



SAM 010-130 DIN is a series of light weight casing axial piston motors, particularly suitable for mobile hydraulics.

SAM 010-130 DIN is of the bent-axis type with spherical pistons. The design gives a compact motor with few moving parts, high starting torque and high operational reliability. It covers the entire displacement range 0.59 - 7.93 cu in/rev. with maximum pressure 5800 psi. The high level of reliability is due to the choice of materials, hardening methods, surface structures and the quality assured manufacturing process.

Other advantages:

- Corrosion free light metal-housing Smooth operation over the entire speed range
- Smooth operation over the entire speed range
- High efficiency
- Suitable for applications with high angular accelerations due to its high rotary stiffness
- Light weight
- Less heat generation due to better ability to dissipate heat through housing

Versions, main data

Example

SA	M	-	012	W	-	N	-	DL4	-	L35	-	S3	G	-	1	00
Line	1		2	3		4		5		6		7	8		9	10

Line	
SA	Sunfab Aluminium

1. Type	
P	Motor

2. Displacement	
010 012 017 025 034 040 047 056 064 084 090 108 130	

3. Direction of rotation	
W	Independent

4. Shaft seal	
N	Nitrile

5. Mounting flange	
DL4	DIN 4-h (ISO 7653D)

6. Shaft	
L35	DIN 5462 / ISO 14
H35	DIN 5462 / ISO 14 Ø 8.15

7. Connection cover		010 012 017 025 034 040 047 056 064 084 090 108 130
S3	40° Threaded connection	X X X X X X X X X X X X X

