



# 50T,150T,250F SERIES

Fixed Displacement-Single, Double, Combination

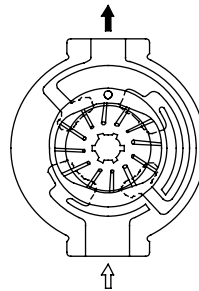
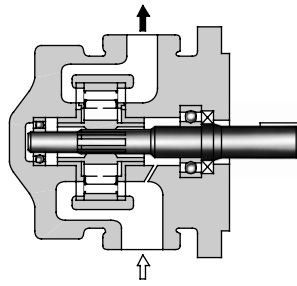
VANE PUMPS

Up to 7 MPa (1020 PSI), 498 cm<sup>3</sup>/rev (30.34 CU.IN./rev)

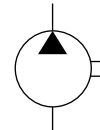
B

### Single Pumps

These pumps are widely used as a source of hydraulic power. They combine stable performance and robust construction with a wide range of delivery rates.

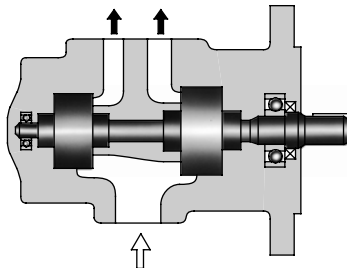
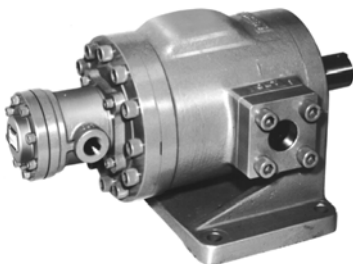


Graphic Symbol

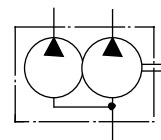


### Double Pumps

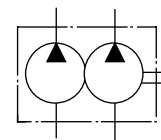
Two single pumps, driven by a common shaft, have two discharge ports so that the output flow can be supplied to separate circuits.



Graphic Symbols



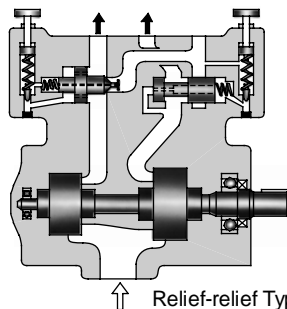
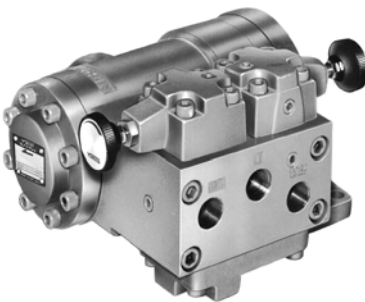
5050T  
50150T



150150T  
50250F  
150250F

### Combination Pumps

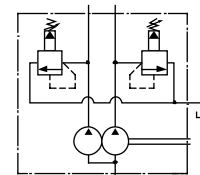
Consists of a double pump with either two relief valves, or one relief and one unloading and check valve incorporated within a common housing. The pressure of each pump can be independently adjusted. Remote control or high-low two-pressure control is possible.



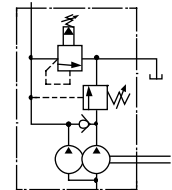
Graphic Symbols

• Relief-relief Type

• Relief-unloading Type



5050CT  
50150CT



5050CT  
50150CT

## Hydraulic Fluids

### 1. Type of hydraulic fluids

Any hydraulic fluid listed in the table 1 below can be used. However, the specifications of the pumps such as maximum pump speed may be changed according to the type of hydraulic fluids to be used. For details, please refer to the specifications of the pump concerned.

#### Hydraulic fluids

(Table 1)

Type of Fluids	Descriptions
Petroleum Base Oils	Use anti-wear type oils or R & O (Rust and Oxidation inhibitor) type oils (equivalent to ISO VG32 or 46).
Synthetic Fluids	Use phosphate ester type fluids. When phosphate ester type fluid is used, prefix "F-" to the model number because the special seals (fluororubber) are required to be used.
Water Containing Fluids	Consult your Yuken representative in advance.

### 2. Fluid viscosity and temperature

Use the hydraulic fluids which satisfy the recommended viscosity and oil temperature given in the Table 2 below. However, please note that if any of the pumps listed in the Table 3 is started at low speed, the maximum fluid viscosity is limited.

#### Fluid viscosity and temperature

(Table 2)

Fluid	Temperature °C (°F)	Viscosity mm <sup>2</sup> /s(SSU)
Petroleum Base Oils	0-70 (32-158)	20-400 (100-1800)
Phosphate Esters		

#### Maximum viscosity for low start-up speed

(Table 3)

Pump Type	Start-up Speed r/min	Max. Viscosity mm <sup>2</sup> /s (SSU)
50T, 5050T, 50150T 50250F, 5050ST 5050CT, 50150ST 50150CT	600	100 (455)
	950	200 (910)

### 3. Control of contamination

Contamination of hydraulic fluids results in pump failures and reduced pump lives. Carry out sufficient contamination control for hydraulic fluids and keep contamination level within NAS class 12.

Also, use a 100 μm (150-mesh) tank filter on the suction side and install it more than 50 mm (2 in.) away from the tank bottom.

## Instructions

### 1. Alignment of shaft

Employ a flexible coupling whenever possible, and avoid any stress from bending or thrust.

Maximum permissible misalignment is less than 0.1 mm (.004 inches) TIR and maximum permissible misangular is less than 0.2°.

### 2. Suction pressure

Set suction pressures, at the pump inlet, at the values shown in the table below.

In addition, use suction pipes having the sizes shown in the dimensional drawings. If the pump is installed above the tank level, set the suction port more than 1.0 m (3.3 ft.) below from the oil level { or 0.8 m (2.6 ft.) if a phosphate ester fluid is used }.

Model Numbers		Suction Pressure		
		Minimum		Maximum
		Petroleum base oil	Phosphate ester type fluid Water containing fluid	
Single Pumps	50T, 150T, 250F	-20 kPa (5.9 in. Hg Vacuum)	-16 kPa (4.7 in. Hg Vacuum)	+140 kPa (+20 PSIG)
Double Pumps	5050T, 50150T	-20 kPa* (5.9 in. Hg Vacuum)		
	150150T, 50250F 150250F	-20 kPa (5.9 in. Hg Vacuum)		
Combination Pumps	5050ST, 50150ST 5050CT, 50150CT	-20 kPa* (5.9 in. Hg Vacuum)		

★ With some nominal displacement, minimum suction pressures are limited because of pump speeds. For details, see the pump specifications.

### 3. Precautions at starting

At an initial operation or at an operation after a long rest, the pump may have difficulty in sucking up the fluid. In such cases, an air bleed valve should be installed beforehand on the discharge side (model No. ST1004-\* -10\*, catalogue No. Pub. EC-3001.), or discharge air by slightly slackening the connection on the discharge side. At starting, operate the pump intermittently as far as possible with no load.

For fluid viscosity at starting, see the item of "Hydraulic Fluids".



**Yuken can offer a large volume pump described below.**  
Consult Yuken for the details.

Model Numbers	500F-**-**-RL-20/2080/2090
Max Operating Pressure MPa (PSI)	7 (1020)
Output flow at 7 MPa (1020 PSI) and 1200 r/min with 20 mm <sup>2</sup> /s (100SSU) fluid L/min (U.S.GPM)	324-530 (85.6-140.0)
Shaft Speed Range r/min	600-1200

### Specifications

Model Numbers	Geometric Displacement cm <sup>3</sup> /rev (cu.in/rev)	Maximum <sup>★1</sup> Operating Pressure MPa (PSI)	Output Flow & Input Power	Shaft Speed Range r/min		Approx. Mass kg (lbs.)	
				Max.	Min.	Foot Mtg.	Flange Mtg.
50T-7	6.8 ( .415)	7 (1020)	Refer to Pages 7 & 8.	2000 <sup>★2</sup>	800	10.5 (23.2)	9.0 (19.8)
50T-12	11.6 ( .708)				1800 <sup>★2</sup>		
50T-17	16.5 ( 1.007)						
50T-23	22.9 ( 1.397)						
50T-26	25.9 ( 1.580)						
50T-36	36.0 ( 2.20)						
150T-48	47.7 ( 2.91)	7 (1020)	Refer to Pages 8 & 9.	1500 <sup>★2</sup>	600	26 (57.3)	25 (55.1)
150T-61	61.1 ( 3.73)						
150T-75	74.9 ( 4.57)						
150T-94	93.6 ( 5.71)						
150T-116	115.6 ( 7.05)						
250F-134	133.9 ( 8.17)	7 (1020)	Refer to Page 10.	1200	600	120 (265)	113 (249)
250F-153	153.1 ( 9.34)						
250F-176	175.8 (10.73)						
250F-200	201.0 (12.27)						

- ★1. The maximum operating pressure is constant irrespective of fluid types.
- ★2. If phosphate ester type fluids are used, the maximum speed is restricted to 1200 r/min.

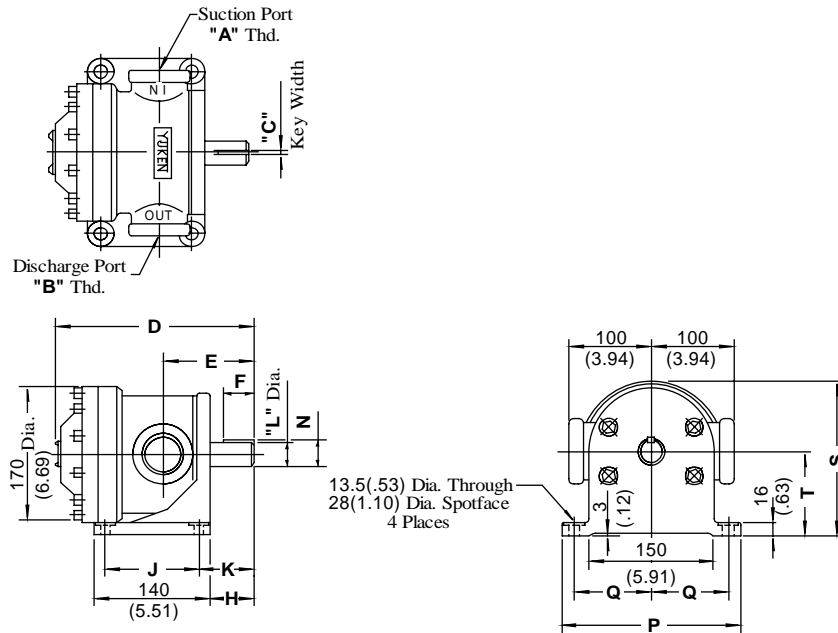
### Model Number Designation

F-	50T	-7	-L	-R	L	-30	*
Special Seals	Series Number	Nominal Displacement cm <sup>3</sup> /rev	Mounting	Direction of Rotation	Discharge Port Position	Design Number	Design Standard
<b>F:</b> For phosphate ester type fluids (Omit if not required)	<b>50T</b> (Threaded Connections)	<b>7, 12, 17, 23, 26, 36</b>	<b>L:</b> Foot Mtg.	(Viewed from Shaft End)  <b>R:</b> Clockwise <sup>★1</sup> (Normal)	<b>L:</b> On Left Hand (Normal)	<b>30</b>	Refer to <sup>★2</sup>
	<b>150T</b> (Threaded Connections)	<b>48, 61, 75, 94, 116</b>				<b>40</b>	
	<b>250F</b> (Flanged Connections)	<b>134, 153, 176, 200</b>	<b>F:</b> Flange Mtg.			<b>40</b>	

- ★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.
- ★2. Design Standards: None ..... Japanese Standard "JIS"  
80 ..... European Design Standard  
90 ..... N. American Design Standard



Foot Mtg.:150T-\*-L-RL-40/4080/4090

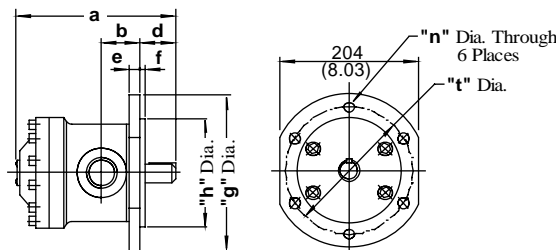


Model Numbers	"A" Thd.	"B" Thd.	Dimensions mm (Inches)					
			C	D	E	F	H	J
150T-*-L-RL-40	Rc 1-1/2	Rc 1-3/4	7.000(.2756) 6.964(.2742)	237 (9.33)	108.5 (4.27)	32 (1.26)	53 (2.09)	114 (4.488)
150T-*-L-RL-4080	1-1/2 BSP.F	1-1/4 BSP.F	4.760(.1874)	237.5 (9.35)	109 (4.29)	38 (1.50)	54 (2.18)	114.3 (4.500)
150T-*-L-RL-4090	1-1/2 NPT	1-1/4 NPT	4.742(.1867)					

