



**YEOSHE**

# Hydraulic Piston Pump AR Series



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**Efficient Performance**  
**Innovative Technology**  
**Reliable Quality and Service**

**YEOSHE HYDRAULICS CO.,LTD.**



# AR Axial piston pump

A

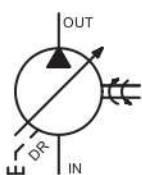
1

AR Axial piston pump

## AR series axial piston pump



- 1.Small and light design,space saving.
- 2.Special alloy material,power saving,low noise,long life.
- 3.Easy to assemble,exquisite appearance ang light weight.
- 4.Application for NC lathe,MC machine,bending machine, punch hydraulic press,high efficiency machine.



nominal pressure:165 bar  
max. pressure:210 bar  
single operation period: 210bar /6ms

## Quick reference data chart

Size	Model	Displacement		Pump Delivery ( 7 bar ) 100 PSI				Pressure Adj Range		Speed		Weight KG (LB)
		cm <sup>3</sup> /rev	in <sup>3</sup> /rev	1500 RPM		1800 RPM		B bar (Mpa)	C bar (Mpa)	Max. RPM	Min. RPM	
				LPM	U.S. GPM	LPM	U.S. GPM					
1	AR8	8.0	0.48	12	3.17	14.4	3.8	12~70 (1.2~7)	12~210 (1.2~21)	1800	500	9(19.84)
2	AR10	10.0	0.61	15	3.9	18	4.76					
3	AR12	12.0	0.73	18	4.76	21.6	5.73					
4	AR16	15.8	0.96	23.7	6.26	28.44	7.51					
5	AR22	22.2	1.35	33.3	8.8	39.96	10.56					

- 1.Installation outlet port top, the pipe bave to less than 2 bar.
- 2.The use of max. pressure override 6 minunt, hydraulic oil clean that see General Installation Infomation.
- 3.YEOSHE offer tandem pumps, and other pumps connection, the connection type use Metric version and SAE version dimensions.



## Type code for standard program

1	16	F	R	01	C	S	K	10				
Series	Size and displacement	Mounting	Rotation	Control device	Pressure adjusting	Port position	Shaft type	Threads code	Voltage	Seals	Design No.	

### Series

1	Axial piston pump	nominal pressure 165 bar	max. pressure 210 bar	single operation period 210bar /6ms	AR
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### Size and displacement

2	Code		8	10	12	16	22	
	Size		1	2	3	4	5	
	Displacement	cm <sup>3</sup> / rev	8.0	10.0	12.0	15.8	22.2	
		in <sup>3</sup> / rev	0.48	0.61	0.73	0.96	1.35	in <sup>3</sup> = 16.378 cm <sup>3</sup>

### Mounting

3	Flange mtg	F
	Foot mtg	L

### Rotation (when viewed from shaft end)

4	 clockwise	R
	 counter clockwise	L

\* YEOSHE only have stock for standard direction of pipe connection and thread, please refer to page A-15.

### Control type(for more details please refer to V series pump catalogue)

5	Standard pressure control	01		
	Remote pressure control	G		
	Load-sensing control	Pressure	HL <input type="checkbox"/>	
		<input type="checkbox"/> A		Low : 7KG
		<input type="checkbox"/> B		Mid : 14KG
	<input type="checkbox"/> C	High : 21KG		
	2-stage pressure & Flow control	C		
	2-stage pressure & Flow control + Remote	CG		
	2-stage pressure & Flow control + Low tension unloading	CR		
	Low tension unloading + Pressure control + Remote	D		
	Low tension unloading + Pressure control + Remote	DG		
	Electric 2-stage pressure control	E		
	Electric 2-stage pressure control + Remote	EG		
	Electric 2-stage pressure & Flow control	F		
	Electric 2-stage pressure & Flow control + Remote	FG		
Remote pressure compensator with NG6 interface	GM			
Remote pressure compensator + Proportional pressure valve	GJ			



## Type code for standard program

1	16	F	R	01	C	S	K	10		-		
Series	Size and displacement	Mounting	Rotation	Control device	Pressure adjusting	Port position	Shaft type	Threads code	Voltage	Seals	Design No.	

Control type(for more details please refer to V series pump catalogue)

5	Remote pressure compensator + Electrical unloading	GR
	Remote pressure compensator + 2-stage pressure control	GB
	Remote pressure compensator + Electrical unloading + 2-stage pressure control	GC
	None pressure compensator (fixed displacement) (pressure protection required)	LN
	Electrical 2-stages flow compensator	LS
	Fixed displacement 2 stage flow compensator (pressure protection required)	LC

Pressure adjusting

6	2~70 bar    1.2 ~ 7 Mpa	B
	12~210 bar    1.2 ~ 21 Mpa	C

Port position

7	None :Rear port.(Inlet with flange, Outlet with thread type.)	<input type="checkbox"/>
	Side port with thread type	S
	Side port.(Inlet with thread type, Outlet with flange interface.)	F
	Side port with flange	H

\* YEOSHE only have stock for standard direction of pipe connection and thread, please refer to page A-15.

Shaft type

8	Key	K
	Splind shaft 13T 16 / 32 DP	G
	Splind shaft 9T 16 / 32 DP	T

Threads type

9	PT(RC)	10	※
	BSPG (G)	40	
	NPT	50	

\* YEOSHE only have stock for standard direction of pipe connection and thread, please refer to page A-15.

Voltage

10	None	Y	※
	AC100V (50/60HZ)	A	
	AC110V (60HZ)	B	
	AC200V (50/60HZ)	C	
	AC220V (60HZ)	D	
	DC 12V	E	
	DC 24V	F	

Seals

11	NBR	<input type="checkbox"/>	※
	VITON	V	

※ standard type



# Diagrams

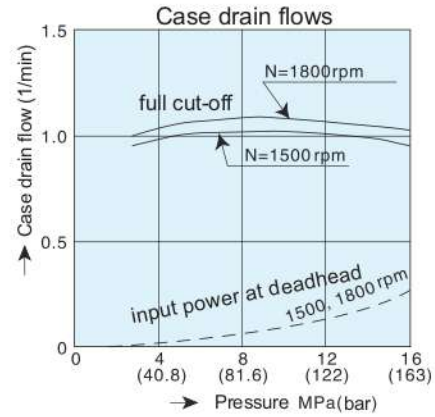
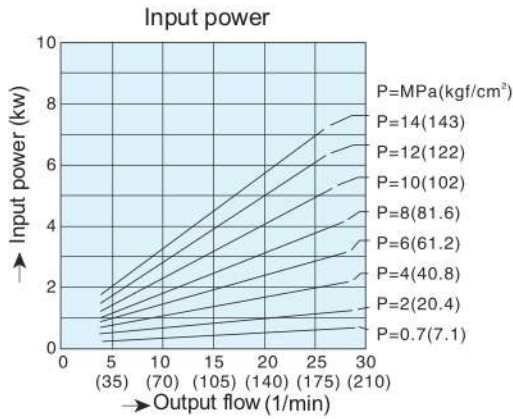
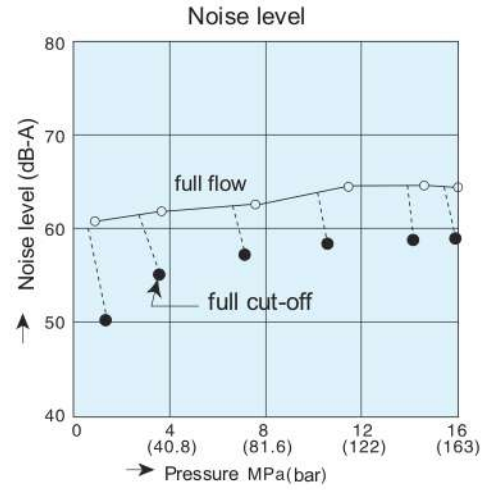
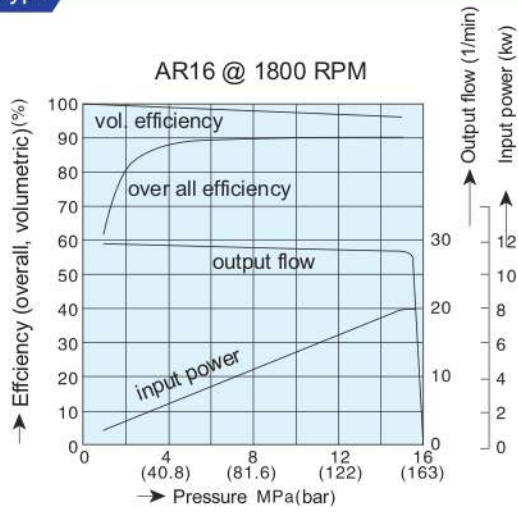
Speed: 1800 r/min Hydraulic oil: ISO VG32 Oil temperature: 50°C

## AR16 type

A

4

AR Axial piston pump



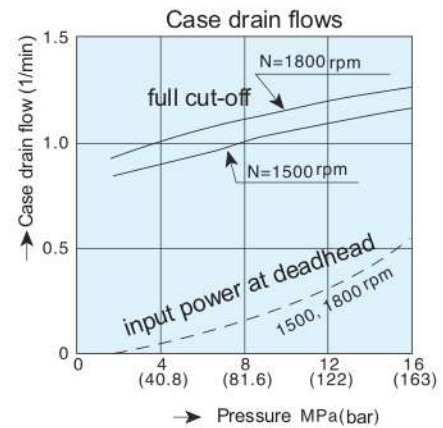
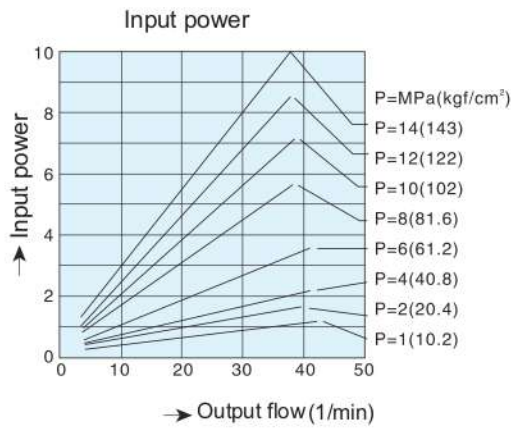
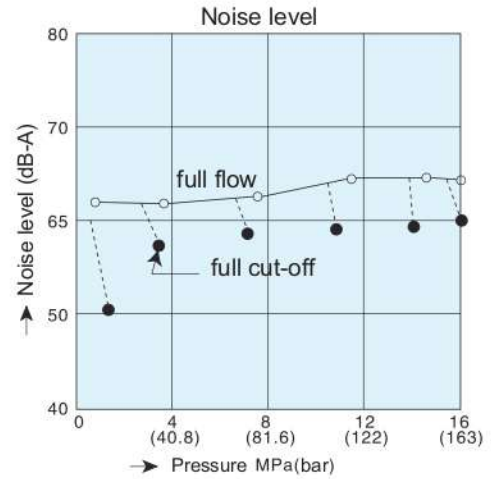
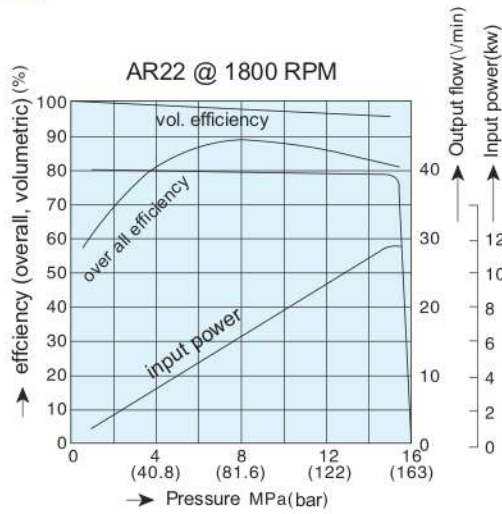
Test condition:

The noise of the single pump is according to the standard of DIN45 635, the rule of land 26 at low echo measure laboratory, measuring that the distance of microphone is 1m and 1500rpm.