8. Connections		010 012 017 025 034 040 047 056 064 084 090 108 130
G	ISO G	X X X X X X X X X X X X X

9. Additional	
1	External drainage

10. Speed Sensor	
00	No Speed Sensor

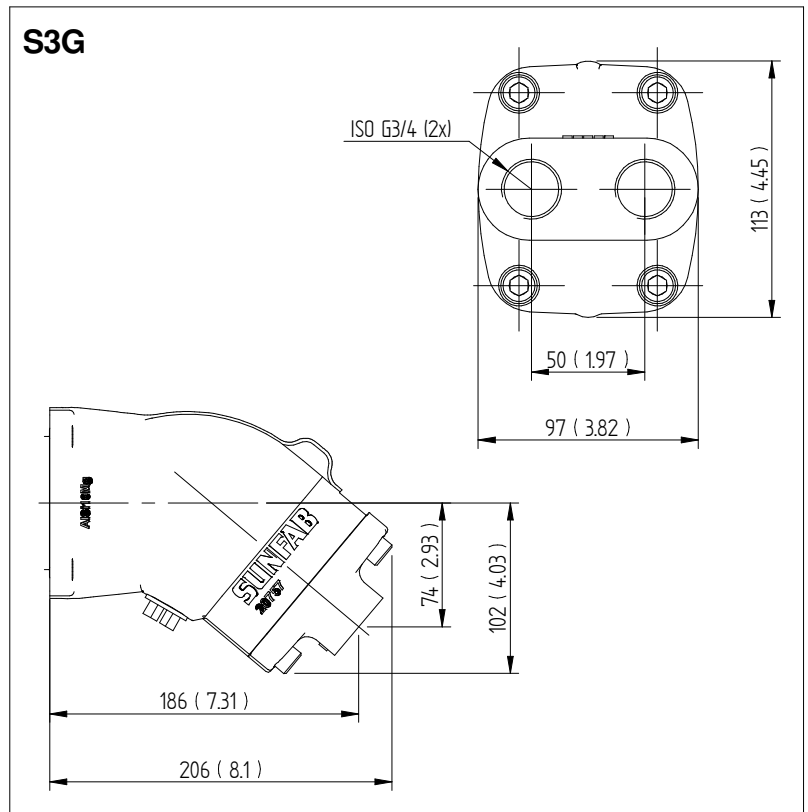
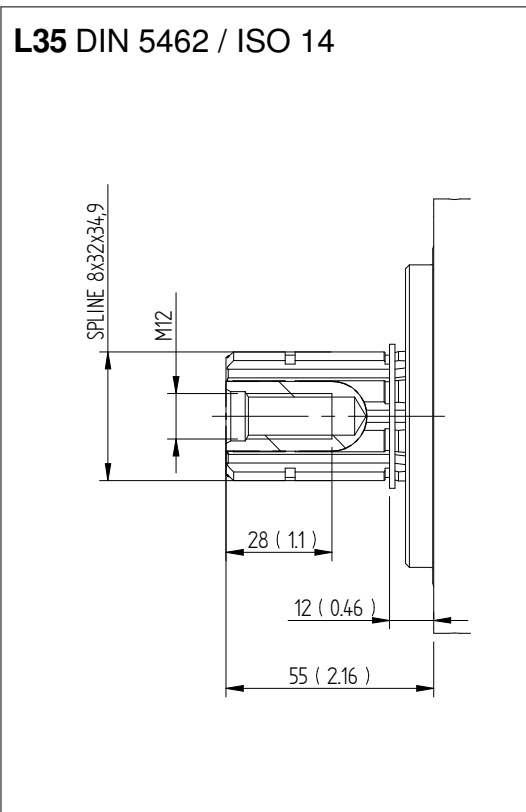
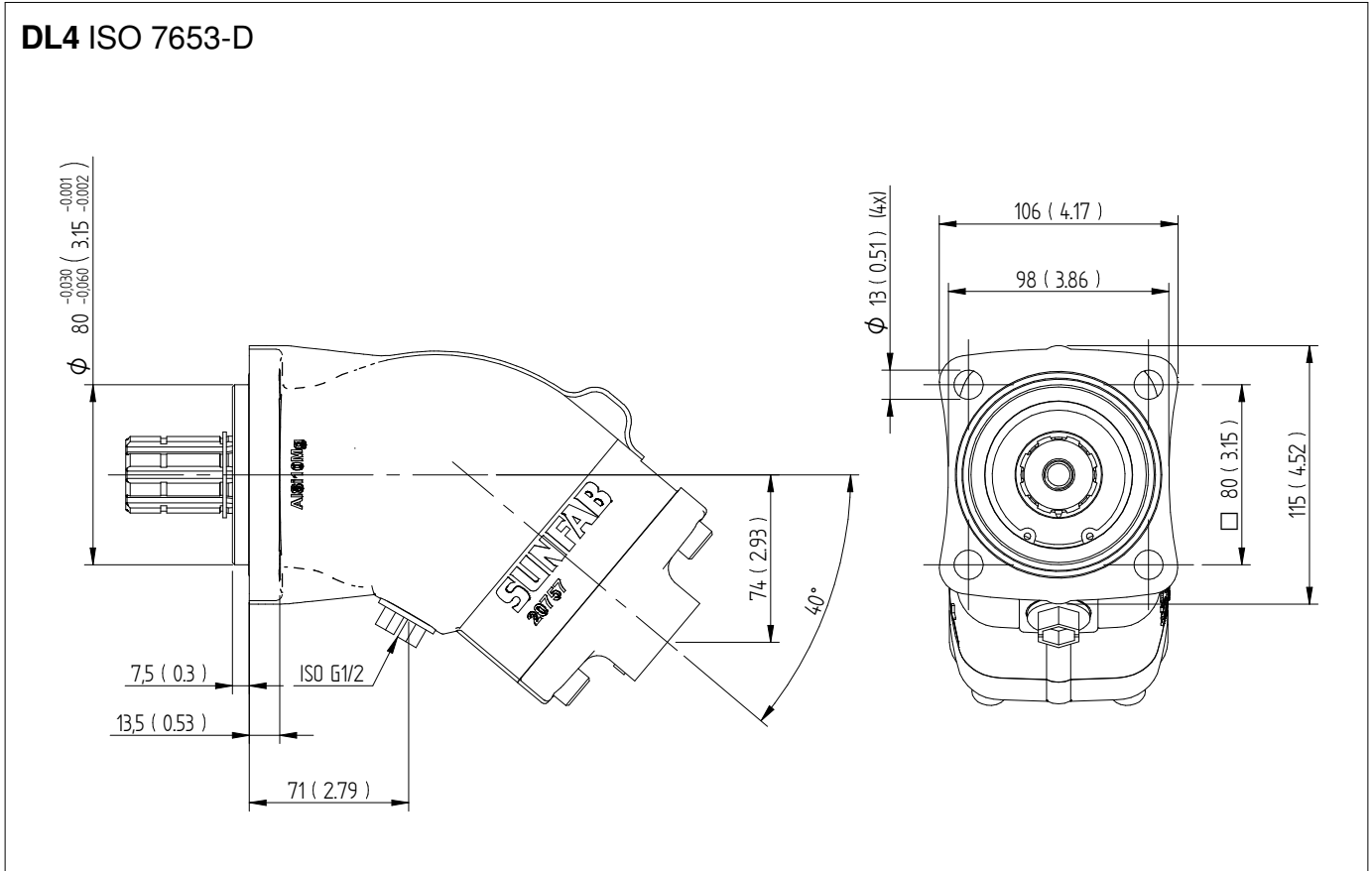
SAM 010-130 DIN		010	012	017	025	034	040	047	056	064	084	090	108	130
Displacement														
cu in/rev		0.59	0.77	1.04	1.55	2.09	2.51	2.87	3.42	3.88	5.10	5.53	6.59	7.93
Working pressure														
psi	<i>max intermittent</i>	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800	4785
	<i>max continuous</i>	5075	5075	5075	5075	5075	5075	5075	5075	5075	5075	5075	5075	4060
Revolutions														
rpm	<i>max intermittent</i>	3000	3000	3000	3000	3000	2500	2500	2500	2500	2000	2000	2000	2000
	<i>max continuous</i>	2400	2400	2400	2400	2400	2000	2000	2000	2000	1600	1600	1600	1600
	<i>min continuous</i>	300	300	300	300	300	300	300	300	300	300	300	300	300
Max power														
hp	<i>max intermittent</i>	19	24	32	48	66	76	87	105	118	125	136	161	166
	<i>max continuous</i>	15	19	25	39	52	62	70	83	54	99	110	129	133
Starting torque theoretical value														
lb-ft/1000psi		8	10	14	20	27	33	38	45	51	67	73	87	105
Moment of inertia (x 10⁻³)														
lb-ft-sec ²		0.7	0.7	0.7	0.8	0.8	1.9	1.9	1.9	1.9	5.5	5.5	5.5	5.5
Max intermittent housing pressure														
psi		72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5	72.5
Weight														
lb		15.2	15.2	15.2	15.7	15.7	21.6	21.6	21.6	21.6	30.6	30.6	30.6	30.6

