

Technical Information

Hydraulic Gear Pumps

0PF / 1PF / 1.5PF / 2PF / 2.5PF / 2.8PF / 3PF / 3.5PF / 4PF





RYAN HYDRAULICS

Keep the concept seeking excellence.
RYAN try our best to create more value for you with products and service.

RYAN Hydraulics

About RYAN

RYAN's manufacturing base was established in 1986, with quality hydraulic components and solutions to hydraulic system in the applications of engineering machinery, mobile industries, agricultural machinery, aviation, mining, and other fields. Main products include gear pump, gear motor, flow divider, orbital motor, loadsensing proportional valve, monoblock valve, sectional valve, manifold assembly and hydraulic power unit as well.

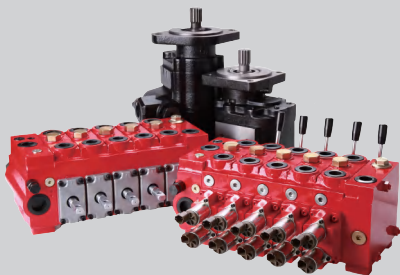
Long-term Development Strategy

Reducing emissions by new energy is one of RYAN's long-term strategies. RYAN will be providing innovative technologies, products, and services for the global development of new energy, moving towards a century development strategy, and writing a century-new chapter in the hydraulic field.



Innovation leads the future

Through a few decades of development, RYAN's manufacturing base has built an intelligent manufacturing factory, gathering international R&D talents, accumulating rich R&D and manufacturing experience, possessing independent intellectual property rights, continuously providing customers with new products and technologies, and creating value for all of the customers.

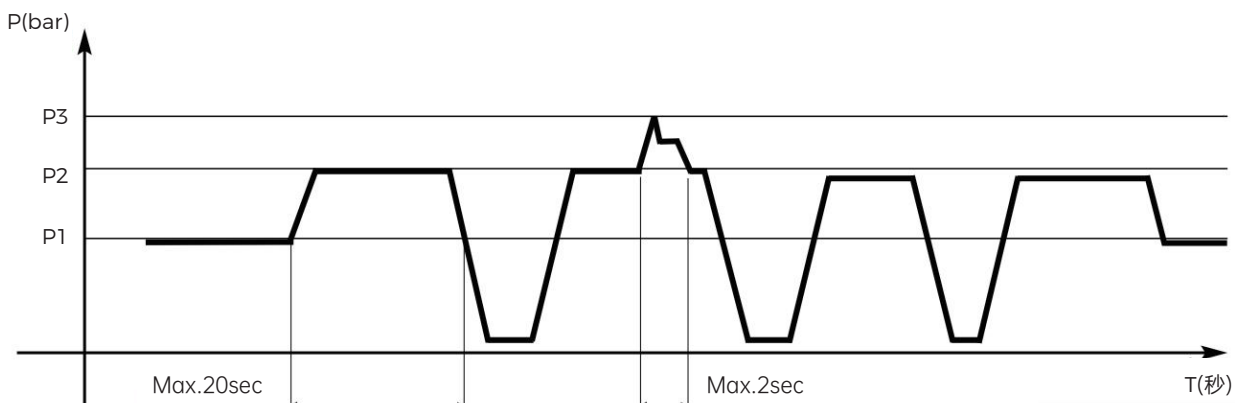


Introduction of Guorui External Gear Pumps

External gear pumps from Guorui Hydraulics have a floating bushing feature with automatic axial clearance compensation. The bushings are made with special abrasion resistant material providing improved service life. Precisely machined gears ensure our units provide excellent low noise characteristics. Our cold extrusion pump bodies can endure pressures above 30Mpa. High strength cast iron front and rear covers also enhance our reliability. Our units are widely used in the industrial mobile marine and aerospace industries.

Guorui Hydraulic Gear Pump Characteristics

- Guorui external gear pumps are produced in 9 different series (0P, 1P, 1.5P, 2P, 2.5P, 2.8P, 3P, 3.5P, 4P) and in each group different displacements are obtained by changing the gears width, refer to performance curves (on page 9 to page 12).
- Pressure: P1=Continuous pressure, P2=Intermittent pressure pressure, P3=Peak pressure
- Efficiencies: volumetric efficiency up to 98%, mechanical efficiency up to 88%.
- Mountings: flanges, shaft ends and ports.
- Seals: viton, buna and EPR seals is available.
- Integration: all pumps can be odered with relief valve and check valve.



General

To achieve the performance it necessary not only to meet the catalogue but also design the hydraulic system appropriately.

- The design of the hydraulic circle, especially the suction line, dimension and position of the valves, the filters, the reservoirs and the heat exchangers.
- Ensure correct and frequent cleaning and maintenance of the circle and of the hydraulic fluid.
- Equip the filter system with suitable alarm and safety devices.
- Avoid possible starting under load or at lower temperature .
- Avoid high pressure at low speed.
- Choose the hydraulic oil type reasonably.

Hydraulic Fluid

Fluid must be specifically for hydraulic equipment, it must be foamless, anti-oxidative, anti-corrosiv and have good lubricating features meeting the following requirements.

Recommended use: GB11118-94: L-HM46 or equate NFE-603/DIN51524 II -85

Minimum Working Speed

We recommend a minimum working speed for every pump group as follows

- 0P=800RPM
- 1P/3.5P/4P=600RPM
- 1AP ~ 2.5P=500RPM
- 3P=400RPM

Hydraulic Circuits

- Avoid the line is locally too small restrictions and small radius bends.
- Place safety relief valve set at correct pressure and with good dynamic characteristic.
- Recommended fluid speed in the inlet line: 1.6 ~ 5ft/s(0.5 ~ 1.5m/s).
- Recommended fluid speed in the delivery line: 6.5 ~ 20ft/s(2 ~ 6m/s).
- Recommended fluid speed in the return line: 5 ~ 10ft/s(1.5 ~ 3m/s).
- Reservoir should have a capacity about twice as much as the volume of delivered by the pump in one minute.
- The return and inlet pipe must be separated as far as possible and under the minimum level of the oil.
- Install pump in a well cleaned environment, and make sure, prior starting the system that all pipe and reservoir are perfectly clean it is recommended to filter the new oil at 8 ~ 10 μ m , before filling the reservoir.
- Fill the pump with fluid before installing and check the direction of rotation.
- For the first run of the pump it is advisable to disconnect the pump in order to purge the air from the system.

Recommended Fluid Cleanliness

- Many of premature failures of gear pumps are due to contamination, filter with clogging indicating and alarms is recommended.
- The initial contamination of the fluid must not exceed class 10 NAS 1638, pass experience has shown that even brand new fluid often exceed this value. In case we recommend to use filters larger than or equal to 80 μ m, for returning line we recommend to use the following filters.

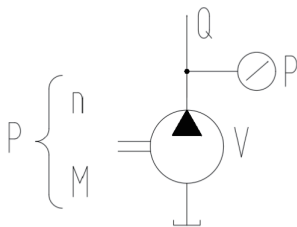
Standard \ Pressure	P<2000PSI(14MPa)	2000PSI(14MPa)<P<3050PSI(21MPa)	P>3050PSI(21MPa)
NAS1638	10	9	8
ISO4406	19/16	18/15	17/14
Filter	25 μ m	20 μ m	10 μ m

Driving Arrangements

- The center line of the pump shaft must be on the same axis line as the center line of the drive shaft, with a deviation of < 0.1 mm
- Do not apply radial or axial loads on the pump shafts, the use of three coupling is recommended.
- Make sure that the absorbed torque does not exceed the max torque allowed for the shaft.
- For gear pumps without front support, the belt and gear drives are not recommended because they apply axial and radial loads on the bearing.

Calculated Formulas

Displacement	Flow	Pressure	Speed	Power	Torque	Volumetric efficiency	Mechanical efficiency	Total Efficiency
(cm ³ /r)	(l/min)	(bar)	(r/min)	(kw)	(N.m)	92%	85%	80%
V	Q	p	n	P	M	η_v	η_m	η_t



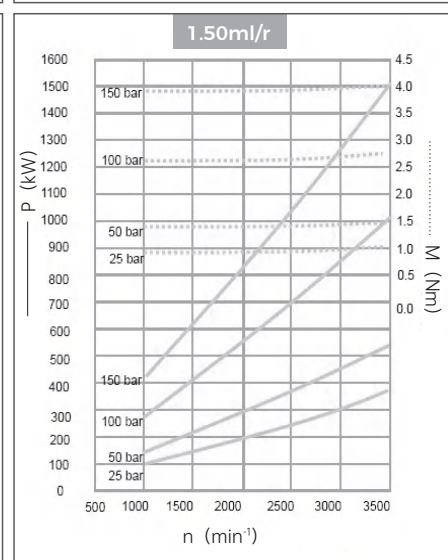
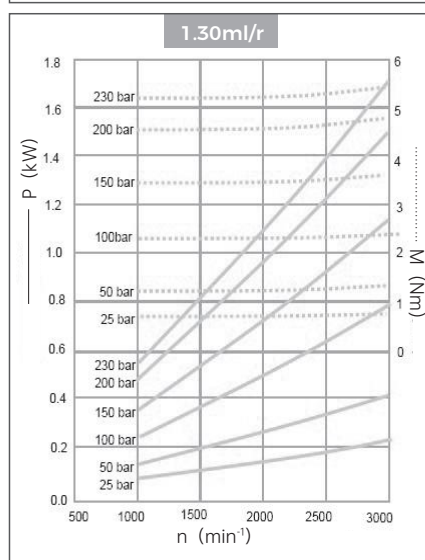
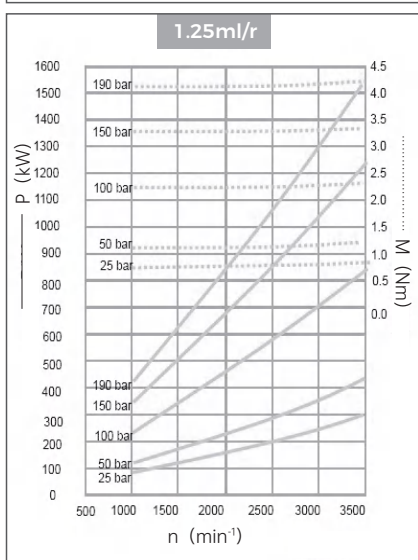
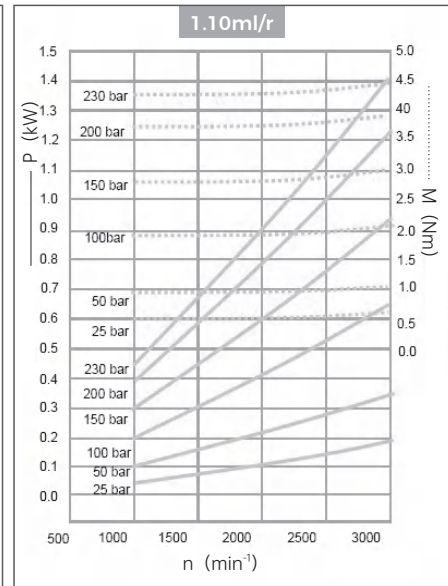
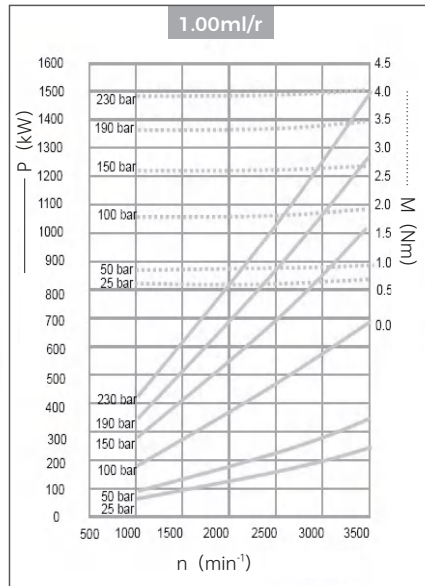
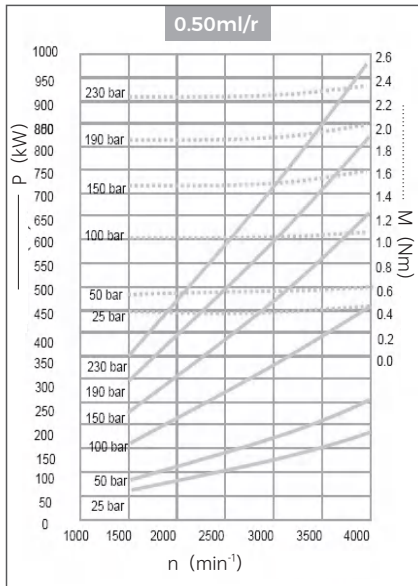
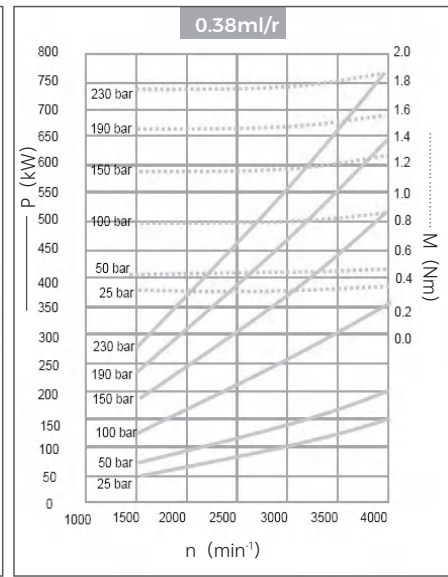
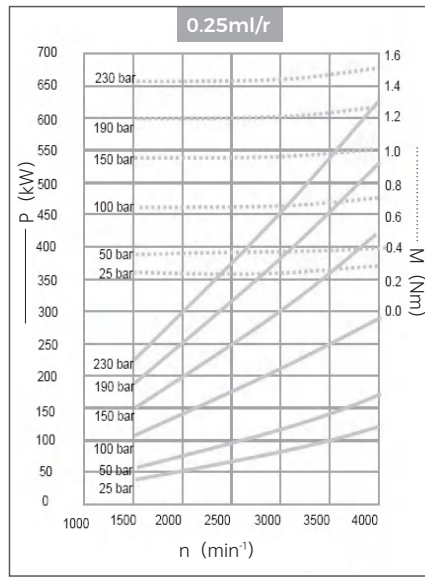
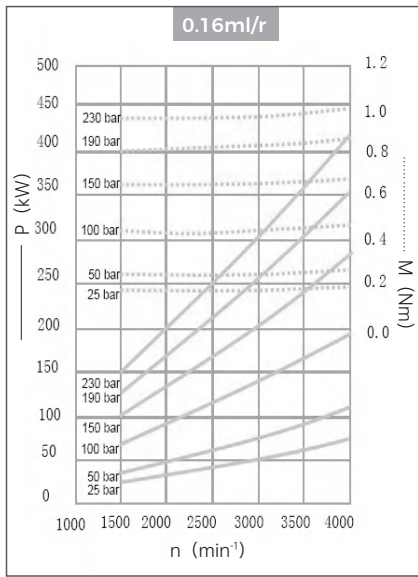
$$Q = V \cdot n \cdot \eta_v \cdot 10^3$$

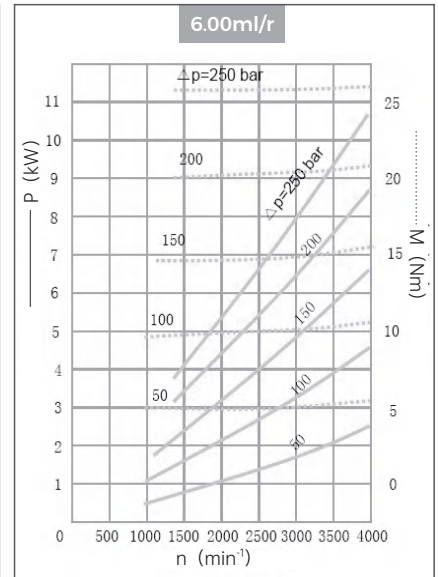
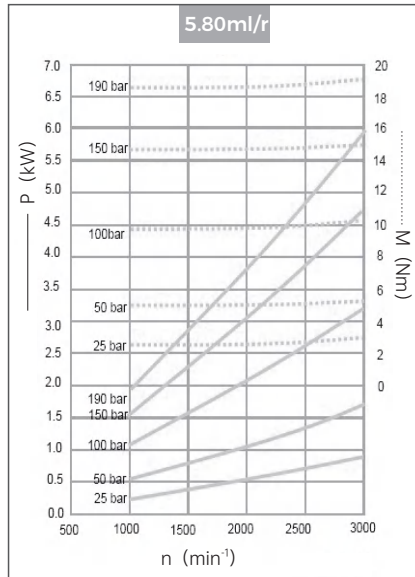
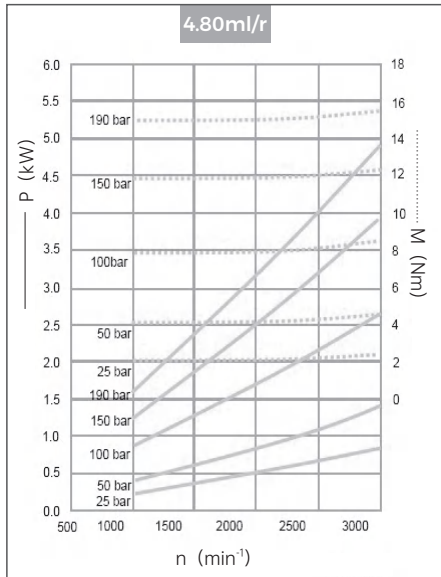
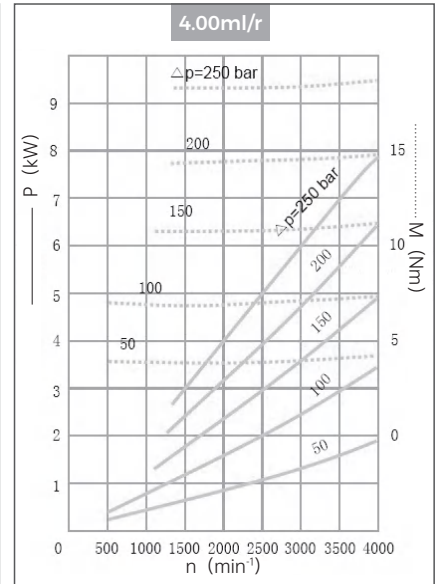
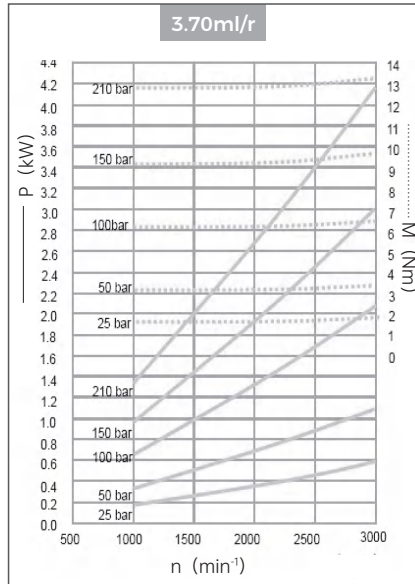
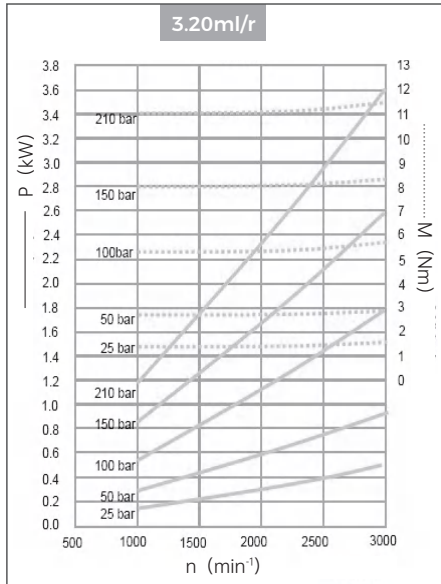
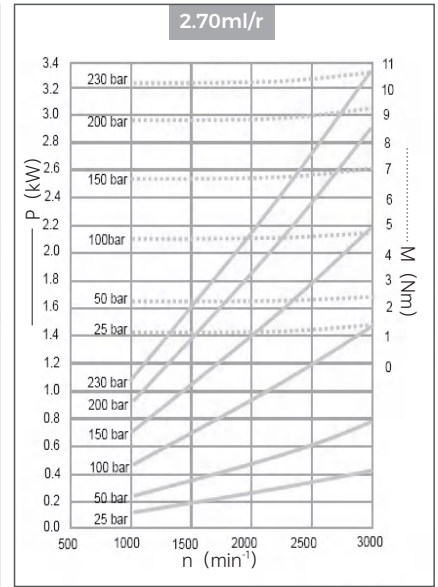
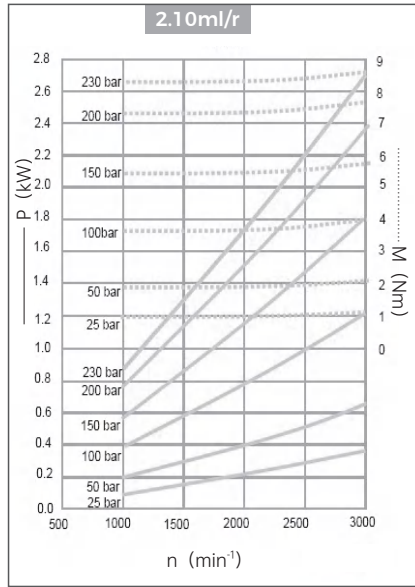
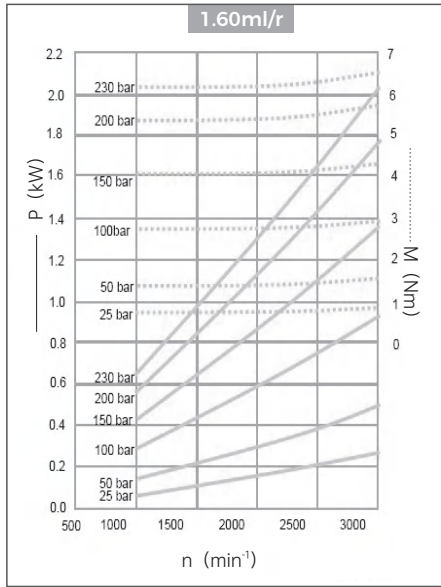
$$M = p \cdot V / 62.83 \cdot \eta_m$$

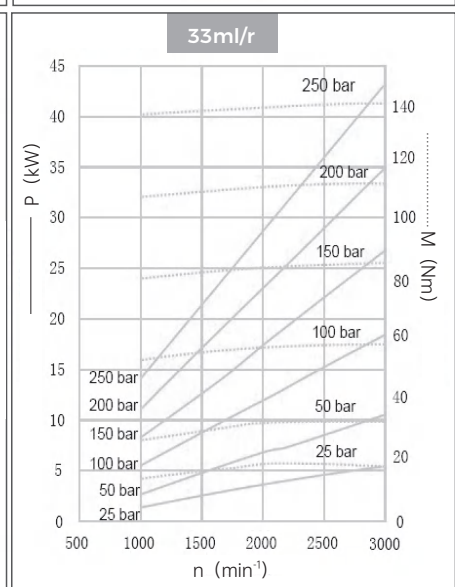
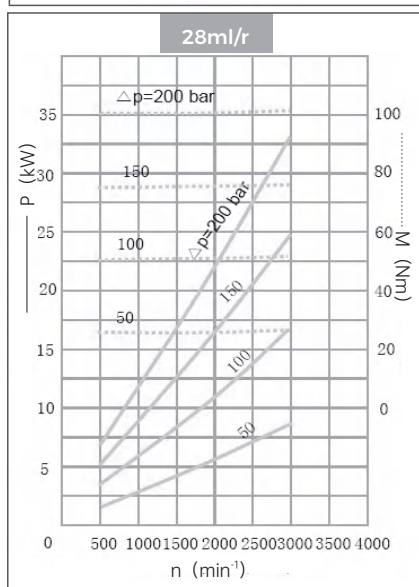
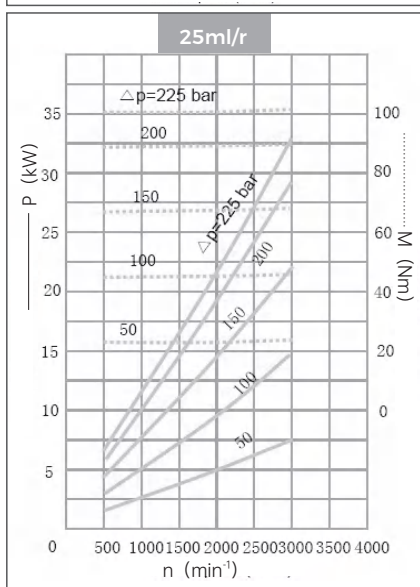
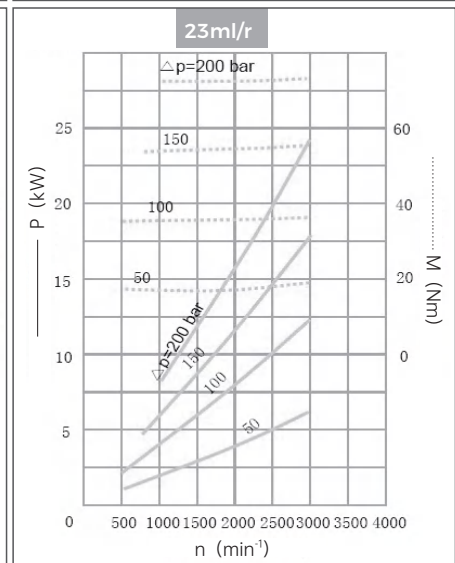
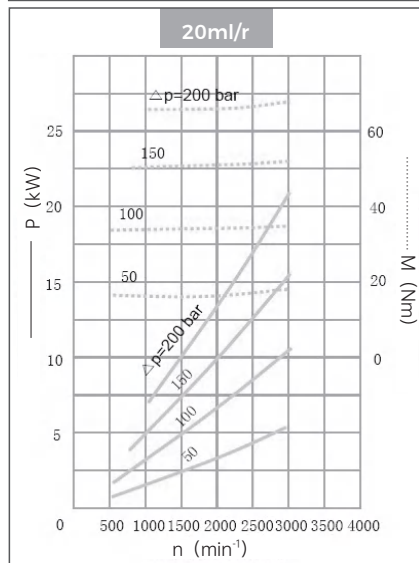
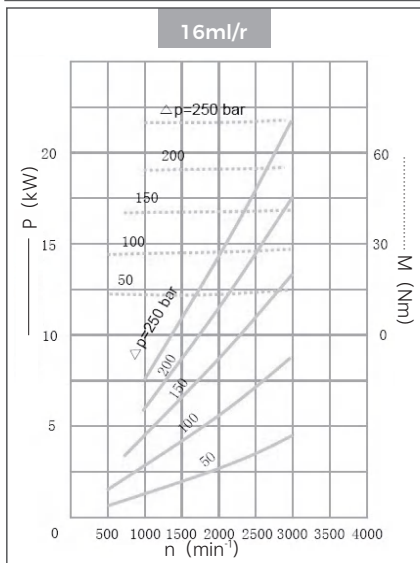
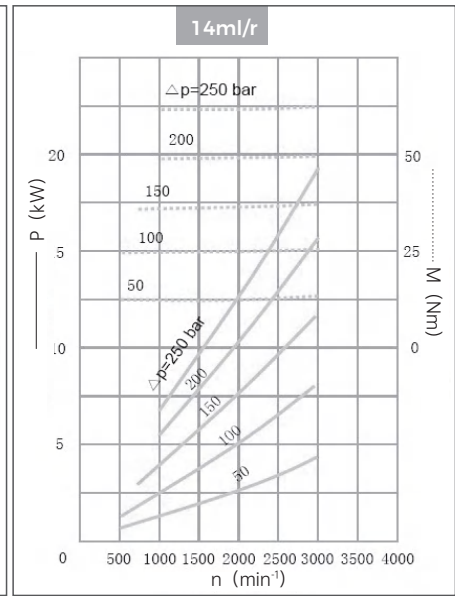
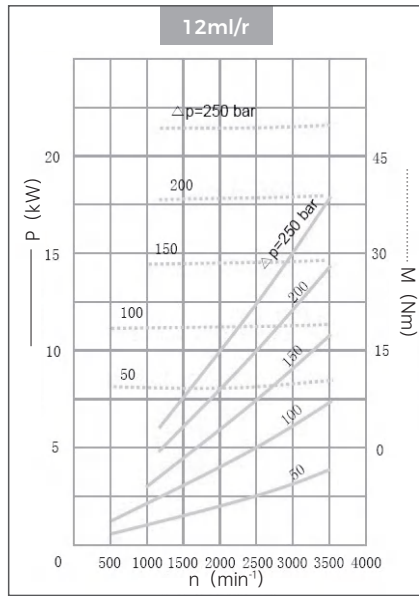
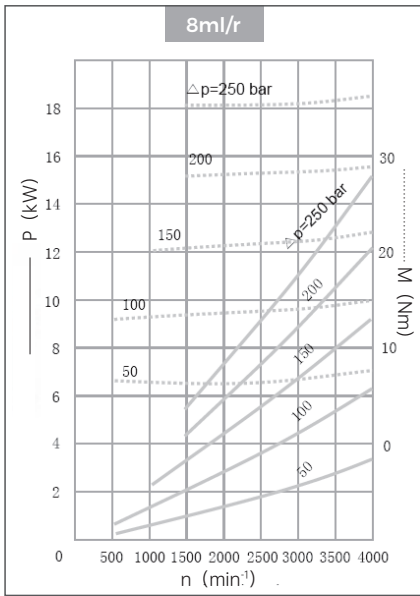
$$P = p \cdot V \cdot n / 600 \cdot 1000 \cdot \eta_t$$

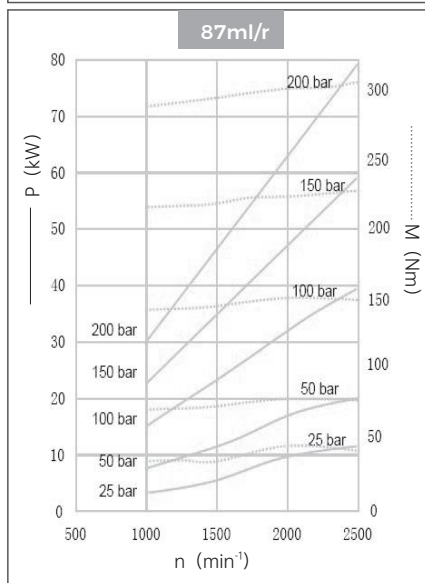
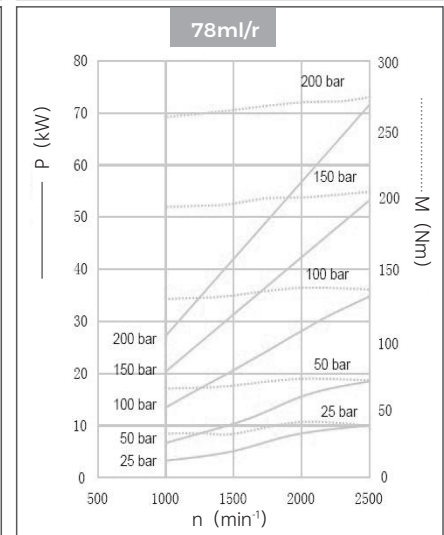
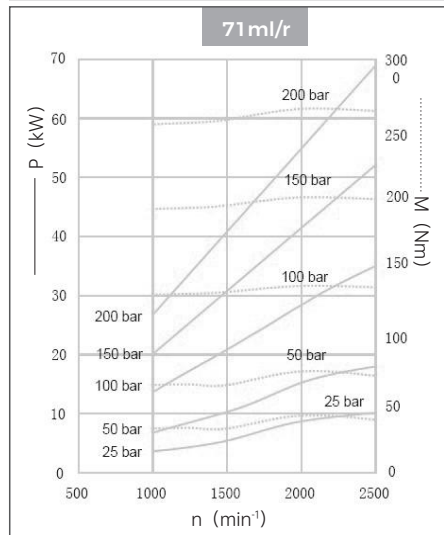
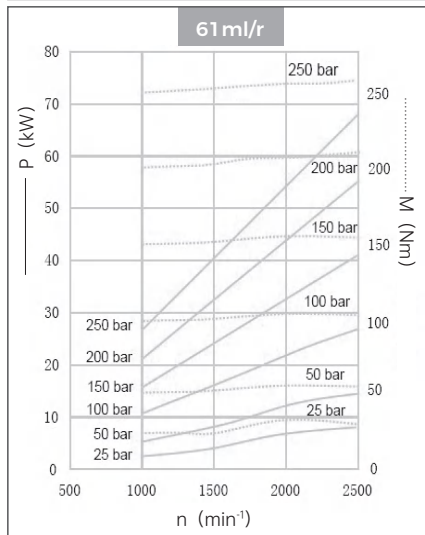
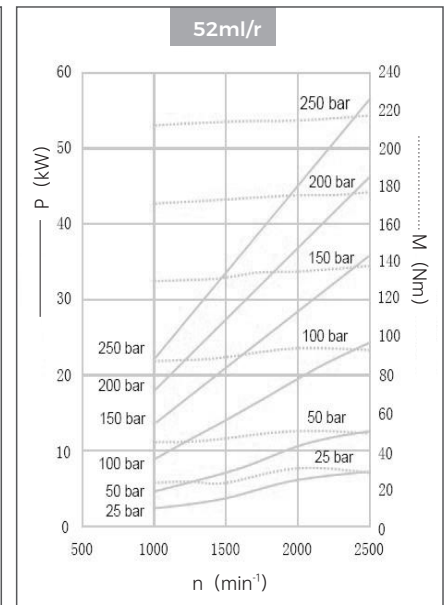
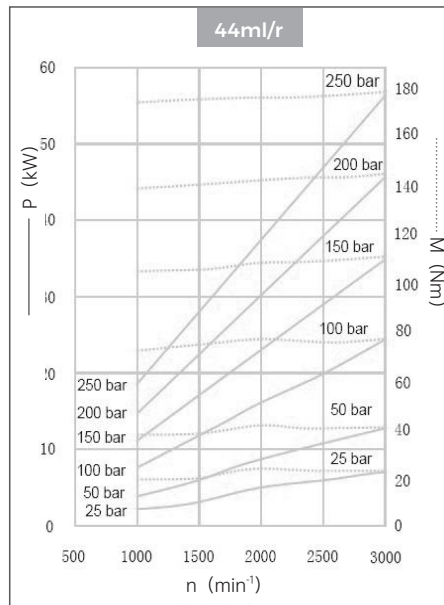
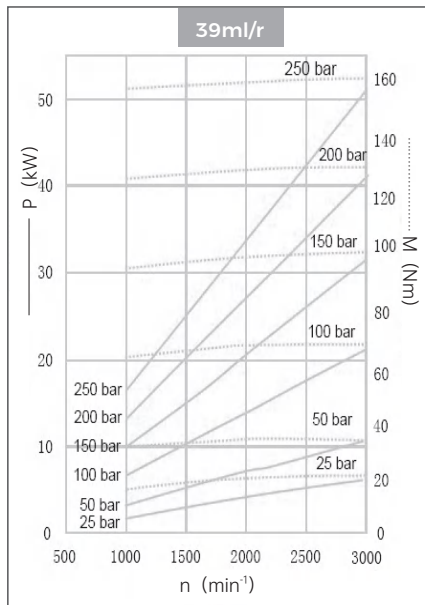
General Notes

- Deliveries are carried out under the conditions of Guorui Hydraulics.
- The catalog only offers the outline connecting dimensions, we reserve the rights to change the design characteristics.
- Please contact us if you have special request.









Contents

Aluminum Single Pumps

0	Ordering Code	13-15
	0PF	16-20
1	Ordering Code	21-23
	1PF	24-26
	1HPF	27
	1APF	28
	1QEPF	29
	1QCPF	30
1.5	Ordering Code	31-33
	1.5PF	34
2	Ordering Code	35-37
	2PF	38
	2ABPF	39-44
	2LPF	45
	2APF	46-48
2.5	Ordering Code	49-52
	2.5APF	53
	2.5CPF	54
	2.5QPF	55
2.8	Ordering Code	56-58
	2.8APF	59
	2.8XPF	60
3	Ordering Code	61-64
	3APF	65-67
	3BPF	68
OM	OM08/OM083	69
	OM401/OM601	70
	OM701/OM702	71
	OM14	72
2CP	2CP18	73-74
2CB-E	2CB-E**/** HI/LO	75-76
PTO	PTO	77

Aluminum Multiple Pumps

1⁺	Ordering Code	78-83
	1DPF	84-85
1.5⁺	1.5DPF	85
	2/1DPF	86
2⁺	1/2DPF	87
	2ADPF	88-90
	2ATPF	91-92
	2AFPF	93
3⁺	3/2ADPF	94
	3ADPF	95
	3ATPF	96
A	Multiple Pump	97-104






















Tandem Pumps

1	Ordering Code	105-113
	1EPF	114
2	2YBDPF	115
2.5	2.5EPF	116
	2.5YPF	117
2.8	2.8QPF	118
	2.8QDPF	119
3	3CPF	120
3.5	3.5EPF	121
	3.5APF	122-123
	3.5QPF	124
	3.5QD(T)PF	125
	3.5/2.8QDPF	126
4	4PF	127
X	XTYBA	128
D	C101/C102 G101/G102 Dump Pumps	129
H	HGP	130
C	CAT Pumps	131-141

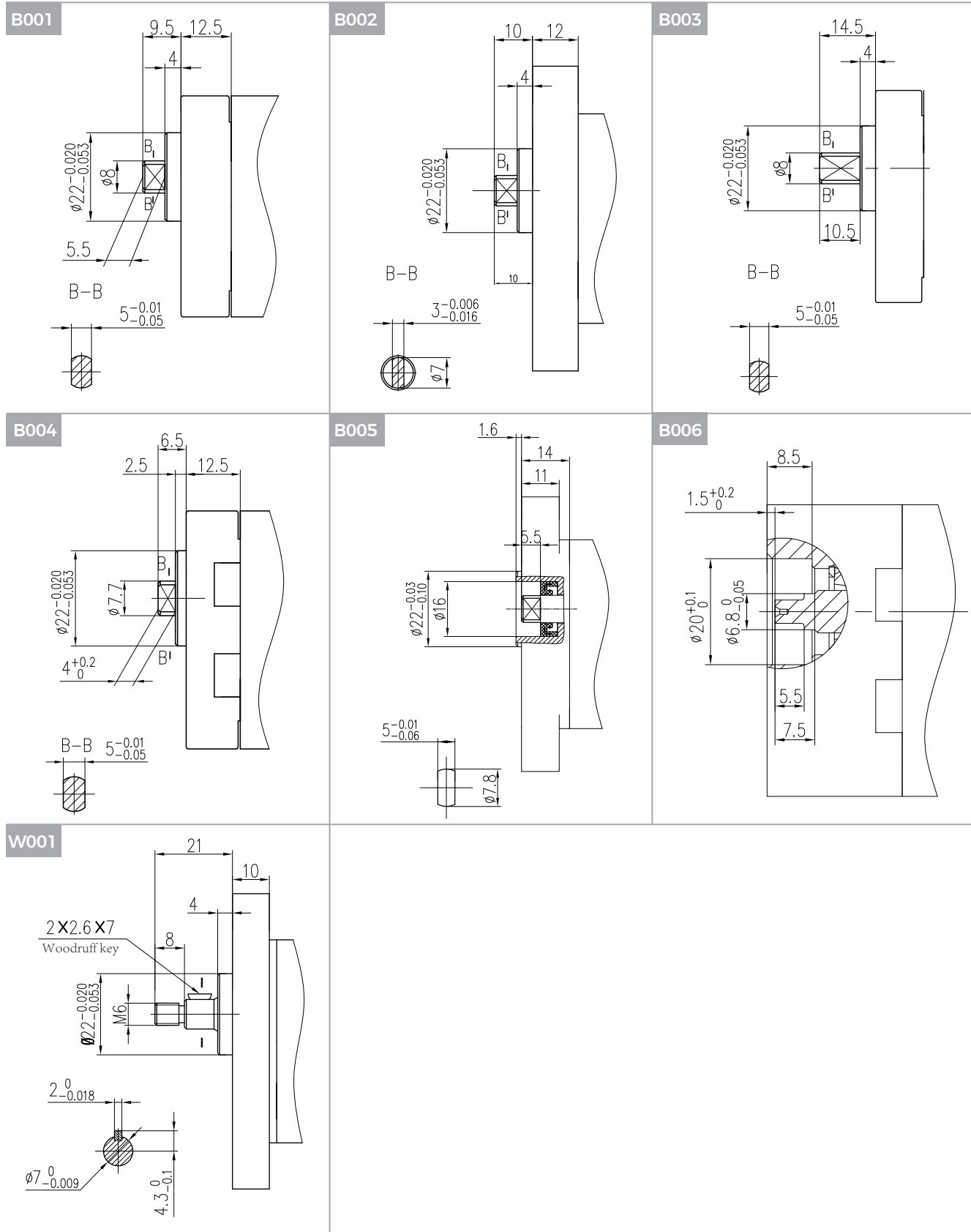
Ordering Code

0	P	F	0.16	L07	B001	A01	L-	BF-	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	l

- (a) 0=Group 0
 (b) P=Gear pump
 (c) F=Version
 (d) Displacement (ml/r)
 0.16, 0.25, 0.38, 0.5, 0.75, 1, 1.25, 1.5, 1.75, 2
 (e) L07=Line ports
 (f) B001=Drive shaft
 (g) A01=Front cover
 (h) Rotation
 R=CW
 L=CCW
 B=Bi-directional
- (i) Ports combination
 SS=Side inlet and side outlet
 BF=Back inlet and front outlet
 BB=Back inlet and back outlet
 (j) Seal
 F=FKM seal
 Omit=NBR seal
 (k) Outboard bearing
 O=Outboard bearing
 Omit=Without outboard bearing
 (l) Option
 V=Relief valve
 D=Check valve

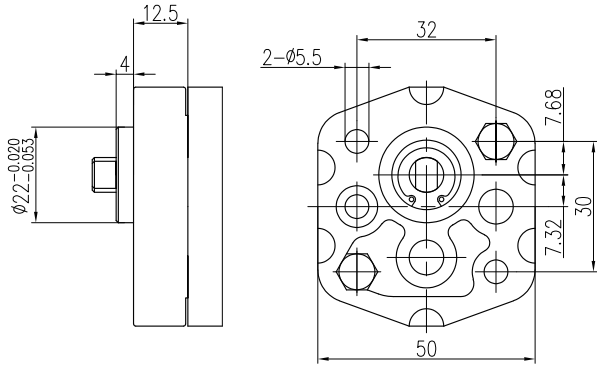
(e) Line ports Inlet and Outlet			(f) Drive shaft			(g) Front cover		
L01	G3/8 Ø9×12.7×1.45mm		B001	Flat key Ø8mm×9.5		A01	2-hole mounting 32x30mm	
L06	G1/4 G1/4		B002	Flat key Ø7mm×10		A02	2-hole mounting 32x30mm	
L07	G1/4 Ø5.5×9.6×1.45mm		B003	Flat key Ø8mm×14.5		A03	2-hole mounting 32x30mm	
L31	NPT1/4 Ø5.5×9.6×1.45mm		B004	Flat key Ø7.7mm×6.5		E01	2-hole mounting 66mm	
L46	G3/8 G3/8		B005	Flat key Ø7.8mm×1.6		E02	2-hole mounting 66mm	
L79	G3/8 Ø5.5×9.6×1.45mm		B006	Flat key Ø6.8mm×1.5		E03	2-hole mounting 66mm	
L97	NPT1/4 NPT1/4		W001	Woodruff key Ø7×21mm				
K07	Ø9.6mm Ø5.5mm							

OPF Shafts

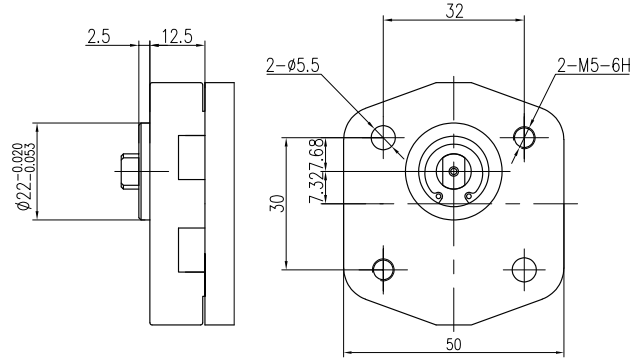


OPF Front Covers

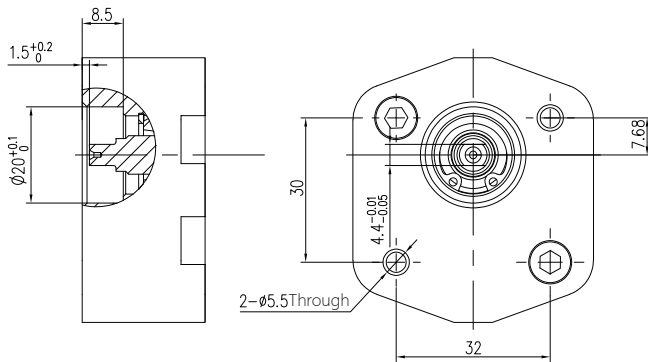
A01



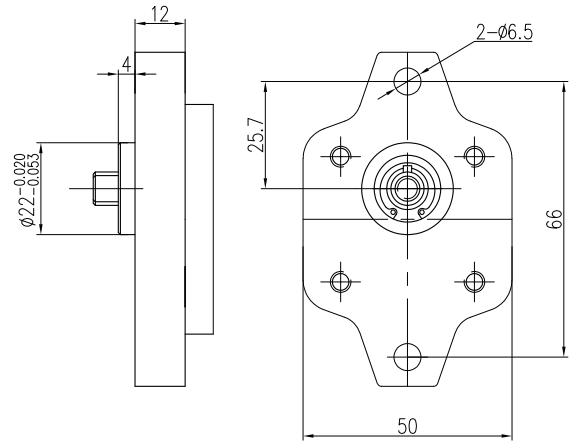
A02



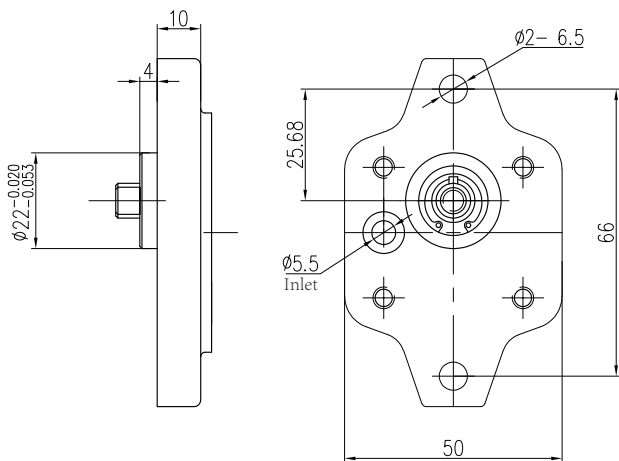
A03



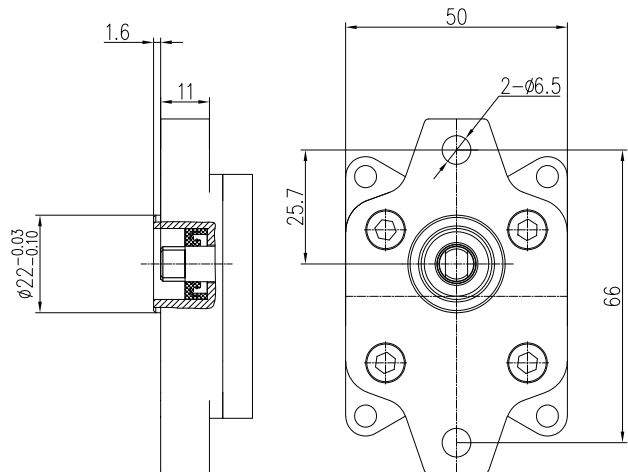
E01



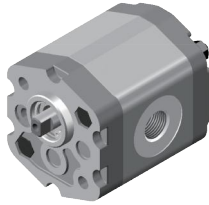
E02



E03



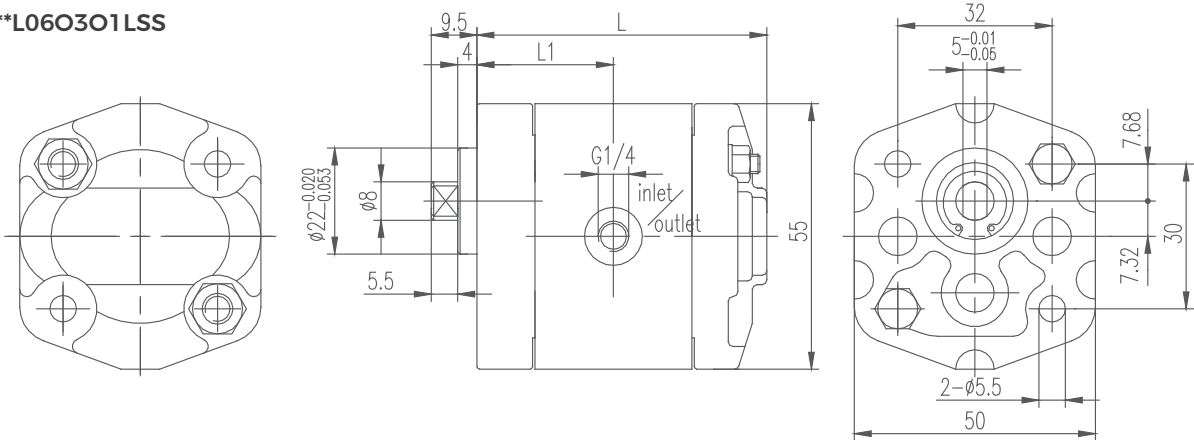
OPFL**B001A01***



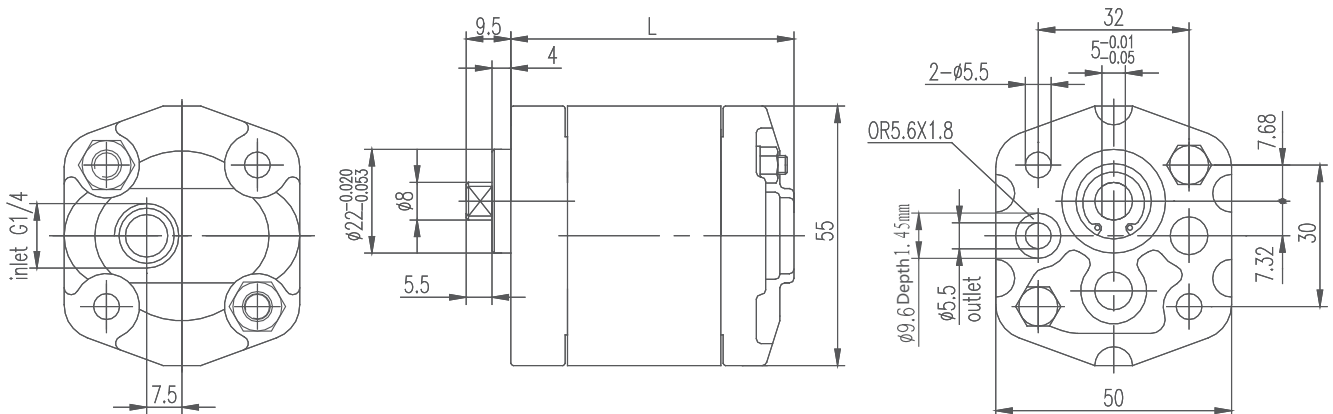
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			SS		Inlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	L(mm)	L1(mm)	
OPF0.16L07B001A01	0.16	200(250)	230(280)	250(300)	3000	6000	800	58.2	30.8	G1/4
OPF0.25L07B001A01	0.25	200(250)	230(280)	250(300)	3000	6000	800	59	31.3	
OPF0.38L07B001A01	0.38	200(250)	230(280)	250(300)	3000	6000	800	60.3	31.9	
OPF0.50L07B001A01	0.50	200(250)	230(280)	250(300)	3000	6000	800	61	32.3	
OPF0.75L07B001A01	0.75	200(250)	230(280)	250(300)	3000	6000	800	63.5	33.5	
OPF1.00L07B001A01	1.00	200(250)	230(280)	250(300)	3000	6000	800	66	34.8	
OPF1.25L07B001A01	1.25	200(250)	230(280)	250(300)	3000	5000	800	68.5	36	
OPF1.50L07B001A01	1.50	200(250)	230(280)	250(300)	3000	5000	800	70	37	
OPF1.75L07B001A01	1.75	160(180)	180(200)	200(230)	3000	4500	800	73	38.3	
OPF2.00L07B001A01	2.00	160(180)	180(200)	200(230)	3000	4500	800	75.5	39.5	

Dimensions

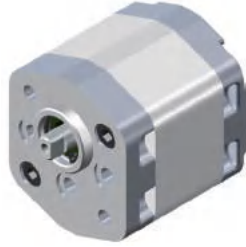
OPFL06O3O1LSS**



OPFL07O3O1LBF**



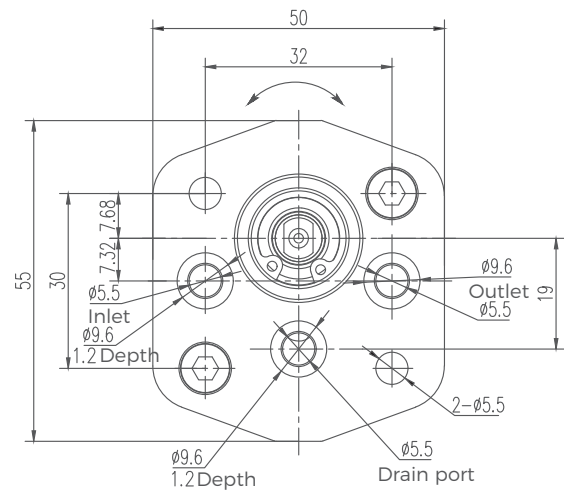
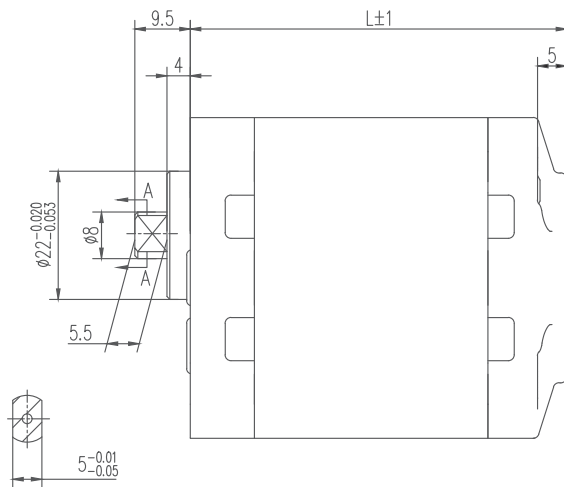
OPF**K07O3O1B-FF



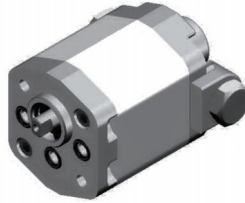
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			FF L(mm)
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	
OPF0.16K07B001A01B-FF	0.16	250(300)	230(280)	250(300)	3000	6000	800	58.2
OPF0.25K07B001A01B-FF	0.25	250(300)	230(280)	250(300)	3000	6000	800	59
OPF0.38K07B001A01B-FF	0.38	250(300)	230(280)	250(300)	3000	6000	800	60.3
OPF0.50K07B001A01B-FF	0.50	250(300)	230(280)	250(300)	3000	6000	800	61
OPF0.75K07B001A01B-FF	0.75	250(300)	230(280)	250(300)	3000	6000	800	63.5
OPF1.00K07B001A01B-FF	1.00	250(300)	230(280)	250(300)	3000	6000	800	66
OPF1.25K07B001A01B-FF	1.25	250(300)	230(280)	250(300)	3000	5000	800	68.5
OPF1.50K07B001A01B-FF	1.50	250(300)	230(280)	250(300)	3000	5000	800	70
OPF1.75K07B001A01B-FF	1.75	200(230)	180(200)	200(230)	3000	4500	800	73
OPF2.00K07B001A01B-FF	2.00	200(230)	180(200)	200(230)	3000	4500	800	75.5

Dimensions

OPF**K07B001A01B-FF



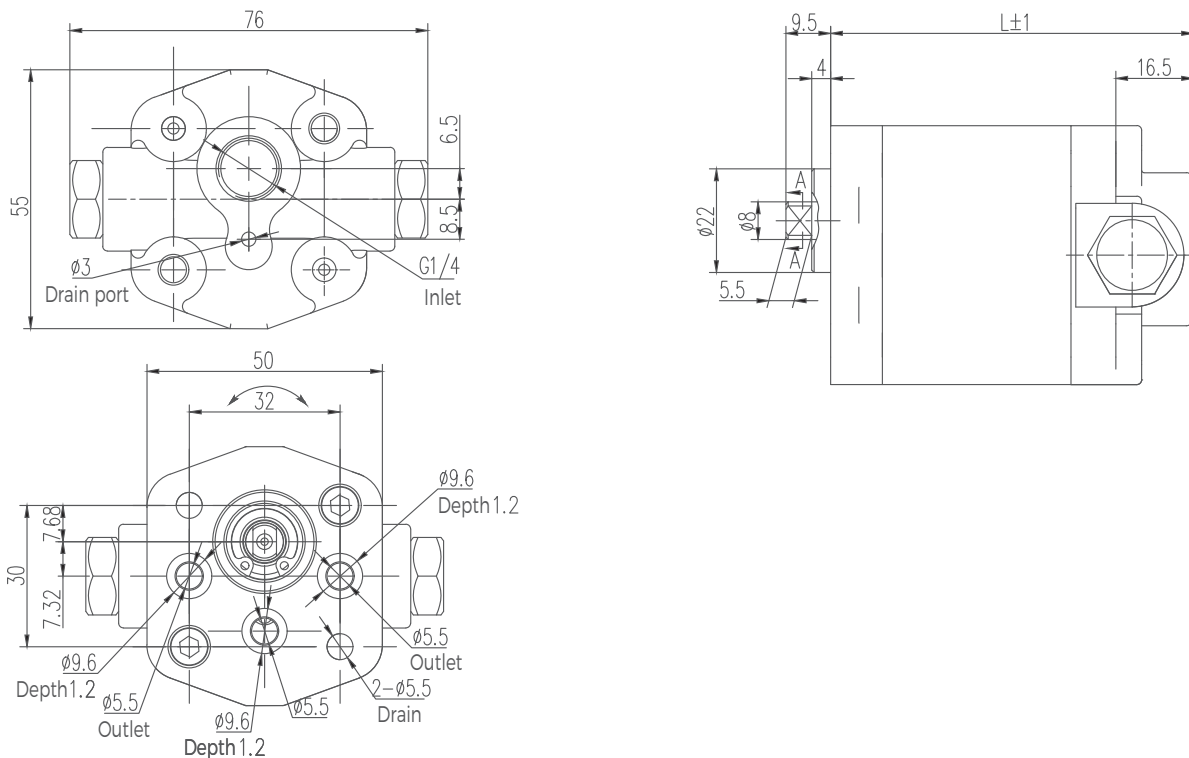
OPFK07B001A01B-FF**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		L (mm)	Rot- ation	Inlet	Outlet	Drain port
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.					
OPF0.16L07B001A01B-BF-D	0.16	200(250)	230(280)	250(300)	3000	6000	66.4	Bi	G1/4	ø5.5	ø5.5
OPF0.20L07B001A01B-BF-D	0.20	200(250)	230(280)	250(300)	3000	6000	66.7				
OPF0.25L07B001A01B-BF-D	0.25	200(250)	230(280)	250(300)	3000	6000	67.1				
OPF0.32L07B001A01B-BF-D	0.32	200(250)	230(280)	250(300)	3000	6000	67.6				
OPF0.38L07B001A01B-BF-D	0.38	200(250)	230(280)	250(300)	3000	6000	68.1				
OPF0.50L07B001A01B-BF-D	0.50	200(250)	230(280)	250(300)	3000	6000	69.1				
OPF0.63L07B001A01B-BF-D	0.63	200(250)	230(280)	250(300)	3000	6000	70.1				
OPF0.75L07B001A01B-BF-D	0.75	200(250)	230(280)	250(300)	3000	6000	71.1				
OPF0.80L07B001A01B-BF-D	0.80	200(250)	230(280)	250(300)	3000	6000	71.5				
OPF1.00L07B001A01B-BF-D	1.00	200(250)	230(280)	250(300)	3000	6000	73.1				
OPF1.25L07B001A01B-BF-D	1.25	200(250)	230(280)	250(300)	3000	5000	75.1				
OPF1.50L07B001A01B-BF-D	1.50	200(250)	230(280)	250(300)	3000	5000	77.1				
OPF1.75L07B001A01B-BF-D	1.75	160(180)	180(200)	200(230)	3000	4500	79.1				
OPF2.00L07B001A01B-BF-D	2.00	160(180)	180(200)	200(230)	3000	4500	81.1				

