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SERVICE LETTER 171
REVISION A
PAGE 1

SERVICE LETTER NUMBER 171
8750A MAIN GEAR OIL BATH WHEEL SYSTEM

By: RCG	Aircraft Makes/Model(s): Cessna 208 Cessna 208B	Float Model(s): 8750A	Note(s): Optional Compliance Service Letter P/N 1008943 ECO 24753
Approved: JRS			
Date: 10/24/2016			
Rev: A			

FAA approval has been obtained for technical data in this publication that affects STC or TSO design compliance

EFFECTIVITY:

This service letter applies to: Cessna 208 and Cessna 208B with Wipline 8750 Amphibious Floats SN 87190 and prior installed per STC SA1311GL

COMPLIANCE:

Optional compliance

BACKGROUND:

A new main gear oil bath wheel bearing system has been designed to replace the old main gear grease wheel system. This new system will allow the wheel bearings to be continuously lubricated, which will increase the life of the wheel bearings.

COMPLIANCE METHOD:

Install new main gear oil bath wheel system per Work Instruction section of this service letter

APPROXIMATE SHOP HOURS:

Installing the main gear oil bath wheel system will take approximately 5 hours per float not including cure time of products used

WARRANTY INFORMATION:

Parts and labor not included for this modification. Contact Wipaire customer service to purchase the kit

TECHNICAL DATA:

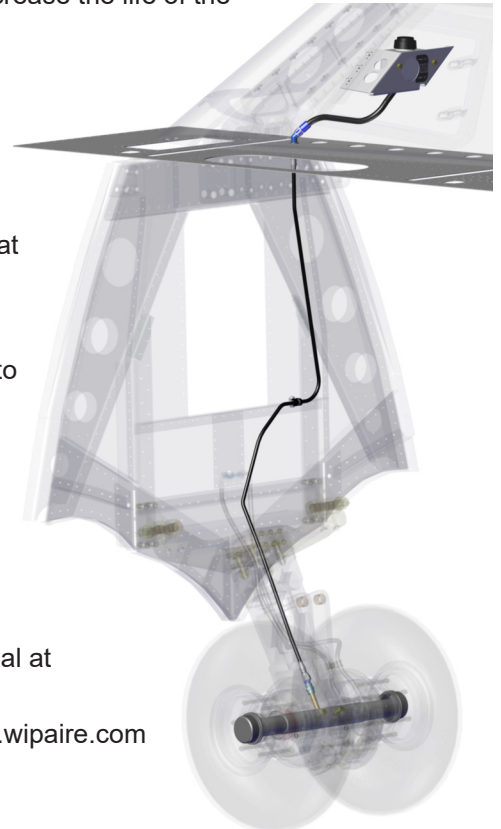
Copies of this service letter, associated service kit, float service manual, and float parts manual are available at www.wipaire.com

See photos and figures below for details to aid in performing this modification

See Table 1 below for a list of parts included in the service kit

For basic float model maintenance information, see applicable Wipaire service manual at www.wipaire.com

For basic float model parts information, see applicable Wipaire parts manual at www.wipaire.com





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ITEMS PROVIDED IN SERVICE KIT (PER KIT)

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	1008995	OIL BATH WHEEL RESERVOIR INSTALLATION ASSEMBLY
2	1	1009155	LH OIL RECEPTACLE BRACKET ASSEMBLY
3	1	1009156	RH OIL RECEPTACLE BRACKET ASSEMBLY
4	2	1009152	HYDRAULIC HOSE ASSEMBLY
5	2	MS21919WDG5	CLAMP
6	2	AN526C1032R10	MACHINE SCREW
7	4	NAS1149D0363J	WASHER
8	2	MS21044N3	NUT
9	4	NAS1149F0763P	WASHER
10	2	1422B002AM655SK	SEALANT SEM KIT 2.5 OZ
11	2	AN837-4D	ELBOW FLARED TUBE
12	2	AN924-4D	JAM NUT
13	2	AN929-4	CAP
14	2	1008983	THREADED BRASS FITTING
15	4	600-0030-1/4	STAT-O-SEAL WASHER
16	4	750-0030-1/4	THREDSEAL WASHER
17	2	AN816-4D	FLARED TUBE AND PIPE THREAD ADAPTER
18	2	AN910-1D	COUPLING
19	4	1008977	OIL BATH INNER WHEEL RETAINER
20	8	AS568A-139	O-RING
21	2	1008984	HUB CAP ASSEMBLY WITH DRAIN HOLE
22	2	1008985	HUB CAP ASSEMBLY WITHOUT DRAIN HOLE
23	4	154-08300	MOLDED GREASE SEAL
24	2	PLT3S-M0	CABLE TIE
25	2	24221	LOCTITE 10 ML BOTTLE
26	4	MS21044N4	NUT
27	4	AN526-632R4	SCREW
28	6	AN526-632R5	SCREW
29	2	MS21044N12	NUT
30	4	MS24665-349	COTTER PIN
31	4	MS24665-376	COTTER PIN
32	1	1009164	OIL BATH WHEEL FILLER ASSEMBLY

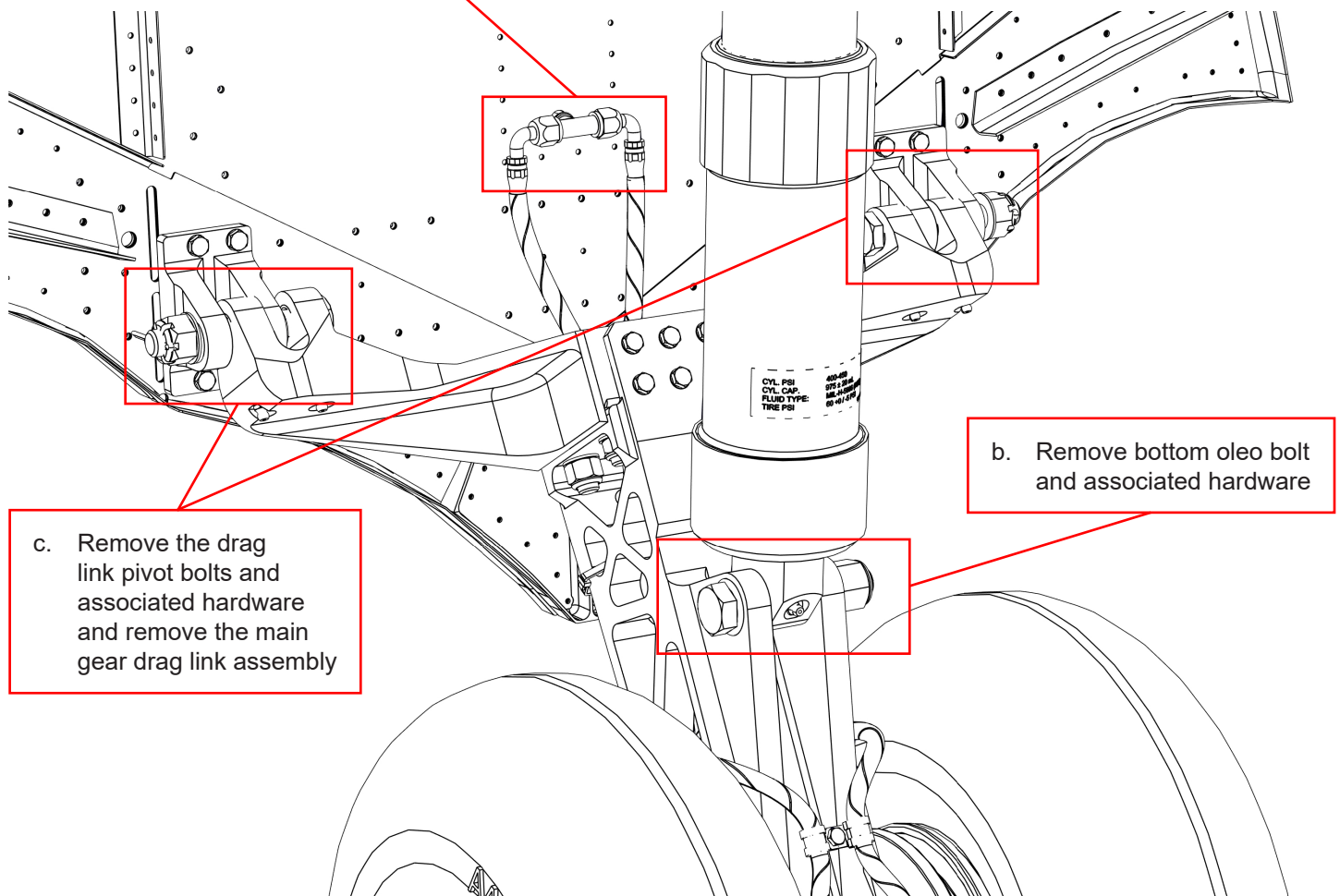
TABLE 1

WORK INSTRUCTION

1. Per Wipaire maintenance manual, jack aircraft to relieve load on the main gear
2. Pull gear pump circuit breakers
3. Pull parking brake valve in cockpit
4. Remove the main gear drag link assembly from the float in the order shown below:

Set aside all removed hardware to use during re-installation unless noted to discard in the instruction or replace hardware as needed

- a. Disconnect brake lines at bulkhead 10 and cap and plug lines at both ends



- b. Remove bottom oleo bolt and associated hardware

- c. Remove the drag link pivot bolts and associated hardware and remove the main gear drag link assembly

MAIN GEAR DRAG LINK ASSEMBLY REMOVAL

WHEEL ASSEMBLY REMOVAL

5. Cut safety wire on caliper backplate assembly bolts and remove brake back plate assemblies
6. Remove and discard cotter pin and remove axle nut and main wheel axle spacer
7. Slide each main wheel assembly off main wheel axle
8. Remove brake calipers, keeping the brake line assemblies still attached to the calipers

