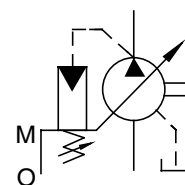




# "A" Series Variable Displacement Piston Pumps – Single Pump, Pressure Compensator Type



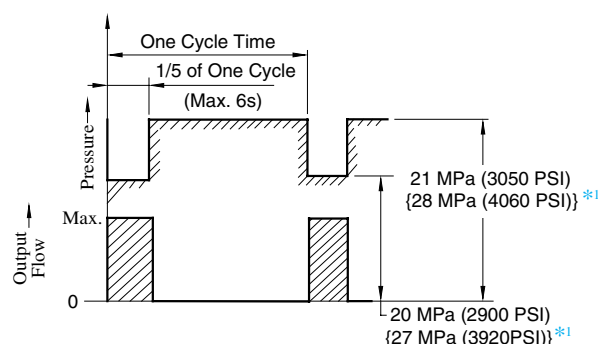
Graphic Symbol



## 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) |                            | 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-FR01B-12*      | 10.0 (.610)                                                      | 2 (.122)                                                    | 16 (2320)                       | 21 (3050)                  | 1800                       | 600  | 5.1 (11.2)                | —           |
| A10-FR01C/H-12*    |                                                                  |                                                             |                                 |                            |                            |      | 8.5 (18.7)                |             |
| A16-*-R-01-*-K-32* | 15.8 (.964)                                                      | 4 (.244)                                                    | 16 (2320)                       | 21 (3050)                  | 1800                       | 600  | 16.5 (36.4)               | 18.7 (41.2) |
| A22-*-R-01-*-K-32* | 22.2 (1.355)                                                     | 6 (.366)                                                    | 16 (2320)                       | 16 (2320)                  | 1800                       | 600  | 16.5 (36.4)               | 18.7 (41.2) |
| A37-*-R-01-*-K-32* | 36.9 (2.25)                                                      | 10 (.610)                                                   | 16 (2320)                       | 21 (3050)                  | 1800                       | 600  | 28.0 (61.7)               | 32.3 (71.2) |
| A56-*-R-01-*-K-32* | 56.2 (3.43)                                                      | 12 (.732)                                                   | 16 (2320)                       | 21 (3050)                  | 1800                       | 600  | 35.0 (77.2)               | 39.3 (86.7) |
| A70-*R01*S-60*     | 70.0 (4.27)                                                      | 30 (1.83)                                                   | 25 (3630)                       | 28 (4060)                  | 1800                       | 600  | 58.5 (129)                | 70.5 (155)  |
| A90-*R01*S-60*     | 91.0 (5.55)                                                      | 56 (3.42)                                                   | 25 (3630)                       | 28 (4060)                  | 1800                       | 600  | 72.5 (160)                | 93 (205)    |
| A145-*R01*S-60*    | 145 (8.85)                                                       | 83 (5.06)                                                   | 25 (3630)                       | 28 (4060)                  | 1800                       | 600  | 92.5 (204)                | 117.5 (259) |

- ★1. Whenever setting pressure, make sure the full cut-off pressure never exceeds the maximum intermittent pressure.
- ★2. Care should be taken in cases of used at a higher pressure than the rated pressure, because operating terms may be restricted. For example, if used as per maximum illustrated operating conditions, intermittent time at maximum flow is restricted to under 1/5 of one cycle time and under six seconds simultaneously. Conditions may vary according to the actual working pressure and delivery (inclination angle of the swash plate). Consult factory or Yuken sales representative for further information.
- ★3. The table above shows specifications for using petroleum based oils. Pumps (customized design) for special fluids are also available. Their operating pressure and maximum shaft speed however differ from the values in the table above depending on the fluid type. Range of operating temperature and viscosities may differ from those of petroleum based oils due to their characteristics.



\*1. Applicable only for "A70/90/145"

## Specifications and Design numbers for Special Fluids

| Type of Fluids       | Pump Series | Operating Pressure<br>MPa (PSI) |                                      | Allowable Maximum Shaft Speed<br>r/min |                      | Temperature Range<br>°C (°F) | Viscosity Range<br>mm <sup>2</sup> /s (SSU) | Design Numbers for Special Fluid<br>(Occasion of Japanese Std. "JIS") <sup>★3</sup> |
|----------------------|-------------|---------------------------------|--------------------------------------|----------------------------------------|----------------------|------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------|
|                      |             | Rated                           | Intermittent                         | Rated                                  | Max.                 |                              |                                             |                                                                                     |
| Water-Glycols        | A16 – A56   | 14(2030)                        | 16(2320)<br>{14(2030)} <sup>★1</sup> | 1200                                   | (1800) <sup>★2</sup> | 0 - 50 (32 - 104)            | 20 - 200(98 - 927)                          | 3230                                                                                |
|                      | A70 – A145  | 21(3050)                        | 21(3050)                             |                                        |                      |                              |                                             | 6030                                                                                |
| Phosphate Ester Type | A16 – A56   | 14(2030)                        | 16(2320)<br>{14(2030)} <sup>★1</sup> | 1200                                   | (1800) <sup>★2</sup> | 0 - 60 (32 - 140)            | 20 - 200(98 - 927)                          | 3206                                                                                |
|                      | A70 – A145  | 21(3050)                        | 21(3050)                             |                                        |                      |                              |                                             | 6006                                                                                |
| Polyol Ester Type    | A16 – A56   | 16(2320)                        | 16(2320)                             | 1800                                   | 1800                 | 0 - 60 (32 - 140)            | 20 - 200(98 - 927)                          | 32450                                                                               |
|                      | A70 – A145  | 21(3050)                        | 21(3050)                             |                                        |                      |                              |                                             | 60450                                                                               |