Dimensions

OPFK07B001A01B-FF**



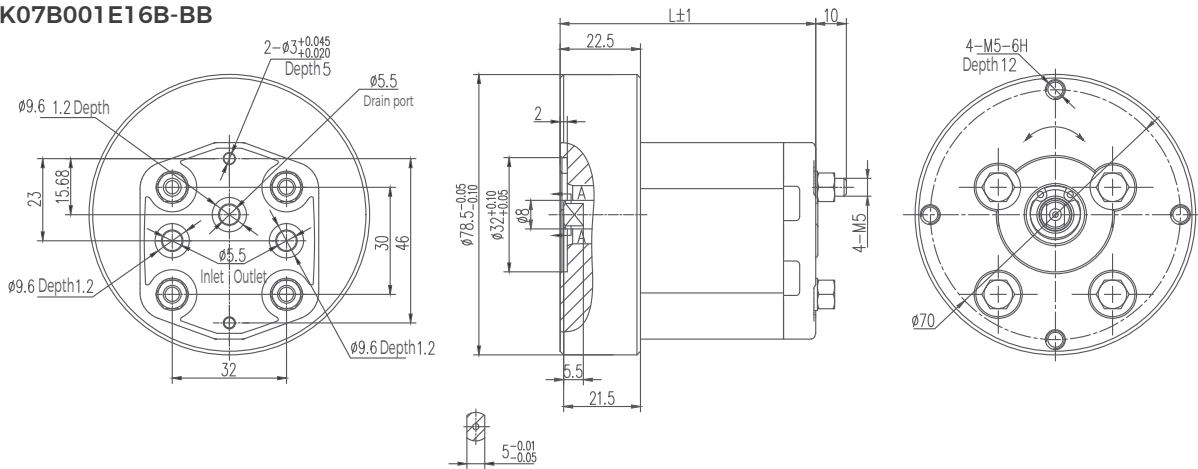
OPFK07B001E16B-BB**



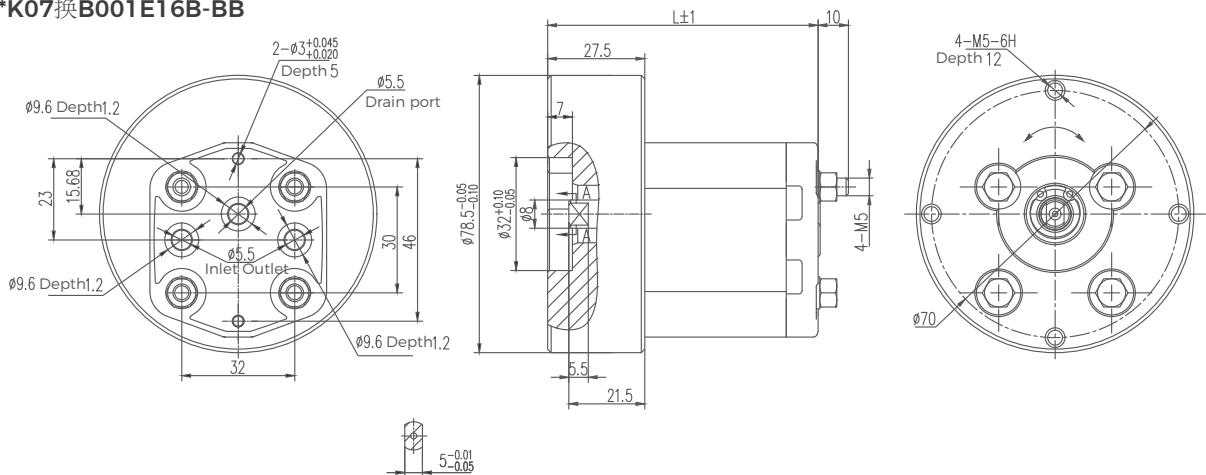
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		L (mm)	Rotation	Inlet and Outlet	Drain port
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.				
OPF0.16K07B001E16B-BB	0.16	200(250)	230(280)	250(300)	3000	6000	60.9	Bi	ø5.5	ø5.5
OPF0.20K07B001E16B-BB	0.20	200(250)	230(280)	250(300)	3000	6000	61.2			
OPF0.25K07B001E16B-BB	0.25	200(250)	230(280)	250(300)	3000	6000	61.6			
OPF0.32K07B001E16B-BB	0.32	200(250)	230(280)	250(300)	3000	6000	62.1			
OPF0.38K07B001E16B-BB	0.38	200(250)	230(280)	250(300)	3000	6000	62.5			
OPF0.50K07B001E16B-BB	0.50	200(250)	230(280)	250(300)	3000	6000	63.5			
OPF0.63K07B001E16B-BB	0.63	200(250)	230(280)	250(300)	3000	6000	64.5			
OPF0.75K07B001E16B-BB	0.75	200(250)	230(280)	250(300)	3000	6000	65.6			
OPF0.80K07B001E16B-BB	0.80	200(250)	230(280)	250(300)	3000	6000	66			
OPF1.00K07B001E16B-BB	1.00	200(250)	230(280)	250(300)	3000	6000	67.6			
OPF1.25K07B001E16B-BB	1.25	200(250)	230(280)	250(300)	3000	5000	69.6			
OPF1.50K07B001E16B-BB	1.50	200(250)	230(280)	250(300)	3000	5000	71.6			
OPF1.75K07B001E16B-BB	1.75	160(180)	180(200)	200(230)	3000	4500	73.6			
OPF2.00K07B001E16B-BB	2.00	160(180)	180(200)	200(230)	3000	4500	75.6			

Dimensions

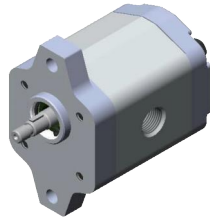
OPFK07B001E16B-BB**



OPFK07换B001E16B-BB**



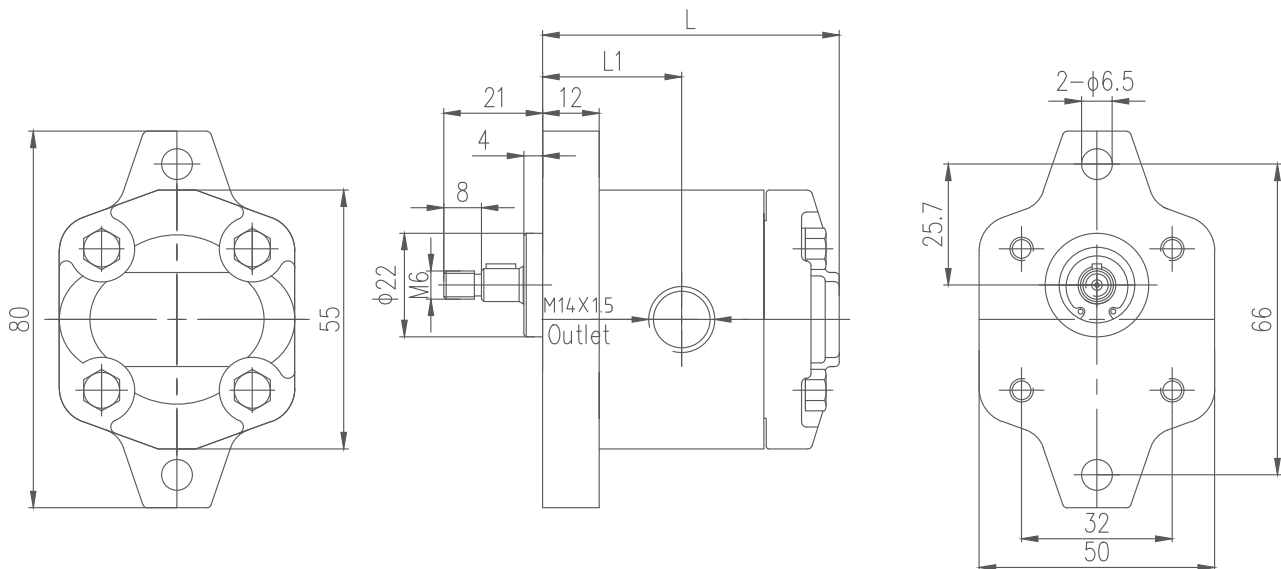
OPF**L**W001E01*



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
OPF0.16L61W001E01*	0.16	200(250)	230(280)	250(300)	3000	6000	800	57.7	26.9
OPF0.25L61W001E01*	0.25	200(250)	230(280)	250(300)	3000	6000	800	58.5	27.3
OPF0.38L61W001E01*	0.38	200(250)	230(280)	250(300)	3000	6000	800	59.8	27.9
OPF0.50L61W001E01*	0.50	200(250)	230(280)	250(300)	3000	6000	800	60.5	28.3
OPF0.63L61W001E01*	0.63	200(250)	230(280)	250(300)	3000	6000	800	62	29
OPF0.75L61W001E01*	0.75	200(250)	230(280)	250(300)	3000	6000	800	63	29.5
OPF1.00L61W001E01*	1.00	200(250)	230(280)	250(300)	3000	6000	800	65.5	30.8
OPF1.25L61W001E01*	1.25	200(250)	230(280)	250(300)	3000	5000	800	68	32
OPF1.50L61W001E01*	1.50	200(250)	230(280)	250(300)	3000	5000	800	70	33
OPF1.75L61W001E01*	1.75	160(180)	180(200)	200(230)	3000	4500	800	72.5	34.3
OPF2.00L61W001E01*	2.00	160(180)	180(200)	200(230)	3000	4500	800	75	35.5

Dimensions





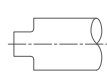


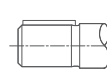


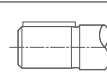


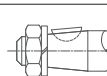








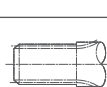

OPF**L**W001E01*



Ordering Code

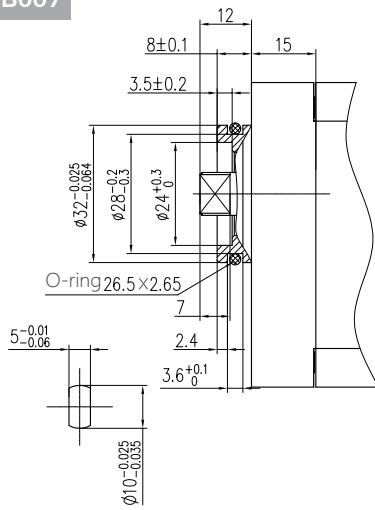
1	A	P	F	2.7	L01	B007	A04	L-	SS	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	l	m

- Ⓐ 1=Group 1
 Ⓑ Improved number
 Omit=Aluminum cover and body
 A=Cast iron cover
 AB=Low noise
 QC/QE=Special type
 Ⓒ P=Gear pump
 Ⓓ F=Version
 Ⓔ Displacement(ml/r)
 1.1, 1.3, 1.6, 1.8, 2.1, 2.7, 3.2, 3.7, 4.2, 4.8, 5.8, 8
 Ⓕ L01=Line ports
 Ⓖ B007=Drive shaft
 Ⓗ A04=Front cover
 ⓘ Rotation
 R=CW
 L=CCW
 B=Bi-directional
 ⓘ Ports combination
 SS=Side inlet and side outlet
 SB=Side inlet and back outlet
 BS=Back inlet and side outlet
 Ⓚ Seal
 F=FKM seal
 Omit=NBR seal
 ⓘ Outboard bearing
 O=Outboard bearing
 Omit=Without outboard bearing
 ⓘ Option
 V=Relief valve
 D=Check valve

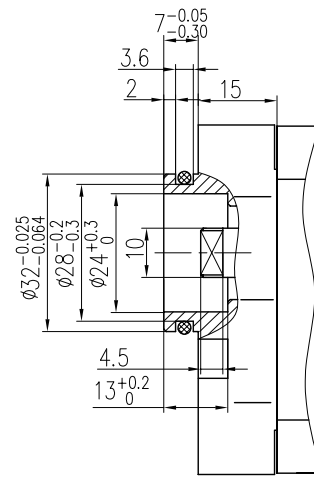
Ⓕ Line ports Inlet and Outlet			Ⓖ Drive shaft			Ⓗ Front cover		
L01	G3/8 Ø9×12.7×1.45mm		B007	Flat key Ø10mm×12		A04	2-hole mounting 40×40mm	
L07	G1/4 Ø5.5×9.6×1.45mm		B008	Flat key Ø10mm×7		A05	2-hole mounting 40×40mm	
L33	NPT3/8 Ø9×12.7×1.45mm		P006	Flat key Ø12.7mm×27		A15	2-hole mounting 40×40mm	
L46	G3/8 G3/8		P016	Flat key Ø12.7mm×38		R01	4-hole mounting 52.4×71.9mm	
L97	NPT1/4 NPT1/4		Z001	Taper key 1:8 Ø8mm		S01	4-hole mounting 64×64mm	
LJ35	3/4-16UNF-2B 9/16-18UNF-2B		Z002	Taper key 1:8 Ø8mm×29		D02	2-groove mounting 82.55mm	
LJ37	7/8-14UNF-2B 3/4-16UNF-2B		S006	Spline key Ø12.67mm 9teeth		D04	2-groove mounting 82.55mm	
F01	Ø30, M6, Ø12 Ø30, M6, Ø12		J002	Spline key Ø9.84mm 11teeth		E04	2-hole mounting 40×40mm	

1PF Shafts

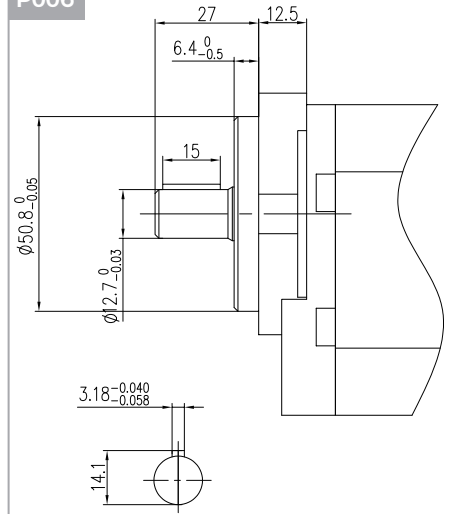
B007



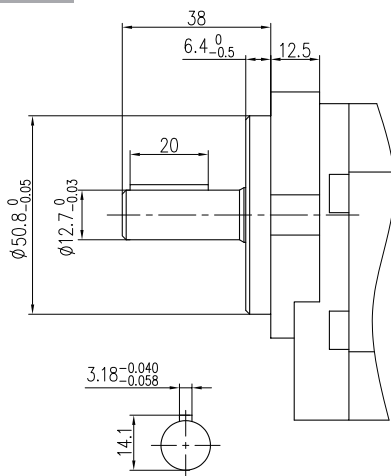
B008



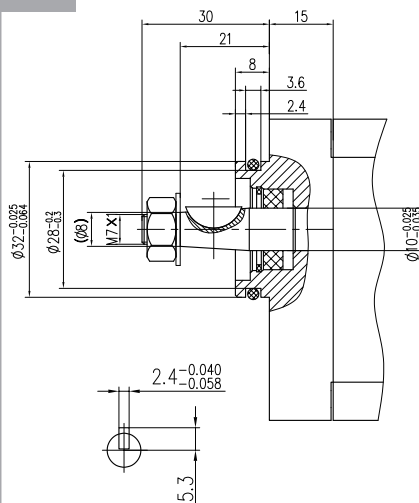
P006



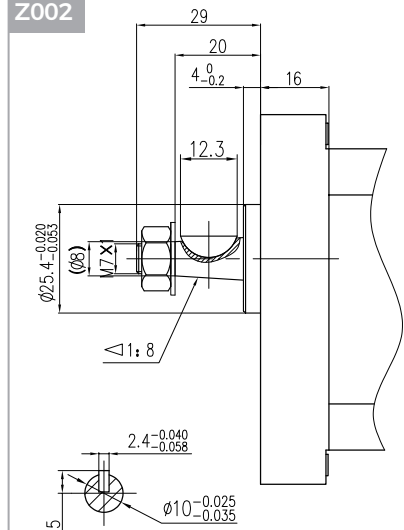
P016



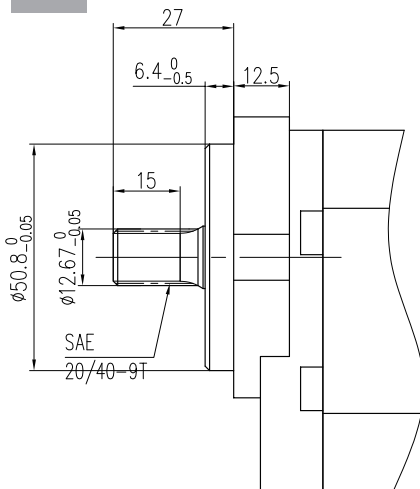
Z001



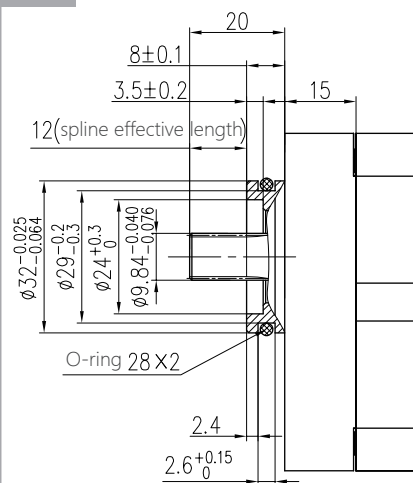
Z002



S006

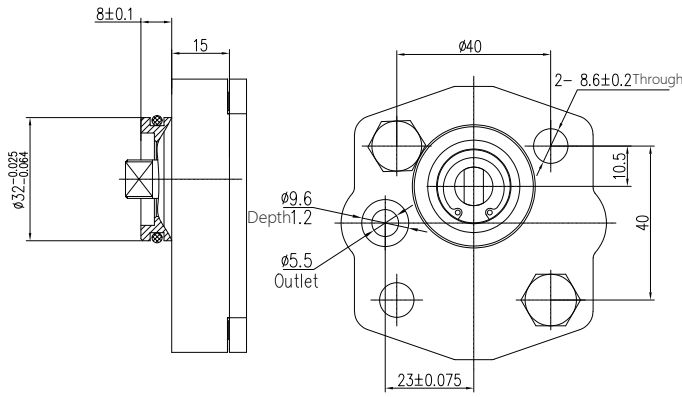


J002

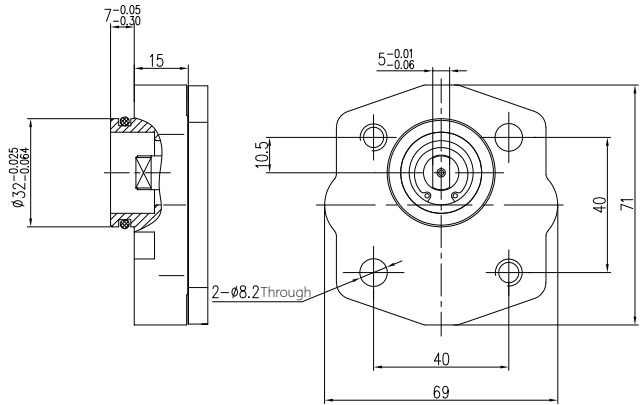


1PF Front Covers

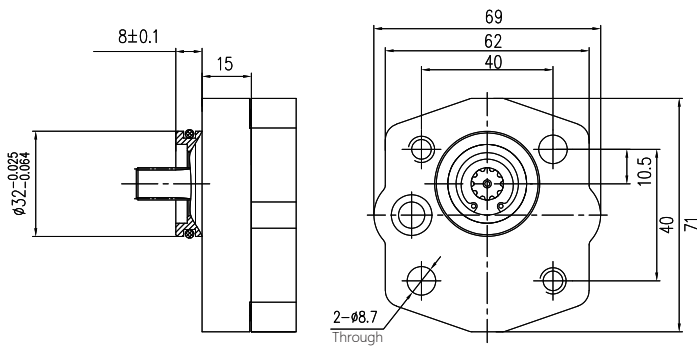
A04



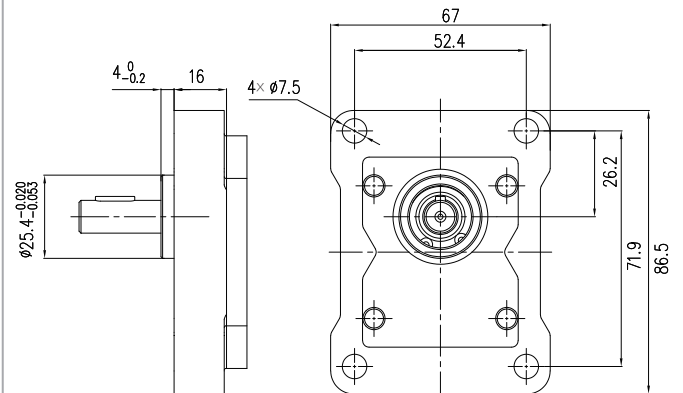
A05



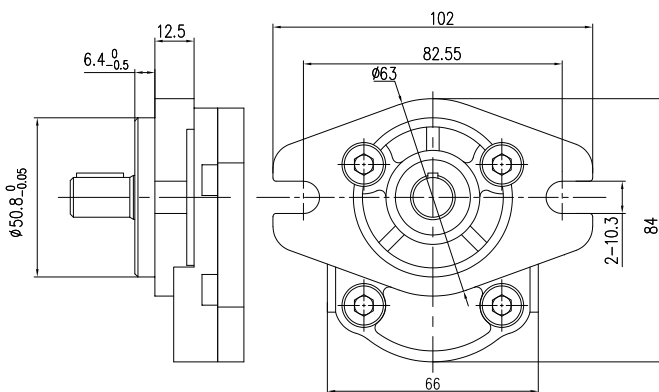
A15



R01



D02



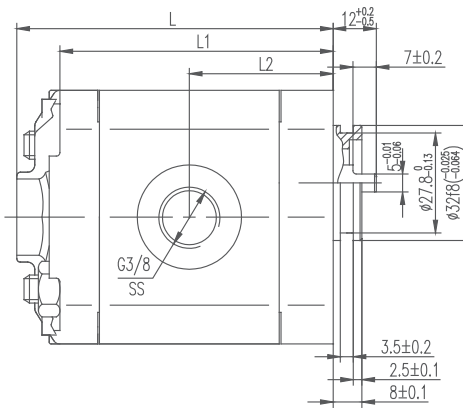
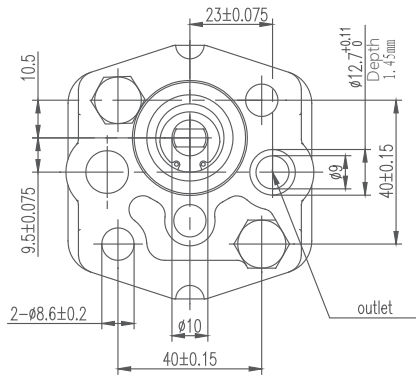
1PFL**B007A04***



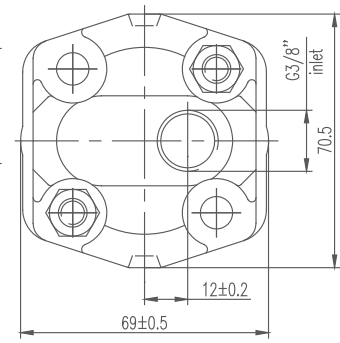
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	L2	Inlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
1PF1.1L01B007A04*	1.10	200(250)	230(280)	250(300)	3000	6000	600	74	63	33.0	G3/8
1PF1.3L01B007A04*	1.30	200(250)	230(280)	250(300)	3000	6000	600	75	64	33.5	
1PF1.6L01B007A04*	1.60	200(250)	230(280)	250(300)	3000	6000	600	76	65	34.0	
1PF1.8L01B007A04*	1.80	200(250)	230(280)	250(300)	3000	6000	600	77	66	34.5	
1PF2.1L01B007A04*	2.10	200(250)	230(280)	250(300)	3000	6000	600	78	67	35.0	
1PF2.7L01B007A04*	2.70	200(250)	230(280)	250(300)	3000	6000	600	80	69	36.0	
1PF3.2L01B007A04*	3.20	200(250)	230(280)	250(300)	3000	5000	600	82	71	37.0	
1PF3.7L01B007A04*	3.70	200(250)	230(280)	250(300)	3000	4500	600	84	73	38.0	
1PF4.2L01B007A04*	4.20	200(250)	230(280)	250(300)	3000	4000	600	86	75	39.0	
1PF4.8L01B007A04*	4.80	160(180)	180(200)	200(230)	3000	3500	600	88	77	40.0	
1PF5.8L01B007A04*	5.80	160(180)	180(200)	200(230)	3000	3500	600	92	81	42.0	
1PF8.0L01B007A04*	8.00	160(180)	180(200)	200(230)	3000	3500	600	100	89	46.0	

Dimensions

1PFL01B007A04**

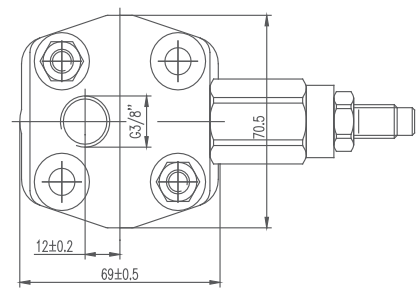
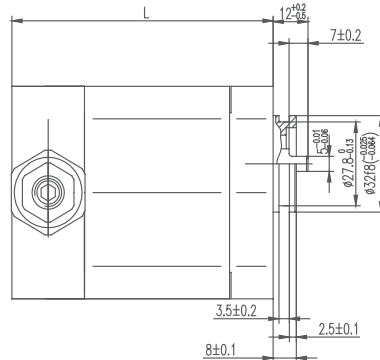
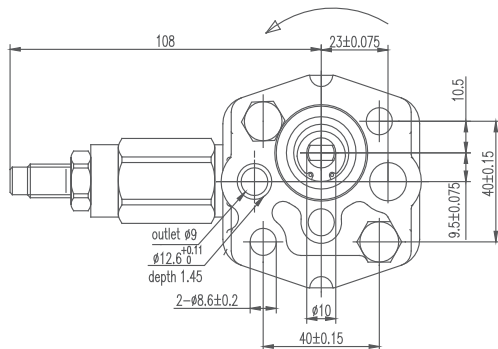


Option: With Relief Valve



Adjustable Pressure of Relief Valve 50–250 Bar

1PFL01B007A04-BF-V**



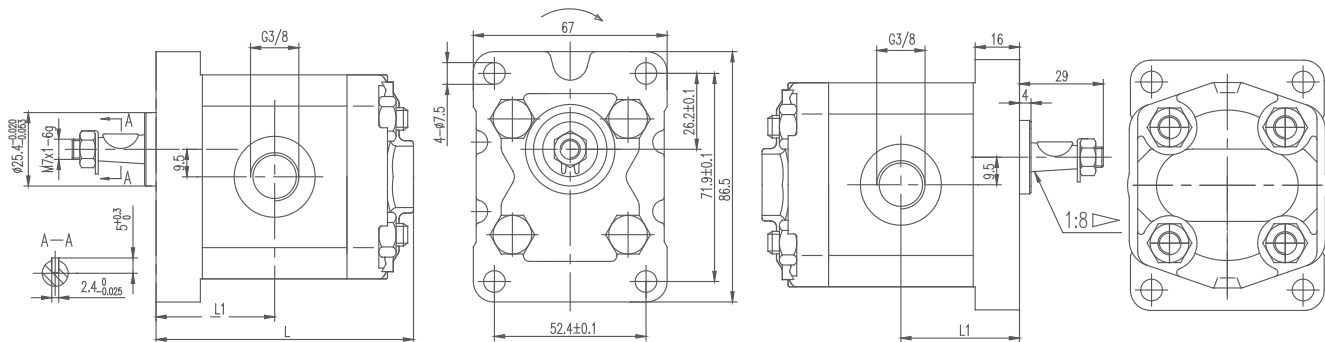
1PFL**Z002R01***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
1PF1.1L46Z002R01*	1.10	200(250)	230(280)	250(300)	3000	6000	600	75	33
1PF1.3L46Z002R01*	1.30	200(250)	230(280)	250(300)	3000	6000	600	76	34
1PF1.6L46Z002R01*	1.60	200(250)	230(280)	250(300)	3000	6000	600	78	35
1PF1.8L46Z002R01*	1.80	200(250)	230(280)	250(300)	3000	6000	600	78.5	35.5
1PF2.1L46Z002R01*	2.10	200(250)	230(280)	250(300)	3000	6000	600	79	36
1PF2.7L46Z002R01*	2.70	200(250)	230(280)	250(300)	3000	6000	600	81	37
1PF3.2L46Z002R01*	3.20	200(250)	230(280)	250(300)	3000	5000	600	83	38
1PF3.7L46Z002R01*	3.70	200(250)	230(280)	250(300)	3000	4500	600	85	39
1PF4.2L46Z002R01*	4.20	200(250)	230(280)	250(300)	3000	4000	600	87	40
1PF4.8L46Z002R01*	4.80	160(180)	180(200)	200(230)	3000	3500	600	89	41
1PF5.8L46Z002R01*	5.80	160(180)	180(200)	200(230)	3000	3500	600	93	43
1PF8.0L46Z002R01*	8.00	160(180)	180(200)	200(230)	3000	3500	600	101	47

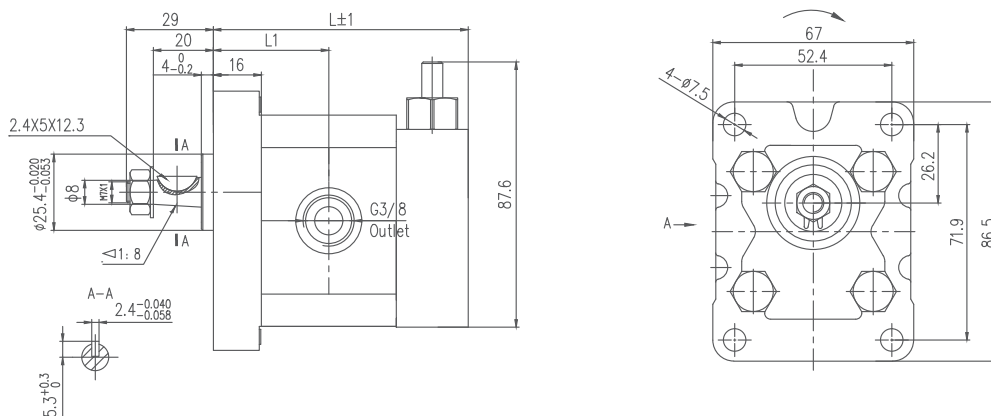
Dimensions

1PFL46Z002R01SS**



1PFL46Z002R01-V**

Option: With Relief Valve



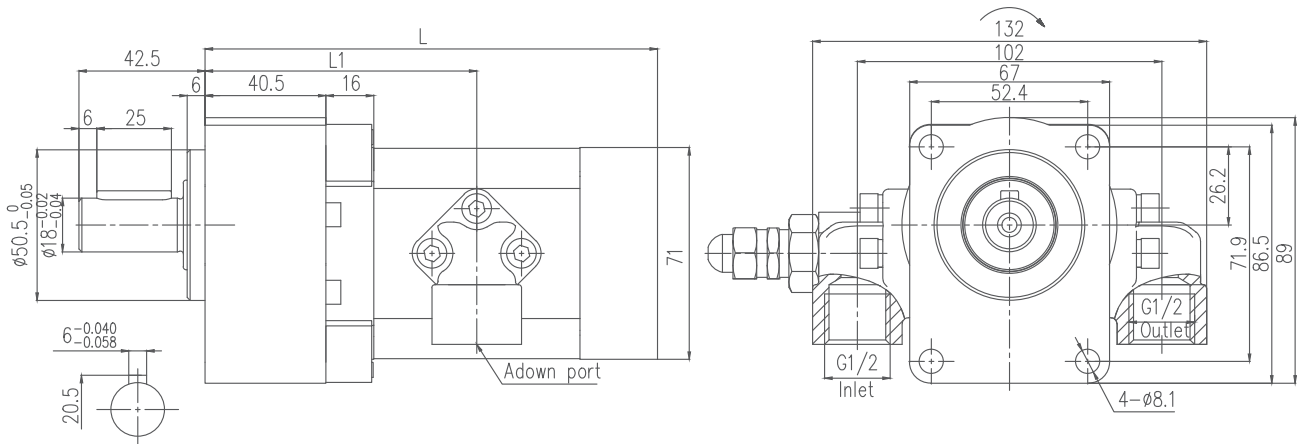
1PFL04P001E06-O-V-J**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
1PF1.1L04P001E06-O-V-J	1.10	200(250)	230(280)	250(300)	3000	6000	600	75	33
1PF1.3L04P001E06-O-V-J	1.30	200(250)	230(280)	250(300)	3000	6000	600	76	34
1PF1.6L04P001E06-O-V-J	1.60	200(250)	230(280)	250(300)	3000	6000	600	78	350
1PF1.8L04P001E06-O-V-J	1.80	200(250)	230(280)	250(300)	3000	6000	600	78.5	35.5
1PF2.1L04P001E06-O-V-J	2.10	200(250)	230(280)	250(300)	3000	6000	600	79	36
1PF2.7L04P001E06-O-V-J	2.70	200(250)	230(280)	250(300)	3000	6000	600	81	37
1PF3.2L04P001E06-O-V-J	3.20	200(250)	230(280)	250(300)	3000	5000	600	83	38
1PF3.7L04P001E06-O-V-J	3.70	200(250)	230(280)	250(300)	3000	4500	600	85	39
1PF4.2L04P001E06-O-V-J	4.20	200(250)	230(280)	250(300)	3000	4000	600	87	40
1PF4.8L04P001E06-O-V-J	4.80	160(180)	180(200)	200(230)	3000	3500	600	89	41
1PF5.8L04P001E06-O-V-J	5.80	160(180)	180(200)	200(230)	3000	3500	600	93	43
1PF8.0L04P001E06-O-V-J	8.00	160(180)	180(200)	200(230)	3000	3500	600	101	47

Dimensions

1PFL04P001E06-O-V-J**



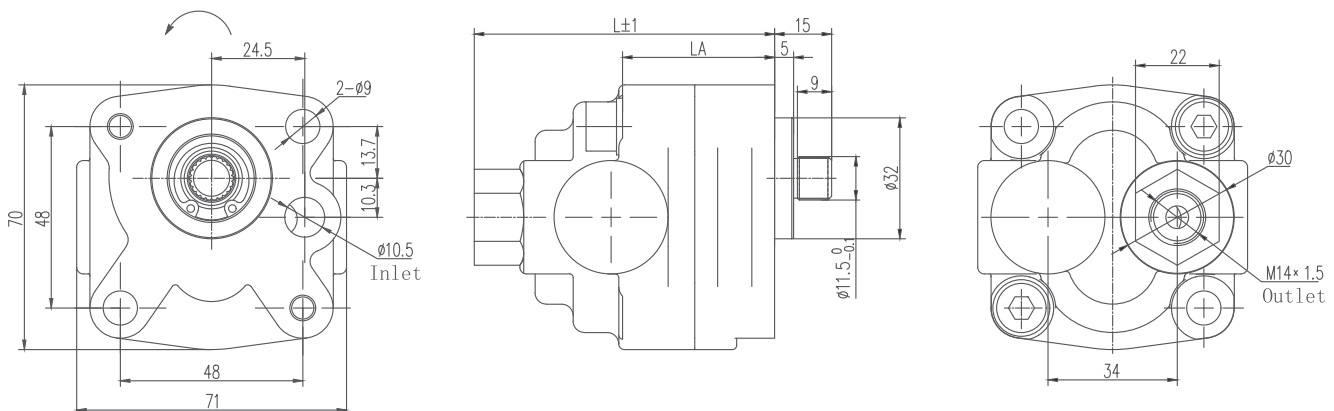
1HPF**L147S93SP4LFB



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
1HPF1.1L147F002A17LFB	1.10	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF1.3L147F002A17LFB	1.30	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF1.6L147F002A17LFB	1.60	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF1.8L147F002A17LFB	1.80	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF2.1L147F002A17LFB	2.10	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF2.3L147F002A17LFB	2.30	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF2.5L147F002A17LFB	2.50	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF2.7L147F002A17LFB	2.70	140 (170)	170 (200)	200 (230)	3000	4000	600	79	40
1HPF3.2L147F002A17LFB	3.20	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF3.3L147F002A17LFB	3.30	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF3.4L147F002A17LFB	3.40	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF3.7L147F002A17LFB	3.70	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF4.2L147F002A17LFB	4.20	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF4.8L147F002A17LFB	4.80	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF5.8L147F002A17LFB	5.80	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF6.0L147F002A17LFB	6.00	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF6.2L147S93SP4LFB	6.20	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF7.0L147S93SP4LFB	7.00	140 (170)	170 (200)	200 (230)	3000	4000	600	99	60
1HPF8.0L147S93SP4LFB	8.00	140 (170)	170 (200)	200 (230)	3000	4000	600	101	60

Dimensions

1HPF**L147F002A17LFB



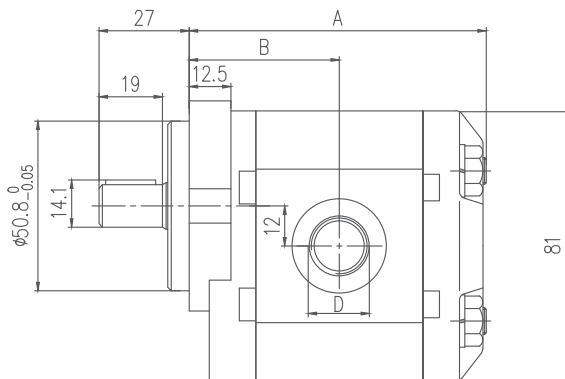
1APFL**P006D02***



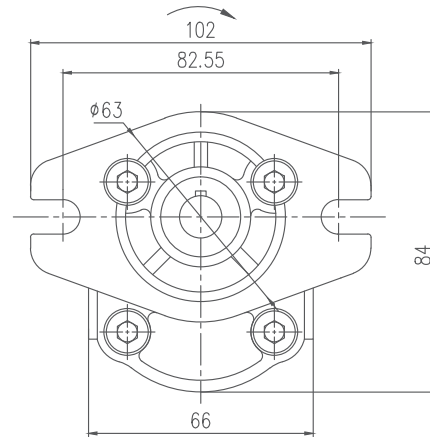
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			A	B	D	
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)		Inlet	Outlet
1APF1.3L05P006D02*	1.30	200(250)	230(280)	250(300)	3000	4500	500	82	42	G1/2	G3/8
1APF2.0L05P006D02*	2.00	200(250)	230(280)	250(300)	3000	4500	500	84	43		
1APF2.7L05P006D02*	2.70	200(250)	230(280)	250(300)	3000	4500	500	86	44		
1APF3.4L05P006D02*	3.40	200(250)	230(280)	250(300)	3000	4500	500	88	45		
1APF4.1L05P006D02*	4.10	200(250)	230(280)	250(300)	3000	4500	500	90	46		
1APF5.1L05P006D02*	5.10	200(250)	230(280)	250(300)	3000	4500	500	93	47.5		
1APF6.1L05P006D02*	6.10	200(250)	230(280)	250(300)	3000	4500	500	96	49		
1APF7.1L05P006D02*	7.10	200(250)	230(280)	250(300)	3000	4500	500	101	50.5		

Dimensions

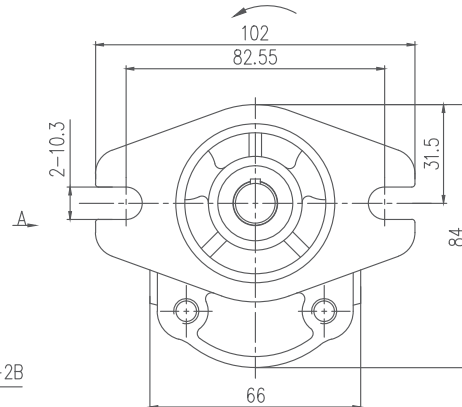
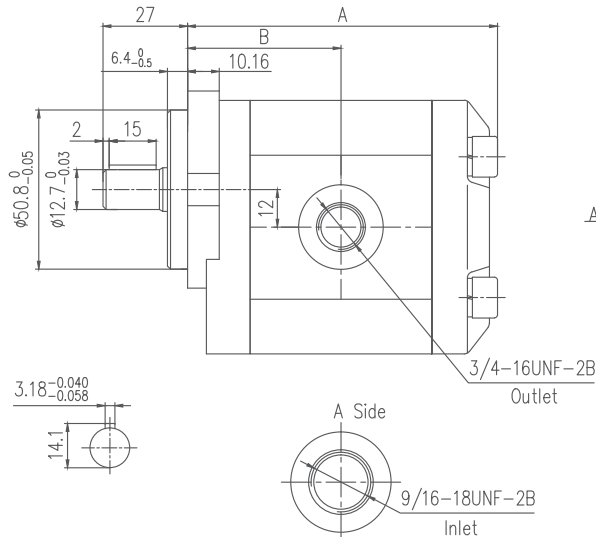
1APFL**P006D02***



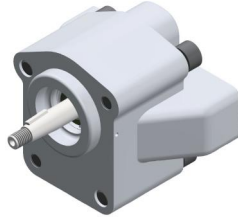
Option: With Relief Valve



1APFLJ35P006D04**



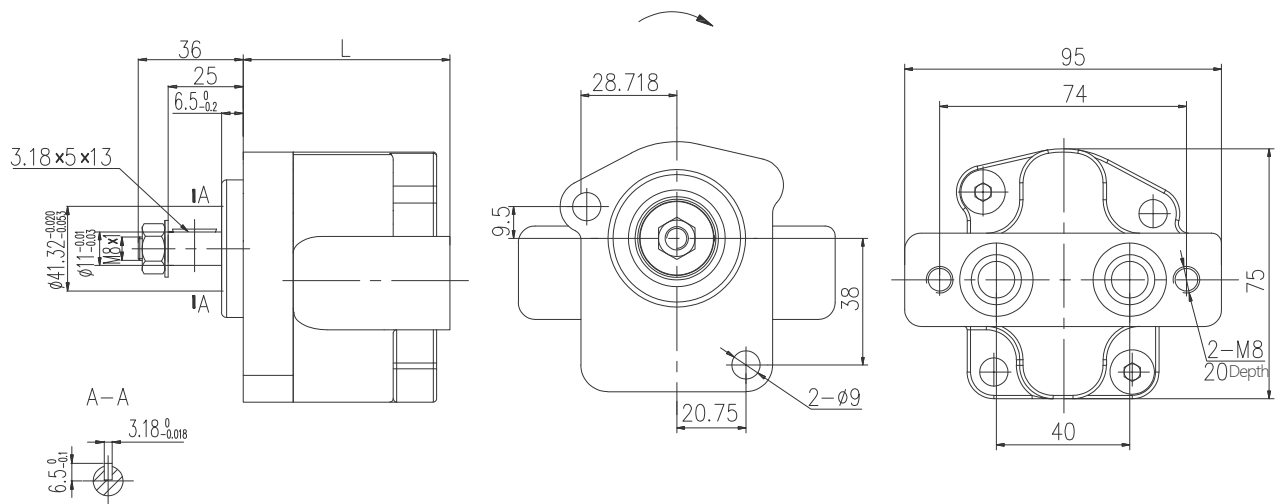
1QEPF**P078E14



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	
1QEPF0.8P078E14	0.8	200(250)	230(280)	250(300)	3000	4000	500	80.3
1QEPF1.1P078E14	1.1	200(250)	230(280)	250(300)	3000	4000	500	80.8
1QEPF1.6P078E14	1.6	200(250)	230(280)	250(300)	3000	4000	500	82.8
1QEPF2.5P078E14	2.5	200(250)	230(280)	250(300)	3000	4000	500	86.3
1QEPF3.2P078E14	3.2	200(250)	230(280)	250(300)	3000	3500	500	90.0

Dimensions

1QEPF**P078E14



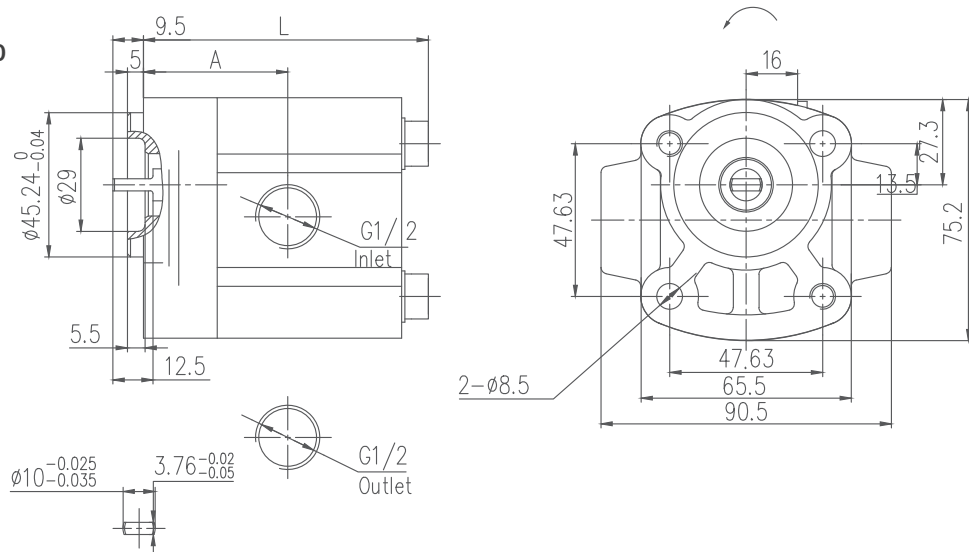
1QCPFL**B025E10***



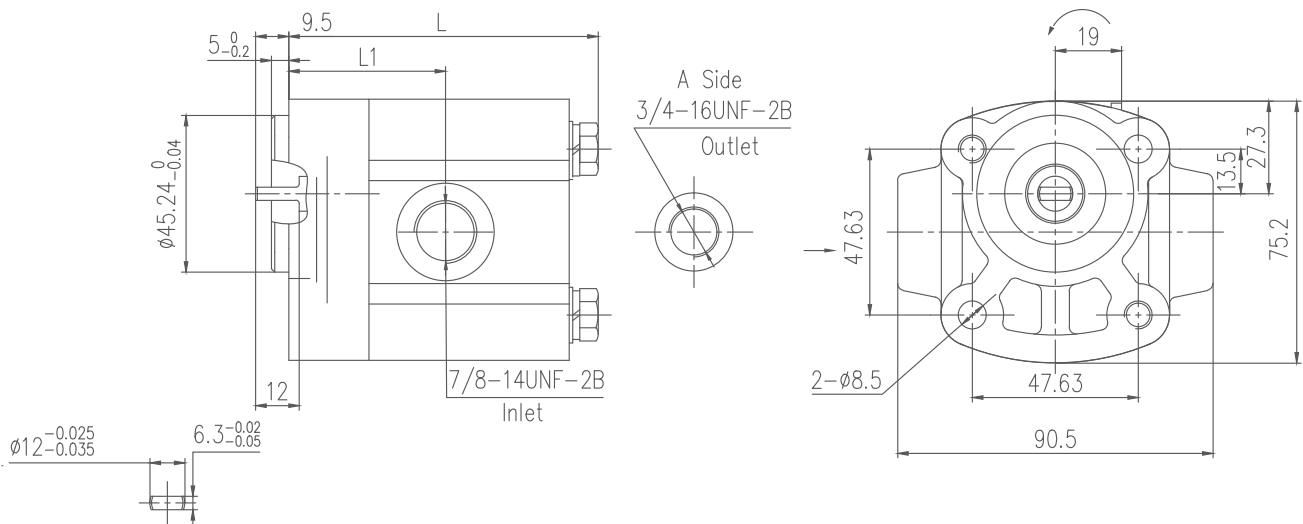
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
1QCPF0.8L04B025E10*	0.8	200(250)	230(280)	250(300)	3000	4000	500	80.3	40.8
1QCPF1.1L04B025E10*	1.1	200(250)	230(280)	250(300)	3000	4000	500	80.8	41.0
1QCPF1.6L04B025E10*	1.6	200(250)	230(280)	250(300)	3000	4000	500	82.8	42.0
1QCPF2.5L04B025E10*	2.5	200(250)	230(280)	250(300)	3000	4000	500	86.3	43.8
1QCPF3.2L04B025E10*	3.2	200(250)	230(280)	250(300)	3000	4000	500	88.8	45.0

Dimensions

1QCPFL04B025E10**




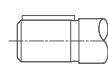


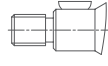


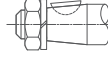







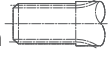


1QCPFLJ37B025E10**



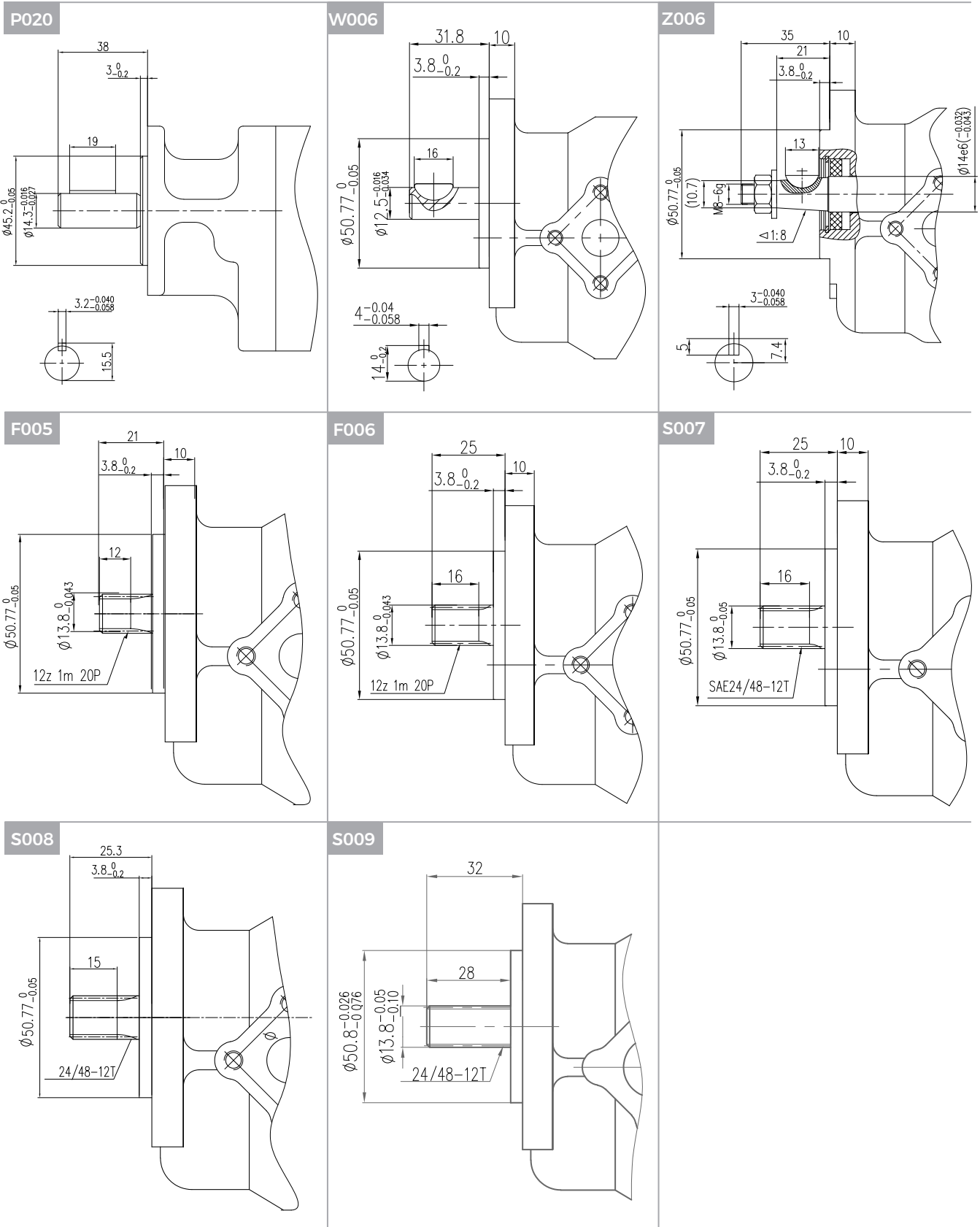
Ordering Code

1.5	P	F	9	F50	W006	R02	L-	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k

- (a) 1.5=Group 1.5
 (b) P=Gear pump
 (c) F=Version
 (d) Displacement (ml/r)
 2, 3, 4, 5, 6, 8, 9, 11, 12
 (e) F50=Line ports
 (f) W006=Drive shaft
 (g) R02=Front cover
 (h) Rotation
 R=CW
 L=CCW
 B=Bi-directional
 (i) Seal
 F=FKM seal
 Omit=NBR seal
 (j) Outboard bearing
 O=Outboard bearing
 Omit=Without outboard bearing
 (k) Option
 V=Relief valve
 D=Check valve

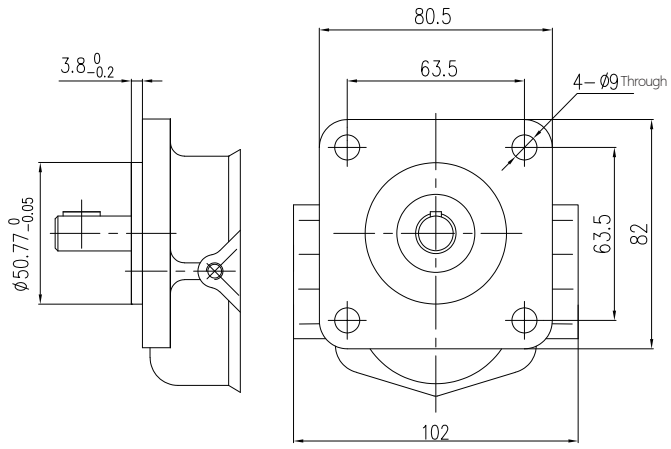
(f) Line ports Inlet and Outlet			(g) Drive shaft			(h) Front cover	
L04	G1/2 G1/2		P020	Flat key Ø14.3mm×38		R02	4-hole mounting Ø80.5×82mm 
L05	G1/2 G3/8		W006	Woodruff key Ø12.5mm×31.8		E24	2-hole mounting Ø9mm 
L44	G3/8 G1/4		Z006	Taper key 1:8, Ø18mm			
L46	G3/8 G3/8		F005	Spline key Ø13.8mm×21 12teeth			
LJ05	G1/2, spot-face Ø35 G3/8, spot-face Ø30		F006	Spline key Ø13.8mm×25 12teeth			
F02	Ø30, M6, Ø13 Ø30, M6, Ø13		S007	Spline key Ø13.8mm×25 12teeth			
F50	25.2×25.2, M6, Ø14.5 25.2×25.2, M6, Ø14.5		S008	Spline key Ø13.5mm×25.3 12teeth			
LJF01	M22×1.5 25.2×25.2, M6, Ø14.5		S009	Spline key Ø13.8mm×32 12teeth			

1.5PF Shafts

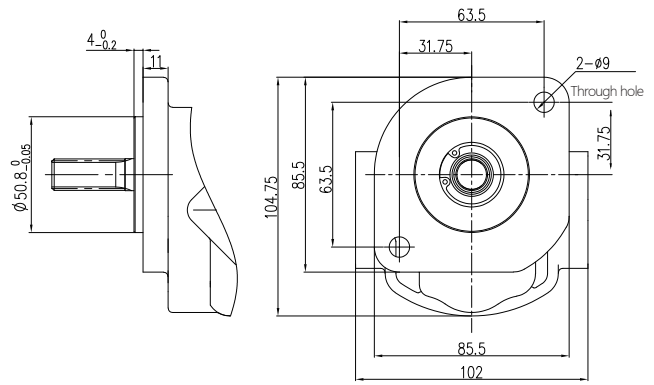


1.5PF Front Covers

R02



E24



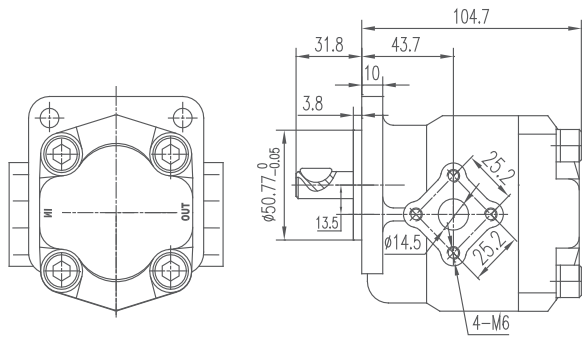
1.5PFF**F13S3***



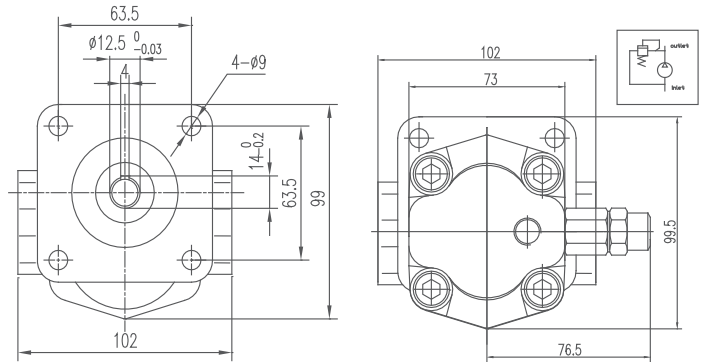
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
1.5PF02F50W006R02*	2	210(250)	230(280)	250(300)	2000	3500	600
1.5PF03F50W006R02*	3	210(250)	230(280)	250(300)	2000	3500	600
1.5PF04F50W006R02*	4	210(250)	230(280)	250(300)	2000	3500	600
1.5PF05F50W006R02*	5	210(250)	230(280)	250(300)	2000	3500	600
1.5PF06F50W006R02*	6	210(250)	230(280)	250(300)	2000	3500	600
1.5PF08F50W006R02*	8	210(250)	230(280)	250(300)	2000	3500	600
1.5PF09F50W006R02*	9	175(195)	195(215)	210(230)	1500	2000	600
1.5PF11F50W006R02*	11	175(195)	195(215)	210(230)	1500	2000	600
1.5PF12F50W006R02*	12	175(195)	195(215)	210(230)	1500	2000	600

Dimensions

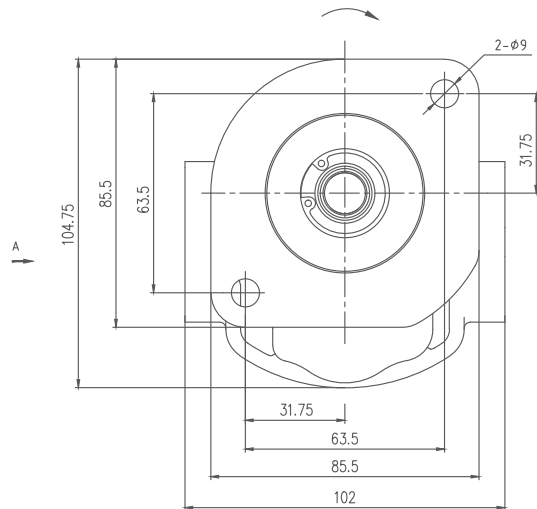
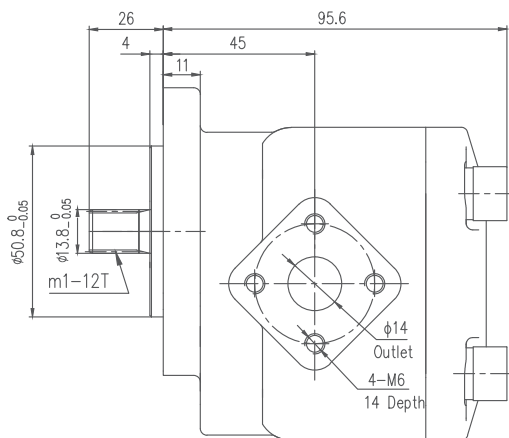
1.5PFF50W006R02***



Option: with relief valve




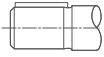


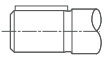


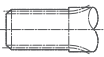





















1.5CPFFL60S031E24***



Ordering Code

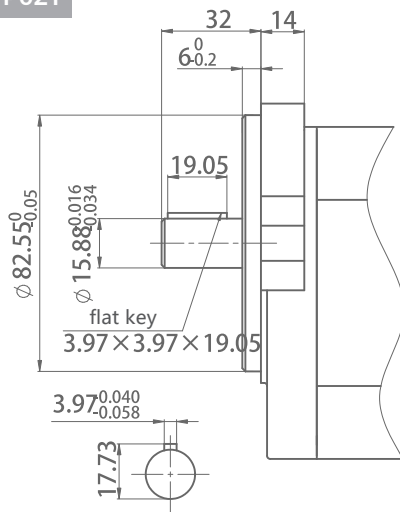
2	A	P	F	18	L01	P021	D09	L-	SS	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	l	m

- (a) 2=Group 2
 (b) Improved number
 Omit=Aluminum cover and body
 A=Cast iron cover
 AB=Low noise
 L=Ultra-low noise
 (c) P=Gear pump
 (d) F=Version
 (e) Displacement(ml/r)
 4, 6, 8, 10, 12, 14, 16, 18, 20, 23, 25, 28, 30
 (f) L01=Line ports
 (g) P021=Drive shaft
 (h) D09=Front cover
 (i) Rotation
 R=CW
 L=CCW
 B=Bi-directional
 (j) Ports combination
 SS=Side inlet and side outlet
 SB=Side inlet and back outlet
 BS=Back inlet and side outlet
 BB=Back inlet and back outlet
 (k) Seal
 F=FKM seal
 Omit=NBR seal
 (l) Outboard bearing
 O=Outboard bearing
 Omit=Without outboard bearing
 (m) Option
 V=Relief valve
 D=Check valve

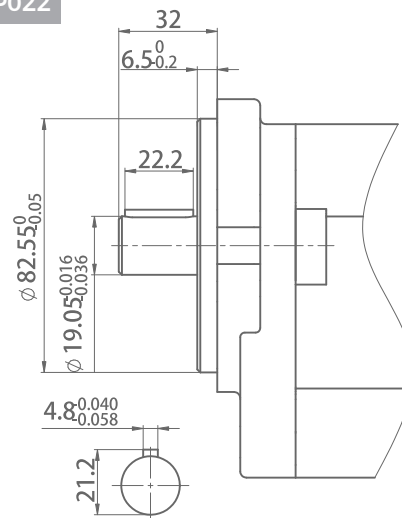
(f) Line ports Inlet and Outlet			(g) Drive shaft			(h) Front cover		
L04	G1/2 G1/2		P021	Flat key Ø15.88mm×32		D09	2-groove mounting Ø106mm	
L05	G1/2 G3/8		P022	Flat key Ø19.05mm×32		D10	2-hole mounting Ø106mm	
L08	G3/4 G1/2		S011	Spline key Ø18.63mm×38		A21	4-hole mounting 60x60mm	
L10	PT3/4 PT1/2		S013	Spline key Ø15.45mm×32		R09	4-hole mounting 71.5×96.2mm	
LJ39	1-1/16-12UN-2B 7/8-14UNF-2B		Z007	Taper key 1:8, Ø8.13mm		A23	4-hole mounting 60×60mm	
LJ42	1-5/16-12UN-2B 1-1/16-12UN-2B		T003	Taper key 1:5, M12×1.5		R12	4-hole mounting 72×100mm	
F02	Ø30, M6, Ø13 Ø30, M6, Ø13		T004	Taper key 1:5, M12		R13	4-hole mounting 72×100mm	
F06	Ø40, M8, Ø20 Ø30, M6, Ø13		T005	Taper key 1:5, M14×1.5		A24	4-hole mounting 60×60mm	
F08	Ø50, M8, Ø22 Ø50, M8, Ø18		C001	Spline key Din 5482 B17×14		R17	4-hole mounting 70×100mm	
F52	Ø40, M6, Ø20 Ø35, M6, Ø15					D28	2-hole mounting 146mm	

