

CY series pump

Axial Piston Pump
 Sizes: 2.5 to 400
 Max. pressure: 315 Bar



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Introduction

The CY14-1B Hydraulic Pump is of axial piston type with hydrostatic film lubrication of bearing. It makes a feature of compact size, light weight, high efficiency, longer life, simple construction and easy maintenance. This Hydraulic Pump nominal displacement up to (10, 25, 63, 160, 250) ml/r and carries its rating pressure up to 315Bar and a maximum pressure up to 400Bar, and can run with a speed up to (1000, 1500) rpm/min.

Application

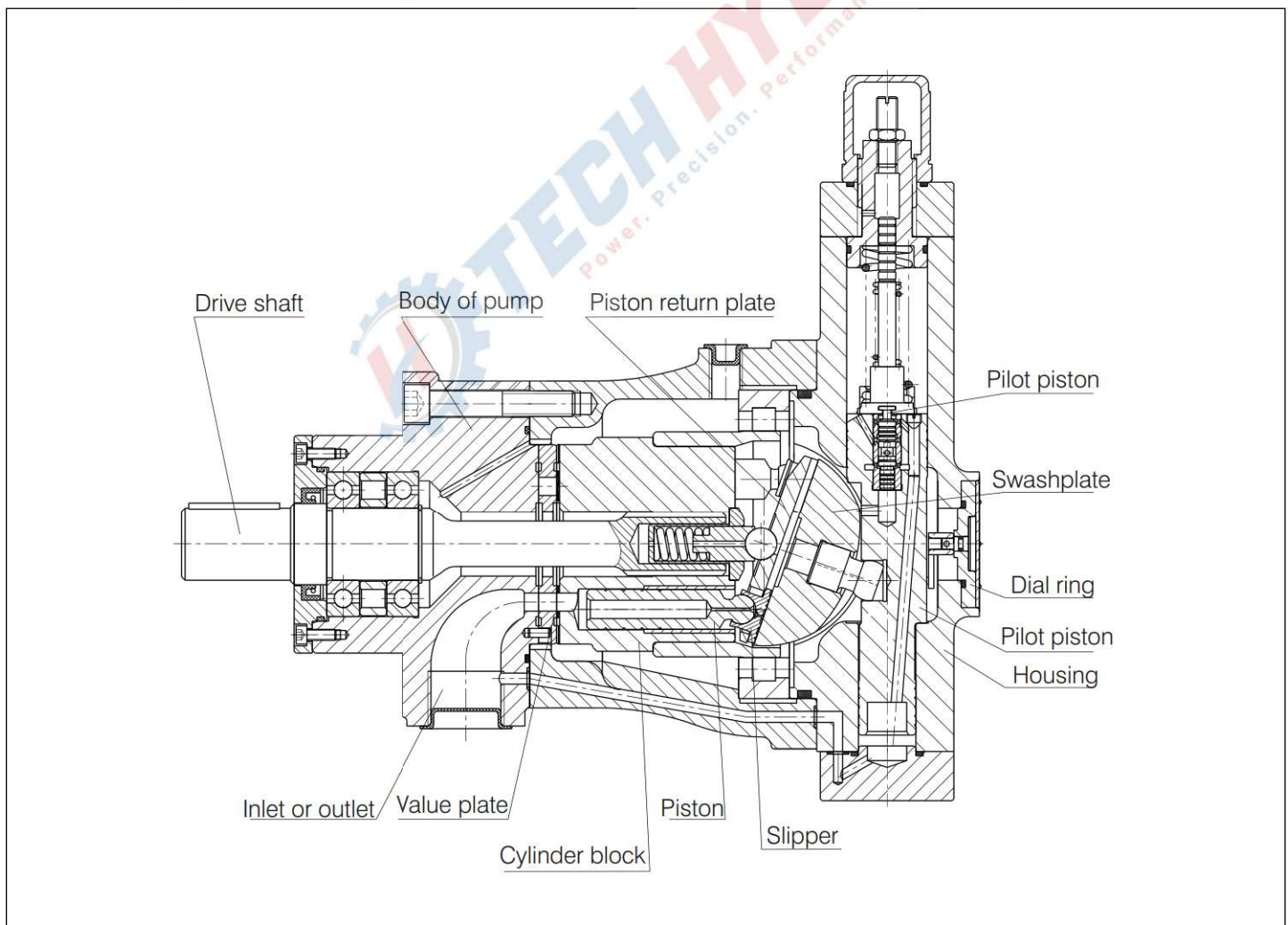
The CY14-1B Axial Piston Pumps of this series are designed to supply the hydraulic presses and actuators with fluid pressure up to 315Bar for producing power as required. These pumps also serve as oil motors. In such case, it is advisable to mention this purpose when ordering. Pumps with various displacement control types are available to meet different purposes. Today they have found wide application in hydraulic equipments of hoisting, transportation, marine, mining, metallurgy, construction, molding, forging, machine tool industry and etc.

