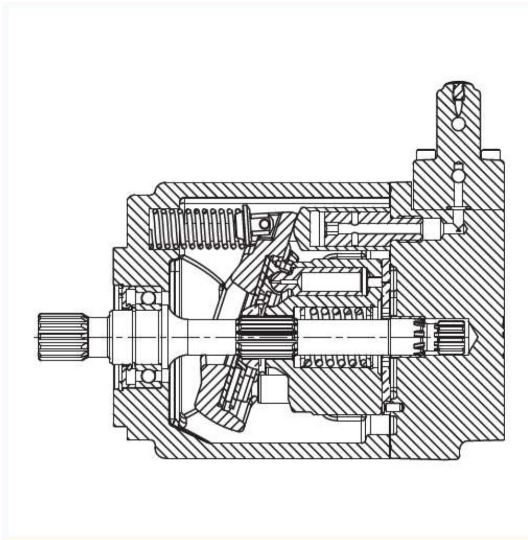


# SMA1 Series



Axial Piston Pumps Variable Displacement



Axial piston pumps series SM A1 have been designed to operate in an open circuit. Control systems now available are making it easy to use these pumps in any application for industrial and mobile fields. Development of rotating groups, specifically designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure unitl 250 bar and until 315 bar for peak pressure. Control types allow a load-sensing or a constant pressure control over the pump. It is possible to couple tandem versions.

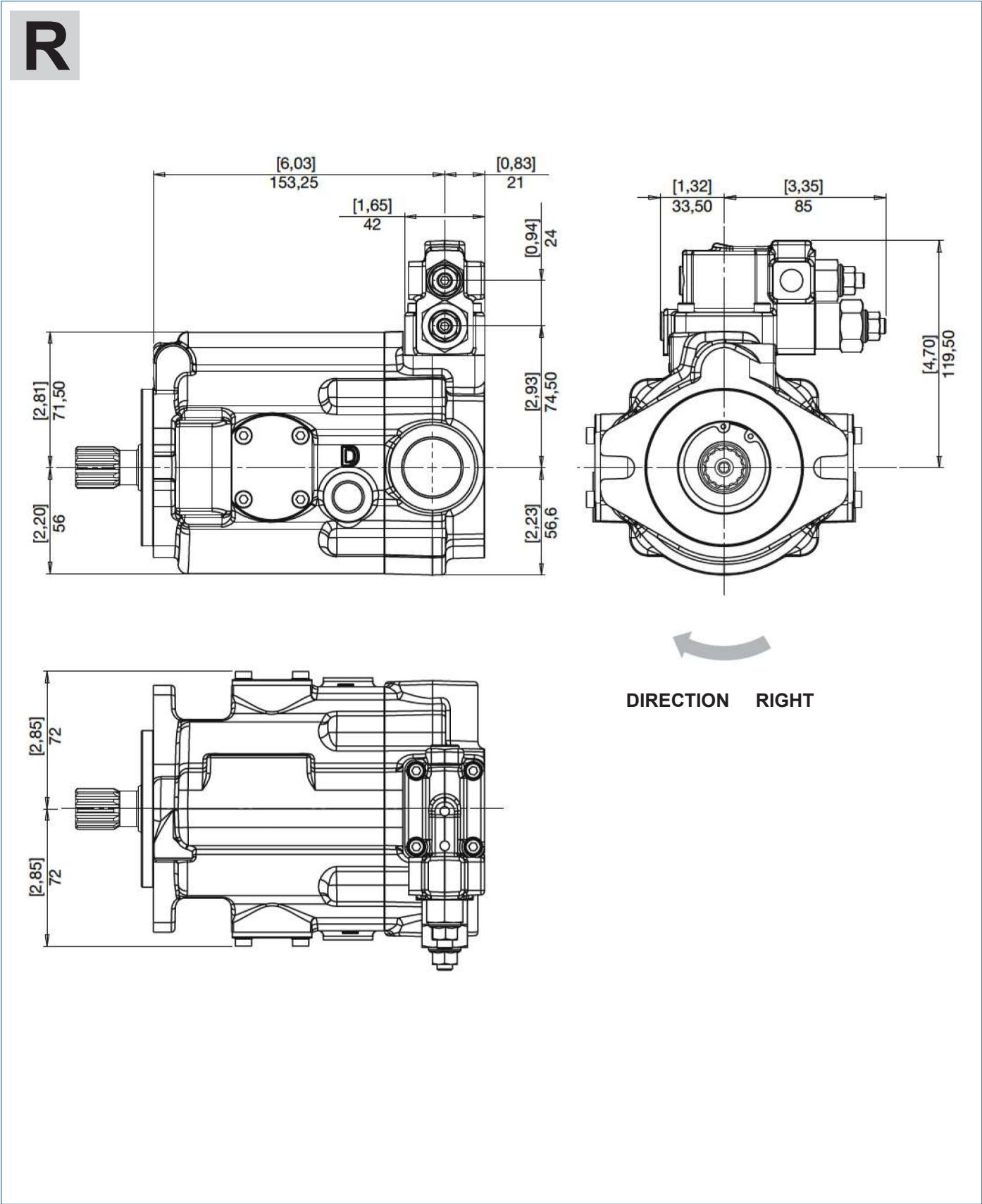
| GROUP | NOMINAL DISPLACEMENT |                   | CONTINUOUS |      | INTERMITTENT |      | PEAK |      | SPEED |     | WEIGHT |     |
|-------|----------------------|-------------------|------------|------|--------------|------|------|------|-------|-----|--------|-----|
|       | cm <sup>3</sup>      | in <sup>3</sup>   | bar        | psi  | bar          | psi  | bar  | psi  | MAX   | MIN | kg     | lbs |
|       | min <sup>-1</sup>    | min <sup>-1</sup> |            |      |              |      |      |      |       |     |        |     |
| SMA1  | 10                   | 0.61              | 250        | 3625 | 280          | 4060 | 315  | 4568 | 3300  | 500 | 10     | 22  |
|       | 12                   | 0.73              |            |      |              |      |      |      |       |     |        |     |
|       | 14                   | 0.85              |            |      |              |      |      |      |       |     |        |     |
|       | 16                   | 0.98              |            |      |              |      |      |      |       |     |        |     |
|       | 18                   | 1.00              |            |      |              |      |      |      |       |     |        |     |