Model Numbers	Dimensions mm (Inches)						
	K	L	N	P	Q	S	T
150T-*-L-RL-40	66 (2.60)	30.000 (1.1811) 29.979 (1.1803)	33.000 (1.299) 32.843 (1.293)	226 (8.86)	98.5 (3.878)	186.5 (7.34)	101.5 (3.996)
150T-*-L-RL-4080	66.7 (2.63)	25.400 (1.0000)	27.400 (1.079)	222 (8.74)	98.4 (3.874)	186.6 (7.35)	101.6 (4.000)
150T-*-L-RL-4090		25.379 ( .9992)	27.221 (1.072)				

DIMENSIONS IN  
MILLIMETRES (INCHES)

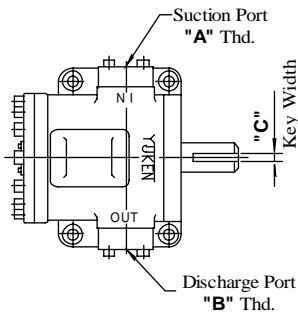
Flange Mtg.:150T-\*-F-RL-40/4080/4090



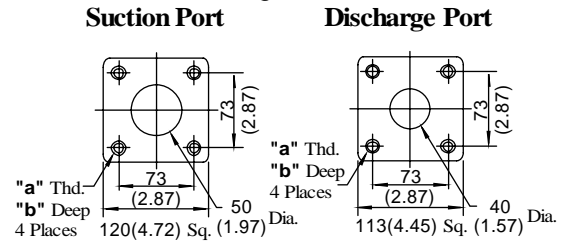
Model Numbers	Dimensions mm (Inches)									
	a	b	d	e	f	g	h	n	t	
150T-*-F-RL-40	237 (9.33)	58 (2.28)	50.5 (1.99)	17.5 (.69)	5 (.20)	230 (9.06)	160.000 (6.299) 159.960 (6.297)	13.5 (.53)	187 (7.36)	
150T-*-F-RL-4080	237.5 (9.35)	58.2 (2.29)	50.8 (2.00)	16 (.63)	6.4 (.25)	228 (8.98)	158.750 (6.250) 158.674 (6.247)	17.5 (.69)	187.3 (7.37)	
150T-*-F-RL-4090										

• For other dimensions, refer to "Foot Mtg."

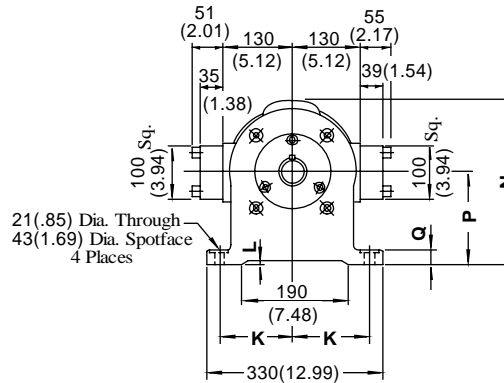
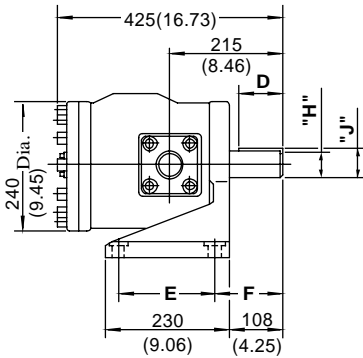
Foot Mtg.:250F-\*-L-RL-40/4080/4090



For Reference: Dimensions of Pipe Flange Mounting Surface



Model Numbers	"a" Thd.	b mm (IN.)
250F-*-L-RL-40	M 16	29 (1.14)
250F-*-L-RL-4080	M 16	29 (1.14)
250F-*-L-RL-4090	5/8-11 UNC	25 ( .98)

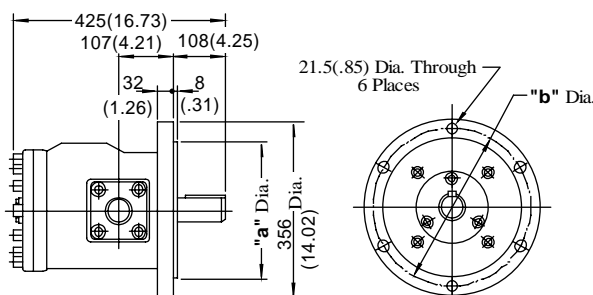


Model Numbers	"A" Thd.	"B" Thd.	Dimensions mm (Inches)				
			C	D	E	F	H
250F-*-L-RL-40	Rc 2	Rc 1-1/2	12.000 (.4724) 11.957 (.4707)	85 (3.35)	180 (7.087)	133 (5.24)	50.000 (1.9685) 49.975 (1.9675)
250F-*-L-RL-4080	2 BSP.F	1-1/2 BSP.F	12.700 (.5000)	87.3 (3.44)	177.8 (7.000)	133.4 (5.25)	50.800 (2.0000) 50.770 (1.9988)
250F-*-L-RL-4090	2 NPT	1-1/2 NPT	12.673 (.4989)				

Model Numbers	Dimensions mm (Inches)					
	J	K	L	N	P	Q
250F-*-L-RL-40	53.000 (2.087) 52.785 (2.078)	140 (5.512)	5 (.20)	305 (12.01)	170 (6.69)	28 (1.10)
250F-*-L-RL-4080	54.900 (2.161)	139.7 (5.500)	6.5 (.26)	306.5 (12.07)	171.5 (6.75)	29.5 (1.16)
250F-*-L-RL-4090	54.640 (2.151)					

DIMENSIONS IN  
MILLIMETRES (INCHES)

Flange Mtg.:250F-\*-F-RL-40/4080/4090

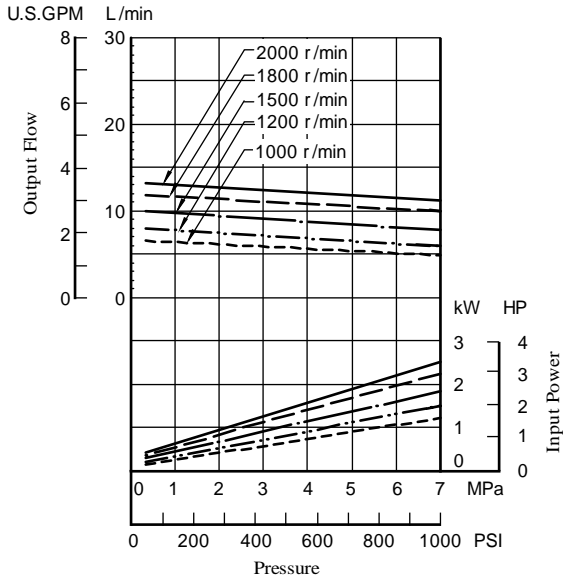


Model Numbers	Dimensions mm (Inches)	
	a	b
250F-*-F-RL-40	280.000 (11.024) 279.948 (11.022)	318 (12.52)
250F-*-F-RL-4080	279.370 (10.999)	317.5 (12.50)
250F-*-F-RL-4090	279.290 (10.996)	

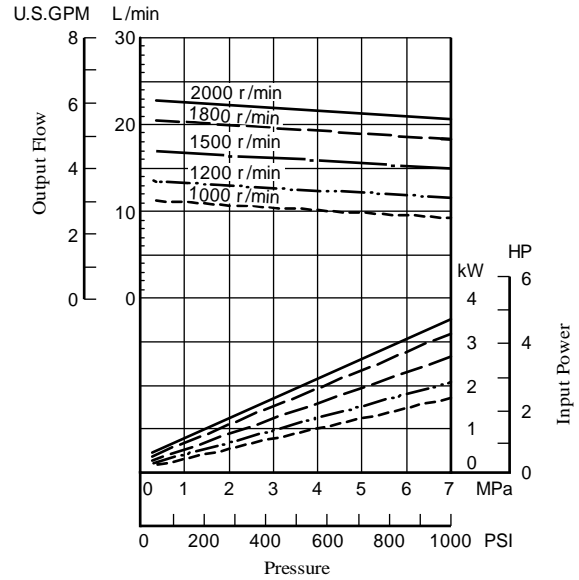
• For other dimensions, refer to "Foot Mtg."

Viscosity 20 mm<sup>2</sup>/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

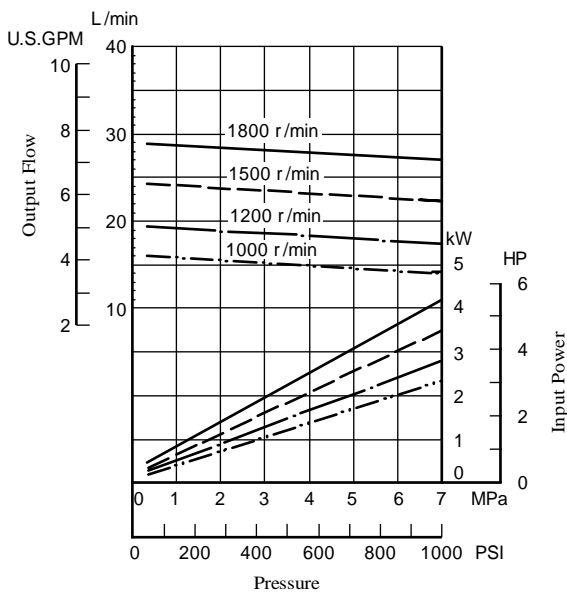
#### ● 50T-7



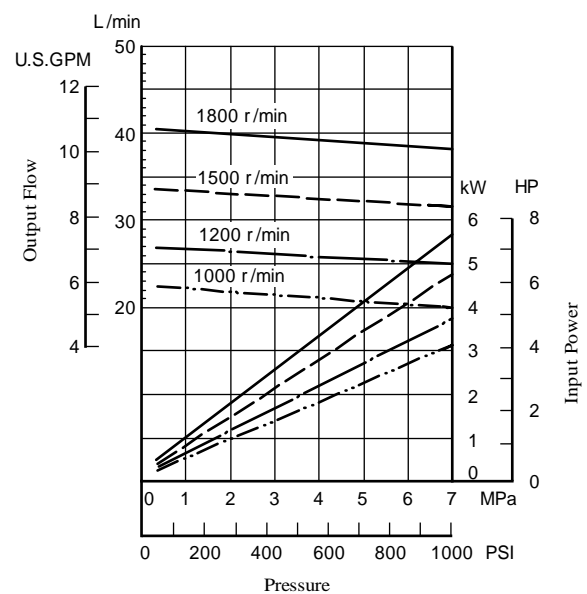
#### ● 50T-12



#### ● 50T-17

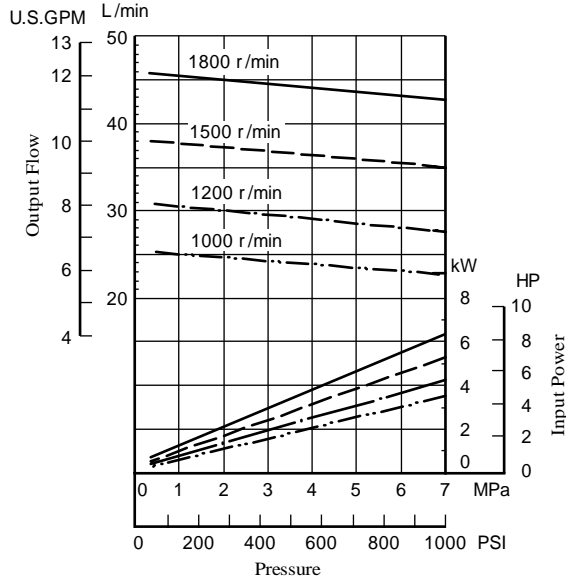


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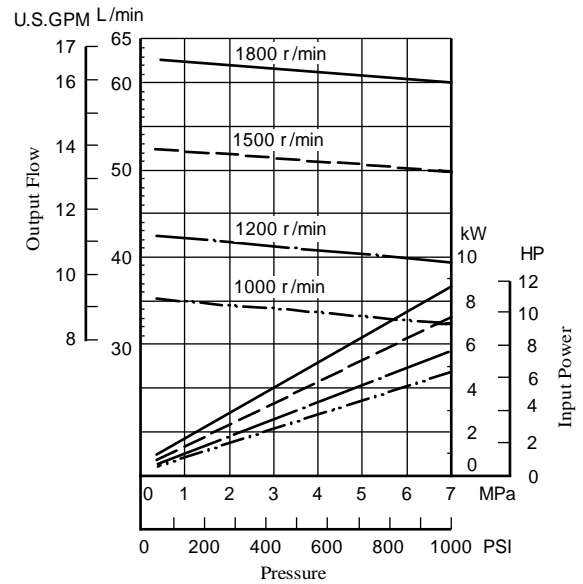


Viscosity 20 mm<sup>2</sup>/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

