

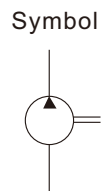
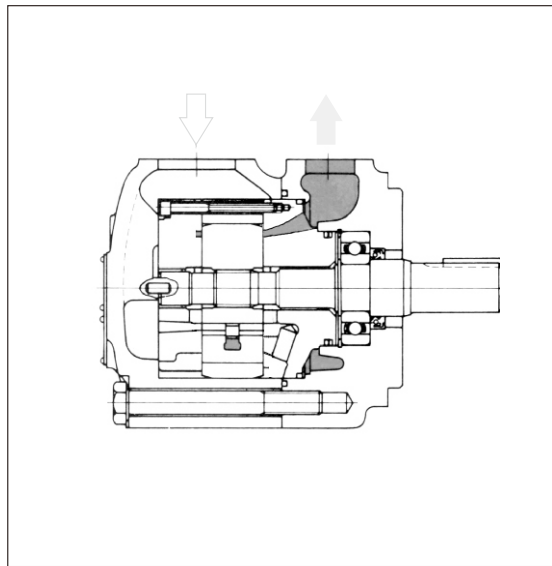
V Series Single Pump

■ Product show and brief introduction

This series are high performance vane pumps developed for industrial applications. Suitable for injection molding machinery, rubber machinery, die-casting machinery, machine tools and other hydraulic in the system.

Its main features:

1. The structural design of the mother and daughter blades reduces the impact of the blades on the stator. Under higher working pressure and high speed, the performance is more stable and the service life is longer.
2. The sub-mother blade structure itself has the characteristics of low noise. 12-blade design, small flow pulsation and lower noise.
3. The choice of multiple displacements and the plug-in structure of the pump core make the user more flexible in use and more convenient in maintenance.



■ Model code

(F3-)	**V	**	A	(F)	-*	*	22	*
Prefix	Series	▲ Code	Port Connections	Mounting	Shafts	Outlet Positions	Design	Rotation
Omit-Using antiwear oil water glycol fluid F3-phosphate ester fluid	20V	2,3,4,5,6,7,8, 9,10,11,12,14	A-SAE 4-bolt flange	Omit-Flange mounting F-Foot mounting	1-Str.Key 151-Spline	(Viewed from cover end of pump) A-Opposite inlet port B-90°CCW from inlet C-In line with inlet D-90°CW from inlet	22	(Viewed from shaft end of pump) L-Left hand for counter clockwise R-Right hand for clockwise
	25V	10,12,14,15, 17,19,21			1-Str.Key			
	35V	21,25,30,32, 35,38,45			86-HD Str. Key			
	45V	42,45,50,57, 60,66,75			11-Spline			

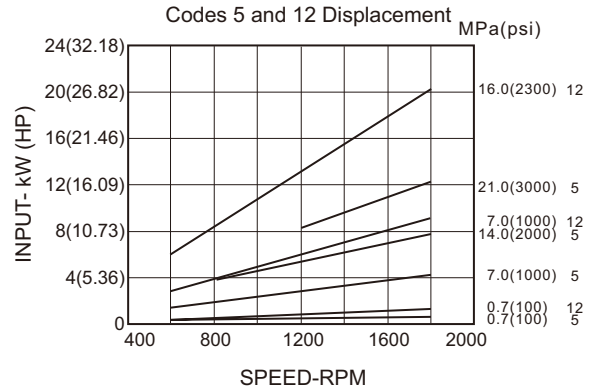
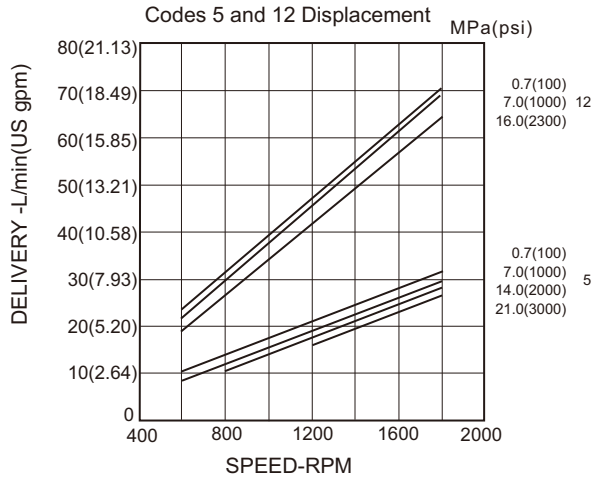
▲ Rated capacity(USgpm)at1200 rpm,0.69MPa(100 psi)

