

## GENERAL

1. Inspect compressor for shipping damage and file claim with shipping company if damaged or incomplete.
2. Check compressor nameplate for correct model and voltage designation.
3. Before installation, review all Carlyle compressor application literature to assure yourself that the proper compressor has been selected and is being applied in a proper manner. The required application literature is available through Carlyle.

## SAFETY INSTRUCTIONS

**WARNING:** Failure to follow these instructions could result in serious injury.

1. Follow recognized safety procedures and practices.
2. Do not remove any compressor bolts or fittings until factory-supplied holding charge has been relieved. Exhaust holding charge pressure through low-pressure connection (shown in Figs. 2-5) by removing the connection cap and depressing the internal disc.
3. Do not apply any power to the compressor unless suction and discharge service valves are installed and opened.
4. Do not operate or provide any electrical power to the compressor unless the terminal box cover is in place and secured. Measurement of amps and volts during running conditions must be taken at other points in the power supply.
5. Do not remove terminal box cover until all electrical sources have been disconnected.
6. Follow recommended safety precautions listed on terminal box cover label before attempting any service work on the compressor.

## GENERAL INSTALLATION PROCEDURES

### Holding Charge

Compressor is factory supplied with a 5 to 15 psig (1.4 to 2 bar) charge of dry air. This internal pressure must be relieved before attempting to remove any compressor fitting or part.

Relieve holding charge by removing the cap on the low pressure connection fitting and depressing the internal disc. See Figs. 2-5 for applicable low pressure connection fitting location.

### Service Valves

Remove valve pads and attach factory supplied suction and discharge gaskets and service valves to the compressor. Torque 5/16"-18 mounting bolts 16 to 20 lb-ft (21.7 - 27.1 N-m) and 1/2"-13 mounting bolts 80 to 90 lb-ft (108.5 -122 N-m). When brazing piping to valve, disassemble valve or wrap in a wet cloth to prevent heat damage.

### Oil

1. Check to see that oil level is 1/3 to 1/2 way up on compressor sightglass before starting and after 15 to 20 minutes of operation. Compressors may be shipped with or without an oil charge based on model. All compressors must contain the specified oil charge prior to start up as a condition of warranty.

2. To add oil: Relieve internal crankcase pressure, isolate crankcase, and add oil through the oil fill connection (see Fig. 2 thru 5). To remove excess oil: Reduce internal crankcase pressure to 2 psig (1.15 bar), isolate crankcase then loosen the oil drain plug allowing oil to seep out past the threads of the plug.

**CAUTION:** With the compressor crankcase under slight pressure, do not remove the oil drain plug as the entire oil charge could be lost. Do not reuse drained oil or oil that has been exposed to the atmosphere.

3. When additional oil or a complete oil change is required, use only the listed Carlyle approved oils.

For CFC and HCFC refrigerants use:

| Manufacturer       | Brand Name |
|--------------------|------------|
| Totaline           | 150        |
| Witco Suniso       | 3GS        |
| Shrieve Chemical   | Zerol 150  |
| Texaco Ind.        | WFI-32-150 |
| IGI Petroleum Ind. | Cryol-150  |

For HFC refrigerants use:

| Manufacturer        | Brand Name |
|---------------------|------------|
| ICI EMKARATE        | RL68H      |
| *Lubrizol Lubrikuhl | 2916S      |
| **Mobil Arctic      | EAL 68     |
| **Castrol           | SW 68      |
| Castrol             | E 68       |
| Totaline            | P903-1701  |

\*Lubrizol ISO 68 also sold under Texaco Capella HFC 68NA brand.

\*\*Medium and high temperature applications only.

