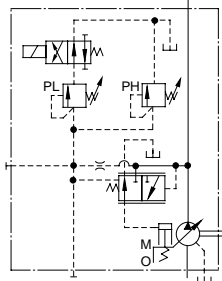
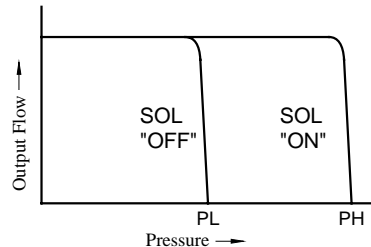


Specifications

Graphic Symbol



Performance Characteristics



Specifications

Model Numbers	Geometric Displacement cm ³ /rev (cu. in. /rev)	Minimum Adj. Flow cm ³ /rev (cu. in. /rev)	Operating Pres. MPa (PSI)		Minimum Adj. Pres. MPa (PSI)	Shaft Speed Range r/min		Approx. Mass kg (lbs.)	
			Rated ^{*2}	Intermittent ^{*1}		Max.	Min.	Flange Mtg.	Foot Mtg.
A16-*R-02-*K-32*	15.8 (964)	4 (.244)	16 (2320)	21 (3050)	1.2 (170)	1800	600	24.5 (54.0)	26.7 (58.9)
A22-*R-02-*K-32*	22.2 (1.355)	6 (.366)	16 (2320)	16 (2320)	1.2 (170)	1800	600	24.5 (54.0)	26.7 (58.9)
A37-*R-02-*K-32*	36.9 (2.25)	10 (.61)	16 (2320)	21 (3050)	1.2 (170)	1800	600	36 (79.4)	40.3 (88.9)
A56-*R-02-*K-32*	56.2 (3.43)	12 (.73)	16 (2320)	21 (3050)	1.2 (170)	1800	600	43 (94.8)	47.3 (104)
A70-*R02S*-60*	70.0 (4.27)	30 (1.83)	25 (3630)	25 (3630)	2 (290)	1800	600	63.5 (140)	75.5 (166)
A90-*R02S*-60*	91.0 (5.55)	56 (3.42)	25 (3630)	25 (3630)	2 (290)	1800	600	80.5 (178)	101 (223)
A145-*R02S*-60*	145 (8.85)	83 (5.06)	25 (3630)	25 (3630)	2 (290)	1800	600	97.5 (215)	122.5 (270)

- ★1. Whenever setting pressure, make sure the full cut-off pressure never exceeds the maximum intermittent pressure.
- ★2. When operating the pump exceeding the rated pressure, operating conditions are restricted. Refer to page 6 for the details.

Solenoid Ratings

Electric Source	Coil Type	Frequency (Hz)	Voltage (V)		Current & Power at Rated Voltage		
			Source Rating	Serviceable Range	Inrush* (A)	Holding (A)	Power (W)
AC	A100	50	100	80 - 110	2.42	0.51	—
			100	90 - 120	2.14	0.37	
			110		2.35	0.44	
	A120	50	120	96 - 132	2.02	0.42	
			108 - 144	1.78	0.31		
	A200	50	200	160 - 220	1.21	0.25	
			200	180 - 240	1.07	0.19	
			220		1.18	0.22	
	A240	50	240	192 - 264	1.01	0.21	
			216 - 288	0.89	0.15		
DC (K Series)	D12	—	12	10.8 - 13.2	—	2.45	29
			24	21.6 - 26.4		1.23	
			48	43.2 - 52.8		0.61	
AC→DC Rectified	R100	50/60	100	90 - 110	—	0.33	29
			200	180 - 220		0.16	

★ Inrush current in the above table shows rms values at maximum stroke.

Model Number Designation

■ Model Number Designation

A16	-F	-R	-02	-S	-K	-A100	-32	*
Series Number	Mounting	Direction of Rotation	Control Type	Port Position	Shaft Extension	Coil Type of Solenoid Valve	Design Number	Design Std.
A16 (15.8 cm ³ /rev)	F: Flange Mtg.	(Viewed from) (Shaft End)	02: Solenoid Two Pressure Control Type	None: Axial Port ^{*2}	K: Keyed Shaft	AC A100,A120 A200,A240 DC D12,D24 D48 (AC→DC Rectified) R100,R200	32	Refer to ^{*3}
A22 (22.2 cm ³ /rev)							32	
A37 (36.9 cm ³ /rev)							32	
A56 (56.2 cm ³ /rev)							32	

A70	-F	R	02	S	A100	-60	*
Series Number	Mounting	Direction of Rotation	Control Type	Port Position	Coil Type of Solenoid Valve	Design Number	Design Std.
A70 (70 cm ³ /rev)	F: Flange Mtg.	(Viewed from) (Shaft End)	02: Solenoid Two Pressure Control Type	S: Side Port	AC A100,A120 A200,A240 DC D12,D24 D48 (AC→DC Rectified) R100,R200	60	Refer to ^{*3}
A90 (91.0 cm ³ /rev)						60	
A145 (145 cm ³ /rev)						60	

★1. Available to supply pump with anti-clockwise rotation. Consult Yuken for details.

★2. The axial port is not available to the N. American Design Standard of A37 and A56 series.