- ★1. The figures in brackets are for A22 type.
- ★2. As the specific gravities of water-glycol fluids and phosphate ester type fluids are higher than one, an overhead reservoir is required when pumps are operated at 1500 r/min or more.
- ★3. For the design numbers of pumps for European Design and North American Design Standards, please contact us.

## Model Number Designation

| A16                                       | -F                                           | -R                                                                    | -01                                  | -B                                                                                                   | -S                                             | -K                    | -32           | *                      |
|-------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------|---------------|------------------------|
| Series Number                             | Mounting                                     | Direction of Rotation                                                 | Control Type                         | Pres. Adj. Range MPa (PSI)                                                                           | Port Position                                  | Shaft Extension       | Design Number | Design Std.            |
| <b>A16</b><br>(15.8 cm <sup>3</sup> /rev) | <b>F:</b> Flange Mtg.<br><b>L:</b> Foot Mtg. | (Viewed from Shaft End)<br><b>R:</b> Clockwise (Normal) <sup>★1</sup> | <b>01:</b> Pressure Compensator Type | <b>B:</b> 1.2 - 7 (170 - 1020)<br><b>C:</b> 1.2 - 16 (170 - 2320)<br><b>H:</b> 1.2 - 21 (170 - 3050) | <b>None:</b> Axial Port<br><b>S:</b> Side Port | <b>K:</b> Keyed Shaft | <b>32</b>     | Refer to <sup>★2</sup> |
| <b>A22</b><br>(22.2 cm <sup>3</sup> /rev) |                                              |                                                                       |                                      | <b>B:</b> 1.2 - 7 (170 - 1020)<br><b>C:</b> 1.2 - 16 (170 - 2320)                                    |                                                |                       | <b>32</b>     |                        |
| <b>A37</b><br>(36.9 cm <sup>3</sup> /rev) |                                              |                                                                       |                                      | <b>B:</b> 1.2 - 7 (170 - 1020)<br><b>C:</b> 1.2 - 16 (170 - 2320)<br><b>H:</b> 1.2 - 21 (170 - 3050) |                                                |                       | <b>32</b>     |                        |
| <b>A56</b><br>(56.2 cm <sup>3</sup> /rev) |                                              |                                                                       |                                      |                                                                                                      |                                                |                       | <b>32</b>     |                        |

| A70                                       | -F                                  | R                                                                     | 01                                   | B                                                                                                                                       | S                   | -60           | *                      |
|-------------------------------------------|-------------------------------------|-----------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------|------------------------|
| Series Number                             | Mounting                            | Direction of Rotation                                                 | Control Type                         | Pres. Adj. Range MPa (PSI)                                                                                                              | Port Position       | Design Number | Design Std.            |
| <b>A10</b><br>(10.0 cm <sup>3</sup> /rev) | <b>F:</b> Flange Mtg. <sup>★3</sup> | (Viewed from Shaft End)<br><b>R:</b> Clockwise (Normal) <sup>★1</sup> | <b>01:</b> Pressure Compensator Type | <b>B:</b> 1.2 - 7 (170 - 1020) <sup>★4</sup><br><b>C:</b> 2.0 - 16 (290 - 2320)<br><b>H:</b> 2.0 - 21 (290 - 3050)                      | —                   | <b>12</b>     | Refer to <sup>★2</sup> |
| <b>A70</b><br>(70.0 cm <sup>3</sup> /rev) | <b>F:</b> Flange Mtg.               |                                                                       |                                      | <b>B:</b> 1.2 - 7 (170 - 1020)<br><b>C:</b> 1.5 - 16 (220 - 2320)<br><b>H:</b> 1.8 - 21 (260 - 3050)<br><b>K:</b> 2.0 - 28 (290 - 4060) | <b>S:</b> Side Port | <b>60</b>     |                        |
| <b>A90</b><br>(91.0 cm <sup>3</sup> /rev) | <b>L:</b> Foot Mtg.                 |                                                                       |                                      |                                                                                                                                         |                     | <b>60</b>     |                        |
| <b>A145</b><br>(145 cm <sup>3</sup> /rev) |                                     |                                                                       |                                      |                                                                                                                                         |                     | <b>60</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  
950 ..... N. American Design Standard

★3. 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.

