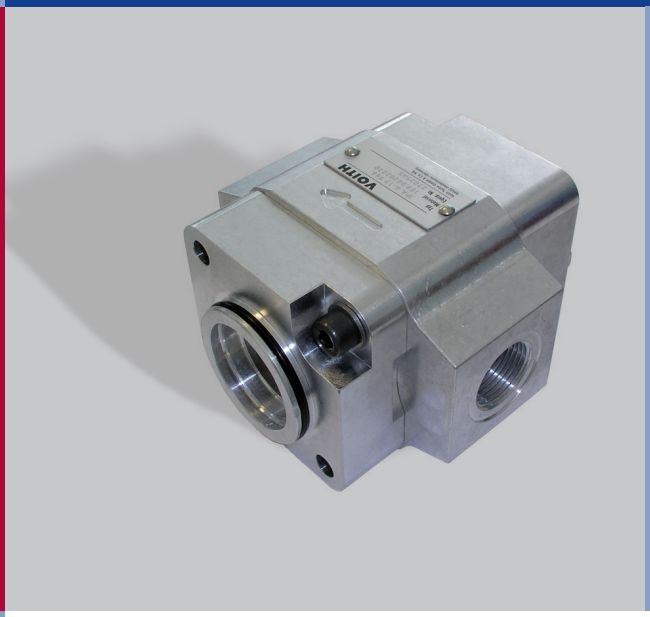
Voith Turbo

VOITH

Medium Pressure Internal Gear Pump IPA



- Voith Superlip principle with additional radial gap compensation
- viscosity range 10 to 300 mm²/s (cSt)
- high efficiency
- very low pulsation on flow and pressure
- low noise level
- compact dimensions
- multiple pumps and pump combinations possible
- suitable for variable-speed drives (variable volume flow)
- delivery up to 72 l/min at 3600 1/min
- peak pressure up to 210 bar at 1500 1/min

hydraulic

Technical Data

General		
Type of construction		internal gear pump without filler element with radial gap compensation (Voith Superlip principle)
Fastening possibilities		SAE-2 hole D82.55 ISO-2 hole D80 Direct fastening 2 hole D52
Direction of rotation		clockwise or counter clockwise rotation
Drive power		please consult following data sheets
Shaft load		for radial and/or axial load of the drive shaft please consult us
Installation position		any position
Flow medium		HLP mineral oils according to DIN 51524, part 2 or 3
Ambient temperature	°C	-10 to +60
Hydraulic		
Input pressure	bar	0.8 to 3.0 bar absolute pressure
Continuous pressure	bar	please consult table characteristic data
Flow medium temperature	°C	-20 to +80
Viscosity range	mm^2/s	10 to 300; admissible start up viscosity: 2000

Characteristic Data

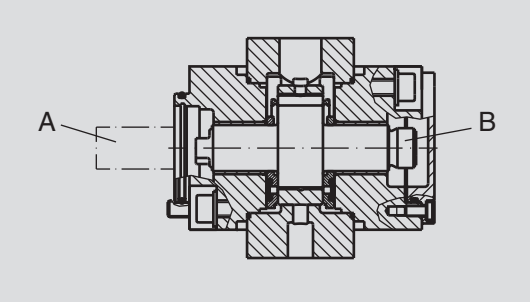
Characteristic data						
Type Size Delivery	Displacement per revolution	Delivery at 1500 min^{-1}	Revolution speed		Continuos pressure	Peak pressure
			min.	max.		
	[cm^3/rev]	[l/min]	[min^{-1}]	[min^{-1}]	[bar]	[bar]
IPA 4 - 6.5	6.5	9.7	400	3600	175	210
IPA 4 - 8	8.2	12.3	400	3600	175	210
IPA 4-10	10.4	15.6	400	3600	175	210
IPA 4 -13	13.1	19.6	400	3600	175	210
IPA 4 - 16	16.2	24.3	400	3600	175	210
IPA 4 - 20	20.1	30.1	400	3600	175	210

Notes:

- **Continuos pressure apply for complete speed range.**
- **Peak pressures apply for 15% of operating time with a maximum cycle time of 1 minute.**
- **Please inquire about peak pressures at non-standard speeds.**
- **Due to production tolerances, the pump volume may be reduced by up to 1.5%.**

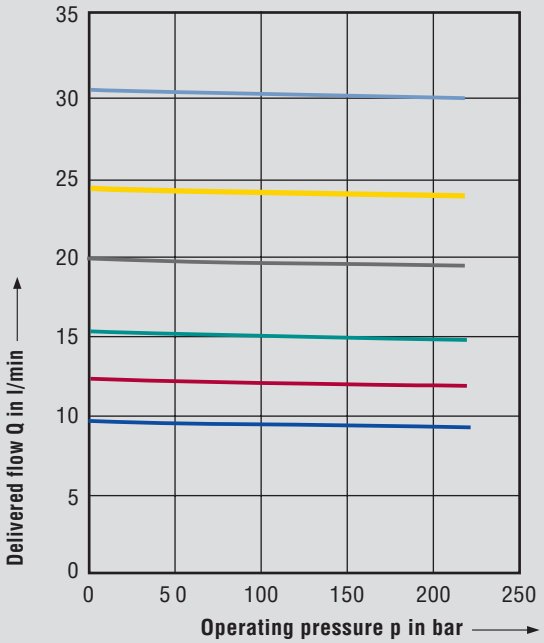
Drive Torque

Admissible Drive Torque		
	Connection type	Drive torque
		[Nm]
Drive shaft A	Oldham coupling	70
	Feather key shaft	160
	Involute spline gearing	160
Secondary shaft B	Involute notch gearing	160

