TRANE

General Service Bulletin

HCOM-SB-70A

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Literature Changes:

Added oil line modification for 8 cylinder Model "E" hermetic compressors.

SUBJECT: MODEL "E" COMPRESSOR PARTS INTERCHANGEABILITY

INTRODUCTION:

This service bulletin discusses design changes to the Model "E" Semi-Hermetic and Open Compressors and the effects on parts interchangeability.

DISCUSSION:

The Model "E" compression rings have been changed to a design with a tapered face, which allows them to seat faster. The tapered face piston rings are completely interchangeable with flat face rings. The tapered rings must be installed properly. Refer to Figures 1 and 2 for proper installation.

The piston itself has also been changed from an elliptical shape to a round shape, and the oil ring has been removed. The elliptical and round pistons are completely interchangeable. The tapered piston rings must be used with the round, two ring pistons. Piston ring set RNG-77 has been changed to include one tapered compression ring, one scraper compression ring and one oil ring, so that the set can be used for three ring or two ring pistons.

The compressor crankshaft has been redesigned to eliminate oil passages that go all the way through the connecting rod journals. Additional crankshaft venting has also been added. See Figure 3. The crankshafts are completely interchangeable.

Figure 1
Replacement Piston
Ring Set (RNG-77)
for 2-Ring Pistons

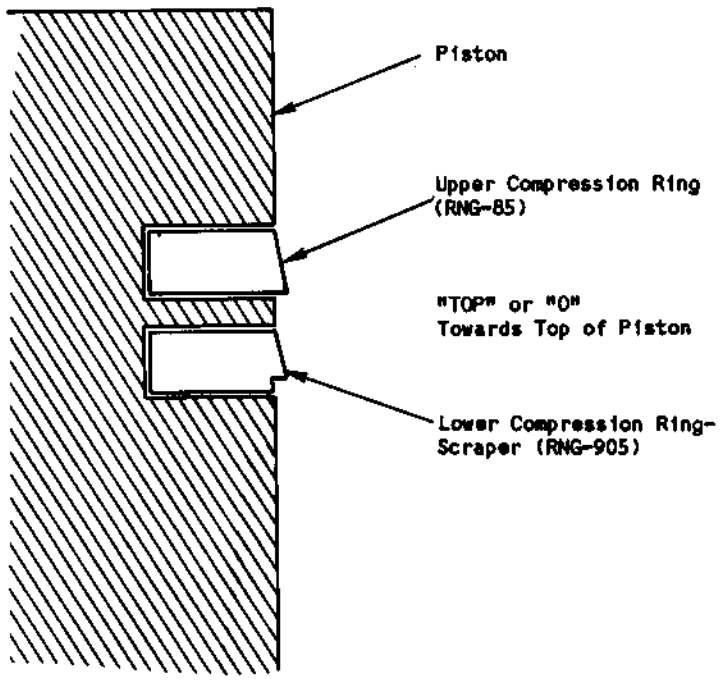


Figure 2
Replacement Piston
Ring Set (RNG-77)
for 3-Ring Pistons

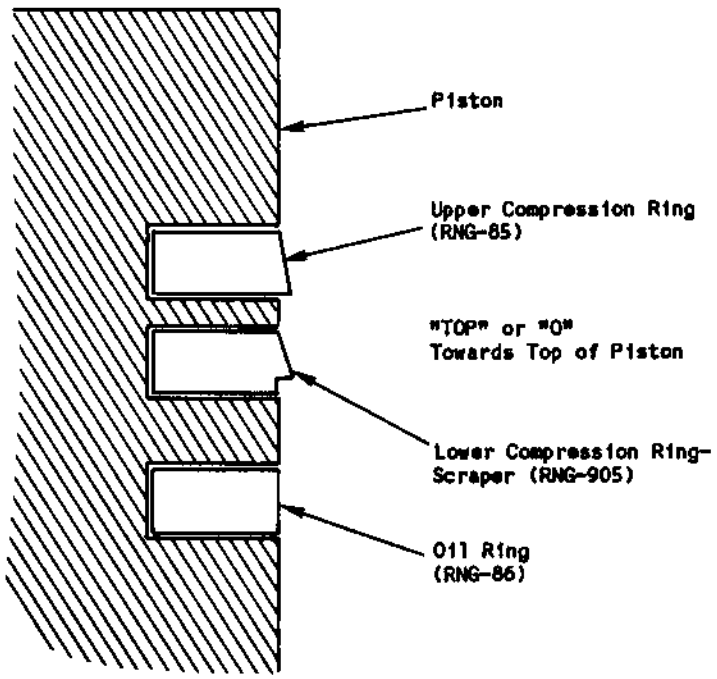
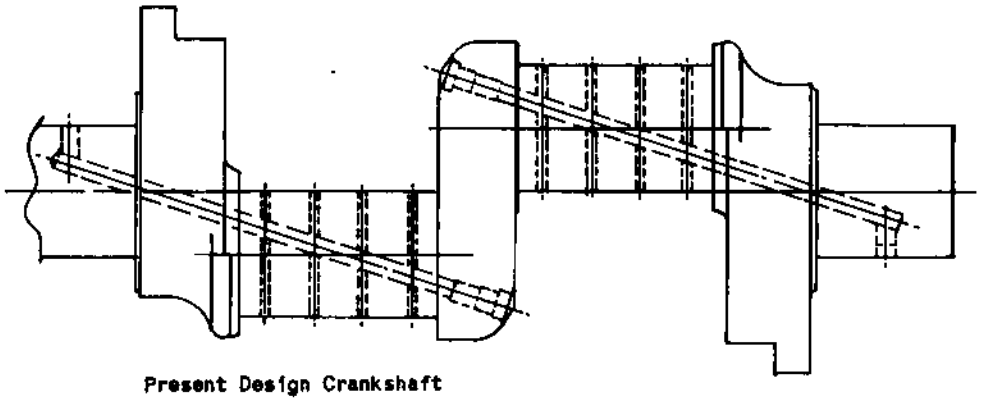
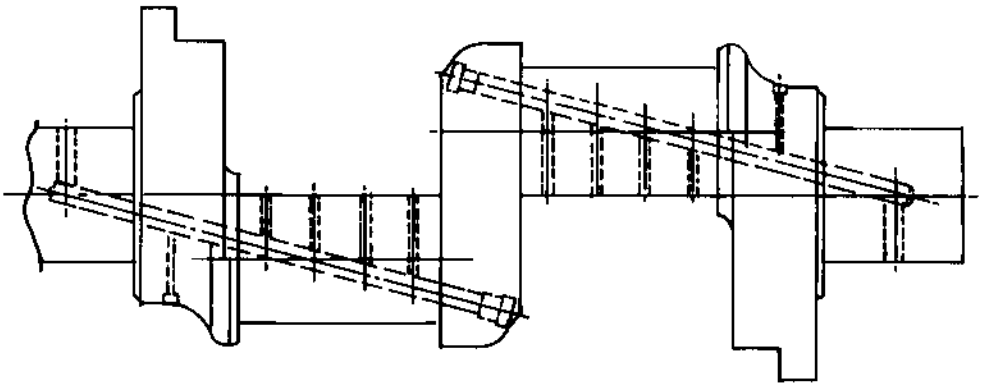


Figure 3
Redesigned Crankshaft for Model "E"
Open and Hermetic Compressors
(4 - 8 Cylinder)



Present Design Crankshaft



Redesigned Crankshaft

The connecting rod split line relief has been removed. Connecting rods without the split line relief can be used on both design crankshafts.

The oil strainer has been changed from a flat retangular design to a round design. The round oil strainer is a direct replacement for the flat rectangular oil strainer. The round strainer will be located to the side of the compressor crankcase and connects to the existing compression fitting in the compressor housing. The oil strainer spring is not required for the round strainer, but will be available for earlier style strainers, if required.