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

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

★4. The pressure adjustment range "B" is not available to the European Design Standard and the N. American Design Standard of "A10".

## Pipe Flange Kits

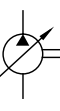
Pipe flange kits are available. When ordering, specify the kit number from the table below.

| Pump Model Numbers | Name of Port | Pipe Flange Kit Numbers |                      |                                       |                                          |                                       |                                          |                                       |
|--------------------|--------------|-------------------------|----------------------|---------------------------------------|------------------------------------------|---------------------------------------|------------------------------------------|---------------------------------------|
|                    |              | Threaded Connection     |                      |                                       | Socket Welding <sup>★1</sup>             |                                       | Butt Welding                             |                                       |
|                    |              | Japanese Std. "JIS"     | European Design Std. | N. American Design Std. <sup>★2</sup> | Japanese Std. "JIS" European Design Std. | N. American Design Std. <sup>★2</sup> | Japanese Std. "JIS" European Design Std. | N. American Design Std. <sup>★2</sup> |
| A16-*R-01          | Suction      | F5-06-A-10              | F5-06-A-1080         | —                                     | F5-06-B-10                               | F5-06-B-1090                          | F5-06-C-10                               | F5-06-C-1090                          |
| A22-*R-01          | Discharge    | F5-06-A-10              | F5-06-A-1080         |                                       | F5-06-B-10                               | F5-06-B-1090                          | F5-06-C-10                               | F5-06-C-1090                          |
| A37-*R-01          | Suction      | F5-10-A-10              | F5-10-A-1080         | —                                     | F5-10-B-10                               | F5-10-B-1090                          | F5-10-C-10                               | F5-10-C-1090                          |
| A56-*R-01          | Discharge    | F5-10-A-10              | F5-10-A-1080         |                                       | F5-10-B-10                               | F5-10-B-1090                          | F5-10-C-10                               | F5-10-C-1090                          |
| A70-*R01           | Suction      | F5-12-A-10              | F5-12-A-1080         | —                                     | F5-12-B-10                               | F5-12-B-1090                          | F5-12-C-10                               | F5-12-C-1090                          |
|                    | Discharge    | F5-08-A-10              | F5-08-A-1080         |                                       | F5-08-B-10                               | F5-08-B-1090                          | F5-08-C-10                               | F5-08-C-1090                          |
| A90-*R01           | Suction      | F5-16-A-10              | F5-16-A-1080         | —                                     | F5-16-B-10                               | F5-16-B-1090                          | F5-16-C-10                               | F5-16-C-1090                          |
| A145-*R01          | Discharge    | F5-10-A-10              | F5-10-A-1080         |                                       | F5-10-B-10                               | F5-10-B-1090                          | F5-10-C-10                               | F5-10-C-1090                          |

★1. In case of using socket welding flanges, there is a case where the operating pressure should be set lower than the normal because of strength of the flanges. Therefore, please pay cautious attention to the operating pressure when the socket welding flanges are used.

★2. As dimensions of the pipe flange mounting surface are conformed to SAE 4 Bolt Split Flange (Standard Pressure Series), pipe flanges conforming to the SAE Standards can be used.

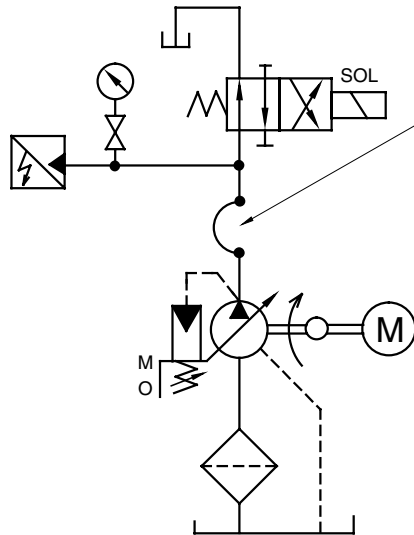
• Details of the pipe flange kits are shown on page 824.



## Response Characteristics Change in Accordance with Circuits and Operating Conditions.

### Test Circuit and Conditions

#### Circuit



#### Conditions

Drive Speed : 1500 r/min

Hydraulic Fluid : ISO VG32 oil

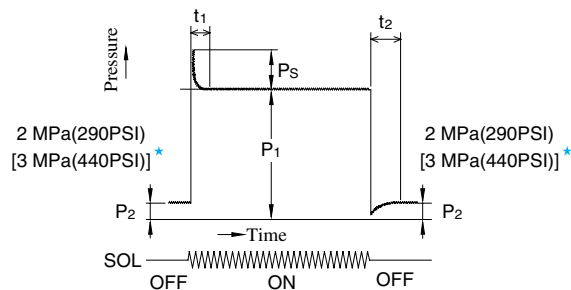
Oil Temperature : A10-A56: 50 °C (122 °F) [Viscosity 20 mm<sup>2</sup>/s (100 SSU)]

A70-A145: 40 °C (104 °F) [Viscosity 32 mm<sup>2</sup>/s (150 SSU)]