★3. Design Standards: None Japanese Standard "JIS"
80 European Design Standard
90 N. American Design Standard

■ Performance Characteristics

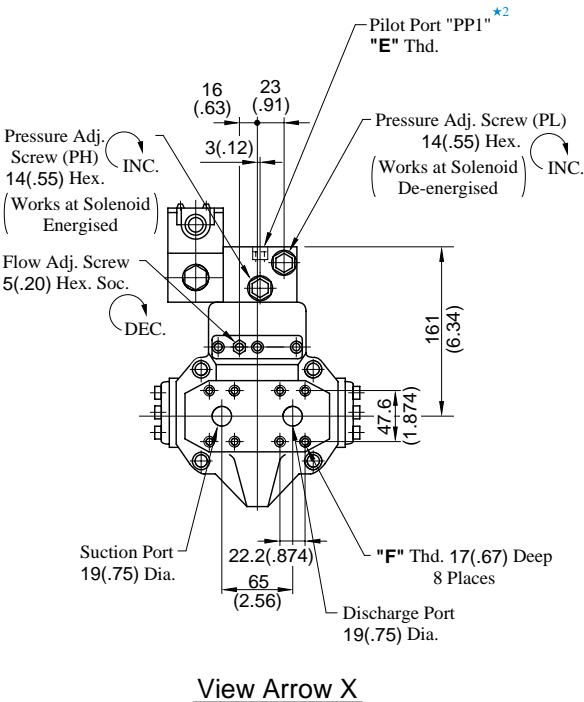
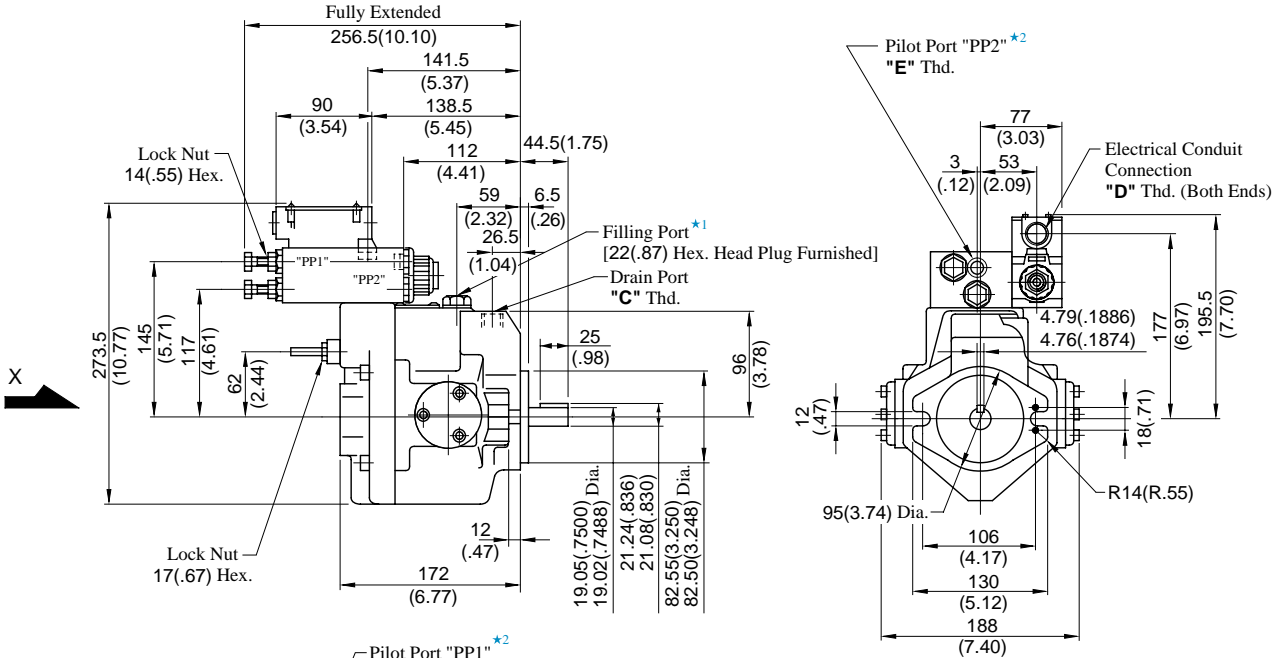
For performance characteristics, refer to models of pressure compensator type on page 10 to 16.

■ Pipe Flange Kit

For pipe flange, refer to form of pressure compensator type on page 7.

Axial Port Type

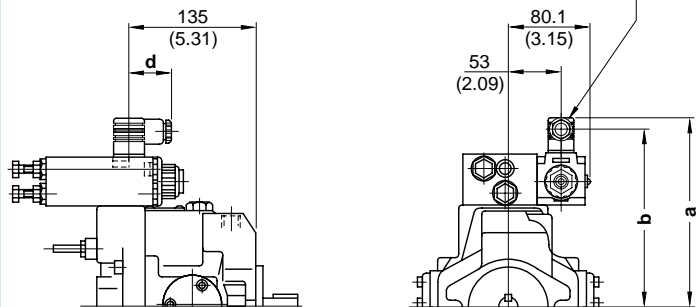
Flange Mtg.: A16-F-R-02-K-*-32/3290
A22-F-R-02-K-*-32/3290



View Arrow X

A16-F-R-02-K-*-3280
A22-F-R-02-K-*-3280

Cable Departure
Cable Applicable:
Outside Dia. 8-10mm(.31-.39 in.)
Conductor Area Not Exceeding 1.5mm²(.002 Sq. IN.)