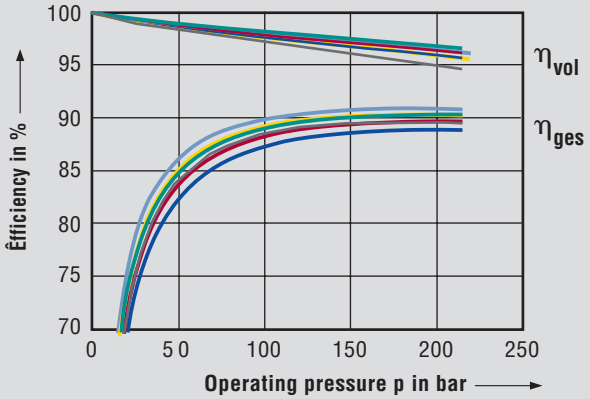


Diagrams

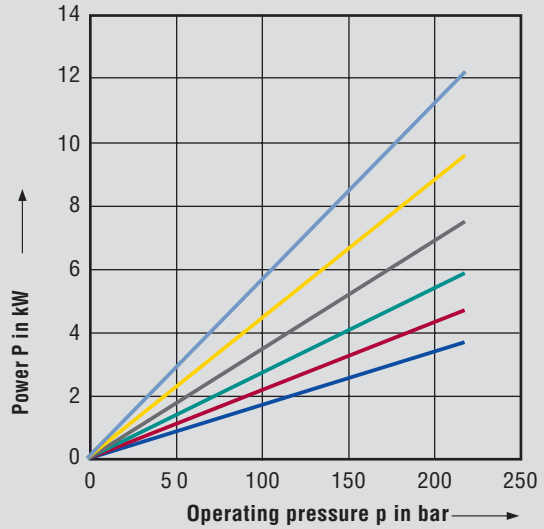
Delivered flow Q at 1500 1/min



Efficiency η_{ges} and η_{vol}

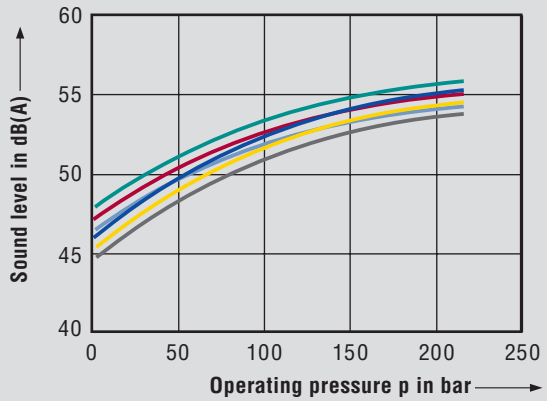


Power requirement P



Sound level

Messort 1 m axial



Mesuring conditions

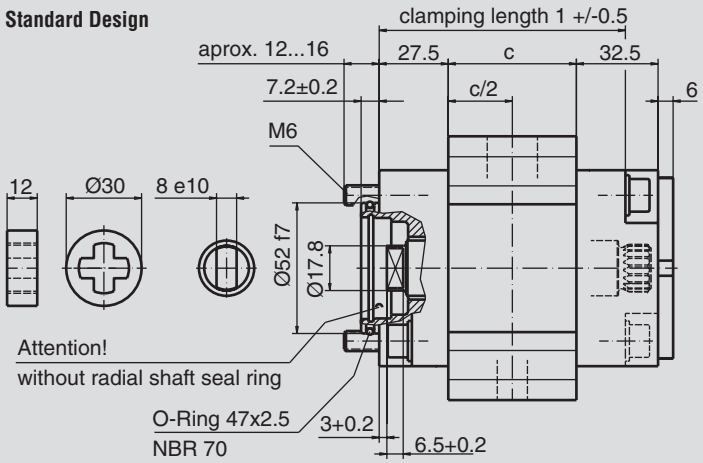
Number of revolutions: 1500 min^{-1}
Viscosity: 46 mm^2s^{-1}
Operating temperature: 40°C

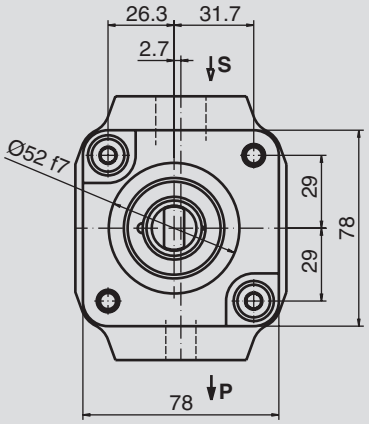
Characteristic curve

- IPA 4 - 6.5
- IPA 4 - 8
- IPA 4 - 10
- IPA 4 - 13
- IPA 4 - 16
- IPA 4 - 20

Drawing, Single Pumps

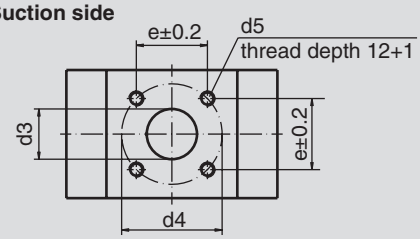
Standard Design





clutch is scope of delivery
fastening screws M8 DIN 912 with washer DIN 125
fastening torque M = 25+5 Nm

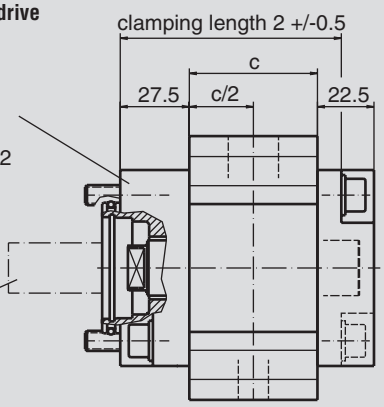
Suction side



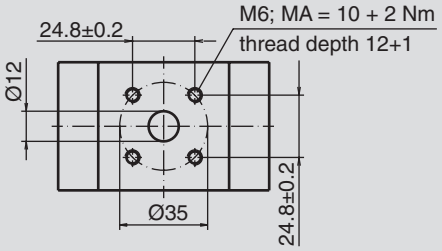
Short design without through drive

Connection flange:
SAE - 2 flange with holes
ISO - 2 flange with holes
direct connection 2-hole D52

