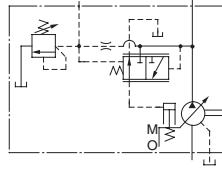
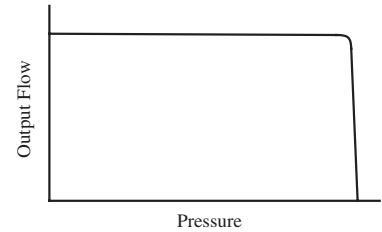


# "A" Series Variable Displacement Piston Pumps – Single Pump, Pilot Pressure Control Type Pressure Compensator

Graphic Symbol



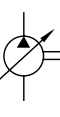
Performance Characteristics



## Specifications

| Model Numbers      | Geometric Displacement<br>cm <sup>3</sup> /rev<br>(cu. in. /rev) | Minimum Adj. Flow<br>cm <sup>3</sup> /rev<br>(cu. in. /rev) | Operating Pressure<br>MPa (PSI) |                            | Minimum Adj. Pres.<br>MPa (PSI) | Shaft Speed Range<br>r/min |      | Approx. Mass<br>kg (lbs.) |                |
|--------------------|--|---|---------------------------------|----------------------------|---------------------------------|----------------------------|------|---------------------------|----------------|
|                    |  |   | Rated <sup>★2</sup>             | Intermittent <sup>★1</sup> |                                 | Max.                       | Min. | Flange Mtg.               | Foot Mtg.      |
| A10-FR07-12*       | 10.0<br>(.610)   | 2<br>(.122)   | 16<br>(2320)                    | 21<br>(3050)               | 2.0<br>(290)                    | 1800                       | 600  | 8.5<br>(18.7)             | 10.7<br>(23.6) |
| A16-*-R-07-*-K-32* | 15.8<br>(.964)   | 4<br>(.244)   | 16<br>(2320)                    | 21<br>(3050)               | 1.2<br>(175)                    | 1800                       | 600  | 21<br>(46.3)              | 23.2<br>(51.2) |
| A22-*-R-07-*-K-32* | 22.2<br>(1.355)  | 6<br>(.366)   | 16<br>(2320)                    | 16<br>(2320)               | 1.2<br>(175)                    | 1800                       | 600  | 21<br>(46.3)              | 23.2<br>(51.2) |
| A37-*-R-07-*-K-32* | 36.9<br>(2.25)   | 10<br>(.610)  | 16<br>(2320)                    | 21<br>(3050)               | 1.2<br>(175)                    | 1800                       | 600  | 29<br>(63.9)              | 33.3<br>(73.4) |
| A56-*-R-07-*-K-32* | 56.2<br>(3.43)   | 12<br>(.732)  | 16<br>(2320)                    | 21<br>(3050)               | 1.2<br>(175)                    | 1800                       | 600  | 36<br>(79.4)              | 40.3<br>(88.9) |
| A70-*R07S-60*      | 70.0<br>(4.27)   | 30<br>(1.83)  | 25<br>(3630)                    | 25<br>(3630)               | 2<br>(290)                      | 1800                       | 600  | 60.3<br>(133)             | 72.3<br>(159)  |
| A90-*R07S-60*      | 91.0<br>(5.55)   | 56<br>(3.42)  | 25<br>(3630)                    | 25<br>(3630)               | 2<br>(290)                      | 1800                       | 600  | 77.5<br>(171)             | 98<br>(216)    |
| A145-*R07S-60*     | 145<br>(8.85)  | 83<br>(5.06)  | 25<br>(3630)                    | 25<br>(3630)               | 2<br>(290)                      | 1800                       | 600  | 94<br>(207)               | 119<br>(262)   |

- ★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 33](#) for the details.



Model Number Designation

| A16                                       | -F                       | -R   | -07   | -S                         | -K                       | -32           | *                      |
|---|--------------------------|--|---|----------------------------|--------------------------|---------------|------------------------|
| Series Number                             | Mounting                 | Direction of Rotation                            | Control Type  | Port Position              | Shaft Extension          | Design Number | Design Std.            |
| <b>A16</b><br>(15.8 cm <sup>3</sup> /rev) | <b>F:</b><br>Flange Mtg. | (Viewed from)<br>Shaft End                       | <b>07:</b><br>Pilot Pressure<br>Control Type<br>Pressure<br>Compensator | <b>None:</b><br>Axial Port | <b>K:</b><br>Keyed Shaft | <b>32</b>     | Refer to <sup>*3</sup> |
| <b>A22</b><br>(22.2 cm <sup>3</sup> /rev) |                          |  |   |                            |                          | <b>32</b>     |                        |
| <b>A37</b><br>(36.9 cm <sup>3</sup> /rev) | <b>L:</b><br>Foot Mtg.   | <b>R:</b><br>Clockwise <sup>*1</sup><br>(Normal) |   |                            |                          | <b>32</b>     |                        |
| <b>A56</b><br>(56.2 cm <sup>3</sup> /rev) |                          |  |   |                            |                          | <b>32</b>     |                        |

