Operating Instructions & Parts Manual

Grainger Part No. Bucher Hydraulics Part No.
36NE06 M-3519-0419
36NE11 M-3519-0420
36NE12 M-3519-0421

Please read the instructions carefully and always operate this equipment in a safe manner.

Unit Description:
This hydraulic power unit is designed specifically to run on DC electric power. Each power unit is a custom assembly consisting of a high performance hydraulic pump, DC motor, internal relief valve, load holding check valve and reservoir. This power unit can be coupled to suit a wide variety of hydraulic actuating devices.

The pump contains hardcoated end plates for unmatched durability in demanding environments and severe duty applications.

Package Contents and Handling Instructions:
Before opening, please check for any shipping damage. The container will include (1) DC hydraulic power unit with breather cap for the reservoir. 36NE06 and 36NE11 include handheld push button control station with 10 ft. cord. If components are missing, or if there is any visible damage, please contact the office in which you purchased this unit.

Schematic:

Content:
Power unit contains:
- Pump / Motor / Reservoir / Valve Unit
- 36NE06 & 36NE11 contain 12 VDC motor; 36NE12 contains 24 VDC motor
- Pump is fixed displacement, external tooth pump with hardcoated ends
- Load holding check valve
- 9/16-18 SAE #6 outlet port
- Pressure compensated flow control valve on lowering side of circuit
- Externally Adjustable Relief Valve preset at Factory. Adjustable range not to exceed “Maximum Operating Pressure” listed in performance table
- 2-Way/2-Position normally closed solenoid cartridge valve
- Horizontal or Vertical Mounting
- Dual-layered mesh inlet strainer
- 36NE06 & 36NE11 include handheld push button control station with 10 ft. cord

Performance:

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Nominal Flow</th>
<th>Maximum Operating Pressure</th>
<th>Motor Voltage</th>
<th>Reservoir Capacity</th>
<th>Control Valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>36NE06</td>
<td>2.5 GPM</td>
<td>3000 PSI</td>
<td>12 VDC</td>
<td>1.0 GALLON</td>
<td>2-WAY / 2-POSITION</td>
</tr>
<tr>
<td>36NE11</td>
<td>2.5 GPM</td>
<td>3000 PSI</td>
<td>12 VDC</td>
<td>0.5 GALLON</td>
<td>2-WAY / 2-POSITION</td>
</tr>
<tr>
<td>36NE12</td>
<td>3.5 GPM</td>
<td>3000 PSI</td>
<td>24 VDC</td>
<td>0.5 GALLON</td>
<td>2-WAY / 2-POSITION</td>
</tr>
</tbody>
</table>
Dimensions:

- ATTACH TO POSITIVE TERMINAL ON DC BATTERY
- ATTACH TO DC POWER FROM CUSTOMER SWITCH CONNECTION* (TORQUE NUT BETWEEN 50-60 IN-LBS.)

Mounting Information:

- ATTACH TO DC POWER FROM CUSTOMER SWITCH.
- STARTS ELECTRIC MOTOR* (TORQUE NUT BETWEEN 15-20 IN-LBS.)

* WIRING CONNECTIONS ARE PREWIRED ON MODEL NO. 36NE06

<table>
<thead>
<tr>
<th>Model No.</th>
<th>“A” Length</th>
<th>“B” Width</th>
<th>“C” Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>36NE06</td>
<td>18 3/8&quot;</td>
<td>7 1/8&quot;</td>
<td>7 1/2&quot;</td>
</tr>
<tr>
<td>36NE11</td>
<td>16 3/8&quot;</td>
<td>7 1/2&quot;</td>
<td>7 1/2&quot;</td>
</tr>
<tr>
<td>36NE12</td>
<td>16 3/8&quot;</td>
<td>7 1/2&quot;</td>
<td>7 1/2&quot;</td>
</tr>
</tbody>
</table>

* WIRING CONNECTIONS ARE PREWIRED ON MODEL NO. 36NE06

MOUNTING HOLE LOCATIONS

2 MOUNTING HOLES 3/8-16 UNC-2B
READ ALL INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE.

RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

WARNING: THIS INSTRUCTION MANUAL IS INTENDED FOR USE BY QUALIFIED INDIVIDUALS WITH A WORKING KNOWLEDGE OF HYDRAULIC AND ELECTRICAL PRINCIPLES. PROFESSIONAL INSTALLATION IS RECOMMENDED.

