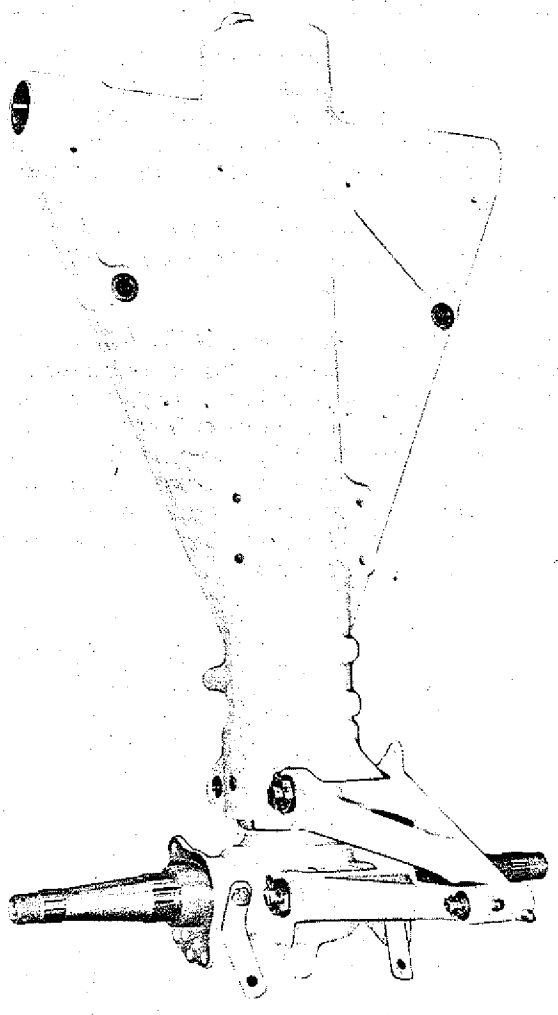
A92-1

MAIN WHEEL SHOCK STRUT ASSEMBLY - DESCRIPTION AND OPERATION

1. General. The main wheel shock strut assembly, Sikorsky part No. S6125-50204-1, is manufactured by Sikorsky Aircraft, Division of United Aircraft Corporation, Stratford, Connecticut. (See figure 1.) The retractable main wheel shock strut assembly supports the helicopter while on the ground and absorbs shock during landing and ground operations through use of a piston assembly which rides within a trunnion assembly. A pair of torque arm assemblies, which are attached to the trunnion assembly and piston assembly prevents the piston assembly from swiveling but does not hinder its vertical movement.

NOTE: If P/N 6125-30 appears on nameplate of strut assembly, this means that the trunnion has been reworked. As a result of this rework, trunnion (73, figure 101) and bearing (50) are no longer interchangeable. Take care not to mix these parts during overhaul. The rework consists of opening up bore on lower end of trunnion, installing an oversize bushing and reducing OD of bearing. Detail rework instructions are provided in paragraph 4A of REPAIR section.



Main Wheel Shock Strut Assembly
Figure 1

MAIN WHEEL SHOCK STRUT ASSEMBLY - DISASSEMBLY

1. Disassemble Main Wheel Shock Strut Assembly.

WARNING: MAKE CERTAIN TO RELEASE AIR IN STRUT ASSEMBLY AND REMOVE AIR VALVE (34, FIGURE 101), BEFORE DISASSEMBLING UNIT.

A. Unscrew lubrication fittings (1 and 2, figure 101) from bolts (11 and 12).

B. Detach torque arm assemblies (3 and 7) from piston assembly (33) and trunnion assembly (65).

C. Separate torque arm assembly (3) from torque arm assembly (7). Remove bushing (15). Unscrew lubrication fitting (16) from torque arm assembly (3) and lubrication fitting (17) from torque arm assembly (7).

D. Slide spacer (18) from ears on sprocket of piston assembly (33) and spacer (19) from lug on trunnion assembly (65). Unscrew lubrication fitting (20) from lower part of trunnion assembly.

E. Unscrew retaining nut (21) from bore at top of trunnion assembly (65) using suitable wrench. Grip ears on cap (22) with suitable tool. Be sure that gripping part of tool is covered with soft pliable material to insure against damage to cap. Slide cap from trunnion assembly and remove back-up rings (23 and 24) and packing (25).

F. Remove washer (26) and nut (27) from top of cap (22) and remove sealing bolt (28). Remove back-up rings (29 and 30) and packing (31) from sealing bolt (28).

G. Unscrew nut (32) from bore at bottom of trunnion assembly (65) and remove piston assembly (33).

H. Unscrew valve (34) from sprocket of piston assembly.

I. Remove bolts, washers, and nuts (37 and 38) and remove bracket (35).

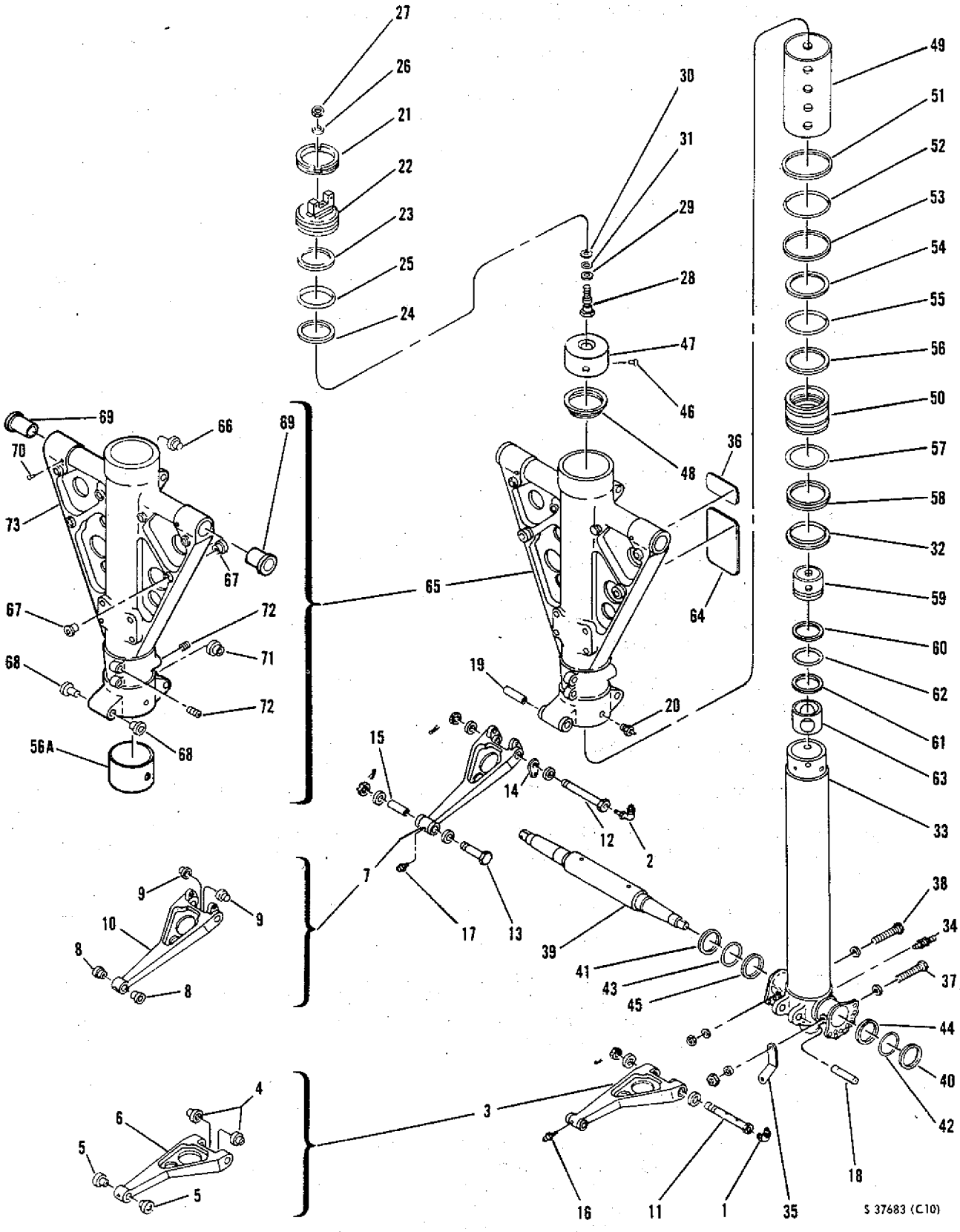
J. Slide axle (39) from sprocket of piston assembly and remove back-up rings (40 and 41), packings (42 and 43), and back-up rings (44 and 45).