Driveshaft:
SAE-toothed shaft
feather key
oldham coupling

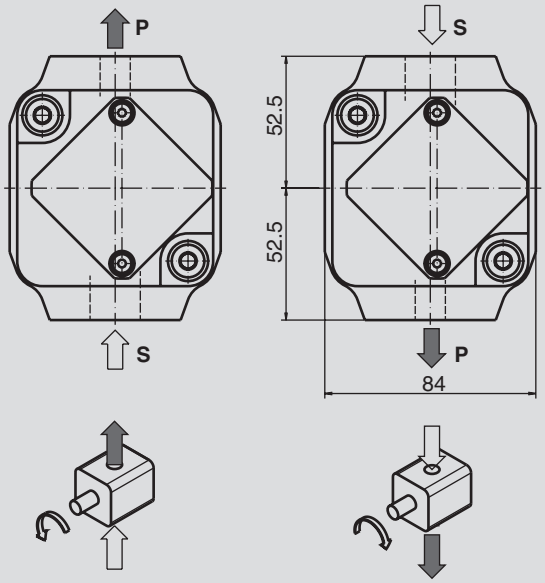


Pressure side



other connections on request

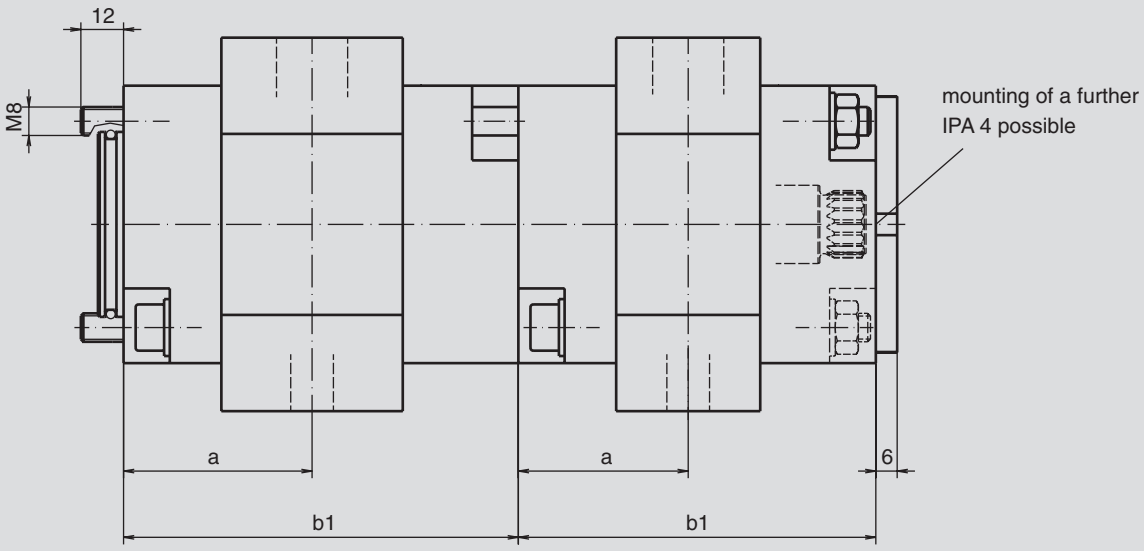
View right side

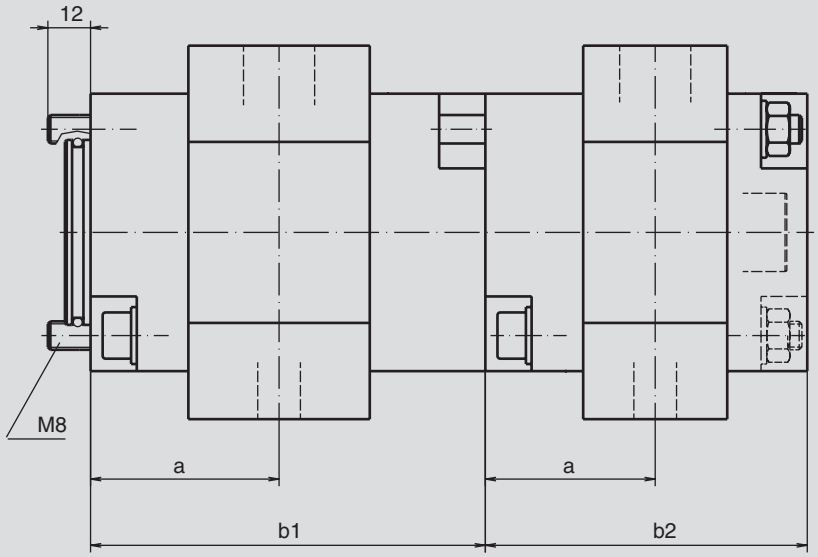


Delivery	Dimensions							
	c	clamping length		d3	d4	d5	e	MA
		1	2					
	[mm]	[mm]	[mm]	[mm]	[mm]	thread	[mm]	[Nm]