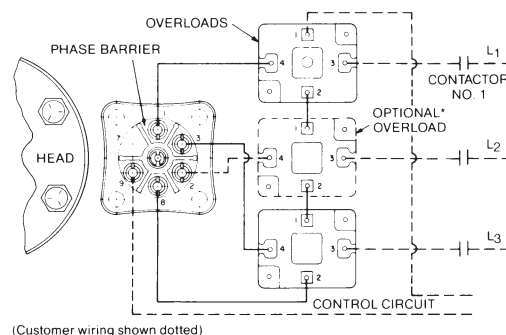
## ELECTRICAL

### General

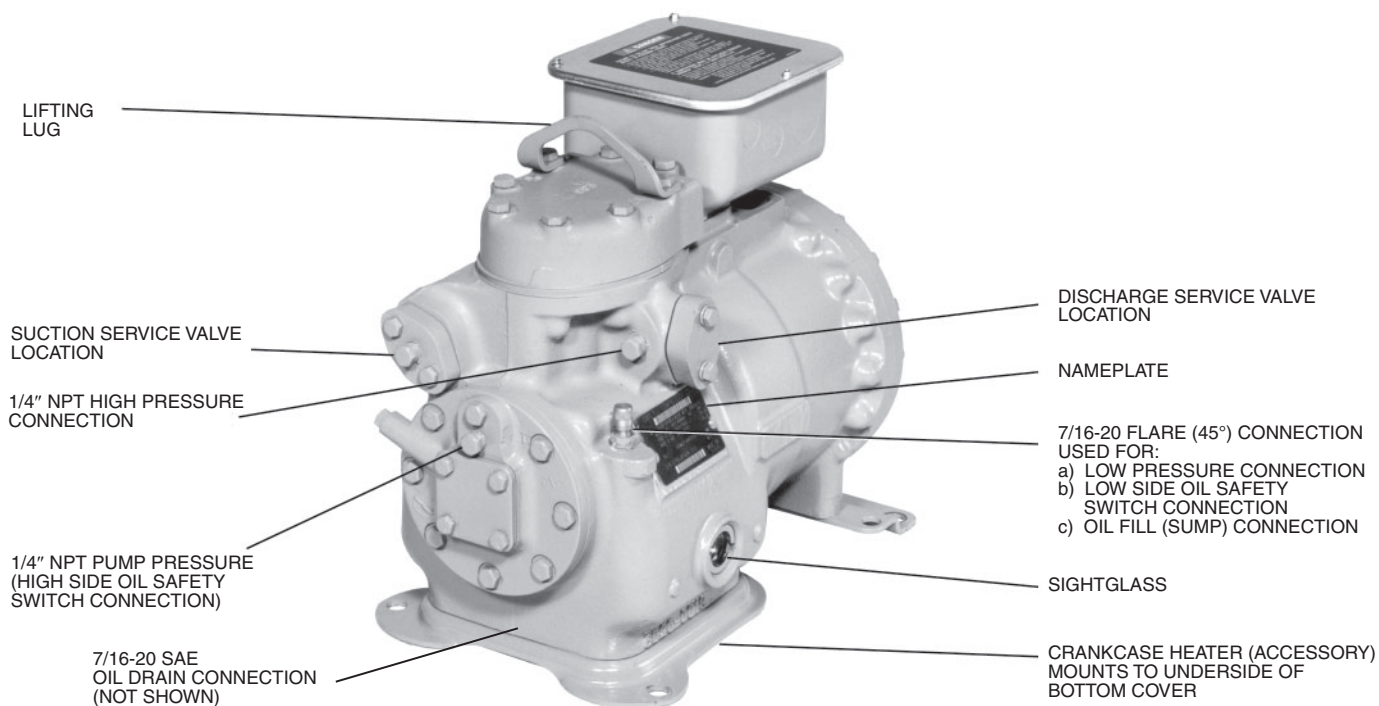
Consult the wiring diagram located inside the compressor terminal box cover and Fig. 1 diagram shown below for wiring connection locations.

