
SERVICE BULLETIN

N° 139-672

DATE: October 3, 2022

REV. : /

TITLE

**ATA 29 - NUMBER 4 PUMP LINE INSTALLATION VISUAL INSPECTION AND
MODIFICATION**

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

All AB/AW139 Helicopters from S/N 31005 to S/N 31960 (except S/N 31007, 31803, 31947 and 31959), from S/N 41001 to S/N 41578 and from S/N 41801 to S/N 41806.

B. COMPLIANCE

PART I

Within and not later than 300 flight hours or 6 months whichever occurs first after the issue of this Service Bulletin.

PART II

- Immediately after compliance with Part I, if chafing is detected and its entity is not negligible.
- Within and not later than 1200 flight hours or 12 months, whichever occurs first after the issue of this Service Bulletin, if during compliance with Part I no chafing is detected or its entity is negligible.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to prescribe an inspection of the auxiliary hydraulic lines and to provide the necessary instruction on how to perform the installation of auxiliary lines retromod P/N 3G2900P00711.

E. DESCRIPTION

Part I of this Service Bulletin is developed to prescribe an inspection of the hydraulic lines connecting Power Control Module 2 to pump number 4. The inspection consists in the removal of the clamps installed in the affected zone, in order to check the absence of chafing of the pipes. Replacement of pipes with new ones may be required in case damage is found.

Part II of this Service Bulletin details the procedure to install retromod P/N 3G2900P00711 which replaces existing clamp P/N A295A3002A and bracket P/N 3G2920A12251 with new and improved versions that prevent chafing.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives. If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin the following MMH are deemed necessary:

Part I: approximately one (1) MMH;

Part II: approximately six (6) MMH;

MMH are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

N.A.

I. REFERENCES

1) PUBLICATIONS

Following Data Modules refer to AMP:

<u>DATA MODULE</u>	<u>DESCRIPTION</u>	<u>PART</u>
DM01 39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	I, II
DM02 39-A-06-41-00-00A-010A-A	Access doors and panels - General data.	I, II
DM03 39-A-12-11-09-00A-218A-A	Number 2 power control module - Fill with other liquid	II
DM04 39-A-12-12-09-00A-228A-A	Number 2 power control module - Drain other liquids	II
DM05 39-A-20-40-00-00A-010A-A	Standard practices - Hydraulic system - General data	II
DM06 39-A-29-10-00-00A-231A-A	Main hydraulic system - Bleed	II

2) ACRONYMS & ABBREVIATIONS

AGB	Auxiliary Gear Box
AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AR	As Required
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
FIPS	Full Ice Protection System
IPD	Illustrated Part Data
ITEP	Illustrated Tool and Equipment Publication
LH	Left Hand
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
N.A.	Not Applicable
PCM	Power Control Module
P/N	Part Number
SB	Service Bulletin
S/N	Serial Number

3) ANNEX

N.A.

J. PUBLICATIONS AFFECTED

AW139 IPD

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

PART I

N.A.

PART II

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	3G2900P00711		AUXILIARY LINES RETROMOD	REF	.		-
2	3G2920A12253		Bracket	1	..		139-672L1
3	8G2920A01251		Special block	1	..		139-672L1
4	8G2920L00151		Special cushion	2	..		139-672L1
5	MS15795-849		Washer	3	..		139-672L1
6	MS35489-10X		Grommet Rubber	3	..		139-672L1
7	NAS43DD3-20N		Spacer	3	..		139-672L1
8	AN3C5A	NAS6603-4 or NAS6703-4	Bolt	3	..		-
9	3G2920A04531		Pipe assy	AR	.	(1)	-
10	3G2920A04431		Pipe assy	AR	.	(1)	-
11	3G2920A04632		Pipe assy	AR	.	(1)	-
12	3G2920A17731		Pipe assy	AR	.	(1)	-
13	3G2920A17631		Pipe assy	AR	.	(1)	-
14	3G2920A17831		Pipe assy	AR	.	(1)	-
15	3G2920A17331		Pipe assy	AR	.	(1)	-
16	3G2920A17231		Pipe assy	AR	.	(1)	-
17	3G2920A17031		Pipe assy	AR	.	(1)	-
18	3G2920A16931		Pipe assy	AR	.	(1)	-
19	3G2920A20231		Pipe assy	AR	.	(1)	-
20	3G2920A20131		Pipe assy	AR	.	(1)	-
21	3G2920A19831		Pipe assy	AR	.	(1)	-
22	3G2920A19931		Pipe assy	AR	.	(1)	-
23	A429A080804		Tee fitting	AR	.	(1)	-
24	AW042PD04C		Tee fitting	AR	.	(1)	-

