Centriguard™
Centrifugal Separator

INSTALLATION
INSTRUCTIONS FOR
CH41101 AND CH41102

Component Parts

A. Vibration Isolator Kit (4 Vibration Isolators, 4 bolts, 8 washers, and 4 nuts)
B. Air Assist Base Casting and Shaft for CH41101
C. Gravity Drain Base Casting and Shaft for CH41102
D. Service Rotor and Gasket
E. Housing Assembly

CAUTION: These instructions are intended for use by professional mechanics who are trained in the proper use of power and hand tools, using appropriate safety precautions (including eye protection).
**Installation Steps**

**Preinstallation Notes**

**CAUTION:** Engine oil, components and surfaces may be hot.

The CH41101 and CH41102 centrifugal separators are bypass filtration devices. All current full-flow filters on your engine or system should remain as they are. If a separate bypass filter is also on the engine, this unit will need to be removed and its connection plugged. If a combination full-flow/bypass filter exists on the engine, then it must be confirmed that the bypass section of the combo filter empties into the main oil flow, not directed back to the sump. If the bypass flow of the combination filter is directed back to the sump, contact your Cummins Filtration representative for support. If the engine does not have a bypass filter already, and the CH41101 or CH41102 is being added to the system, check the engine oil flow and pressure requirements to make sure the addition of this unit is within the acceptable limits.

Examine the separator for any shipping damage and determine the best location for installing the separator assembly. Depending on the application, this location may be on the frame rail, on the engine or the equipment being used. **Turn the engine off before starting the installation process.**

**Mounting the Separator**

**Step 1** - Place the separator where it is to be mounted. It is shipped with the vibration isolators installed. Use of the vibration isolators is recommended to reduce vibration noise.

**Important:** The base casting must be mounted with the shaft pointed upwards (± 10 degrees).

**Step 2** - Insert the bolts and washers as shown in the illustration and secure with the nuts. Tighten to 27 N-m (20 ft-lb).

If you are installing a CH41102 separator, skip to Step 6.

**Installing the Oil Inlet Line on a CH41101**

Use an available oil supply port on the engine for the separator inlet connection. Most engines provide a port to supply auxiliary devices.

**Step 3** - Connect the inlet line to the smaller of the two threaded connections at the bottom of the unit with a 1\(^*\) x 14 o-ring Seal Lok connection fitting. The inlet line must be at least 13 mm (1/2\("\)) ID hose (#8 or #10 hose). Tighten to a maximum 30 N-m (22 ft-lb).
Installing the Drain Line On a CH41101 Centrifugal Separator (Air Assist Drain)

The CH41101 separator is an air-assisted drain system.

All hoses must be clear of exhaust and all moving parts. Fasten hoses securely. It is very important to use hose clamps on either end of the hose when “barb” type fittings are used.

Step 4 - Securely connect the drain line to the larger threaded connection at the bottom of the unit.

The drain line must be a minimum 10 mm (3/8”) ID hose and it must be returned to the sump. There should be no U-traps, kinks or other obstructions or horizontal sections in the drain hose.

It may be necessary to adapt an inspection plate on the engine to accommodate the drain hose connection. The return/drain flow must be directed away from any moving parts in the crankcase.

Installing the Air Inlet Line On a CH41101 Centrifugal Separator (Air Assist Drain)

Step 5 - The air inlet line requires 1/4” NPT male threads to fit to the air control opening in the unit. Minimum pressure requirements depend on the oil pressure at the separator. (See the note at the bottom of the Specifications table on page 5.)

If you are installing a CH41101 separator, skip to Step 8.

Installing the Oil Inlet Line on a CH41102

Use an available oil supply port on the engine for the separator inlet connection. Most engines provide a port to supply auxiliary devices.

Step 6 - Connect the inlet line to the smaller of the two ports at the bottom of the unit with an M22 x 1.5 o-ring connection fitting. The inlet line must be at least 13 mm (1/2”) ID hose (#8 or #10 hose). Tighten to a maximum 30 N-m (22 ft-lb).
Installing the Drain Line On a CH41102 Centrifugal Separator (Gravity Drain)

The CH41102 separator is a gravity-drained system, so the unit must be located such that the drain line is at a steady down slope from the unit to the oil sump. To ensure proper drainage, 0.3 m (1') of drop per 0.9 m (3') of hose is recommended. It is recommended that the unit be at least 0.3 m (1') above the drain return location.

All hoses must be clear of exhaust and all moving parts. Fasten hoses securely. It is very important to use hose clamps on either end of the hose when “barb” type fittings are used.

Step 7 - Securely connect the drain line to the larger port at the bottom of the unit.

The drain line must be a minimum 19 mm (3/4") ID hose, and it must be returned to the sump at a location above the oil level to assure proper drainage. There should be no U-traps, kinks or other obstructions or horizontal sections in the drain hose.

It may be necessary to adapt an inspection plate on the engine to accommodate the drain hose connection. The return/drain flow must be directed away from any moving parts in the crankcase.

Testing the System

Step 8 - Start the engine and check for any leaks. Turn the engine off to correct any problems. Restart the engine and check for proper operation.

Replace the CS41007 service rotor at the same time as the full-flow filter(s) are replaced. Follow engine manufacturer’s recommendations for filter service intervals.
## Servicing the Separator

### Replacing the Service Rotor

The service rotor requires regular replacement. The rotor can be changed at the same interval as the full-flow filters. If a more accurate determination of the life of the rotor is required, contact your Cummins Filtration representative for support.