Service instruction:

The CY14-1B Axial Piston Pump is a precision hydraulic component, its service life directly depends on correct installation and proper operation. As hydraulic bearings are incorporated in the pump, great care must be taken to keep the fluid from contamination. Cleanness of the working fluid is of special significance to the service life of the pump.

The Axial Piston Pump possesses suction capacity and has a suction head up to 0.5m

Structure Diagram of Axial Piston Type *CY14-1B



Ordering code

Q	10	M	C	Y	14	-	1	B	
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Low noise

= Q

Nominal Displacement (ml/r)

1.25, 2.5, 10, 13, 16, 25, 32, 40, 63, 80, 100, 160, 250, 400

Fixed displacement

= M

Manually operated

= S

Pressure compensated

= Y

Step displacement

= MY

Displacement at constant pressure

= P

Working pressure

315 Bar

= C

Pump

= Y

Motor

= M

Axial piston pump (motor) with rotary body

Code for 1st design

Code for modified design (e.g. A, B, C.....)

clockwise rotation

= No code

Counter clockwise rotation

= F

Technical Specifications

Model		Rated Pressure (Bar)	Nominal displacement (ml/r)	Rated flow (L/min)		Power-output (KW)
				1000rpm	1500rpm	1000rpm
2.5	*CY14-1B	315	2.5	2.5	3.75	1.43
10		315	10	10	15	5.7
25		315	25	25	37.5	14.1
40		315	40	40	60	22.6
63		315	63	63	94.5	35.6
80		315	80	80	120	46.6
160		315	160	160	240	92.2
250		315	250	250	375	133.2
400		315	400	400	600	199.5

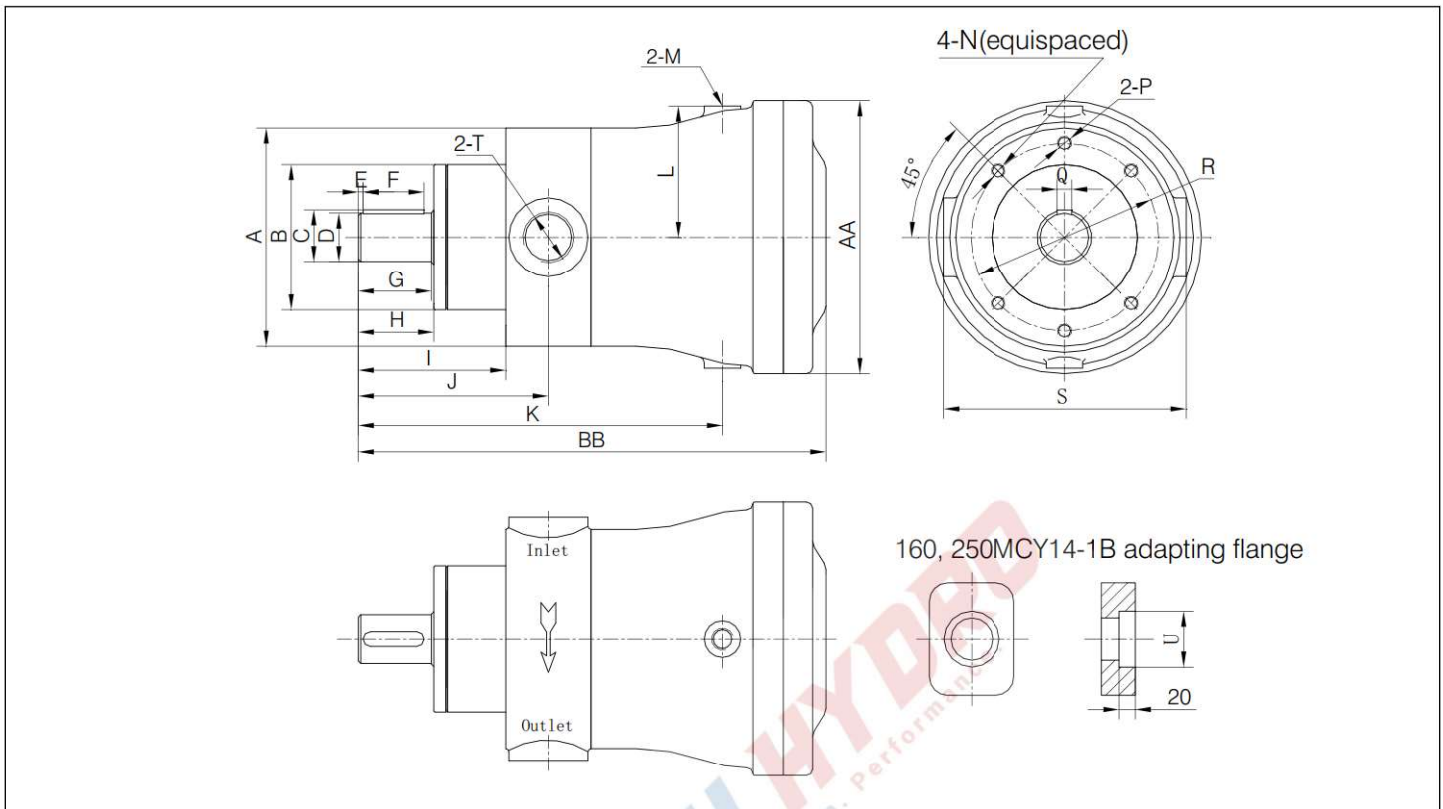
Note:
denotes any type of pump i.e. S, M, Y, P, MY.

