



GENERAL SERVICE BULLETIN

LIBRARY	Service Literature
PRODUCT SECTION	Refrigeration
PRODUCT	Compressor-Condensing Units
MODEL	HCOM
LITERATURE TYPE	General Service Bulletin
SEQUENCE	44A
DATE	10/21/83
FILE NO	SV-RF-COM-HCOM-SB-44A-1083
SUPERSEDES	HCOM-SB-44 781

ORDERING NUMBER **HCOM-SB-44A**

Since the Trane Company has a policy of continuous product improvement, it reserves the right to change specifications and design without notice. The installation and servicing of the equipment referred to in this booklet should be done by qualified, experienced technicians.

SUBJECT: RECIPROCATING HERMETIC AND OPEN COMPRESSORS - OIL LINE REPLACEMENT

INTRODUCTION:

This Service Bulletin provides instructions for the replacement of internal lines on Model "A", "B", "E" and "F" hermetic and open compressors. This bulletin also provides guidelines for building the tools required to perform oil line replacement for these compressors.

DISCUSSION:

When a reciprocating compressor experiences a severe mechanical failure, it may be necessary to repair or replace the internal oil lines.

Use the following procedure when replacing oil lines:

1. Form the tubing.
 - a. Form the new tubing according to the Figure provided for each compressor.
 - b. Cut all tubing with a saw to avoid hardening.
2. Install the tubing.
 - a. In some compressor models, it is necessary to install the oil lines in a definite sequence. Refer to the piping diagrams for the proper sequence of installation.
 - b. Insert the formed lines into the proper holes in the housing and extend them approximately 1/8-inch beyond the point where the 45 degree bevel starts as shown in Figure 1.
 - c. Keep all tubing away from moving parts.
 - d. Be sure all lines will clear the capacity control actuator when the hand-hole cover is installed.
3. Preflare the tubing.
 - a. Select the correct size preflaring tool from Table 1.
 - b. Insert the preflaring tool into the tubing and, with a rotary motion of the tool, expand the tubing enough to prevent it from being driven out of the housing during the actual flaring operation. See Figure 2.

4. Finish flare the tubing.

- a. Select the correct size finish flaring tool from Table 1.
- b. Drive the tool into the preflared tubing to form a 45 degree flare of the tubing against the housing body. See Figure 3.

5. Install the bushings.

- a. Select the correct tool for installing the bushings from Table 1.
- b. Insert the bushing into the housing or place it on the end of the tool and seat it against the flared tubing by driving it with the tool. See Figure 4.

TABLE 1 - Tool Selection Table

	OPERATION	TOOL NUMBER	
		OPEN	HERMETIC
UNLOADER CONNECTION	PREFLARE FINISH FLARE INSTALL BUSHING	17 7 1	17 7 1
1/8" O.D. TUBE	PREFLARE FINISH FLARE INSTALL BUSHING	15 9 3	15 and 16 9 and 10 3 and 4
3/16" O.D. TUBE	PREFLARE FINISH FLARE INSTALL BUSHING	17 8 2	17 8 2
1/4" O.D. TUBE	PREFLARE FINISH FLARE INSTALL BUSHING	17 11 5	17 and 18 11 and 12 5 and 6

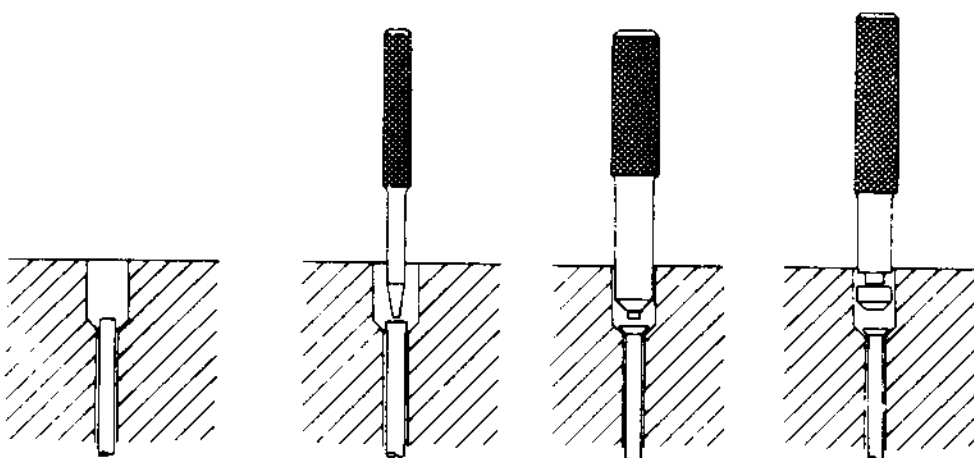


FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

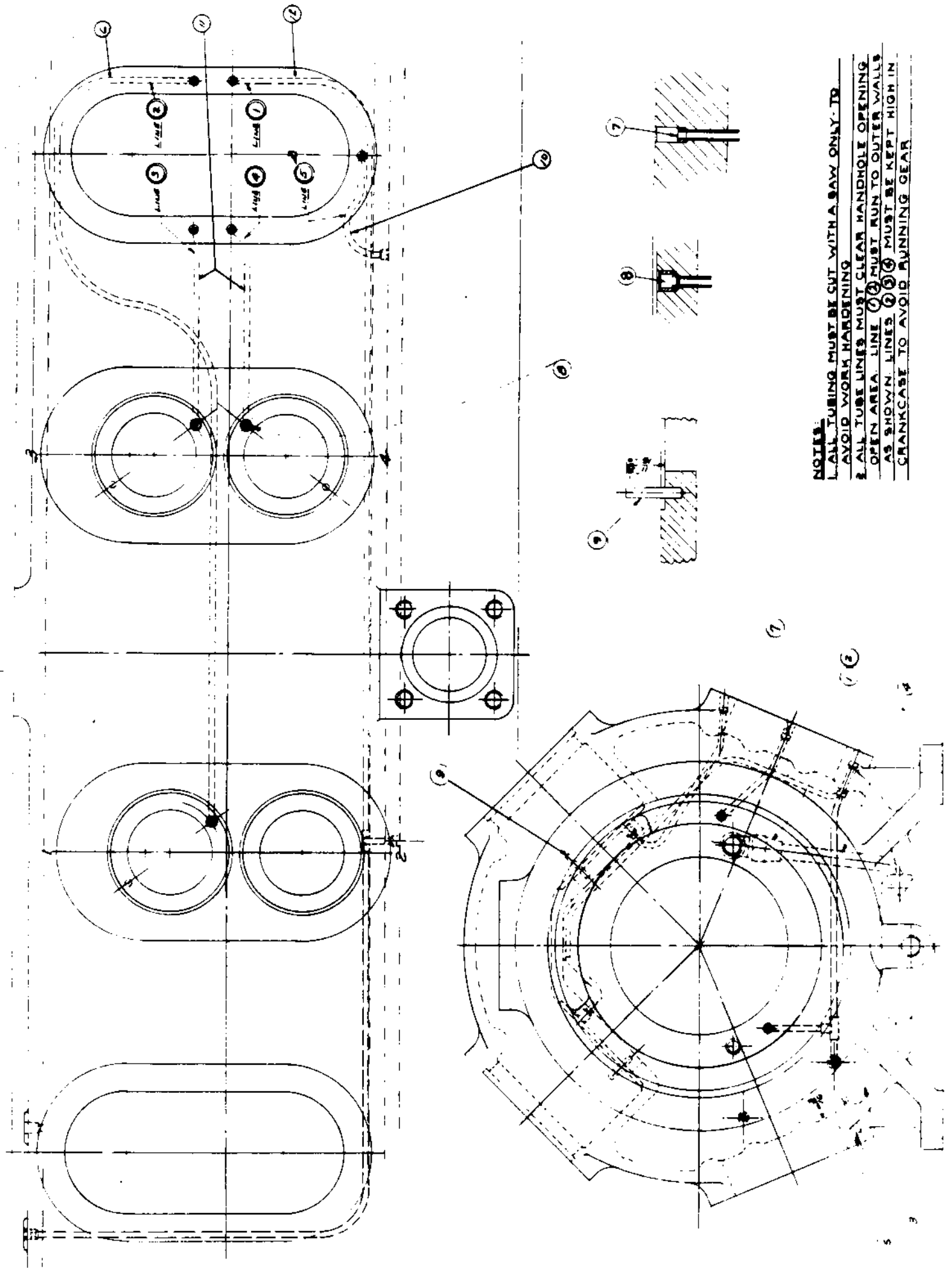
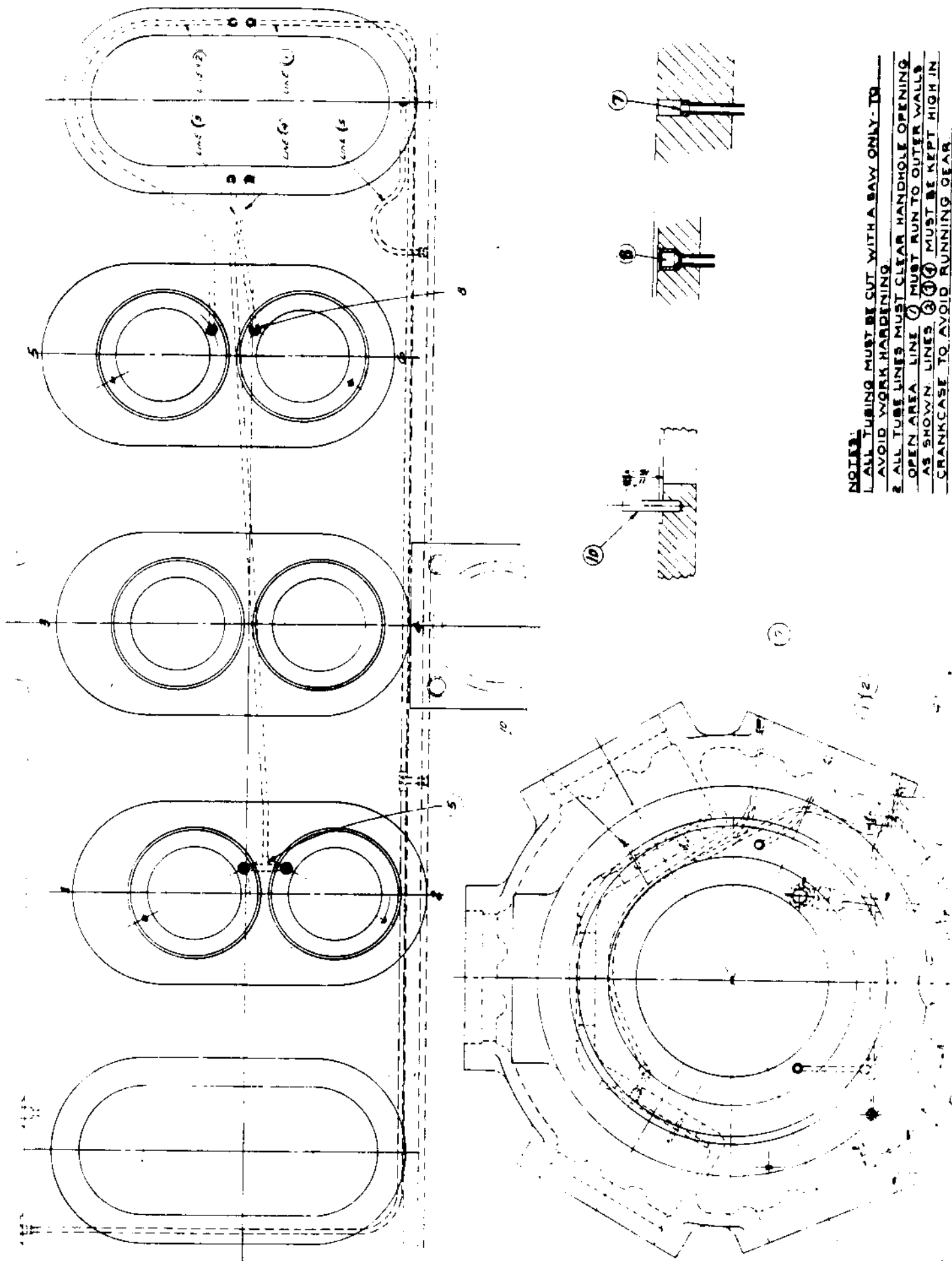
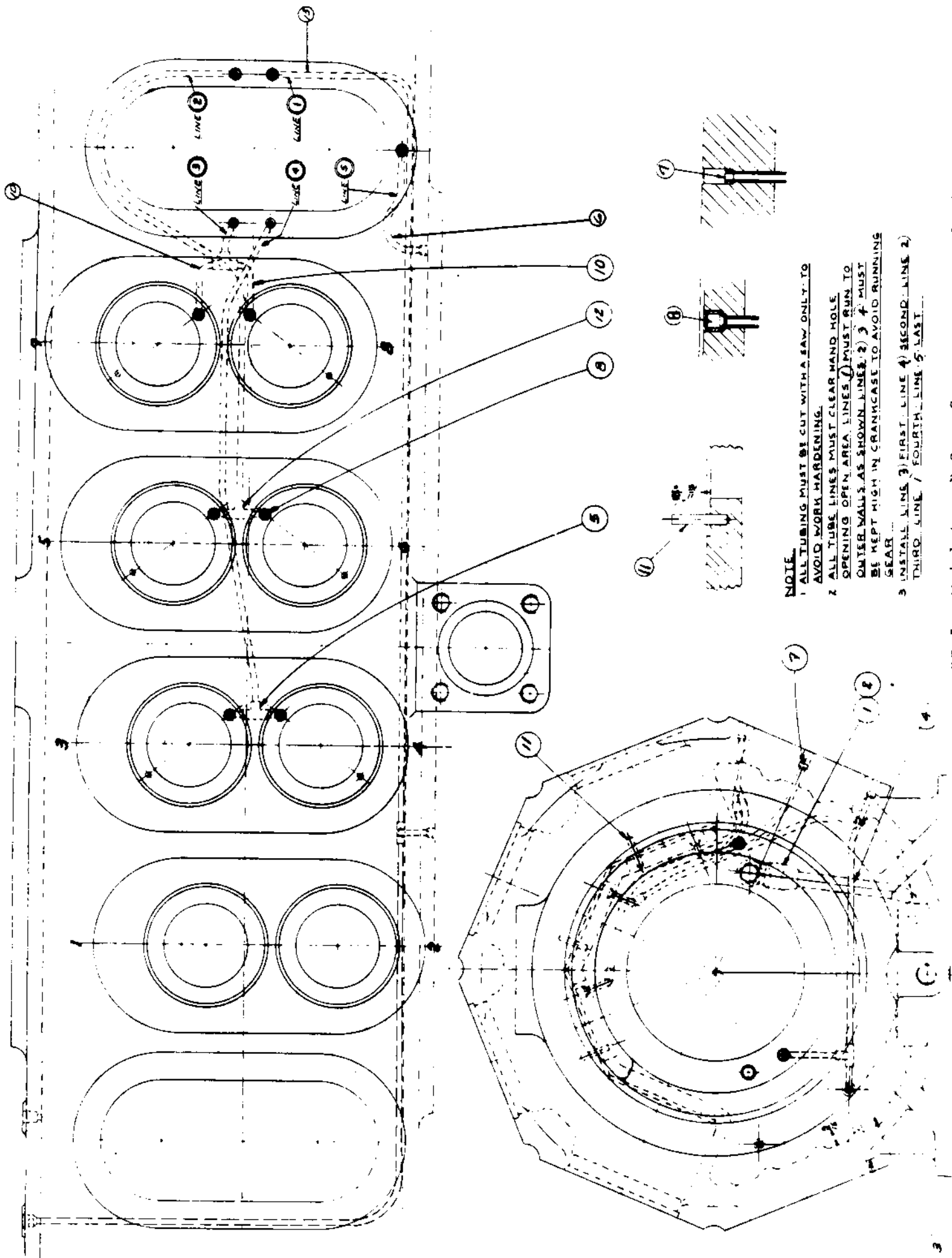