Model Numbers	mm (IN.)		
	a	b	d
A16/A22-F-R-02-K-A*- 3280	194 (7.64)	182. (7.17)	39 (1.54)
A16/A22-F-R-02-K-D*-	205 (8.07)	193 (7.60)	39 (1.54)
	208 (8.19)	186.2 (7.33)	53 (2.09)

• For other dimensions, refer to 32/3290 design.

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. The pilot port provided is for connecting a control valve, if multistage pressure control is required.

Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.
A16/A22-F-R-02-K-*-32	Rc 3/8	G 1/2	Rc 1/4	M10
A16/A22-F-R-02-K-*-3280	3/8 BSP.F	—	1/4 BSP. Tr	
A16/A22-F-R-02-K-*-3290	3/8 NPT	1/2 NPT	1/4 NPT	3/8-16 UNC

DIMENSIONS IN MILLIMETRES (INCHES)

• Side Port Type

Port mounting dimensions are the same as those of pressure compensator model. Refer to page 18 for port mounting dimensions.

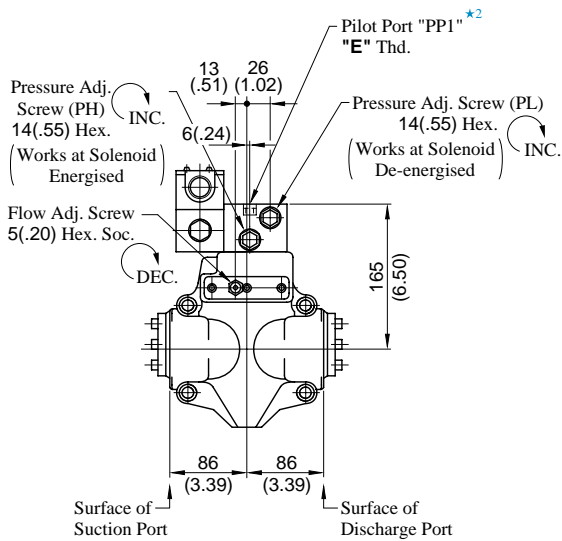
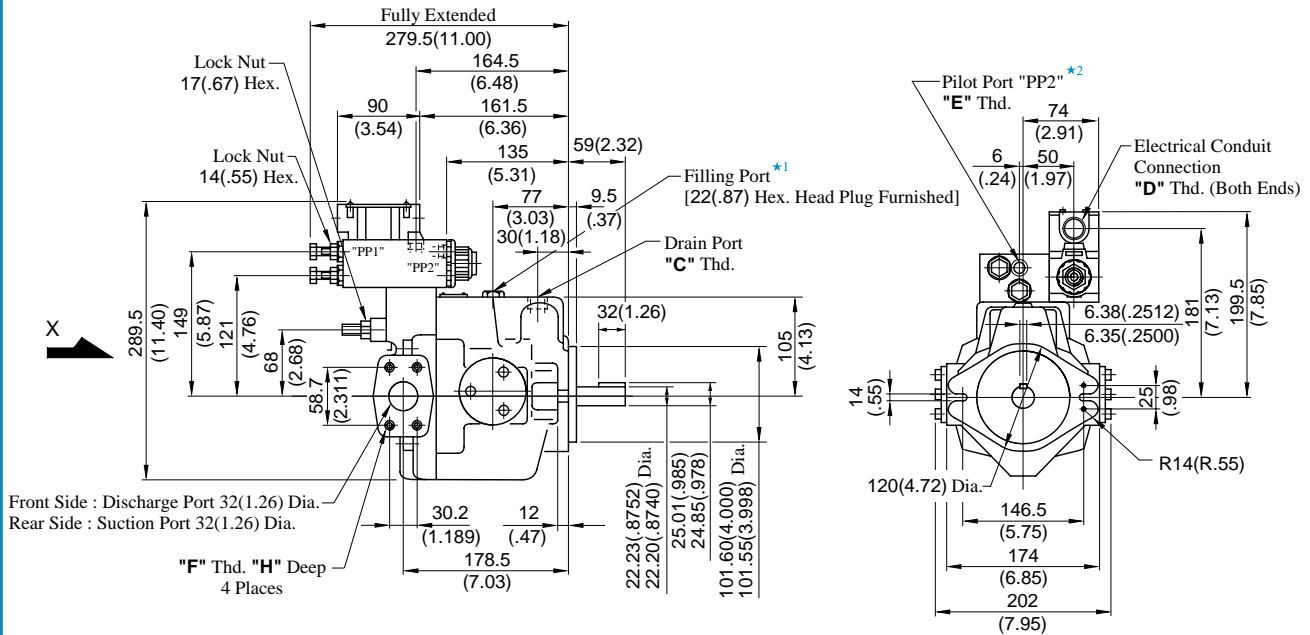
• Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 18 for the dimensions of mounting bracket.