K. Remove pin (46) and slide fluid restrictor (47) and dampener (48) from top of piston assembly (33).

L. Remove spacer (49) from piston assembly and pull off bearing (50). Remove back-up ring (51), packing (52), back-up rings (53 and 54), packing (55), back-up ring (56), and felt (57) from bearing (50). Slide off scraper (58) and nut (32).

M. Slide floating piston (59) from piston assembly (33) and remove back-up rings (60 and 61) and packing (62). Remove spacer (63).

NOTE: If trunnion has been reworked, there will be a bushing (56A) installed in lower end of trunnion bore. This bushing is bonded in place and no attempt should be made to remove it, unless it is damaged or worn, making replacement necessary.



DISASSEMBLY

Main Wheel Shock Strut Assembly - Exploded View
Figure 101

Key to Figure 101

1. Lubrication Fitting
2. Lubrication Fitting
3. Torque Arm Assembly
4. Bushing
5. Bushing
6. Torque Arm
7. Torque Arm Assembly
8. Bushing
9. Bushing
10. Torque Arm
11. Bolt, Washer, Nut, Cotter Pin
12. Bolt, Washer, Nut, Cotter Pin
13. Bolt, Washer, Nut, Cotter Pin
14. Tab Washer
15. Bushing
16. Lubrication Fitting
17. Lubrication Fitting
18. Spacer
19. Spacer
20. Lubrication Fitting
21. Retaining Nut
22. Cap
23. Backup Ring
24. Backup Ring
25. Packing
26. Washer
27. Nut
28. Sealing Bolt
29. Backup Ring
30. Backup Ring
31. Packing
32. Nut
33. Piston Assembly
34. Valve
35. Bracket
36. Identification Plate
37. Bolt, Washer, Nut
38. Bolt, Washer, Nut
39. Axle
40. Backup Ring
41. Backup Ring
42. Packing
43. Packing
44. Backup Ring
45. Backup Ring
46. Pin
47. Fluid Restrictor
48. Dampener
49. Spacer
50. Bearing
51. Backup Ring
52. Packing
53. Backup Ring
54. Backup Ring
55. Packing
56. Backup Ring
*56A. Bushing
57. Felt
58. Scraper
59. Floating Piston
60. Backup Ring
61. Backup Ring
62. Packing
63. Spacer
64. Instruction Plate
65. Trunnion Assembly
66. Bushing
67. Bushing
68. Bushing
69. Sleeve
70. Rivet
71. Bushing
72. Insert
73. Trunnion

*This bushing is the result of rework and will be found only on strut assemblies identified as 6125-30, 6125LS-30A, or LS-030B. Strut assemblies identified as 6125-30 have the modified bearing (50) identified as P/N 6125-30-4 and must be treated as a matched set. Reworked strut assemblies identified as 6125LS-30A or LS-030B and some reworked strut assemblies identified as 6125-30 use the same bearing, S6125-50110, as standard, non-reworked strut assemblies.

NOTE: If floating piston (59) does not come out readily, apply 5 to 10 psi air pressure to air valve (34).

WARNING: MAKE CERTAIN WHEN APPLYING AIR PRESSURE THAT PISTON ASSEMBLY IS DIRECTED AWAY FROM PERSONNEL, AND RAGS OR SIMILAR CUSHIONING MATERIALS ARE USED TO PREVENT DAMAGE TO PISTON AND SPACER, AS THEY ARE EJECTED FROM THE PISTON ASSEMBLY.

MAIN WHEEL SHOCK STRUT ASSEMBLY - CLEANING

1. Consumable Materials. All consumable materials needed to overhaul the main wheel shock strut assembly are listed in table 201. Each consumable listed is assigned an item number which is referenced in text to identify that consumable.

WARNING: OBSERVE ALL CAUTIONS AND WARNINGS ON CONTAINERS WHEN USING CONSUMABLES. WHEN APPLICABLE WEAR NECESSARY PROTECTIVE GEAR DURING HANDLING AND USE. IF A CONSUMABLE IS FLAMMABLE OR EXPLOSIVE, MAKE CERTAIN CONSUMABLE AND ITS VAPORS ARE KEPT AWAY FROM HEAT, SPARK, AND FLAME. MAKE CERTAIN HELICOPTER IS PROPERLY GROUNDED AND FIREFIGHTING EQUIPMENT IS READILY AVAILABLE PRIOR TO USE. FOR ADDITIONAL INFORMATION ON TOXICITY, FLASHPOINT, AND FLAMMABILITY OF CHEMICALS, CONSULT MANUFACTURER OF CONSUMABLE.

1A. Clean Main Wheel Shock Strut Assembly.

A. Clean all metal parts with solvent (item 22, table 201).

B. Remove paint from parts, using paint remover, (item 17), or an equivalent water-soluble paint remover that is not detrimental to metal.

CAUTION: IF PAINT REMOVER (ITEM 17) IS NOT AVAILABLE, ALTERNATE SHOULD BE TESTED BEFORE USE. RINSE THE PARTS WITH WATER AFTER REMOVING PAINT.

TABLE 201

CONSUMABLE MATERIALS

ITEM NO.	NOMENCLATURE	SPECIFICATION OR PART NO.	MANUFACTURER
1	Alcohol	MIL-F-5566	
1A	Adhesive	EC-1751	Minnesota Mining and Mfg. Co., St. Paul, Minnesota
2	Aluminum Pigment; Powder and Paste, For Paint	Fed. Spec TT-A-468	
3	Barrier Material, Greaseproofed, Flexible (Waterproofed)	MIL-B-121, Grade A	
4	Barrier Material, Water Vaporproof, Flexible	MIL-B-131, Grade A	

TABLE 201 (Cont)

ITEM NO.	NOMENCLATURE	SPECIFICATION OR PART NO.	MANUFACTURER
5	Butyl Alcohol	Fed. Spec TT-B-864B	
6	Cadmium Coatalyte	No. 312	Rapid Electroplating Process Inc. Chicago, Illinois
7	Cement	EC1357	Minnesota Mining and Mfg. Co.
8	Corrosion Preventive, Petrolatum, Hot Application	MIL-C-11796	
8A	Corrosion Removing and Metal Conditioning Compound	MIL-M-10578	
9	Crocus Cloth	Fed. Spec P-C-458	
10	Cushioning Material, Cellulosic	Fed. Spec PPP-C-843	
10A	Emery Cloth	P-C-0011673	
10B	Epocast	#169	M&T Chemicals Inc. Furane Products Division, 5121 San Fernando Road West, Los Angeles, Calif. 90039
10C	Enstrip	"C"	Enthone Inc. West Haven, Conn.
11	Grease, Aircraft, Helicopter Oscillating Bearing	MIL-G-81322	

TABLE 201 (Cont)

ITEM NO.	NOMENCLATURE	SPECIFICATION OR PART NO.	MANUFACTURER
11A	Hardener	9646	M&T Chemicals Inc. Furane Products Division, 5121 San Fernando Road West, Los Angeles, Calif. 90039
12	Hydraulic Fluid, Petroleum Base	MIL-H-5606	
13	Hydraulic Preservative Fluid, Petroleum Base	MIL-H-6083	
13A	Ink, Etching	No. 22	Jas. A. Matthews Co., Pittsburgh, Pa.
13B	Ink	TT-I-558	
14	Isopropyl Alcohol, Technical	MIL-I-10428A	
15	Lacquer, Acrylic Nitrocellulose Gloss	MIL-L-19537	
15A	Methyl ethyl ketone	TT-M-261	
16	Oil, General Purpose, Low Temperature	MIL-L-7870	
17	Paint Remover, Non-Flammable, Water Rinseable	MIL-R-8633	
18	Primer, Zinc Chromate	Fed. Spec TT-P-1757	
19	Primer, Cellulose Nitrate	MIL-P-7962	
19A	Rouge, Greaseless, Heavy Duty		Roberts Rouge Co. Stratford, Conn.

TABLE 201 (Cont)

ITEM NO.	NOMENCLATURE	SPECIFICATION OR PART NO.	MANUFACTURER
20	Sandpaper	No. 320	
21	Sealant	EC1239	Minnesota Mining and Mfg. Co.
21A	Solution, Cleaning and Deoxidizing		Marlane Development Co., Inc. N.Y., N.Y.
21B	Solution, Dalic Plating		Selectrons Inc. N.Y., N.Y.
21C	Solution, Etching No. 1		Marlane Development Co., Inc.