### Overload Wiring

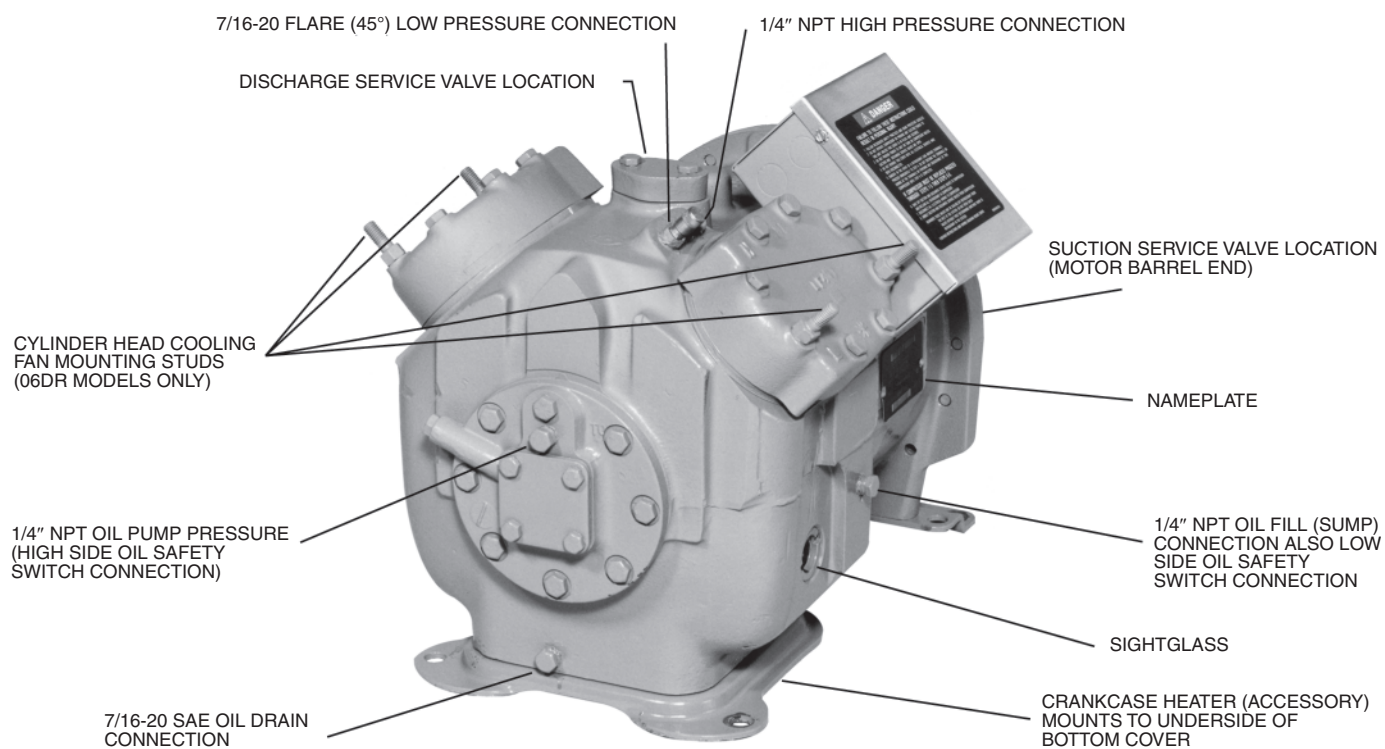
1. Connect (1) control circuit lead to the empty side tab (#1 terminal location of the top overload as shown in Fig. 1 below) of the overload using a push-on quick-connect wire terminal.