| A70                                       | -F                                     | R                          | 07  | S             | -60  | *                      |
|---|--|----------------------------|---|---------------|--|------------------------|
| Series Number                             | Mounting                               | Direction of Rotation      | Control Type  | Port Position | Design Number                                    | Design Std.            |
| <b>A10</b><br>(10.0 cm <sup>3</sup> /rev) | <b>F:</b><br>Flange Mtg. <sup>*2</sup> | (Viewed from)<br>Shaft End | <b>07:</b><br>Pilot Pressure<br>Control Type<br>Pressure<br>Compensator | —             | <b>12</b>  | Refer to <sup>*3</sup> |
| <b>A70</b><br>(70.0 cm <sup>3</sup> /rev) | <b>F:</b><br>Flange Mtg.               |                            |   |               | <b>R:</b><br>Clockwise <sup>*1</sup><br>(Normal) |                        |
| <b>A90</b><br>(91.0 cm <sup>3</sup> /rev) |  | <b>60</b>                  |   |               |  |                        |
| <b>A145</b><br>(145 cm <sup>3</sup> /rev) |  | <b>L:</b><br>Foot Mtg.     |   | <b>60</b>     |  |                        |

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

★2. When A10 pump is used as the foot Mtg., order the Mtg. Bracket kit shown below separately. Refer to page 24 for dimensions of the Mtg. bracket.

| Mtg. Bracket Kit Numbers | Approx. Mass kg (lbs.) |
|--------------------------|------------------------|
| LP-1A-10                 | 2.2 (4.9)              |

Note: The mounting bracket kit consists of a mounting bracket, 2 hex. bolts and 2 plain washer.

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

Performance Characteristics

For performance characteristics, refer to models of pressure compensator type on page 36 to 43.

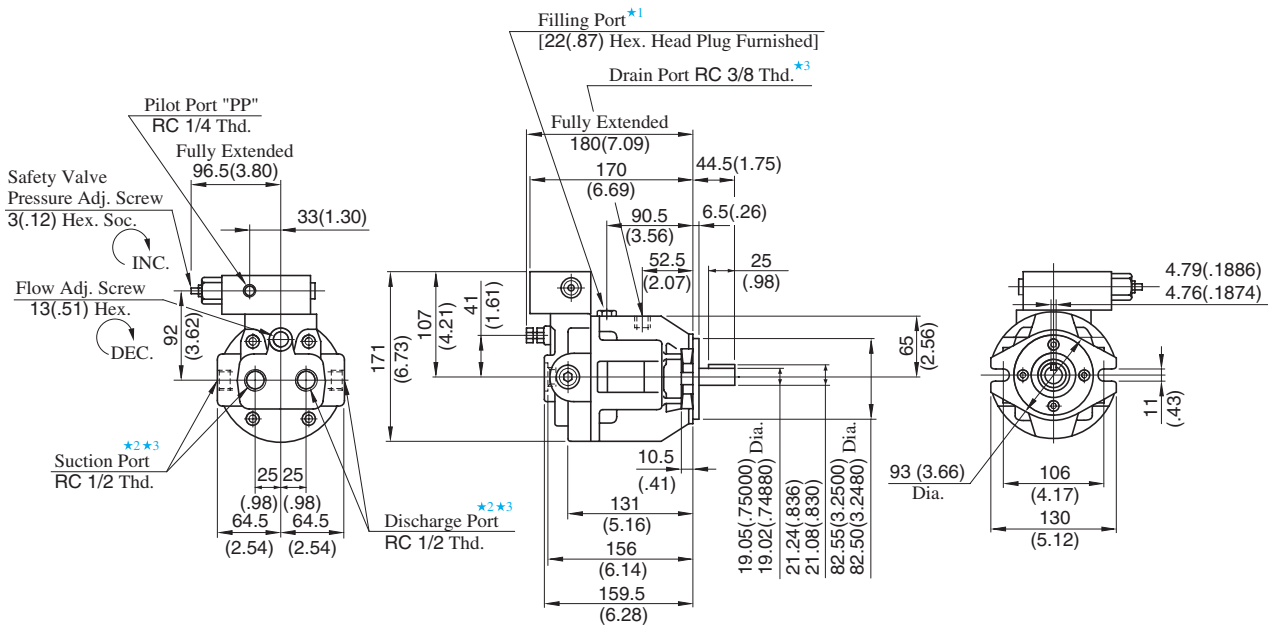
Pipe Flange Kit

For pipe flange, refer to form of pressure compensator type on page 34.

Flange Mtg.

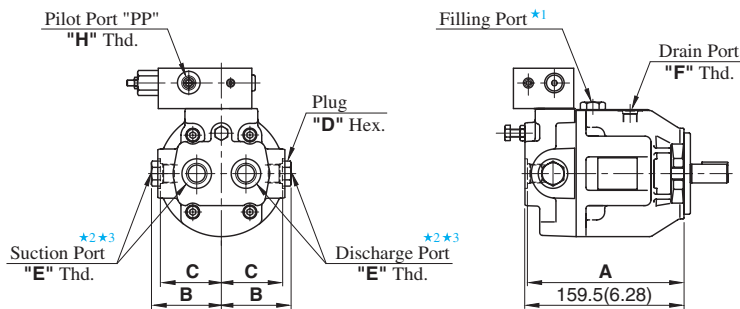
**DIMENSIONS IN MILLIMETRES (INCHES)**

● Japanese Standard "JIS" : A10-FR07-12



● European Design Standard : A10-FR07-1280

● N. American Design Standard : A10-FR07-12950



| Model Numbers  | Dimensions mm (IN.) |              |              |              | Thread Size |            |             |
|----------------|---------------------|--------------|--------------|--------------|-------------|------------|-------------|
|                | A                   | B            | C            | D            | E           | F          | h           |
| A10-FR07-1280  | 159<br>(6.26)       | 72<br>(2.83) | 64<br>(2.52) | 22<br>(.87)  | 1/2 BSP. F  | 3/8 BSP. F | 1/4 BSP. Tr |
| A10-FR07-12950 | 157<br>(6.18)       | 71<br>(2.80) | 62<br>(2.44) | 27<br>(1.06) | SAE #8      | SAE #6     | SAE #4      |