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

2) CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
25	MIL-PRF-16173E Class 1, Grade 1	Corrosion inhibitor TECTYL 891D (C385)	AR	(2)	II

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
139-672L1	1		II
AN3C5A or NAS6603-4 or NAS6703-4	3		II

NOTE

(1) Item on-condition, needed only in case of negative outcome of Part I inspection. The required quantity is 1 unit per helicopter. Up to 3 different P/N are involved for each helicopter, depending on the configuration. Refer to Industry Support Information section for details regarding the conditions to receive the item on free of charge basis.

(2) Item to procured as local supply.

B. SPECIAL TOOLS

The following special tools, or equivalent, are necessary to accomplish this Service Bulletin:

#	P/N	DESCRIPTION	Q.TY	NOTE	PART
26	RMGE3G-103A	Deck servicing platform RH (GG-02-00) or approved alternative	1		I, II
27	DLTFRPSKT3038	Permaswage field repair kit	1	(B1)	II

Refer also to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

SPECIAL TOOLS NOTE

(B1) Item needed only in case of negative outcome of Part I inspection and if the damaged pipe assy is P/N 3G2920A17331 or P/N 3G2920A17031 or P/N 3G2920A20231 or P/N 3G2920A19831.

C. INDUSTRY SUPPORT INFORMATION

With reference to the prescribed damaged pipes replacement note that, as reported in step 13.5 of Part II, only if Product Support Engineering will confirm the replacement, please Issue relevant MMIR form to your Warranty Administration Dpt.

Please note that Product Support Engineering's approvals is mandatory to evaluate your request, otherwise MMIR could be rejected.

Owners/Operators who comply with the instructions of this Service Bulletin no later than the applicable date in the "Compliance" section will be eligible to receive REQUIRED MATERIALS on free of charge basis, except for Consumable Materials and Special Tools.

NOTE: Customers who fail to comply with the instructions in this Service Bulletin before the compliance date are not eligible for the aforementioned special policy.

Please Issue relevant MMIR form to your Warranty Administration Dpt.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

- a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
- b) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.
- c) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.
- d) All lengths are in mm.

PART I

- 1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
- 2. Put the platform (GG-02-00), or an approved alternative, adjacent to the right side of the fuselage.
- 3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, open the access door 473AL to gain access to the area affected by the inspection.
- 4. With reference to Figure 7, get access to the area between AUX hydraulic pump P/N 3G2910V00133 (pump number 4) and PCM 2.
- 5. With reference to Figure 7, at position n°1, remove the clamp block P/N A295A3002A. Retain for later reuse.
- 6. With reference to Figure 7, remove the clamps P/N MS21919WCH8 and P/N MS21919WCH4. Retain for later reuse.

NOTE

If chafing is found on inspected hydraulic lines their replacement might be necessary.

- 7. With reference to Figure 1 thru 7, perform an inspection of the hydraulic line between bracket P/N 3G2920A12251 and PCM 2 as described in the following procedure:

NOTE

The following step 7.1 is applicable ONLY to helicopters equipped with kit hydraulic pulsation dampener P/N 3G2900F00111 or P/N 3G2900F00112 or P/N 3G2900F00114.

- 7.1 With reference to Figures 1 or 2 or 4, examine the following pipe assemblies for chafing:
- pipe assy P/N 3G2920A17331;
 - pipe assy P/N 3G2920A04431;
 - pipe assy P/N 3G2920A17031.

NOTE

The following step 7.2 is applicable ONLY to helicopters equipped with kit hydraulic pulsation dampener (FIPS+AGB) P/N 3G2900F00113 or P/N 3G2900F00115.

- 7.2 With reference to Figures 3 or 5, examine the following pipe assemblies for chafing:
- pipe assy P/N 3G2920A20231;
 - pipe assy P/N 3G2920A04431;
 - pipe assy P/N 3G2920A19831.