6.5	40.5	87.5	77.5	Ø20	Ø40	M6	28.3	10+2
8	43	90	80					
10	46	93	83					
13	51	98	88					
16	56	103	93					
20	62.5	109.5	99.5	Ø26	Ø55	M8	38.9	25+5

dimensions in mm

Drawing, Multiple Pumps





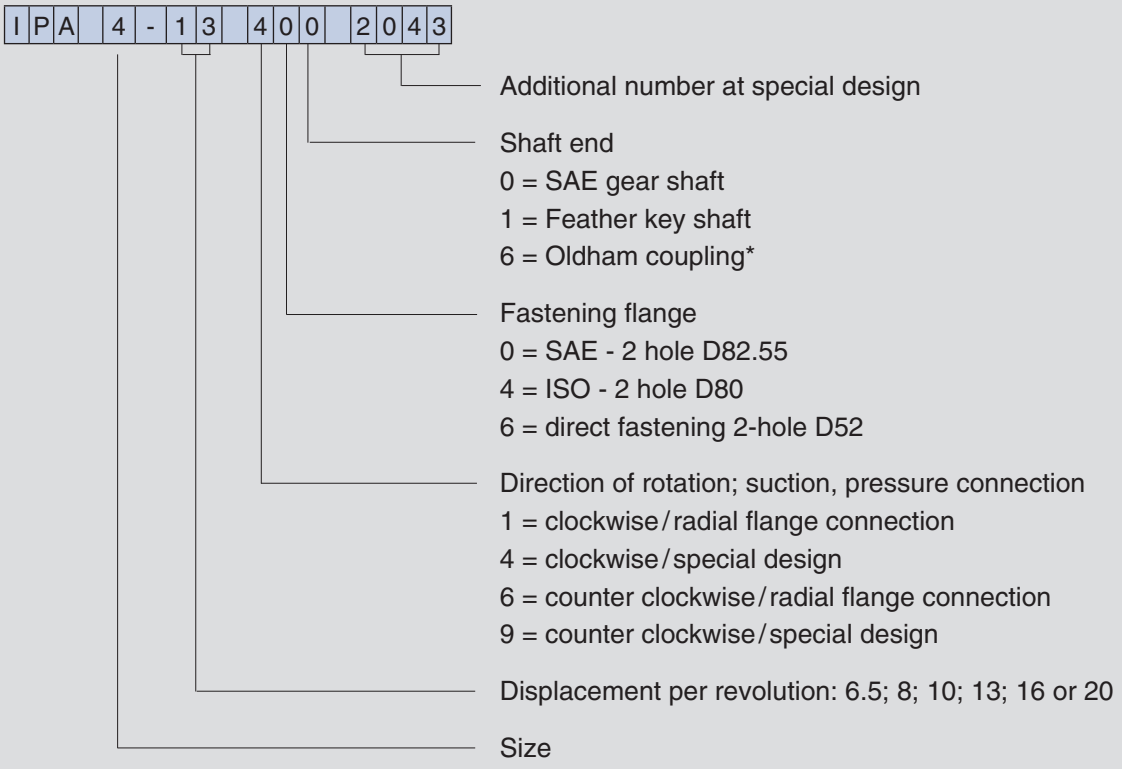
The stud screws allows mounting on parts made of materials with a minimum yield strength of 180 MPa.