# SMA1 Series

Axial Piston Pumps Variable Displacement



## DIMENSIONS

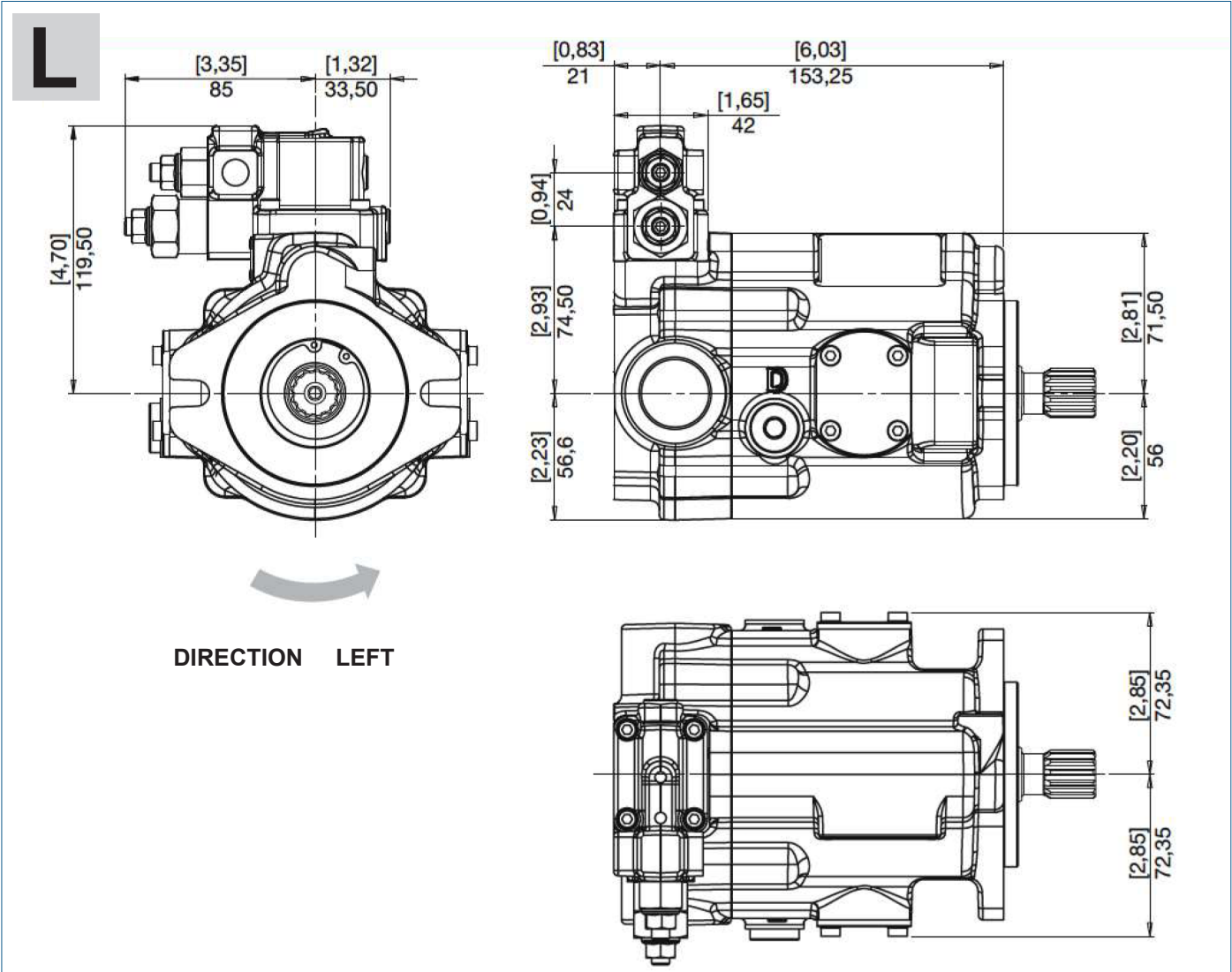


# SMA1 Series

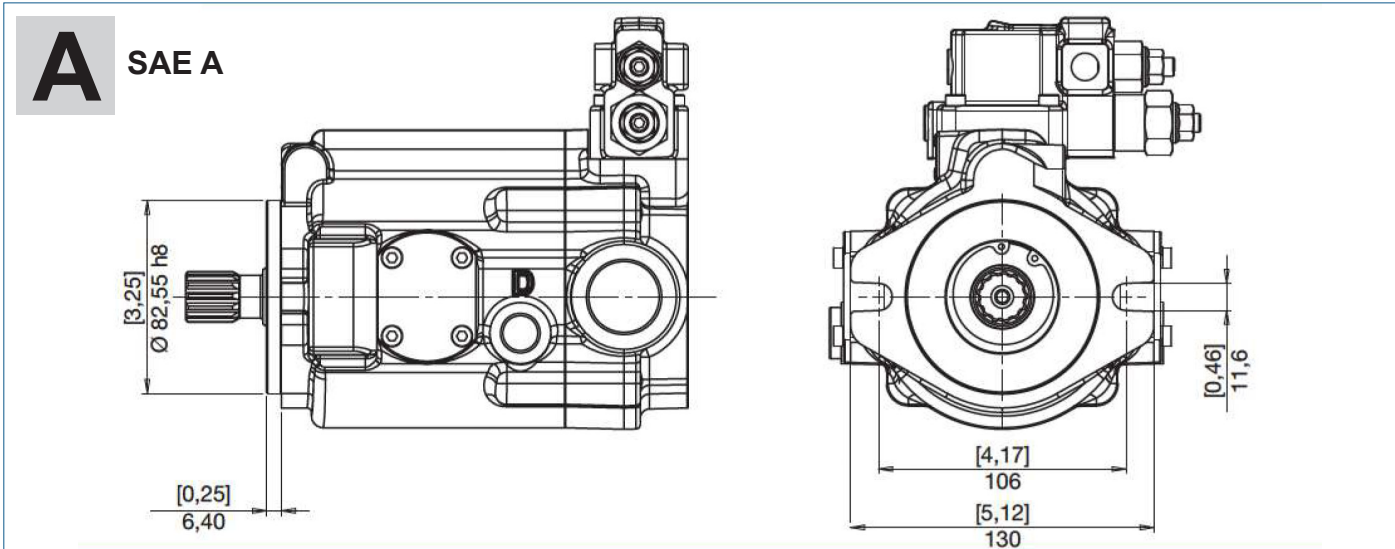
Axial Piston Pumps Variable Displacement



## DIMENSIONS



## FLANGES



# SMA1 Series

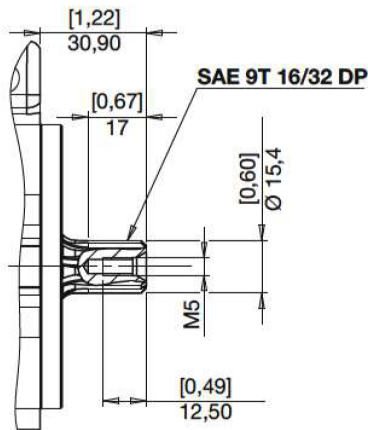
Axial Piston Pumps Variable Displacement