Assembly

All the power units are packaged fully assembled. Customer is responsible to fill the reservoir with proper level of a quality hydraulic fluid suitable for use in the intended environment.

**CAUTION**

Avoid dusty conditions that could clog the reservoir breather.

1. This hydraulic power unit is designed for horizontal or vertical mounting with the reservoir feet down and the reservoir breather on the top. Choose a flat, level mounting surface to bolt the reservoir feet to. See unit dimensions for reservoir base bolt pattern.

The hydraulic unit is plumbed for horizontal or vertical mounting as noted above. Mounting the unit in an inclined plane or any other position will greatly reduce available usable oil in the reservoir. This can cause the hydraulic oil to foam resulting in erratic movement of hydraulic components, and pump failure.

**CAUTION**

To minimize contamination problems, do not remove plastic shipping plugs from hydraulic unit until you are ready to install hoses and fittings.

2. HYDRAULIC INSTALLATION – Make sure that the work area and the hydraulic components are clean and free from dirt, lint, etc.

3. Connect your hoses and fittings to the hydraulic actuator (hydraulic cylinder, hydraulic motor, or other devise) and when ready to connect the hydraulic power unit ports, remove and discard all plastic shipping plugs from the aluminum manifold.

**CAUTION**

Do not use Teflon tape. This unit is equipped with SAE O-ring type ports.

Do not over-tighten fittings.

4. Remove the reservoir breather and fill the hydraulic unit reservoir with a good quality hydraulic fluid. It is recommended that hydraulic fluids have a viscosity of 100 SUS to 350 SUS when operating between 10°F and 140°F.

5. Use of a filter cart to add fluid to the reservoir is highly recommended. Do not pour hydraulic fluid directly from a pail or drum as this can result in debris entering the reservoir.

6. Re-install the breather on the reservoir.

Electrical wiring

1. When wiring the power unit, follow all local electrical and safety codes as well as the National electrical and safety codes in your jurisdiction (i.e. NEC, ESA, etc) and all Occupational Safety and Health Act (OSHA) requirements, or similar.

2. Make certain that wire size is adequate for voltage requirements.

3. On 36NE06 and 36NE11, proper grounding should be supplied to 5/16-18 "GND" threaded hole. On 36NE12, proper grounding must be supplied to ground post on motor.

**NOTE:** Voltage drop increases with the length of power cord. Larger wire diameter may be required.

4. Motor nameplate voltage must be available at the motor when it is operating under load. Avoid voltage drop by using adequate wire size.

5. On start-up, ensure an open flow path for the hydraulic circuit and jog the motor to prime the pump to ensure adequate lubrication. After the fluid is moving freely, motor may be operated at full speed.

**CAUTION**

Never run the system without adequate levels of hydraulic fluid in the reservoir. New installations will require additional fluid to fill the lines, cylinders etc. so check the reservoir fluid levels frequently during initial operation to ensure the fluid level does not go below the minimum level.

6. Keep all electrical lines as short as practical.

7. Never exceed the maximum operating pressure.

8. Do not over-tighten fittings, bolts, etc., as this can damage the units.

9. Provide adequate cooling for the hydraulic oil so as not to allow oil and/or component damage due to excessive temperatures. Excessively high operating temperatures will be hazardous and may cause property damage and/or personal injury.

**WARNING**

REPLACE OR REPAIR DAMAGED OR WORN POWER CORDS IMMEDIATELY.
WARNING

DO NOT OPERATE UNITS WITHOUT PROPER GROUNDING.

WARNING

DO NOT RUN THE HYDRAULIC UNIT DRY AS THIS WILL CAUSE SEVERE PUMP DAMAGE.

Prior to Operation:
1. Double check all hydraulic and electric connections.
2. Confirm that reservoir is filled with hydraulic fluid.
3. Put all equipment guards in place.
4. Clear all persons from work area.
5. Check for loose tools, equipment, or anything that might interfere with operation of equipment.