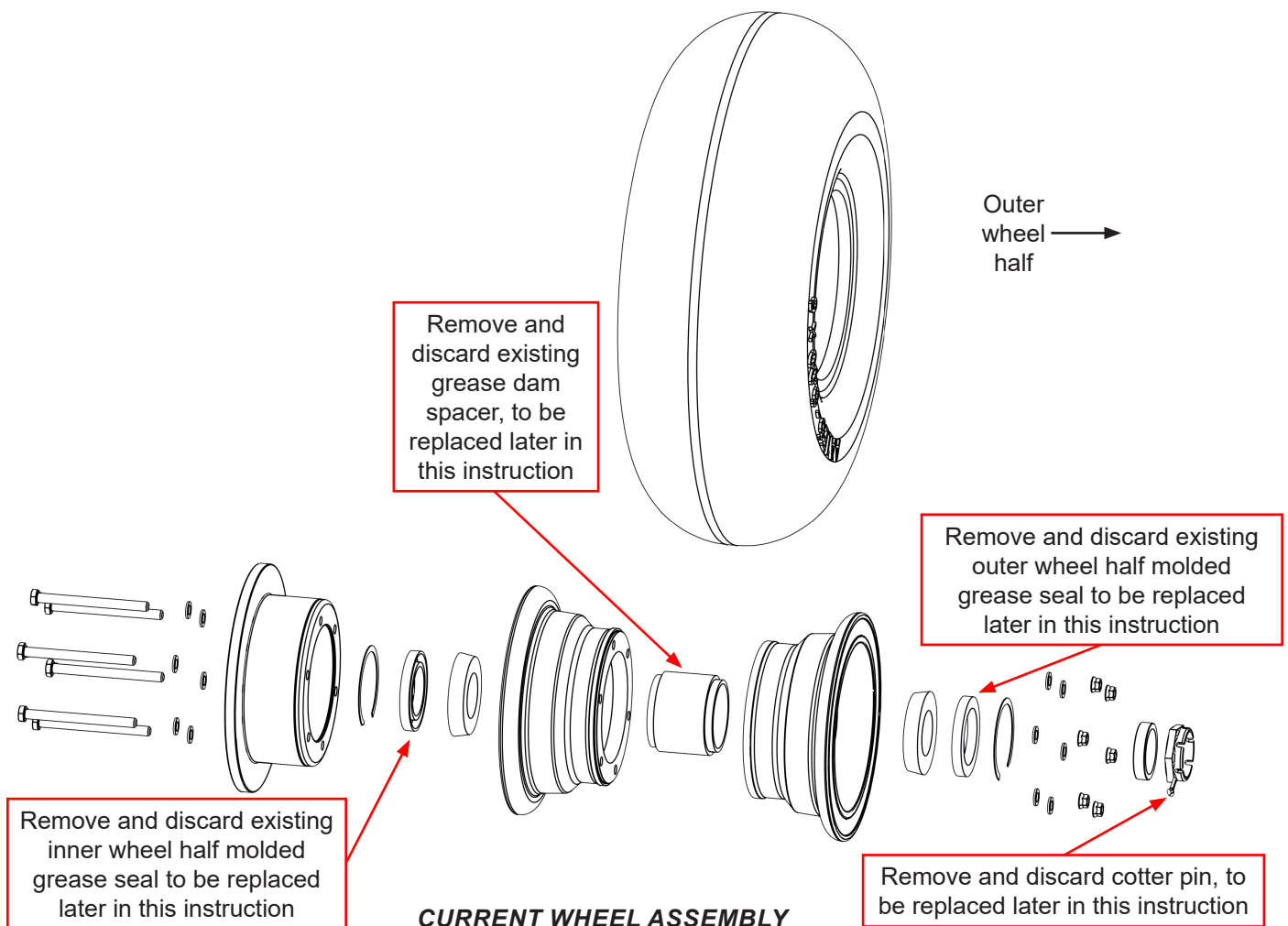
WHEEL DISASSEMBLY

9. Remove air from tire and break loose tire beads

WARNING!

Serious injury can result from attempting to separate wheel halves while tire and tube are still inflated.

10. Remove (6) AN bolts and associated washers and nuts that hold the wheel halves and brake disc together
11. Split wheel halves and remove tire assembly
12. Remove snap ring, bearing seals, and bearing cone from each wheel half
13. Remove the following components from the current wheel assembly:



14. Clean existing grease from wheel and bearing cavities

Note: Grease does not need to be completely cleaned out as it will not affect the oil bath wheel system bearing lubrication

15. Inspect wheel assemblies and replace any worn components if needed

WHEEL REASSEMBLY

16. Verify the index marking on tire aligns with the air valve on tube

17. Place inner wheel half into tire

18. Install (2) new AS568A-139 O-rings in grooves of 1008977 oil bath inner wheel retainer

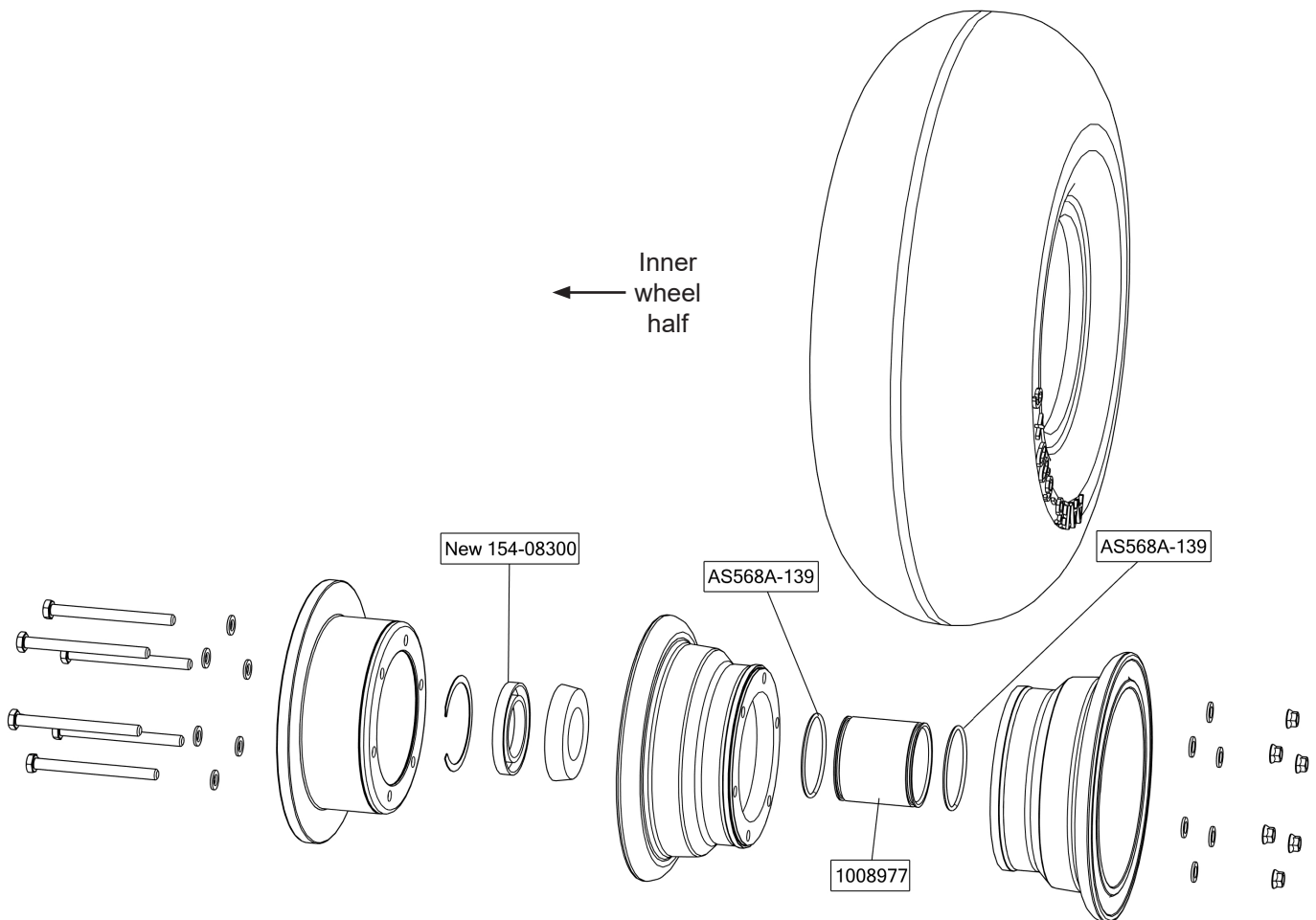
19. Place outer wheel half into other side of tire with assembled 1008977 oil bath inner wheel retainer and attached O-rings between wheel halves

20. Insert thru-bolts, brake disc, and associated washers and nuts and torque to specifications provided by wheel manufacturer.

NOTE: Ensure tube and oil bath inner wheel retainer is not pinched between wheel halves prior to torquing hardware

21. Place the wheel and tire in an inflation cage and inflate tire to seat tire beads, then inflate or deflate to specifications provided by the wheel manufacturer

22. Assemble bearing cone, new grease seal, and snap ring into the inner wheel half



WHEEL REASSEMBLY

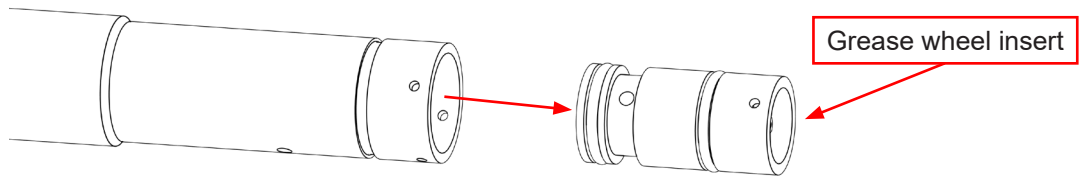
AXLE REMOVAL

23. Remove the torque plates from the main gear drag link by removing (6) MS16997-77 and (6) MS16997-96 screws, and (4) 30A04523-002 torque plate bushings
24. Remove (2) AN4-33A bolts and associated washers and nuts that secure the axle to the main gear drag link and remove axle out of main gear drag link