Pipeline size

Model	Import (Inner Diameter)	Model	Model
1.5CT14-1B	>Ø13	>Ø10	>Ø8
2.5CY14-1B	>Ø13	>Ø10	>Ø8
5CY14-1B	>Ø13	>Ø13	>Ø8
10CY14-1B	>Ø16	>Ø13	>Ø10
16CY14-1B	>Ø16	>Ø13	>Ø10
25CY14-1B	>Ø24	>Ø24	>Ø10
32CY14-1B	>Ø32	>Ø32	>Ø15
40CY14-1B	>Ø32	>Ø32	>Ø15
63CY14-1B	>Ø32	>Ø32	>Ø15
80CY14-1B	>Ø38	>Ø34	>Ø15
160CY14-1B	>Ø55	>Ø42	>Ø18
250CY14-1B	>Ø64	>Ø50	>Ø20
400CY14-1B	>Ø66	>Ø55	>Ø20

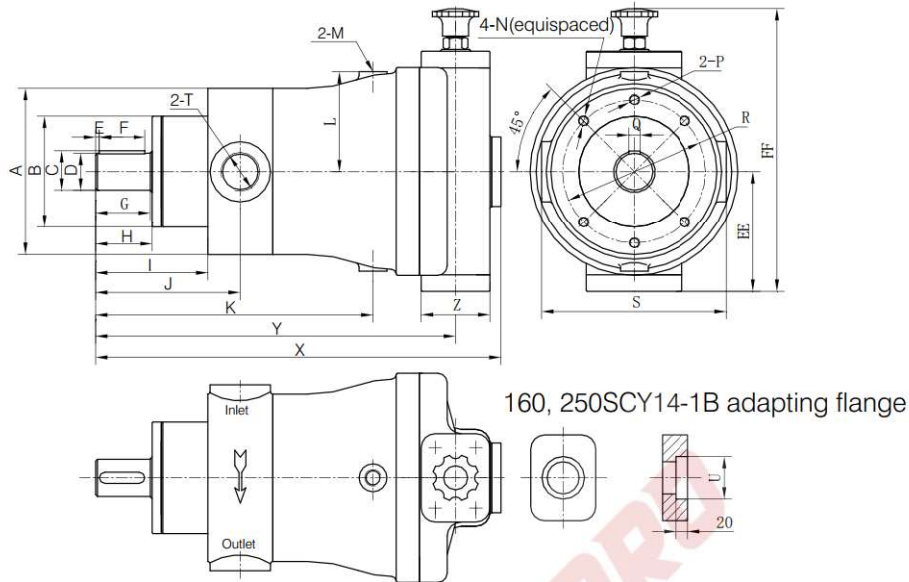
Note: The inner diameter of the drain mouth should not be restricted by nipple size, should try to meet this requirement.