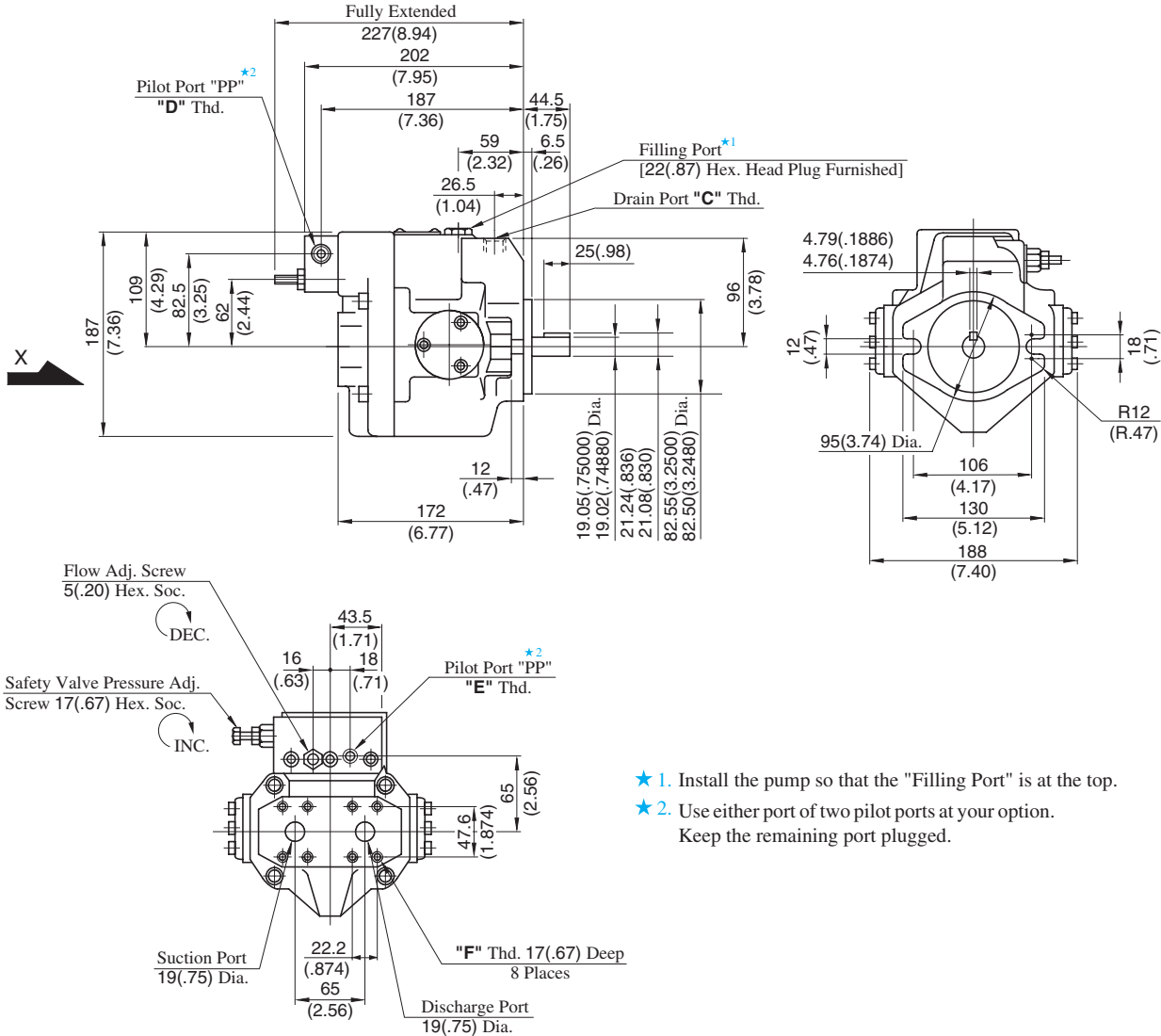
● For other dimensions, refer to Japanese Standard "JIS".

- ★1. Install the pump so that the "Filling Port" is at the top.
- ★2. Use either port of two suction and discharge ports at your option. Keep the remaining ports plugged.
- ★3. As the tightening torques of suction, discharge and drain port fittings, conform to the below.

| Model Numbers  | Tightening Torque Nm (IN. lbs.) |                 |
|----------------|---------------------------------|-----------------|
|                | Suction Port & Discharge Port   | Drain Port      |
| A70-FR07-12    | 65-75 (575-664)                 | 40-50 (354-443) |
| A70-FR07-1280  | 56-62 (496-549)                 | 33-36 (292-319) |
| A70-FR07-12950 | 47-51 (416-451)                 | 40-50 (354-443) |

Axial Port Type

Flange Mtg. : A16-F-R-07-K-32/3280/32950  
A22-F-R-07-K-32/3280/32950



- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two pilot ports at your option. Keep the remaining port plugged.

