



Locomotive Equipment Bulletin #13

September, 1954

Page 1

WEAR LIMITS AND FIELD SALVAGE MODEL 244 ENGINES

- RECOMMENDED ACTION:** For information.
- LOCOMOTIVES INVOLVED:** All having Model 244, 12 and 16 cylinder engines.
- APPARATUS INVOLVED:** Various Model 244 Diesel engine parts.
- PURPOSE:** To insure the maximum utilization and efficiency of various Model 244 engine parts, thereby providing optimum performance of the Model 244 Diesel engine.
- BRIEF DESCRIPTION:** This Bulletin provides you with two groups of sketches, one group of which sets forth our recommended field wear limits, while the other group sets forth our recommended field salvage limits and instructions, for various Model 244 engine parts.

DETAILED DESCRIPTION:

FIELD WEAR LIMIT SKETCHES - The Field Wear Limit sketches included herein, are being issued to provide you with the limits of wear for certain Model 244 engine parts for which no such limits have previously been issued, as well as to provide you with the revised, and in most cases, broadened limits for other parts. This information, when adhered to, will insure the maximum utilization and efficiency of these parts and will thereby provide optimum performance of the Model 244 Diesel engine. These sketches also provide the information necessary to schedule the timely removal from service of these parts to prevent engine and/or locomotive failures; as well as to allow for the rehabilitation of these parts while they are still salvageable, and before they have reached their condemning or scrapping limit.

These wear limits have been compiled from information submitted by our Service Department, Factory Rebuild Service Department, Engineering Department and especially many Railroad Mechanical Departments, as based on actual operating experiences.

FIELD SALVAGE SKETCHES - The Field Salvage sketches also included herein are being issued to provide you with the salvage information and details for

certain Model 244 engine parts for which no such information has previously been issued. This information, when properly used, will enable the salvage and/or rebuilding of these parts at a minimum expense; and allow for additional utilization at original maximum efficiency.

These salvage sketches have been prepared from information submitted by our Service Department, Engineering Department, Factory Rebuild Service Department and especially many Railroad Mechanical Departments as based on actual salvage and subsequent operating experiences. The methods and information included in these sketches are those approved and recommended by Alco and are those methods utilized by our Factory Rebuild Service Department in rebuilding these parts at our Auburn Plant.

GENERAL INFORMATION: All previously issued copies of these sketches, which are dated prior to the date shown on each individual sketch included herein, or which do not show the latest revision, are hereby superseded and should be destroyed. Further, wear limit and salvage details contained in previously published Maintenance Manuals on the subjects covered by this Bulletin, are also hereby superseded.

As future experience dictates, additional sketches will be issued to provide field wear limits and/or field salvage details for parts not now covered. Also, if found necessary, the present sketches will be revised and reissued to comply with the then prevailing experiences. Claims on parts in warranty will be disallowed, if those parts are operated in combination with other parts reused when worn beyond the recommended wear limits, or with parts salvaged to other than the recommendations, as set forth herein.

Many engine parts, which are found worn beyond these field wear limits, can be economically repaired by our Factory Rebuild Service Department, which maintains well-equipped repair facilities at our Auburn Plant. Unit exchange service is offered on many of these parts and practically all can be handled on a repair and return basis. Detailed information concerning this service may be obtained from your Regional Renewal Parts Manager.

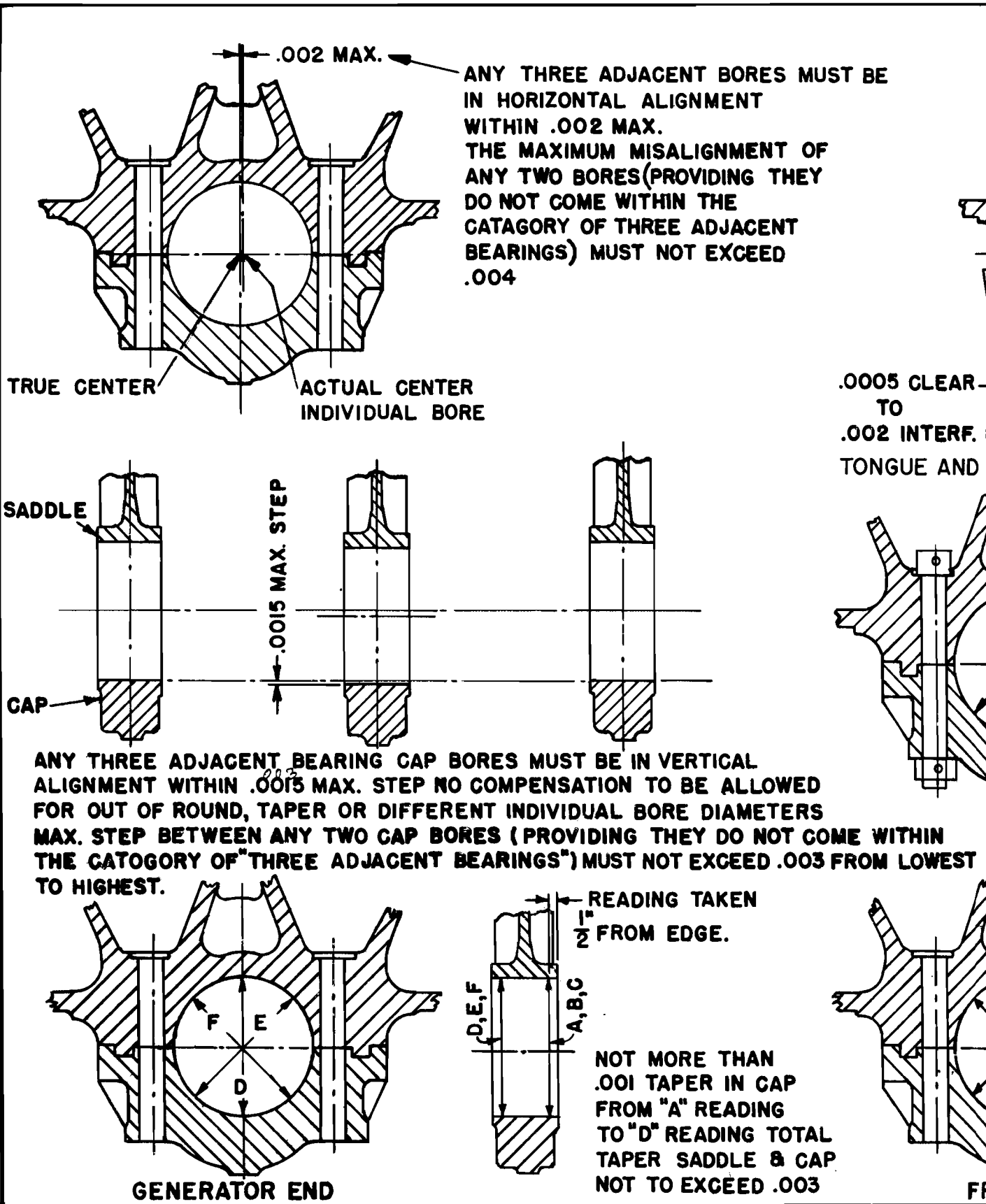
INDEX: On page 3 of this Bulletin is an index of the sketches provided, which index you will note gives the Bulletin page number, sketch number, revision letter, and date, as well as the sketch title. Any correspondence in connection with any particular sketch or sketches, MUST refer to this Bulletin as well as to the particular sketch number, revision, date and title. As new sketches are issued or present sketches revised and/or superseded, this index will be reissued so as to provide you with a ready and current means for locating the information you desire.

INDEX OF SKETCHESFIELD WEAR LIMITS

<u>Bulletin Page No.</u>	<u>Sketch No.</u>	<u>Sketch Revision</u>	<u>Sketch Date</u>	<u>Sketch Title</u>
WL-1	50-C-73227	Z-X	4-1-55	Crankshaft
WL-2	50-C-72100	Z-x	5-17-55	Cylinder Block (Main Bearing In- spection)
WL-3	50-C-72101	None	6-1-54	Cylinder Block (Main Bearing In- spection Instructions)
WL-4	50-D-72082✓	None	6-1-54	Cylinder Block Bore
WL-5	50-D-72081✓	None	6-1-54	Liner
WL-6	50-D-72080✓	None	6-1-54	Water Jacket
WL-7	50-D-72079✓	Z	6-1-54	Piston
WL-8	50-D-73155✓	Y -x	2-20-55	Connecting Rod
WL-9	50-D-73222✓	Z	5-11-55	Main Bearing Stud and Connecting Rod Bolt
WL-10	50-D-73074	None -z	6-1-54	Cylinder Head
WL-11	50-D-72091✓	Z -y	3-9-55	Valve and Guide Assembly
WL-12	50-D-73204	None	6-1-54	Crosshead Casing

FIELD SALVAGE

<u>Bulletin Page No.</u>	<u>Sketch No.</u>	<u>Sketch Revision</u>	<u>Sketch Date</u>	<u>Sketch Title</u>
FS-1	50-D-73182✓	None	6-1-54	Piston (Pin Plug Keyway)
FS-2	50-D-73225✓	None	6-1-54	Piston (Pin Plug Keyway Oversize)
FS-3	50-D-73026	None	6-1-54	Cylinder Head (Yoke Guide Holes)
FS-4	50-D-73206✓	None	6-1-54	Cylinder Head (Nozzle Hole)
FS-5	50-D-73207	None	6-1-54	Cylinder Head (Water Passage)
FS-6	50-D-73191	None	6-1-54	Liner to Cylinder Head (Water Passage Gasket)
FS-7	50-D-73189✓	None	6-1-54	Base Support Pad
FS-8	50-D-73181✓	None	6-1-54	Water Pump Impeller
FS-9	50-D-73221	None	6-1-54	Fuel Pump Control Lever
FS-10	50-C-73208	None -z	6-1-54	Crosshead Casing (Fuel Pump)
FS-11	50-C-73220	Z -x	5-12-55	Crankshaft Extension (Replace- ment of Oil Seal & Damper)
FS-12	50-C-73167✓	None	6-1-54	Fuel Header (Reversal)

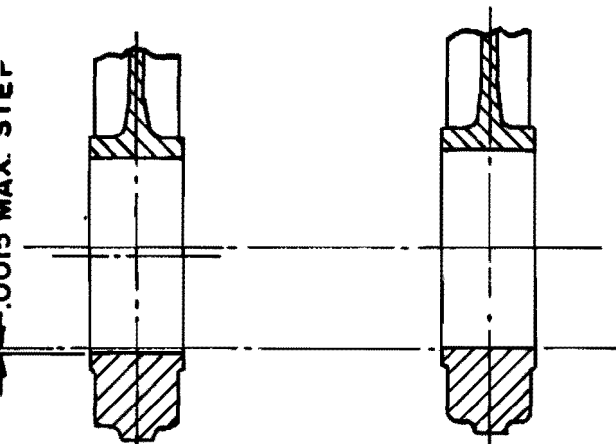


August 1955

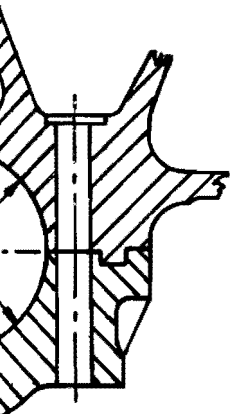
.002 MAX.

ANY THREE ADJACENT BORES MUST BE IN HORIZONTAL ALIGNMENT WITHIN .002 MAX. THE MAXIMUM MISALIGNMENT OF ANY TWO BORES (PROVIDING THEY DO NOT COME WITHIN THE CATEGORY OF THREE ADJACENT BEARINGS) MUST NOT EXCEED .004

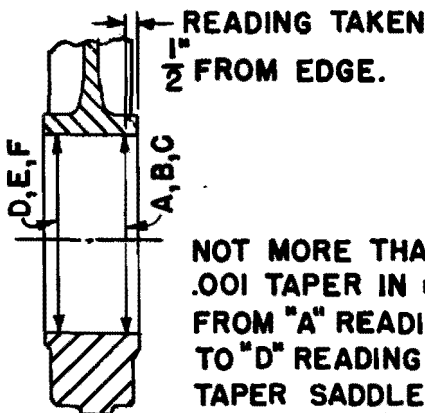
ACTUAL CENTER
INDIVIDUAL BORE



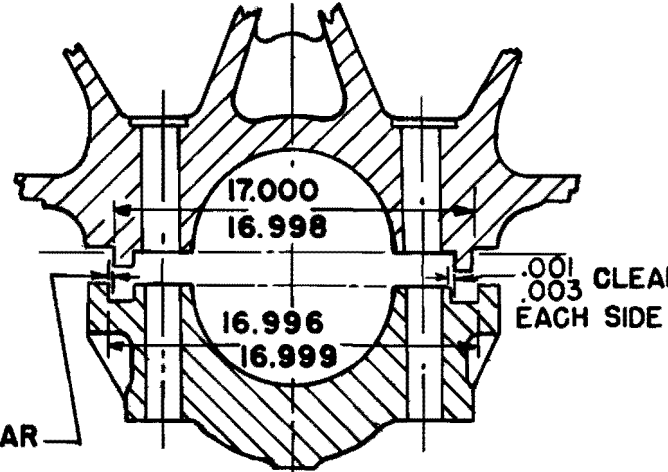
BEARING CAP BORES MUST BE IN VERTICAL ALIGNMENT WITHIN .002 MAX. STEP NO COMPENSATION TO BE ALLOWED FOR DIFFERENT INDIVIDUAL BORE DIAMETERS. ANY TWO CAP BORES (PROVIDING THEY DO NOT COME WITHIN THE CATEGORY OF THREE ADJACENT BEARINGS) MUST NOT EXCEED .003 FROM LOWEST



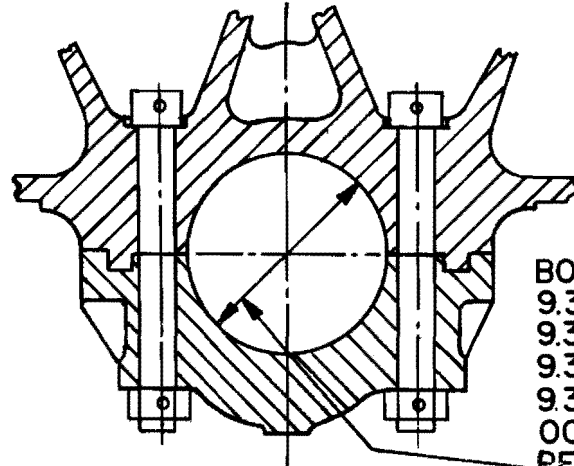
END



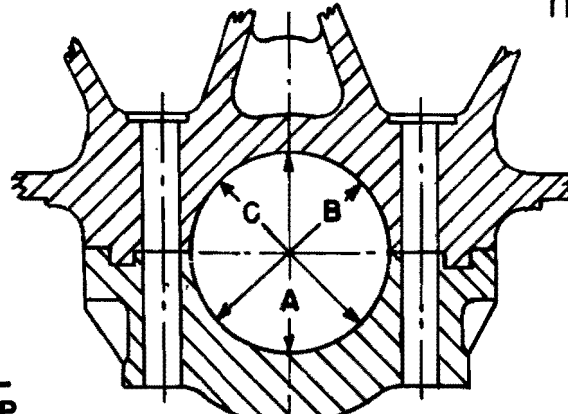
NOT MORE THAN .001 TAPER IN CAP FROM "A" READING TO "D" READING TOTAL TAPER SADDLE & CAP NOT TO EXCEED .003



.0005 CLEAR TO .002 INTERF. EACH SIDE TONGUE AND GROOVE JOINT



BORE DIA'S.
9.3750 NEW
9.3765
9.374 MIN.
9.378 MAX. DIA.
.0035 OUT OF ROUND PERMISSIBLE, BUT MUST NOT EXCEED 9.378 NOR LESS THAN 9.374.



