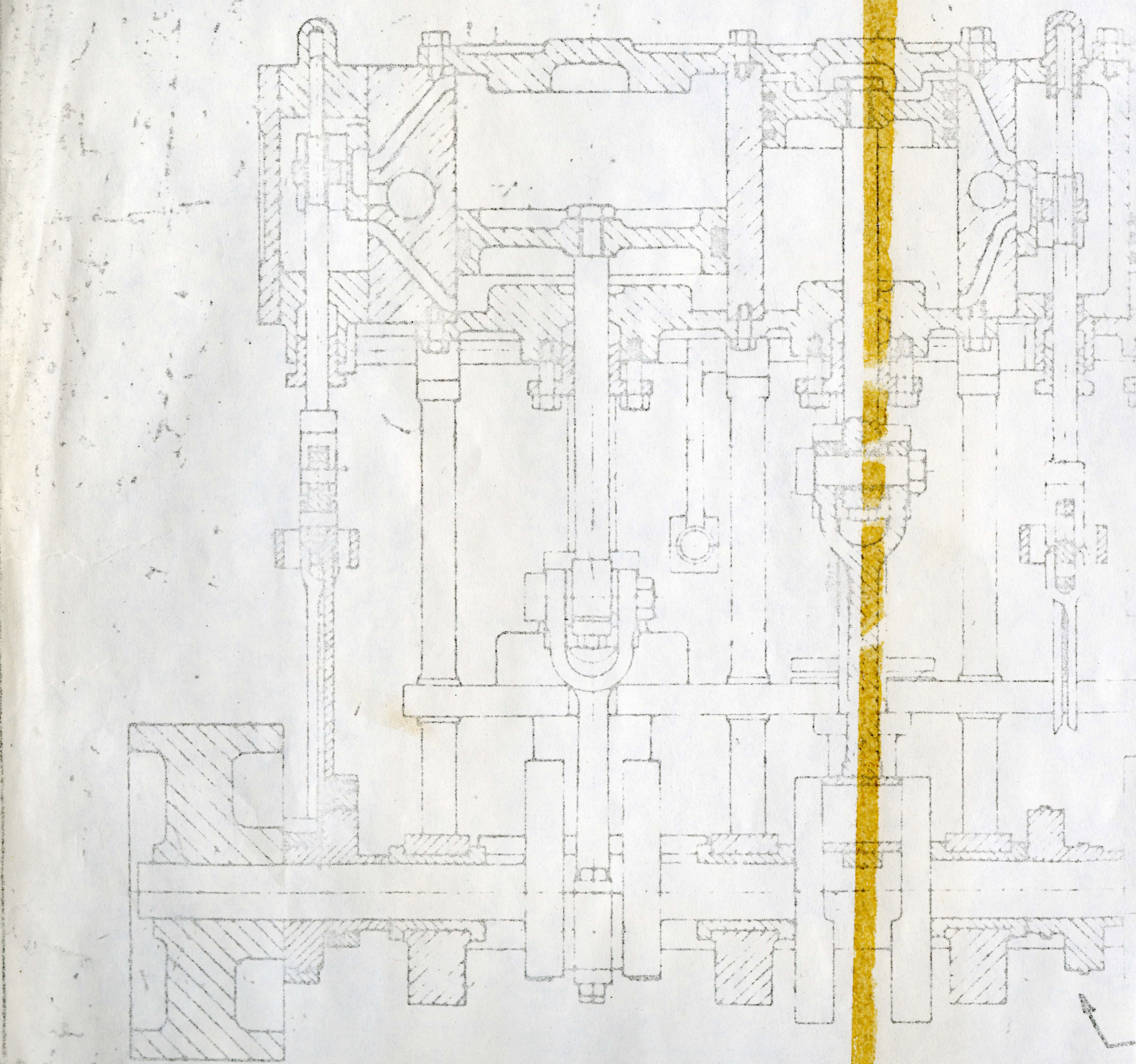
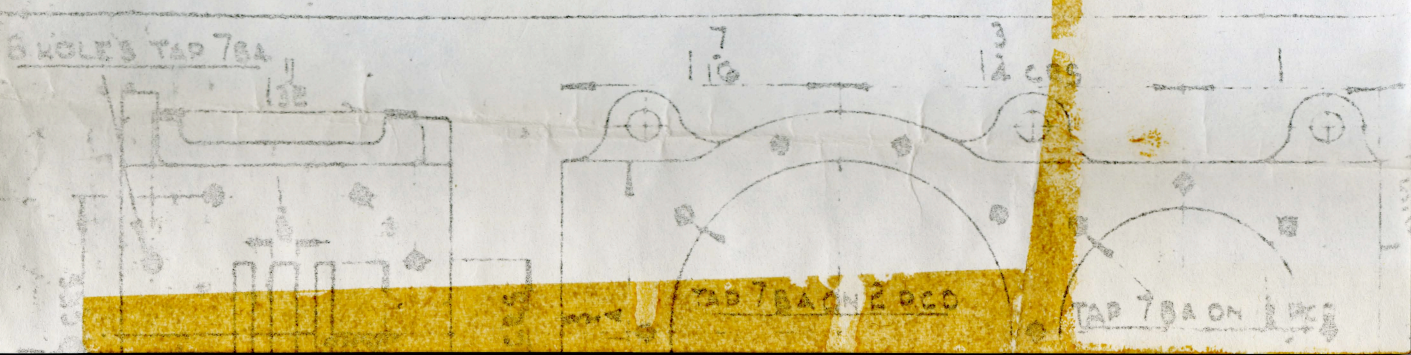
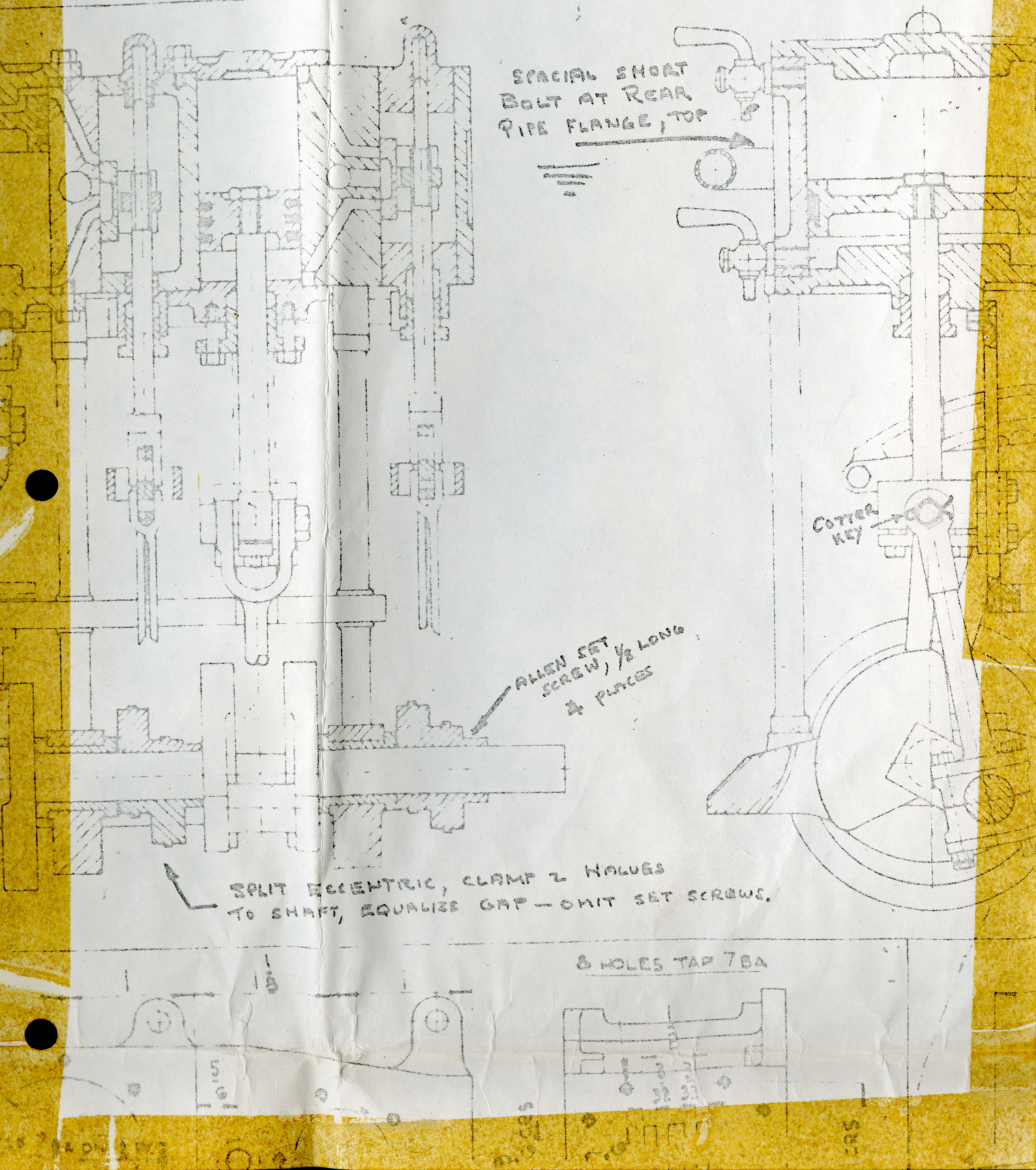
NO. No	DATE	ALTERATIONS
90016	4·2·55	