Due to crankcase modifications, venting system changes have been made to the oil return standpipe and the motor end bearing head. The standpipe has been relocated, and the size of the opening has been increased from 1/4 inch to 3/8 inch diameter. See Figure 4.

The crankcase venting has been moved from between cylinders 1 and 2, and 7 and 8 to the centerlines of cylinders 2 and 8. The orifices have also been removed. As part of the venting changes, the check valves and foam breaker have been removed from the bearing head assembly. The check valves have been replaced with 1/8 inch hex pipe plugs. The foam breaker and check valves must be retained when the original venting and 1/4 inch standpipe is used. The bearing head (part number BRG-84) will continue to ship without foam breakers, check valves and pipe plugs, making it completely interchangeable.

Eight magnets have been added to the compressor crankcase to catch loose iron particles. These magnets should be added during a compressor rebuild. Refer to Figure 5 for the magnet mounting locations.

Table 1 summarizes Model "E" compressor parts interchangeability.

Figure 4
Standpipe and
Oil Strainer
Locations

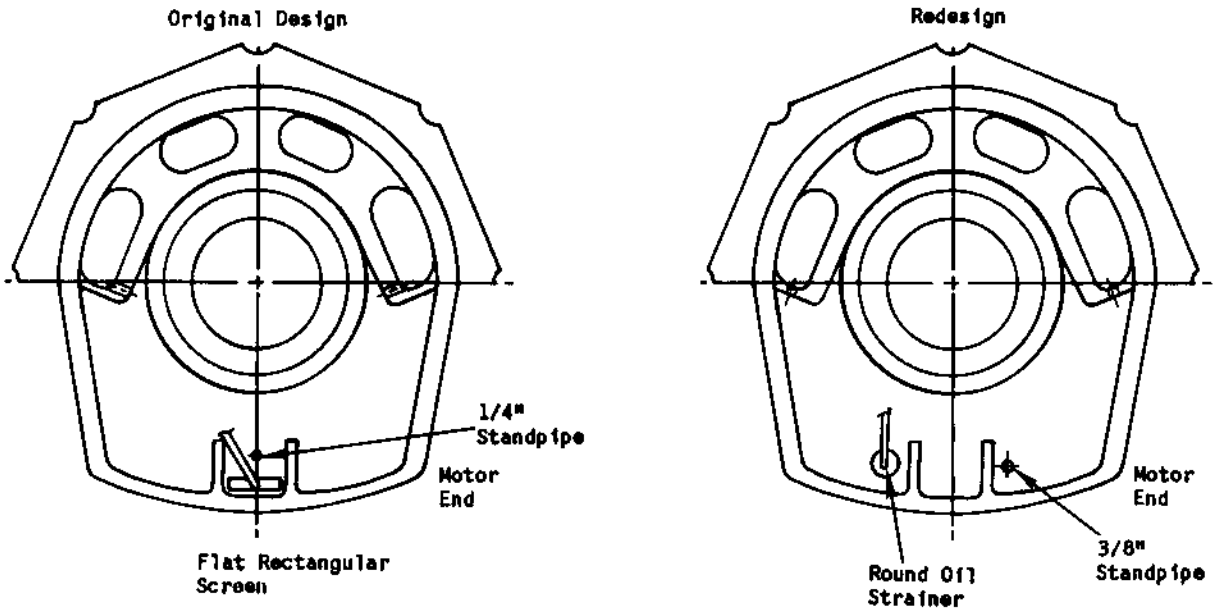


Figure 5
Magnet Mounting
Locations

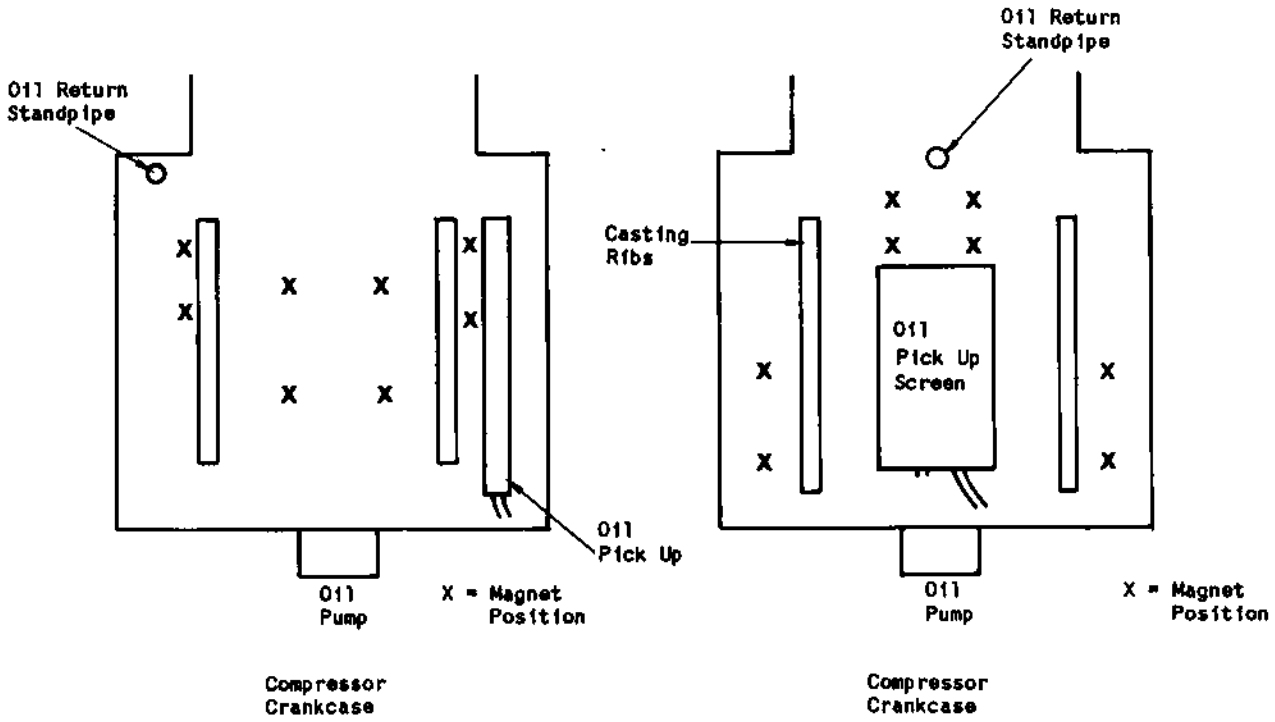


Table 1
Model "E" Compressor
Parts Interchangeability

Part Name	Part Number	Orig. Design	Redesign	Interchangeable
Compression Rings	RNG-85	Flat Face	Tapered Face	Yes (1)
Piston Ring Set	RNG-77	2-Flat Face Rings 1-Oil Ring	1-Taper Face 1-Oil Ring 1-Scraper	Yes (2)
Piston Assy.	PST-17	Elliptical Piston and Rod	Round Piston and Rod	Yes
Piston	PST-18	Elliptical, 3-Ring	Round, 2-Ring	Yes
Connecting Rod	ROD-34	Split Line Relief	No Relief	Yes
Oil Strainer	SRA-33	Flat, Rectangular	Round	Yes (3)
	SRN-8	Flat, Rectangular	Round	Yes (3)
Crankshaft	CSF-12 CSF-13 CSF-14 CSF-15 CSF-28 CSF-29 CSF-30 CSF-31	Oil Feed Holes in Journal Drilled Through	Oil Feed Holes in Journal Not Drilled Through & Venting Added	Yes
Standpipe	ELL-125 PIP-164	1/4" Dia.		No
Standpipe	ELL-157 PIP-244		3/8" Dia.	No
Magnets	MAG-2	None	8 Added to Crankcase	Yes (4)
Bearing Head	BRG-84	Foam Breaker and Check Valves	No Foam Breaker or Check Valves	Yes (5)