## SPLINE SHAFTS

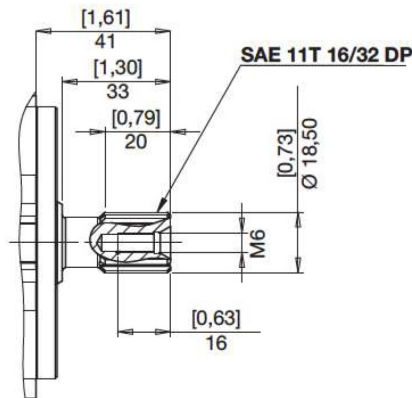
**V**

Max Torque 120 Nm



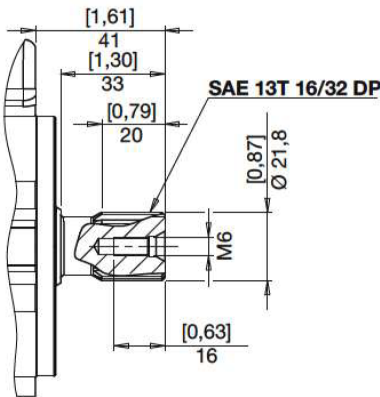
**X**

Max Torque 160 Nm



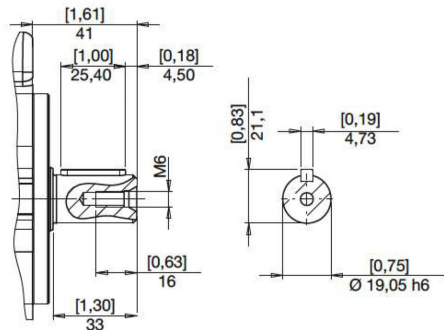
**9**

Max Torque 310 Nm



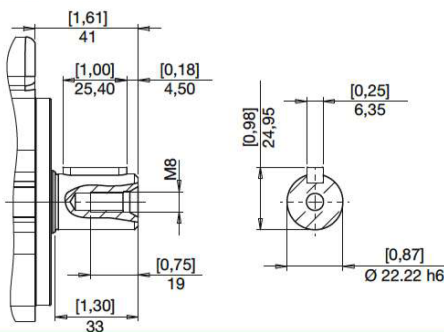
**E**

Max Torque 113 Nm



**J**

Max Torque 210 Nm

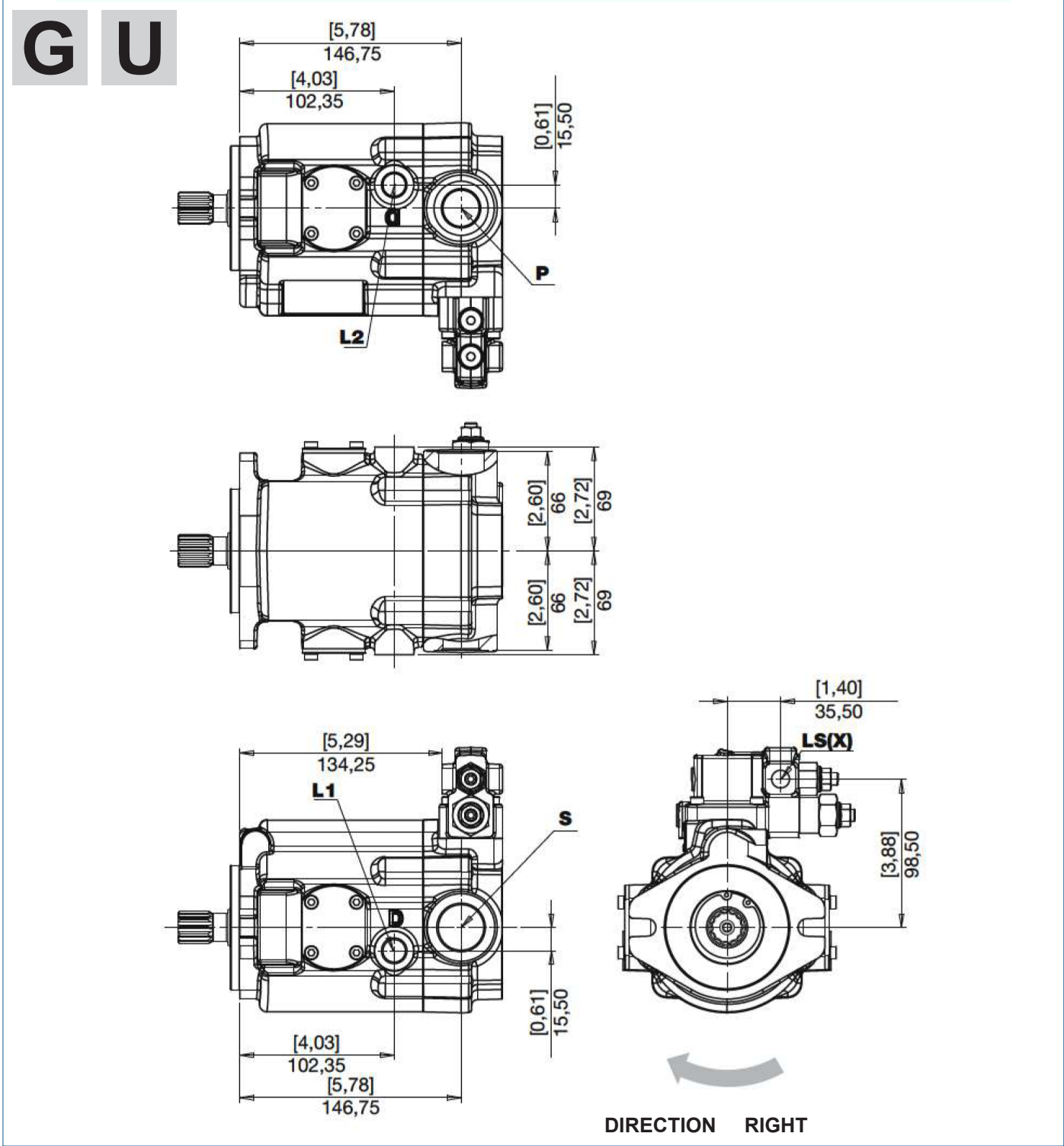


# SMA1 Series

Axial Piston Pumps Variable Displacement



## RIGHT VERSION PORTS



|          |                    |       |        |
|----------|--------------------|-------|--------|
| S        | Feeding Pump Inlet | P     | Output |
| L1<br>L2 | Drain              | LS(X) | Pilot  |