2PF Shafts

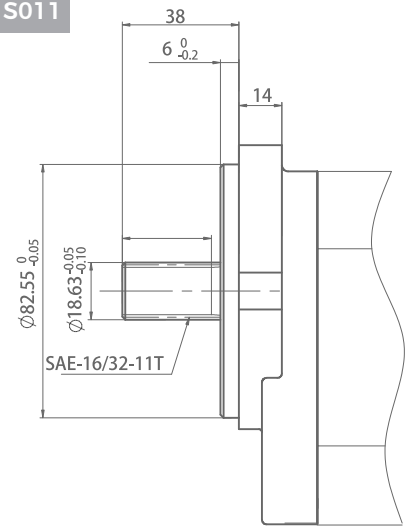
P021



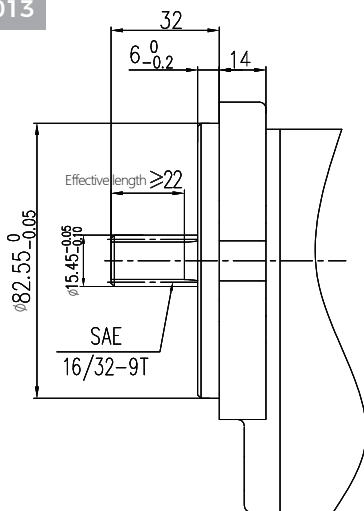
P022



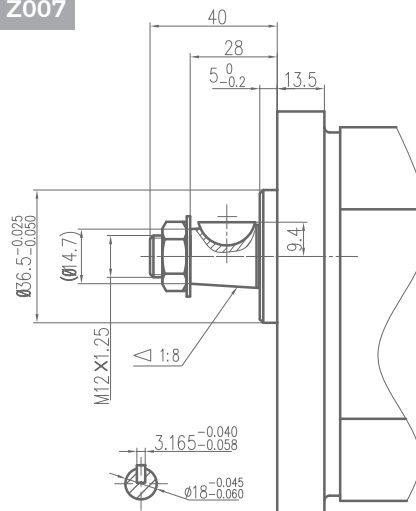
S011



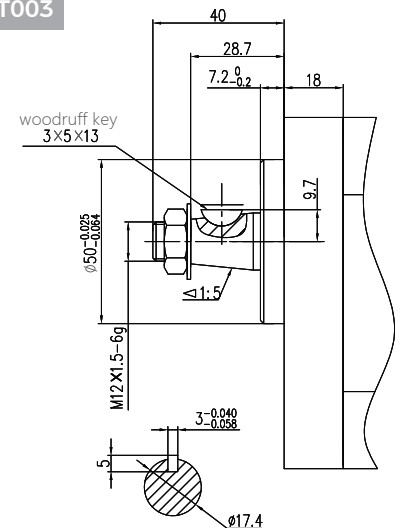
S013



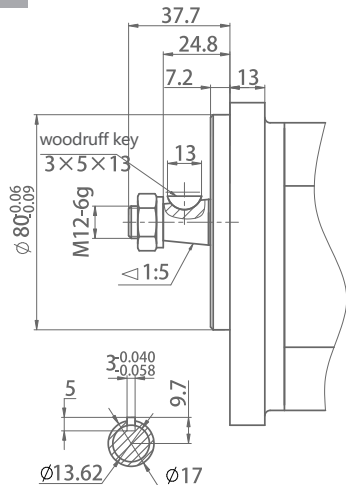
Z007



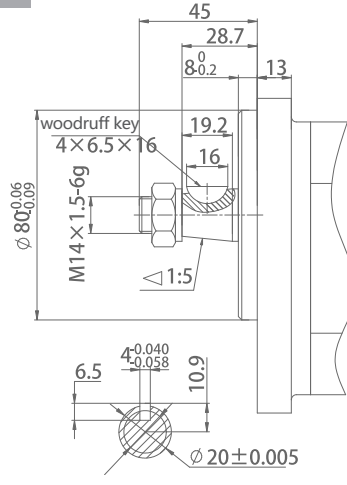
T003



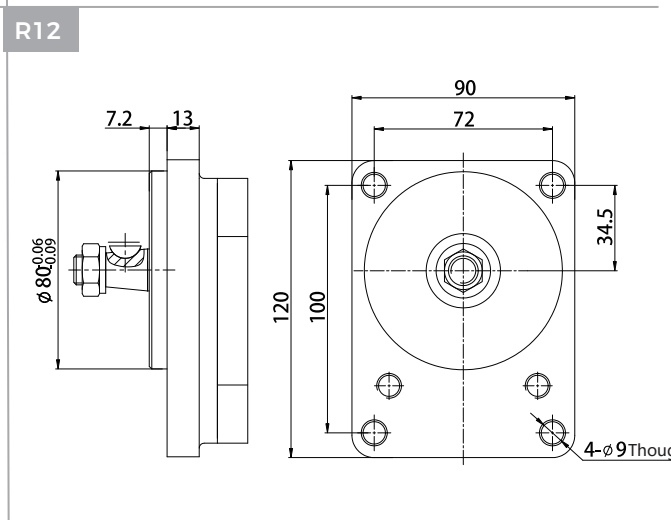
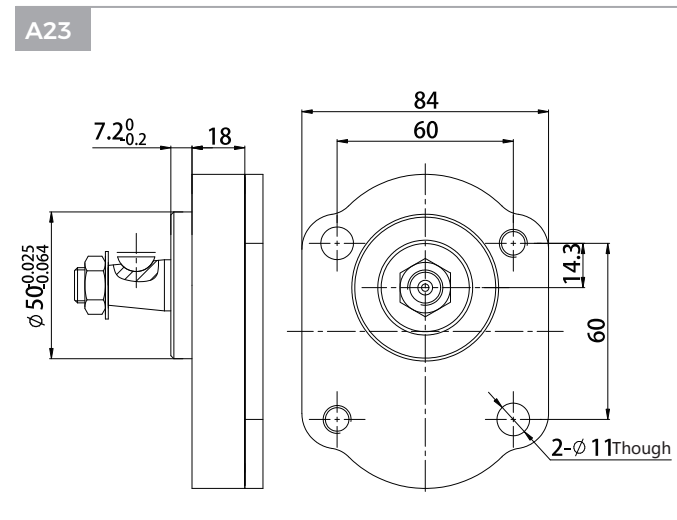
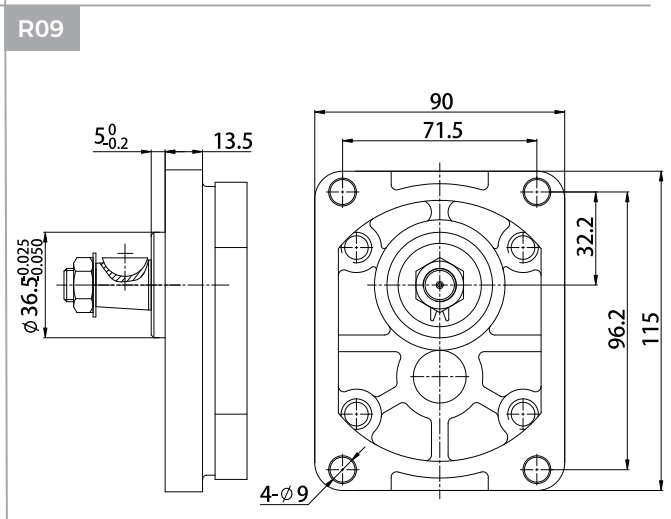
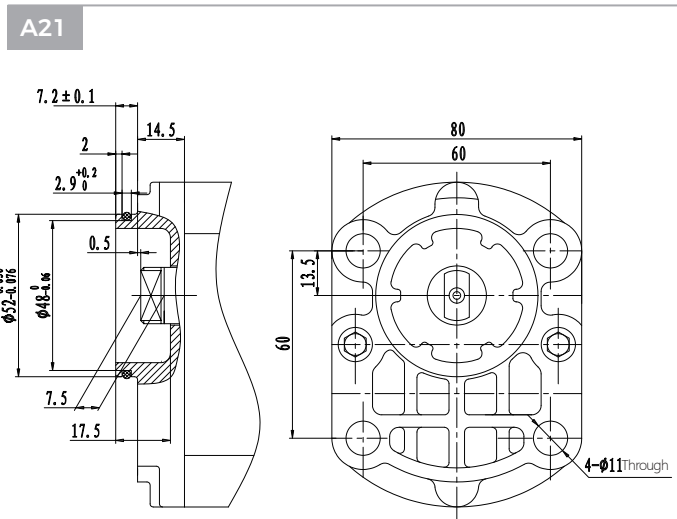
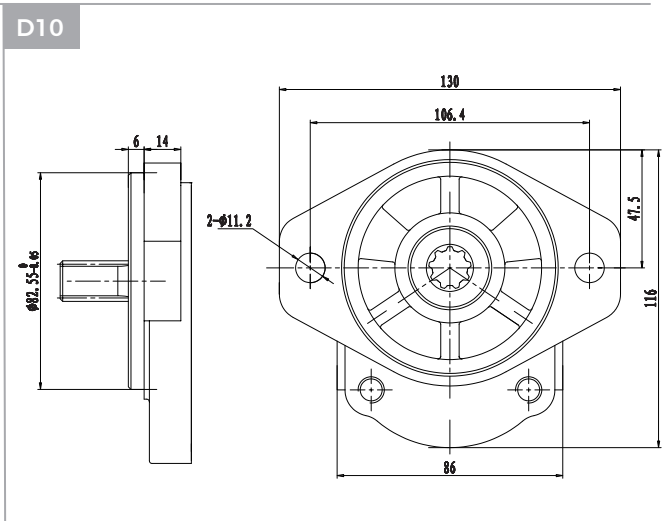
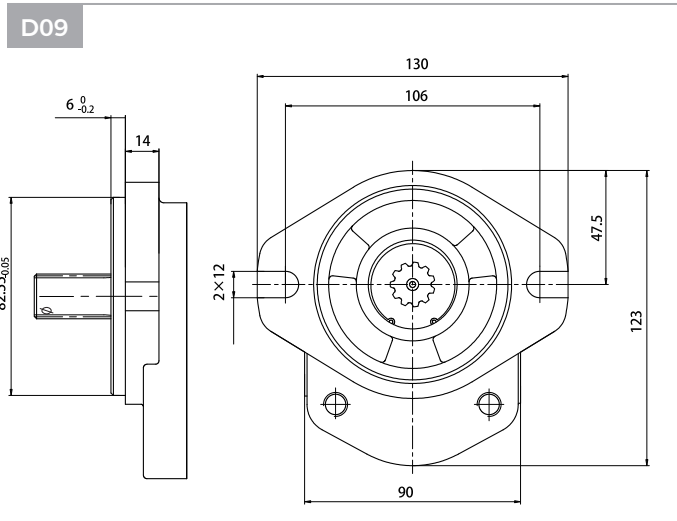
T004



T005



2PF Front Covers



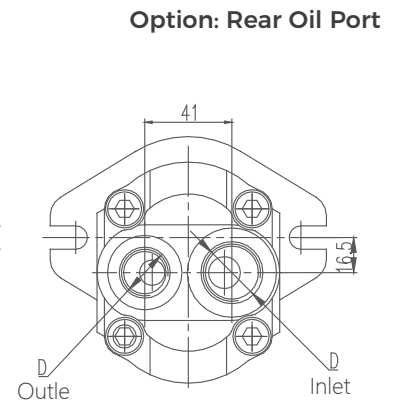
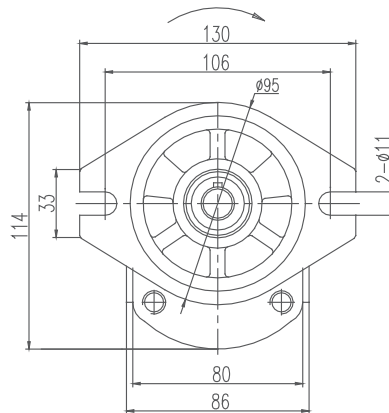
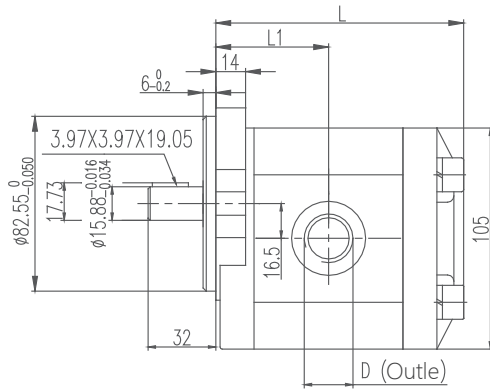
2PFL**F032D9***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2PF4L09F032D09*	4	200(250)	230(280)	250(300)	2000	3500	500	96	43.3	PT1/2	PT1/2
2PF6L09F032D09*	6	200(250)	230(280)	250(300)	2000	3500	500	98	45.0		
2PF8L09F032D09*	8	200(250)	230(280)	250(300)	2000	3500	500	102	46.5		
2PF10L09F032D09*	10	200(250)	230(280)	250(300)	2000	3500	500	104	48.0		
2PF12L09F032D09*	12	200(250)	230(280)	250(300)	2000	3500	500	108	50.0		
2PF14L09F032D09*	14	200(250)	230(280)	250(300)	2000	3500	500	110	51.0	PT3/4	PT1/2
2PF16L09F032D09*	16	200(250)	230(280)	250(300)	2000	3500	500	114	53.0		
2PF18L09F032D09*	18	200(250)	230(280)	250(300)	2000	3500	500	117	55.0		
2PF20L09F032D09*	20	200(250)	230(280)	250(300)	2000	3500	500	120	56.0		
2PF23L09F032D09*	23	200(250)	230(280)	250(300)	2000	3000	500	123	58.0		
2PF25L09F032D09*	25	200(250)	230(280)	250(300)	2000	3000	500	128	60.0		
2PF28L09F032D09*	28	160(180)	180(200)	200(230)	2000	3000	500	133	63.0		
2PF30L09F032D09*	30	160(180)	180(200)	200(230)	2000	3000	500	136	64.0		

Dimensions

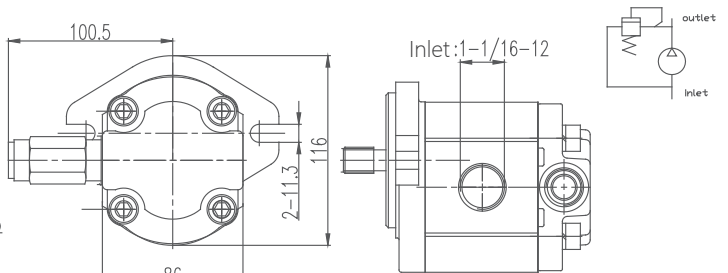
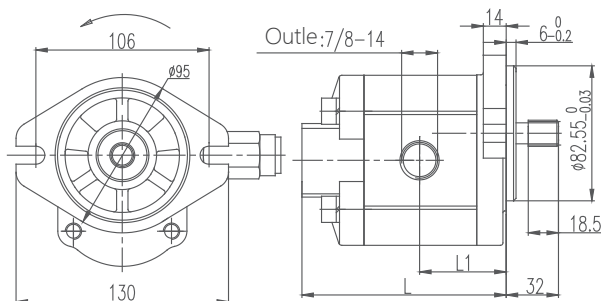
2PFL**F032D09***



Option: With Relief Valve

2PFL**S012D09-V**

Adjustable Pressure of Relief Valve 50~250 Bar



2ABPFF**Z007R09***

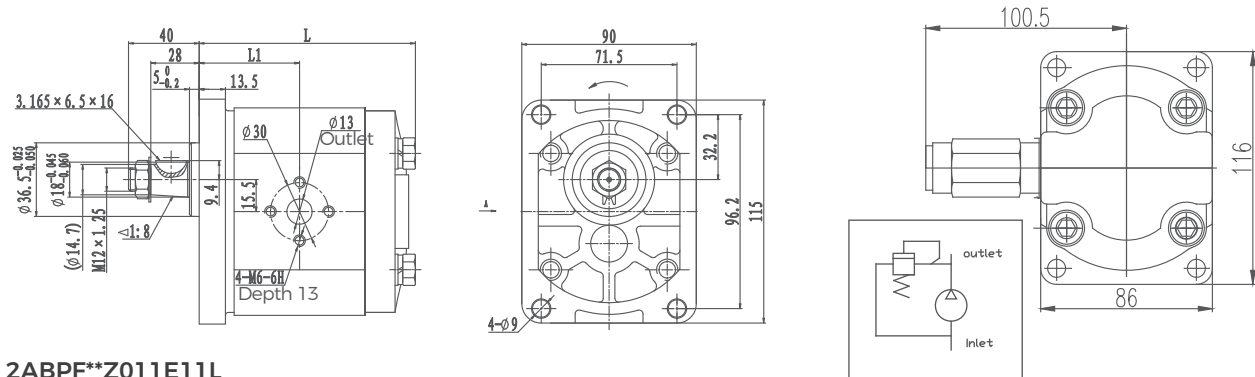


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	Inlet			Outlet		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			(mm)	ØD1	Ød1	T1	ØD2	Ød2
2ABPF4F06Z007R09*	4	200(250)	230(280)	250(300)	2000	3500	500	95.5	43.3	30	13	M6			
2ABPF6F06Z007R09*	6	200(250)	230(280)	250(300)	2000	3500	500	99.0	45.0						
2ABPF8F06Z007R09*	8	200(250)	230(280)	250(300)	2000	3500	500	102.0	46.5						
2ABPF10F06Z007R09*	10	200(250)	230(280)	250(300)	2000	3500	500	105.0	48.0						
2ABPF12F06Z007R09*	12	200(250)	230(280)	250(300)	2000	3500	500	108.0	49.5						
2ABPF14F06Z007R09*	14	200(250)	230(280)	250(300)	2000	3500	500	111.0	51.0						
2ABPF16F06Z007R09*	16	200(250)	230(280)	250(300)	2000	3500	500	114.0	52.5	40	20	M8	3	13	M6
2ABPF18F06Z007R09*	18	200(250)	230(280)	250(300)	2000	3500	500	117.5	54.3						
2ABPF20F06Z007R09*	20	200(250)	230(280)	250(300)	2000	3500	500	121.0	56.0						
2ABPF23F06Z007R09*	23	200(250)	230(280)	250(300)	2000	3000	500	125.5	58.3						
2ABPF25F06Z007R09*	25	200(250)	230(280)	250(300)	2000	3000	500	128.0	59.5						
2ABPF28F06Z007R09*	28	160(180)	180(200)	200(230)	2000	3000	500	133.0	62.0						
2ABPF30F06Z007R09*	30	160(180)	180(200)	200(230)	2000	3000	500	136.0	63.5						

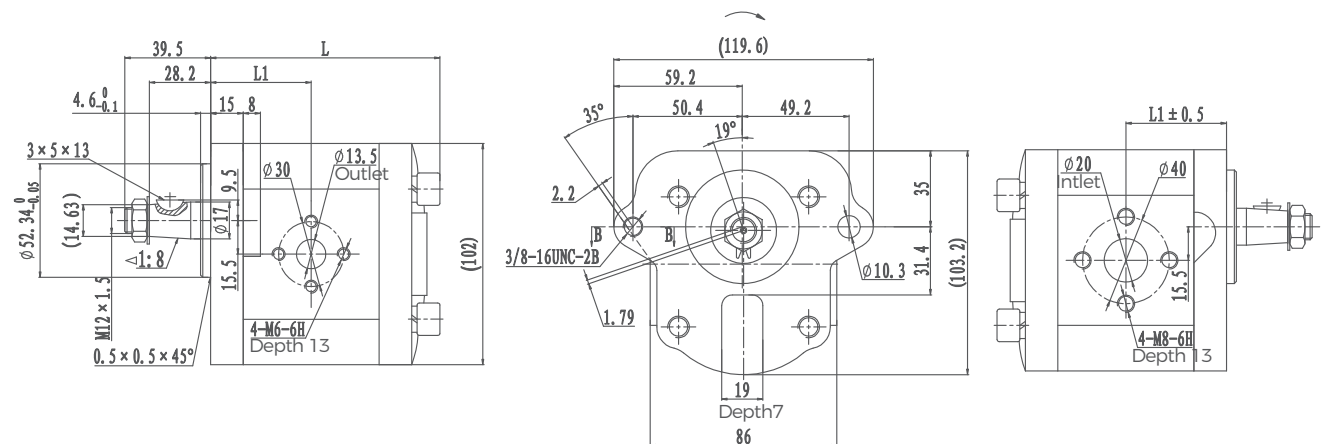
Dimensions

2ABPFF06Z007R09***

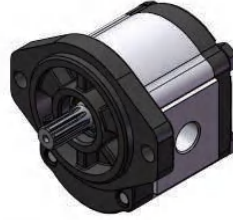
Option: With Relief Valve



2ABPFZ011E11L**



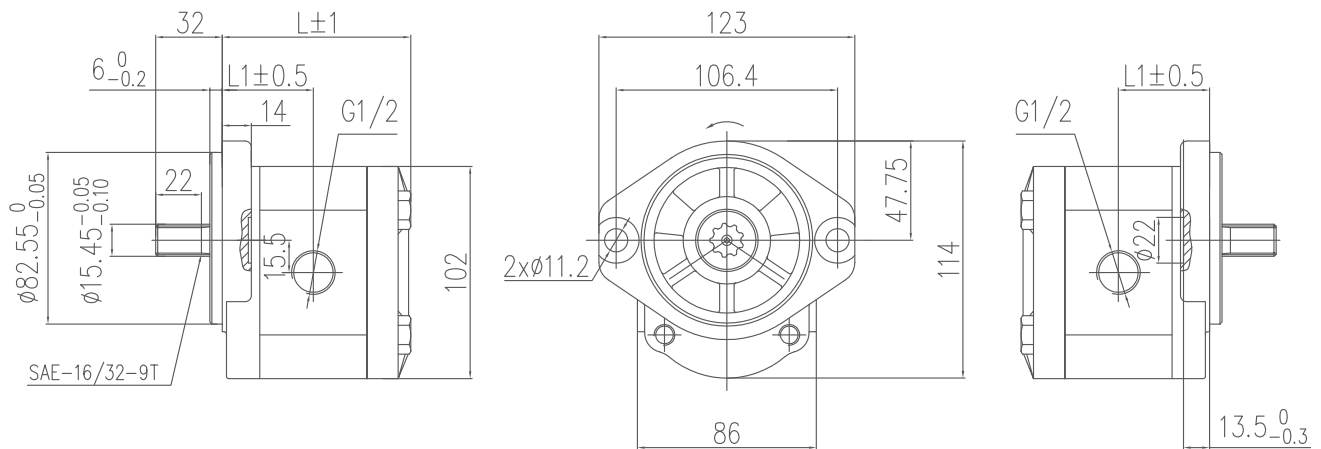
2ABPFLJ**S013D10L**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2ABPF04LJ37S013D10L	4	200(250)	230(280)	250(300)	2000	3500	500	89.8	43.4	1-5/16- 12UN	3/4- 16UNF
2ABPF5.6LJ37S013D10L	5.6	200(250)	230(280)	250(300)	2000	3500	500	93.5	45.3		
2ABPF06LJ37S013D10L	6	200(250)	230(280)	250(300)	2000	3500	500	96.5	46.8		
2ABPF08LJ37S013D10L	8	200(250)	230(280)	250(300)	2000	3500	500	100.0	48.5		
2ABPF10LJ37S013D10L	10	200(250)	230(280)	250(300)	2000	3500	500	101.7	49.4		
2ABPF12LJ37S013D10L	12	200(250)	230(280)	250(300)	2000	3500	500	103.5	50.3		
2ABPF14LJ37S013D10L	14	200(250)	230(280)	250(300)	2000	3500	500	106.5	51.8		
2ABPF16LJ37S013D10L	16	200(250)	230(280)	250(300)	2000	3500	500	110.0	53.5		
2ABPF18LJ37S013D10L	18	200(250)	230(280)	250(300)	2000	3500	500	113.5	55.3		
2ABPF20LJ37S013D10L	20	200(250)	230(280)	250(300)	2000	3500	500	117.0	57.0		
2ABPF23LJ37S013D10L	23	200(250)	230(280)	250(300)	2000	3000	500	121.5	59.3		
2ABPF25LJ37S013D10L	25	160(180)	180(200)	200(230)	2000	3000	500	125.0	61.0		
2ABPF28LJ37S013D10L	28	160(180)	180(200)	200(230)	2000	3000	500	130.0	63.5		
2ABPF30LJ37S013D10L	30	160(180)	180(200)	200(230)	2000	3000	500	133.0	65.0		

Dimensions

2ABPFLJ37S013D10L**



2ABPF**L**S013D10-TLT-O

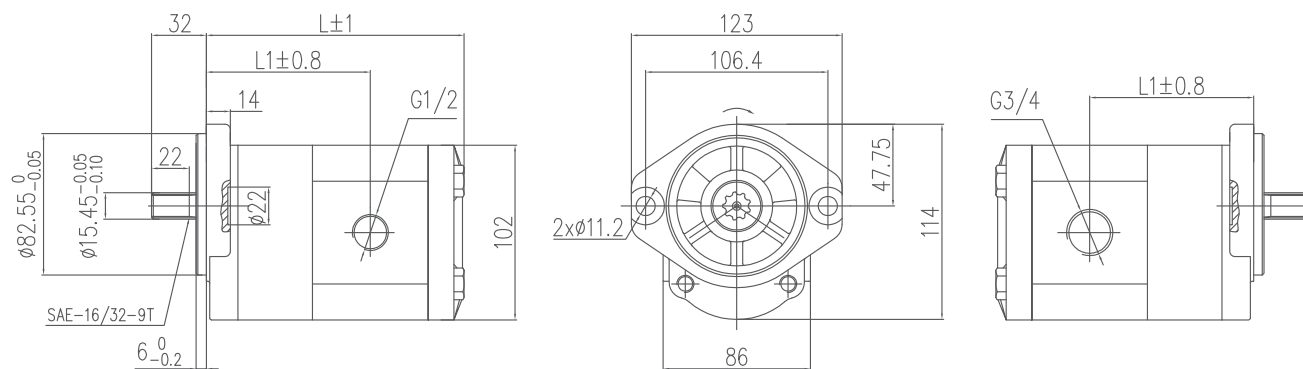


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2ABPF04L08S013D10-TLT-O	4	200(250)	230(280)	250(300)	2000	3500	500	133.8	87.4	G3/4	G1/2
2ABPF06L08S013D10-TLT-O	6	200(250)	230(280)	250(300)	2000	3500	500	137.5	89.3		
2ABPF08L08S013D10-TLT-O	8	200(250)	230(280)	250(300)	2000	3500	500	140.5	90.8		
2ABPF10L08S013D10-TLT-O	10	200(250)	230(280)	250(300)	2000	3500	500	144.0	92.5		
2ABPF12L08S013D10-TLT-O	12	200(250)	230(280)	250(300)	2000	3500	500	147.5	94.3		
2ABPF14L08S013D10-TLT-O	14	200(250)	230(280)	250(300)	2000	3500	500	150.5	95.8		
2ABPF16L08S013D10-TLT-O	16	200(250)	230(280)	250(300)	2000	3500	500	154.0	97.5		
2ABPF18L08S013D10-TLT-O	18	200(250)	230(280)	250(300)	2000	3500	500	157.5	99.3		
2ABPF20L08S013D10-TLT-O	20	200(250)	230(280)	250(300)	2000	3500	500	161.0	101.0		
2ABPF23L08S013D10-TLT-O	23	200(250)	230(280)	250(300)	2000	3000	500	165.5	103.3		
2ABPF25L08S013D10-TLT-O	25	160(180)	180(200)	200(230)	2000	3000	500	169.0	105.0		
2ABPF28L08S013D10-TLT-O	28	160(180)	180(200)	200(230)	2000	3000	500	174.0	107.5		
2ABPF30L08S013D10-TLT-O	30	160(180)	180(200)	200(230)	2000	3000	500	177.0	109.0		

Dimensions

2ABPF**L08S013D10-TLT-O

-TLT is special rear cover structure



2ABPFLJ**S13D10-TLT**

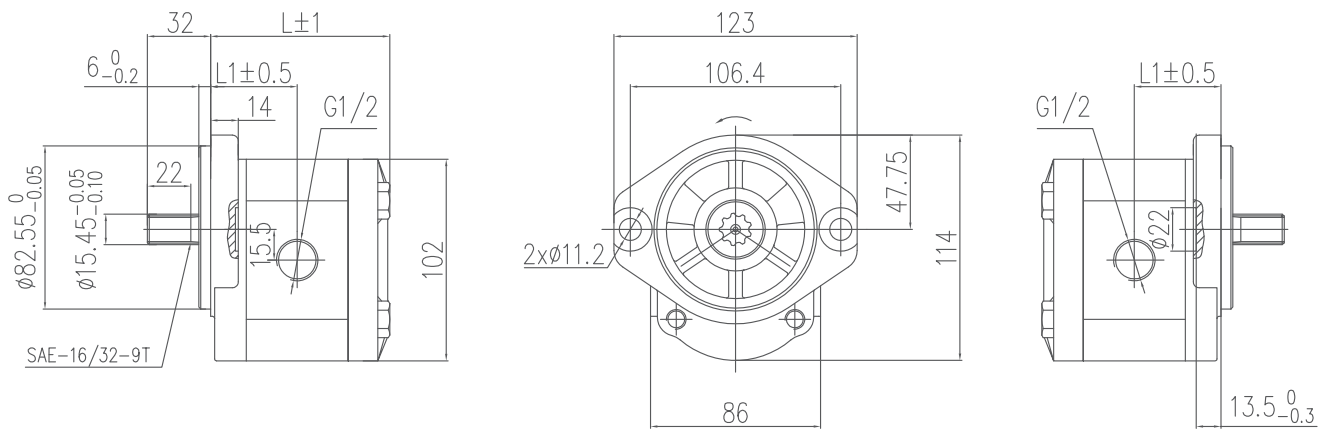


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
2ABPF04L04S013D10L-TLT	4	200	230	250	2000	3500	500	89.8	43.4	G1/2	G1/2
2ABPF4.5L04S013D10L-TLT	4.5	200	230	250	2000	3500	500	90.6	43.8		
2ABPF06L04S013D10L-TLT	6	200	230	250	2000	3500	500	93.5	45.3		
2ABPF08L04S013D10L-TLT	8	200	230	250	2000	3500	500	96.5	46.8		
2ABPF10L04S013D10L-TLT	10	200	230	250	2000	3500	500	100.0	48.5		
2ABPF12L04S013D10L-TLT	12	200	230	250	2000	3500	500	103.5	50.3		
2ABPF14L04S013D10L-TLT	14	200	230	250	2000	3500	500	106.5	51.8		
2ABPF16L04S013D10L-TLT	16	200	230	250	2000	3500	500	110.0	53.5		
2ABPF18L04S013D10L-TLT	18	200	230	250	2000	3500	500	113.5	55.3		
2ABPF20L04S013D10L-TLT	20	200	230	250	2000	3500	500	117.0	57.0		
2ABPF23L04S013D10L-TLT	23	200	230	250	2000	3000	500	121.5	59.3		
2ABPF25L04S013D10L-TLT	25	160	180	200	2000	3000	500	125.0	61.0		
2ABPF28L04S013D10L-TLT	28	160	180	200	2000	3000	500	130.0	63.5		
2ABPF30L04S013D10L-TLT	30	160	180	200	2000	3000	500	133.0	65.0		

Dimensions

2ABPFL04S013D10L-TLT-D**

-TLT is special rear cover structure



2ABPFLJ**S013D10L-TLT-D**

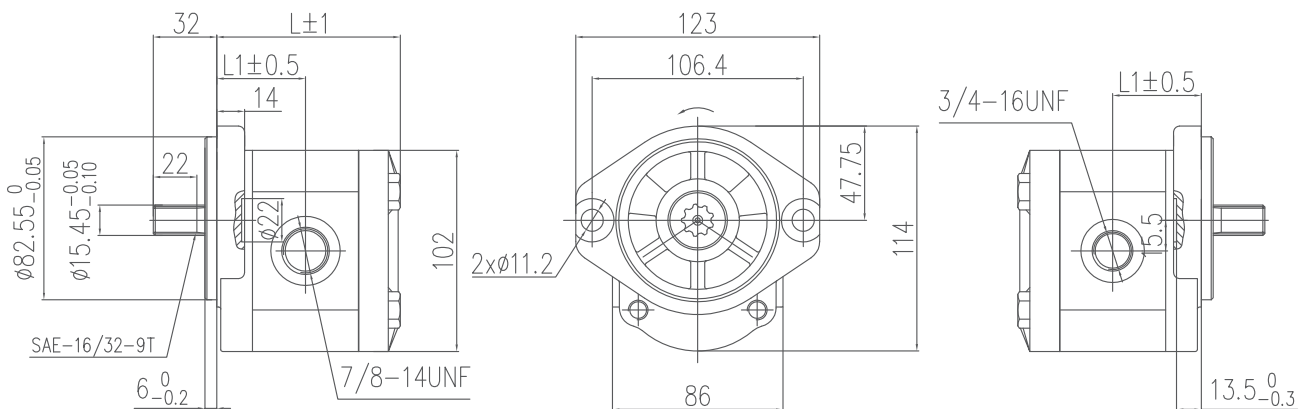


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
2ABPF04LJ37S013D10L-TLT-D	4	200(250)	230(280)	250(300)	2000	3500	500	89.8	43.4	7/8-14UNF	3/4-16UNF
2ABPF5.6LJ37S013D10L-TLT-D	5.6	200(250)	230(280)	250(300)	2000	3500	500	92.5	44.8		
2ABPF06LJ37S013D10L-TLT-D	6	200(250)	230(280)	250(300)	2000	3500	500	93.5	45.3		
2ABPF08LJ37S013D10L-TLT-D	8	200(250)	230(280)	250(300)	2000	3500	500	96.5	46.8		
2ABPF10LJ37S013D10L-TLT-D	10	200(250)	230(280)	250(300)	2000	3500	500	100.0	48.5		
2ABPF12LJ37S013D10L-TLT-D	12	200(250)	230(280)	250(300)	2000	3500	500	103.5	50.3		
2ABPF14LJ37S013D10L-TLT-D	14	200(250)	230(280)	250(300)	2000	3500	500	106.5	51.8		
2ABPF16LJ37S013D10L-TLT-D	16	200(250)	230(280)	250(300)	2000	3500	500	110.0	53.5		
2ABPF18LJ37S013D10L-TLT-D	18	200(250)	230(280)	250(300)	2000	3500	500	113.5	55.3		
2ABPF20LJ37S013D10L-TLT-D	20	200(250)	230(280)	250(300)	2000	3500	500	117.0	57.0		
2ABPF23LJ37S013D10L-TLT-D	23	200(250)	230(280)	250(300)	2000	3000	500	121.5	59.3		
2ABPF25LJ37S013D10L-TLT-D	25	160(180)	180(200)	200(230)	2000	3000	500	125.0	61.0		
2ABPF28LJ37S013D10L-TLT-D	28	160(180)	180(200)	200(230)	2000	3000	500	130.0	63.5		
2ABPF30LJ37S013D10L-TLT-D	30	160(180)	180(200)	200(230)	2000	3000	500	133.0	65.0		

Dimensions

2ABPFLJ37S013D10L-TLT-D**

-TLT is special rear cover structure
-D is galvanized surface of front and rear cover cast iron parts



2ABPFLJ**S011D09-W-TLT-D**

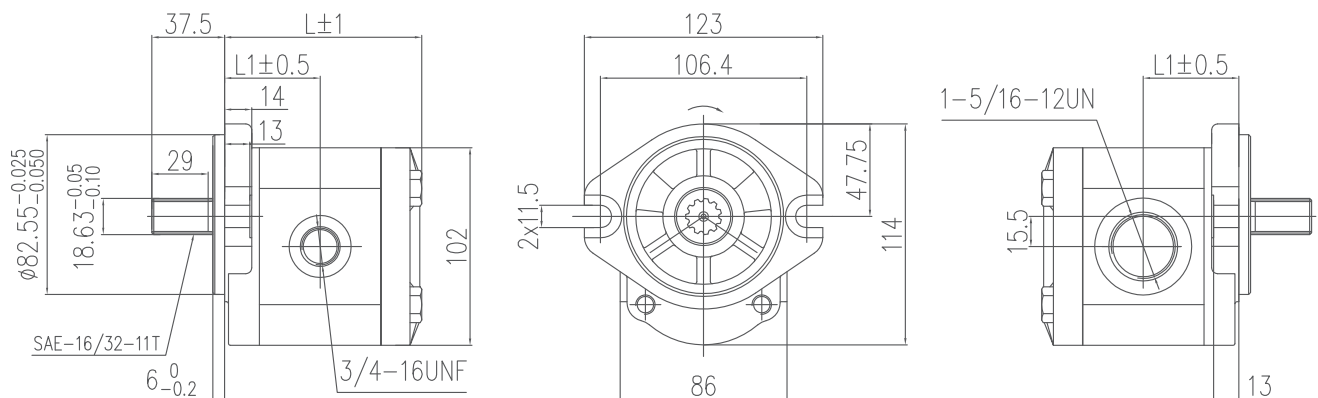


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2ABPF04LJ90S011D09-W-TLT-D	4	200(250)	230(280)	250(300)	2000	3500	500	89.8	43.4	1-5/16-12UN	3/4-16UNF
2ABPF06LJ90S011D09-W-TLT-D	6	200(250)	230(280)	250(300)	2000	3500	500	93.5	45.3		
2ABPF08LJ90S011D09-W-TLT-D	8	200(250)	230(280)	250(300)	2000	3500	500	96.5	46.8		
2ABPF10LJ90S011D09-W-TLT-D	10	200(250)	230(280)	250(300)	2000	3500	500	100.0	48.5		
2ABPF11LJ90S011D09-W-TLT-D	11	200(250)	230(280)	250(300)	2000	3500	500	101.7	49.4		
2ABPF12LJ90S011D09-W-TLT-D	12	200(250)	230(280)	250(300)	2000	3500	500	103.5	50.3		
2ABPF14LJ90S011D09-W-TLT-D	14	200(250)	230(280)	250(300)	2000	3500	500	106.5	51.8		
2ABPF16LJ90S011D09-W-TLT-D	16	200(250)	230(280)	250(300)	2000	3500	500	110.0	53.5		
2ABPF18LJ90S011D09-W-TLT-D	18	200(250)	230(280)	250(300)	2000	3500	500	113.5	55.3		
2ABPF20LJ90S011D09-W-TLT-D	20	200(250)	230(280)	250(300)	2000	3500	500	117.0	57.0		
2ABPF23LJ90S011D09-W-TLT-D	23	200(250)	230(280)	250(300)	2000	3000	500	121.5	59.3		
2ABPF25LJ90S011D09-W-TLT-D	25	160(180)	180(200)	200(230)	2000	3000	500	125.0	61.0		
2ABPF28LJ90S011D09-W-TLT-D	28	160(180)	180(200)	200(230)	2000	3000	500	130.0	63.5		
2ABPF30LJ90S011D09-W-TLT-D	30	160(180)	180(200)	200(230)	2000	3000	500	133.0	65.0		

Dimensions

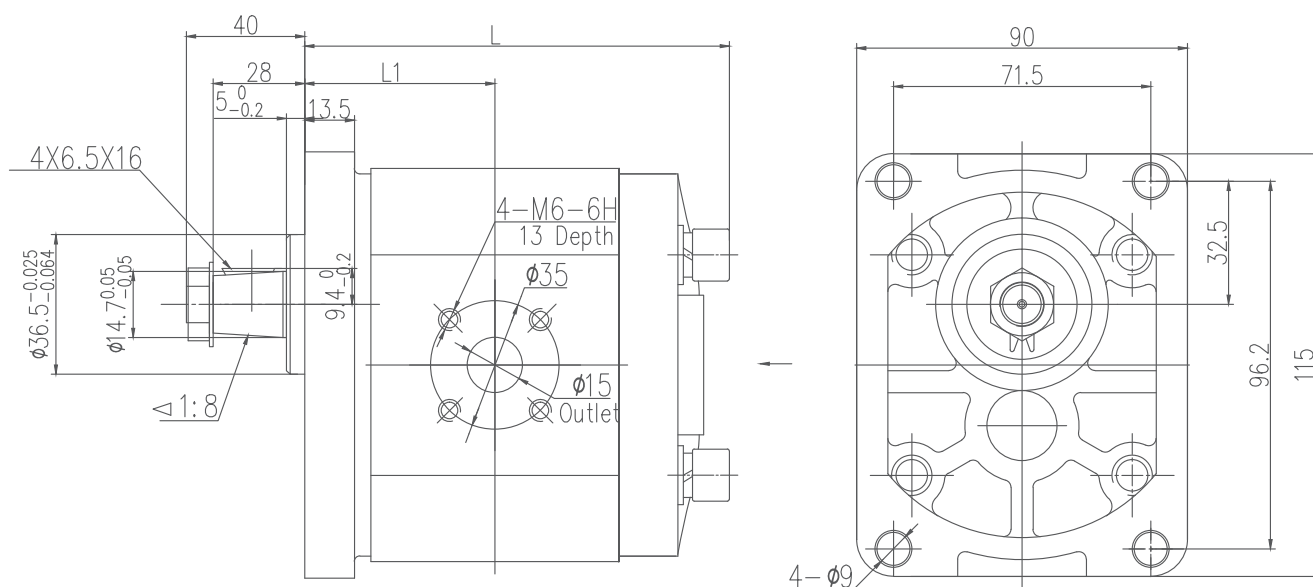
2ABPFLJ3S011D09-W-TLT-D**

-TLT is special rear cover structure
-D is galvanized surface of front and rear cover cast iron parts



2LPFF**C002R09***


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)	
2LPF04F52C002R09*	4	200(250)	230(280)	250(300)	1500	1800	1000	95.5	42.0
2LPF06F52C002R09*	6	200(250)	230(280)	250(300)	1500	1800	1000	99.0	43.8
2LPF08F52C002R09*	8	200(250)	230(280)	250(300)	1500	1800	1000	103.0	45.8
2LPF10F52C002R09*	10	200(250)	230(280)	250(300)	1500	1800	1000	107.0	47.8
2LPF12F52C002R09*	12	200(250)	230(280)	250(300)	1500	1800	1000	111.0	49.8
2LPF14F52C002R09*	14	200(250)	230(280)	250(300)	1500	1800	1000	115.0	51.8
2LPF16F52C002R09*	16	200(250)	230(280)	250(300)	1500	1800	1000	118.5	53.5
2LPF18F52C002R09*	18	200(250)	230(280)	250(300)	1500	1800	1000	122.5	55.5
2LPF19F52C002R09*	19	180(200)	200(210)	210(230)	1500	1800	1000	124.5	56.5
2LPF20F52C002R09*	20	180(200)	200(210)	210(230)	1500	1800	1000	126.5	57.5
2LPF23F52C002R09*	23	180(200)	200(210)	210(230)	1500	1800	1000	132.5	60.5
2LPF25F52C002R09*	25	160(180)	170(190)	180(200)	1500	1800	1000	136.0	62.3
2LPF28F52C002R09*	28	160(180)	170(190)	180(200)	1500	1800	1000	142.0	65.3
2LPF30F52C002R09*	30	160(180)	170(190)	180(200)	1500	1800	1000	146.0	67.3

Dimensions
2LPFF**C002R09***


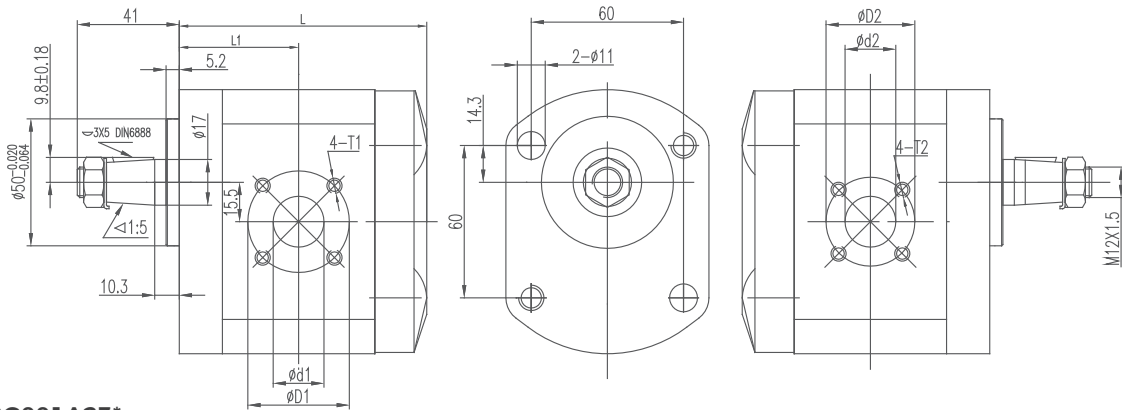
2APFF**T003A23***



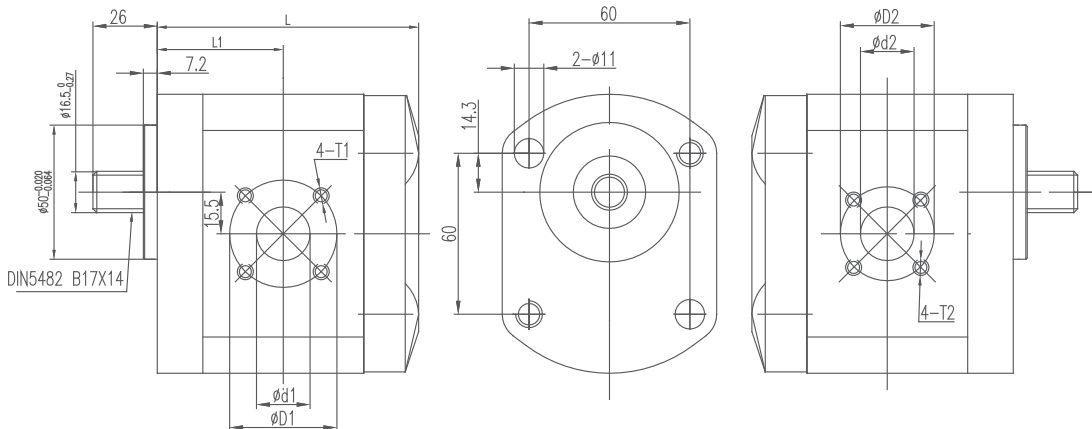
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet			Outlet		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			ØD1	Ød1	T1	ØD2	Ød2	T2
2APF4F60T003A23*	4	200(250)	230(280)	250(300)	2000	3500	500	95.5	43.3	40	15	M6	35	15	M6
2APF6F60T003A23*	6	200(250)	230(280)	250(300)	2000	3500	500	99.0	45.0						
2APF8F52T003A23*	8	200(250)	230(280)	250(300)	2000	3500	500	102.0	46.5						
2APF10F52T003A23*	10	200(250)	230(280)	250(300)	2000	3500	500	105.0	48.0						
2APF12F5T003A23*	12	200(250)	230(280)	250(300)	2000	3500	500	108.0	49.5						
2APF14F52T003A23*	14	200(250)	230(280)	250(300)	2000	3500	500	111.0	51.0						
2APF16F52T003A23*	16	200(250)	230(280)	250(300)	2000	3500	500	114.0	52.5	40	20	M6	35	15	M6
2APF18F52T003A23*	18	200(250)	230(280)	250(300)	2000	3500	500	117.5	54.3						
2APF20F52T003A23*	20	200(250)	230(280)	250(300)	2000	3500	500	121.0	56.0						
2APF23F52T003A23*	23	200(250)	230(280)	250(300)	2000	3000	500	125.5	58.3						
2APF25F52T003A23*	25	200(250)	230(280)	250(300)	2000	3000	500	128.0	59.5						
2APF28F52T003A23*	28	160(180)	180(200)	200(230)	2000	3000	500	133.0	62.0						
2APF30F52T003A23*	30	160(180)	180(200)	200(230)	2000	3000	500	136.0	63.5						

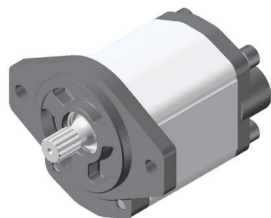
Dimensions

2APFF52T003A23***

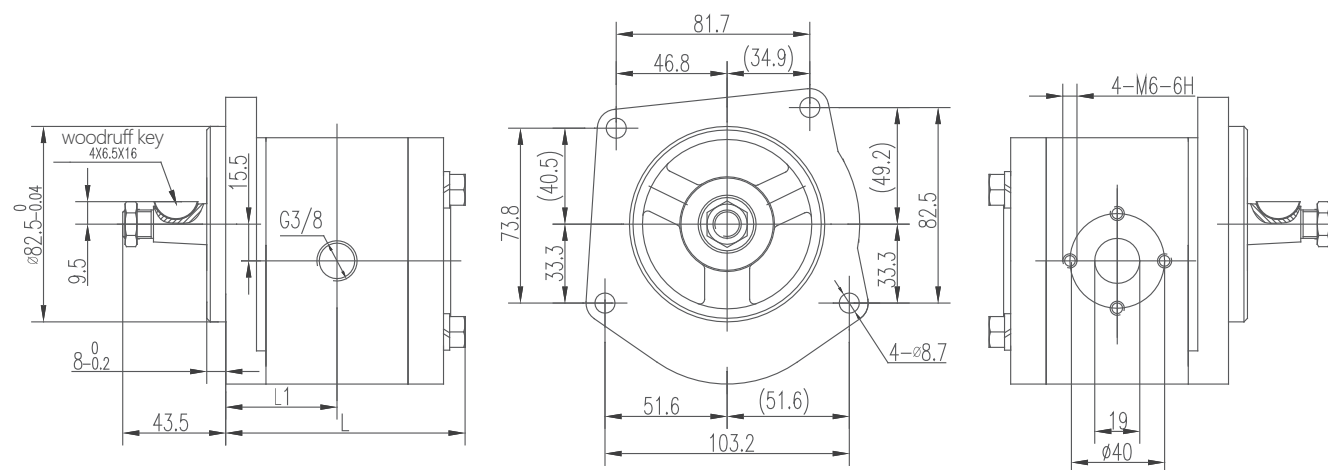


2APFF52G001A23***



2APFF**C002E10***

Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet			Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			ØD1	Ød1	T1	
2APF4LF5C002E10*	4	200(250)	230(280)	250(300)	2000	3500	500	91.5	42.3	40	19	M6	G3/8
2APF6LF5C002E10*	6	200(250)	230(280)	250(300)	2000	3500	500	95.0	44.0				
2APF8LF5C002E10*	8	200(250)	230(280)	250(300)	2000	3500	500	98.0	45.5				
2APF10LF5C002E10*	10	200(250)	230(280)	250(300)	2000	3500	500	101.0	47.0				
2APF12LF5C002E10*	12	200(250)	230(280)	250(300)	2000	3500	500	104.5	48.8				
2APF14LF5C002E10*	14	200(250)	230(280)	250(300)	2000	3500	500	107.5	50.0				
2APF16LF5C002E10*	16	200(250)	230(280)	250(300)	2000	3500	500	111.0	52.0				
2APF18LF5C002E10*	18	200(250)	230(280)	250(300)	2000	3500	500	114.0	54.0				
2APF20LF5C002E10*	20	200(250)	230(280)	250(300)	2000	3500	500	118.0	55.0				
2APF23LF5C002E10*	23	200(250)	230(280)	250(300)	2000	3500	500	122.0	58.0				
2APF25LF5C002E10*	25	200(250)	230(280)	250(300)	2000	3500	500	125.0	59.0				
2APF28LF5C002E10*	28	160(180)	180(200)	200(230)	2000	3500	500	130.0	61.0				
2APF30LF5C002E10*	30	160(180)	180(200)	200(230)	2000	3500	500	133.0	63.0				

外形尺寸**2APF**F**C002E10***

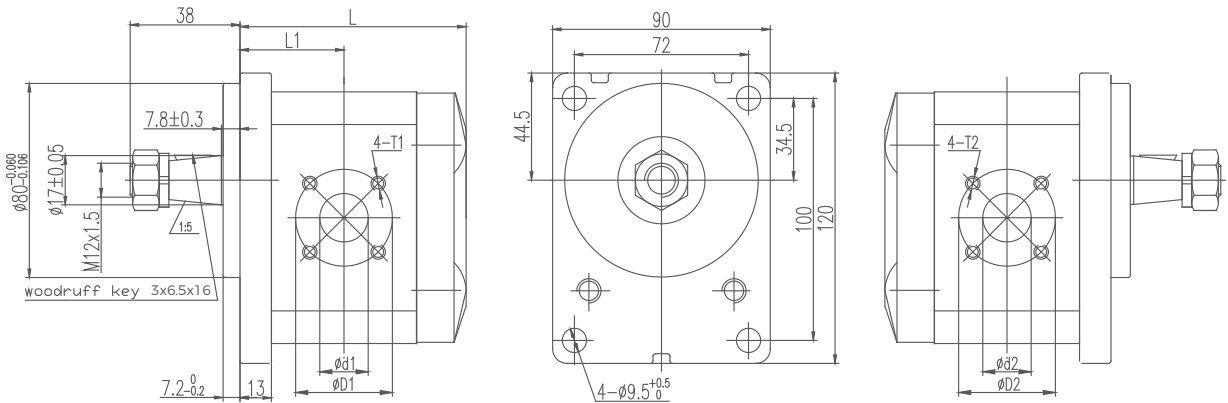
2APFF**T004R12**



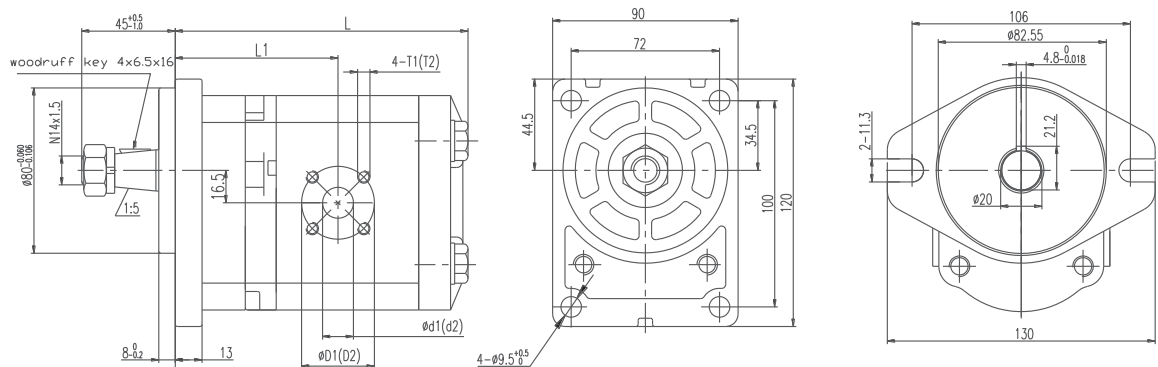
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1	Inlet			Outlet		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			ØD1	Ød1	T1	ØD2	Ød2	T2
2APF4F60T004R12*	4	200(250)	230(280)	250(300)	2000	3500	500	95.5	43.3	40	15	M6			
2APF6F60T004R12*	6	200(250)	230(280)	250(300)	2000	3500	500	99.0	45.0						
2APF8F52T004R12*	8	200(250)	230(280)	250(300)	2000	3500	500	102.0	46.5						
2APF10F52T004R12*	10	200(250)	230(280)	250(300)	2000	3500	500	105.0	48.0						
2APF12F52T004R12*	12	200(250)	230(280)	250(300)	2000	3500	500	108.0	49.5						
2APF14F52T004R12*	14	200(250)	230(280)	250(300)	2000	3500	500	111.0	51.0						
2APF16F52T004R12*	16	200(250)	230(280)	250(300)	2000	3500	500	114.0	52.5						
2APF18F52T004R12*	18	200(250)	230(280)	250(300)	2000	3500	500	117.5	54.3	40	20	M6	35	15	M6
2APF20F52T004R12*	20	200(250)	230(280)	250(300)	2000	3500	500	121.0	56.0						
2APF23F52T004R12*	23	200(250)	230(280)	250(300)	2000	3000	500	125.5	58.3						
2APF25F52T004R12*	25	200(250)	230(280)	250(300)	2000	3000	500	128.0	59.5						
2APF28F52T004R12*	28	160(180)	180(200)	200(230)	2000	3000	500	133.0	62.0						
2APF30F52T004R12*	30	160(180)	180(200)	200(230)	2000	3000	500	136.0	63.5						

Dimensions

2APFF52T004R12***



2APFF52T005R13***


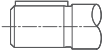


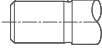


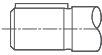





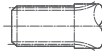





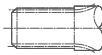








Option: 2PFF**P21*-O**

Ordering Code

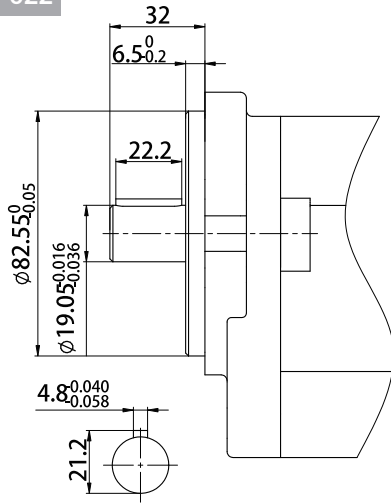
2.5	A	P	F	30	L04	P022	D09	L-	SS	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	i	m

- (a) 2.5=Group 2.5
- (b) Improved number
Omit=Aluminum cover and body
C=Forklift pump
E =Plate structure
Q=Ceramic forklift pump
- (c) Gear pump
- (d) Version
- (e) Displacement(ml/r)
20、25、27、30、32、36、40
- (f) L04=Line ports
- (g) P022=Drive shaft
- (h) D09=Front cover
- (i) Rotation
R=CW
L=CCW
B=Bi-directional
Ports combination
- (j) SS=Side inlet and side outlet
SB=Side inlet and back outlet
BS=Back inlet and side outlet
BB=Back inlet and back outlet
- (k) Seal
F=FKM seal
Omit=NBR seal
- (l) Outboard bearing
O=Outboard bearing
Omit=Without outboard bearing
- (m) Option
V=Relief valve
D=Check valve

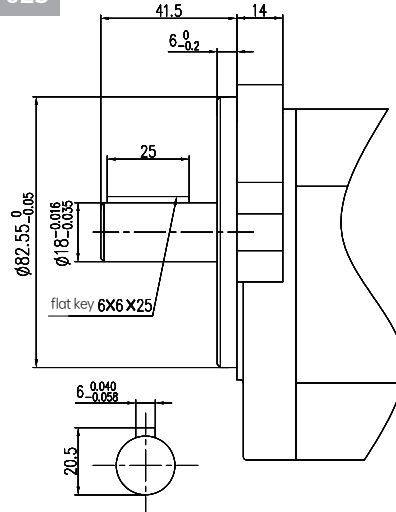
(f) Line ports Inlet and Outlet			(g) Drive shaft			(h) Front cover		
L03	G1 G3/4		P022	Flat key Ø19.05mm×32		D08	2-hole mounting 106mm	
L08	G3/4 G1/2		P023	Flat key Ø18mm×41.5		D09	2-groove mounting 106mm	
L10	PT3/4 PT1/2		P052	Flat key Ø20mm×45		D10	2-hole mounting 106mm	
L69	G3/4 G3/4		T002	Flat key 1.5, Ø13.6mm×53		D24	2-groove mounting 130mm	
LJ02	G1 G1/2		S011	Spline key Ø18.63mm×38 11teeth		D32	2-hole mounting 146mm	
LJ39	1-1/16-12UN-2B 7/8-14UNF-2B		S014	Spline key Ø16.95mm×39 13teeth		D33	2-groove mounting 130mm	
LJ42	1-5/16-12UN-2B 1-1/16-12UNF-2B		S017	Spline key Ø21.81mm×40.7 13teeth				
LJ52	1-1/16-12UN-2B 3/4-16UNF-2B		S013	Spline key Ø15.45mm×32 9teeth				
F30	52.4×26.2, M10, Ø25 47.6×22.2, M10, Ø19		H003	Spline key Ø20mm×45				
F77	30.2×58.7, M10, Ø25 26.2×52.4, M10, Ø19		H004	Spline key Ø20mm×41.5				