For mounting on parts with a lower yield strength there must be used stud screws with increased length of thread engagement.

Fastening torque: M = 25+5 Nm

Delivery	Dimensions		
	a	b1	b2
	[mm]	[mm]	[mm]
6.5	47.75	100.5	90.5
8	49	103	93
10	50.5	106	96
13	53	111	101
16	55.5	116	106
20	58.75	122.5	112.5

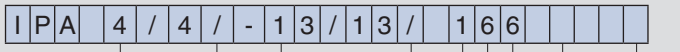
Type Code, Single Pumps



*only in combination with direct fastening 2-hole D52

additional explanations according to the 3 digit special design code (direction of rotation, fastening flange, shaft end) on succesional sides

Type Code, Single Pumps with Through-drive and Multiple Pumps



Additional number at special design

Shaft end
0 = SAE gear shaft
1 = Feather key shaft
6 = Oldham coupling*

Fastening flange
0 = SAE - 2 hole D82.55
4 = ISO - 2 hole D80
6 = direct fastening 2-hole D52

Direction of rotation
suction, pressure connection
1 = clockwise / radial flange connection
4 = clockwise / special design
6 = counter clockwise / radial flange connection
9 = counter clockwise / special design

Displacement per revolution:
6.5; 8; 10; 13; 16 or 20

Size

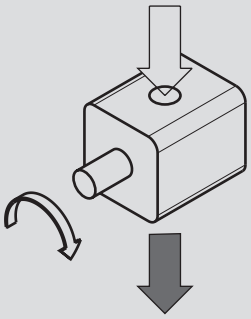
*only in combination with direct fastening 2-hole D52

additional explanations according to the 3 digit special design code (direction of rotation, fastening flange, shaft end) on succesional sides