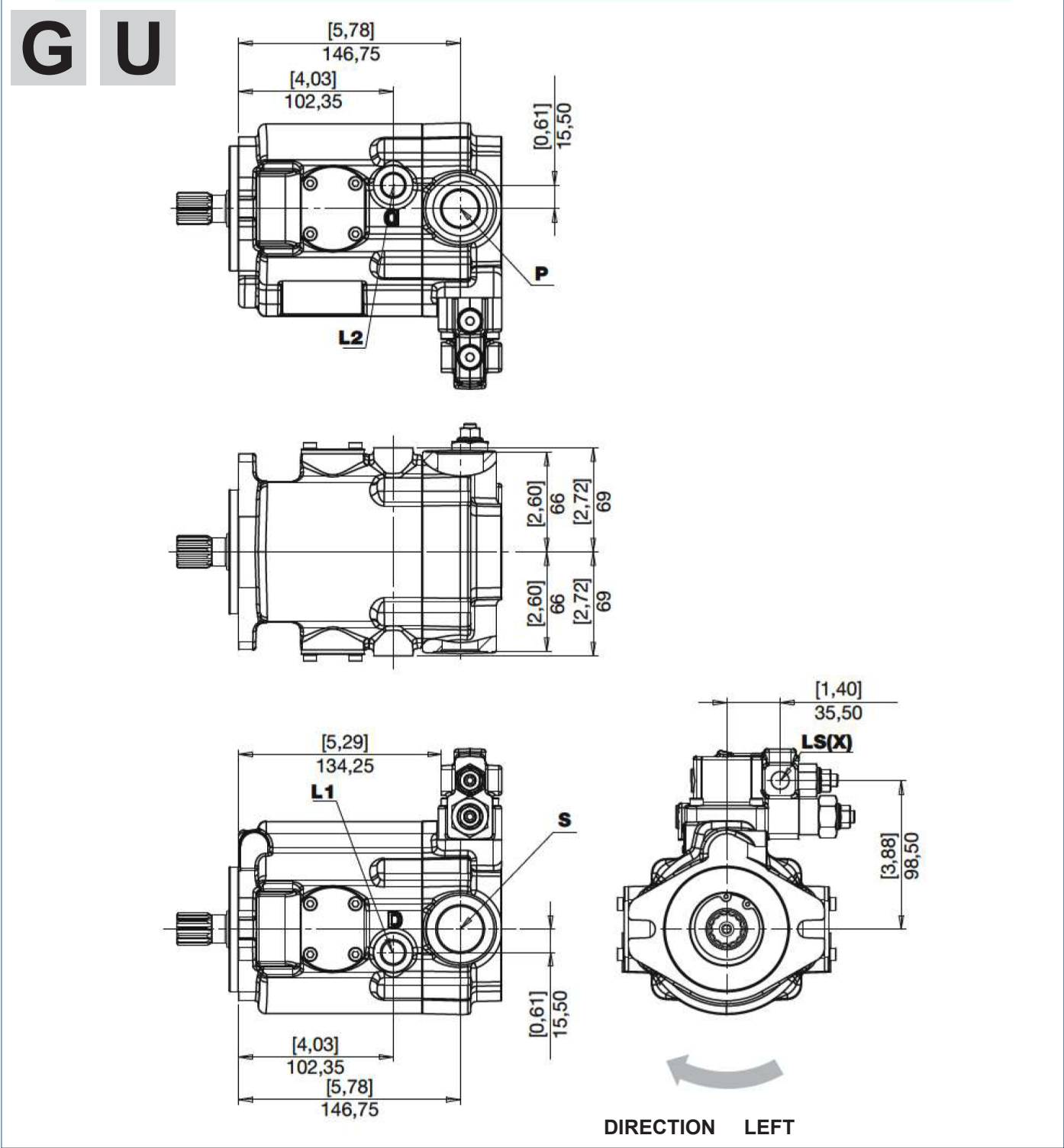


# SMA1 Series

Axial Piston Pumps Variable Displacement



## LEFT VERSION PORTS



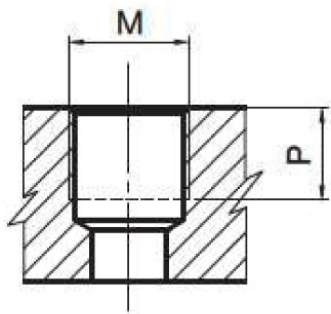
|          |                    |       |        |
|----------|--------------------|-------|--------|
| S        | Feeding Pump Inlet | P     | Output |
| L1<br>L2 | Drain              | LS(X) | Pilot  |

# SMA1 Series

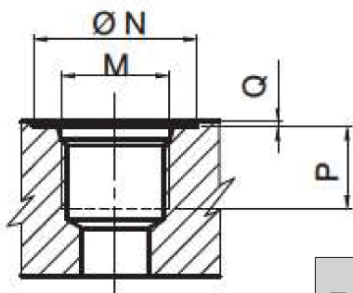
Axial Piston Pumps Variable Displacement



## PORTS



| TYPE      | M             |     | P  |      |
|-----------|---------------|-----|----|------|
|           |               | Nm  | mm | in   |
| <b>G1</b> | 1/8" GAS BSPP | 8   | 8  | 0.31 |
| <b>G3</b> | 3/8" GAS BSPP | 40  | 12 | 0.47 |
| <b>G6</b> | 3/4" GAS BSPP | 90  | 19 | 0.75 |
| <b>G7</b> | 1" GAS BSPP   | 160 | 21 | 0.83 |



| TYPE      | SIZE | N  |      | P  |      | Q   |      | M             |     |
|-----------|------|----|------|----|------|-----|------|---------------|-----|
|           |      | mm | in   | mm | in   | mm  | in   |               | Nm  |
| <b>U2</b> | 1/4" | 20 | 0.79 | 12 | 0.47 | 0.3 | 0.01 | 7/16-20 UNF   | 17  |
| <b>U3</b> | 3/8" | 25 | 0.98 | 13 | 0.51 | 0.3 | 0.01 | 9/16-18 UNF   | 40  |
| <b>U6</b> | 3/4" | 41 | 1.61 | 20 | 0.79 | 0.3 | 0.01 | 1-1/16-12 UNF | 90  |
| <b>U7</b> | 1"   | 49 | 1.93 | 20 | 0.79 | 0.3 | 0.01 | 1-5/16-12 UNF | 160 |

| TYPE     | S<br>INLET | P<br>OUTLET | L1 - L2<br>DRAIN | LS(X)<br>PILOT |
|----------|------------|-------------|------------------|----------------|
| <b>G</b> | G7         | G6          | G3               | G1             |
| <b>U</b> | U7         | U6          | U3               | U2             |

