

# Bent Axis Motors - Installation Guide



## INSTALLATION GUIDE

### 1. DIRECTION OF ROTATION AND SHAFT LOADING

The motors can operate in both directions of rotation. The illustration shows the port selection in relation to the rotation. The service life of the motor largely depends on the service life of the bearings. These are affected by the operating conditions such as speed, pressure, oil viscosity, degree of purification. External loading of the shaft, its size, direction and location also affects the service life of the bearings. Optimal angle of engagement is 20°. If a calculation of bearing service life is required for special applications,

### M. FEED PRESSURE

In certain applications the motor can operate as a pump, for example, vehicles on slopes. In such cases one must ensure that there is sufficient flow and feed pressure to prevent cavitation and noise.

### o. HYDRAULIC OIL

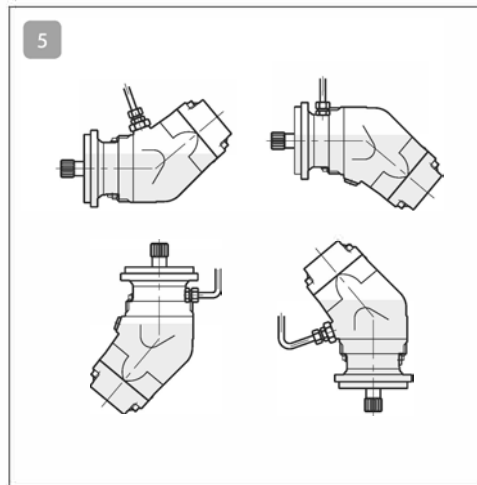
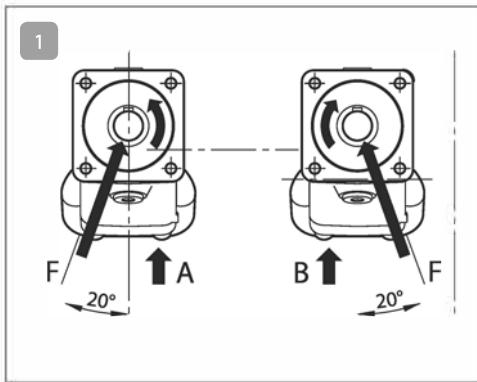
High performance oil meeting the specifications ISO type HM, DIN 51524-2HLP or better must be used. Min. viscosity 10 cSt is required to guarantee lubrication. Ideal viscosity is 20-40 cSt. In order not to reduce the viscosity of the oil below the recommended level, the system temperature should not exceed 60°C.

### r. FILTERING

Cleanliness ISO norm 4406, code 18/16/13 is recommended.

### t. DRAINAGE

Before start up, the motor housing should be filled to at least 50% with hydraulic oil. The drainage hose must be connected to the drainage outlet positioned highest on the motor. The other end must be connected below the oil level in the tank. Max. temperature of the drainage oil is 75°C for Nitrile shaft seals and 90°C for Viton shaft seals. Flushing of the motor housing may be required to keep the drainage oil at the recommended temperature.



\*Flushing is not applicable for DIN motors.

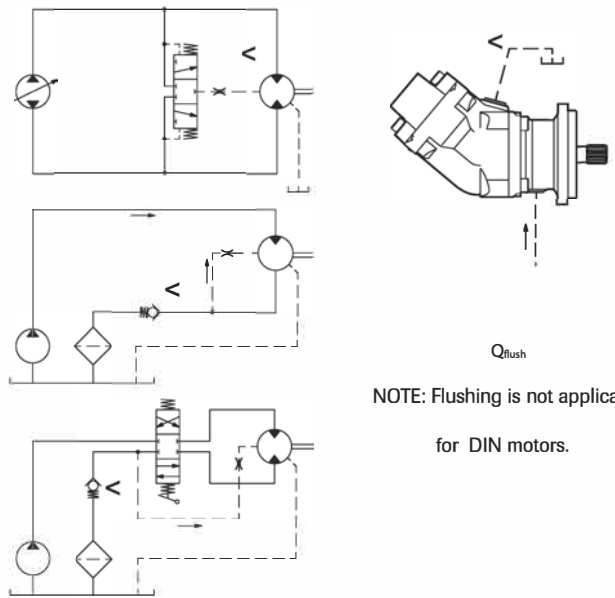
### Guideline for housing flushing:

Motor M	Flushing l/min	Cont. rpm
010-034	2-8	í 2800
040-064	4-10	í 2500
084-130	6-12	í 2200

5a. Max. permitted housing pressure depends on the selection of motor, shaft seal and rpm. See the table below for ISO respectively SAE motors.