FREE END

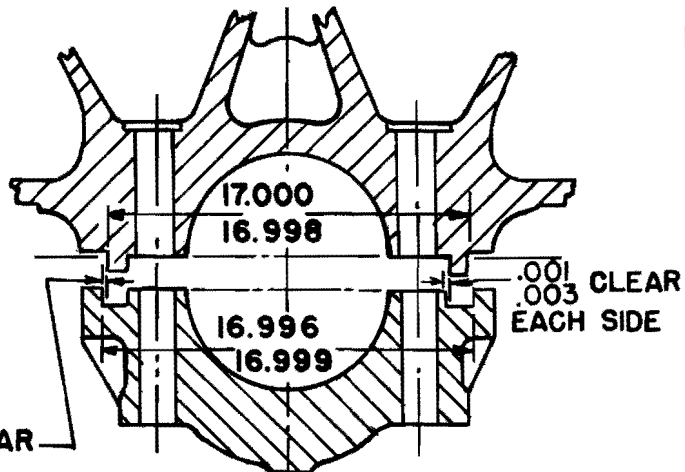
CYLI

5-17-

RES MUST BE
NT

MENT OF
G THEY

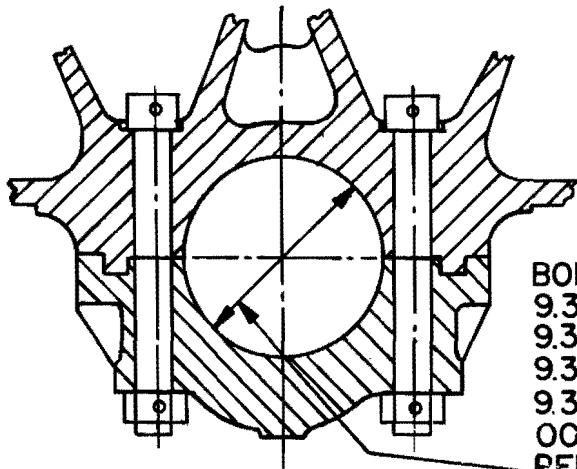
CENT
DEED



NOTE:-

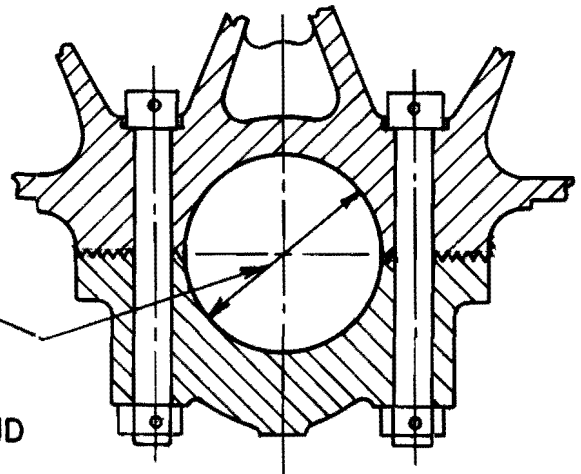
FOR CHECKING
INSTRUCTIONS
SEE 50 C 72101

.0005 CLEAR
TO
.002 INTERF. EACH SIDE
TONGUE AND GROOVE JOINT

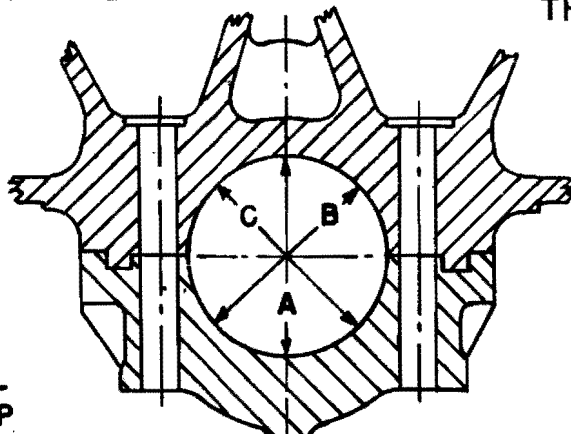


BORE DIA'S.
9.3750 NEW
9.3765
9.374 MIN.
9.378 MAX. DIA.
0035 OUT OF ROUND
PERMISSIBLE, BUT
MUST NOT EXCEED
9.378 NOR LESS
THAN 9.374.

SERRATED JOINT



AL
ALLOWED
METERS
NOT COME WITHIN
ED .003 FROM LOWEST



FREE END

IAN
I CAP
DING
G TOTAL
E & CAP
ED .003

CYLINDER BLOCK
(MAIN BEARING INSPECTION)
(FIELD WEAR LIMITS)
ALCO - 244

5-17-55

50 C 72100

(2)

**A WHEN CHECKING WITH A CAST IRON MANDREL,
DRAWING N° 47C75014 FOLLOW THIS PROCEDURE:**

- I PLACE BLOCK IN POSITION WITH SADDLES FACING UPWARD.
CLEAN ALL SADDLE BORES AND SPLIT LINES. PLACE MANDREL
IN SADDLES. MANDREL SHOULD ENTER SADDLES FREELY.
REMOVE MANDREL.**
- II CLEAN ALL BEARING CAP BORES AND SPLIT LINES.
CHECK TONGUE DIMENSIONS OF SADDLES AND CAPS
AND APPLY CAPS TO BLOCK. TIGHTEN ALL BEARING CAPS
TO (.021) BOLT ELONGATION, CHECK AND RECORD DIA.
OF EACH BORE. ALL BORES MUST BE WITHIN DRAWING LIMITS
FOR EACH READING (I. E. A,B,C,D,E,F,) SEE 50 C 72100**
- III WITH ALL INDIVIDUAL BORE DIAMETERS WITHIN THE DRAWING
LIMITS, A 9.371 DIA. MANDREL SHOULD BE LIGHTLY OILED
AND INSERTED FROM AN END BEARING. THIS MANDREL MUST
TURN FREELY. TURN 180° TO CHECK FOR STRAIGHTNESS.**
- IV IF MANDREL TURNS FREELY, PUSH MANDREL AGAINST BEARING
CAPS EITHER BY LIGHTLY JACKING (JACK DWG. N° 47 A 79320)
OR BY TURNING THE CYLINDER BLOCK OVER. CHECK WITH A
FEELER BETWEEN MANDREL AND BOTTOM CENTER OF EACH CAP, BOTH ON
GENERATOR AND FREE END SIDE OF CAP. THE MAXIMUM FEELER
DIFFERENCE BETWEEN ANY THREE ADJACENT CAPS MUST NOT
EXCEED .0015 INCH. (SEE NOTE)**
- V WHEN REPLACING SHELL LOCKS IN CAPS MAKE CERTAIN LOCK
DOES NOT PROTRUDE ABOVE SURFACE OF SPLIT LINE.**

NOTE:

WHEN CHECKING TOTAL STEP OR STEP BETWEEN ANY
CAPS, THE DIFFERENCE MUST BE FIGURED FROM THE EN
CAPS WHICH GIVE THE GREATEST STEP.

IF THE BLOCK BORE PASSES ALL THE ABOVE INSPECT
THE BLOCK BORE IS SATISFACTORY. IF NOT, BLOCK B
REWORKED.

SEE 50 C 72100

September, 1954

WITH A CAST IRON MANDREL,
C75014 FOLLOW THIS PROCEDURE:

POSITION WITH SADDLES FACING UPWARD.
THE BORES AND SPLIT LINES. PLACE MANDREL
MANDREL SHOULD ENTER SADDLES FREELY.

IG CAP BORES AND SPLIT LINES.
DIMENSIONS OF SADDLES AND CAPS
TO BLOCK. TIGHTEN ALL BEARING CAPS
ELONGATION, CHECK AND RECORD DIA.
ALL BORES MUST BE WITHIN DRAWING LIMITS
(I.E. A,B,C,D,E,F.) SEE 50 C 72100

UAL BORE DIAMETERS WITHIN THE DRAWING
A. MANDREL SHOULD BE LIGHTLY OILED
FROM AN END BEARING. THIS MANDREL MUST
TURN 180° TO CHECK FOR STRAIGHTNESS.

IS FREELY, PUSH MANDREL AGAINST BEARING
LIGHTLY JACKING (JACK DWG. N° 47 A 79320)
THE CYLINDER BLOCK OVER. CHECK WITH A
MANDREL AND BOTTOM CENTER OF EACH CAP, BOTH ON
FREE END SIDE OF CAP. THE MAXIMUM FEELER
BETWEEN ANY THREE ADJACENT CAPS MUST NOT
EXCEED .001 IN. (SEE NOTE)

SHELL LOCKS IN CAPS MAKE CERTAIN LOCK
SIDE ABOVE SURFACE OF SPLIT LINE.

NOTE:

WHEN CHECKING TOTAL STEP OR STEP BETWEEN ANY THREE BEARING
CAPS, THE DIFFERENCE MUST BE FIGURED FROM THE EDGES OF THE
CAPS WHICH GIVE THE GREATEST STEP.

IF THE BLOCK BORE PASSES ALL THE ABOVE INSPECTION REQUIREMENTS
THE BLOCK BORE IS SATISFACTORY. IF NOT, BLOCK BORE MUST BE
REWORKED.
SEE 50 C 72100

B WHEN CHECKING WITH A TRANSIT, FOLLOW THIS PROCEDURE:

I PLACE BLOCK IN POSITION WITH SADDLES FACING UPWARD
AND PROCEED THE SAME AS IN ITEMS I & 2

II WITH ALL INDIVIDUAL BORE DIAMETERS WITHIN THE DRAWING
LIMITS, THE ALIGNMENT OF THE BORES SHOULD BE WITHIN THE
LIMITS, KEEPING IN MIND THAT THE CRANKSHAFT IS
BY THE CAPS.

III (1) THE TARGET MUST REST SQUARELY IN THE CENTER OF THE
AND NOT IN THE SADDLE BORE.

(2) THE MANNER IN WHICH THE BLOCK IS PLACED IS
IMMATERIAL WITH RESPECT TO CAUSING DISTORTION
OF THE BORES.

(3) (a) TAKE READING OF ALL BORES THROUGH THE TARGET
IN CENTER. RECORD BOTH VERTICAL AND HORIZONTAL
ALIGNMENT.

(b) TAKE READING OF ALL BORES WITHIN THE TARGET
END EDGE OF BORE AND RECORD BOTH VERTICAL AND
HORIZONTAL ALIGNMENT.

(c) TAKE READING OF ALL BORES WITHIN THE TARGET
OF BORES AND RECORD BOTH VERTICAL AND HORIZONTAL
ALIGNMENT. (SEE NOTE)

BORE READINGS MUST BE TAKEN IN THE SAME
ORDER TO INDICATE A TILTED BORE OR CRANKSHAFT
SHOWN BY THE BORE MICROMETER.

CYLINDER
MAIN BEARING

6-1-54

B WHEN CHECKING WITH A TRANSIT, FOLLOW THIS PROCEDURE:

**I PLACE BLOCK IN POSITION WITH SADDLES FACING UPWARD
AND PROCEED THE SAME AS IN ITEMS 1 & 2 IN PROCEDURE-A**

**II WITH ALL INDIVIDUAL BORE DIAMETERS WITHIN DRAWING LIMITS
THE ALIGNMENT OF THE BORES SHOULD BE CHECKED TO THE DRAWING
LIMITS, KEEPING IN MIND THAT THE CRANKSHAFT IS SUPPORTED
BY THE CAPS.**

**III (1) THE TARGET MUST REST SQUARELY IN THE BEARING CAPS
AND NOT IN THE SADDLE BORE.**

**(2) THE MANNER IN WHICH THE BLOCK IS SUPPORTED IS
IMMATERIAL WITH RESPECT TO CAUSING MISALIGNMENT
OF THE BORES.**

**(3) (a) TAKE READING OF ALL BORES THE USUAL WAY WITH TARGET
IN CENTER. RECORD BOTH VERTICAL AND HORIZONTAL
ALIGNMENT.**

**(b) TAKE READING OF ALL BORES WITH TARGET ON GENERATOR
END EDGE OF BORE AND RECORD BOTH VERTICAL AND
HORIZONTAL ALIGNMENT.**

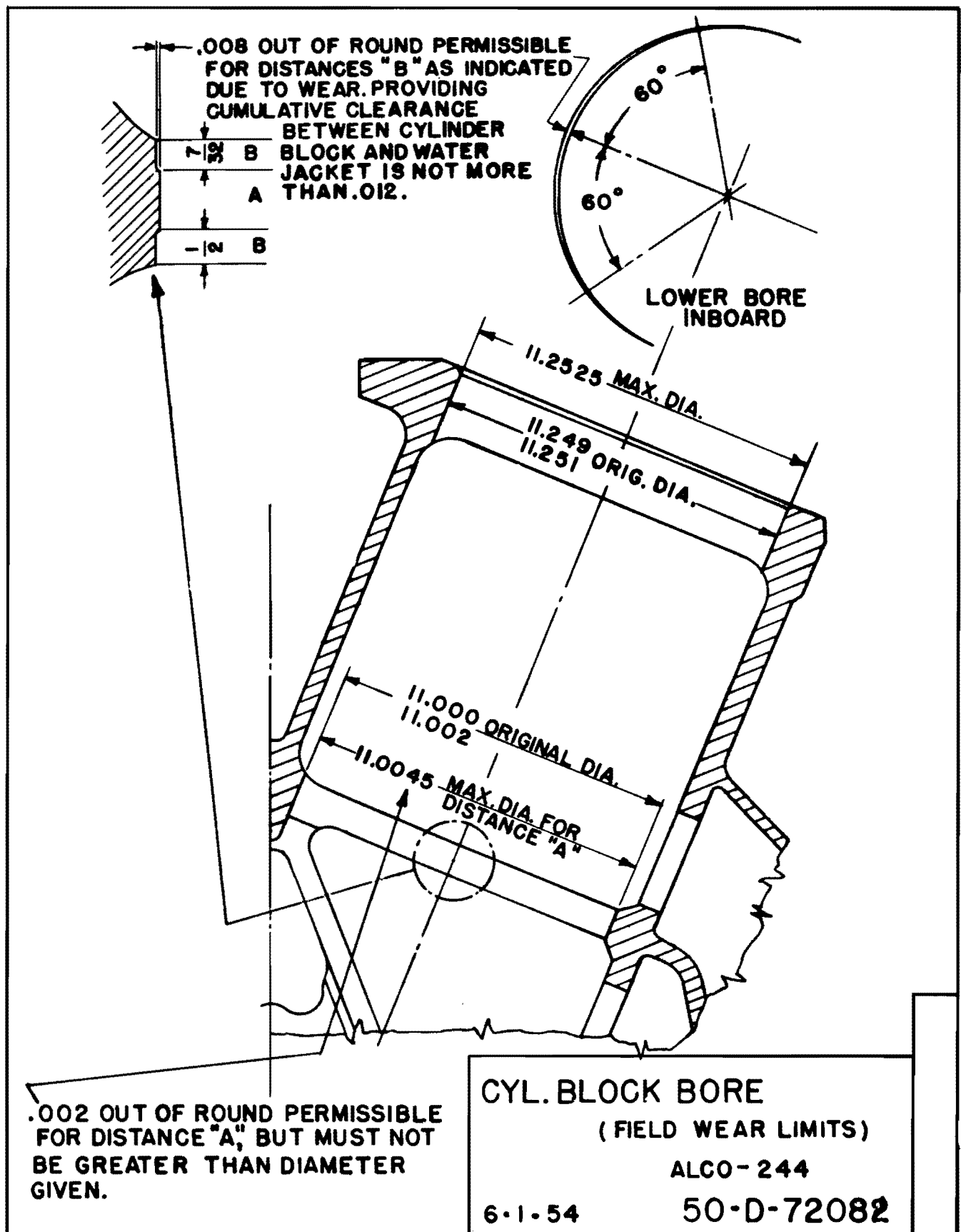
**(c) TAKE READING OF ALL BORES WITH TARGET ON FREE END EDGE
OF BORES AND RECORD BOTH VERTICAL AND HORIZONTAL
ALIGNMENT. (SEE NOTE)**

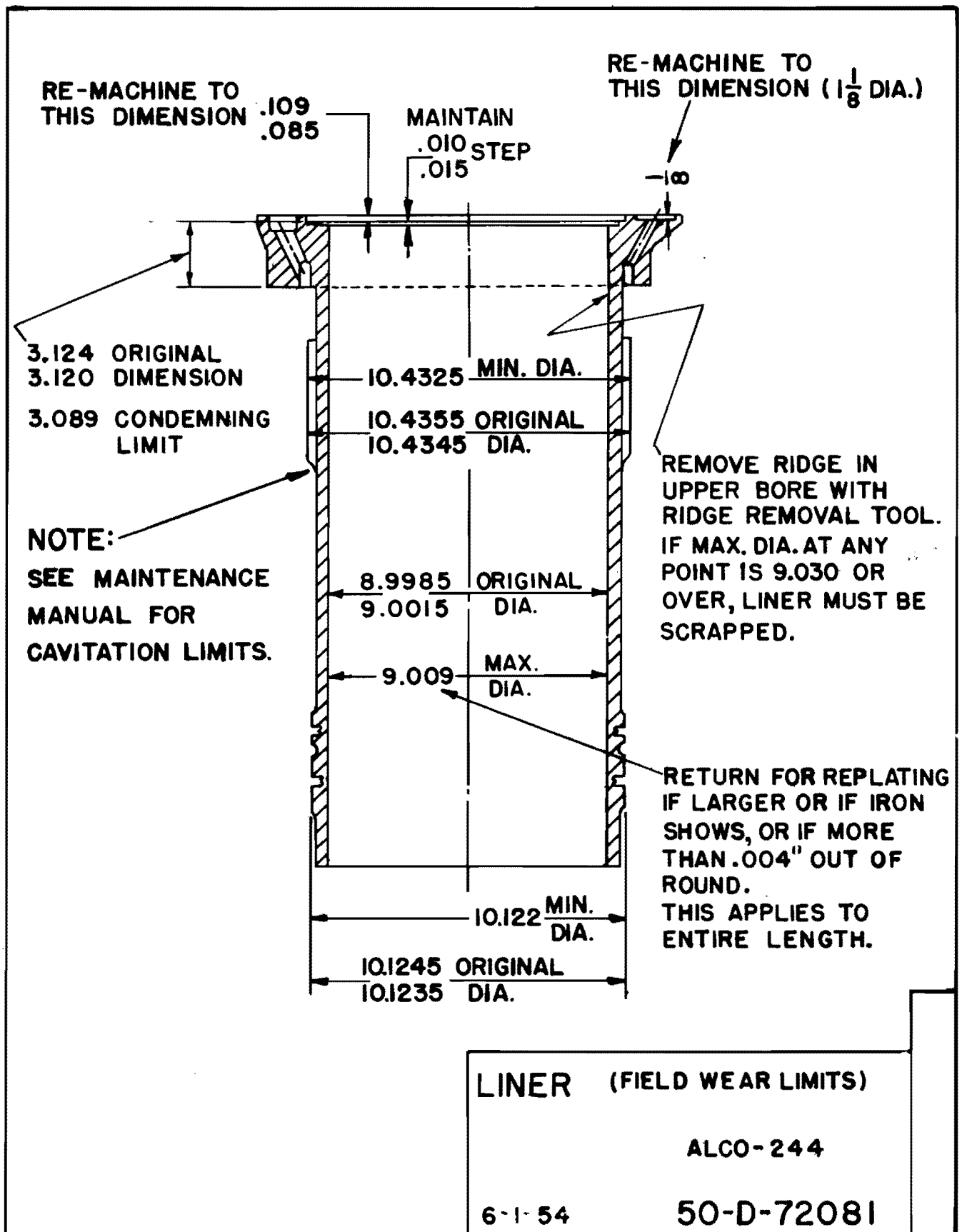
**BORE READINGS MUST BE TAKEN IN THE ABOVE MANNER IN
ORDER TO INDICATE A TILTED BORE, WHICH WOULD NOT BE
SHOWN BY THE BORE MICROMETER READINGS.**