# SMA1 Series

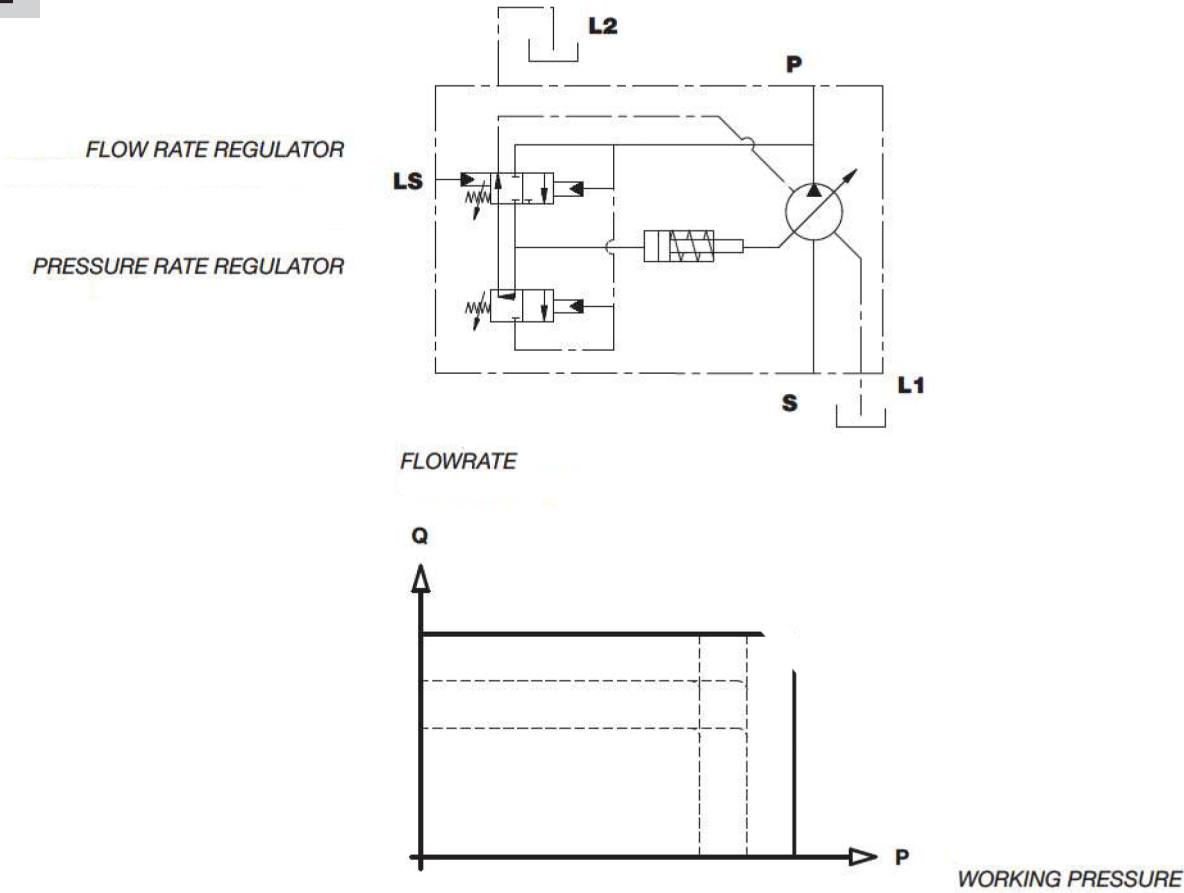
Axial Piston Pumps Variable Displacement



## CONTROL SYSTEMS

**L**

### Pressure/Flow Rate Regulator



## CONTROL SYSTEM SET

| WORKING PRESSURE |      | PRESSURE DIFFERENTIAL $\Delta P$ |                  |                  |
|------------------|------|----------------------------------|------------------|------------------|
| bar              | psi  | 14 bar - 203 psi                 | 21 bar - 305 psi | 25 bar - 363 psi |
| 180              | 2610 | <b>A</b>                         | <b>B</b>         | <b>C</b>         |
| 210              | 3045 | <b>E</b>                         | <b>F</b>         | <b>G</b>         |
| 250              | 3625 | <b>I</b>                         | <b>L</b>         | <b>M</b>         |
| 280              | 4060 | <b>O</b>                         | <b>P</b>         | <b>Q</b>         |

An external relief valve set at 10% above the pump pressure regulator must always be provided.