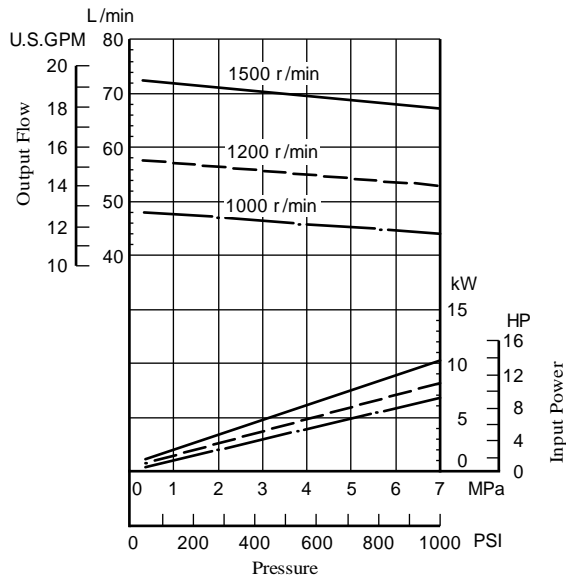
#### ● 50T-26



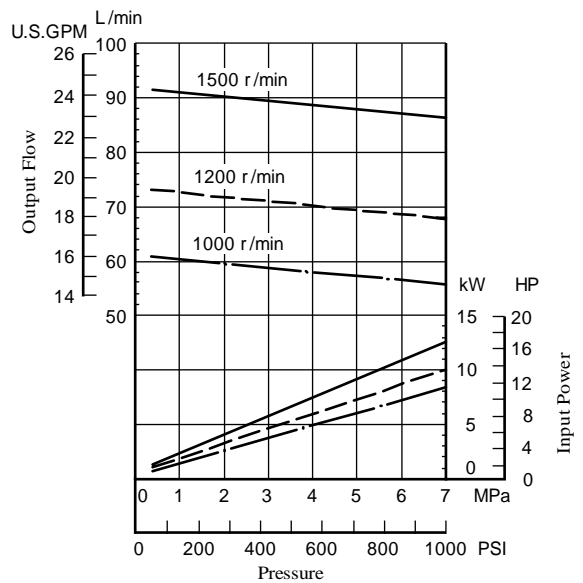
#### ● 50T-36



#### ● 150T-48



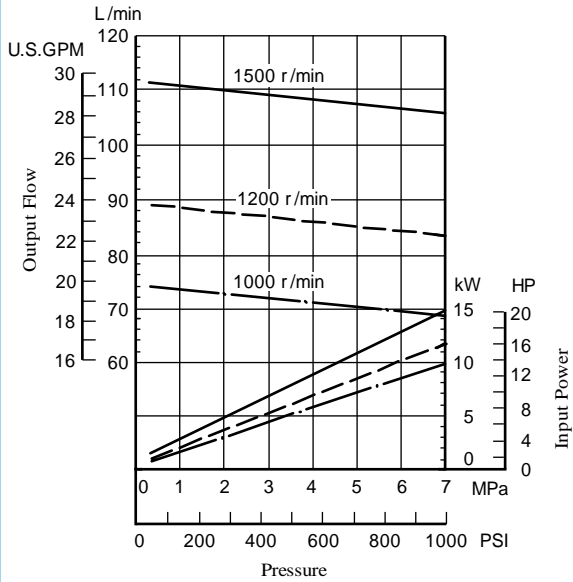
#### ● 150T-61



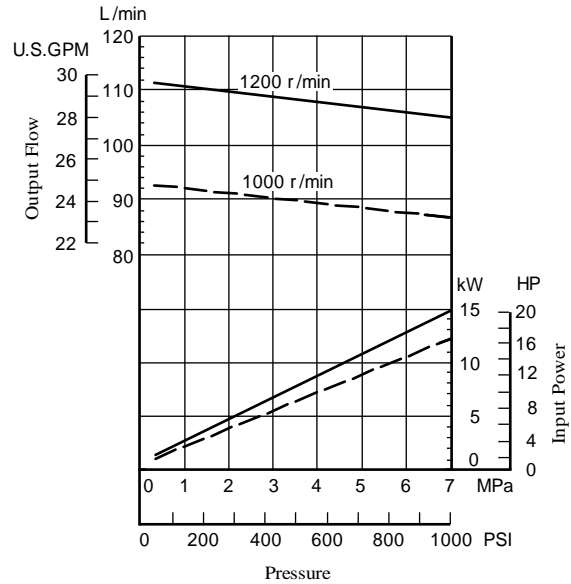


Viscosity 20 mm<sup>2</sup>/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

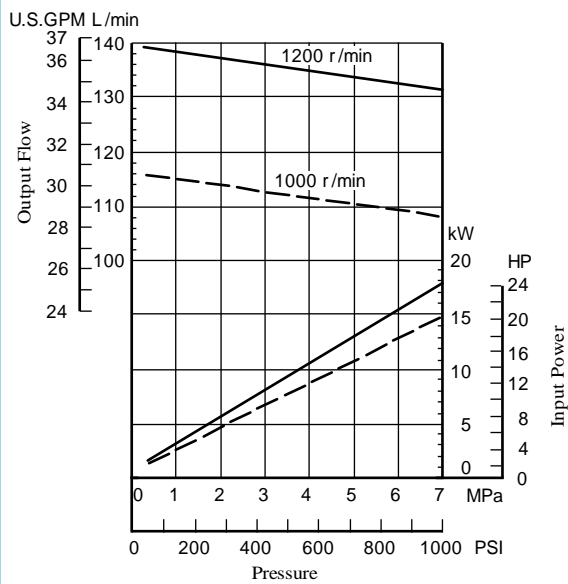
#### ● 150T-75



#### ● 150T-94

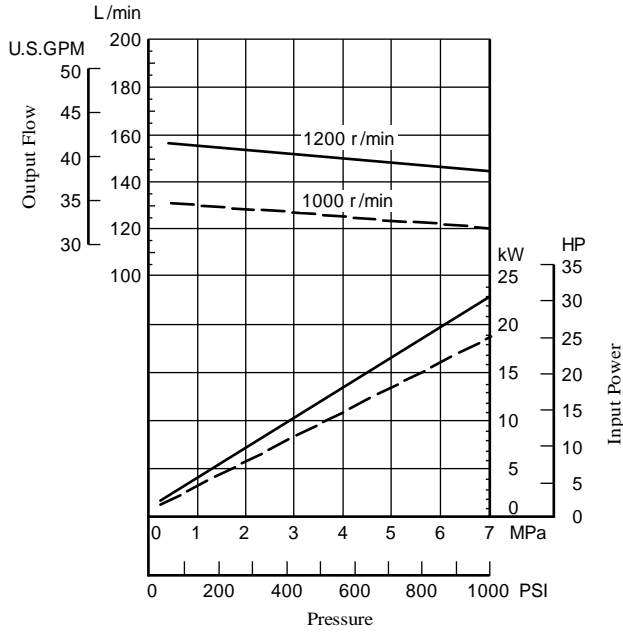


#### ● 150T-116

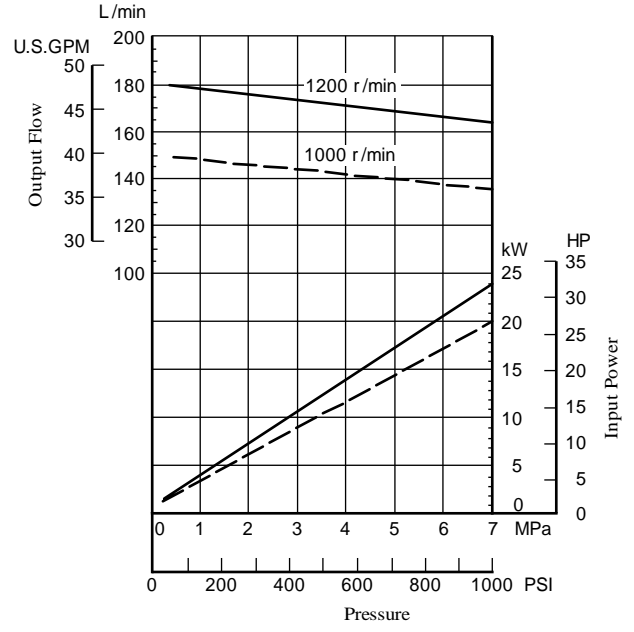


Viscosity 20 mm<sup>2</sup>/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

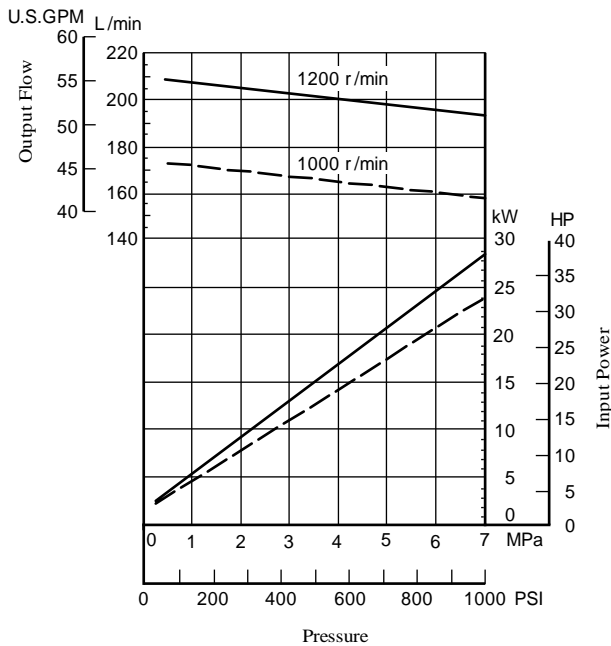
● **250F-134**



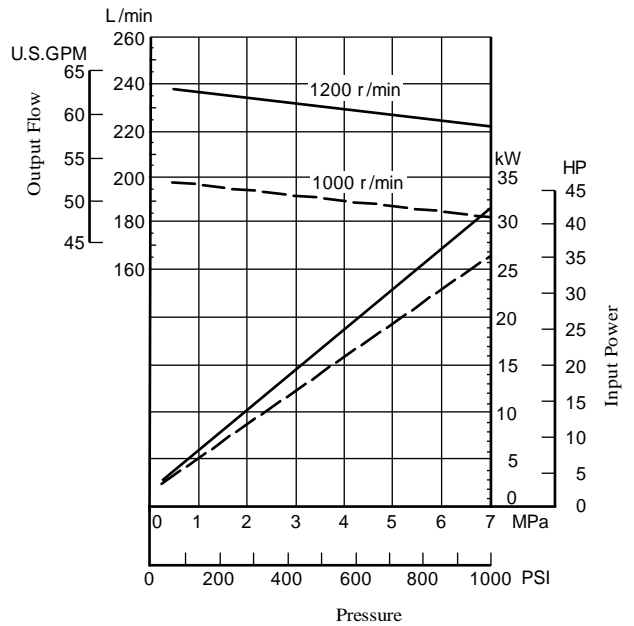
● **250F-153**



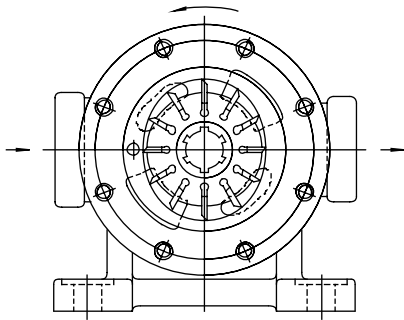
● **250F-176**



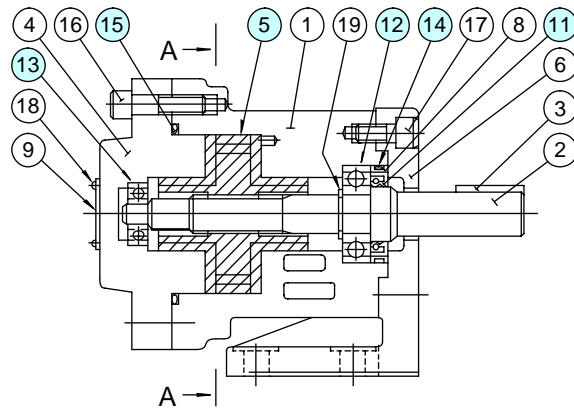
● **250F-200**



50T-\*-\*-RL-30/3080/3090  
150T-\*-\*-RL-40/4080/4090



Section A-A



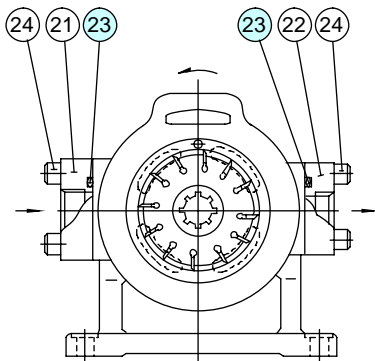
Item & Name Model Numbers	⑤ Cartridge Kit	⑪ Oil Seal	⑭ O-Ring	⑮ O-Ring	⑫ Bearing	⑬ Bearing	Seal Kit <sup>2</sup> Numbers
50T-7-*-RL-30*	C50-7-30	ISPD25388	SO-NA-P41	SO-NA-A234	6204	6200	KS-50T-30
50T-12-*-RL-30*	C50-12-30						
50T-17-*-RL-30*	C50-17-30						
50T-23-*-RL-30*	C50-23-30						
50T-26-*-RL-30*	C50-26-30						
50T-36-*-RL-30*	C50-36-30						
150T-48-*-RL-40*	C150-48-40	ISPD32427	SO-NA-P46	SO-NA-A248	6205	6203	KS-150T-40
150T-61-*-RL-40*	C150-61-40						
150T-75-*-RL-40*	C150-75-40						
150T-94-*-RL-40*	C150-94-40						
150T-116-*-RL40*	C150-116-40						

★1. For pumps for phosphate ester type hydraulic fluids, seals are different from the above. Please contact us. ★2. Seal kits consist of ⑪(oil seal) and ⑭ and ⑮(o-rings).