■ Specification

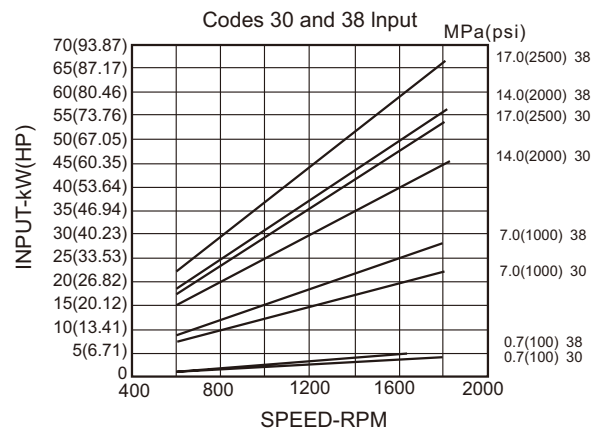
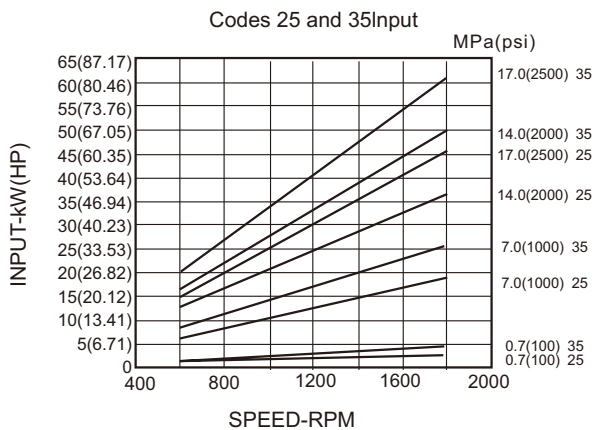
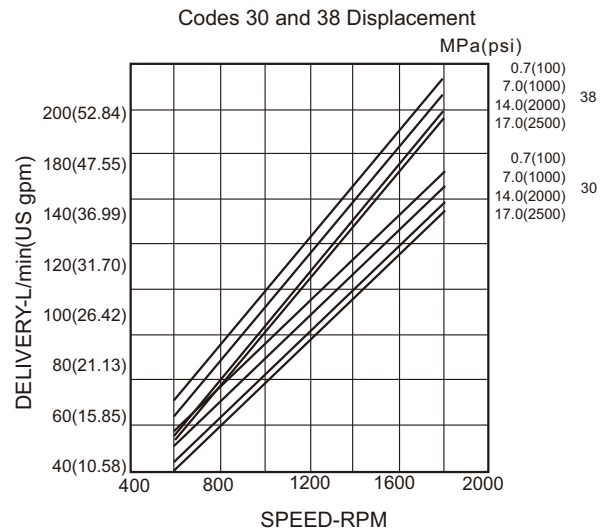
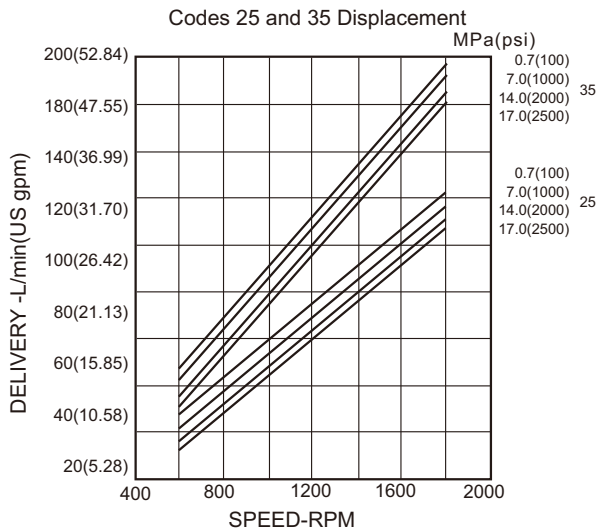
Model	Code	Geometric displacement mL/r	Using anti-wear oil or phosphate ester fluid		Using water glycol fluid		Using water-in-oil emulsion		Min. Speed r/min
			Max.pressure MPa	Max.speed r/min	Max.pressure MPa	Max.speed r/min	Max.pressure MPa	Max.speed r/min	
20V	2	7.5	13.8	1800	13.8	1500	6.9	1200	600
	3	10							
	4	13							
	5	17	20.7						
	6	19							
	7	23							
	8	27							
	9	30							
	10	32.5	15.9						
	11	36							
	12	40							
14	45	13.8							
25V	10	32.5	17.2	1800	15.9	1500	6.9	1200	600
	12	40							
	14	43							
	15	45							
	17	55							
	19	59							
	21	67							
35V	21	67	17.2	1800	15.9	1500	6.9	1200	600
	25	81							
	30	97							
	32	100							
	35	112							
	38	121							
	45	142							
45V	42	138	13.8	1800	15.9	1500	6.9	1200	600
	45	142							
	50	162							
	57	183							
	60	193							
	66	212							
	75	237							

Performance Characteristics Typical flows at 50°C, 10w oil at 26cSt, 0MPa inlet at specified speeds.