FIGURE 5 - Model A or B Open Compressor - 4 Cylinder



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. LINE (1) MUST RUN TO OUTER WALLS AS SHOWN. LINES (3), (4) MUST BE KEPT HIGH IN CRANKCASE TO AVOID RUNNING GEAR.

FIGURE - Model A or B Open Compressor - 6 Cylinder



NOTE
 1 ALL TUBING MUST BE CUT WITH A SAW ONLY TO AVOID WORK HARDENING.
 2 ALL TUBE LINES MUST CLEAR HAND HOLE OPENING OPEN AREA. LINES 1 MUST RUN TO OUTER WALLS AS SHOWN LINES 2, 3 & 4 MUST BE KEPT HIGH IN CRANKCASE TO AVOID RUNNING GEAR.
 3 INSTALL LINE 3 FIRST, LINE 4 SECOND, LINE 2 THIRD, LINE 1 FOURTH, LINE 5 LAST.

FIGURE 7 - Model A or B Open Compressor - 8 Cylinder

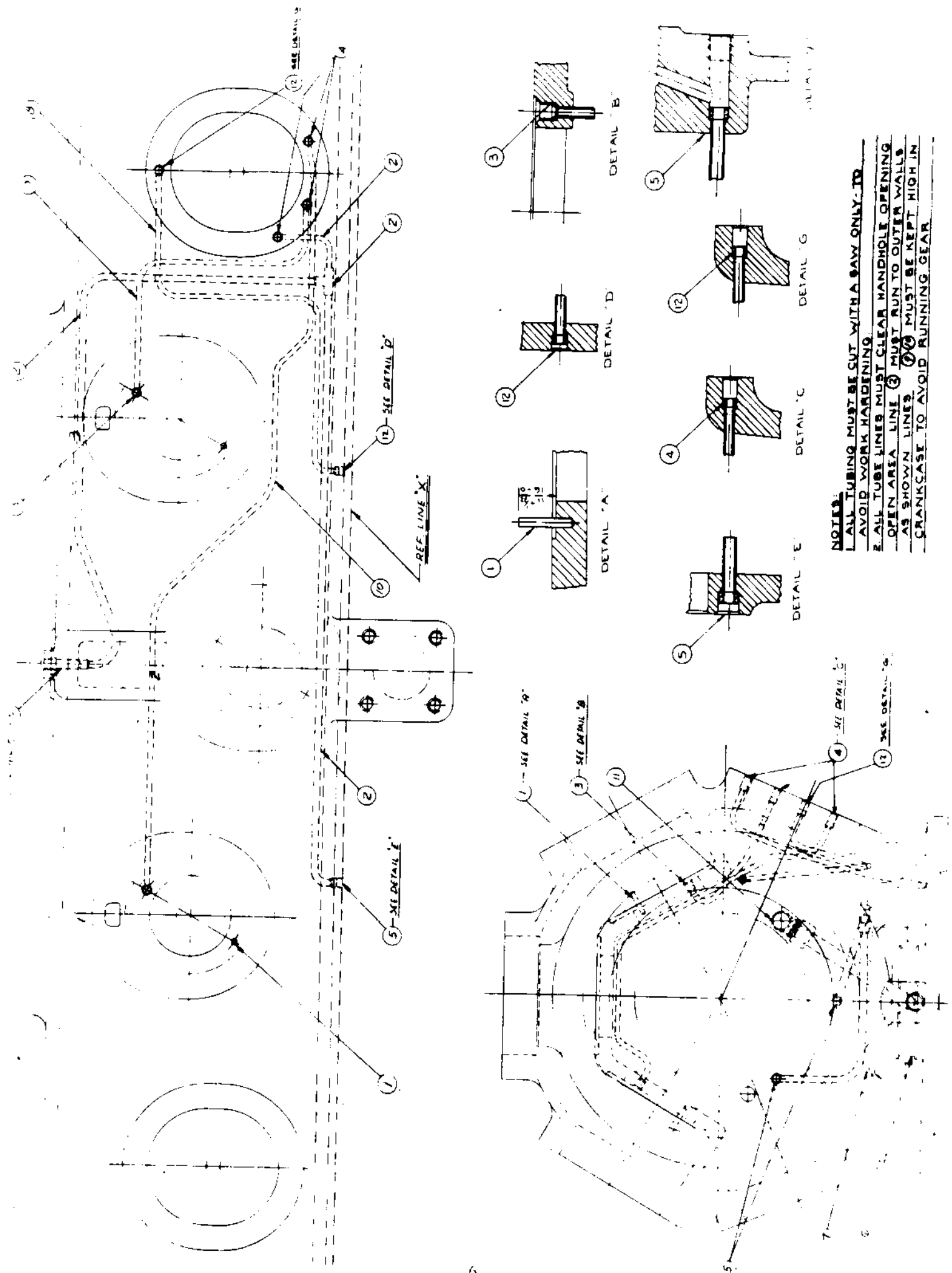


FIGURE 8 - F Open Compressor - 3 Cylinder

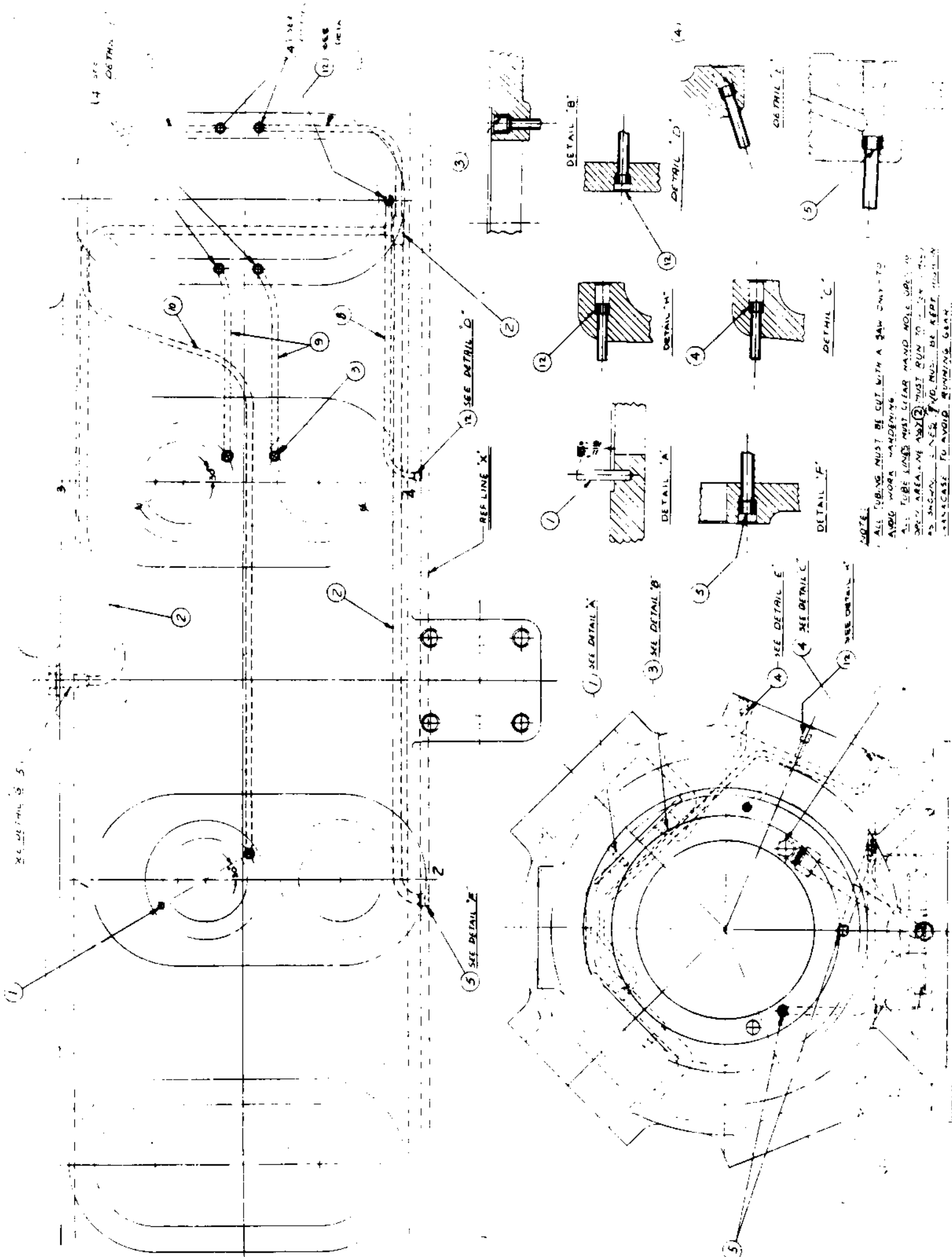
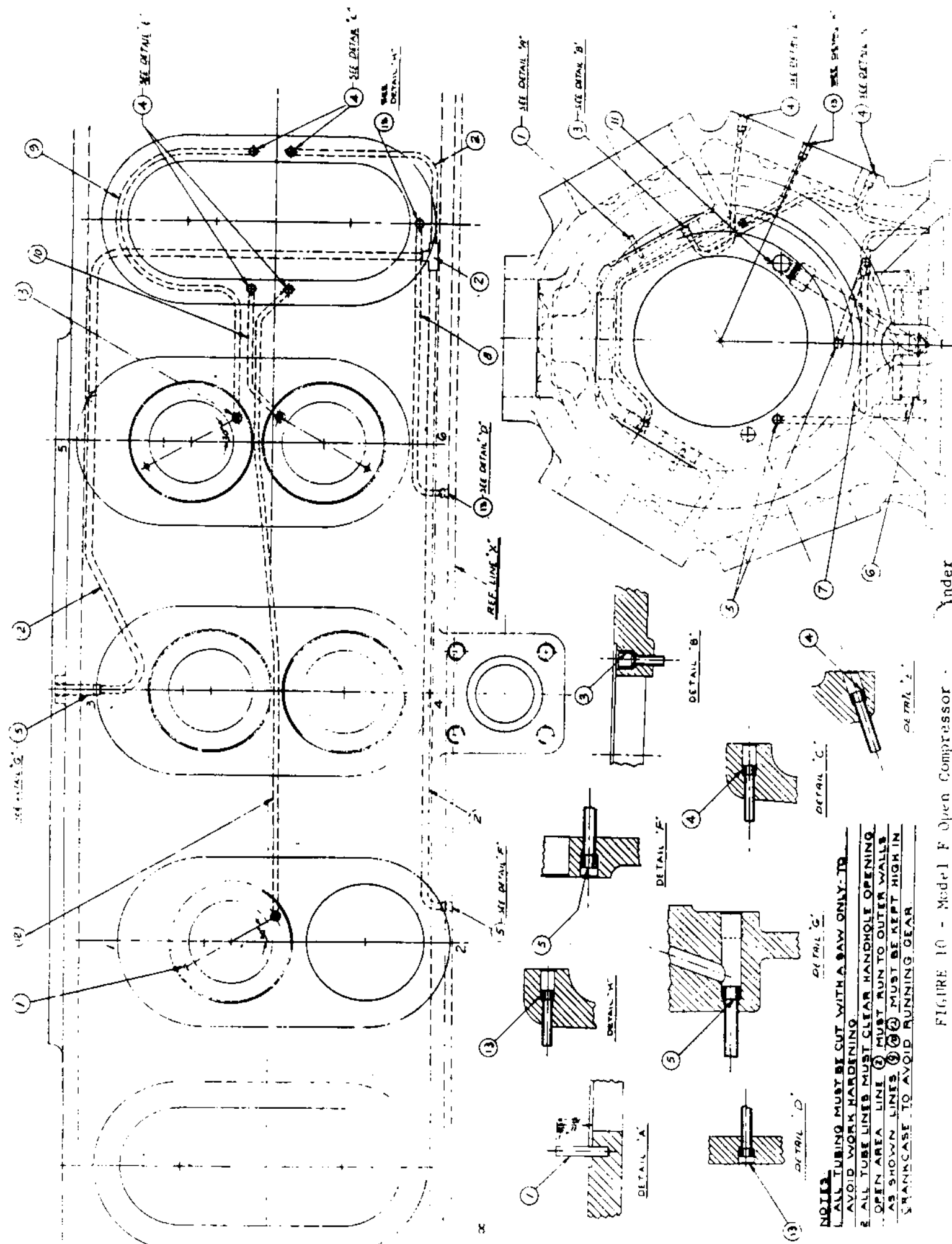
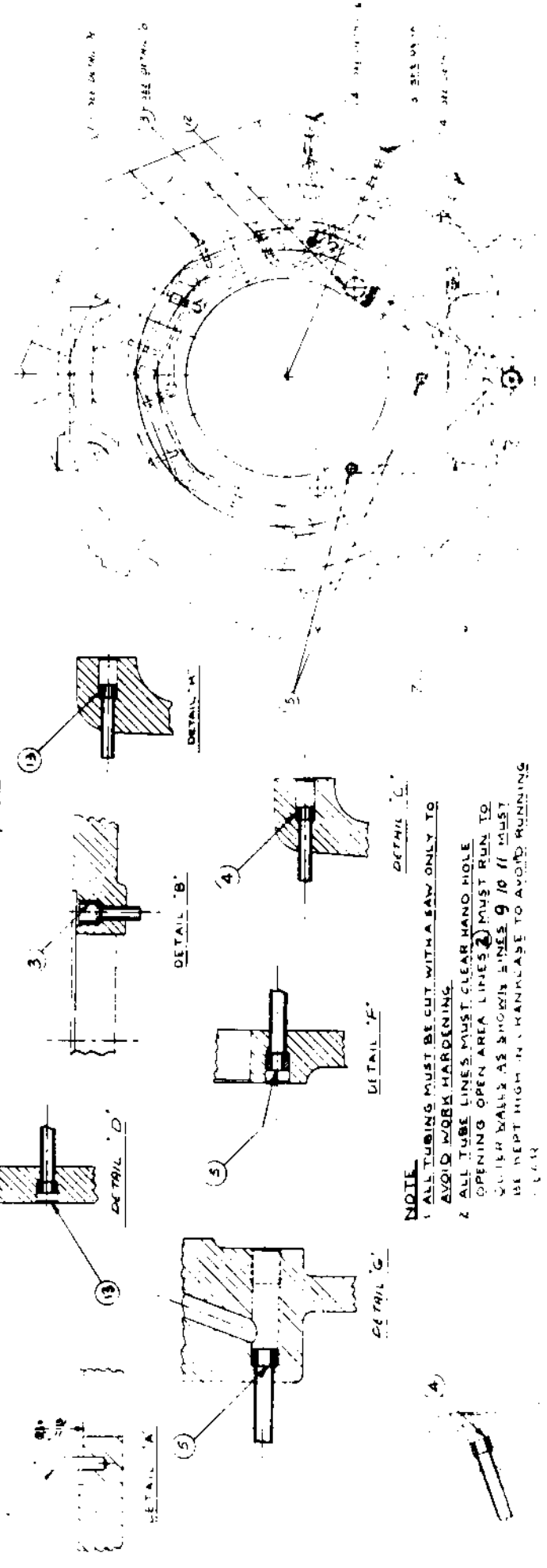
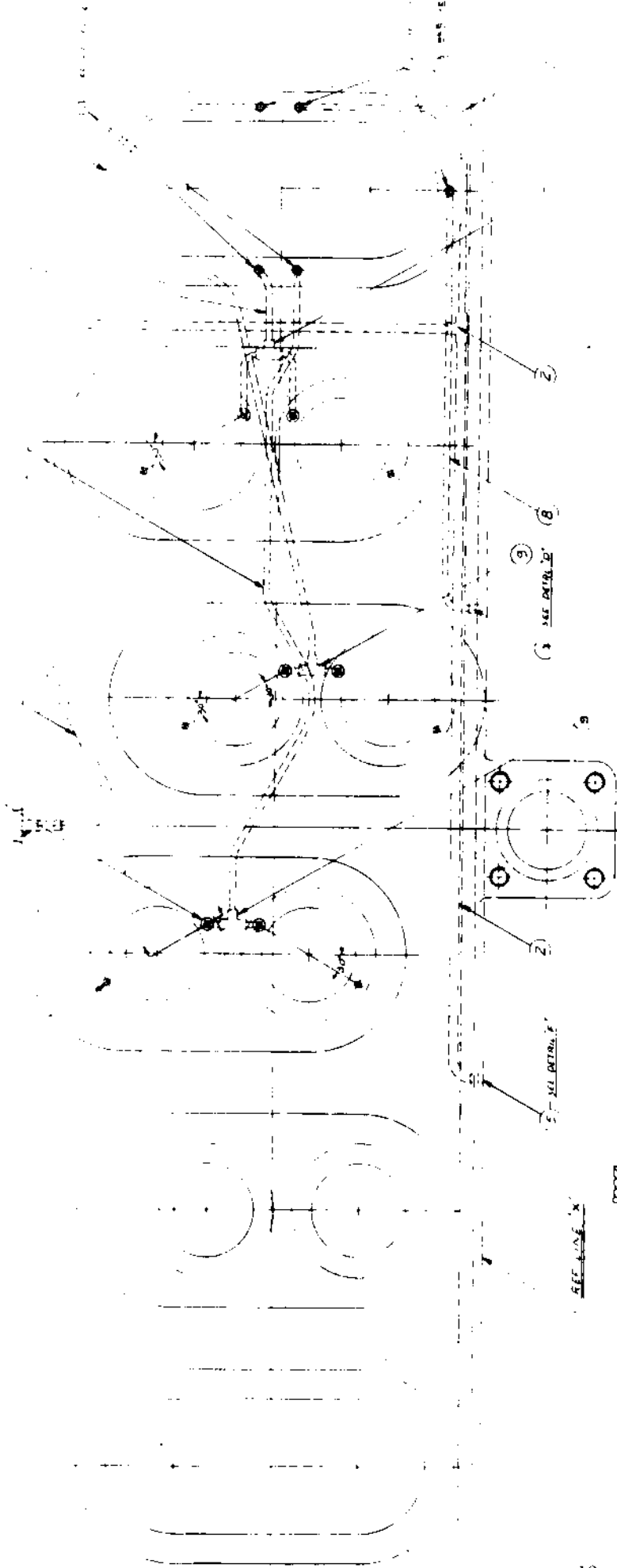
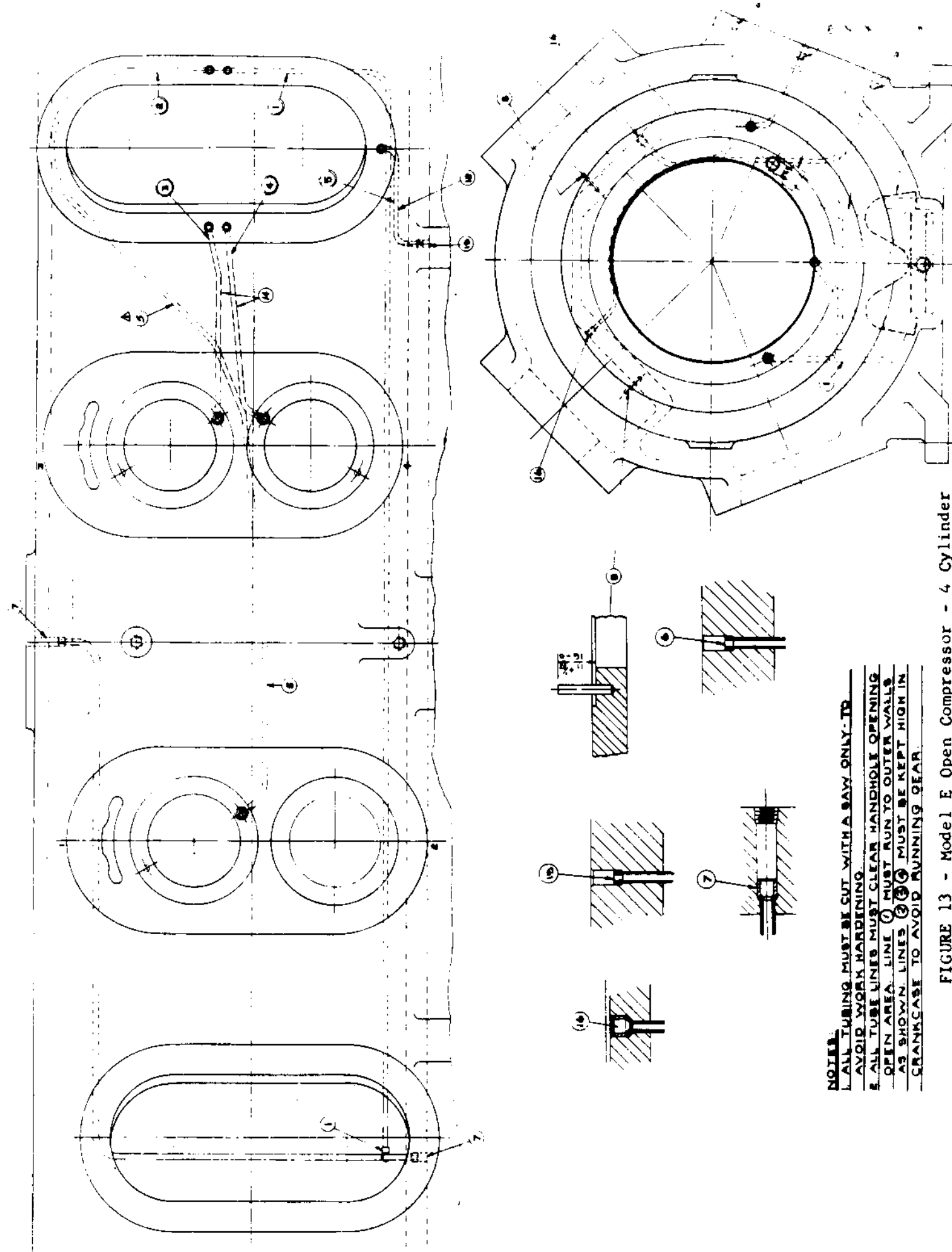