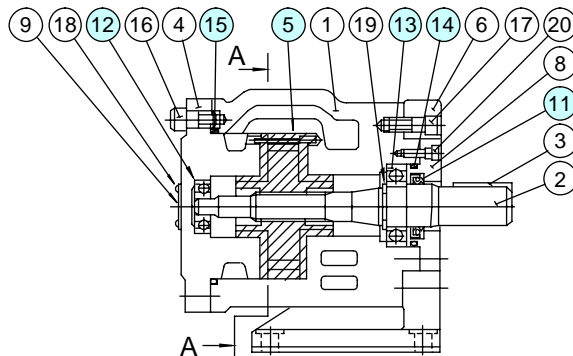
### ⚠ CAUTION

When making replacement of seals, bearings or cartridge kits, please do it carefully after reading through the relevant instructions in the Operator's Manual.

250F-\*-\*-RL-40/4080/4090



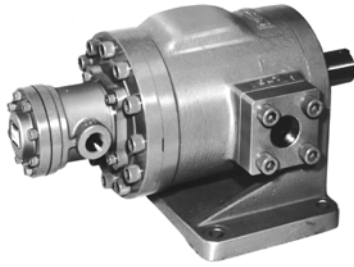
Section A-A



Item & Name Model Numbers	⑤ Cartridge Kit	⑪ Oil Seal	⑭ O-Ring	⑮ O-Ring	⑲ O-Ring	⑬ Bearing	⑫ Bearing	Seal Kit <sup>2</sup> Numbers
250F-134-*-RL-40*	C250-134-40	ISPD527512	SO-NA-G95	SO-NB-G165	SO-NB-G60	6309	6305	KS-250F-40
250F-153-*-RL-40*	C250-153-40							
250F-176-*-RL-40*	C250-176-40							
250F-200-*-RL-40*	C250-200-40							

★1. For pumps for phosphate ester type hydraulic fluids, seals are different from the above. Please contact us. ★2. Seal kits consist of ⑪ (oil seal) and ⑭ and ⑮ and ⑲(o-rings).

### Specifications / Model Number Designation



Yuken can offer a large volume double pump described below. Consult Yuken for the details.

Model Numbers	250250F-**-**-RL-20/2080/2090	
Max Operating Pres.	MPa (PSI)	7 (1020)
Output flow at 7 MPa (1020 PSI) and 1200 r/min with 20 mm <sup>2</sup> /s (100 SSU) fluid	L/min (U.S.GPM)	(Each Pump) 162-265 (42.8-70)
Shaft Speed Range	r/min	600-1200

### Specifications

Model Numbers	Max. Operating Pressure MPa (PSI)	Output Flow & Input Power		Shaft Speed Range r/min		Approx. Mass kg (lbs.)	
		Small Volume Pump	Large Volume Pump	Max.	Min.	Foot Mtg.	Flange Mtg.
5050T	7 <sup>*1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)	Same as Single Pump "50T" (Refer to pages 7 & 8)	2000 <sup>*2</sup> <sub>*6</sub>	600 <sup>*4</sup>	31 (68.4)	29 (63.9)
50150T	7 <sup>*1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)	Same as Single Pump "150T" (Refer to pages 8 & 9)	1200 <sup>*3</sup>	600 <sup>*4</sup>	60 (132)	55 (121)
150150T	7 <sup>*1</sup> (1020)	Same as Single Pump "150T" (Refer to pages 8 & 9)	Same as Single Pump "150T" (Refer to pages 8 & 9)	1500 <sup>*5</sup> <sub>*6</sub>	600	67 (148)	62 (137)
50250F	7 <sup>*1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)	Same as Single Pump "250F" (Refer to page 10)	1200	600. <sup>*4</sup>	131 (289)	125 (276)
150250F	7 <sup>*1</sup> (1020)	Same as Single Pump "150T" (Refer to pages 8 & 9)	Same as Single Pump "250F" (Refer to page 10)	1200	600	146 (322)	140 (309)

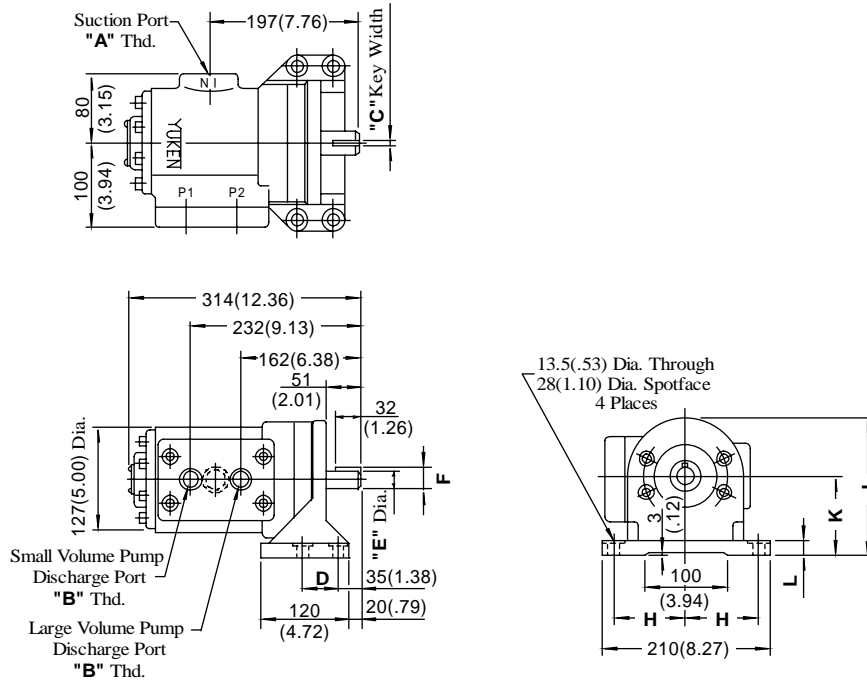
- ★1. The maximum operating pressure is constant irrespective of fluid types.
- ★2. If nominal displacement 17, 23, 26 or 36 is used, the maximum pump speed is restricted as follows:  
 ND. 17,23 ..... 1800 r/min  
 26 ..... 1500 r/min  
 36 ..... 1200 r/min
- ★3. If large-volume side nominal displacement 94 or 116 is used at a speed above 1000 r/min, restrict the suction pressure to -7 kPa (1.97 in. Hg. Vacuum). (For other models, restrict it to -20 kPa (5.9 in. Hg. Vacuum).)
- ★4. If nominal displacement 7 is used on the pump on small-volume side, the minimum speed is restricted to 800 r/min.
- ★5. If nominal displacement 94 or 116 is used, the maximum speed is restricted to 1200 r/min.
- ★6. If phosphate ester type fluids are used, the maximum speed is restricted to 1200 r/min.

### Model Number Designation

F-	5050T	-7	-12	-L	-R	L	-40	*
Special Seals	Series Number	Small Volume Pump Nominal Displacement cm <sup>3</sup> /rev	Large Volume Pump Nominal Displacement cm <sup>3</sup> /rev	Mounting	Direction of Rotation	Discharge Port Position	Design Number	Design Std.
F: For phosphate ester type fluids (Omit if not required)	5050T (Threaded Connections)	7, 12, 17, 23, 26, 36	7, 12, 17, 23, 26, 36	L: Foot Mtg.  F: Flange Mtg.	(Viewed from Shaft End)  R: Clockwise ★1 (Normal)	L: On Left Hand (Normal)	40	Refer to ★2
	50150T (Threaded Connections)	7, 12, 17, 23, 26, 36	48, 61, 75, 94, 116				40	
	150150T (Threaded Connections)	48, 61, 75, 94, 116	48, 61, 75, 94, 116				20	
	50250F (Flange Connections)	7, 12, 17, 23, 26, 36	134, 153, 176, 200				40	
	150250F (Flange Connections)	48, 61, 75, 94, 116	134, 153, 176, 200				40	

- ★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.
- ★2. Design Standards: None ..... Japanese Standard "JIS"  
 80 ..... European Design Standard  
 90 ..... N. American Design Standard

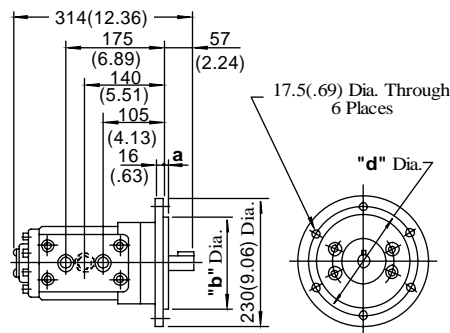
Foot Mtg.:5050T-\*\*-L-RL-40/4080/4090



Model Numbers	"A" Thd.	"B" Thd.	Dimensions mm (Inches)							
			C	D	E	F	H	J	K	L
5050T-**-L-RL-40	Rc 1-1/2	Rc 3/4	7.000 (.2756) 6.964 (.2742)	50 (2.008)	25.000 (.9843) 24.979 (.9834)	28.000 (1.102) 24.743 (1.092)	90 (3.543)	167 (6.57)	95 (3.74)	20 (.79)
5050T-**-L-RL-4080	1-1/2 BSP.F 1-1/2 NPT	3/4 BSP.F 3/4 NPT	4.760 (.1874) 4.730 (.1862)	50.8 (2.000)	25.370 (.9988) 25.349 (.9980)	27.370 (1.078) 27.191 (1.071)	88.9 (3.500)	167.3 (6.59)	95.25 (3.75)	20.3 (.80)

DIMENSIONS IN  
MILLIMETRES (INCHES)

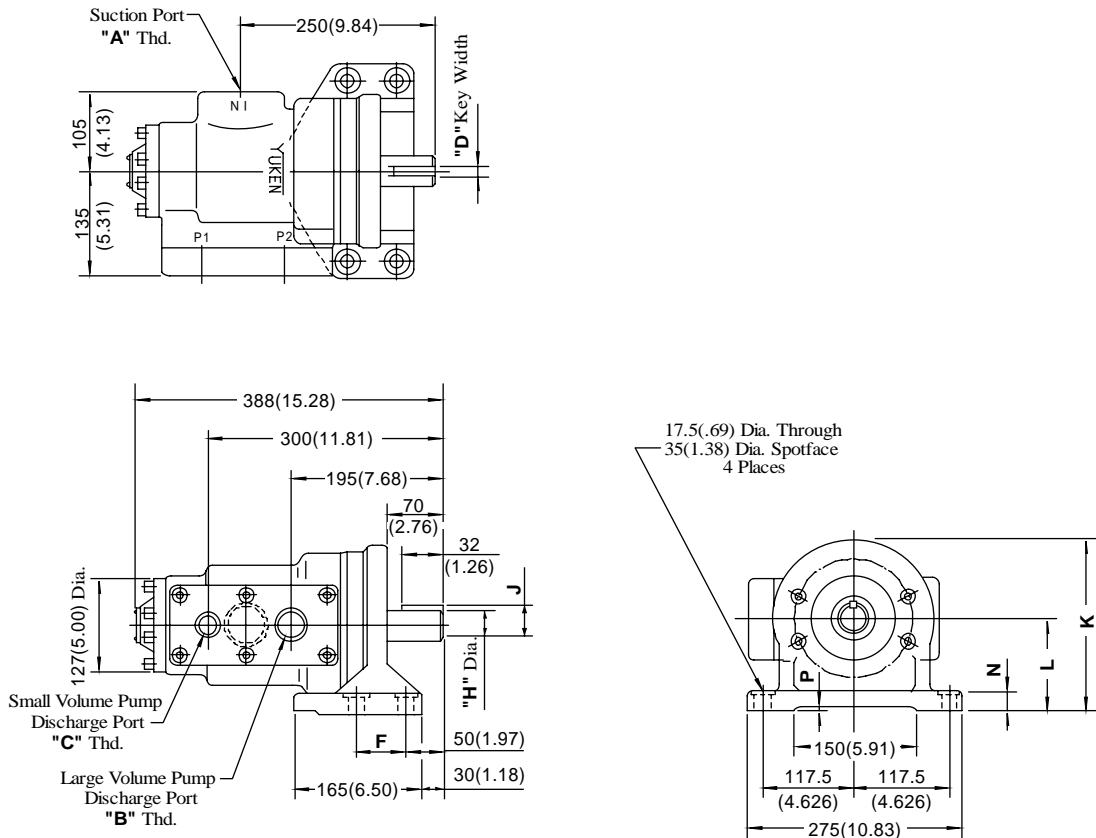
Flange Mtg.:5050T-\*\*-F-RL-40/4080/4090



Model Numbers	Dimensions mm (Inches)		
	a	b	d
5050T-**-F-RL-40	6 (.24)	160.000 (6.299) 159.960 (6.298)	190 (7.48)
5050T-**-F-RL-4080	6.5 (.26)	158.750 (6.250) 158.674 (6.247)	187.3 (7.37)

• For other dimensions, refer to "Foot Mtg.".