20V

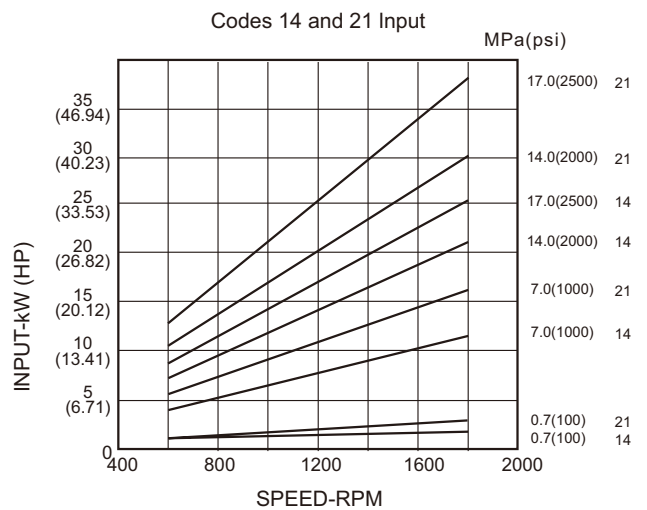
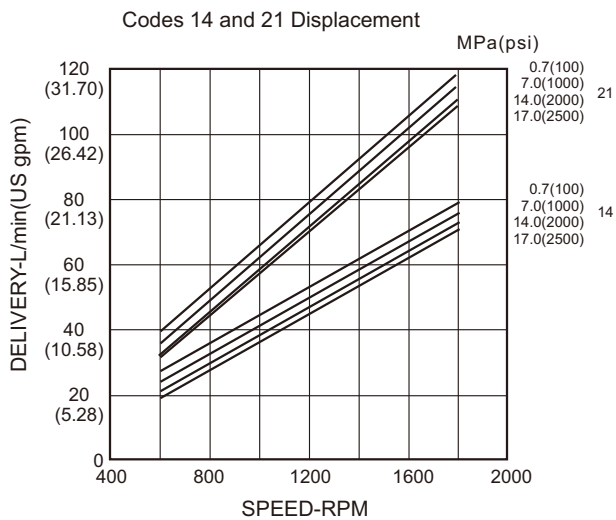
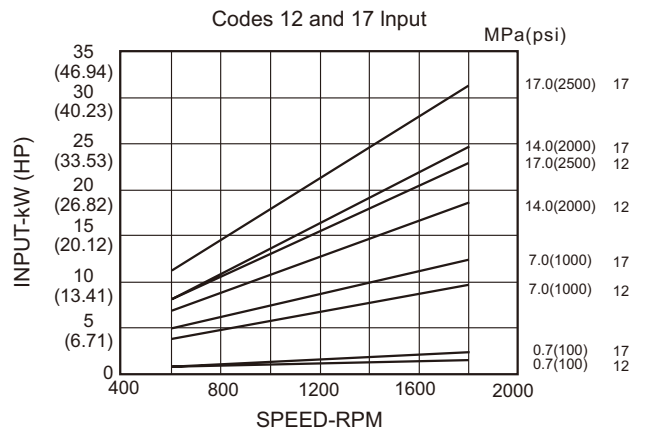
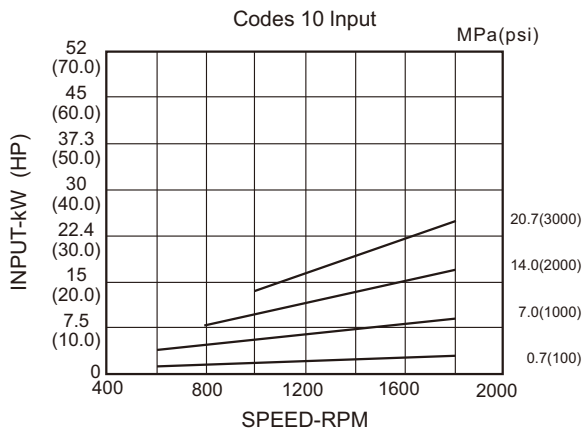
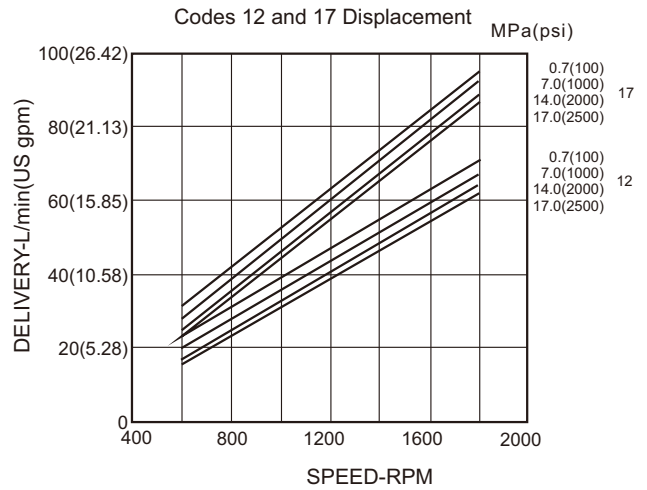
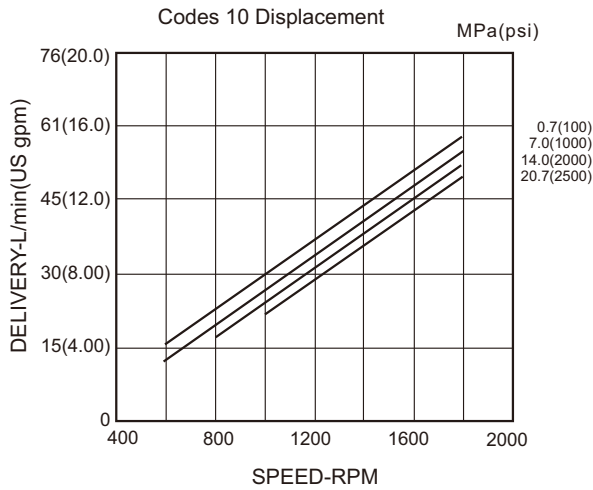


35V



Performance Characteristics Typical flows at 50°C, 10w oil at 26cSt, 0MPa inlet at specified speeds.

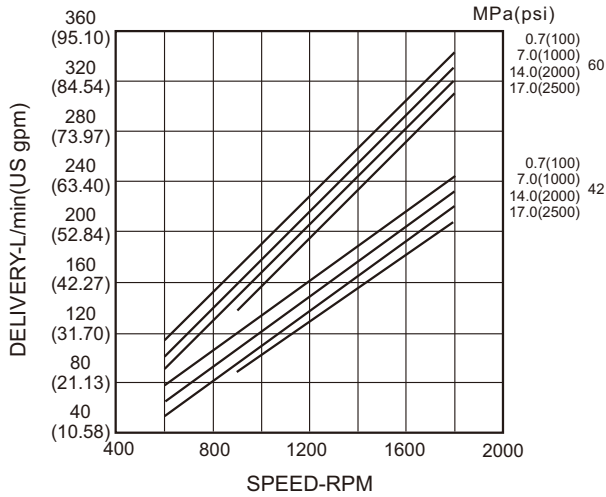
25V



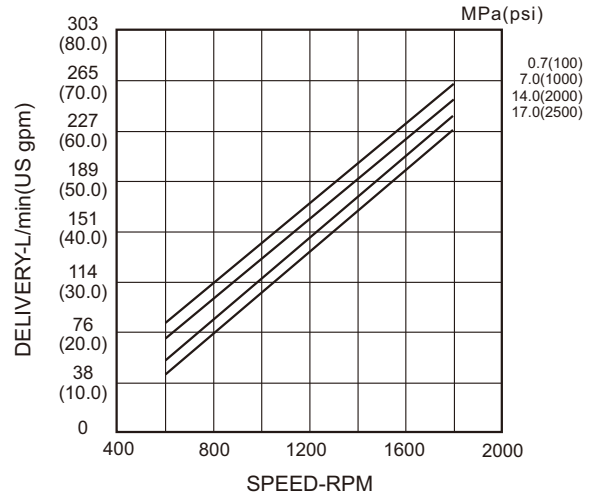
Performance Characteristics Typical flows at 50°C, 10w oil at 26cSt, 0MPa inlet at specified speeds.