Intermittent duty is defined as follows: max 6 seconds per minute, e.g. peak RPM when unloading or accelerating.

Dimensions SAM 010-034

Flange, shaft & connection cover

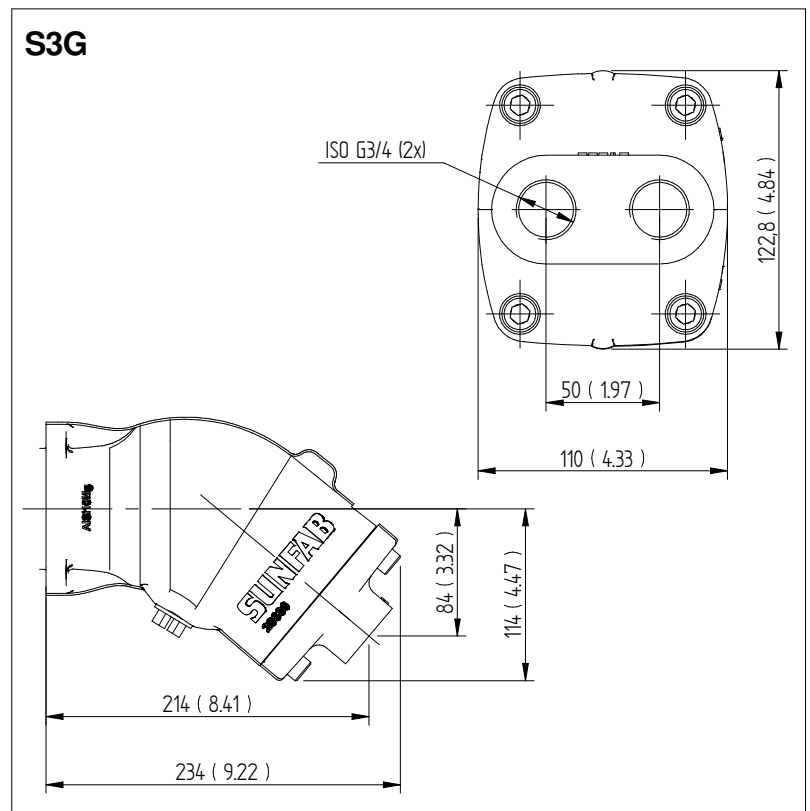
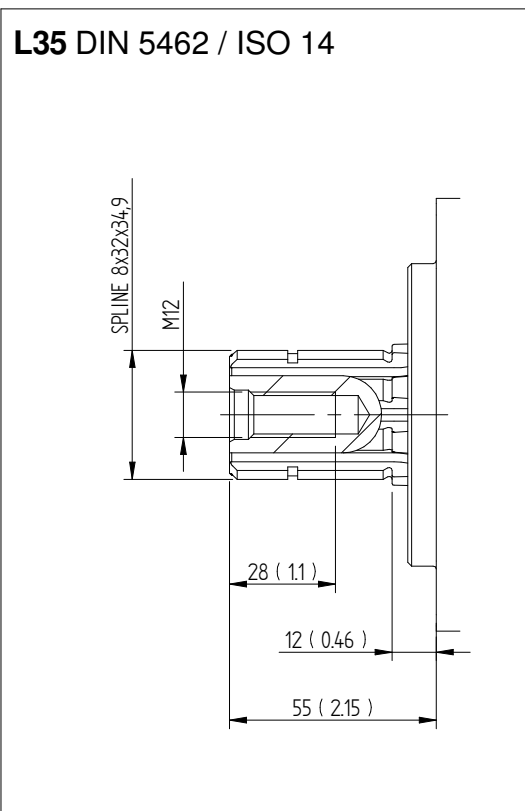
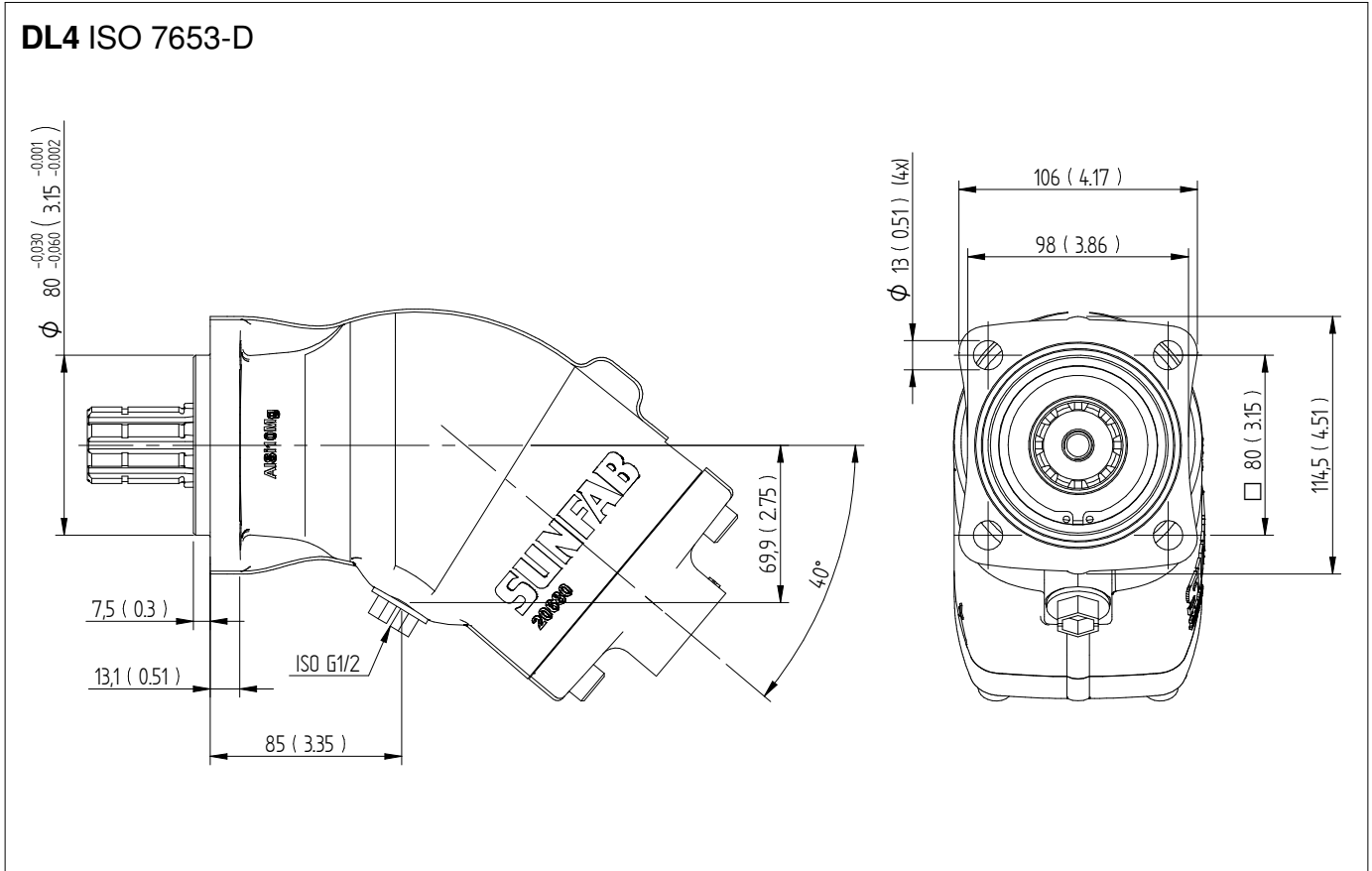
Millimeter (inch)