NOTE

The following step 7.3 is applicable ONLY to helicopters equipped with upper deck hydraulic variant (accessory mode) P/N 3G2906P01311.

- 7.3 With reference to Figure 6, examine the following pipe assemblies for chafing:
- pipe assy P/N 3G2920A17731;
 - pipe assy P/N 3G2920A17631;
 - pipe assy P/N 3G2920A17831.

NOTE

The following step 7.4 is applicable ONLY to helicopters equipped with auxiliary lines installation P/N 3G2920A12412 or P/N 3G2920A12413.

- 7.4 With reference to Figure 7, examine the following pipe assemblies for chafing:
- pipe assy P/N 3G2920A04531;
 - pipe assy P/N 3G2920A04431;
 - pipe assy P/N 3G2920A04632.

- 7.5 If chafing is detected along the pipe assy, check if it is possible to feel the diameter reduction by hand. In this case record for compliance with Part I of this Service Bulletin on the helicopter logbook and go to step 6 of Part II.
8. With reference to Figure 7, at position n°1, re-install the clamp block P/N A295A3002A.
 9. With reference to Figure 7, re-install the clamps P/N MS21919WCH8 and P/N MS21919WCH4.
 10. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, close the access door 473AL.
 11. Remove the platform from the right side of the fuselage.
 12. Return the helicopter to flight configuration and record for compliance with Part I of this Service Bulletin on the helicopter logbook.
 13. Send the attached compliance form to the following mail box:

engineering.support.lhd@leonardo.com

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

PART II

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.
2. Put the platform (GG-02-00), or an approved alternative, adjacent to the right side of the fuselage.
3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 thru 7, open the access door 473AL to gain access to the area affected by the installation.

NOTE

Make sure to use the hydraulic-system standard practices during the following procedure. Refer to AMP DM 39-A-20-40-00-00A-010A-A.

NOTE

It is prohibited to use any form of lubricant on bolts, screws or any type of threaded fastener.

4. With reference to Figure 7, at position n°1, remove the clamp block P/N A295A3002A from the helicopter. Retain existing fixing hardware for later reuse.
5. With reference to Figure 7, remove the clamps P/N MS21919WCH8 and P/N MS21919WCH4. Retain for later reuse.
6. In accordance with AMP DM 39-A-12-12-09-00A-228A-A and with reference to Figures 1 thru 7, drain the PCM 2.

NOTE

The following step 7 is applicable ONLY to helicopters equipped with kit hydraulic pulsation dampener P/N 3G2900F00111.

7. With reference to Figures 1 and 7, disconnect the following pipe and hoses from the side of the bracket P/N 3G2920A12251:
 - Pipe assy P/N 3G2920A17431;
 - Flexible hose P/N A385AG6G00H0255X;
 - Flexible hose P/N A385AB6B69B0436X
 - Flexible Hose P/N A385AB6B33B0295X (if present).

NOTE

The following step 8 is applicable ONLY to helicopters equipped with kit hydraulic pulsation dampener P/N 3G2900F00112 or P/N 3G2900F00113 or P/N 3G2900F00114 or P/N 3G2900F00115.

8. With reference to Figures 2 or 3 or 4 or 5 and Figure 7, disconnect the following flexible hoses from the side of the bracket P/N 3G2920A12251:
- Flexible hose P/N A494AE6E25E0815X;
 - Flexible hose P/N A385AG6G00H0255X;
 - Flexible hose P/N A385AB6B69B0436X.

NOTE

The following step 9 is applicable ONLY to helicopters equipped with auxiliary lines installation P/N 3G2920A12412 or P/N 3G2920A12413 or equipped with upper deck hydraulic variant (accessory mode) P/N 3G2906P01311.

9. With reference to Figures 6 and 7, disconnect the following flexible hoses from the side of the bracket P/N 3G2920A12251:
- Flexible hose P/N AW004PFE5E18E0348X;
 - Flexible hose P/N A385AG6G00H0255X;
 - Flexible hose P/N A385AB6B69B0436X;
10. With reference to Figure 8 View B, to release the indicated pipe assemblies from the bracket P/N 3G2920A12251, remove the following fixing hardware:
- at position n°5, remove nut P/N AN924-4D and washer P/N NAS1149C0763R;
 - at position n°6, remove nut P/N AN924-8D and washer P/N NAS1149C1290R;
 - at position n°7, remove nut P/N AN924-12D and washer P/N NAS1149C1790R.
- Retain fixing hardware for later reuse.
11. With reference to Figure 8 View B, remove the bracket P/N 3G2920A12251 and relative fixing hardware from the helicopter.

NOTE

Perform following step 12 only if Part II is not performed immediately after Part I.

12. With reference to Figures 1 thru 7, examine for chafing the hydraulic lines between PCM 2 and the removed bracket P/N 3G2920A12251. If damage is found, check if the diameter reduction can be felt by hand.

NOTE

If chafing is found on inspected hydraulic lines their replacement might be necessary.

13. If chafing/diameter reduction is found according to Part I step 7.5 or Part II step 12, perform the following procedure:
 - 13.1 Measure the diameter of the pipe assy in correspondence of the worn area and note it in the Inspection Report in Figure 9.
 - 13.2 Measure the diameter of the pipe assy in correspondence of an intact area close to the existing damaged area and note it in the Inspection Report in Figure 9.
 - 13.3 Fill out the rest of the Inspection Report in Figure 9.
 - 13.4 Take clear pictures of the damage, with evidence of chafing depth.
 - 13.5 Send the pictures and the Inspection Report to Product Support Engineering (engineering.support.lhd@leonardo.com) to receive further instructions.

NOTE

If present, the spacer P/N 3G2920A30451 must be reinstalled under the bracket P/N 3G2920A12253.

14. With reference to Figure 8 View B and Section C-C, install bracket P/N 3G2920A12253 by means of n°3 bolts P/N AN3C5A, n°3 washers P/N MS15795-849, n°3 grommets P/N MS35489-10X and n°3 spacers P/N NAS43DD3-20N.
15. With reference to Figure 8 Section C-C, coat exposed bolt heads with corrosion inhibitor TECTYL 891D (C385).
16. With reference to Figure 8 View B, fix the indicated pipe assemblies to the bracket P/N 3G2920A12253 by means of the previously removed hardware at step 10.
17. With reference to Figures 1 thru 7, reconnect to the side of the bracket P/N 3G2920A12253 the pipe assy and the flexible hoses disconnected at previously steps 7 thru 9.

NOTE

If present, the spacer P/N 3G2920A30651 must be reinstalled under the special block P/N 8G2920A01251.

18. With reference to Figure 7 and Figure 8 View A, at position n°1, install the special block P/N 8G2920A01251 and n°2 special cushions P/N 8G2920L00151 by means of bolt P/N ANC16A, bolt P/N ANC17A and n°2 washers P/N NAS1149C0332R.
19. With reference to Figure 8 View A, coat exposed bolt heads with corrosion inhibitor TECTYL 891D (C385).
20. With reference to Figure 7, re-install the clamps P/N MS21919WCH8 and P/N MS21919WCH4.

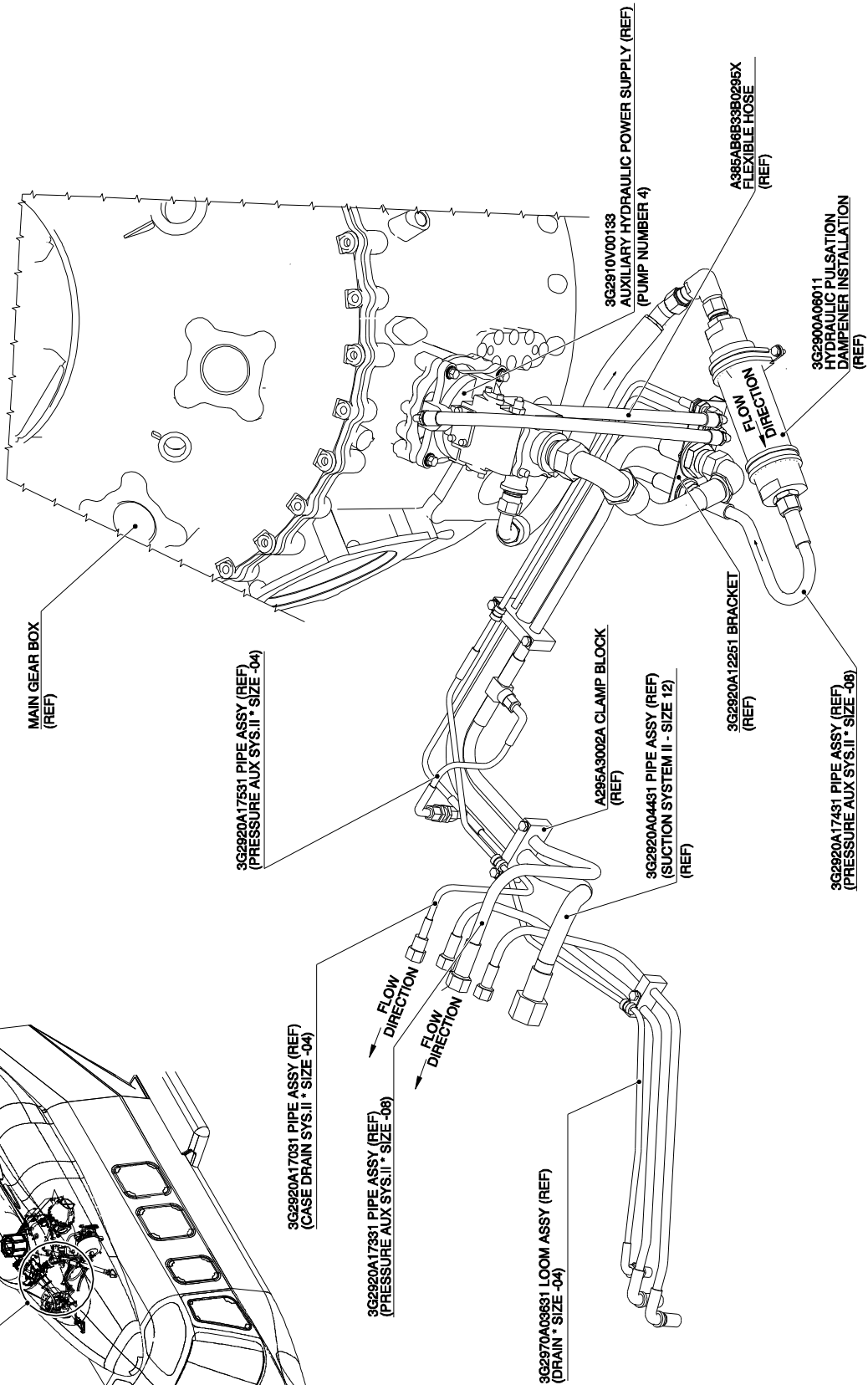
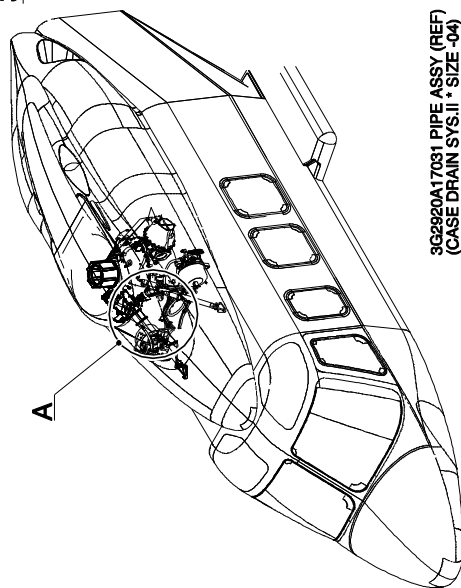
21. Remove all the tools and other items from the work area.
22. In accordance with AMP DM 39-A-12-11-09-00A-218A-A, fill the PCM 2 with fluid.
23. In accordance with AMP DM 39-A-29-10-00-00A-231A-A, bleed the Number-2 main hydraulic system.
24. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, close the access door 473AL.
25. Remove the platform from the right side of the fuselage.
26. Return the helicopter to flight configuration and record for compliance with Part II of this Service Bulletin on the helicopter logbook.
27. Send the attached compliance form to the following mail box:

engineering.support.lhd@leonardo.com

As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

3G2900A06111 HYDRAULIC LINES INSTALLATION

VALID ONLY FOR HELICOPTER EQUIPPED WITH
KIT HYDRAULIC PULSATION DAMPENER P/N 3G2900F00111

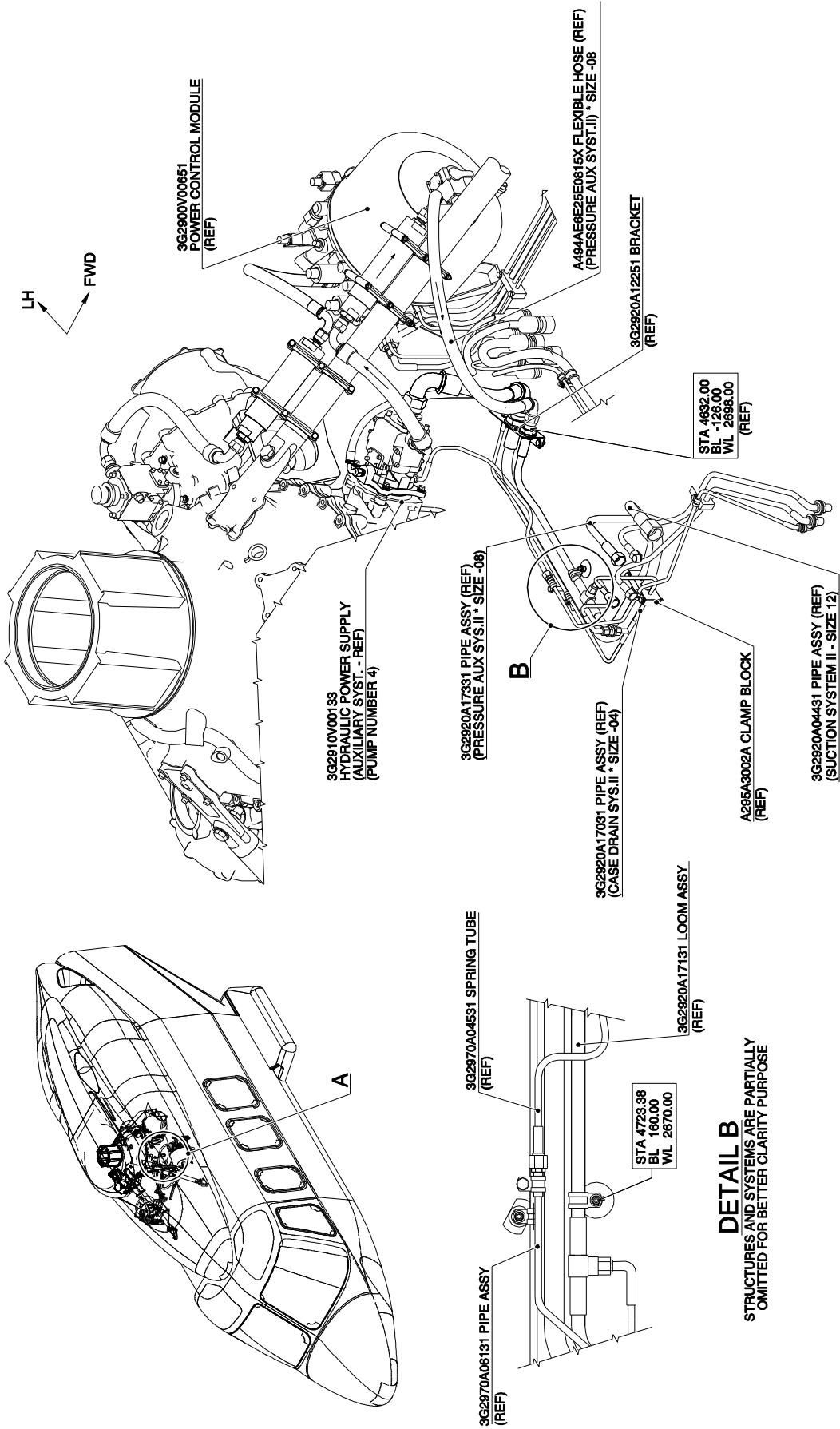


DETAIL A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 1

3G2900A06112 HYDRAULIC LINES INSTALLATION