**Step 1** - Loosen the nut on top of the cover housing and remove the housing.

**Step 2** - Slide the service rotor off the shaft.

**Step 3** - Remove the used o-ring from the bottom of the cover housing.

**Step 4** - Clean the cover housing and install the new o-ring onto the housing.

**Step 5** - Slide the service rotor over the shaft until it is seated on the base casting.

**Step 6** - Slide the cover housing over the service rotor and tighten to 20 N-m (15 ft-lb).

**Step 7** - Dispose of the used rotor according to local/regional regulations.

### Replacing the Vibration Isolators

The four vibration isolators located in the base casting should be changed every 2-3 years for optimal vibration dampening. Inspect periodically for any damage and replace as necessary.

### Specifications

<table>
<thead>
<tr>
<th></th>
<th>CH41101</th>
<th>CH41102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Flowrate* @50 psi</td>
<td>4 L/min (1 gpm)</td>
<td>4 L/min (1 gpm)</td>
</tr>
<tr>
<td>Recommended Temperature</td>
<td>110 °C (230 °F)</td>
<td>110 °C (230 °F)</td>
</tr>
<tr>
<td>Recommended Pressure</td>
<td>3 - 6 bar (44 - 87 psi)</td>
<td>3 - 6 bar (44 - 87 psi)</td>
</tr>
<tr>
<td>Drain Hose and Attachment Fitting Minimum ID *</td>
<td>10 mm (3/8&quot;)</td>
<td>19 mm (3/4&quot;)</td>
</tr>
<tr>
<td>Recommended Sump Size *</td>
<td>18 - 113 L (5 - 30 gal)</td>
<td>18 - 113 L (5 - 30 gal)</td>
</tr>
<tr>
<td>Air Supply Needed**</td>
<td>1/4&quot; NPT</td>
<td>N/A</td>
</tr>
<tr>
<td>Capacity (weight depends on density of contaminant)</td>
<td>0.57 L (.15 gal)</td>
<td>0.57 L (.15 gal)</td>
</tr>
<tr>
<td>Overall Height of Assembly</td>
<td>285 mm (11.2&quot;)</td>
<td>285 mm (11.2&quot;)</td>
</tr>
<tr>
<td>Depth of Assembly</td>
<td>167 mm (6.55&quot;)</td>
<td>167 mm (6.55&quot;)</td>
</tr>
<tr>
<td>Width of Assembly</td>
<td>166 mm (6.53&quot;)</td>
<td>166 mm (6.53&quot;)</td>
</tr>
<tr>
<td>Rotor Weight [dry]</td>
<td>329 g (11.58 oz)</td>
<td>329 g (11.58 oz)</td>
</tr>
<tr>
<td>Clearance Above Assembly Needed for Service of Rotor</td>
<td>145 mm (5.7&quot;)</td>
<td>145 mm (5.7&quot;)</td>
</tr>
</tbody>
</table>

* Indicates engine supply parameters needed for EACH centrifuge used. In the event of multiple units used on the same engine/application, contact your Cummins Filtration representative.

** Air system requirements (for CH41101 only)
If the operating oil pressure at the centrifuge unit is below 4.2 bar (60 psi), then at least a 2.1 bar (30 psi) air source is needed.
If the operating oil pressure at the centrifuge unit is above 4.2 bar (60 psi), then at least a 3.5 bar (50 psi) air source is needed.
Specifications subject to change without notice.
## Ordering Information

<table>
<thead>
<tr>
<th>Part Description</th>
<th>CH41101</th>
<th>CH41102</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Service Rotor and Gasket</td>
<td>CS41007</td>
<td>CS41007</td>
</tr>
<tr>
<td>2 Gravity Drain Base Casting and Shaft</td>
<td>N/A</td>
<td>393526200 S</td>
</tr>
<tr>
<td>(Includes vibration isolators, nuts, bolts, and washers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Air Assist Base Casting and Shaft</td>
<td>394075000 S</td>
<td>N/A</td>
</tr>
<tr>
<td>(Includes vibration isolators, plunger assembly,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>air control fitting, nuts, bolts, and washers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Air Control Fitting (1/4 NPT)</td>
<td>394151900 S</td>
<td>N/A</td>
</tr>
<tr>
<td>5 Oil Shutoff/Air Flow Plunger Assembly</td>
<td>394307100 S</td>
<td>N/A</td>
</tr>
<tr>
<td>(Includes plunger, spring and o-rings)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Housing Assembly with CH41101 Label</td>
<td>394075600 S</td>
<td>N/A</td>
</tr>
<tr>
<td>(Includes cover housing, nut, o-ring and retaining ring)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Housing Assembly with CH41102 Label</td>
<td>N/A</td>
<td>394452000 S</td>
</tr>
<tr>
<td>(Includes cover housing, nut, o-ring and retaining ring)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Vibration Isolator Kit</td>
<td>393526300 S</td>
<td>393526300 S</td>
</tr>
<tr>
<td>(Includes 4 vibration isolators, 4 bolts, 8 washers,</td>
<td></td>
<td></td>
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<tr>
<td>and 4 nuts)</td>
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</table>

![Diagram](image)

- **13 mm Hex Nut**
  - Tighten to 20 N·m (15 ft-lb)

- **Casting Part**
  - Number and Date Code

- **10 mm (3/8") Grade 8 to Grade 5 Bolts and Nuts**
  - Tighten to 20 N·m (15 ft-lb)
  - Attached Mounting Hole
  - 10.3 mm (0.406") (13/32")

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