#### High Pressure Rubber Hose

| Model       | Ruber Hose Size                                             |
|-------------|-------------------------------------------------------------|
| A10         | 1/2" × 800 mm (2.6 ft.)                                     |
| A16<br>A22  | 3/4" × 700 mm (2.3 ft.)                                     |
| A37<br>A56  | 3/4" × 2000 mm (6.6 ft.)                                    |
| A70         | 3/4" × 3500 mm (11.5 ft.)                                   |
| A90<br>A145 | 3/4" × 3000 mm (9.8 ft.)<br>+<br>1-1/4" × 2000 mm (6.6 ft.) |

### Result of Measurement



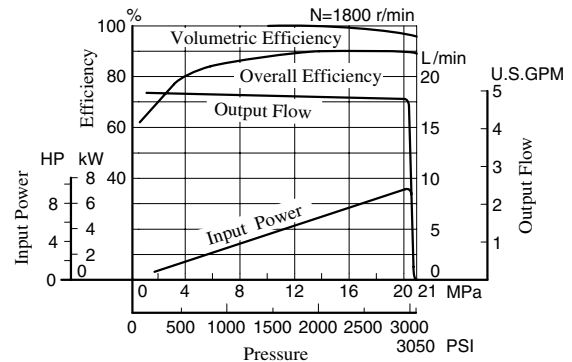
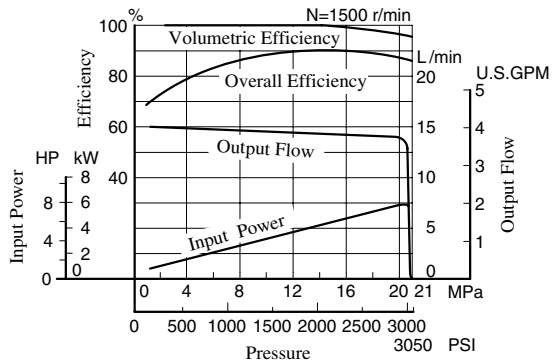
★ Applicable only for "A90/A145"

| Model | Full Cut-off Pressure<br>P <sub>1</sub><br>MPa (PSI) | Response Time<br>ms |                | Overshoot Pressure<br>P <sub>S</sub><br>MPa (PSI) |
|-------|------------------------------------------------------|---------------------|----------------|---------------------------------------------------|
|       |                                                      | t <sub>1</sub>      | t <sub>2</sub> |                                                   |
| A10   | 21 (3050)                                            | 100                 | 75             | 2.6 (380)                                         |
| A16   | 16 (2320)                                            | 38*                 | 59*            | 3.6 (520)                                         |
| A22   | 16 (2320)                                            | 30*                 | 72*            | 5.9 (860)                                         |
| A37   | 16 (2320)                                            | 40*                 | 78*            | 7.8 (1130)                                        |
| A56   | 16 (2320)                                            | 38*                 | 88*            | 7.6 (1100)                                        |
| A70   | 25 (3630)                                            | 80                  | 100            | 7.8 (1130)                                        |
| A90   | 25 (3630)                                            | 90                  | 110            | 7.9 (1150)                                        |
| A145  | 25 (3630)                                            | 100                 | 150            | 8.8 (1280)                                        |

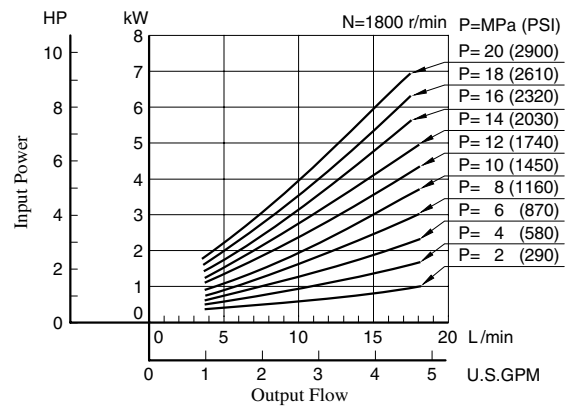
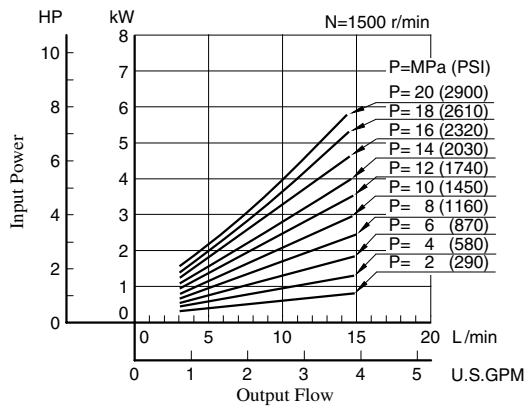
\* Response time except A10, A70, A90 and A145 is measured Yoke travel.