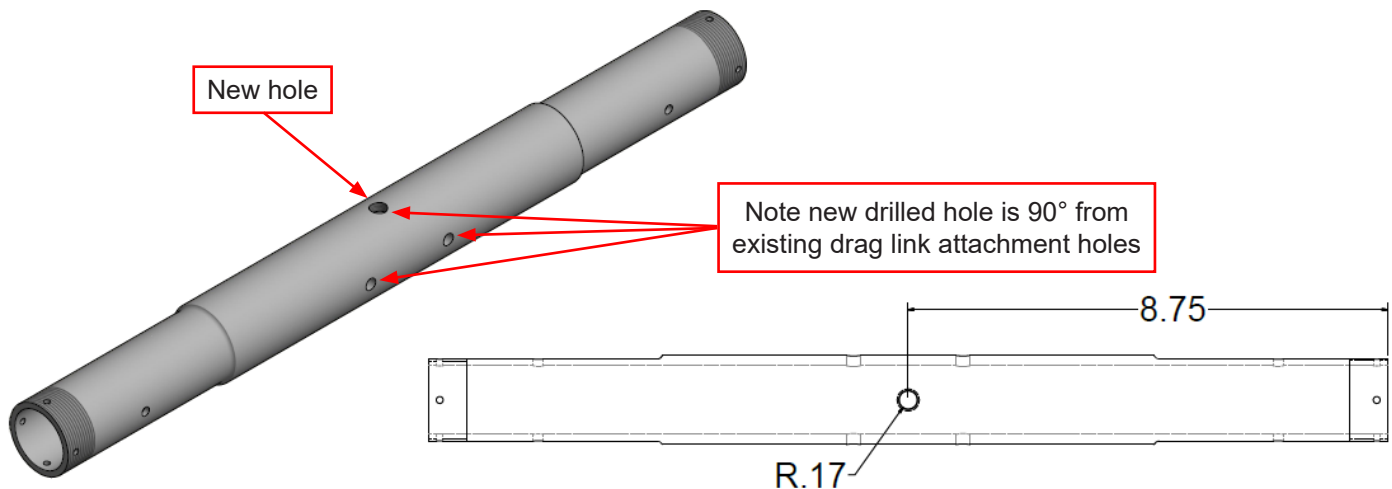
NOTE: Axle may need to be pressed out

NOTE: New 1008980 oil bath wheel main gear axle is not provided in the service kit. This part can be ordered through Wipaire Parts if reworking the current axle is not desired. Skip next 2 steps if a new axle has been purchased

25. If reworking the existing axle, remove grease wheel insert and attached O-rings from each side of the axle and discard



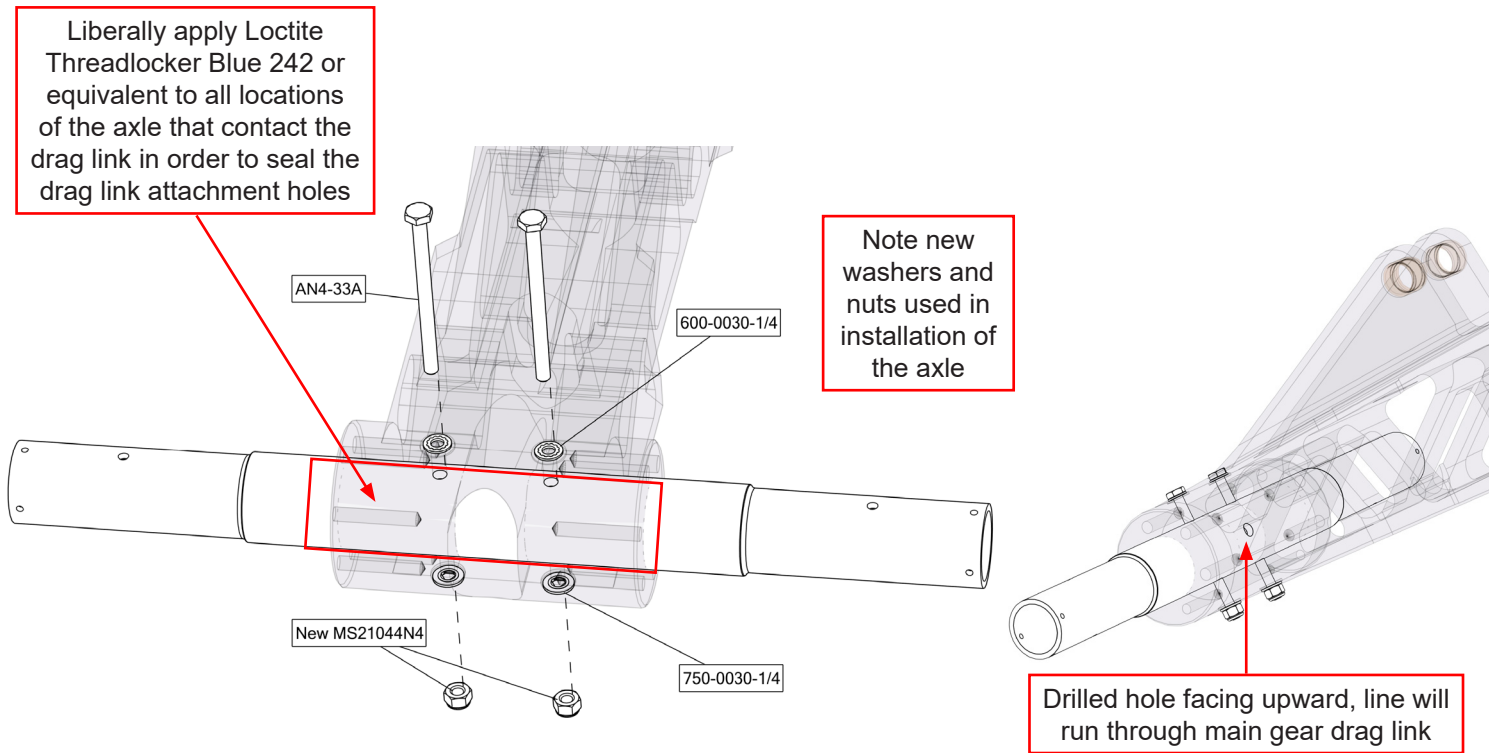
26. If choosing to modify the current axle, drill a hole through one side of the axle where shown using a 11/32" bit. Use a 1/8-27 NPT tap to thread hole



EXISTING AXLE MODIFICATION

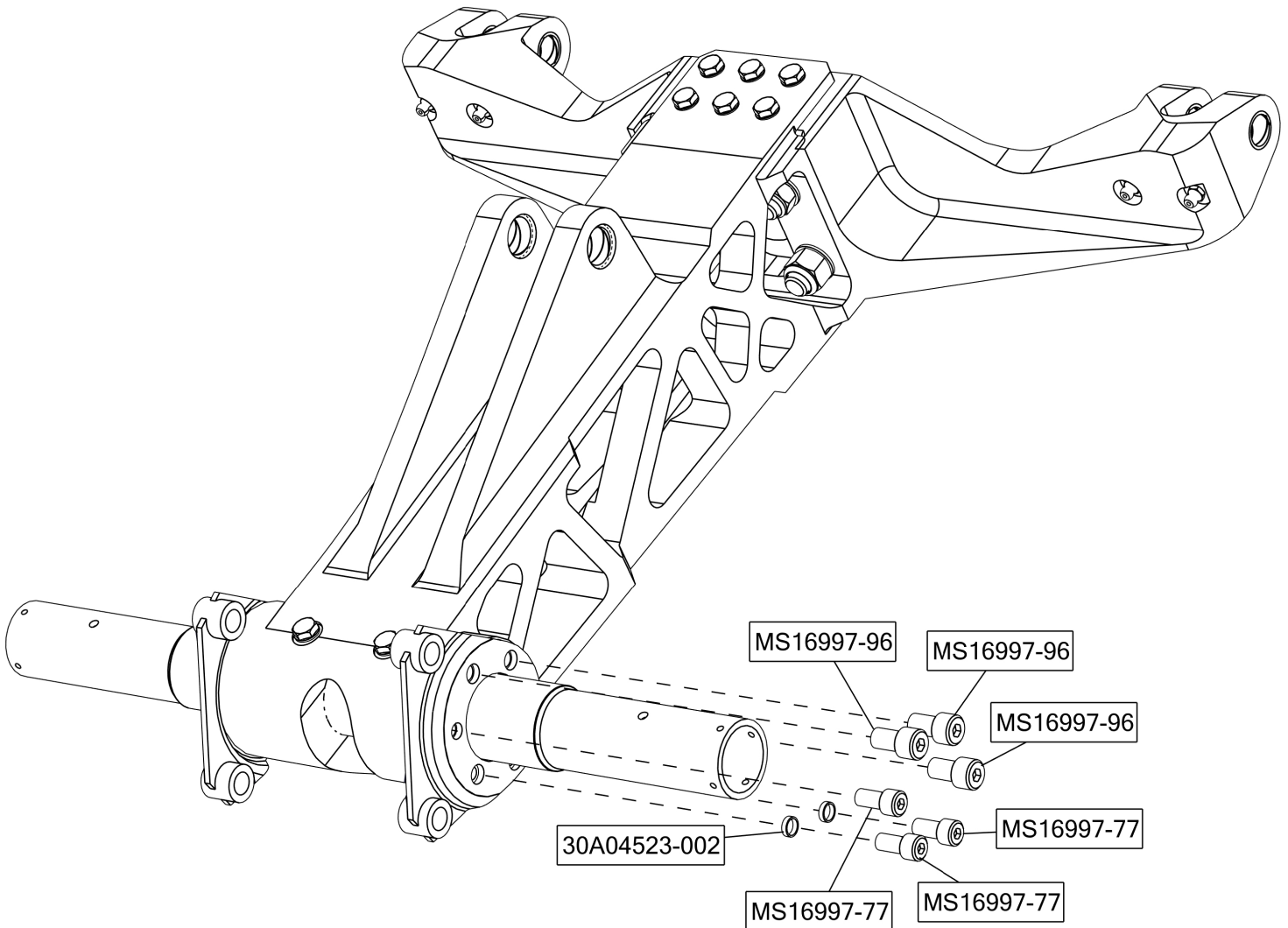
DRAG LINK REASSEMBLY

27. Install main gear axle into drag link after sealing the axle with Loctite Threadlocker Blue 242. Threadlocker must be applied liberally such that mating surfaces are 100% wetted. Rotate and maneuver axle back and forth in drag link to assure threadlock is completely spread and contacting all points between the axle and the drag link
28. Reinstall (2) AN4-33A bolts with new 600-0030-1/4 and 750-0030-1/4 stat-o-seal washers, and (2) new MS21044N4 nuts that secure the axle to the main gear drag link