N	Nitrile
H	Nitrile, high pressure
V	Viton, high pressure

5b. Housing flushing can be built up with the help of a flushing valve ① or taken directly from the return line. When the return pressure is too low this is compensated for by a counter pressure valve ②. The tank line is connected to the highest point as in the figure ③.



NOTE: Flushing is not applicable for DIN motors.

Code		Max. housing pressure MPa at rpm
Kod		Max hustryck MPa vid varv/min
Codice	Temp.	Max press. int. MPa giri/min
Kode		Max. Gehäusedruck MPa bei U/min
Koodi		Maks. kotelon paine MPa pyörimisnopeudella r/min
Código		Presión máxima en carcasa, MPa a rpm
Code	Temp.	Pression maximale dans le carter - bar. Vitesse moteur - tr/min

Motor	M-ISO	°C	1000	2000	3000	4000	5000	6000	7000	8000	9000
010-034	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35	0.31	0.27
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08	0.07	0.06
040-064	N	75	0.55	0.27	0.18	0.14	0.11	0.09	0.08		
	H	75	2.46	1.23	0.82	0.61	0.49	0.41	0.35		
	V	90	0.55	0.27	0.18	0.14	0.11	0.09	0.08		
084-130	N	75	0.38	0.19	0.13	0.10	0.08	0.06			
	H	75	1.72	0.86	0.57	0.43	0.34	0.29			
	V	90	0.38	0.19	0.13	0.10	0.08	0.06			

Motor	M-SAE	°C	1000	1500	2000	3000	4000	5000
012-034 B	N	75	0.64	0.42	0.32	0.21	0.16	0.12
	H	75	2.87	1.91	1.43	0.96	0.72	0.52
	V	90	0.64	0.42	0.32	0.21	0.16	0.12
040-108 C	N	75	0.55	0.36	0.27	0.18	0.14	0.11
	H	75	2.46	1.64	1.23	0.82	0.61	0.51
	V	90	0.55	0.36	0.27	0.18	0.14	0.11
084-130 D	N	75	0.35	0.23	0.17	0.12		
	H	75	1.56	1.04	0.78	0.52		
	V	90	0.35	0.23	0.17	0.12		

# Complete Product Range

## Piston Pumps

## Piston Motors

# DIN

DIN 5462 / ISO 14  
8x32x35  
8x32x36  
DIN 6885



**A8PD**



**A9MD**

# ISO

ISO 3019-2 (4 BOLTS)  
DIN 5480 -W25,30,35,40,45  
DIN 6885 -Ø20,25,30,35,40,45



**A8PO**



**A9MO**

# SAE

SAE B2 C4 - SAE D  
SAE J498b  
SAE J 744



**A8PS**



**A9MS**

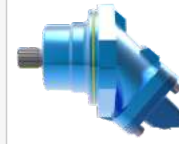
# M2

Fixed Plug-in

DIN 5480 / ISO 3019-2  
W30 - W35 - W40  
M21 - M22 - M23



**A8PL - Dual Flow**



**A9MF - Semi integrated**

# A4

DIN ISO 14  
8x32x36



**A4PP Single Flow**



**A4PL Dual Flow**

# A6

P2 Connection M8x125  
Woodruff key 3x6,5 NF E  
27-653 NF R 124-04  
(2 BOLTS)



**A6HP - High Pressure**



**A7GP - Gear Pump  
A7GM - Gear Motor**

# Contact



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Hydraulic Bent Axis Piston Pumps  
Bent Axis Motors  
Dual Flow Piston Pumps and Gear Pumps...

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