45V

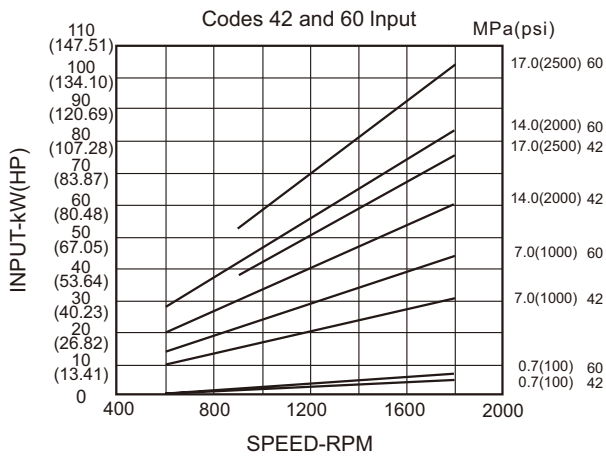
Codes 42 and 60 Displacement



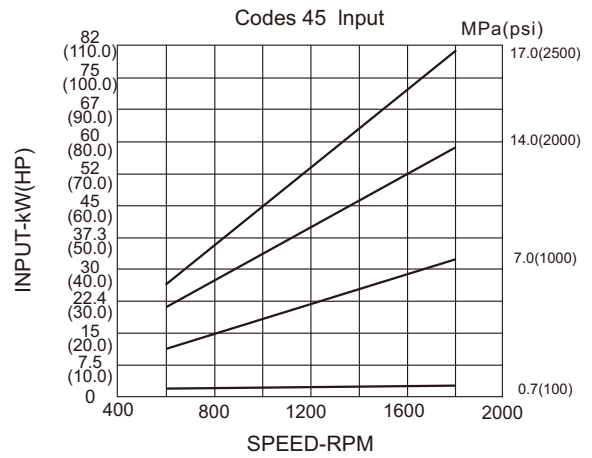
Codes 45 Displacement



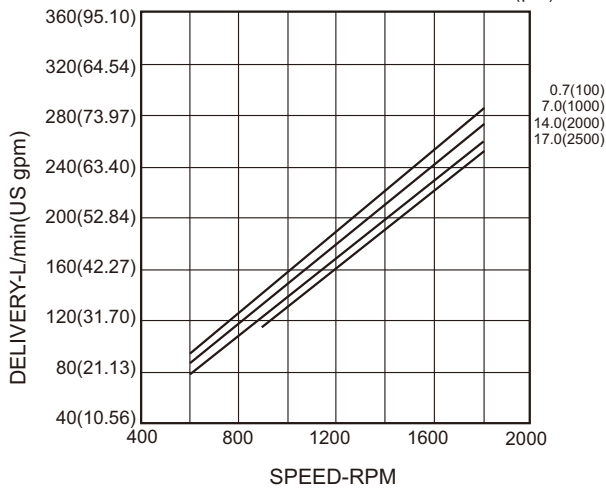
Codes 42 and 60 Input



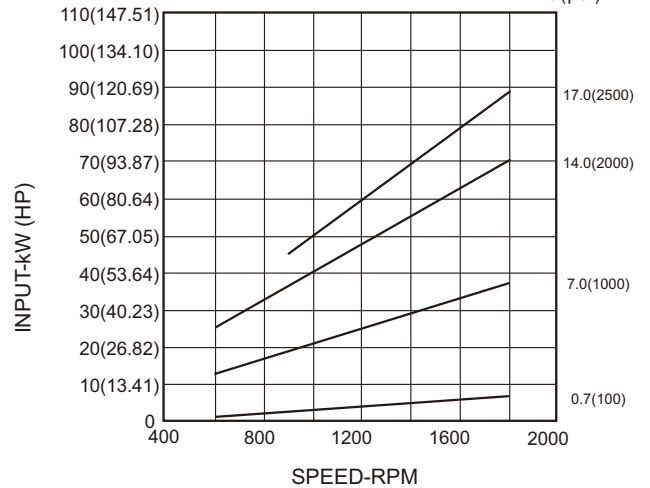
Codes 45 Input



Codes 50 Displacement

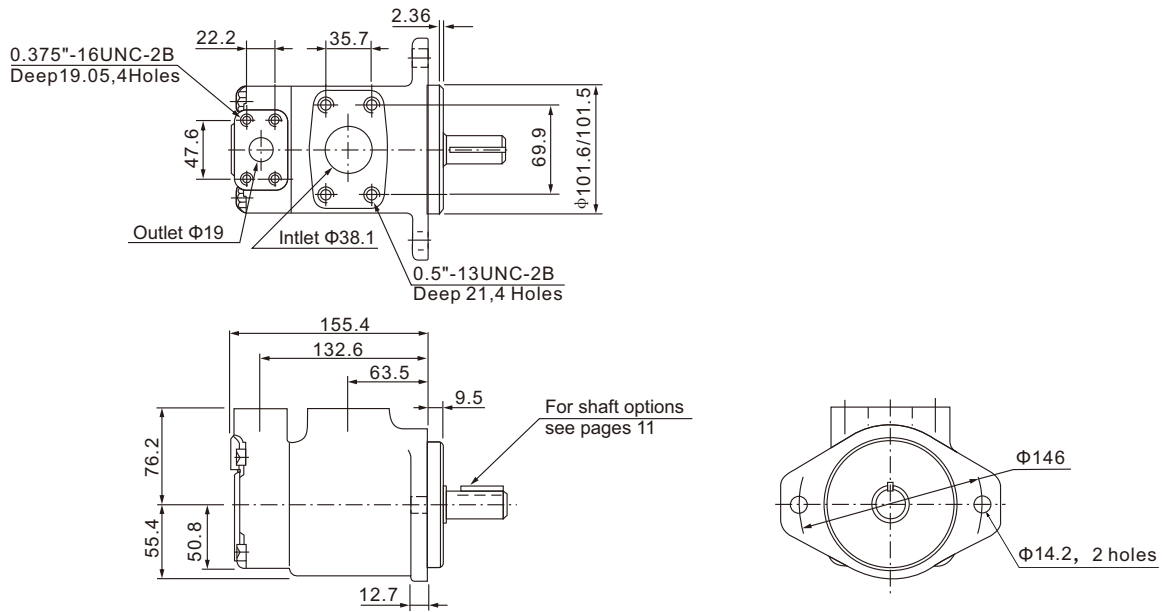


Codes 50 Input

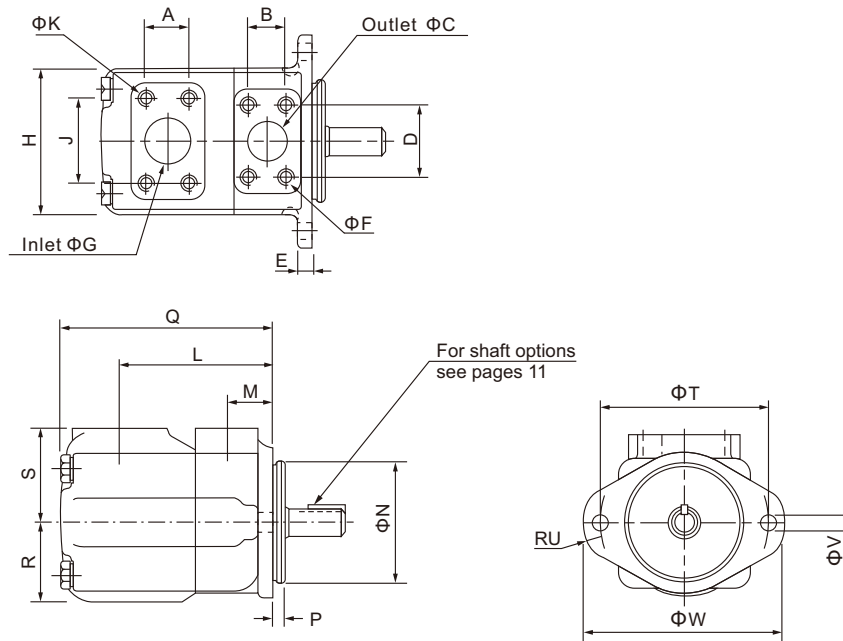


Installation dimensions

20V



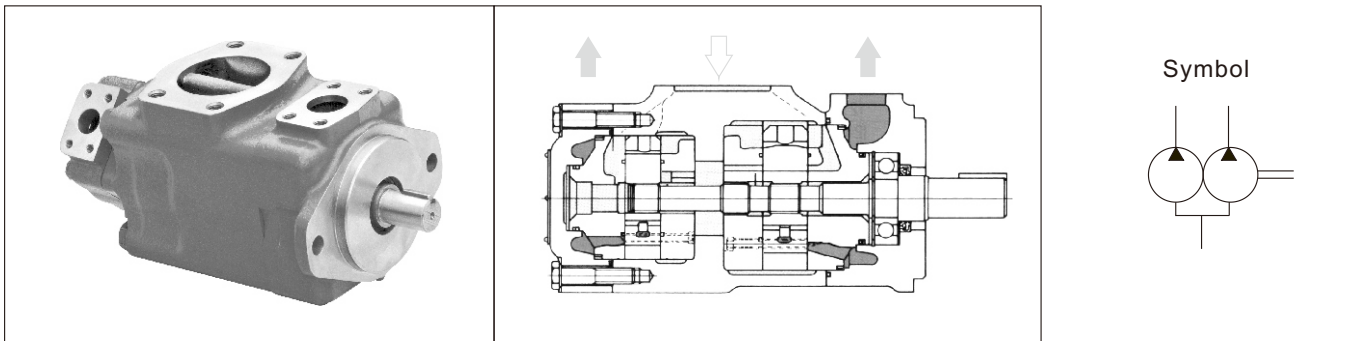
25V, 35V, 45V



Model	A	B	C	D	E	G	H	J	L	M	N	P	Q	R
25V	35.7	26.2	25.4	52.4	12.7	38.1	118	69.9	121	38.1	101.6/101.5	9.53	162.1	63.5
35V	42.9	30.2	31.8	58.7	16	50.8	140	77.8	125.5	38.1	127.0/126.9	9.53	185	69.9
45V	61.9	35.7	38.1	69.9	16	76.2	159	106.4	153	43	127.0/126.9	12.7	216	82.6
Model	S	T	U	V	W	$\phi F \times$ full thread depth, 4 holes		$\phi K \times$ full thread depth, 4 holes						
25V	76.2	146	14	14.2	175	3/8-16UNC-2B \times 19.1 deep		1/2-13UNC-2B \times 23.8 deep						
35V	82.6	181	16	17.5	213	7/16-14UNC-2B \times 22.3 deep		1/2-13UNC-2B \times 22.3 deep						
