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

⚠ DANGER

Failure to follow these instructions will result in severe personal injury or death.

ELECTRIC SHOCK HAZARD. Do not operate compressor or provide electric power to it unless the compressor terminal box is installed and the terminal box cover is in place and secured.

DO NOT provide power to unit or turn on compressor unless suction and discharge service valves are open.

DO NOT remove the compressor terminal box cover until all electrical sources have been disconnected.

DO NOT USE oxygen or other industrial gases for tightness/pressure testing. Use nitrogen or inert gas.

⚠ WARNING

Failure to follow these instructions may result in serious injury or death.

CONTENTS UNDER PRESSURE. Compressor contains oil and refrigerant under pressure. Pressure must be relieved before installation, servicing or opening any connections.

HOT and COLD surface temperatures can occur during operation and can result in severe burns or frostbite.

USE ONLY approved refrigerants and refrigeration oils.

NEVER EXCEED specified test pressures. System strength/tightness test pressure may not exceed the compressor maximum Test pressure on the Nameplate. Close shutoff valves to isolate compressor if necessary.

CHECK THE REFRIGERANT TYPE. Charge only with refrigerant that conforms to AHRI Standard 700.

Only qualified, authorized, and appropriately trained HVAC or refrigeration personnel, should install, commission, and maintain this equipment.

Use appropriate personal safety equipment where required. Safety goggles, gloves, protective clothing, safety boots, and hard hats should be worn where necessary.

OPERATING LIMITS: Refer To Application Guide

GENERAL INSTALLATION PROCEDURES

Holding Charge

Compressor is factory supplied with a 7 to 20 psig (0.5 to 1.4 bar) charge of dry air or nitrogen. 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 Fig. 1 through 4 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 $^{5}/_{16}$-in. -18 mounting bolts 20 to 25 lb-ft (27 to 34 N•m) and $^{1}/_{2}$-in. -13 mounting bolts 80 to 90 lb-ft (109 to 122 N•m). When brazing piping to valve, wrap the valve in a wet cloth to prevent heat damage.

Oil

1. Check to see that oil level is $^{1}/_{4}$ to $^{3}/_{4}$ of the way up on compressor sight glass 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. 1 through 4). 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.

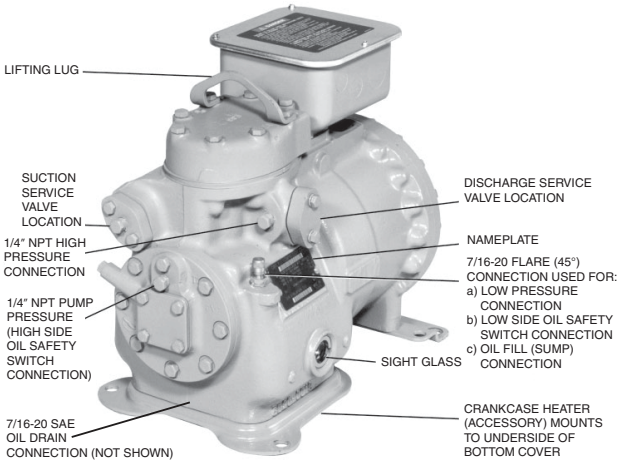


Fig. 1 — 06D 2-Cylinder Compressors 8 and 9 CFM (0.23 and 0.25 m^3/min)

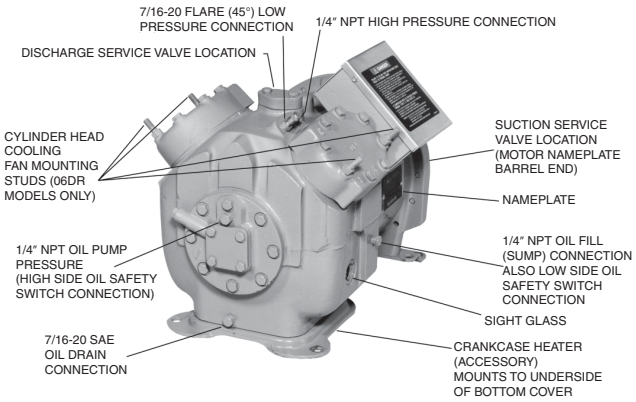


Fig. 2 — 06D 4-Cylinder Compressors 13 and 16 CFM (0.36 and 0.45 m^3/min)

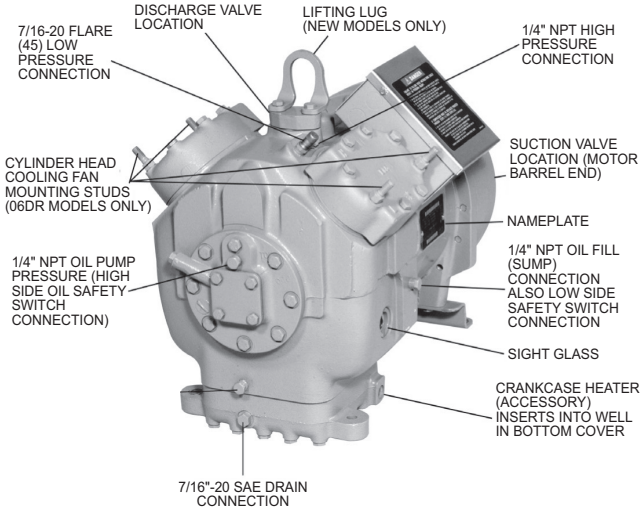


Fig. 3 — 06D 4-Cylinder Compressors 18 and 20 CFM (0.52 and 0.56 m^3/min)

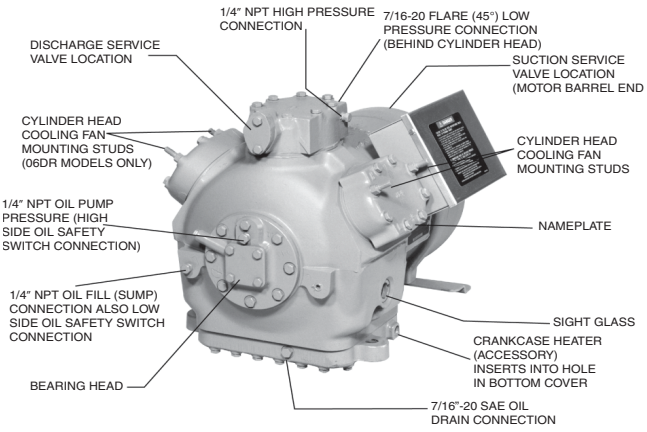


Fig. 4 — 06D 6-Cylinder Compressors 24/25, 28, 37 and 41 CFM (0.68, 0.79, 1.05 and 1.16 m^3/min)

ELECTRICAL

General

Consult the wiring diagram located inside the compressor terminal box cover and the diagrams shown below associated with the correct terminal plate and overloads for proper wiring connections.

The compressor will have one of 3 terminal plate configurations: one is a 5-pin assembly and the remaining two are 6-pin assemblies. Refer to Fig. 5 through 7 for details on each arrangement. To determine which terminal plate arrangement is used, refer to digit 10 of the nameplate model number and Table 1.

Table 1 — Terminal Plate Arrangement Identification

DIGIT 10 OF NAMEPLATE MODEL NUMBER	TERMINAL PLATE ARRANGEMENT	FIGURE
A, C, or G	5-Pin	5
0, 1, 2, or 3	6-Pin Universal	6
B or D	6-Pin Part Wind	7

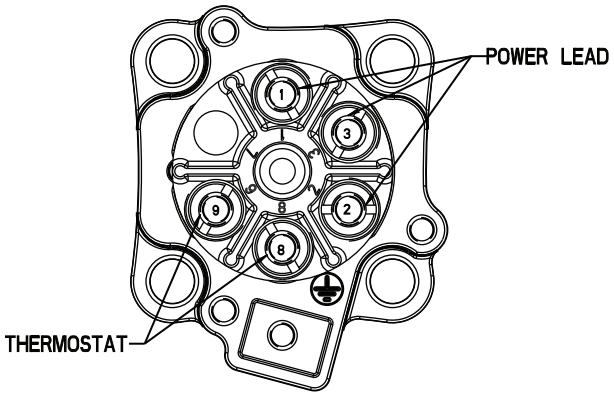
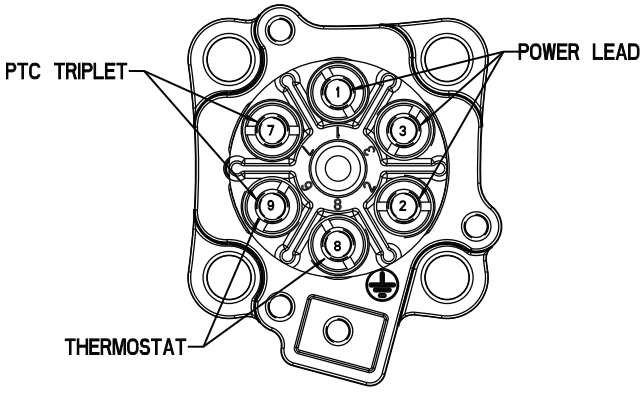


Fig. 5 — 5-Pin Plate Assembly



PTC — Positive Temperature Coefficient Thermistor

Fig. 6 — 6-Pin Plate Assembly, Universal Compressors

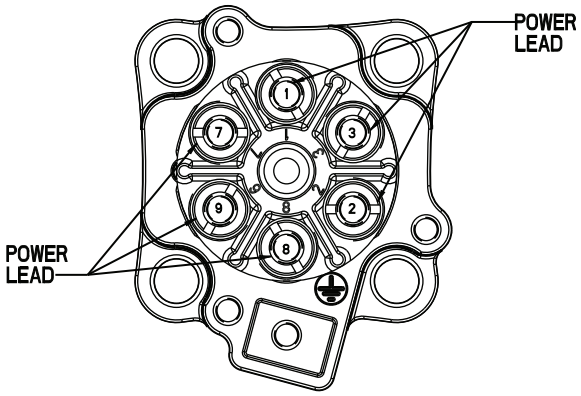


Fig. 7 — 6-Pin Plate Assembly, Part Wind Compressors

Each terminal plate assembly may be utilized with or without overloads. For compressors without overloads, please be sure adequate protection is supplied for all 3 phases of the motor in the form of a circuit breaker or similar system. For compressors with overloads, please refer to Table 2 and referenced figures to ensure proper connection with the applicable overload system on the compressor.

Table 2 — Overload Systems

TERMINAL PLATE ARRANGEMENT	OVERLOAD SYSTEM OPTIONS		
	Hybrid	Service Hybrid	Legacy Bi-Metal
5 Pin (Fig. 5) A, C or G in Digit 10	No	Yes (Fig. 10)	Yes (Fig. 11)
6 Pin (Fig. 6) 0, 1, 2 or 3 in Digit 10	Yes (Fig. 8)	Yes (Fig. 10)	Yes (Fig. 11)
6 Pin (Fig. 7) B or D in Digit 10	No	No	Yes (Fig. 13)

Hybrid Overload Wiring — 6-Pin Plate Assembly for Universal Compressors

1. Connect one of the 2 control circuit leads to connection 14 located on top of the module. Connect the other control circuit lead to connection 11 located on top of the module. Use a fork terminal or stripped and tinned wire to prevent fraying. See Fig. 8. Torque module connections to 12 lb-in. (1.35 N•m) maximum.
2. Determine module power supply voltage by referring to the 6th digit in the part number located on the left side of module (06DANB****). The supply voltages are 115/230 vac and 24 vac and correlate to digits B and C respectively. Connect two module power leads to module connections L and N using a fork terminal or stripped and tinned wire to prevent fraying. Refer to module front label for further power supply requirements. Torque module connections to 12 lb-in. (1.35 N•m) maximum.
3. Route one power lead (L3) through the current transformer (CT) as shown in Fig. 8. See detail in Fig. 9.
4. Once power lead L3 is routed through the CT, make terminal plate connections as shown in Fig. 8. Refer to Terminal Plate Wiring section for connection details.

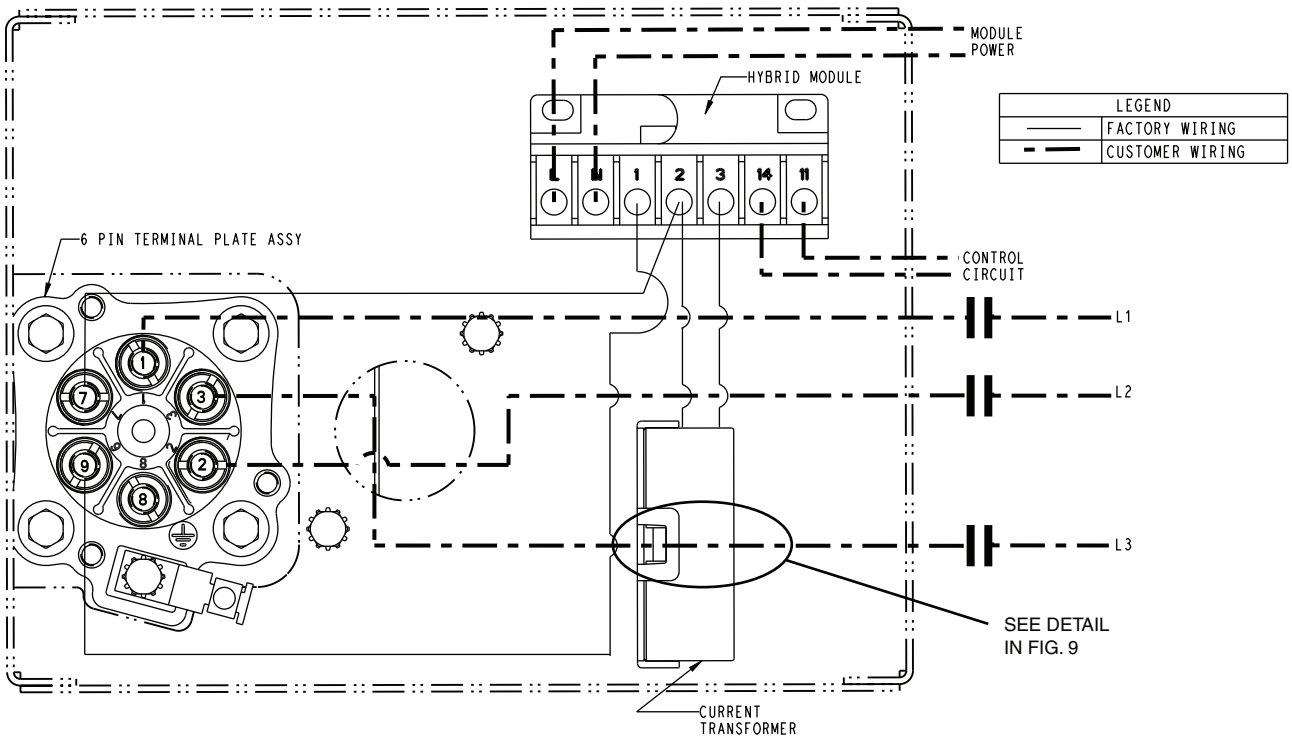


Fig. 8 — Hybrid Overload Wiring

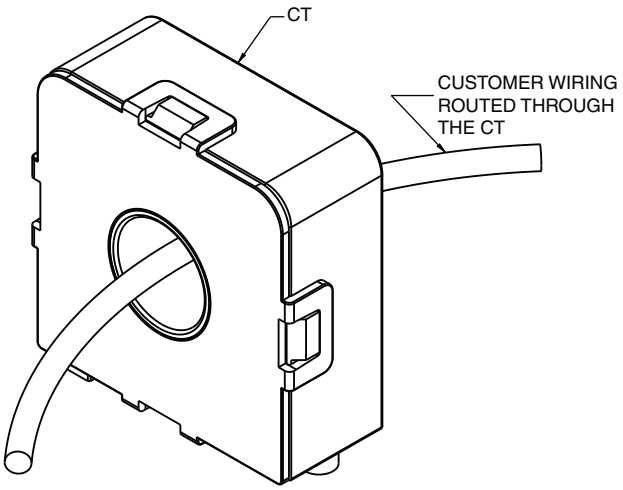


Fig. 9 — Routing Power Lead through Current Transformer (CT)

Service Hybrid Overload Wiring — 5-Pin Plate Assembly or 6-Pin Plate Assembly for Universal Compressor

1. Connect one control circuit lead to module connection 11 located on top of the module as shown in Fig. 10. Use a fork terminal or stripped and tinned wire to prevent fraying. Torque module connections to 12 lb-in. (1.35 N•m) maximum.
2. Determine module power supply voltage by referring to the 6th digit in the part number located on the left side of module (06DASB****). The supply voltages are 115/230 vac and 24 vac and correlate to digits B and C respectively. Connect 2 module power leads to module connections L and N using a fork terminal or stripped and tinned wire to prevent fraying. Refer to module front label for further power supply requirements. Torque module connections to 12 lb-in. (1.35 N•m) maximum.
3. Route 2 power leads (L1 and L3) through current transformers (CTs) as shown in Fig.10. See detail in Fig. 9.
4. Once power lead L3 is routed through CT, make terminal plate connections as shown in Fig. 10. (Terminal pin 7 is not used but may be present on 6-pin assembly.) Refer to Terminal Plate Wiring section for connection details.

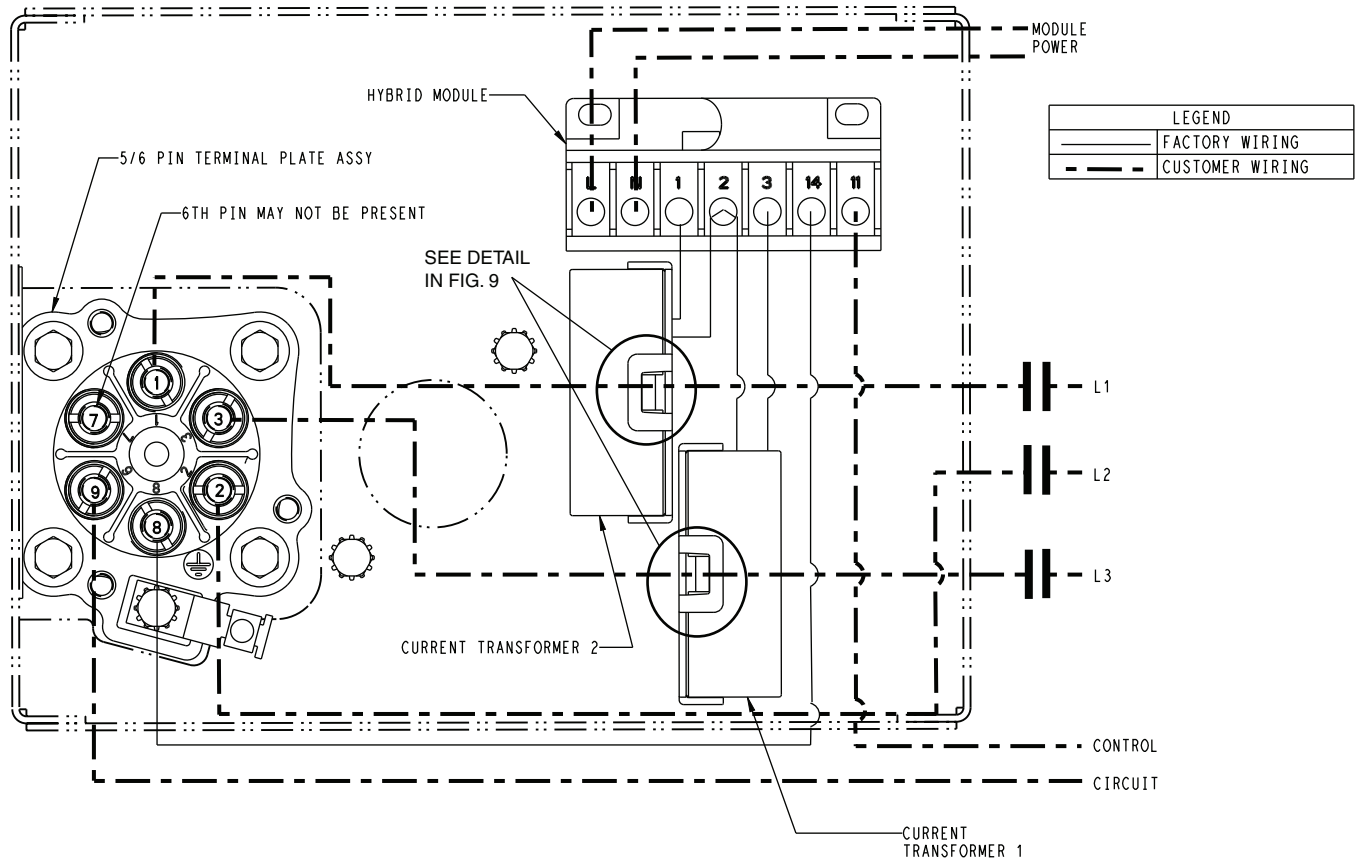
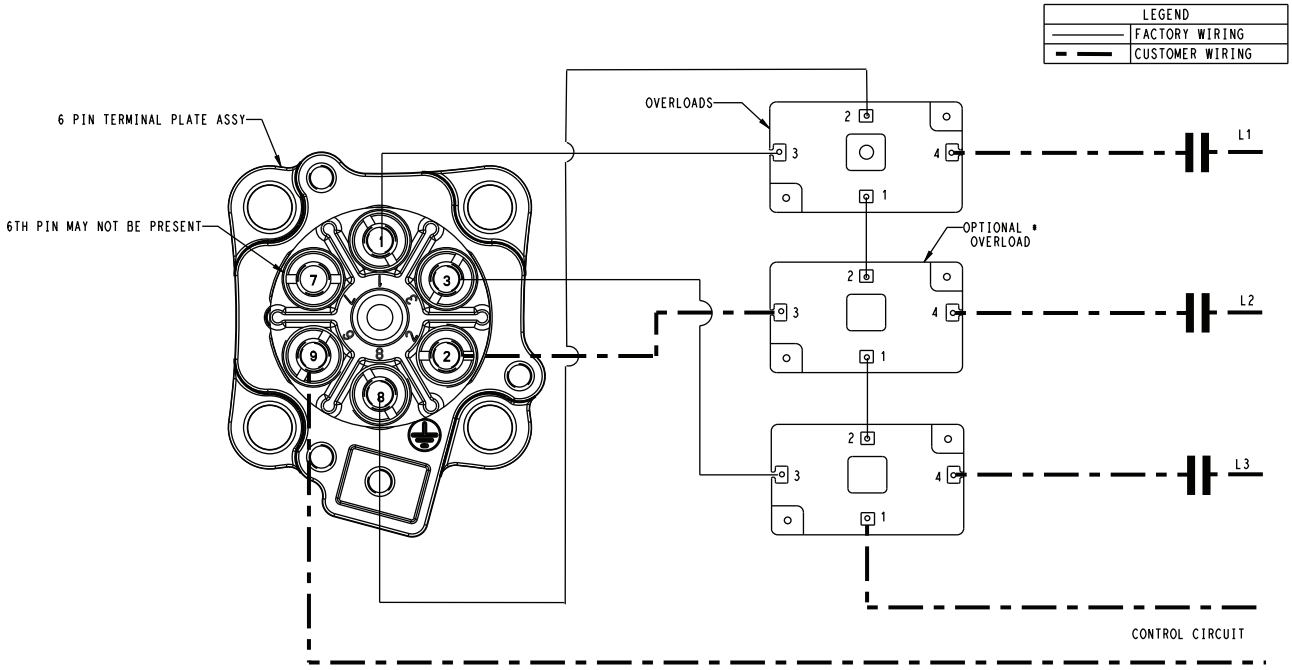


Fig. 10 — Service Hybrid Overload Wiring — 5-Pin Plate Assembly or 6-Pin Plate Assembly for Universal Compressor

Bi-Metal Overload Wiring — 5-Pin Plate Assembly or 6-Pin Plate Assembly for Universal Compressor

1. Connect one control circuit lead to the empty side tab #1 terminal location of the bottom overload (as shown in Fig. 11) using a push-on quick-connect wire terminal.
2. Connect 2 power leads from L1 and L3 to the #4 terminal location of the 2 overloads as shown in Fig. 11. For compressor models 06DR337, DM337, and DA328 for 208/230-v units, connect power lead from L2 to the #4 terminal location of the third overload as shown in Fig. 11. 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.
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 one screw and one external-tooth lockwasher per connection. Assemble the parts in the order shown in Fig. 12. Torque the terminal screws to 20 lb-in. (2.3 N•m) maximum.
4. Once all connections to overloads are made, make remaining connections to terminal plate as shown in Fig. 11. (Terminal pin 7 is not used but may be present on 6-pin assembly.) Refer to Terminal Plate Wiring section for connection details.



*Compressor models 06DR337, DM337, and DA328 for 208/230-v units only.

Fig. 11 — Bi-Metal Overload Wiring — 5-Pin Plate Assembly or 6-Pin Plate Assembly for Universal Compressor

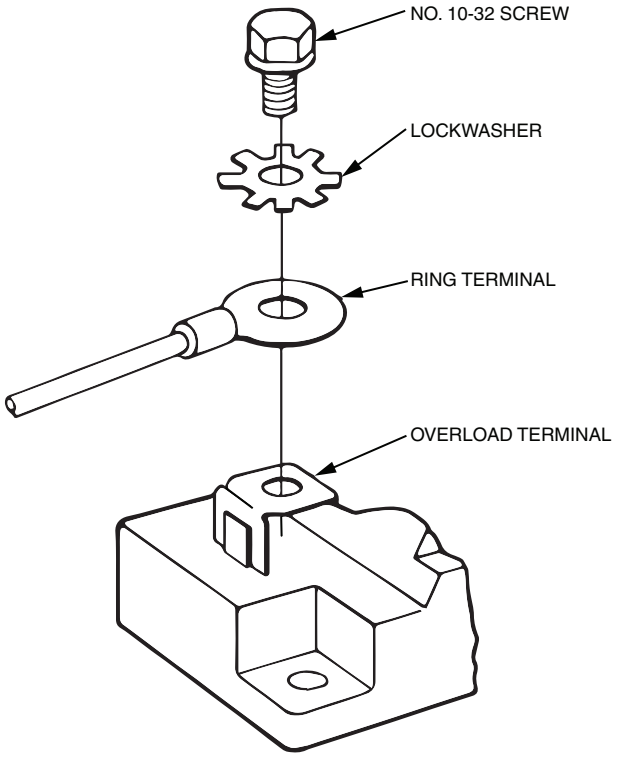


Fig. 12 — Assembly Order for Overload Terminal Connections

Bi-Metal Overload Wiring — 6-Pin Plate Assembly for Part-Wind Compressor (B or D in digit 10 of the Manufacturing Model Number)

1. Connect one control circuit lead to the empty side tab #1 terminal location of the bottom overload, as shown in Fig. 13, using a push-on quick-connect wire terminal.
2. Connect 6 power leads (from L1, L2, L3 and L7, L8, and L9) to the #4 terminal location of the overloads as shown in Fig. 13. 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.
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 one screw and one external-tooth lockwasher per connection. Assemble the parts in the order shown in Fig. 12. Torque terminal screws to 20 lb-in. (2.3 N•m) maximum.

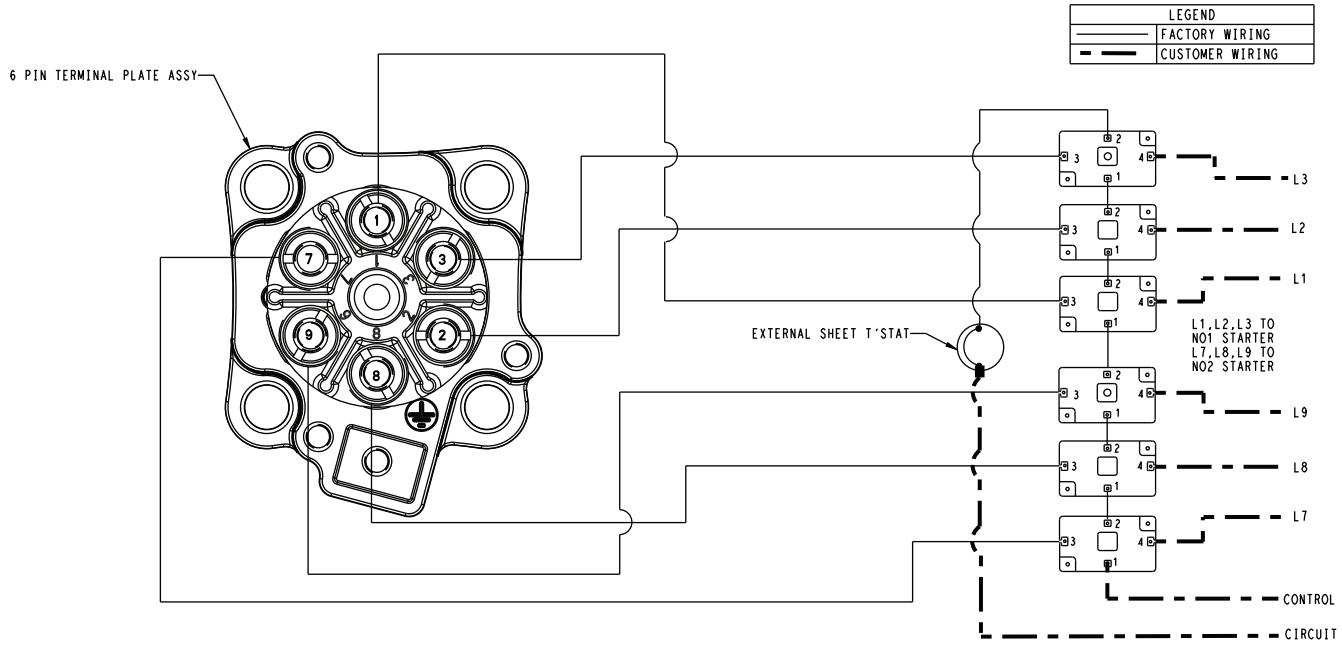


Fig. 13 — Bi-Metal Overload Wiring — 6-Pin Plate Assembly for Part-Wind Compressor

Terminal Plate Wiring

1. Field-supplied ring terminals are required to accommodate the $^1/_4$-in. -28 terminal studs.
2. With screwdriver, remove terminal nut and star washer only on terminals needed to make connections applicable to installed overload system. Leave dished retainer in place. See Fig. 14.
3. Apply all applicable power and control circuit leads to the terminal studs per associated overload wiring diagram. Reassemble star washers and extended slotted terminal nuts. See Fig. 14.
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 pressure safety switch. The use of an oil pressure safety switch can help prevent compressor failures when loss of lubrication or loss of compressor oil charge occurs. The use of an oil pressure safety switch is required as a condition of warranty for 06D compressors 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 Fig. 1 through 4 for oil pressure safety switch connections.
2. Normal net oil pressure for 06D compressors is 18 to 34 psi (1.2 to 2.3 bar) above suction pressure. Net oil pressure may vary depending on the lubricant type applied and operating conditions. Select a switch to close the control circuit (at start-up) at a maximum of 12 psi (0.83 bar) and open the control circuit at a minimum of 5 psi (0.35 bar). A time delay of not less than 30 seconds nor more than 120 seconds is required for start-up purposes. The switch must also be manually reset when it trips.
3. Table 3 shows the oil pressure safety switches that have been approved by Carlyle.

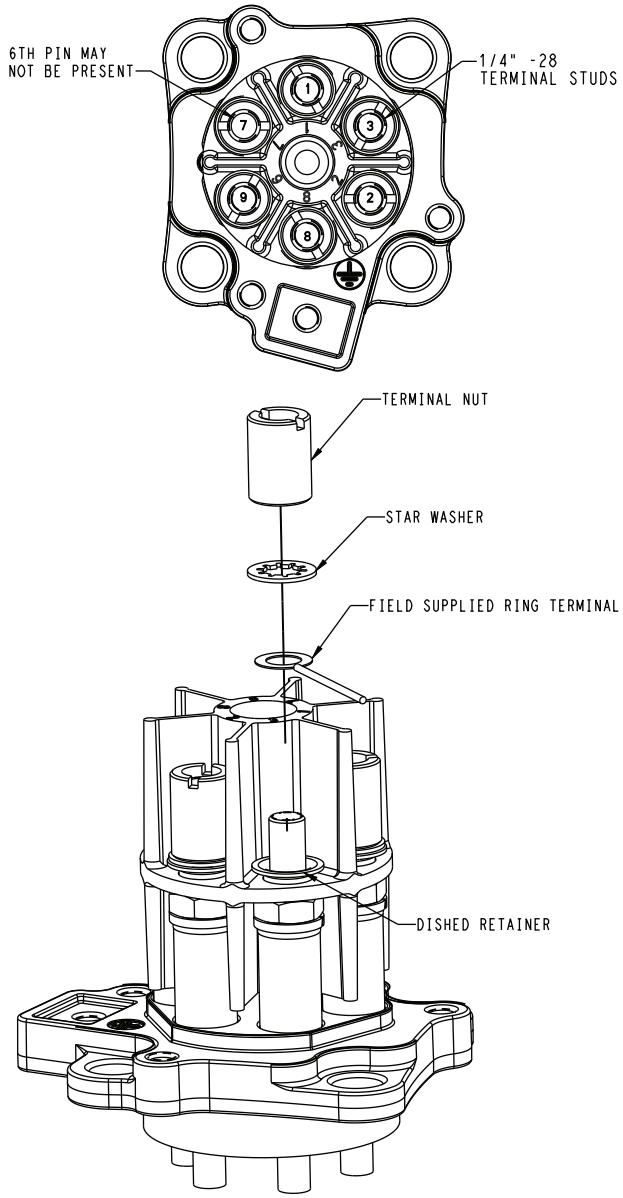


Fig. 14 — Terminal Plate Wiring Connections

COOLING FANS

Cylinder head cooling fans are recommended for most applications that have saturated suction temperatures below 0° F. Visit www.carlylecompressor.com for head cooling fan recommendations specific to the refrigerant type and operating conditions of your application.

Table 3 — Oil Pressure Safety Switches

CARLYLE PART NO.	TIME DELAY	CONNECTIONS	PRESSURE DIFFERENTIAL — psi (bar)		VOLTS 60 Hz	RESET	REMOTE ALARM CIRCUIT CAPABILITY
			Cut-in	Cut-out			
06DA660170	45 sec	Electronic	8-11 (0.55-0.76)	4-8 (0.28-0.55)	115/230	Manual	Yes
P529-2430	120 sec	1/4 in. Male Flares					
P529-2410		36 in. Lg. Cap. Tube 1/4 in. SAE Nuts					

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

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