2.5PF Shafts

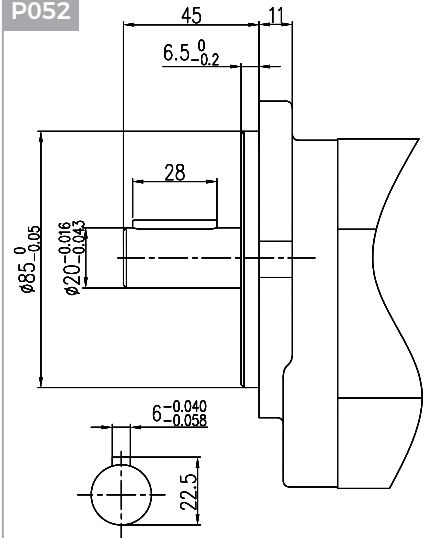
P022



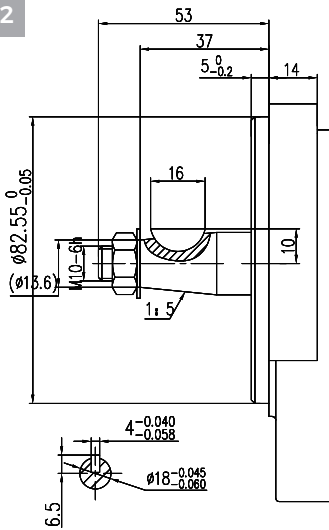
P023



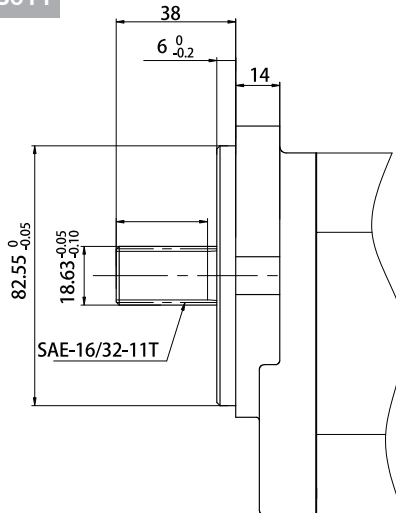
P052



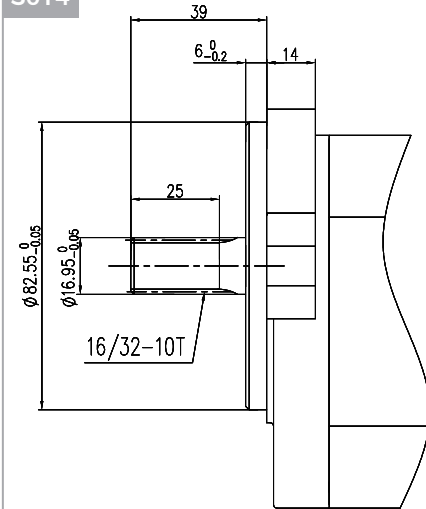
T002



S011

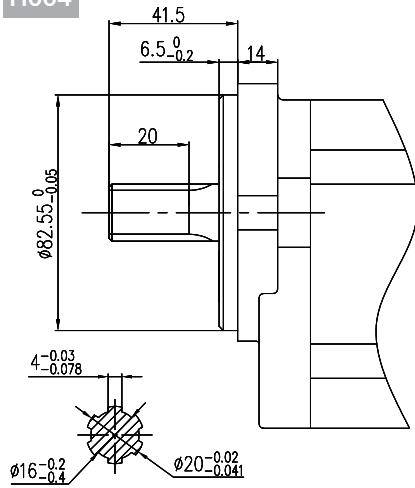


S014

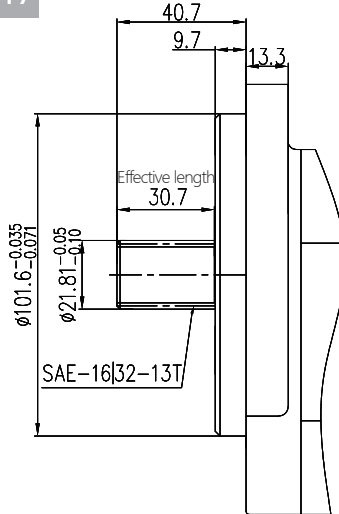


2.5PF Shafts

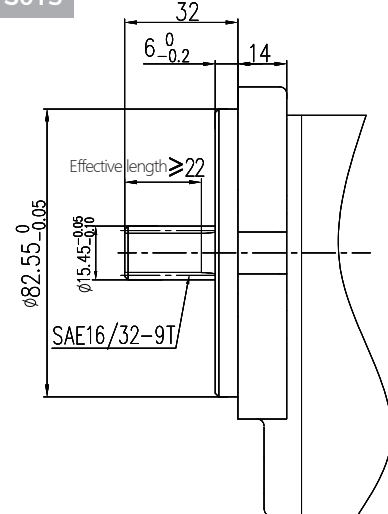
H004



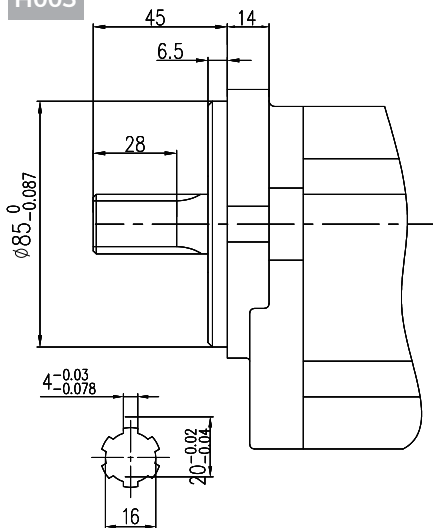
S017



S013

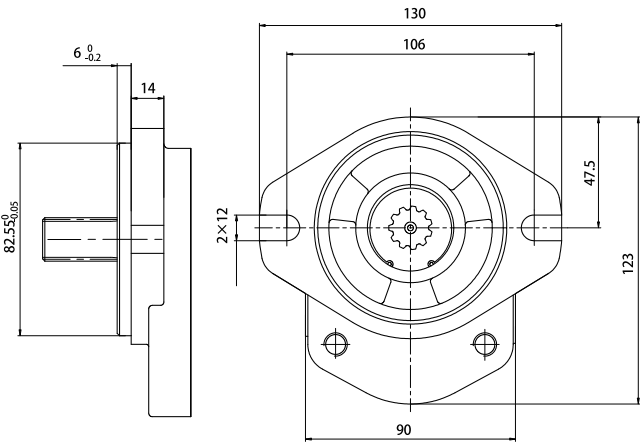


H003

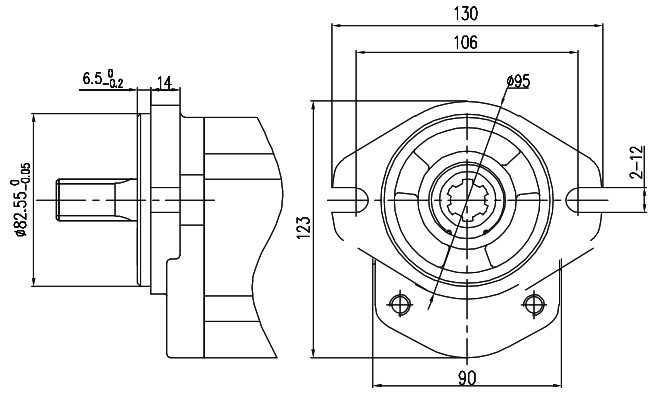


2.5PF Front Covers

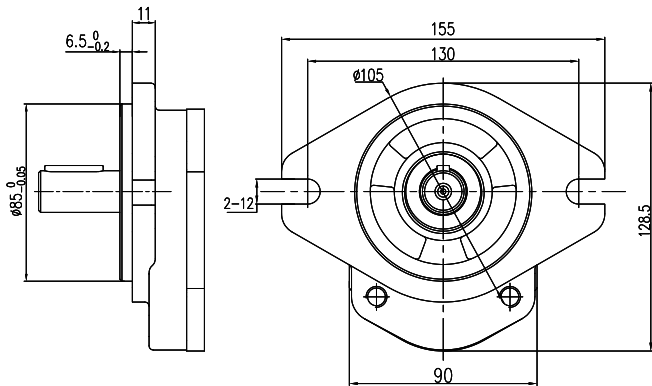
D09



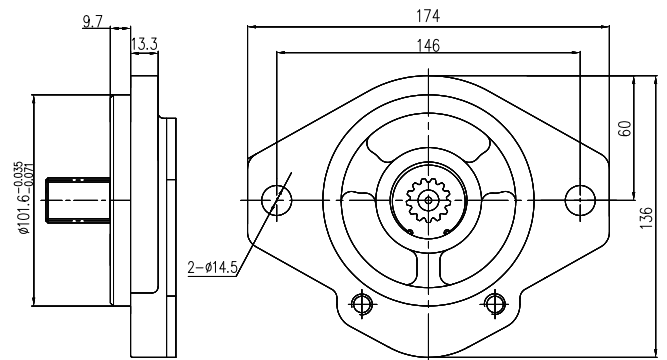
D31



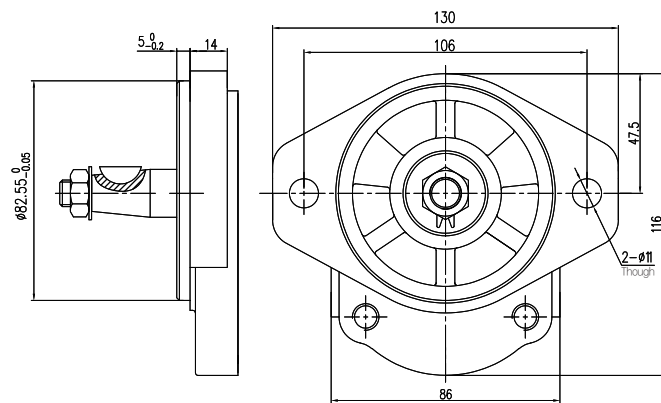
D24



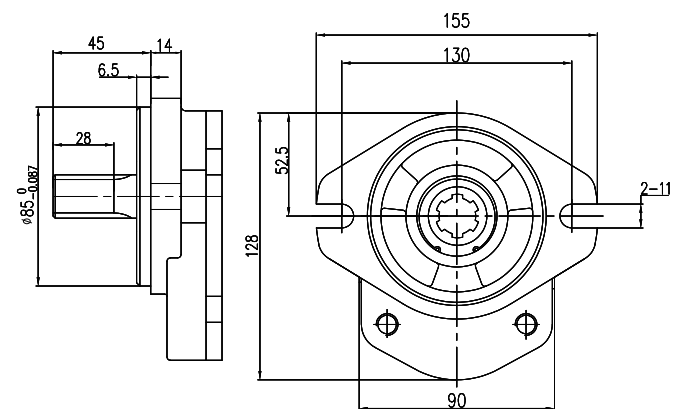
D32



D08

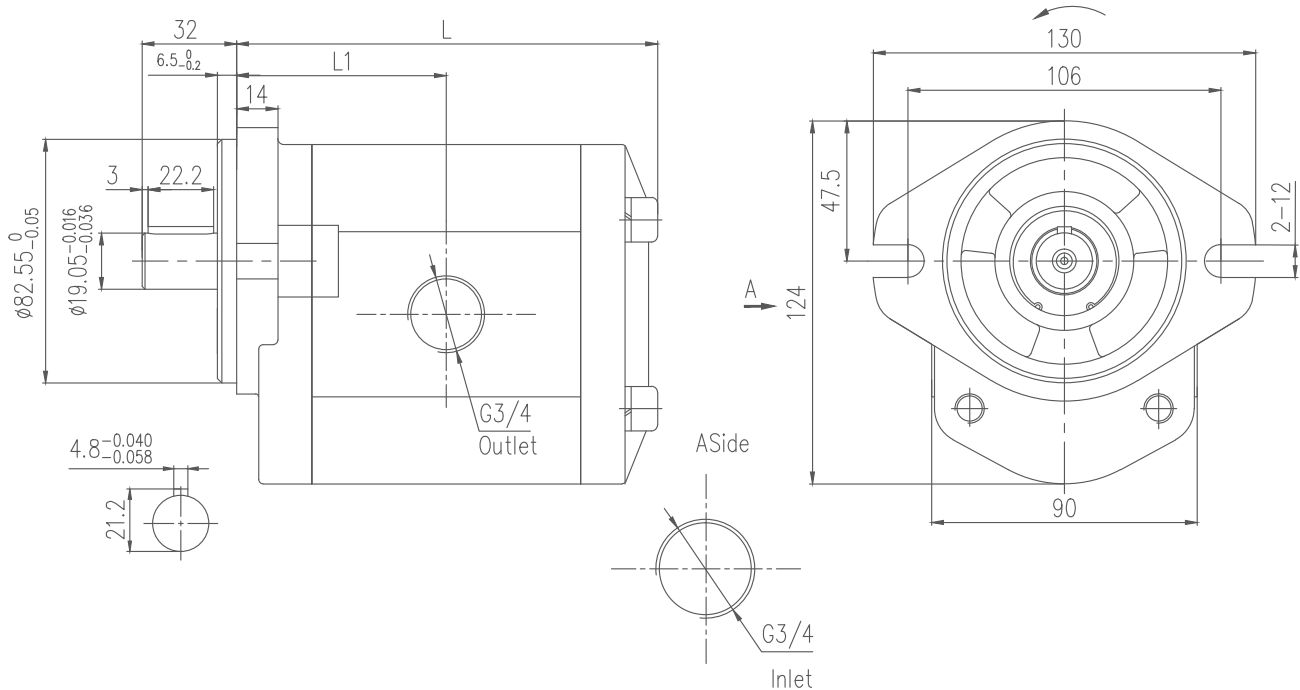


D33



2.5APFL**P022D09***


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
2.5APF20L03P022D09*	20	200(250)	230(280)	250(300)	2000	3000	500	124.5	61.5	G1	G3/4
2.5APF25L03P022D09*	25	200(250)	230(280)	250(300)	2000	3000	500	130.5	64.5		
2.5APF27L03P022D09*	27	200(250)	230(280)	250(300)	2000	3000	500	133.0	65.8		
2.5APF30L03P022D09*	30	200(250)	230(280)	250(300)	2000	3000	500	136.5	67.5		
2.5APF32L03P022D09*	32	200(220)	220(240)	230(250)	2000	3000	500	139.0	68.8		
2.5APF36L03P022D09*	36	200(220)	220(240)	230(250)	2000	3000	500	143.5	71.0		
2.5APF40L03P022D09*	40	160(180)	180(200)	200(230)	2000	3000	500	148.5	73.5		

Dimensions
2.5APFL**P022D9***


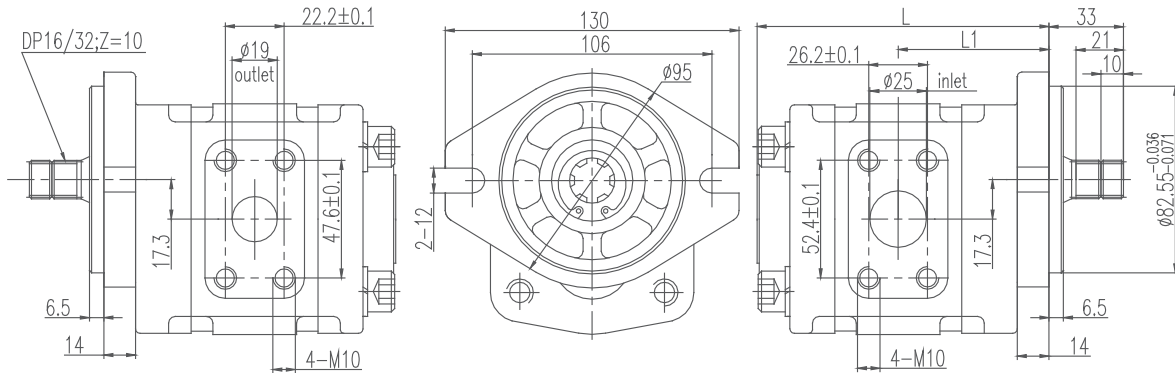
2.5CPFF**S014D35***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2.5CPF20F30S014D35*	20	200(250)	230(280)	250(300)	2000	3000	500	124.5	61.5	Ø25	Ø19
2.5CPF25F30S014D35*	25	200(250)	230(280)	250(300)	2000	3000	500	130.5	64.5		
2.5CPF27F30S014D35*	27	200(250)	230(280)	250(300)	2000	3000	500	133.0	65.8		
2.5CPF30F30S014D35*	30	200(250)	230(280)	250(300)	2000	3000	500	136.5	67.5		
2.5CPF32F30S014D35*	32	200(220)	220(240)	230(250)	2000	3000	500	1390	68.8		
2.5CPF36F30S014D35*	36	200(220)	220(240)	230(250)	2000	3000	500	143.5	71.0		
2.5CPF40F30S014D35*	40	160(180)	180(200)	200(230)	2000	3000	500	148.5	73.5		

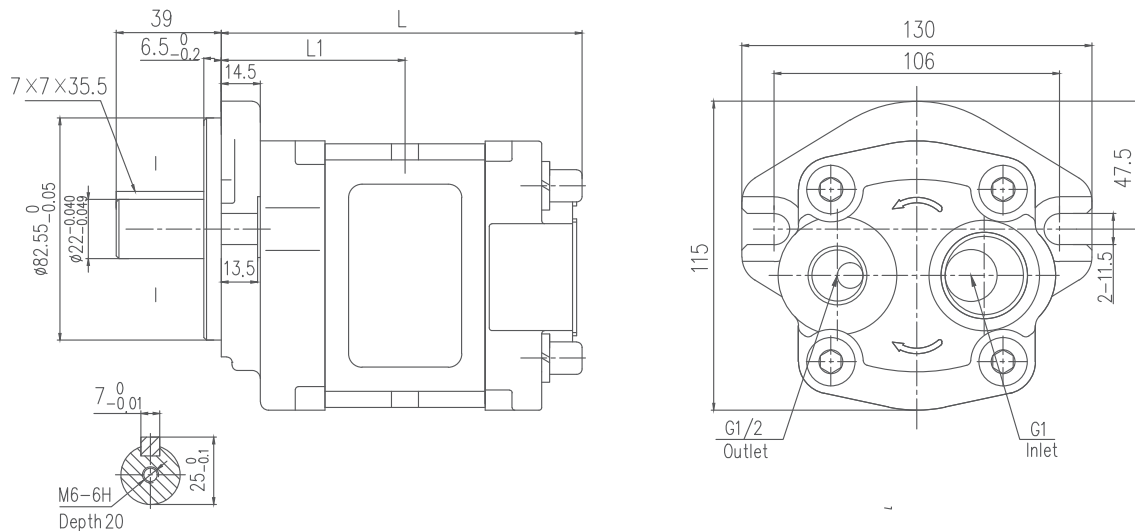
Dimensions

2.5CPFF30S014D35***

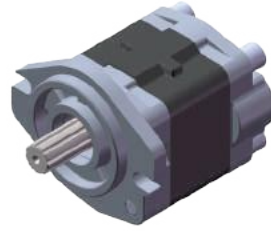


2.5CPFLJ03P084D35LBB**

Option : 2.5CPFLJ02P084D35*BB**



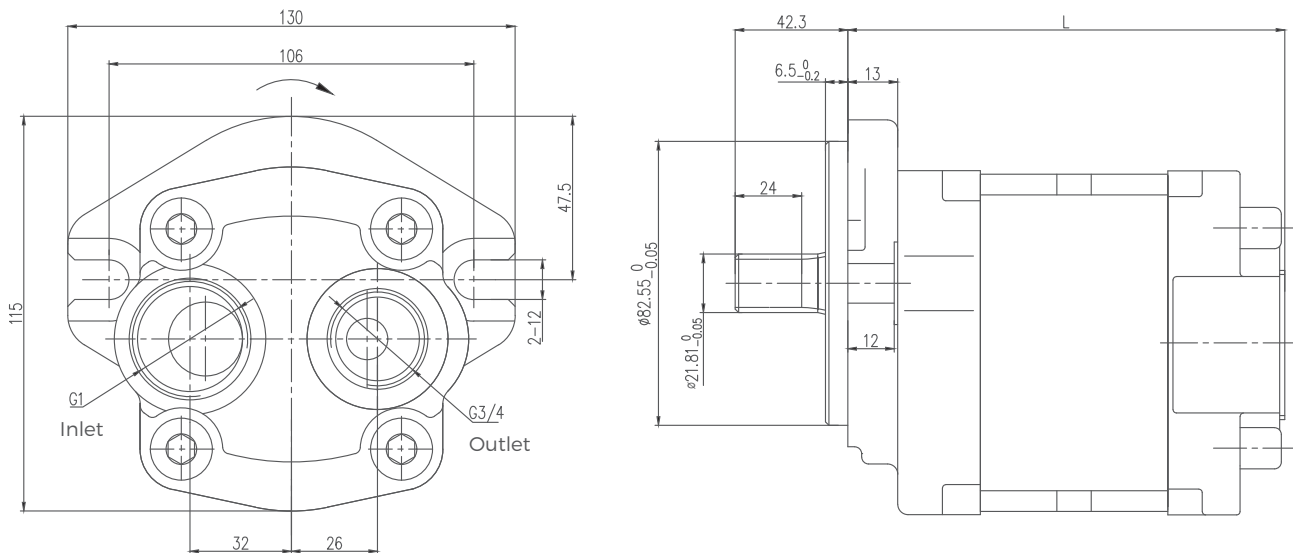
2.5QPF**LJ03S023D35LBB



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			
2.5QPF16LJ03S023D35LBB	16	200(250)	230(280)	250(300)	1500	2500	500	101.5	G1	G3/4
2.5QPF18LJ03S023D35LBB	18	200(250)	230(280)	250(300)	1500	2500	500	103.5		
2.5QPF20LJ03S023D35LBB	20	200(250)	230(280)	250(300)	1500	2500	500	105.5		
2.5QPF23LJ03S023D35LBB	23	200(250)	230(280)	250(300)	1500	2500	500	108.5		
2.5QPF25LJ03S023D35LBB	25	200(250)	230(280)	250(300)	1500	2500	500	110.5		
2.5QPF28LJ03S023D35LBB	28	200(250)	230(280)	250(300)	1500	2500	500	113.5		
2.5QPF30LJ03S023D35LBB	30	200(250)	230(280)	250(300)	1500	2500	500	115.5		
2.5QPF32LJ03S023D35LBB	32	200(250)	230(280)	250(300)	1500	2500	500	117.5		
2.5QPF36LJ03S023D35LBB	36	200(250)	230(280)	250(300)	1500	2500	500	121.5		
2.5QPF40LJ03S023D35LBB	40	200(250)	230(280)	250(300)	1500	2500	500	125.5		
2.5QPF45LJ03S023D35LBB	45	200(250)	230(280)	250(300)	1500	2500	500	130.5		
2.5QPF52LJ03S023D35LBB	52	200(250)	230(280)	250(300)	1500	2500	500	137.5		

Dimensions






















2.5QPF**LJ03S023D35LBB



Ordering Code

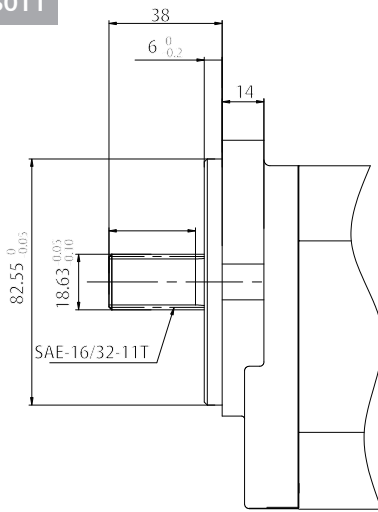
2.8	A	P	F	40	L69	S017	D22	L-	SS	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	l	m

- Ⓐ 2.8=Group 2.8
- Ⓑ Improved number
A=Cast iron cover
X= High performance
- Ⓒ P=Gear pump
- Ⓓ F=Version
- Ⓔ Displacement(ml/r)
6, 8, 10, 12, 14, 16, 19, 22, 25, 28, 30, 32, 36, 40, 43, 45
- Ⓕ L69=Line ports
- Ⓖ S017=Drive shaft
- Ⓗ D22=Front cover
- Ⓘ Rotation
R=CW
L=CCW
B=Bi-directional
- Ⓙ Ports combination
- Ⓚ Seal
F=FKM seal
Omit=NBR seal
- Ⓛ Outboard bearing
O=Outboard bearing
Omit=Without outboard bearing
- Ⓜ Option
V=Relief valve
D=Check valve

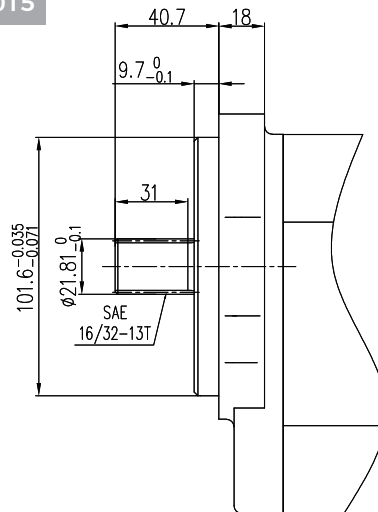
Ⓕ Line ports Inlet and Outlet			Ⓖ Drive shaft			Ⓗ Front cover		
L03	G1 G3/4		S011	Spline key Ø18.63mm×38 11 teeth		D09	2-groove mounting 106mm	
L04	G1/2 G1/2		S015	Spline key Ø21.81mm×40.7		D22	2-hole mounting 146mm	
L08	G3/4 G1/2		S017	Spline key Ø21.81mm×41		D27	2-hole mounting 146mm	
L28	NPT1 NPT3/4		S018	Spline key Ø21.81mm×32		D28	2-hole mounting 146mm	
LJ39	1-1/16-12UN-2B 7/8-14UNF-2B		P080	Flat key Ø22.22mm×40.7				
LJ41	1-5/16-12UN-2B 7/8-14UNF-2B		P079	Flat key Ø25.4mm×49.7				
LJ42	1-5/16-12UN-2B 1-1/16-12UN-2B		Z014	Taper key 1:8, Ø18.67mm				
F52	Ø40, M6, Ø20 Ø35, M6, Ø15							
F105	Ø51, M10, Ø27 Ø40, M8, Ø19							
F117	Ø55, M8, Ø26 Ø55, M8, Ø18							

2.8PF Shafts

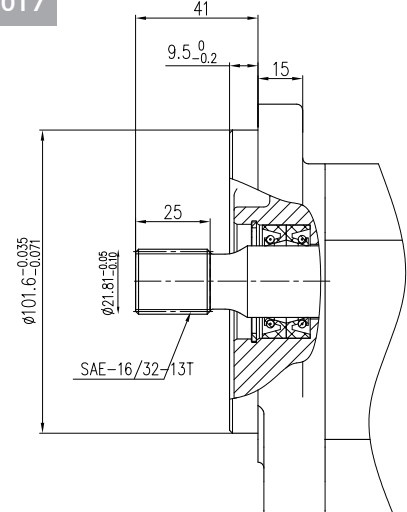
S011



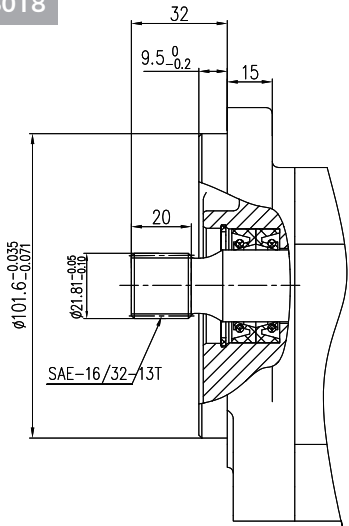
S015



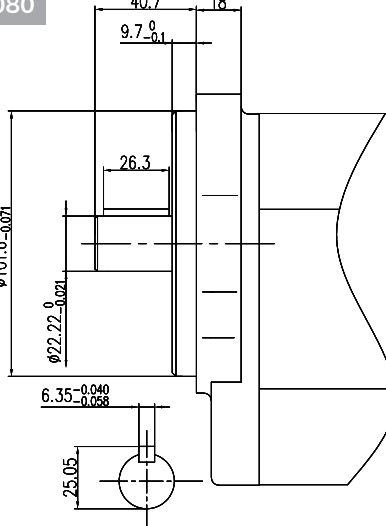
S017



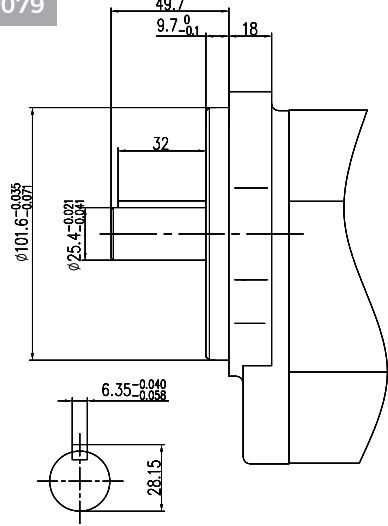
S018



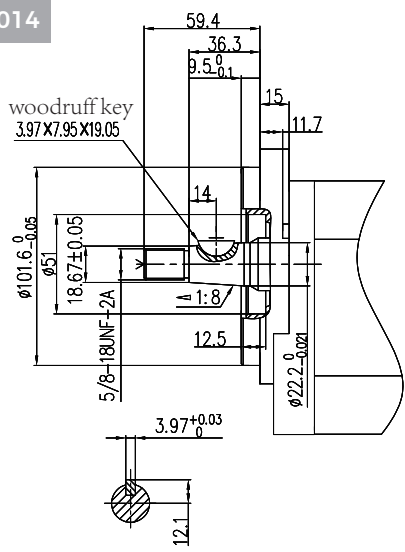
P080



P079

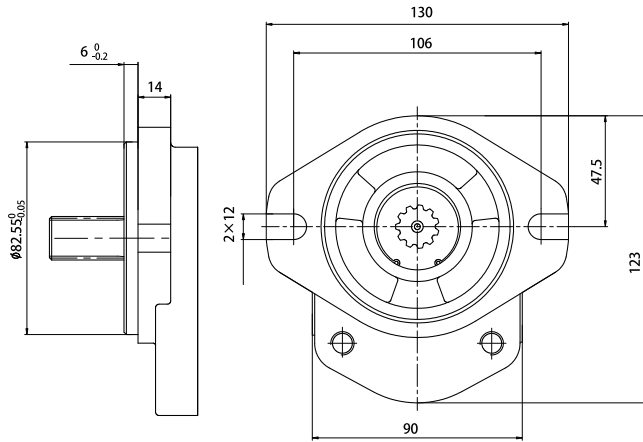


Z014

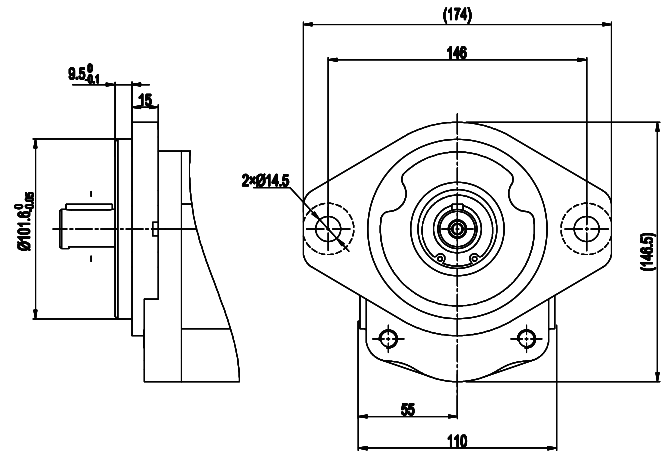


2.8PF Front Covers

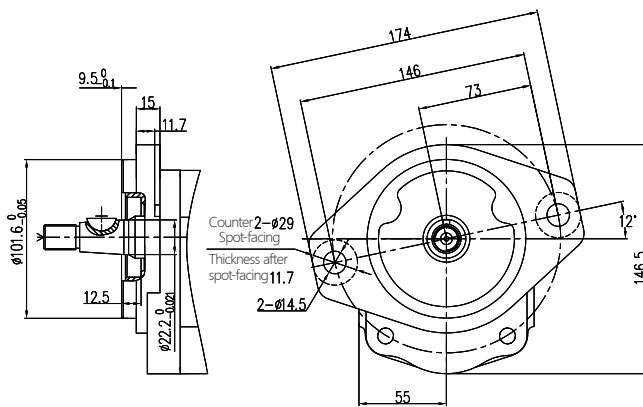
D09



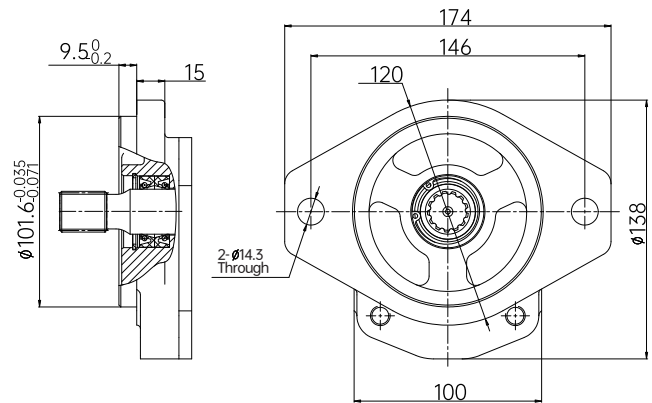
D22



D27



D28



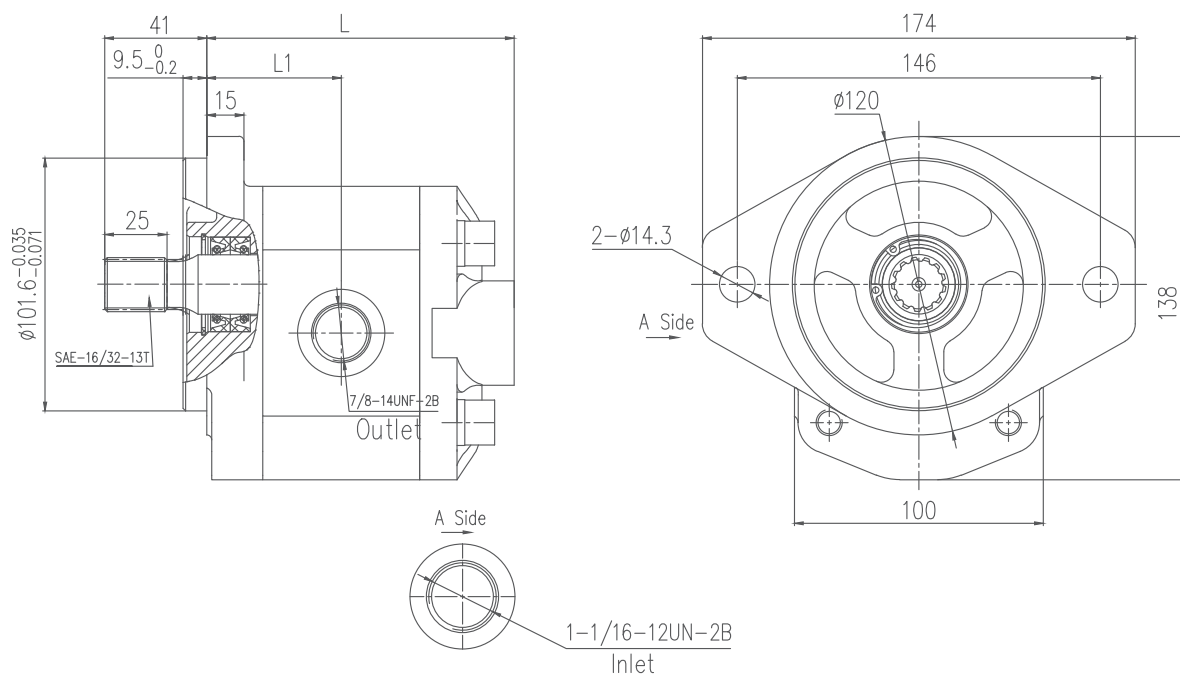
2.8APF**LJ**S017D16L



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	
2.8APF06LJ39S017D22	06	250	270	280	2000	4000	800	115.0
2.8APF08LJ39S017D22	08	250	270	280	2000	4000	800	117.0
2.8APF10LJ39S017D22	10	250	270	280	2000	4000	700	119.0
2.8APF12LJ39S017D22	12	250	270	280	2000	3500	700	121.5
2.8APF14LJ39S017D22	14	250	270	280	2000	3500	600	123.5
2.8APF16LJ39S017D22	16	250	270	280	2000	3500	600	125.5
2.8APF19LJ39S017D22	19	250	270	280	2000	3000	500	128.5
2.8APF22LJ39S017D22	22	250	270	280	2000	3000	500	132.0
2.8APF25LJ39S017D22	25	250	270	280	2000	3000	500	135.0
2.8APF28LJ39S017D22	28	250	270	280	2000	3000	500	138.5
2.8APF30LJ39S017D22	30	230	240	250	2000	3000	500	140.5
2.8APF32LJ39S017D22	32	230	240	250	2000	3000	400	142.5
2.8APF36LJ39S017D22	36	200	220	230	1500	2750	400	147.0
2.8APF40LJ39S017D22	40	200	220	230	1500	2750	400	151.5
2.8APF43LJ39S017D22	43	170	180	190	1500	2500	400	154.5
2.8APF45LJ39S017D22	45	170	180	190	1500	2500	400	156.5

Dimensions

2.8APF**LJ39**S017D22



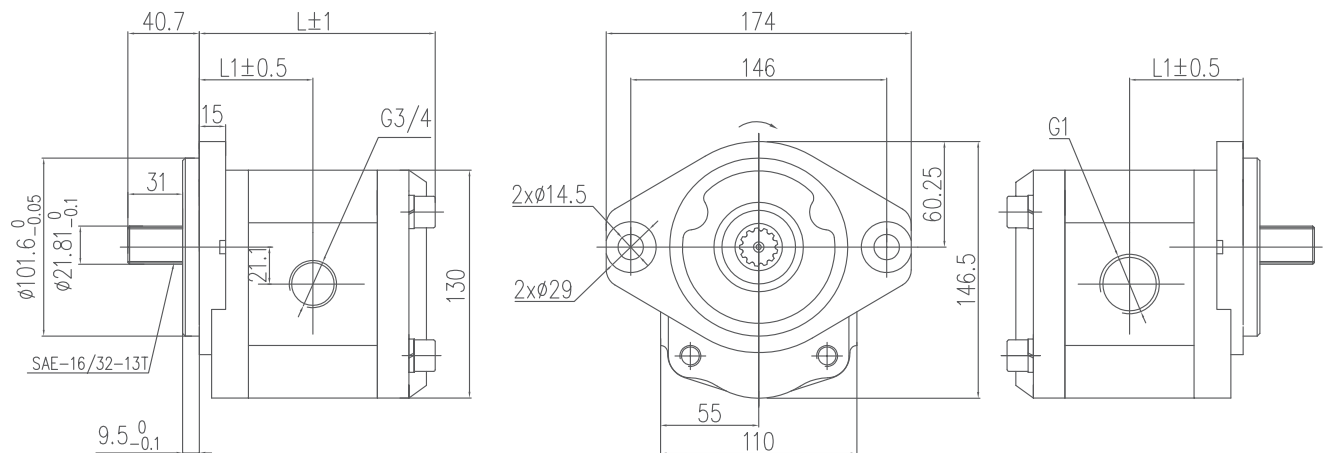
2.8XPFL**S015D22**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1 (mm)	L (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
2.8XPF11L03S015D22	11	200(250)	230(280)	250(300)	2000	3000	500	60.8	126.6	G1	G3/4
2.8XPF12L03S015D22	12	200(250)	230(280)	250(300)	2000	3000	500	61.3	127.6		
2.8XPF15L03S015D22	15	200(250)	230(280)	250(300)	2000	3000	500	62.8	130.5		
2.8XPF16L03S015D22	16	200(250)	230(280)	250(300)	2000	3000	500	63.3	131.6		
2.8XPF19L03S015D22	19	200(250)	230(280)	250(300)	2000	3000	500	64.8	134.6		
2.8XPF23L03S015D22	23	200(250)	230(280)	250(300)	2000	3000	500	66.9	138.8		
2.8XPF25L03S015D22	25	200(250)	230(280)	250(300)	2000	3000	500	67.9	140.8		
2.8XPF28L03S015D22	28	200(250)	230(280)	250(300)	2000	3000	500	69.5	143.9		
2.8XPF34L03S015D22	34	200(250)	230(280)	250(300)	2000	3000	500	72.6	150.1		
2.8XPF38L03S015D22	38	200(250)	230(280)	250(300)	2000	3000	500	74.6	154.1		
2.8XPF40L03S015D22	40	200(250)	230(280)	250(300)	2000	3000	500	75.6	156.1		

Dimension


























2.8XPFL03S015D22**



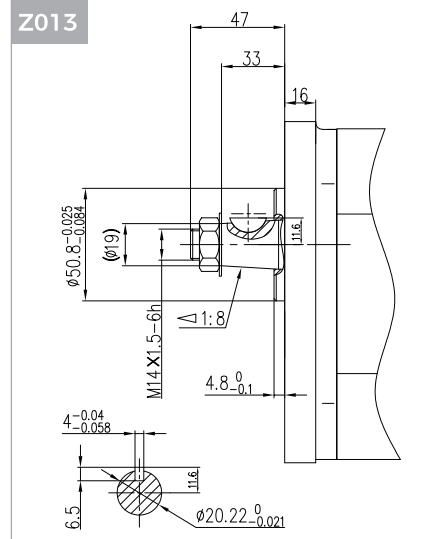
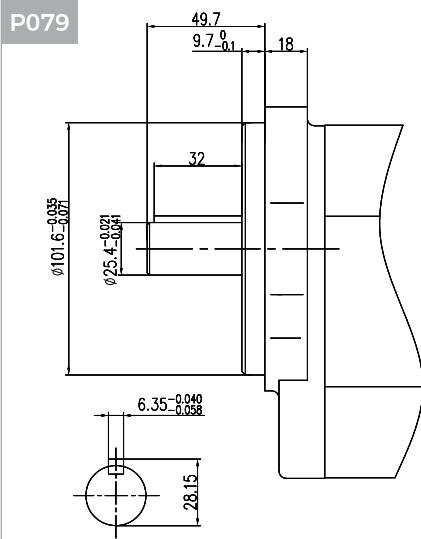
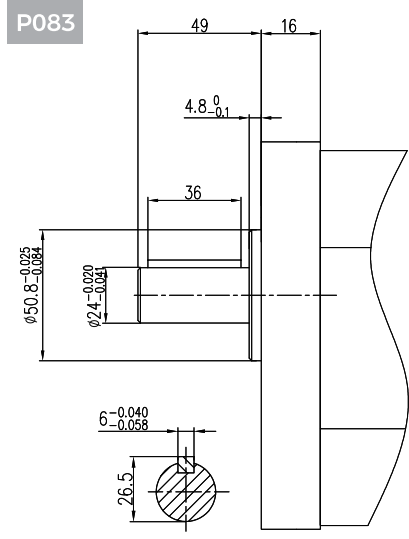
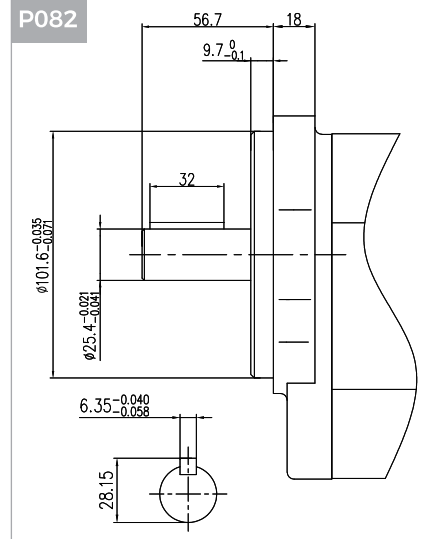
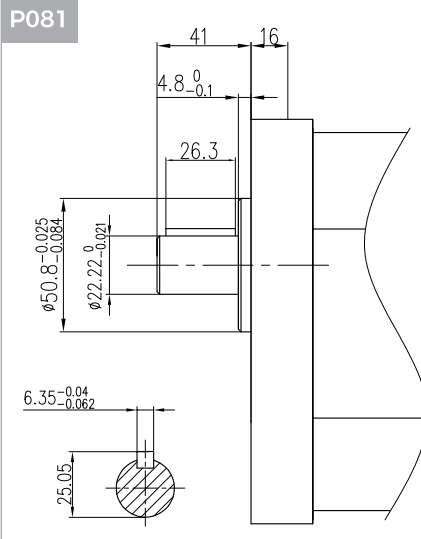
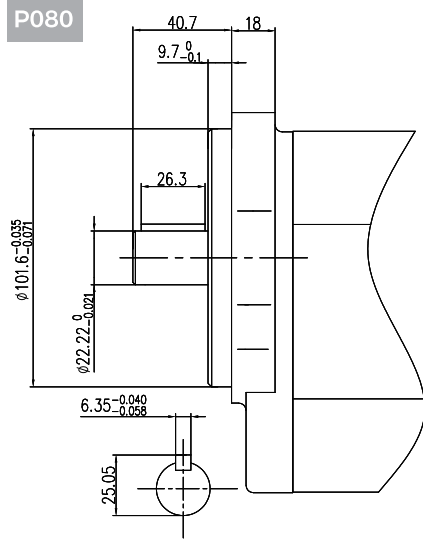
Ordering Code

3	A	P	F	60	L99	S015	D20	L-	SS	F-	O	-v
a	b	c	d	e	f	g	h	i	j	k	i	m

- Ⓐ 3=Group 3
 Ⓑ Improved number
 A=Cast iron cover
 B=Special type
 Ⓒ Gear pump
 Ⓓ Version
 Ⓔ Displacement(ml/r)
 22、26、34、39、43、51、60、70、78、89
 Ⓕ L99=Line ports
 Ⓖ S015=Drive shaft
 Ⓗ D20=Front cover
 ⓘ Rotation
 R=CW
 L=CCW
 B=Bi-directional
 ⓘ Ports combination
 SS=Side inlet and side outlet
 SB=Side inlet and back outlet
 BS=Back inlet and side outlet
 BB=Back inlet and back outlet
 ⓘ Seal
 F=FKM seal
 Omit=NBR seal
 ⓘ Outboard bearing
 O=Outboard bearing
 Omit=Without outboard bearing
 ⓘ Option
 V=Relief valve
 D=Check valve

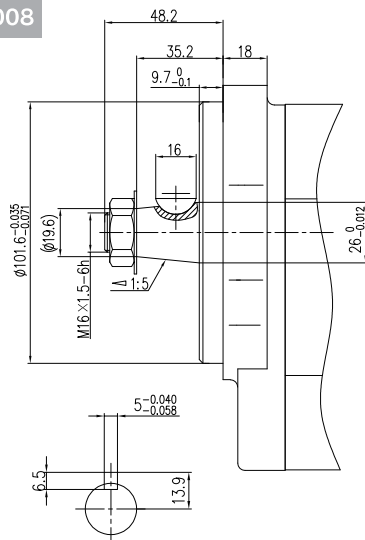
Ⓕ Line ports Inlet and Outlet			Ⓖ Drive shaft			Ⓗ Front cover	
L03	G1 G3/4		P080	Flat key Ø22.22mm×40.7		D20	2-hole mounting 146mm 
L05	G1/2 G3/8		P081	Flat key Ø22.22mm×41		R25	4-hole mounting 98.5×128mm 
L08	G3/4 G1/2		P082	Flat key Ø25.4mm×56.7		R26	4-hole mounting 102×145mm 
L11	G1-1/4 G1		P083	Flat key Ø24mm×49		D34	2-hole mounting 140mm 
L69	G3/4 G3/4		P079	Flat key Ø25.4mm×49.7		D29	2-hole mounting 106mm 
LJ39	1-1/16-12UN-2B 7/8-14UNF-2B		Z013	Taper key 1:8, Ø20.22mm, M14×1.5			
LJ42	1-5/16-12UN-2B 1-1/16-12UN-2B		T008	Taper key 1:5, Ø19.6mm, M16×1.5			
LJ53	1-5/8-12UN-2B 1-5/16-12UN-2B		T009	Taper key 1:5, Ø20mm, M16×1.5			
F51	Ø51, M10, Ø27 Ø40, M8, Ø20		S015	Spline key Ø21.81mm×40.7, 13teeth			
F10	Ø56, M10, Ø27 Ø56, M10, Ø19		H005	Spline key Ø25mm×63			

3PF Shafts

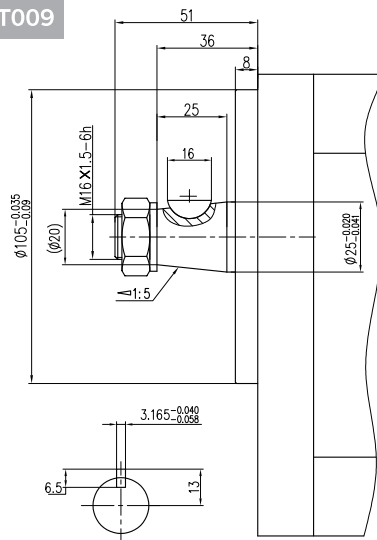


3PF Shafts

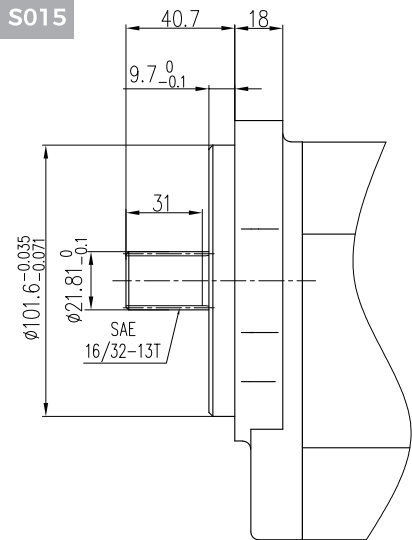
T008



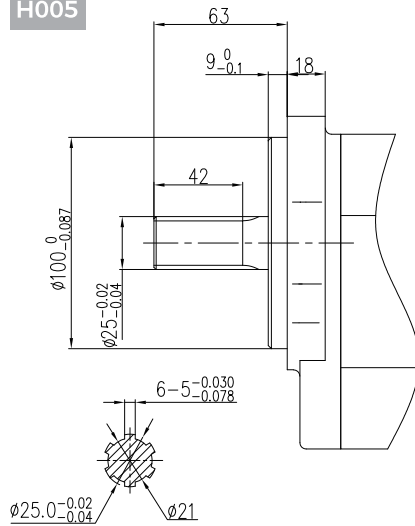
T009



S015

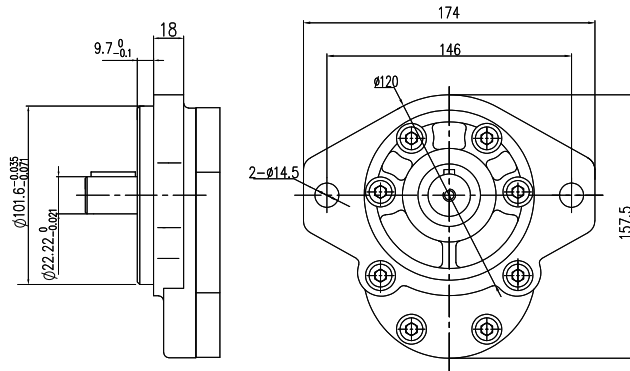


H005

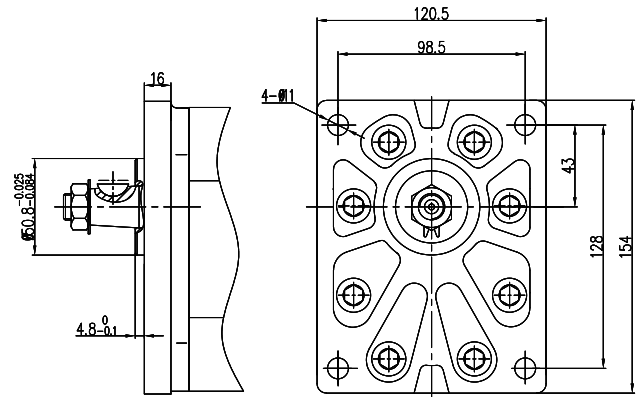


3PF Front Covers

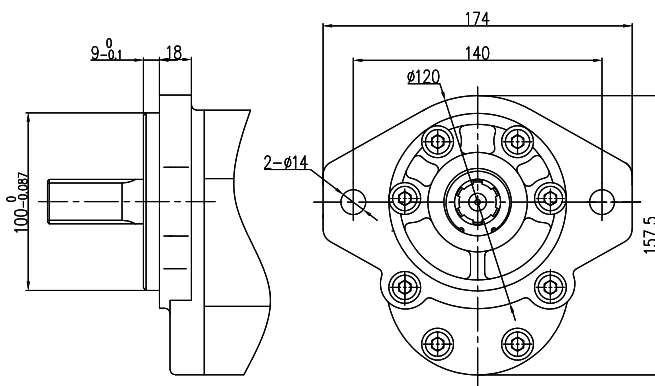
D20



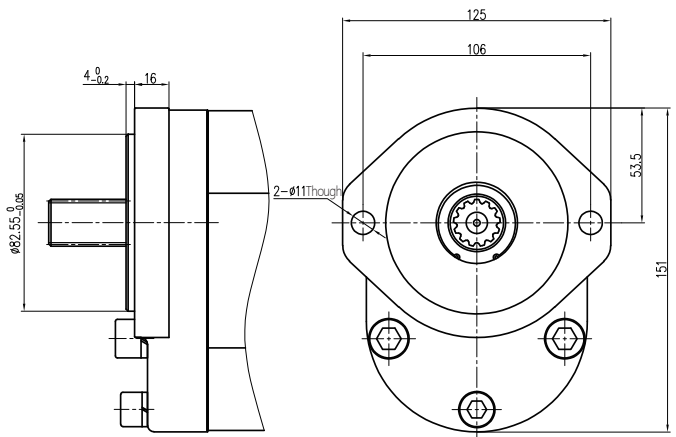
R25



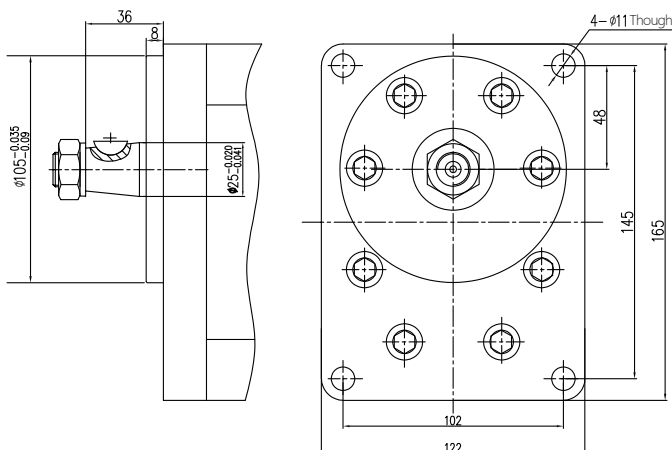
D34



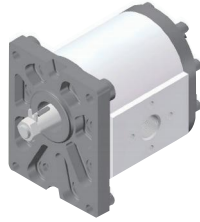
D29



R26



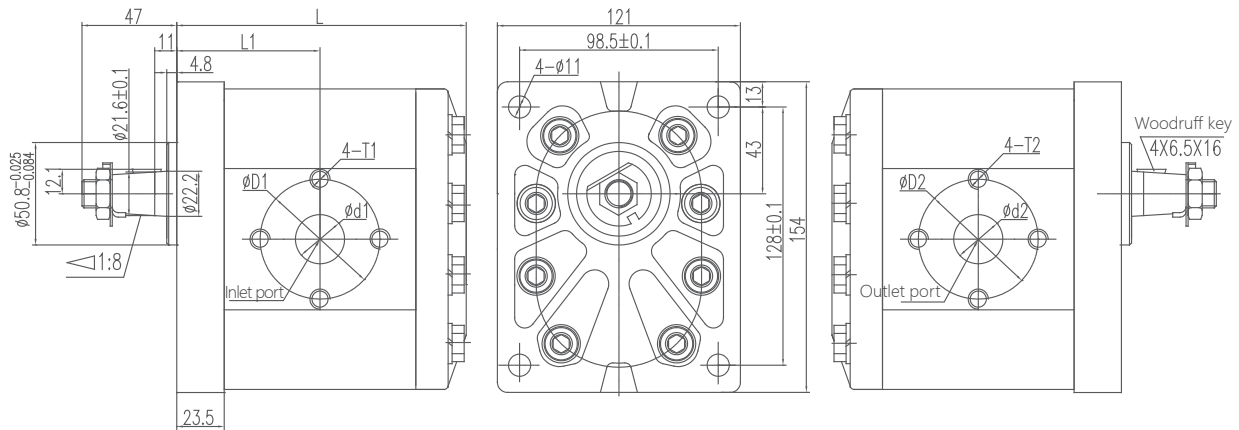
3APFF**Z013R25***



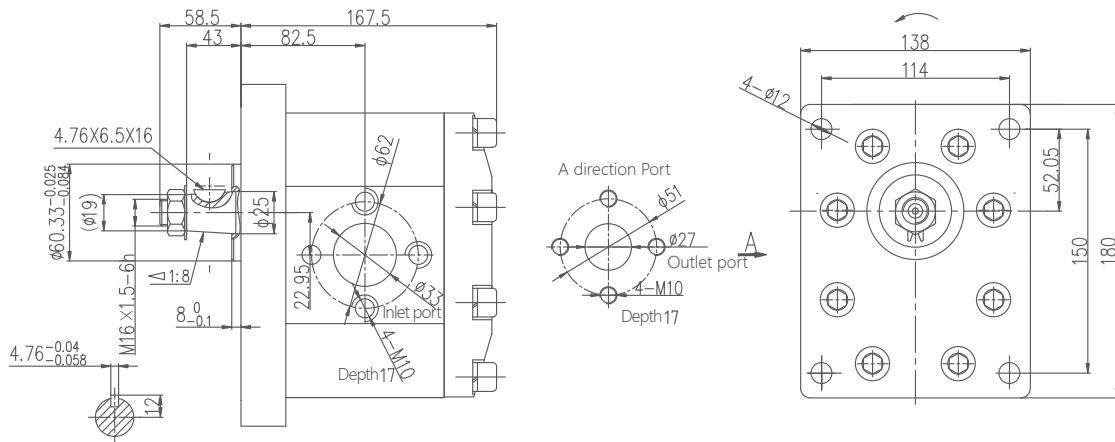
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	ØD1	Ød1	T1	ØD2	Ød2	T2	
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.									
3APF22F10Z013R25	22	200(250)	230(280)	250(300)	2000	3000	400	128.5	65.5	56	27	M10	56	19	M10	
3APF26F10Z013R25	26	200(250)	230(280)	250(300)	2000	3000	400	131.5	67.0							
3APF34F10Z013R25	34	200(250)	230(280)	250(300)	2000	3000	400	137.0	69.8							
3APF39F10Z013R25	39	200(250)	230(280)	250(300)	2000	3000	400	141.0	71.8							
3APF43F09Z013R25	43	200(250)	230(280)	250(300)	2000	2800	400	143.5	73.0	51	27	M10	51	27	M10	
3APF51F11Z013R25	51	200(250)	230(280)	250(300)	2000	2800	400	149.5	76.0	56	27		56	27		
3APF60F12Z013R25	60	180(200)	210(230)	230(250)	1500	2800	400	156.0	79.3	62	33	M10	51	27	M10	
3APF70F12Z013R25	70	180(200)	190(210)	200(230)	1500	2500	400	163.0	82.8							
3APF78F12Z013R25	78	160(180)	180(200)	200(230)	1500	2300	400	169.2	85.2							
3APF89F12Z013R25	89	140(160)	160(180)	180(200)	1500	2000	400	174.2	88.2							

Dimensions

3APFF**Z013R25***



3APFF12Z015R28**



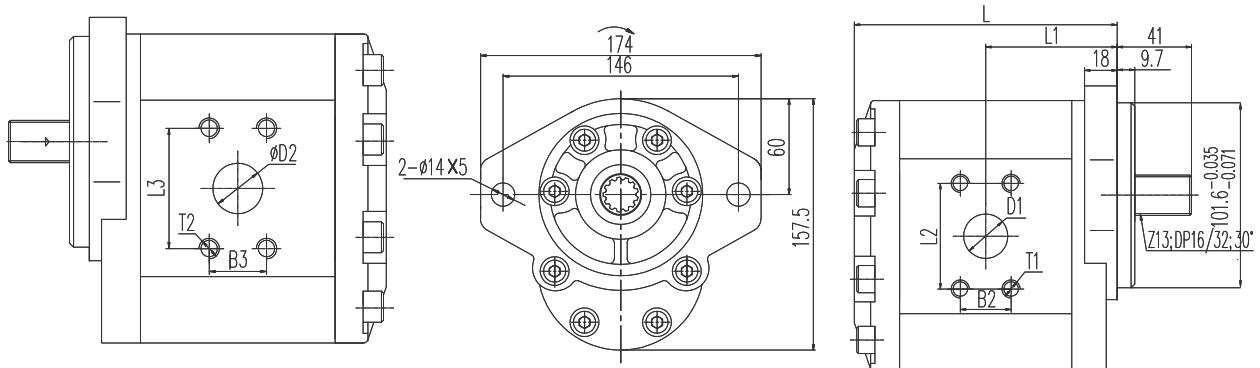
3APFF32S015D20***



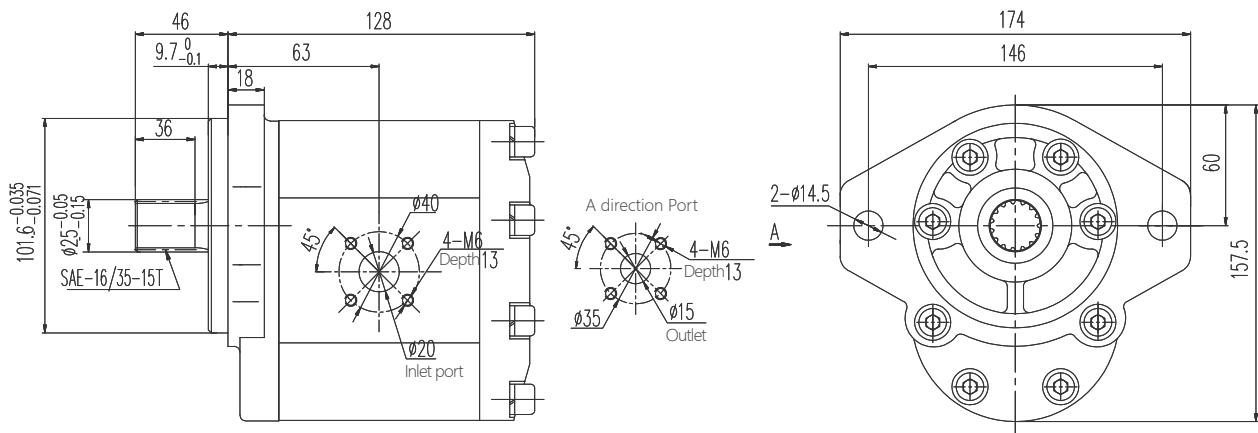
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	L2	B2	ØD1	T1	L3	B3	ØD2	T2
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.										
3APF22F32S015D20	22	200(250)	230(280)	250(300)	2000	3000	400	130.3	65.3	52.4	26.2	27	3/8 16UNC -2B	26.2	47.6	19	3/8 16UNC -2B
3APF26F32S015D20	26	200(250)	230(280)	250(300)	2000	3000	400	133.3	66.8								
3APF34F32S015D20	34	200(250)	230(280)	250(300)	2000	3000	400	138.8	69.6								
3APF39F32S015D20	39	200(250)	230(280)	250(300)	2000	3000	400	142.8	71.6								
3APF43F32S015D20	43	200(250)	230(280)	250(300)	2000	2800	400	145.3	72.8								
3APF51F32S015D20	51	200(250)	230(280)	250(300)	2000	2800	400	151.3	75.8								
3APF60F36S015D20	60	180(200)	210(230)	230(250)	1500	2800	400	157.8	79.1	58.7	28.4	33	7/16 14UNC -2B	26.2	52.4	27	
3APF70F36S015D20	70	180(200)	190(210)	200(230)	1500	2500	400	164.8	82.5								
3APF78F36S015D20	78	160(180)	180(200)	200(230)	1500	2300	400	171.0	85.0								
3APF89F36S015D20	89	140(160)	160(180)	180(200)	1500	2000	400	176.0	88.0								

Dimensions

3APFF**S015D20***



3APFF52S022D20**



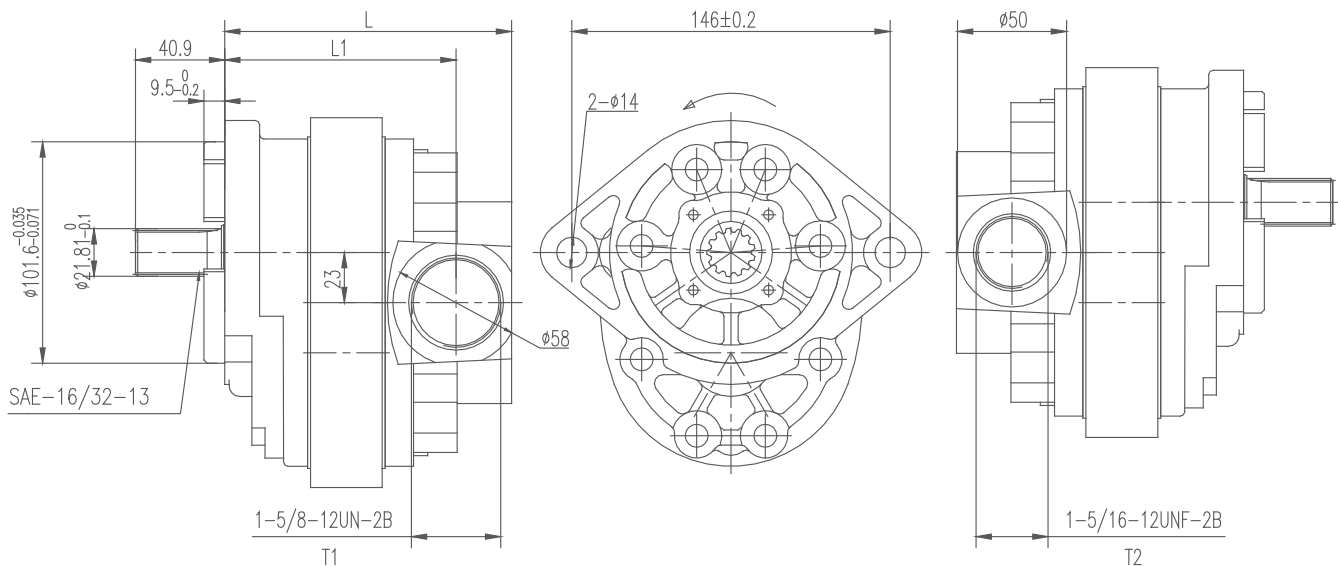
3BPFLJ**S015D36L***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	T1	T2
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
3BPF22LJ53S015D36L*	22	200(250)	230(280)	250(300)	2000	3000	400	111.6	85.6	1-5/8-12UNC-2B	1-5/16-12UNC-2B
3BPF26LJ53S015D36L*	26	200(250)	230(280)	250(300)	2000	3000	400	114.5	88.5		
3BPF34LJ53S015D36L*	34	200(250)	230(280)	250(300)	2000	3000	400	120.2	94.2		
3BPF39LJ53S015D36L*	39	200(250)	230(280)	250(300)	2000	3000	400	123.8	97.8		
3BPF43LJ53S015D36L*	43	200(250)	230(280)	250(300)	2000	2800	400	126.5	100.5		
3BPF50LJ53S015D36L*	50	200(250)	230(280)	250(300)	2000	2800	400	131.5	105.5		
3BPF60LJ53S015D36L*	60	180(200)	210(230)	230(250)	1500	2800	400	138.5	112.5		
3BPF63LJ53S015D36L*	63	180(200)	190(210)	200(230)	1500	2500	400	140.8	114.8		