45V	93.7	181	16	17.5	213	1/2-13UNC-2B \times 23.8 deep		5/8-11UNC-2B \times 30 deep						

V Series Double Pumps

Product show and brief introduction



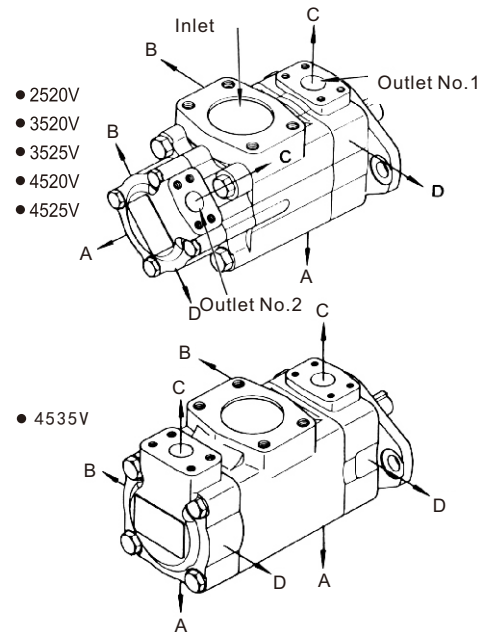
Model Code

(F3-)	****V	**	A	**	(F)	-**	*	22	*
Prefix	Series	▲ Code Shaft End Pump	Port Connections	▲ Code Cover End Pump	Mounting	Shafts	Port Orientation	Design	Rotation
Omit-Using antiwear oil water glycol fluid	2520V	10,12,14,15,17,19,21	A-SAE 4-bolt flange	2,3,4,5,6,7,8,9,10,11,12,14	Omit-Flange mounting	1:str.Key 86:HD Str.Key	See below	22	(Viewed from shaft end of pump) L-Left hand for counter clockwise R-Right hand for clockwise
	3520V	21,25,30,32,35,38,45		2,3,4,5,6,7,8,9,10,11,12,14					
F3-Phosphate ester fluid	3525V	21,25,30,32,35,38,45		10,12,14,15,17,19,21	F-Foot mounting	11:spline			
	4520V	42,45,50,57,60,66,75		2,3,4,5,6,7,8,9,10,11,12,14					
	4525V	42,45,50,57,60,66,75		10,12,14,15,17,19,21					
	4535V	42,45,50,57,60,66,75		21,25,30,32,35,38,45					

▲ Rated capacity(USgpm) at 1200 rpm,0.69 MPa (100psi).