1



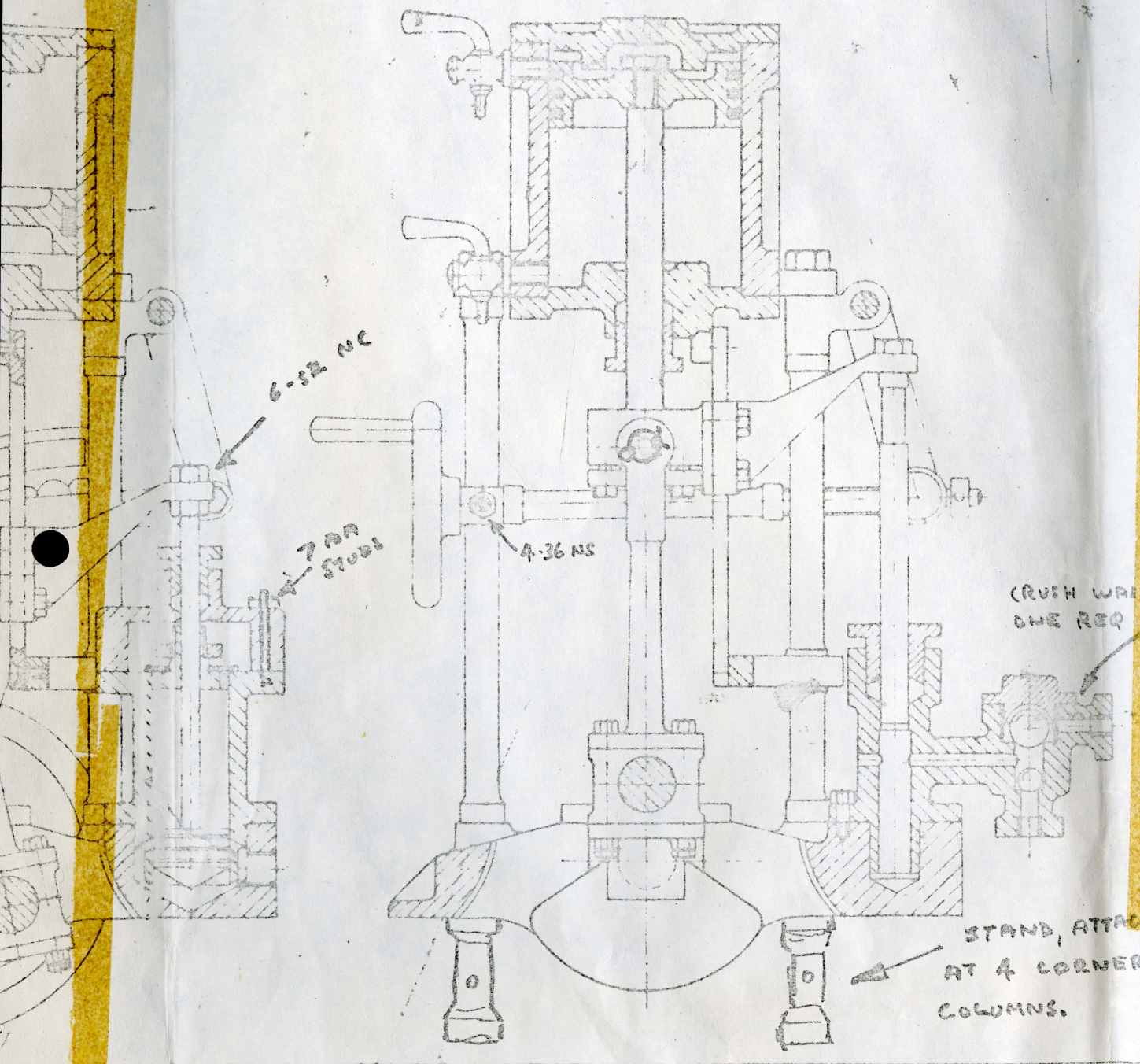


DIMENSIONS


SPECIAL SHORT BOLT AT REAR PIPE FLANGE, TOP
COTTER KEY
ALLEN SET SCREW, 1/8 LONG 4 PLACES
SPLIT ECCENTRIC, CLAMP 2 HALVES TO SHAFT, EQUALIZE GAP — OMIT SET SCREWS.
8 HOLES TAP 7BA

STUART TURNER LIMITED. ENGINEERS

ONS IN INCHES



1/2 7/8 7/8 7/8 1/4 7/8 7/8

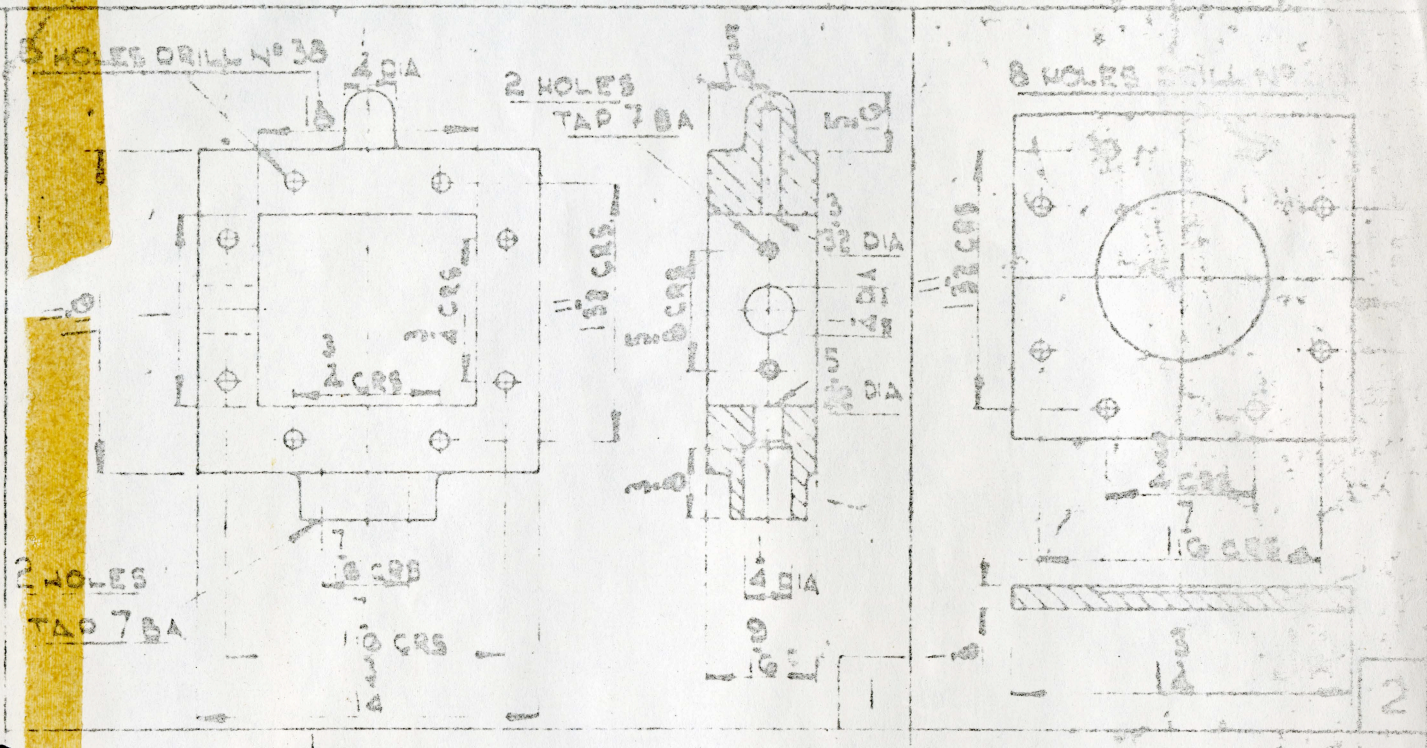
1/4 3/8 1/4 3/16 1/2 3/16

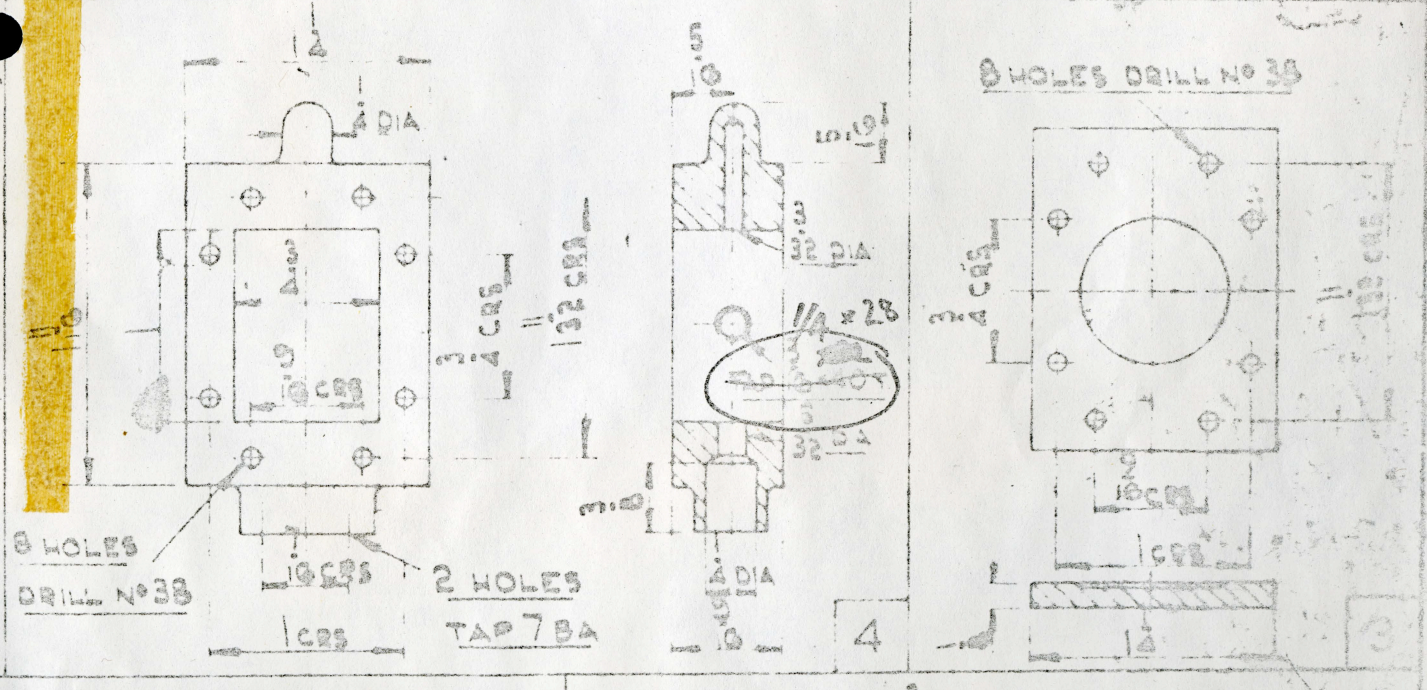
3

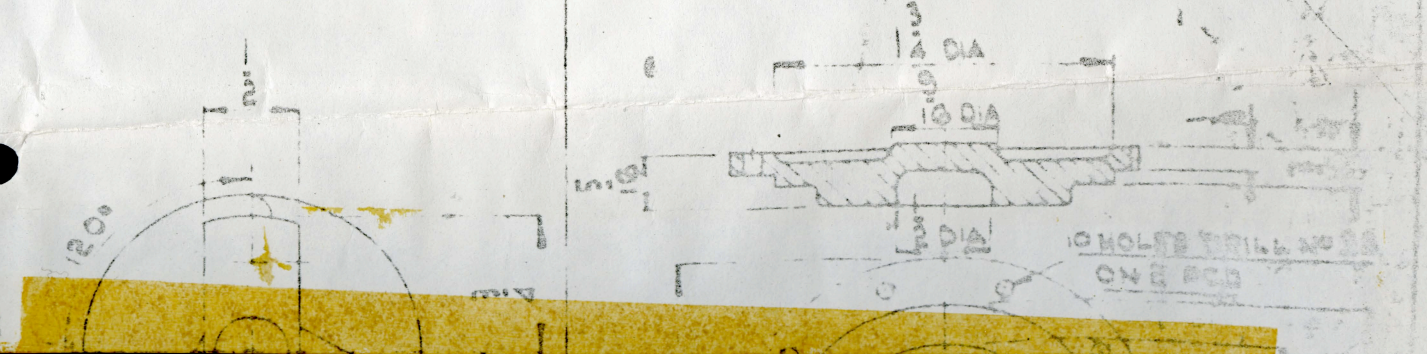
HENLEY-ON-THAMES.