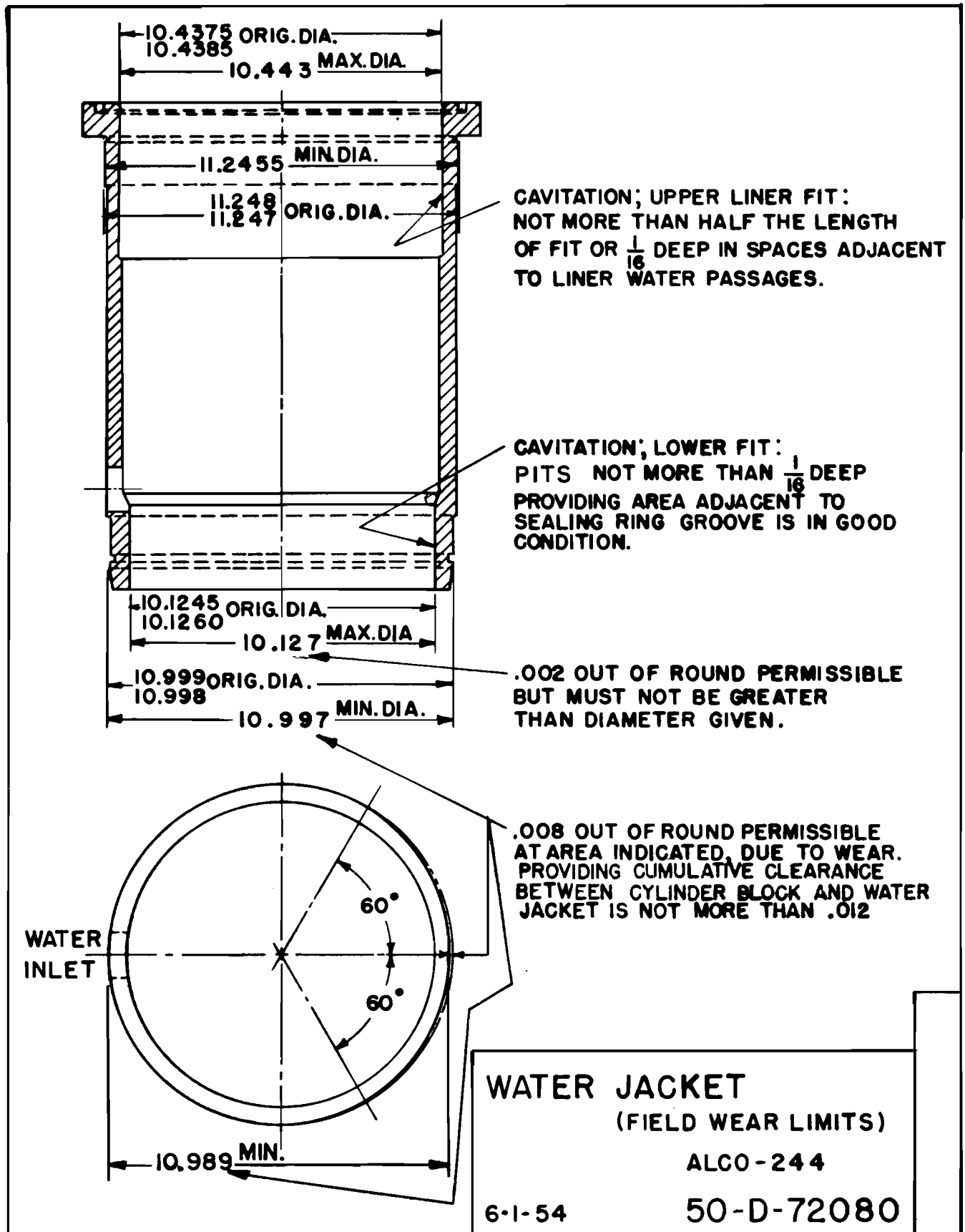
**R STEP BETWEEN ANY THREE BEARING
FIGURED FROM THE EDGES OF THE
ST STEP.**

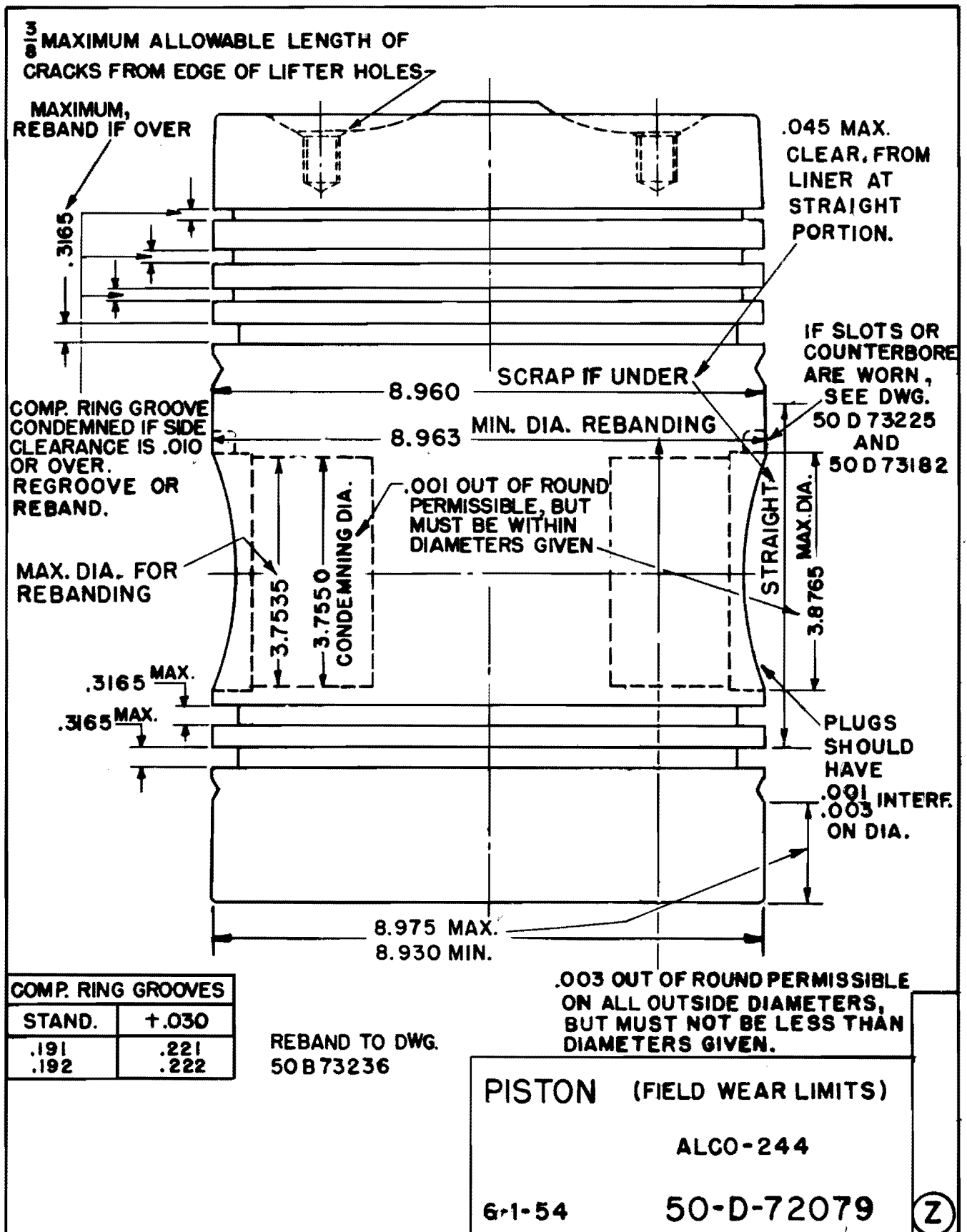
**ALL THE ABOVE INSPECTION REQUIREMENTS
ORY. IF NOT, BLOCK BORE MUST BE**

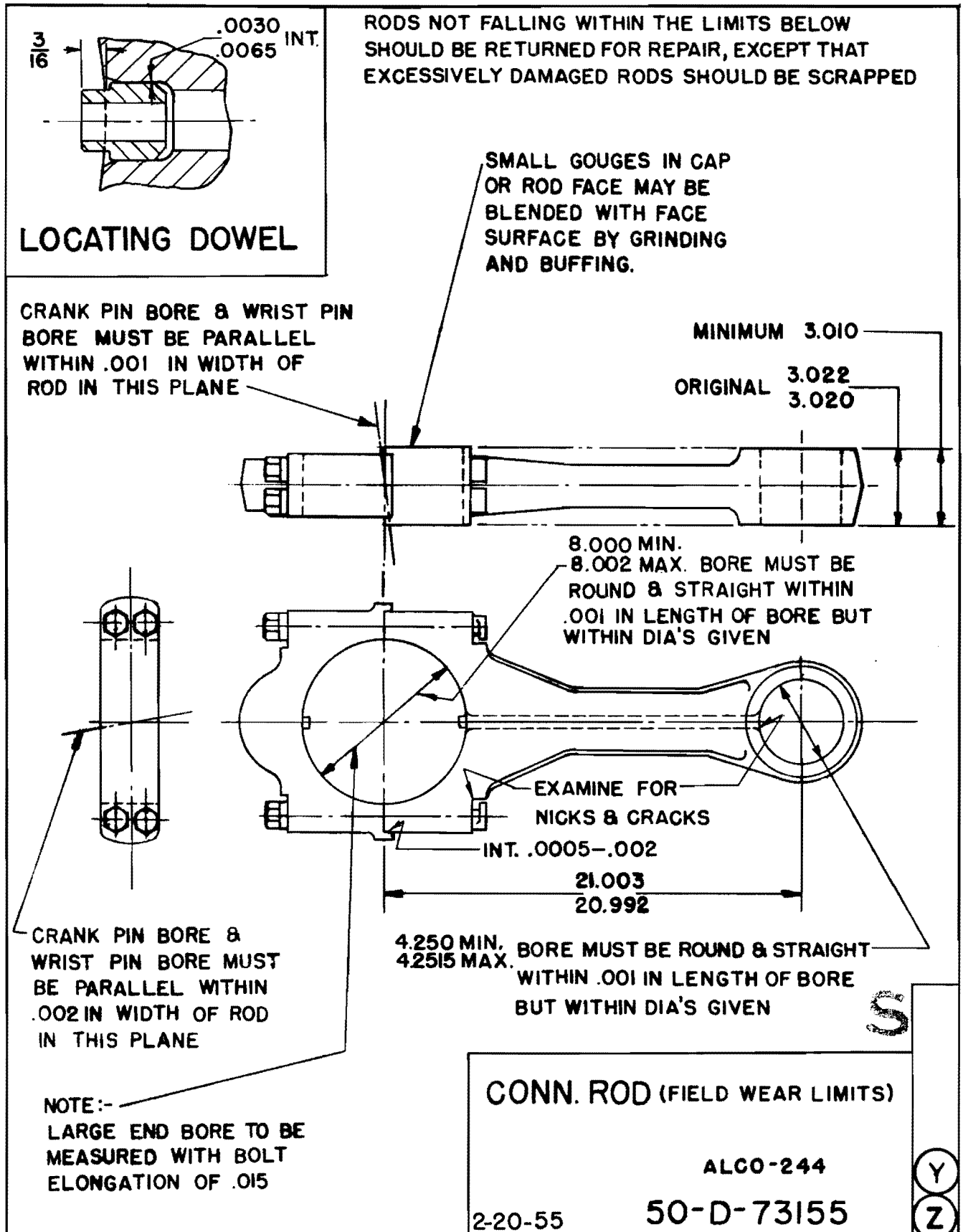
CYLINDER BLOCK**(MAIN BEARING INSPECTION INSTRUCTIONS)****(FIELD WEAR LIMITS)****ALCO 244****6-1-54****50 C 72101**



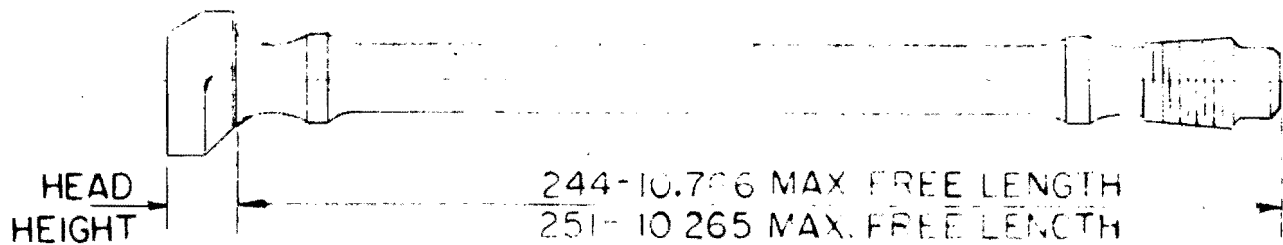








CONN. ROD BOLT



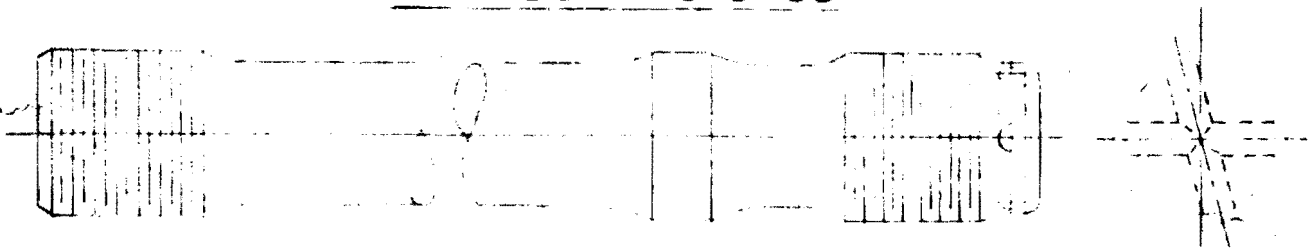
TO REUSE, EACH BOLT MUST BE:

1. STRAIGHT WITHIN .005 INDICATED.
2. FREE OF CRACKS (MAGNAFLUX INSPECTION).
3. FREE OF THREAD DAMAGE.
4. LESS THAN FREE LENGTH SHOWN.

TO DETERMINE FREE LENGTH:

- a. MEASURE OVERALL LENGTH OF BOLT WITH MICROMETER.
- b. MEASURE HEIGHT OF BOLT HEAD WITH MICROMETER.
- c. SUBTRACT HEAD HEIGHT FROM OVERALL LENGTH.

MAIN BEARING STUD



TO REUSE, EACH STUD MUST BE:

1. STRAIGHT WITHIN .010 INDICATED
2. FREE OF CRACKS (MAGNAFLUX INSPECTION).
3. FREE OF THREAD DAMAGE

NOTE: SCRAP ANY BOLT OR STUD THAT IS FOUND UNSATISFACTORY
IN ANY WAY DESCRIBED ABOVE.

