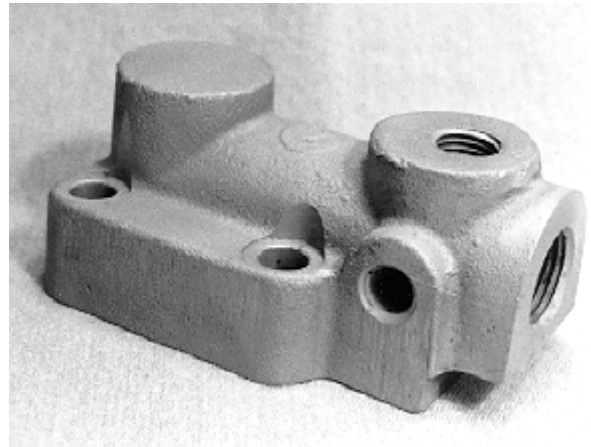


## CST29A Adapter Block for Carlyle Compressors

*The Johnson Controls/PENN® CST29A Adapter Block is designed for use on Carlyle compressors (models O6CC, O6D, and O6E) equipped with an oil pump. The adapter block allows for the installation of the P400 single point differential pressure switch for use with the P545NCB-82 electronic lube oil control.*



**Figure 1: CST29A Adapter Block**

Features and Benefits	
<input type="checkbox"/> <b>Simple Installation</b>	Provides easy conversion of electromechanical lube oil control system to electronic equivalent
<input type="checkbox"/> <b>Designed Specifically for Carlyle Applications</b>	Applies to Carlyle compressor models O6CC, O6D, and O6E

## Application

**IMPORTANT:** The Adapter Block is designed for use **only** with Carlyle compressor series O6CC, O6D, and O6E and with a P545NCB-82 electronic lube oil control and the P400AD-1 differential pressure switch.

The CST29A Adapter Block allows you to mount the P400AD-1 switch on select Carlyle compressors to monitor net lube oil pressure (oil discharge pressure minus suction pressure).

### Compressor Types

Carlyle compressors have several body types available. Note the body type of your compressor before proceeding.

#### *D Body (O6D and O6CC Compressors)*

**O6D and O6CC Compressors with New Style Bearing Heads:** If you have an O6D Series compressor with a New Style Bearing Head (06DA660126), the top portion of the bearing head extends over the top bearing head bolt.

**Older Standard Bearing Heads:** If you have an O6D Series compressor with an older Standard Bearing Head, you should order the New Style Bearing Head (06DA660126) from Carlyle.

The older Standard Bearing Head has a square cover plate and has a pipe plug between the 5 and 6 o'clock bearing head bolts.

Follow the 06DA660126 documentation when you remove the older Standard Bearing Head and mounting the replacement bearing head.

**Other Bearing Heads:** If you have an O6D Series compressor with an older Air Conditioning Bearing Head, you must change out the bearing head to use the P545NCB-82 with the P400AD-1 switch. Order the New Style Bearing Head (06DA660126) from Carlyle.

The Air Conditioning Bearing Head is similar to the older Standard Bearing Head but does not have a pipe plug between the 5 and 6 o'clock bearing head bolts.

Follow the 06DA660126 documentation when you remove the Air Conditioning Bearing Head and mounting the replacement bearing head.

#### *E Body (O6E and O6CC Compressors)*

If you have an O6E or O6CC Series compressor with a Standard Bearing Head (see Figure 4), the top portion of the bearing head does **not** extend over the top bearing head bolt.

There is only one bearing head available for E body O6E and O6CC Series compressors (06EA660157).