Installation Drawing

Side Port Type

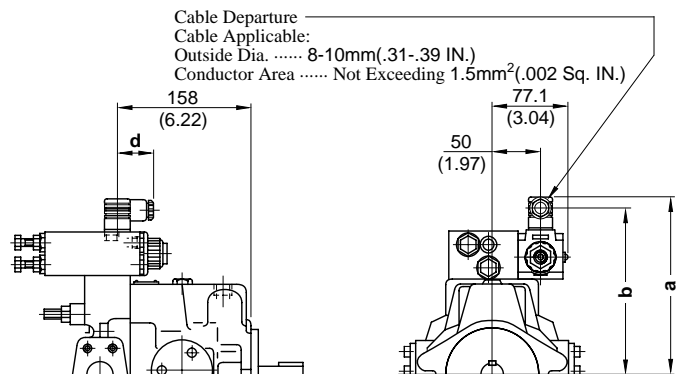
Flange Mtg. : A37-F-R-02-S-K*-32/3290



View Arrow X

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. The pilot port provided is for connecting a control valve, if multistage pressure control is required.

A37-F-R-02-S-K*-3280



Model Numbers	mm (IN.)		
	a	b	d
A37-F-R-02-S-K-A*-3280	198 (7.80)	186 (7.32)	39 (1.54)
A37-F-R-02-S-K-D*-3280	209 (8.23)	197 (7.76)	39 (1.54)
A37-F-R-02-S-K-R*-3280	212 (8.35)	190.2 (7.49)	53 (2.09)

• For other dimensions, refer to 32/3290 design.

Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.	"H" mm (IN.)
A37-F-R-02-S-K-*-32	Rc 1/2	G 1/2	Rc 1/4	M10	19 (.75)
A37-F-R-02-S-K-*-3280	1/2 BSP.F	—	1/4 BSP. Tr		
A37-F-R-02-S-K-*-3290	1/2 NPT	1/2 NPT	1/4 NPT	7/16-14 UNC	20 (.79)

DIMENSIONS IN MILLIMETRES (INCHES)

• Axial Port Type

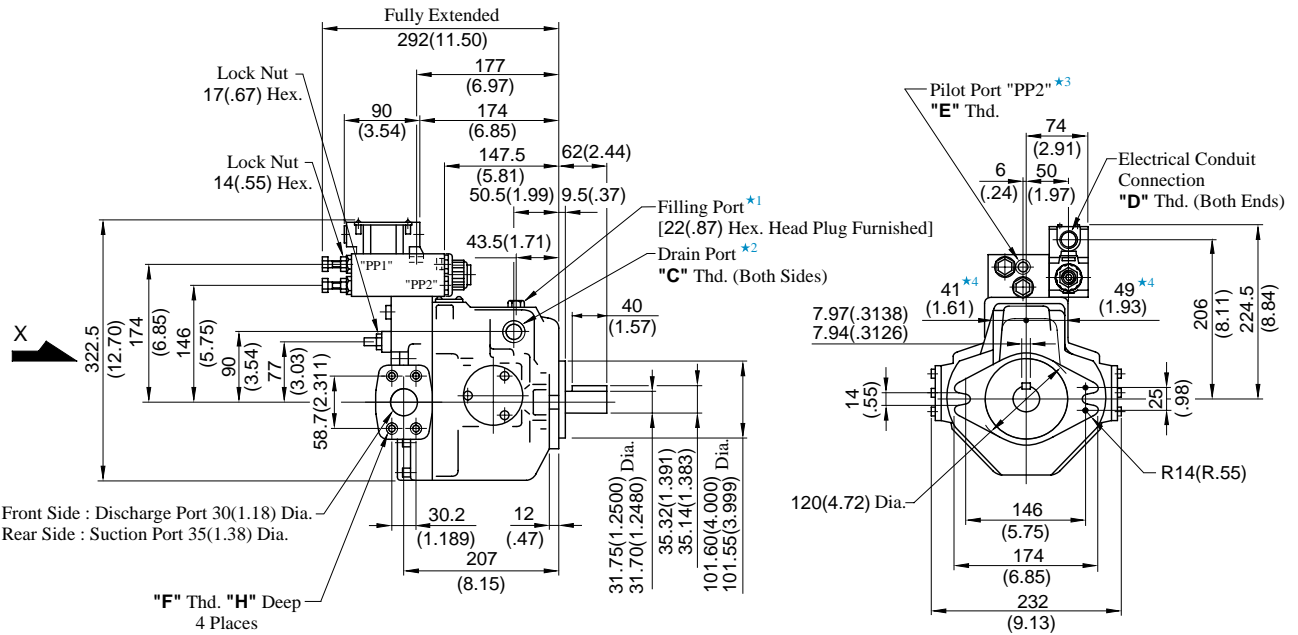
Port mounting dimensions are the same as those of pressure compensator model. Refer to page 19 for port mounting dimensions.

• Foot Mounting Type

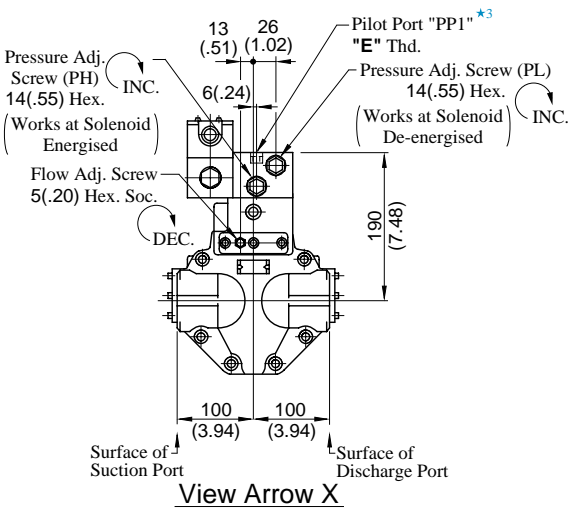
Mounting bracket is common to that of pressure compensator model. Refer to page 19 for the dimensions of mounting bracket.