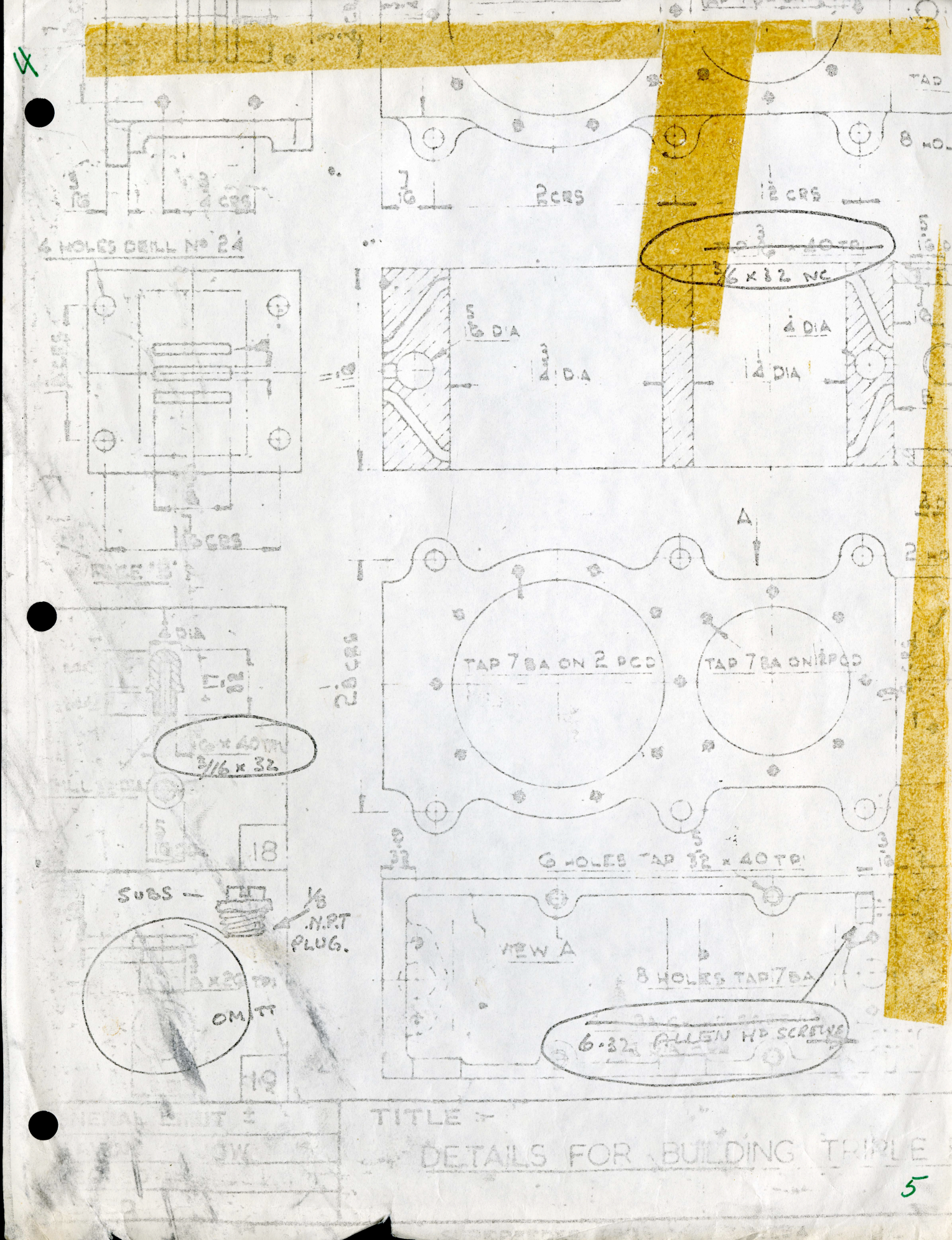
ISSUED 1 NOV 1971

USE ONLY FOR ORDER

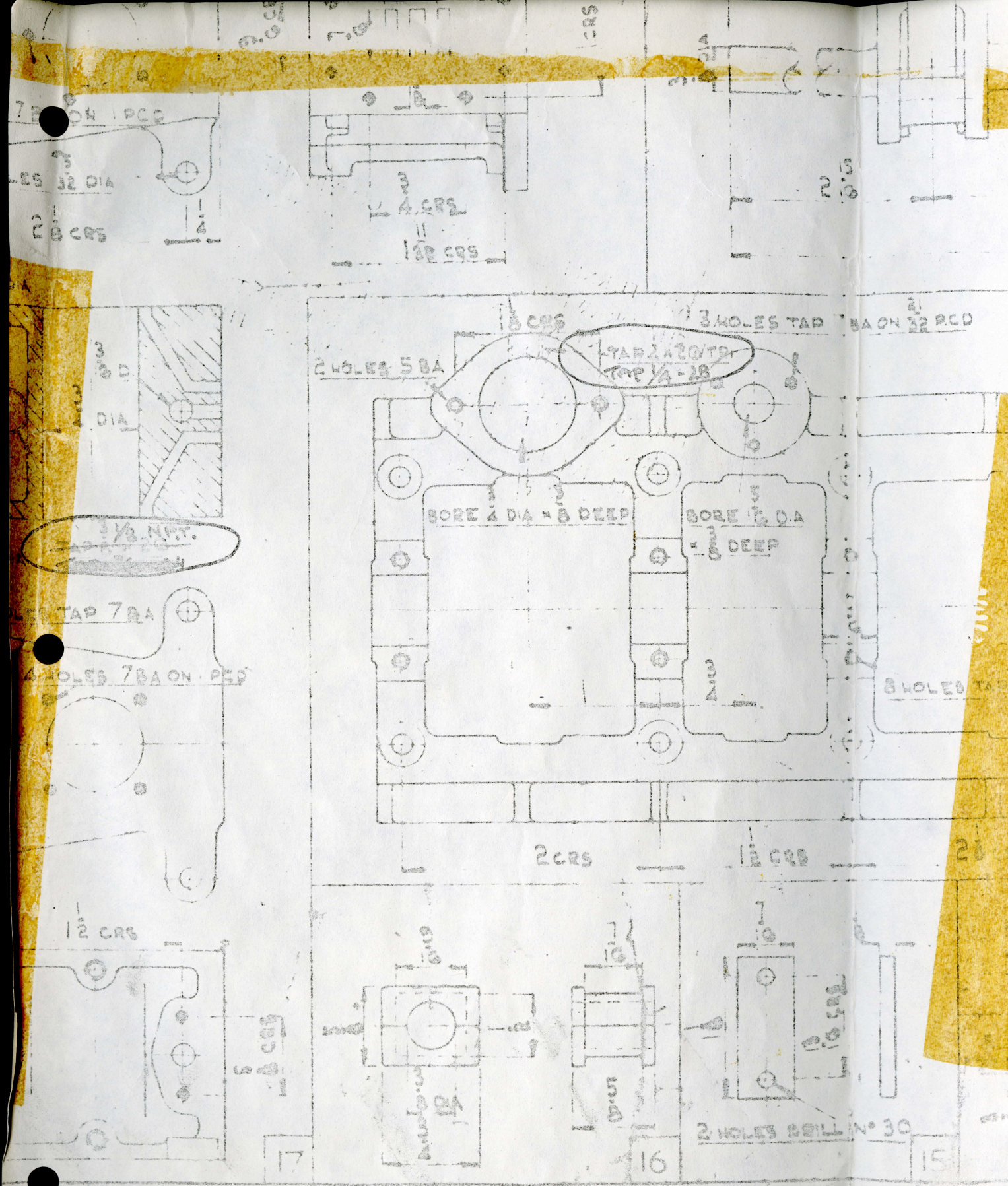


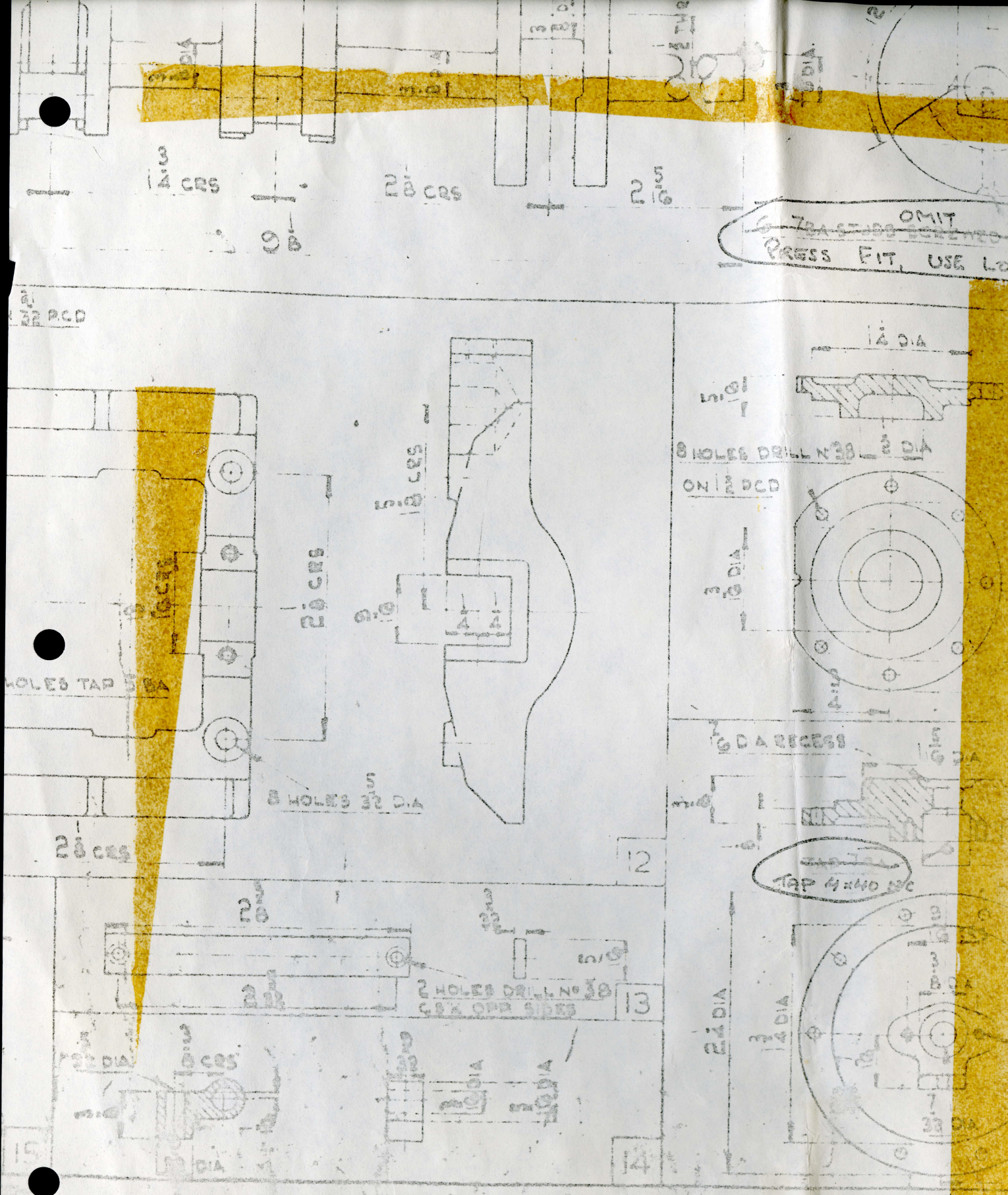


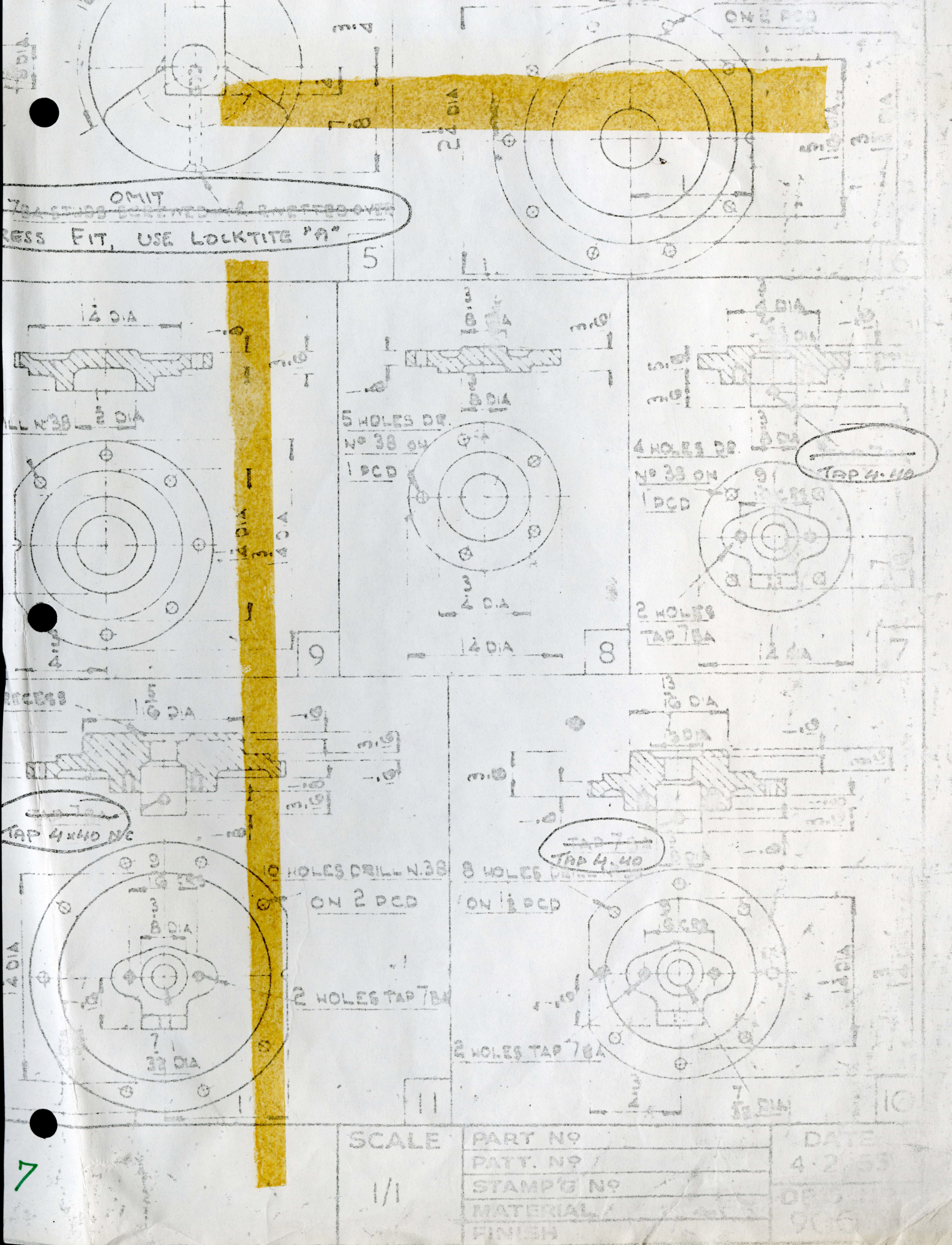



6 HOLES DRILL No 24
2 CRS
1/2 CRS
5/16 DIA
3/4 DIA
1/4 DIA
3/16 x 32 NC
TAP 7 BA ON 2 PCD
TAP 7 BA ON 1 PCD
2 CRS
6 HOLES TAP 3/32 x 40 TPI
VIEW A
8 HOLES TAP 7 BA
6-32 ALLEN HD SCREWS
3/16 x 40 TPI
3/16 x 32
18
19
SUBS —
1/8 N.P.T PLUG.
OMIT
TITLE :-
DETAILS FOR BUILDING TRIPLE

5


2 HOLES 5 BA
TAP 2 HOLES TAP 1/4 - 28
3 HOLES TAP BA ON P.C.D
BORE 1/4 DIA x 3/8 DEEP
BORE 1/2 DIA x 3/8 DEEP
2 HOLES 7 BA ON P.C.D