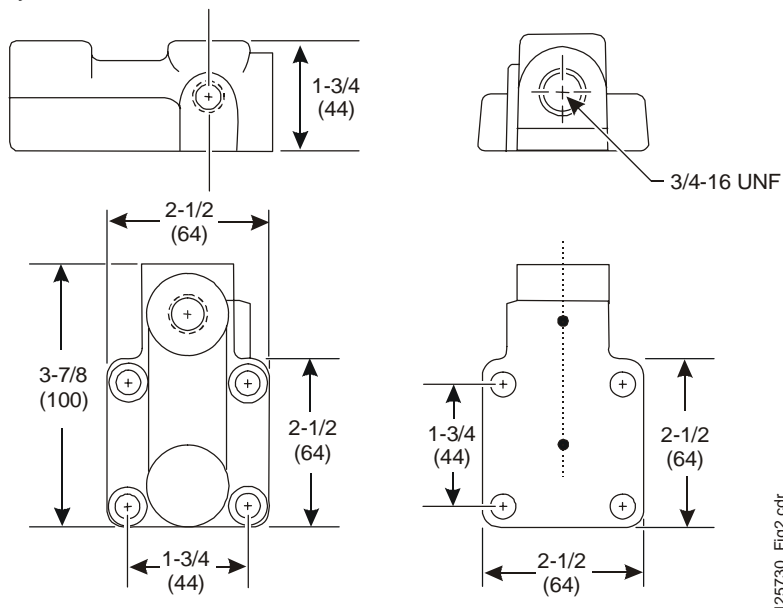


Figure 2: CST29A Adapter Block Dimensions, in. (mm)

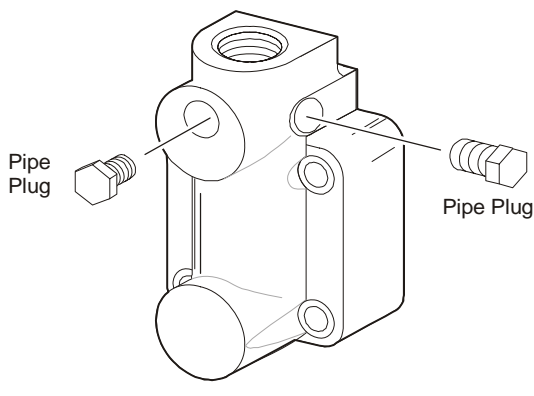
## Tools and Materials Required

- standard screwdriver
- adjustable wrench
- 1/16 in. Allen-head wrench
- Adapter Block Gasket (06DA680063 from Carlyle)
- P400AD-1 switch and P545NCB-82 lube oil control (from Johnson Controls or Carlyle)
- pipe sealant (compatible with refrigerant and oil being used)
- two 1/4 in. NPT pipe plugs

### Mounting the Adapter Block

Use the following procedure to mount the adapter block.

1. Apply sealant to the pipe threads of a 1/4 in. pipe plug (see Figure 3) and insert in front of the adapter block.
2. Apply sealant to the pipe threads of a 1/4 in. pipe plug and insert on the side of the adapter block (see Figure 3).



**Figure 3: Inserting the Pipe Plugs**

3. Isolate and evacuate the compressor.
4. On the compressor, remove the four cover plate bolts, cover plate, recess cup, spring, and gasket from the bearing head. Carefully scrape off residual gasket material from the bearing head sealing surface.



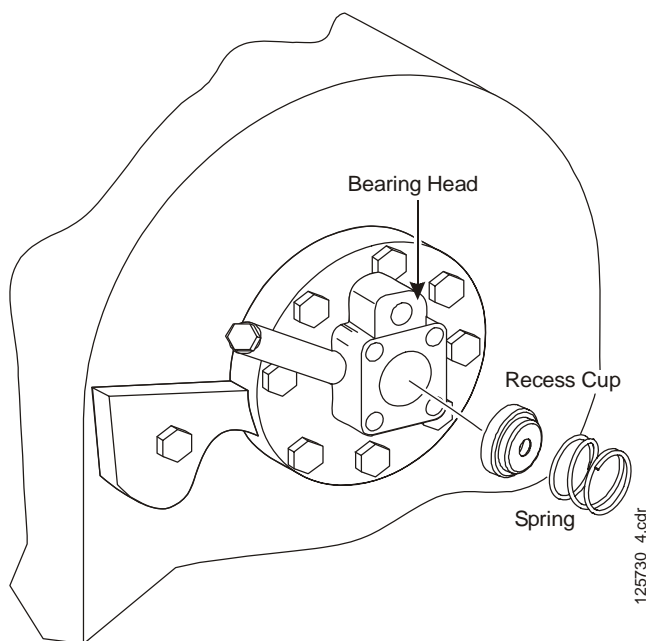
**CAUTION: Risk of Environmental Damage.** Do not damage the bearing head surface. Failure to prevent scratching or nicking of the bearing head surface will cause leakage of oil and refrigerant.