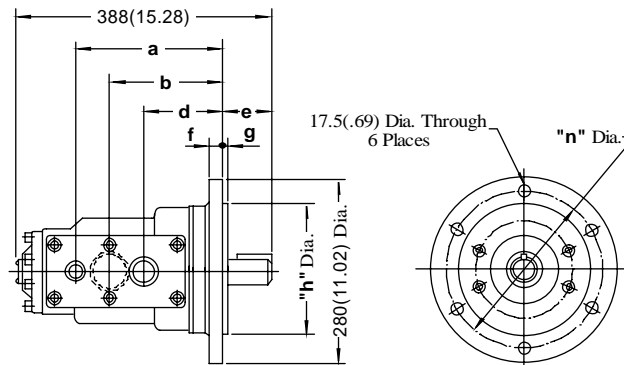
#### Foot Mtg.:50150T-\*-\*-L-RL-40/4080/4090



Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	Dimensions mm (Inches)								
				D	E	E	H	J	K	L	N	P
50150T-*-*-L-RL-40	Rc 2	Rc 1-1/4	Rc 3/4	10.000 (.3937) 9.964 (.3923)	50 (1.97)	64 (2.520)	38.000 (1.4961) 37.975 (1.4951)	42.000 (1.654) 41.839 (1.647)	220 (8.66)	120 (4.72)	25 (.98)	3 (.12)
50150T-*-*-L-RL-4080	2 BSP.F	1-1/4 BSP.F	3/4 BSP.F	9.550 (.3760)	57	63.5	38.075 (1.4990)	42.225 (1.662)	220.5 (8.68)	120.7 (4.75)	25.7 (1.01)	3.7 (.15)
50150T-*-*-L-RL-4090	2 NPT	1-1/4 NPT	3/4 NPT	9.525 (.3750)	(2.24)	(2.500)	38.050 (1.4980)	42.075 (1.656)				

DIMENSIONS IN  
MILLIMETRES (INCHES)

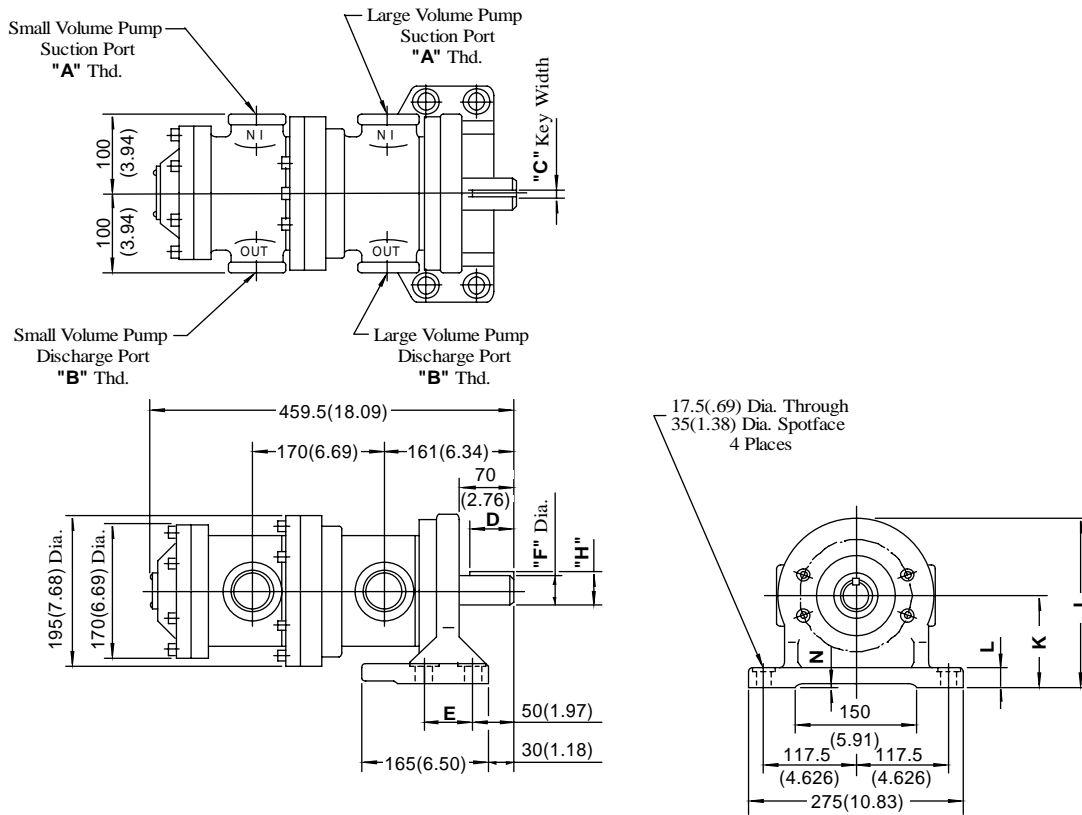
#### Flange Mtg.:50150T-\*-\*-F-RL-40/4080/4090



Model Numbers	Dimensions mm (Inches)							
	a	b	d	e	f	g	h	n
50150T-*-*-F-RL-40	225 (8.86)	175 (6.89)	120 (4.72)	75 (2.95)	22 (.87)	5 (.20)	203.000 (7.992) 202.954 (7.990)	241 (9.49)
50150T-*-*-F-RL-4080	224	174	119	76	21	6.5	203.200 (8.000)	241.3
50150T-*-*-F-RL-4090	(8.82)	(6.85)	(4.69)	(2.99)	(.83)	(.26)	203.128 (7.997)	(9.50)

• For other dimensions, refer to "Foot Mtg."

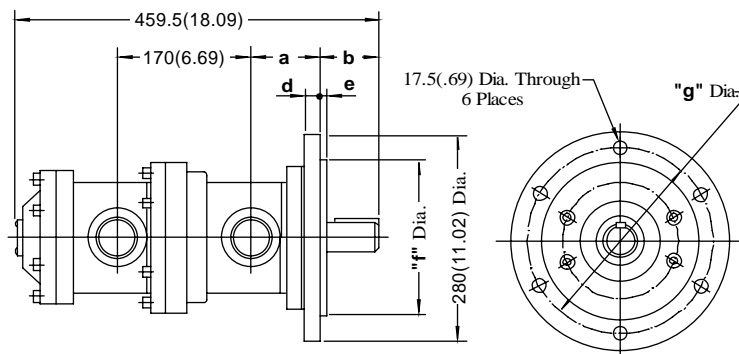
Foot Mtg.:150150T-\*\*-L-RL-20/2080/2090



Model Numbers	"A" Thd.	"B" Thd.	Dimensions mm (Inches)								
			C	D	E	F	H	J	K	L	N
150150T-**-L-RL-20	Rc 1-1/2	Rc 1-1/4	10.000 (.3937)	56	64	38.000 (1.4961)	41.000 (1.614)	220	120	25	3
			9.964 (.3923)	(2.20)	(2.520)	37.975 (1.4951)	40.685 (1.602)	(8.66)	(4.72)	(.98)	(.12)
150150T-**-L-RL-2080	1-1/2 BSP.F	1-1/4 BSP.F	9.550 (.3760)	55	63.5	38.075 (1.4990)	42.225 (1.662)	220.5	120.7	25.7	3.7
150150T-**-L-RL-2090	1-1/2 NPT	1-1/4 NPT	9.525 (.3750)	(2.17)	(2.500)	38.050 (1.4980)	42.075 (1.656)	(8.68)	(4.75)	(1.01)	(.15)

DIMENSIONS IN  
MILLIMETRES (INCHES)

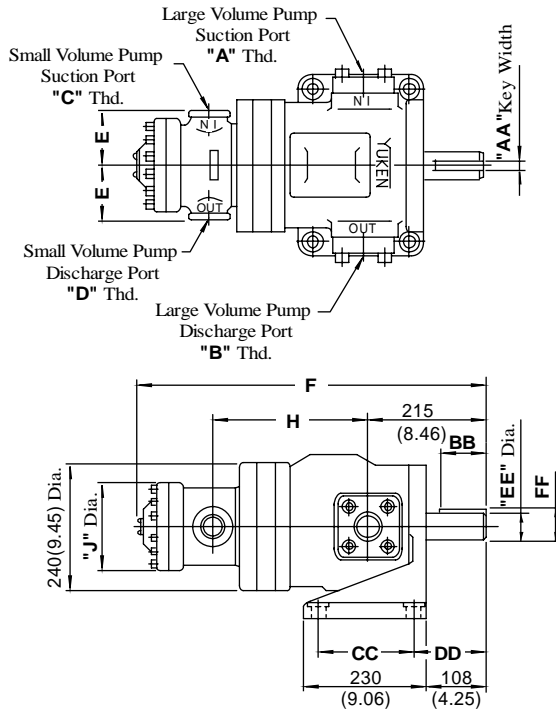
Flange Mtg.:150150T-\*\*-F-RL-20/2080/2090



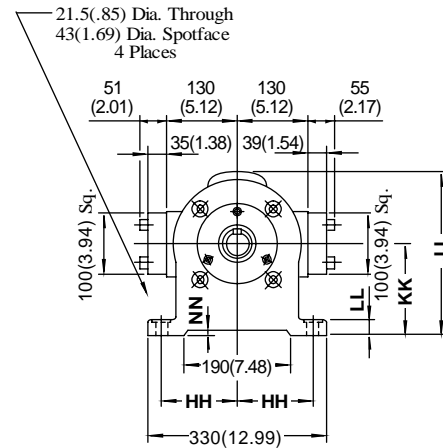
Model Numbers	Dimensions mm (Inches)					
	a	b	d	e	f	g
150150T-**-F-RL-20	86 (3.39)	75 (2.95)	22 (.87)	5 (.20)	203.000 (7.992)	241 (9.49)
					202.954 (7.990)	
150150T-**-F-RL-2080	85 (3.35)	76 (2.99)	21 (.83)	6.5 (.26)	203.200 (8.000)	241.3 (9.50)
150150T-**-F-RL-2090					203.128 (7.997)	

• For other dimensions, refer to "Foot Mtg.".

Foot Mtg.: 50150F-\*\*-L-RL-40/4080/4090  
150250F-\*\*-L-RL-40/4080/4090



The dimensions of the pipe flange mounting surface for suction and discharge ports are the same as those of "250F" series single pumps. See page 6.