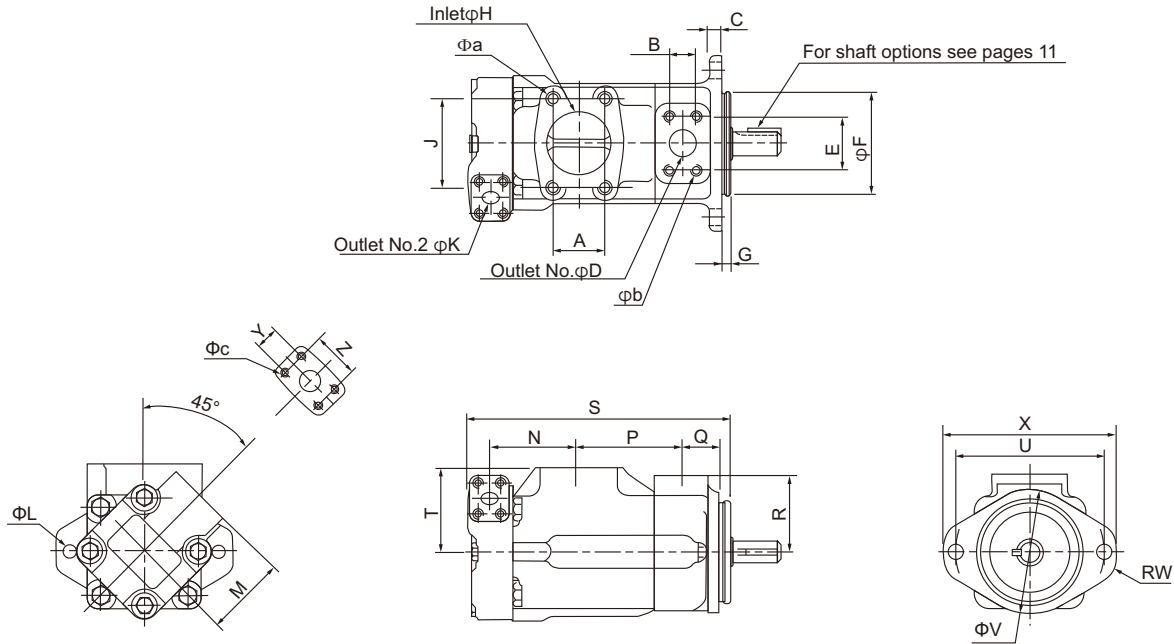
Port Orientation Table (Viewed from cover end of pump)

Port Orientation	All series (except 4535V)	Series 4535V
With No.1 outlet Opposite inlet:	AA No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	AB No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	AC No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	AD No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CCW from inlet:	BA No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	BB No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	BC No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	BD No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet inline with inlet:	CA No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	CB No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	CC No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	CD No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet
With No.1 outlet 90° CW inlet	DA No,2 outlet 135° CCW from inlet	No.2 outlet opposite inlet
	DB No,2 outlet 45° CCW from inlet	No.2 outlet 90° CCW from inlet
	DC No,2 outlet 45° CW from inlet	No.2 outlet in line with inlet
	DD No,2 outlet 135° CW from inlet	No.2 outlet 90° CW from inlet