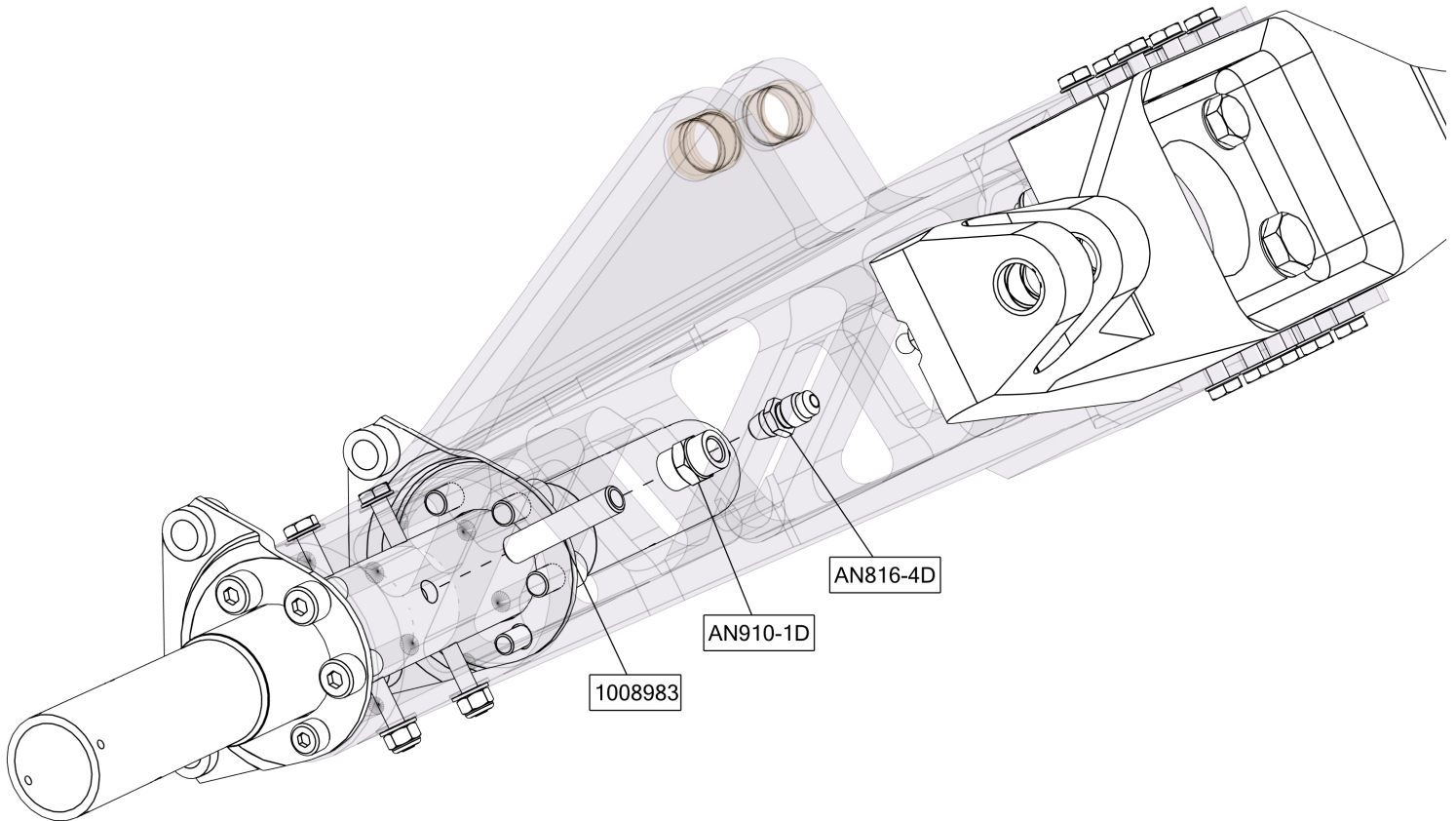
AXLE REINSTALLATION

29. Reinstall torque plates using (6) MS16997-77 and (6) MS16997-96 screws (with Tefgel applied), and (4) 30A04523-002 torque plate bushings



HOSE ROUTING AND DRAG LINK REINSTALLATION

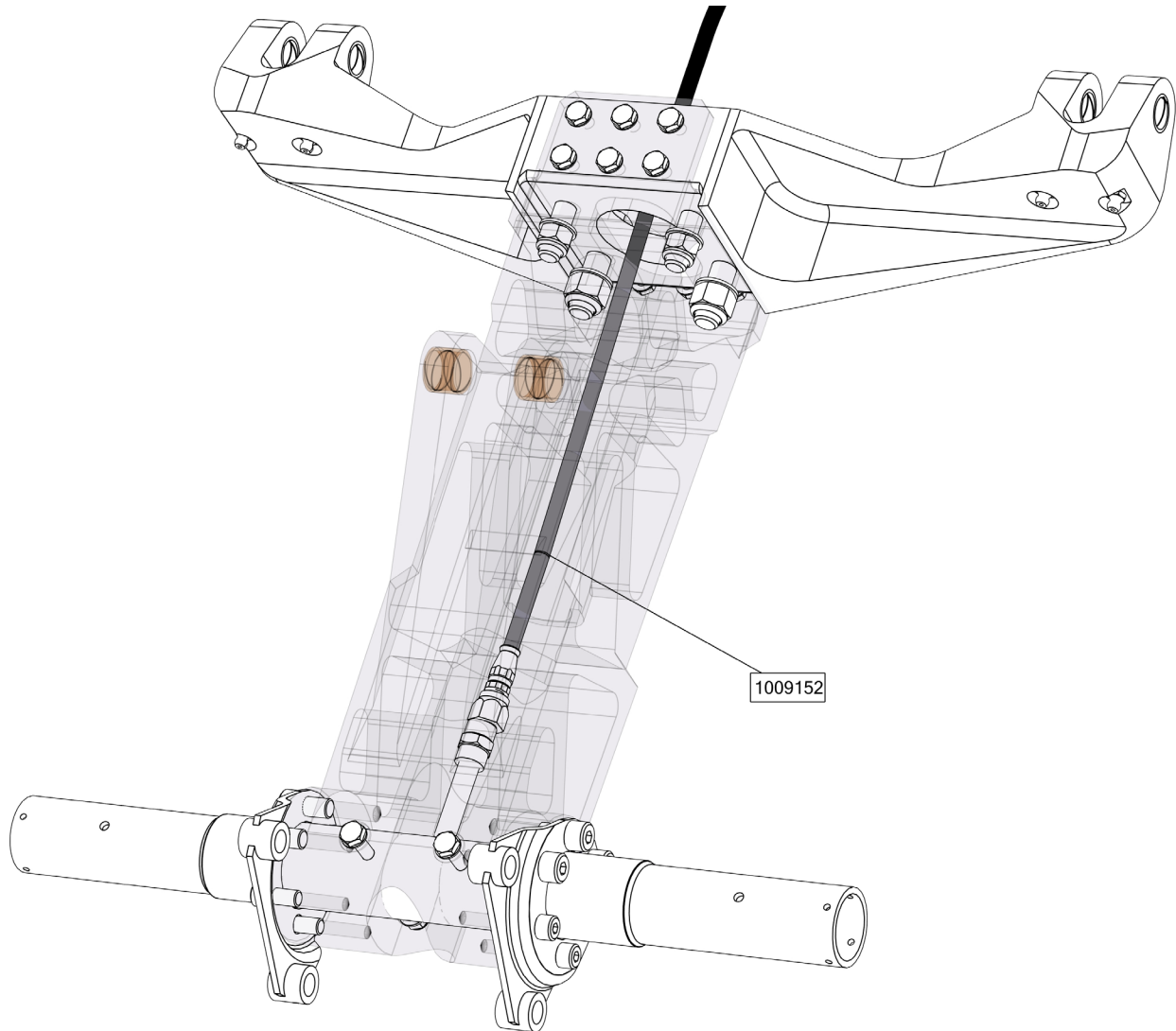
30. Apply 1422 sealant on threads of 1008983 threaded brass fitting, AN910-1D coupling, and AN816-4D flared tube and pipe thread adapter and install into axle as shown



31. Corrosion treat all exposed hardware with Dinitrol AV30 or equivalent

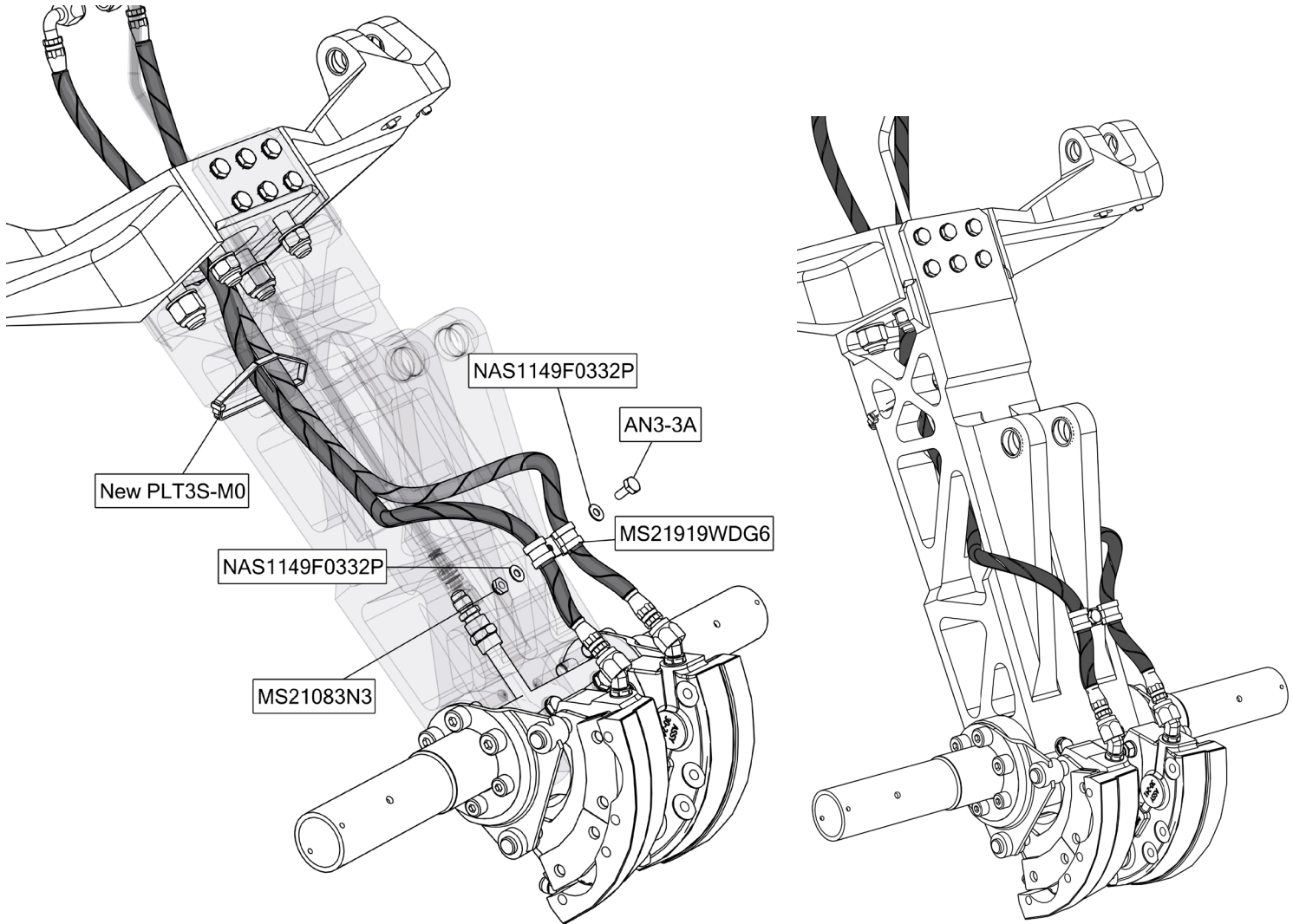
NOTE: Allow previously applied 1422 sealant to dry completely per manufacturing specifications prior to applying Dinitrol AV30 or equivalent