TABLE 201 (Cont)

ITEM NO.	NOMENCLATURE	SPECIFICATION OR PART NO.	MANUFACTURER
22	Solvent, Dry-Cleaning	Fed. Spec P-D-680	
22A	Stepanfoam	H102N	Stepan Chemical Co. Northfield, Ill. 60093
23	Tape, Masking, Paper, (Pressure Sensitive)	Fed. Spec CC-T-106	
24	Tape, Pressure Sensitive Adhesive	Fed. Spec PPP-T-60	
25	Thinner, Paint, Volatile Mineral Spirits (Petroleum Spirits)	Fed. Spec TT-T-291	
251A	Trichloroethane	MIL-T-81533	
25A	Unichrome	80X	Metal and Thermite Chemical Co., Rahway, N.J.
26	Wash Primer, Pre-treatment Coating	MIL-C-8507	

2. Vapor Degreasing.

Vapor degreasing may be used to clean grease from parts. Cleaning fluid used shall be trichloroethane (item 251A, Table 201) at a temperature of 74° to 78°C (165° to 172°F) with a specific gravity of 60°/60°F at 1.8 minimum. Parts must be free of water when placed in vapor degreaser. Lower parts slowly by hook, crane basket or other suitable means into vapor zone of degreaser. Allow load to remain in degreaser until liquid condensation can no longer be seen dripping from parts. Caked on material may be removed by pressure spraying. Spray only when necessary and hold nozzle below level of vapor in degreaser. Before removal, tip tubing or other parts, which contain recesses for entrapment of degreasing fluid, back and forth to drain all solvent from inside of parts.

MAIN WHEEL SHOCK STRUT ASSEMBLY - INSPECTION/CHECK

1. Magnetic Particle and Fluorescent Penetrant Inspection.

   A. Magnetic Particle Inspection. Inspect all ferrous parts specified in table 301, using magnetic particle inspection in accordance with Specification MIL-I-6868. All parts must be completely disassembled, cleaned, and degreased before magnetic particle inspection. All areas that are scratched, scored, or galled must be stoned or

TABLE 301

MAGNETIC PARTICLE AND FLUORESCENT

PENETRANT INSPECTION

FIGURE 101 INDEX NO.	NOMENCLATURE
	MAGNETIC PARTICLE INSPECTION
12	Bolt
33	Piston Assembly
39	Axle
48	Dampener
	FLUORESCENT PENETRANT INSPECTION
6,10	Torque Arm
18	Spacer
21	Retaining Nut
22	Cap
32	Nut
46	Pin
47	Fluid Restrictor
50	Bearing
59	Floating Piston
73	Trunnion

polished. Parts treated with blue bake or acrylic nitrocellulose must be polished to a clean bright finish at the point of contact or serious burning will result. For complete instructions on preparation of detail parts for inspection, refer to table 302.

B. Fluorescent Penetrant Inspection. Inspect all nonferrous parts listed in table 301, using fluorescent penetrant inspection in accordance with Specification MIL-I-6866. Thoroughly clean each part to be inspected. Surfaces should be free of foreign material which might hold penetrant and cause nonrelevant indications. Heavy oil should be removed by degreasing; dirt and scale by cleaning or sand blasting. Parts must be dry before applying penetrant. Preheating immediately prior to immersion in penetrant increases sensitivity and may readily be accomplished by hot vapor degreasing. For complete instructions on preparation of detail parts for inspection, refer to table 302.

2. Inspect axle (39, figure 101) for pitting, scratches, and scoring.

3. Inspect cylinder of piston assembly (33) for scratches, nicks, corrosion, and cleanliness. Inspect bore of trunnion assembly (65) for pick-up, corrosion, pitting, scratches, scoring, wear, and cleanliness.

4. Inspect detail parts for dimensional limits listed in table 303.

TABLE 302

PREPARATION OF DETAIL PARTS FOR INSPECTION

TYPE OF SURFACE PREPARATION	MILITARY SPECIFICATION	FLUORESCENT PENETRANT INSPECTION	MAGNETIC PARTICLE INSPECTION
Resin Coating	MIL-R-3043	Do not remove	Remove from areas to be inspected and from surfaces which will be contacted when magnetic current is applied. Use stripper, Specification MIL-S-6892
Phosphate Coating (Parco-Lubrite)	MIL-C-16232	Not applied to non-ferrous materials	Do not remove
Black Oxide Coating	MIL-C-13924	Not applied to non-ferrous materials	Do not remove
Dow 17 Coating	MIL-M-3171	Do not remove	Not applied to ferrous materials
Aluminized 2-Component Epoxy	None	Do not remove	Not applied to ferrous materials
Acrylic Nitrocellulose Lacquer	MIL-L-19537	Remove using paint remover, Specification MIL-R-25134	Remove using paint remover, Specification MIL-R-25134

TABLE 303

SERVICE LIMITS

FIGURE 101 INDEX NO.	PART NUMBER	NOMENCLATURE	SERVICE LIMIT (INCHES)
3,7	S6125-50113	Torque Arm Assembly	Corrosion damage less than 0.015-inch in depth and one inch in diameter is acceptable providing it is not within one inch of nearest defect Isolated damage (scratches and nicks) limited to 0.005-inch in depth after blend out
4,9	NAS538-10-61	Bushing (Line reamed)	0.6270 ID
5,8	NAS538-9-37	Bushing (Line reamed)	0.5645 ID
11,12	S6125-50107	Bolt (Shank)	0.6226 OD
	AN320-10	Nut	250 to 300 in.-lb torque
13	NAS464P6L-34	Bolt	0.3729 OD
15	NAS73-6E201	Bushing	0.3760 ID 0.5595 OD
18,19	S6125-50124	Spacer	0.6275 ID 0.7455 OD

TABLE 303 (Cont)

FIGURE 101 INDEX NO.	PART NUMBER	NOMENCLATURE	SERVICE LIMIT (INCHES)
27	MS20365-820	Nut	335 to 385 in.-lb. torque
28	S6125-50209	Sealing Bolt	0.621 OD
33	S6125-50105	Piston Assembly (Main bore)	3.002 ID
		(Small end)	3.184 OD
		Check dia. of four pin holes (holes closest to end of piston) for wear	0.254 Max ID Refer to paragraph 3D for repair of oversize holes
		Check dia. of holes in torque arm lugs	0.7505 Max ID Refer to paragraph 3A for repair of oversize holes
33	S6125-50105	Piston Assembly (Main shank)	3.2435 OD
			Corrosion damage less than 0.015-inch in depth and one inch in diameter is acceptable providing it is not within one inch of nearest damage or in chrome plated area

TABLE 303 (Cont)

FIGURE 101 INDEX NO.	PART NUMBER	NOMENCLATURE	SERVICE LIMIT (INCHES)
39	S6125-50115	Axle (Large bearing diameter)	1.4990 OD
		(Small bearing diameter)	0.9990 OD
			Scratches and nicks - isolated - damage limited to 0.003-inch deep after blending with 00 sandpaper are acceptable. Inspect interior surfaces for corrosion. Clean and refinish per paragraph 4-(1)A. Inspect inside of axle for damaged or deteriorated foam inserts. Repair per paragraph 4-(2)A.
47	S6125-50305-1	Fluid Restrictor	3.188 ID
			3.746 OD
48	S6125-50114	Dampener	3.190 ID
50	S6125-50110	Bearing	3.252 ID
			3.871 OD

TABLE 303 (Cont)

FIGURE 101 INDEX NO.	PART NUMBER	NOMENCLATURE	SERVICE LIMIT (INCHES)
	*6125-30-4	Bearing	3.252 Max ID 3.832 Min OD If bearing is not within limits, refer to paragraph 4A of REPAIR section for fabrication instructions of a replacement.
56A	*6125-30-3	Bushing	3.838 Max ID If bushing is not within limits, refer to paragraph 4A of REPAIR section for replacement instructions.
59	S6125-50117	Floating Piston	2.995 OD

*These parts will be found only on those units reworked per paragraph 4A in REPAIR section.
These units can also be identified by P/N 6125-30 on nameplate.

TABLE 303 (Cont)

FIGURE 101 INDEX NO.	PART NUMBER	NOMENCLATURE	SERVICE LIMIT (INCHES)
65	S6125-50112 *6125-30-2	Trunnion Assembly	After corrosion removal per REPAIR, paragraph 4A, pitting in trunnion bore must not be over 20% of total area. If depth of pitting is over 0.015 inch at any one point, replace part.
66	NAS75-6-081	Bushing	0.3765 ID
67	NAS77-10-100	Bushing	0.6265 ID
68	NAS538-12-118	Bushing (Line reamed)	0.7505 ID
69	S6125-50264	Sleeve	1.253 ID
69	S7125-50155	Sleeve	1.252 ID
71	NAS538-10-43	Bushing (Line reamed)	0.6255 ID

*These parts will be found only on those main wheel shock strut assemblies reworked per paragraph 4A. in repair section and identified as 6125-30, 6125LS-30A, or LS-030B. See starred note below Key to Figure 101.