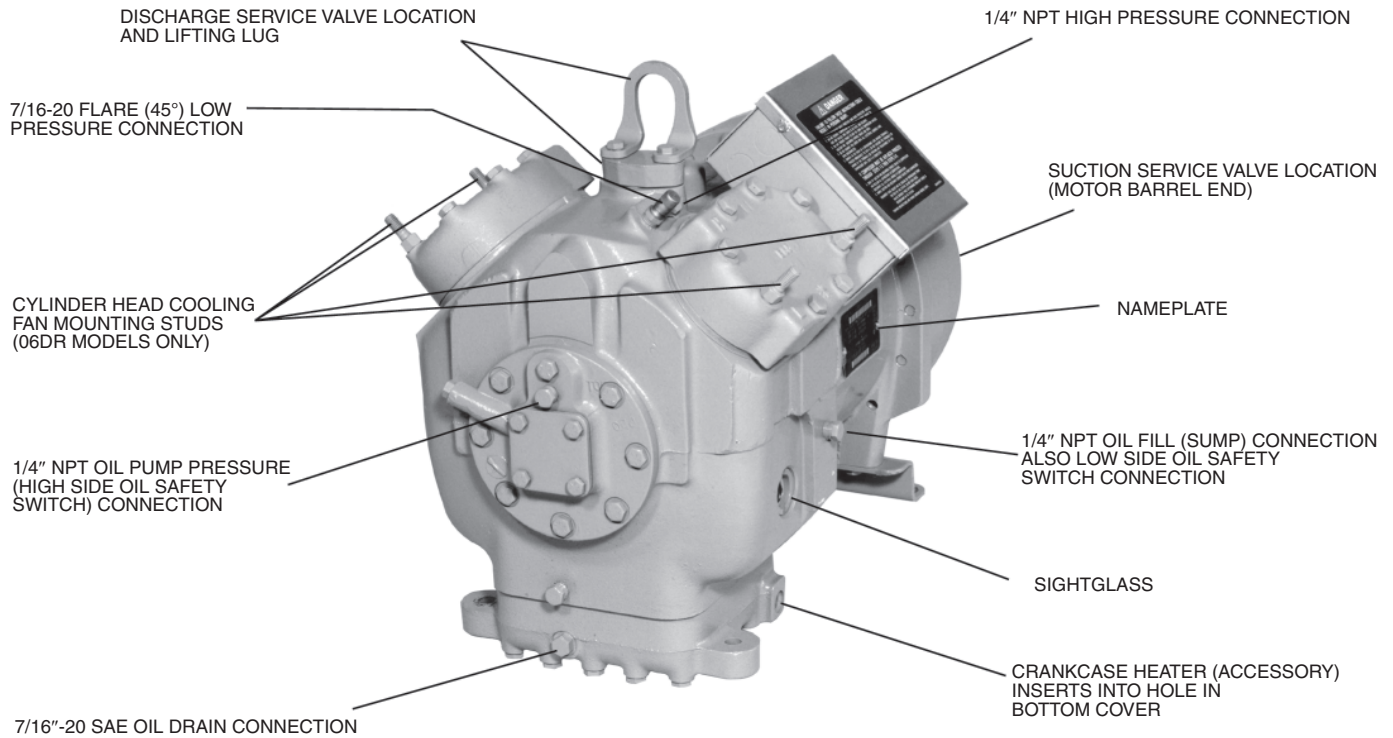
**Fig. 1 — Three Phase Across-the-Line Start Internal Thermostat**



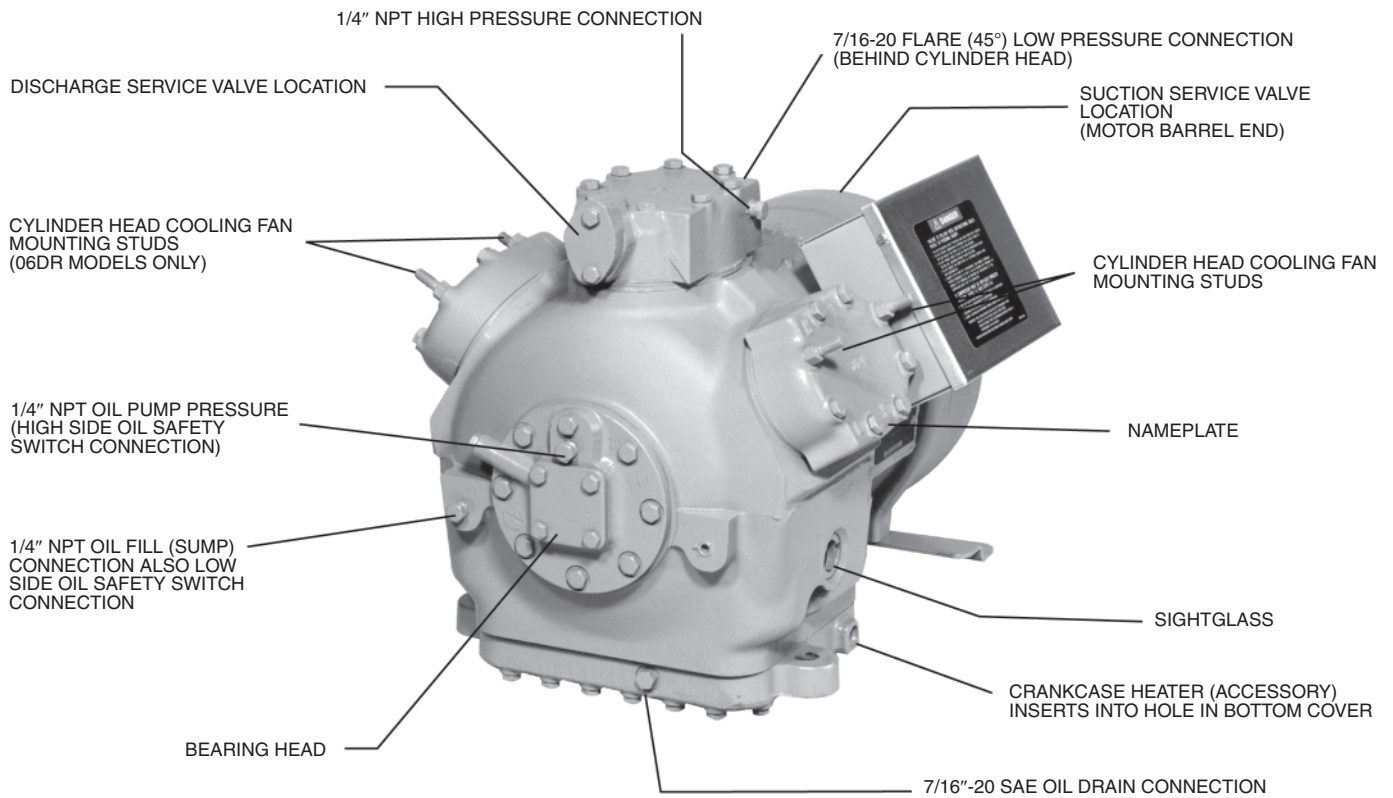
**Fig. 2 — 06D 2-Cylinder Compressors**  
8 and 9 CFM (.23 and .25 m<sup>3</sup>/min)