Unit dimensions of MCY14-1B



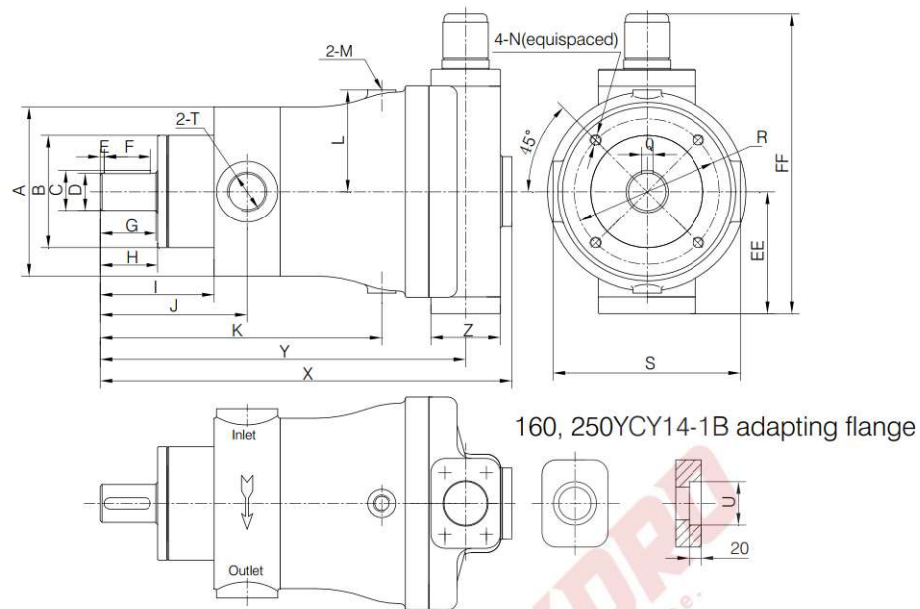
Dimension model	2.5MCY	10(16)MCY	25(40)MCY	63(80)MCY	160MCY	250(400)MCY
A	79x84	ø125	ø150	ø190	ø240	ø280
B(f9)	ø52	ø75	ø100	ø120	ø150	ø180
C	15.8	27.5	32.5	42.8	59	63.9
D(h6)	ø14	ø25	ø30	ø40	ø55	ø60
E	3	4	4	4	4	5
F	20	30	45	50	100	100
G	25	40	52	60	106	110
H	26	41	54	62	110	112
I	62	86	104	122	180	212
J	77	109	134	157	230	272(277)
K	119	194	246	300	411	492(502)
L	44	71	83	108	141	170
M	M10x1	M14x1.5	M14x1.5	M18x1.5	M22x1.5	M22x1.5
N	M8	M10	M10	M12	M16	M20
P					M16	M20
Q(h9)	5	8	8	12	16	18
R	ø80	ø100	ø125	ø155	ø198	ø230
S	84	142	172	200	340	420
T	M18x1.5	M22x1.5	M33x(M42)x2	M42(M48)x2	ø55	ø64(ø66)
U					ø64	ø76
AA	ø92	ø150	ø170	ø225	ø300	ø360
BB	171	253	308	385	525	622(632)