FIGURE 9 - Model F Open Compressor - 4 Cylinder



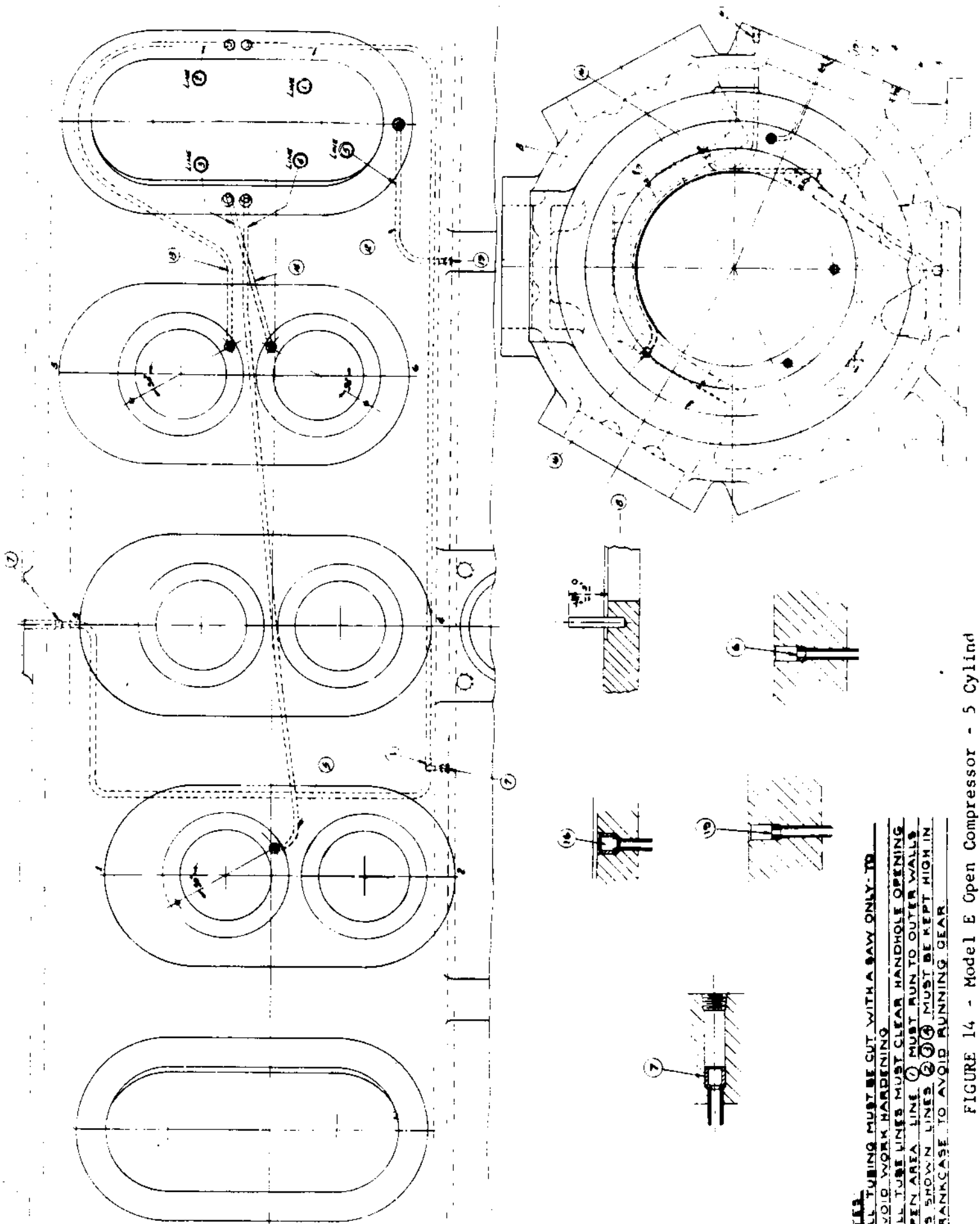


NOTE:
 1. ALL TUBING MUST BE CUT WITH A SAW ONLY TO AVOID WORK HARDENING.
 2. ALL TUBE LINES MUST CLEAR HAND HOLE OPENING OPEN AREA LINES 2 MUST RUN TO CYLINDER WALL AS SHOWN LINES 9 10 11 MUST BE DEPT HIGH IN CHAMFERS TO AVOID RUNNING.



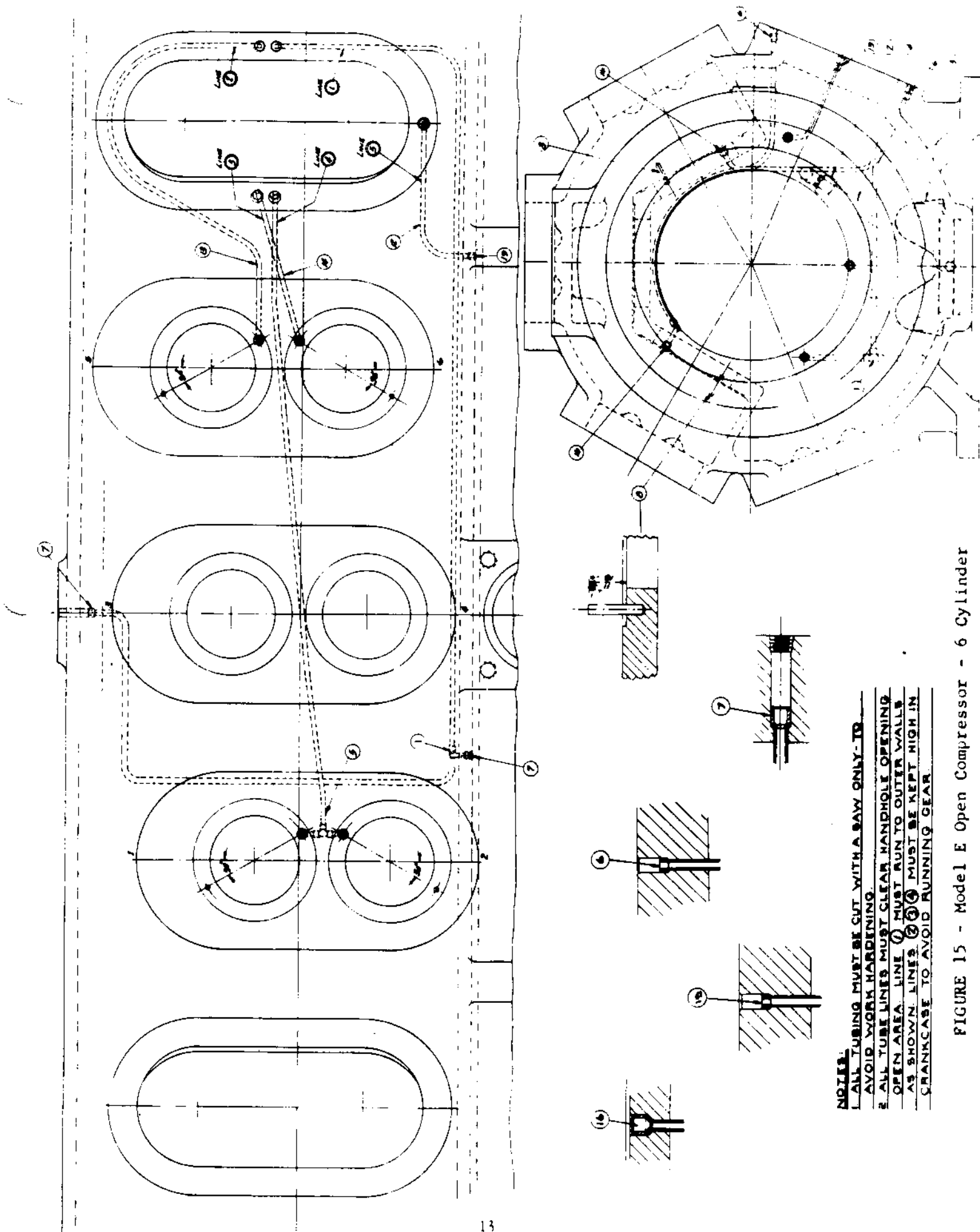
NOTES.
 1. ALL TUBING MUST BE CUT WITH A SAW ONLY - TO
 AVOID WORK HARDENING.
 2. ALL TUBE LINES MUST CLEAR HANDHOLE OPENING
 OPEN AREA. LINE 1 MUST RUN TO OUTER WALLS
 AS SHOWN. LINES 2, 3, 4 MUST BE KEPT HIGH IN
 CRANKCASE TO AVOID RUNNING GEAR.

FIGURE 13 - Model E Open Compressor - 4 Cylinder



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 LINE ⑦ MUST RUN TO OUTER WALLS
 AS SHOWN LINES ② ③ ④ MUST BE KEPT HIGH IN
 CRANKCASE TO AVOID RUNNING GEAR

FIGURE 14 - Model E Open Compressor - 5 Cylind



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. LINE 1 MUST RUN TO OUTER WALLS AS SHOWN. LINES 2, 3, 4 MUST BE KEPT HIGH IN CRANKCASE TO AVOID RUNNING GEAR.