MAIN WHEEL SHOCK STRUT ASSEMBLY - REPAIR

1. Parts Replacement. Replace all packings, back-up rings, and felts.

2. Repair Worn Cadmium Plate as Follows:

   A. Wear or corrosion which extends through cadmium plating into base metal may be reapired by touchup brush plating, providing not more than ten percent of total area is affected.

   B. Clean oils, grease, and paint from surface to be plated, using solvent (item 22, table 201).

   C. Clean rust, stains, and other stubborn film from part with emery cloth followed up with crocus cloth (item 9).

   D. Neutralize cleaning solution with water, and dry thoroughly.

   E. Brush area, using repeated slow strokes with Cadmium Applicators No. 412, manufactured by Rapid Electroplating Process Inc., 1414 South Wabash Avenue, Chicago 5, Illinois, which has been saturated with Cadmium Coatalyte (item 6). The temperature of solution should be from 21.11° to 32.2°C (70° to 90°F) and applied voltage should be about six volts, or as high as possible without producing a burned cadmium deposit.

   F. Repeat step E as necessary to produce required thickness. A plate thickness of 0.0003 inch can be applied in five to ten minutes. The higher the current, the faster the deposit of plate.

   G. Wash area thoroughly with clean water when plating process has been completed.

2A. Marking of Parts.

NOTE: Marking of parts shall be in same location as part number but not in an area so as to be construed as part of the part number.

A. Impression Stamping. Impression stamping may be performed with machine control gang stamp, or individual stamps. Stamping shall not exceed a depth of 0.003 inch.

B. Vibration - Peen Marking. Characters may be hand peened on a surface 0.500 inch square. Thor air pen No. 116, manufactured by Thor Power Tool Co., Aurora, Illinois, or equivalent, with a 0.010 inch minimum radius carbide tip may be used for peen marking.

C. Electrolytic Etching. Electrolytic etching chemical stencils marking on the part with an electric charge. An electromaster kit, No. 3500, which includes a standard E-500 power unit may be used. Unit may be purchased from Electromark Corp., Cleveland, Ohio, or equivalent.

D. Acid Etching. Acid etching can be accomplished with a toothpick or similar implement and etching ink (item 13A, table 201).

E. Rubber Stamping. Use a rubber stamp, characters 3/16 inch high, and ink (13A).

3. Repair of Piston Assembly. (See figure 401.)

A. Worn Torque Arm Lugs.

(1) Line ream lugs on piston assembly (33, figure 101), to a diameter of 0.8130 to 0.8120 inch as shown in figure 401, detail A.

(2) Perform magnetic particle inspection per MIL-I-6868.

(3) Coat OD of NAS537-10P43 bushings with primer (item 18, table 201) and press bushings into lugs while primer is wet.

(4) Line ream and face bushings to dimensions specified in figure 401, detail A.

(5) Brush cadmium plate face of lugs in accordance with paragraph 2.

B. Chrome Plating Surface.

NOTE: If wear extends through the chrome plating into the base metal, replace piston. If the outside diameter of the piston is worn below 3.2435 inches it may be reworked as follows. (See figure 401.)

(1) Strip chromium plating from piston using unichrome (item 25A, table 201) in accordance with the manufacturer's specifications.

(2) Perform magnetic particle inspection in accordance with MIL-I-6868.

(3) Shot peen area to be chrome plated, including 0.25 inch radius in accordance with MIL-S-13165, using number 170 shot at 003A to 009A intensity.

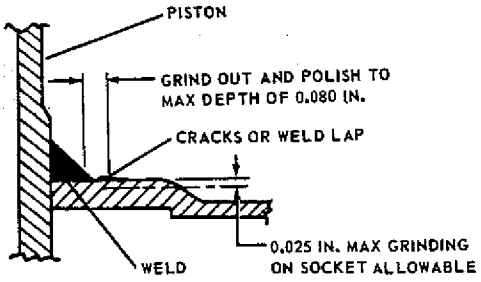
(4) Replate in accordance with QQ-C-320, class 2E.

(5) Grind diameter to 3.247 to 3.245 inch with a surface finish of 16-microinches.

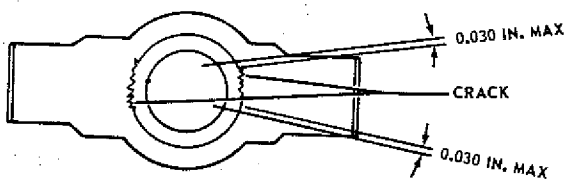
(6) Magnetic inspect for surface cracks per MIL-I-6868.

C. Cracks or Weld Laps in the Edge of Weld Fillet.

(1) Using hand grinder, grind affected area to a depth of 0.080 inch maximum. If necessary grind surrounding area to a depth of 0.025 inch maximum to clean up surface. (See detail B, figure 401.)



DETAIL B



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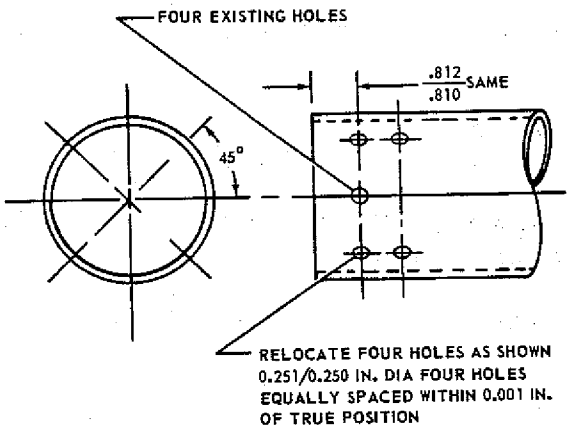
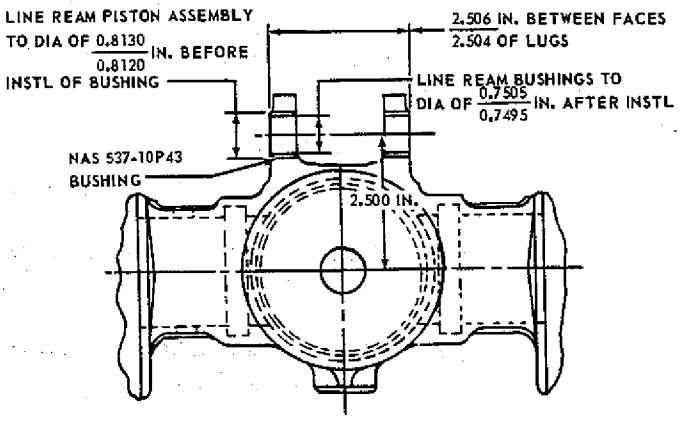
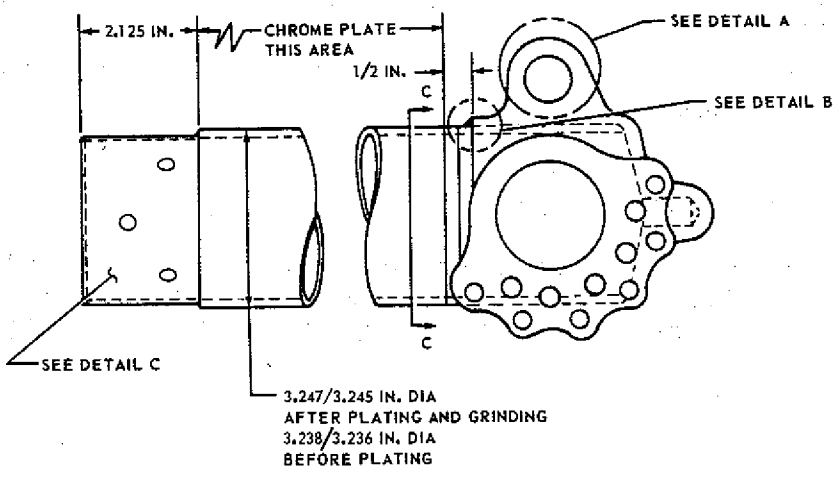


DETAIL C



DETAIL A



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(2) Do not allow piston assembly to overheat during grinding.

(3) After grinding and polishing, do a magnetic particle inspection for cracks per MIL-I-6868, both circumferential and longitudinal direction, continuous method where possible.

(4) Touch up reworked area with cadmium plating per MIL-STD-865.