Unit dimensions of SCY14-1B



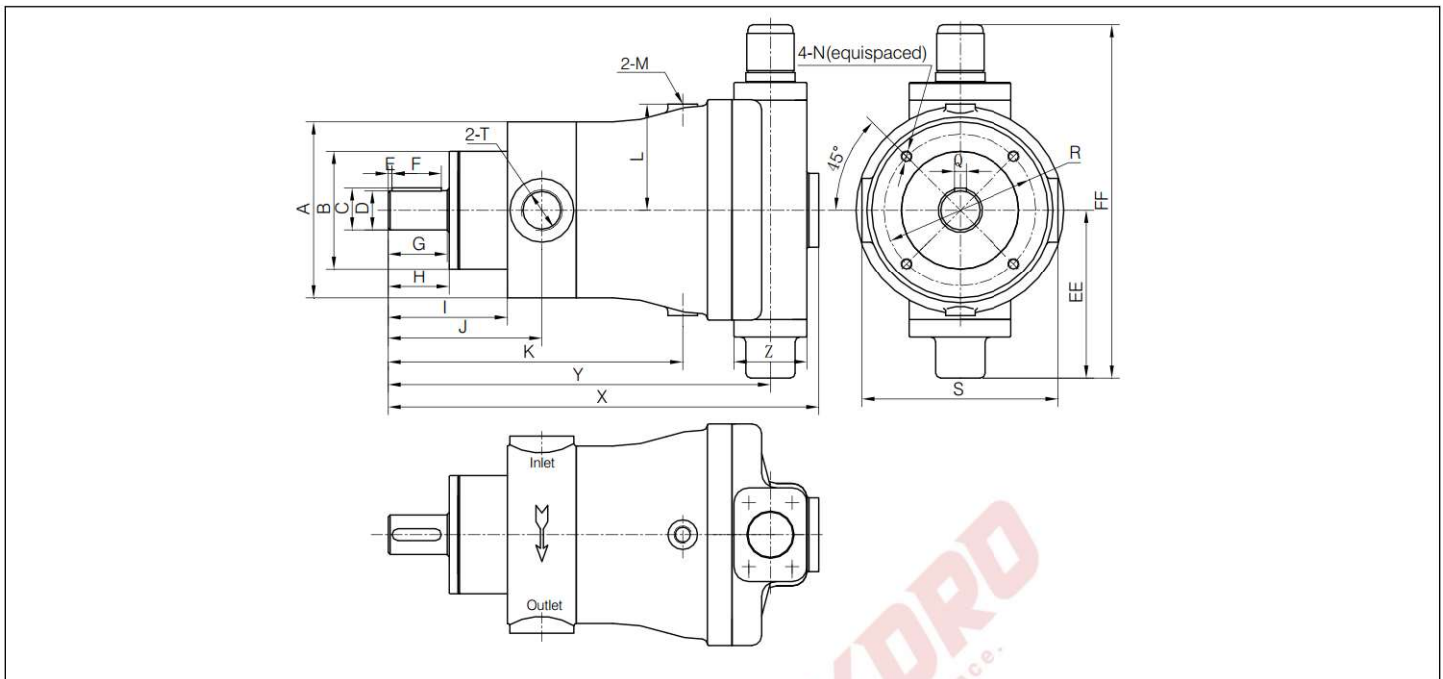
Dimension/model	10(16)SCY	25(40)SCY	63(80)SCY	160SCY	250(400)SCY
A	ø125	ø150	ø190	ø240	ø280
B(f9)	ø75	ø100	ø120	ø150	ø180
C	27.5	32.5	42.8	59	63.9
D(h6)	ø25	ø30	ø40	ø55	ø60
E	4	4	4	4	5
F	30	45	50	100	100
G	40	52	60	106	110
H	41	54	62	110	112
I	86	104	122	180	212
J	109	134	157	230	272(277)
K	194	246	300	411	492(502)
L	71	83	108	141	170
M	M14x1.5	M14x1.5	M18x1.5	M22x	M22x1.5
N	M10	M10	M12	M16	M20
P				M16	M20
Q(h9)	8	8	12	16	18
R	ø100	ø125	ø155	ø198	ø230
S	142	172	200	340	420
T	M22x1.5	M33(M42)x2	M42(M48)x2	ø55	ø64(ø66)
U				ø64	ø76
X	294	362	439	595	690(700)
Y	258	317	390	533	629(639)
Z	50	66	74	100	100
EE	91	101	130	165	203
FF	231	266	305	393	470