2 HOLES DRILL № 30
EXPANSION ENGINE (1)

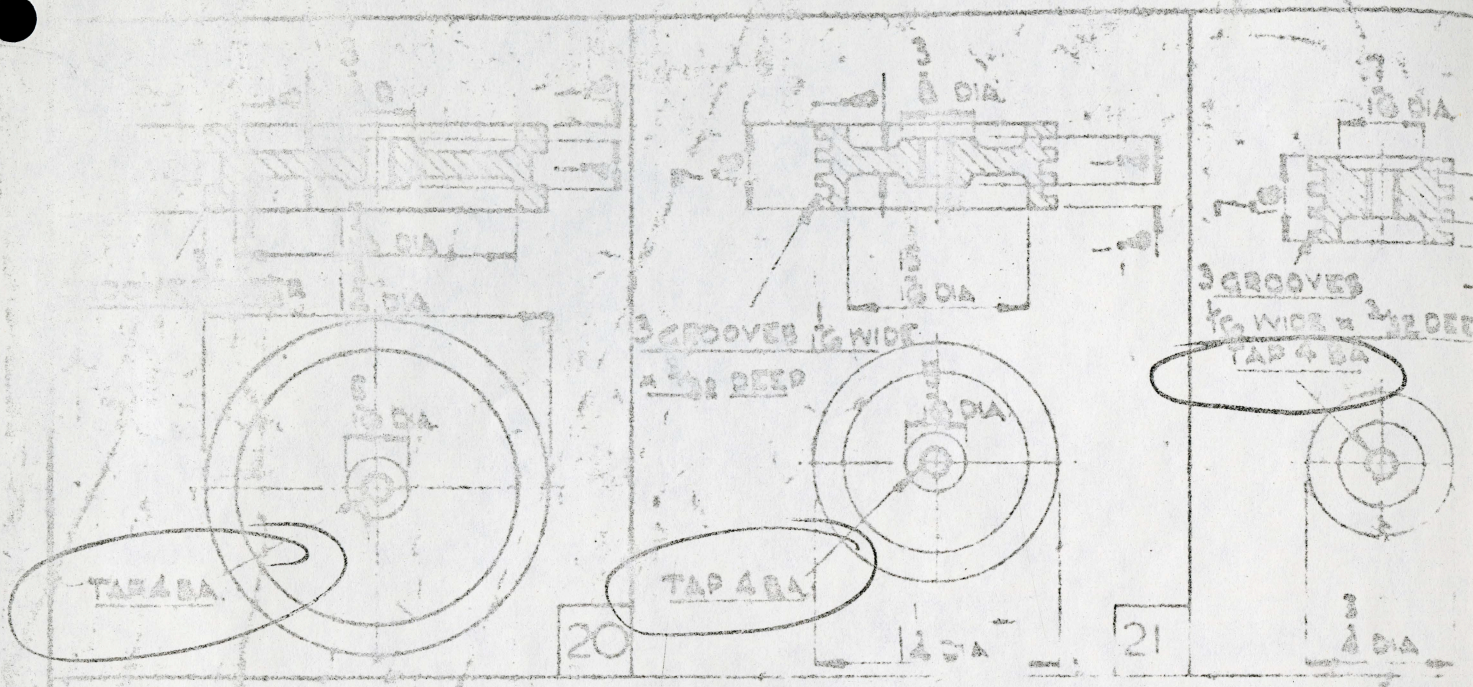

3/4 CRS
2 5/8 CRS
2 5/16
OMIT
PRESS FIT, USE
1/4 DIA
8 HOLES DRILL No 38 ON 1/2 PCD
1/2 DIA
5/8 DIA RECESS
TAP 4 x 40 UNC
8 HOLES 5/32 DIA
2 HOLES DRILL No 38 C'SK OPP SIDES
12
13
14
15
MADE IN ENGLAND

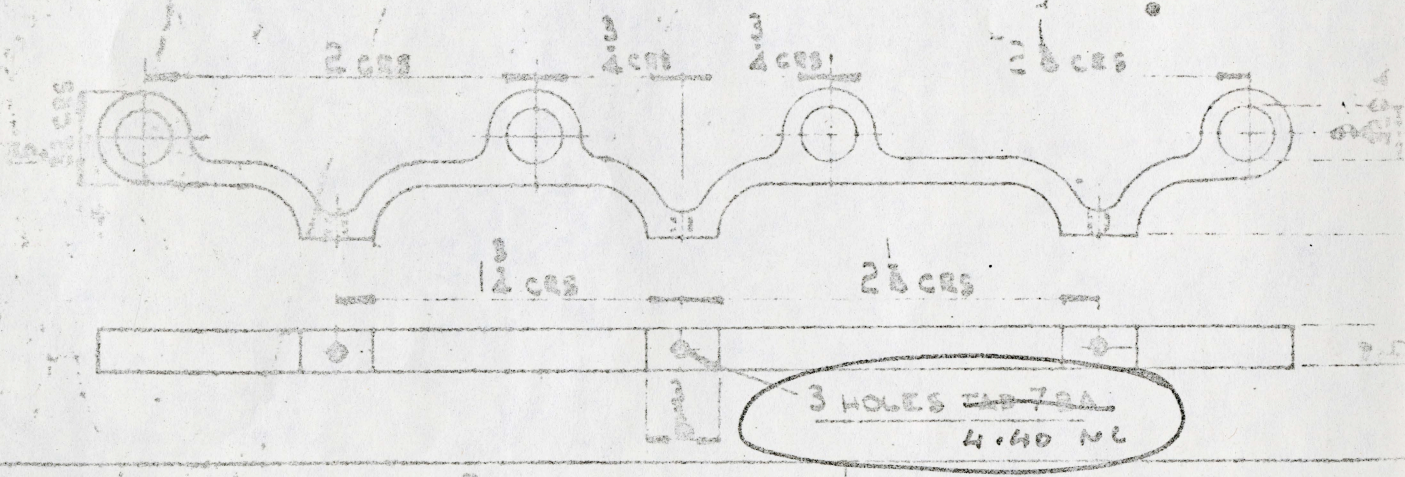

OMIT
RESS FIT, USE LOCKTITE "A"
5
9
8
7
11
10
TAP 4 x 40 NC
TAP 4-40
10 HOLES DRILL N.38
ON 2 PCD
2 HOLES TAP 7BA
8 HOLES
ON ½ PCD
2 HOLES TAP 7BA
5 HOLES DR.
No 38 ON
1 PCD
4 HOLES DR.
No 38 ON
1 PCD
TAP 4-40
2 HOLES
TAP 7BA
SCALE
1/1
PART No
PATT. No
STAMP'G No
MATERIAL
FINISH
DATE
4 2