## Diagrams

Speed: 1800 r/min Hydraulic oil: ISO VG32 Oil temperature: 50°C

## AR22 type



Test condition:

The noise of the single pump is according to the standard of DIN45 635, the rule of land 26 at low echo measure laboratory, measuring that the distance of microphone is 1m and 1500rpm.

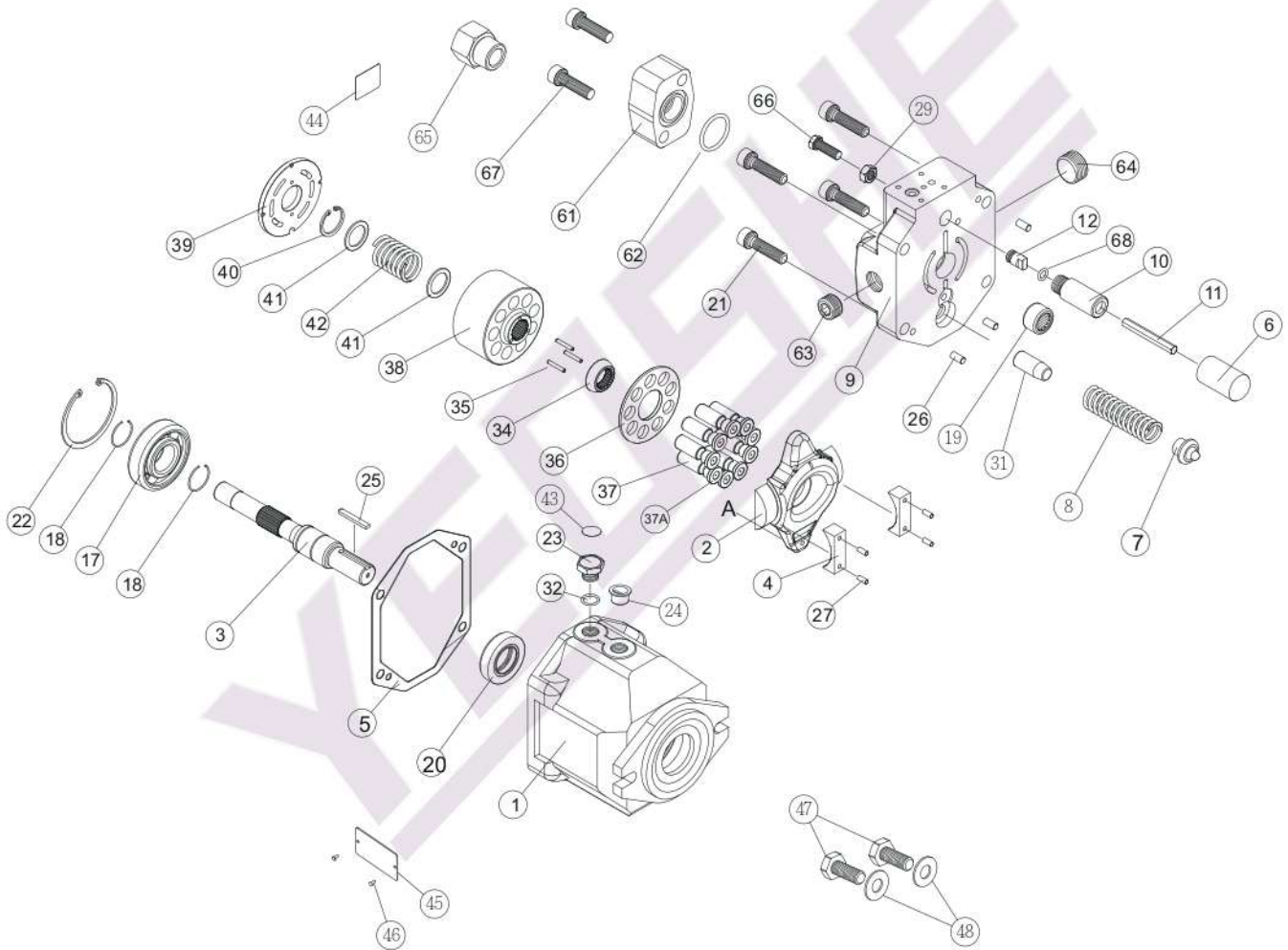


# AR Axial piston pump exploded view

A

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AR Axial piston pump





## AR Axial piston pump exploded view

## AR16,22 pump

Item		Item	
1	Pump body	31	Sleeve piston
2	Swashplate	32	O-ring
3	Shaft	34	Ball guide
4	Trunnion carrier	35	Pin-cylinder block
5	Body seal	36	Slipper retainer
6	Servo piston sleeve	37A	Piston shose
7	Servo carrier	37	Piston assembly
8	Servo spring	38	Cylinder block
9	Pump cover	39	Valve plate
10	Flow sleeve	40	Snap ring
11	Flow pin	41	Washer cylinder block
12	Seal pin	42	Spring-cylinder block
17	Shaft bearing	43	Circular sticker
18	Snap ring	44	Square sticker
19	Cover bearing	45	Nameplate
20	Shaft seal	46	Motor pin
21	Cover screw	47	Screw
22	Snap ring	48	Washer
23	Screw	61	Flange
24	Plug	62	O-ring
25	Key	63	Plug
26	Roller	64	Plug
27	Pin-trunnion carrier	65	Adaptor
29	Nut	66	Spindle
		67	Screw
		68	O-ring





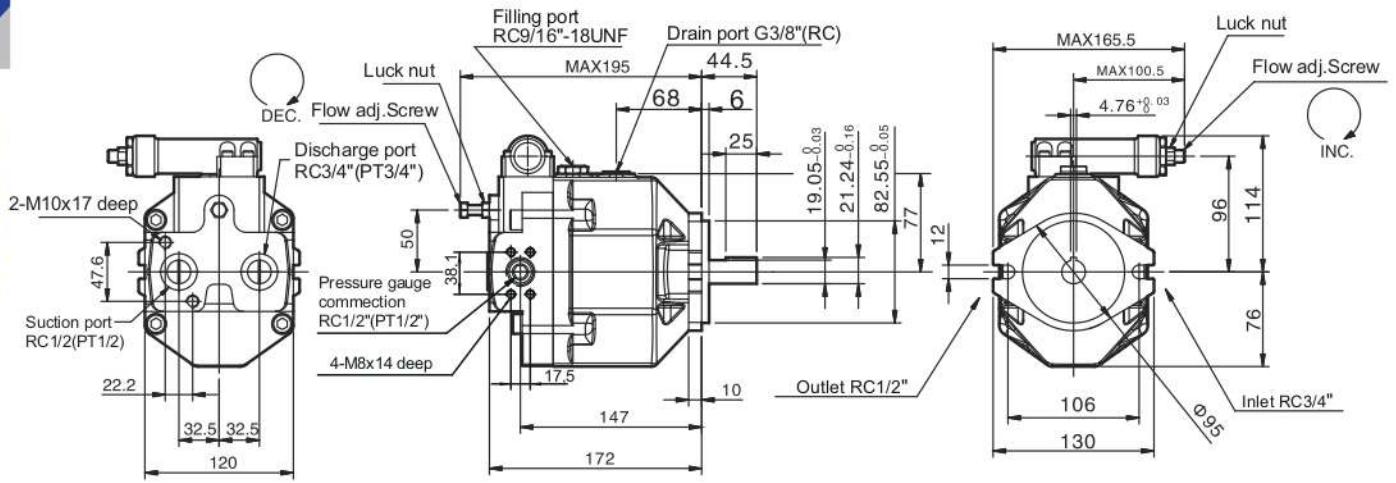
# Dimension(For different control methods)

## AR16 / 22 01

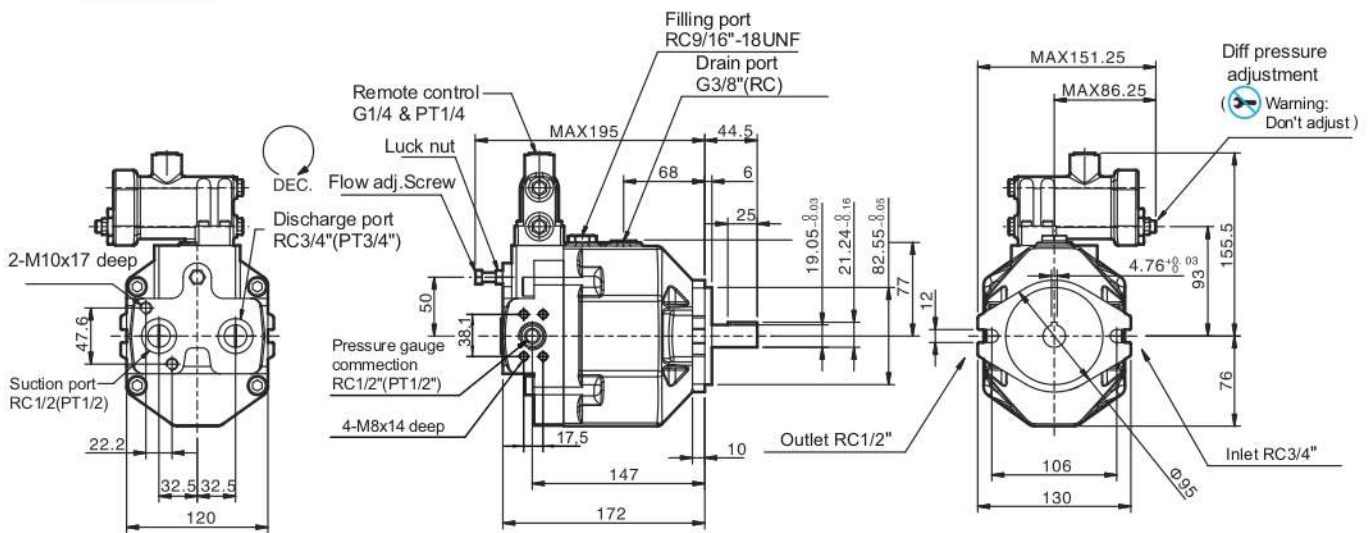
A

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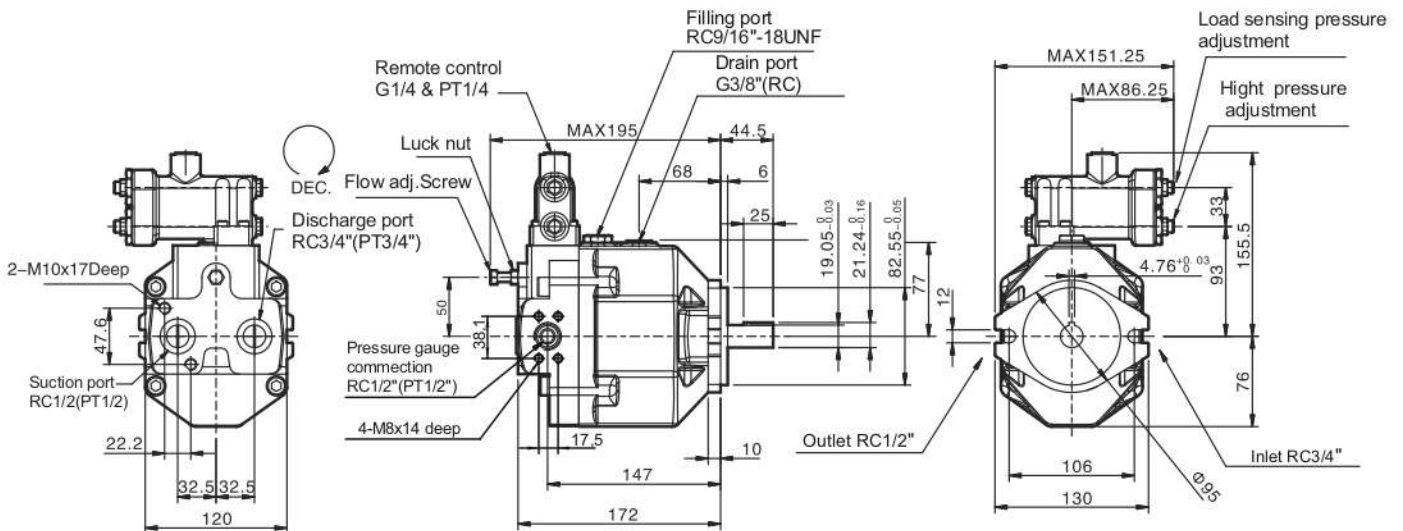
AR Axial piston pump