Unit dimensions of YCY14-1B



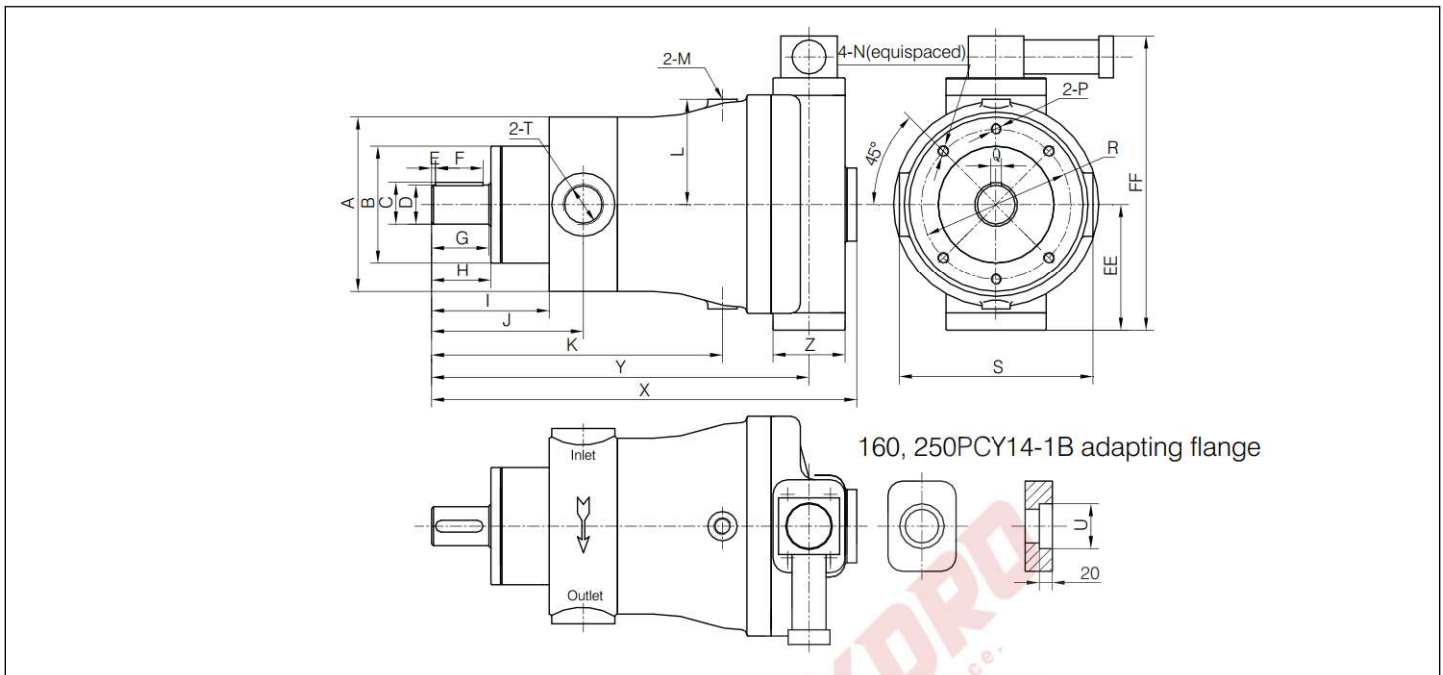
Dimension/model	10(16)YCY	25(40)YCY	63(80)YCY	160YCY	250(400)YCY
A	ø125	ø150	ø190	ø240	ø280
B(f9)	ø75	ø100	ø120	ø150	ø180
C	27.5	32.5	42.8	59	63.9
D(h6)	ø25	ø30	ø40	ø55	ø60
E	4	4	4	4	5
F	30	45	50	100	100
G	40	52	60	106	110
H	41	54	62	110	112
I	86	104	122	180	212
J	109	134	157	230	272(277)
K	194	246	300	411	492(502)
L	71	83	108	141	170
M	M14x1.5	M14x1.5	M18x1.5	M22x1.5	M22x1.5
N	M10	M10	M12	M16	M20
P				M16	M20
Q(h9)	8	8	12	16	18
R	ø100	ø125	ø155	ø198	ø230
S	142	172	200	340	420
T	M22x1.5	M33(M42)x2	M42(M48)x2	ø55	ø64(ø66)
U				ø64	ø76
X	294	362	439	595	690(700)
Y	258	317	390	533	629(639)
Z	50	66	74	100	100
EE	100	120	140	173	210
FF	288	350	400	448	516

Unit dimensions of MYCY14-1B



Dimension/model	10(16)MYCY	25(40)MYCY	63(80)MYCY
A	ø125	ø150	ø190
B(f9)	ø75	ø100	ø120
C	27.5	32.5	42.8
D(h6)	ø25	ø30	ø40
E	4	4	4
F	30	45	50
G	40	52	60
H	41	54	62
I	86	104	122
J	109	134	157
K	194	246	300
L	71	83	108
M	M14x1.5	M14x1.5	M18x1.5
N	M10	M10	M12
Q(h9)	8	8	12
R	ø100	ø125	ø155
S	142	172	200
T	M22x1.5	M33(M42)x2	M42(M48)x2
X	294	362	439
Y	258	317	390
Z	50	66	74
EE	127	153	188
FF	282	335	382

Unit dimensions of PCY14-1B

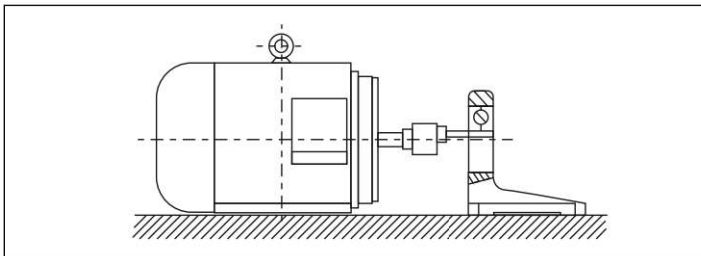


Dimension/model	10PCY	25(40)PCY	63(80)PCY	160PCY	250(400)PCY
A	ø125	ø150	ø190	ø240	ø280
B(f9)	ø75	ø100	ø120	ø150	ø180
C	27.5	32.5	42.8	59	63.9
D(h6)	ø25	ø30	ø40	ø55	ø60
E	4	4	4	4	5
F	30	45	50	100	100
G	40	52	60	106	110
H	41	54	62	110	112
I	86	104	122	180	212
J	109	134	157	230	272(277)
K	194	246	300	411	492(502)
L	71	83	108	141	170
M	M14x	M14x1.5	M18x1.5	M22x	M22x1.5
N	M10	M10	M12	M16	M20
P				M16	M20
Q(h9)	8	8	12	16	18
R	ø100	ø125	ø155	ø198	ø230
S	142	172	200	340	420
T	M22x1.5	M33(M42)x2	M42(M48)x2	ø55	ø76(ø66)
U				ø 64	ø76
X	294	362	439	595	690(700)
Y	258	317	390	533	629(639)
Z	50	66	74	100	100
EE	101	120	140	173	210
FF	255	280	329	396	465