**Fig. 3 — 06D 4-Cylinder Compressors**  
13 and 16 CFM (.36 and .45 m<sup>3</sup>/min)



**Fig. 4 — 06D 4-Cylinder Compressors**  
**18 and 20 CFM (.52 and .56 m<sup>3</sup>/min)**



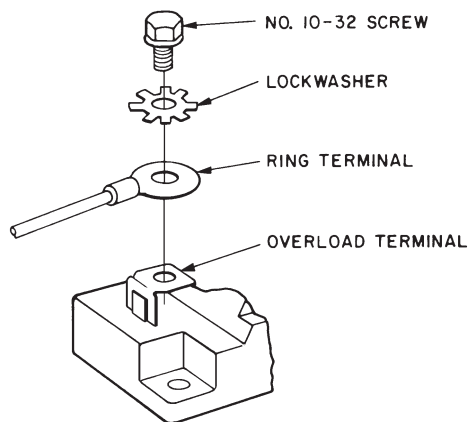
**Fig. 5 — 06D 6-Cylinder Compressors**  
**24/25, 28, 37 and 41 CFM (.68, .79, 1.05 and 1.16 m<sup>3</sup>/min)**

2. Connect (2) power leads (from L1 and L3) to the #3 terminal location of the overloads as shown in Fig. 1. Connections are made using push-on quick connect flag terminal or ring terminals based on model and voltage. Be sure that power leads with the quick connect flag terminals are securely and firmly fastened to the overload terminal tabs.

\*Models 06DR337/DM337/DA328 for 208/230 V are supplied with 3 overloads.

3. When attaching power leads to the overloads requiring the ring terminals as noted above, use the hardware in the parts bag supplied with the compressor and located inside the terminal box.

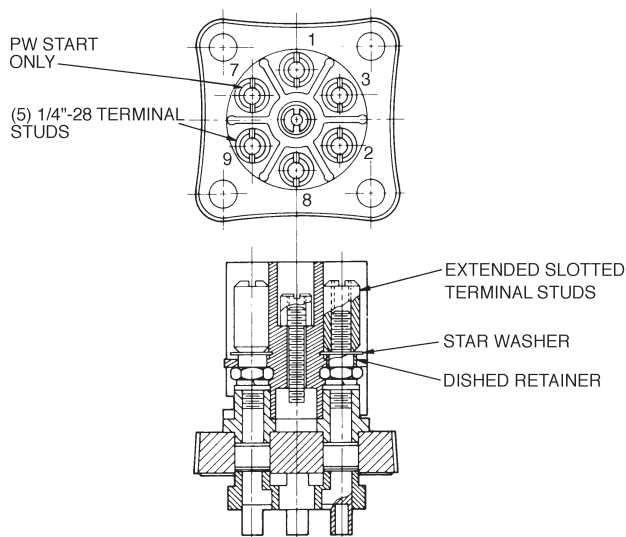
Use (1) screw, and (1) external-tooth lockwasher per connection. Assemble the parts in the order as shown in Fig. 6.