Dimensions

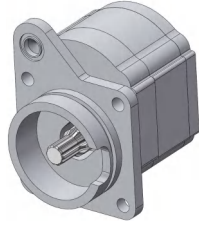
3BPFLJ**S015D36L***



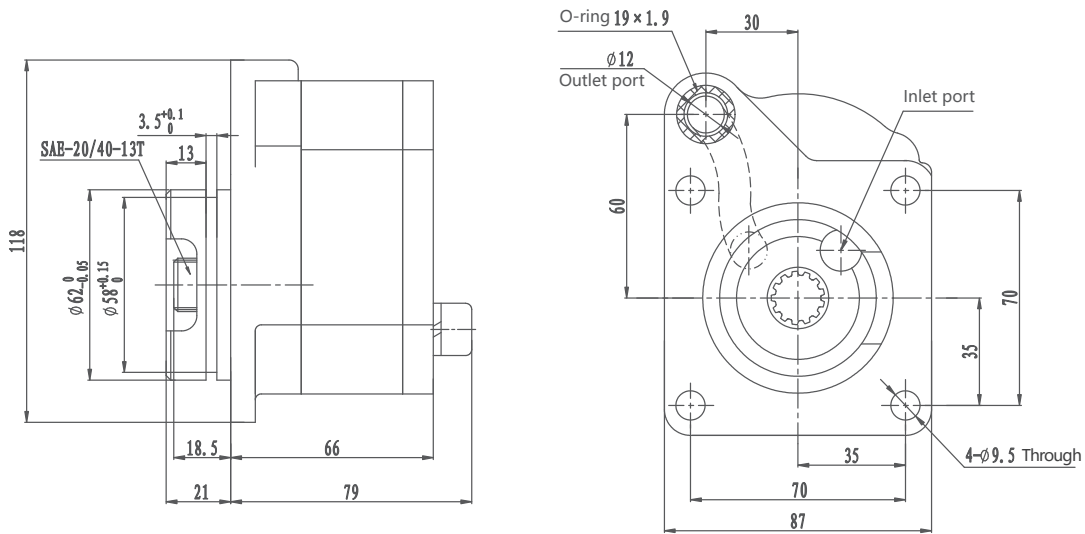
Ordering Code

3	B	P	F	**	LJ53	S015D36L	/L
Group 3	Structure improve number	Gear pump	F:16 ~ 25 Mpa	Displacement 22, 26, 34, 39, 43, 50, 60, 63 ml/r	Inlet/outlet combination	Shaft and flange combination	Rotation L= left omit = right

OM08GR08K04F007E17

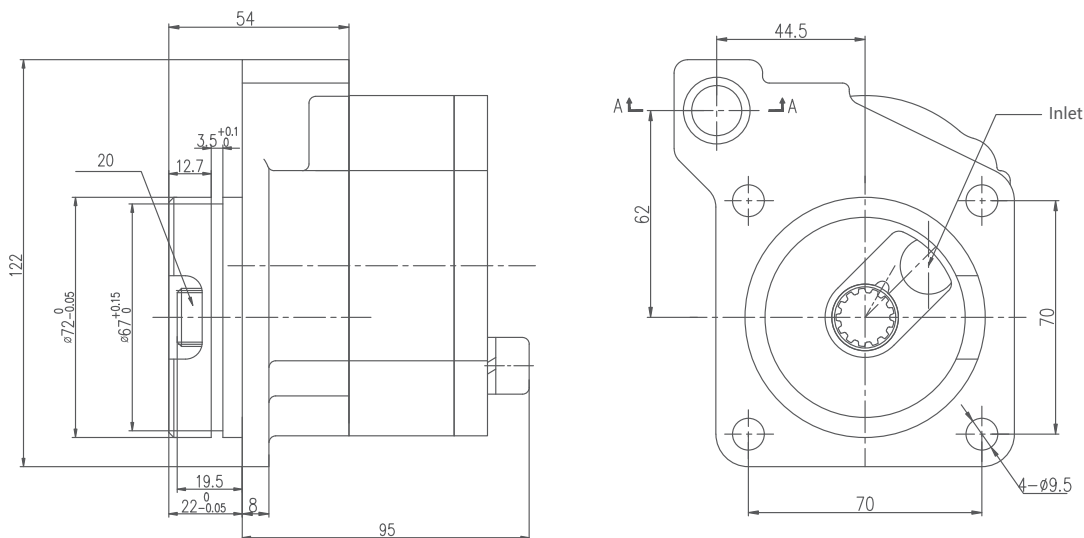


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
OM08GR08K04F007E17	08	100	120	140	1500	2500	500

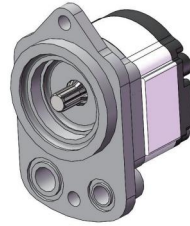


OM08-3GRK03F012E22**

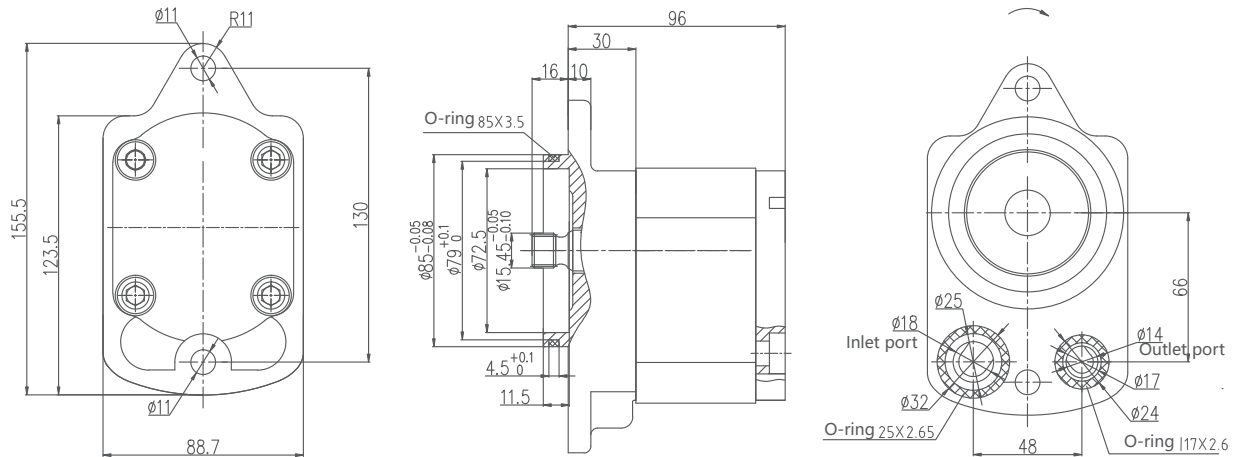
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
OM08-3GR12K03F012E22	12	100	120	140	1500	2500	500



OM401GR18K05F008E18-X

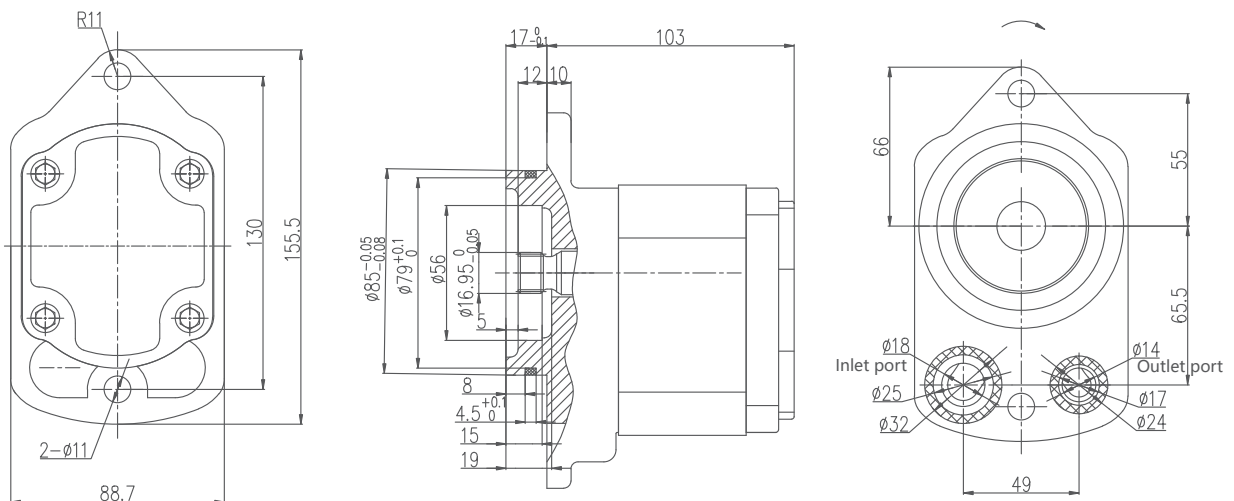


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet Φ18	Outlet Φ14
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
OM401GR18K05F008E18-X	18	140	150	160	1500	2500	600	Φ18	Φ14

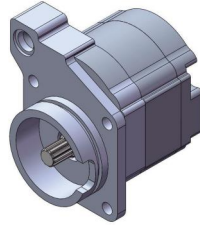


OM601GR18K05F009E19-X

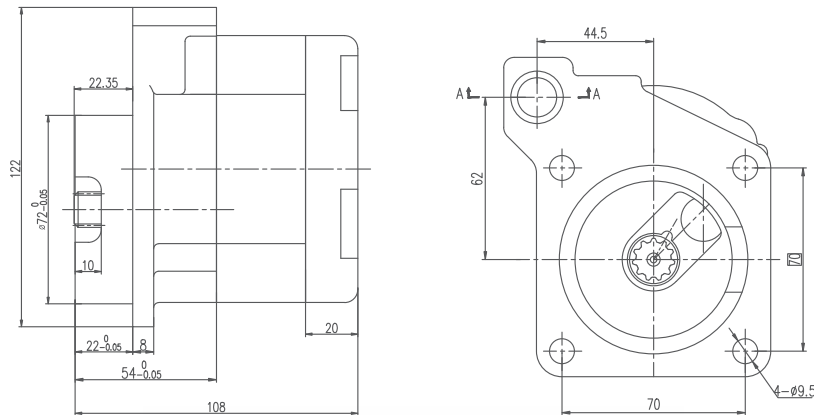
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet Φ18	Outlet Φ14
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
OM601GR18K05F009E19-X	18	140	150	160	1500	2500	600	Φ18	Φ14



OM701GR17K03F010E20-X



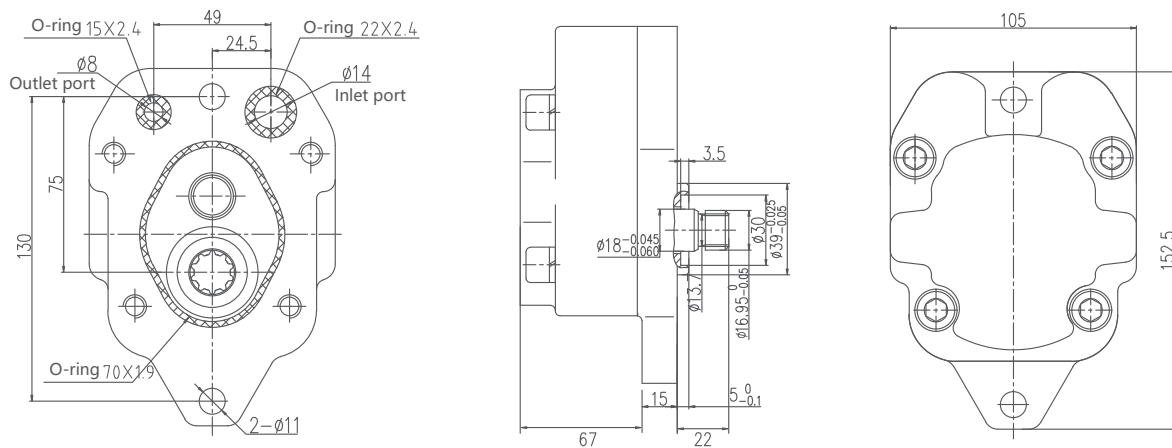
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
OM701GR17K03F010E20-X	17	140	150	160	1500	2500	600



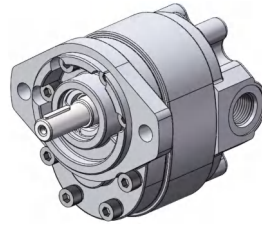
OM702GR10K04F011E21



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
OM702GR10K04F011E21	10	100	130	160	1500	2500	600	Φ14	Φ8



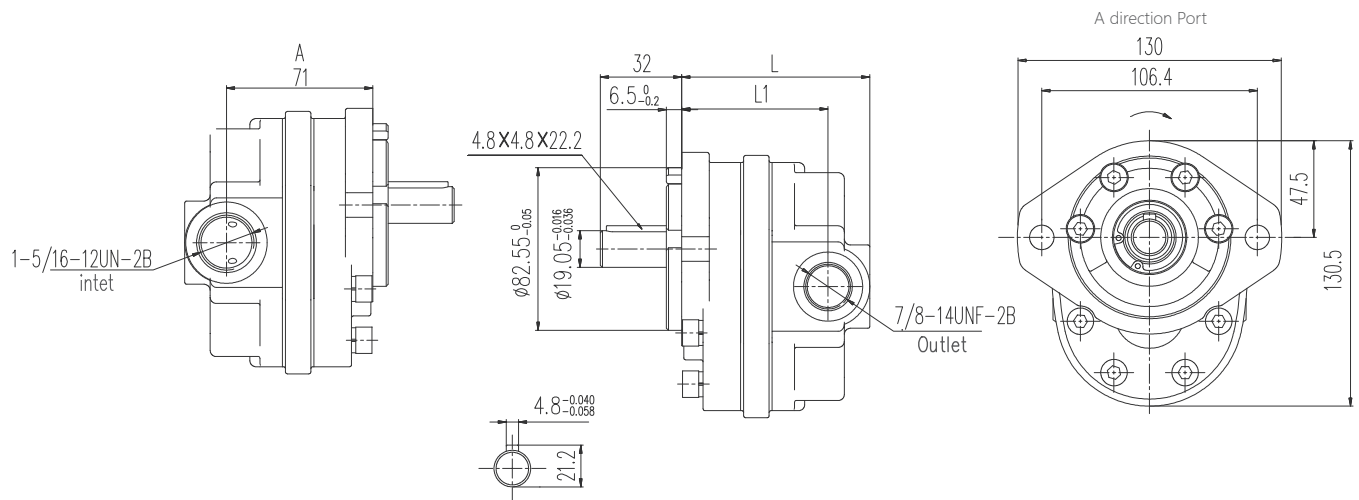
OM14GRLJ41P022D37**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1 (mm)	Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.				
OM14GR17LJ41P022D37	17	160	170	180	1500	2500	500	104.5	84.0	1-5/16- 12UN-2B	7/8- 14UNF-2B
OM14GR20LJ41P022D37	20	160	170	180	1500	2500	500	108.0	87.5		
OM14GR23LJ41P022D37	23	160	170	180	1500	2500	500	112.0	91.5		
OM14GR24LJ41P022D37	24	160	170	180	1500	2500	500	113.0	92.5		
OM14GR25LJ41P022D37	25	160	170	180	1500	2500	500	114.0	93.5		
OM14GR28LJ41P022D37	28	160	170	180	1500	2500	500	117.5	97.0		
OM14GR29LJ41P022D37	29	160	170	180	1500	2500	500	119.0	98.5		
OM14GR30LJ41P022D37	30	160	170	180	1500	2500	500	120.0	99.5		

Dimensions

OM14GRLJ41P022D37**



2CP18 Constant Flow Gear Pumps

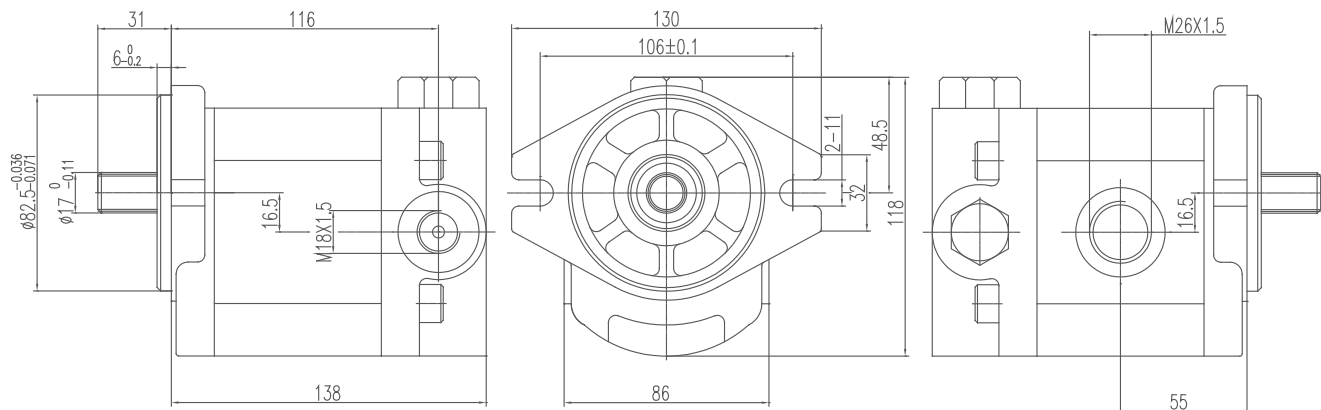


Model	Displacement(ml/r)	Constant flow(L/min)	Max Pressure(bar)	Speed(r/min)
2[C]P18 16/14L17F106D18SS	18	16	10	500-3200

Involute Spline Parameter

m	Z	Pressure angle	Precision
1	16	30°	5h

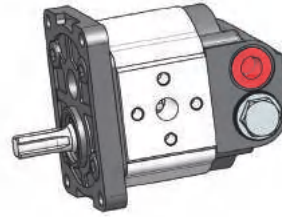
Dimensions



Ordering Code

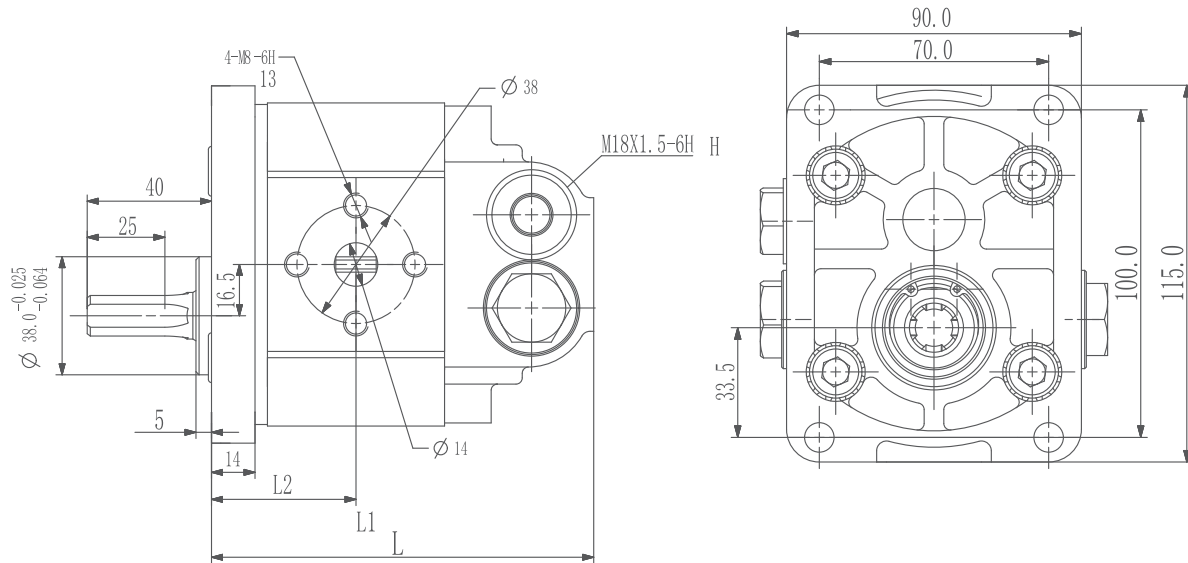
2	[C]P	**	16/14	L17	F106D18	/L	SS
Group 2	Constant flow Gear pump	Displacement 18 ml/r	Control flow: 16L/min safety valve pressure: 14MPa	Inlet/outlet combination	Shaft and flange combination	Rotation L= left omit = right	inlet/out position combination BB, BS, SB, SS

2CP18 Constant Flow Gear Pumps



Model	Displacement (ml/r)	Constant flow (L/min)	Max. Pressure (bar)	Speed (r/min)	L	L1	L2
2[C]P6 6/12.5LF01R17S7LSS	6	6	125	500-3200	47.0	98.0	120.0
2[C]P10 6/12.5LF01R17S7LSS	10	6	125	500-3200	49.75	103.5	125.5
2[C]P14 10/12.5LF01R17S7LSS	14	10	125	500-3200	52.85	109.5	131.7

Dimensions



Ordering Code

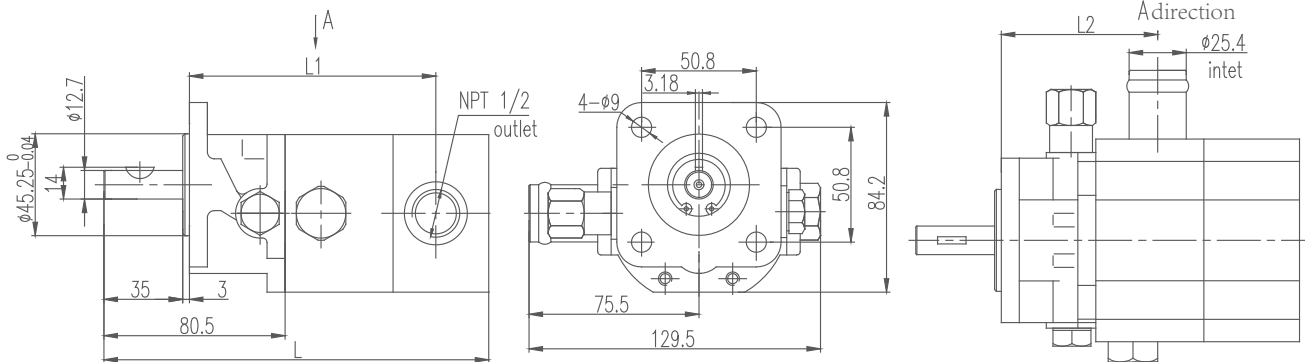
2	[C]P	**	*/12.5	LF01	H007R30	/L	SS
Group 2	Constant flow	Displacement 6, 10, 14 ml/r	Control flow: 6, 10L/min safety valve pressure: 12.5 MPa	Inlet/outlet combination	Shaft and flange combination	Rotation L= left omit = right	inlet/out position combination BB, BS, SB, SS

2CB-E**/** HI/LO Gear Pumps



Model	Flow (gpm)	Pressure(PSI)		Displacement (Cu.in/r)		Speed (rpm)	D	
		LO	HI	LO	HI		Inlet	Outlet
2CB-E6.3/2.1	8.0	400/900	3000	0.385	0.130	3600	1 IN PIPE	1/2 NPT
2CB-E6.3/3.0	8.5	400/900	3000	0.385	0.183			
2CB-E6.3/3.6	9.0	400/900	3000	0.385	0.220			
2CB-E8.8/2.1	10.0	400/900	3000	0.537	0.130			
2CB-E8.8/3.0	10.5	400/900	3000	0.537	0.183			
2CB-E8.8/3.6	11.0	400/900	3000	0.537	0.220			
2CB-E8.8/4.2	11.5	400/900	3000	0.537	0.256			
2CB-E10.9/2.1	12.0	400/900	3000	0.665	0.130			
2CB-E10.9/3.0	12.5	400/900	3000	0.665	0.183			
2CB-E10.9/3.6	13.0	400/900	3000	0.665	0.220			
2CB-E10.9/4.2	13.5	400/900	3000	0.665	0.256			
2CB-E13.0/4.2	16.0	400/900	3000	0.793	0.265			

Dimensions



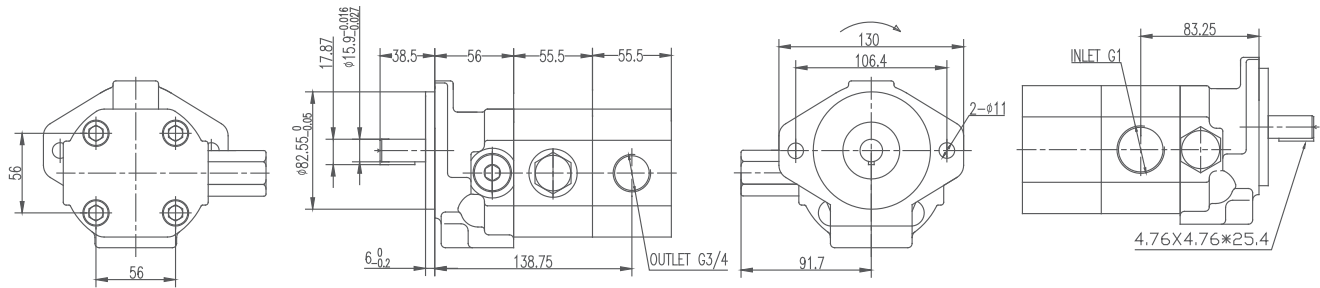
Model	Dimension(in)			Model	Dimension(in)			Model	Dimension(in)		
	L	L1	L2		L	L1	L2		L	L1	L2
2CB-E6.3/2.1	6.07	3.74	2.41	2CB-E8.8/3.0	6.54	4.08	2.74	2CB-E10.9/3.0	6.90	4.53	3.04
2CB-E6.3/3.0	6.21	3.90	2.41	2CB-E8.8/3.6	6.61	4.24	2.74	2CB-E10.9/3.6	7.00	4.53	3.04
2CB-E6.3/3.6	6.28	3.90	2.74	2CB-E8.8/4.2	6.70	4.24	2.74	2CB-E10.9/4.2	7.09	4.53	3.04
2CB-E8.8/2.1	6.41	4.08	2.74	2CB-E10.9/2.1	6.70	4.37	3.04	2CB-E13.0/4.2	6.70	4.37	3.04

2CB-P**/** HI/LO Gear Pumps

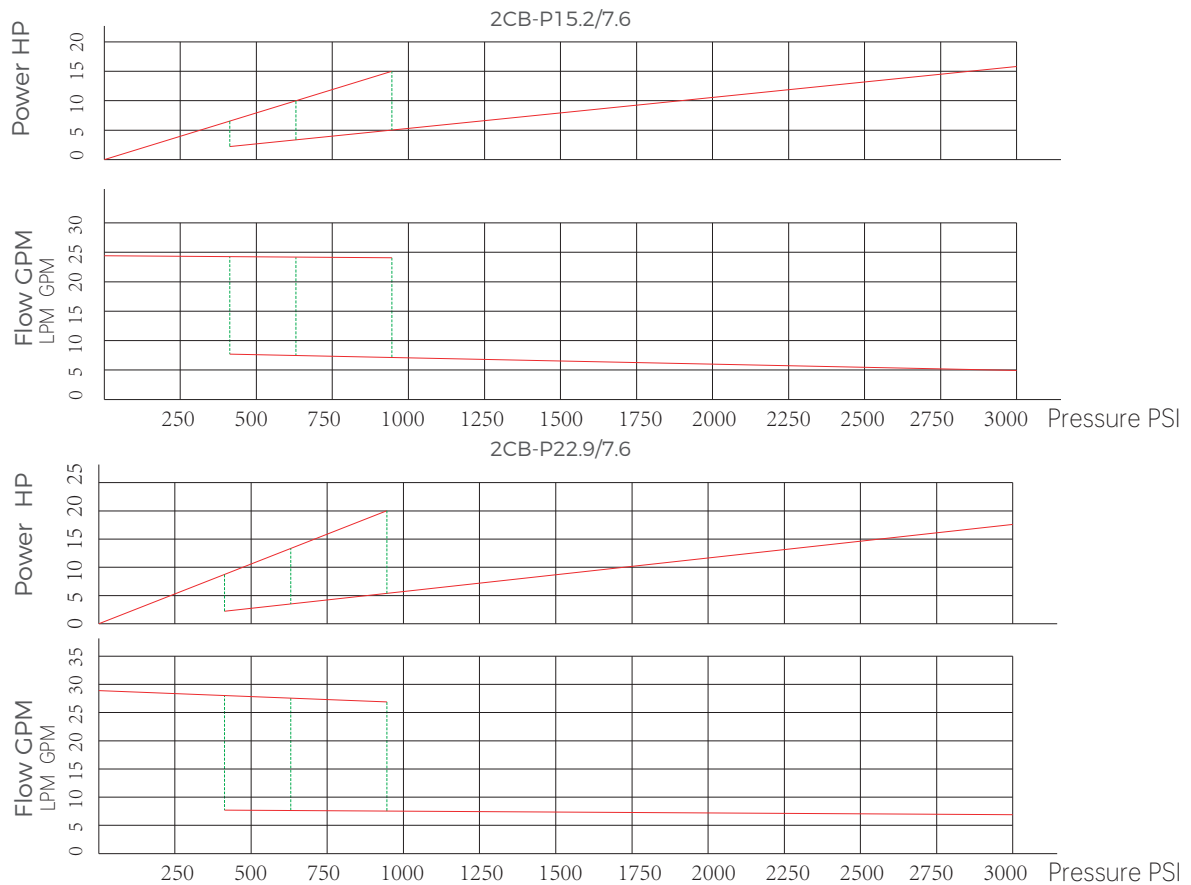


Model	Flow (gpm)	Pressure (PSI)		Displacement (Cu.in/r)		Speed (rpm)	D	
		LO	HI	LO	HI		Inlet	Outlet
2CB-P15.2/7.6	22	400/900	3000	0.930	0.465	3600	NPTF 1 G1	NPTF3/4 G3/4
2CB-P22.9/7.6	28	400/900	3000	1.395	0.465			

Dimensions



Performance curves



PTO Gear Pumps

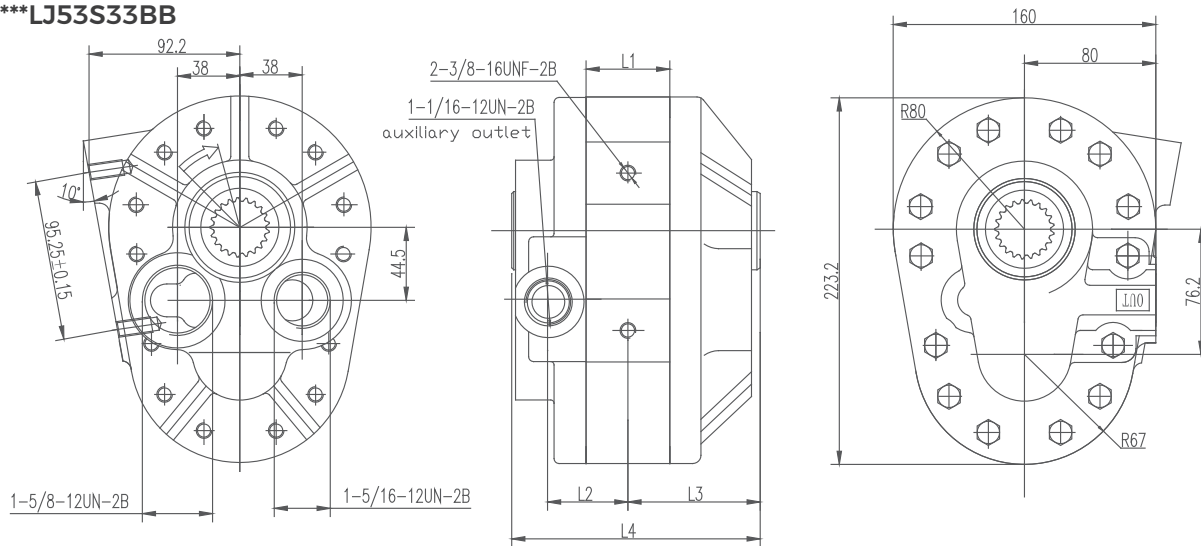


PTO pump can be used in the hydraulic systems of agricultural tractors

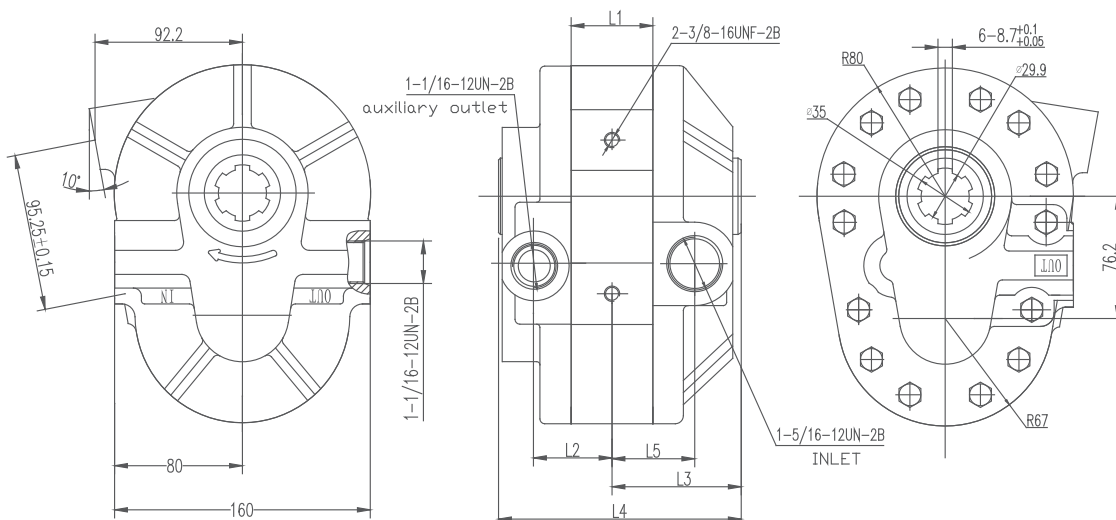
Model	Displacement (cc/r)	Pressure	Speed	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)
		Max.	Rated					
CB-P160LJ53S33BB	160	160 bar (2250 psi)	1000RPM	60.2	53.0	86	161	61.0
CB-P125LJ53S33BB	125			50.8	50.8	81	151	52.0
CB-P90LJ53S33BB	90			41.5	44.0	76	142	47.5
CB-P56LJ53S33BB	56			32.0	39.0	71	133	42.5
CB-P160LJ42H21SS	160		540RPM	60.2	53.0	86	161	61.0
CB-P125LJ42H21SS	125			50.8	48.0	81	151	52.0
CB-P90LJ42H21SS	90			41.5	44.0	76	142	47.5
CB-P56LJ42H21SS	56			32.0	39.0	71	133	42.5

Dimensions

CB-P***LJ53S33BB



CB-P***LJ42H21SS



Aluminum Multiple Pump

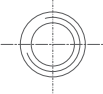




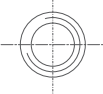




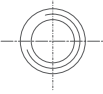









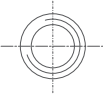










Ordering Code

1	D	P	F	**/**	DL01	P006	D02	L-	SS	F-	O	-V
a	b	c	d	e	f	g	h	i	j	k	l	m

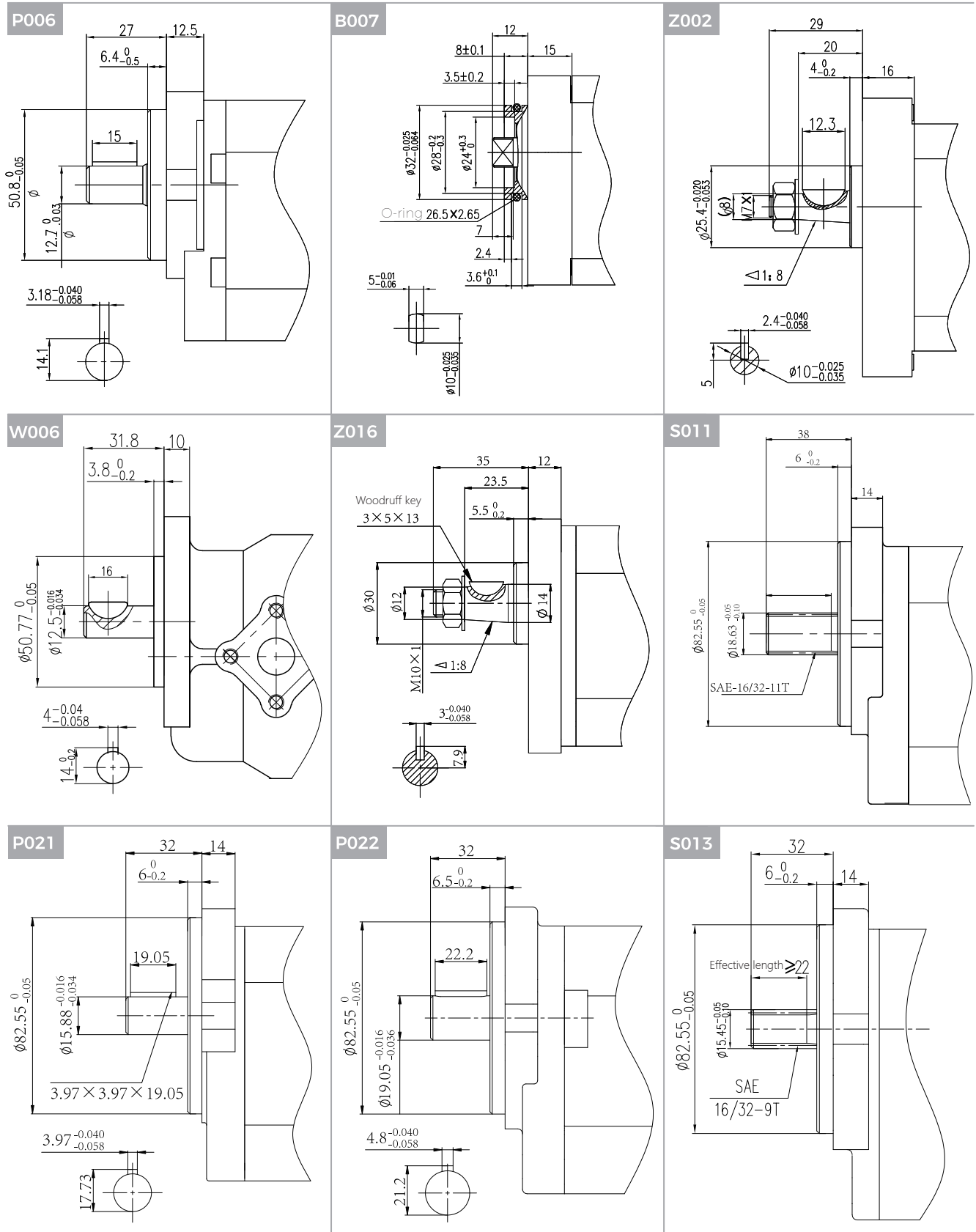
- Ⓐ 1=Group 1
1、 1.5、 2、 3 Group
- Ⓑ Function
D=Double pump
T=Triple pump
F=Quadruple pump
- Ⓒ P=Gear pump
- Ⓓ F=Version
- Ⓔ Displacement(ml/r)
first stage/second stage/third stage/forth stage
- Ⓕ DL01=Line ports
- Ⓖ P006=Drive shaft
- Ⓗ D02=Front cover
- Ⓘ Rotation
R=CW
L=CCW
B=Bi-directional

- ⓷ Ports combination
SS=Side inlet and side outlet
SB=Side inlet and back outlet
BS=Back inlet and side outlet
BB=Back inlet and back outlet
- Ⓚ Seal
F=FKM seal
Omit=NBR seal
- Ⓛ Outboard bearing
O=Outboard bearing
Omit=Without outboard bearing
- Ⓜ Option
V=Relief valve
D=Check valve

Ⓕ Line ports Front Pump Inlet/Outlet Back Pump Inlet/Outlet			Ⓖ Drive shaft			Ⓗ Front cover		
DL06	G1, G3/4 G1/2, G3/8		P006	Parallel key Ø12.7mm×27		D02	2-groove mounting 82.55mm	
			B007	Flat key Ø10mm×12		A04	2-hole mounting 40×40mm	
DL08	G3/4, G1/2 G3/4, G1/2		Z002	Taper key 1:8, Ø8mm, M7×1		R01	4-hole mounting 52.4×71.9mm	
			W006	Parallel key Ø12.5mm×31.8		R02	4-hole mounting 63.5×63.5mm	

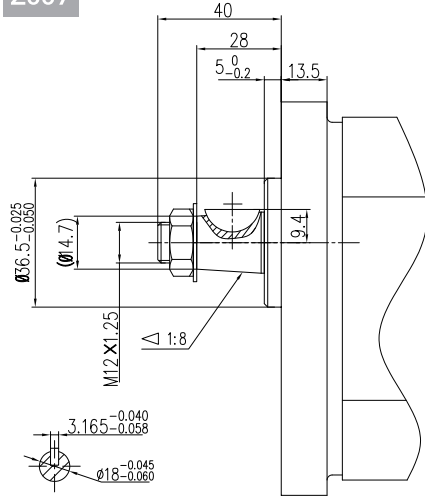
Ⓕ Line ports Front Pump Inlet/Outlet Back Pump Inlet/Outlet		Ⓖ Drive shaft		Ⓕ Front cover		
DL11	G1-1/4,G1 G1-1/4,G1		Z016	Taper key 1:8,Ø12mm,M10×1 	R29	4-hole mounting 56×73mm 
			S011	Spline key Ø18.63mm×38 	D09	4-hole mounting 71.5×96.2mm 
DL40	G3/8,G3/8 G3/8,G3/8		P021	Flat key Ø15.88mm×32 	D10	2-hole mounting 106.4mm 
			P022	Parallel Key Ø19.05mm×32 	A23	2-hole mounting 60×60mm 
DL95	PT1,PT3/4 PT1,PT3/4		S013	Spline key Ø15.45mm×32 	R-12	4-hole mounting 72×100mm 
			S013	Spline key Ø15.45mm×32 	R17	4-hole mounting 70×100mm 
DLJ07	1-1/16-12UN-2B 7/8-14UNF-2BNA 7/8-14UNF-2B		Z007	Taper key 1:8,Ø14.7mm,M12×1.25 	D20	2-hole mounting 146mm 
			T003	Taper key 1:5,M12×1.5 	R25	4-hole mounting 98.5×128mm 
DLJ39	1-1/16-12UN-2B 7/8-14UNF-2B 1-1/16-12UN-2B 7/8-14UNF-2B		T004	Taper key 1:5,M12 		
			Z008	Taper key 1:8,Ø14.7mm,M12×1.5 		
DF02	Ø40,4-M8,Ø20 Ø30,4-M6,Ø13		H001	Spline key Ø11.4mm×40 		
	Ø40,4-M8,Ø20 Ø30,4-M6,Ø13		S015	Spline key Ø21.81mm×40.7 		
DF05	Ø40,4-M6,Ø20 Ø35,4-M6,Ø15		P080	Parallel Key Ø22.22mm×40.7 		
	Ø40,4-M6,Ø20 Ø35,4-M6,Ø15		Z013	Taper key 1:8,Ø19mm 		

Multiple Pump Shafts

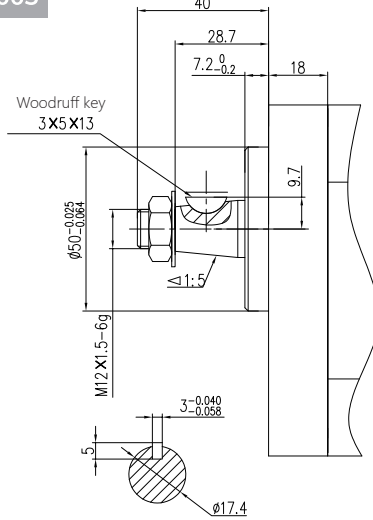


Multiple Pump Shafts

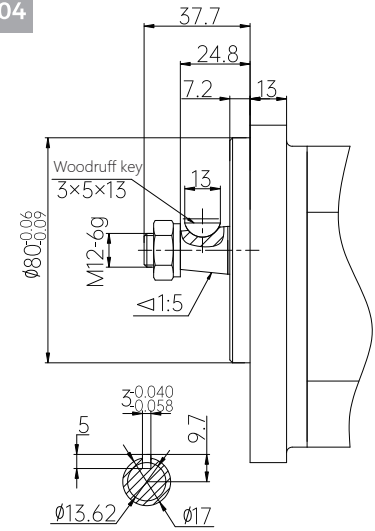
Z007



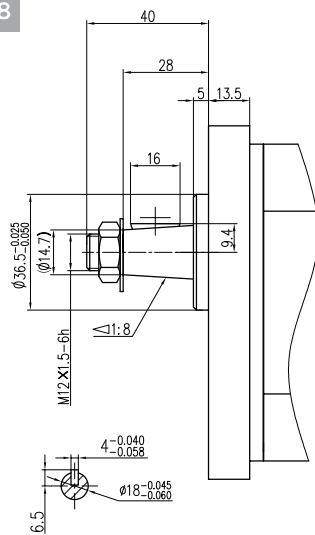
T003



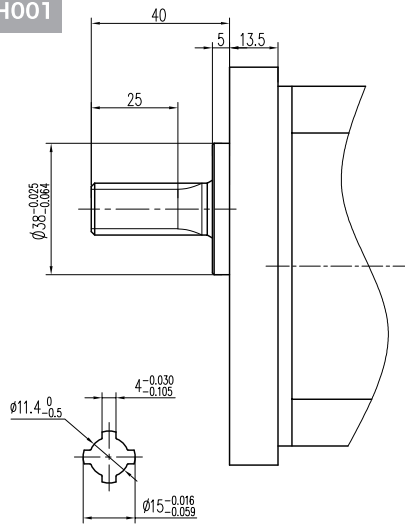
T004



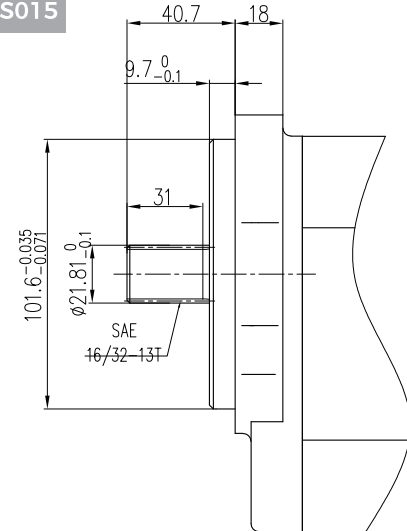
Z008



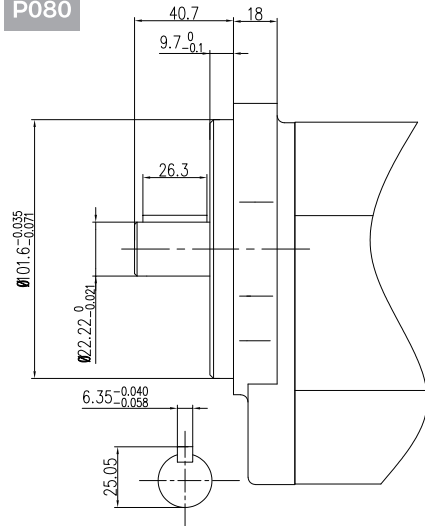
H001



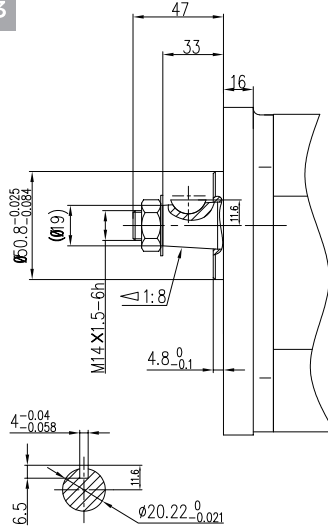
S015



P080

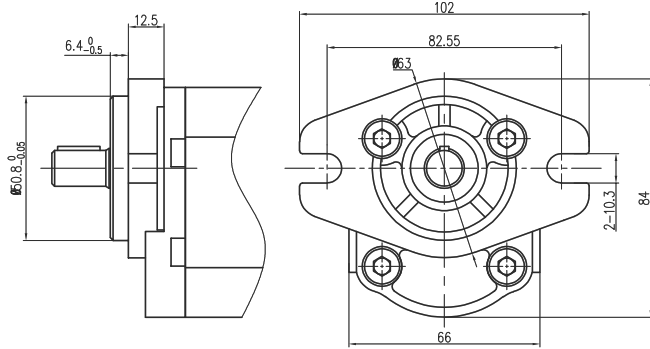


Z013

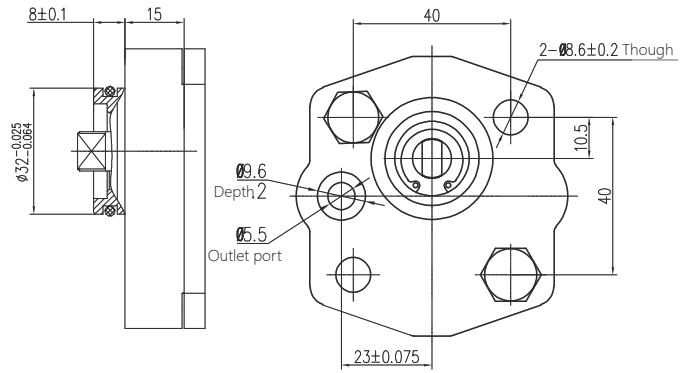


Multiple Pump Covers

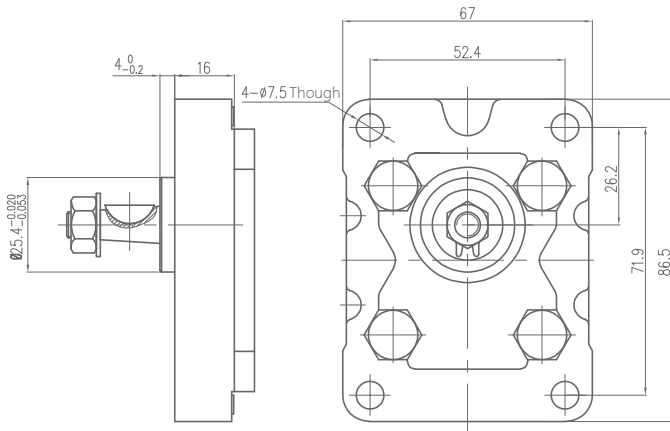
D02



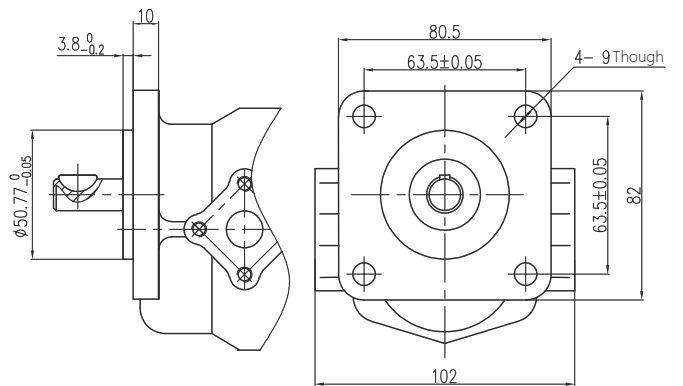
A04



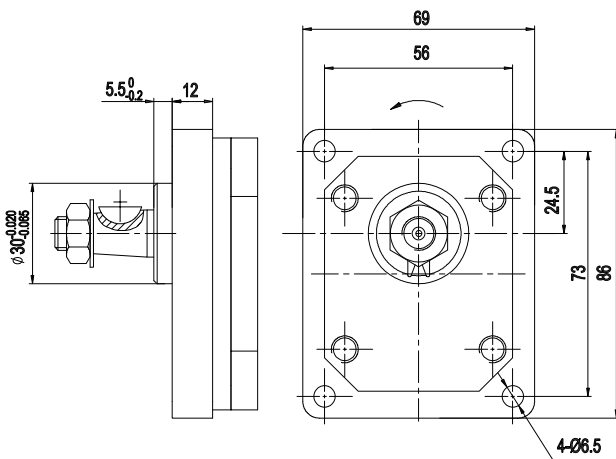
R01



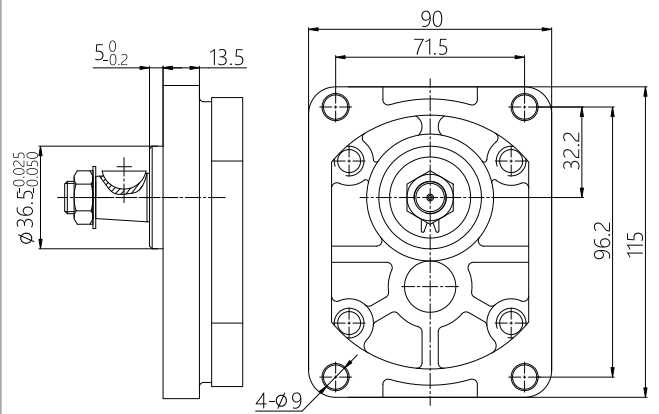
R02



R29

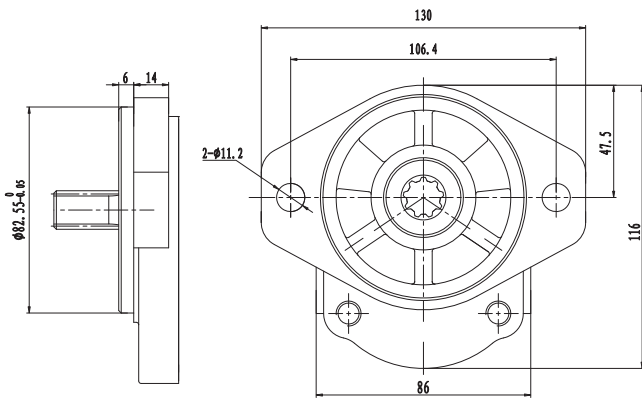


R09

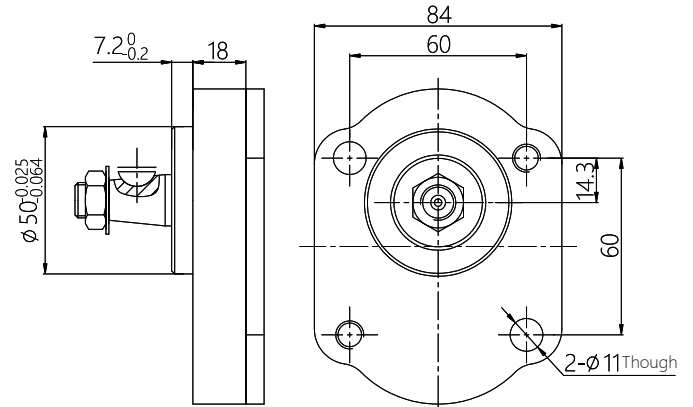


Multiple Pump Covers

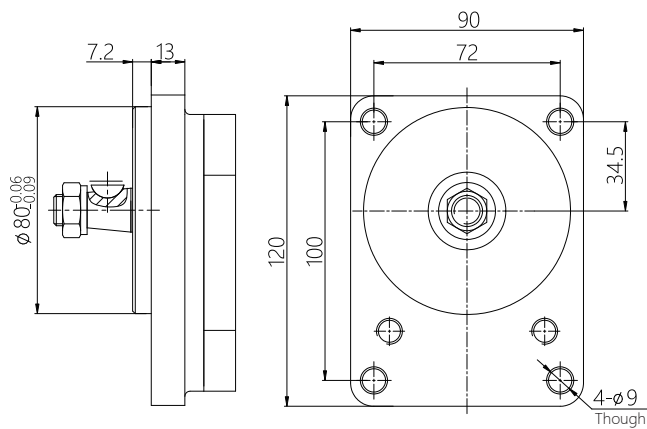
D10



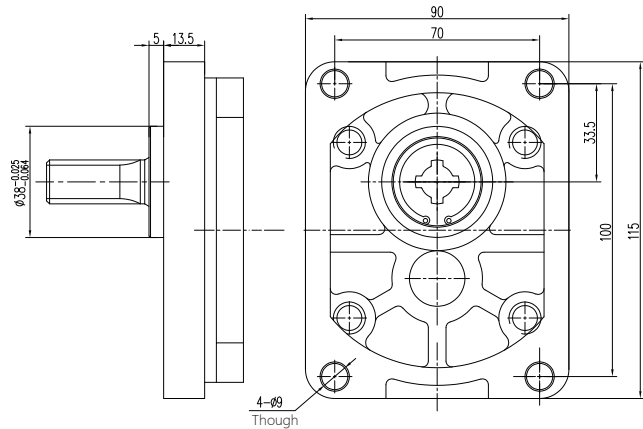
A23



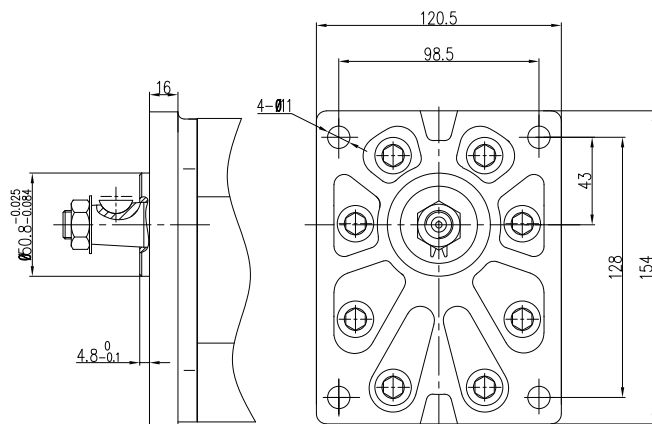
R12



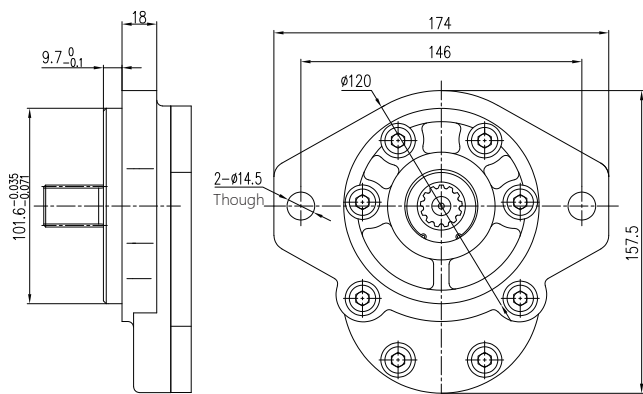
R17



R25



D20

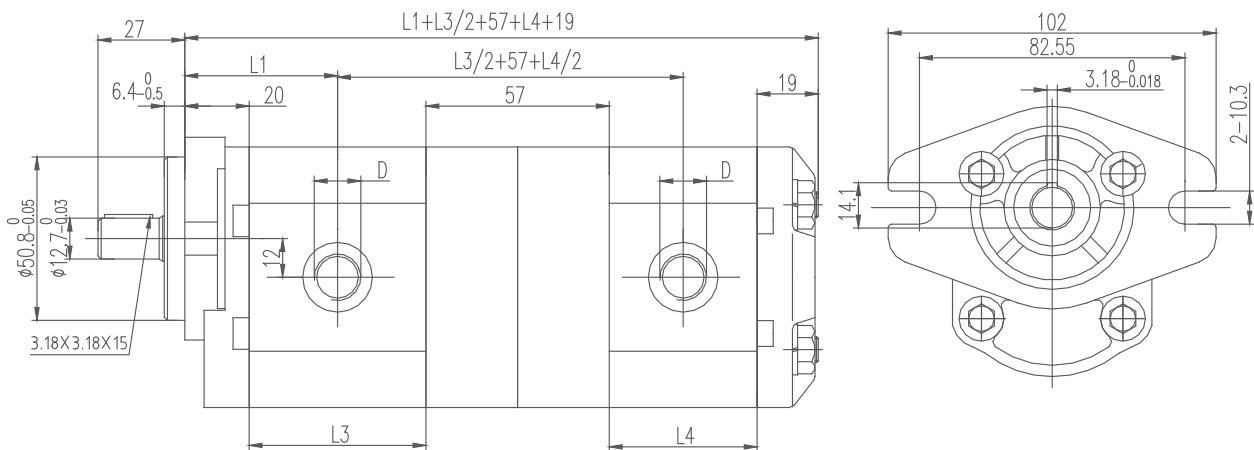


1DPF/**DL**P006D02**



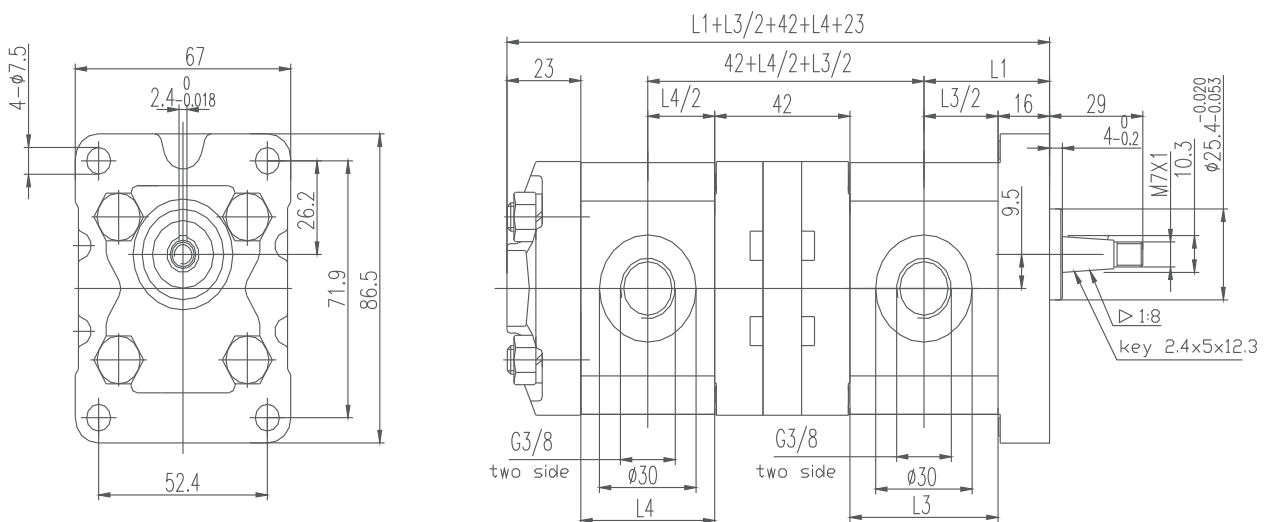
Displacement(ml/r)	1.3	2.0	2.7	3.4	4.1	5.1	6.1
L3/L4	44	46	48	50	52	55	58
L	82	84	86	88	90	93	96
L1	42.0	43.0	44.0	45.0	46.0	47.5	49.0

Dimensions

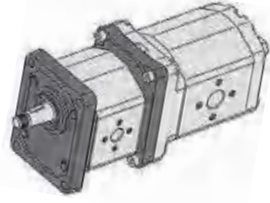


1DPF/**DL**T3S5***

Displacement(ml/r)	1.1	1.3	1.6	2.1	3.2	3.7	4.2	4.8	5.8	8.0
L3/L4	36	37	38	40	44	46	48	50	54	62
L	75	76	78	79	83	85	87	89	93	101
L1	33	34	35	36	38	39	40	41	43	47