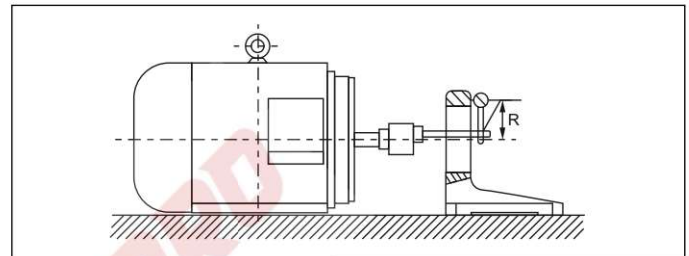
Installation notes

CY type axial piston pump is a one-way rotary pump, generally are positive rotation (clockwise from the shaft end, and vice is reverse; if the user needs to reverse rotary pump when ordering). Accordingly, when installation should first pay attention to the direction of rotation, in and out of the oil mouth over should also confirm to the requirements of the pump on tag. Note in the pump before use to (up) to the oil return his mouth filled with oil. Oil pump flange installation, can use the bracket or pump and prime mover should use common foundation support. Stents, flange and should have enough rigidity, so as to avoid the pump vibration during operation. For the new flow rate is greater than or equal to 160l/min pump, because the engine power is larger, should not be installed on the fuel tank. The pump shaft and installation of the prime mover of the output shaft alignment error and its alignment method is as follows:

Bracket installation: The prime motor output shaft with stent installation precision inspection methods below: At left, alignment error is $\varnothing 0.05$; right, the perpendicularity error of $\varnothing 0.05$ holes distribution circle radius \textcircled{R} for the pump installation).

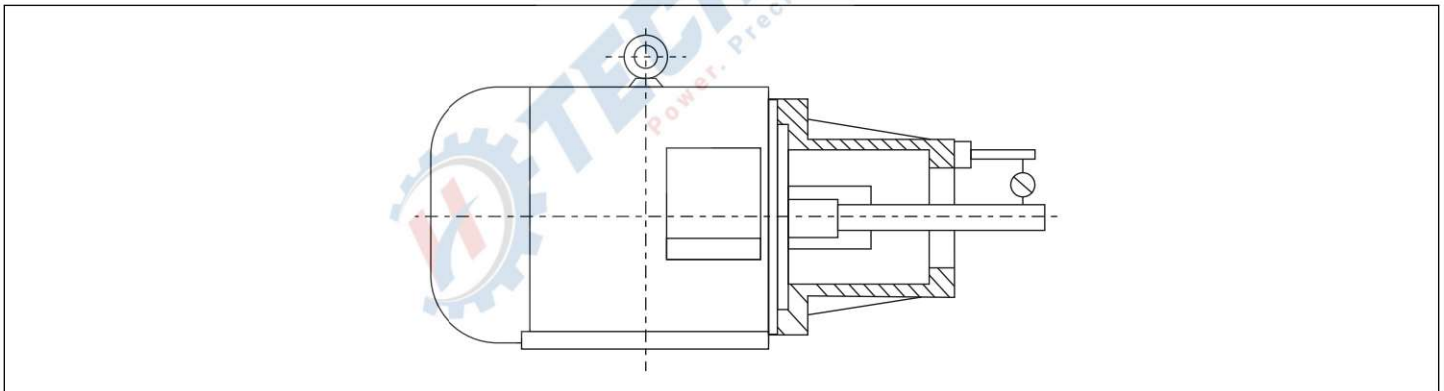


The mounting speed of the pump on the bracket is checked against the verticality of the output shaft of the prime mover.

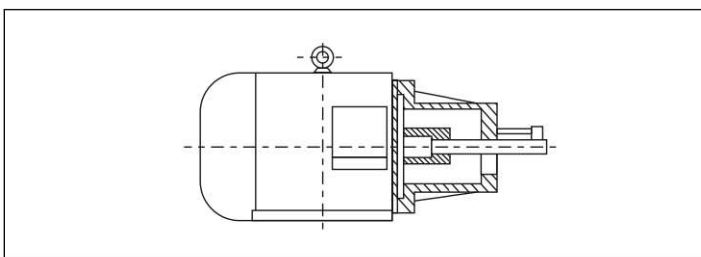


The mounting speed of the pump on the bracket is checked against the verticality of the output shaft of the prime mover.