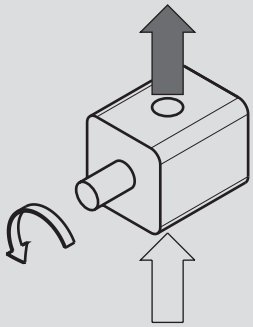
Explanations, Design Code

Rotation direction / Suction-, Pressure connection

1 clockwise



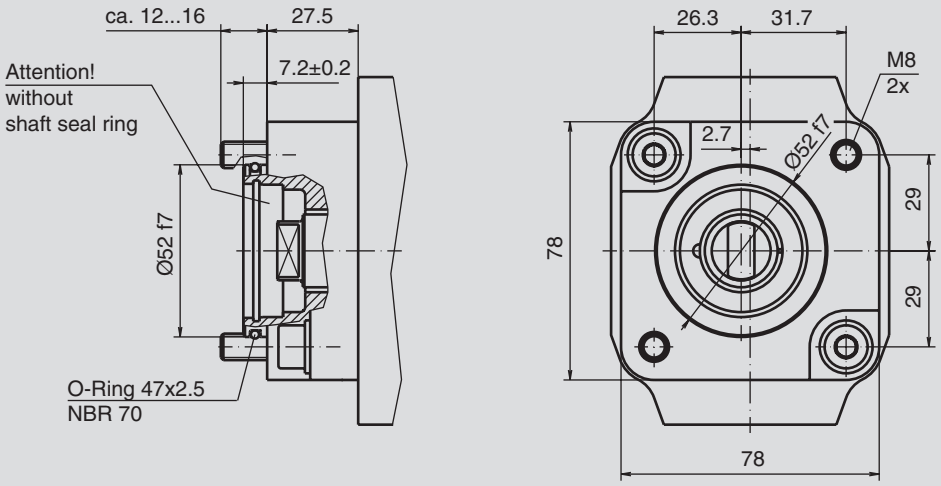
6 counter clockwise



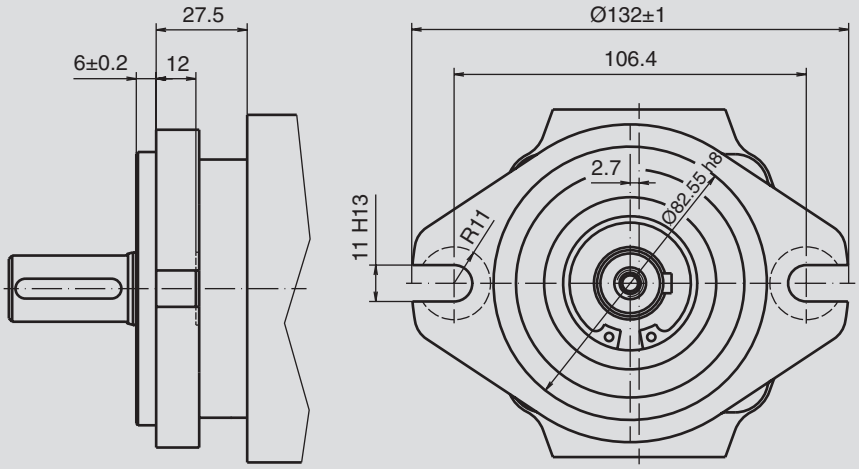
nomenclature according to type code

Fastening

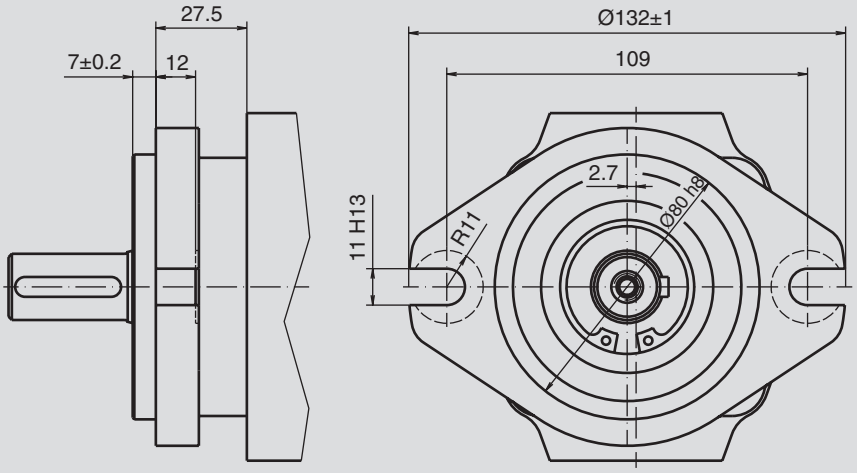
6 Direct fastening 2-hole D52



0 SAE-2 hole flange



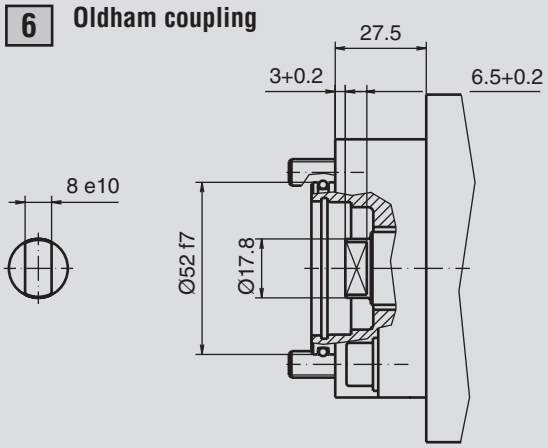
4 ISO-2 hole flange



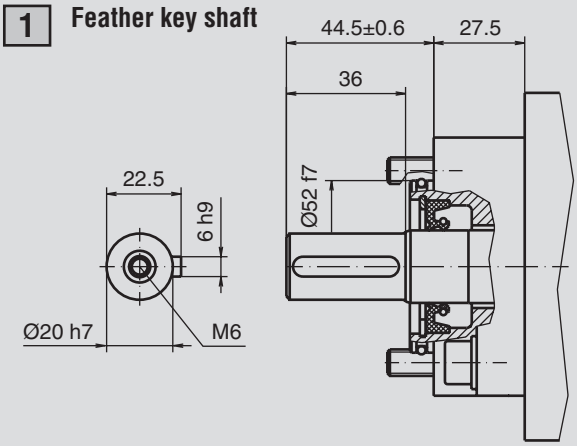
nomenclature according to type code

Shaft end

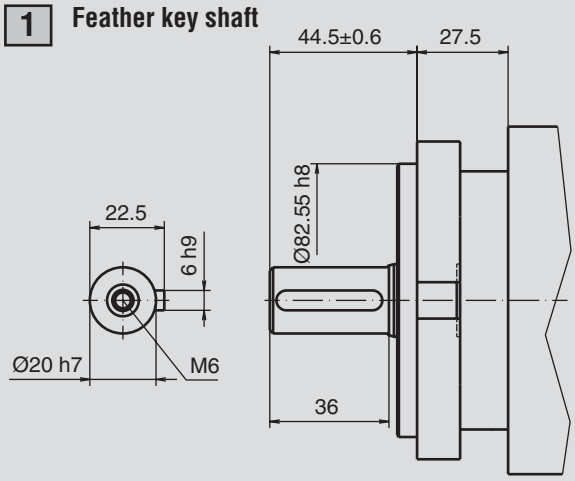
6 Oldham coupling



1 Feather key shaft

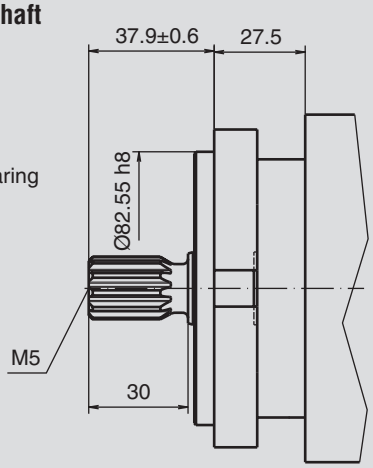