FIGURE 15 - Model E Open Compressor - 6 Cylinder

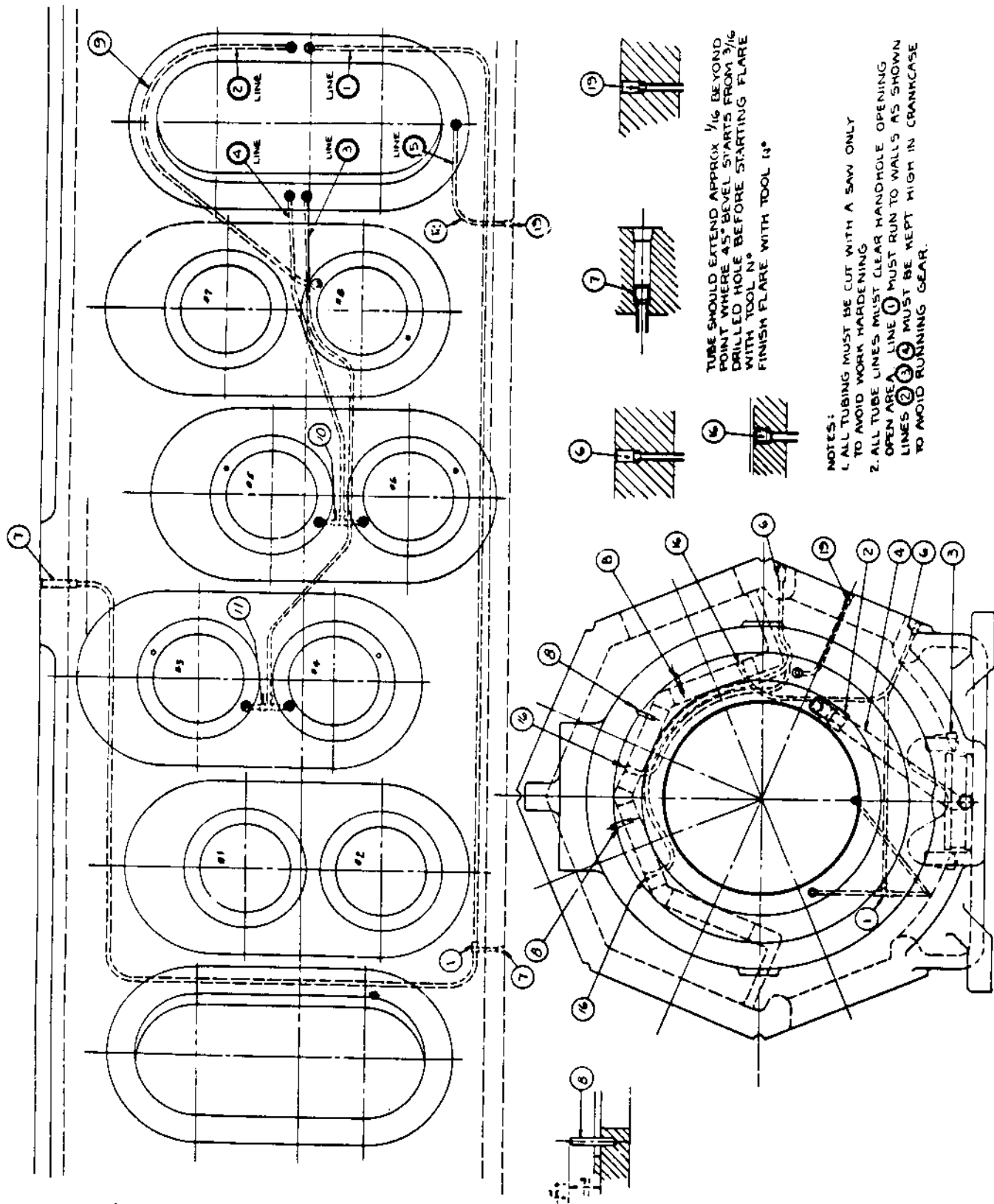


FIGURE 16 - Model E Open Compressor - 8 Cylinder

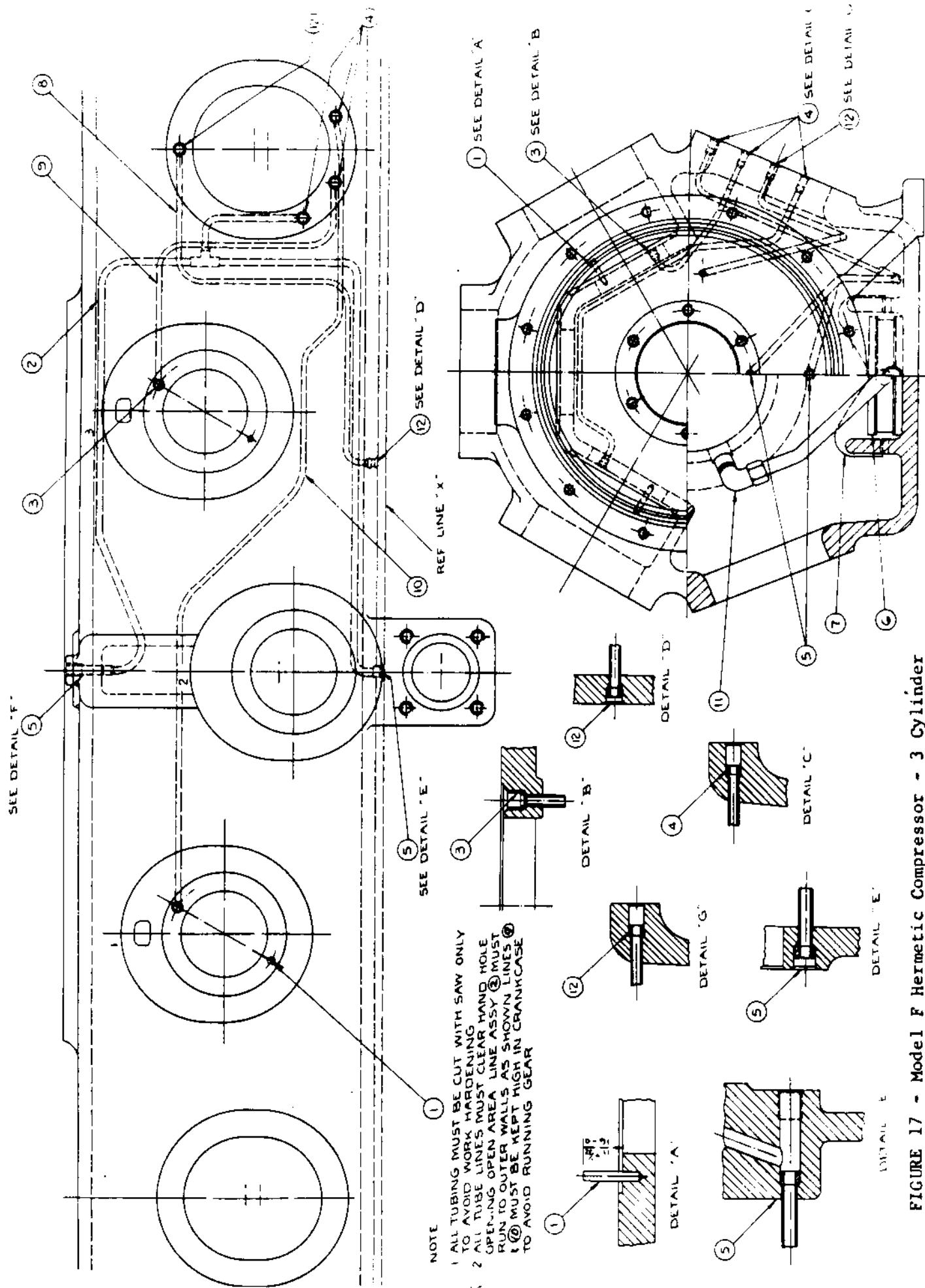


FIGURE 17 - Model F Hermetic Compressor - 3 Cylinder

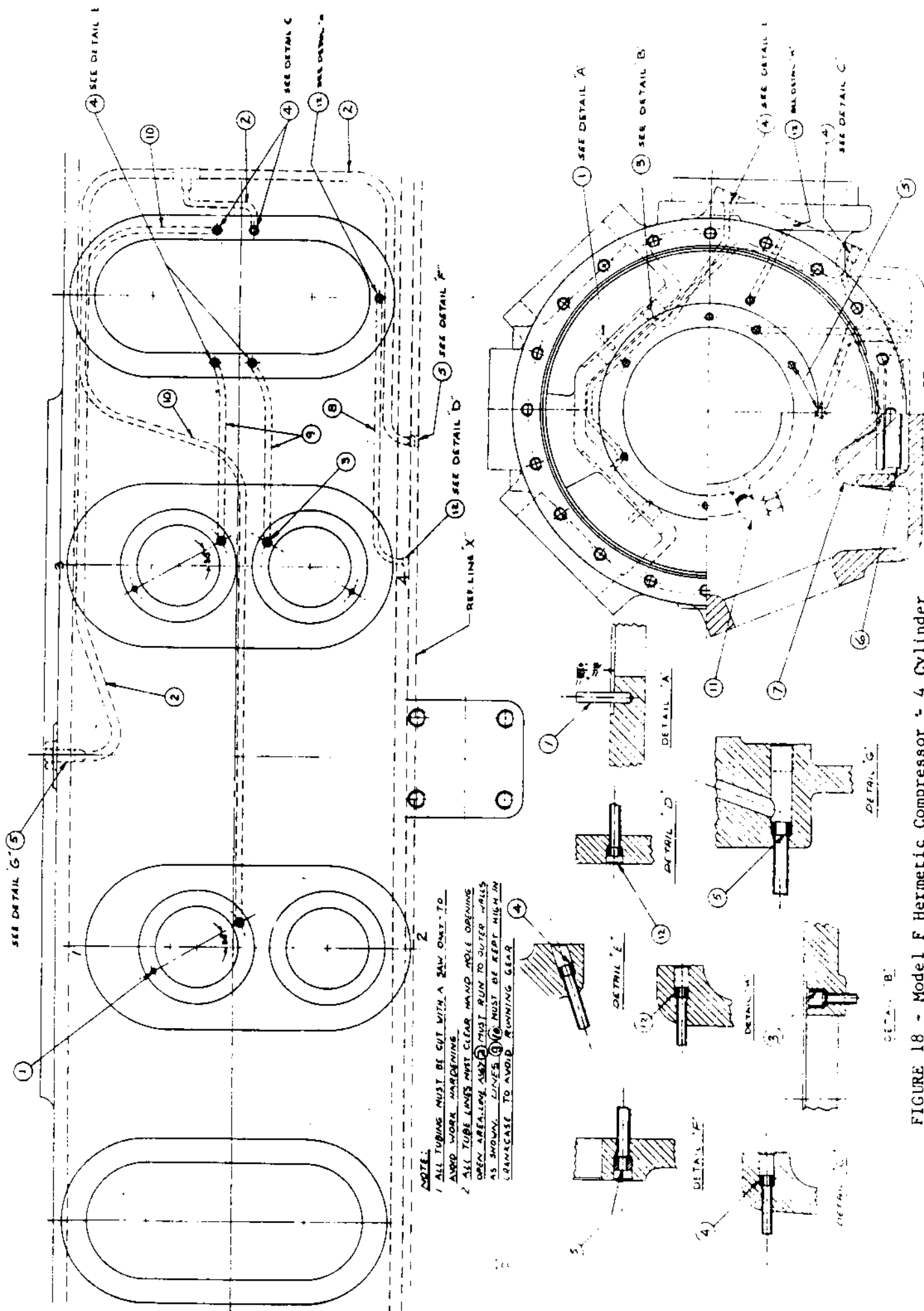


FIGURE 18 - Model F Hermetic Compressor - 4 Cylinder

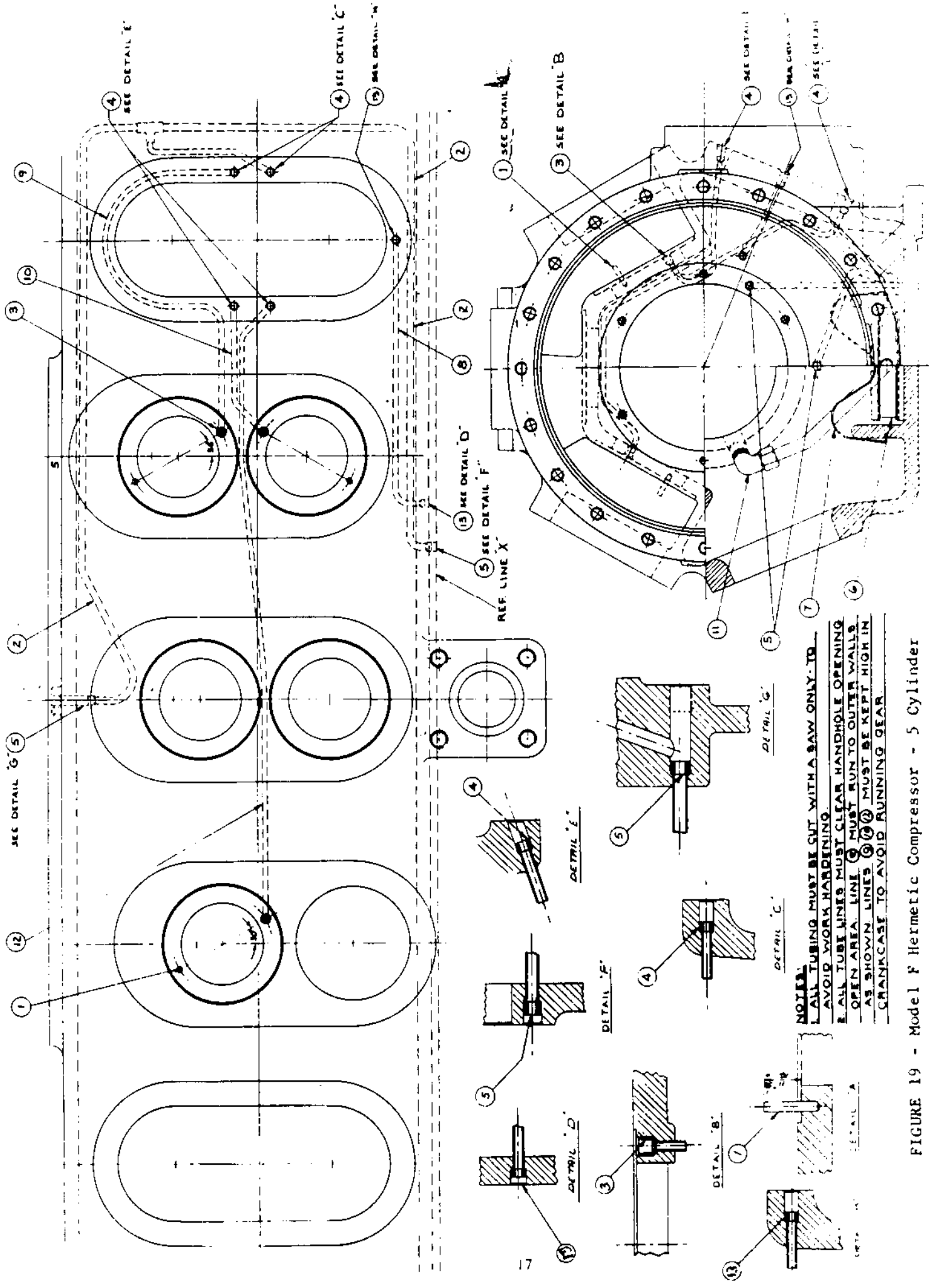
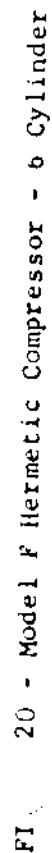


