

Improved 05T Open Drive And 06T Semi-Hermetic Screw Compressors

This month, Carlyle Compressor Company will phase in redesigned screw compressor housings. The new housings are a more compact, cleaner design. The new design mounting footprints are the same as the original compressors. Some of the compressor connection points had to be relocated. Each relocation is minor and should be transparent to most customers. Details on these changes are as follows.

Semi-hermetic Compressors

1. Oil Manifold

- The external oil manifold tubing was eliminated (Figure A) and replaced



Figure A

with a machined passageway within the compressor casting (Figure B). The change eliminated the inlet tee mounted on over two feet of exposed fabricated tubing, a fitting on the motor barrel, and the tee fitting at the rotors. The rotor fitting

is now an elbow fitting. These changes have reduced the overall width of the compressor.

- Damage to the external manifold either during shipment or during system assembly is eliminated.
- The mounting of required compressor accessories should be easier and faster for the OEM without the external manifold.
- The compressor still requires a single oil line connection point. The oil line that the OEM fabricates to connect to the compressor may have to be several inches longer with the new housing.
- See the service section of this bulletin for complete details on the oil manifold change. This section includes details on both OEM installation changes and on service replacement changes.

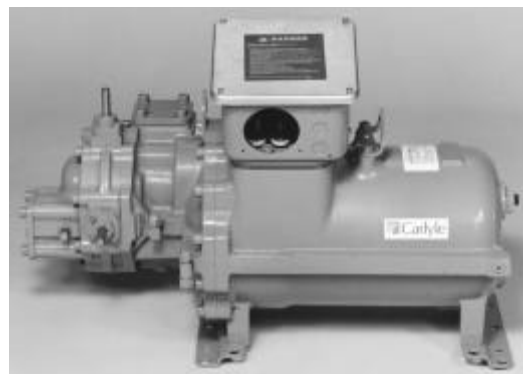


Figure B

- Every new style compressor will have a warning tag on the oil fitting to alert the installer of where to connect the oil system.
NOTE: Oil connection is the bottom of the tee fitting. See drawing Page 8.

2. Terminal Box

- The terminal box on the compressor is in the same general location. The new casting is narrower and shorter, allowing the terminal box to be mounted at a lower angle on the casting. This change reduces the overall height and width of the compressor. See Figures A and C for the original terminal box and Figures B and D for the new terminal box.



Figure C



Figure D

3. Economizer Location

- In order for Carlyle to optimize our casting production, the economizer port on the 06T compressors was relocated. The original position was at twelve o'clock (Figure C) on the motor end of the casting. The new location is between the ten and eleven o'clock position (Figure D).

- This relocation should not affect pre-cut electrical wiring. The wiring to the electrical can enter from three of its sides and the box can be rotated to allow for entry from the fourth side.

4. Other Changes

- Two lifting lug points will be standard on the new semi-hermetic casting. The original design had a single point lifting lug provision, later revised to two lifting points.
- Weight has remained same.

Open Drive Compressors

1. Oil Manifold

- The external oil manifold tubing (Figure E) has been eliminated and replaced with a machined passageway (Figure F) within the compressor casting. The change eliminated the inlet fitting mounted on an exposed fabricated tubing. Also, the tee fitting at the rotors is now an elbow fitting.

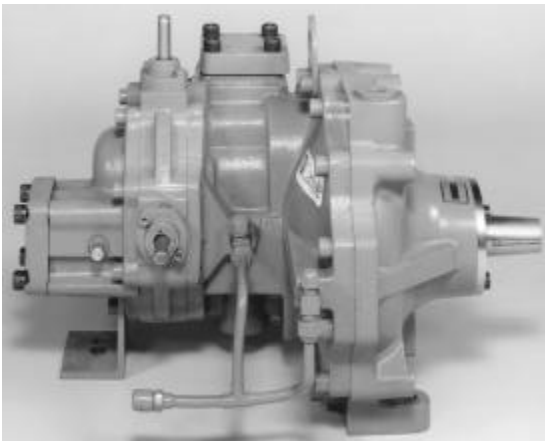


Figure E

2. Economizer Location

- The economizer port on the 05T compressors remained the same.

3. Other Changes

- Weight has remained same.

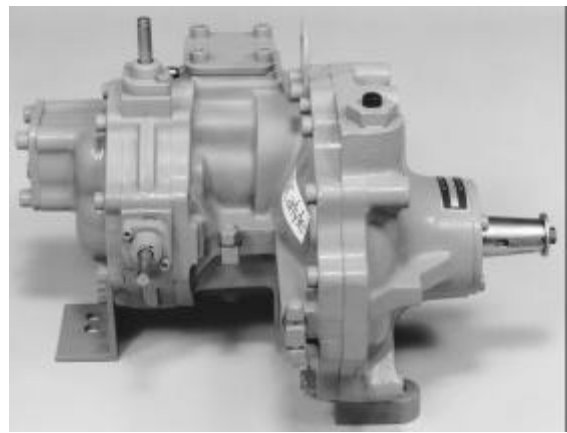


Figure F

- Damage to the external manifold either during shipment or during system assembly is eliminated.
- The mounting of required compressor accessories should be easier and faster for the OEM without the external manifold.
- The compressor still requires a single oil line connection point. The oil line that the OEM fabricates to connect to the compressor may have to be several inches longer with the new housing.
- See the service section of this bulletin for complete details on the oil manifold change. This section includes details on both OEM installation changes and on service replacement changes.

NOTE: Oil connection is the bottom of tee fitting. See drawing Page 10.

What Model Will Carlyle Ship?

Production of the new design will begin March 1997. Carlyle will no longer manufacture the older external manifold design. Customers for new compressors may still receive units with the older external manifold or a mixture of both styles due to existing inventories and/or the customers need for quick delivery.

NOTE: THERE IS NO PROBLEM IN MIXING THE TWO COMPRESSOR DESIGNS, SINCE THEY ARE BOTH FUNCTIONALLY INTERCHANGEABLE.

OEM New Compressor Installation

Information on the new style screw compressors can be found in the preceding information. Every new style compressor will have a warning tag on the oil fitting to alert the installer of where to connect the oil system.

Field Service Compressor Installation

The current screw compressors in the field and at our distributors for service backup have the external oil manifold. Shortly we will begin to supply the new internal design manifold models for OEM use and for service backup. Carlyle will no longer build the old design manifold, so a service technician may get a new internal design as a replacement for a unit that originally had an external manifold or vice versa. We are providing the following information to help with a compressor change in either situation.

-- How to replace a compressor body that has an external oil manifold with one that has an internal machined oil passageway.

The economizer line on the motor end of the housing must be relocated from the 12 o'clock position to the 10 o'clock position. The location of the electrical terminal boxes on the two different castings is similar, but is not identical. The wiring may have to enter the box on a different side than originally wired by the OEM.

There are three options on how to connect the system oil supply from the old style compressor to the new style compressor. See Figures A and B for details on semi-hermetic compressors or Figure E and F on open drive compressors. The old style Carlyle compressor has a threaded fitting on the

external oil manifold for use by the OEM in hooking up the system oil supply. Some OEM's have replaced that threaded fitting with a soldered joint. If you have an oil line without a threaded fitting, option 3 may be the simplest choice. The options are as follows:

1. The service technician will have to field fabricate a short piece of copper tubing to connect the existing oil system feed line and the compressor tee fitting on the new style body. See Figures G and H below and Pages 8 and 10 for details.

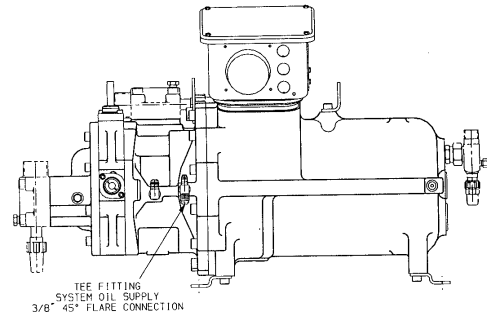


FIGURE G
NEW
INTERNALLY MANIFOLDED
06T SEMI-HERMETIC DESIGN
(MANUFACTURED STARTING MARCH 1997)

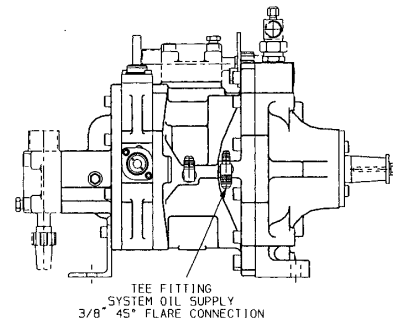


FIGURE H
NEW
INTERNALLY MANIFOLDED
05T OPEN DRIVE DESIGN
(MANUFACTURED STARTING MARCH 1997)

2. The technician can install the Carlyle designed oil adapter assembly available through the Carlyle OEM Sales Department. The adapter for semi-hermetic compressors is Figure I, P/N 0TA0967D. The adapter for open drive compressors is Figure J, P/N 0TA0968D. The adapters have threaded fittings at both ends.

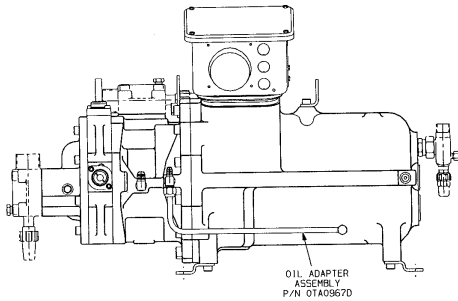


FIGURE I
NEW
INTERNALLY MANIFOLDED
05T SEMI-HERMETIC DESIGN
 (SHOWING 0TA0967D RETROFIT OIL ADAPTER)

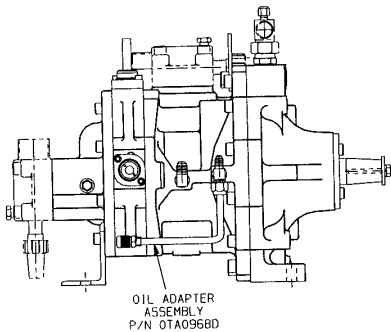


FIGURE J
NEW
INTERNALLY MANIFOLDED
05T OPEN DRIVE DESIGN
 (SHOWING 0TA0968D RETROFIT OIL ADAPTER)

3. Modify the original external oil manifold as follows:
 - For semi-hermetic compressors – cut and cap the two side branches of the manifold as noted in Figure K.

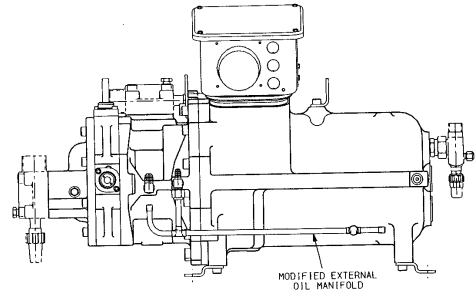


FIGURE K
NEW
INTERNALLY MANIFOLDED
05T SEMI-HERMETIC DESIGN
 (SHOWING FIELD-MODIFIED EXTERNAL OIL MANIFOLD)

- For open drive compressors – cut and cap the one side branch of the manifold as noted in Figure L.

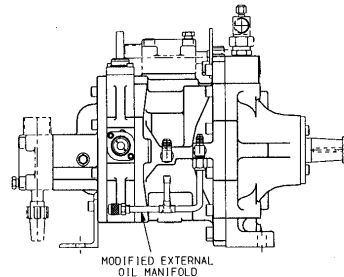


FIGURE L
NEW
INTERNALLY MANIFOLDED
05T OPEN DRIVE DESIGN
 (SHOWING FIELD-MODIFIED EXTERNAL OIL MANIFOLD)

The caps must be brazed and capable of holding at least 405 psig pressure. The cutting and brazing must be done with care, as any piece of the copper tubing or of solder material left in the system can cause serious damage to the replacement compressor.

-- How to replace a compressor body that has an internal machined oil passageway with one that has an external oil manifold.

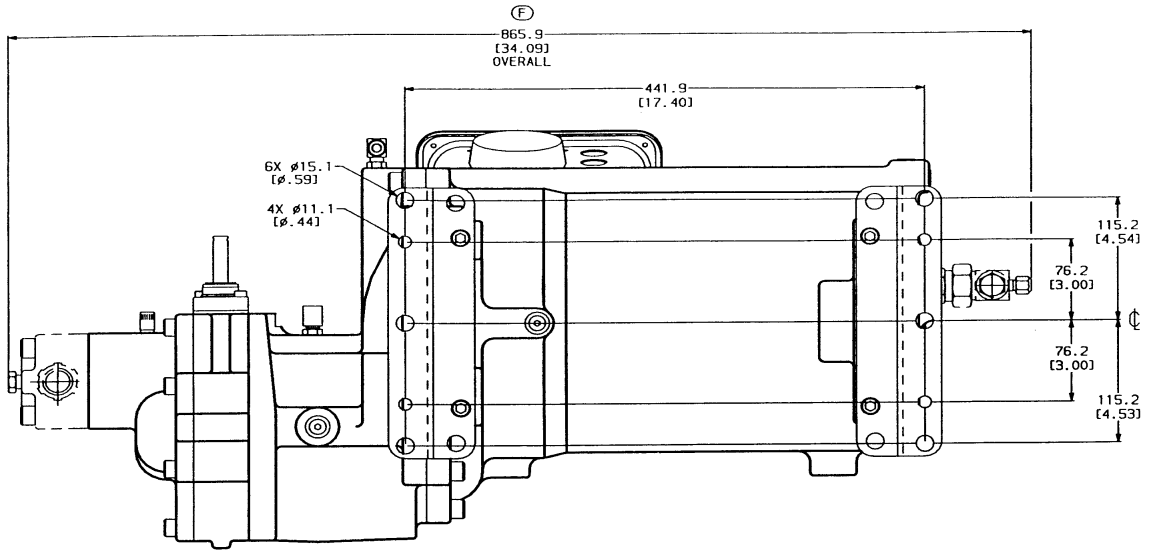
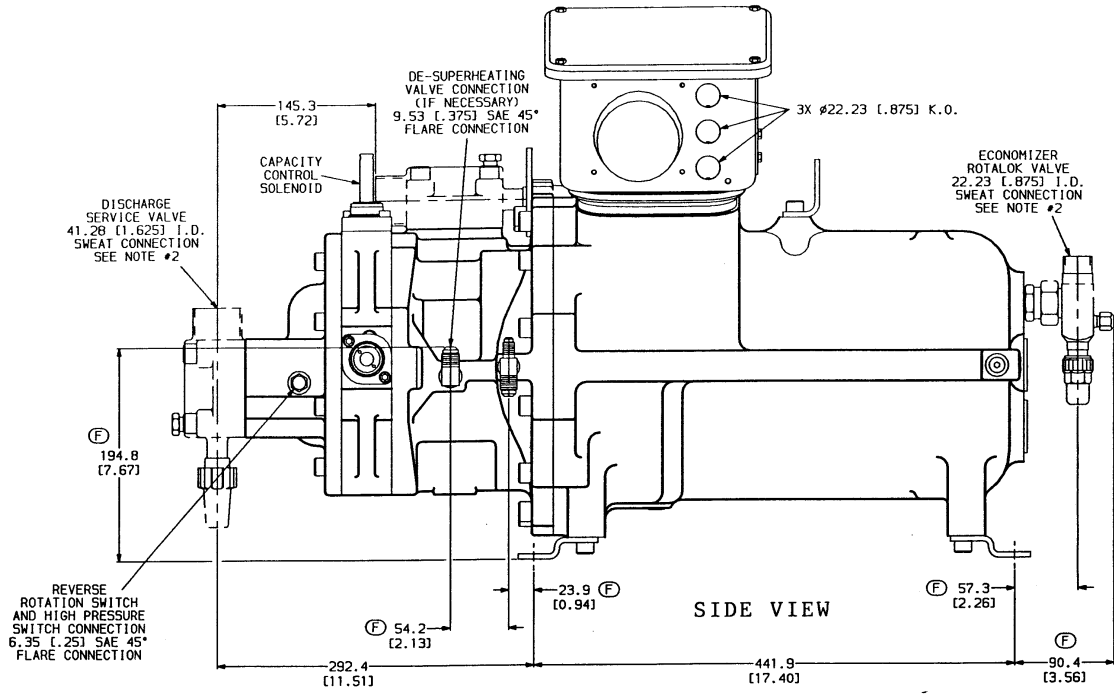
The semi-hermetic compressor economizer line on the motor end of the housing must be relocated from the 10 o'clock position to the 12 o'clock position. See Figures C and D. The location of the electrical terminal boxes on the two different castings is similar, but is not identical. The wiring may have to enter the box on a different side than originally wired by the OEM.

NOTE: ANY COMPRESSOR, NEW OR SERVICE, ORIGINALLY SUPPLIED BY CARLYLE WITH AN OIL MANIFOLD, **MUST** USE THAT MANIFOLD WHEN THAT COMPRESSOR IS INSTALLED. FAILURE TO USE THIS MANIFOLD, WHEN SUPPLIED, WILL RESULT IN COMPRESSOR FAILURE DUE TO LACK OF LUBRICATION TO ROTATING PARTS.

The original screw compressor designs have an external oil supply manifold. See Figures A. This external oil manifold has a threaded fitting for connecting up the system's oil supply. The service technician will have to field fabricate a connection between the OEM provided system oil line and the fitting on the external oil manifold.

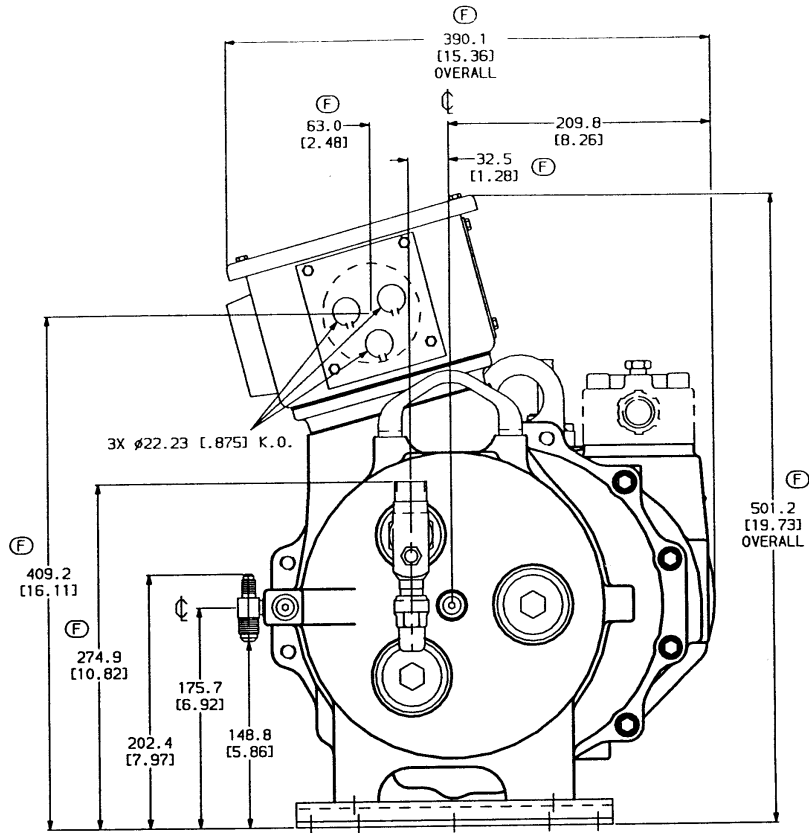
The technician can also remove this fitting and braze the system oil supply line to the external manifold in order to eliminate having a fitting in the oil line. The brazed oil line must be capable of holding at least 405 psig pressure. All cutting and brazing must be done carefully to prevent any pieces of the copper tubing or of the solder material being left in the oil line. Any particles left in the oil system can cause serious damage to the replacement screw compressor.

Please contact Carlyle Compressor Company directly if you need any additional information on these changes.

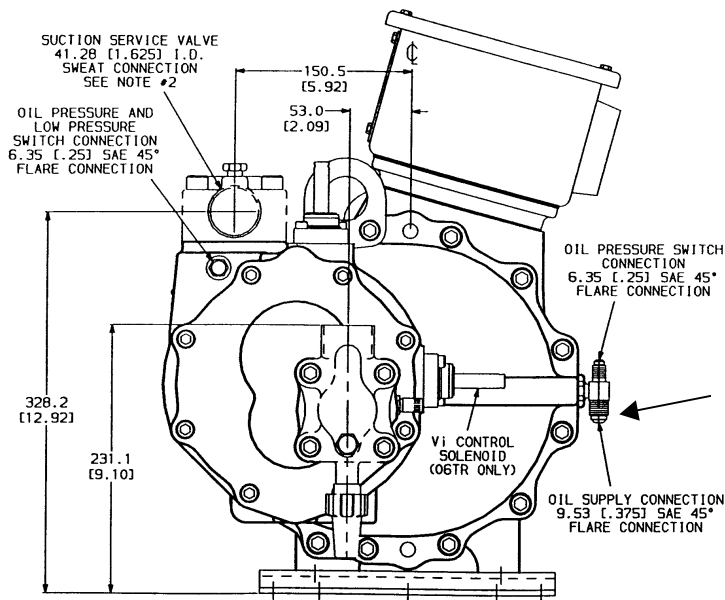


BOTTOM VIEW

NEW INTERNALLY MANIFOLDED
06T SEMI-HERMETIC DESIGN
(MANUFACTURED STARTING
MARCH 1997)