32. Route the 1009152 hydraulic hose assembly through the center of the main gear drag link and attach to the AN816-4D flared tube and pipe thread adapter on the main wheel axle



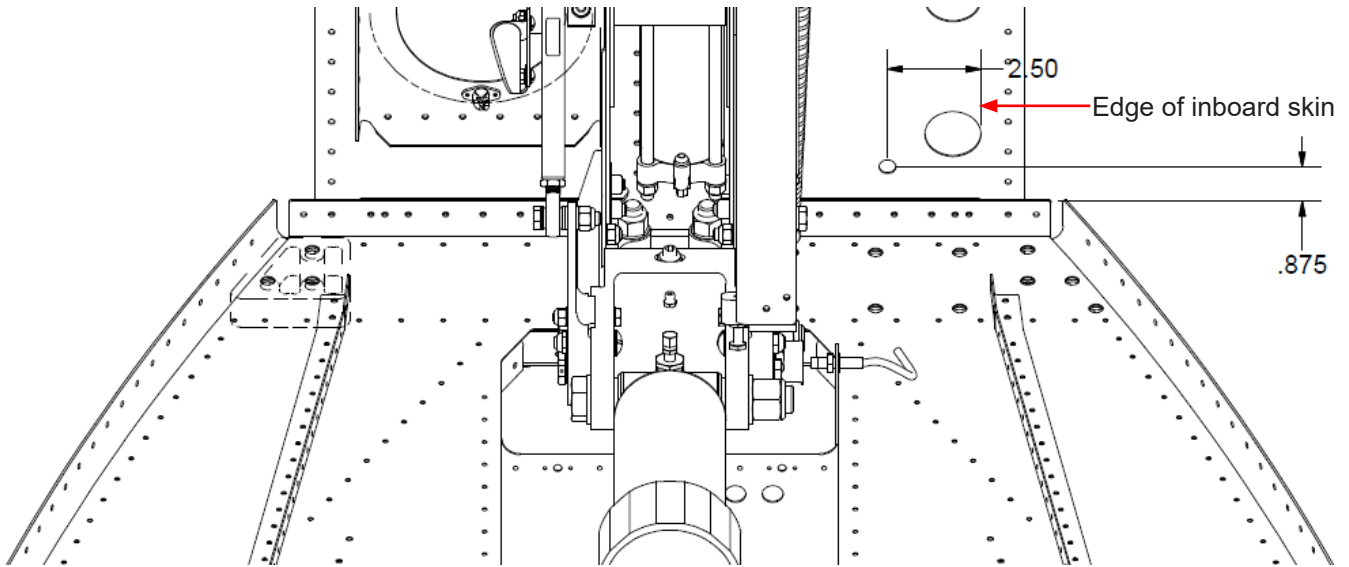
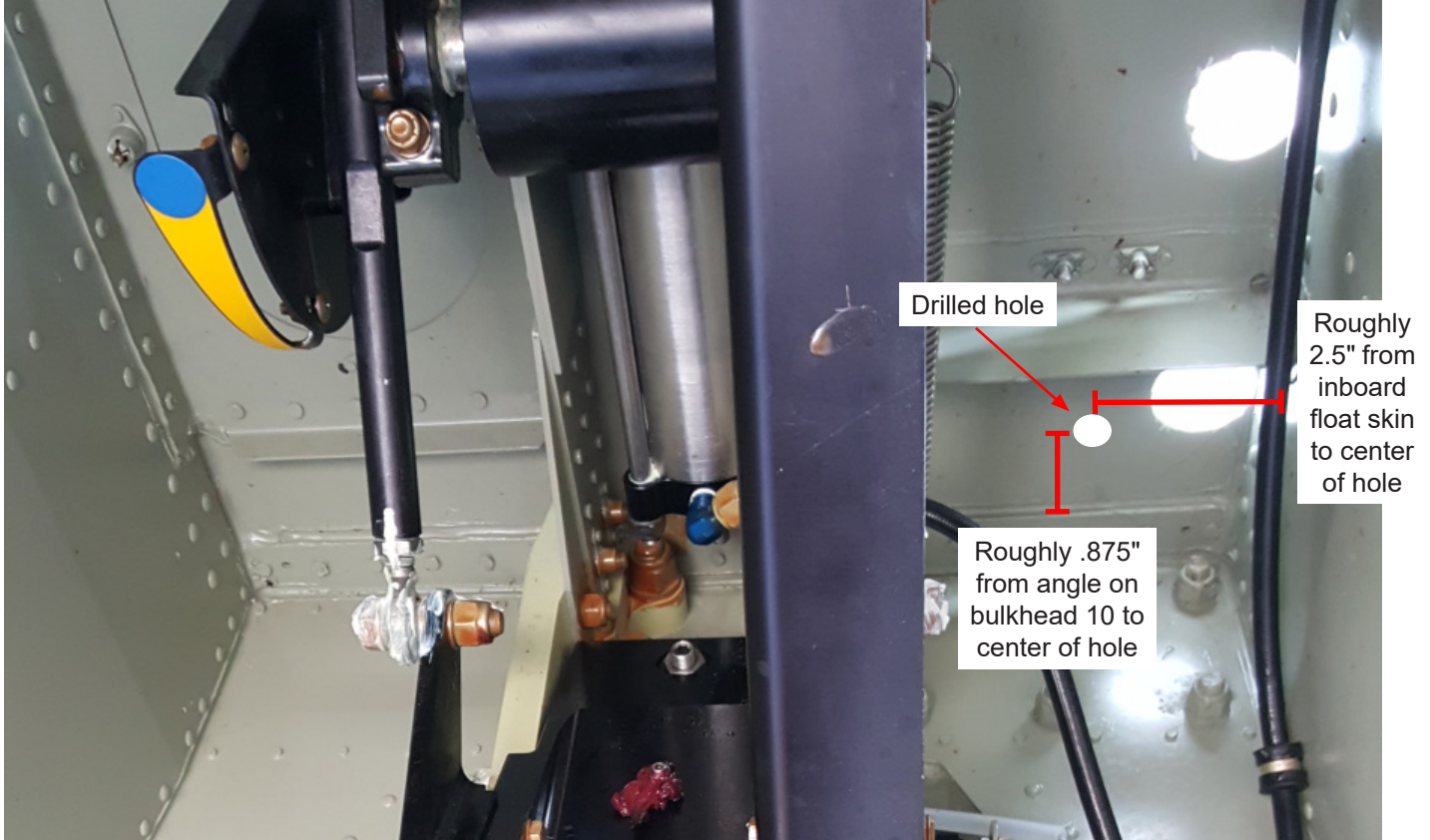
HOSE TO AXLE INSTALLATION

33. Route the brake lines and calipers. Secure brake lines to main gear drag link as shown



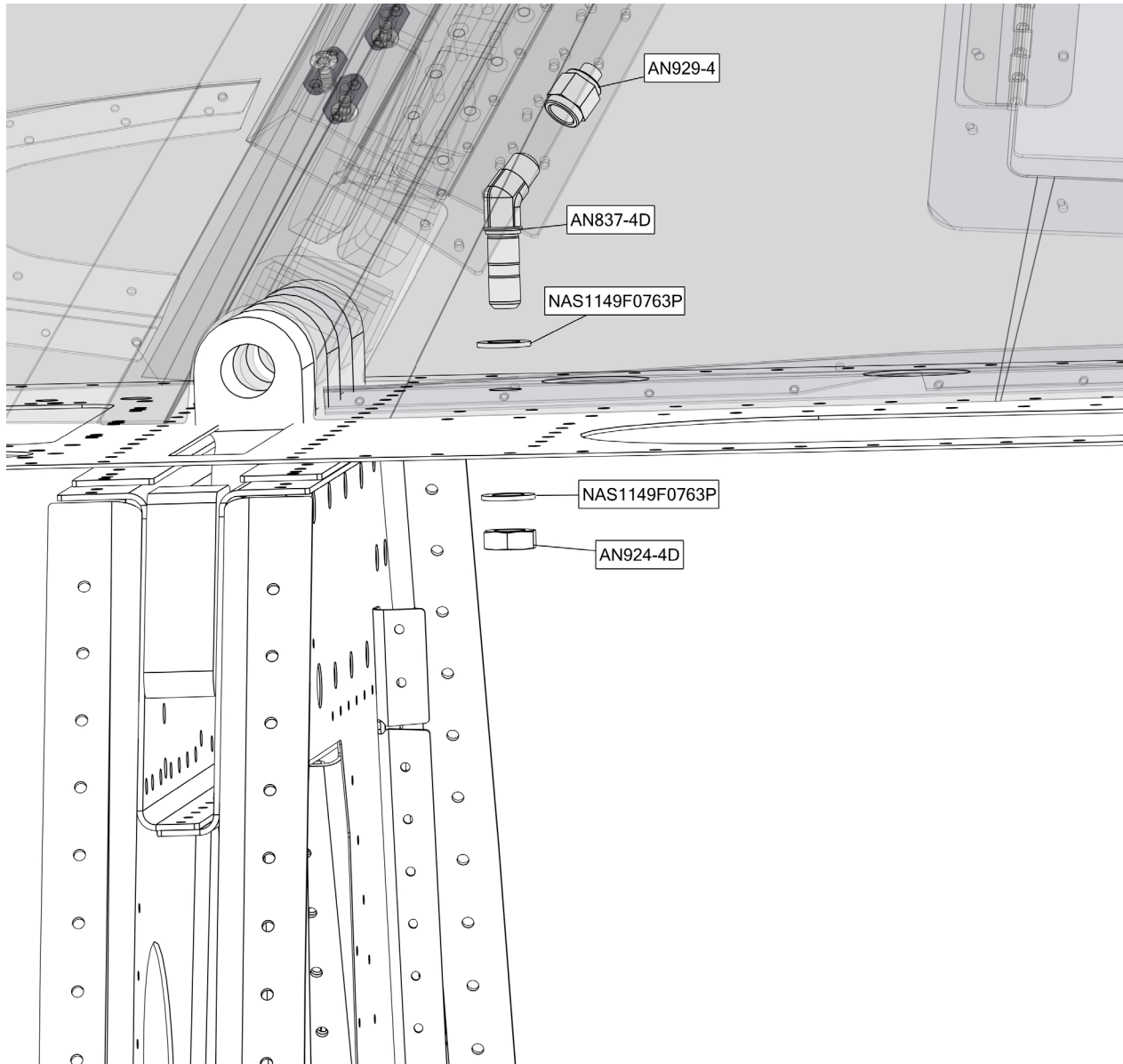
BRAKE LINE ROUTING

34. Carefully drill a $\varnothing.45$ hole into the top deck using a 29/64 drill bit where shown



TOP DECK HOLE LOCATION

35. Install AN837-4D elbow flared tube, (2) NAS1149F0763P washers, AN924-4D jam nut, and 63-190600-4 hose fitting as shown into previously drilled hole. Cap the top of fitting AN837-4D with AN929-4 cap until the hose is ready to be attached