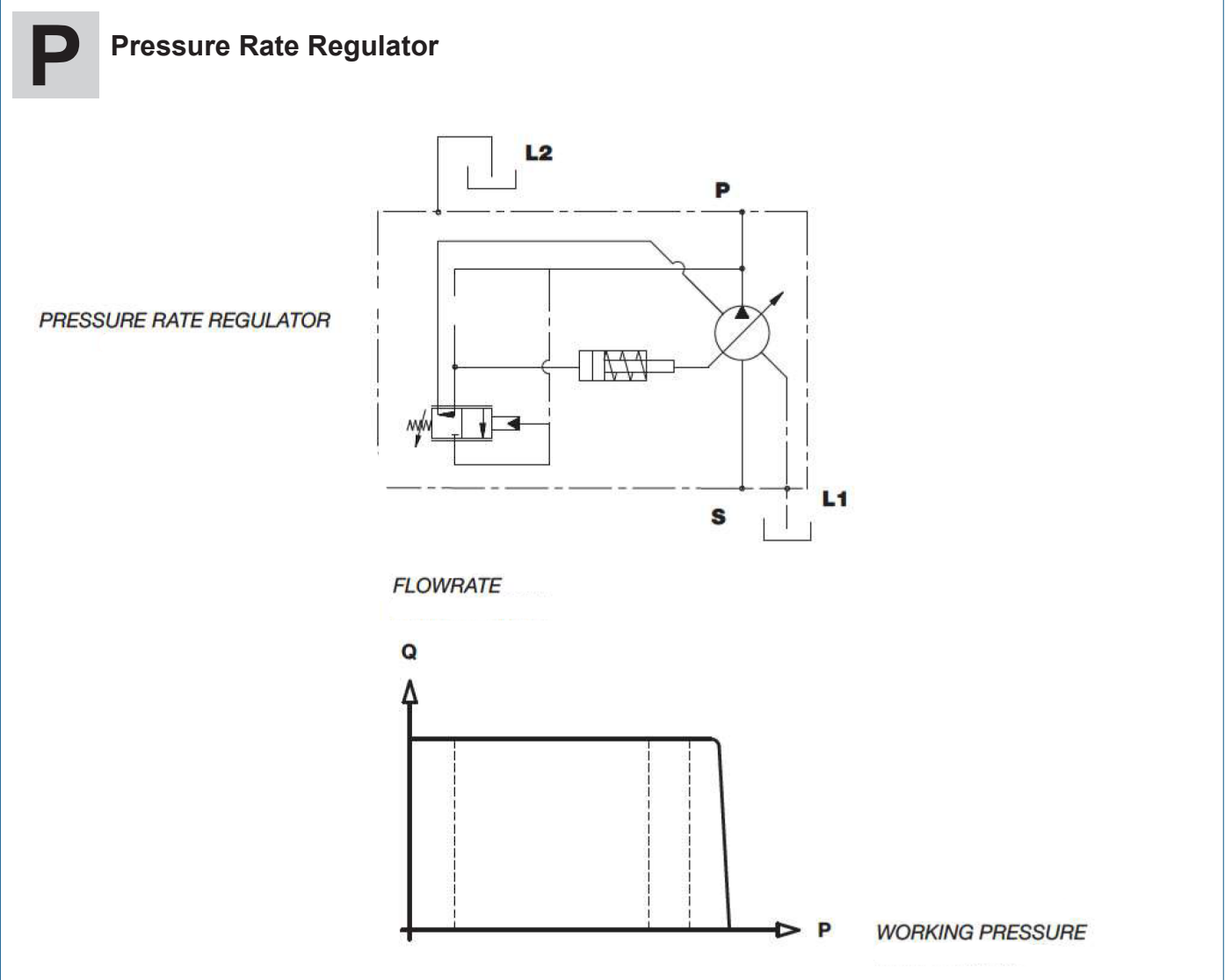


# SMA1 Series

Axial Piston Pumps Variable Displacement



## CONTROL SYSTEMS



## CONTROL SYSTEM SET

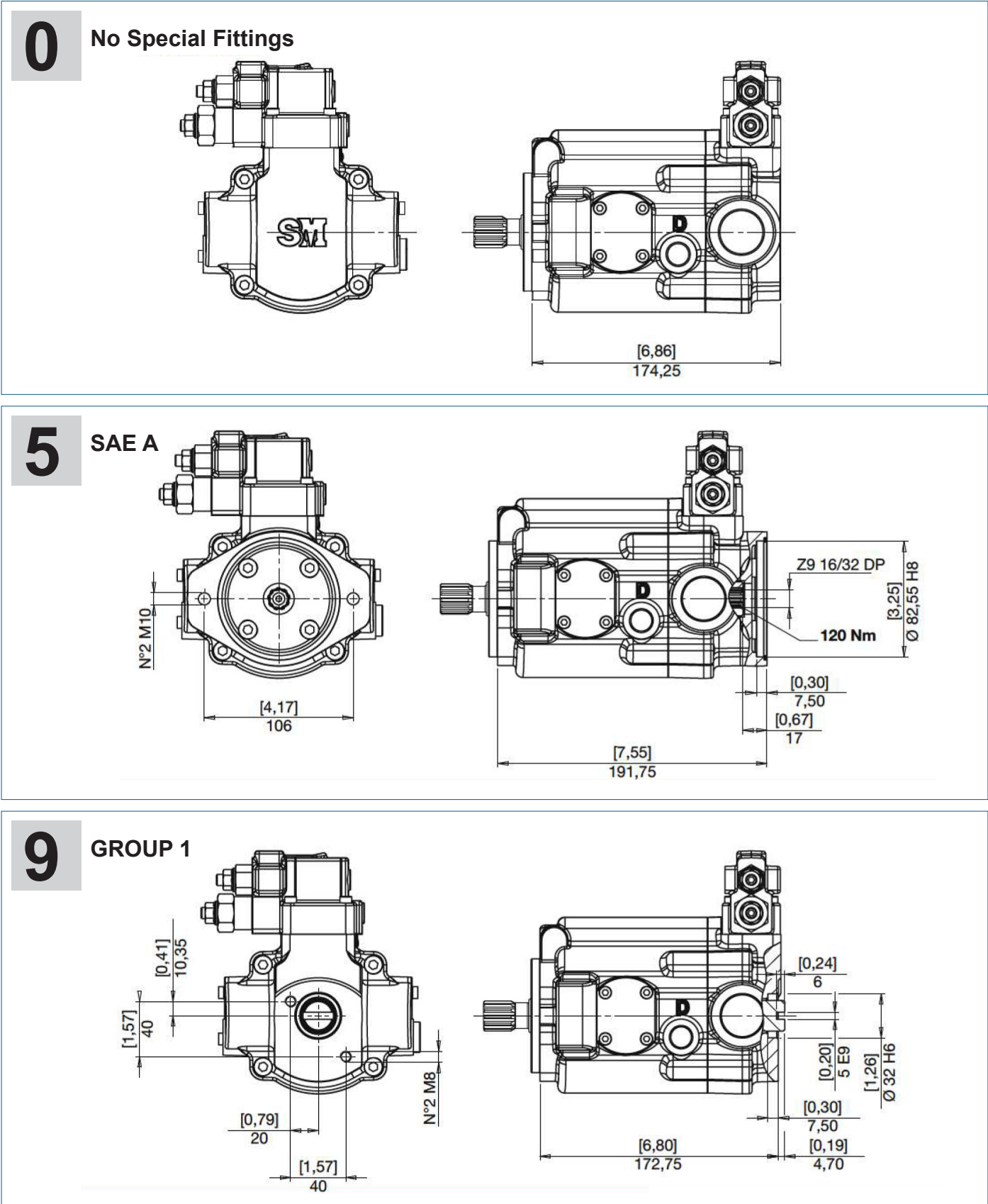
| CODE     | WORKING PRESSURE |      |
|----------|------------------|------|
|          | bar              | psi  |
| <b>D</b> | 180              | 2610 |
| <b>H</b> | 210              | 3045 |
| <b>N</b> | 250              | 3625 |
| <b>R</b> | 280              | 4060 |

# SMA1 Series

Axial Piston Pumps Variable Displacement



## VERSION



# SMA1 Series

Axial Piston Pumps Variable Displacement



## HOW TO ORDER

MODEL CODE

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|   |   |   |   |   |   |   |   |   |

### 1 - SERIES

|              |                                            |
|--------------|--------------------------------------------|
| <b>SM A1</b> | Axial piston motors, variable displacement |
|--------------|--------------------------------------------|

### 2 - DISPLACEMENT

|           |                                                                    |
|-----------|--------------------------------------------------------------------|
| <b>10</b> | Displacement 10 cm <sup>3</sup> / rev (0.61 in <sup>3</sup> / rev) |
| <b>12</b> | Displacement 12 cm <sup>3</sup> / rev (0.73 in <sup>3</sup> / rev) |
| <b>14</b> | Displacement 14 cm <sup>3</sup> / rev (0.85 in <sup>3</sup> / rev) |