Notes:

1. Piston rings must be installed with the "TOP" or "O" up. Instructions ship with the piston rings.
2. The 2-ring pistons must use one each of the tapered upper and lower (scraper) compression rings only.
3. The oil strainer hold down retaining spring (SPG-30) is no longer required with the round strainer, but will be available for earlier style strainers, if required.
4. Magnets are a recommended addition when the compressor is rebuilt.
5. The redesigned compressor housing (larger standpipe and improved venting) does not affect the bearing head assembly.

These changes will occur to production compressors as present inventories of parts are depleted. The order of which these changes will take place is as follows:

1. Round pistons and tapered compression rings.

2. Larger standpipe and improved crankcase venting, and round oil pick-up screen.

3. Crankshaft and connecting rods.

The unit parts lists will be updated to reflect compressor design sequence changes and parts applicability.

Note: New material may be used in combination with existing field inventory. Old and new designs are directly interchangeable.

Oil Line Modification (8 Cylinder Model "E" Hermetics Only)

On 8 cylinder Model "E" hermetic compressors with oil lines as shown in Figure 6, it is recommended that oil line number 7 be modified to obtain proper oil pressure at the handhole cover. This oil line can be removed and updated to the current oil line as shown in Figure 7. Oil line kit number KIT-142 is required.

An alternative modification is shown in Figure 8. This modification changes the oil supply to the handhole cover from the motor end main bearing to the pump end main bearing.

Figure 6
Model "E" 8 Cylinder Hermetic Compressor -
Original Location of Oil Line Number 7