## AR16 / 22 G

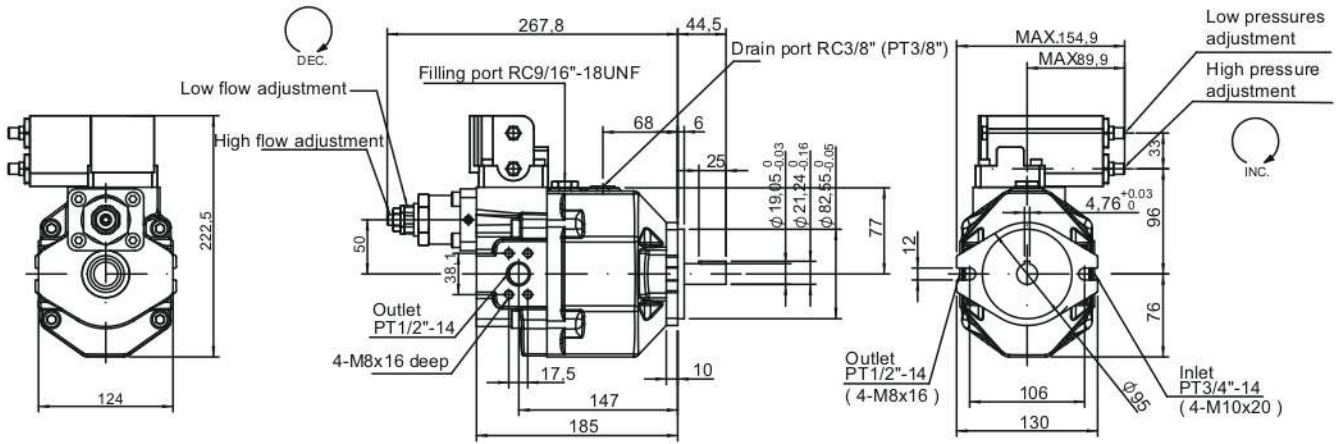


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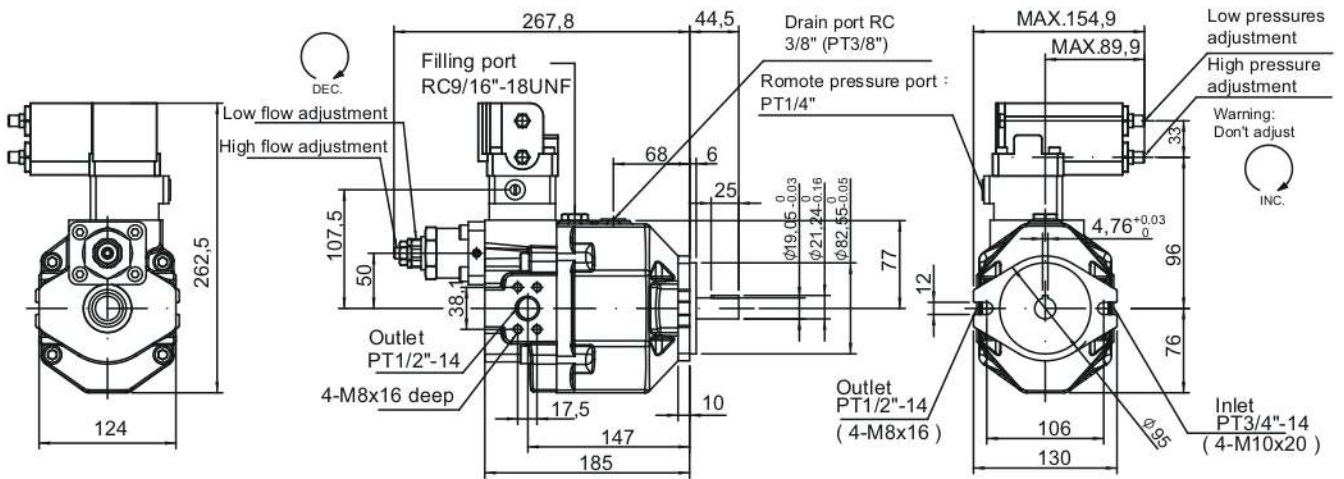


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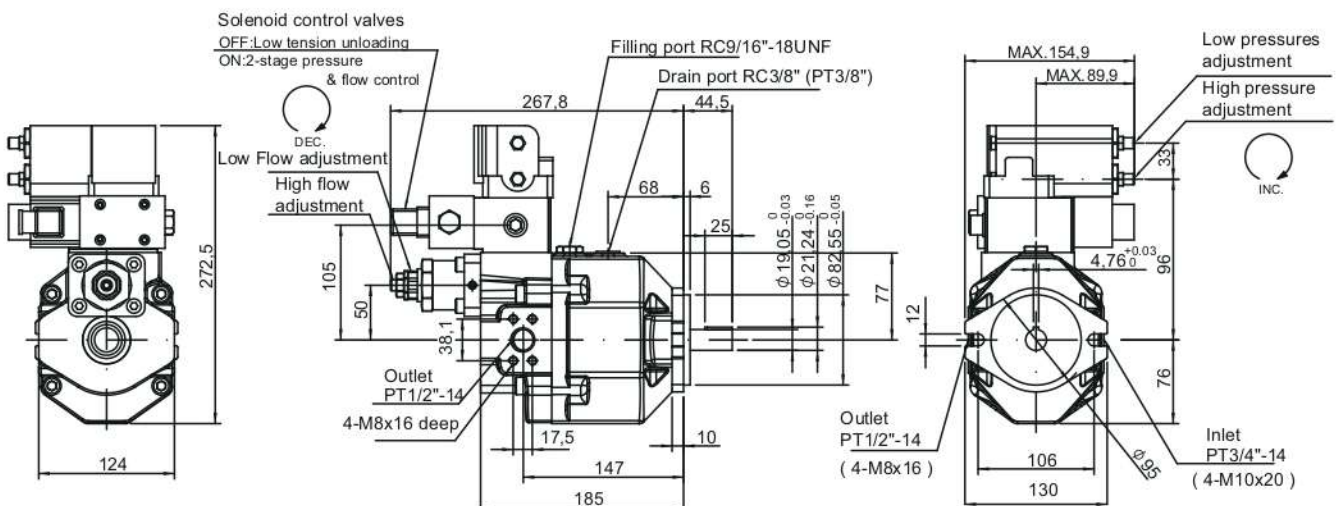
AR16 / 22C



AR16 / 22 CG



AR16 / 22 CR

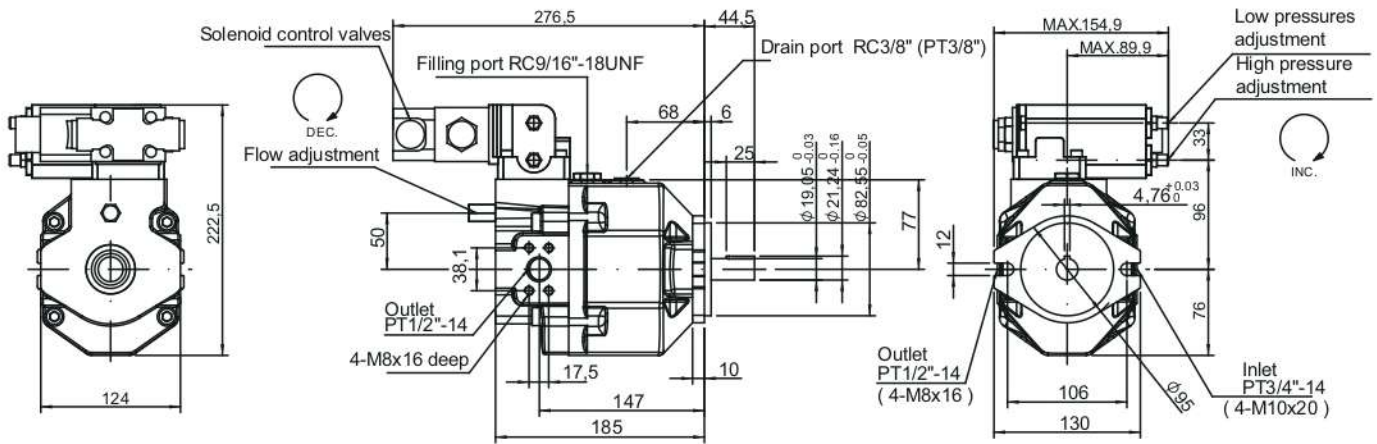




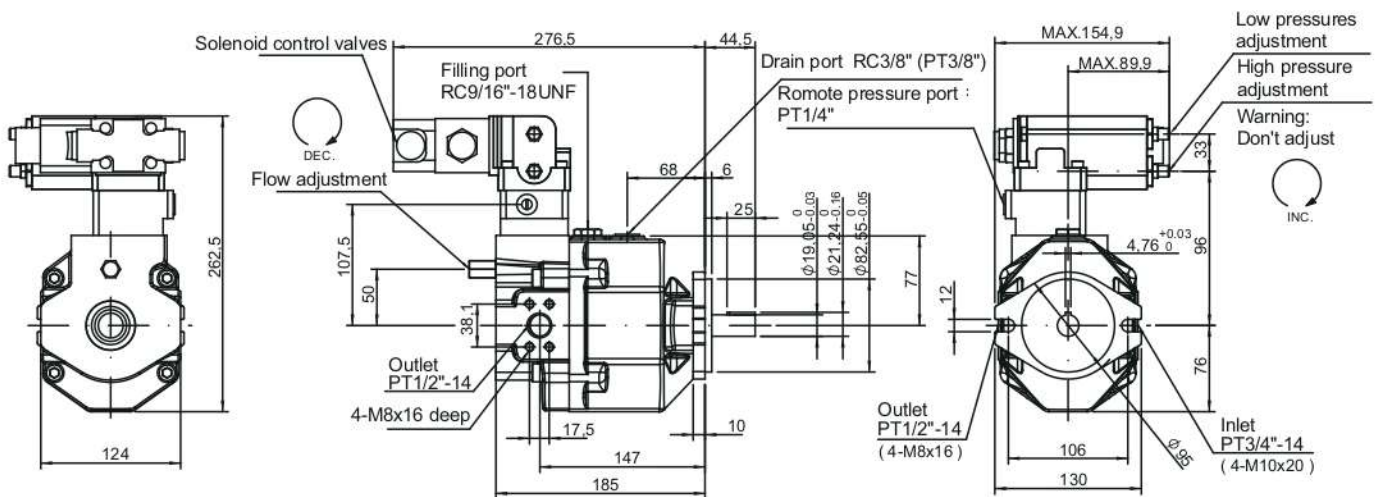


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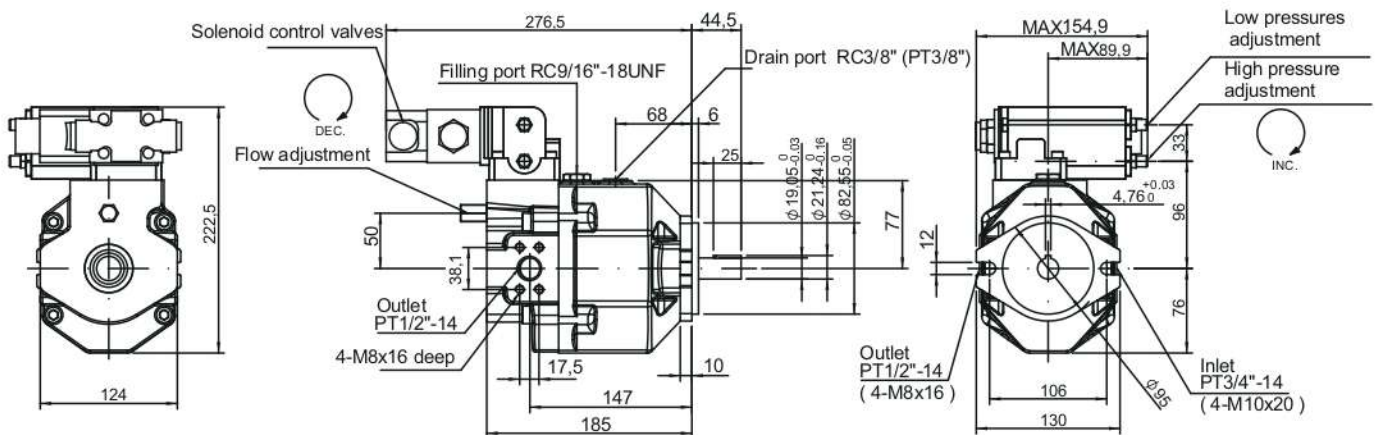
## AR16 / 22D



