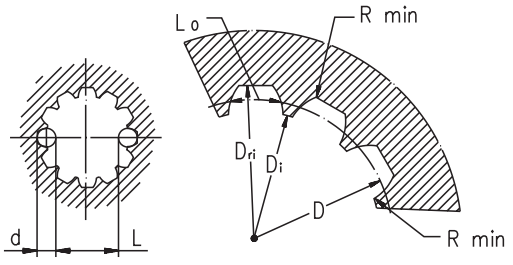
The drain line must be possible for oil to flow freely between motor and attached component and must be led to the tank. The maximum pressure in the drain line is limited by the attached component and its seal.

INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

Standard 12 DP 10/20 ANSI B92.1-1976, class 5
[m=2.54; corrected x.m=+0,4]

Fillet Root Side Fit		mm
Number of Teeth	z	12
Diametral Pitch	DP	10/20
Pressure Angle		30^{O}
Pitch Dia.	D	30,48
Major Dia.	Dri	$33,2^{+0,4}$
Minor Dia.	Di	$27,8^{+0,1}$
Space Width [Circular]	Lo	$4,45^{+0,071}$
Fillet Radius	Rmin	0,2
Max. Measurement between Pin	L	$22,72^{+0,17}$
Pin Dia.	d	5±0,001

Above are when hardened



Hardering Specification:
HRC 60±2
Effective case depth (HRC 52) 0,7±0,2 mm
Material: 20 MoCr4 DIN 17210 or better

ORDER CODE

	1	2	3	4	5	6	7	8	9
O S Y									

Pos.1 - Mounting Flange

omit - SAE A mount, four holes
A - SAE A mount, two holes
F - Magneto mount, four holes
Q - 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 - 159,7 [cm^3/rev]
200 - 200,0 [cm^3/rev]
250 - 250,0 [cm^3/rev]
315 - 314,9 [cm^3/rev]
400 - 397,0 [cm^3/rev]

Pos. 4 - Shaft Extensions*

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 ANSI B92.1-1976

Pos. 5 - Ports

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

Pos. 6 - Special Features (see Specification data page OSY - 03)

omit - none
LL -Low Leakage
LSV - Low Speed Valve

Pos. 7 - Rotation

omit - Standard Rotation
R - Reverse Rotation

Pos. 8 - Option (Paint)**

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

Pos. 9 - 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.