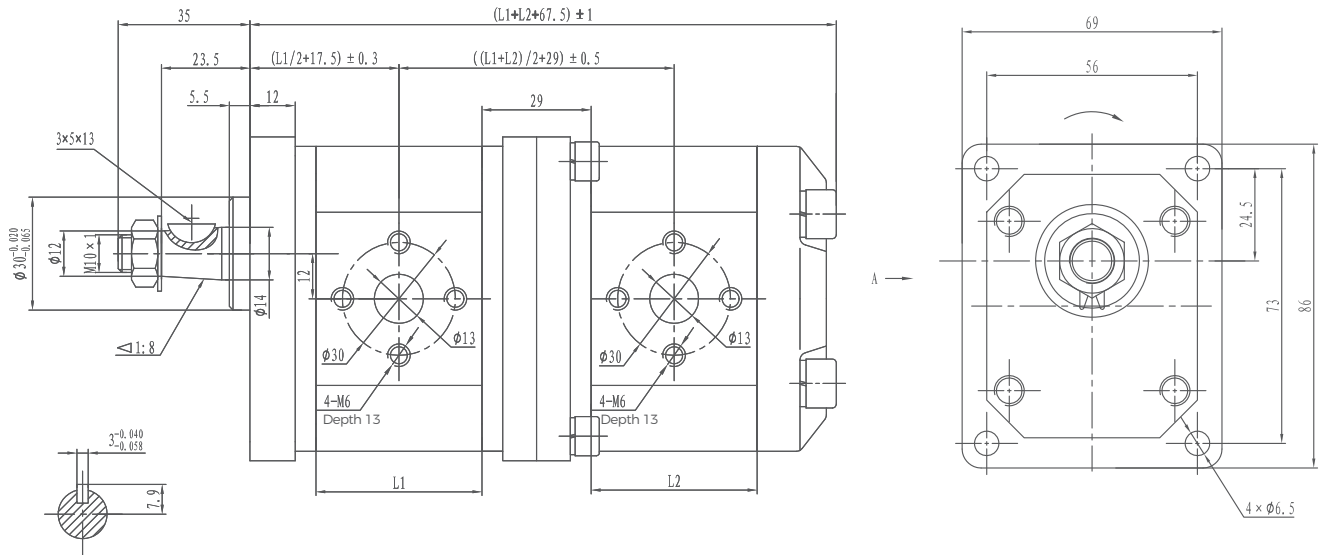


1DPF/**DF**Z016R29**



Displacement(ml/r)	1.4	2.1	2.8	3.5	4.1	5.2	5.2	6.2	7.6	9.3	9.6	11.0	13.8
L1	44.1	46.1	48.1	50.1	52.1	55.1	55.1	58.1	63.1	67.1	69.1	73.1	81.6
L2	44.1	46.1	48.1	50.1	52.1	55.1	55.1	58.1	63.1	67.1	69.1	73.1	81.6

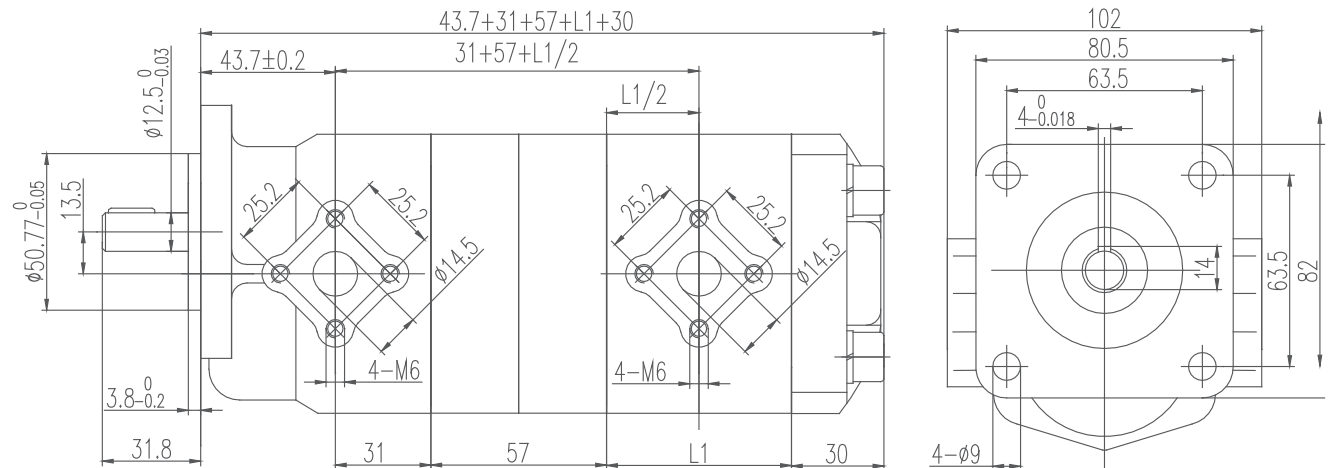
Dimensions



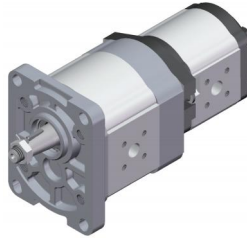
1.5DPF/**DF50W006R02**

Displacement(ml/r)	2	3	4	5	6	7	8	9	10	11	12
L1	42	44	46	48	50	52	54	56	58	60	62

Dimensions



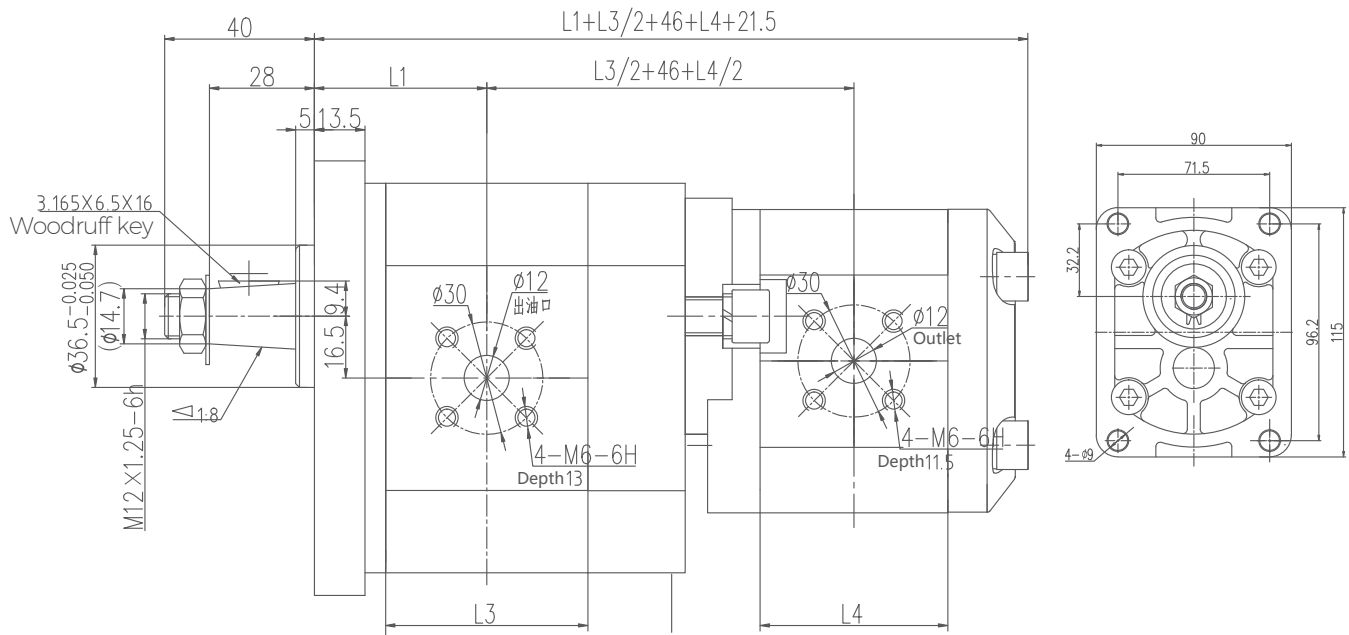
2/1DPF/**DF**Z007R09***



L(mm)	42.3	44.0	45.5	47	48.8	50.0	52.0	54.0	55.0	58.0	59.0	61.0	63.0
Displacement(ml/r)	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	23.0	25.0	28.0	30.0
L3(mm)	50.5	54.0	57.0	60.0	63.0	66.0	69.0	72.5	76.0	80.5	83.0	88.0	91.0
Displacement(ml/r)	1.3	2.0	2.7	3.4	4.1	5.1	6.1	/	/	/	/	/	/
L4(mm)	44.0	46.0	48.0	50.0	52.0	55.0	58.0	/	/	/	/	/	/

Dimensions

2/1DPF/**DF**Z007R09***

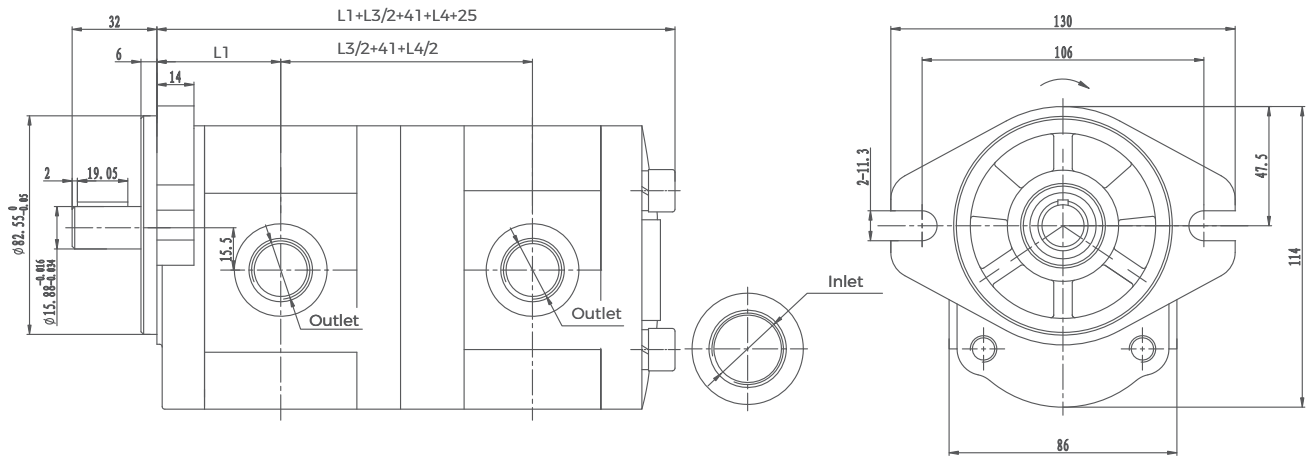


2ADPF/**DL**P021D099**



Displacement(ml/r)	4	6	8	10	12	14	16	18	20	23	28	30
L3/L4	50.5	54.0	57.0	60.0	63.0	66.0	69.0	72.5	76.0	80.5	88.0	91.0
L	96	98	102	104	108	110	114	117	120	123	133	136
L1	43.3	45.0	46.5	48.0	50.0	51.0	53.0	55.0	56.0	58.0	63.0	64.0

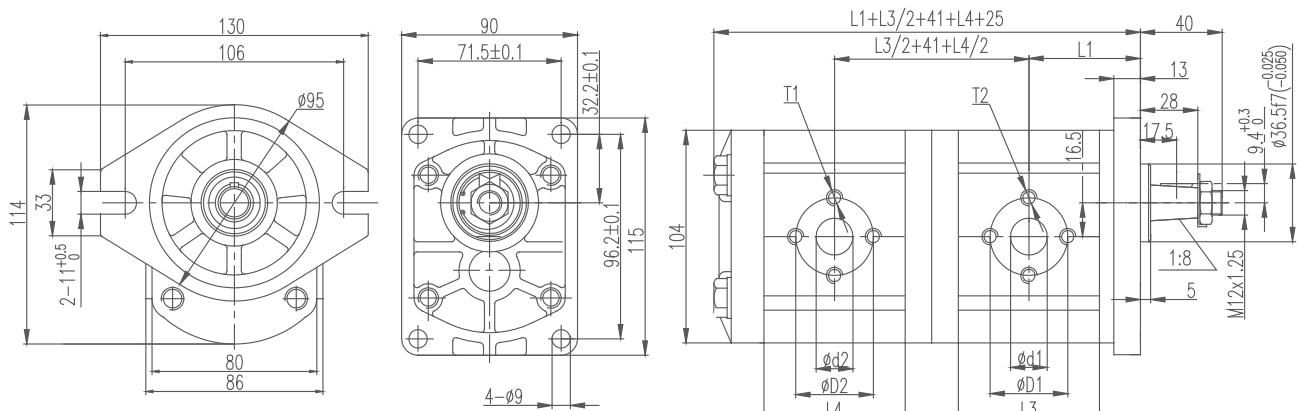
Dimensions



2ADPF/**DF**T24S7***

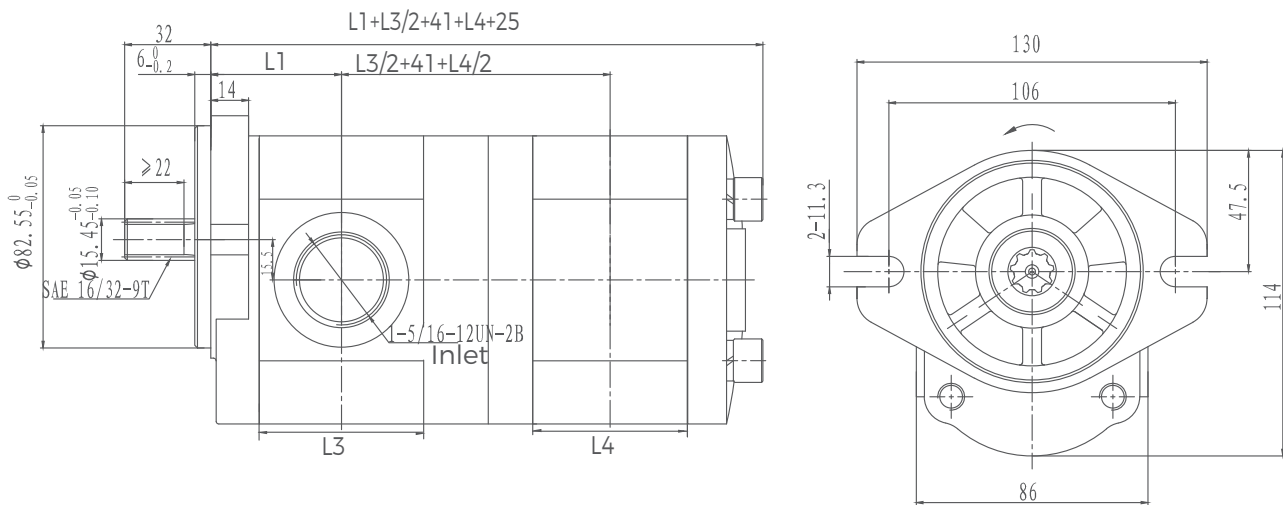
Displacement(ml/r)	4	6	8	10	12	14	16	18	20	23	28	30
L3/L4	50.5	54.0	57.0	60.0	63.0	66.0	69.0	72.5	76.0	80.5	88.0	91.0
L	96	98	102	104	108	110	114	117	120	123	133	136
L1	43.3	45.0	46.5	48.0	50.0	51.0	53.0	55.0	56.0	58.0	63.0	64.0

Dimensions

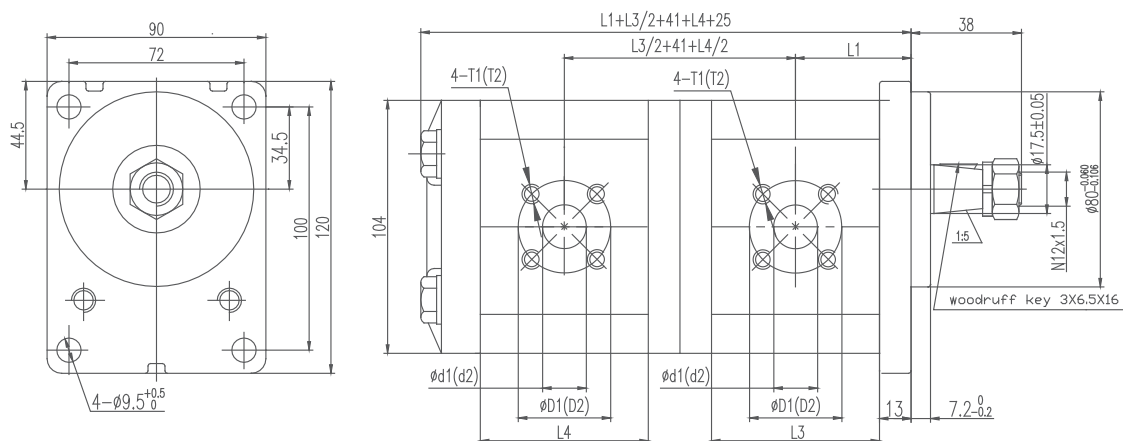


2ADPF/**DL**S013D09**


Displacement(ml/r)	4	6	8	10	12	14	16	18	20	23	28	30
L3/L4	50.5	54.0	57.0	60.0	63.0	66.0	69.0	72.5	76.0	80.5	88.0	91.0
L	96	98	102	104	108	110	114	117	120	123	133	136
L1	43.3	45	46.5	48.0	50.0	51.0	53.0	55.0	56.0	58.0	63.0	64.0

Dimensions

2ADPF/**DF**T004R12**

Displacement(ml/r)	4	6	8	10	12	14	16	18	20	23	28	30
L3/L4	50.5	54.0	57.0	60.0	63.0	66.0	69.0	72.5	76.0	80.5	88.0	91.0
L	96	98	102	104	108	110	114	117	120	123	133	136
L1	43.3	45.0	46.5	48.0	50.0	51.0	53.0	55.0	56.0	58.0	63.0	64.0

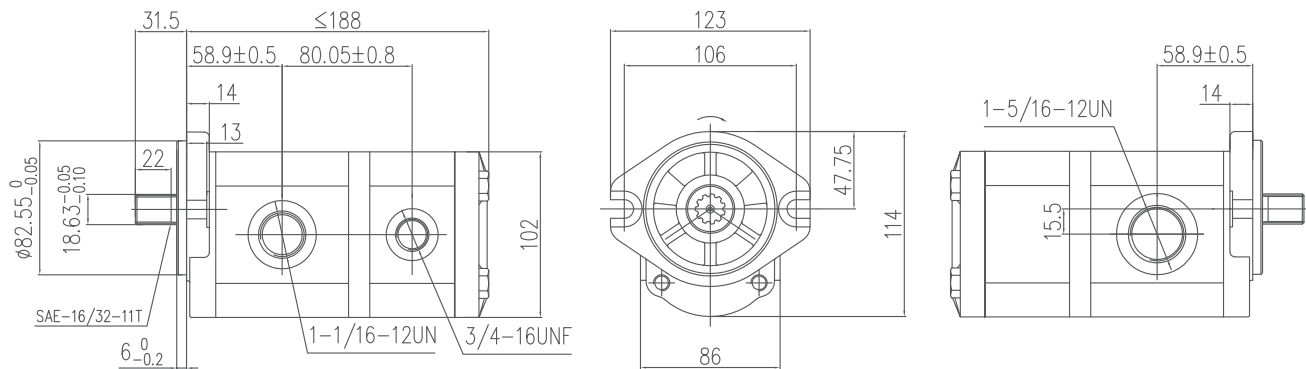
Dimensions


2ABDPF23/5DLJ40S024D38-T-W-D-TLT



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont)	P2(Int)	P3(Peak)	Rated	Max.	Min.		
2ABDPF23/5DLJ40S024D38-T-W-D-TLT	23/5	200(250)	230(280)	250(300)	2000	3000	800	1-5/16-12UN	1-1/16-12UN 3/4-16UNF

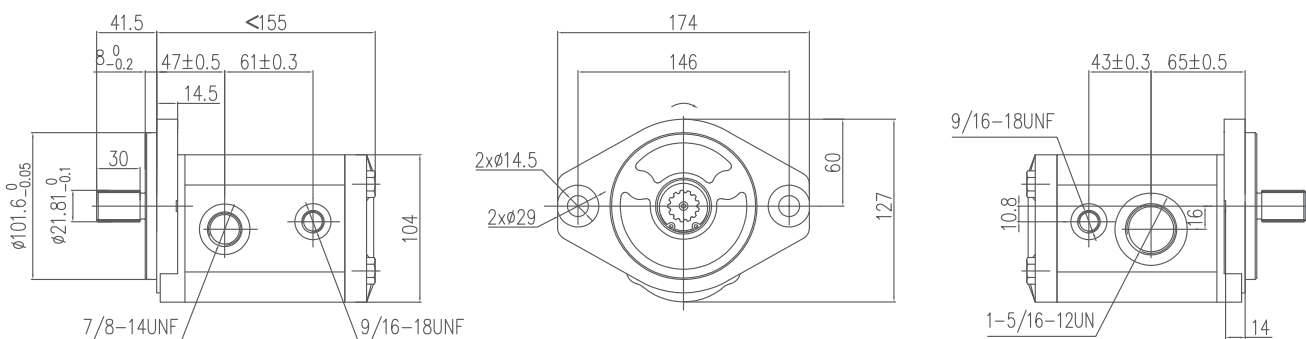
Dimensions



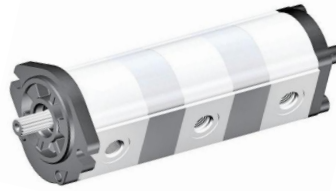
2/1ASDPG6.5/3.2DLJ113S025D39-D

Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont)	P2(Int)	P3(Peak)	Rated	Max.	Min.		
2/1ASDPG6.5/3.2DLJ113S342-D	6.5/3.2	200(250)	230(280)	250(300)	2000	3500	800	1-5/16-12UN 9/16-18UNF	7/8-14UNF 9/16-18UNF

Dimensions

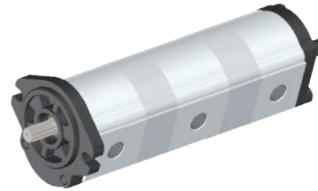
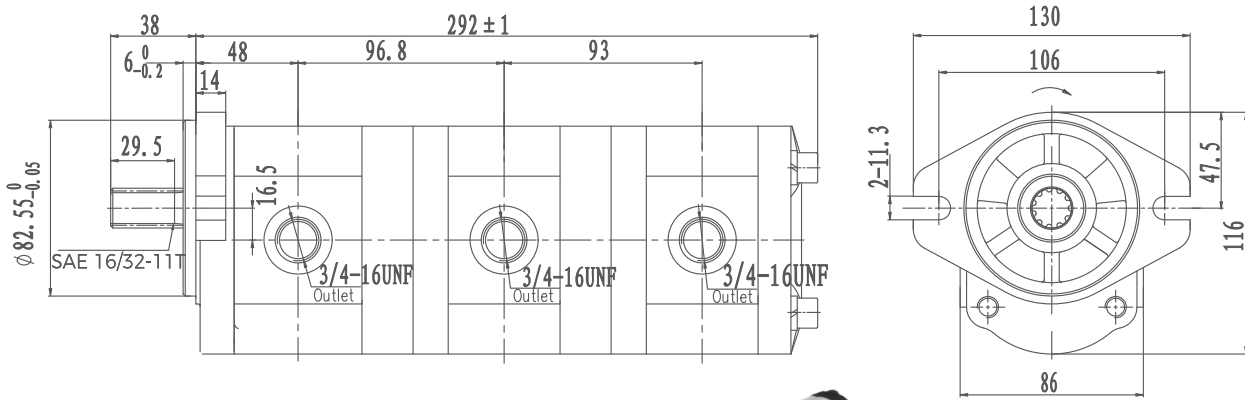


2ATPF10/5/5TLJ0S011D09



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
2ATPF10/5/5TLJ0S011D09	10/5/5	200(250)	230(280)	250(300)	2500	3000	500	1-5/16-1 2UN-2B	3/4-16UNF -2B

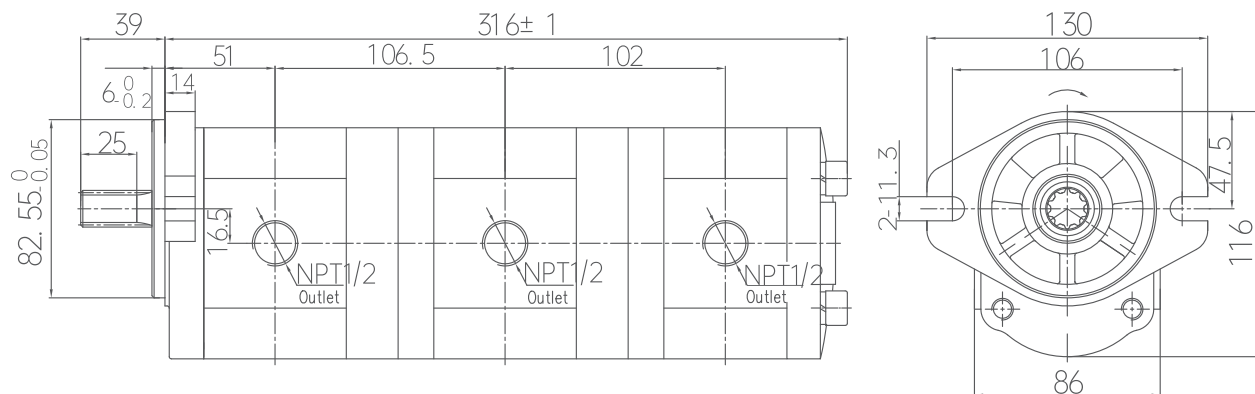
Dimensions



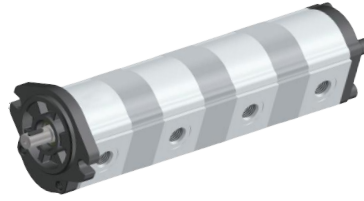
2ATPF14/14/8TL28S014D09

Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
2ATPF14/14/8TL28S014D09	14/14/8	160(180)	180(200)	200(230)	2000	3000	500	NPT3/4	NPT1/2

Dimensions

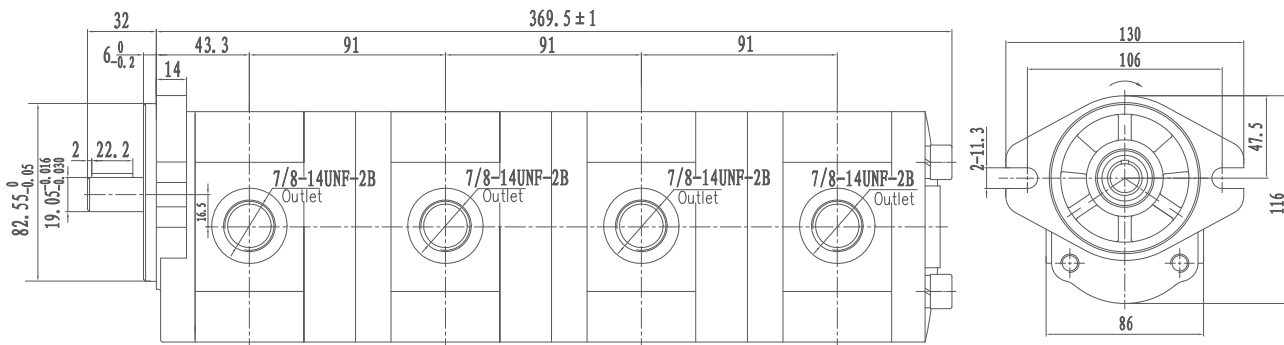


2AFPF4/4/4/4FLJ**P022D09

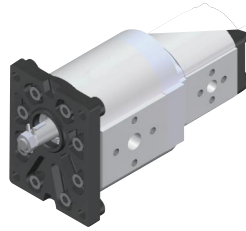


Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			Inlet	Outlet
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
2AFPF4/4/4/4FLJ**P022D09	4/4/4/4	200(250)	230(280)	250(300)	2000	3000	500	1-1/16-12UNF-2B	7/8-14UNF-2B

Dimensions

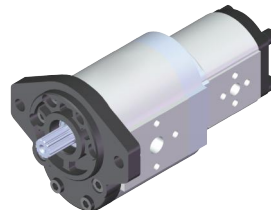
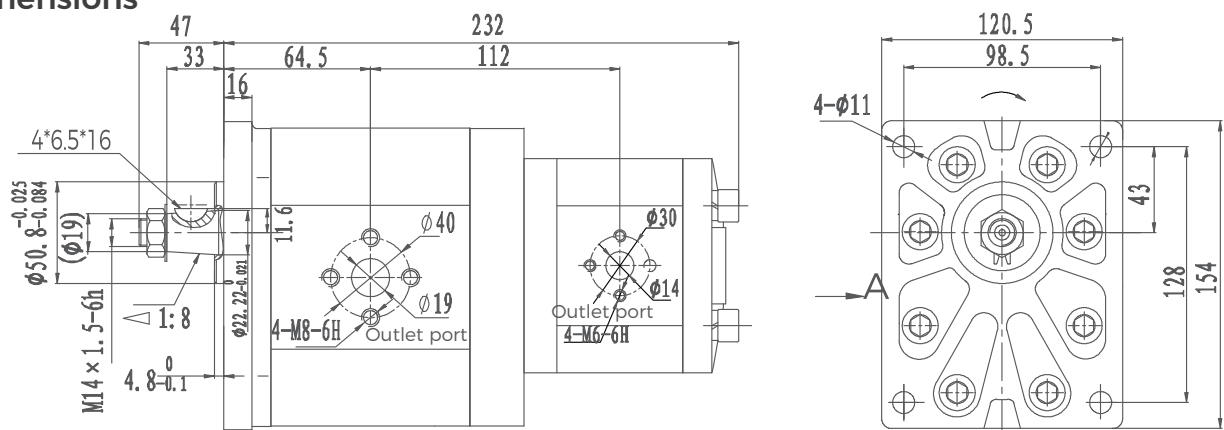


3/2ADPF25/08DF129Z013R25*



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
3/2ADPF25/08DF129Z013R25*	25/08	200(250)	230(280)	250(300)	2000	3000	500

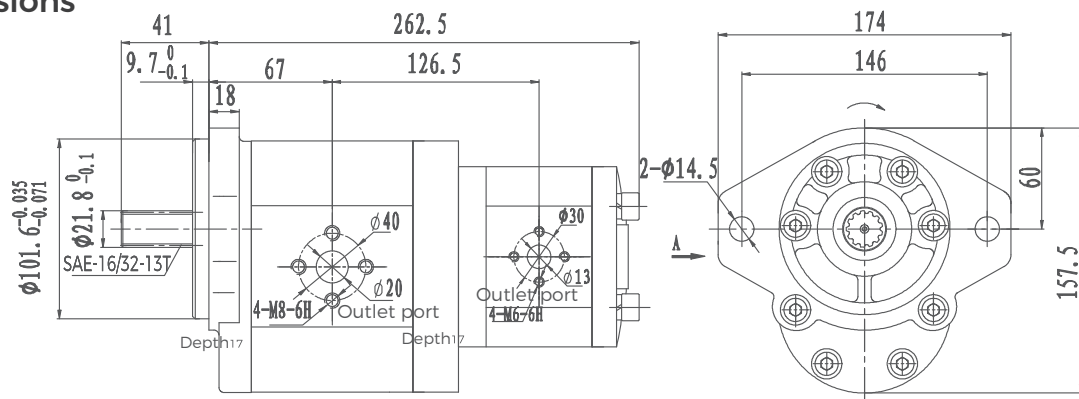
Dimensions



3/2ADPF32/23DF128S015D20*

Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
3/2ADPF32/23DF128S015D20*	32/23	200	230	250	2000	3000	500

Dimensions

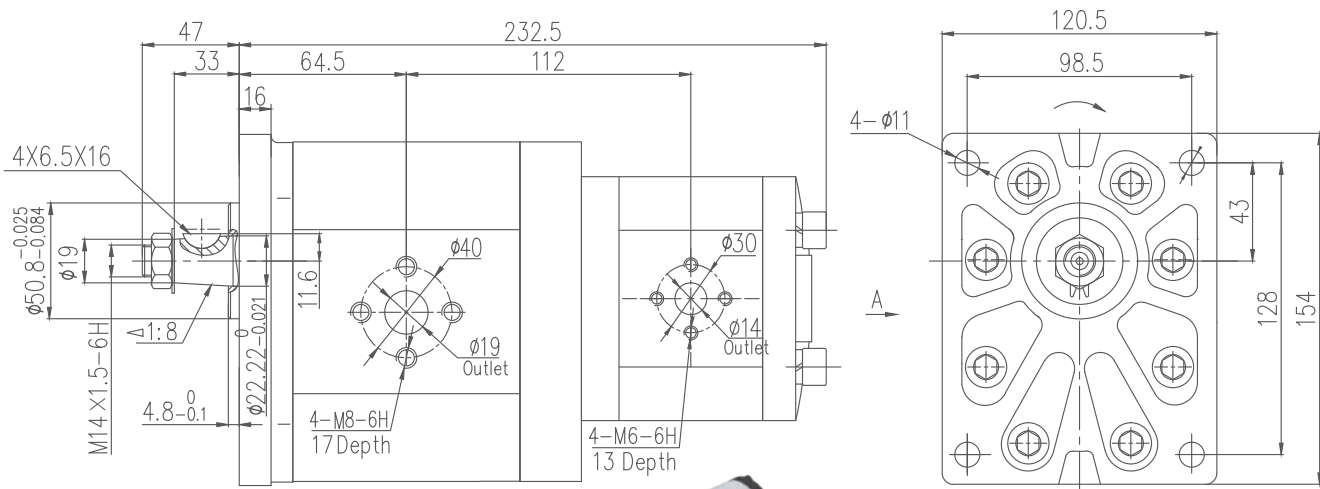


3ADPF/**DL**Z013R254**

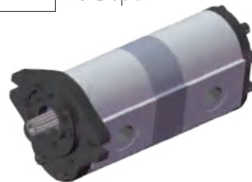


Displacement(ml/r)	22	26	34	39	43	51	60	70
L3 / L4	80.0	83.0	88.5	92.5	95.0	101.0	107.5	114.5
L	128.5	131.5	137.0	141.0	143.5	149.5	156.0	163.0
L1	65.5	67.0	69.8	71.8	73.0	76.0	79.3	82.8

Dimensions

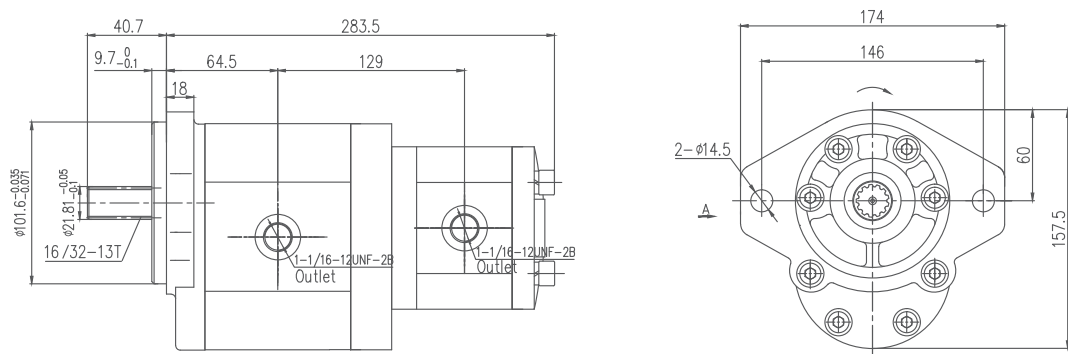


3ADPF/**DL**S015D20*****

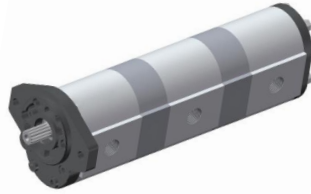


Displacement(ml/r)	22	26	34	39	43	51	60	70
L3 / L4	80.0	83.0	88.5	92.5	95.0	101.0	107.5	114.5
L	128.5	131.5	137.0	141.0	143.5	149.5	156.0	163.0
L1	65.5	67.0	69.8	71.8	73.0	76.0	79.3	82.8

Dimensions



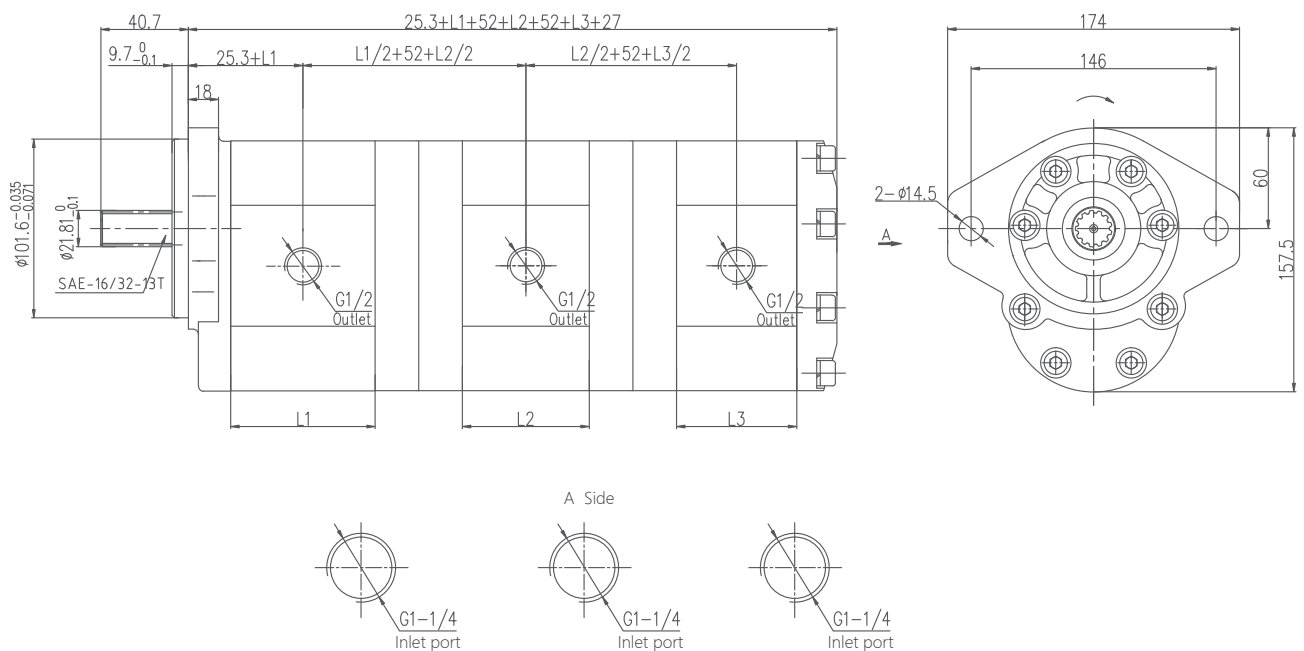
3ATPFTL**S015D20***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1	L2	B2	ØD1	T1	L3	B3	ØD2	T2	
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)										
3ATPF**TL**S015D20*	22	200(250)	230(280)	250(300)	2000	3000	400	130.3	65.3									
3ATPF**TL**S015D20*	26	200(250)	230(280)	250(300)	2000	3000	400	133.3	66.8									
3ATPF**TL**S015D20*	34	200(250)	230(280)	250(300)	2000	3000	400	138.8	69.6									
3ATPF**TL**S015D20*	39	200(250)	230(280)	250(300)	2000	3000	400	142.8	71.6	52.4	26.2	27	3/8 16UNC -2B	26.2	47.6	19		
3ATPF**TL**S015D20*	43	200(250)	230(280)	250(300)	2000	2800	400	145.3	72.8									3/8 16UNC -2B
3ATPF**TL**S015D20*	51	200(250)	230(280)	250(300)	2000	2800	400	151.3	75.8									
3ATPF**TL**S015D20*	60	180(200)	210(230)	230(250)	1500	2800	400	157.8	79.1									
3ATPF**TL**S015D20*	70	180(200)	190(210)	200(230)	1500	2500	400	164.8	82.5									
3ATPF**TL**S015D20*	78	160(180)	180(200)	200(230)	1500	2300	400	171.0	85.0	58.7	28.4	33	7/16 14UNC -2B	26.2	52.4	27		
3ATPF**TL**S015D20*	89	140(160)	160(180)	180(200)	1500	2000	400	176.0	88.0									

Dimensions

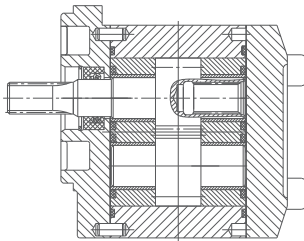
3ATPFTL**S015D20***



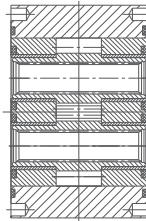
Application Guide of Tandem Pump Connection - Assemble Step

2ABDPF**F****-TS Only for Tandem Pump or Triple Pump

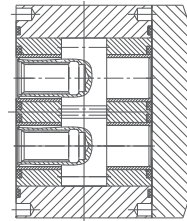
Step 1 2ABPF-F****-TSF



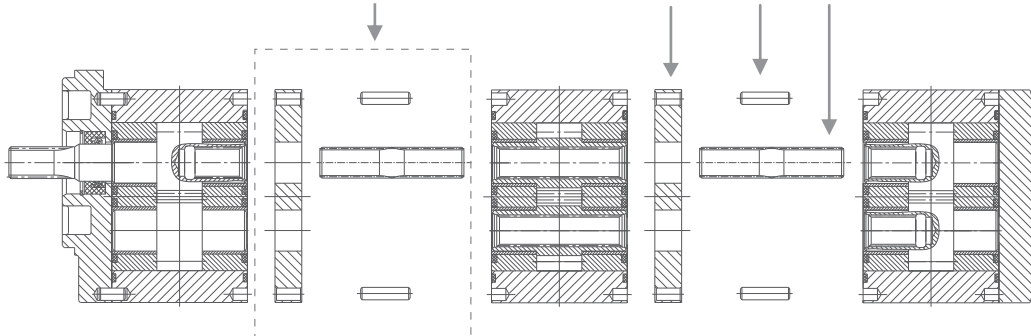
Step 2 2ABPF-F****-TSM



Step 3 2ABPF-F****-TSR

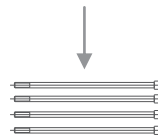


Step 4 Add kit 2ABPF-TS-K

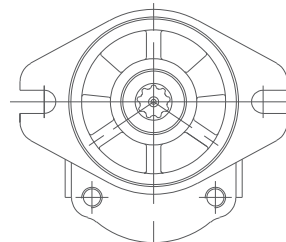
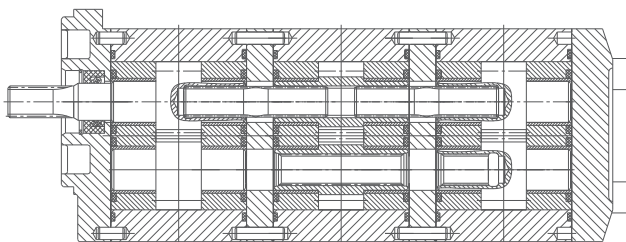


Long Bolts

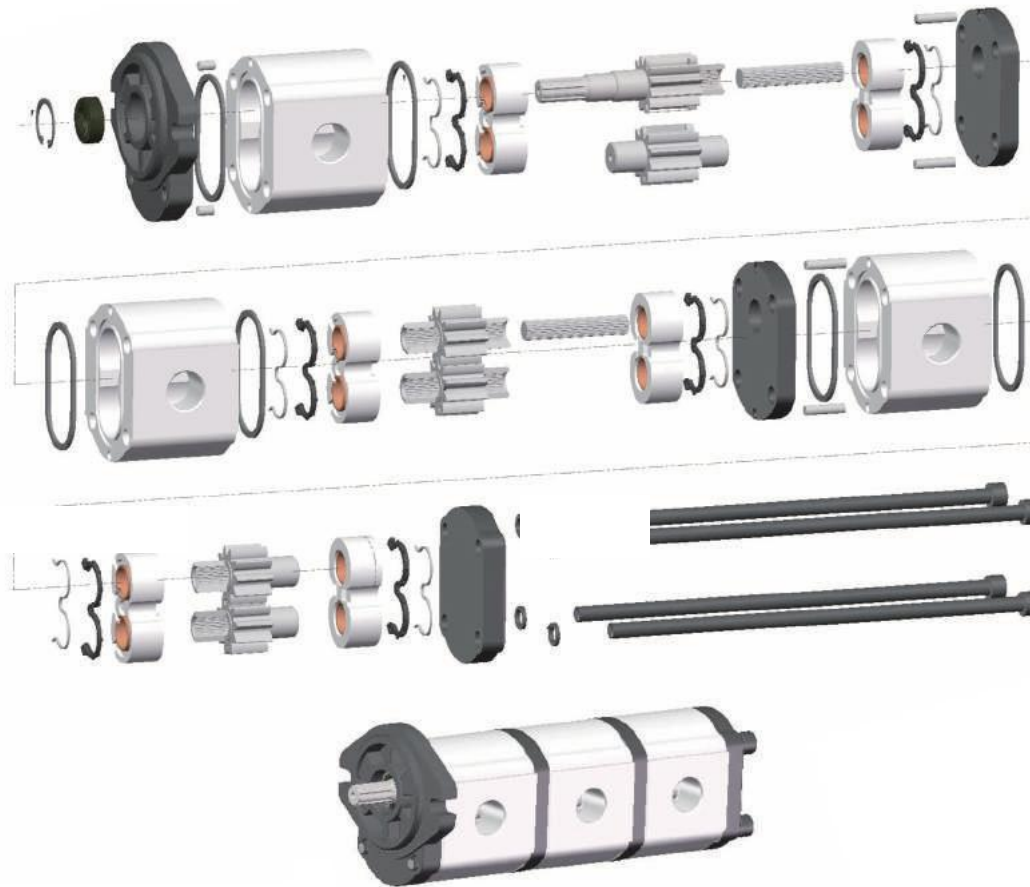
Step 5 Tighten bolt 4 × M10/70Nm



To remove 4 × M10 short bolt and stat using



Exploded View

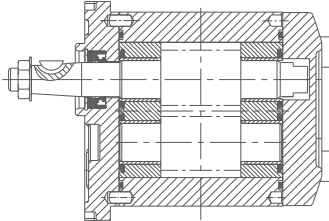


Ordering Code

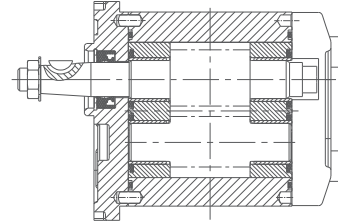
No.	Name	Order Code	Quantity	Notes
1	Gear Pump	2ABPF**F****-TSF	1	Front Pump
2	Gear Pump	2ABPF**F****-TSM	1	Middle Pump
3	Gear Pump	2ABPF**F****-TSR	1	Rear Pump
4	Kit	2ABPF-TS-K1	1	Used in Double Pump or Triple Pump
4.1	Pin	2ABPF-TS-KP	2	
4.2	Plate	2ABPF-TS-KPL	1	
4.3	Spline Drive Shaft	2ABPF-TS-KSP	1	
5	Bolt		4	According to the displacement

2BDPFF*****-Can Be Used As Single Pump**

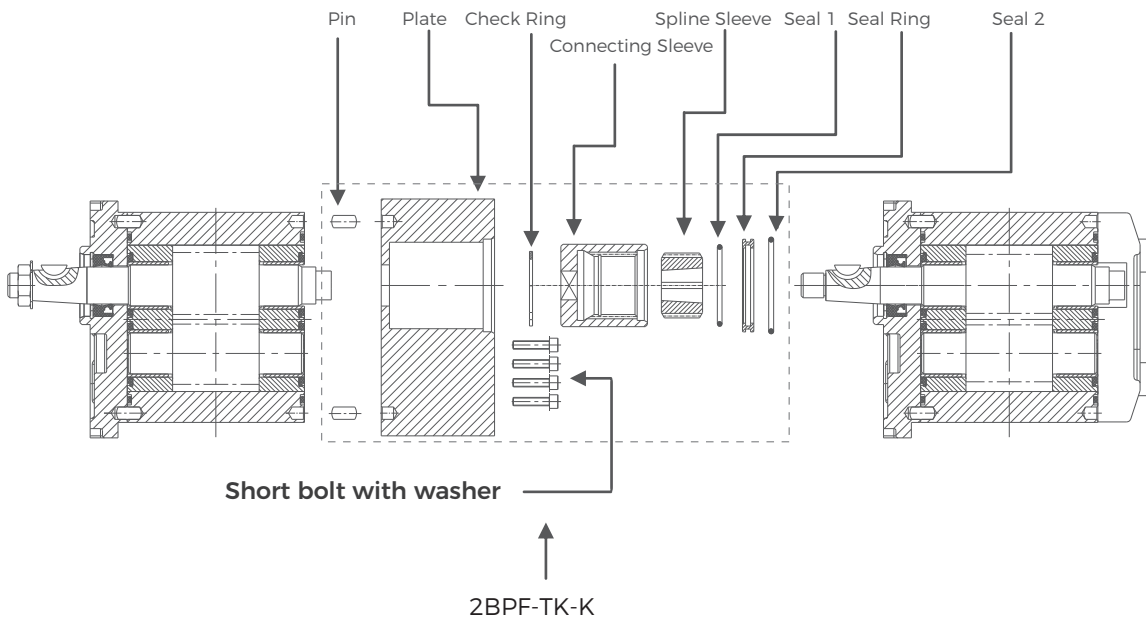
STEP 1 2BPFF*****-TK**



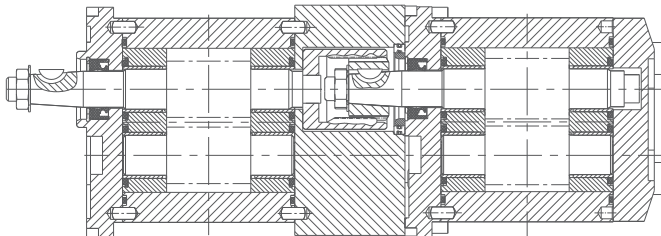
STEP 2 2BPFF*****-TK**



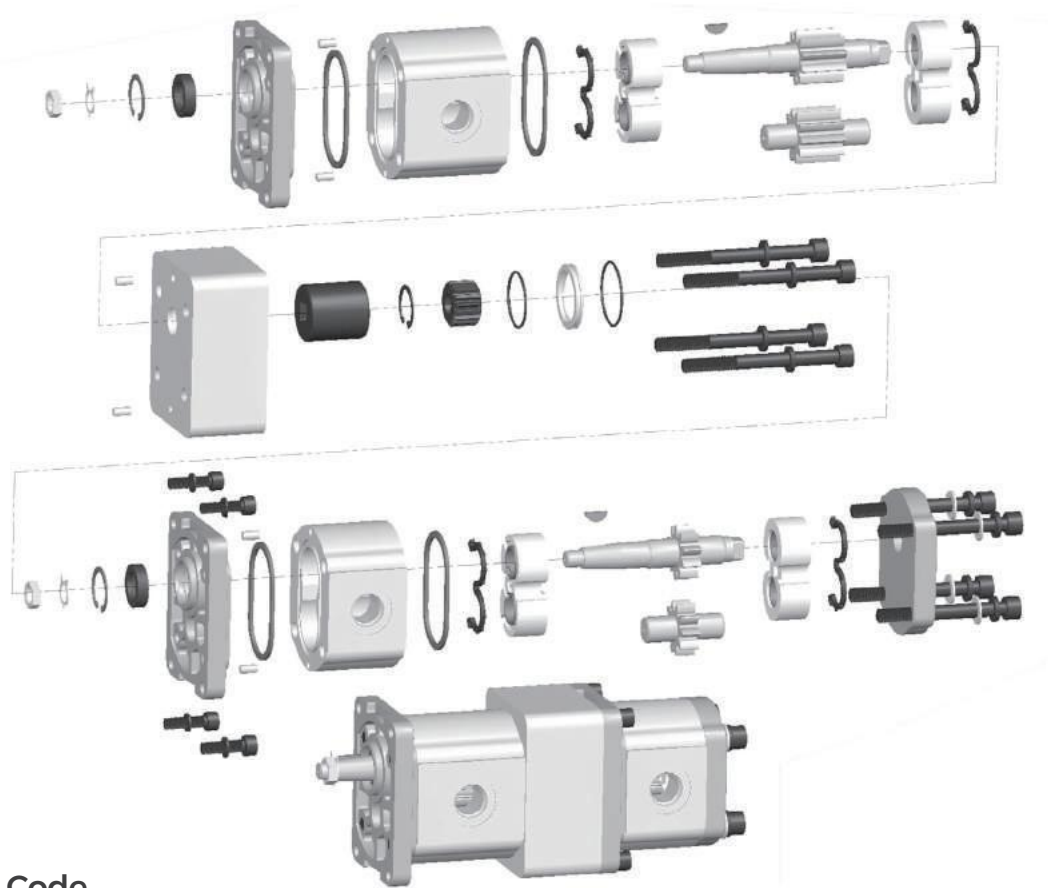
Step 3 Add kit 2BPF-TK-K



Step 4 Tighten bolt 4 × M8/40Nm



Exploded View

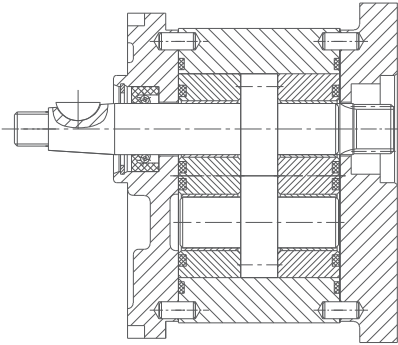


Ordering Code

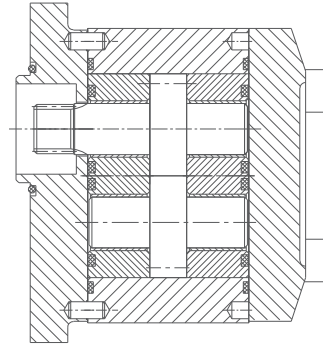
No.	Name	Order Code	Quantity	Notes
1	Gear Pump	2BPF**F****-TK	1	Front Pump
2	Gear Pump	2BPF**F****-TK	1	Rear Pump
3	Kit	2BPF-TK-K	1	
3.1	Pin	2BPF-TK-KP	2	Used in 2BPF-TK-K
3.2	Plate	2BPF-TK-KBL	1	Used in 2BPF-TK-K
3.3	Check Ring	2BPF-TK-KBL	1	Used in 2BPF-TK-K
3.4	Check Ring	2BPF-TK-KC1	1	Used in 2BPF-TK-K
3.5	Spline Sleeve	2BPF-TK-KC2	1	Used in 2BPF-TK-K
3.6	Seal 1	2BPF-TK-KS1	1	Used in 2BPF-TK-K
3.7	Seal 2	2BPF-TK-KS2	1	Used in 2BPF-TK-K
3.8	Seal Ring	2BPF-TK-KSR	1	Used in 2BPF-TK-K
3.9	Bolt with Washer	2BPF-TK-KB	4	Used in 2BPF-TK-K

2ABDPFF****-XK Only for Tandem Pump**

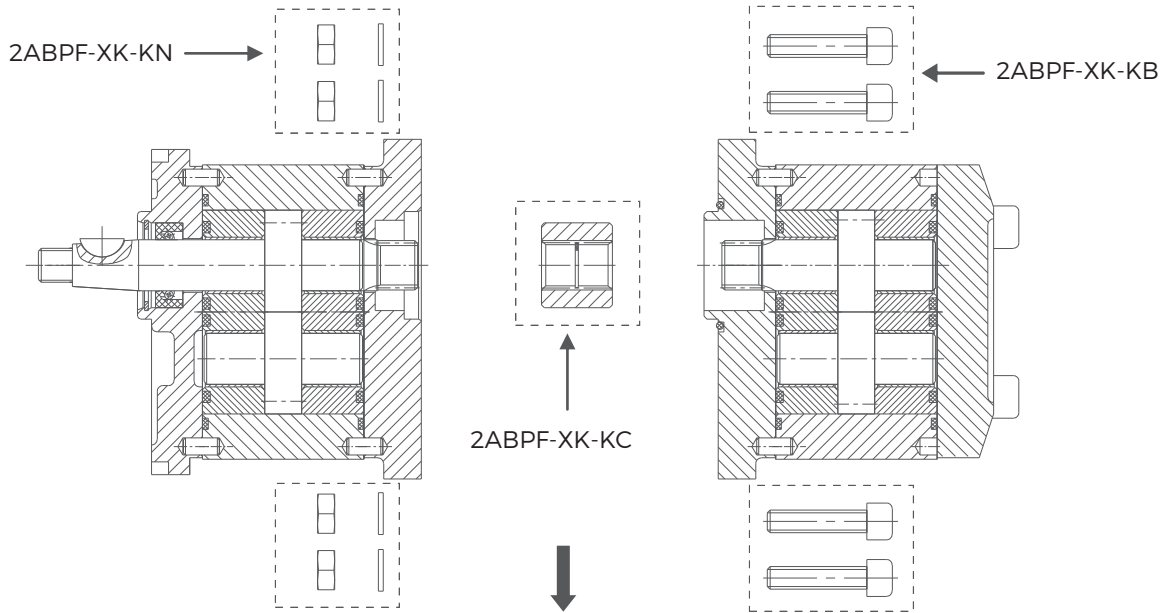
Step 1 2ABPFF****-XKF**



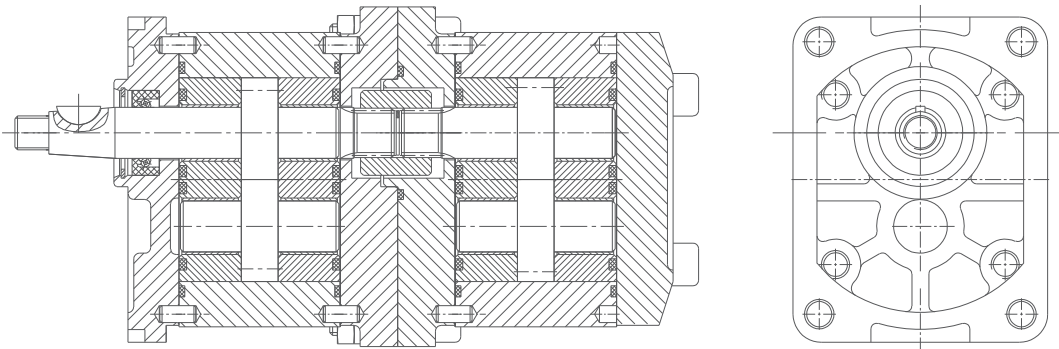
Step 2 2ABPFF****-XKR**



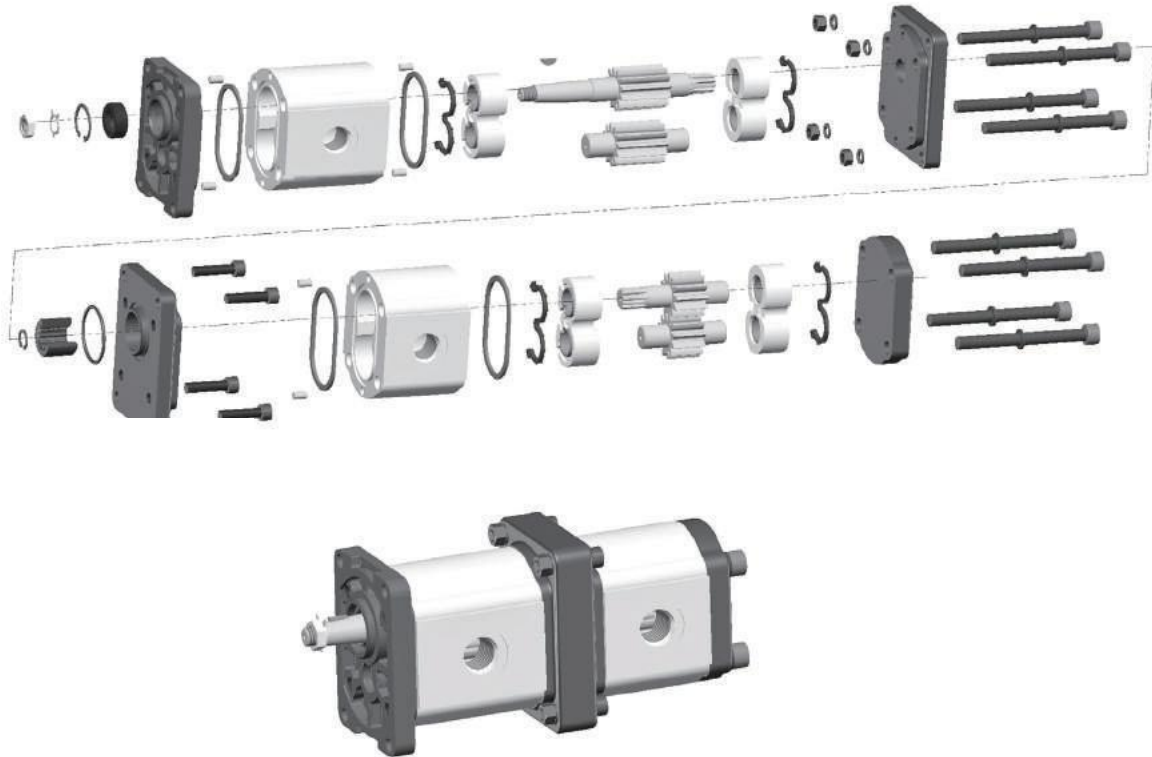
Step 3 Add 2ABPF-XK-K (Nuts 4×M10 / Washer 4×ϕ 11/ Coupling 1/ Bolt 4×M10)