## AR16 / 22 DG



## AR16 / 22 E



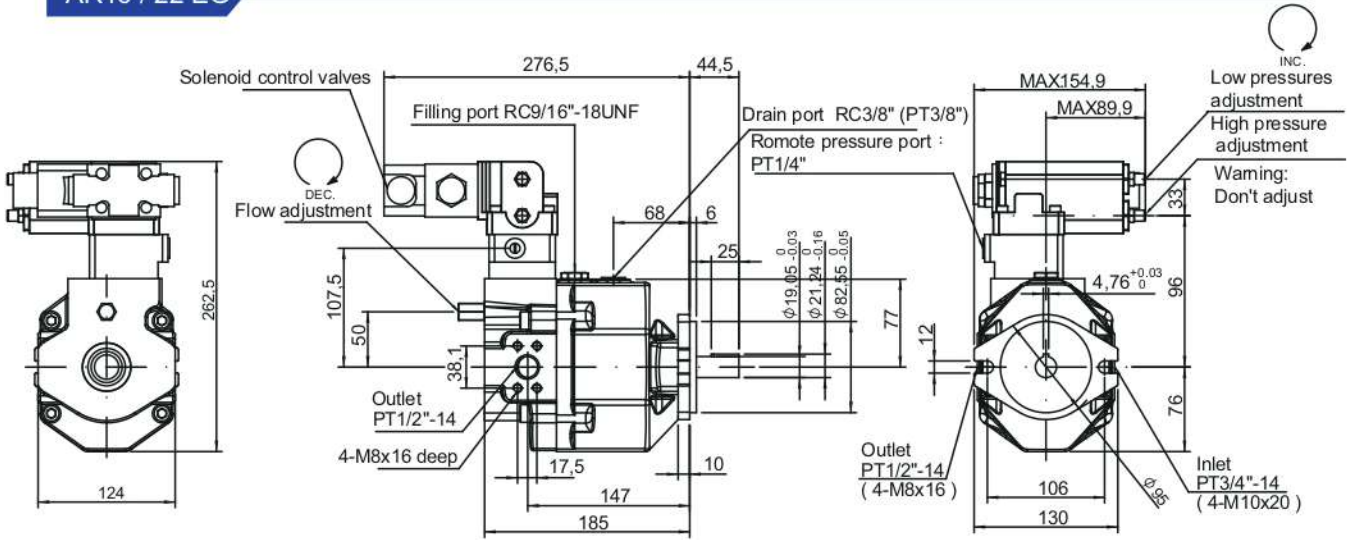
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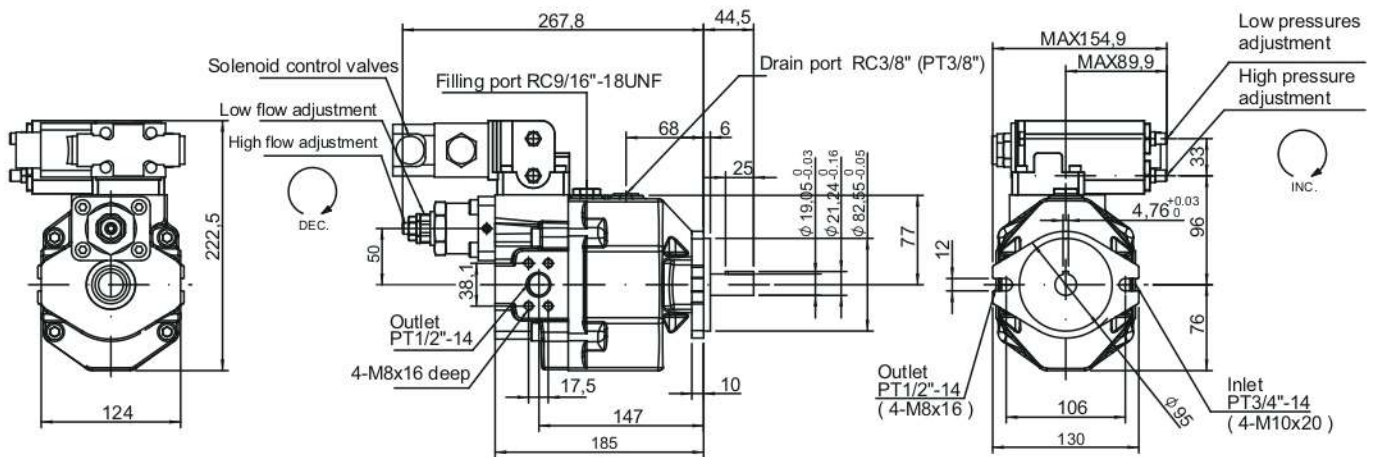
AR Axial piston pump

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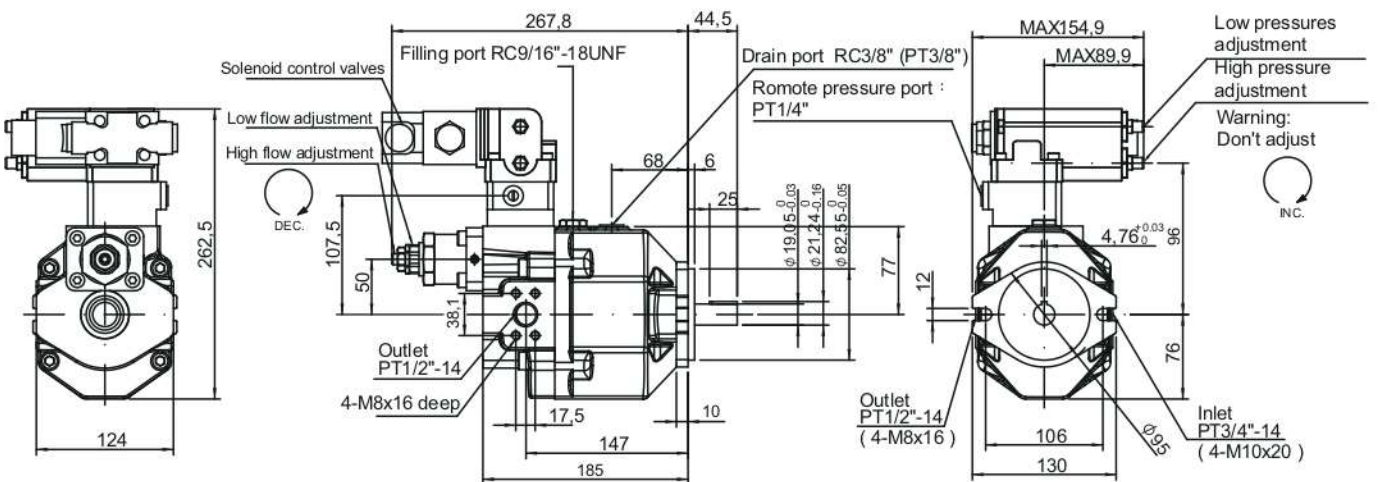
AR16 / 22 EG