FIGURE 19 - Model F Hermetic Compressor - 5 Cylinder



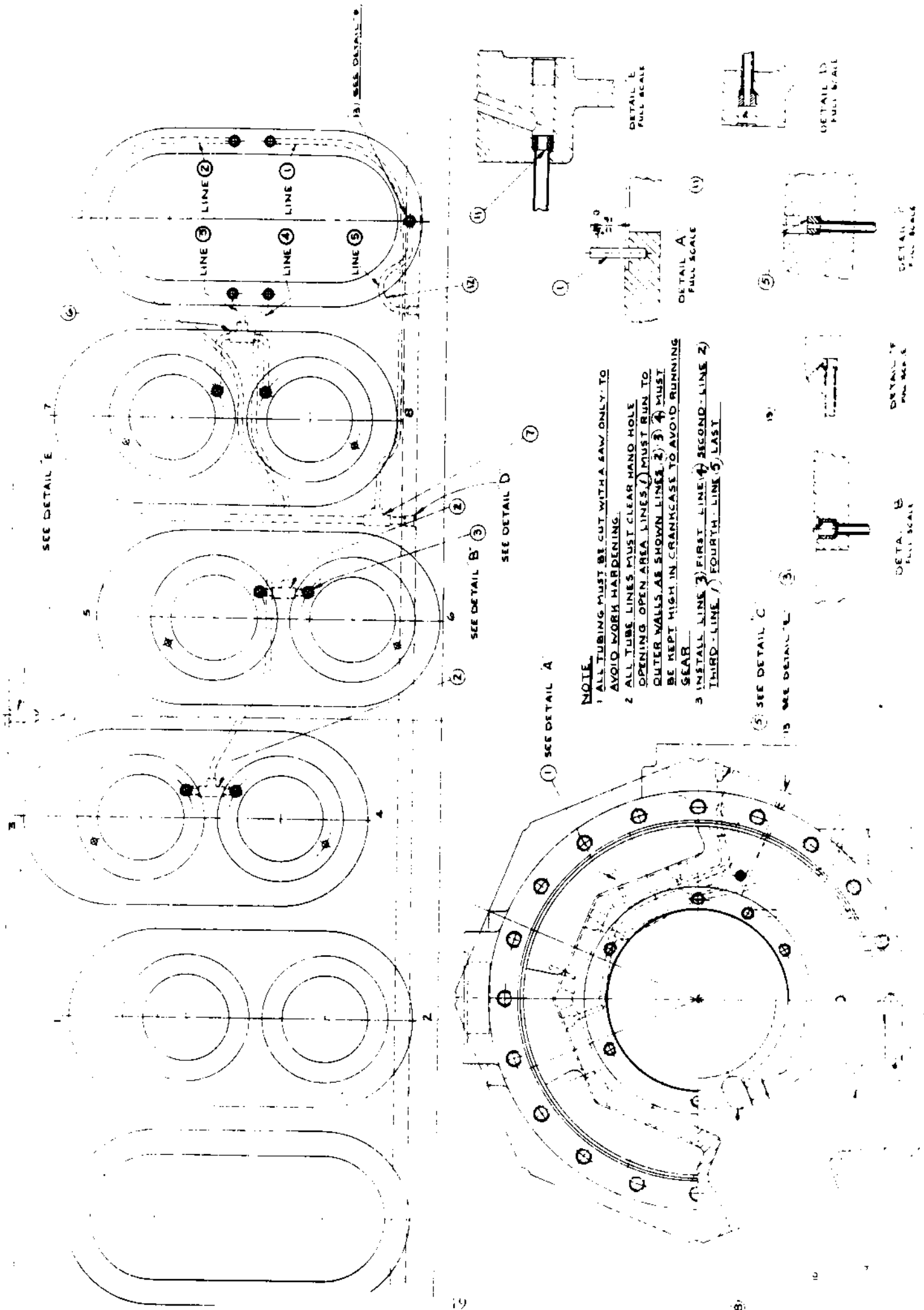
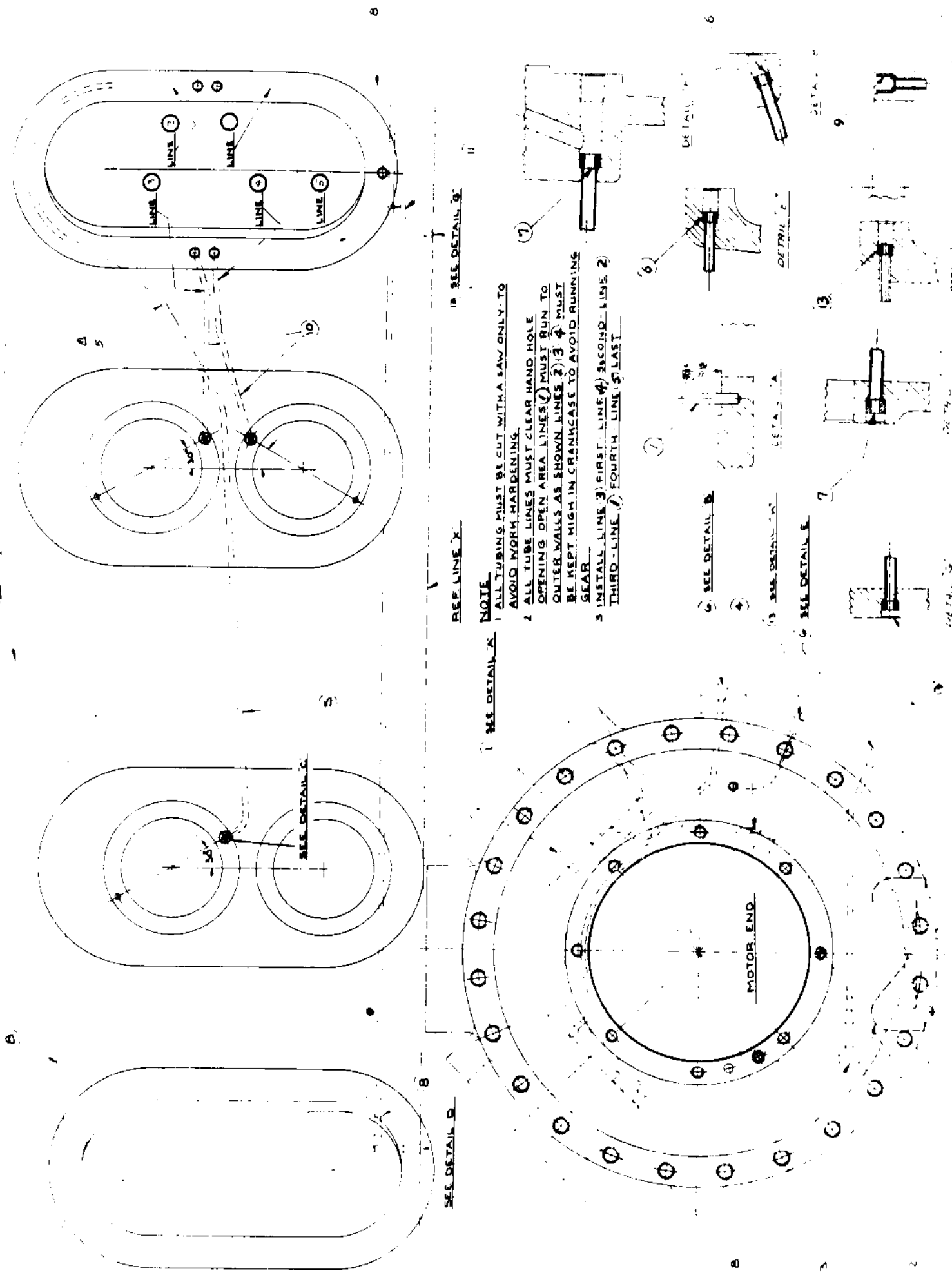


FIGURE 21 - Model F Hermetic Compressor - 8 Cylinder



REF. LINE X

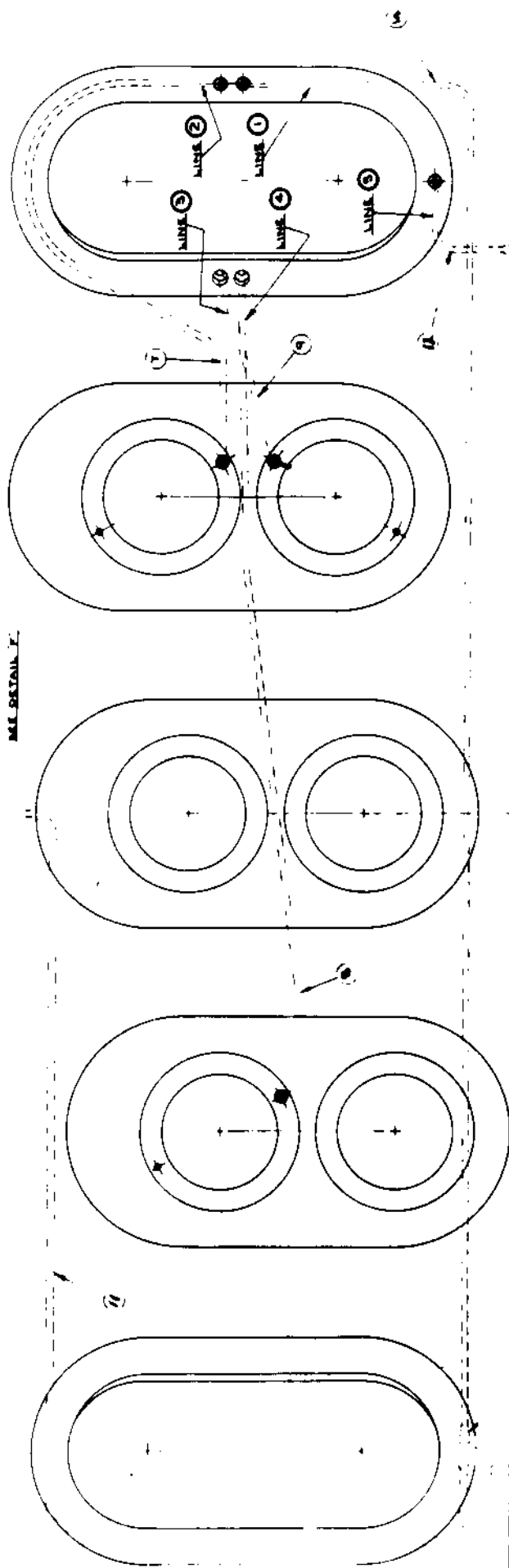
13 SEE DETAIL 9

NOTE

- 1 ALL TUBING MUST BE CUT WITH A SAW ONLY TO AVOID WORK HARDENING.
- 2 ALL TUBE LINES MUST CLEAR HAND HOLE OPENING & OPEN AREA LINES 1 MUST RUN TO OUTER WALLS AS SHOWN LINES 2, 3, 4 MUST BE KEPT HIGH IN CRANKCASE TO AVOID RUNNING GEAR.
- 3 INSTALL LINE 3 FIRST, LINE 4 SECOND, LINE 2 THIRD, LINE 1 FOURTH, LINE 5 LAST.

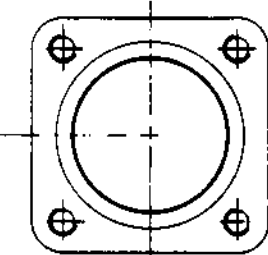
FIGURE 24 Model E Hermetic Compressor - 4 Cylinder

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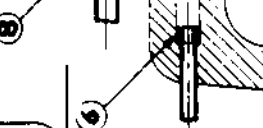
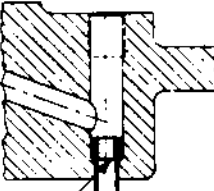
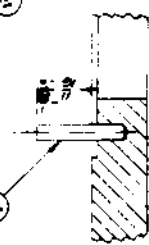
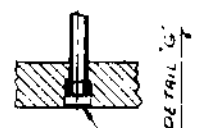
SEE DETAIL 'B'

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2 ALL TUBE LINES MUST CLEAR HAND HOLE OPENING OPEN AREA LINES 1 MUST RUN TO OUTER WALLS AS SHOWN LINES 2 3 4 MUST BE KEPT HIGH IN CRANKCASE TO AVOID RUNNING GEAR
3 INSTALL LINE 3 FIRST LINE 4 SECOND LINE 2 THIRD LINE 1 FOURTH LINE 5 LAST