View Arrow X

| Model Numbers          | "C" Thd.   | "D" Thd.   | "E" Thd.    | "F" Thd.   |
|------------------------|------------|------------|-------------|------------|
| A16/A22-F-R-07-K-32    | Rc 3/8     | Rc 3/8     | Rc 1/4      | M10        |
| A16/A22-F-R-07-K-3280  | 3/8 BSP. F | 3/8 BSP. F | 1/4 BSP. Tr |            |
| A16/A22-F-R-07-K-32950 | SAE #8     | SAE #6     | SAE #4      | 3/8-16 UNC |

DIMENSIONS IN MILLIMETRES (INCHES)

● Axial Port Type

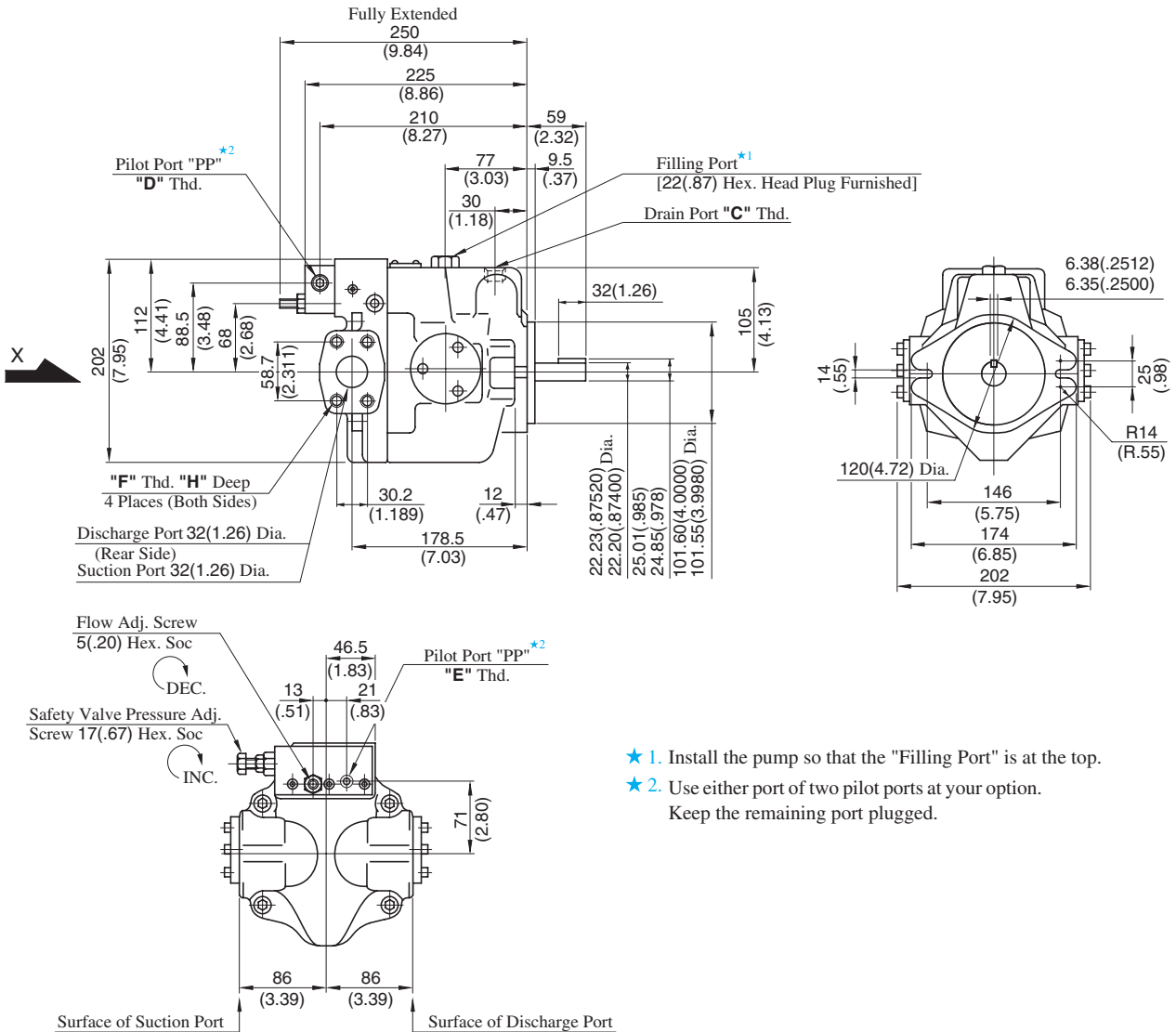
Port mounting dimensions are the same as those of pressure compensator model. Refer to page 45 for port mounting dimensions.

● Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 45 for the dimensions of mounting bracket.

**Side Port Type**

Flange Mtg. : A37-F-R-07-S-K-32/3280/32950



- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two pilot ports at your option. Keep the remaining port plugged.