AR16 / 22 F



AR16/22 FG

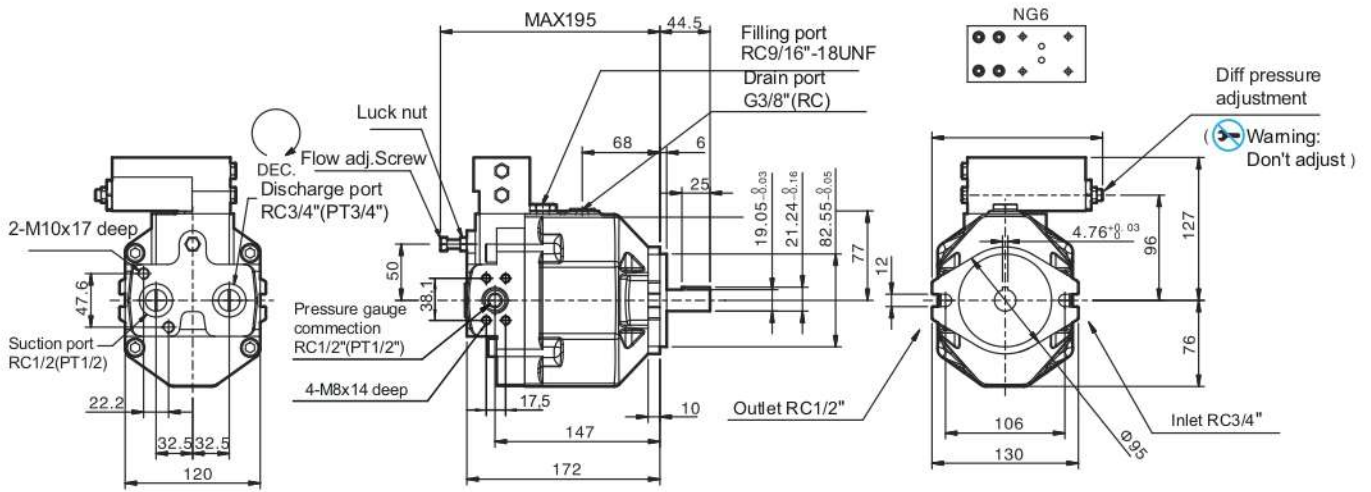




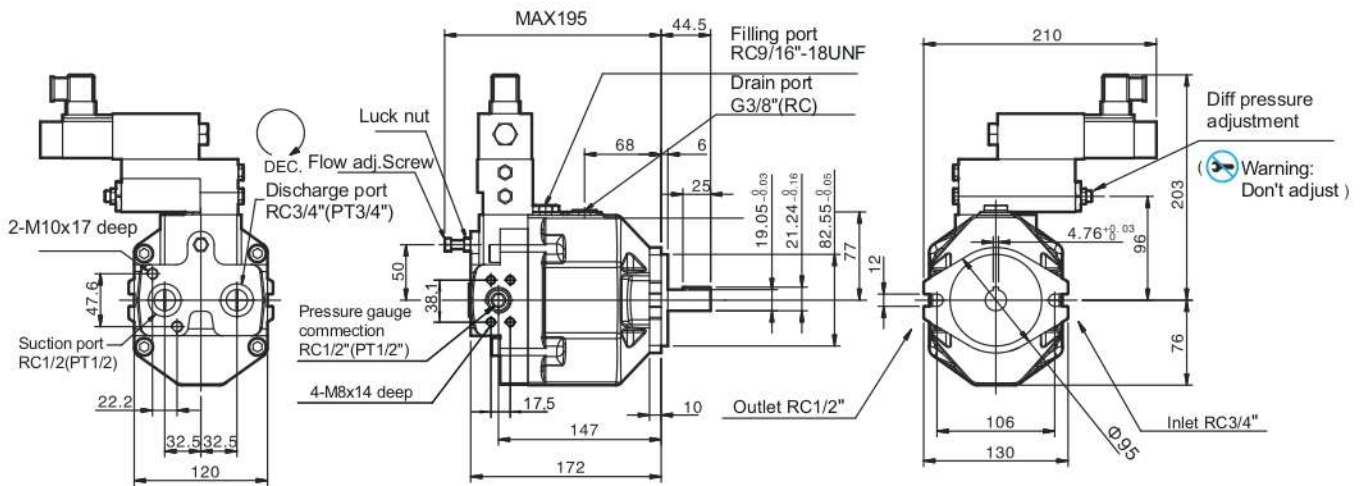


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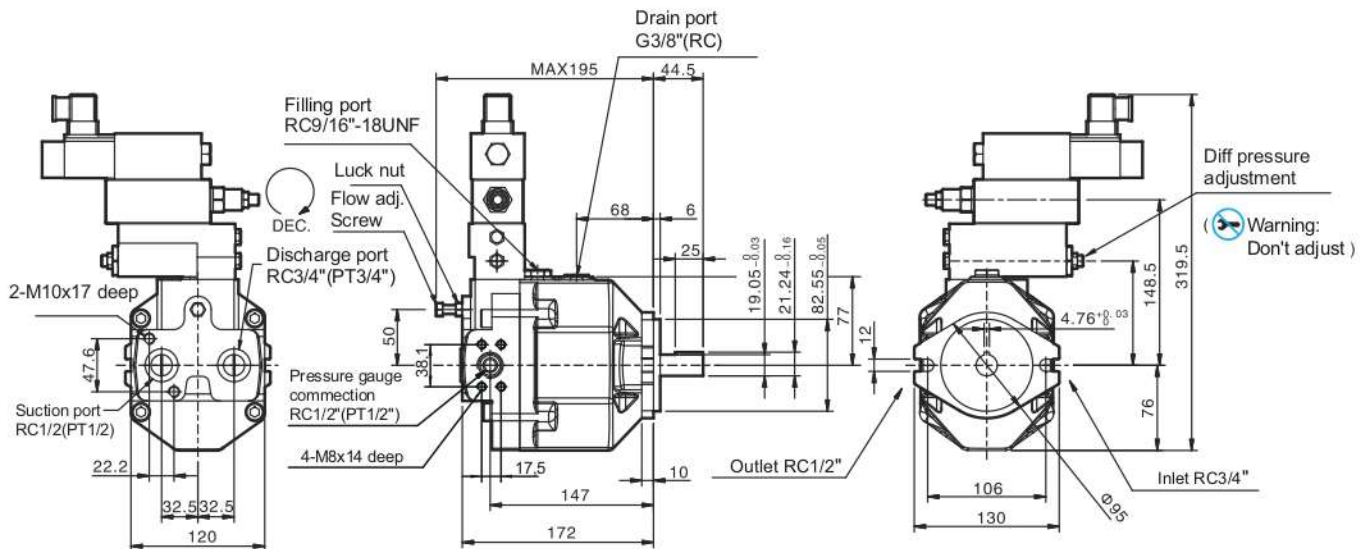
## AR16 / 22 GM



## AR16 / 22 GJ



## AR16 / 22 GR



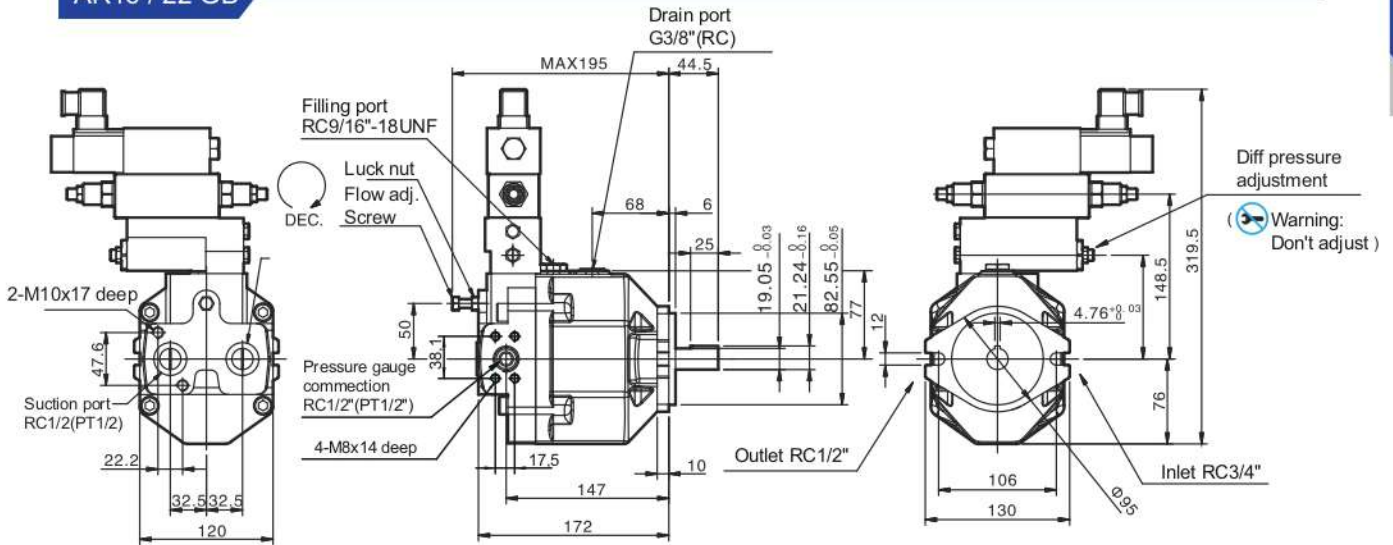
Dimension(For different control methods)

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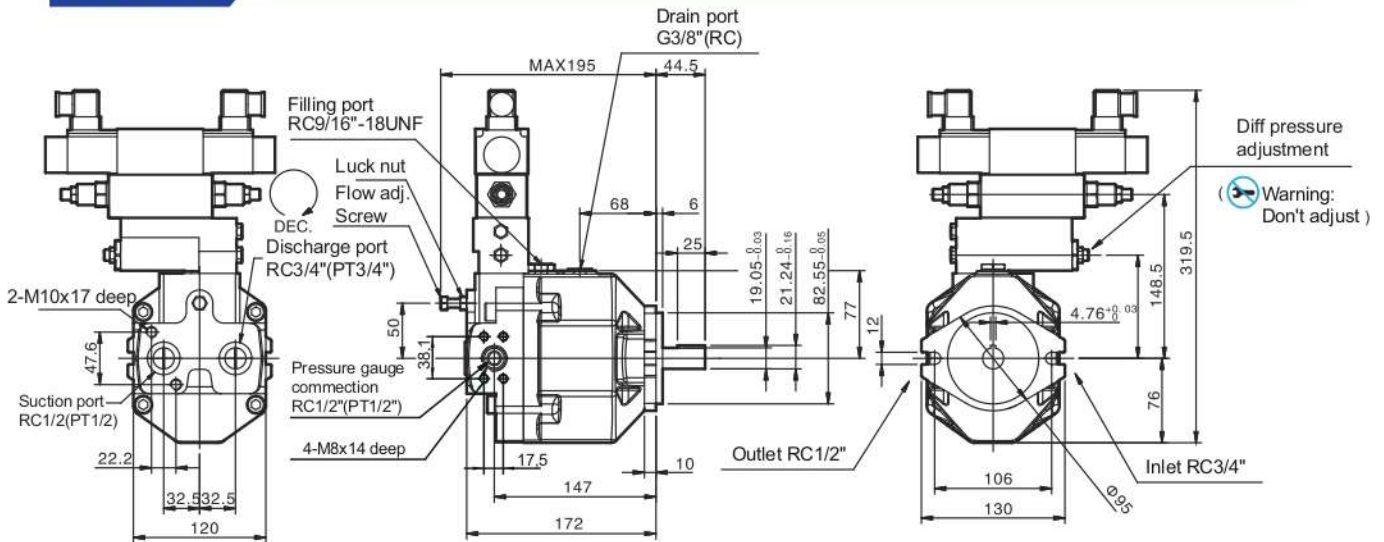
13