Step 4 Tighten bolt 4 × M8/40Nm



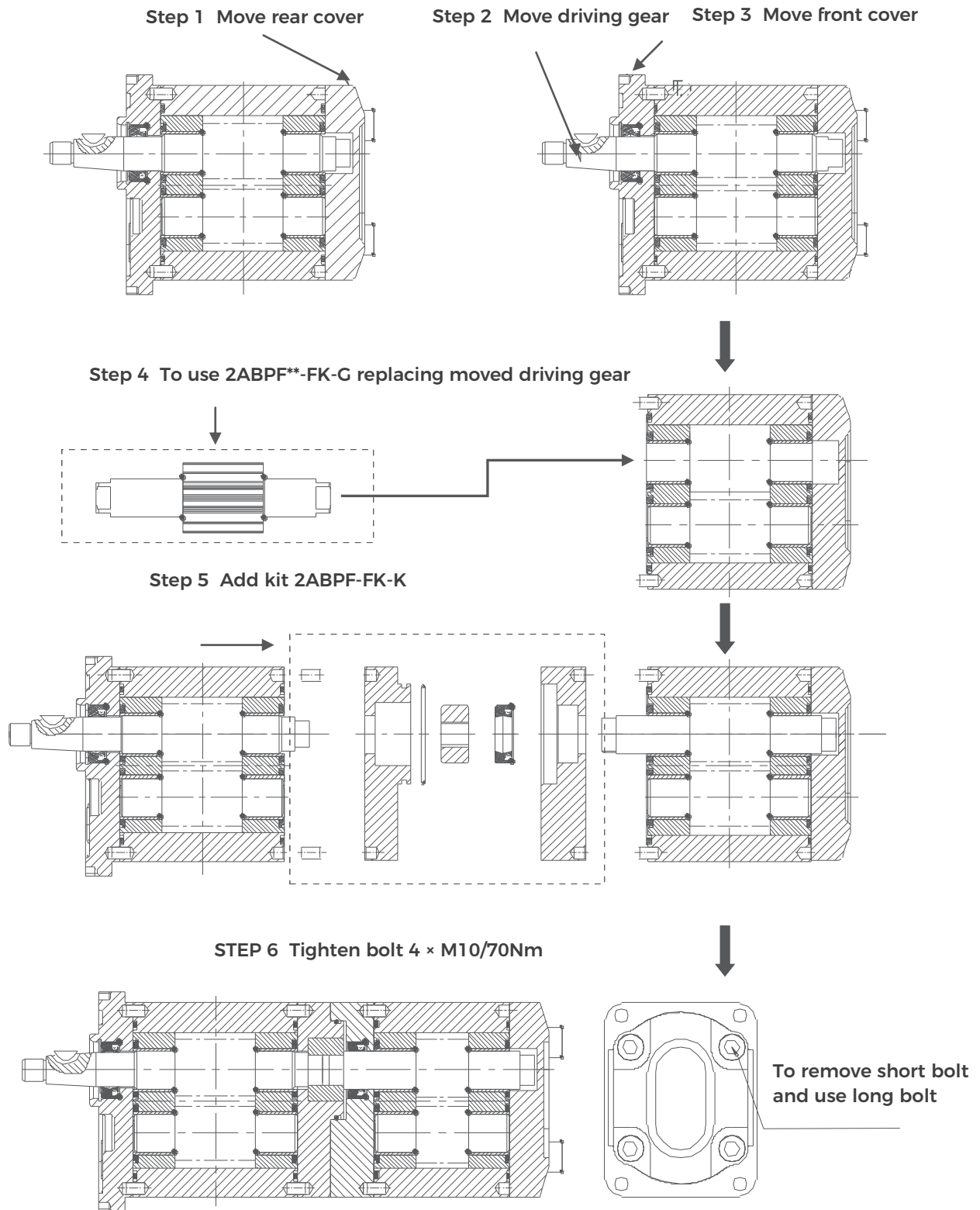
Exploded View



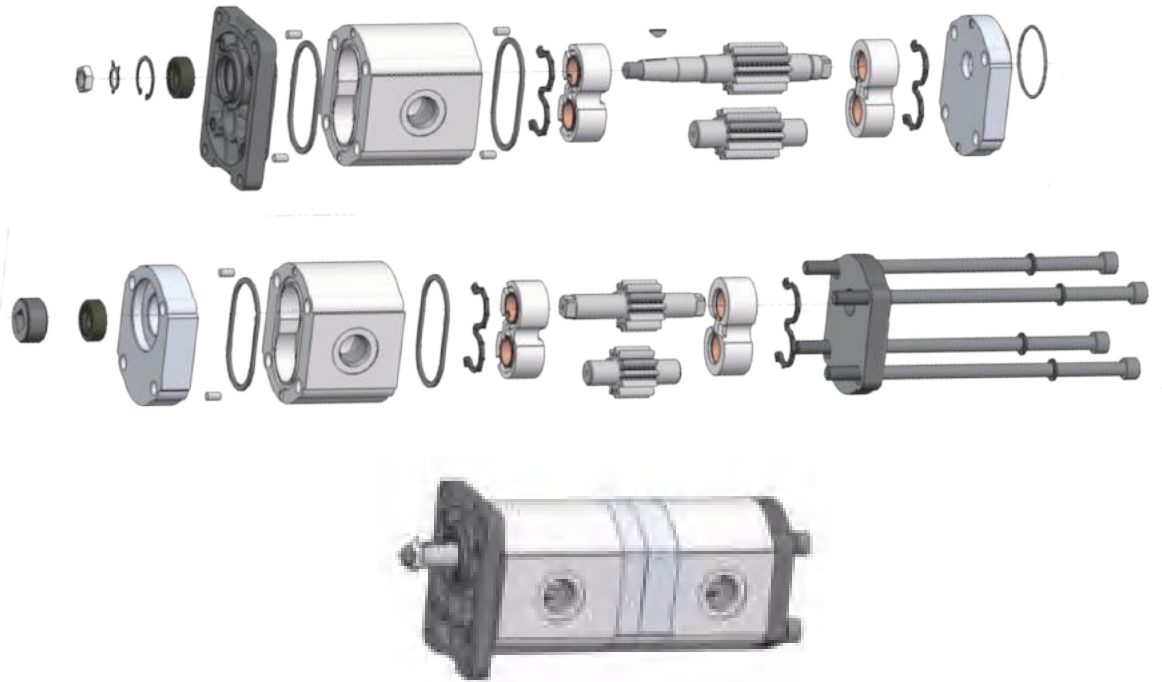
Ordering Code

No.	Name	Order Code	Quantity	Notes
1	Gear Pump	2ABPF**F****-XKF	1	Front Pump
2	Gear Pump	2ABPF**F****-XKR	1	Rear Pump
3	Kit	2ABPF-XK-K	1	Nuts × 4 / Whsher × 4 / Coupling×1 / Bolt × 4
3.1	NuT and washer	2ABPF-XK-KN	4	Used in 2ABPF-XK-K
3.2	Spline Sleeve	2ABPF-XK-KC	1	Used in 2ABPF-XK-K
3.3	Bolt	2ABPF-XK-KB	4	Used in 2ABPF-XK-K

2ABDPF**F****-FK Can Be Used As Single Pump



Exploded View



Ordering Code















No.	Name	Order Code	Quantity	Notes
1	Gear Pump	2ABPF**F****-TK	1	Front Pump
2	Gear Pump	2ABPF**F****-TK	1	Rear Pump
3	Gear	2ABPF**-FK-G	1	**-cc/r
4	Kit	2ABPF-FK-K	1	
4.1	Pin	2ABPF-FK-KP	2	Used for 2ABPF-FK-K
4.2	Plate 1	2ABPF-FK-KPL1	1	Used for 2ABPF-FK-K
4.3	Seal	2ABPF-FK-KS	1	Used for 2ABPF-FK-K
4.4	Connecting Seelve	2ABPF-FK-KC	1	Used for 2ABPF-FK-K
4.5	Shaft Seal	2ABPF-FK-KSS	1	Used for 2ABPF-FK-K
4.6	Plate 2	2ABPF-FK-KPL2	1	Used for 2ABPF-FK-K
5	Bolt		4	According to the displacement













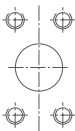











Cast Iron Pump






























Ordering Code

1	E	P	F	73	L01	B016	S02	L-	SS	F
a	b	c	d	e	f	g	h	i	j	k

- Ⓐ 1=Group 1
 1、 2、 2.5、 2.8、 3、 3.5、 4 Group
 Ⓑ E/Y/C/Q=Cast Iron pump
 Ⓒ P=Gear pump
 Ⓓ F=Version
 Ⓔ Displacement(ml/r)
 1.6 ~ 199cc/r
 Ⓕ L01=Line ports
 Ⓖ B016=Drive shaft
 Ⓗ S02=Front cover
 ⓘ Rotation
 R=CW
 L=CCW
 B=Bi-directional
 ⓘ Ports combination
 SS=Side inlet and side outlet
 SB=Side inlet and back outlet
 BS=Back inlet and side outlet
 BB=Back inlet and back outlet
 Ⓚ Seal
 F=FKM seal
 Omit=NBR seal

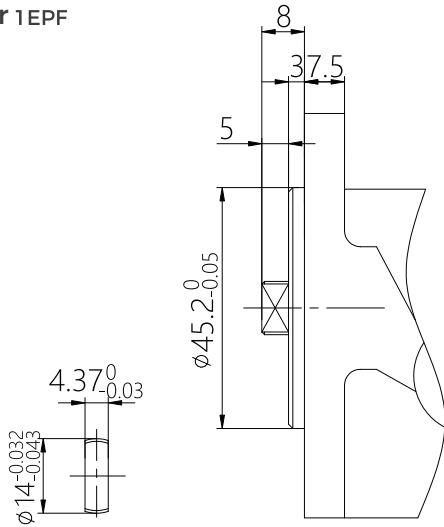
Ⓕ Line ports Inlet/Outlet			Ⓖ Drive shaft			Ⓗ Front cover		
1EPF								
LJ35	3/4-16UNF-2B 9/16-18UNF-2B		B016	Flat key Ø14mmx8		S02	4-groove mounting 50.8x50.8mm	
LJ66	9/16-18UNF-2B 9/16-18UNF-2B		W005	Parallel Key Ø12.7mmx38.2		R33	4-hole mounting 50.8x50.8mm	
LJ86	3/4-16UNF-2B 3/4-16UNF-2B		P088	Parallel Key Ø12.7mmx38.1				
2YBDPF								
DL88	G1/2, G1/2 N/A, G1/2		K001	Rectangle Ø18mmx39.5		R32	4-hole mounting 70x100mm	
LJ86	3/4-16UNF-2B 3/4-16UNF-2B		P029	Parallel Key Ø18mmx36		D09	2-groove mounting 106mm	

Ⓕ Line ports Inlet/Outlet			Ⓖ Drive shaft			Ⓗ Front cover		
2.5YPF								
L08	G3/4 G1/2		PO90	Parallel Key 20mm×41		D46	2-groove mounting 106mm	
L10	PT3/4 PT1/2		S011	Spline key Ø18.63mm×38 11teeth				
LJ42	1-5/16-12UN-2B 1-1/16-12UN-2B		P022	Parallel Key Ø19.05mm×32				
2.8QPF								
L83	NPT1 NPT1		S015	Spline key Ø21.8mm×40.7 13teeth		D22	2-hole mounting 146mm	
			S026	Spline key Ø21.8mm×41.2 13teeth		D43	6-hole mounting 90mm,146.05mm	
2.8QDPF								
DF247	30.2×58.7 4-M12 Ø31.8mm 22.2×47.6 4-M10 Ø19mm 26.2×52.4 4-M10 Ø25.4mm 26.2×52.4 4-M10 Ø25.4mm		S015	Spline key Ø21.81mm×40.7 13teeth		D22	2-hole mounting 146mm	
3CPF								
L03	G1 G3/4		H006	Spline key Ø32mm×55 8teeth		R27	4-hole mounting 80×80mm	
L00	G1 G1							
L11	G1-1/4 G1							
3.5EPH								
L00	G1 G1		H006	Spline key Ø32mm×55 8teeth		R27	4-hole mounting 80×80mm	
L99	G1-1/4 G1-1/4							

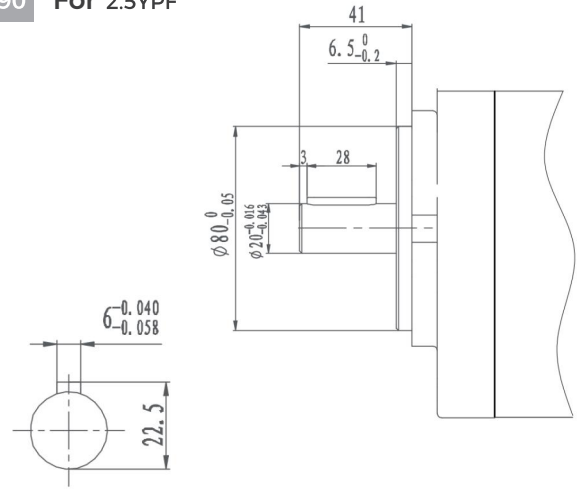
① Line ports Inlet/Outlet		② Drive shaft			③ Front cover		
3.5APF							
F38	58.7×30.2 4-M10 Ø32mm 52.4×26.2 4-M10 Ø25mm		S015	Spline key Ø21.81mm×41.3 13teeth		D40 2-hole mounting 146mm	
L80	NPT1-1/4 NPT1						
LJ153	1-5/8-12UN 1-5/8-12UN						
3.5QPDPF							
DF220	77.8×42.6 M12 Ø50 26.2×52.4 M10 Ø25 58.7×30.2 M10 Ø32 26.2×52.4 M10 Ø25		S027	Spline key Ø21.8mm×41.2 13teeth		R34 4-hole mounting Ø114.5×114.5mm	
			S029	Spline key Ø31.224mm×40mm 14teeth		D45 2-hole mounting Ø146mm	
			S030	Spline key Ø31.224mm×44.5mm		D47 2-hole mounting Ø181mm	
			H008	Rectangle Ø30mm×42mm 6teeth		D48 6-groove mounting Ø180mm	
			H009	Rectangle Ø30mm×36mm 6teeth			
3.5QP							
L84	NPT1-1/4 NPT1-1/4		S026	Spline key Ø21.81mm×41.2 13teeth		D44 6-hole mounting 90mm, 146mm	
F41	69.9×35.7 4-M12 Ø38 52.4×26.2 4-M10 Ø25		S027	Spline key Ø21.8mm×41.2 13teeth		D45 2-hole mounting Ø146mm	
F461	42.9×77.8 4-M12 Ø50 30.2×58.7 4-M10 Ø32						
3.5/2.8QP							
DF209	66.9×35.7 M12 Ø50 47.6×22.3 M10 Ø25 52.4×26.2 M10 Ø32 47.6×22.3 M10 Ø25		H008	Rectangle Ø30mm×42mm 6teeth		R35 2-groove mounting 2-hole mounting Ø115×115mm	
						D48 6-groove mounting Ø180mm	
4PF							
F161	77.8×42.9 4-M12 Ø51 69.9×35.7 4-M12 Ø38		S016	Spline key Ø31.224mm×56 14teeth		E15 4-hole mounting 114.5×114.5mm	

Cast Iron Pump Shafts

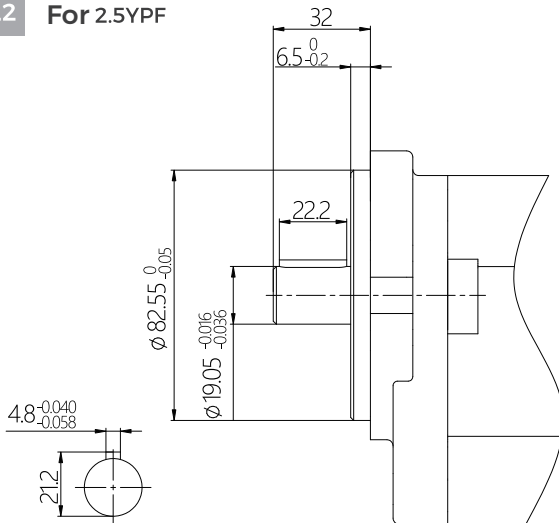
B016 For 1EPF



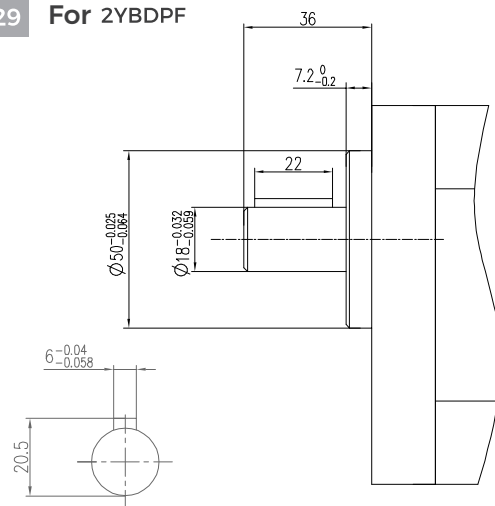
P090 For 2.5YPF



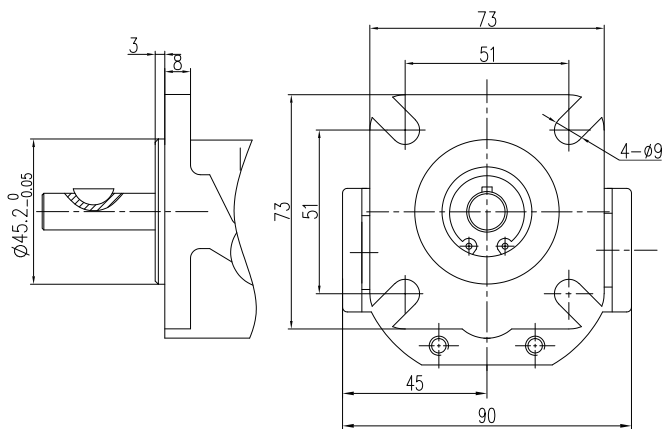
P022 For 2.5YPF



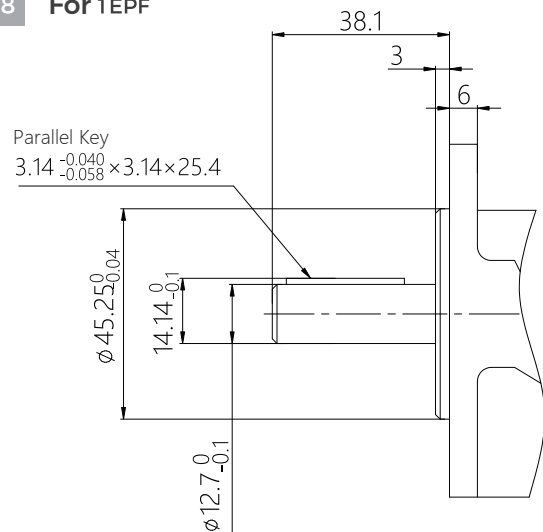
P029 For 2YBDFP



W005 For 1EPY

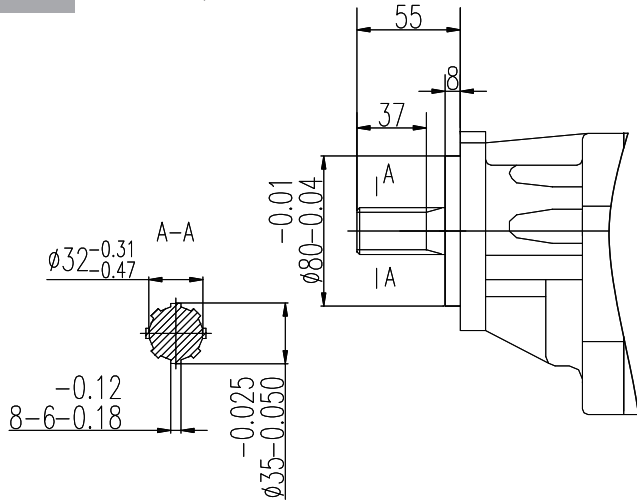


P088 For 1EPF

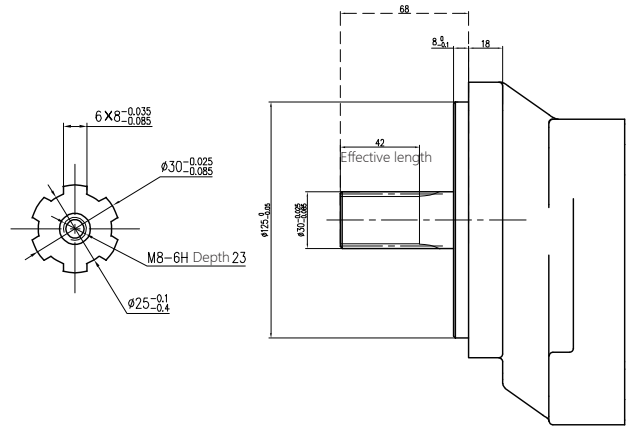


Cast Iron Pump Shafts

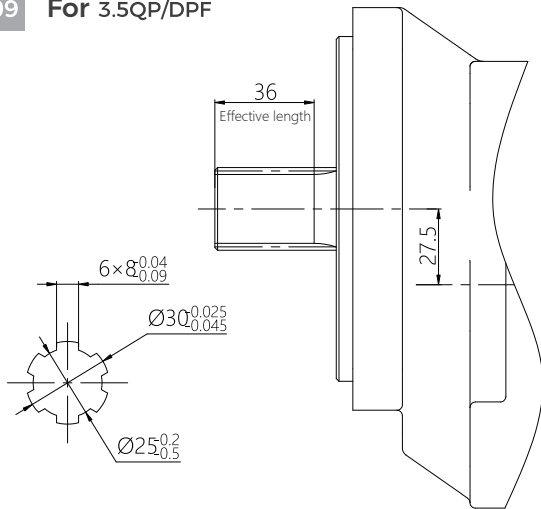
H006 For 3CPF,3.5EPF



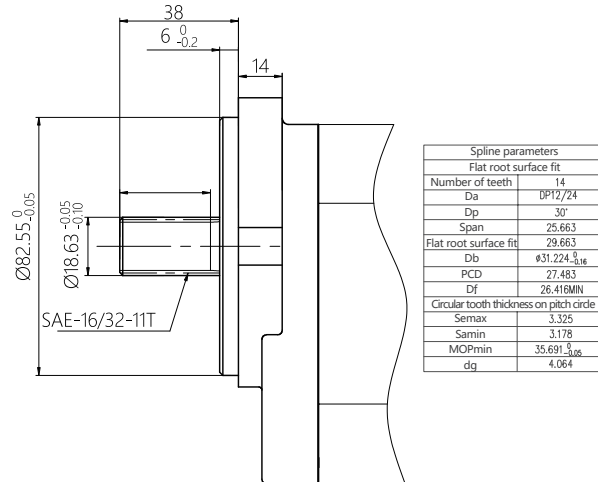
H008 For 3.5QP/DPF,3.5/2.8QPf



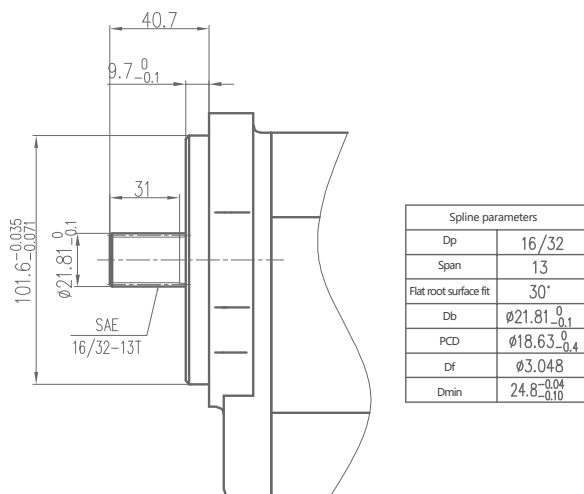
H009 For 3.5QP/DPF



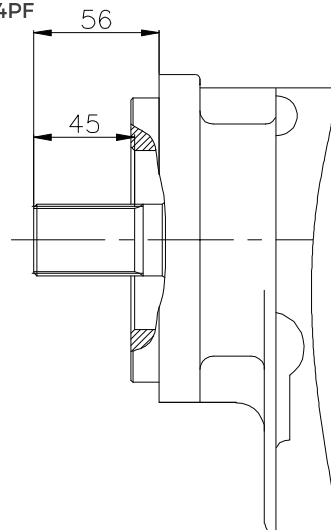
S011 For 2.5YPF



S015 For 2.8QPf,2.8QDPf,3.5APf

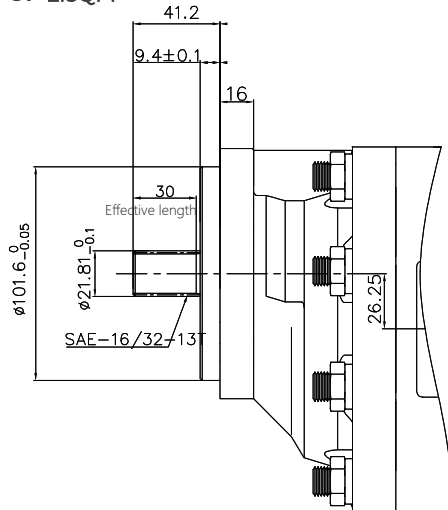


S016 For 4PF

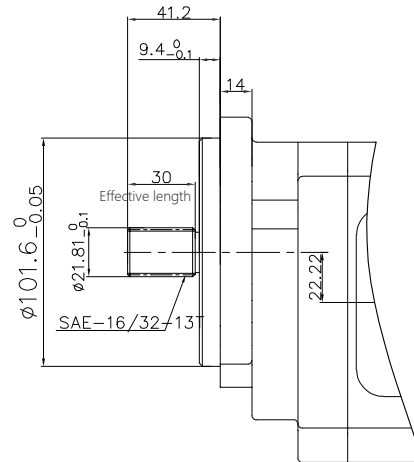


Cast Iron Pump Shafts

S027 For 2.8QPF

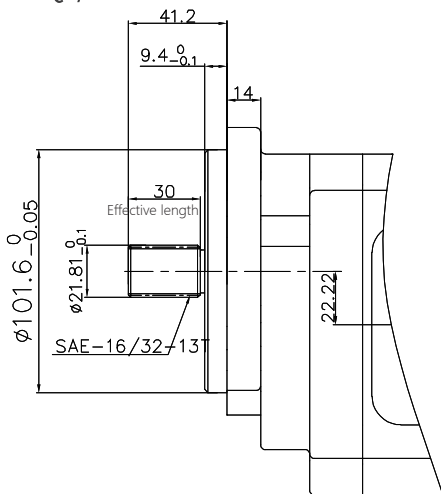


S026 For 3.5QP/DPF,3.5QPF

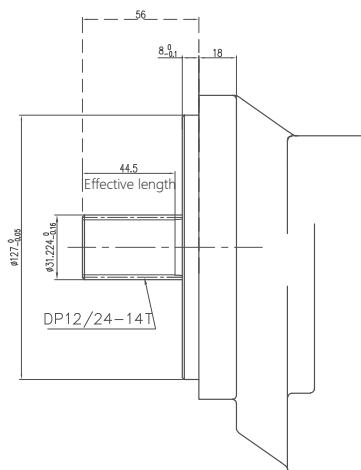


Spline parameters	
Dp	16/32
Span	13
Flat root surface fit	30°
Db	$\phi 21.81 \begin{smallmatrix} 0 \\ -0.1 \end{smallmatrix}$
PCD	$\phi 18.63 \begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$
Df	$\phi 3.048$
Dmin	$24.8 \begin{smallmatrix} -0.04 \\ -0.10 \end{smallmatrix}$

S029 For 3.5QP/DPF

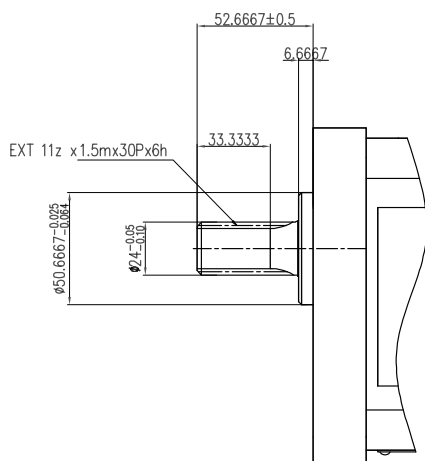


S030 For 3.5QP/DPF



Spline parameters	
Flat root surface fit	
Number of teeth	14
Da	DP12/24
Dp	30°
Span	25.663
Flat root surface fit	29.663
Db	$\phi 31.224 \begin{smallmatrix} 0 \\ -0.18 \end{smallmatrix}$
PCD	27.483
Df	26.416MIN
Circular tooth thickness on pitch circle	
Semax	3.325
Samin	3.178
MOPmin	$35.691 \begin{smallmatrix} 0 \\ -0.06 \end{smallmatrix}$
dg	4.064

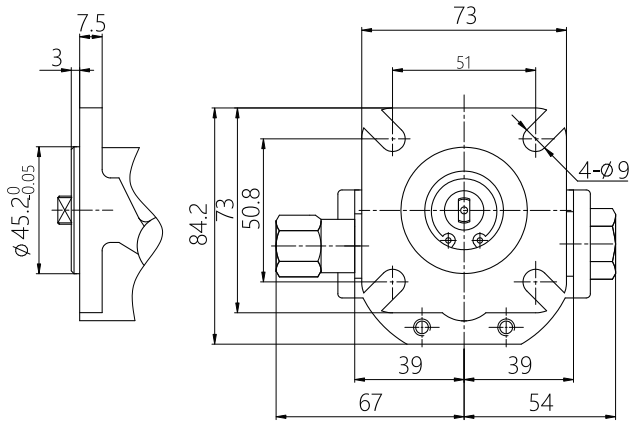
K001 For 2YBDPF



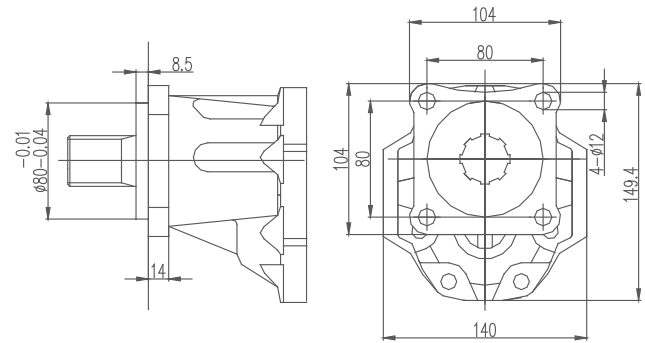
Spline parameters	
Dp	1.5
Span	11
Flat root surface fit	30°
Db	$\phi 18 \begin{smallmatrix} -0.05 \\ -0.3 \end{smallmatrix}$
PCD	$\phi 14.4 \begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$
Df	$\phi 3.55$
Dmin	22.297~22.374

Cast Iron Pump Covers

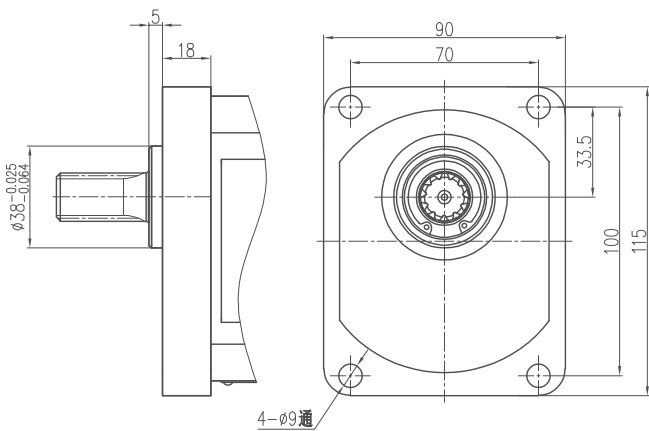
S02 For 1EPF



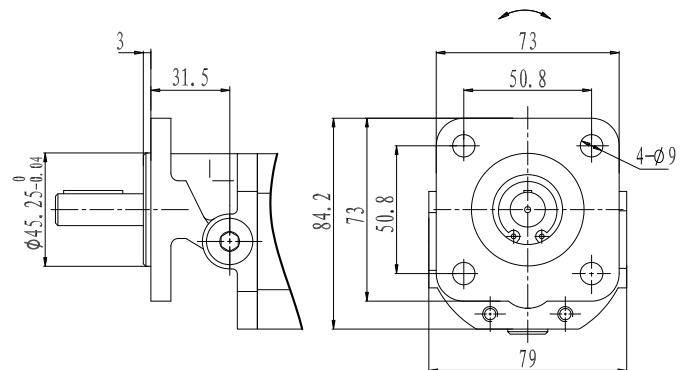
R27 For 3CPF,3.5EPF



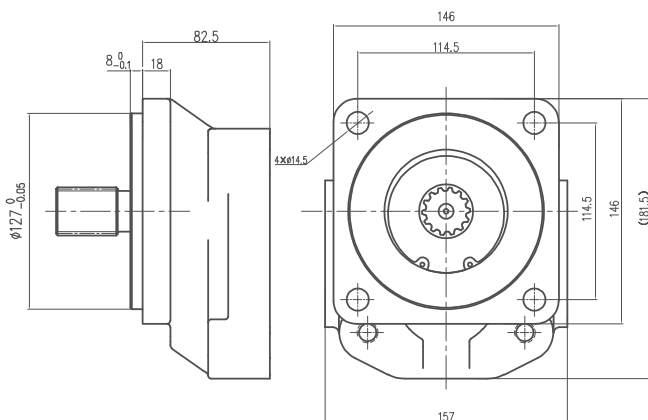
R32 For 2YBDPF



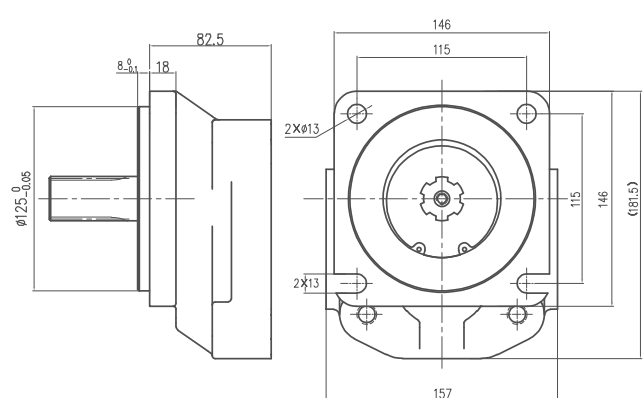
R33 For 1EPF



R34 For 3.5QP/DPF

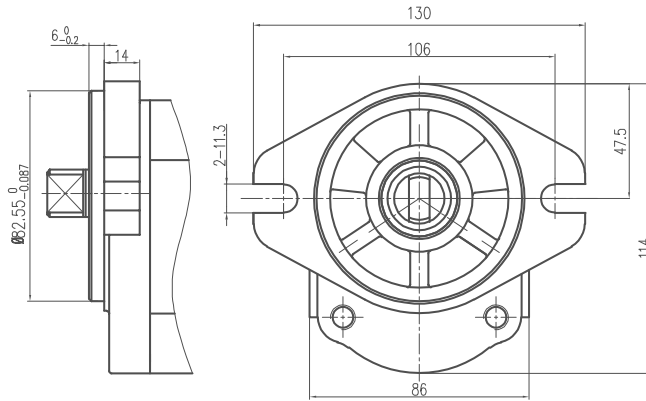


R35 For 3.5/2.8QPF

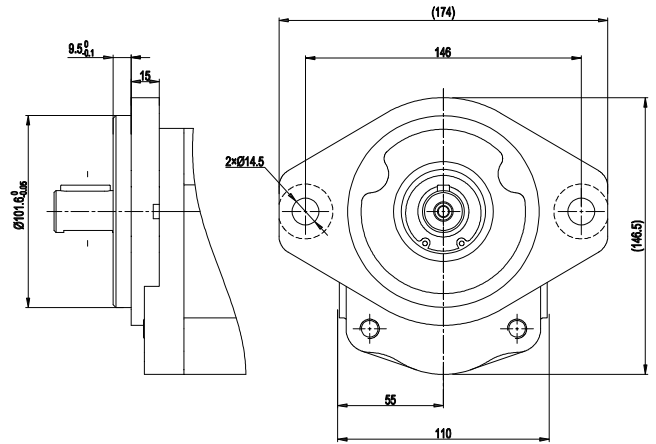


Cast Iron Pump Covers

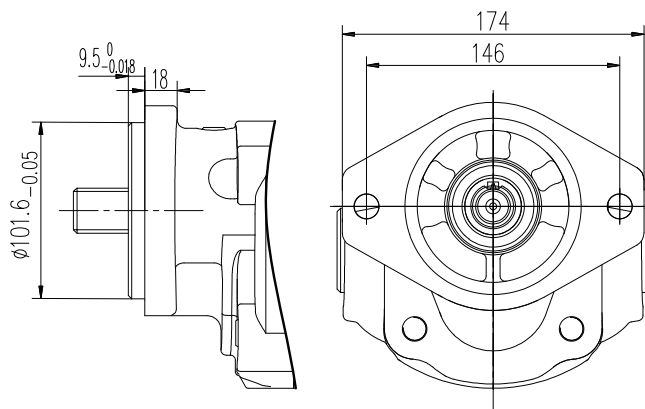
D09 For 2YBDPF



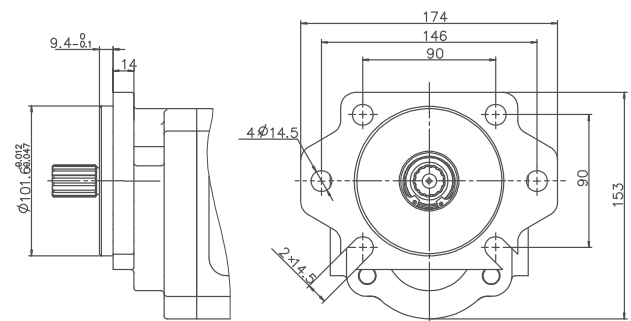
D22 For 2.8QPF, 2.8QDPF



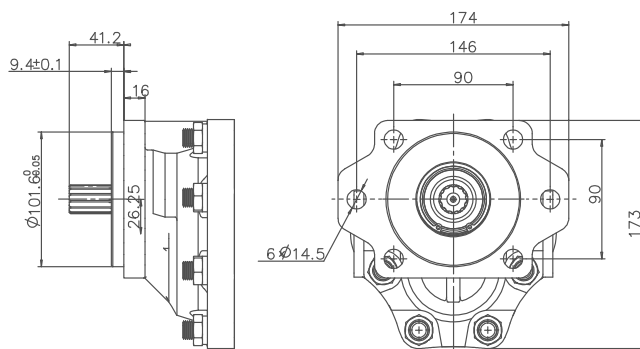
D40 For 3.5APF



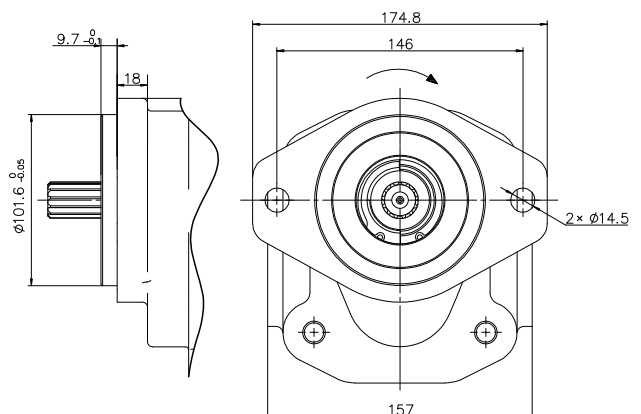
D43 For 2.8QPF



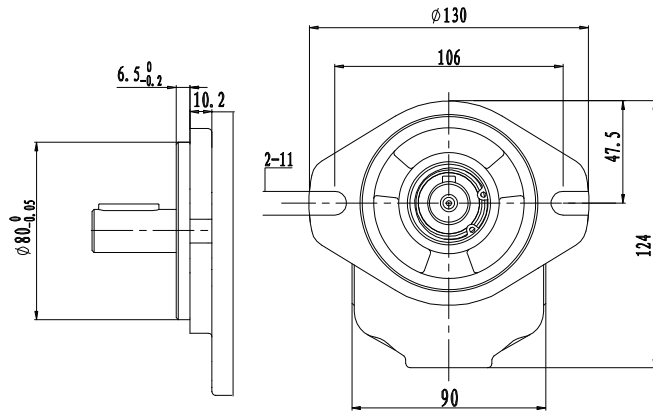
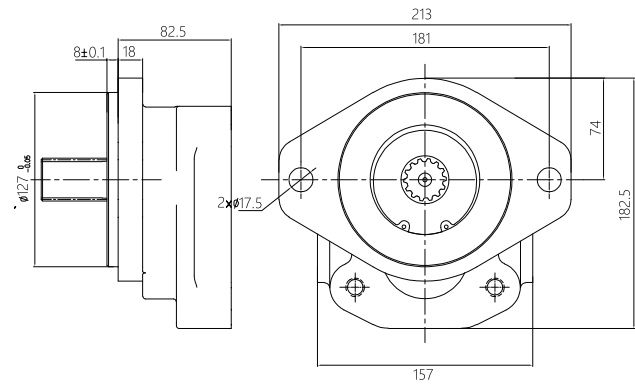
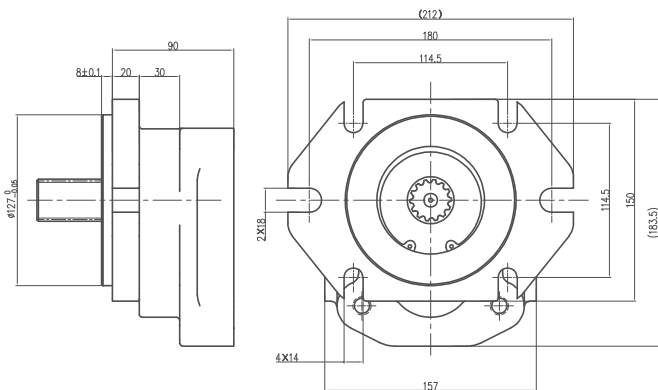
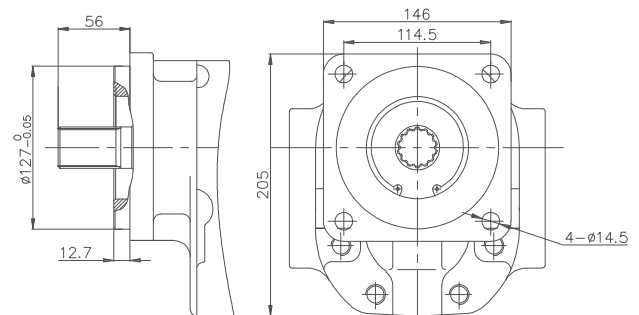
D44 For 3.5QPF



D45 For 3.5QPF



Cast Iron Pump Covers

D46 For 2.5YPF

D47 For 3.5QP/DPF

D48 For 3.5QP/DPF, 3.5/2.8QPF

E15 For 4PF


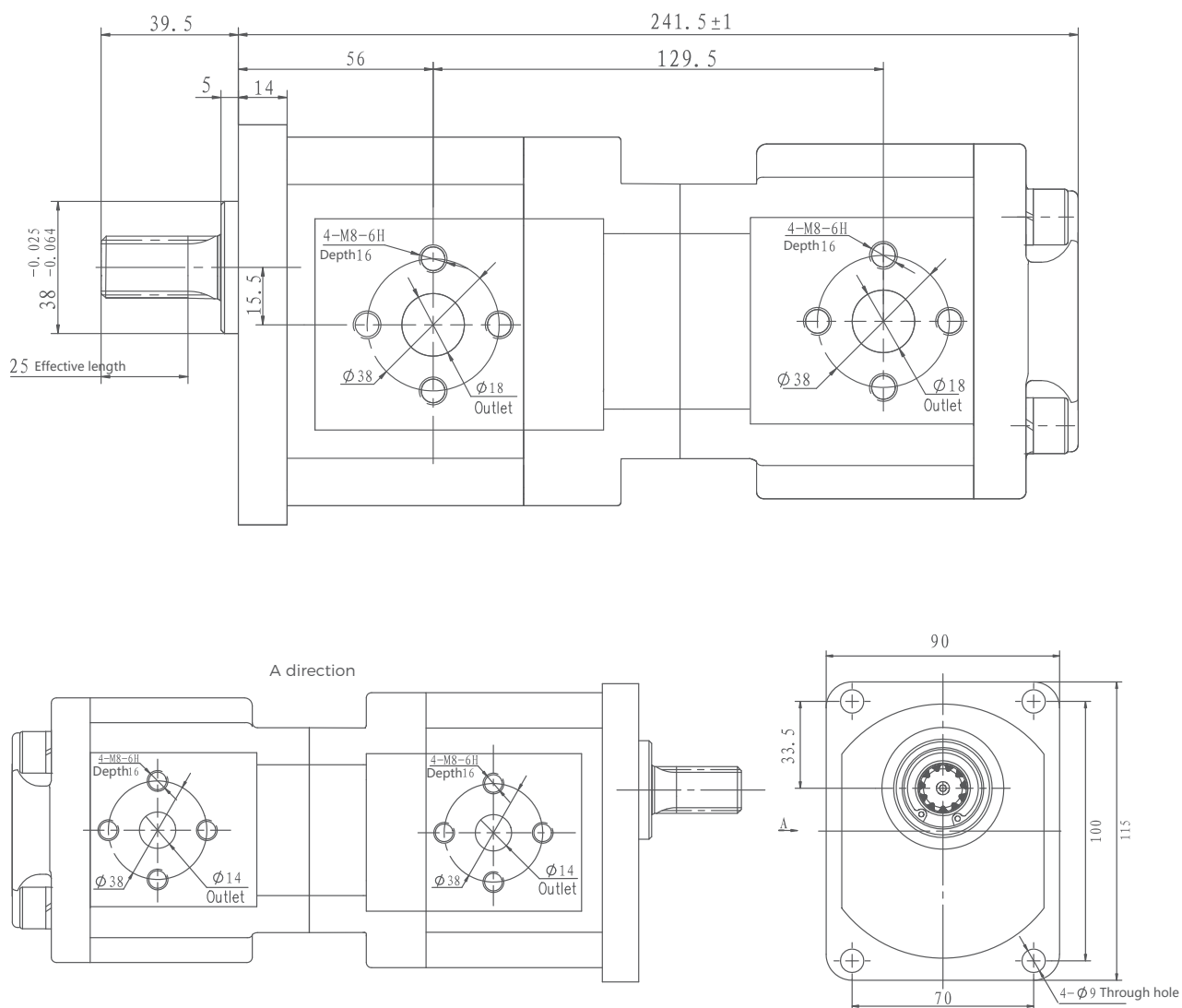
2YBDPFDF**K001R32***



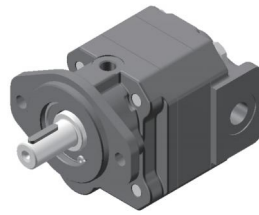
Model	Displacement		Pressure(bar)						Speed		
	(ml/r)		Front Pump			Rear Pump			(r/min)		
			P1(Cont)	P2(Int)	P3(Peak)	P1(Cont)	P2(Int)	P3(Peak)	Rated	Max.	Min.
2YBDPF20/10DF54K001R32*	20	10	200/25	230/28	250/30	200/25	230/28	250/30	2500	3000	800

Dimensions

2YBDPFDF**K001R32***



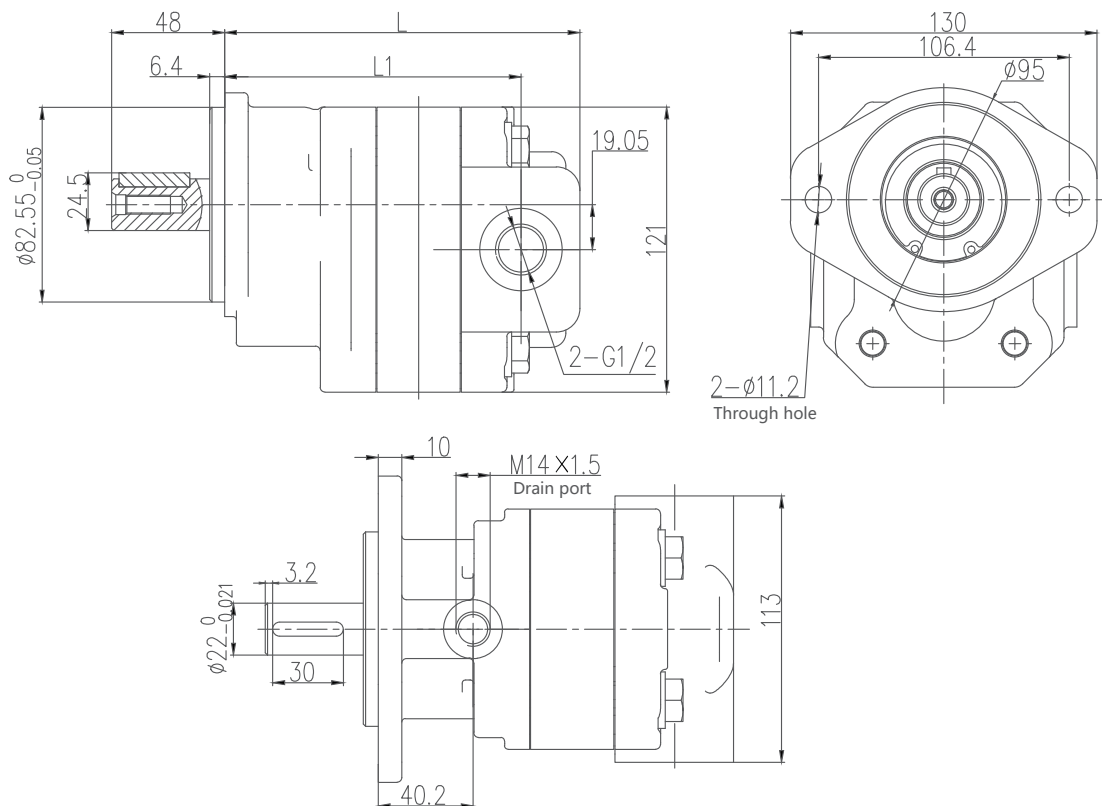
2.5EPFL**P085D41-O***



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L (mm)	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
2.5EPF 10.16L**P085D41-O*	10.16	210	230	250	2000	3000	600	137.0	112.0
2.5EPF 15.23L**P085D41-O*	15.23	210	230	250	2000	3000	600	143.5	118.5
2.5EPF 20.31L**P085D41-O*	20.31	210	230	250	2000	3000	600	1500	125.0
2.5EPF 25.39L**P085D41-O*	25.39	210	230	250	2000	3000	600	156.5	131.5
2.5EPF 30.47L**P085D41-O*	30.47	210	230	250	2000	3000	600	163.0	138.0
2.5EPF 35.54L**P085D41-O*	35.54	180	200	210	2000	3000	600	169.5	144.5
2.5EPF 40.62L**P085D41-O*	40.62	180	200	210	2000	3000	600	176.0	151.0

Dimensions

2.5EPFL**P085D41-O***

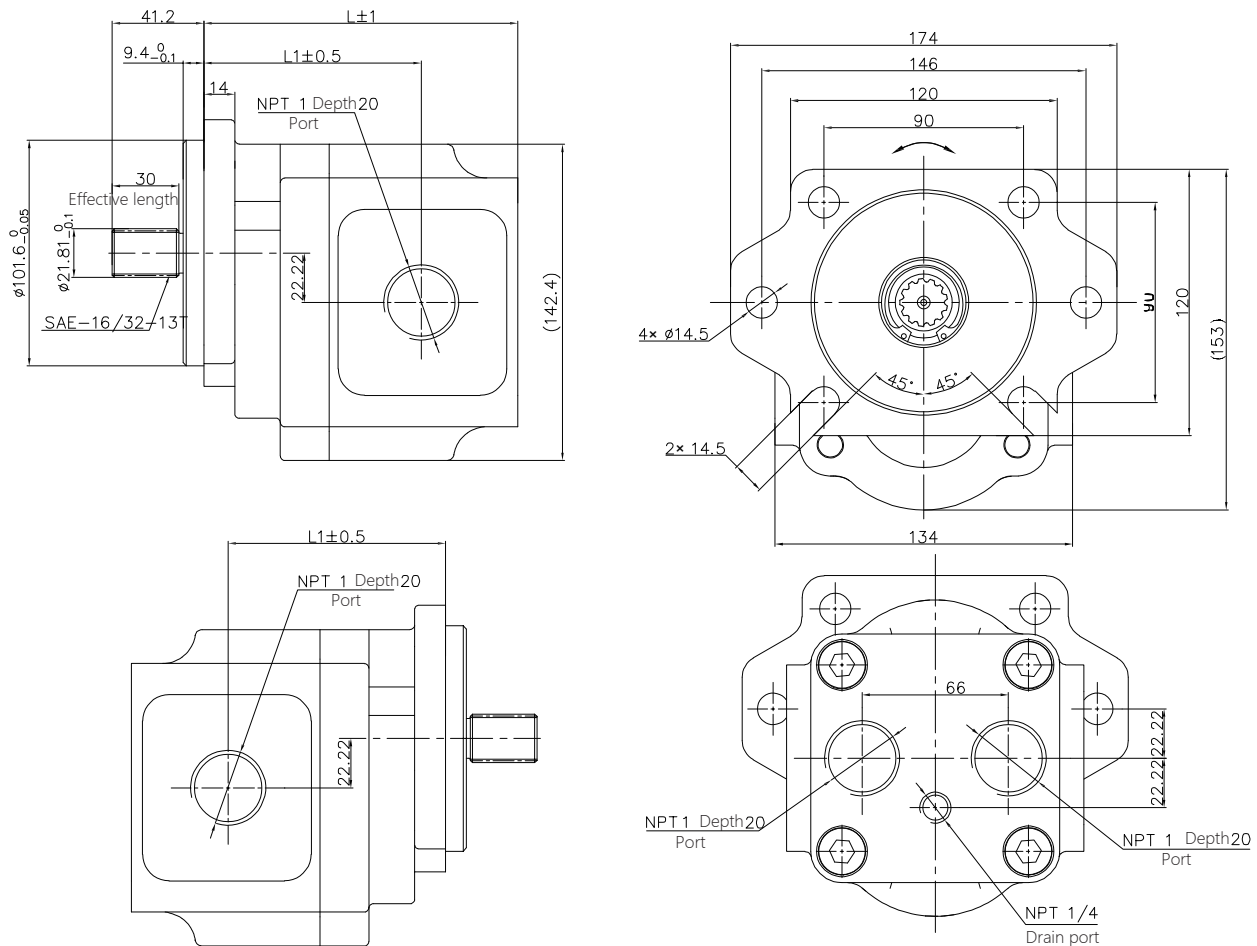


2.8QPFxxSSxxBBxxS419-B

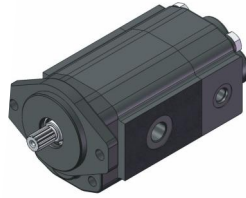
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
2.8QPF	30	200	230	250	1200	350	2500
2.8QPF	42	200	230	250	1200	350	2500
2.8QPF	51	200	230	250	1200	350	2500
2.8QPF	57	200	230	250	1200	350	2500
2.8QPF	64	200	230	250	1200	350	2500

Dimensions

2.8QPFxxSSxxBBxxS419-B



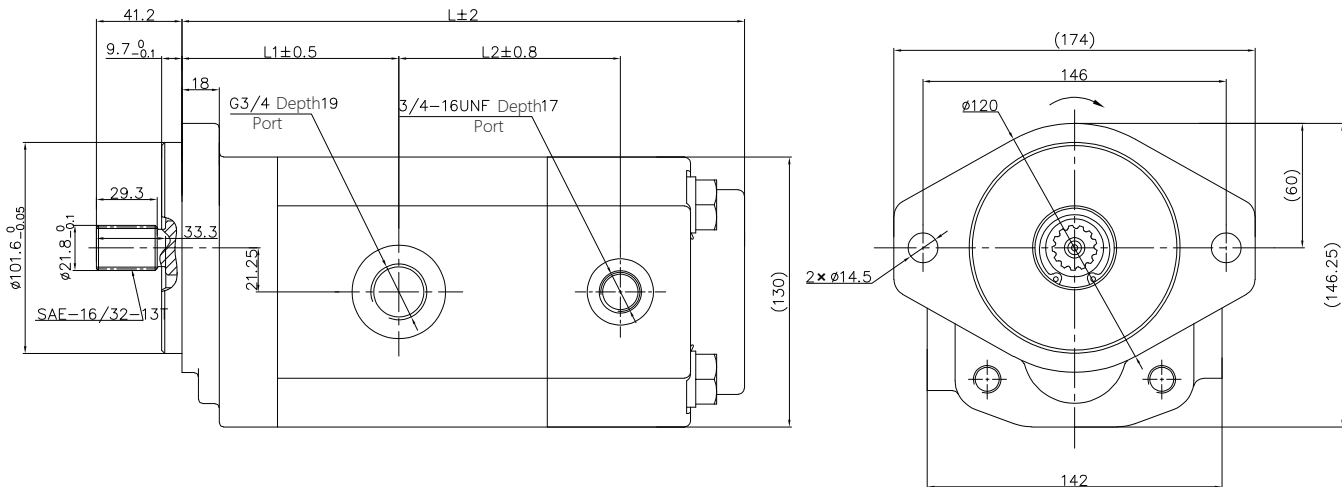
2.8QDPF Cast Iron Double Pump



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.
2.8QPF7.5	7.5	250	270	300	1500	600	2500
2.8QPF14.9	14.9	250	270	300	1500	600	2500
2.8QPF22.4	22.4	250	270	300	1500	600	2500
2.8QPF29.8	29.8	250	270	300	1500	600	2500
2.8QPF37.3	37.3	250	270	300	1500	600	2500
2.8QPF44.8	44.8	250	270	300	1500	600	2500
2.8QPF52.2	52.2	250	270	300	1500	600	2500
2.8QPF59.7	59.7	250	270	300	1500	600	2500
2.8QPF67.2	67.2	250	270	300	1500	600	2500
2.8QPF74.6	74.6	230	250	280	1500	600	2500
2.8QPF82.1	82.1	200	230	250	1500	600	2500
2.8QPF89.5	89.5	200	230	250	1500	600	2500

Dimensions

2.8QDPF Cast iron double pump



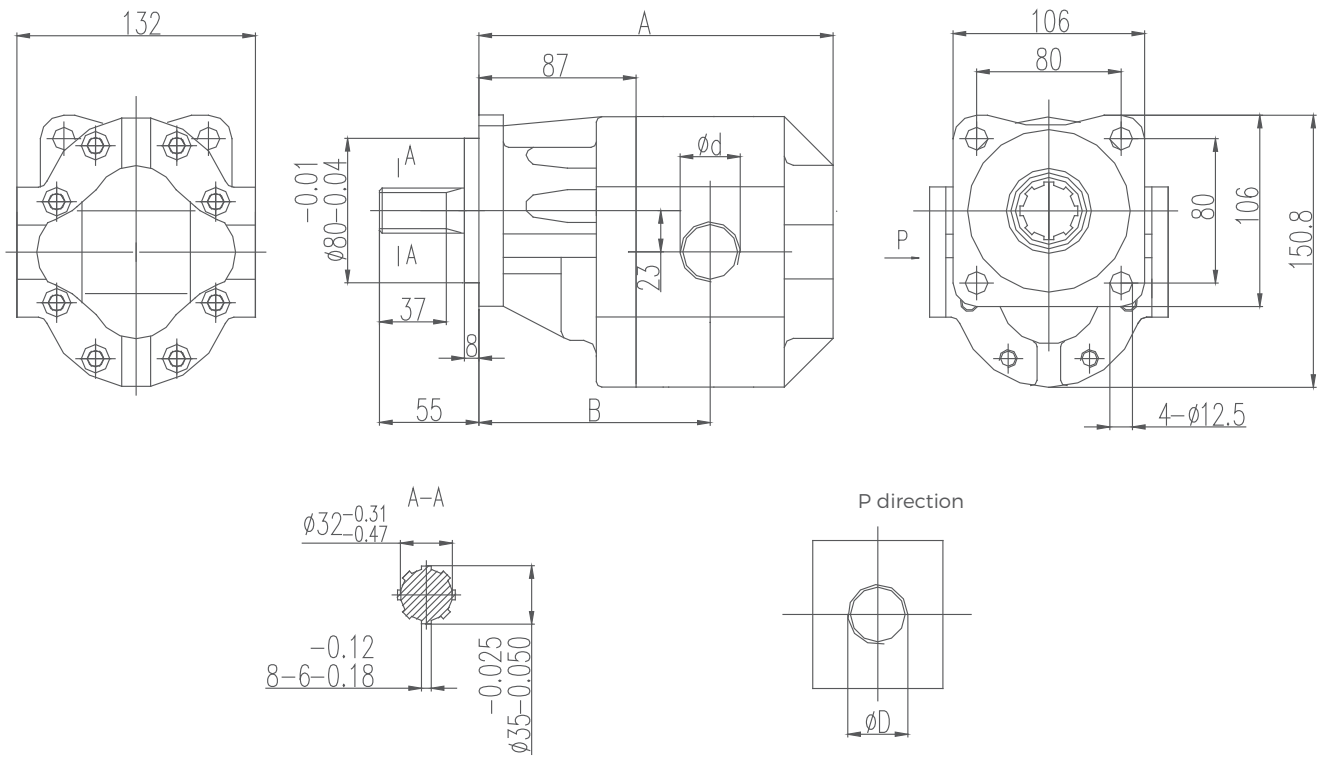
3CPFL**H006R27**



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			A	B	D	d	Weight (kg)
		P1(Cont)	P2(Int)	P3(Peak)	Rated	Max.	Min.	(mm)				
3CPF43L03H006R27	43	210	260	300	2000	3000	300	171.0	115.5	G1	G3/4	12.8
3CPF51L00H006R27	51	210	260	300	2000	3000	300	177.0	118.5	G1	G1	13.2
3CPF61L00H006R27	61	210	260	300	2000	3000	300	183.6	121.8	G1	G1	13.6
3CPF82L11H006R27	82	210	260	300	2000	3000	300	196.0	128.0	G1-1/4	G1	14.1

Dimensions

3CPFL**H006R27**



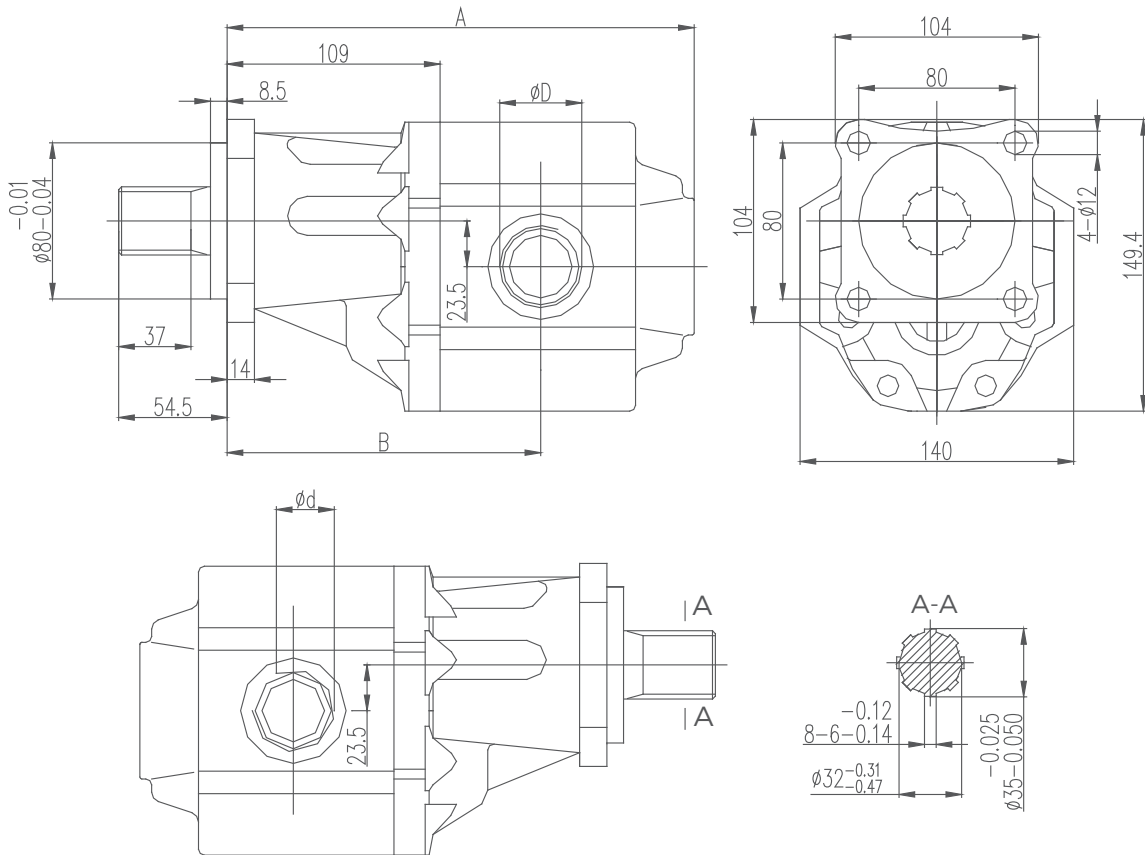
3.5EPFL**H006RR27B**



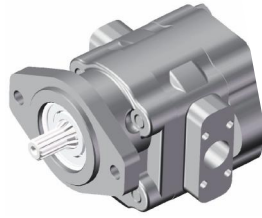
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			A	B	D	d
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
3.5EPF82L00H006RR27B	82	210	260	300	2000	3000	300	233	157.5	G1	G1
3.5EPF95L99H006RR27B	95	210	260	300	2000	3000	300	239	160.5	G1-1/4	G1-1/4