5. Remount the recess cup and spring (see Figure 4).



### **CAUTION: Risk of Property Damage.**

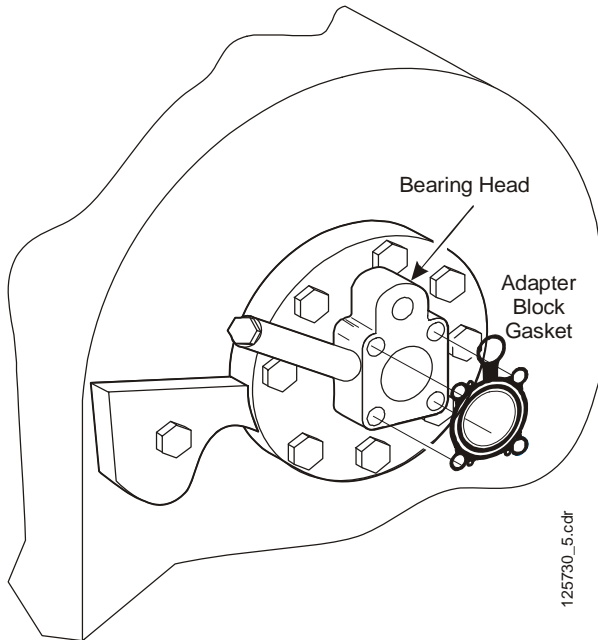
You must remount the recess cup first and **then** the spring. Failure to do so will cause the compressor to seize.



**Figure 4: Compressor Bearing Head**

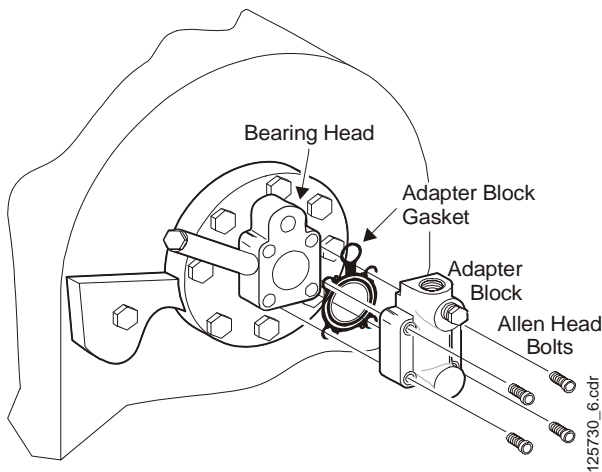
6. Mount the adapter block gasket on the compressor bearing head (see Figure 5).

Make sure the bead side of the gasket faces away from the bearing head and toward the adapter block.



**Figure 5: Mounting the Adapter Gasket**

7. Mount the adapter block to the bearing head using the four Allen-head bolts provided with the adapter block (see Figure 6).



**Figure 6: Mounting the Adapter Block**

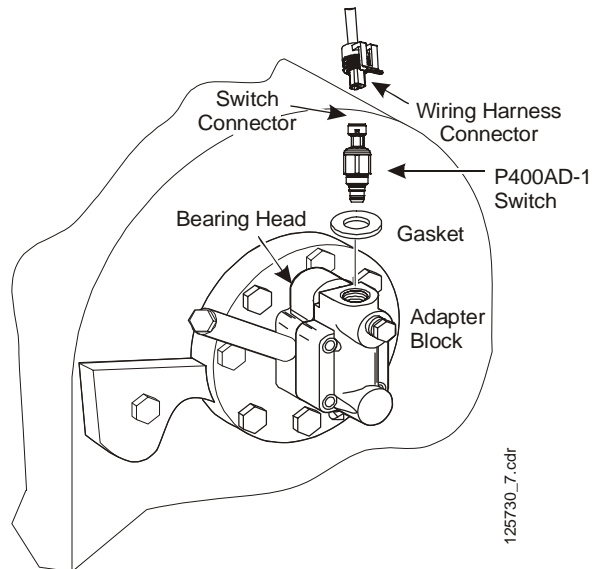
8. Use a torque wrench to tighten the bolts to 15 lb-ft torque.