Typical Performance Characteristics of Type "A10" at Viscosity 20 mm<sup>2</sup>/s (100 SSU) [ISO VG32 Oils, 50°C (122°F)]

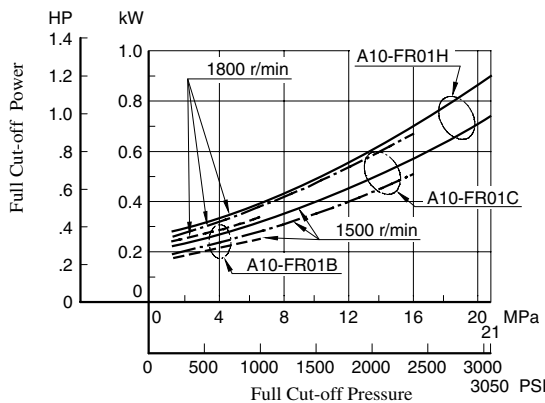
■ Performance Characteristic Curve



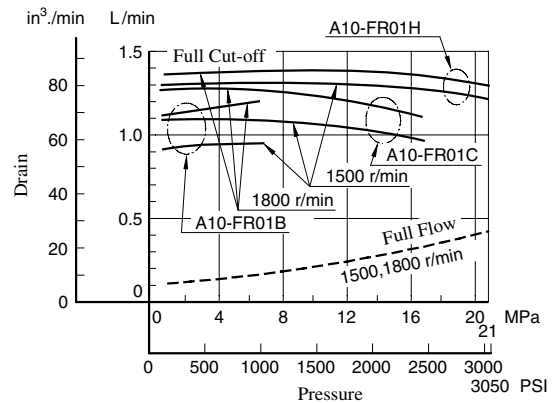
■ Input Power



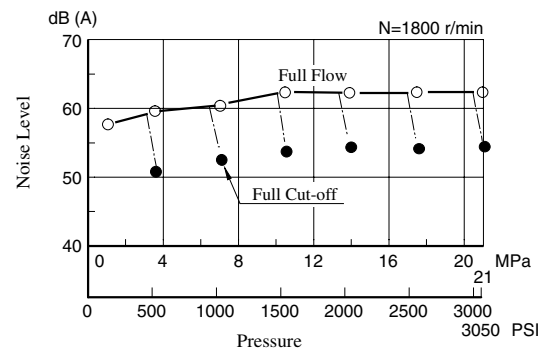
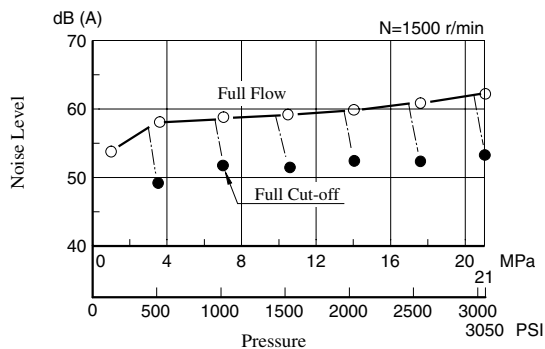
■ Full Cut-off Power



■ Drain



■ Noise Level [One metre (3.3 ft.) horizontally away from pump head cover]

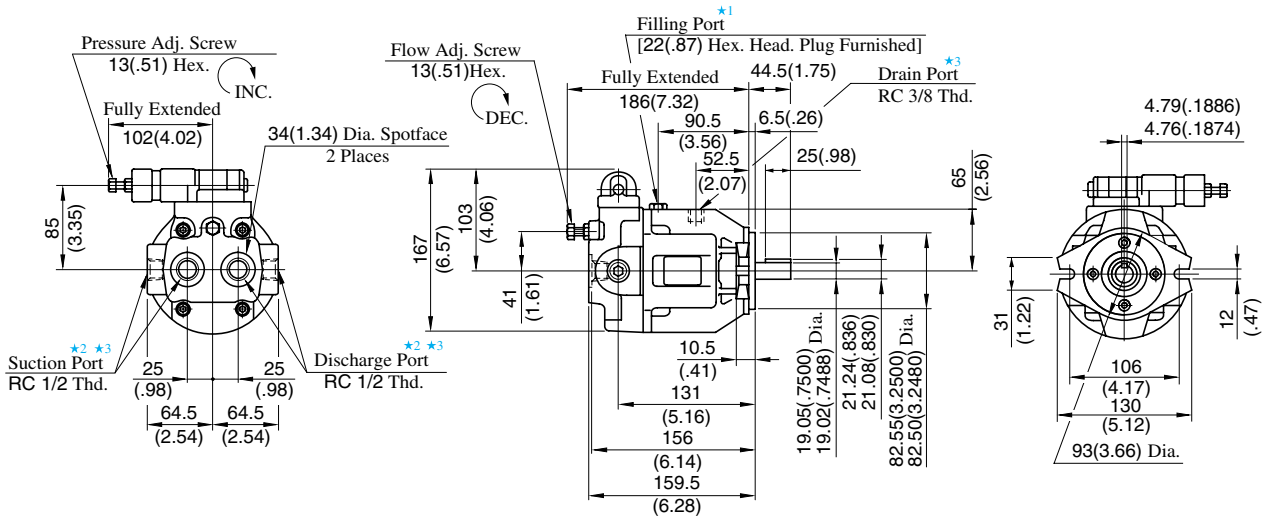


Flange Mtg.