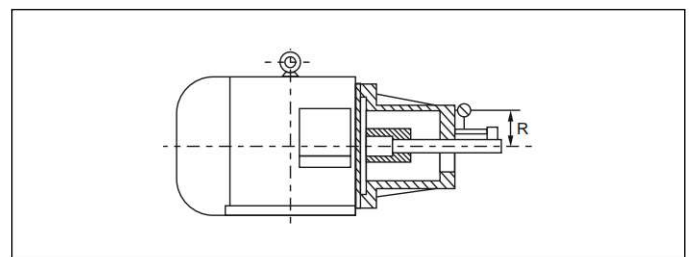
Flange installation: In this type of installation, if the prime mover is a coupling between pump and its installation precision inspection method as above. If the pump shaft directly inserted into the engine output shaft, then install it precision inspecting method below.



Coaxial error is $\varnothing 0.05$ (Coaxial degree of coaxial axis of the coaxial error is not greater than 0.01mm) Check the coaxiality of the output shaft to the prime mover on the pump shaft mounting hole



Coaxial error is $\varnothing 0.05$ pump shaft mounting hole on the flange mounting hole coaxial check



The verticality error is $\varnothing 0.05$ (R is the diameter on the distribution hole of the pump mounting screw hole) pump shaft mounting hole check the vertical mounting angle of the flange

Hydraulic fluid

- This series of pump work in oil low setting is recommended for the hydraulic oil, anti-wear hydraulic oil, aviation hydraulic oil and precision machine tool hydraulic oil, etc.
- Normal working oil temperature of 15~65°C, the ideal working oil temperature to 50±4°C the kinematic viscosity is 27~43mm²/s, oil work under normal operating temperature, shall guarantee that the kinematic viscosity at 65°C was not under 27mm²/s, when 15°C is not higher than 43mm²/s.
- When cold start self-priming caused because of the large oil kinematic viscosity vacuum should not greater than 0.016Mpa, the oil cleanliness control within the NAS10 level (or 19/16). cleanliness will significantly affect the oil pump life!
- Oil pump initial use a month or continuous use after period of time, should be to check the cleanness of the oil, and replace or clean the filter. Unqualified oil to replace the new oil.
- The oil in the oil standard is as follows (confirm to one of the following conditions should be oil change):
 - (1) the viscosity change than the initial viscosity change when using more than plus or minus 10~15%.
 - (2) **Acid**: a value greater than 0.5 mg KOH/g;
 - (3) **Water**: more then 0.1%;
 - (4) **Compared to heavy**: compared to the initial changes when using more than 0.005.

Fuel tanks and filtration:

- Tank design should consider to have a reasonable volume. It can ensure the pump in the normal work under the oil temperature, fully considering the regional different and nature of work, should add cooling and heating equipment when necessary.
- Tank insult should be equipped with air filter, the rest must be sealed in order to avoid dust into the tank.
- The partition should be set up in the oven to remove oil return when the bubble, on clapboard is equipped with 80 mesh sieve.
- Hydraulic system should be set in oil return part 10 ~ 20 of fine filter, in order to maintain the system the oil clean. (pump leak no fine filter, lest make the shell cavity pressure, cause the skeleton seal leak. Pump inlet pipe should not be installed oil filter, in case of increasing oil absorption resistance.)

The operation:

- Operation before check whether the oil pump installation is correct and reliable, coupling installation eligibility requirement, turn the coupling with the hand, should not have stuck phenomenon (coupling axial top can't die, needs to keep about 2mm gap).
- Initial use or stores for a long time after the operation, should be before the start in the pump housing to fill the oil cleaning work, or not allowed to start! Start up to check whether the pump to correct! will overflow valve in the system, such as to adjust to lowest level, it is forbidden to have load to start!
- Should be inching pump start-up, normal oil again after continuous operation.
- In running after a certain period of time without adverse phenomenon, and then gradually adjust to the required pressure and flow rate.
- The overflow valve maximum regulation no more than 350Bar.
- Pump stop using more than three months and use, should first idle running half an hour. Found abnormal heat pump in operation, leakage, vibration and noise, should immediately stop check. When the pump stop, unloading, after downtime.

The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract.

FOR MORE INFORMATION PLEASE CONTACT US

SALES@TECHYDRO.COM.CN



TECHYDRO

☎ +86-15869517019

✉ SALES@techydro.com.cn

🌐 WWW.TECHYDRO.COM.CN

📞 whatsapp/Wechat: +86-15869517019

TEL: +86(0574) -87021030