Dimensions SAM 040-064

Flange, shaft & connection cover

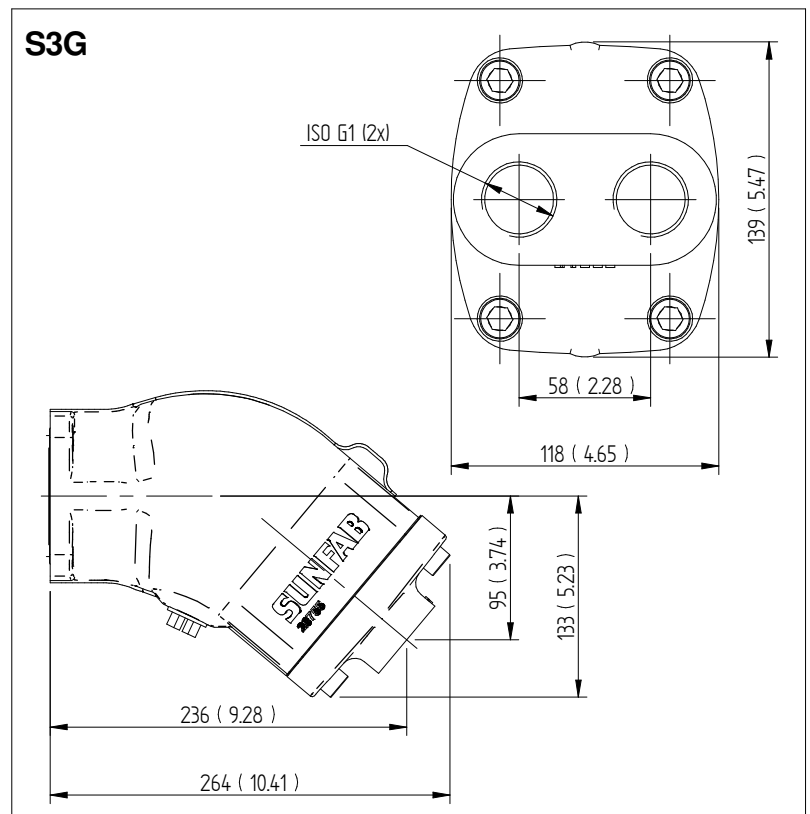