(5) Apply protective finishes to reworked areas as follows: Apply zinc-chromate primer coating (item 18, Table 201) per MIL-P-26915A, Type 1, Class A or B, and one coat each of wash primer (item 26) per MIL-C-8507 and primer (item 19), and two coats of acrylic lacquer (item 15).

D. Elongated or Oversize Pin Holes (holes closest to end of piston).

(1) Protect chrome-plated area of piston and secure piston assembly (33, Figure 101) in a suitable fixture.

(2) Drill four new holes as specified in Figure 401, Detail C. Deburr holes after machining.

(3) Check machined areas by magnetic particle inspection per MIL-I-6868.

4. Repair of Axle.

A. Repair of OD

(1) Using heavy duty greaseless rouge (item 19A, Table 201), blend out nicks and pitted areas, to clean up axle.

(2) Do a magnetic particle inspection per MIL-I-6868.

(3) Clean inside diameter of axle using compressed air to remove all metal chips or fragments.

(4) Clean axle by vapor degreasing as specified in CLEANING, paragraph 2.

(5) Dalic electrolytical clean axle with cleaning and deoxidizing solution (item 21A, Table 201), etching solution (item 21C), and current as specified by manufacturer.

(6) Axle shall be thoroughly rinsed with clean water and dried with clean low-lint cloth before plating.

(7) After thorough cleaning and drying, touch up outside reworked areas with Dalic plating solutions (item 21B) and Dalic process portable rectifier, manufactured by Marlane Development Company, Inc., New York, N.Y. per manufacturer's instructions. Plate axle by constantly moving stylus or work until desired thickness is reached. Thickness of plating shall be not less than 0.0003 inch.

(8) Measure center diameter of axle. Diameter of axle must be within 1.997 to 1.995 inch.

4(1).A. Removal of corrosion on interior axle surfaces.

(1) Remove foam inserts using a plastic scraper.

(2) Vapor degrease per CLEANING paragraph 2.

(3) Mask all machined surfaces, part numbers, threads, and other areas not to be grit-blasted with masking tape (items 23, Table 201).

(4) Using G80-grit silica sand and cleaning machine per MIL-C-15061, grit-blast internal surfaces just enough to produce a clean surface.

NOTE: Cleaned surfaces shall not be touched with greasy or dirty hands. Wear clean gloves when handling cleaned parts.

(5) If cadmium-plating on threaded areas is intact, mask it off. If not intact, mask off chrome-plated areas only and do this:

WARNING: DO NOT LEAVE PARTS IN SOLUTION OVERNIGHT.

(a) Immerse areas to be stripped in a solution of 12 ounces Enstrip "C" (item 10C, Table 201) per gallon of water at ambient temperature, until cadmium-plating is stripped.

(b) At all times maintain a pH above 9.5 using an anhydrous ammonia gas.

(6) Cadmium-plate external threaded areas if required and internal surfaces per QQ-P-416, Class 2, Type II.

NOTE: Rise time is the time it takes for the plated surfaces to reach the baking temperature.

(7) Within 4 hours of cadmium-plating, bake at a temperature of 191° ± 14°C (375° ± 25°F) for 8 hours, plus rise time.

(8) After axle has cooled, apply two coats of zinc chromate primer (item 18) to internal surfaces.

(9) To prevent further corrosion, replace foam inserts per paragraph 4(1)B.

(10) Vibration-peen LS-53 in the same location as part number, but in such a way as not to be construed as part of part number.

4(2).A. Replacement of Foam Inserts.

(1) Remove damaged or deteriorated foam insert using a plastic scraper.

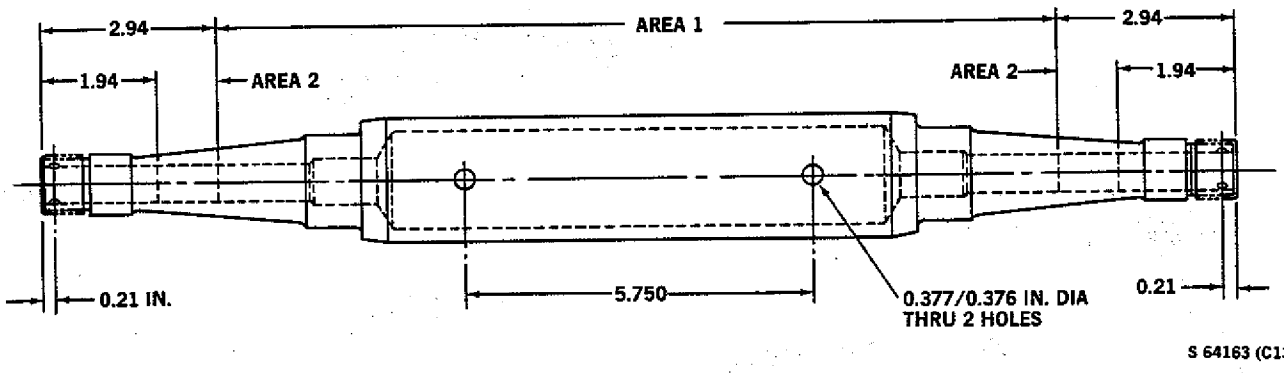
(2) Vapor-degrease axle (39, Figure 101) assembly per CLEANING paragraph 2.

(3) Replace Stepanfoam (item 22A, Table 201) in Area 1, Figure 401A, as follows:

CAUTION: Mixing and dispensing of Stepanfoam shall be in a controlled, well-ventilated area. Down-draft or overhead venting is permissible. Ventilation control should be provided to maintain personnel exposures below a 0.02 parts per million threshold limit value, or operators should wear respirators to avoid inhalation of the vapors. Avoid contact with skin and eyes. Wash hands thoroughly before eating or smoking. There shall be no smoking in working area.

NOTE: Do not mix Stepanfoam if temperature is less than 70°F (21°C).

(a) Mix Stepanfoam, (item 22A, Table 201), in a clean, wax-free container, as follows: Mix parts by weight; add 52 parts of T component to 48 parts of R component. Mix until material is uniform in color and consistency.



Replacement of Foam Inserts
Figure 401A

(b) Heat axle assembly to 79°C (175°F). Plug threaded end and boltholes of axle assembly. Pour mixed Stepanfoam into axle assembly in Area 1 shown in Figure 401A, and cure for 24 hours at room temperature.

(c) Using 0.376- to 0.377-inch-diameter boltholes as a guide, drill same diameter hole through cured Stepanfoam, taking care not to damage holes.

(d) Brush-cadmium-plate holes per, MIL-STD-865, using selectron or Dalic method.

(4) Replace syntactic foam insert in Area 2 shown in Figure 401.A, as follows:

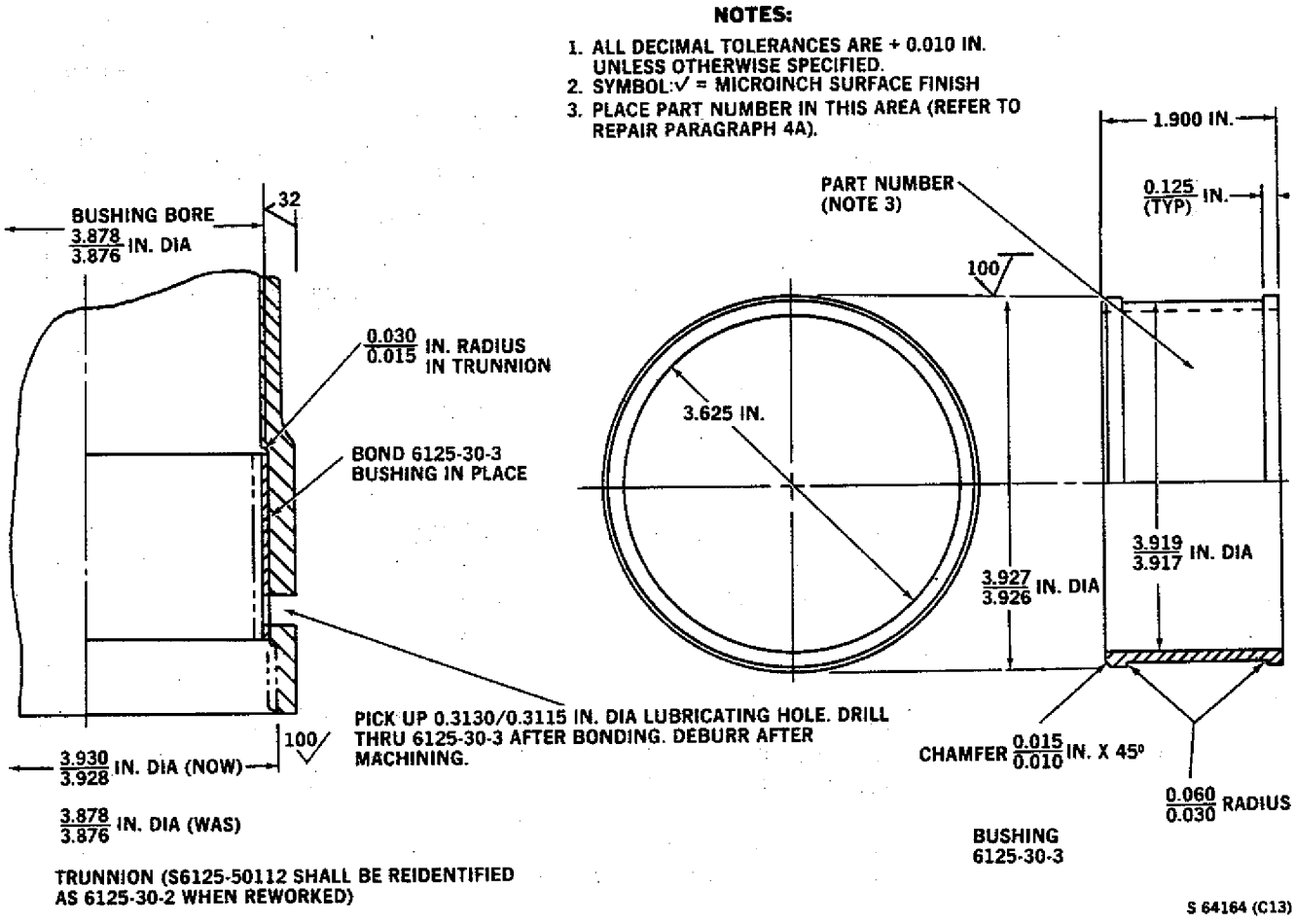
(a) Mix Epocast #169 (item 10B, Table 201) and hardener 9646 (item 11A) per manufacturer's instructions.