S

CONN ROD BOLT & MAIN
BEARING STUD
(FIELD WEAR LIMITS)

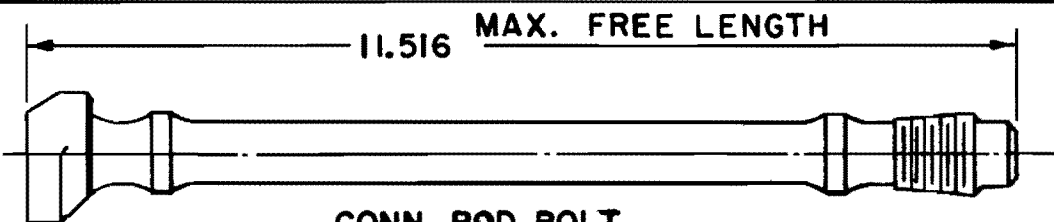
ALCO-244 & 251

7-22-57

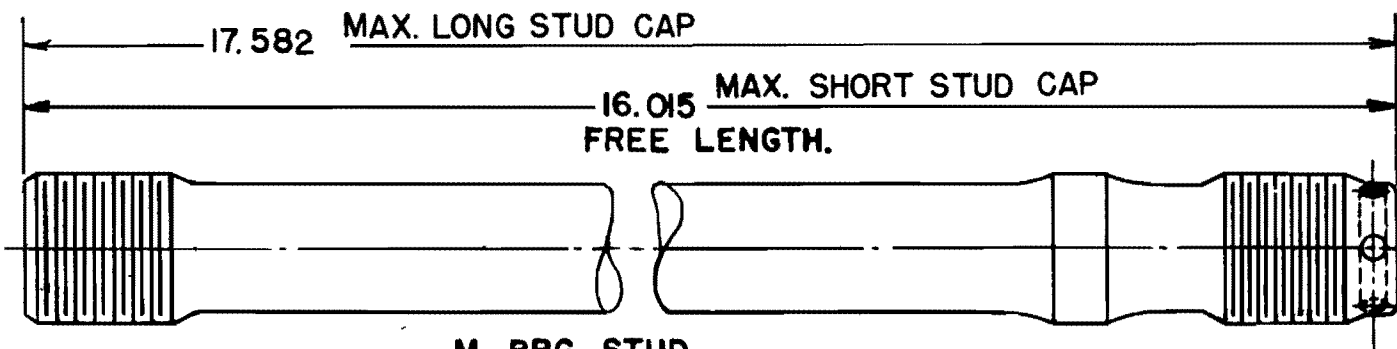
50-D-73222

X
Y
Z

7/24/57

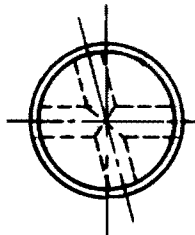


CONN. ROD BOLT
MUST BE STRAIGHT WITHIN .005 INDICATED.



M. BRG. STUD
MUST BE STRAIGHT WITHIN .010 INDICATED.

BOLT AND STUD TO BE MAGNAFLUXED
FOR CRACKS BEFORE RE-APPLYING.
EXAMINE THREADS FOR EXCESSIVE DAMAGE.



S

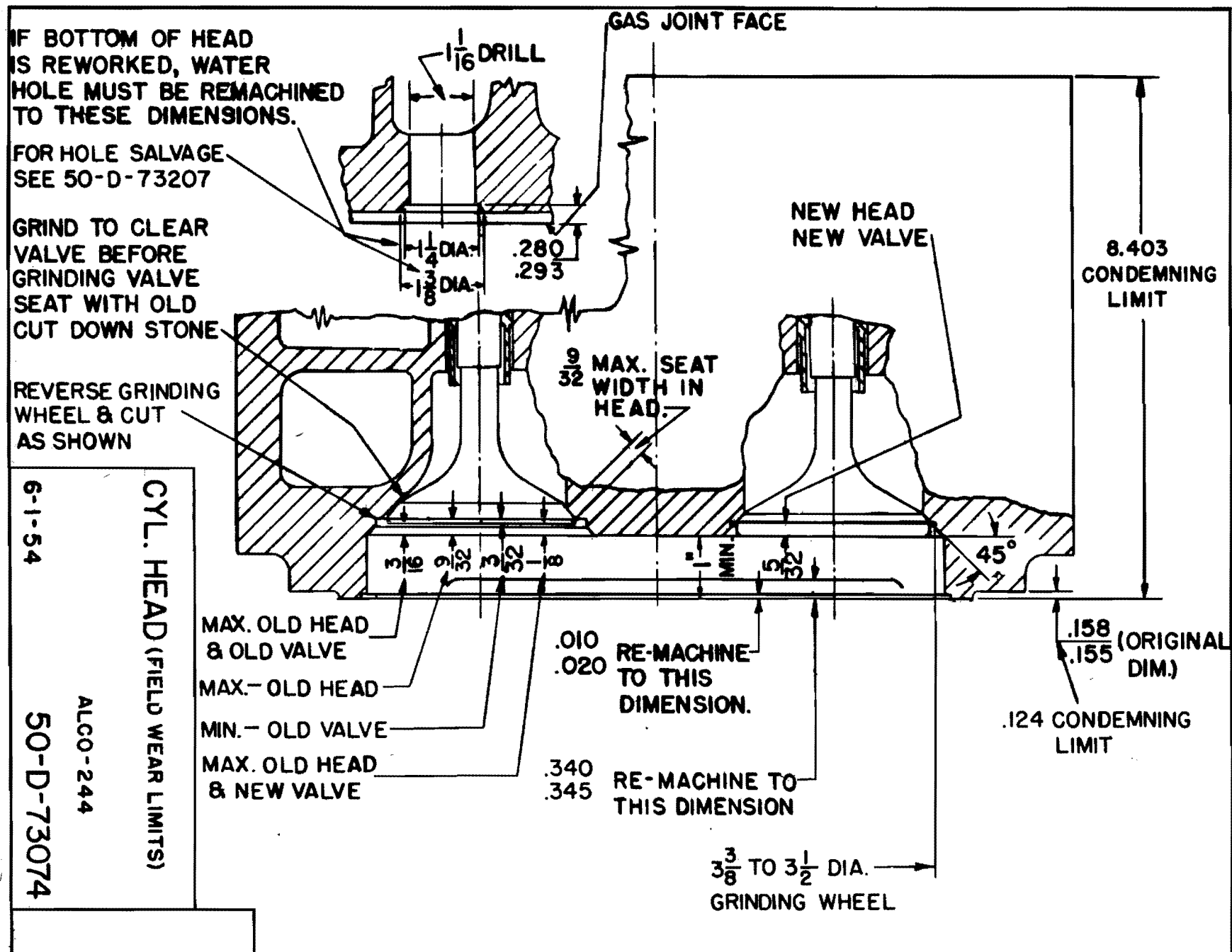
BRG. STUD & CONN. ROD
BOLT (FIELD WEAR LIMITS)

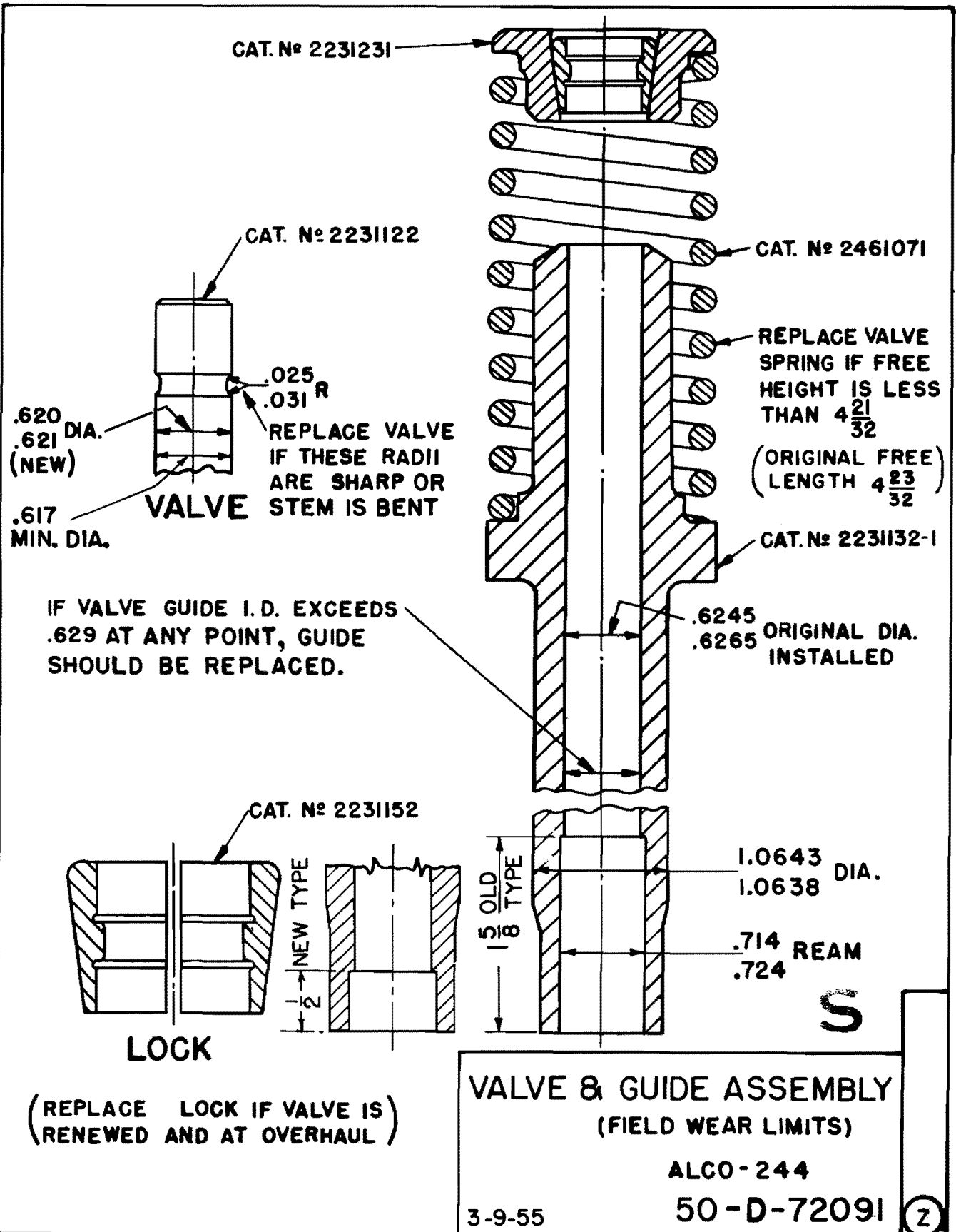
ALCO - 244

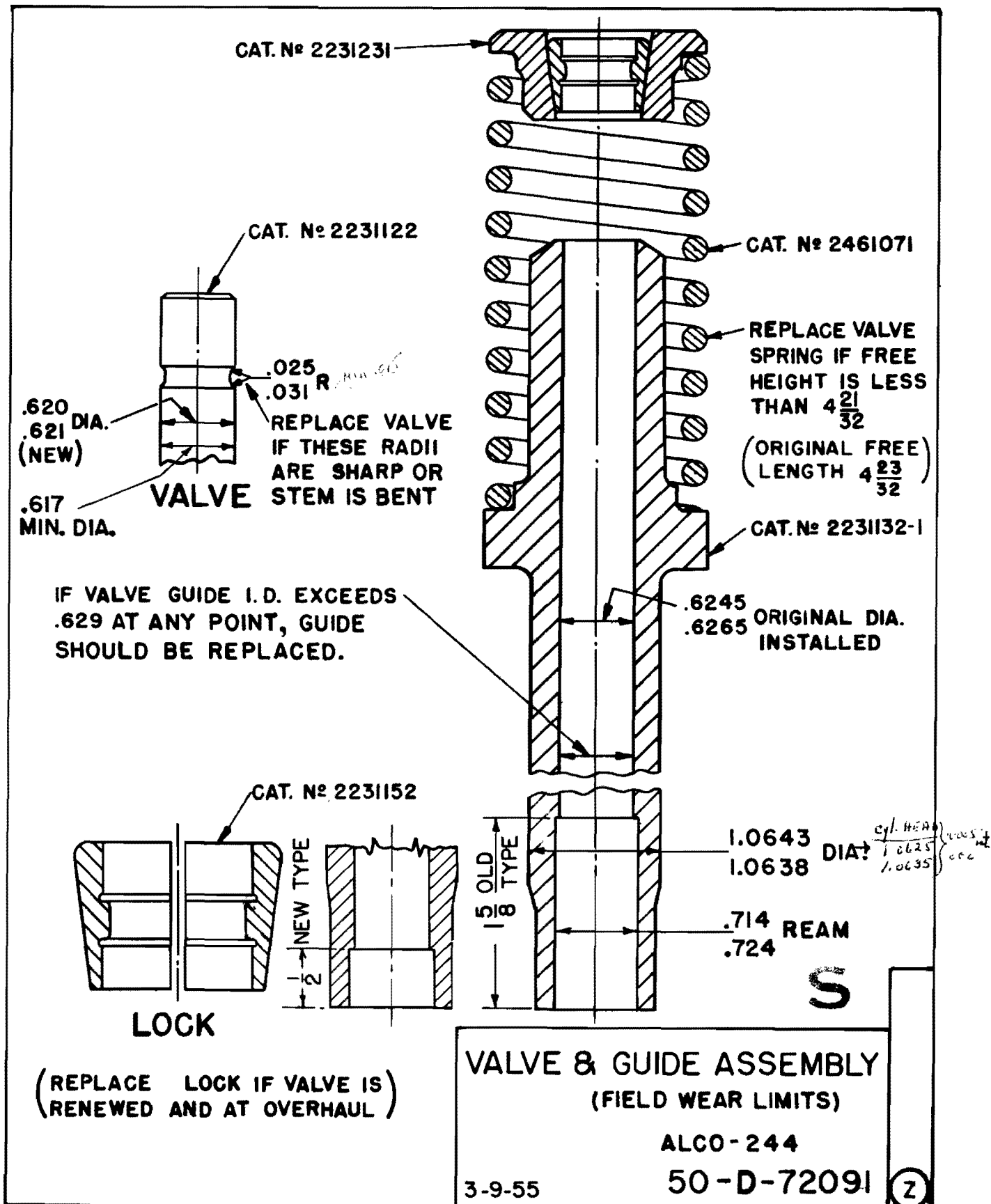
5-11-55

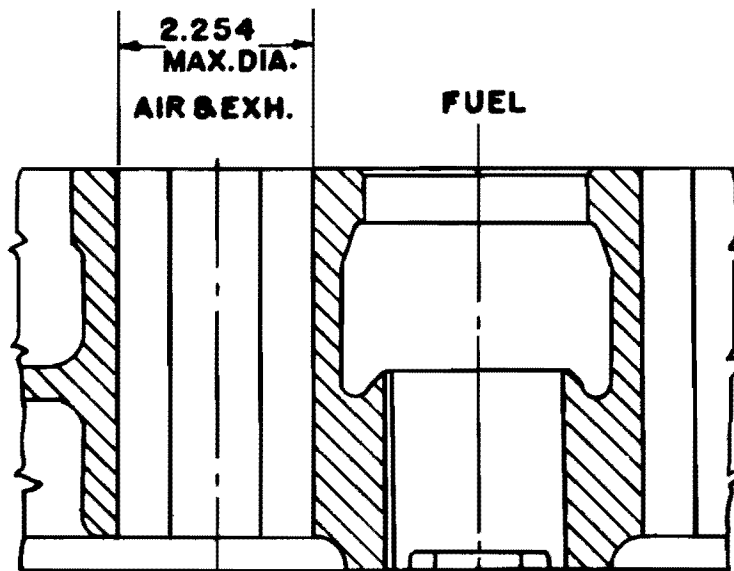
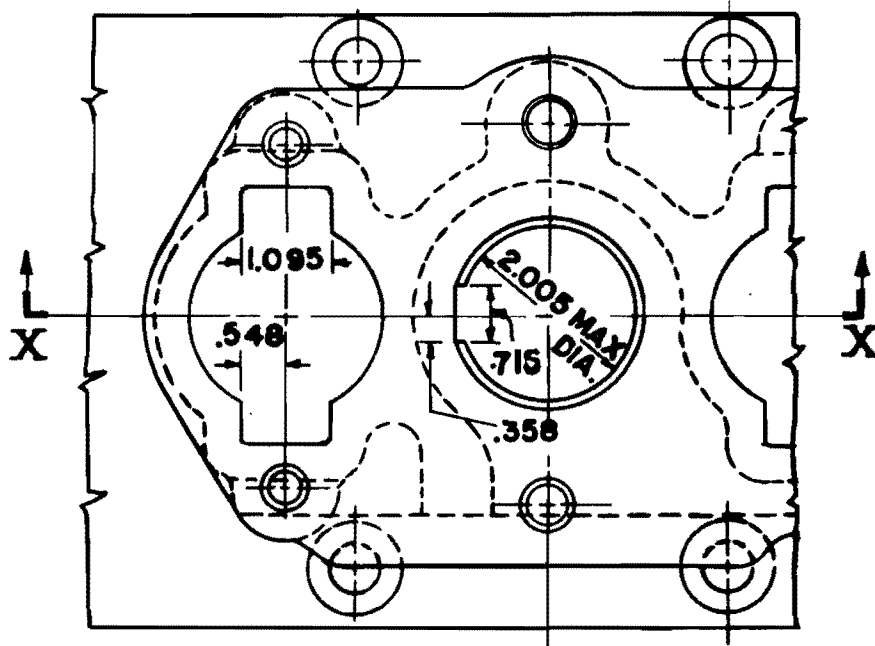
50-D-73222

(Z)







