Energy-Saving Power Unit
Variable Displacement Piston Pumps Driven by AC Servo Motor
Precise Pressure Flow Control Based on Machine Motion

POWER-FIT

Features

Energy-Saving
80% Energy Savings Over Conventional Units

High Pressure
25MPa (3625PSI) (PVS Type)
28MPa (4060PSI) (PZS Type)

High Flow
90L/min (23.8GPM) (PVS Type)
140L/min (37.0GPM) (PZS Type)

Pressure and Flow Settings
16 Patterns of Settings of Pressure and Flow Combinations

Compact
60% Less Space
15.9, 21.2GAL Reservoir

Low Noise
60dB(A) at 3045PSI

Low Temperature
10°C (50°F) + Ambient Temp.*
* Saturation temp. at constant pressure 21Mpa (3000PSI), 15.9GAL reservoir

Suitable for Hydraulic Source of Press Machines
Compact • High Pressure • High Flow
• Energy saving type power unit with two displacement piston pumps driven by AC servo motor.
• Pressure and flow is controlled by motor drive speed and pump displacement. Pressure and flow can be set digitally at given value by control panel.
• Multiple settings of pressure and flow are possible by an external signal input.
Pressure and Flow Setting

16 patterns of settings are possible as pressure and flow combinations. Setting operation is very easy by using control panel in control box.

1. Select mode “u.XXX” by “MOD button” on control panel (Mode changes by every push of “MOD button”)
2. When input pressure setting of pattern 0, show “u.100” and push “SET” button for 1 second.
3. Input pressure by 0.1MPa resolution and then push “SET” button for 1 second. Then 4 digit data flush and setting is complete.

<table>
<thead>
<tr>
<th>Pattern No</th>
<th>Flow Setting</th>
<th>Change over time</th>
<th>Pressure Setting</th>
<th>General Output</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Parameter</td>
<td>Parameter</td>
<td>Parameter</td>
<td>Parameter</td>
</tr>
<tr>
<td>Pattern 0</td>
<td>u.110</td>
<td>u.120</td>
<td>u.100</td>
<td>u.200</td>
</tr>
<tr>
<td>Pattern 1</td>
<td>u.111</td>
<td>u.121</td>
<td>u.101</td>
<td>u.201</td>
</tr>
<tr>
<td>Pattern 2</td>
<td>u.112</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattern 3</td>
<td>u.113</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattern 4</td>
<td>u.114</td>
<td>u.125</td>
<td>u.105</td>
<td>u.205</td>
</tr>
</tbody>
</table>

For pattern 0 to 15, pressure, flow and time of setting shift can be set.

External Input of Pressure and Flow (Multiple Step Control)

Selection of a combination pressure and flow by an external signal input. Multiple step control of pressure and flow is possible by choosing pattern number set with control panel by an external signal (4 discrete contacts). Some pattern numbers can be set on control panel. Due to select external signal input (4-points), multiple combinations of pressure and flow can be generated.

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The rotary switch has 1~9 and A~F channels. It is also available to select 16 patterns by setting parameter. (Manual operation mode)

Simply remove a screw to open the panel and access wiring. You can then connect the external signal wire on the right side of the control panel.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. pressure</th>
<th>Max. flow</th>
<th>Pump Displacement Hi/Lo (initial setting)</th>
<th>Servo motor</th>
<th>Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPQ-60E-55PV45N3A2-6161A</td>
<td>3625PSI (25MPa)</td>
<td>23.8GPM (90 L/min)</td>
<td>2.74 / 0.73“cuin (45 / 12cm/rev)</td>
<td>7.37HP (5.5kW)</td>
<td>15.85GAL (60L)</td>
</tr>
<tr>
<td>NPQ-80E-75PZ70N4A2-6161A</td>
<td>4061PSI (28MPa)</td>
<td>37GPM (140 L/min)</td>
<td>4.27 / 1.04“cuin (70 / 17cm/rev)</td>
<td>10.05HP (7.5kW)</td>
<td>21.13GAL (80L)</td>
</tr>
</tbody>
</table>

Power unit without control box is also possible. In that case, separated PQ amplifier unit (in customer’s control box) and cable kit are required.
Outline

- Speed (flow) and force (pressure) are automatically controlled by controller based on load situation
- No need to use additional valves for flow and pressure control

Model Number Coding

NPQ-60E-55PV45N3A2-**-6161A

Design No.  
Option (Note 1)
Solenoid Valve Source 2: AC200V
Solenoid Valve Type A: SA-G01
Cut-off Pressure Range
3: 3~25MPa (435-3625PSI)
4: 2~28MPa (290-4060PSI)
Variable Control Mechanisms
NA: 2-Flow Type
Pump Capacity (cm³/rev) (in³/rev)
45 (2.75) (PVS), 70 (4.27) (PZS)
Motor 55: 5.5kW (7.4HP), 75: 7.5kW (10HP)
Control Box E: with control box
nothing: without control box
Reservoir 60.80Lit (15.9, 21.2 Gallon)
Power-Fit

Notes: G: Guard Level Gauge  H: Thermostat  M: Microseparator  P: Oil Pan  S: Float Switch (for lower)  T: Level Gauge with Thermometer

Amplifier unit for power unit without control box

Pump with servo motor

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