Installation dimensions

2520V,35**V,452*V

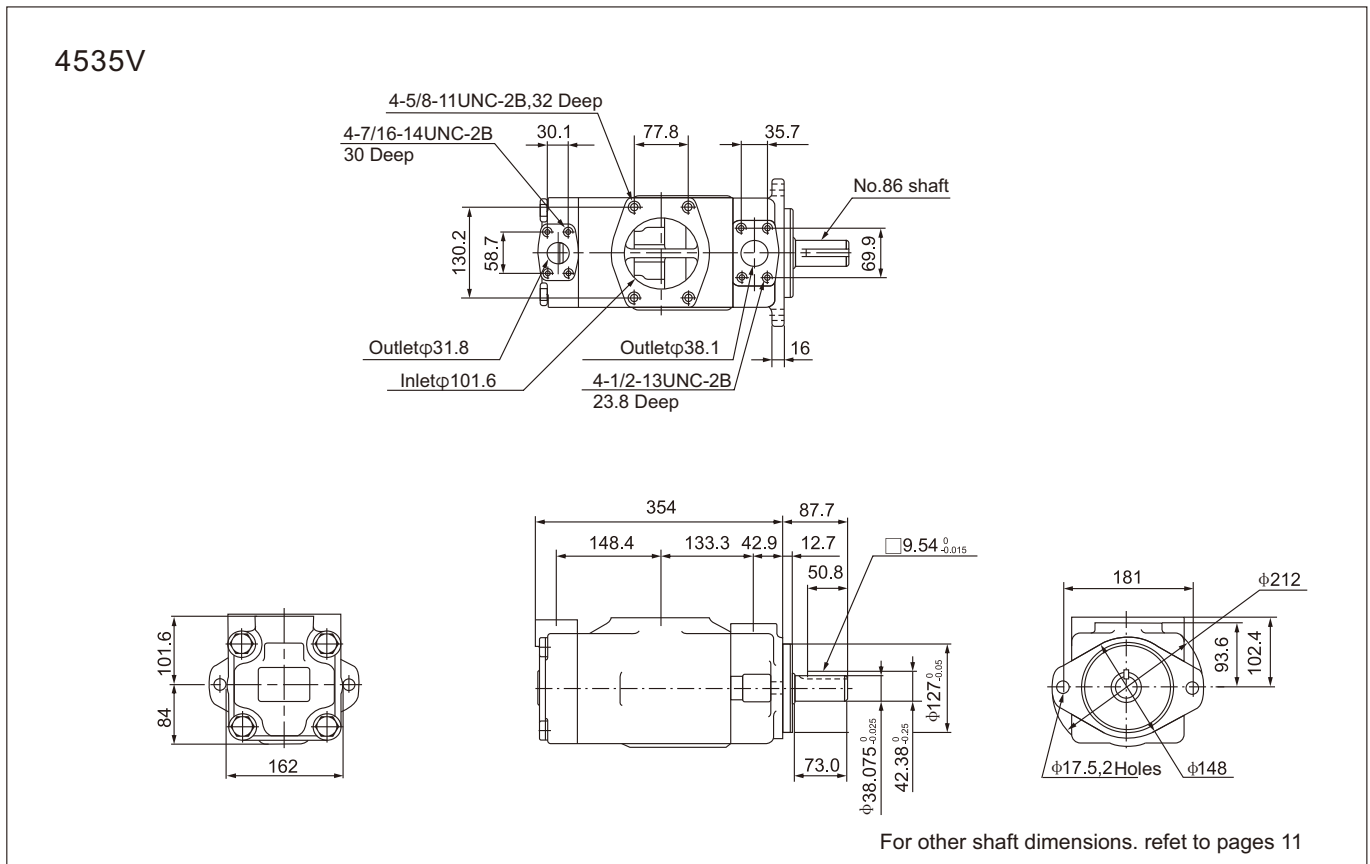


Model	Φaxfull thread depth,4 holes	Φbxfull thread depth,4 holes	Φcxfull thread depth,4 holes
2520V	1/2-13UNC-2B;23.8Deep	3/8-16UNC-2B;20.1Deep	3/8-16UNC-2B;20.1Deep
3520V	5/8-11UNC-2B;25.4Deep	7/16-14UNC-2B;21.0Deep	3/8-16UNC-2B;20.1Deep
3525V	5/8-11UNC-2B;25.4Deep	7/16-14UNC-2B;21.0Deep	3/8-16UNC-2B;20.1Deep
4520V	5/8-11UNC-2B;25.4Deep	1/2-13UNC-2B;23.8Deep	3/8-16UNC-2B;20.1Deep
4525V	5/8-11UNC-2B;25.4Deep	1/2-13UNC-2B;23.8Deep	3/8-16UNC-2B;20.1Deep

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2520V	50.8	26.2	12.7	25.4	52.4	101.6/101.5	9.53	63.5	88.9	19.1	14.2	76.2	88.1	101.6	38.1
3520V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	19.1	17.5	76.2	99.6	114.3	38.1
3525V	62	30.1	15.9	31.7	58.7	127/126.9	9.53	76.2	106.3	25.4	17.5	74.7	109.5	114.3	38.1
4520V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	19.1	17.5	76.2	120	119.4	42.9
4525V	69.9	35.7	15.9	38.1	69.9	127/126.9	12.7	88.9	120.6	25.4	17.5	74.7	136	119.4	42.9

Model	R	S	T	U	W	X	Y	Z
2520V	76.2	250	85.3	146.1	14	174.7	22.2	47.6
3520V	82.6	273.3	88.9	181	16	213	22.2	47.6
3525V	82.6	287.3	88.9	181	16	213	26.2	52.4
4520V	93.7	303.5	102.4	181	16	213	22.2	47.6
4525V	93.7	325	102.4	181	16	213	26.2	52.4

Installation dimensions



Use and maintenance

Hydraulic oil

It is recommended to use anti-wear hydraulic oil with a viscosity grade of 32-68 cSt at 40°C or an automobile crankcase oil with the symbol SC, SD, SE or SF. Retard speed and pressure recommended viscosity under force:

Min 13cSt	Max 54cSt
Minimum 49°C	Maximum 65°C

Cold start

When operating in the 860 to 54cSt range with SAE 10W oil, speed and pressure should be limited to within 50% of their respective ratings until the system warms up.

When the oil viscosity exceeds 860cSt, special attention should be paid to make the whole system, including the remote cylinder and motor, warm up.

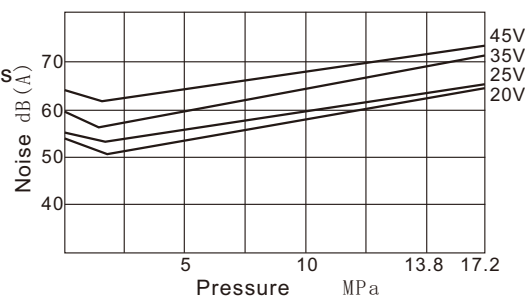
High temperature operation

During high temperature operation, the viscosity must not fall below 13cSt and the temperature must not exceed 99°C, as the expected life of the pump core components and seals will be shortened.

Noise data

The average noise value of each series of single pumps
Test conditions:

1. Quiet laboratory, the speed is 1500r/min
2. Anti-wear hydraulic oil, viscosity 30cSt
3. Test oil temperature 45-50°C
4. Test distance, 1m behind the pump