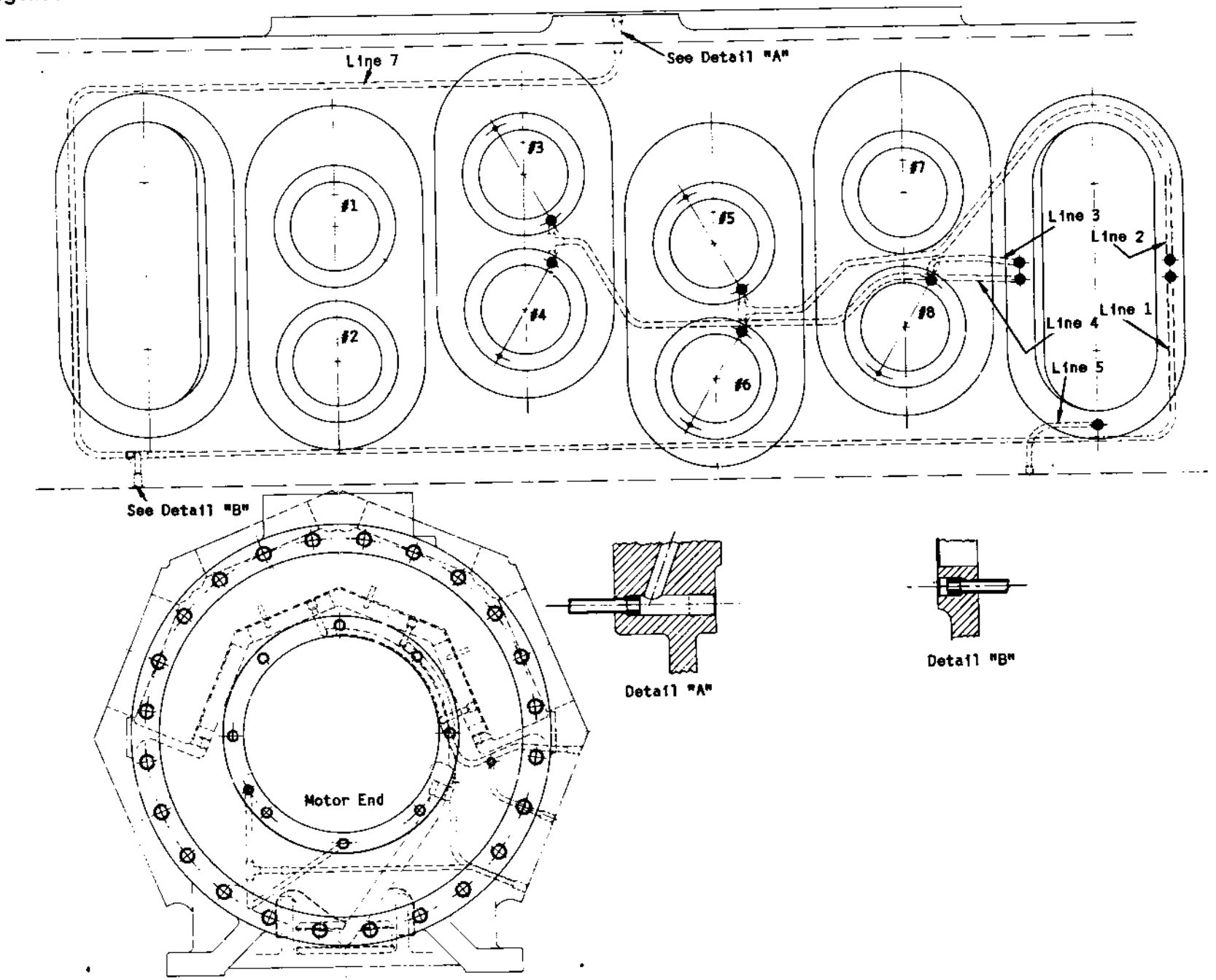
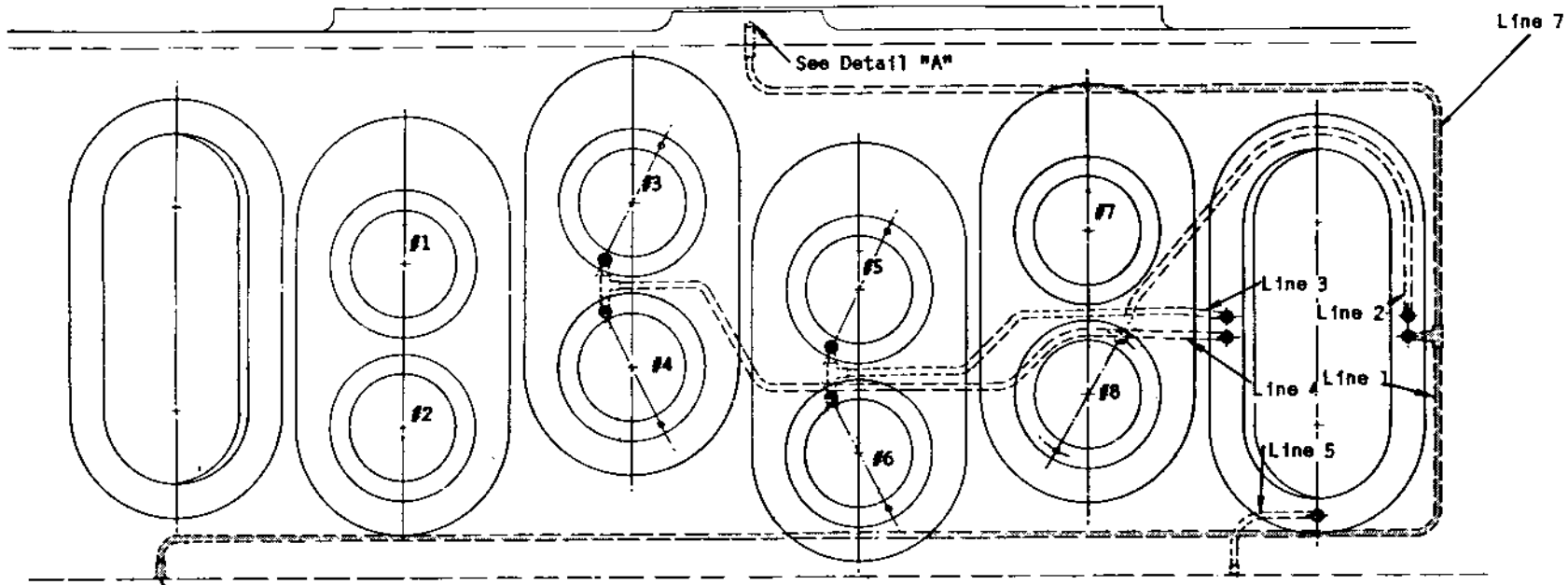
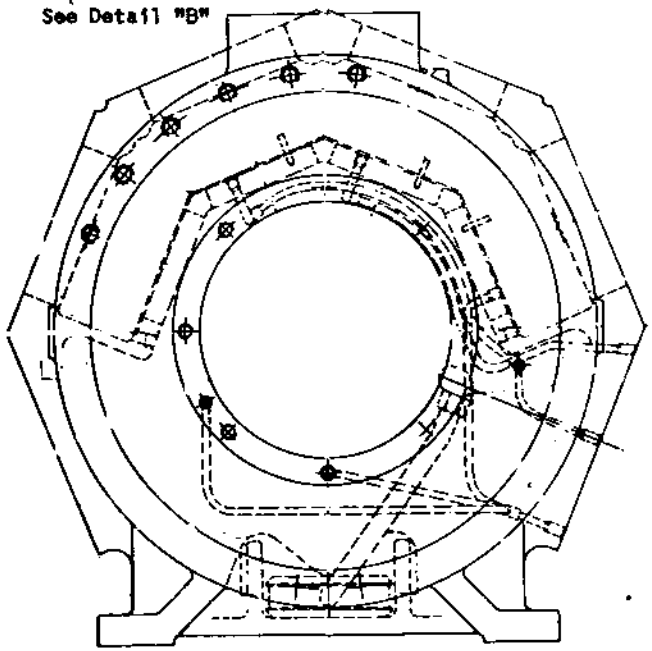
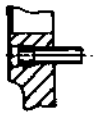
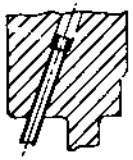