(b) Fill Areas 2 shown in Figure 401A.

(c) Allow to cure per manufacturer's instructions.

4A. Repair of Trunnion Lower Bore.

A. Remove press-fit lubrication fitting and washer (20, Figure 101) from lower part of trunnion (73) bore. Secure trunnion in a suitable fixture. Remove corrosion from 3.878- to 3.876-inch-diameter bore by machining to 3.930- to 3.928-inch-diameter as shown in Figure 402.



Repair of Trunnion - Lower Bore
Figure 402

B. Inspect machined area by fluorescent penetrant inspection per MIL-I-6866, Type I or II, no immersion.

C. Remove any corrosion remaining in bore by scrubbing, for 1 to 2 minutes, with a nylon brush saturated with corrosion removing and metal conditioning compound (item 8A, Table 201). Wash and thoroughly dry bore. Clean up any remaining corrosion by blending, using fine grade crocus cloth.

CAUTION: Pitting must not be over 20% of total area. If pitting depth is over 0.015 inch at any one point, replace part.

D. Make a bushing from aluminum alloy bar, WW-T-700-3, 2024-T3 (alternate material extruded tubing QQA-200P3, T3511) to dimensions specified in Figure 402. After machining, vapor

degrease and anodize bushing per MIL-A-8625. Wipe OD of bushing with methyl ethyl ketone (item 15A, Table 201).

E. Identify bushing by rubber-stamping 6125-30-3 on bushing per paragraph 2A in area shown in Figure 402.

F. Wipe bore of trunnion with methyl ethyl ketone (item 15A).

NOTE: If more than 8 hours has lapsed since anodizing, then treat bushing with corrosion removing and metal conditioning compound (item 8A). Thoroughly wash and dry and rinse in 50% solution of commercial ethyl alcohol and water.

G. Apply a coat of adhesive (item 1A) to mating surfaces of trunnion (73, Figure 101) and bushing. Adhesive shall be mixed by weight, two parts to one part accelerator.

H. Install bushing into bore of trunnion and allow to cure 12 hours at room temperature. Cure time can be reduced to 2 hours by heating parts to 60° to 71°C (140° to 160°F). Adhesive will reach full strength in about 6 days.

I. After bond has cured, machine bushing bore and drill lubrication hole as specified in Figure 402. Deburr inner edge of lubrication hole.

J. Chemically treat reworked areas of trunnion per MIL-C-5541. Neutralize with cold water.

K. Place AN960PD516 washer on lubrication fitting (20) and press lubrication fitting in 0.3130- to 0.3115-inch-diameter hole in lower part of trunnion.

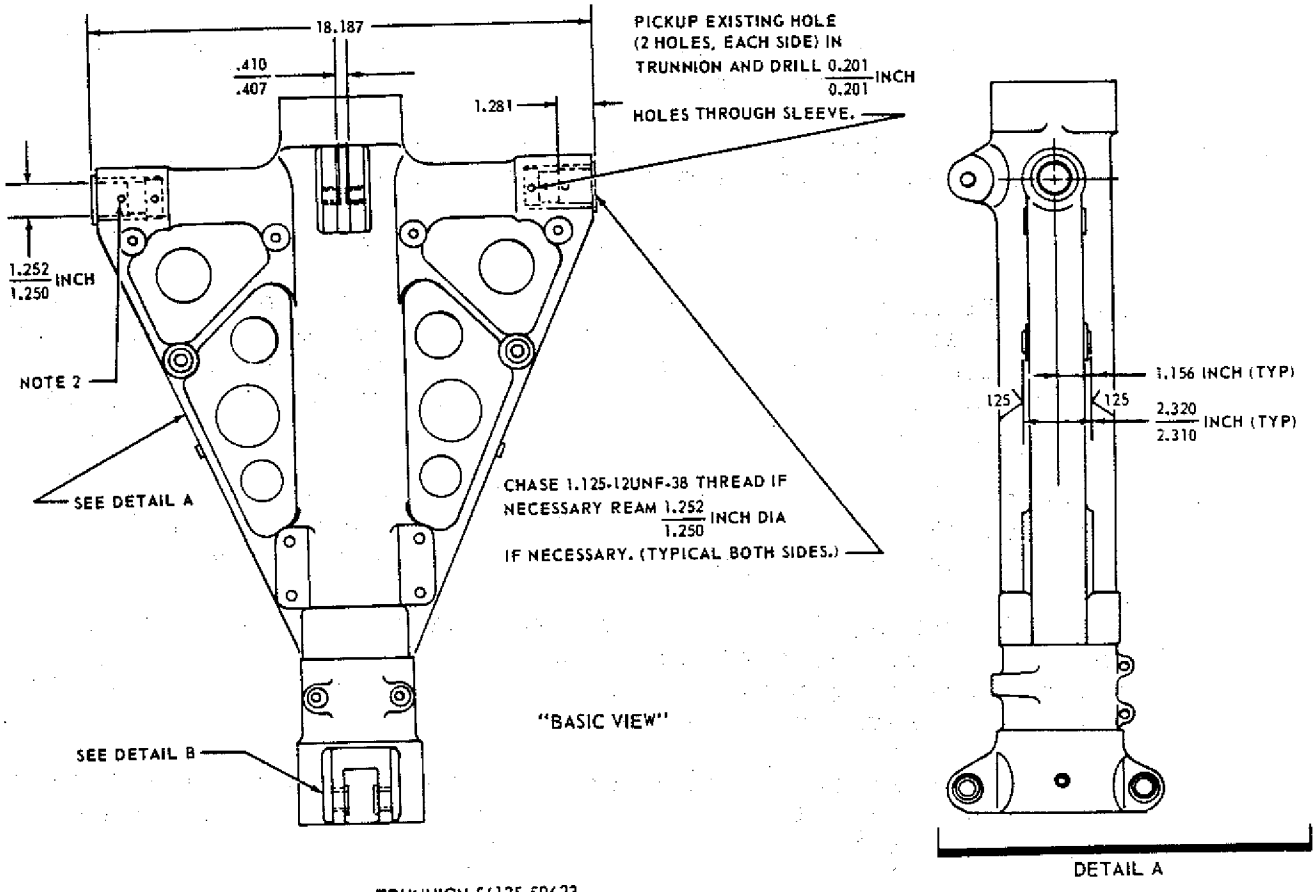
L. Impression-stamp 6125-30-2 on reworked trunnion per paragraph 2A.

M. After rework, impression-stamp LS-030B (per paragraph 2A) on nameplate near original part number.

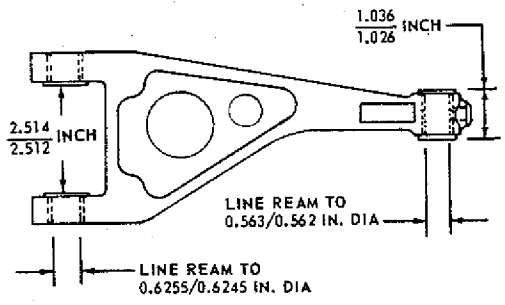
4B. Replacement of Bushings and Sleeves (Figure 403).