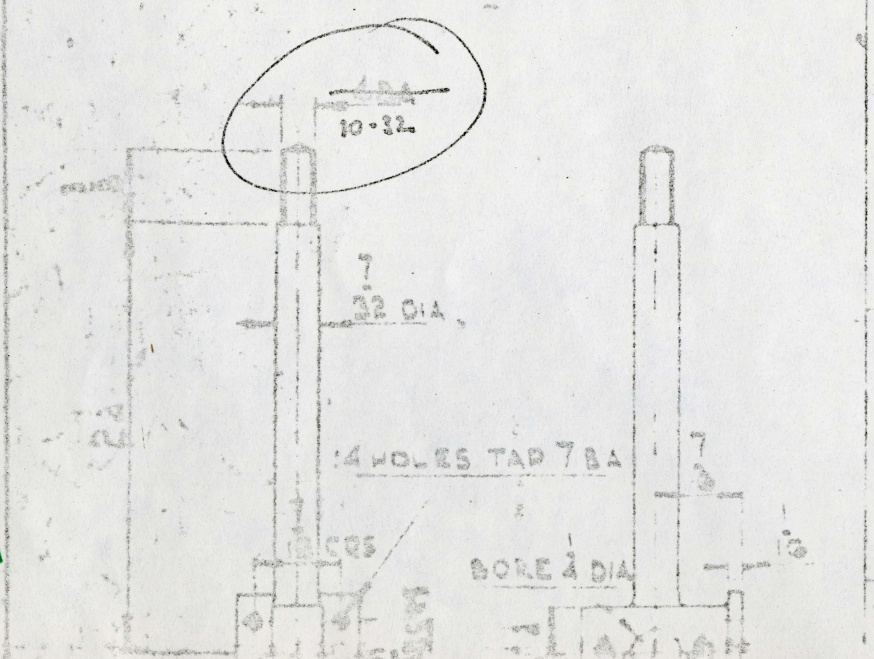
7

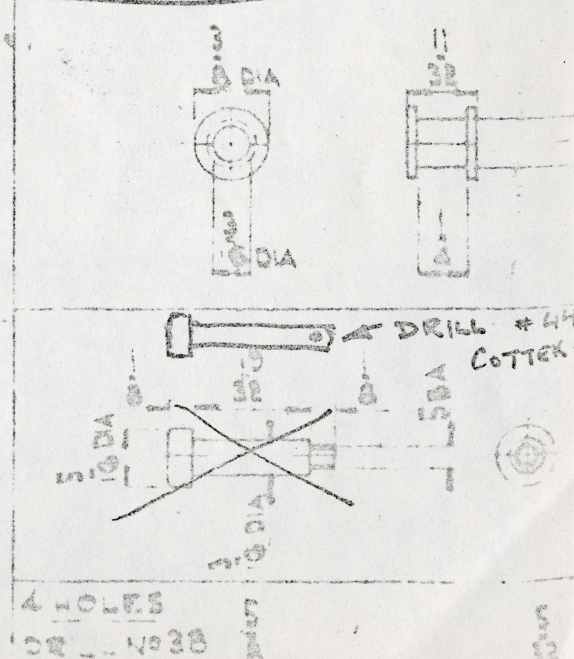
	DATE	ALTERATIONS
	4.2.55	

8









11

8

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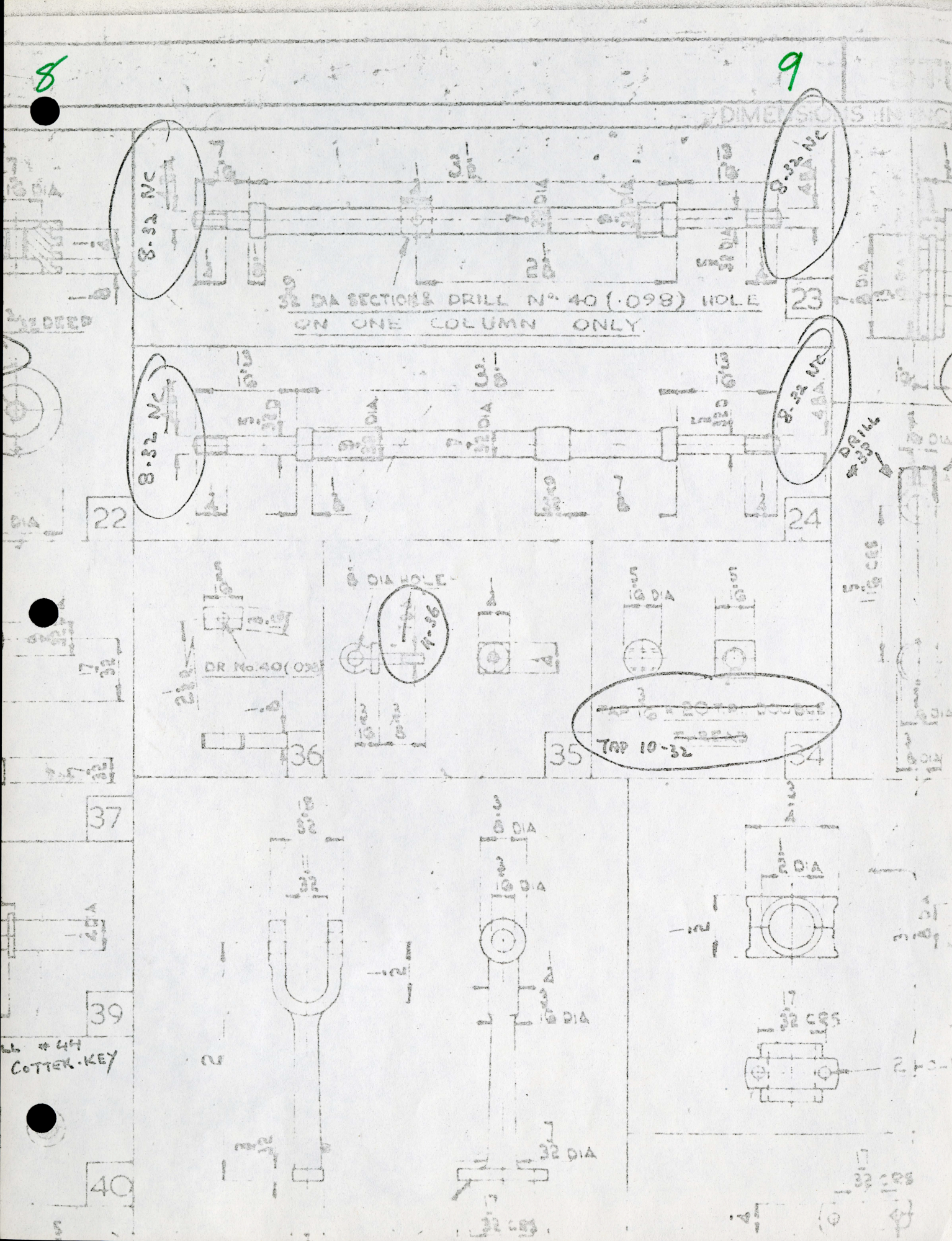
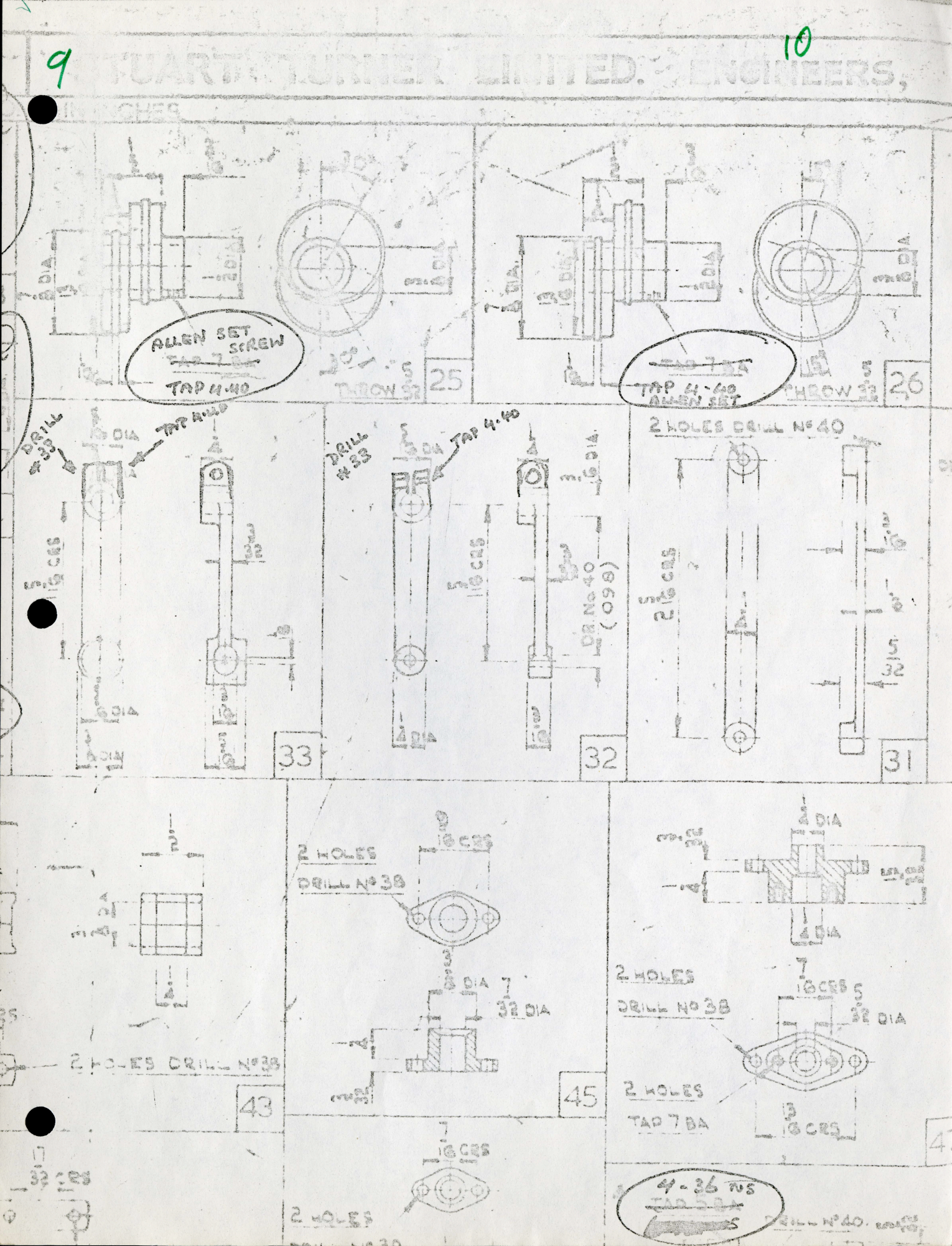

8-32 NC
8-32 NC
3 1/2
2 5/8
9/32 DIA SECTION 8 DRILL No. 40 (.098) HOLE ON ONE COLUMN ONLY
23
8-32 NC
8-32 NC
3 1/8
DRILL #33
22
24
DR No. 40 (098)
11-36
5/8 DIA HOLE
5/16 DIA
TAP 10-32
36
35
34
37
39
40
COTTER KEY
3/8 DIA
1/2 DIA
32 DIA

STUART TURNER LIMITED. ENGINEERS,



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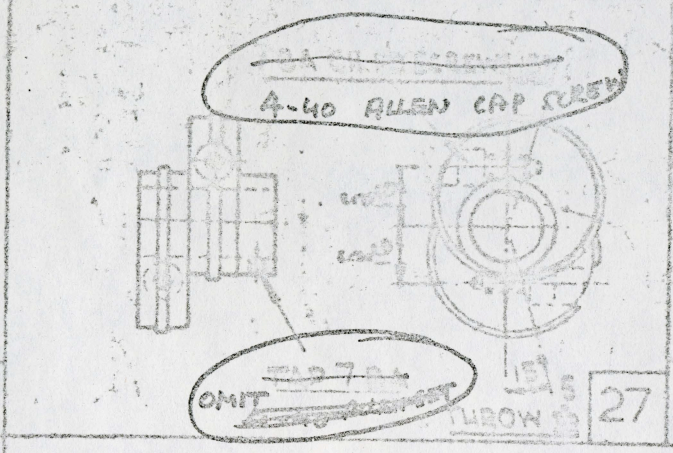
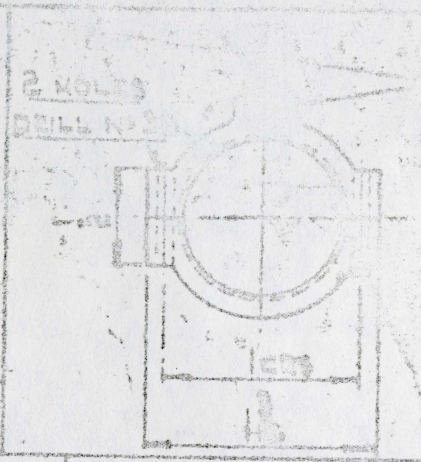
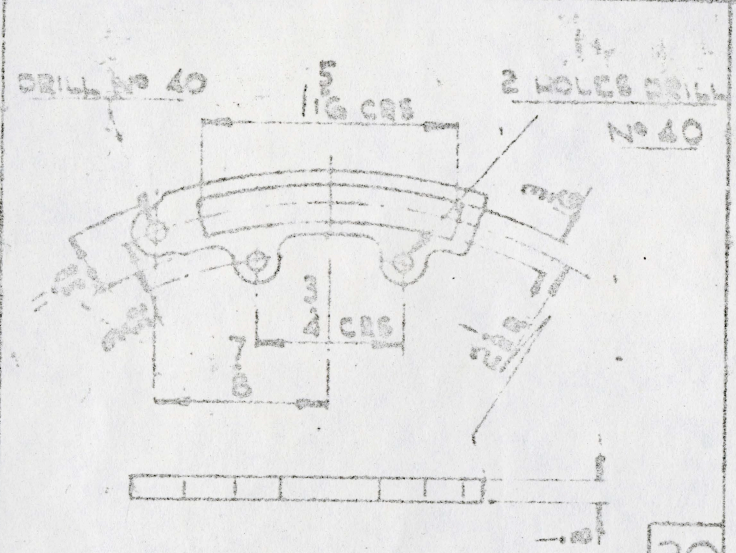