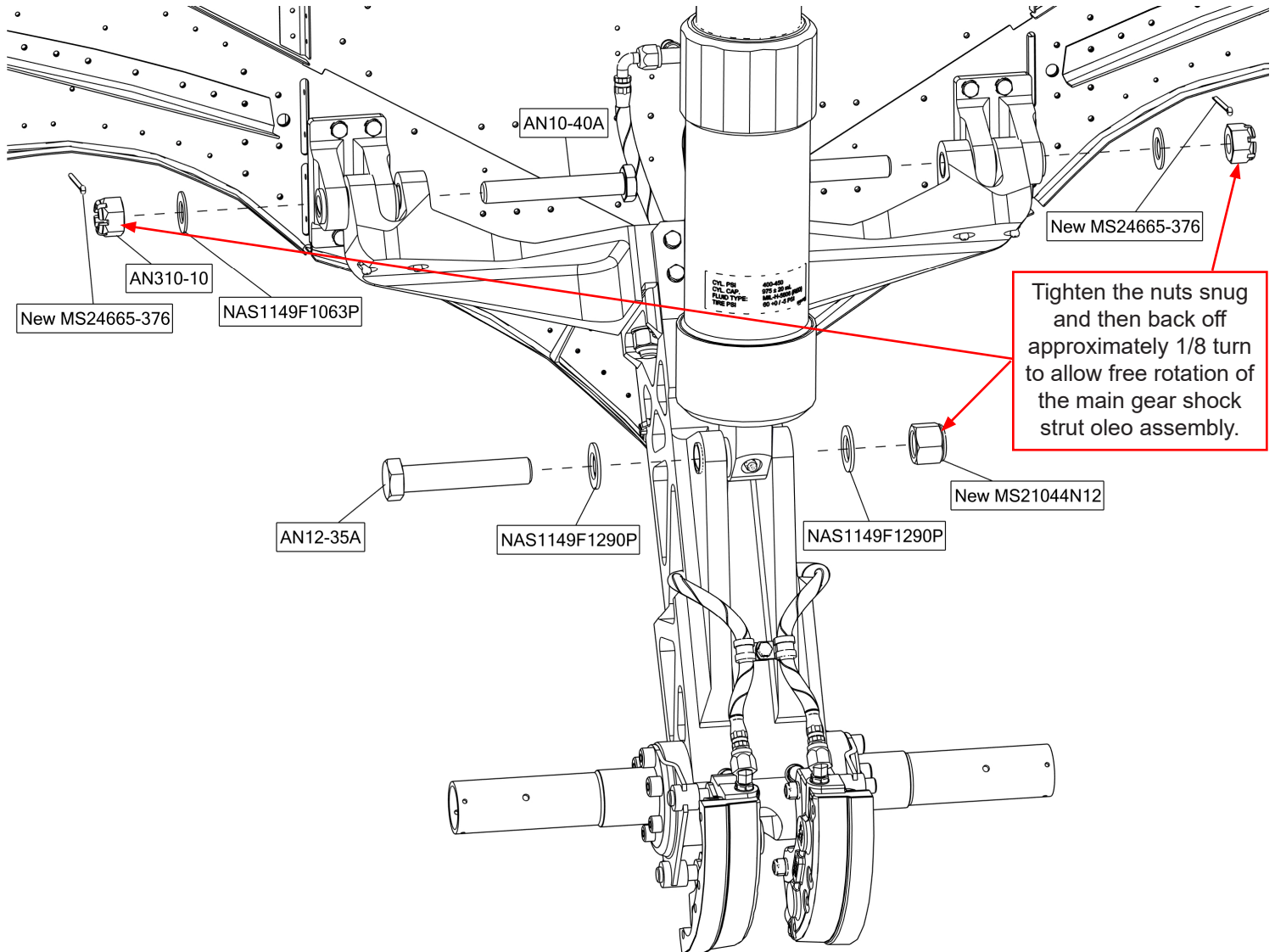


TOP DECK HOSE FITTING ASSEMBLY



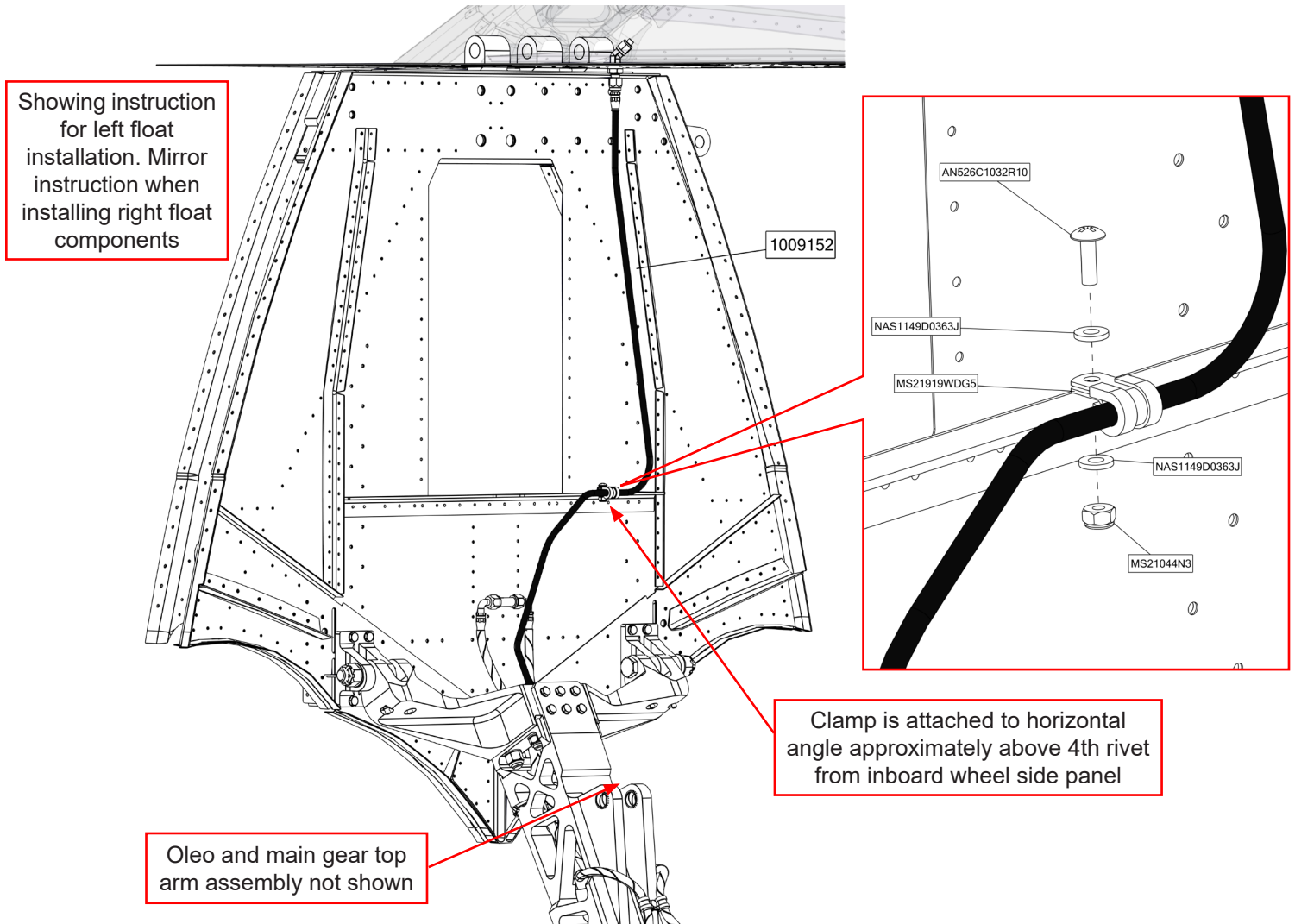
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36. Install the main gear drag link assembly and brake lines as shown below



37. Grease the main gear zerks per service manual

38. Connect 1009152 hydraulic hose assembly to the top deck hose fitting and secure to bulkhead 10 assembly using AN526C1032R10 screw, (2) NAS1149D0363J washers, and MS21044N3 nut as needed such that it does not interfere with landing gear retraction

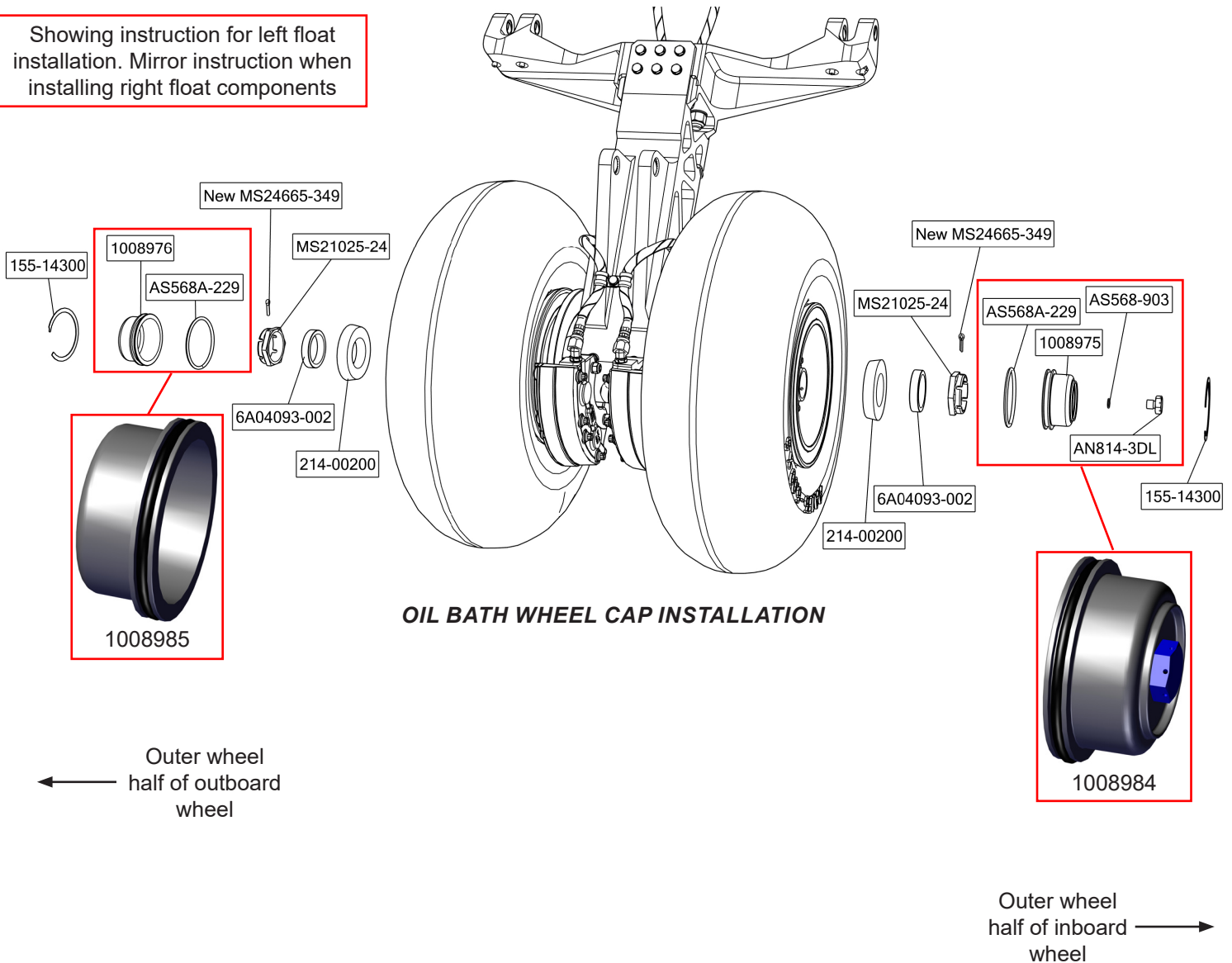


HOSE LINE ROUTING TO BULKHEAD 10

WHEEL ASSEMBLY REINSTALLATION

39. Slide main wheel assemblies onto main wheel axle
40. Install bearing cone, main wheel axle spacer, and axle nut until a slight bearing drag is obvious when wheel is rotated. Back the nut off to the nearest castellation and insert new cotter pin in a manner that the head will not interfere with the inner hub cab surface
41. Reinstall the back plate assemblies and torque to specifications provided by brake manufacturer
42. Attach safety wire to caliper backplate assembly bolts
43. Install hub cap without drain hole assembly 1008985 to outer wheel half of outboard wheel using 155-14300 snap ring
44. Install hub cap with drain hole assembly 1008984 to outer wheel half of inboard wheel using 155-14300 snap ring

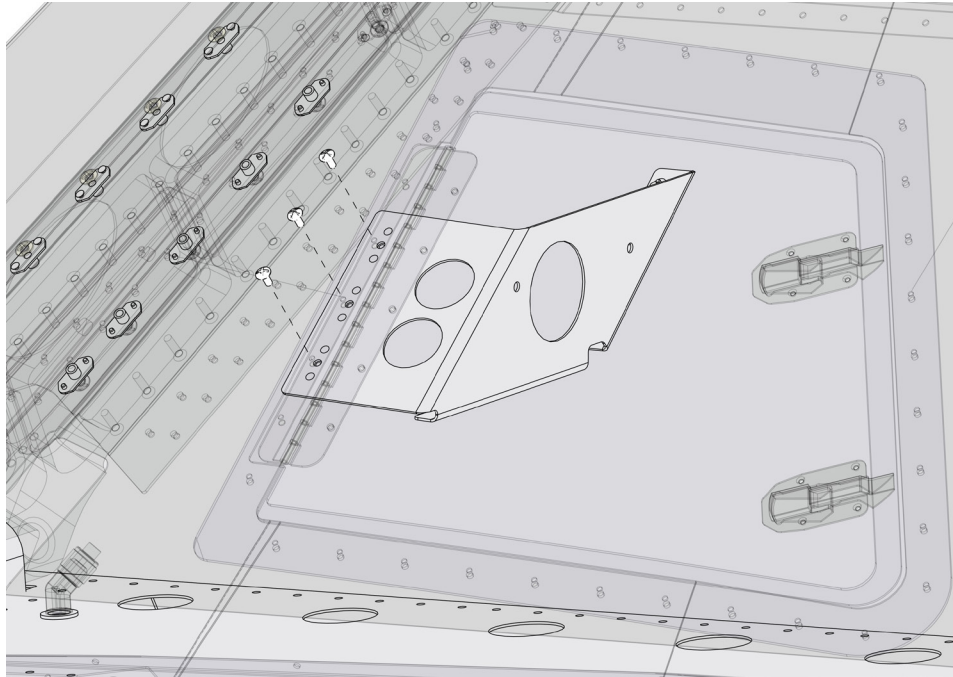
Showing instruction for left float installation. Mirror instruction when installing right float components



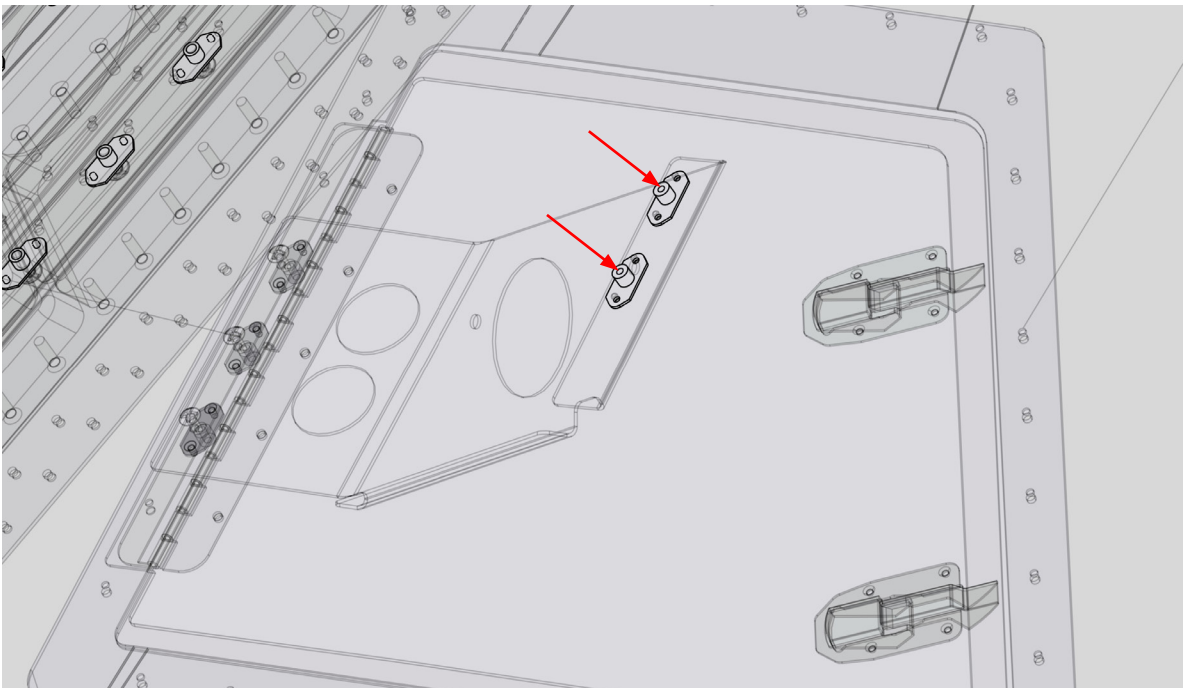
RESERVOIR INSTALLATION

45. Remove the 3 middle rivets from the pylon door hinge and use a #27 drill bit to upsize the 3 holes
46. Attach 1009155 reservoir bracket assembly (1009156 for right pylon) and attach bracket with (3) AN526-632R5 screws

Showing
instruction for left
float installation.
Mirror instruction
when installing
right float
components