A. Press damaged or worn bushing or sleeve from parent part.

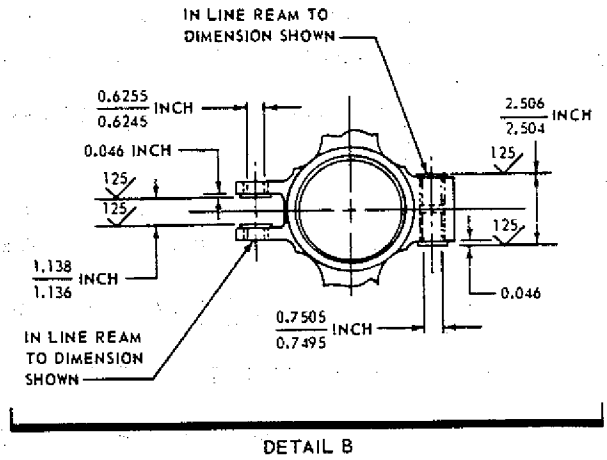
NOTE: Before removing sleeve (69, Figure 101) remove rivets (70) from trunnion (73) and sleeve (69).



TRUNNION S6125-50623
(S6125-50112 SIMILAR. SEE NOTE 2).



TORQUE ARM ASSEMBLY
S6125-50113



NOTES

1. ✓ INDICATES SURFACE FINISH IN MICROINCHES.
2. 204 / 201 DIA HOLE (BOTH SIDES) FOR S6125-50263 TRUNNION ASSY ONLY.
   ALIGN HOLE IN S6125-50264-1 SLEEVE WITH HOLE IN TRUNNION DURING SLEEVE INSTALLATION.
3. DIMENSIONAL TOLERANCE ± 0.010 UNLESS OTHERWISE INDICATED ON DRAWING.

S 37686 (C10)

B. Smooth out any galling or roughness in parent part using emery cloth (item 10A, Table 201). Galling no deeper than 0.010 inch may be blended out, provided not more than 25% of contact area is affected.

C. Clean bore in parent part and dry thoroughly.

D. Cool replacement bushing or sleeve with dry ice and thinner (item 25), to ease installation.

WARNING: WEAR GLOVES WHEN HANDLING CHILLED PARTS.

E. Coat bore to receive bushing or sleeve with zinc-chromate primer (item 18) and press chilled bushing or sleeve into place while primer is wet. See Figure 403 for bushing and sleeve installation tolerances and specific instructions.

F. Allow bushing or sleeve to return to room temperature.

G. If sleeve (69, Figure 101) is replaced, pick up existing holes in trunnion (73) (two holes each side) and drill through one side of sleeve (69), one at a time, as shown in Figure 403. Thoroughly clean drilled holes. Coat rivets (70, Figure 101) with zinc-chromate primer (item 18, Table 201) and secure sleeve to trunnion with rivets.

H. Ream bushing or sleeve to dimension specified in Figure 403.

5. Paint Detail Parts as follows:

A. Apply a spray coating of wash primer (item 26, Table 201), in a single spray pass, to deposit a thin wet film which will provide a thickness of 0.2 to 0.3 mils.

NOTE: Do not attempt to obtain a full coverage coating. Do not hold the spray gun more than 12 inches from the surface.

B. Remove any initial heavy coating of wash primer, (item 26), using alcohol (item 1). Apply a coating of proper thickness according to step A.

C. Allow spray coating of wash primer (item 26) to dry from 1 to 4 hours, before applying top coating.

D. Apply a top coating of primer (item 19, Table 201) over initial spray coating.

NOTE: It is not necessary to apply a top coating or primer (item 18 or 19) over thin initial spray coating. Applying top coating directly on initial spray coating with lacquer or enamel is prohibited, since poor corrosion resistance will result.

MAIN WHEEL SHOCK STRUT ASSEMBLY - ASSEMBLY

1. General.

   A. Apply coat of oil (item 16, Table 201) to bore surface of trunnion assembly (65, Figure 101) and to exposed sliding surface of piston assembly (33).

   B. Soak all packings, felts, and backup rings in hydraulic fluid (item 12, Table 201) before reassembly.

2. Assemble Main Wheel Shock Strut Assembly.

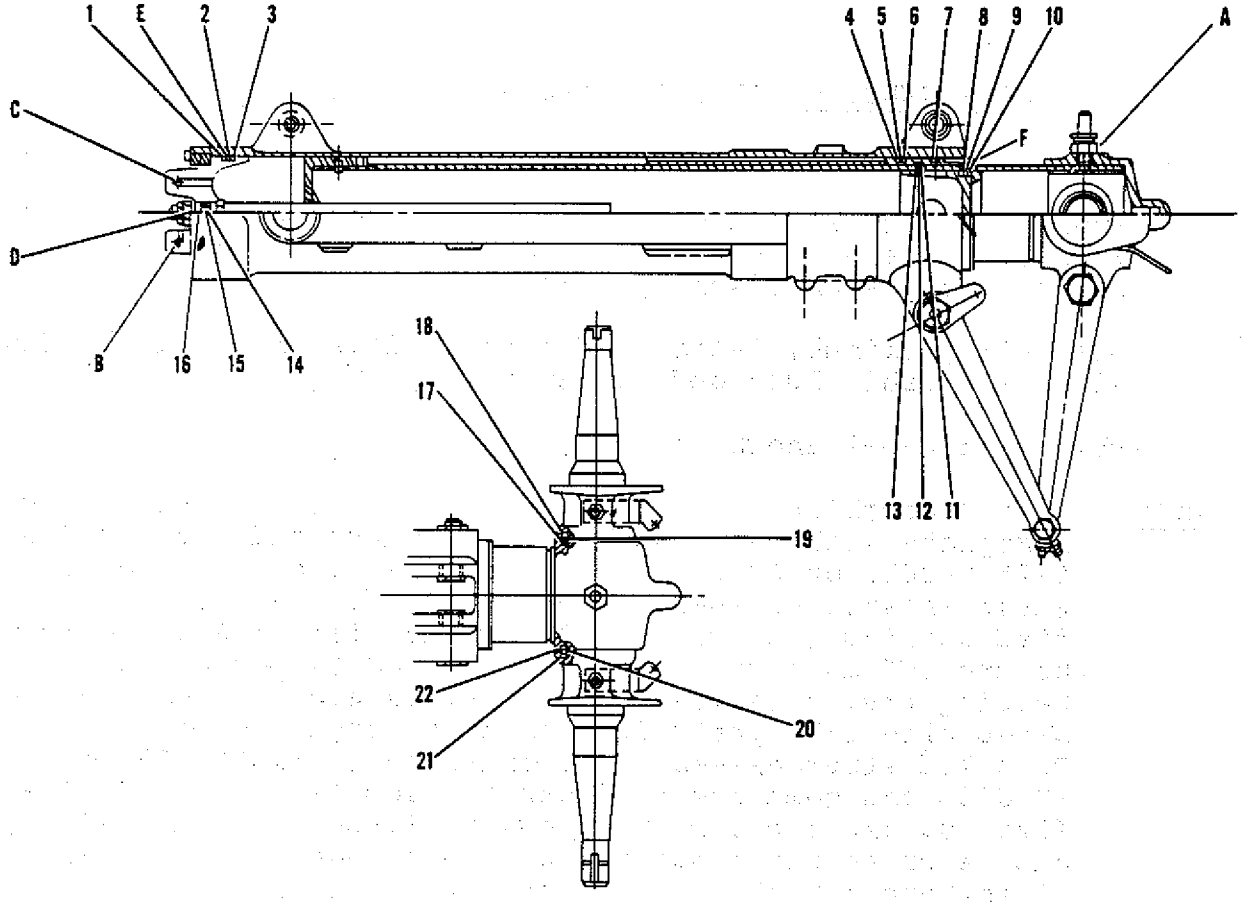
   NOTE: Strut assemblies that have been reworked are identified on nameplate with the original part number and with 6125-30, 6125LS-30A, or LS-030B in the same area of the plate. Strut assemblies identified as 6125-30 that have the modified bearing (50, Figure 101) identified as 6125-30-4 must be treated as a matched set; trunnion (73) and modified bearing from these reworked strut assemblies must not be mixed with like parts from another strut assembly. Reworked strut assemblies identified as 6125LS-30A or LS-030B and some reworked strut assemblies identified as 6125-30, use the same bearing, S6125-50110, as standard, non-reworked strut assemblies. All reworked strut assemblies have a bushing in which the bearing is installed. (See starred note below Key to Figure 101.)