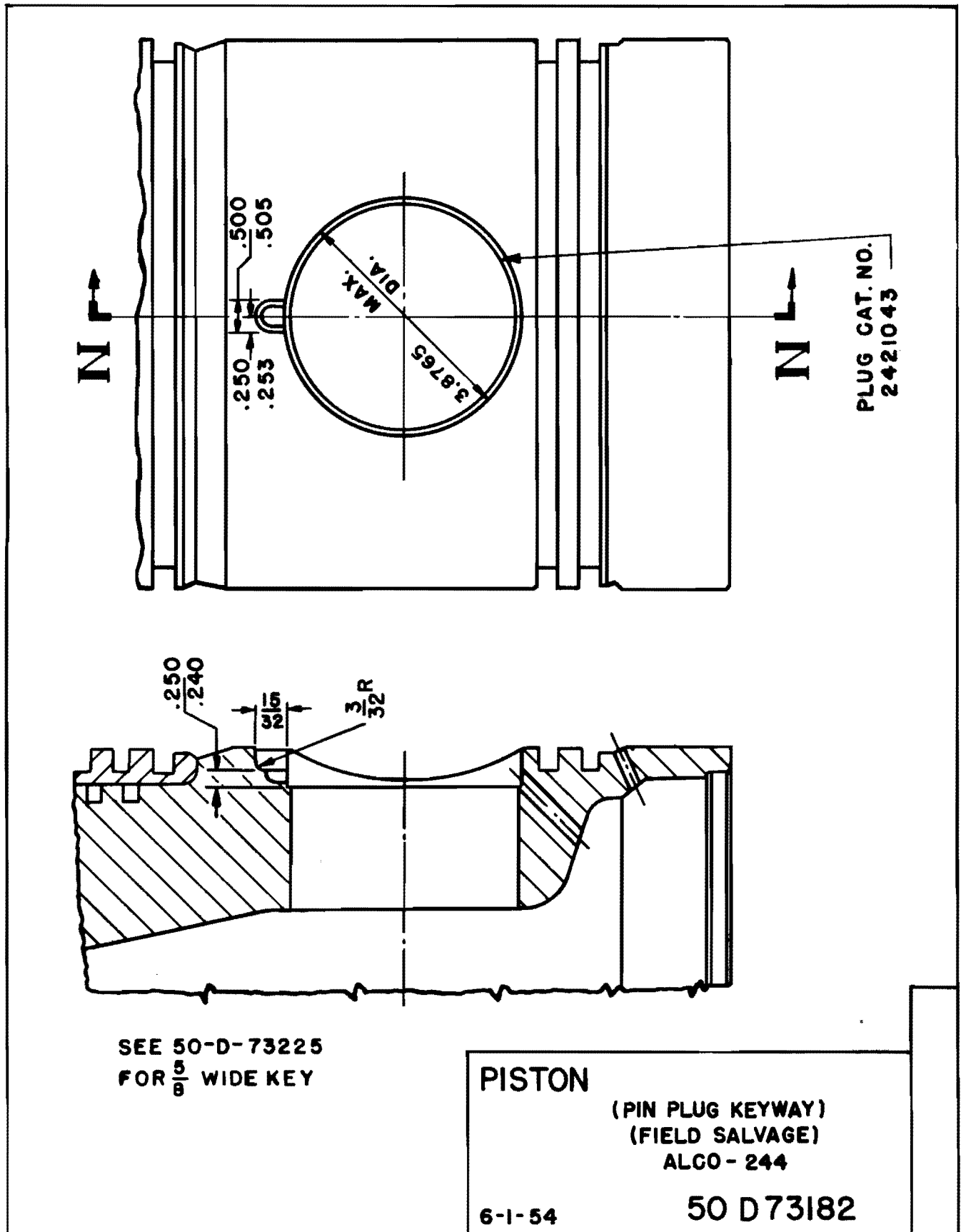


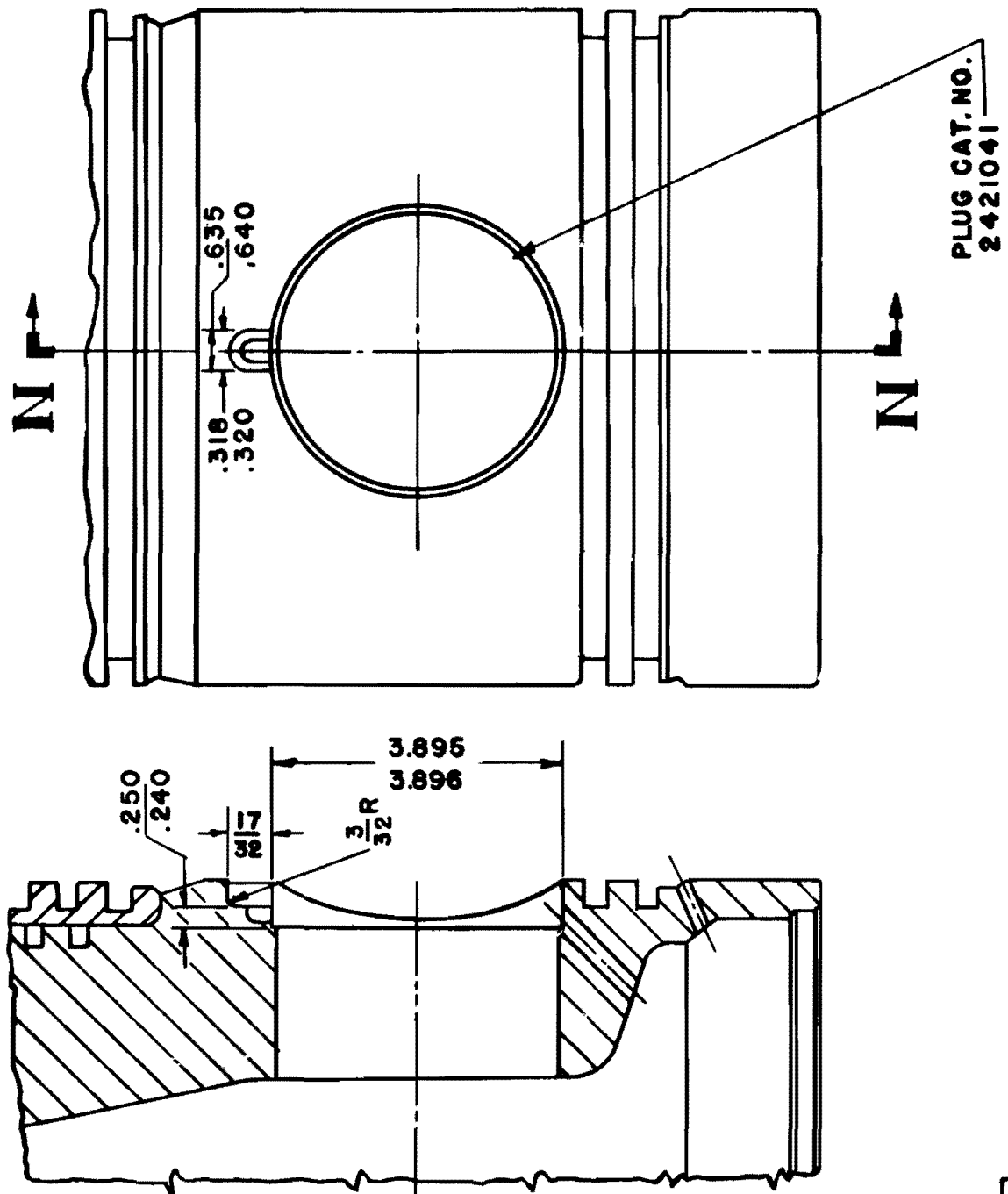
SECTION-XX
FOR SALVAGE SEE 50 C 73208

CROSSHEAD CASING
(FIELD WEAR LIMITS)
ALCO - 244

6-1-54

50-D-73204





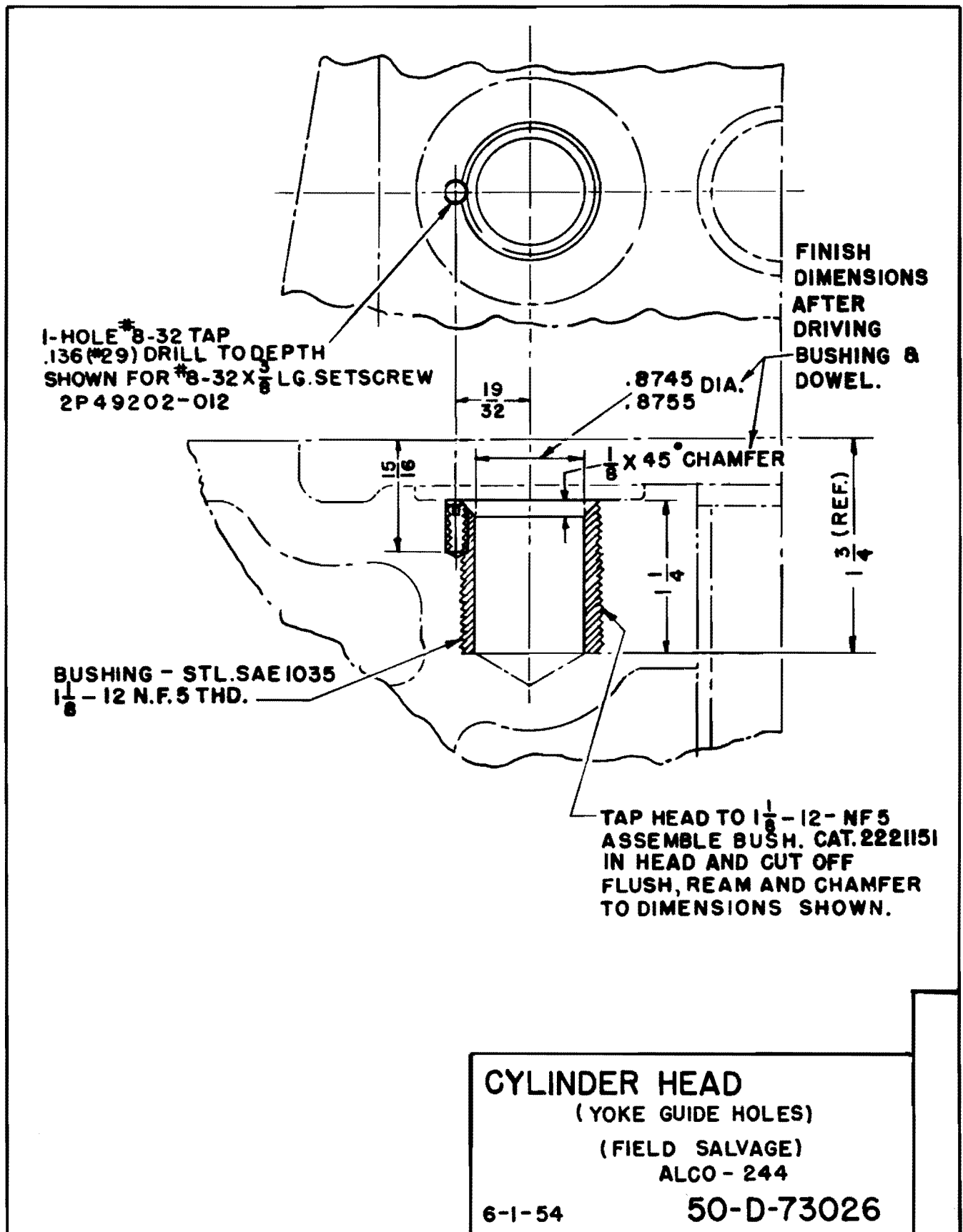
SEE 50-D-73182
FOR $\frac{1}{2}$ WIDE KEY.

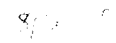
PISTON

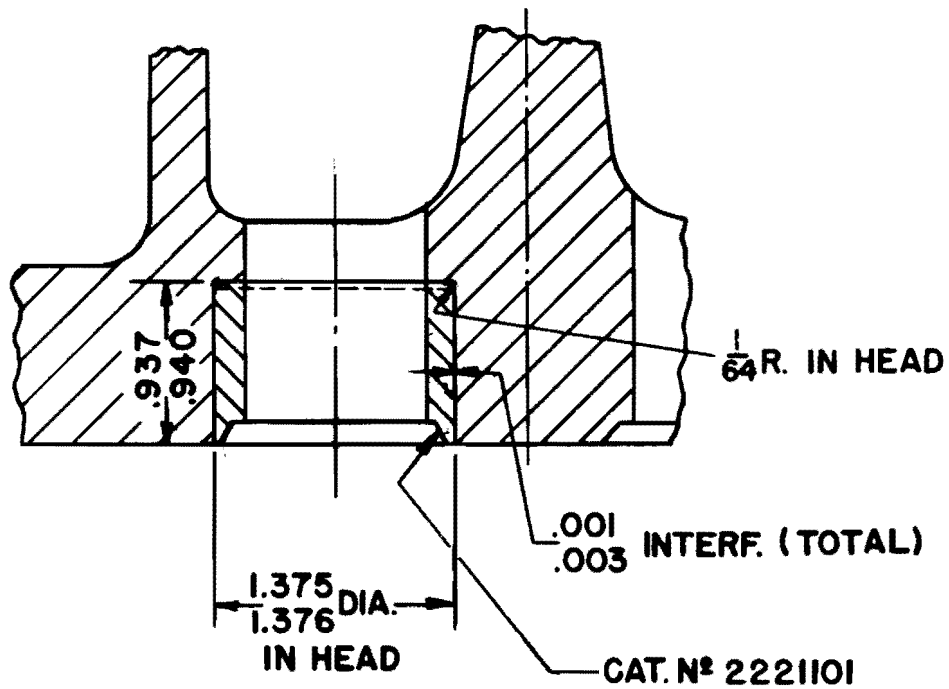
(PIN PLUG KEYWAY OVERSIZE)
(FIELD SALVAGE)
ALCO - 244