26

27





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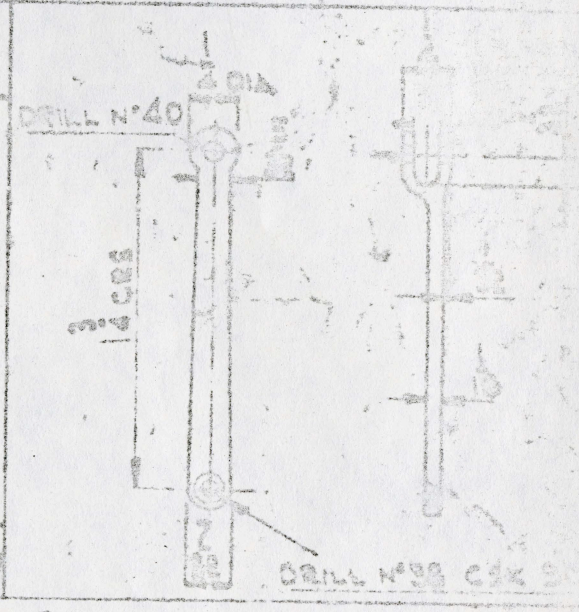

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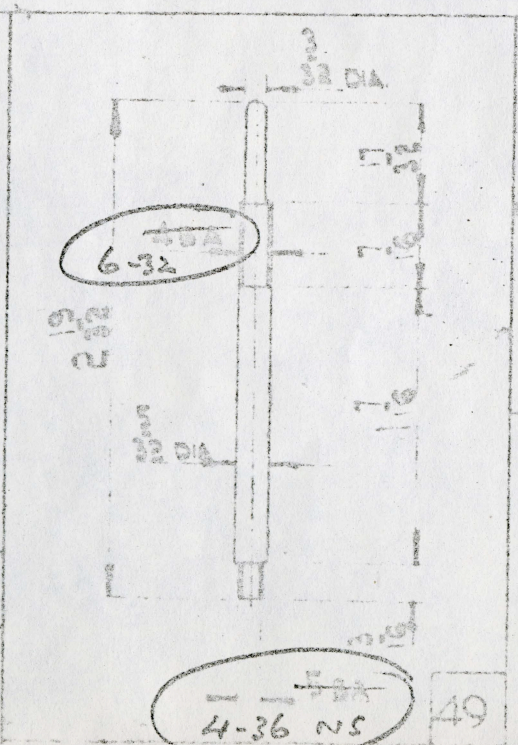
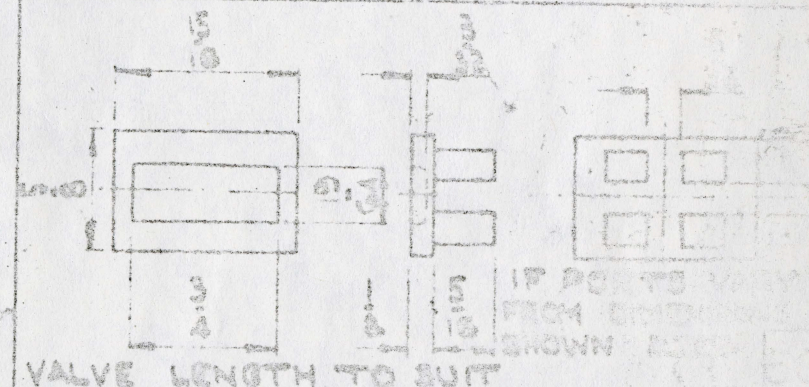
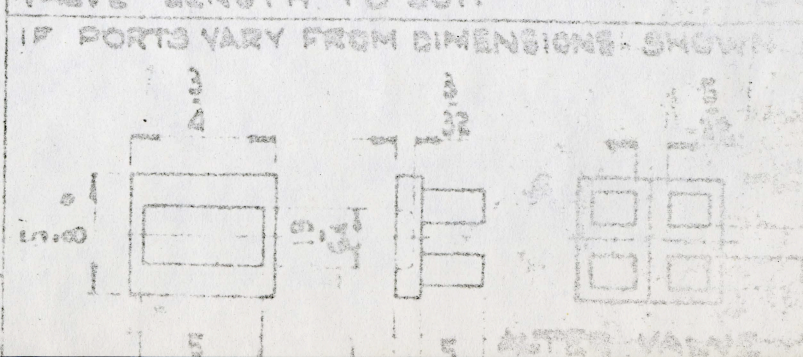
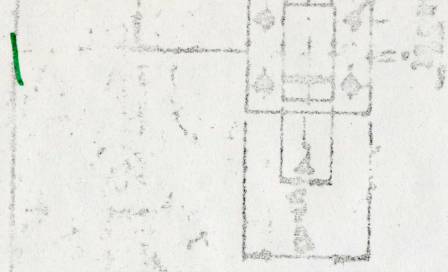


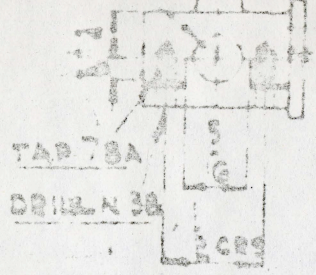
47

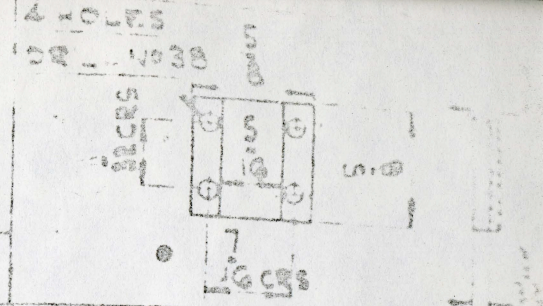
49



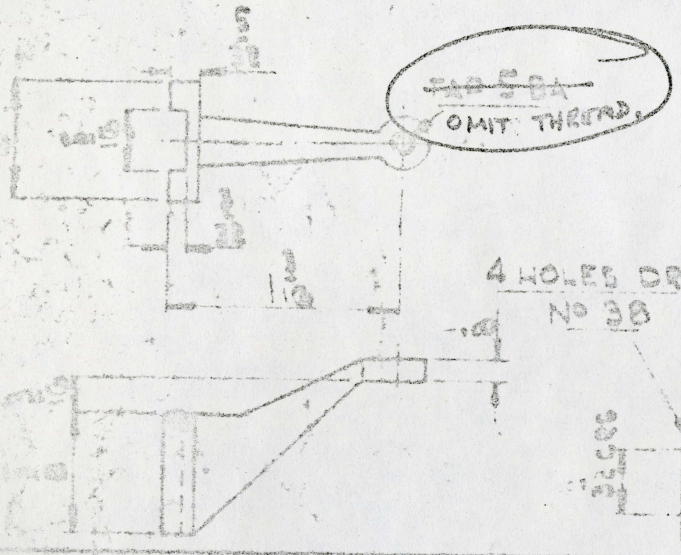


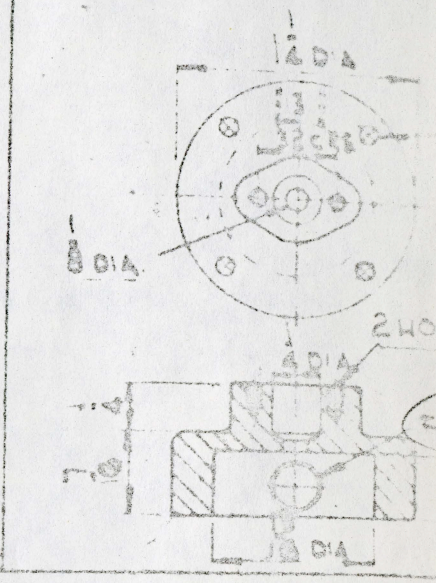


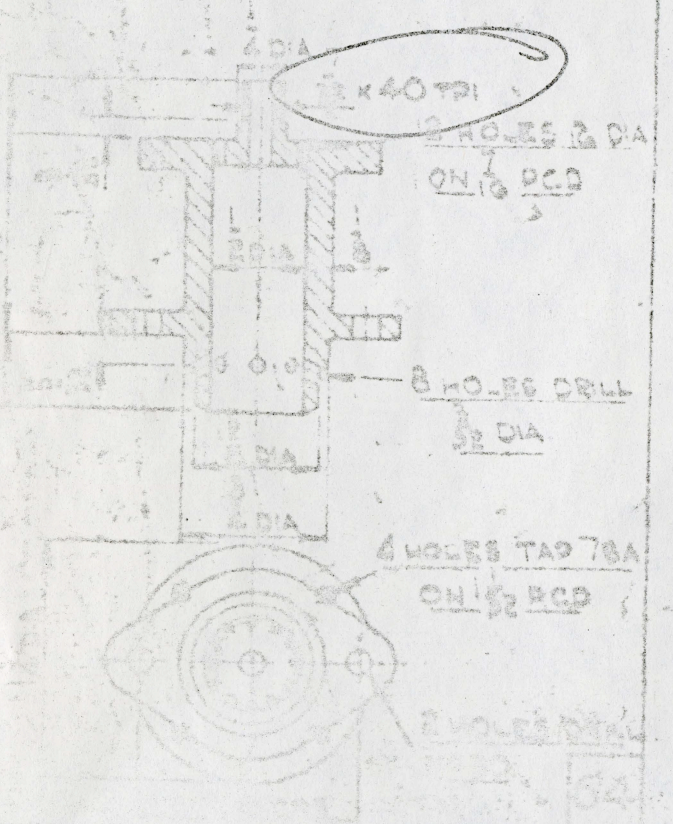

TAP 7BA
DRILL N 38
3 CRS

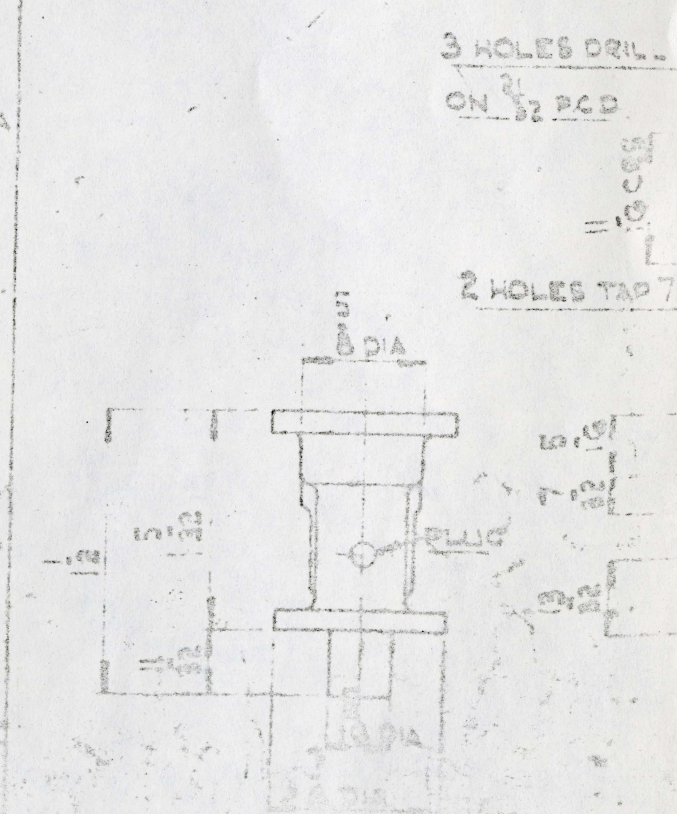

4 HOLES
DR N 38
7/16 CRS

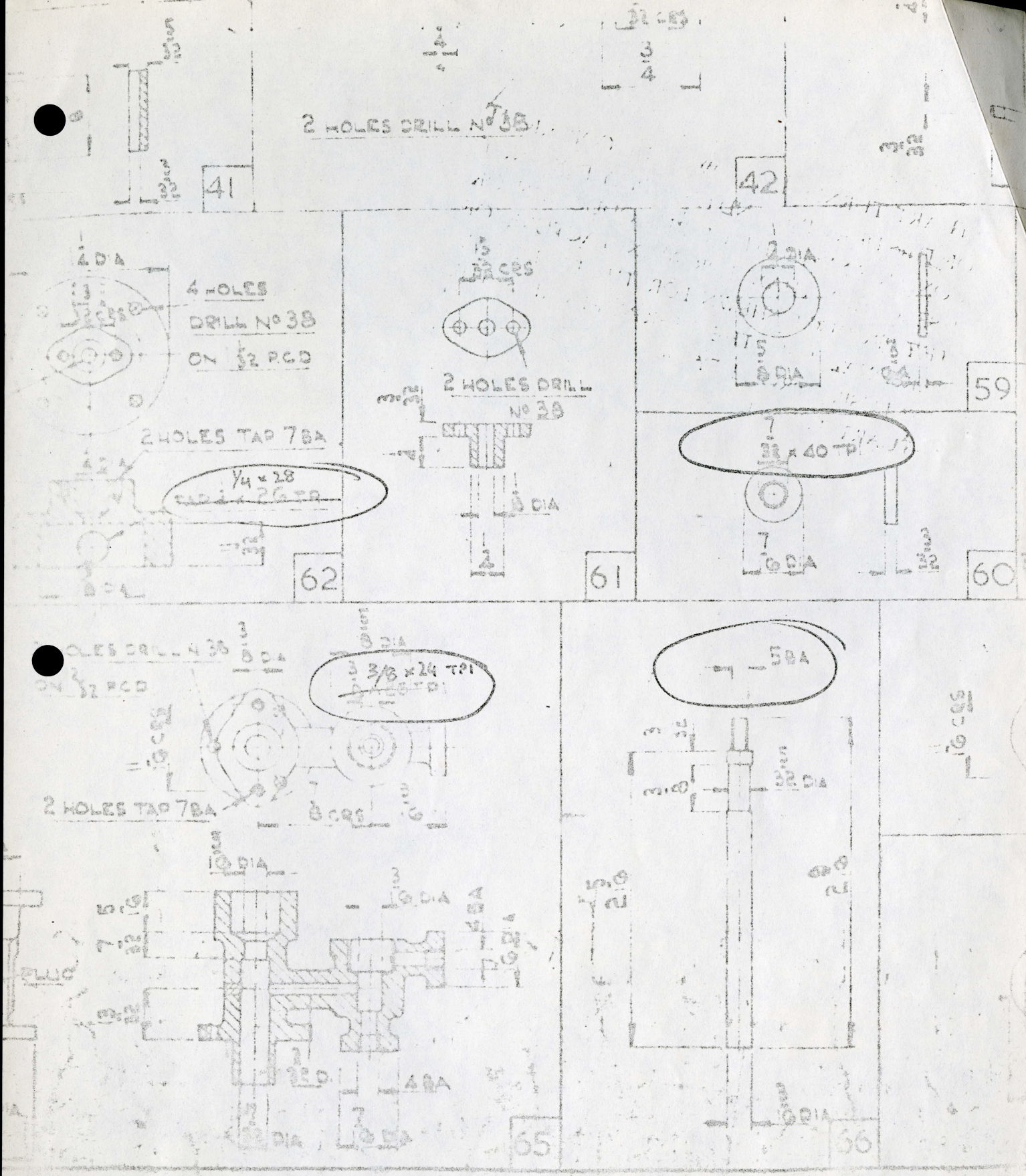
38

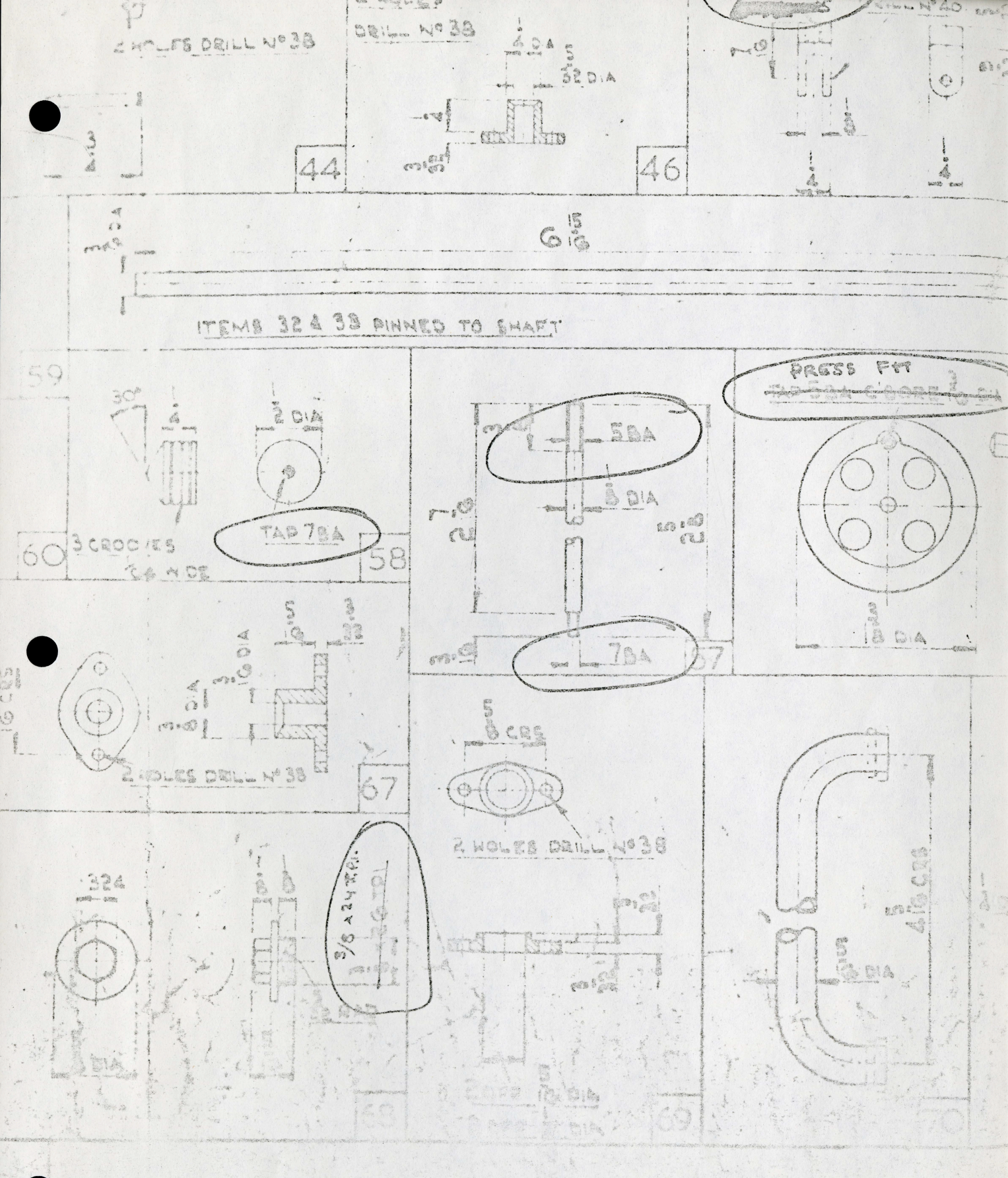

OMIT THREAD
4 HOLES DR
No 38
3/8 CRS

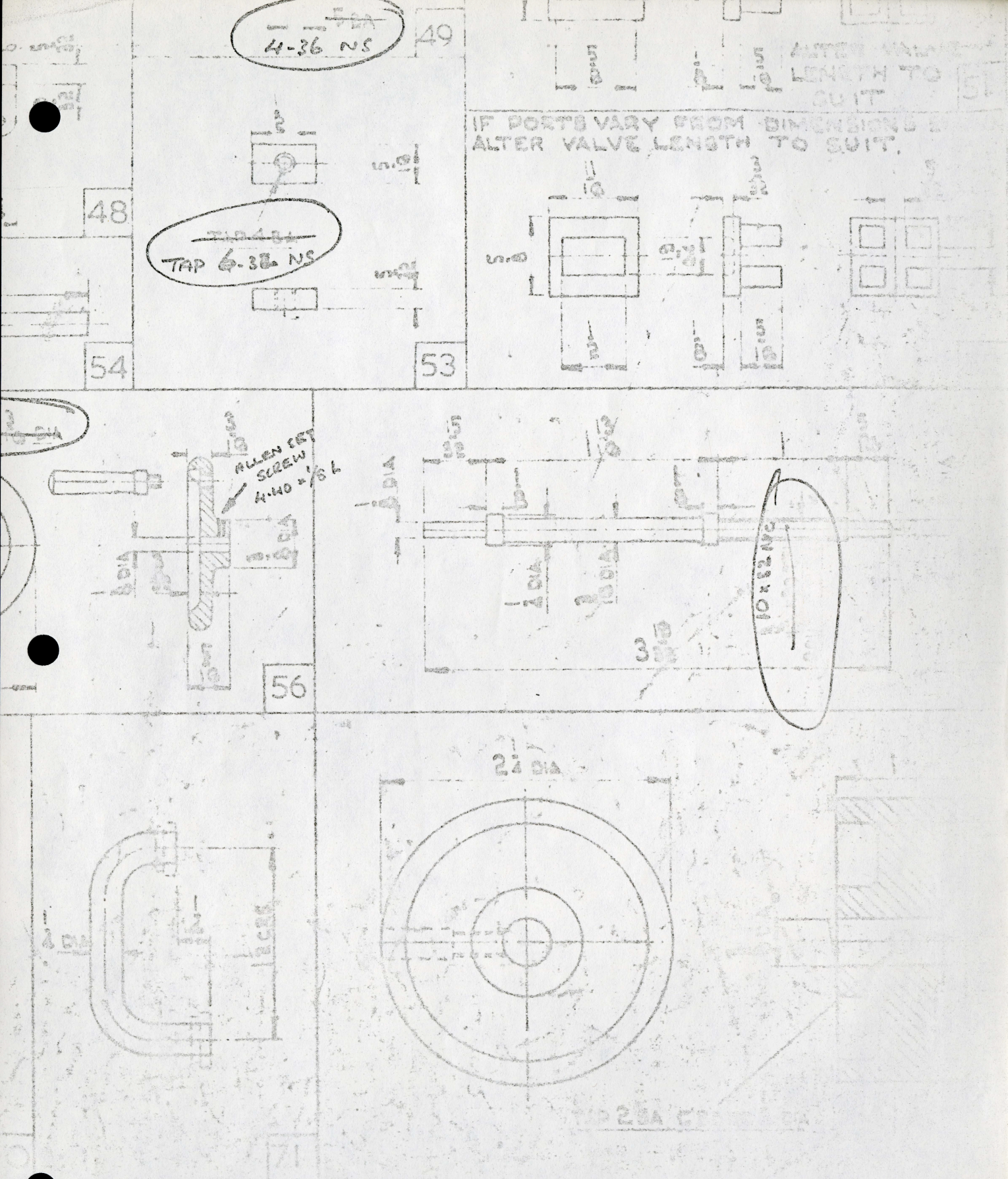

1/4 DIA
3/8 CRS
3/8 DIA
4 DIA
2 HO
3/8 DIA


1/4 DIA
7/8 x 40 TPI
2 HOLES 1/8 DIA
ON 1/16 PCD
8 HOLES DRILL
1/32 DIA
4 HOLES TAP 7BA
ON 1/32 PCD

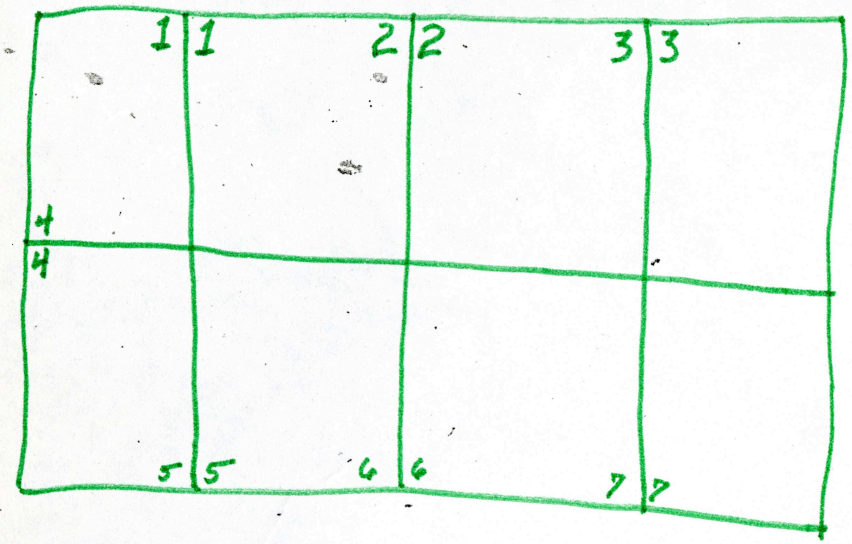

3 HOLES DRIL
ON 3/32 PCD
2 HOLES TAP 7
5/8 DIA
1 DIA


2 HOLES DRILL No 38
41
42
4 HOLES
DRILL No 38
ON 1/2 P.C.D
2 HOLES TAP 7BA
1/4 x 28
2 HOLES DRILL
No 38
59
60
61
62
2 HOLES TAP 7BA
3/8 x 24 TPI
5BA
65
66

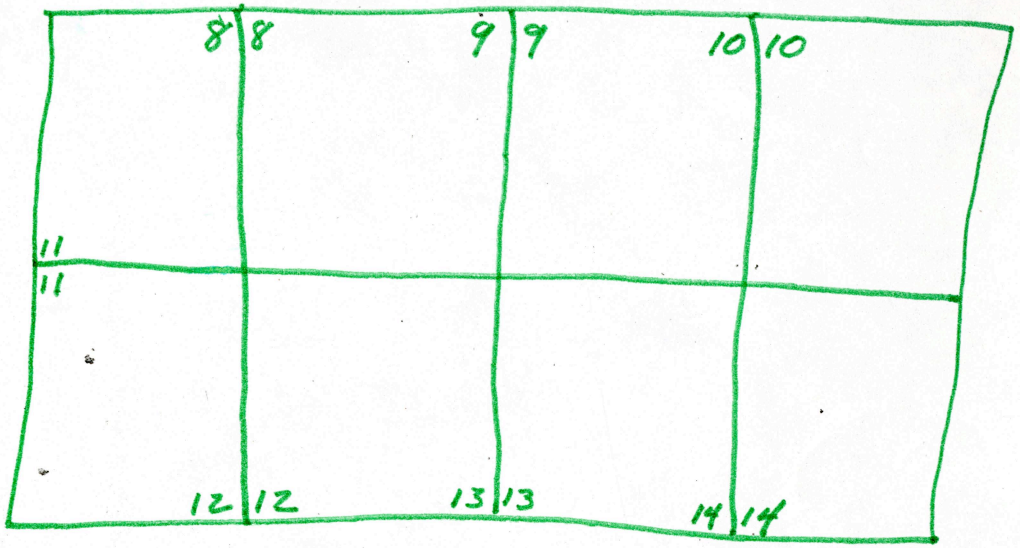

DRILL Nº 38
44
46
ITEMS 32 & 33 PINNED TO SHAFT
59
60
3 CROCKS
58
TAP 7BA
5BA
8 DIA
7BA
57
PRESS FIT
8 DIA
67
2 HOLES DRILL Nº 38
5 CRS
2 HOLES DRILL Nº 38
3/8 x 24 T.P.I.
69
70


4-36 NS
49
48
TAP 4-36 NS
54
53
IF PORTS VARY FROM DIMENSIONS
ALTER VALVE LENGTH TO SUIT.
ALLEN SET SCREW 4-40 x 1/8 L
56
2¼ DIA

14



DWG 90016



DWG 90017

CAPCOM HAS THE ORIGINALS AND A COPY OF THIS "PIECE MAP". THESE COPIES ARE PRETTY SAD DUE TO THE SHAPE OF THE ORIGINALS, BUT HE SHOULD BE ABLE TO ANSWER ANY QUESTIONS.

1. The High Pressure cylinder is located at the front of the engine, flywheel at the rear.

2. The right-hand side of the engine is that side when viewed from the rear, looking forward.

3. Parts that require to be numbered for matching purposes are numbered on the front and/or right-hand side.

4. Split bearings (main and cam bearings) must be kept as matched pairs and are so numbered so that they can be matched and re-assembled in their original locations. In case the numbers become obliterated, a duplicate numbering by center-punch marks has been made.

5. Parts which may be assembled in different locations and/or which may be assembled in more than one rotational position should be assembled in the location and rotational position which gives the freest and best assembly. Trial and error method should be used.

6. All studs, bolts, nuts, etc., are "free running". Any tightness on assembly should be treated with caution - cross threading should be looked for, i.e. a stud not true to the surface should be backed off and re-fitted perpendicular to the surface. Be cautious of intermix of American Standard and British Association threads.

7. All studs and bolts have British Association threads.

8. The following carry American Standard threads:-

Piston to piston rod.

Cylinder columns.

H.P. cylinder casting to L.P. casting.

Set screws for eccentrics.

Split eccentric halves.

Valve rod and nut.

Valve rod and head.

Hand wheel (set screw).

Hand wheel guide and nut.

Reversing screw and barrel nut.

Air pump shaft to piston.

Air pump shaft to slide plate and arm.