**Fig. 6 — Torque Terminal Screws to 20 Lb-in (2.3 N-m) Maximum**

## TERMINAL PLATE WIRING

1. Customer wiring to the terminal plate must be provided with ring terminals to accommodate the 1/4"-28 terminal studs.



**Fig. 7 — Section thru Terminal Plate**

2. With screwdriver, remove the extended slotted terminal nut and star washer only on terminal studs #2 and #9. On compressors with 3 overloads, the power lead wire to terminal #2 is factory connected.

3. Apply control circuit lead wire to terminal stud #9 and power lead from L2 to terminal stud #2. Reassemble star washers and extended slotted terminal nuts.

4. Tighten extended terminal nuts to 30 lb-in (3.4 N-m) maximum.

## OIL PRESSURE SAFETY SWITCH

1. All Carlyle 06D compressors are provided with connections for an oil safety switch. The use of an oil safety switch can help prevent compressor failures when loss of lubrication or loss of compressor oil charge occurs. The use of an oil safety switch is required as a condition of warranty for those 06D compressors which are applied on systems in which two or more 06D compressors are connected in parallel. On units in which single 06D compressors are applied, the use of an oil pressure switch is recommended. See Figs. 2-5 for oil safety switch connections.

2. Normal oil pressure for 06D compressors is 12 to 30 psi (.83 - 2.1 bar) above suction pressure. Select a switch to close the control circuit (at start-up) at a maximum of 12 psi (.83 bar) and open the control circuit at a minimum of 5 psi (.35 bar). A time delay of not less than 30 seconds nor more than 60 seconds is required for start-up purposes. The switch must also be manually reset when it trips.

3. The following oil safety switches have been approved by Carlyle:

| Carlyle Part No. | Time Delay | Connections                       | Pressure Diff. psi (bar) |                    | Volts                | Reset  | Remote Alrm Circ Capability |
|------------------|------------|-----------------------------------|--------------------------|--------------------|----------------------|--------|-----------------------------|
|                  |            |                                   | Cut In                   | Cut Out            |                      |        |                             |
| P529-2430        | 120 sec    | 1/4" Male Flares                  |                          |                    |                      |        |                             |
| P529-2410        |            | 36" Lg. Cap Tube<br>1/4" SAE Nuts | 8-11<br>(0.55-0.76)      | 4-8<br>(0.28-0.55) | 115/230<br>(100/220) | Manual | Yes                         |

| Carlyle Part No. | Time Delay | Connections | Pressure Diff. psi (bar) |                    | Volts                | Reset  | Remote Alrm Circ Capability |
|------------------|------------|-------------|--------------------------|--------------------|----------------------|--------|-----------------------------|
|                  |            |             | Cut In                   | Cut Out            |                      |        |                             |
| 06DA660115       | 45 sec     | Electronic  | 8-11<br>(0.55-0.76)      | 4-8<br>(0.28-0.55) | 115/230<br>(100/220) | Manual | Yes                         |

## MOTOR PROTECTION

All 06D compressors are supplied with overcurrent and overtemperature device.

## COOLING FANS

Cylinder head cooling fans are recommended for saturated suction temperature (SST) below 0°F (-18°C) and are required based on SST as follows:

| Refrigerant | SST            |
|-------------|----------------|
| R-22        | <0°F (-18°C)   |
| R-507/404A  | <-25°F (-32°C) |

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

Carlyle Compressor Co. • © Carrier Corporation  
P.O. Box 4808, Syracuse, NY 13221  
Phone: In US & Puerto Rico 1-800-GO-CARLYLE  
In Canada 1-800-258-1123  
In Mexico 001-800-462-2759  
www.carlylecompressor.com

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