6-1-54

50-D-73225



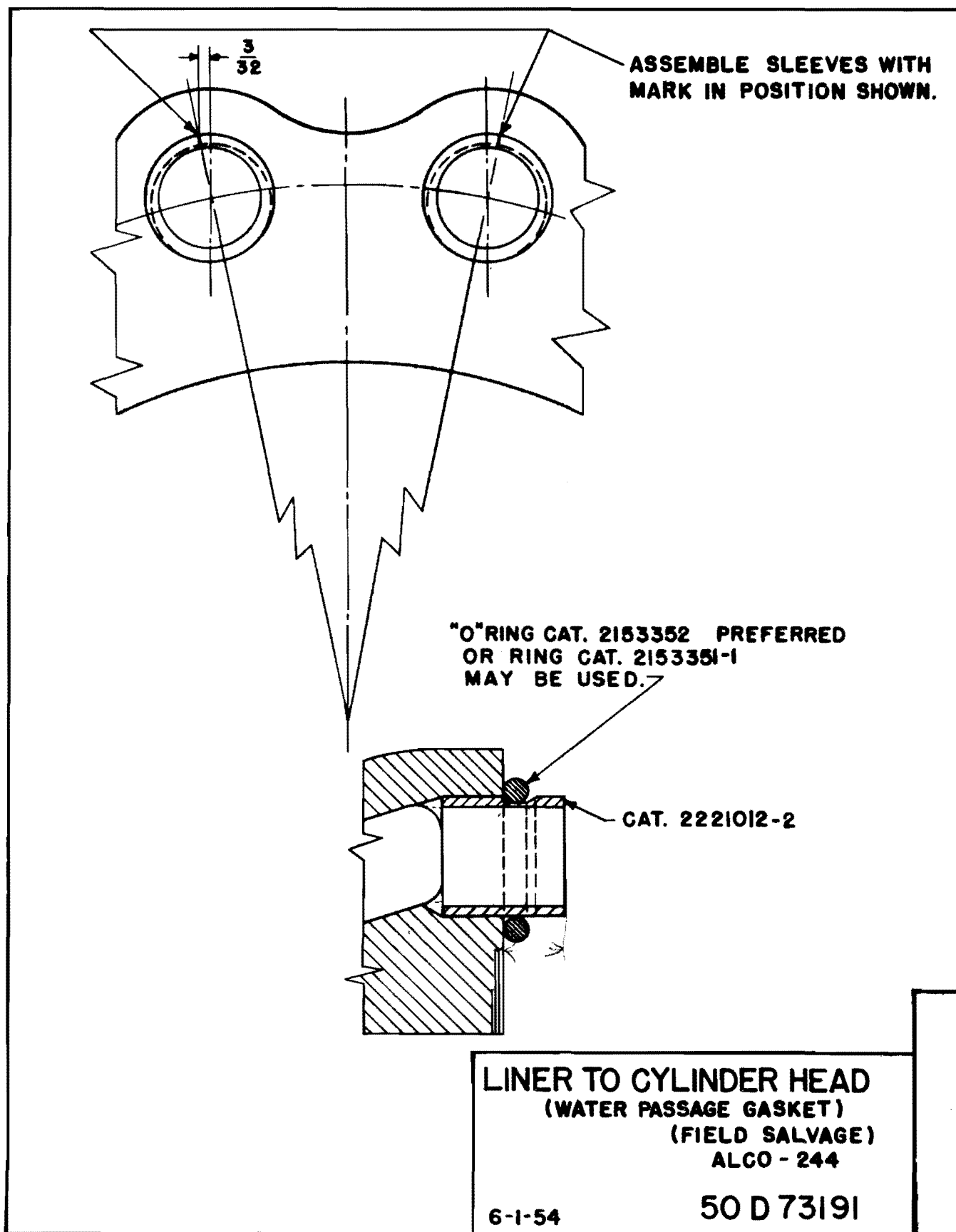


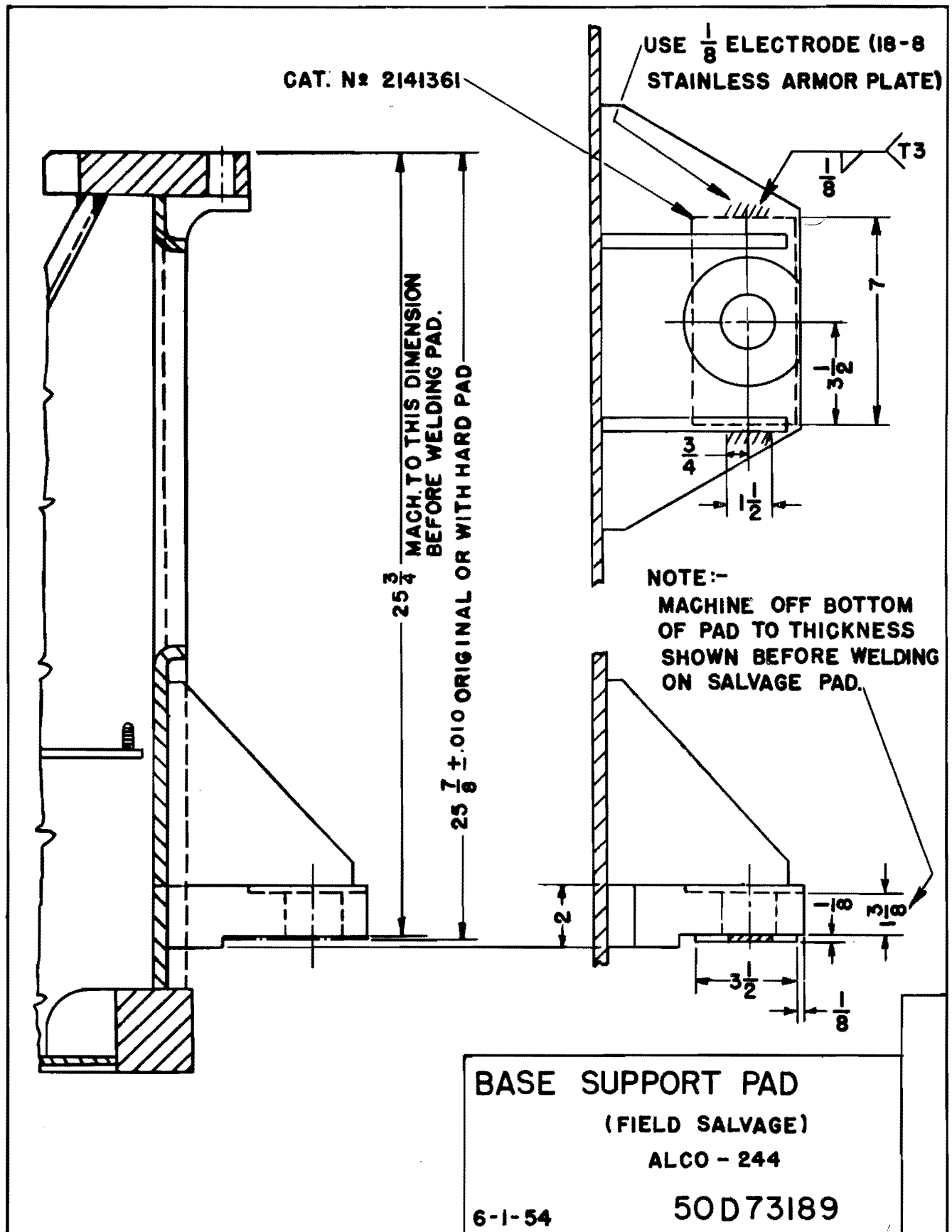


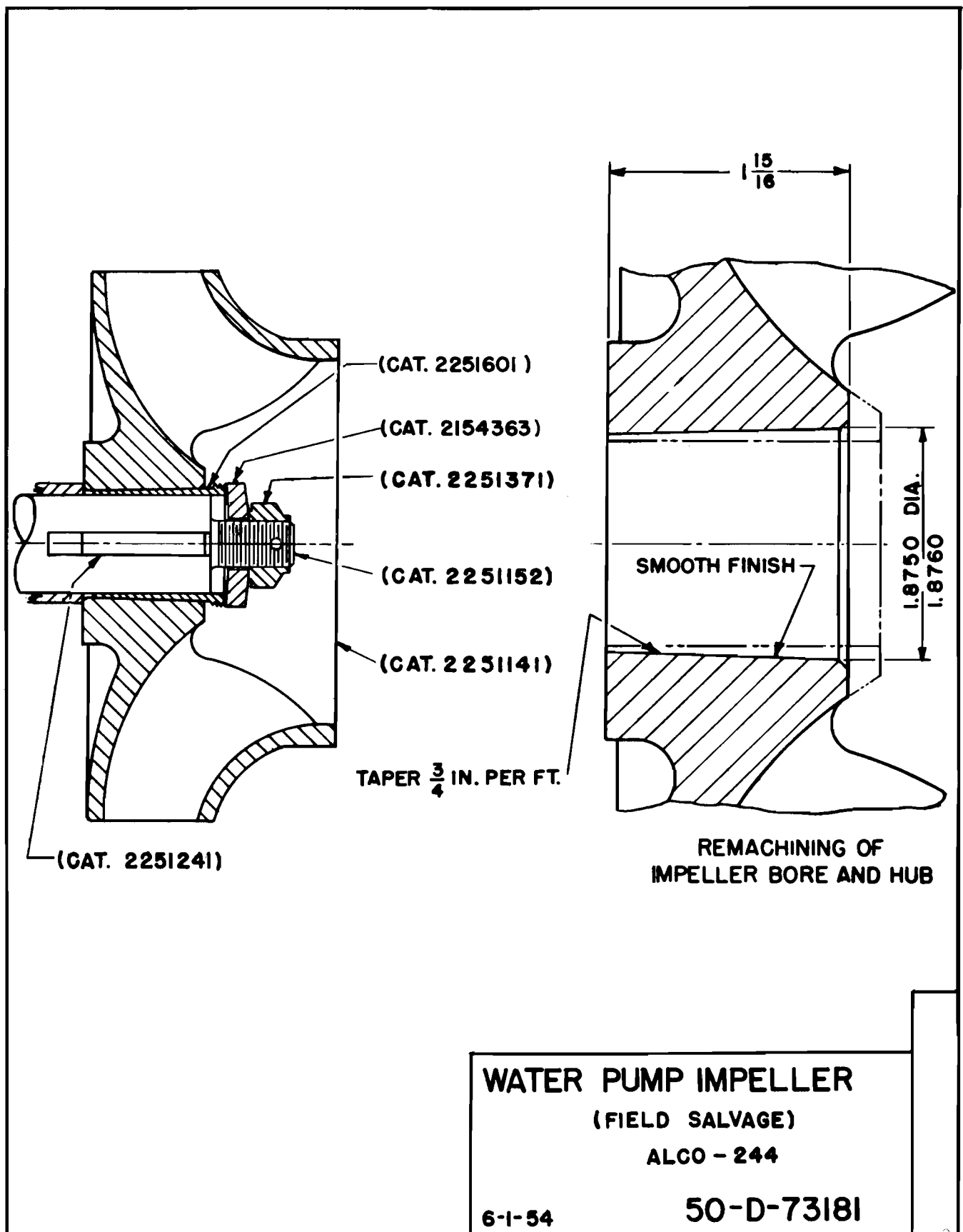
CYLINDER HEAD
(WATER PASSAGE)
(FIELD SALVAGE)
ALCO - 244

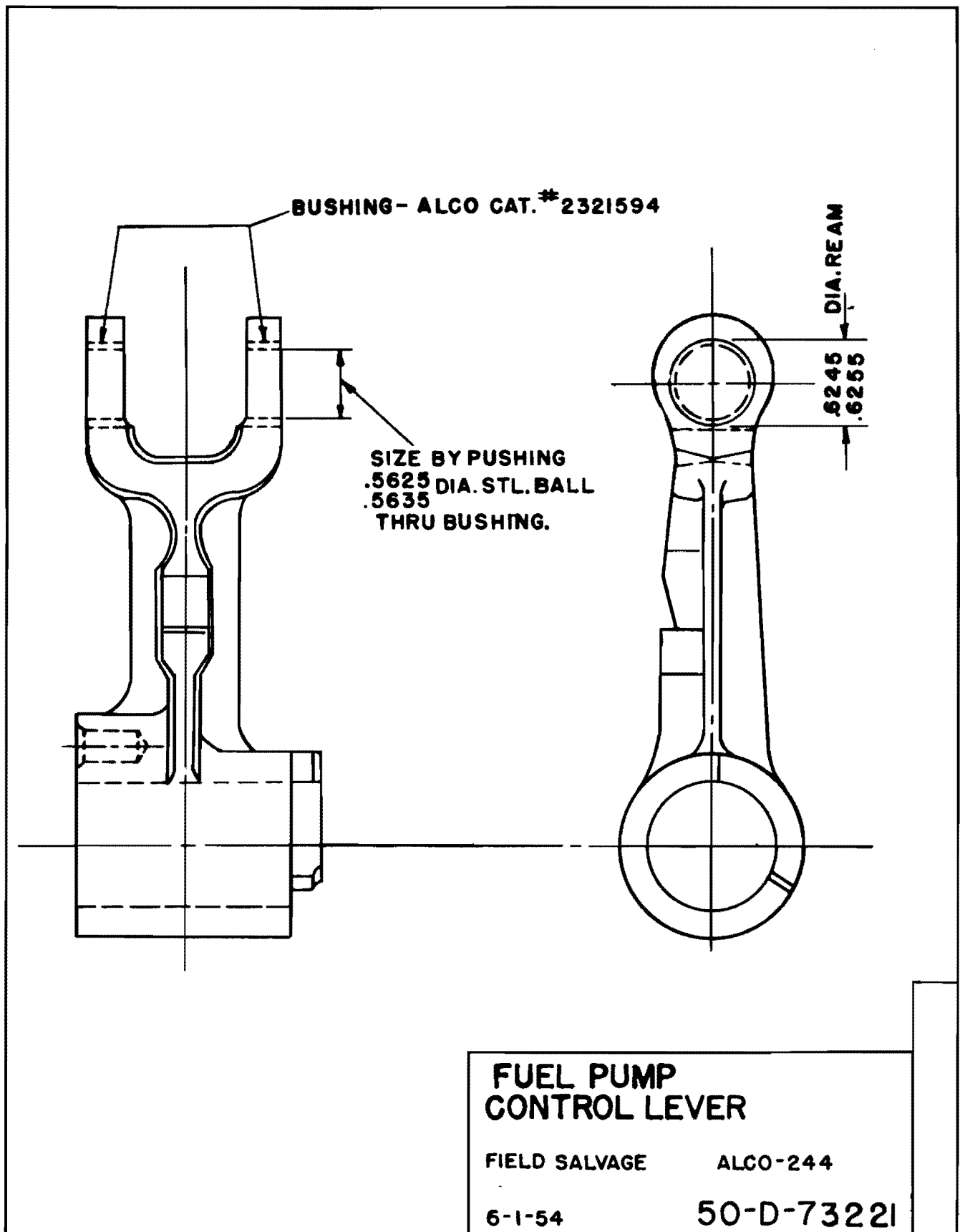
6-1-54

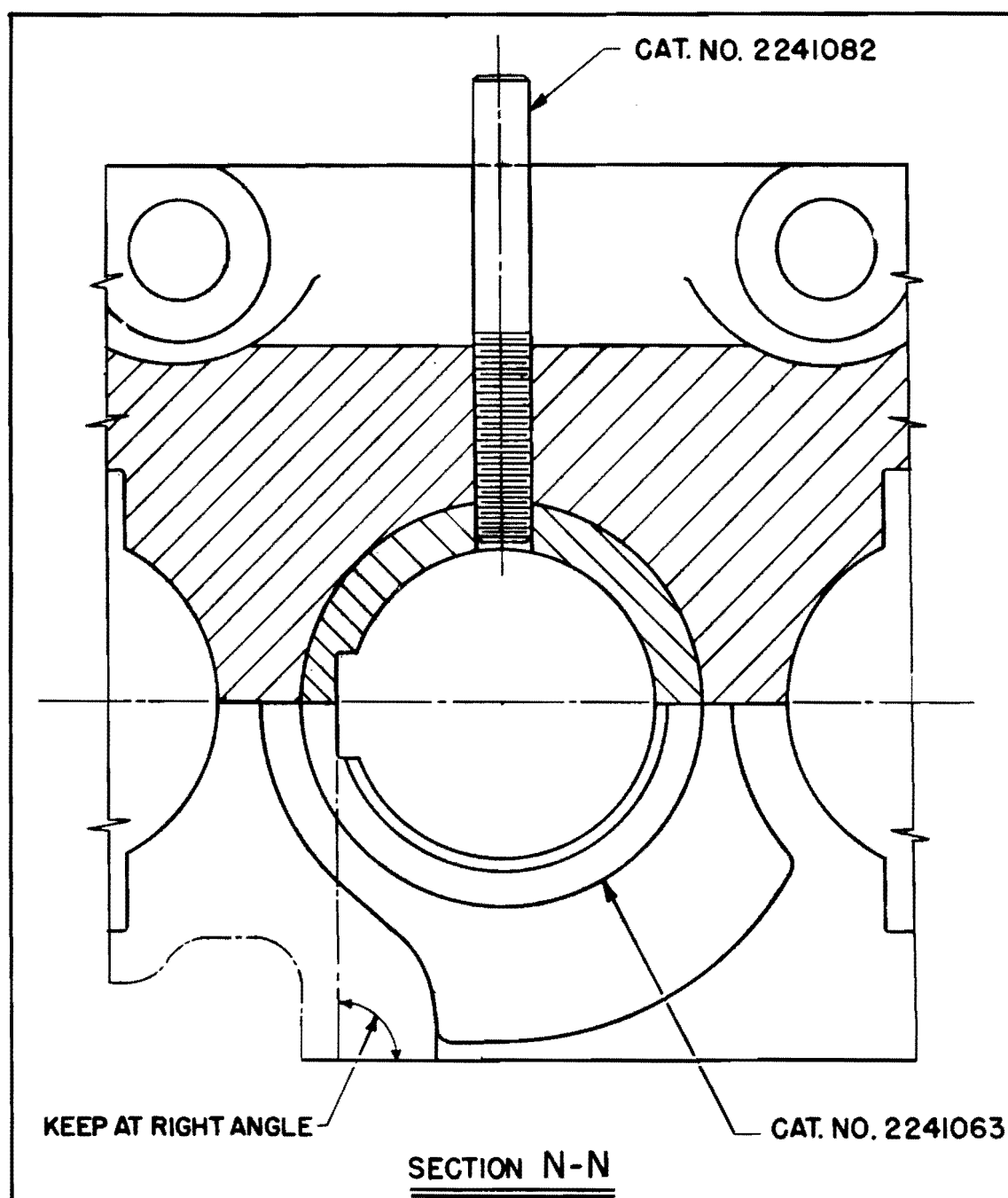
50 D 73207







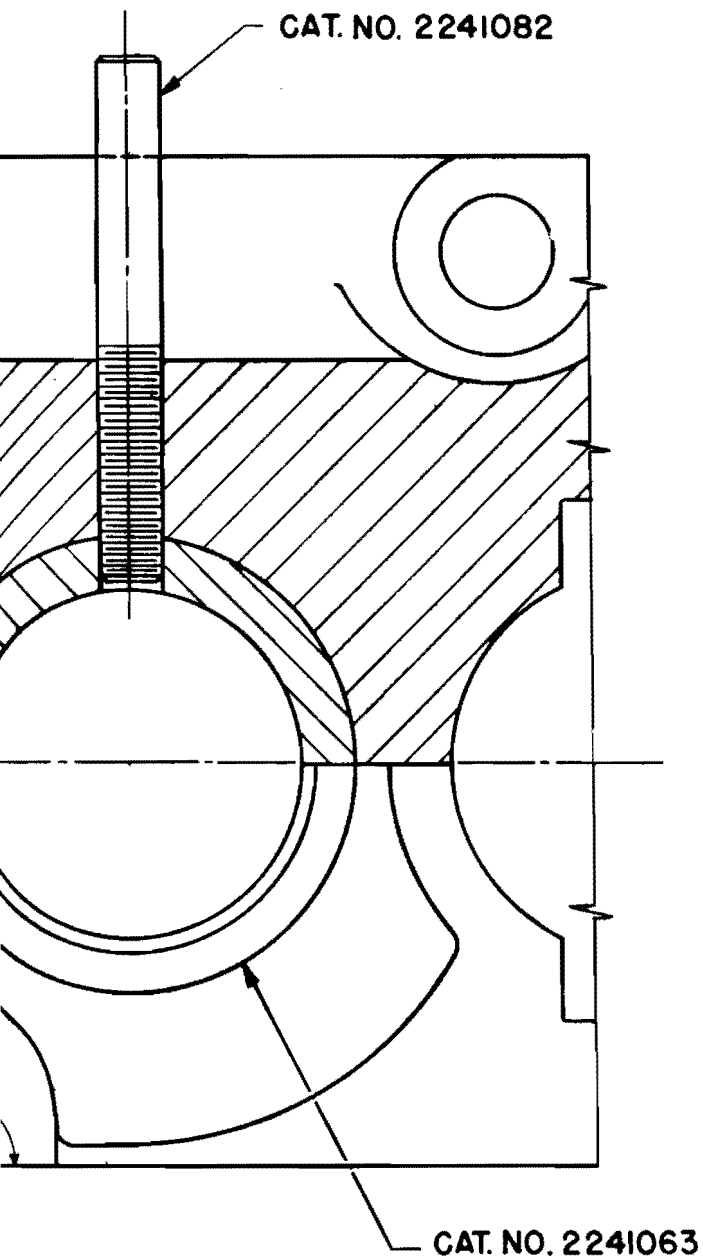




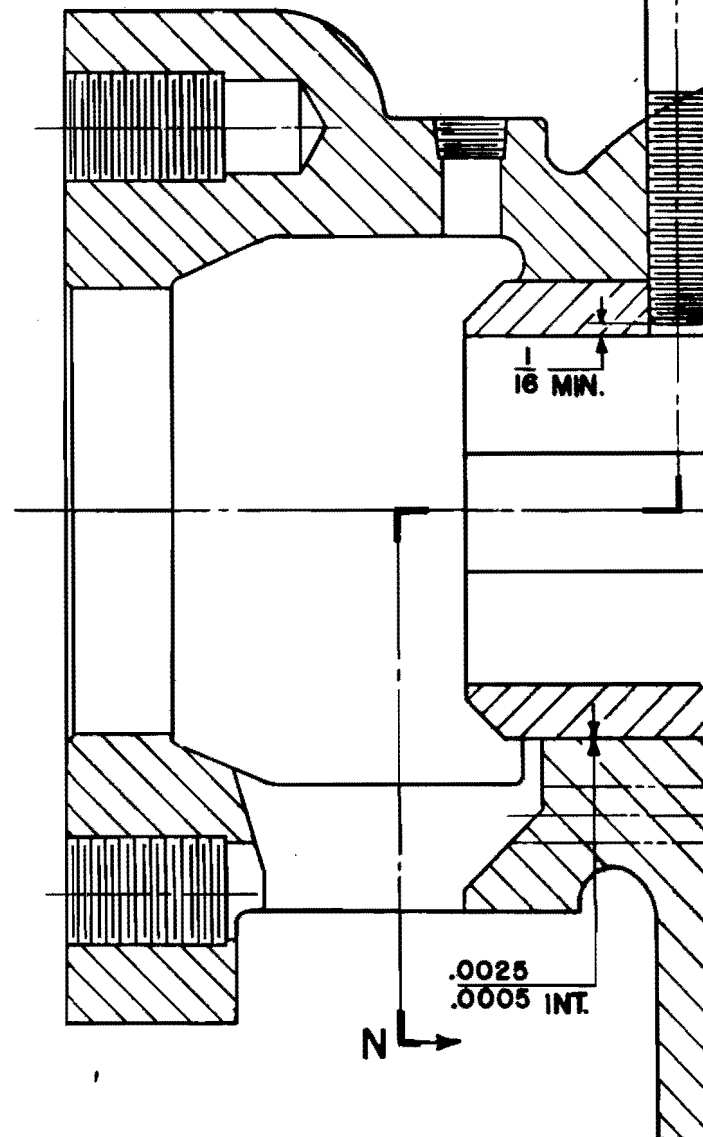
SEE 47 B 74064 FOR APPLICATION JIG.

SEE WEAR LIMIT DWG. 50 D 73204

September, 1954



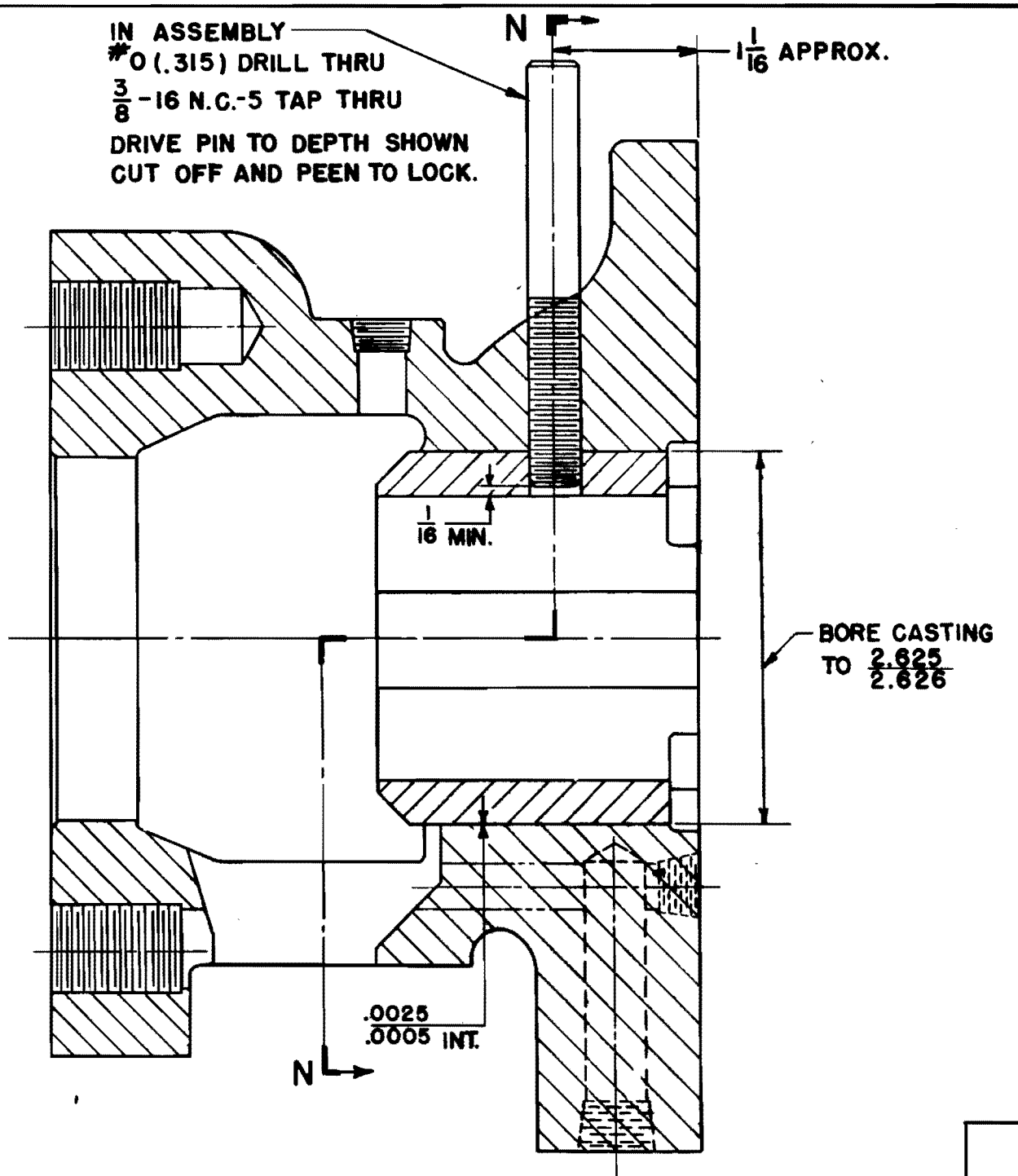
IN ASSEMBLY
#0 (.315) DRILL THRU
 $\frac{3}{8}$ -16 N.C.-5 TAP THRU
DRIVE PIN TO DEPTH SHOWN
CUT OFF AND PEEN TO LOCK.



064 FOR APPLICATION JIG.
LIMIT DWG. 50 D 73204

CROSS

6-1-54

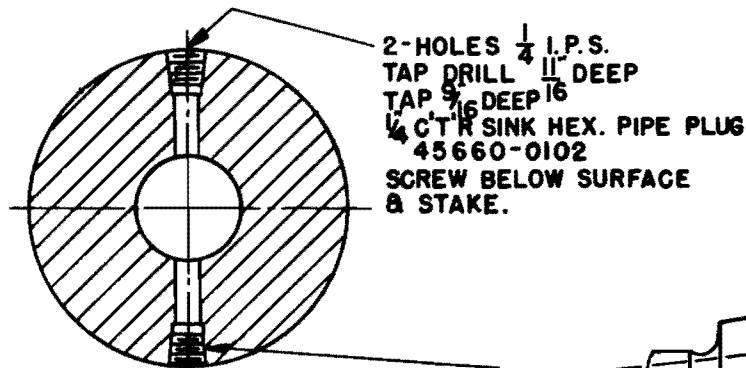


CROSSHEAD CASING
(FUEL PUMP)
(FIELD SALVAGE)
ALCO-244

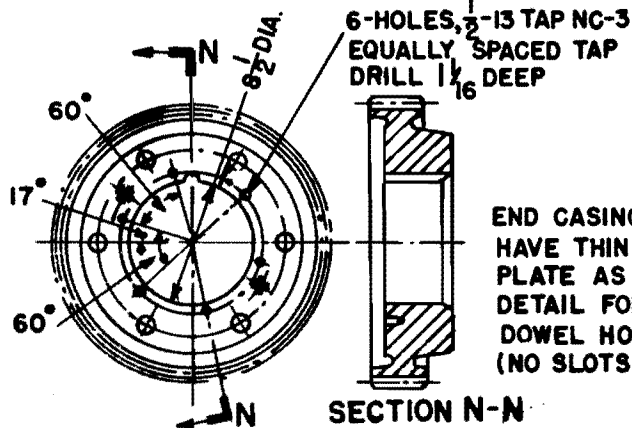
6-1-54

50 C 73208

NOTE: HOUE HERSEY DAMPER-
IF ALCO VIBRATION DAMPER IS REPLACED BY HOUE HERSEY DAMPER WHEN OIL SLINGER IS APPLIED, NOTES FOR PLUGGING EXTENSION SHAFT AND FOR DRILLING DIAGONAL HOLE AND PLUGGING CENTER HOLE IN CRANKSHAFT DO NOT APPLY, BUT DOWEL CAT. 21517718 MUST BE APPLIED TO EITHER TYPE DAMPER AND CRANKSHAFT.

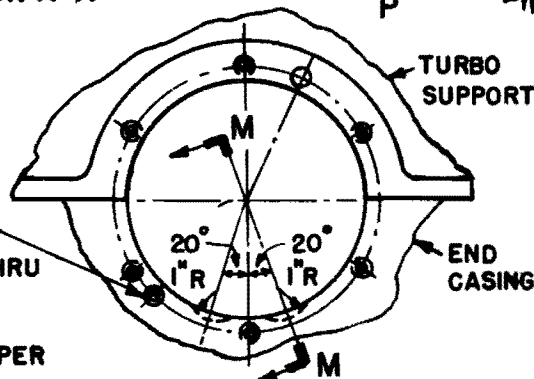


METHOD FOR PLUGGING OIL HOLE IN EXTENSION SHAFT.



DETAIL OF CRANKSHAFT GEAR SHOWING, $\frac{1}{2}$ -13NC-3 TAPPED HOLES FOR ATTACHMENT OF OIL SEAL.

AT ASSEMBLY:- 2-HOLES
 $\frac{3}{16}$ DRILL $\frac{5}{8}$ DEEP (DRILL THRU ON END CASINGS WITH $\frac{5}{8}$ FRONT PLATE)
#9 TAPER REAM FOR #9 TAPER DOWEL X $1\frac{1}{2}$ LG.
(2P77042-048)



VIEW P-P SHOWING MODIFICATION TO CASING. SAME CHANGE TO CASING WITH THIN $\frac{5}{8}$ FRONT PLATE EXCEPT 1" R SLOTS OMITTED.

APPLY GASKET BETWEEN HALF OIL CATCHER AND END CASING

VIBRATION DAMPER

TURBO SUPPORT

P

.030 CL. (ON DIA.)
.000 CL. (ON DIA.)
IF SHAFT IS CENTER SU WITH SHAFT

.125 CL. DIA.
.138 CL. DIA.

SECTION
APPLIES ONLY
($\frac{1}{8}$ THICK FR

August 1955

PER IS REPLACED BY HOUE HERSEY
GER IS APPLIED, NOTES FOR PLUGGING
FOR DRILLING DIAGONAL HOLE AND
E IN CRANKSHAFT DO NOT APPLY,
18 MUST BE APPLIED TO EITHER
CRANKSHAFT.

2-HOLES $\frac{1}{4}$ I.P.S.
TAP DRILL $\frac{11}{16}$ DEEP
TAP $\frac{9}{16}$ DEEP
 $\frac{1}{4}$ C'T'R SINK HEX. PIPE PLUG
45660-0102
SCREW BELOW SURFACE
& STAKE.

UGGING OIL
SION SHAFT.

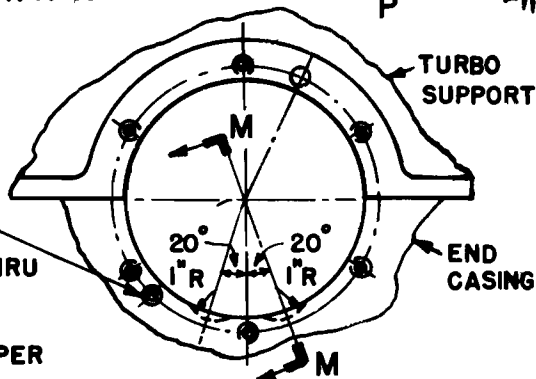
6-HOLES, $\frac{1}{2}$ -13 TAP NC-3
EQUALLY SPACED TAP
DRILL $\frac{11}{16}$ DEEP

END CASING MAY
HAVE THIN ($\frac{5}{8}$) FRONT
PLATE AS SHOWN. SEE
DETAIL FOR DRILLING
DOWEL HOLE ONLY.
(NO SLOTS NECESSARY.)

SECTION N-N

SHAFT
2-13NC-3
FOR
OIL

HOLES
(DRILL THRU
WITH $\frac{5}{8}$
FOR #9 TAPER



VIEW P-P SHOWING MODIFICATION TO
CASING. SAME CHANGE TO CASING WITH
THIN $\frac{5}{8}$ FRONT PLATE EXCEPT 1" R
SLOTS OMITTED.

APPLY GASKET BETWEEN HALVES OF
OIL CATCHER AND END CASING.

VIBRATION DAMPER

TURBO
SUPPORT

OPEN UP COUPLING BOLT
HOLES OF VIBRATION
DAMPER AND EXTENSION
SHAFT TO $1\frac{1}{16}$ DIA.

1-HOLE
 $\frac{1}{2}$ DIA.
REAM AS
SHOWN.

HOLE "A" IF SHAFT
HAS THIS DRILLING.
REMOVE PLUG
TO ALLOW OIL
TO PASS
(SEE NOTE)

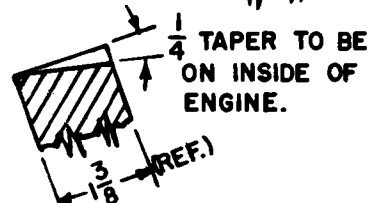
.030 CL. (ON
.040 DIA.)

.000 CL. (ON DIA.)
.007 CL. (ON DIA.)
IF SHAFT IS SMALL,
CENTER SLINGER
WITH SHAFT.

.125 CL. DIA.
.138

ROUND OFF T
AT ASSEMBLY V
2-HOLES 1" DR
DEEP OR THRU
#13 TAPER REA
CAT. 21517718

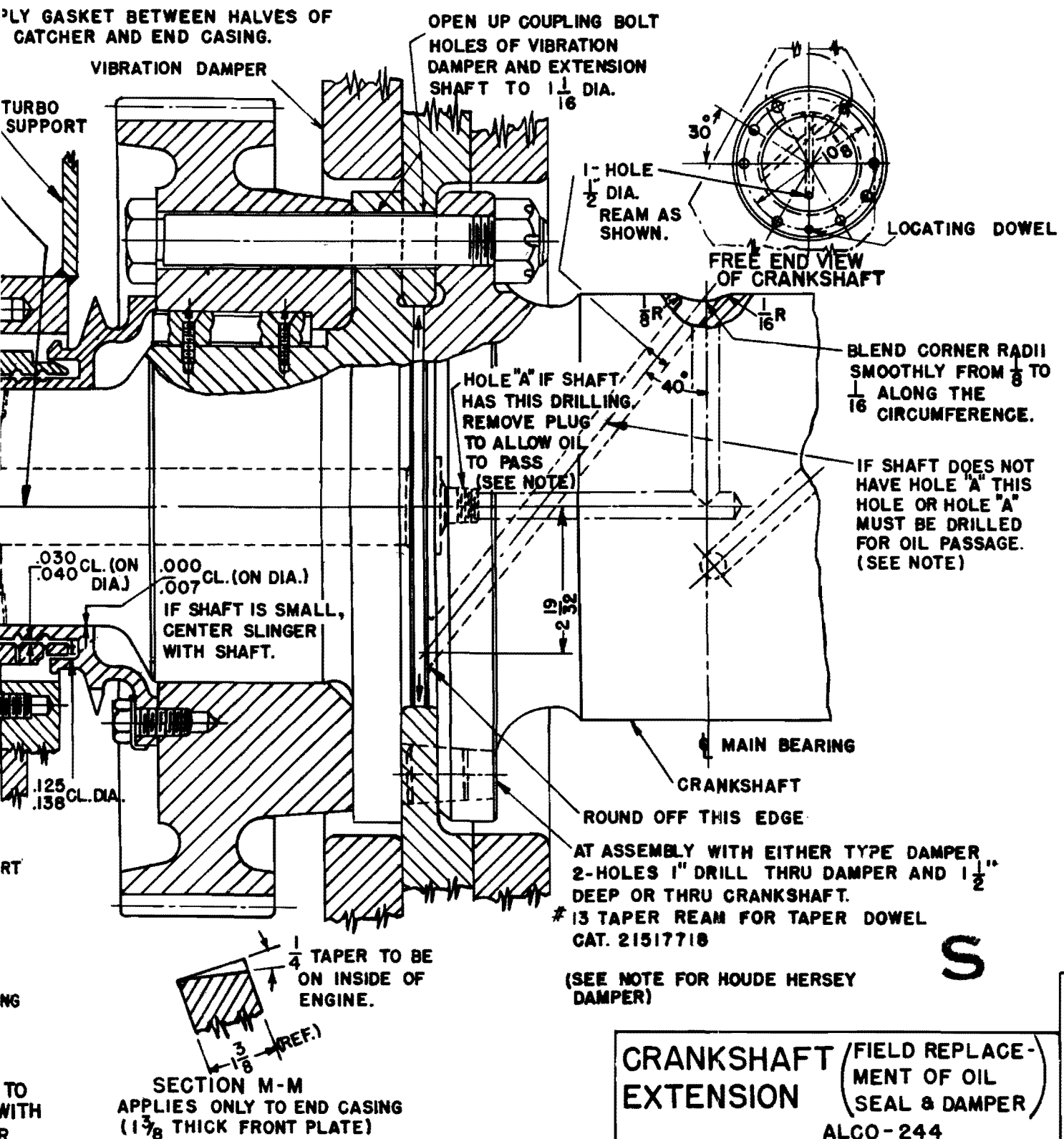
(SEE NOTE FOR
DAMPER)



SECTION M-M
APPLIES ONLY TO END CASING
($\frac{1}{8}$ THICK FRONT PLATE)

CRANK
EXTEN

5-12-55

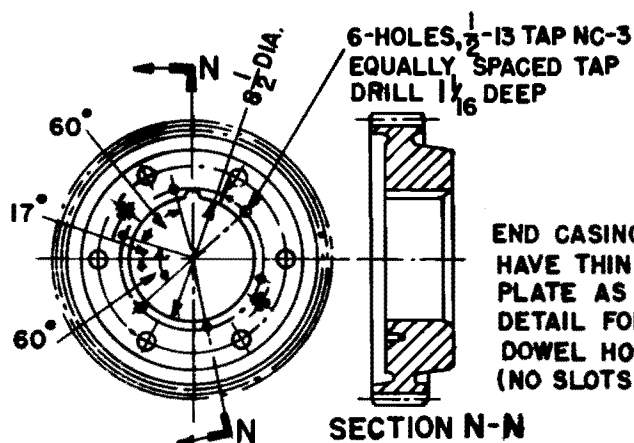


8/20 (10) 7.12

NOTE: HOUE HERSEY DAMPER-
IF ALCO VIBRATION DAMPER IS REPLACED BY HOUE HERSEY DAMPER WHEN OIL SLINGER IS APPLIED, NOTES FOR PLUGGING EXTENSION SHAFT AND FOR DRILLING DIAGONAL HOLE AND PLUGGING CENTER HOLE IN CRANKSHAFT DO NOT APPLY, BUT DOWEL 2P77045-048 MUST BE APPLIED TO DAMPER AND CRANKSHAFT.



METHOD FOR PLUGGING OIL HOLE IN EXTENSION SHAFT.



DETAIL OF CRANKSHAFT GEAR SHOWING, 1/2-13NC-3 TAPPED HOLES FOR ATTACHMENT OF OIL SEAL.

AT ASSEMBLY:- 2-HOLES 31/64 DRILL 5/8 DEEP (DRILL THRU ON END CASINGS WITH 5/8 FRONT PLATE)
#9 TAPER REAM FOR #9 TAPER DOWEL X 1 1/2 LG. (2P77042-048)

VIEW P-P SHOWING MODIFICATION TO CASING. SAME CHANGE TO CASING WITH THIN 5/8 FRONT PLATE EXCEPT 1\"/>

APPLY GASKET BETWEEN HALF OIL CATCHER AND END CASING

TURBO SUPPORT

P

.030 CL. (ON DIA)
.040 CL. (ON DIA)
.000 CL. (ON DIA)
.007 CL. (ON DIA)
IF SHAFT IS CENTER SL WITH SHAFT

P

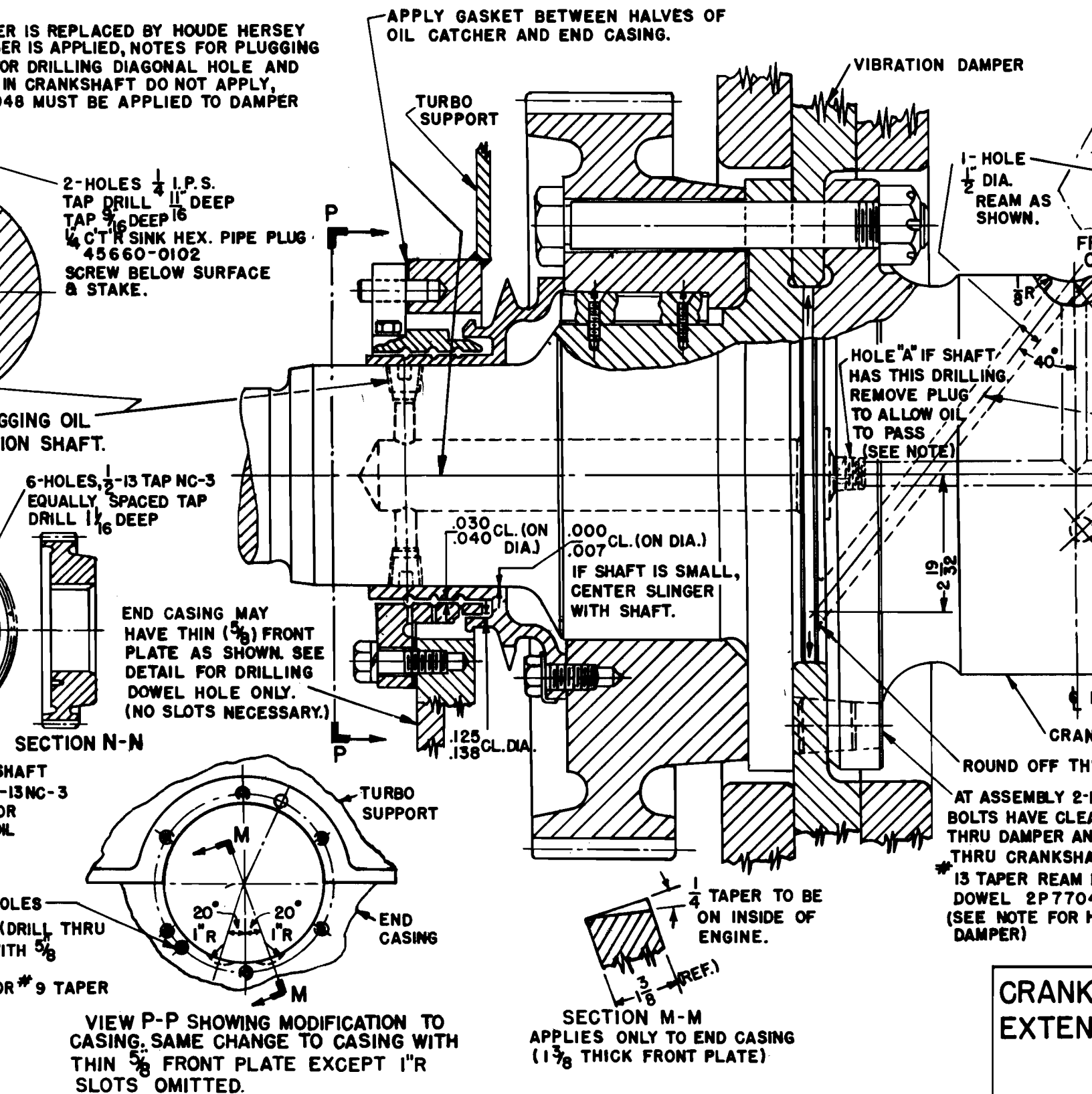
TURBO SUPPORT

END CASING

SECTION I APPLIES ONLY (1 3/8 THICK FR

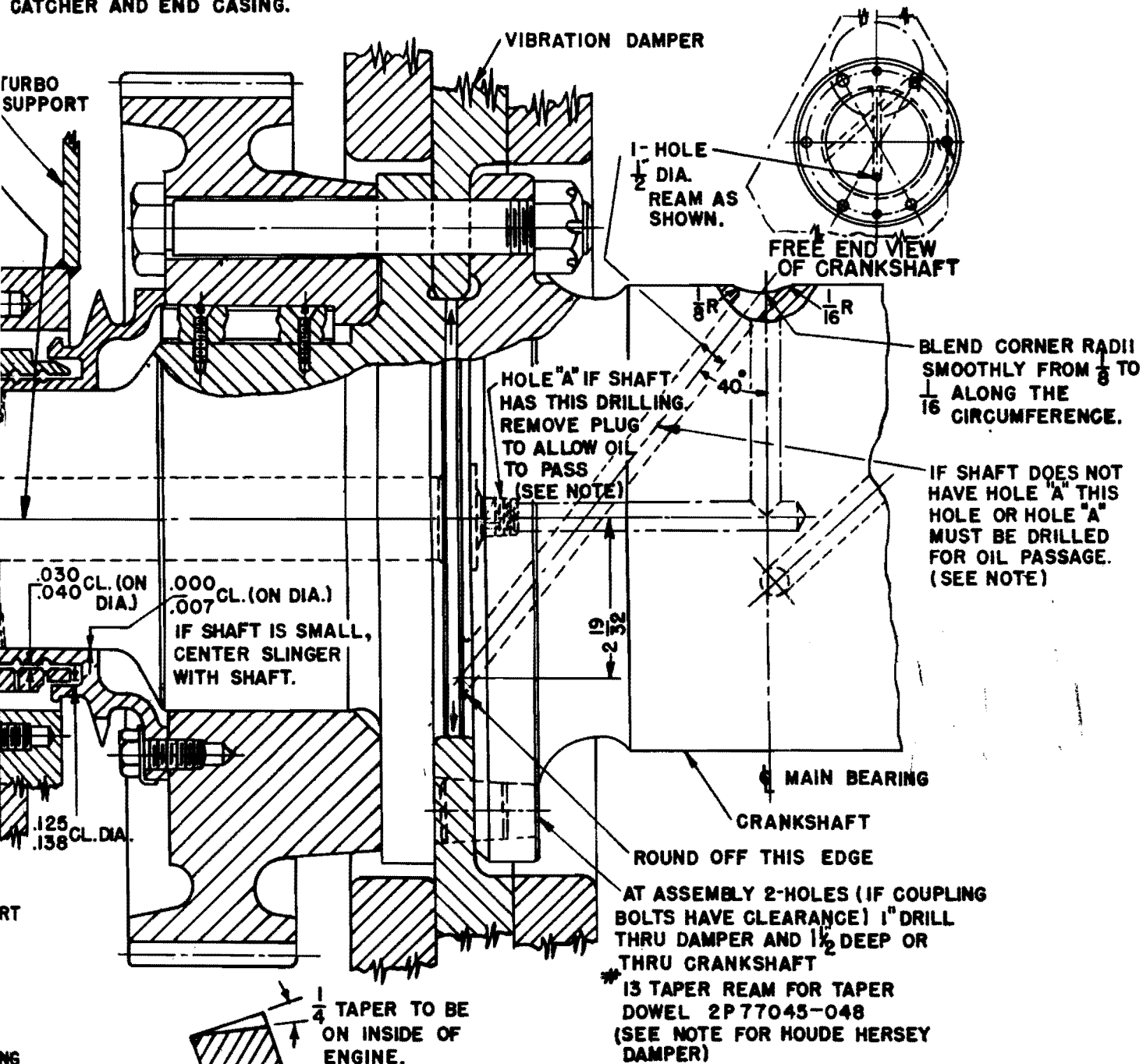
September, 1954

ER IS REPLACED BY HOUE HERSEY
ER IS APPLIED, NOTES FOR PLUGGING
OR DRILLING DIAGONAL HOLE AND
IN CRANKSHAFT DO NOT APPLY,
48 MUST BE APPLIED TO DAMPER



**CRANK
EXTENSION**

LY GASKET BETWEEN HALVES OF
CATCHER AND END CASING.

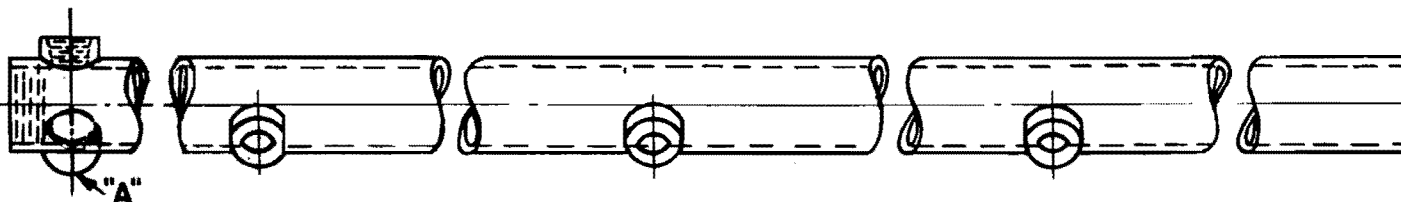


CRANKSHAFT (FIELD REPLACEMENT OF OIL SEAL.)

ALCO-244

50 C 73220

6-1-54



**BOSSES "A" ADDED TO PERMIT
HEADER REVERSAL**

**AFTER WELDING, DRILLING & TAPPING
CLEAN HEADER THOROUGHLY WITH
WIRE BRUSH**

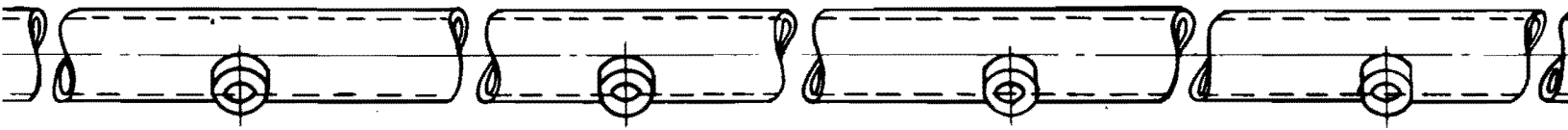
**TEST HEADER AT 800 POUNDS PER SQUARE
INCH HYDROSTATIC PRESSURE**

**BOSS MUST FIT HEADER
ACCURATELY WITH NO GAPS**



ALCO

September, 1954

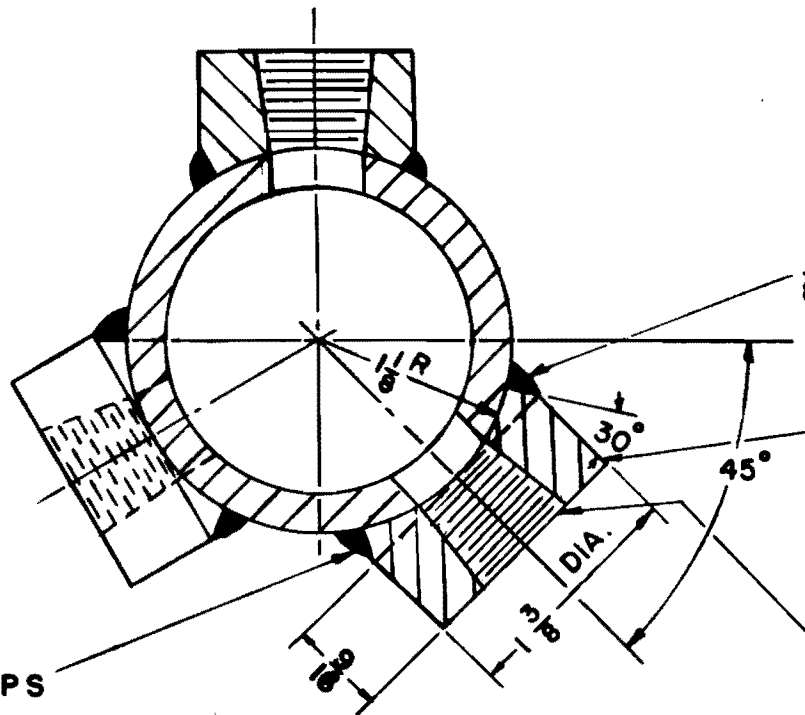


1/8" ADDED TO PERMIT
REVERSAL

WELDING, DRILLING & TAPPING
HEADER THOROUGHLY WITH
USH

HEADER AT 800 POUNDS PER SQUARE
INCH STRESS

BOSS MUST FIT HEADER
ACCURATELY WITH NO GAPS



SECTION Z-Z

FUEL
REVERSE

6-1-54