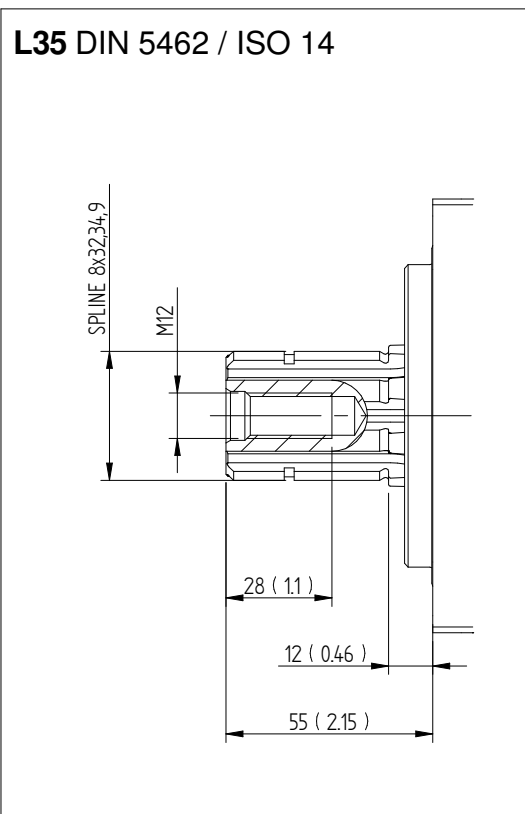
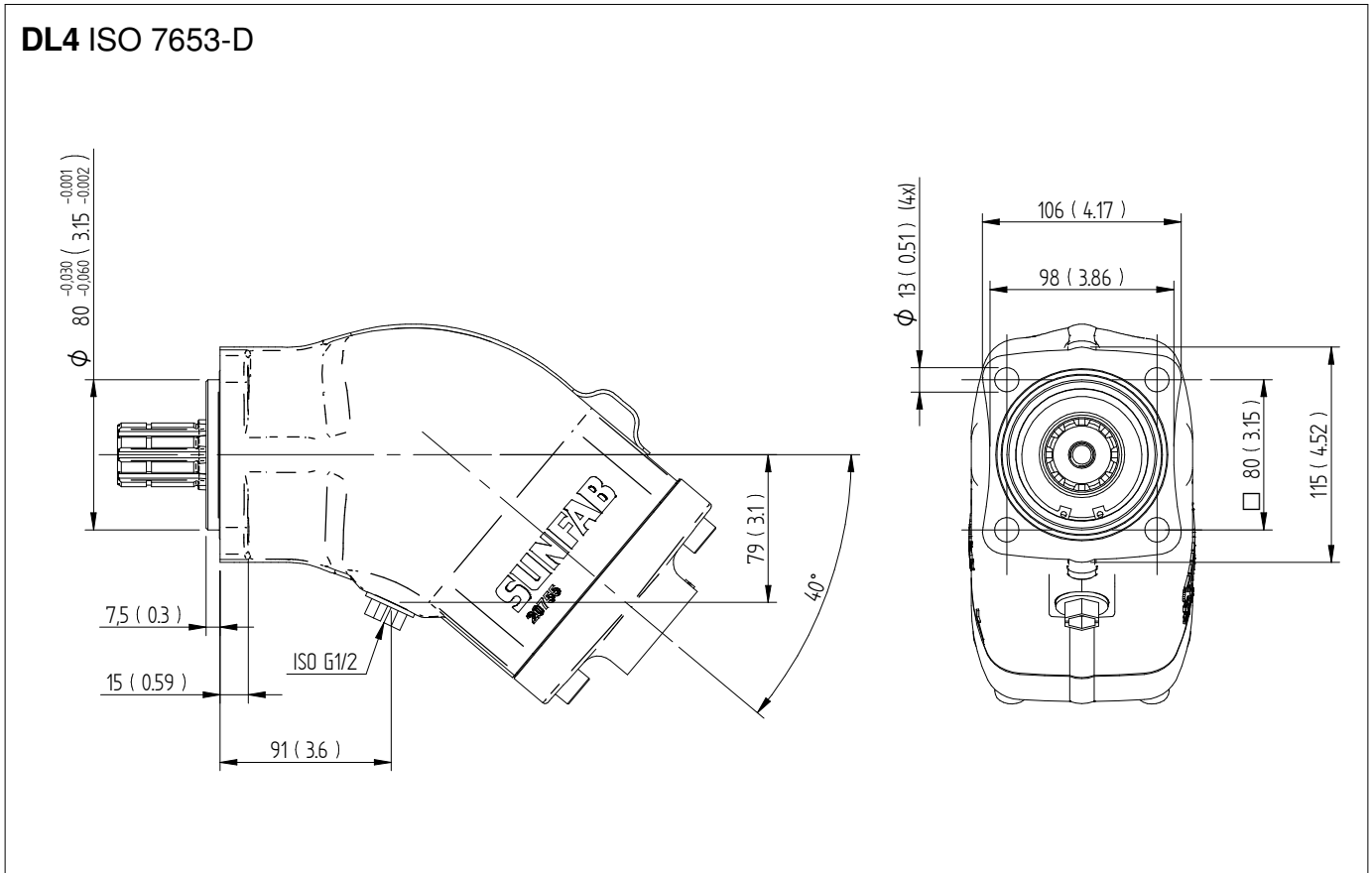
Millimeter (inch)