**View Arrow X**

| Model Numbers        | "C" Thd.  | "D" Thd.  | "E" Thd.    | "F" Thd.    | "H" mm (IN.) |
|----------------------|-----------|-----------|-------------|-------------|--------------|
| A37-F-R-07-S-K-32    | Rc 1/2    | Rc 3/8    | Rc 1/4      | M10         | 19 (.75)     |
| A37-F-R-07-S-K-3280  | 1/2 BSP.F | 3/8 BSP.F | 1/4 BSP. Tr |             |              |
| A37-F-R-07-S-K-32950 | SAE #10   | SAE #6    | SAE #4      | 7/16-14 UNC | 20 (.79)     |

**DIMENSIONS IN MILLIMETRES (INCHES)**

● **Axial Port Type**

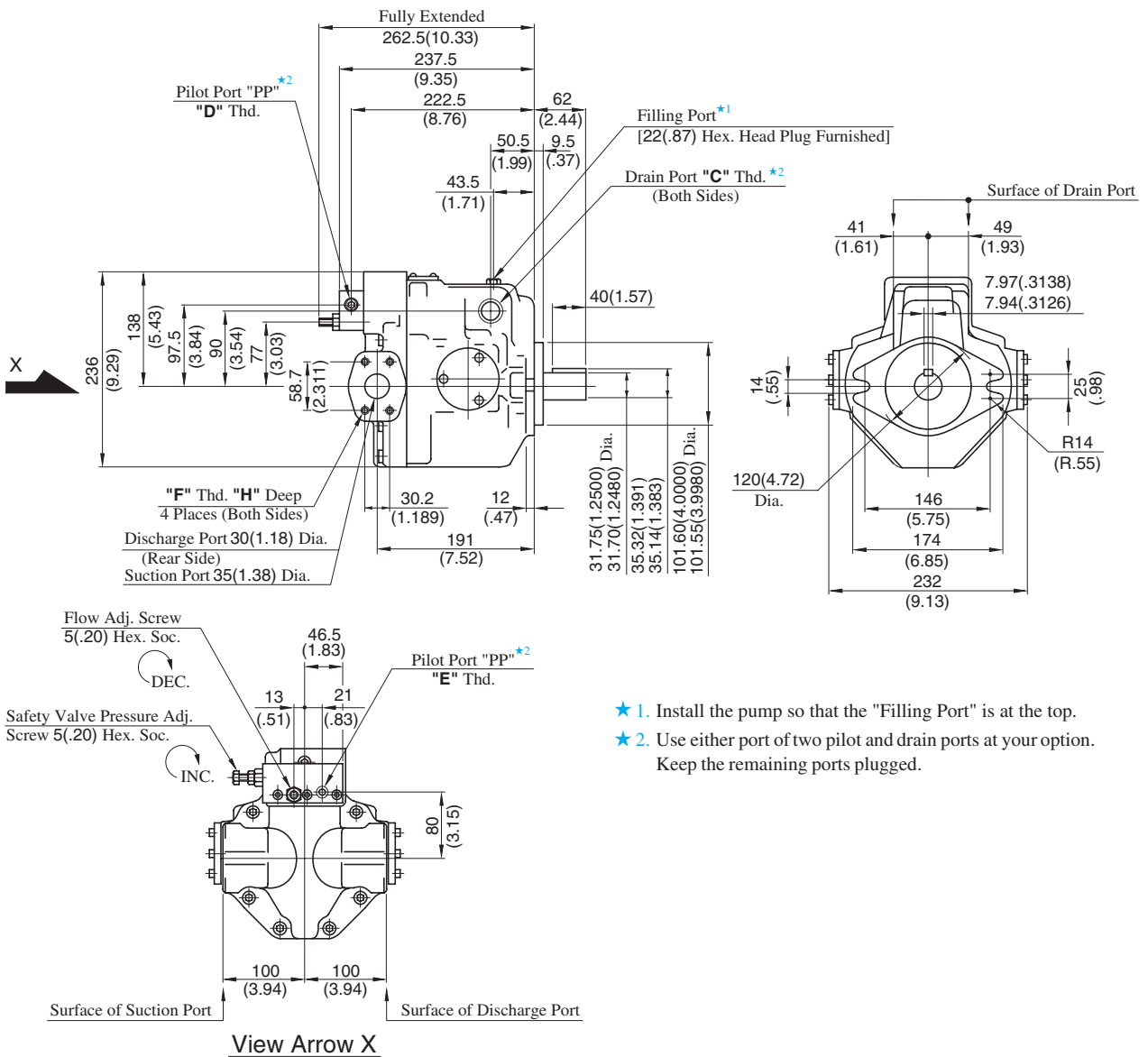
Port mounting dimensions are the same as those of pressure compensator model. Refer to page 46 for port mounting dimensions.

● **Foot Mounting Type**

Mounting bracket is common to that of pressure compensator model. Refer to page 46 for the dimensions of mounting bracket.

Side Port Type

Flange Mtg. : A56-F-R-07-S-K-32/3280/32950



- \* 1. Install the pump so that the "Filling Port" is at the top.
- \* 2. Use either port of two pilot and drain ports at your option. Keep the remaining ports plugged.

| Model Numbers        | "C" Thd.  | "D" Thd.  | "E" Thd.    | "F" Thd.    | "H" mm (IN.) |
|----------------------|-----------|-----------|-------------|-------------|--------------|
| A56-F-R-07-S-K-32    | Rc 3/4    | Rc 3/8    | Rc 1/4      | M10         | 19 (.75)     |
| A56-F-R-07-S-K-3280  | 3/4 BSP.F | 3/8 BSP.F | 1/4 BSP. Tr |             |              |
| A56-F-R-07-S-K-32950 | SAE #12   | SAE #6    | SAE #4      | 7/16-14 UNC | 20 (.79)     |

DIMENSIONS IN MILLIMETRES (INCHES)