Pressure Adjustment Range "C" & "H"

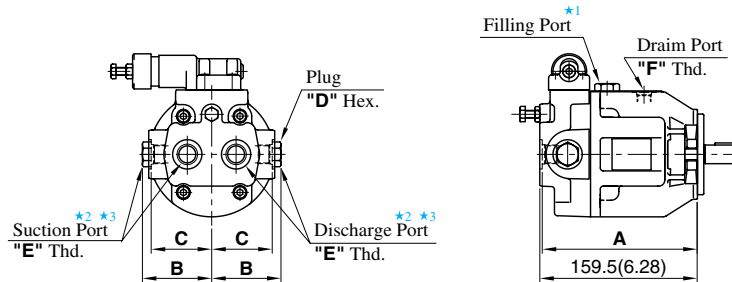
DIMENSIONS IN  
MILLIMETRES (INCHES)

● Japanese Standard "JIS": A10-FR01-C/H-12



● European Design Standard: A10-FR01-C/H-1280

● N. American Design Standard: A10-FR01-C/H-12950

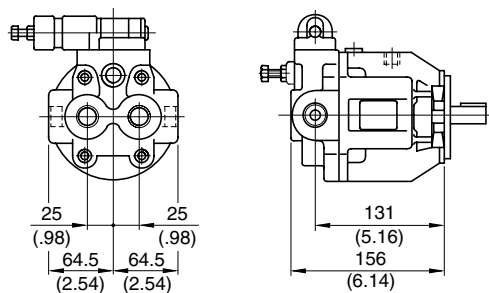


| Model Numbers     | Dimensions mm(Inches) |              |              |              | Thread Size |            |
|-------------------|-----------------------|--------------|--------------|--------------|-------------|------------|
|                   | A                     | B            | C            | D            | E           | F          |
| A10-FR01C/H-1280  | 159<br>(6.25)         | 72<br>(2.83) | 64<br>(2.52) | 27<br>(1.06) | 1/2 BSP. F  | 3/8 BSP. F |
| A10-FR01C/H-12950 | 157<br>(6.18)         | 71<br>(2.80) | 62<br>(2.44) | 22<br>(.87)  | SAE #8      | SAE #6     |

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

Pressure Adjustment Range "B"

● Japanese Standard "JIS": A10-FR01-B-12



● For other dimensions, refer to above Pressure Adj. Range "C" & "H".

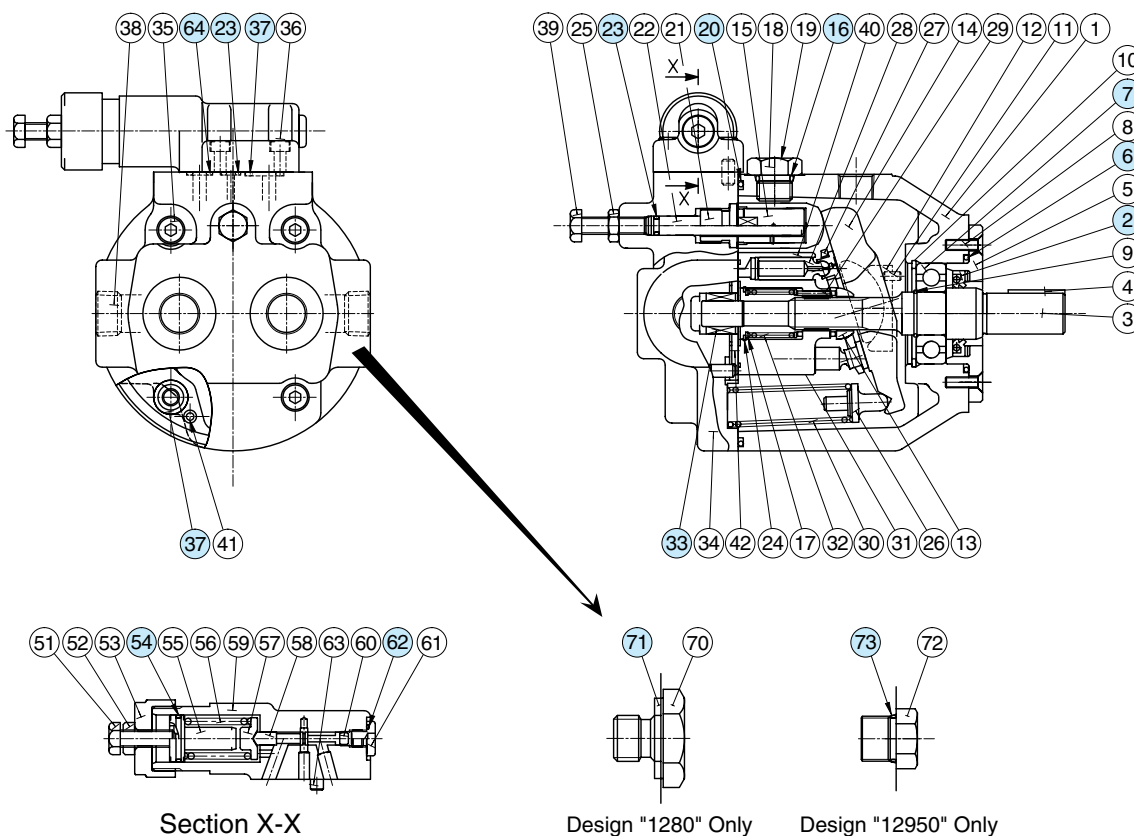
- ★ 1. Install the pump so that the "Filling Port" is at the top.
- ★ 2. Use either port of two suction and discharge ports at your option. Keep the remaining ports plugged.
- ★ 3. As the tightening torques of suction, discharge and drain port fittings, conform to the below.