FIGURE 23 - Model E Hermetic Compressor - 5 Cylinder

MOTOR END

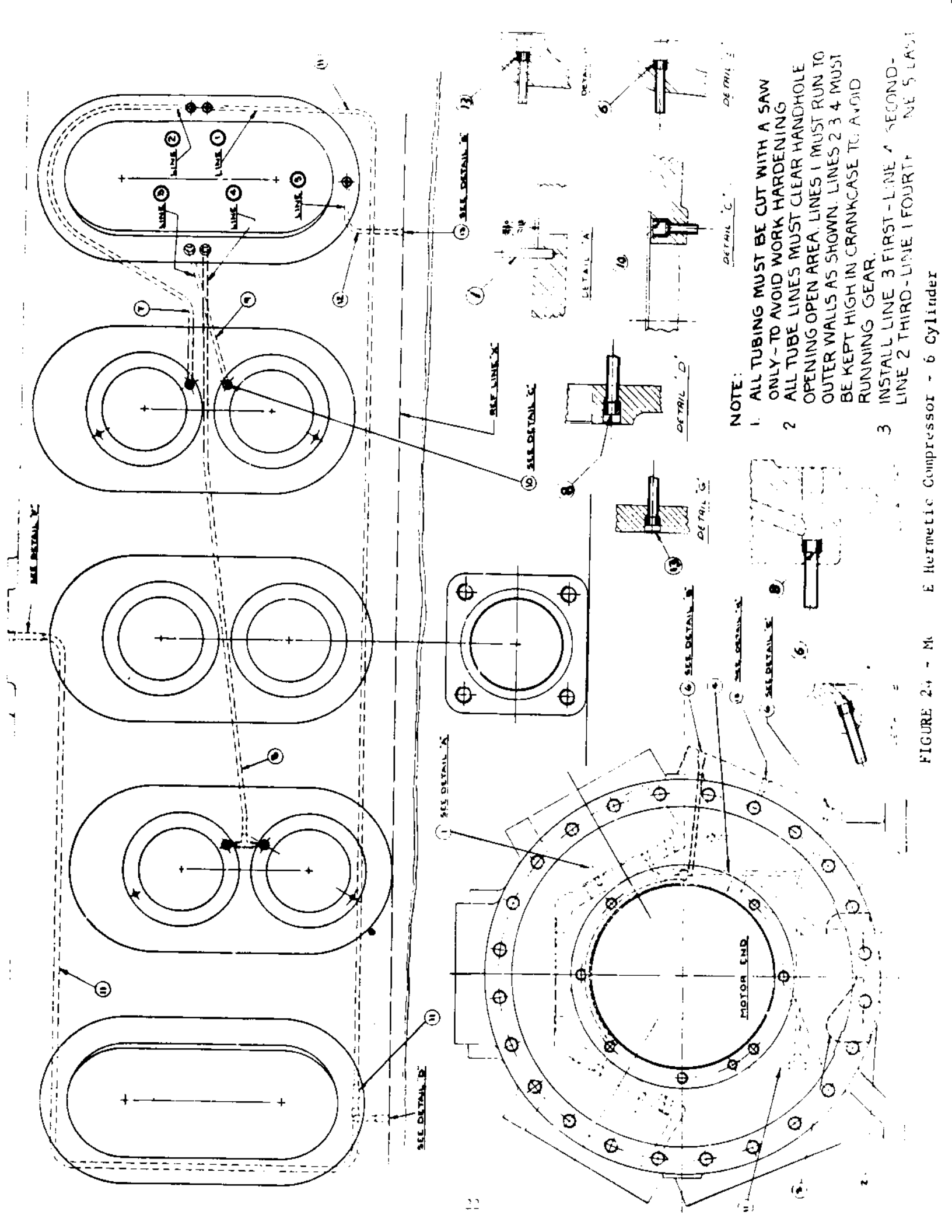


FIGURE 24 - Mc E Hermetic Compressor - 6 Cylinder

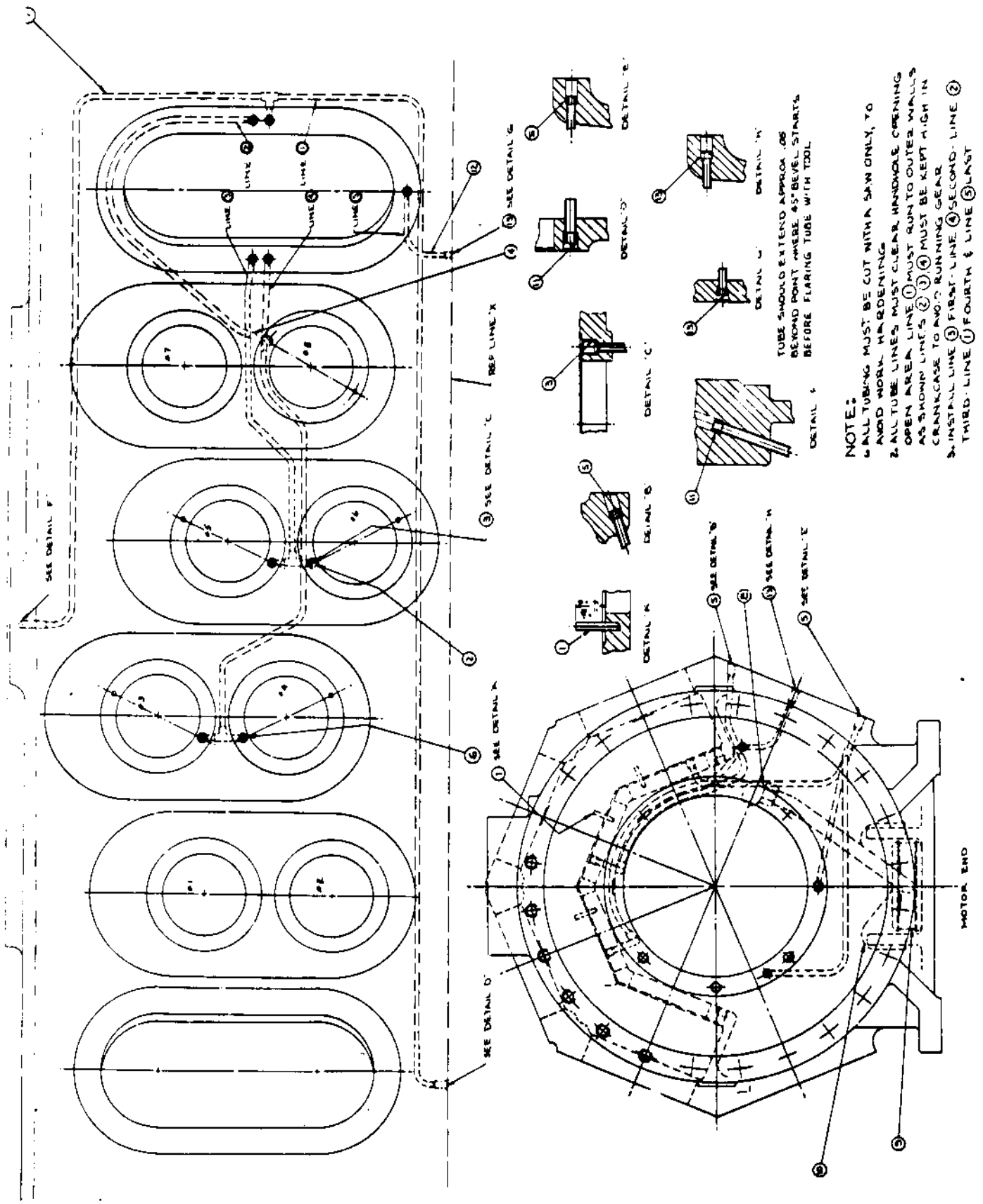


FIGURE 25 - Model E Hermetic Compressor - 8 Cylinder

SERVICE OIL LINE REPAIR TOOLS FOR OPEN AND HERMETIC MODEL A,B,E, AND F
COMPRESSORS

Use Figures 26 through 34 to make tools required for oil line replacement and repair. See Table 1 on page 2 for tool selection.

Note: All tools use HY-TEN "M" hardness and grade; R/C 50-55

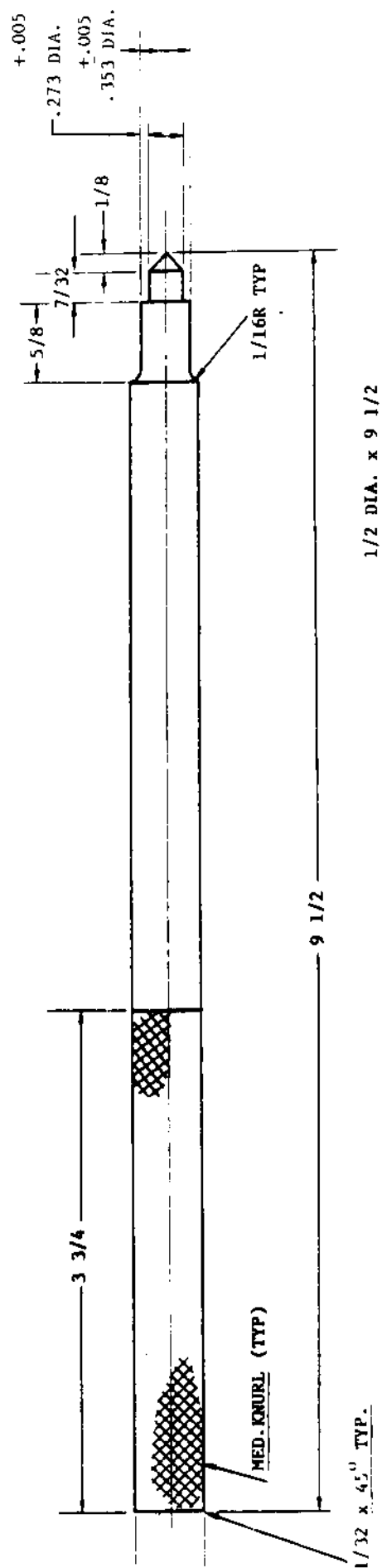


FIGURE 26 - Tool No. 1

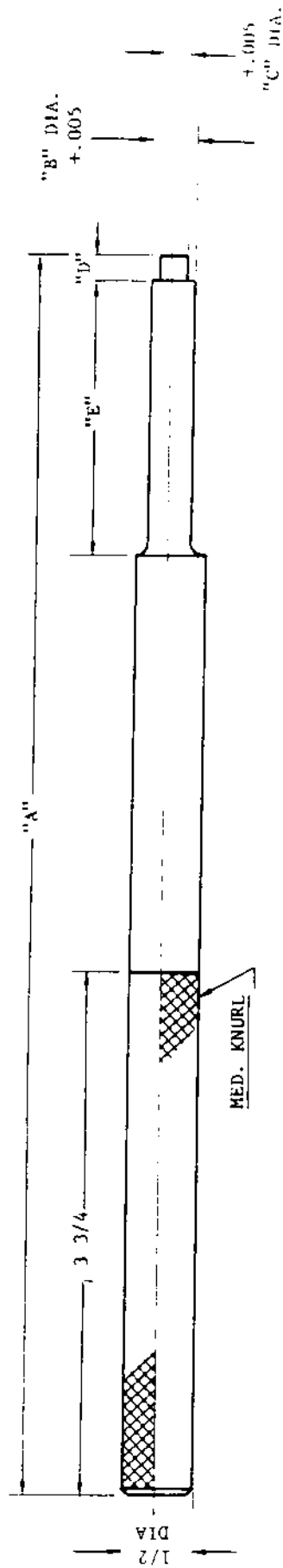


FIGURE 27 - Tool No. 2,3,4,5,6,20,21,22

TOOL NO.	"A"	"B" DIA.	"C" DIA.	"D"	"E"
2	9	.250	.140	1/8	7/8
3	9	.230	.050	1/8	7/8
4	24	.230	.050	1/8	7/8
5	9	.305	.205	3/16	2
6	24	.305	.205	3/16	3/16
20	24	.250	.125	1/8	1
21	24	.250	.125	1/8	2
22	24	.312	.187	3/16	2

