

# Internal gear pump / 2A / Pump

## Feature

The 2A pump is for mid. capacity and mid. pressure. The max. flow rate and discharge pressure are 36L/min or less and 3MPa or less. For the applications of hydraulic pressure, lubrication and cooling, this pump is widely used to feed hydraulic oil and lubrication oil. A high temp. ver. (VF) and an ultra-high temp. ver. (VH) are up to 120°C and 200°C, respectively. The standard rotation direction of this pump is counter-clockwise.



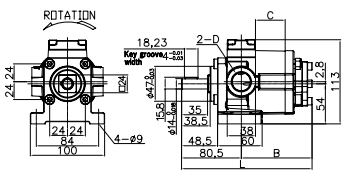
## Model

<b>FTP-</b>	<b>Model No.</b>	<b>Applications</b>	<b>Form</b>	<b>Rotation direction</b>	<b>Seal material</b>	<b>Relief valve</b>	<b>Relief valve set pressure</b>
	204	No mark: Standard	No mark: Standard	No mark: Counter	No mark: Standard (-5~90°C)	No mark: No valve	Ex.
	206	WO: Bunker oil,	M: Dedicated motor	clockwise	VF: Viton (R) for high temp. (120°C)	VB: With valve	0.1: Set pressure 0.1MPa (Spring No.1L)
	208	Coolant Water	(short shaft)	R : Clockwise	VH: Ultrahigh temp. (200°C)	(Internal-return)	0.5: Set pressure 0.5MPa (Spring No.2L)
	210	PL: Liquid seal				VD: With valve	1.0: Set pressure 1.0MPa (Spring No.3L)
	212					(External-return)	2.0: Set pressure 2.0MPa (Spring No.4L)
	216						
	220						

Model examples: FTP-203A-VB (With valve (Internal-return)) FTP-204AR (Counter-clockwise as seen from the shaft end)

## Dimensional diagrams / Standard rotation (mm)

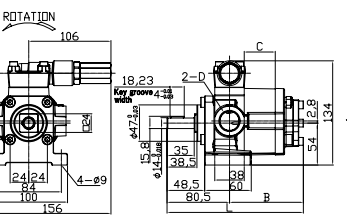
### FTP-A(PL·WO) Without relief valve



### Standard and PL type

Model	L	B	C	D
204A	145.7	65.2	10	1/2
206A	151.7	70.2	15	
208A	155.7	75.2	20	
210A	160.7	80.2	25	3/4
212A	165.7	85.2	30	
216A	175.7	95.2	40	
220A	185.7	105.2	50	

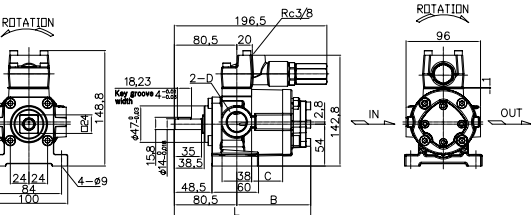
### FTP-A(PL·WO)-VB With relief valve (Internal-return) (VB)



### WO type

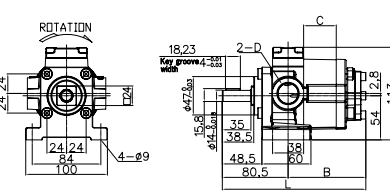
Model	L	B	C	D
204A	146.4	65.9	10.7	1/2
206A	151.7	71.2	16.0	
208A	157.0	76.5	21.3	
210A	162.2	81.7	26.5	3/4
212A	167.4	86.9	31.7	
216A	177.6	97.1	41.9	
220A	187.7	107.2	52.0	

### FTP-A(PL·WO)-VD With relief valve (External-return) (VD)



## Dimensional diagrams / Reverse rotation (mm)

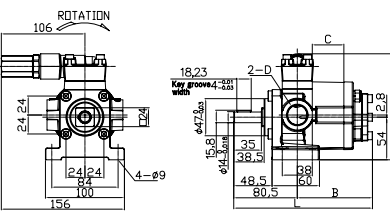
### FTP-A(PL·WO)R Without relief valve



### Standard and PL type

Model	L	B	C	D
204A	145.7	65.2	10	1/2
206A	150.7	70.2	15	
208A	155.7	75.2	20	
210A	160.7	80.2	25	3/4
212A	165.7	85.2	30	
216A	175.7	95.2	40	
220A	185.7	105.2	50	

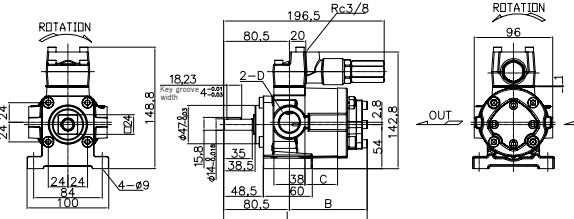
### FTP-A(PL·WO)R-VB With relief valve (Internal-return) (VB)



### WO type

Model	L	B	C	D
204A	146.4	65.9	10.7	1/2
206A	151.7	71.2	16.0	
208A	157.0	76.5	21.3	
210A	162.2	81.7	26.5	3/4
212A	167.4	86.9	31.7	
216A	177.6	97.1	41.9	
220A	187.7	107.2	52.0	

### FTP-A(PL·WO)R-VD With relief valve (External-return) (VD)



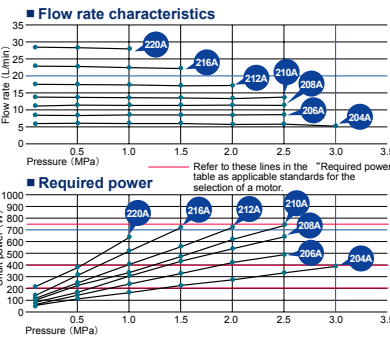
## Spec

Model	Flow rate per. rev. (ml/rev)	Theoretical flow rate (L/min)		Max. discharge pressure (MPa)	Max. revolution (min <sup>-1</sup> )	Approx. weight Without valve/With valve (kg)
		1500min <sup>-1</sup>	1800min <sup>-1</sup>			
204A (VB,VD)	4	6.0	7.2	3.0	3000	3.6/4.0
206A (VB,VD)	6	9.0	10.8	2.5	2500	3.8/4.2
208A (VB,VD)	8	12.0	14.4	2.5	2500	4.0/4.4
210A (VB,VD)	10	15.0	18.0	2.5	2500	4.1/4.6
212A (VB,VD)	12	18.0	21.6	2.0	2000	4.3/4.7
216A (VB,VD)	16	24.0	28.8	1.5	1800	4.6/5.1
220A (VB,VD)	20	30.0	36.0	1.2	1800	5.0/5.5

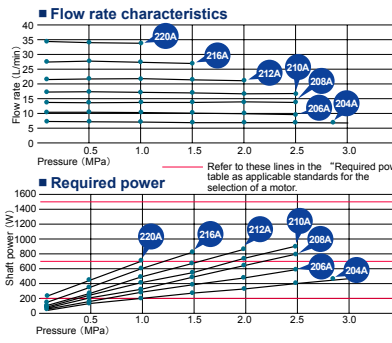
## Performance

● Test conditions Oil: ISO-VG46 Oil temp.: 40°C

### At 1,450 rotations (50Hz)



### At 1,750 rotations (60Hz)



● The required power varies depending on viscosity, temp. etc.