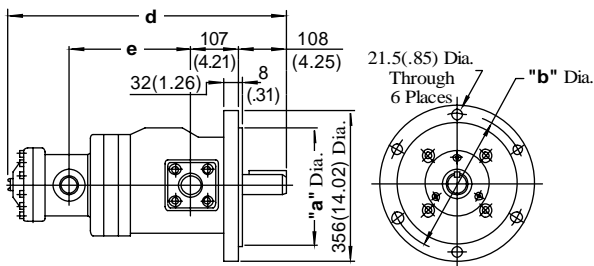


Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	"D" Thd.	Dimensions mm (Inches)			
					E	F	H	J
50250F-**-L-RL-40	Rc 2	Rc 1-1/2	Rc 1	Rc 3/4	70 (2.76)	562 (22.13)	250 (9.84)	125 (4.92)
50250F-**-L-RL-4080	2 BSP.F	1-1/2 BSP.F	1 BSP.F	3/4 BSP.F				
50250F-**-L-RL-4090	2 NPT	1-1/2 NPT	1 NPT	3/4 NPT				
150250F-**-L-RL-40	Rc 2	Rc 1-1/2	Rc 1-1/2	Rc 1-1/4	100 (3.94)	620.5 (24.43)	277 (10.91)	170 (6.69)
150250F-**-L-RL-4080	2 BSP.F	1-1/2 BSP.F	1-1/2 BSP.F	1-1/4 BSP.F				
150250F-**-L-RL-4090	2 NPT	1-1/2 NPT	1-1/2 NPT	1-1/4 NPT				

Model Numbers	Dimensions mm (Inches)										
	AA	BB	CC	DD	EE	FF	HH	JJ	KK	LL	NN
50250F/150250F-**-L-RL-40	12.000 (.4724) 11.957 (.4708)	85 (3.35)	180 (7.087)	133 (5.24)	50.000 (1.9685) 49.975 (1.9675)	53.000 (2.087) 52.685 (2.074)	140 (5.512)	305 (12.01)	170 (6.69)	28 (1.10)	5 (.20)
50250F/150250F-**-L-RL-4080	12.700 (.5000)	87.3 (3.44)	177.8 (7.000)	133.4 (5.25)	50.800 (2.0000)	54.900 (2.161)	139.7 (5.500)	306.5 (12.07)	171.5 (6.75)	29.5 (1.16)	6.5 (.26)
50250F/150250F-**-L-RL-4090	12.673 (.4989)				50.770 (1.9988)	54.640 (2.151)					

DIMENSIONS IN  
MILLIMETRES (INCHES)

Flange Mtg.: 50150F-\*\*-F-RL-40/4080/4090  
150250F-\*\*-F-RL-40/4080/4090

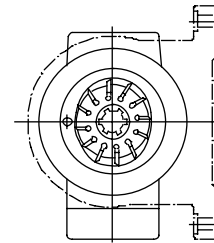
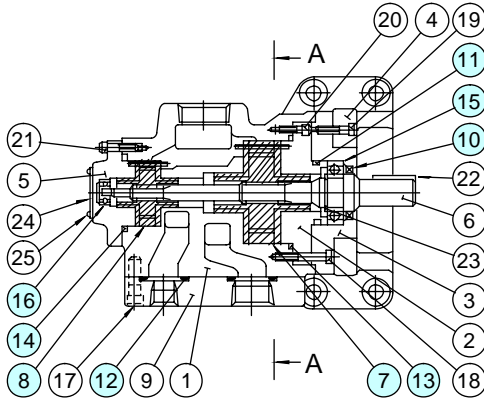


Model Numbers	Dimensions mm (Inches)			
	a	b	d	e
50250F-**-F-RL-40	280.000 (11.024) 279.948 (11.022)	318 (12.52)	562 (22.13)	250 (9.84)
50250F-**-F-RL-4080	279.370 (10.999)	317.5 (12.50)		
50250F-**-F-RL-4090	279.290 (10.996)			
150250F-**-F-RL-40	280.000 (11.024) 279.948 (11.022)	318 (12.52)	620.5 (24.23)	277 (10.91)
150250F-**-F-RL-4080	279.370 (10.999)	317.5 (12.50)		
150250F-**-F-RL-4090	279.290 (10.996)			

• For other dimensions, refer to "Foot Mtg."



5050T-\*\*\*-RL-40/4080/4090  
50150T-\*\*\*-RL-40/4080/4090



Section A-A

#### ● Seals & Bearings

Item	Name of Parts	Part Numbers		Qty.
		5050T	50150T	
10 *	Oil Seal	ISPD 325211	ISPD 406212	1
11 *	O-Ring	SO-NA-P52	SO-NA-P62	1
12 *	O-Ring	SO-NB-G30	SO-NB-G45	2
13 *	O-Ring	SO-NA-A234	SO-NA-A248	1
14 *	O-Ring	SO-NA-A234	SO-NA-A234	1
15	Bearing	6305	6207	1
16	Bearing	6200	6200	1

Note: For pumps for phosphate ester type fluids, seals are different from the above. Please contact us.

★ When ordering seals, please specify the seal kit number from the table in the following page.

#### ● Cartridge Kits

Model Numbers	Cartridge Kit Numbers	
	⑧ Small Volume Pump	⑦ Large Volume Pump
5050T-★-■	C50-★-30	C50-■-30
50150T-★-■	C50-★-30	C150-■-40

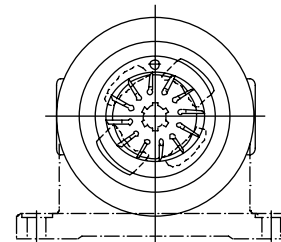
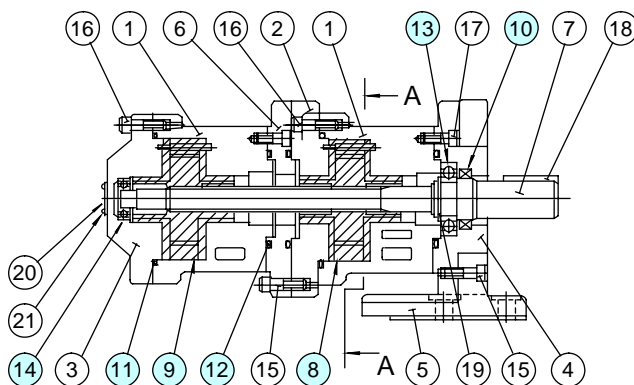
Notes: 1) ★ and ■ are spaces for nominal displacement figures.

2) Cartridge kits are common with 50T or 150T series single pumps. For details, see page 11.

#### ⚠ CAUTION

When making replacement of seals, bearings or cartridge kits, please do it carefully after reading through the relevant instructions in the Operator's Manual.

150150T-\*\*\*-RL-20/2080/2090



Section A-A

#### ● Seals & Bearings

Item	Name of Parts	Part Numbers	Qty.
10 *	Oil Seal	ISPD 406212	1
11 *	O-Ring	SO-NA-A248	2
12 *	O-Ring	SO-NA-G90	3
13	Bearing	6207	1
14	Bearing	6203	1

Note: For pumps for phosphate ester type fluids, seals are different from the above. Please contact us.

★ When ordering seals, please specify the seal kit number from the table in the following page.

#### ● Cartridge Kits

Model Numbers	Cartridge Kit Numbers	
	⑨ Small Volume Pump	⑧ Large Volume Pump
150150T-★-■	C150-★-40	C150-■-40

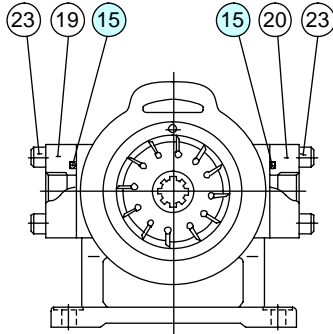
Notes: 1) ★ and ■ are spaces for nominal displacement figures.

2) Cartridge kits are common with 150T series single pumps. For details, see page 11.

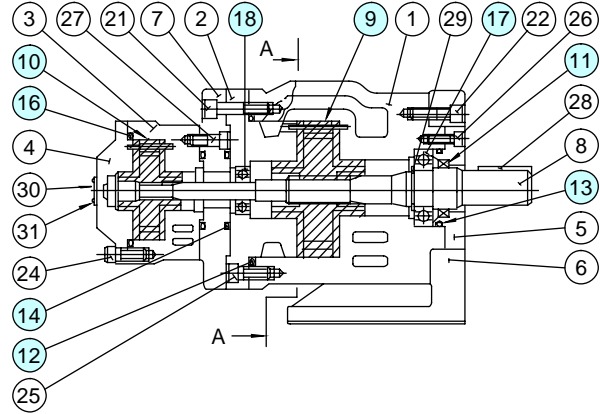
50250F-\*\*\*-RL-40/4080/4090  
150250F-\*\*\*-RL-40/4080/4090

#### ⚠ CAUTION

When making replacement of seals, bearings or cartridge kits, please do it carefully after reading through the relevant instructions in the Operator's Manual.



Section A-A



#### ● Cartridge Kits

Model Numbers	Cartridge Kit Numbers	
	⑩ Small Volume Pump	⑨ Large Volume Pump
50250F-★-■	C50-★-30	C250-■-40
150250F-★-■	C150-★-40	C250-■-40

Notes: 1) ★ and ■ are spaces for nominal displacement figures.

2) Cartridge kits are common with single pumps.

For details, see page 11.

#### ● Seals & Bearings

Item	Name of Parts	Part Numbers		Qty.
		50250F	150250F	
11 ★	Oil Seal	ISPD 527512	ISPD 527512	1
12 ★	O-Ring	SO-NB-G165	SO-NB-G165	1
13 ★	O-Ring	SO-NA-G95	SO-NA-G95	1
14 ★	O-Ring	SO-NB-G50	SO-NB-G90	2
15 ★	O-Ring	SO-NB-G60	SO-NB-G60	2
16 ★	O-Ring	SO-NA-A234	SO-NA-A248	1
17	Bearing	6309	6309	1
18	Bearing	6305	6305	1

Note: For pumps for phosphate ester type fluids, seals are different from the above. Please contact us.

★ When ordering seals, please specify the seal kit number from the table below.

#### ● Seal Kit Numbers

Model Numbers	Seal Kit Numbers
5050T-***-RL-40/4080/4090	KS-5050T-40
50150T-***-RL-40/4080/4090	KS-50150T-40
150150T-***-RL-20/2080/2090	KS-150150T-20
50250F-***-RL-40/4080/4090	KS-50250F-40
150250F-***-RL-40/4080/4090	KS-150250F-40



### ■ Specifications

Pump Types	Model Numbers	Max. Operating Pressure MPa (PSI)	Output Flow & Input Power		Start Speed Range r/min		Approx. Mass kg (lbs.)	
			Small Volume Pump	Large Volume Pump	Max.	Min.	Foot Mtg.	Flange Mtg.
Relief-relief Type	5050ST	7 <sup>★1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)		2000 <sup>★2</sup> <sup>★6</sup>	600 <sup>★4</sup>	44 (97)	42 (92.6)
	50150ST	7 <sup>★1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)	Same as Single Pump "150T" (Refer to pages 8 & 9)	1200 <sup>★3</sup>	600 <sup>★4</sup>	70 (154)	65 (143)
Relief-unloading Type	5050CT	7 <sup>★1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)		2000 <sup>★2</sup> <sup>★6</sup>	600 <sup>★4</sup>	44 (97)	42 (92.6)
	50150CT	7 <sup>★1</sup> (1020)	Same as Single Pump "50T" (Refer to pages 7 & 8)	Same as Single Pump "150T" (Refer to pages 8 & 9)	1200 <sup>★3</sup>	600 <sup>★4</sup>	70 (154)	65 (143)

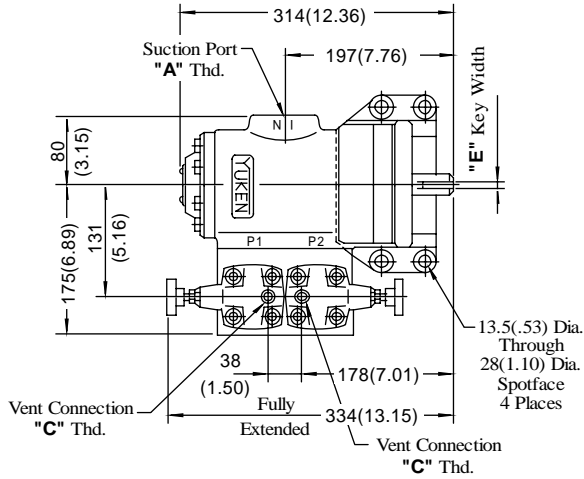
- ★1. The maximum operating pressure is constant irrespective of fluid types.
- ★2. If nominal displacement 17, 23, 26 or 36 is used, the maximum pump speed is restricted as follows:  
 ND. 17,23 ..... 1800 r/min  
 26 ..... 1500 r/min  
 36 ..... 1200 r/min
- ★3. If large-volume side nominal displacement 94 or 116 is used at a speed above 1000 r/min, restrict the suction pressure to -7 kPa (1.97 in. Hg. Vacuum). (For other models, restrict to -20 kPa (5.9 in. Hg. Vacuum).)
- ★4. If nominal displacement 7 is used on the pump on small-volume side, the minimum speed is restricted to 800 r/min.
- ★5. If nominal displacement 94 or 116 is used, the maximum speed is restricted to 1200 r/min.
- ★6. If phosphate ester type fluids are used, the maximum speed is restricted to 1200 r/min.