| Model Numbers     | Tightening Torque Nm(IN. lbs.) |                 |
|-------------------|--------------------------------|-----------------|
|                   | Suction Port & Discharge Port  | Drain Port      |
| A10-FR01B/C/H-12  | 65-75 (575-664)                | 40-50 (354-443) |
| A10-FR01C/H-1280  | 56-62 (496-549)                | 33-36 (292-319) |
| A10-FR01C/H-12950 | 47-51 (363-451)                | 40-50 (354-443) |



### Spare Parts List

A10-FR01-B-12  
A10-FR01C/H-12/1280/12950



### List of Seals & Bearings

| Item            | Name of Parts | Part Numbers          | Qty.             |       | Remarks                                           |
|-----------------|---------------|-----------------------|------------------|-------|---------------------------------------------------|
|                 |               |                       | Pres. Adj. Range |       |                                                   |
|                 |               |                       | B                | C & H |                                                   |
| 2 <sup>*</sup>  | Oil Seal      | TCN24408Y             | 1                | 1     |                                                   |
| 6 <sup>*</sup>  | O-Ring        | SO-NA-G50             | 1                | 1     |                                                   |
| 7               | Bearing       | 6204                  | 1                | 1     |                                                   |
| 16 <sup>*</sup> | O-Ring        | SO-NB-P14             | 1                | 1     |                                                   |
| 20 <sup>*</sup> | O-Ring        | SO-NB-G120            | 1                | 1     |                                                   |
| 23 <sup>*</sup> | O-Ring        | SO-NB-P6              | 2                | 2     |                                                   |
| 33              | Bearing       | HMK1215               | 1                | 1     |                                                   |
| 37 <sup>*</sup> | O-Ring        | SO-NB-P12             | 6                | 5     |                                                   |
| 54 <sup>*</sup> | O-Ring        | SO-NA-A018            | 1                | 1     |                                                   |
| 62 <sup>*</sup> | O-Ring        | SO-NB-P10             | 1                | 1     |                                                   |
| 64 <sup>*</sup> | O-Ring        | SO-NB-P9              | —                | 1     |                                                   |
| 71              | Bonded Seal   | KP-C-04               | —                | 2     | Only for "1280" Design, Not included in Seal Kit  |
| 73              | O-Ring        | AS568-908 (NBR, Hs90) | —                | 2     | Only for "12950" Design, Not included in Seal Kit |

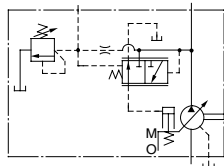
★ When ordering seals, please specify the seal kit number from the table below.

### List of Seal Kits

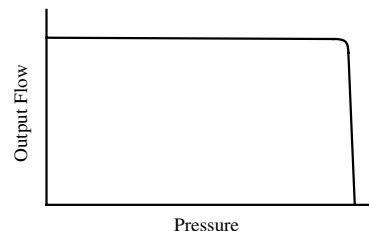
| Pump Model Numbers      | Seal Kit Numbers |
|-------------------------|------------------|
| A10-FR01B-12            | KS-A10-01B-12    |
| A10-FR01C-12/1280/12950 | KS-A10-01H-12    |
| A10-FR01H-12/1280/12950 |                  |

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

Graphic Symbol



Performance Characteristics

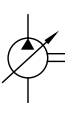


### Specifications

| 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.            |
| A16<br>(15.8 cm³/rev) | F:<br>Flange Mtg.<br><br>L:<br>Foot Mtg. | (Viewed from)<br>Shaft End<br><br>R:<br>Clockwise <sup>★1</sup><br>(Normal) | 07:<br>Pilot Pressure<br>Control Type<br>Pressure<br>Compensator | None:<br>Axial Port<br><br>S:<br>Side Port | K:<br>Keyed Shaft | 32            | Refer to <sup>★3</sup> |
| A22<br>(22.2 cm³/rev) |                                          |                                                                             |                                                                  |                                            |                   | 32            |                        |
| A37<br>(36.9 cm³/rev) |                                          |                                                                             |                                                                  |                                            |                   | 32            |                        |
| A56<br>(56.2 cm³/rev) |                                          |                                                                             |                                                                  |                                            |                   | 32            |                        |