| <b>16</b> | Displacement 16 cm <sup>3</sup> / rev (0.98 in <sup>3</sup> / rev) |
| <b>18</b> | Displacement 18 cm <sup>3</sup> / rev (1.00 in <sup>3</sup> / rev) |

### 3 - DIRECTION OF ROTATION

|          |       |
|----------|-------|
| <b>R</b> | Right |
| <b>L</b> | Left  |

### 4 - SHAFT PROFILE

|          |                     |
|----------|---------------------|
| <b>V</b> | Z9 16/32" DP        |
| <b>X</b> | Z11 16/32" DP       |
| <b>9</b> | Z13 16/32" DP       |
| <b>E</b> | Round Shaft Ø 19.05 |
| <b>J</b> | Round Shaft Ø 22.22 |

### 5 - PORTS

|          |     |
|----------|-----|
| <b>G</b> | GAS |
| <b>U</b> | UNF |

### 6 - CONTROL SYSTEMS

|          |                              |
|----------|------------------------------|
| <b>L</b> | Pressure/Flow Rate Regulator |
| <b>P</b> | Pressure Rate Regulator      |

### 7 - CONTROL SYSTEM SETTING

|  |           |
|--|-----------|
|  | See Chart |
|--|-----------|

### 8 - VERSION

|          |                     |
|----------|---------------------|
| <b>0</b> | No special Fittings |
| <b>5</b> | SAE A               |
| <b>9</b> | Group 1             |

### 9 - SPECIAL VERSIONS

# SMA1 Series

Axial Piston Pumps Variable Displacement



## MULTIPLE PUMPS

To order multiple pumps, duplicate the order code of the individual pumps as per example below:

