Power Fit is an energy-saving hydraulic unit that operates the variable piston pump with two capacities using an AC servo motor.

**Features**

1. **Energy-saving, low-noise**
   - Energy-savings and low noise are achieved by rotating the pump for the required number of times only when it is necessary by the AC servo motor.

2. **High pressure, large flow rate**
   - By using the variable piston pump with two capacities, the two pump capacities switch between the low pressure large flow rate and high pressure small flow rate to control.

3. **Easy control of multi-stage pressure and flow rate**
   - By using external signals, 16 patterns of changeover controls are possible. The pressure and flow rate can be freely set with the operation panel inside the control box.

4. **Compact**
   - By making the Power Fit energy-saving, the oil quantity will be reduced.

**Overview**

- Power Fit can be used to replace the existing hydraulic unit.
- The operating direction of the cylinder can be switched by the external directional control valve.
- Cylinder speed (flow rate) and load (pressure) can be controlled freely by the controller. (Valves for controlling speed and pressure are unnecessary.)
- The controller automatically switches the flow rate control and pressure control according to the loaded condition.
- External signals (Open Collector signals) can be output in conjunction with the flow rate and pressure command. The directional control valve can be switched in conjunction with the commands.

**Press operation examples**

- Energy saving efficiency due to load response control
- Slow decrease
- Add pressure
- Pressure relief
- Sudden increase
- Stroke
- Flow rate
- Pressure

**Diagram**

- Cylinder
- Limit switch
- Cylinder
- Directional control valve
- Relay
- Controller
- Servo motor
- Servo amp
- Power Fit
- Tank
- Pump
- Work
- Upper die
- Bottom die
# Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>NPQ-60*-55PV 45N3A2-6161B</th>
<th>NPQ-80*-75PV 70N4A2-6161B</th>
<th>NPQ-100-11KPZ 70N4A2-6161B</th>
<th>NPQ-120-15KPZ 70N4A2-6161B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor capacity</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
<td>kW</td>
</tr>
<tr>
<td>Pump</td>
<td>PVS-2B-45</td>
<td>7.5</td>
<td>11.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Pump</td>
<td>PZS-3B-70</td>
<td>45</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>Max. pump capacity</td>
<td>cm³/rev</td>
<td>45</td>
<td>45</td>
<td>70</td>
</tr>
<tr>
<td>Pump adjustment range</td>
<td>cm³/rev</td>
<td>20 to 45³⁶¹⁄³⁻¹ (Factory default : 45)</td>
<td>5 to 70³⁶¹⁄³⁻¹ (Factory default : 70)</td>
<td></td>
</tr>
<tr>
<td>Pump adjustment range</td>
<td>cm³/rev</td>
<td>3 to 24³⁶¹⁄³⁻¹ (Factory default : 12)</td>
<td>5 to 40³⁶¹⁄³⁻¹ (Factory default : 17)</td>
<td></td>
</tr>
<tr>
<td>Maximum RPM</td>
<td>min⁻¹</td>
<td>2000</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>Maximum flow rate</td>
<td>ℓ/min</td>
<td>90</td>
<td>140</td>
<td>100</td>
</tr>
<tr>
<td>Pressure Rating</td>
<td>MPa</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>MPa</td>
<td>25</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Tank Size</td>
<td>Lit.</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Power supply</td>
<td>Main circuit</td>
<td>3  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
</tr>
<tr>
<td>Power Supply Capacity</td>
<td>KVA</td>
<td>8.4</td>
<td>12.6</td>
<td>15.7</td>
</tr>
<tr>
<td>Ambient Temperature/Humidity</td>
<td>°C/PH(non-condensation)</td>
<td>10 to 35°C/20 to 90%PH(non-condensation)</td>
<td>10 to 60°C</td>
<td></td>
</tr>
<tr>
<td>Pressure Rating</td>
<td>MPa</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>MPa</td>
<td>25</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Tank Size</td>
<td>Lit.</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Power supply</td>
<td>Main circuit</td>
<td>3  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
</tr>
<tr>
<td>Power Supply Capacity</td>
<td>KVA</td>
<td>8.4</td>
<td>12.6</td>
<td>15.7</td>
</tr>
<tr>
<td>Ambient Temperature/Humidity</td>
<td>°C/PH(non-condensation)</td>
<td>10 to 35°C/20 to 90%PH(non-condensation)</td>
<td>10 to 60°C</td>
<td></td>
</tr>
<tr>
<td>Pressure Rating</td>
<td>MPa</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>MPa</td>
<td>25</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Tank Size</td>
<td>Lit.</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Power supply</td>
<td>Main circuit</td>
<td>3  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
</tr>
<tr>
<td>Power Supply Capacity</td>
<td>KVA</td>
<td>8.4</td>
<td>12.6</td>
<td>15.7</td>
</tr>
<tr>
<td>Ambient Temperature/Humidity</td>
<td>°C/PH(non-condensation)</td>
<td>10 to 35°C/20 to 90%PH(non-condensation)</td>
<td>10 to 60°C</td>
<td></td>
</tr>
<tr>
<td>Pressure Rating</td>
<td>MPa</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>MPa</td>
<td>25</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Tank Size</td>
<td>Lit.</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Power supply</td>
<td>Main circuit</td>
<td>3  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
<td>1  AC200 to 220V, 50/60Hz</td>
</tr>
<tr>
<td>Power Supply Capacity</td>
<td>KVA</td>
<td>8.4</td>
<td>12.6</td>
<td>15.7</td>
</tr>
<tr>
<td>Ambient Temperature/Humidity</td>
<td>°C/PH(non-condensation)</td>
<td>10 to 35°C/20 to 90%PH(non-condensation)</td>
<td>10 to 60°C</td>
<td></td>
</tr>
<tr>
<td>Pressure Rating</td>
<td>MPa</td>
<td>21</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>MPa</td>
<td>25</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>Tank Size</td>
<td>Lit.</td>
<td>60</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