MOTOR END VIEW

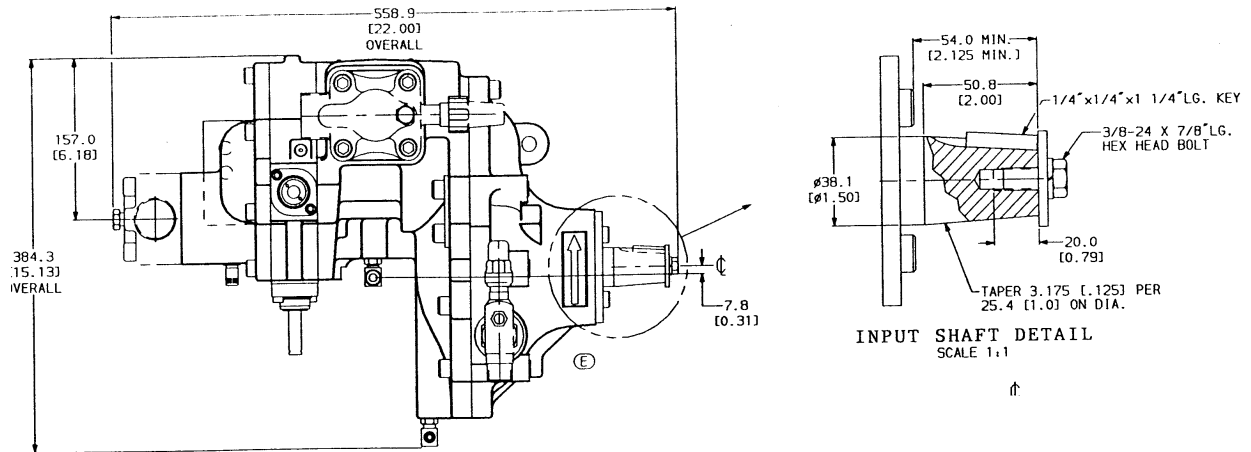


NOTE: Oil supply is to be connected bottom of the tee fitting.

COMPRESSION END VIEW

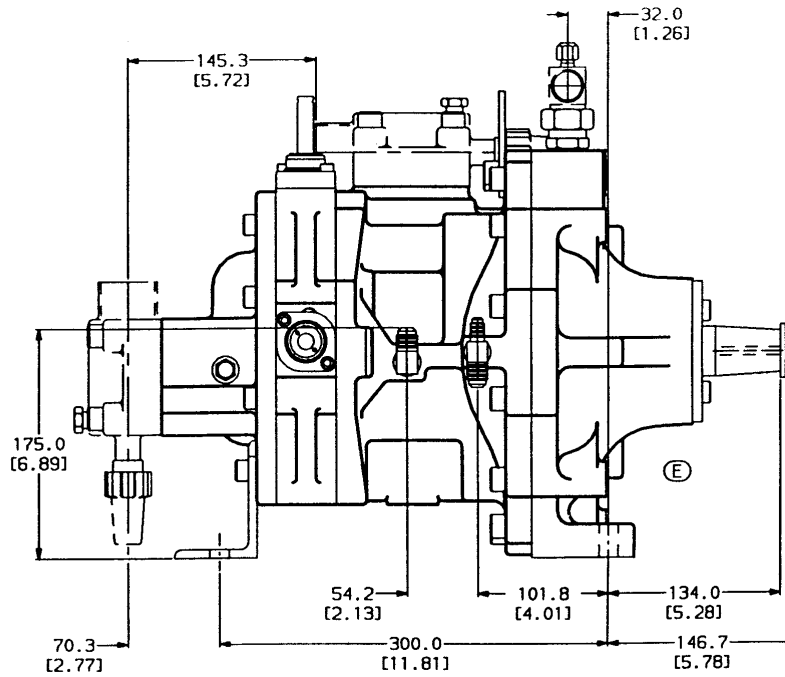
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06T SEMI-HERMETIC DESIGN
(MANUFACTURED STARTING
MARCH 1997)

Bulletin 97T-2



Notes:

1. Compressor weight is 76.7 KG (169 lbs)
2. Optional service valves are shown for clarity
3. See Application Guide for application procedures and requirements
4. Dimensions in brackets {} are in inches.



NEW INTERNALLY MANIFOLDED
 05T OPEN DRIVE DESIGN
 (MANUFACTURED STARTING
 MARCH 1997)