Dimensions SAM 084-130

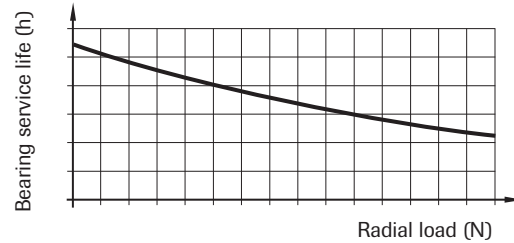
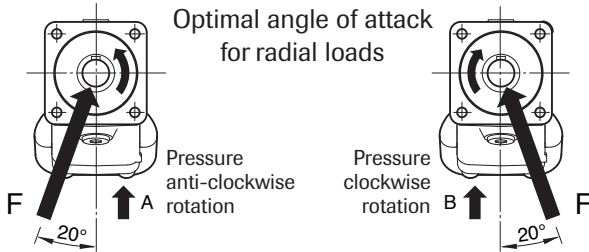
Flange, shaft & connection cover

Millimeter (inch)



Shaft loads

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 and degree of purification.

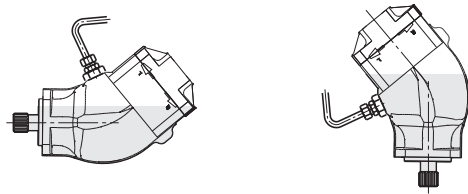


External loading of the shaft, its size, direction and location also affect the service life of the bearings.

If a calculation of bearing service life is required for special applications, contact Sunfab Hydraulics.

Installation

The motor housing is filled with oil to at least 50% of the volume before start up. The drainage hose is connected to the drainage outlet positioned highest on the motor. The other end is connected below the oil level in the oil tank.



Hydraulic fluids

High performance oil meeting the specifications of 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.

Pipe dimensions

The recommended flow velocity in the pressure line is max 23 ft/s.

Filtering

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

Useful formulaes

Required flow rate $Q = \frac{D \times n}{231 \times \eta_v}$ GPM.

Speed $n = \frac{Q \times 231 \times \eta_v}{D}$ RPM

Torque $M = \frac{D \times \Delta p \times \eta_{hm}}{75.6}$ lb-ft

Power $P = \frac{Q \times \Delta p \times \eta_t}{1714}$ hp

D = displacement, cu in/rev

n = revolutions, RPM

P = power, hp

Q = flow, GPM

η_v = volumetric efficiency

η_{hm} = hydromechanical efficiency

η_t = total efficiency = $\eta_v \times \eta_{hm}$

M = torque, lb-ft

Δp = pressure difference between inlet and outlet on the hydraulic motor, psi



WARNING!

When the motor is in use:

1. Do not touch the pressure pipe
2. Watch out for rotating parts
3. The motor and pipes can reach high temperatures

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