Air pump valve nut.

Feed pump, shaft to slide plate and arm.

Intermediate valve tail rod guide in cylinder block.

Air pump, inlet and outlet.

Main steam inlet (H.P. valve chest).

Valve reversing shaft levers.

Bottom cover plate, for guide bar screws.

Guide bar bracket, for guide bar screws.

9. Special caution - 4-40 American Standard threads have been used when substituted for 7 B.A. except 4-36 threads for hand wheel reverse screw guide, also shortened 7 B.A. bolt, top rear pipe flange.

10. If this model is to be assembled and disassembled a number of times, it is advisable to assemble all studs finger tight only and all nuts only sufficient to make a secure assembly.

11. Make certain that all sub-assemblies with moving parts are completely free of binding before proceeding to next assembly.

12. When completing the assembly of the steam engine and making the valve timing and adjustment, be cautious when turning the engine, making certain that the valve does not "Bottom out", causing resistance to turning of the engine. Check in both forward and reverse. Damage may be done to eccentric rods if the engine is turned further until this adjustment is corrected so that the valves will not hit at the end of their travel.

The sliding action that takes place in the Exp. links (Item 30) also during adjustment may reach the limit of its travel - again damage may be caused if this is not adjusted to give clearance at both ends of travel. Drag links, if not properly aligned will allow the valve head bolt to foul the drag links. Any of these occurrences can cause damage and should be treated with suspicion if at any time increased resistance to turning of the engine is felt.

13. Good Luck!

STEAM ENGINE PARTS

BAG No.	CONTENTS
1	3 MANIFOLDS (LONG SCREWS FOR OPEN ENDED MANIFOLD
2	CYLINDER TOP COVERS VALVE CHEST COVERS
X 3	SHEET METAL CYLINDER COVERS AND SCREWS
4	MATCHING { No. 1 AND 2 VALVE RODS (NUMBERED FROM OPPOSITE END FROM FLYWHEEL) EXPANSION LINK DRAG LINKS
5	VALVE CHEST AND VALVE (OPPOSITE END FROM FLYWHEEL) 8 - STUDS 2 - NUTS

6 MATCHING { No. 5 AND 6 VALVE RODS
EXPANSION LINK
DRAG LINKS

7 VALVE CHEST AND VALVE (FLYWHEEL END)
8 - STUDS
2 - NUTS

8 HAND WHEEL

9 15 ~~FLYWHEEL~~

10 REVERSING SHAFT AND LEVERS

11 MATCHING { No. 3 AND 4 VALVE RODS
EXPANSION LINK
DRAG LINKS

12 CONNECTING ROD ASSEMBLY (HIGH PRESSURE CYLINDER - FRONT OF ENGINE)

13 MATCHING { HIGH PRESSURE PISTON AND RING
PISTON ROD ASSEMBLY

14 AIR PUMP ASSEMBLY

15 FEED PUMP ASSEMBLY

16 ~~16~~ 10 CONNECTING ROD (REAR OR FLYWHEEL END)

17 ~~CENTER~~ CONNECTING ROD

18 ~~COLUMNS~~

GUIDE ~~BAR BRACKETS~~

4 Flat heads - base plate

19 ~~CRANKSHAFT~~

20 ~~SOLEPLATE AND BEARINGS~~

21 MATCHING
- REAR CYLINDER PISTON (NO RING)
- PISTON ROD ASSEMBLY
- BOTTOM COVER

22 MATCHING
- CENTER PISTON (NO RING)
- PISTON ROD ASSEMBLY
- BOTTOM COVER

23 CENTER VALVE ASSEMBLY

24 HIGH PRESSURE CYLINDER
11 - STUDS (TOP AND BOTTOM)

25 LOW PRESSURE CYLINDERS
34 - STUDS (TOP AND BOTTOM)