### ■ Model Number Designation

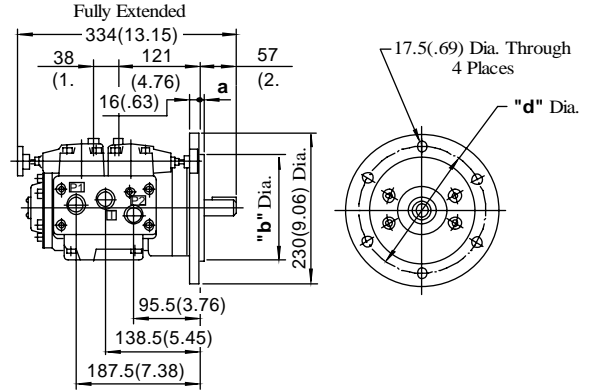
F-	5050CT	-7	-12	-L	-D	-R	L	-40	*
Special Seals	Series Number	Small Volume Pump Nominal Displacement cm <sup>3</sup> /rev	Large Volume Pump Nominal Displacement cm <sup>3</sup> /rev	Mounting	Pres. Adj. Range of Unloading Valve MPa (PSI)	Direction of Rotation	Discharge Port Position	Design Number	Design Std.
F: For phosphate ester type fluids (Omit if not required)	<b>5050ST</b> ( Relief-relief Type, Threaded Connections )	<b>7, 12, 17 23, 26, 36</b>	<b>7, 12, 17 23, 26, 36</b>	L: Foot Mtg.	D 0.5 - 1.0 : (73 - 145) E: 1.0 - 3.0 (145 - 435) F: 3.0 - 7.0 (435 - 1020)	(Viewed from Shaft End)  R: Clock-wise <sup>★1</sup> (Normal)	L: On Left Hand (Normal)	<b>40</b>	Refer to <sup>★2</sup>
	<b>50150ST</b> ( Relief-relief Type, Threaded Connections )		<b>48, 61, 75 94, 116</b>						
	<b>5050CT</b> ( Relief-unloading Type, Threaded Connections )	<b>7, 12, 17 23, 26, 36</b>	<b>7, 12, 17 23, 26, 36</b>	F: Flange Mtg.				<b>40</b>	
	<b>50150CT</b> ( Relief-unloading Type, Threaded Connections )		<b>48, 61, 75 94, 116</b>					<b>40</b>	

- ★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.
- ★2. Design Standards: None ..... Japanese Standard "JIS"  
 80 ..... European Design Standard  
 90 ..... N. American Design Standard

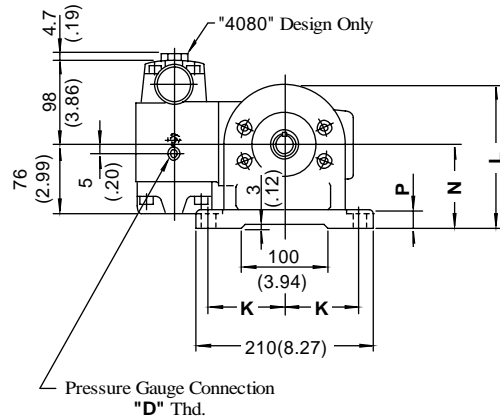
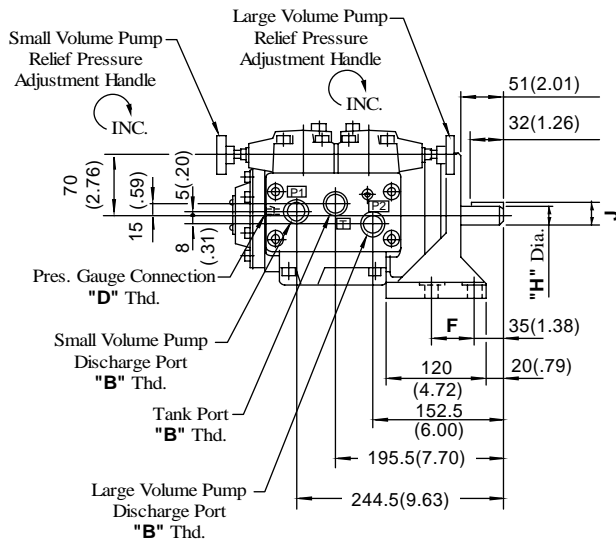
Foot Mtg.:5050ST-\*-\*-L-RL-40/4080/4090



Flange Mtg.:5050ST-\*-\*-F-RL-40/4080/4090



• For other dimensions, refer to "Foot Mtg.".

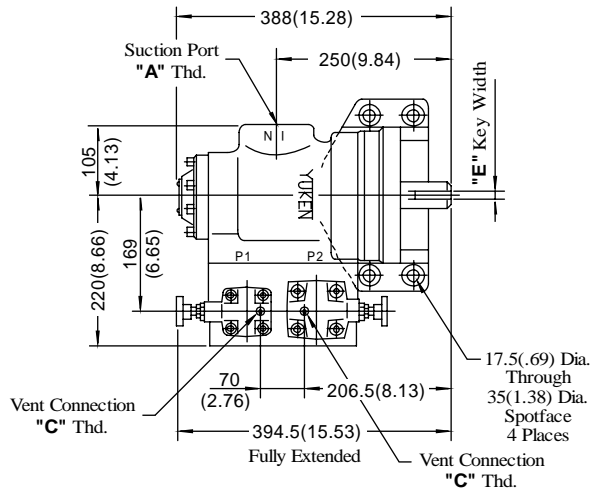


**DIMENSIONS IN MILLIMETRES (INCHES)**

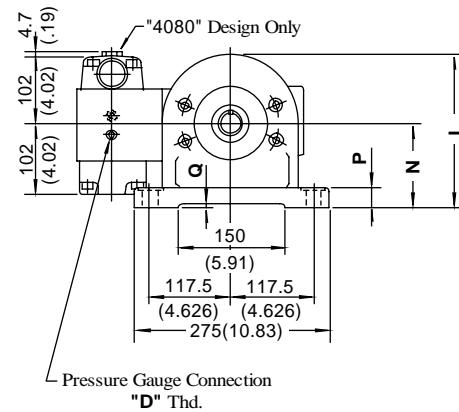
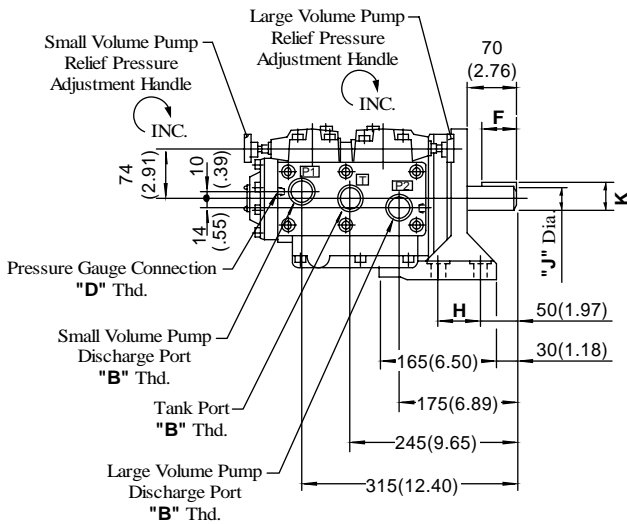
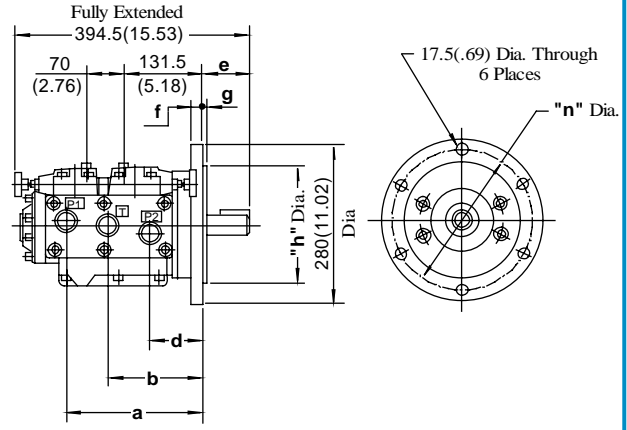
Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	"D" Thd.	Dimensions mm (Inches)		
					E	F	H
5050ST-*-*-L-RL-40	Rc 1-1/2	Rc 3/4	Rc 1/4	Rc 1/4	7.000 (.2756) 6.964 (.2742)	50 (2.008)	25.000 (.9843) 24.979 (.9834)
5050ST-*-*-L-RL-	1-1/2 BSP.F	3/4 BSP.F	1/4 BSP.F	1/4 BSP.Tr	4.760 (.1874)	50.8 (2.000)	25.370 (.9988) 25.349 (.9980)
4080	1-1/2 NPT	3/4 NPT	1/4 NPT	1/4 NPT	4.730 (.1862)		

Model Numbers	Dimensions mm (Inches)							
	J	K	L	N	P	a	b	d
5050ST-*-*-L-RL-40	28.000 (1.102) 27.743 (1.092)	90 (3.543)	167 (3.543)	95 (3.74)	20 (.79)	6 (.24)	160.000 (6.299) 159.960 (6.298)	190 (7.48)
5050ST-*-*-L-RL-	27.370 (1.078)	88.9 (3.500)	167.3 (6.59)	95.25 (3.75)	20.3 (.80)	6.5 (.26)	158.750 (6.250) 158.674 (6.247)	187.3 (7.37)
4080	27.191 (1.071)							

Foot Mtg.:50150ST-\*\*-\*-L-RL-40/4080/4090



Flange Mtg.:50150ST-\*\*-\*-F-RL-40/4080/4090

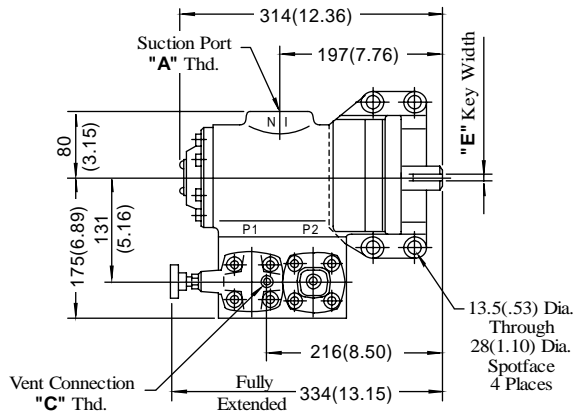


**DIMENSIONS IN  
MILLIMETRES (INCHES)**

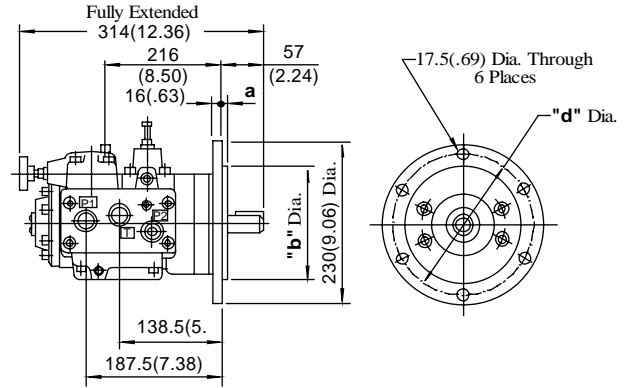
Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	"D" Thd.	Dimensions mm (Inches)				
					E	F	H	J	K
50150ST-**-*-L-RL-40	Rc 2	Rc 1-1/4	Rc 1/4	Rc 1/4	10.000 (.3937) 9.964 (.3923)	50 (1.97)	64 (2.520)	38.000 (1.4961) 37.975 (1.4951)	42.000 (1.654) 41.839 (1.647)
50150ST-**-*-L-RL-4080	2 BSP.F	1-1/4 BSP.F	1/4 BSP.F	1/4 BSP.Tr	9.550 (.3760)	57 (2.24)	63.5 (2.500)	38.075 (1.4990)	42.225 (1.662)
50150ST-**-*-L-RL-4090	2 NPT	1-1/4 NPT	1/4 NPT	1/4 NPT	9.525 (.3750)			38.050 (1.4980)	42.075 (1.656)

Model Numbers	Dimensions mm (Inches)											
	L	N	P	Q	a	b	d	e	f	g	h	n
50150ST-**-*-L-RL-40	220 (8.66)	120 (4.72)	25 (.98)	3 (.12)	225 (8.86)	175 (6.89)	120 (4.72)	75 (2.95)	22 (.87)	5 (.20)	203.000 (7.992) 202.954 (7.990)	241 (9.49)
50150ST-**-*-L-RL-4080	220.5 (8.68)	120.7 (4.75)	25.7 (1.01)	3.7 (.15)	224 (8.82)	174 (6.85)	119 (4.69)	76 (2.99)	21 (.83)	6.5 (.26)	203.200 (8.000) 203.128 (7.997)	241.3 (9.50)

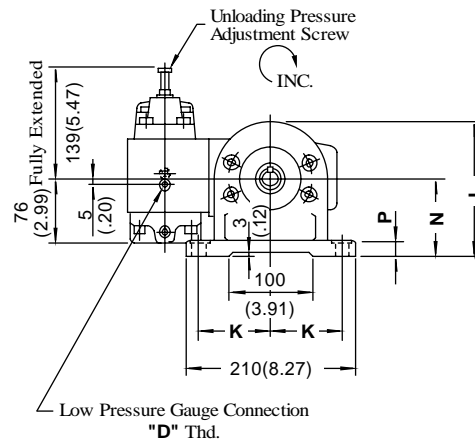
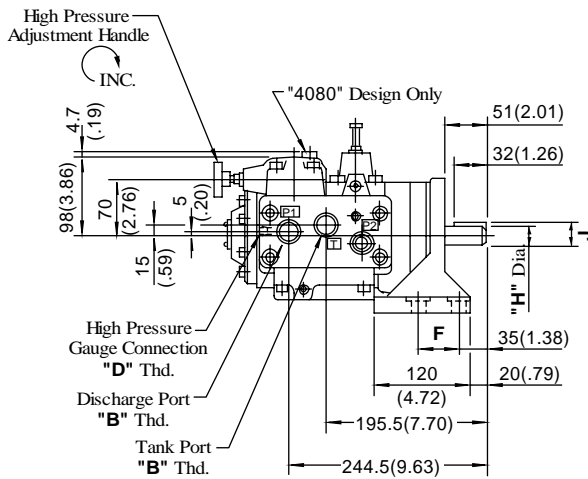
Foot Mtg.:  
5050CT-\*\*-\*\*-L-\*-RL-40/4080/4090



Flange Mtg.:  
5050CT-\*\*-\*\*-F-\*-RL-40/4080/4090



• For other dimensions, refer to "Foot Mtg."