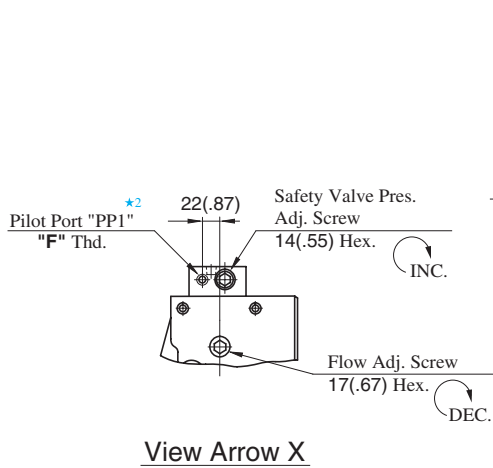
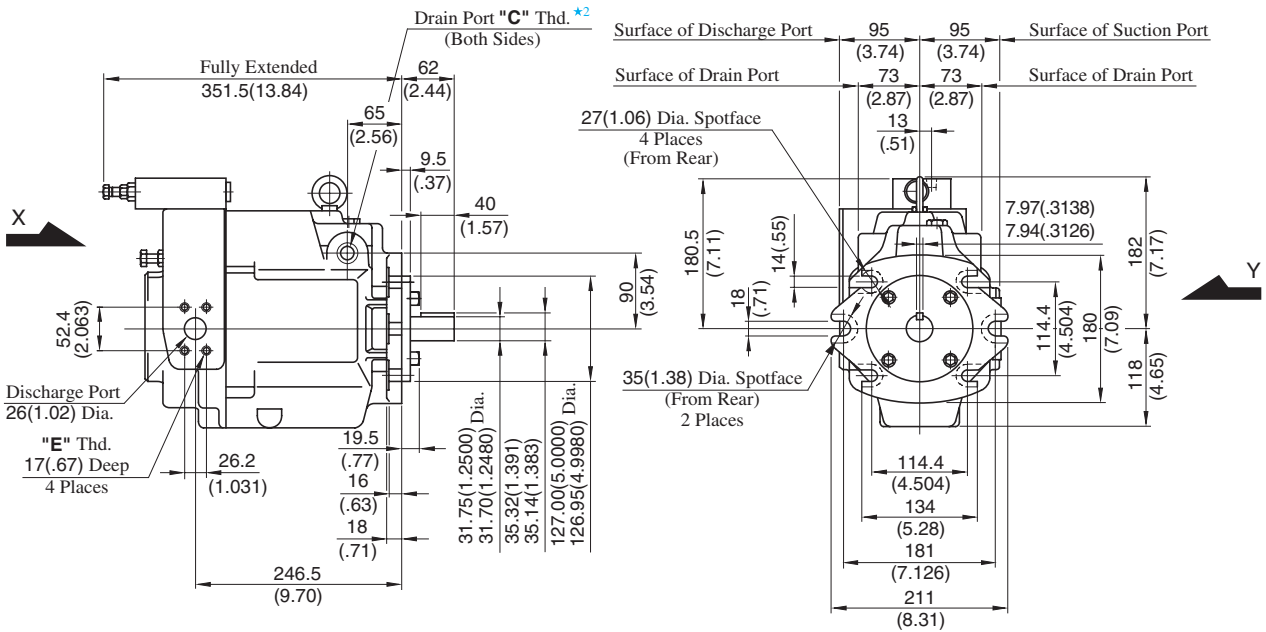
● Axial Port Type

Port mounting dimensions are the same as those of pressure compensator model. Refer to page 47 for port mounting dimensions.

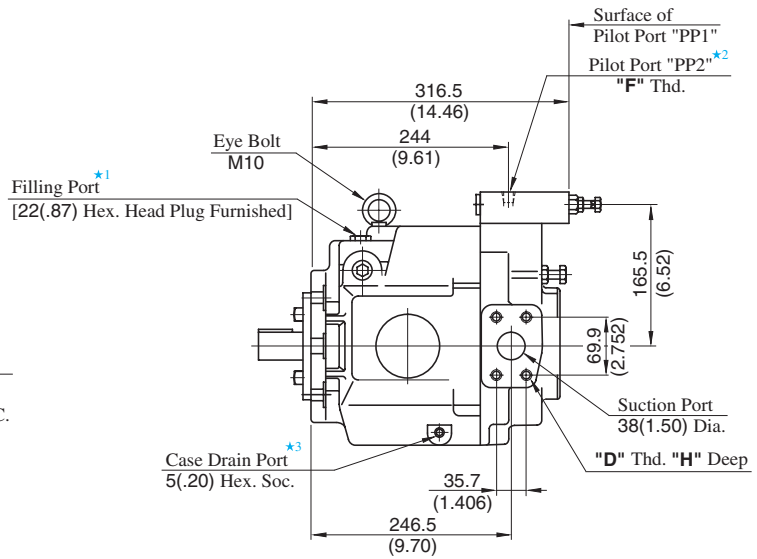
● Foot Mounting Type

Mounting bracket is common to that of pressure compensator model. Refer to page 47 for the dimensions of mounting bracket.

Flange Mtg. : A70-FR07S-60/6080/60950



View Arrow X



View Arrow Y

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two pilot and drain ports at your option. Keep the remaining ports plugged.
- ★ 3. Case drain port is available for use when draining hydraulic fluid from pump casing.