**IMPORTANT:** Do not overtighten the bolts. Overtightening may strip the threads and will void the warranty.

### Installing the P400AD-1 Switch

Use this procedure to install the P400AD-1 switch (see Figure 7).

1. Wet the switch nozzle and gasket with oil.
2. Fit the gasket over the switch nozzle.
3. Thread the switch into the top of the adapter block.
4. Hand tighten until the surfaces of the gasket and adapter block meet.
5. Use a torque wrench to tighten the switch until sealed (40 lb-ft recommended torque).



**Figure 7: Mounting the Switch**

6. Connect the cable to the switch (see Figure 7).
7. Connect the switch cable to the P545 control at connector P2. Refer to the *P545 Series Electronic Lube Oil Control Product/Technical Bulletin (LIT-12011012)* for details.

## Checkout Procedure

Before leaving the installation, observe at least three complete operating cycles to be sure that the switch block is not leaking oil and that the lube oil control and switch are functioning correctly.

Remove the switch cable from the switch or the control to simulate a lube oil trip.

After a week of operation, check the adapter block for possible oil leakage with a refrigerant leak detector such as the Johnson Controls/PENN RLD-H10G or RLD-H10PM. Although the leak detectors do not detect oil leaks, they can pick up traces of refrigerant carried by the oil.

## Repairs and Replacements

Do not make field repairs. For a replacement adapter block, contact the nearest Johnson Controls/PENN distributor.

For a replacement adapter block gasket, contact the nearest Carlyle distributor.

If you have any questions, contact Johnson Controls Refrigeration Application Engineering at 1-800-276-5676.

**Table 1: Johnson Controls Supplied Parts and Accessories - Ordering Information**

Product Code Number	Description
<b>CST29A-600C</b>	Adapter Block for Carlyle Compressor Series O6CC, O6D, and O6E; Includes Allen-head bolts.
<b>P545NCB-82C</b>	Electronic Lube Oil Pressure Control, 120 Second Delay Before Lockout, with P400AD-1 Switch and WHA-P400-100 Switch Cable
<b>P400AD-1C</b>	Replacement Differential Pressure Switch with WHA-P400-100 Wire Harness Open at 7 ±1.0 psid, Close Less than or Equal to 2.0 psid above Open Point
<b>KITP545-82C</b>	Single Pack P545 with Adapter Block and Allen-head Bolts
<b>WHA-P400-100C</b>	3 1/3 ft (1 m) Length Wiring Harness
<b>WHA-P400-125C</b>	4 ft (1 1/4 m) Length Wiring Harness
<b>WHA-P400-250C</b>	8 ft (2 1/2 m) Length Wiring Harness
<b>WHA-P400-400C</b>	14 ft (4 1/3 m) Length Wiring Harness

**Table 2: Carlyle Supplied Parts - Ordering Information**

Product Code Number	Description
<b>06DA680063</b>	Adapter Block Gasket for Carlyle Compressor Series O6CC, O6D, and O6E

\* For information on the nearest Carlyle distributor, contact Carlyle at 1-800-462-2759 (1-800-GO-CARLYLE) or visit <http://www.carlylecompressor.com/Contact/distmap.htm>

Technical Specifications

Product	Adapter Block for Carlyle O6CC, O6D, and O6E Series Compressors
Dimensions (H x W x D)	See Figure 2.
Shipping Weight	1.13 lb (0.512 kg)

*The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office or Johnson Controls/PENN Application Engineering at (414) 524-5535 or 1-800-275-5676 (1-800-ASK-JNSN). Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.*



**Controls Group**  
507 E. Michigan Street  
P.O. Box 423  
Milwaukee, WI 53201

Published in U.S.A.  
[www.johnsoncontrols.com](http://www.johnsoncontrols.com)