Operation
1. Start Up – When initially starting unit up, be sure to jog the unit (intermittently run it) several times. This will prime the pump and fill the hydraulic lines.

WARNING

Do not overfill the reservoir as foaming of the oil may occur.

Maintenance
1. Keep the reservoir filled to the proper level with hydraulic fluid. Use a good quality hydraulic fluid that is suitable for use in the intended environment.
2. Check the reservoir fluid level on a regular basis and use new, filtered hydraulic fluid when adding fluid. Most pump/fluid motor failures, valve malfunctions, and short unit life can be traced directly or indirectly to dirt or other foreign materials (water, chips, lint, etc.) entering or already in the hydraulic system.
3. Make a frequent inspection of hydraulic fluid and change if contaminated.
4. Regularly inspect hydraulic hoses and fittings for wear or leakage.
5. Keep the unit and surrounding area clear of dirt and foreign materials.

Troubleshooting Chart:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible cause(s)</th>
<th>Corrective action</th>
</tr>
</thead>
</table>
| Motor won’t start                            | 1. Loose connection  
2. Circuit breaker tripped  
3. Voltage drop  
4. Seized pump  
5. Start switch                            | 1. Check wiring  
2. Reset circuit breaker  
3. Use heavier gauge wire  
4. Replace pump  
5. Replace start switch                      |
| Will not pump oil (Motor runs but cylinder does not move, or moves slowly) | 1. No oil in reservoir  
2. Oil level low  
3. Relief valve is held open  
4. Suction strainer is clogged  
5. Hydraulic cylinder (or motor etc.) seals are cut or worn out.  
6. Reservoir breather is dirty or clogged. | 1. Check oil level, refill  
2. Add oil as needed  
3. Flush relief valve  
4. Clean suction strainer  
5. Replace or repair cylinder (or motor etc.)  
6. Clean reservoir breather and reinstall |
| Pump motor unit is noisy                      | 1. Low oil level  
2. Air in system  
3. Suction strainer or inlet filter is clogged | 1. Add oil as needed  
2. Bleed air from highest fitting in system by loosening fitting very slightly and operating unit until bubbling of air stops, then tighten  
3. Clean suction strainer or inlet filter |
| Unit does not develop full pressure           | 1. System relief valve set too low, or leaking  
2. Pump worn out  
3. Air in system  
4. Oil temperature is too high | 1. Check system relief valve for proper setting  
2. Replace the pump  
3. Bleed air from systems  
4. Let oil cool below 140°F |
# Parts List:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>36NE06</th>
<th>36NE11</th>
<th>36NE12</th>
</tr>
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<tbody>
<tr>
<td>1.*</td>
<td>P ASSY, MOD, DC, BRGS BLED RESV.</td>
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<td>500201707900</td>
<td>500201707900</td>
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<tr>
<td>2.3</td>
<td>O-RING, 3.75 X 4.00 X 0.13 -240</td>
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<td>500205302352</td>
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<td>2.4</td>
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<td>500203201134</td>
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<td>2.5</td>
<td>PLUG, RESEV, BREATHER-FILLER</td>
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<td>3.</td>
<td>TUBE, 30 DEG, 3/8 NPTF</td>
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<td>4.</td>
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<td>5.</td>
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<td>6.</td>
<td>MOTOR, DC, 4.5in</td>
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<td>7.</td>
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<tr>
<td>8.*</td>
<td>SOL. SW., KIT, POWER SEAL, GND</td>
<td>500248017757</td>
<td>500248017757</td>
<td>500248017764</td>
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<tr>
<td>8.1</td>
<td>SWITCH, SOL ACT MTR ST, 12 VDC</td>
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<td>500208017757</td>
<td>500208017764</td>
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<tr>
<td>8.2</td>
<td>STRAP, MOTOR-SOLENOID CONNECTNG</td>
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<tr>
<td>9.</td>
<td>SCREW, PAN HD, TORX, 10-32 X 5/16</td>
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<td>10.</td>
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<td>11.</td>
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<td>12.</td>
<td>POPPET ASSY, P CMP FL</td>
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<td>500216101723350</td>
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*KITS CONTAIN ALL SUBCOMPONENTS LISTED BELOW EACH KIT NUMBER*