1 Feather key shaft

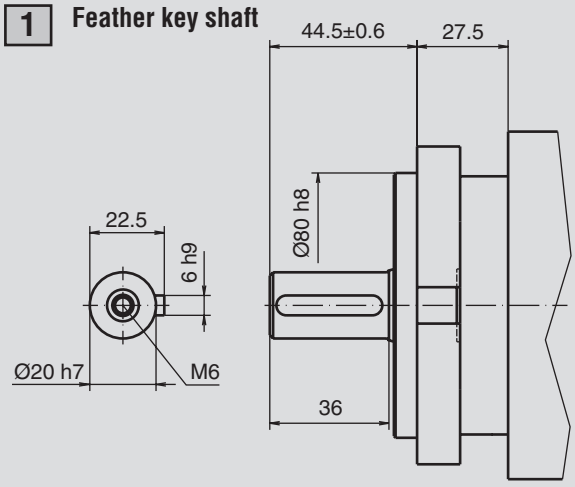


0 SAE-toothed shaft

Involute spline gearing
ANSI B92.1a
11T
16/32 DP 30°

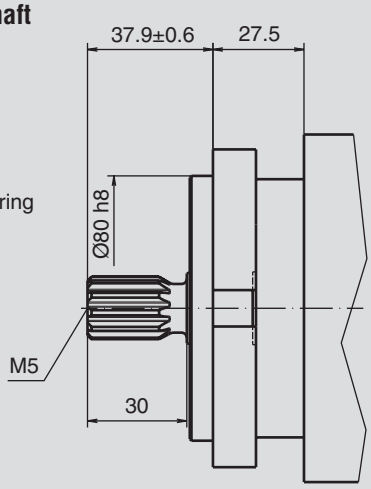


1 Feather key shaft



0 SAE-toothed shaft

Involute spline gearing
ANSI B92.1a
11T
16/32 DP 30°



nomenclature according to type code

Voith Turbo H + L Hydraulic GmbH & Co. KG
Schuckertstraße 15
71277 Rutesheim, Germany
Tel. +49 7152 992-3
Fax +49 7152 992-400
sales-rut@voith.com
www.voithturbo.com/hydraulic-systems

VOITH

Engineered reliability.

VTHL IP102 en, MBi, 02.10. Dimensions and illustrations without obligation. Subject to modifcations.