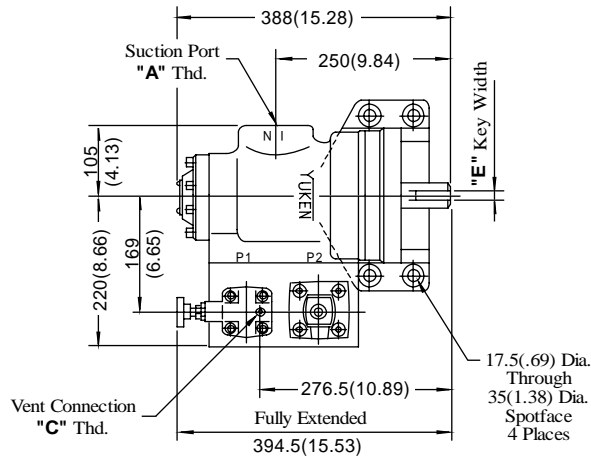
**DIMENSIONS IN MILLIMETRES (INCHES)**

Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	"D" Thd.	Dimensions mm (Inches)		
					E	F	H
5050CT-**-**-L-*-RL-40	Rc 1-1/2	Rc 3/4	Rc 1/4	Rc 1/4	7.000 (.2756) 6.964 (.2742)	50 (1.969)	25.000 (.9843) 24.979 (.9834)
5050CT-**-**-L-*-RL-	1-1/2 BSP.F	3/4 BSP.F	1/4 BSP.F	1/4 BSP.Tr	4.760 (.1874)	50.8 (2.000)	25.370 (.9988)
4080	1-1/2 NPT	3/4 NPT	1/4 NPT	1/4 NPT	4.730 (.1862)		25.349 (.9980)

Model Numbers	Dimensions mm (Inches)							
	J	K	L	N	P	a	b	c
5050CT-**-**-L-*-RL-40	28.000 (1.102) 27.743 (1.092)	90 (3.543)	167 (6.57)	95 (3.74)	20 (.79)	6 (.24)	160.000 (6.299) 159.960 (6.298)	190 (7.48)
5050CT-**-**-L-*-RL-	27.370 (1.078)	88.9 (3.500)	167.3 (6.59)	95.25 (3.75)	20.3 (.80)	6.5 (.26)	158.750 (6.250)	187.3 (7.37)
4080	27.191 (1.071)						158.674 (6.247)	

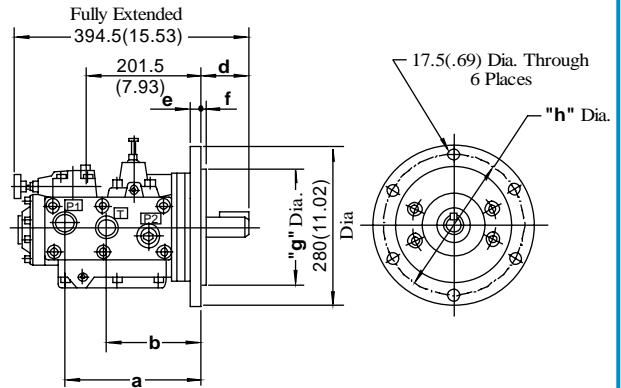
Foot Mtg.:

50150CT-\*\*\*-L\*-RL-40/4080/4090

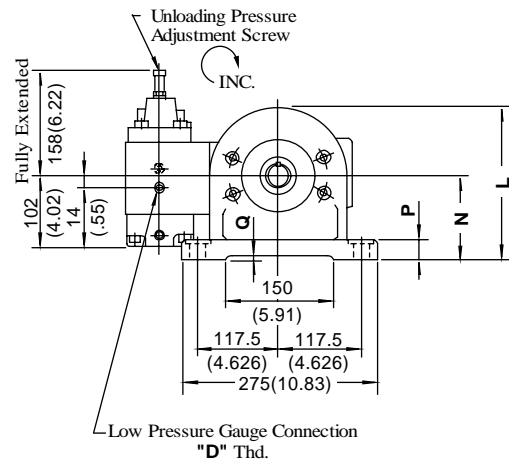
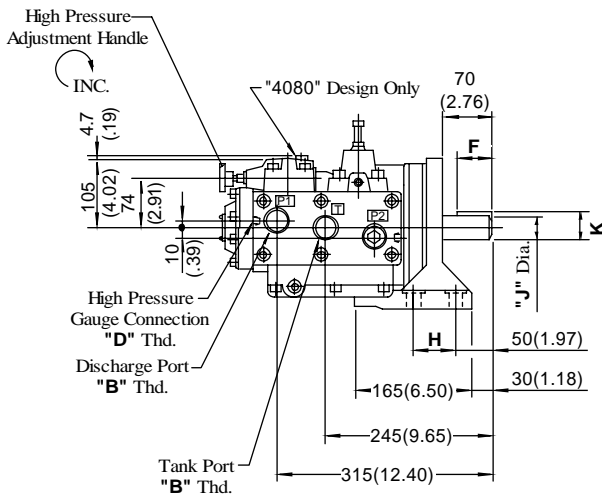


Flange Mtg.:

50150CT-\*\*\*-F\*-RL-40/4080/4090



• For other dimensions, refer to "Foot Mtg."



DIMENSIONS IN MILLIMETRES (INCHES)

Model Numbers	"A" Thd.	"B" Thd.	"C" Thd.	"D" Thd.	Dimensions mm (Inches)				
					E	F	H	J	K
50150CT-***-L*-RL-40	Rc 2	Rc 1-1/4	Rc 1/4	Rc 1/4	10.000 (.3937) 9.964 (.3923)	50 (1.97)	64 (2.520)	38.000 (1.4961) 37.975 (1.4951)	42.000 (1.654) 41.839 (1.647)
50150CT-***-L*-RL-4080	2 BSP.F 2 NPT	1-1/4 BSP.F 1-1/4 NPT	1/4 BSP.F 1/4 NPT	1/4 BSP.Tr 1/4 NPT	9.550 (.3760) 9.525 (.3750)	57 (2.24)	63.5 (2.500)	38.075 (1.4990) 38.050 (1.4980)	42.225 (1.662) 42.075 (1.656)

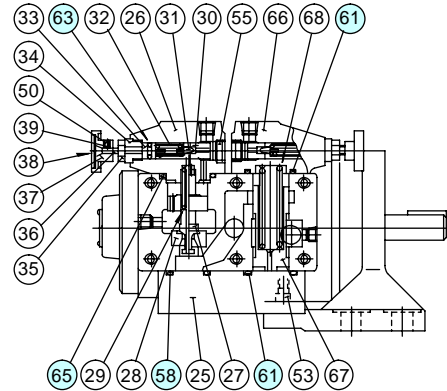
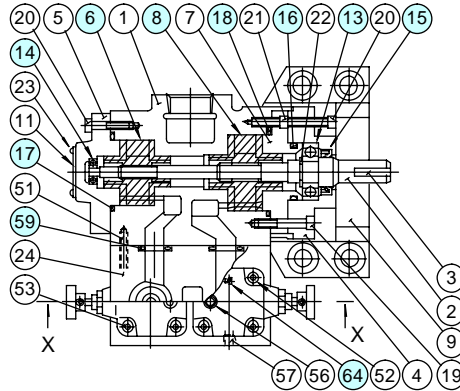
Model Numbers	Dimensions mm (Inches)										
	L	N	P	Q	a	b	d	e	f	g	h
50150CT-***-L*-RL-40	220 (8.66)	120 (4.72)	25 (.98)	3 (.12)	225 (8.86)	175 (6.89)	75 (2.95)	22 (.87)	5 (.20)	203.000 (7.992) 202.954 (7.990)	241 (9.49)
50150CT-***-L*-RL-4080	220.5 (8.68)	120.7 (4.75)	25.7 (1.01)	3.7 (.15)	224 (8.82)	174 (6.85)	76 (2.99)	21 (.83)	6.5 (.26)	203.200 (8.000) 203.128 (7.997)	241.3 (9.50)

#### Spare Parts List

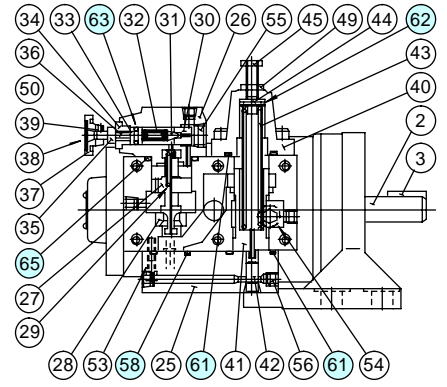
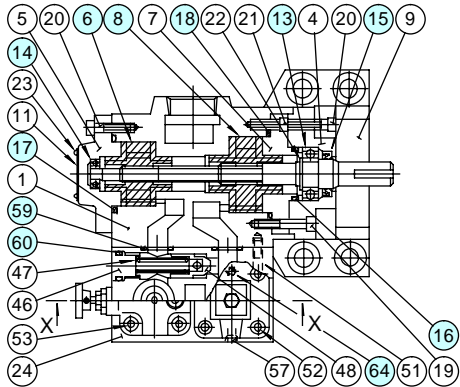
#### ⚠ CAUTION

When making replacement of seals, bearings or cartridge kits, please do it carefully after reading through the relevant instructions in the Operator's Manual.

5050ST  
50150ST



5050CT  
50150CT



#### ● Seals & Bearings

Item	Name of Parts	Part Numbers				Qty.	
		5050ST	50150ST	5050CT	50150CT	5050ST 50150ST	5050CT 50150CT
15*	Oil Seal	ISPD 325211	ISPD 406212	ISPD 325211	ISPD 406212	1	1
16*	O-Ring	SO-NA-P52	SO-NA-P62	SO-NA-P52	SO-NA-P62	1	1
17*	O-Ring	SO-NA-A234	SO-NA-A234	SO-NA-A234	SO-NA-A234	1	1
18*	O-Ring	SO-NA-A234	SO-NA-A248	SO-NA-A234	SO-NA-A248	1	1
58*	O-Ring	SO-NB-G40	SO-NB-P48	SO-NB-G40	SO-NB-P48	1	1
59*	O-Ring	SO-NB-P28	SO-NB-P40	SO-NB-P28	SO-NB-P40	2	2
60*	O-Ring	—	—	SO-NB-P24	SO-NB-P39	—	1
61*	O-Ring	SO-NB-G30	SO-NB-P36	SO-NB-G30	SO-NB-P36	2	2
62*	O-Ring	—	—	SO-NA-P15	SO-NA-P20	—	1
63*	O-Ring	SO-NA-P9	SO-NA-P9	SO-NA-P9	SO-NA-P9	2	1
64*	O-Ring	SO-NB-P6	SO-NB-P6	SO-NB-P6	SO-NB-P6	1	2
65*	O-Ring	SO-NB-G40	SO-NB-G40	SO-NB-G40	SO-NB-G40	1	1
13	Bearing	6305	6207	6305	6207	1	1
14	Bearing	6200	6200	6200	6200	1	1

#### ● Cartridge Kits

Model Numbers	Cartridge Kit Numbers	
	⑥ Small Volume Pump	⑧ Large Volume Pump
5050 <sub>ST</sub> -★-■	C50-★-30	C50-■-30
50150 <sub>ST</sub> -★-■	C50-★-30	C150-■-40

Notes: 1) ★ and ■ are spaces for nominal displacement figures.  
2) Cartridge kits are common with single pumps.  
For details, see page 11.

★ When ordering seals, please specify the seal kit number from the table below.

#### ● Seal Kits

Model Numbers	Seal Kit No.
5050ST-***-RL-40*	KS-5050ST-40
50150ST-***-RL-40*	KS-50150ST-40
5050CT-***-RL-40*	KS-5050CT-40
50150CT-***-RL-40*	KS-50150CT-40