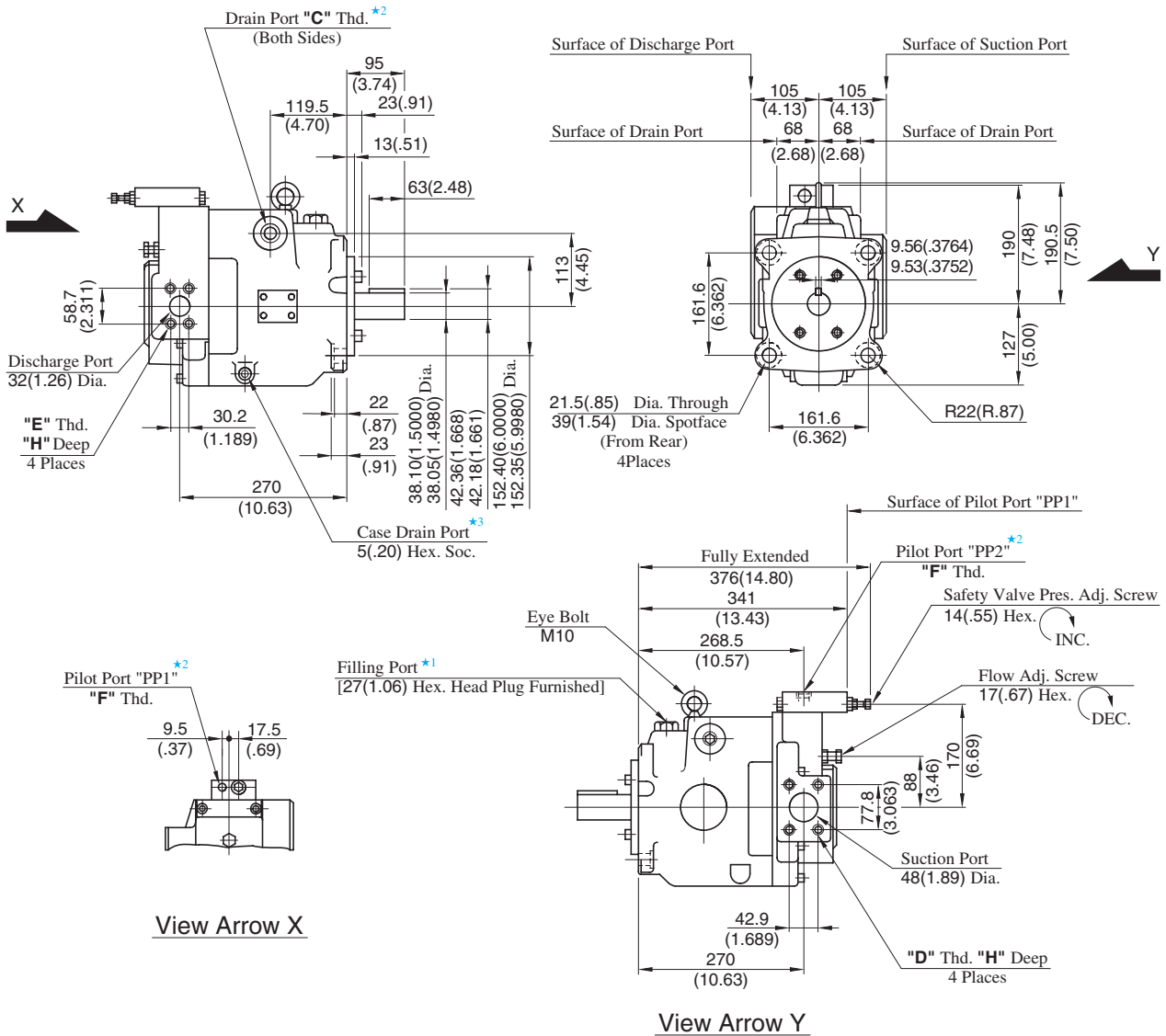
| Model Numbers   | "C" Thd.  | "D" Thd.   | "E" Thd.   | "F" Thd.    | "H" mm (IN.) |
|-----------------|-----------|------------|------------|-------------|--------------|
| A70-FR07S-60    | Rc 3/4    | M12        | M10        | Rc 1/4      | 19 (.75)     |
| A70-FR07S-6080  | 3/4 BSP.F |            |            | 1/4 BSP. Tr |              |
| A70-FR07S-60950 | SAE #12   | 1/2-13 UNC | 3/8-16 UNC | SAE #4      | 21 (.83)     |

DIMENSIONS IN MILLIMETRES (INCHES)

● **Foot Mounting Type**

Mounting bracket is common to that of pressure compensator model. Refer to [page 48](#) for the dimensions of mounting bracket.