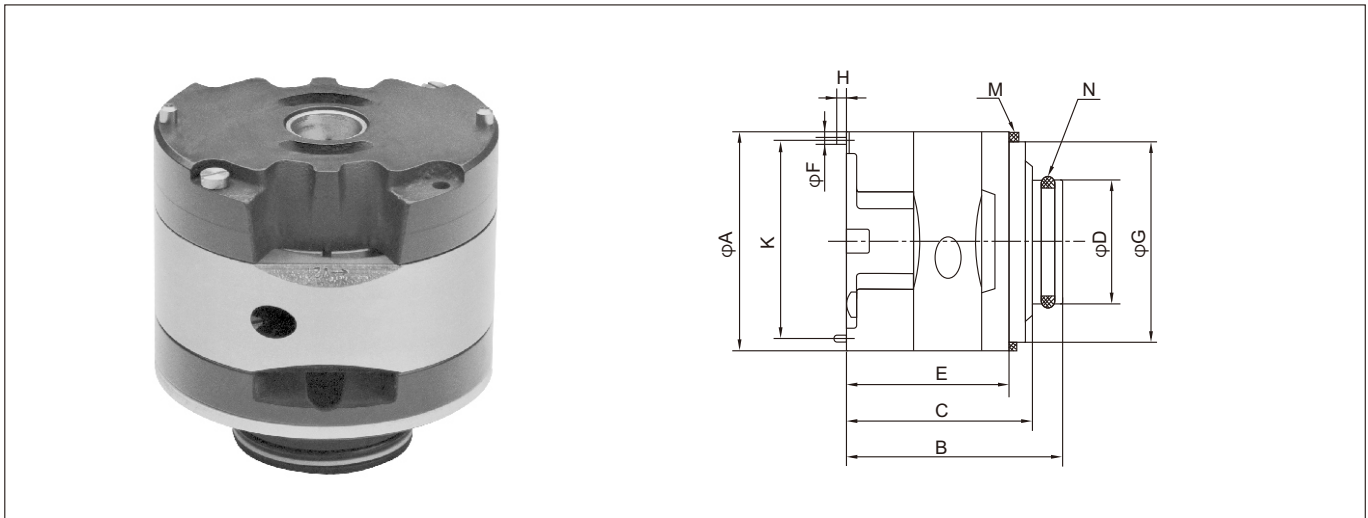
V Series Cartridge Kits

Model Code

(F3-)	PC-	20V	-5	-R	-10
Prefix	Cartridge kits mark	Series	▲ Code	Rotation	Design
Omit-Using antiwear oil water glycol fluid F3-Phosphate ester fluid	PC-Single pump cartridge kits Double pump shaft end pump cartridge kits	20V	2,3,4,5,6,7,8,9,10, 11,12,14	(Viewed from shaft end of pump) R-Right hand for clockwise L-Left hand for counter clockwise	10
		25V	10,12,14,15,17,19,21		
	35V	21,25,30,32,35,38,45			
	45V	42,45,50,57,60,66,75			
	PCT-Double pump cover end pump cartridge kits				

▲ Rated capacity(USgpm) at 1200 rpm,0.69 MPa(100 psi).

Installation dimensions

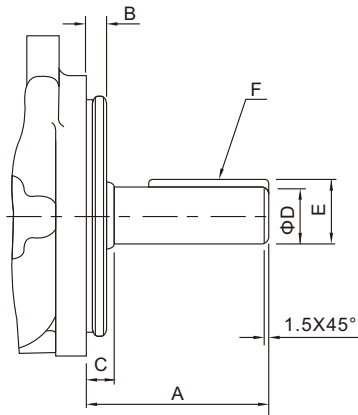


Series	A	B	C	D	E	F	G	H	K	M(Gasket)	N(O-Ring)
20V	82.5	81.5	70.1	47	61.5	4.8	76.2	6	73.6	82.76x76.26x3.5	40x3.5
25V	96.8	98.8	87	52.2	71.2	4.8	90.5	5	88.19	97x91x3.5	44x3.53
35V	114.3	117.7	105	72.2	90.3	6.4	108	6	103.94	114.5x108.5x3.5	63.09x3.53
45V	133.35	141.1	129.6	80.2	105.5	6.4	127	10	133.35	133.6x127.6x3.5	71x3.55

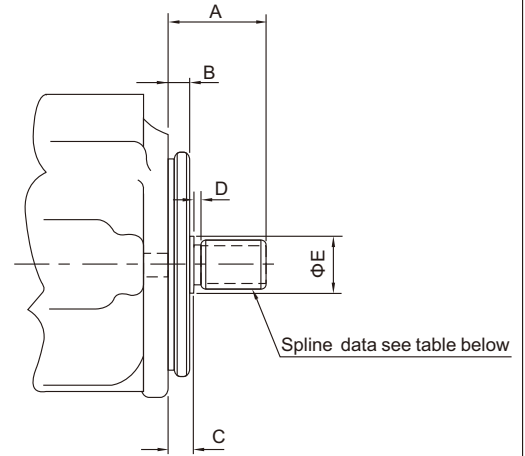
Series	Inner spline dentiform parameter of rotor				
	Pitch	Number of teech	Pressure angle	Major diameter	Minor diameter
20V	48/96	30	45°	16.617	15.56
25V	48/96	40	45°	21.9	20.86
35V	40/80	37	45°	24.38	23.1
45V	12/24	14	30°	32.59	27.60

Optional shafts

● key shaft



● Spline shaft



● key shaft

Model	Shaft	A	B	C	D	E	F
20V	1	59	9.53	12.1	22.23/22.20	24.5/24.4	4.76×32
25V 2520V	1	59	9.53	11.1	22.23/22.20	24.5/24.4	4.76×32
	86	78	9.53	11.1	25.37/25.35	28.3/28.1	6.36×50.8
35V 352*V	1	73.2	9.53	11.1	31.75/31.70	35.36/34.10	7.94×38.1
	86	86	9.53	11.1	34.90/34.87	38.6/38.3	7.94×54
45V 45**V	1	62	12.7	14.22	31.75/31.70	35.36/34.10	7.94×28.5
	86	87.4	12.7	14.22	38.07/38.05	42.4/42.1	9.54×50.8

● Spline shaft

Model	Shaft	A	B	C	D	E	Spline data (see table below)
20V	151	41.1	9.53	11.1	3.9	27.8	A
25V	11	44.5	9.53	11.1	3.9	27.8	A
2520V							
35V	11	58.7	9.53	11.1	6.35	35.1	C
352*V							
45V	11	61.9	12.7	14.3	9.7	39.6	C
45**V							

● Spline data (involute spline)

Spline data tag	teeth	diameter	large diameter	forming diameter	trail	flat tooth with fit
A	13	16/32	22.17	19.03	18.63	large diameter fit
			22.15		18.35	
C	14	12/24	31.7	27.2	26.99	large diameter fit
			31.67		26.64	