AR Axial piston pump

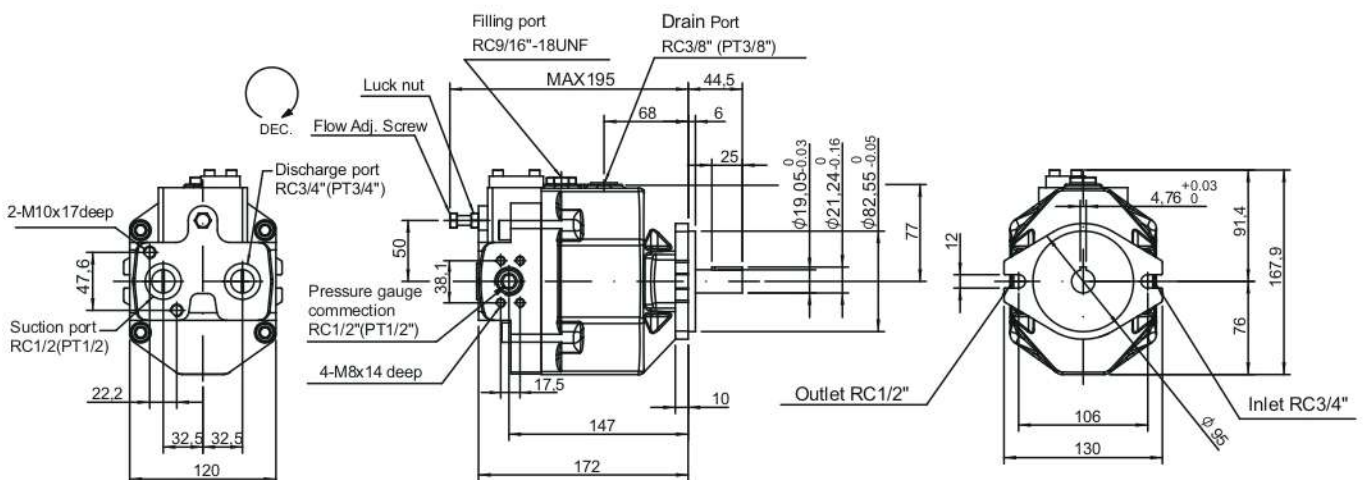
AR16 / 22 GB



AR16 / 22 GC



AR16 / 22 LN

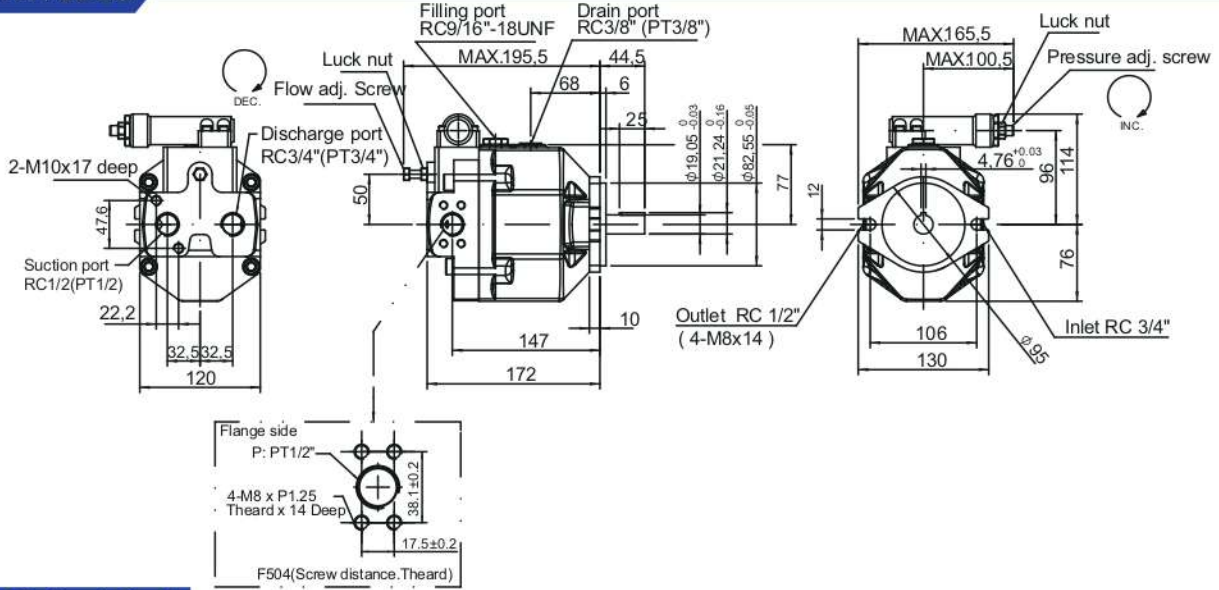




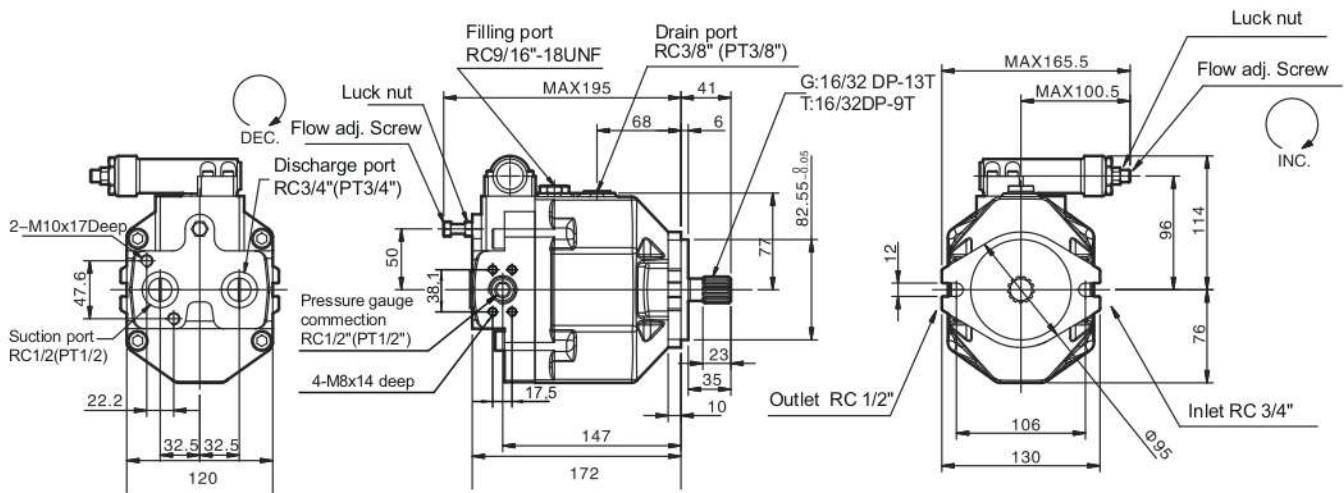


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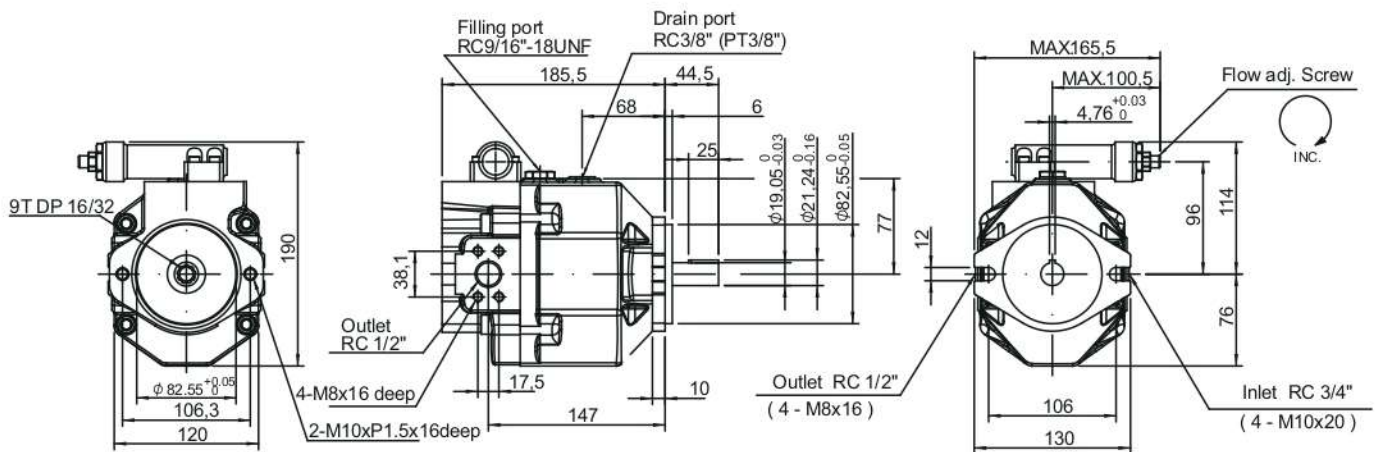
## AR16 / 22 LC



## AR Splined Shaft



## AR Thru drive



## Stock Status Table

A

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AR Axial piston pump

Rotation	Direction of pipe connection		Tread	Status	External Dimension
R clockwise	None	Rear Ports	10:PT	●	AR16/22 RN10
		Flange for inlet	40:G	●	AR16/22 RN40
		Thread for outlet	50:NPT	△	
	S	Side ports	10:PT	●	AR16/22 RS10
		Thread for inlet	40:G	●	AR16/22 RS40
		Thread for outlet	50:NPT	△	
	F	Side ports	10:PT	●	AR16/22 RF10
		Thread for inlet	40:G	△	
		Flange interface for outlet (It can connect with manifold block, compact type)	50:NPT	△	
	H	Side ports	10:PT	●	AR16/22 RH10
		Flange for inlet	40:G	●	AR16/22 RH40
		Flange for outlet	50:NPT	△	
L counter clockwise	None	Rear Ports	10:PT	●	AR16/22 LN10
		Flange for inlet	50:NPT	△	
		Thread for outlet			
	S	Side ports	10:PT	△	
		Thread for inlet	40:G	△	
		Thread for outlet	50:NPT	△	
	F	Side ports	10:PT	△	
		Thread for inlet	40:G	△	
		Flange interface for outlet (It can connect with manifold block, compact type)	50:NPT	△	
	H	Side ports	10:PT	△	
		Flange for inlet	40:G	△	
		Flange for outlet	50:NPT	△	

● There is stock, it can delivery fast.

△Not standard, please check it with YEOSHE for available and lead time.



External Dimension  
(Different Rotation / Direction of pipe connection / Thread )