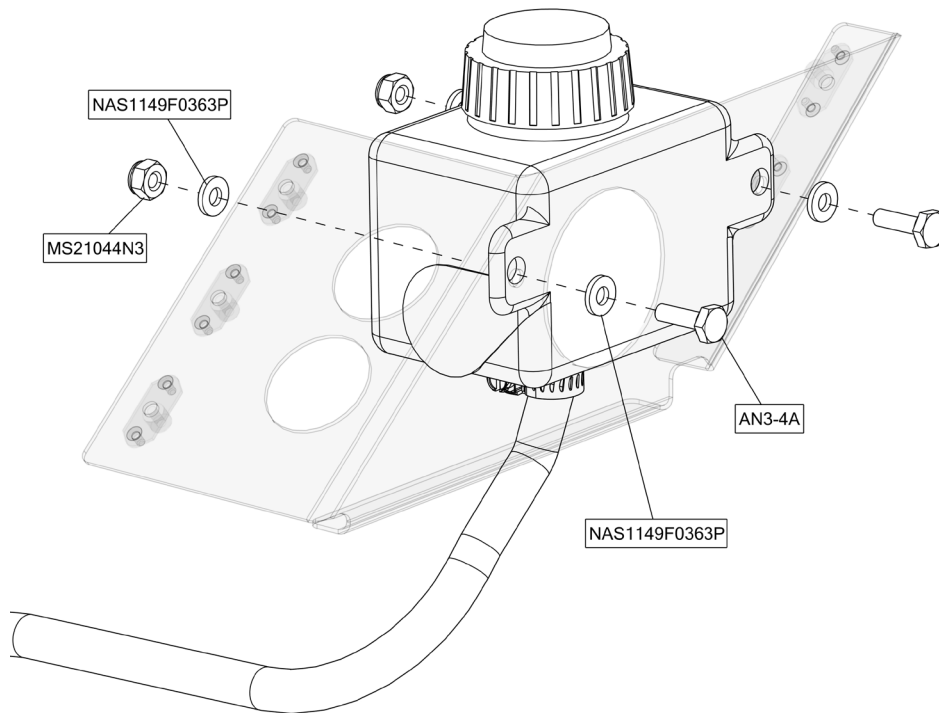


47. Mark inboard pylon skin through the center hole of each nutplate

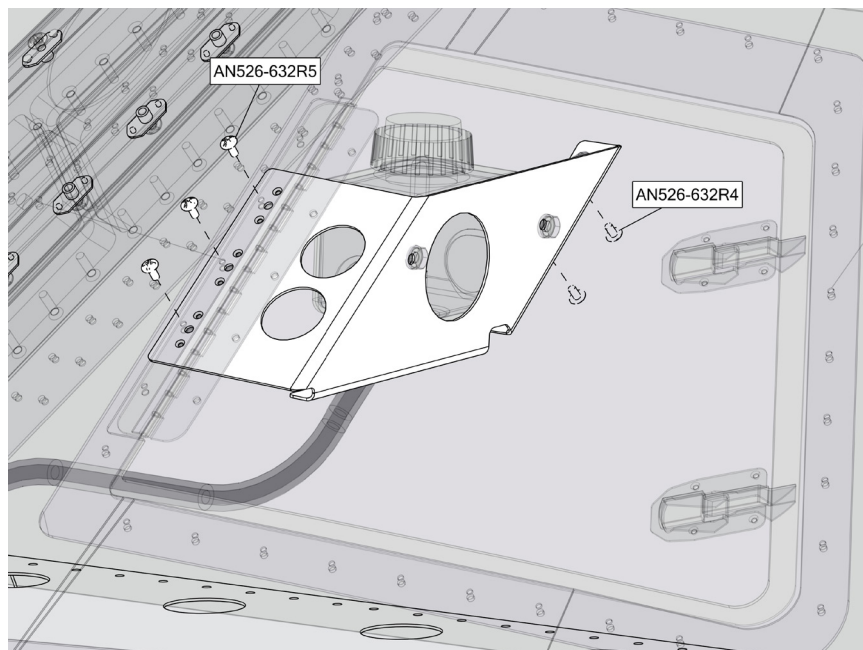


48. Remove reservoir bracket and drill the marked holes with a #27 drill bit
49. Deburr drilled holes
50. Attach the 1008992 oil bath wheel reservoir assembly to the bracket with (2) MS21044N3 nuts, (4) NAS1149F0363P washers, and (2) AN3-4A bolts

Showing instruction
for left float
installation. Mirror
instruction when
installing right float
components

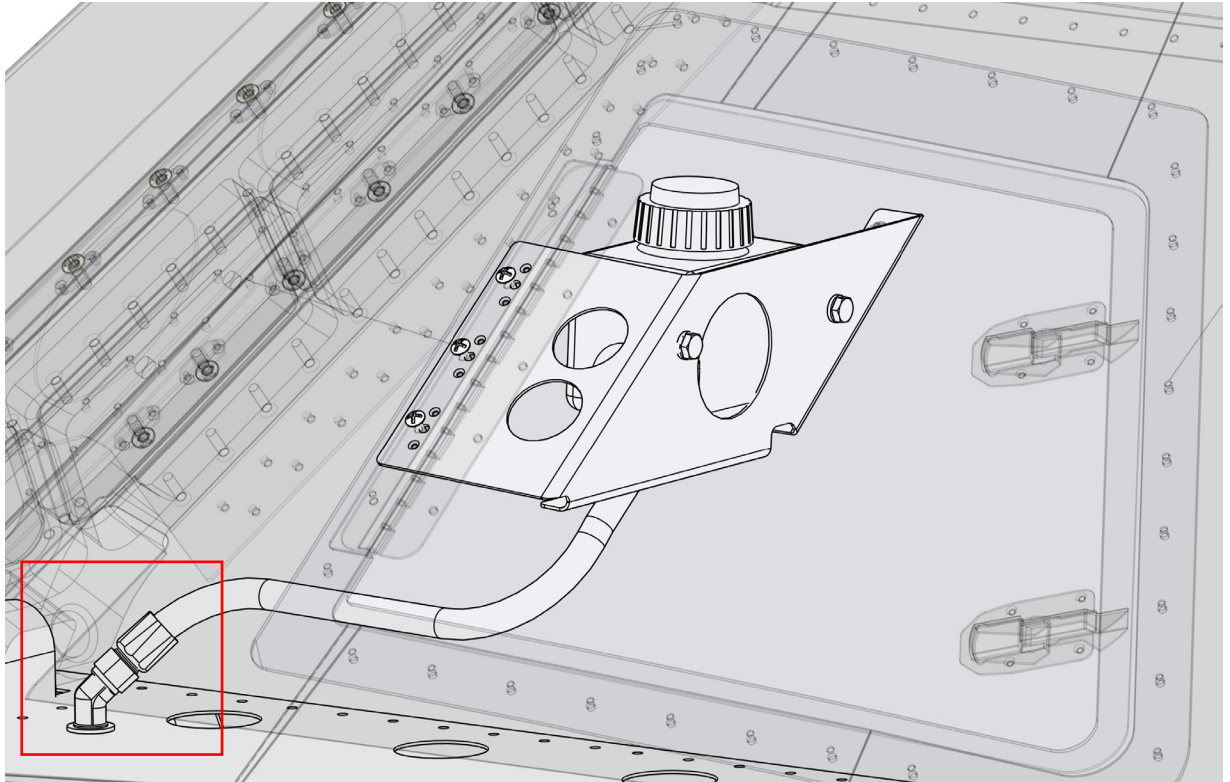


51. Install reservoir bracket with reservoir assembly attached in pylon using (3) AN526-632R5 screws on the outboard skin and (2) AN526-632R4 screws on the inboard skin

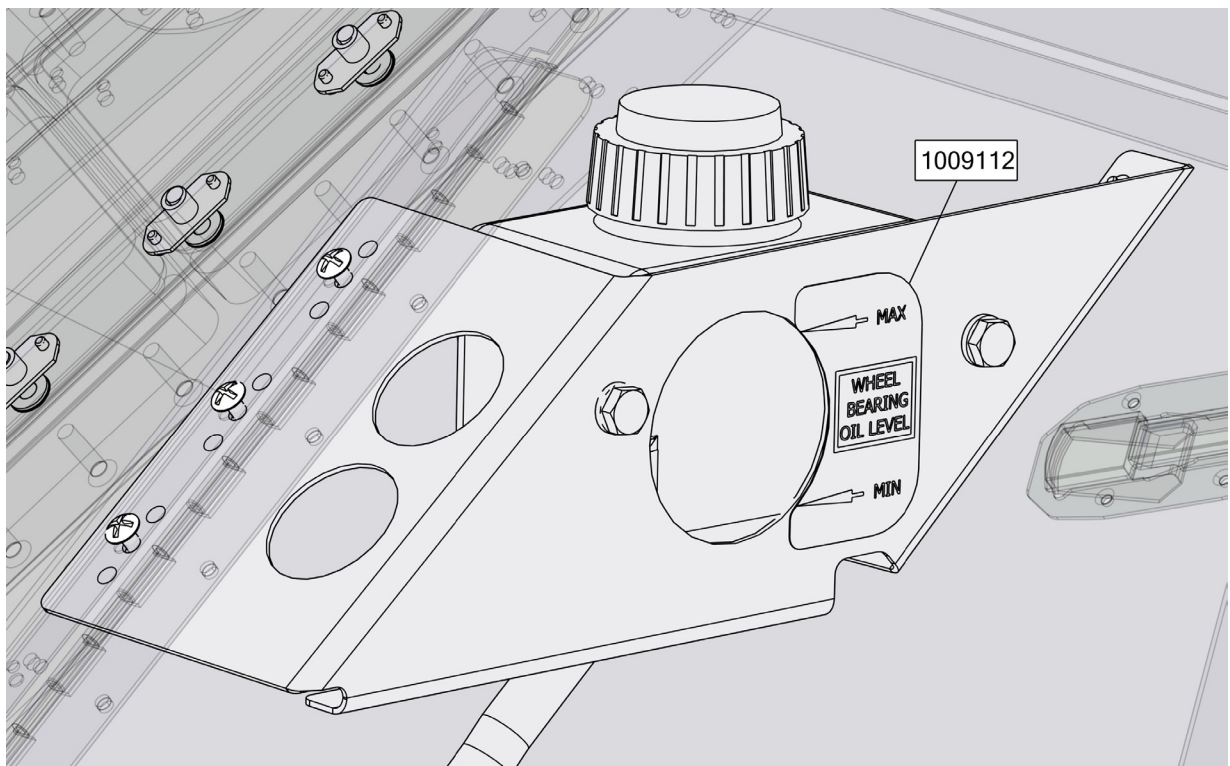


52. Connect the hose to the AN837-4D top deck fitting after removing the AN929-4 cap

Showing
instruction for left
float installation.
Mirror instruction
when installing
right float
components



53. Install 1009112 placard (1009113 for right pylon) as shown with the minimum/maximum arrows level to the ground





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54. Allow 1422 sealant and Loctite to dry per manufacture specifications prior to filling system with oil

55. Fill the oil bath wheel assembly by 1 of the following methods:

Option 1 - Recommended method, requires pump not provided

- a. Remove plug on hub cap with drain hole assembly 1008984 and install 1009164 oil bath wheel filler assembly
- b. Using a manual or electric type fluid pump, fill with 15W-50 engine oil or equivalent from the union installed in the hub cab with drain hole assembly until reservoir is full as indicated by placard on reservoir bracket
- c. Remove 1009164 oil bath wheel filler assembly and reinstall plug on hub cab with drain hole assembly 1008984
- d. Ensure the fluid in the reservoir remained in the correct range

Option 2

- a. Remove plug on hub cap with drain hole assembly 1008984
- b. Fill reservoir with 15W-50 engine oil or equivalent until oil comes out where axle plug was removed
- c. Reinstall plug on hub cab with drain hole assembly 1008984
- d. Fill the reservoir in the pylon to level indication by placard on reservoir bracket

NOTE: Some air will remain in the system and will not affect the functionality of the oil bath wheel system

56. Install .020" safety wire to hub cap with hole assembly

57. Check axle assembly to verify no leaks are present

RETURNING AIRCRAFT TO SERVICE

58. Release parking brake

59. Bleed brakes

60. Push gear pump circuit breakers in

61. Cycle gear and verify new oil bath wheel hose is clear of obstruction

62. Verify gear is down and lock position

63. Service air in tires to specification provided in service manual

64. Remove jack stands

NOTES:

1. Upon completion of inspection, enter information in Aircraft Logbook for completion of Wipaire Service Letter 171
2. Once service letter is accomplished, please visit www.wipaire.com and update your aircraft service letter/kit record using the link found on the Customer Support dropdown menu under "Update Service Letter & Kit Compliance Status"