Side Port Type

Flange Mtg.: A56-F-R-02-S-K-*-32/3290



Front Side : Discharge Port 30(1.18) Dia.
Rear Side : Suction Port 35(1.38) Dia.

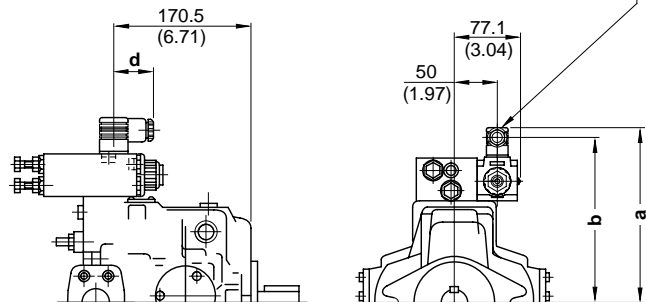


View Arrow X

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two drain ports at your option. Keep the remaining port plugged. Note that on the European Design Standard (3280 Design), only the left side, as viewed from the shaft end, of the drain port is machined.
- ★ 3. The pilot port provided is for connecting a control valve, if multistage pressure control is required.
- ★ 4. Dimensions show surface of drain port.

A56-F-R-02-S-K-*-3280

Cable Departure
Cable Applicable:
Outside Dia. 8-10mm(.31-.39 IN.)
Conductor Area Not Exceeding 1.5mm²(.002 Sq. IN.)



Model Numbers	mm (IN.)		
	a	b	d
A56-F-R-02-S-K-A*-3280	223 (8.78)	211 (8.31)	39 (1.54)
A56-F-R-02-S-K-D*-3280	234 (9.21)	222 (8.74)	39 (1.54)
A56-F-R-02-S-K-R*-3280	237 (9.33)	215.2 (8.47)	53 (2.09)

• For other dimensions, refer to 32/3290 design.

Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.	"H" mm (IN.)
A56-F-R-02-S-K-*-32	Rc 3/4	G 1/2	Rc 1/4	M10	19 (.75)
A56-F-R-02-S-K-*-3280	3/4 BSP.F	—	1/4 BSP. Tr		
A56-F-R-02-S-K-*-3290	3/4 NPT	1/2 NPT	1/4 NPT	7/16-14 UNC	20 (.79)

DIMENSIONS IN MILLIMETRES (INCHES)

• Axial Port Type

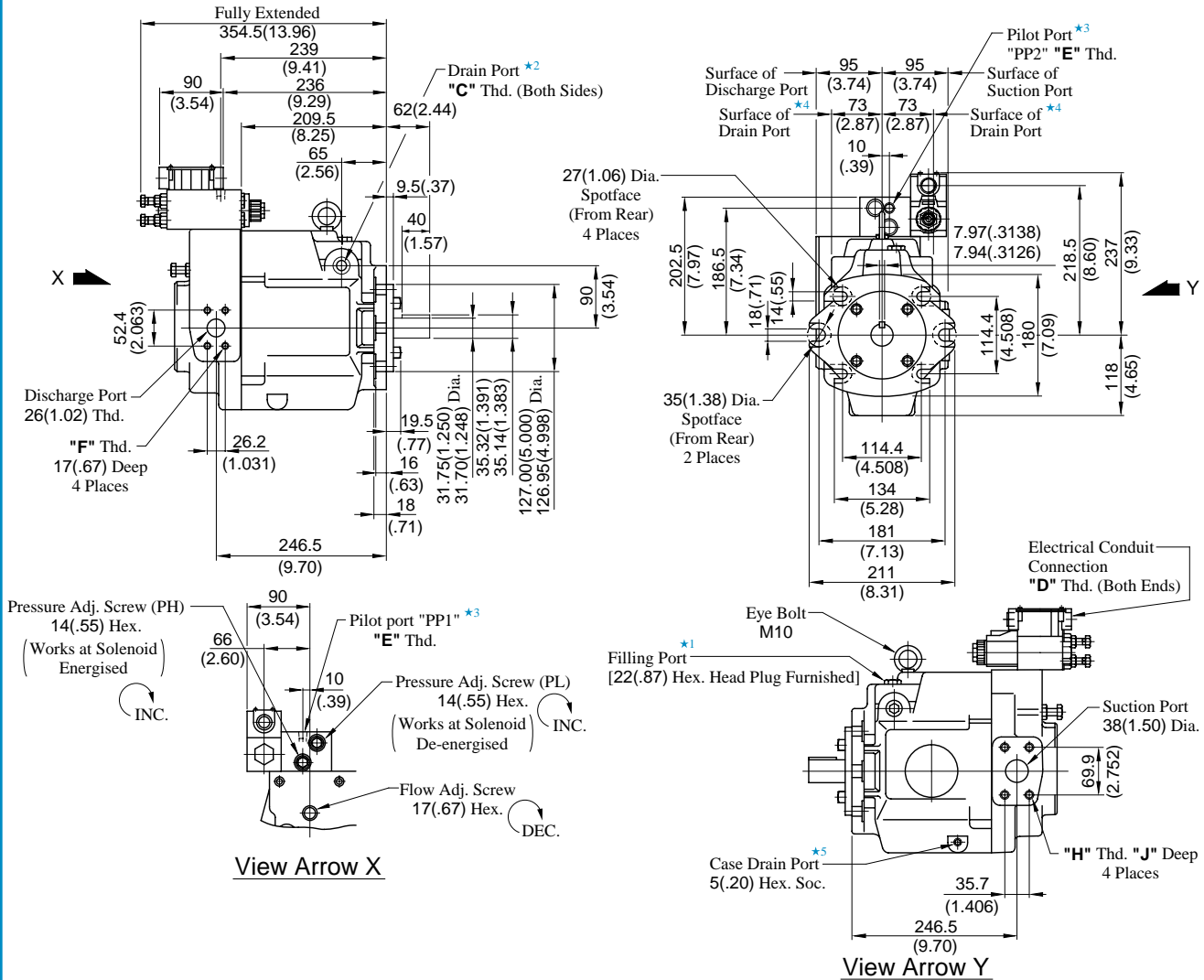
Port mounting dimensions are the same as those of pressure compensator model. Refer to page 20 for port mounting dimensions.

• Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 20 for the dimensions of mounting bracket.

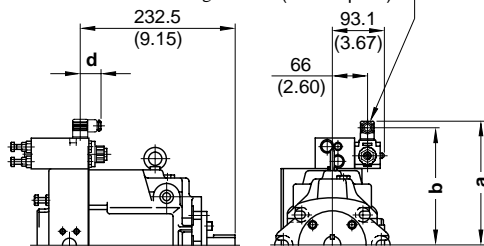
Installation Drawing

Flange Mtg. : A70-FR02S*-60/6090



A70-FR02S*-6080

Cable Departure
Cable Applicable:
Outside Dia. 8-10mm (.31-.39 IN.)
Conductor Area Not Exceeding 1.5mm² (.002 Sq. IN.)



Model Numbers	mm (IN.)		
	a	b	d
A70-FR02SA*-6080	236 (9.29)	224 (8.82)	39 (1.54)
A70-FR02SD*-6080	247 (9.72)	235 (9.25)	39 (1.54)
A70-FR02SR*-6080	250 (9.84)	228.2 (8.98)	53 (2.09)

• For other dimensions, refer to 60/6090 design.

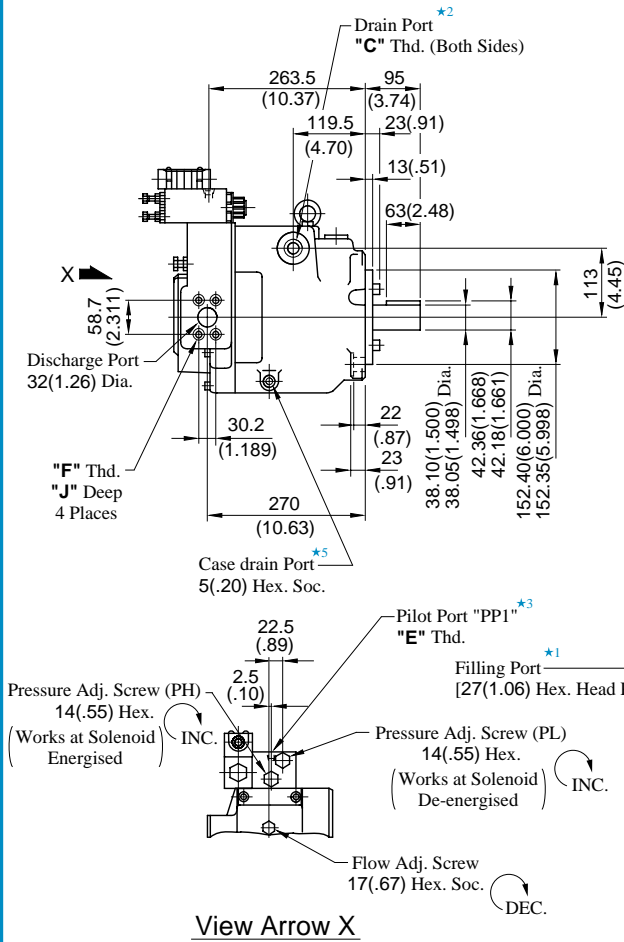
- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two drain ports at your option. Keep the remaining port plugged. Note that on the European Design Standard (6080 Design), only the left side, as viewed from the shaft end, of the drain port is machined.
- ★ 3. The pilot port provided is for connecting a control valve, if multistage pressure control is required.
- ★ 4. Dimensions show surface of drain port.
- ★ 5. Case drain port is available for use when draining hydraulic fluid from pump casing.

DIMENSIONS IN
MILLIMETRES (INCHES)

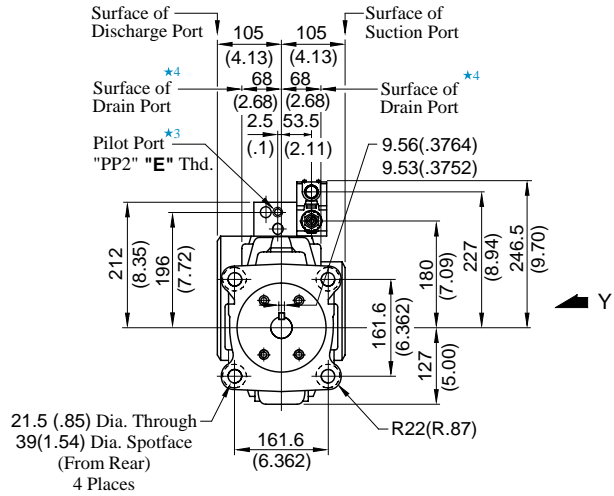
● Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 21 for the dimensions of mounting bracket.