**Note 1:** The adjustment range of the pump high volume changes according to the setting of the small volume. For details see the user documentation.

## Explanation of model No.

### NPQ—80 E—75 PZ 70 N 4 A 2—**—6161B

- **Design number**:
  - **Option (Note 1)**: Solenoid power supply 2:AC200V
- **Cut-off pressure adjustment range**: 3.3 to 25MPa
- **Variable control mechanism**: NA:Control two capacities
- **Max. pump capacity**: 45:45cm³/rev(PVS) 70:70cm³/rev(PZS)
- **Motor Capacity**: 55:5.5kW/75:7.5kW 11K:11.0kW/15K:15.0kW
- **Control box**:
  - E : Equipped on the hydraulic unit
  - No symbol: none
- **Tank capacity**: 60/80/100/120Lit.
- **Power Fit**:
  - G:Fluid Level Gauge With Guard
  - H:With Thermostat
  - M:With Microseparator
  - P:With Oil Pan
  - S:Float Switch (Low fluid level detection)
  - T:Fluid Level Gauge With Temperature Gauge (with guard)
  - W:Self Leak Test (The return filter is standard equipment)

### Hydraulic Circuit Diagram

- **Hydraulic unit (Control box non-equipped type)**
- **Control equipment, Cable Kit Combinations List**

#### Hydraulic unit (Control box non-equipped type), Control equipment, Cable Kit Combinations List

<table>
<thead>
<tr>
<th>Hydraulic unit (Control box non-equipped type)</th>
<th>Control equipment</th>
<th>Cable Kit (Note 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(PQ Bellmount pump Model No.)</td>
<td>Select from the following</td>
<td>(Select from 3m or 5m)</td>
</tr>
<tr>
<td>Motor capacity (kW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPQ-60-55PV45N3A2-6161B</td>
<td>1: EPQ-55R-8671A</td>
<td>JAQ-03PQR-55-8682(3m)</td>
</tr>
<tr>
<td>(UPQ-2A-45N3A2-55PV-6331B)</td>
<td>2: EPQ-85R-8695A</td>
<td>JAQ-05PQR-55-8682(5m)</td>
</tr>
<tr>
<td>NPQ-80-75PV70N4A2-6161B</td>
<td>1: EPQ-75R-8671A</td>
<td>JAQ-03PQR-75-8682(3m)</td>
</tr>
<tr>
<td>(UPQ-3A-70N4A2-75PV-6331B)</td>
<td>2: EPQ-75R-8695A</td>
<td>JAQ-05PQR-75-8682(5m)</td>
</tr>
<tr>
<td>NPQ-100-11KPZ70N4A2-6161B</td>
<td>1: EPQ-11KR-8671A</td>
<td>JAQ-03PQR-11K-8682(3m)</td>
</tr>
<tr>
<td>(UPQ-3A-70N4A2-11KPZ-6331B)</td>
<td>2: EPQ-11KR-8695A</td>
<td>JAQ-05PQR-11K-8682(5m)</td>
</tr>
</tbody>
</table>

**Note 1:** Cable Kit details

- **Pressurereg sensor cable**
- **Encoder cable**
- **Motor cable**
- **Fan cable (11kW only)**
- **Solenoid cable**
- **Fan cable**

---

L-45
NPQ-100-11KPZ70N4A2-6161B

Fan cooler
(Plug stopper)
Return filter

Servo motor
Couplings

Pump

NPQ-120-15KPZ70N4A2-6161B

Fan cooler
(Plug stopper)
Return filter

Servo motor
Couplings

Pump

Pressure sensor
Pressure gauge

Fluid level gauge
Upper limit 100L
Lower limit 80L

Tank

Strainer

NPQ-100-11KPZ70N4A2-6161B

Fan cooler
(Plug stopper)
Return filter

Servo motor
Couplings

Pump

NPQ-120-15KPZ70N4A2-6161B

Fan cooler
(Plug stopper)
Return filter

Servo motor
Couplings

Pump

Pressure sensor
Pressure gauge

Fluid level gauge
Upper limit 100L
Lower limit 80L

Tank

Strainer

Hydraulic Unit

L-47
PQ Bellmount pump, PQ Amplifier unit

PQ Bellmount pumps, PQ Amplifier units of Power Fit are also available. Please contact our sales agent.

PQ Amplifier unit for setting inside the control panel

PQ Bellmount pump made by combining a pump and servo motor.