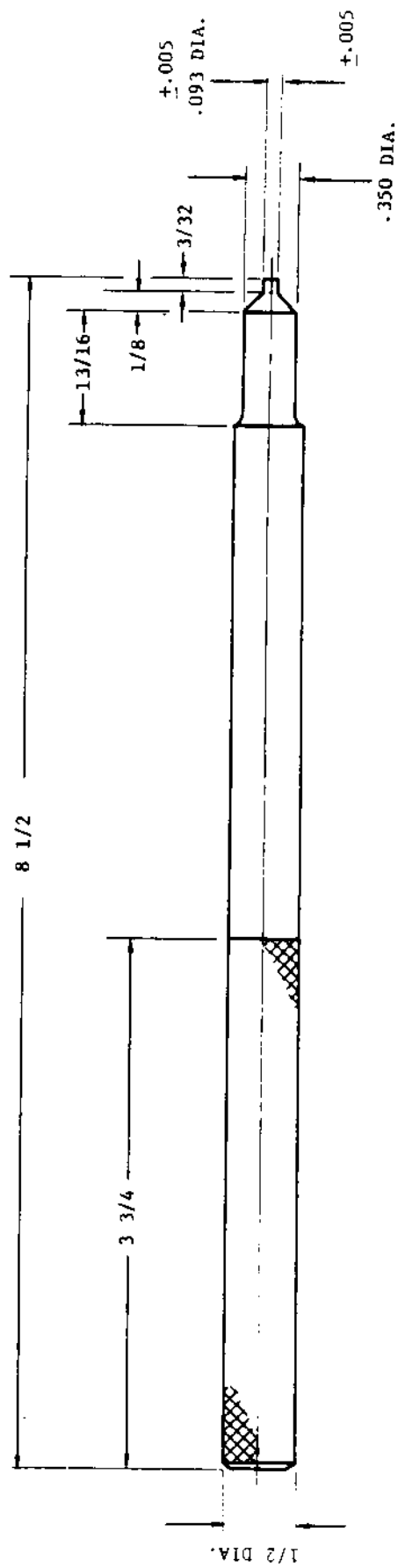
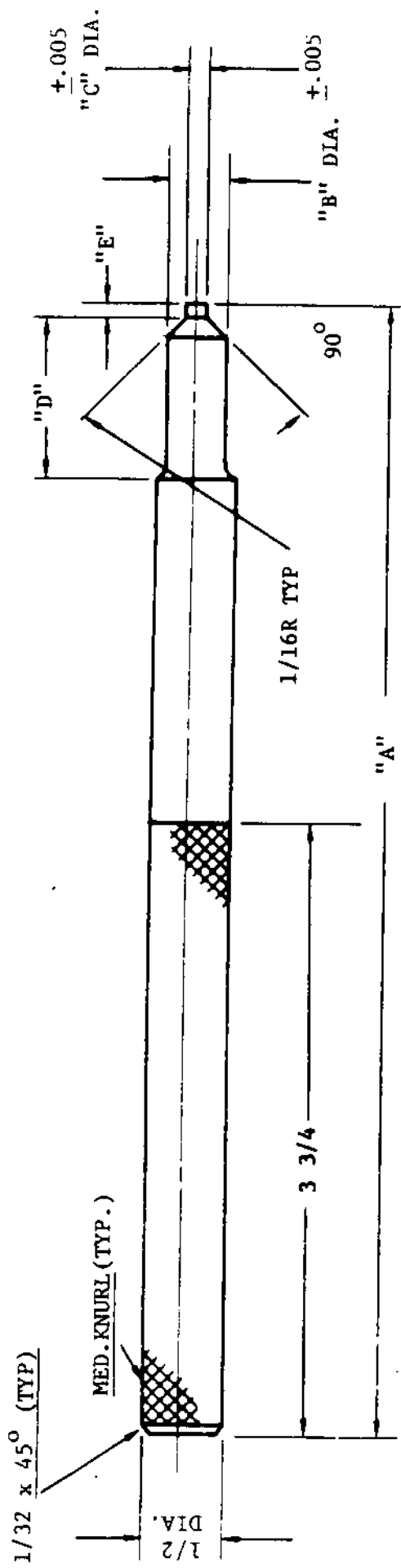


FIGURE 28 - Tool No. 7



TOOL NO.	"A"	"B" DIA	"C" DIA	"D"	"E"
8	7	.250	.033	1	3/32
9	9	.230	.046	1	3/32
10	24	.230	.046	1	3/32
11	9	.305	.110	2	3/32
12	24	.305	.110	1	3/32

FIGURE 29 - Tool No. 8,9,10,11,12

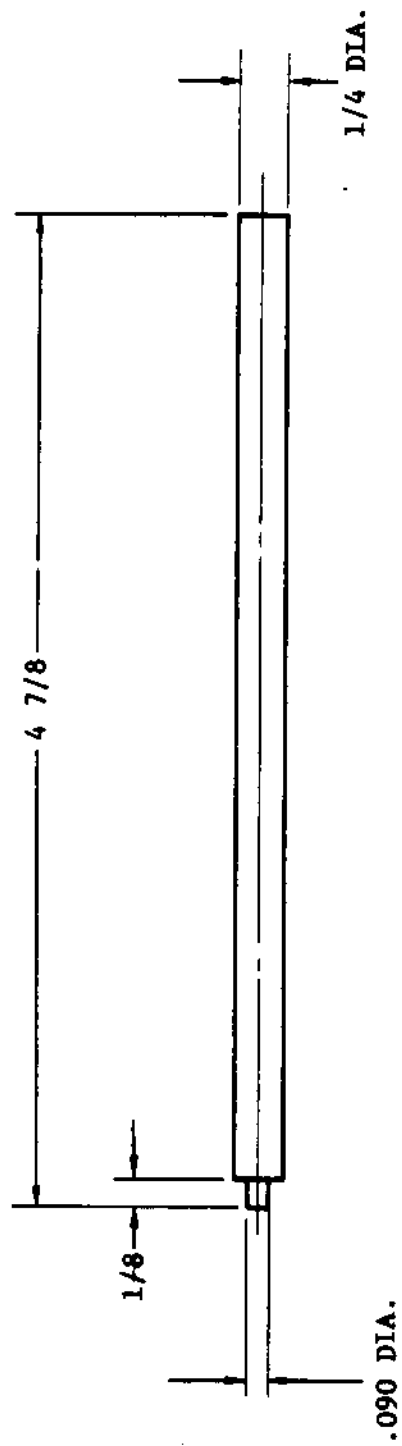


FIGURE 30 - Tool No. 14

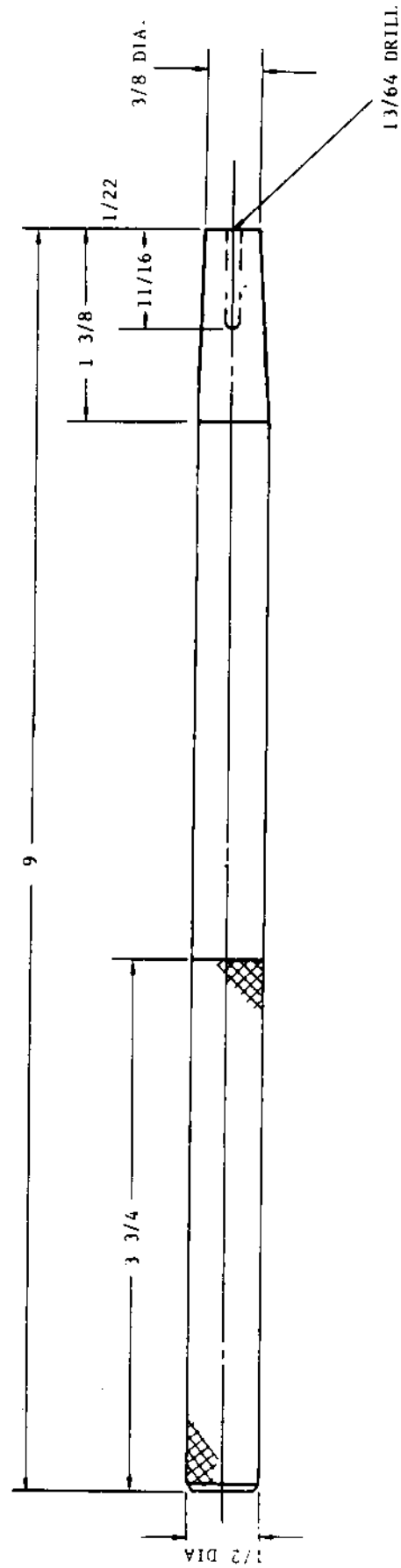
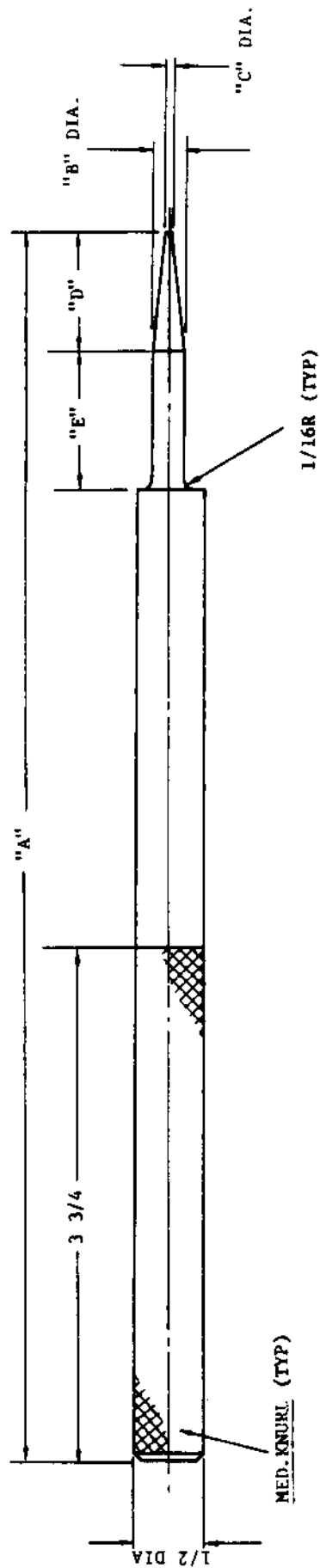
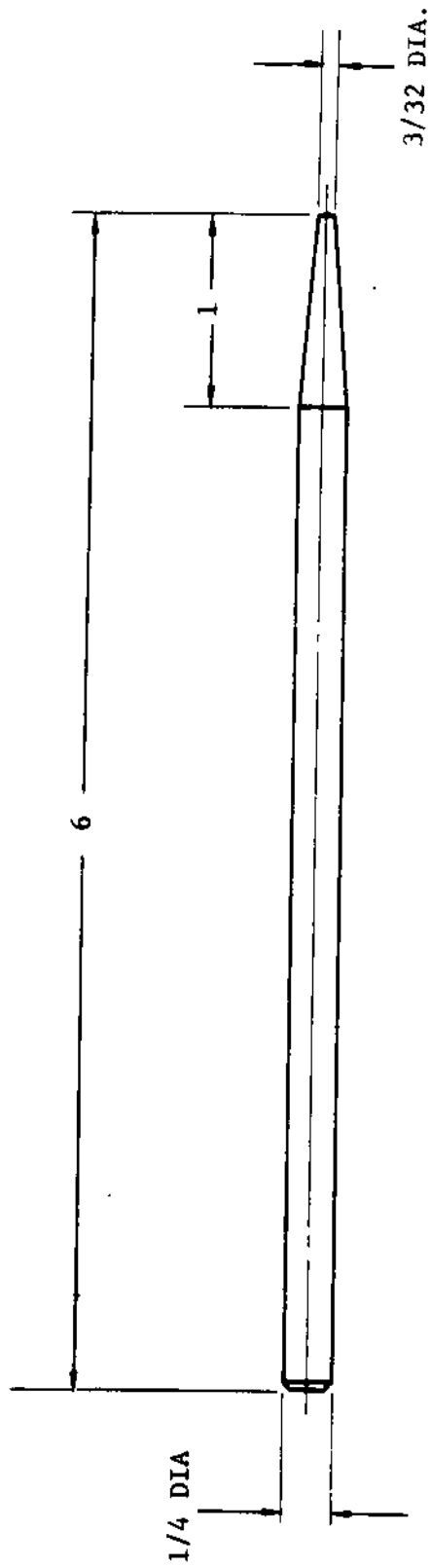


FIGURE 31 - Tool No. 13



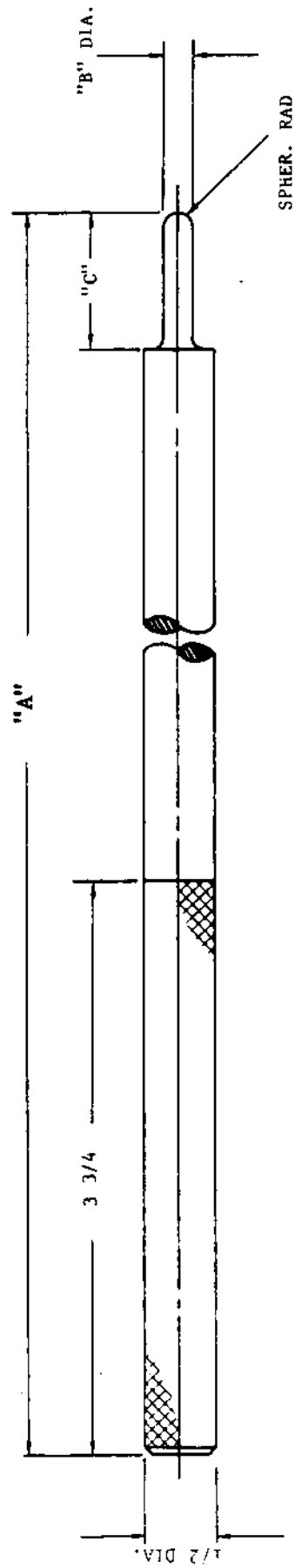
TOOL NO.	"A"	"B" DIA.	"C" DIA.	"D"	"E"
15	9	$\frac{7}{32}$	$\frac{3}{64}$	$\frac{3}{4}$	1
16	24	$\frac{7}{32}$	$\frac{3}{64}$	$\frac{3}{4}$	1
17	9	$\frac{5}{16}$	$\frac{3}{32}$	$\frac{7}{8}$	$1 \frac{3}{4}$
18	24	$\frac{5}{16}$	$\frac{3}{32}$	$\frac{7}{8}$	$\frac{1}{2}$

FIGURE 32 - Tool No. 15,16,17,18



HY-TEN "M" 1/4 x 6

FIGURE 33 - Tool No. 19



TOOL NO.	"A"	"B" DIA.	"C"
23	24	3/16	1

FIGURE 34 - Tool No. 23