Flange Mtg.: A90-FR02S*-60/6090



View Arrow X

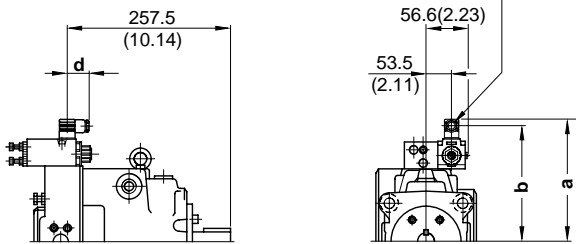


View Arrow Y

Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.	"H" Thd.	"J" mm (IN.)	"K" mm (IN.)
A90-FR02S*-60	Rc 3/4	G 1/2	Rc 1/4	M10	M12	19 (.75)	19 (.75)
A90-FR02S*-6080	3/4 BSP.F	—	1/4 BSP. Tr				
A90-FR02S*-6090	3/4 NPT	1/2 NPT	1/4 NPT	7/16-14 UNC	1/2-13 UNC	20 (.79)	21 (.83)

A90-FR02S*-6080

Cable Departure
Cable Applicable:
Outside Dia. 8-10mm (.31-.39 IN.)
Conductor Area Not Exceeding 1.5mm² (.002 Sq. IN.)



Model Numbers	mm (IN.)		
	a	b	d
A90-02FRSA*-6080	245 (9.65)	233 (9.17)	39 (1.54)
A90-02FRSD*-6080	256 (10.08)	244 (9.61)	39 (1.54)
A90-02FRSR*-6080	259 (10.20)	237.2 (9.34)	53 (2.09)

• For other dimensions, refer to 60/6090 design.

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two drain ports at your option. Keep the remaining port plugged. Note that on the European Design Standard (6080 Design), only the left side, as viewed from the shaft end, of the drain port is machined.
- ★ 3. The pilot port provided is for connecting a control valve, if multistage pressure control is required.
- ★ 4. Dimensions show surface of drain port.
- ★ 5. Case drain port is available for use when draining hydraulic fluid from pump casing.

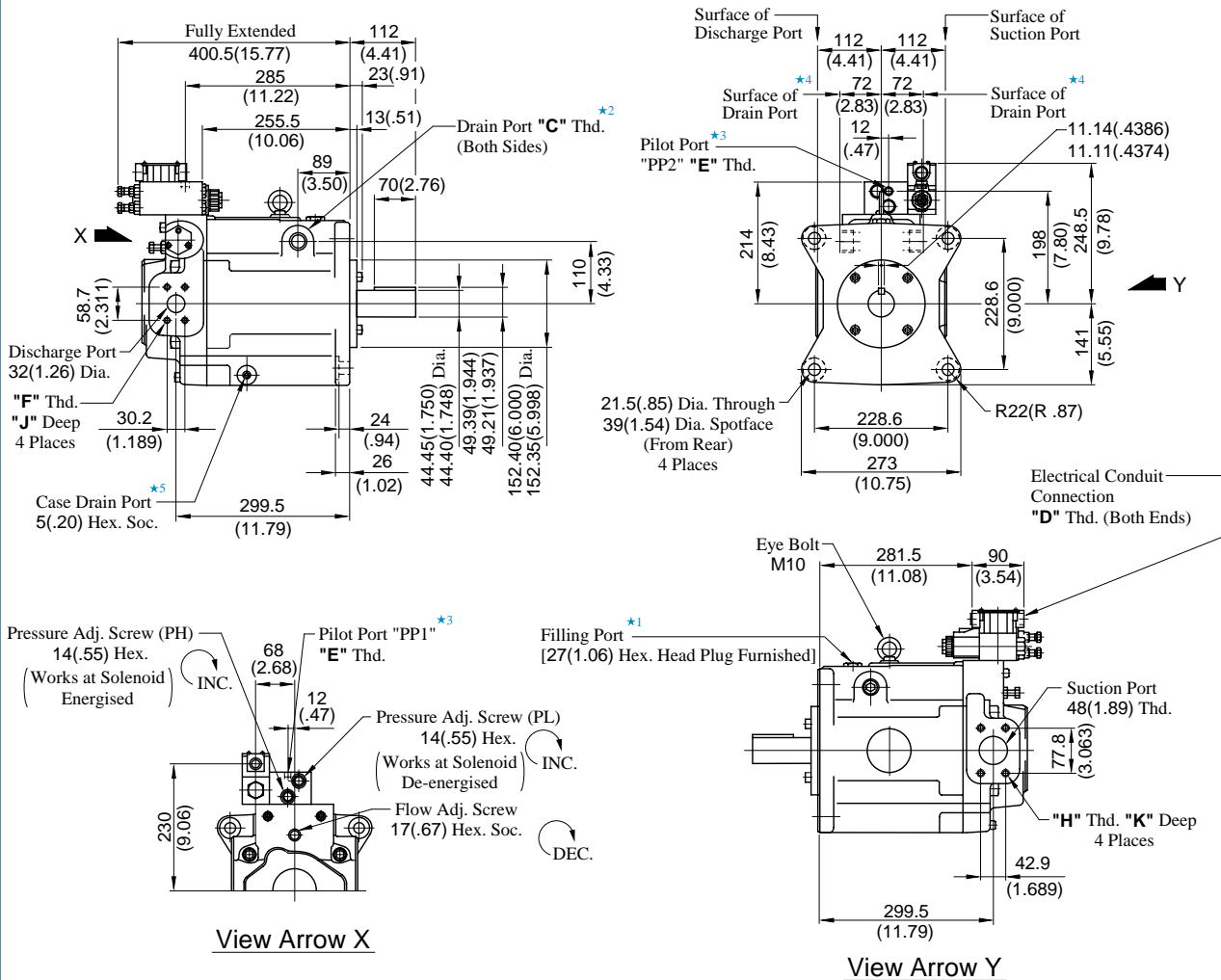
DIMENSIONS IN
MILLIMETRES (INCHES)

● Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 22 for the dimensions of mounting bracket.

Installation Drawing

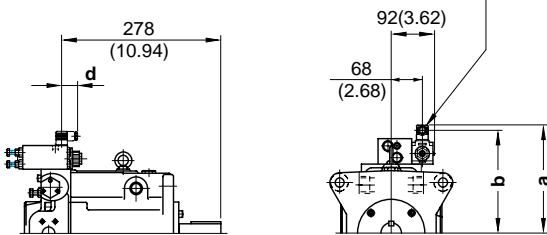
Flange Mtg. : A145-FR02S*-60/6090



Model Numbers	"C" Thd.	"D" Thd.	"E" Thd.	"F" Thd.	"H" Thd.	"J" mm (IN.)	"K" mm (IN.)
A145-FR02S*-60	Rc 3/4	G 1/2	Rc 1/4	M10	M12	19 (.75)	19 (.75)
A145-FR02S*-6080	3/4 BSP.F	—	1/4 BSP. Tr				
A145-FR02S*-6090	3/4 NPT	1/2 NPT	1/4 NPT	7/16-14 UNC	1/2-13 UNC	20 (.79)	21 (.83)

A145-FR02S*-6080

Cable Departure
Cable Applicable:
Outside Dia. 8-10mm(.31-.39 IN.)
Conductor Area Not Exceeding 1.5mm²(.002 Sq. IN.)



Model Numbers	mm (IN.)		
	a	b	d
A145-FR02SA*-6080	247 (9.72)	235 (9.25)	39 (1.54)
A145-FR02SD*-6080	258 (10.16)	246 (9.69)	39 (1.54)
A145-FR02SR*-6080	261 (10.28)	239.2 (9.42)	53 (2.09)

• For other dimensions, refer to 60/6090 design.

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two drain ports at your option. Keep the remaining port plugged. Note that on the European Design Standard (6080 Design), only the left side, as viewed from the shaft end, of the drain port is machined.
- ★ 3. The pilot port provided is for connecting a control valve, if multistage pressure control is required.
- ★ 4. Dimensions show surface of drain port.
- ★ 5. Case drain port is available for use when draining hydraulic fluid from pump casing.

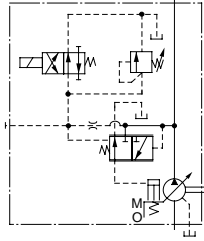
DIMENSIONS IN
MILLIMETRES (INCHES)

● Foot Mounting Type

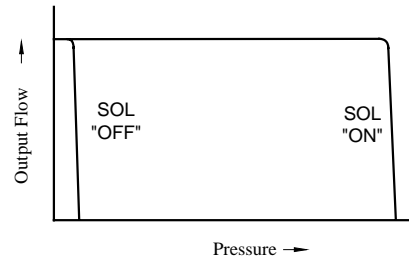
Mounting bracket is common to that of pressure compensator model. Refer to page 23 for the dimensions of mounting bracket.

Specifications

Graphic Symbol



Performance Characteristics



Specifications

Model Numbers	Geometric Displacement cm ³ /rev (cu. in. /rev)	Minimum Adj. Flow cm ³ /rev (cu. in. /rev)	Operating Pres. MPa (PSI)		Unloading Pres. MPa (PSI)	Shaft Speed Range r/min	
			Rated	Intermittent		Max.	Min.
A16-*R-03-*K-*32*	15.8 (.964)	4 (.244)	16 (2320)	21 (3050)	1.2 (170)	1800	600
A22-*R-03-*K-*32*	22.2 (1.355)	6 (.366)	16 (2320)	16 (2320)	1.2 (170)	1800	600
A37-*R-03-*K-*32*	36.9 (2.25)	10 (.61)	16 (2320)	21 (3050)	1.2 (170)	1800	600
A56-*R-03-*K-*32*	56.2 (3.43)	12 (.73)	16 (2320)	21 (3050)	1.2 (170)	1800	600
A70-*R03S*K-60*	70.0 (4.27)	30 (1.83)	25 (3630)	25 (3630)	1.2 (170)	1800	600
A90-*R03S*K-60*	91.0 (5.55)	56 (3.42)	25 (3630)	25 (3630)	1.2 (170)	1800	600
A145-*R03S*K-60*	145 (8.85)	83 (5.06)	25 (3630)	25 (3630)	1.2 (170)	1800	600

- Consult YUKEN for details.