Dimensions

3.5EPFL**H006RR27B**



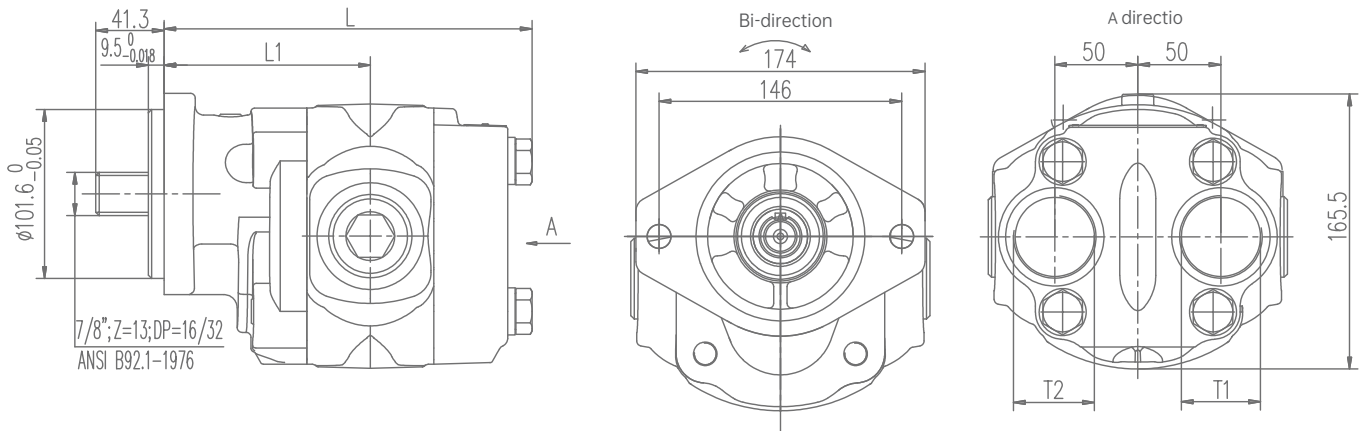
3.5APFF108F102S015D40-B-O**



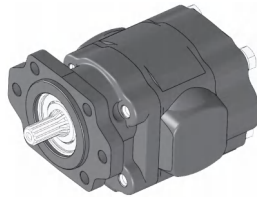
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.		
3.5APF52F108F102S015D40-B-O	52	170	190	210	1500	3600	600	181.0	206.5
3.5APF63F108F102S015D40-B-O	63	170	190	210	1500	3600	600	187.5	216.0
3.5APF73F108F102S015D40-B-O	73	170	190	210	1500	3600	600	193.5	225.3
3.5APF85F108F102S015D40-B-O	85	150	170	180	1500	3600	600	200.5	235.5
3.5APF93F108F102S015D40-B-O	93	150	170	180	1500	3600	600	206.5	244.5
3.5APF104F108F102S015D40-B-O	104	150	170	180	1500	3600	600	213.0	254.5
3.5APF115F108F102S015D40-B-O	115	120	130	140	1500	3600	600	219.0	263.5

Dimensions

3.5APFF108F102S015D40-B-O**



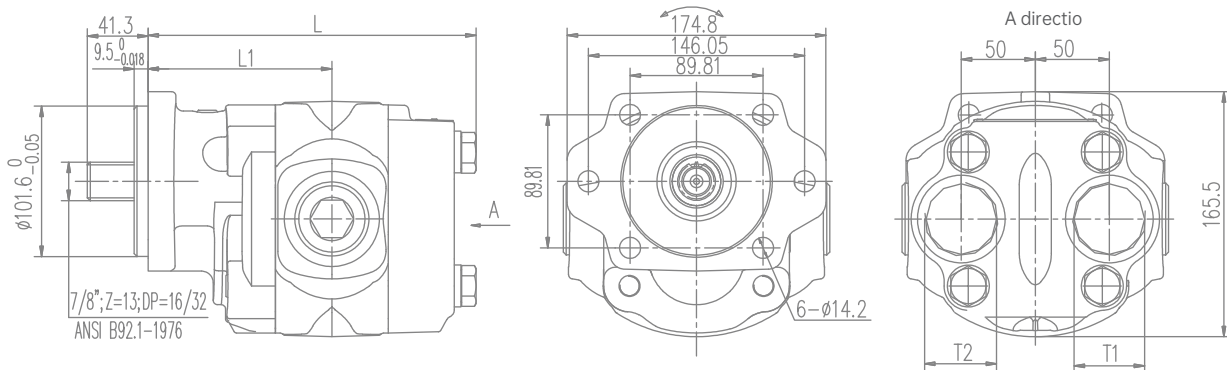
3.5APF**L**S015D23*-B-O



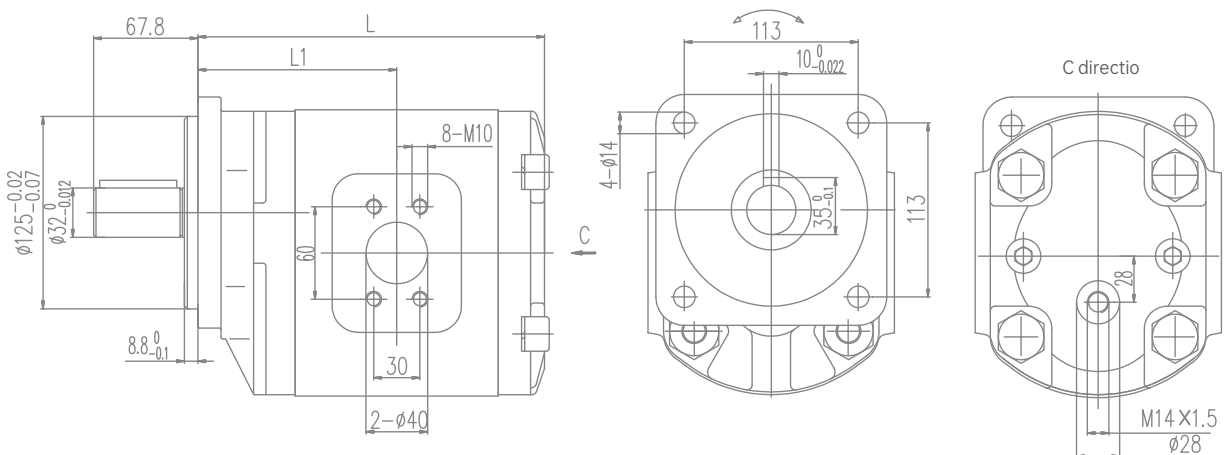
Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L1	L	T1	T2
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.	(mm)			
3.5APF52L**S015D23-B-O	52	210	230	230	1500	3600	600	181.0	206.5	1"	1-1/4"
3.5APF63L**S015D23-B-O	63	210	230	230	1500	3600	600	187.5	216.0	1"	1-1/4"
3.5APF73L**S015D23-B-O	73	210	230	230	1500	3600	600	193.5	225.3	1-1/4"	1-1/4"
3.5APF85L**S015D23-B-O	85	210	230	230	1500	3600	600	200.5	235.5	1-1/4"	1-1/4"
3.5APF93L**S015D23-B-O	93	180	200	210	1500	3600	600	206.5	244.5	1-1/2"	1-1/4"
3.5APF104L**S015D23-B-O	104	180	200	210	1500	3600	600	213.0	254.5	1-1/2"	1-1/4"
3.5APF115L**S015D23-B-O	115	160	180	210	1500	3600	600	219.0	263.5	1-1/2"	1-1/4"

Dimensions

3.5APF**L**S015D23-B-O



3.5BPF**F108F102S015D23-B-O



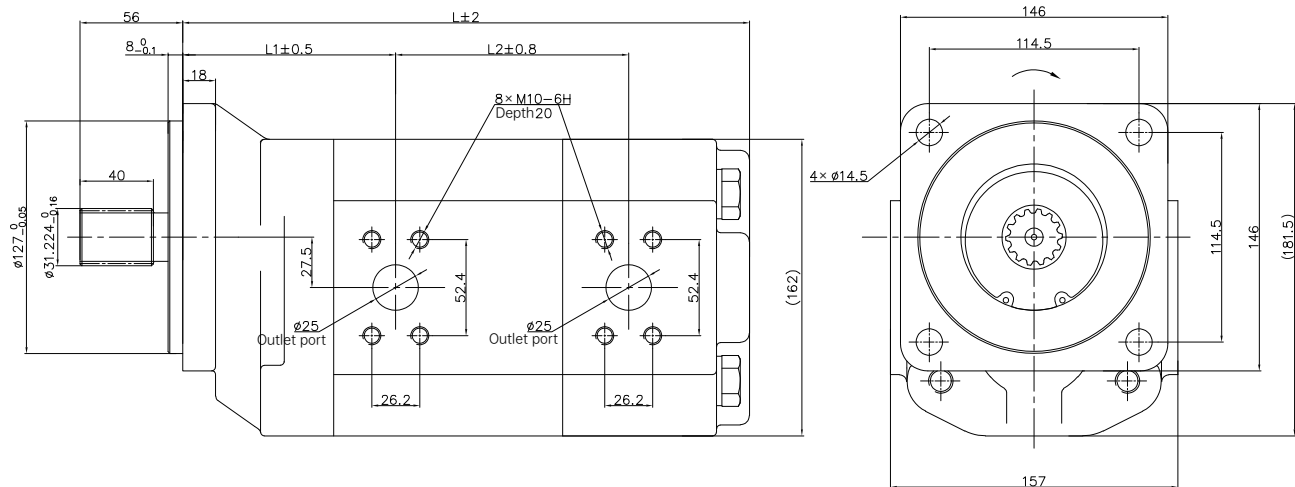
3.5QD(T)PF Cast Iron Double(Triple) Pump



Model	Displacement		Pressure(bar)			Speed(r/min)	
	(ml/r)		P1(Cont.)	P2(Int.)	P3(Peak)	Max.	Min.
3.5QPF/G24.99	24.99	250	270	300	1500	600	2500
3.5QPF/G37.49	37.49	250	270	300	1500	600	2500
3.5QPF/G43.74	43.74	250	270	300	1500	600	2500
3.5QPF/G49.98	49.98	250	270	300	1500	600	2500
3.5QPF/G62.48	62.48	250	270	300	1500	600	2500
3.5QPF/G74.98	74.98	250	270	300	1500	600	2500
3.5QPF/G81.22	81.22	250	270	300	1500	600	2500
3.5QPF/G87.47	87.47	250	270 <td 300	1500	600	2500	
3.5QPF/G93.72	93.72	250	270	300	1500	600	2500
3.5QPF/G99.97	99.97	250	270	300	1500	600	2500
3.5QPF/G112.46	112.46	230	240	280	1500	600	2500
3.5QPF/G137.46	137.46	200	230	250	1500	600	2500
3.5QPF/G149.95	149.95	200	230	250	1500	600	2500
3.5QPF/G162.45	162.45	200	230	250	1500	600	2500

Dimensions

3.5QD(T)PF Cast Iron Double Pump

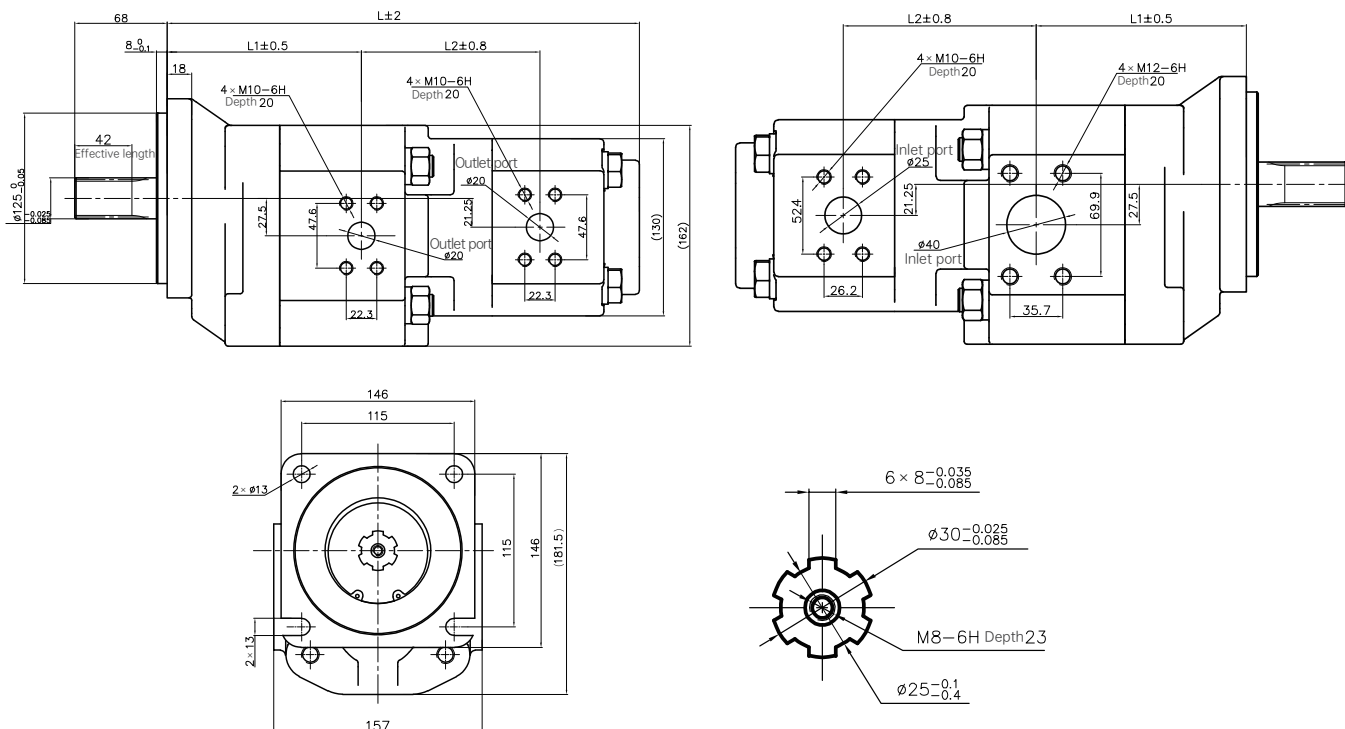


3.5/2.8QDPF Cast Iron Pump

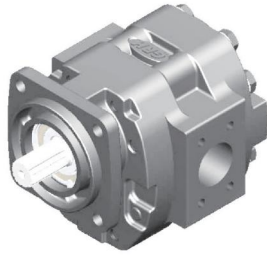
Model	Displacement (ml/r)		Pressure(bar)			Speed(r/min)		
	Front Pump	Rear Pump	P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Min.	Max.
3.5/2.8QDPF	24.99	7.5	200	230	250	1500	600	2500
3.5/2.8QDPF	37.49	14.9	200	230	250	1500	600	2500
3.5/2.8QDPF	43.74	22.4	200	230	250	1500	600	2500
3.5/2.8QDPF	49.98	29.8	200	230	250	1500	600	2500
3.5/2.8QDPF	62.48	37.3	200	230	250	1500	600	2500
3.5/2.8QDPF	74.98	47.8	200	230	250	1500	600	2500
3.5/2.8QDPF	81.22	52.2	200	230	250	1500	600	2500
3.5/2.8QDPF	87.47	59.7	200	230	250	1500	600	2500
3.5/2.8QDPF	93.72	67.2	200	230	250	1500	600	2500
3.5/2.8QDPF	99.97	74.6	200	230	250	1500	600	2500
3.5/2.8QDPF	112.46	82.1	200	230	250	1500	600	2500
3.5/2.8QDPF	124.96	89.5	200	230	250	1500	600	2500

Dimensions

3.5/2.8QDPF Cast iron double pump



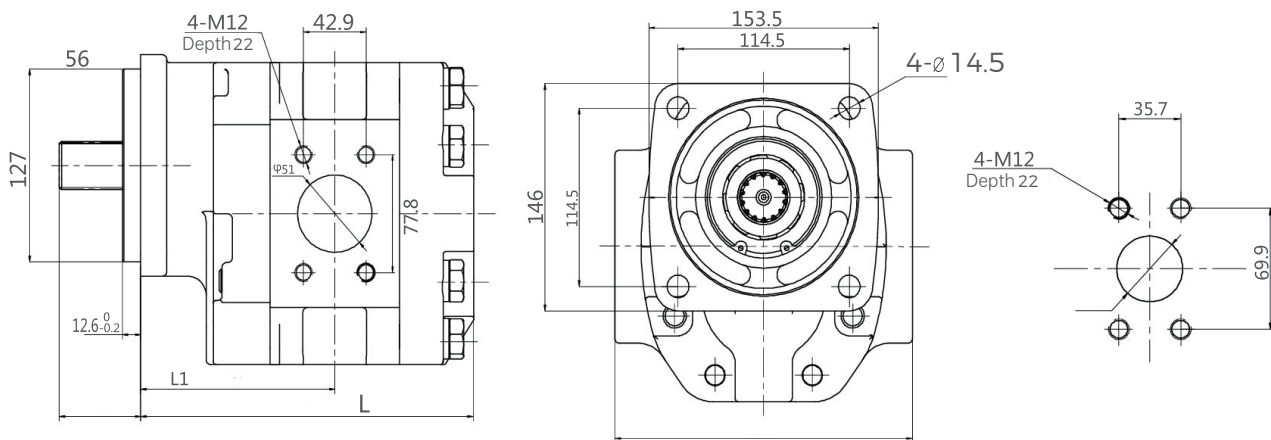
4PF**F**S016E15L



Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)			L	L1
		P1(Cont)	P2(Int)	P3(Peak)	Rated	Min.	Max.		
4PF66F161S016E15L	66	210	230	250	1800	2200	600	197.3	121.0
4PF83F161S016E15L	83	210	230	250	1800	2200	600	203.5	124.1
4PF91F161S016E15L	91	210	230	250	1800	2200	600	207.3	126.0
4PF99F161S016E15L	99	210	230	250	1800	2200	600	209.8	127.2
4PF116F161S016E15L	116	210	230	250	1800	2200	600	217.3	130.9
4PF132F161S016E15L	132	210	230	250	1800	2200	600	222.6	133.5
4PF145F161S016E15L	145	210	230	250	1800	2200	600	227.8	136.1
4PF149F161S016E15L	149	210	230	250	1800	2200	600	229.3	136.8
4PF166F161S016E15L	166	210	230	250	1800	2200	600	235.3	139.8
4PF182F161S016E15L	182	180	200	210	1800	2200	600	241.3	142.8
4PF199F161S016E15L	199	180	200	210	1800	2200	600	248.3	146.3

Dimensions

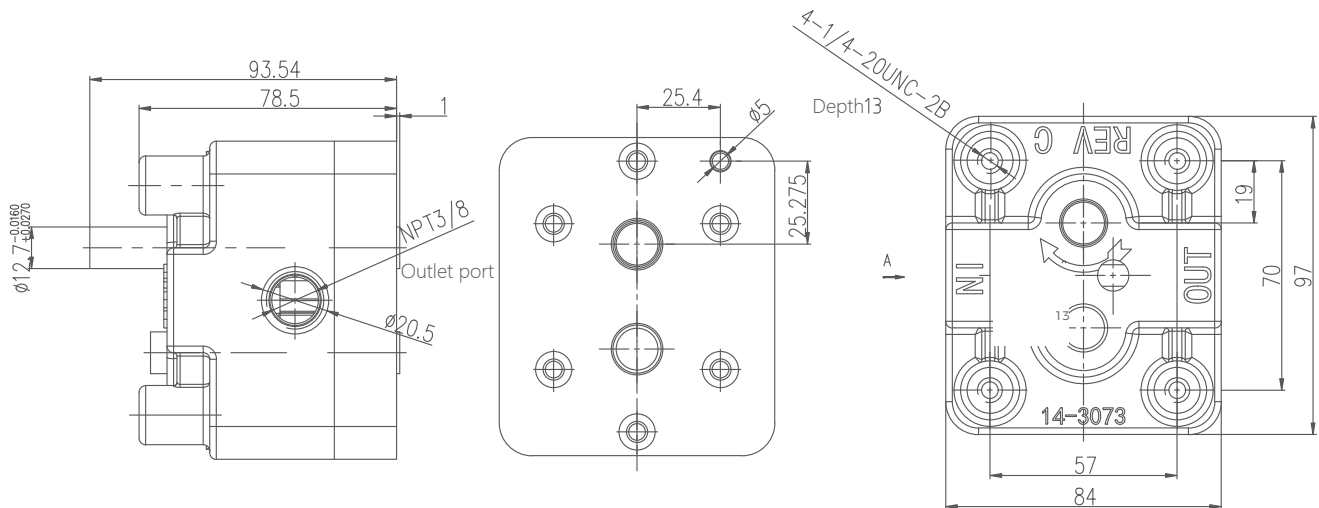
4PF**F**S016E15L



XTYBA Gear Pumps

Model	Displacement	Pressure(bar)			Speed(r/min)	
	(ml/r)	P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.
XTYBA	10	20	25	30-50	1500	2500

Dimensions

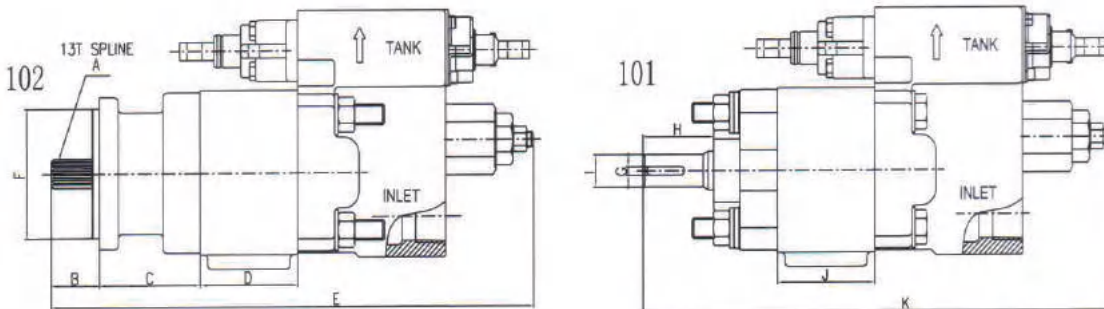


C101 C102 G101 G102 Dump Pumps

Model	Teeth Width	Displacement (ml/r)	Pressure(bar)			Speed(r/min)		Input Power (Kw)	Features
	(in)		P1(Cont.)	P2(Int.)	P3(Peak)	Max.	Min.		
C101-20-MS/AS-R	2	85	175	190	210	2400	600	78	Double Shaft
C101-25-MS/AS-R	2-1/2	105	175	190	210	2400	600	89	Double Shaft
C102-20-MS/AS-L	2	85	175	190	210	2400	600	78	Single Shaft
C102-25-MS/AS-L	2-1/2	105	175	190	210	2400	600	89	Single Shaft
G101-07-MS/AS-R	3/4	25	175	190	210	2400	600	27	Double Shaft
G101-20-MS/AS-R	2	65	175	190	210	2400	600	70	Double Shaft
G102-15-MS/AS-L	1-1/2	50	175	190	210	2400	600	89	Single Shaft
G102-20-MS/AS-L	2	65	175	190	210	2400	600	70	Single Shaft

Dimensions

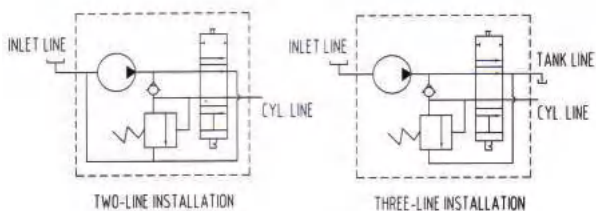
C101 C102 Dump Pump



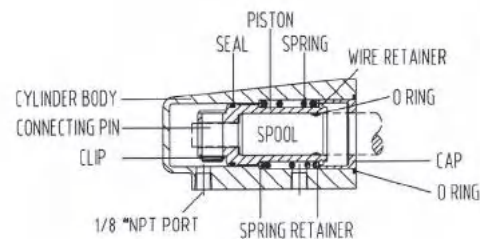
	A	B	C	D			E	D
G102	SAE B	1.62	2.94	1.50(07)	2.25(15)	2.75(20)	11.25+D	4
C102	SAE B	1.62	3.37	2.75(20)	3.25(25)		13.25+D	4

	G	H	I	J			K
G101	0.25	1.94	1.00	1.50(07)	2.25(15)	2.75(20)	10.43+J
C101	0.25	2.38	1.00	2.75(20)	3.25(25)		12.75+J

Installation and Operation



Air Shifters

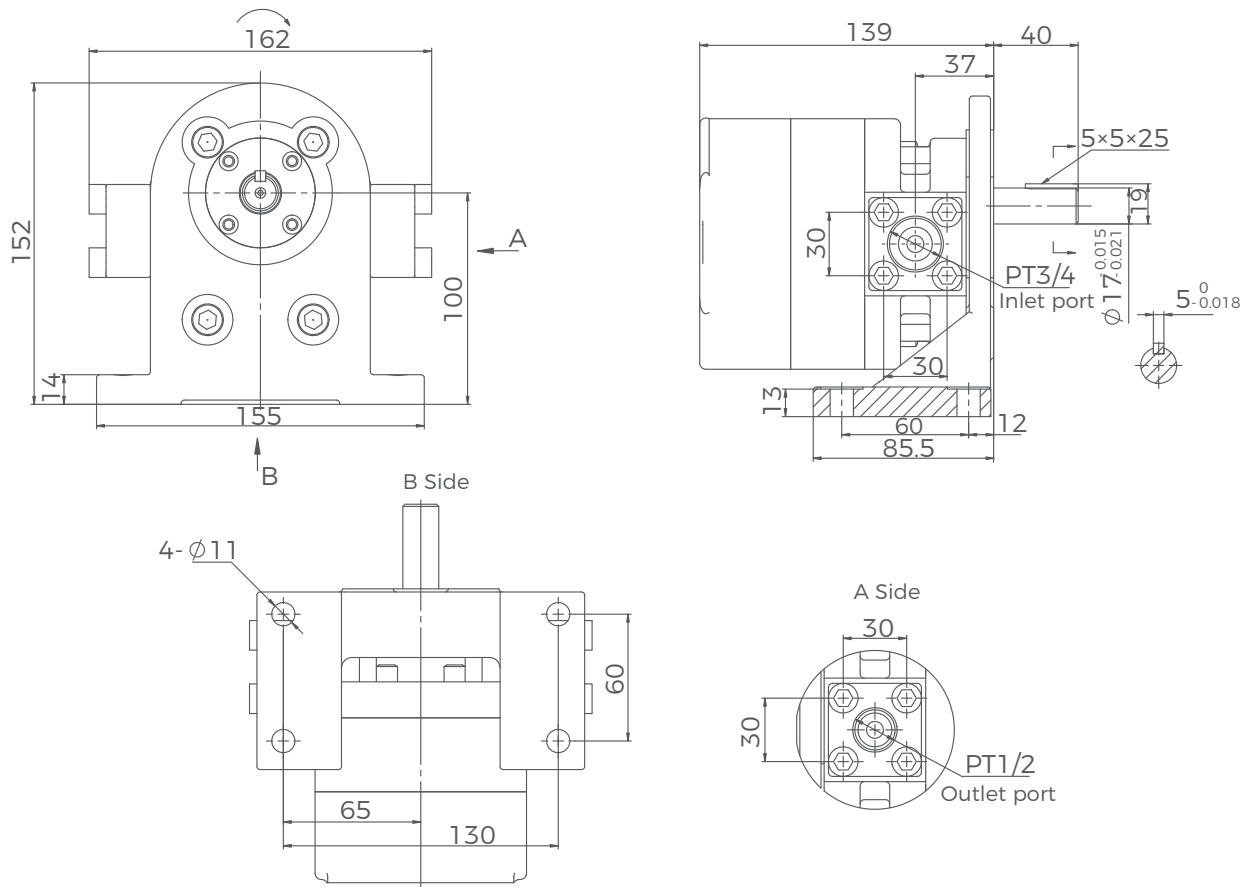


HGP19L10P089E23

Model	Displacement (ml/r)	Pressure(bar)			Speed(r/min)	
		P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.
HGP19L10P089E23	19	50	60	70	200	1200

Dimensions

HGP19L10P089E23

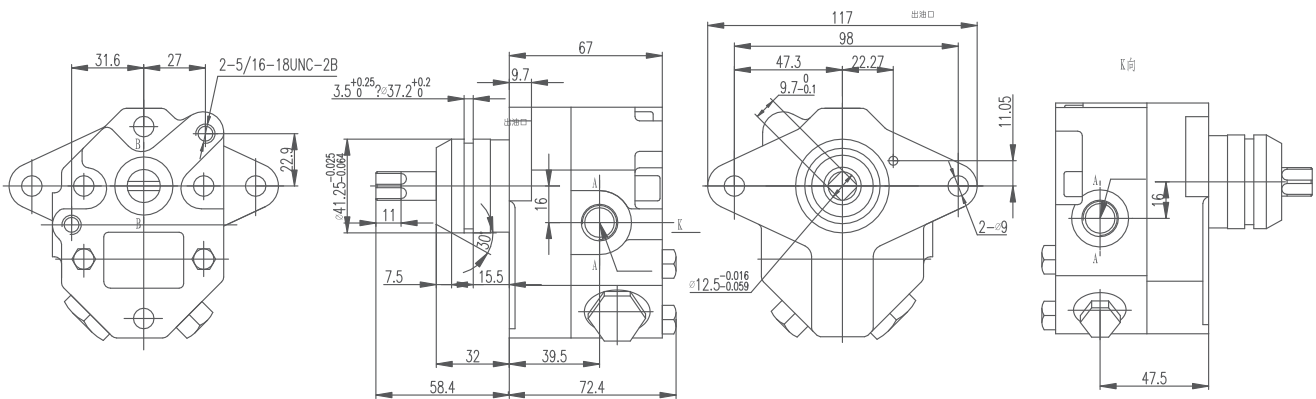


Cat Pumps

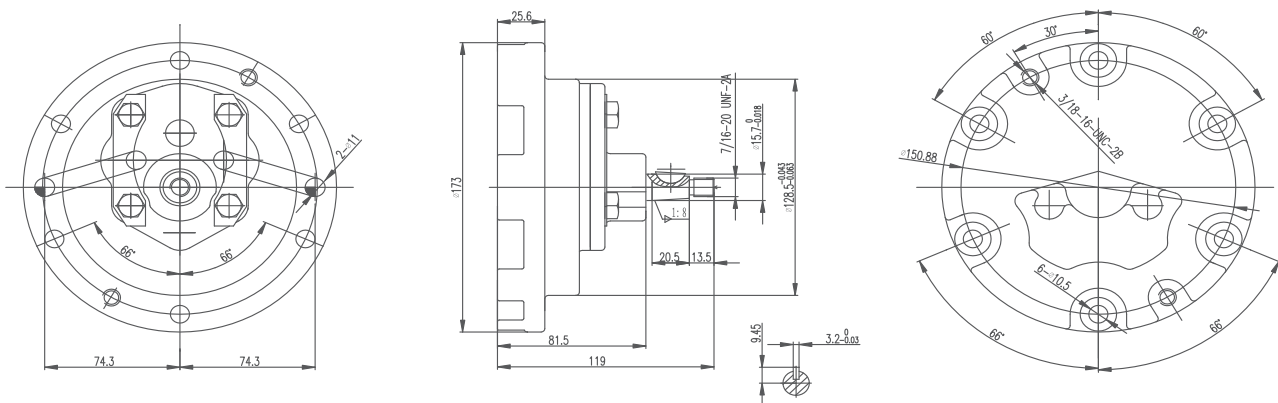
Model	Displacement	Pressure(bar)			Speed(r/min)			Min. flow rate at rated pressure and rated speed (L/min)	Rotation	Weight (Kg)
	(ml/r)	P1(Cont.)	P2(Int.)	P3(Peak)	Rated	Max.	Min.			
4W5479	8.0	0.25	0.30	0.35	1500	2000	500	10.8	CCW	18.4
5H1719	12.0	0.80	1.40	2.00	1500	2000	500	15.0	CCW	15.0
3N2078	16.0	2.00	2.50	3.00	1500	2000	500	19.0	CCW	19.4
3S4386	22.0	2.50	2.80	3.15	1500	2000	500	30.0	CW	19.4
5M7864	28.0	2.50	2.80	3.15	2000	2500	500	45.6	CCW	18.4
3P6814	32.0	2.50	2.80	3.15	1800	2500	500	45.0	CW	18.4
7S4629	40.0	2.50	2.80	3.15	2000	2500	500	18.0	CCW	18.4
7C4856	47.0	26.00	31.00	35.00	1500	2000	500	78.0	CCW	23.2
1192924	47.5	26.00	31.00	35.00	1500	2500	500	66.0	CW	5.0
9P9610	55.0	26.00	31.00	35.00	1500	2000	500	91.5	CCW	24.5
1233472	55.0	26.00	31.00	35.00	1500	2000	500	91.5	CCW	22.3
1226658	55.0	26.00	31.00	35.00	1500	2500	500	91.5	CCW	25.2
9U9535	65.0	26.00	31.00	35.00	1500	2000	500	108.0	CCW	26.5
3P4002	71.0	3.00	3.50	4.00	2000	2500	500	174.0	CW	15.5
3P6816/3P0380	71.0	2.50	2.80	3.15	1800	2500	500	115.0	CW	19.4
8E1217	73.0	26.00	31.00	35.00	1500	2000	500	121.5	CCW	31.5
2P9239	73.3	2.50	2.80	3.15	1800	2500	500	122.0	CW	15.5
3C4768	90.0	16.00	18.00	20.00	2000	2500	500	180.0	CCW	19.4
4W2448	前泵 : 62.0	2.00	2.50	3.00	1500	2000	500	109.0	CW	25.0
	后泵 : 48.0	2.00	2.50	3.00				82.0		

4W5479/5H1719 Cat Pumps

4W5479 Dimensions

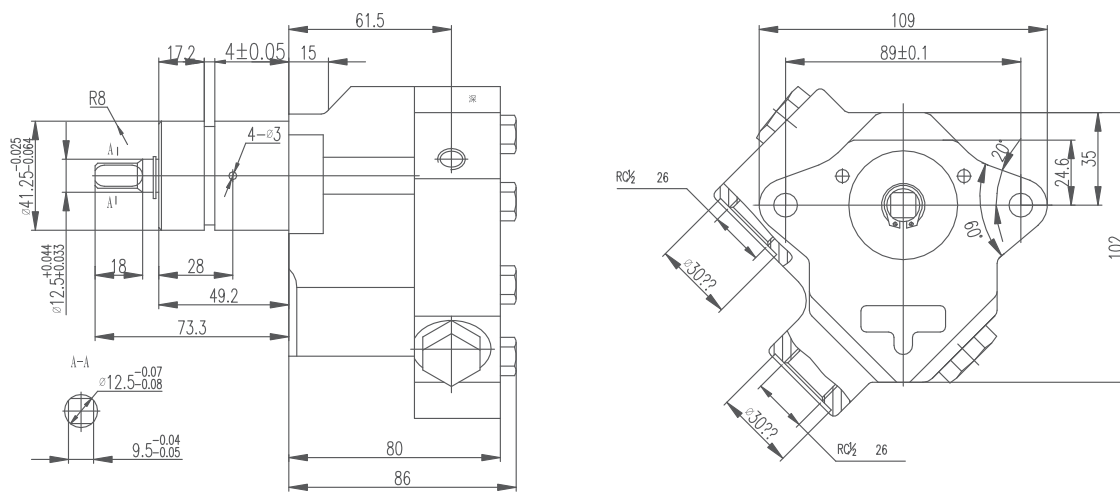


5H1719 Dimensions

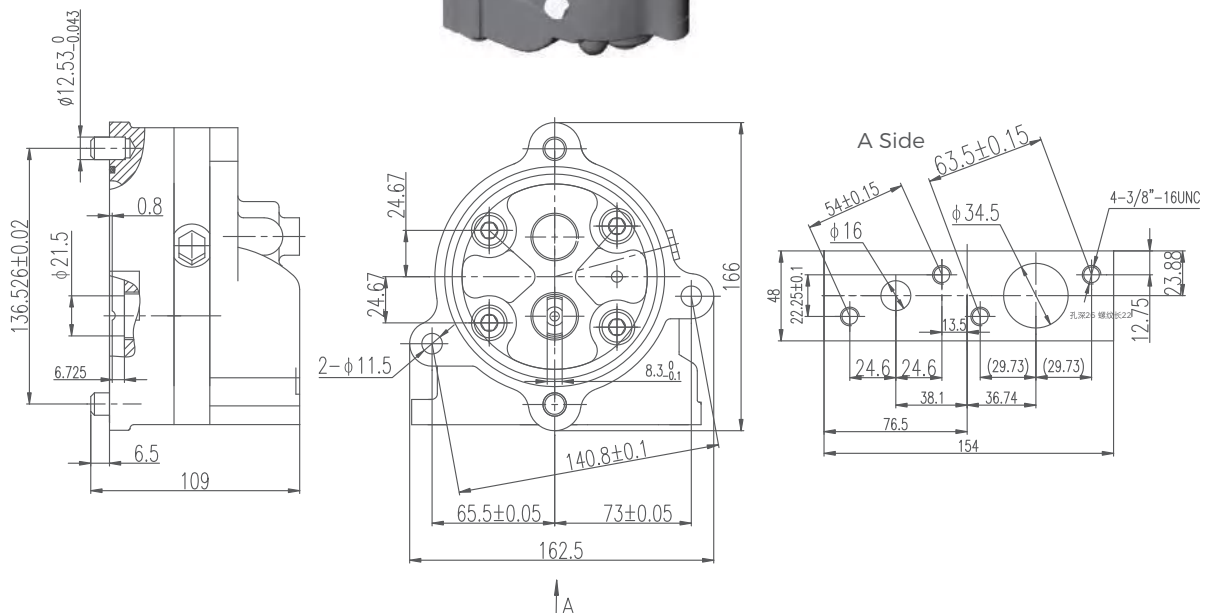


3N2078/3S4386 Cat Pumps

3N2078 Dimensions

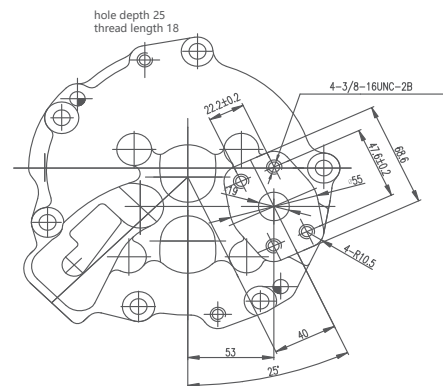
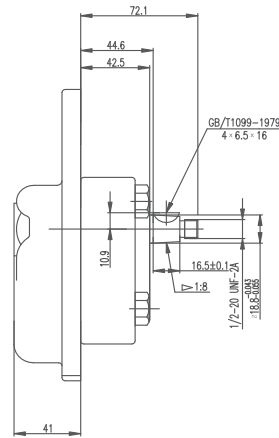
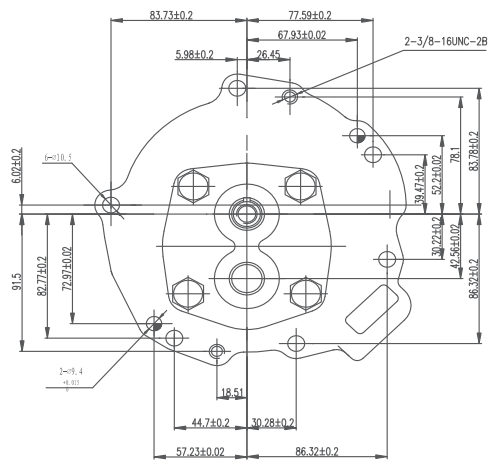


3S4386 Dimensions

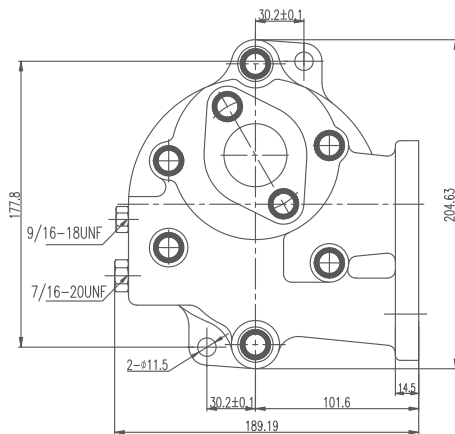
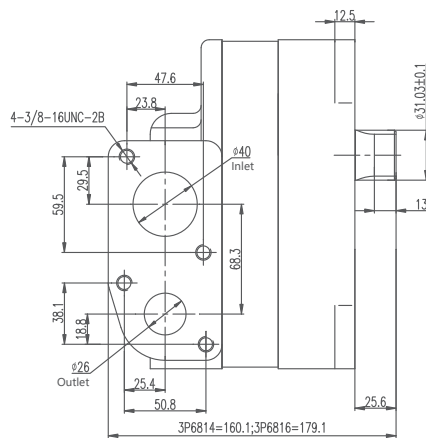
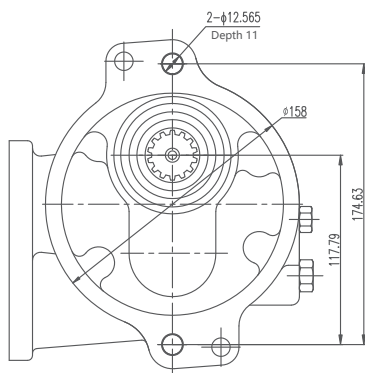


5M7864/3P6814/3P6816 Cat Pumps

5M7864 Dimensions

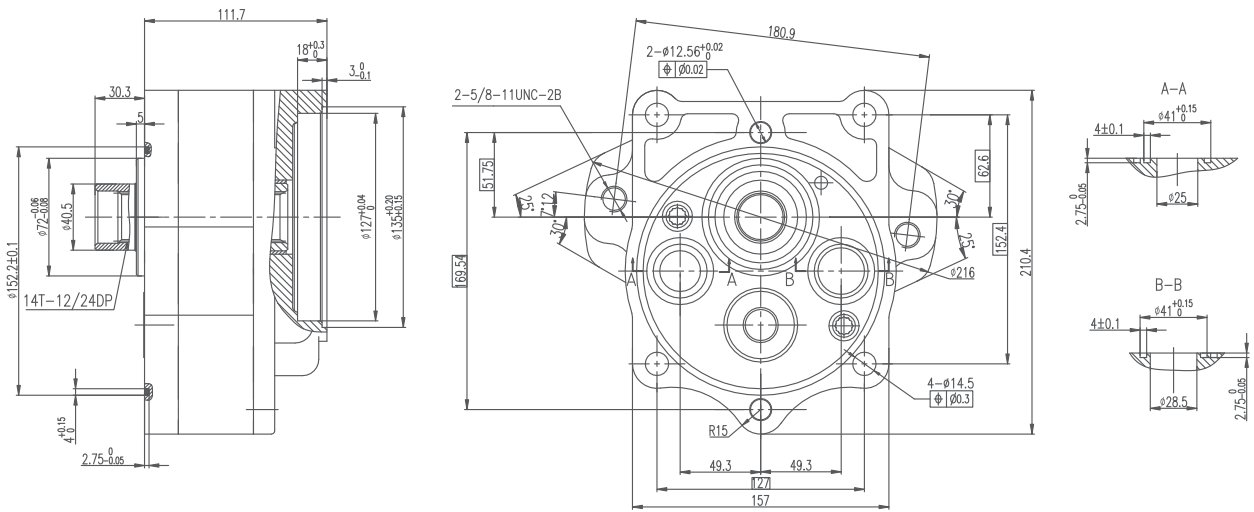


3P6814 / 3P6816 Dimensions

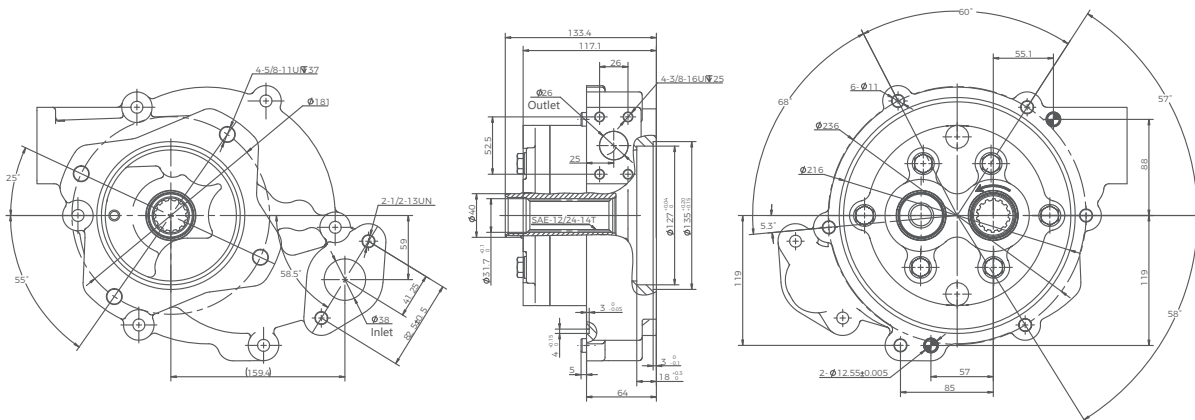


7S4629/7G4856 Cat Pumps

7S4629 Dimensions

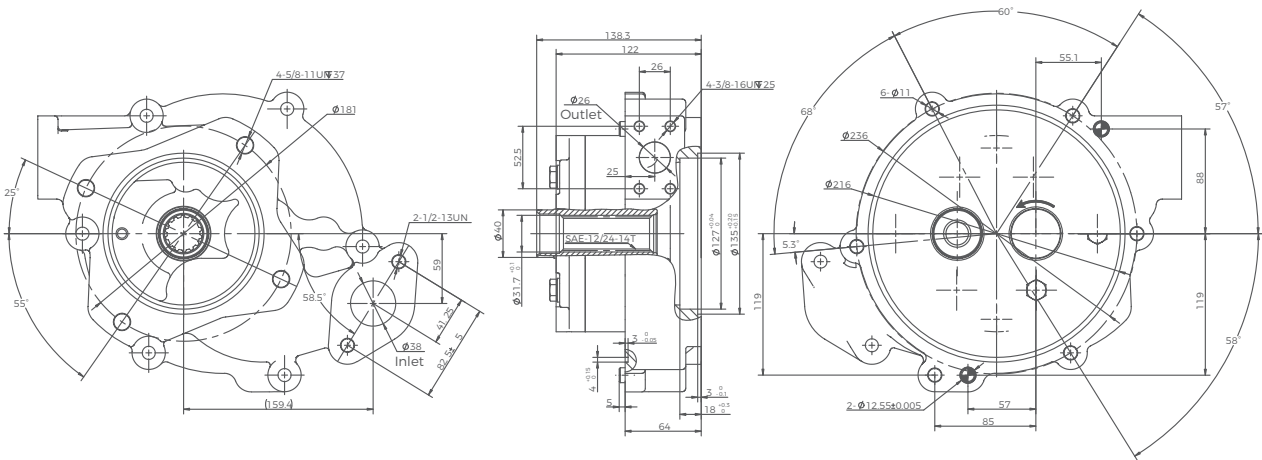
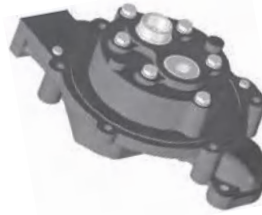


7G4856 Dimensions

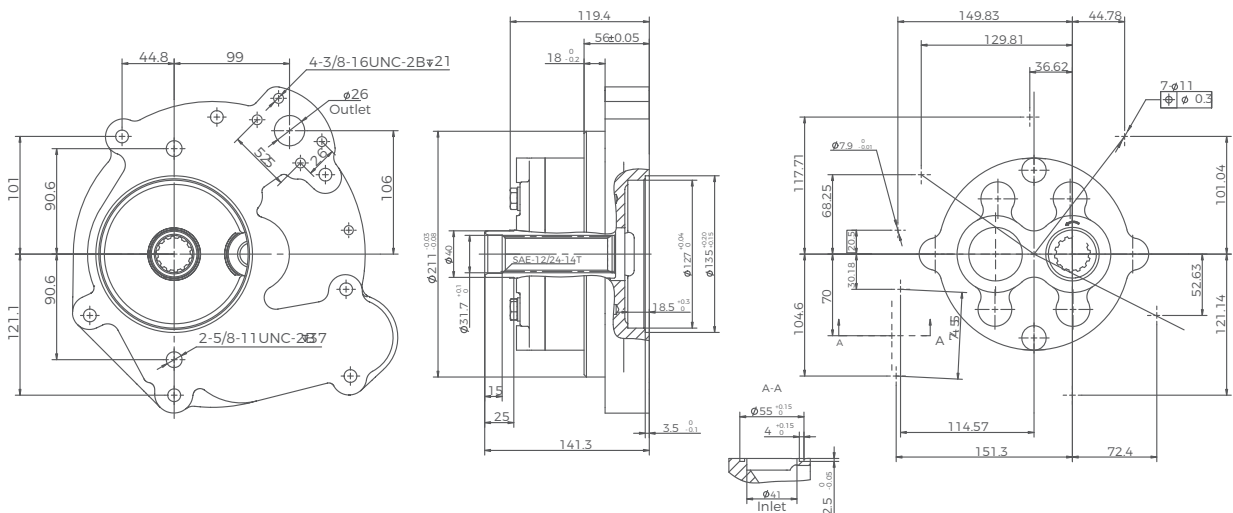


1233472/1226658 Cat Pumps

1233472 Dimensions

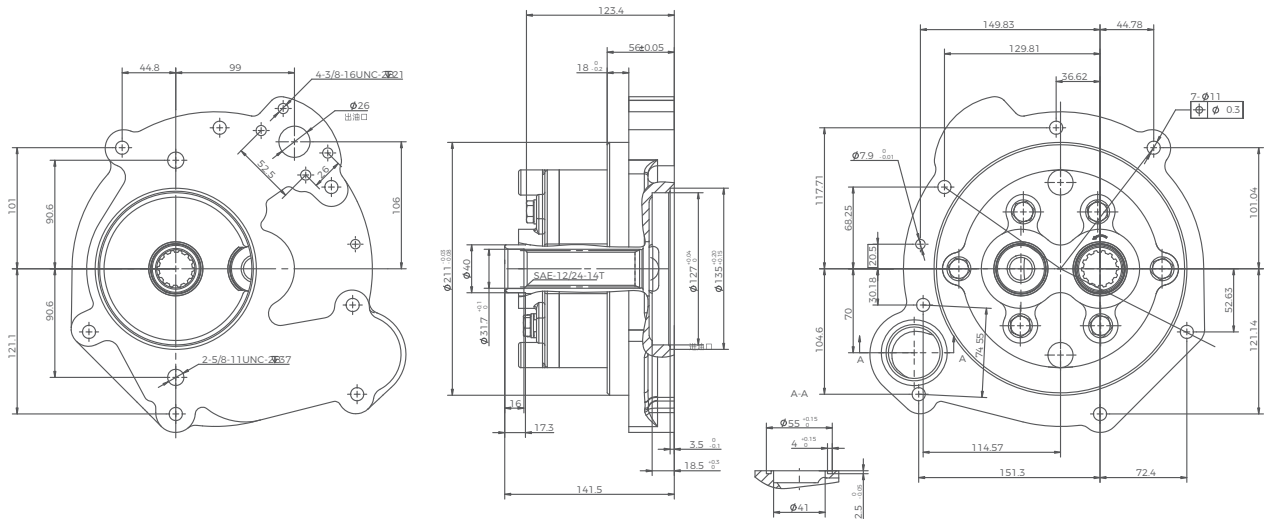


1226658 Dimensions

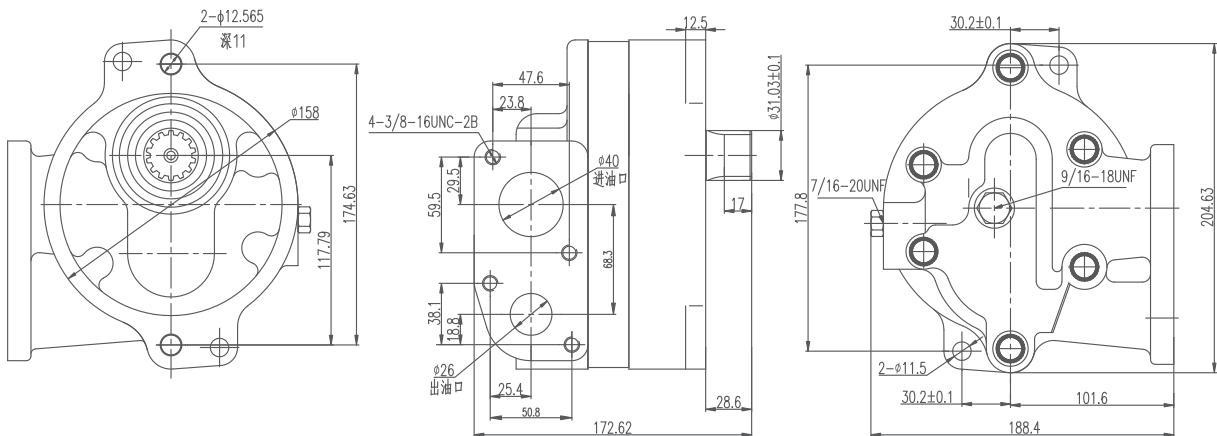


9U9535/3P4002 Cat Pumps

9U9535 Dimensions

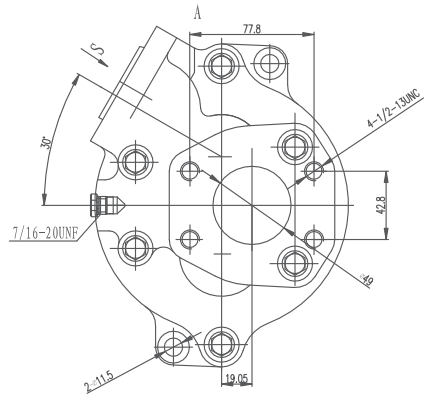
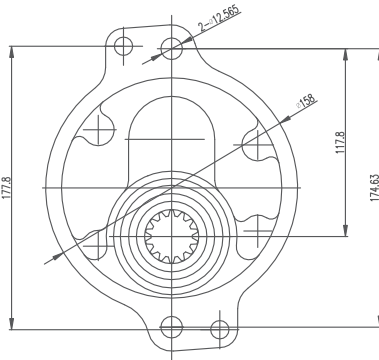
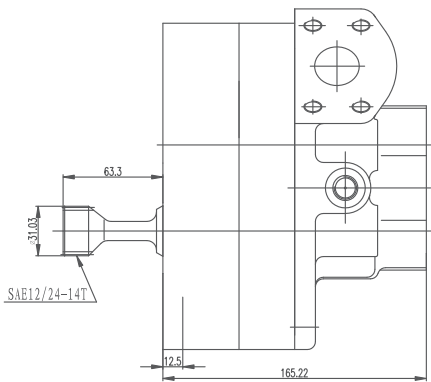


3P4002 Dimensions

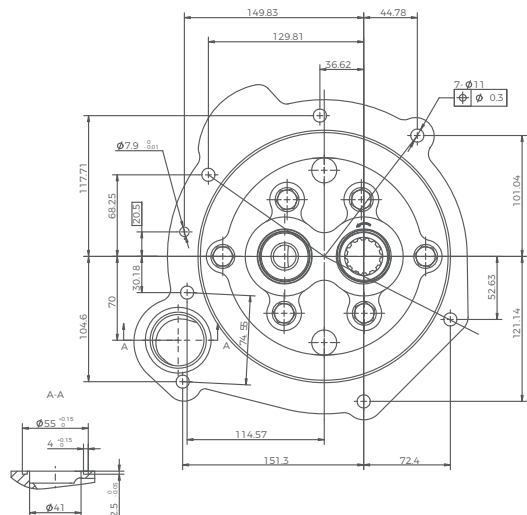
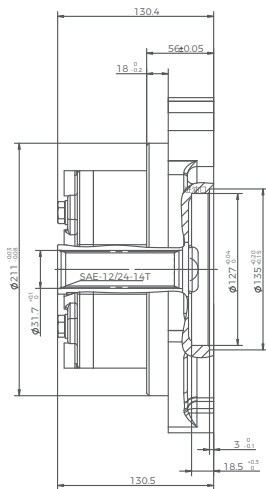
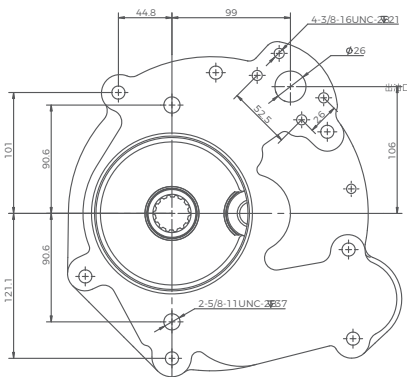


3P0380/8E1217 Cat Pumps

3P0380 Dimensions

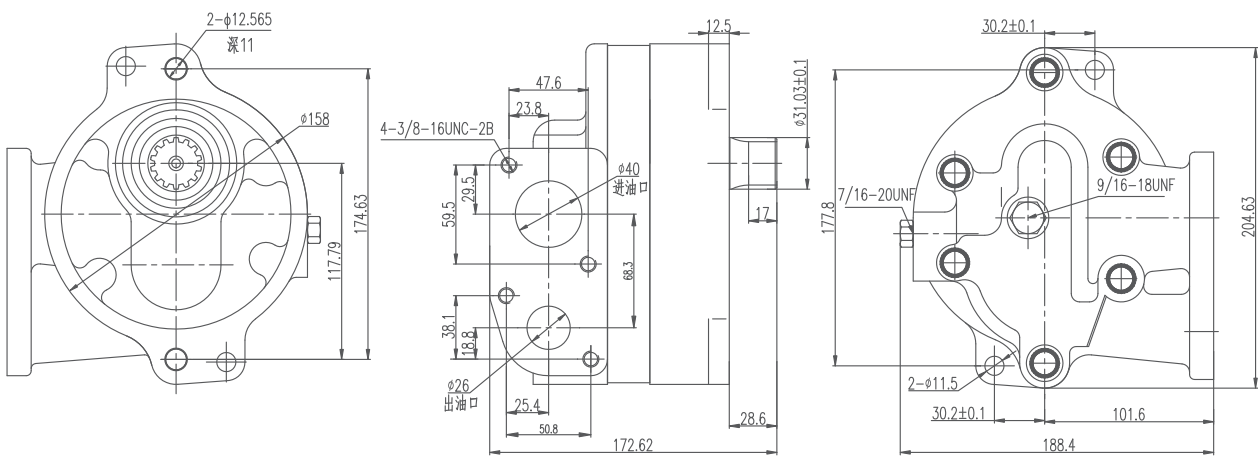


8E1217 Dimensions

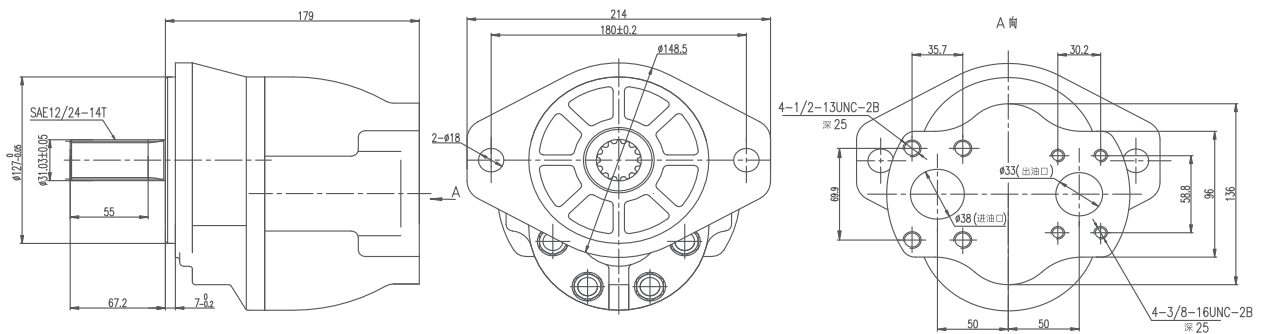


2P9239/3G4768 Cat Pumps

2P9239 Dimensions

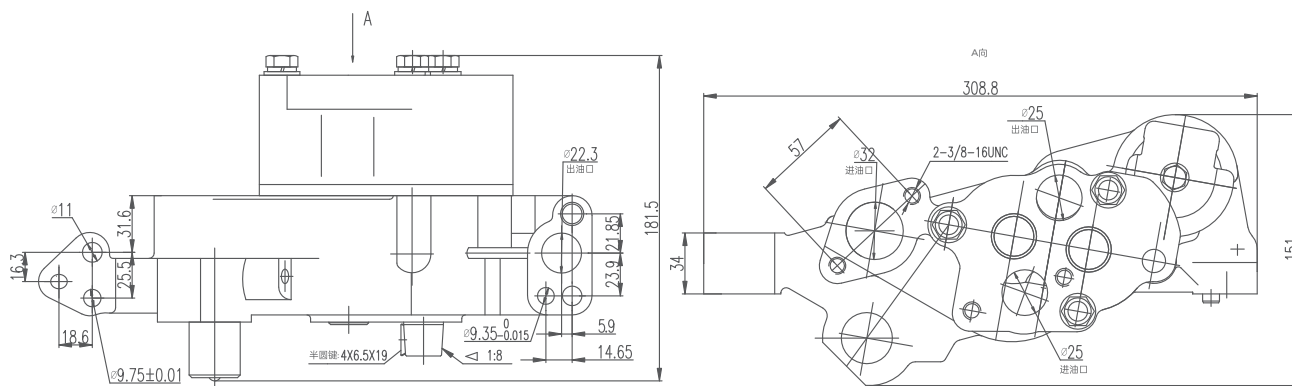


3G4768 Dimensions



4W2448 Cat Pumps

4W2448 Dimensions





Shanghai Ryan Hydraulic Fluid Power Co., Ltd

Add. Room 2201-2202, 1717 North Sichuan Road,
Hongkou Shanghai, China
P.C. 200080
Tel. +86-21-5662 6882
Mail. sales@ryanhydraulic.com