| A70                   | -F                                 | R                                                         | 07                                                   | S             | -60           | *           |
|-----------------------|------------------------------------|-----------------------------------------------------------|------------------------------------------------------|---------------|---------------|-------------|
| Series Number         | Mounting                           | Direction of Rotation                                     | Control Type                                         | Port Position | Design Number | Design Std. |
| A10<br>(10.0 cm³/rev) | F: Flange Mtg.★2                   | (Viewed from Shaft End)<br><br>R: Clockwise★1<br>(Normal) | 07: Pilot Pressure Control Type Pressure Compensator | —             | 12            | Refer to★3  |
| A70<br>(70.0 cm³/rev) | F: Flange Mtg.<br><br>L: Foot Mtg. |                                                           |                                                      | S: Side Port  | 60            |             |
| A90<br>(91.0 cm³/rev) |                                    |                                                           |                                                      |               | 60            |             |
| A145<br>(145 cm³/rev) |                                    |                                                           |                                                      |               | 60            |             |

★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<br>Kit Numbers | Approx. Mass<br>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](#).

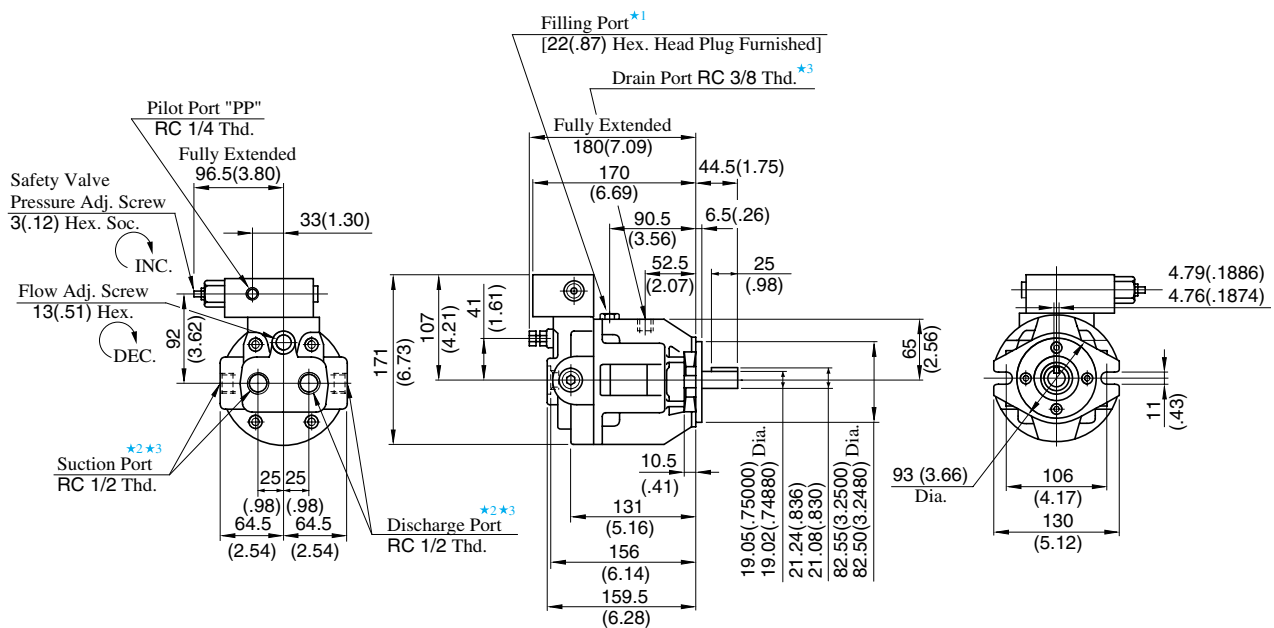
### Pipe Flange Kit

For pipe flange, refer to form of pressure compensator type on [page 34](#).

Flange Mtg.

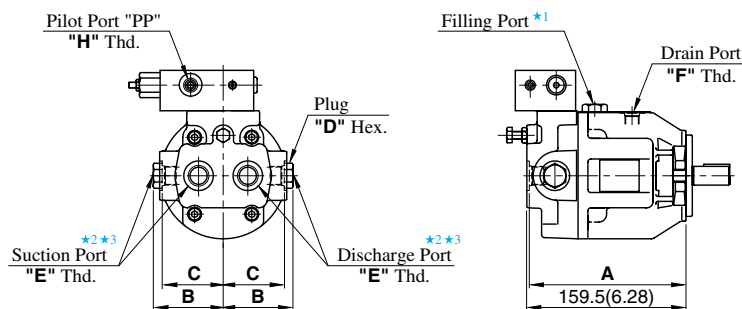
● Japanese Standard "JIS" : A10-FR07-12

DIMENSIONS IN  
MILLIMETRES (INCHES)



● 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) |