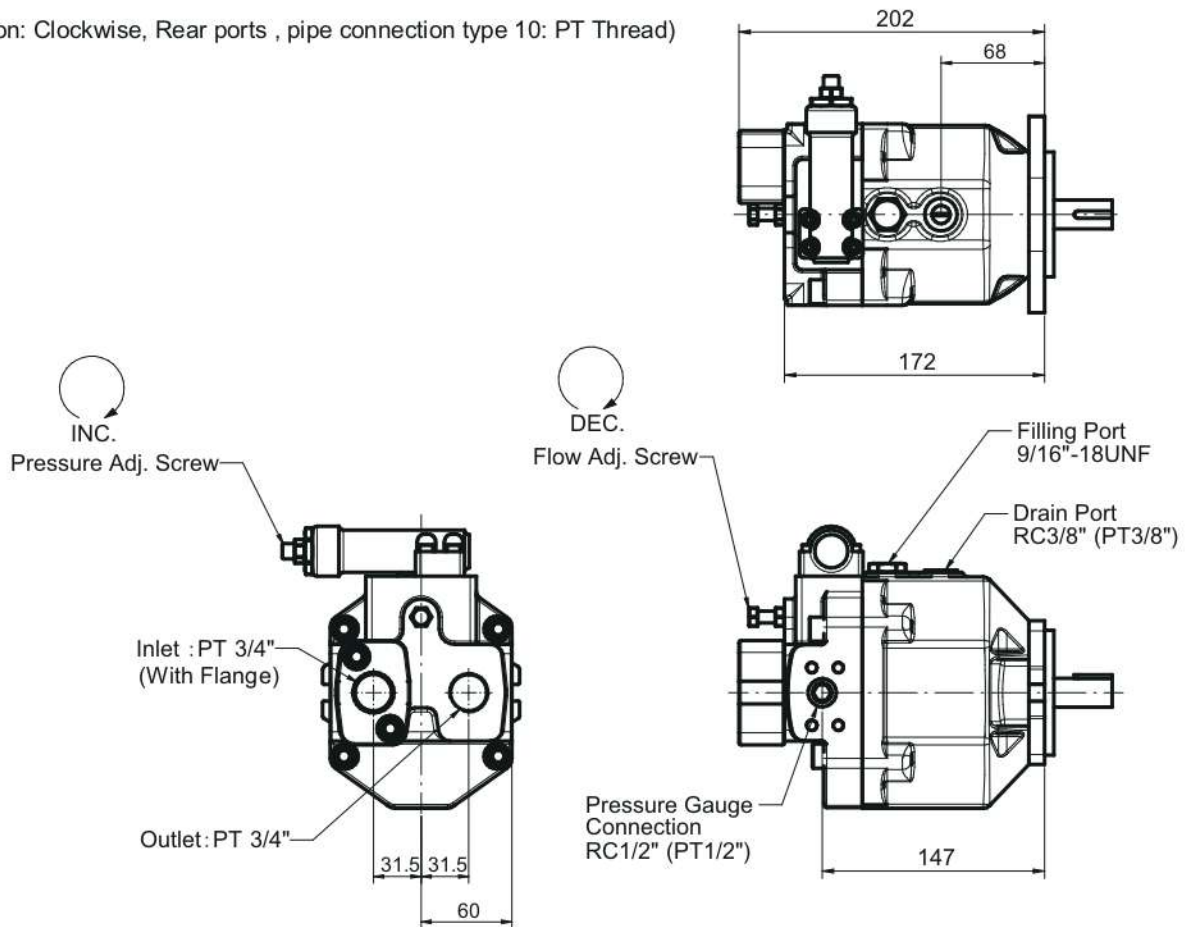
A

16

AR Axial piston pump

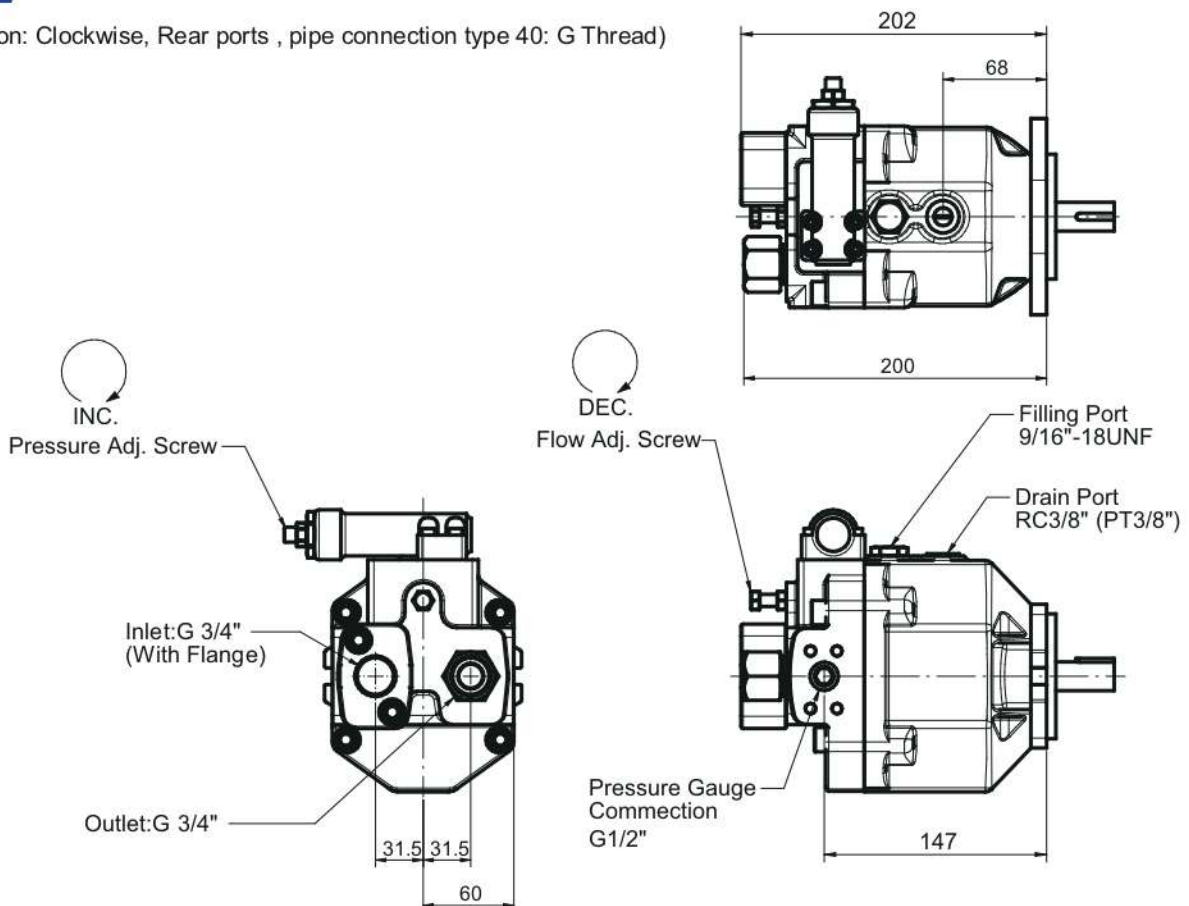
**RN10**

(Rotation: Clockwise, Rear ports , pipe connection type 10: PT Thread)



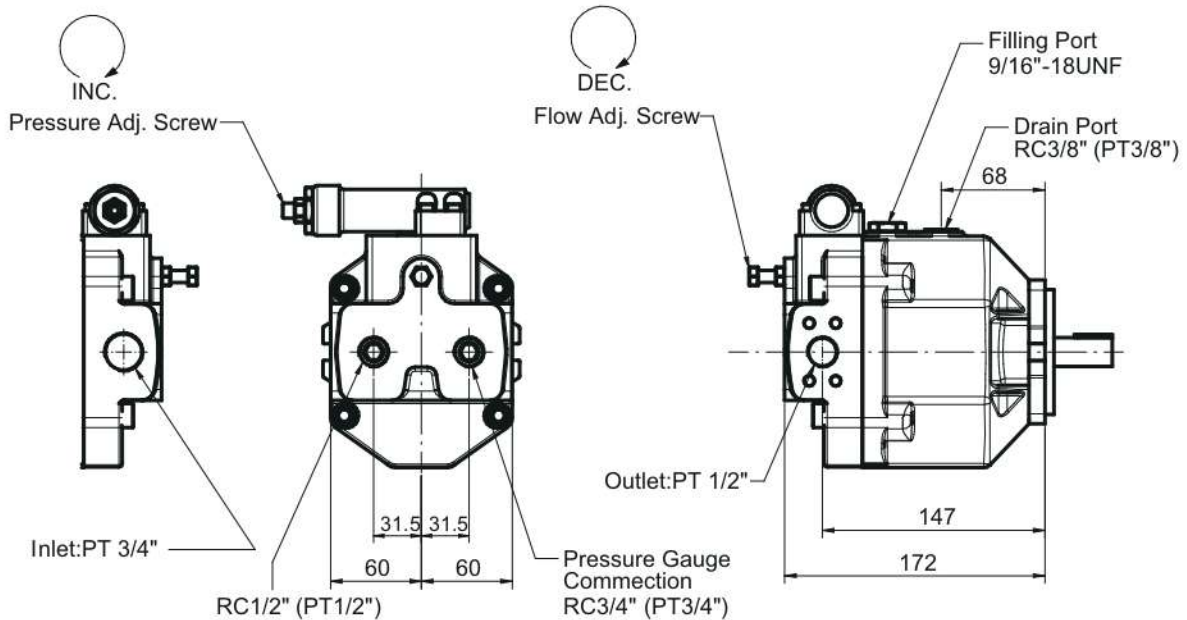
**RN40**

(Rotation: Clockwise, Rear ports , pipe connection type 40: G Thread)



**RS10**

(Rotation: Clockwise, Side ports , pipe connection type 10: PT Thread)

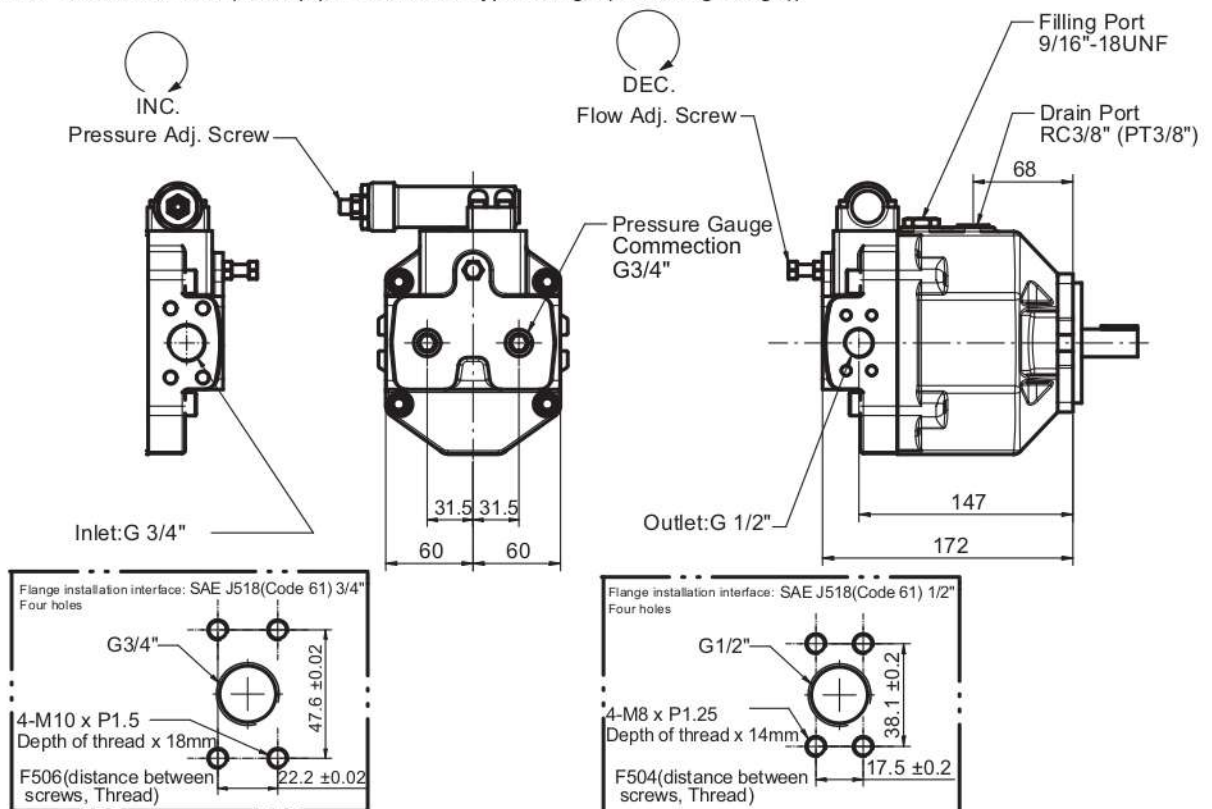


**RS40**

(Rotation: Clockwise, Side ports , pipe connection type 40: G Thread)

**RH40-1005**

(Rotation: Clockwise, Side ports, pipe connection type: flange (excluding flange))



External Dimension  
(Different Rotation / Direction of pipe connection / Thread )



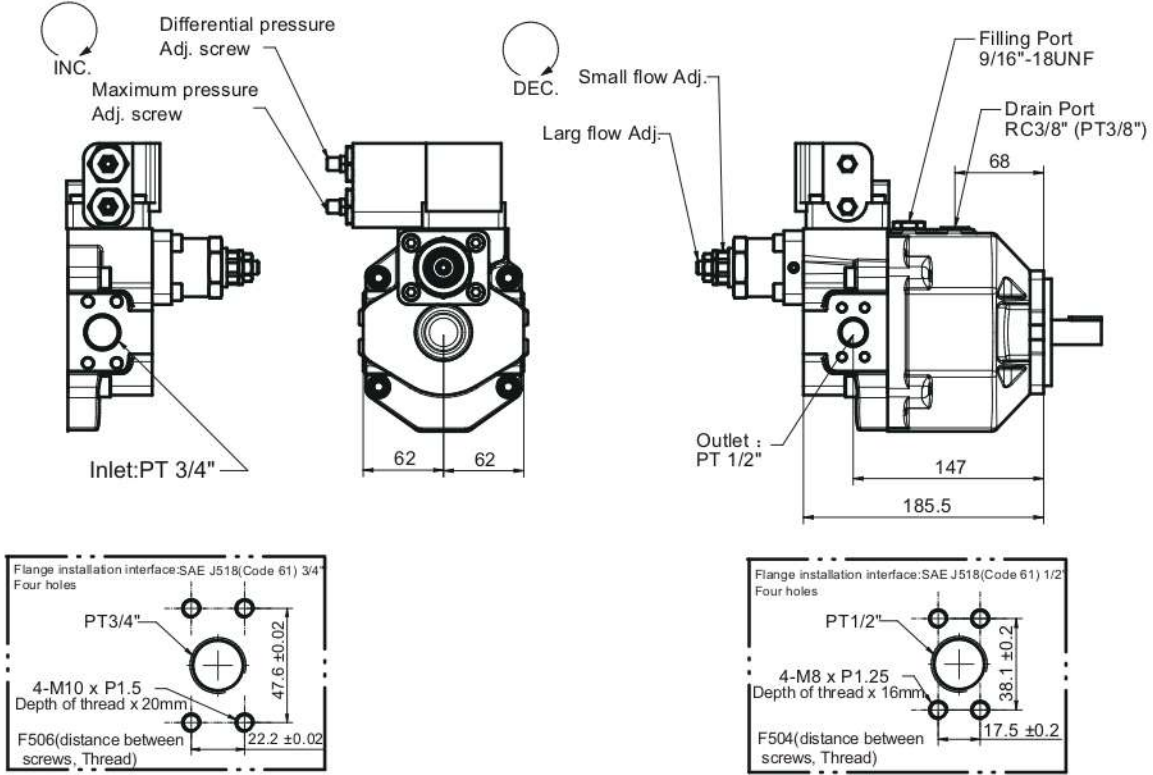
A

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AR Axial piston pump

RC10

(Rotation: Clockwise, Side ports , C type pipe connection type: flange 10: PT Thread)  
Only C, CR, D, E, F control options are available: Counterclockwise are not available