Flange Mtg. : A90-FR07S-60/6080/60950



- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two pilot and drain ports at your option. Keep the remaining ports plugged.
- ★ 3. Case drain port is available for use when draining hydraulic fluid from pump casing.

| Model Numbers   | "C" Thd.  | "D" Thd.   | "E" Thd.    | "F" Thd.    | H mm (IN.) |
|-----------------|-----------|------------|-------------|-------------|------------|
| A90-FR07S-60    | Rc 3/4    | M12        | M10         | Rc 1/4      | 19 (.75)   |
| A90-FR07S-6080  | 3/4 BSP.F |            |             | 1/4 BSP. Tr |            |
| A90-FR07S-60950 | SAE #12   | 1/2-13 UNC | 7/16-14 UNC | SAE #4      | 21 (.83)   |

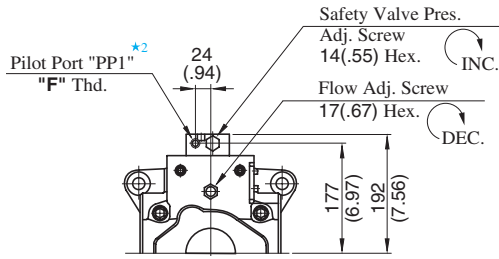
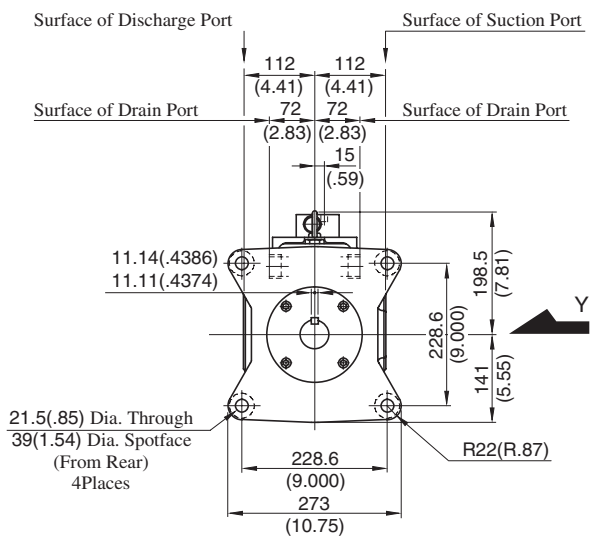
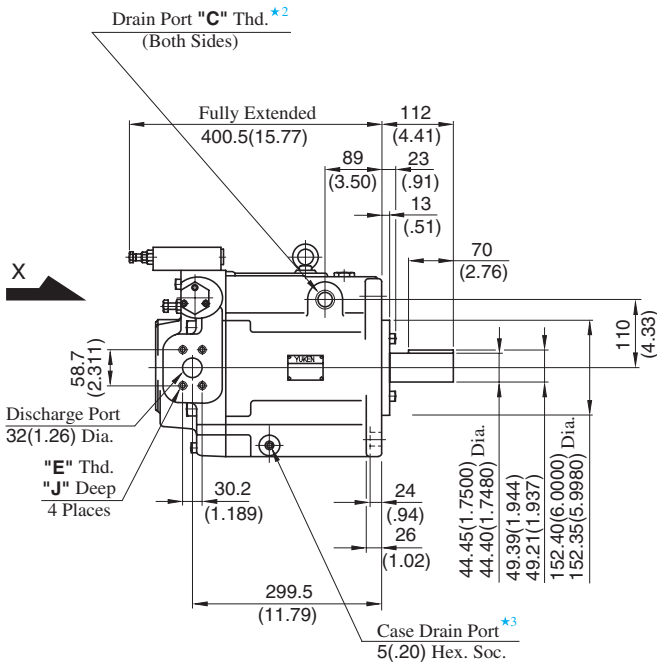
DIMENSIONS IN MILLIMETRES (INCHES)

● **Foot Mounting Type**

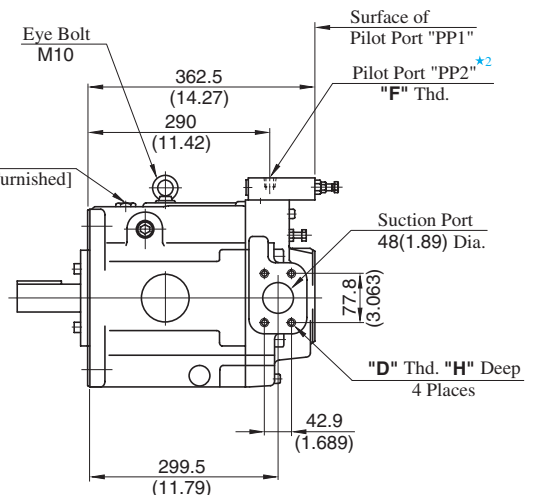
Mounting bracket is common to that of pressure compensator model. Refer to page 49 for the dimensions of mounting bracket.



Flange Mtg. : A145-FR07S-60/6080/60950



View Arrow X



View Arrow Y

- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two pilot and drain ports at your option.  
Keep the remaining ports plugged.
- ★ 3. Case drain port is available for use when draining hydraulic fluid from pump casing.

| Model Numbers    | "C" Thd.  | "D" Thd.   | "E" Thd.    | "F" Thd.    | H mm (IN.) | J mm (IN.) |
|------------------|-----------|------------|-------------|-------------|------------|------------|
| A145-FR07S-60    | Rc 3/4    | M12        | M10         | Rc 1/4      | 19 (.75)   | 19 (.75)   |
| A145-FR07S-6080  | 3/4 BSP.F |            |             | 1/4 BSP. Tr |            |            |
| A145-FR07S-60950 | SAE #12   | 1/2-13 UNC | 7/16-14 UNC | SAE #4      | 21 (.83)   | 20 (.79)   |

DIMENSIONS IN MILLIMETRES (INCHES)

● Foot Mounting Type

Mounting bracket is common to that of pressure compensator model.  
Refer to page 50 for the dimensions of mounting bracket.