Figure 7
Model "E" 8 Cylinder Hermetic Compressor -
New Location of Oil Line Number 7





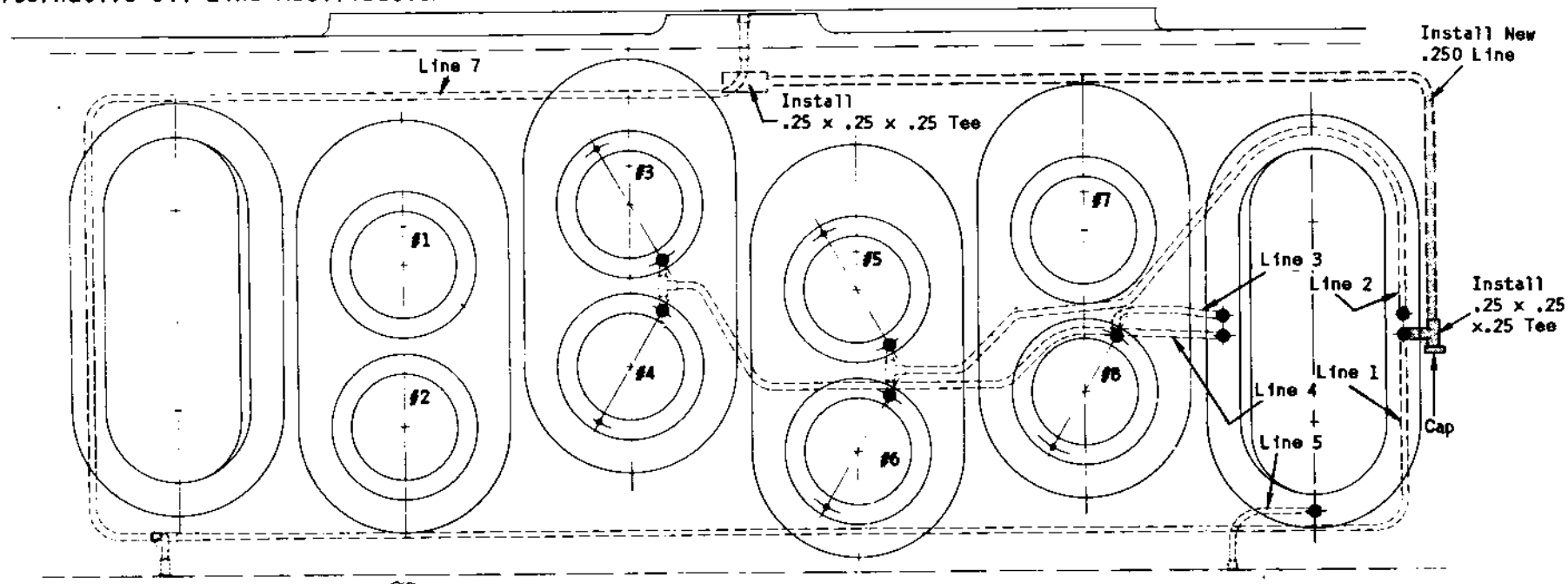


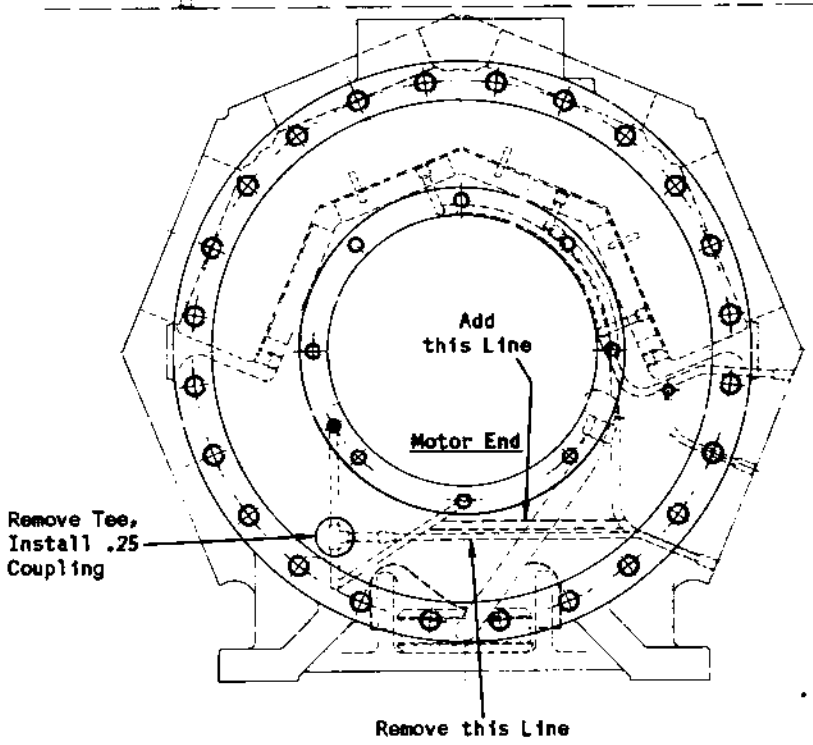


Notes:

1. All tubing must be cut with a saw only, to avoid work hardening.
2. All tube lines must clear handhole opening open area.

Figure 8
Alternative Oil Line Modification





Notes:

1. All tubing must be cut with a saw only, to avoid work hardening.
2. All tube lines must clear handhole opening open area.

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