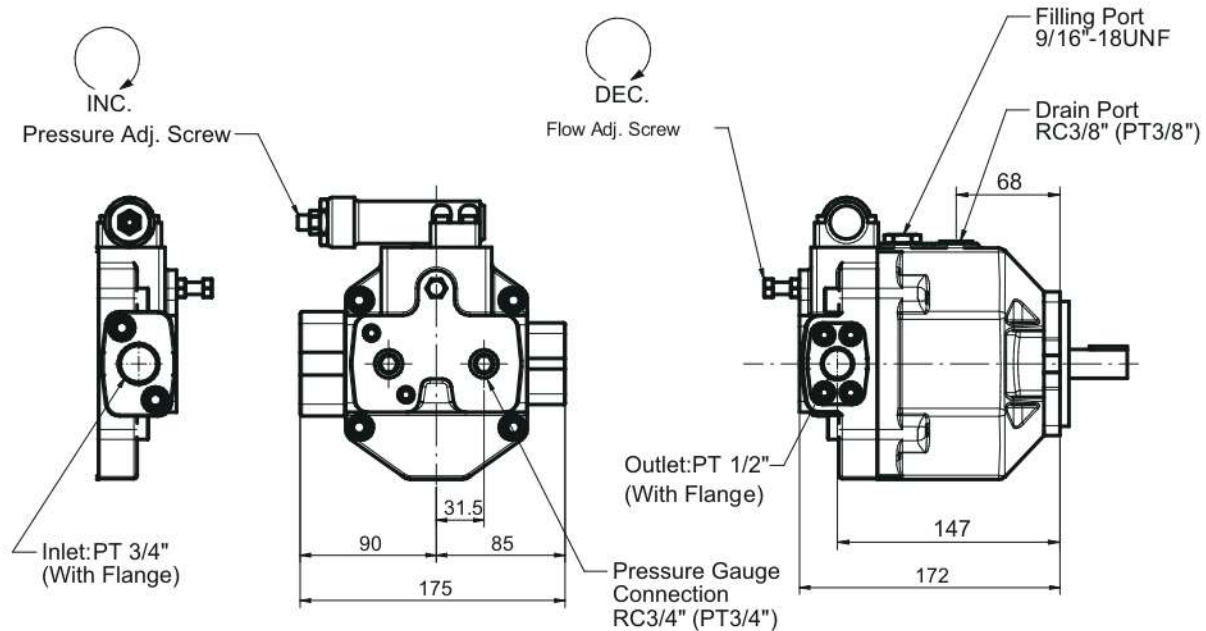


## External Dimension

(Different Rotation / Direction of pipe connection / Thread)

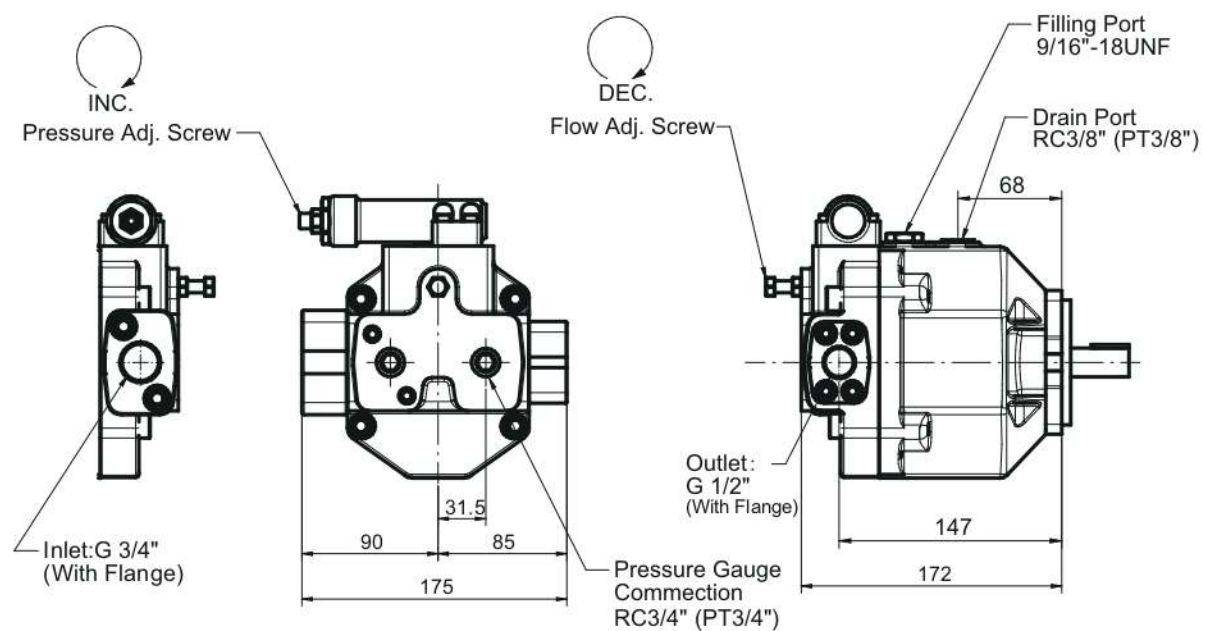
## RH10

(Rotation: Clockwise, Side ports , pipe connection type: flange 10: PT Thread)



## RH40

(Rotation: Clockwise, Side ports , pipe connection type: flange 40: G Thread)







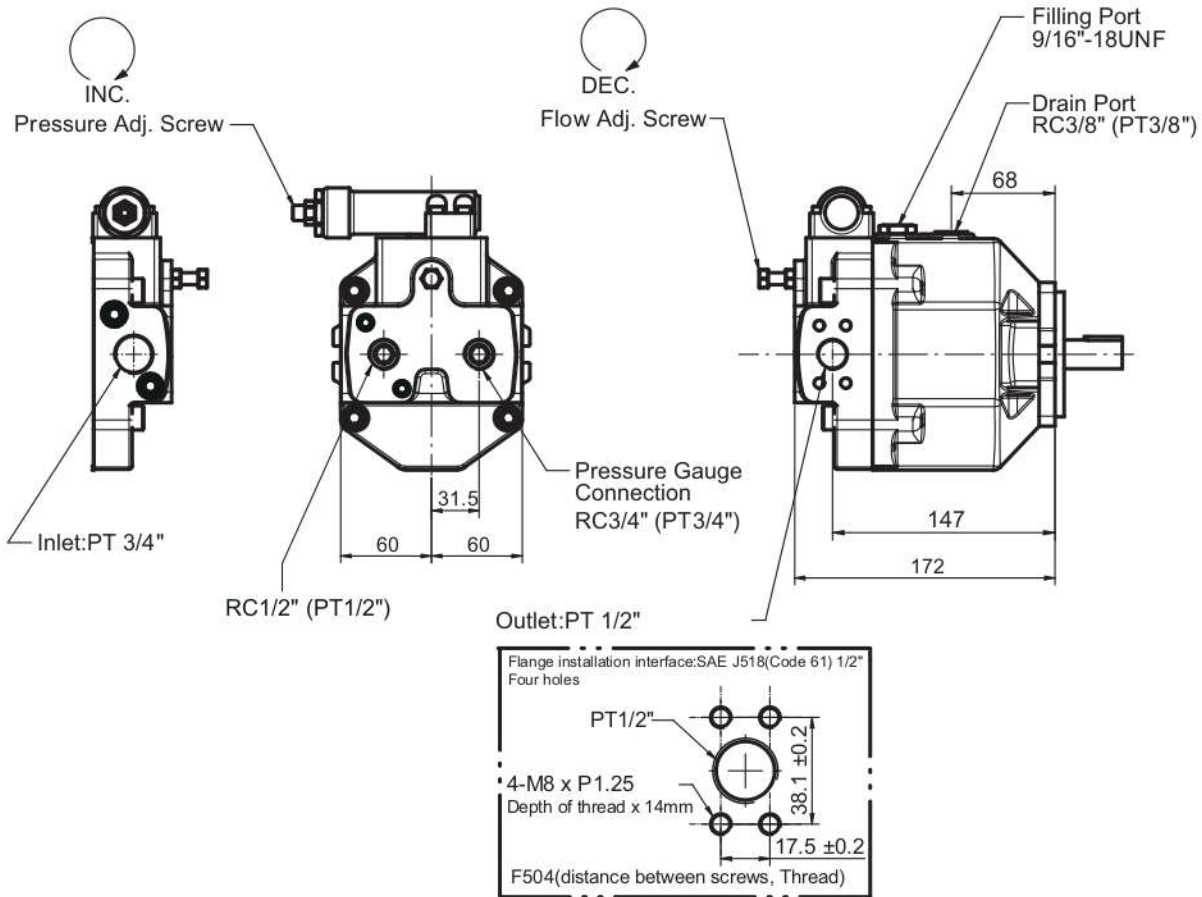
## External Dimension (Different Rotation / Direction of pipe connection / Thread )

A

RF10

(Rotation: clockwise / Side Ports / Pipe connection type: inlet with flange10: PT thread /  
Outlet: flange installation: SAE J518 (code 61)1/2")

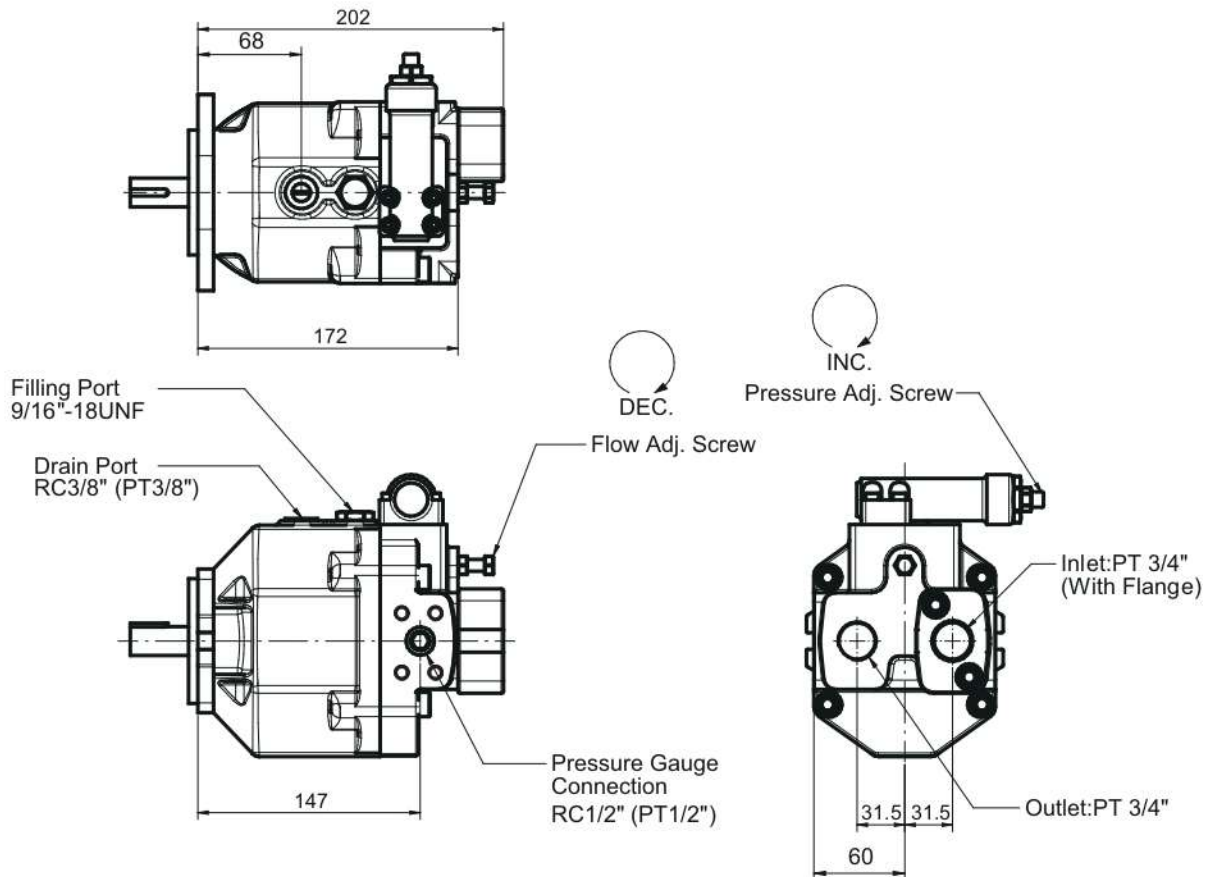
AR Axial piston pump



## External Dimension (Different Rotation / Direction of pipe connection / Thread )

### LN10

(Counter Clockwise Rear Ports10:PT)





**YEOSHE HYDRAULICS CO., LTD.**  
**YEOSHE BEST CHOICE**

*Innovative Technology*  
*Efficient Performance*  
*Reliable Quality and Service*

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