   A. Slide spacer (63, Figure 101) into bore of piston assembly (33). Install packing (10, Figure 501) and backup rings (8 and 9) on floating piston, and slide floating piston in piston assembly until situated just above spacer (63, Figure 101).

   B. Slide nut (32) and scraper (58) over cylindrical shaft of piston assembly (33). Install felt (7, Figure 501), backup ring (4), packing (5), backup rings (6 and 11), packing (12), and backup ring (13) into grooves provided on inside and outside diameters of bearing (50) and spacer (49) over cylindrical shaft of piston assembly.

   C. Install dampener (48) and fluid restrictor (47) on top of piston assembly (33) and secure fluid restrictor with pin (46).

   D. Install backup rings (18 and 21, Figure 501), packings (19 and 20), and backup rings (17 and 22) into grooves provided in sprocket of piston assembly. Slide axle (39, Figure 101) into sprocket.



1.	Back-Up Ring	9.	Back-Up Ring	17.	Back-Up Ring
2.	Packing	10.	Packing	18.	Back-Up Ring
3.	Back-Up Ring	11.	Back-Up Ring	19.	Packing
4.	Back-Up Ring	12.	Packing	20.	Packing
5.	Packing	13.	Back-Up Ring	21.	Back-Up Ring
6.	Back-Up Ring	14.	Back-Up Ring	22.	Back-Up Ring
7.	Felt	15.	Packing		
8.	Back-Up Ring	16.	Back-Up Ring		

Port and Packing Locations
Figure 501

E. Line up holes in axle (39) with holes in sprocket of piston assembly (33). Position bracket (35) over holes in sprocket and secure with bolts, washers, and nuts (37). Secure valve (34) into sprocket and lockwire. Install bolt, washer, and nut (38).

F. Slide piston assembly (33) into bore of trunnion assembly (65) and secure with nut (32). Tighten nut using suitable wrench. Lockwire nut to trunnion assembly.

G. Install packing (15, Figure 501) and backup rings (14 and 16) in grooves of sealing bolt (28, Figure 101). Attach sealing bolt to cap (22) with washer (26) and nut (27). Install packing (2, Figure 501) and backup rings (1 and 3) in grooves provided on outside diameter of cap, and slide assembly into bore of trunnion assembly (65, Figure 101) and secure with retaining nut (21). Lockwire retaining nut to trunnion assembly.

H. Screw lubrication fitting (20) into lower part of trunnion assembly (65). Slide spacer (19) into lug on trunnion assembly and spacer (18) into ears of sprocket of piston assembly (33).

3. Install Torque Arm Assemblies.

A. Screw lubrication fitting (17, Figure 101) into torque arm assembly (7) and lubrication fitting (16) into torque arm assembly (3). Lubrication fittings to be installed finger-tight, plus 1/4 turn. Connect torque arm assemblies (3 and 7) together with bushing (15) and with bolt, washers, nut, and cotter pin (13).

B. Secure torque arm assemblies (3 and 7) to piston assembly (33) and trunnion assembly (65) with bolts, washers, nuts, and cotter pins (11 and 12) and tab washer (14). Torque nuts with 250 to 300 inch-pounds. Lubricate bushings of torque arm assemblies with grease (item 11, table 201).

C. Screw lubrication fittings (1 and 2, figure 101) into bolts (11 and 12).

D. Soak instruction plate (64) in cold water until cellophane backing is loose enough to remove. Peel off cellophane backing and allow instruction plate to dry.

E. Clean area to receive instruction plate, using clean lint-free cloth saturated in thinner (item 25, table 201). Allow surface to dry. Apply a normal brush coat of cement (item 7) to cleaned surface. Allow cement to become tacky and press instruction plate (64, figure 101) in position.

F. Form a fillet of primer (item 19, table 201) around all bolt heads and bearing shoulders. Seal all packets, joints, and entrants against moisture with sealant (item 21).

G. Lubricate torque arm assemblies through lubrication fittings (1, 2, 16 and 17), with grease (item 11). Lubricate felt through lubrication fitting (20) with hydrualic fluid (item 12) using a squirt can.

4. Painting.

A. Masking. Prior to painting, mask all machined areas, reamed holes, bearing etc. with tape (item 23, table 201) or equivalent.

NOTE: Before mixing wash primer, check process control form. The code number indicates date of manufacture. Primer must not be used after six months from date of manufacture, unless analyzed by a laboratory and found satisfactory, in which case it may be used up to nine months. Primer over nine months old must be rejected.

B. Mixing and Thinning.

(1) Thoroughly break up and intermix cake which forms at bottom of container. Mixing must be complete.

(2) Thin by adding one-half volume of isopropyl alcohol (item 14, table 201) to five volumes of mixed wash primer (25) to obtain proper spraying qualities. Adjust proportions if necessary.

NOTE: Under conditions of high humidity, approximately one-half of isopropyl alcohol (item 14) may be replaced by butyl alcohol (item 5).

C. Application.

(1) Spray equipment must be thoroughly clean, before use. Before and after using wash primer, the equipment should be flushed with alcohol and blown dry.

(2) Spray in a single spray pass to deposit a thin but wet film which will provide a thickness of 0.2 to 0.3 mils. Do not attempt to obtain a full hiding spray coating. If such a coating is produced, it should be immediately removed with alcohol and replaced with a properly applied coating. Do not attempt to obtain required thin films by holding spray gun more than 12 inches from work. A dry, powdery film would be deposited and seriously impair adhesion of finish system.

(3) Allow wash primer to dry not less than one hour or more than four hours before applying zinc-chromate primer (item 18). If butyl alcohol has been used in thinning, drying time should be extended to one and one-half hours.

(4) The wash primer coating should be dry scuffed lightly with sandpaper (item 20) or with new, clean Kraft paper to remove overspray and smooth out nibs. Remove any dust, using a tack rag before applying zinc-chromate primer.

(5) Apply two coats of primer (item 18) and two coats of lacquer (item 15).

MAIN WHEEL SHOCK STRUT ASSEMBLY - TESTING

1. Test Main Wheel Shock Strut Assembly.

   NOTE: Perform following test on main wheel shock strut assembly, using hydraulic fluid (item 12, table 201).

   A. Position strut vertically and remove valve (34, figure 101) at bottom of strut by turning inner 3/4 inch hex counterclockwise. Fully compress strut. Remove one bleeder plug from cap (22) and connect a hydraulic hand pump to open bleeder port.

   B. Operate hydraulic pump to bottom the floating piston (59) and fully extend strut. When floating piston bottoms it will be indicated by a sharp increase in pressure (hard pump handle). Manually compress strut by opening pressure valve on hydraulic pump, allowing hydraulic fluid to return to pump reservoir.

   C. Remove hydraulic pump and check to make certain cylinder is filled with hydraulic fluid. Install and tighten bleeder plug. Thread the valve (34) into the bottom of the strut and tighten inner 3/4 inch hex to 100 to 110 inch-pounds.

   D. Remove valve cap and attach air filling chuck to valve stem.

   E. Loosen outer 3/4 inch hex on valve (34) and slowly inflate strut to 225 pounds pressure allowing strut to fully extend. Use an AN6286-2 pressure gage or equivalent teed into line to measure pressure.

   F. Permit the pressure to stabilize and tighten outer 3/4 inch hex to 50 to 70 inch-pounds.

   G. Allow strut to remain pressurized and extended for one hour.

   H. Carefully examine all parting surfaces and fittings for evidence of hydraulic leaks. Install the pressure gage on valve (34) crack the outer 3/4 inch hex and check for loss of air pressure as indicated by drop in pressure gage reading.

   I. The strut shall show no evidence of leakage after being fully extended for one hour.

   J. Reduce air pressure to zero and remove pressure gage.

MAIN WHEEL SHOCK STRUT ASSEMBLY - STORAGE INSTRUCTIONS

1. Prepare Main Wheel Shock Strut Assembly for Storage.

   A. Drain hydraulic fluid from unit.

   B. Fill main wheel shock strut assembly with hydraulic preservative fluid (item 13, table 201).

   C. Coat exposed machined surfaces with corrosion-preventive (item 8, table 201).

   D. Wrap unit with barrier material (item 4) and secure with tape (item 23).

   E. Place cushioning material (item 10), over any sharp edges which can damage barrier material.

   F. Coat remainder of unit with a light coat of corrosion-preventive (ite 8), wrap in barrier material (item 3) and pack securely in suitable wooden box.