VALID ONLY FOR HELICOPTER EQUIPPED WITH
KIT HYDRAULIC PULSATION DAMPENER P/N 3G2900F00112



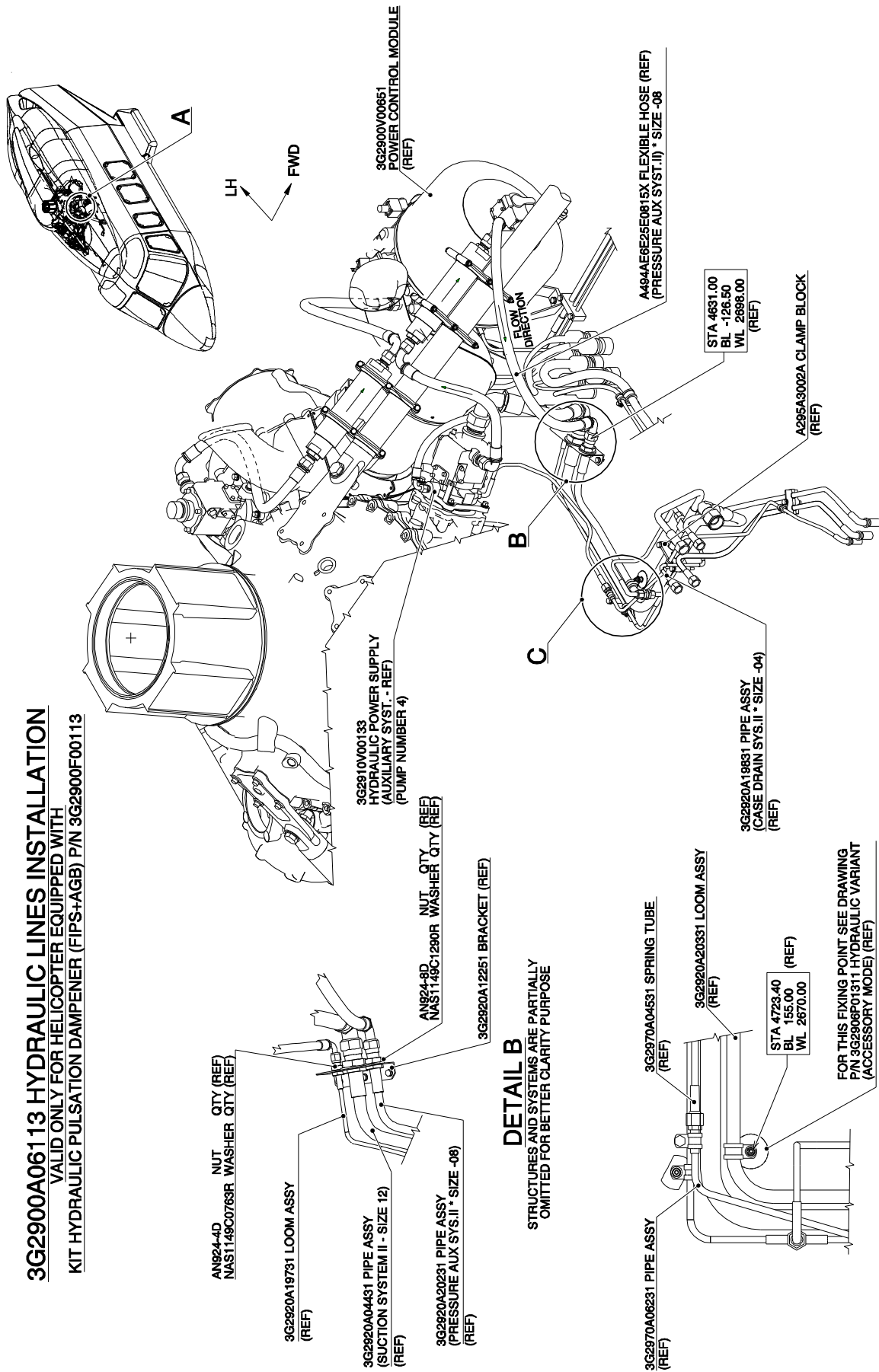
DETAIL A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

DETAIL B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 2

3G2900A06113 HYDRAULIC LINES INSTALLATION

VALID ONLY FOR HELICOPTER EQUIPPED WITH
KIT HYDRAULIC PULSATION DAMPENER (FIPS+AGB) P/N 3G2900F00113



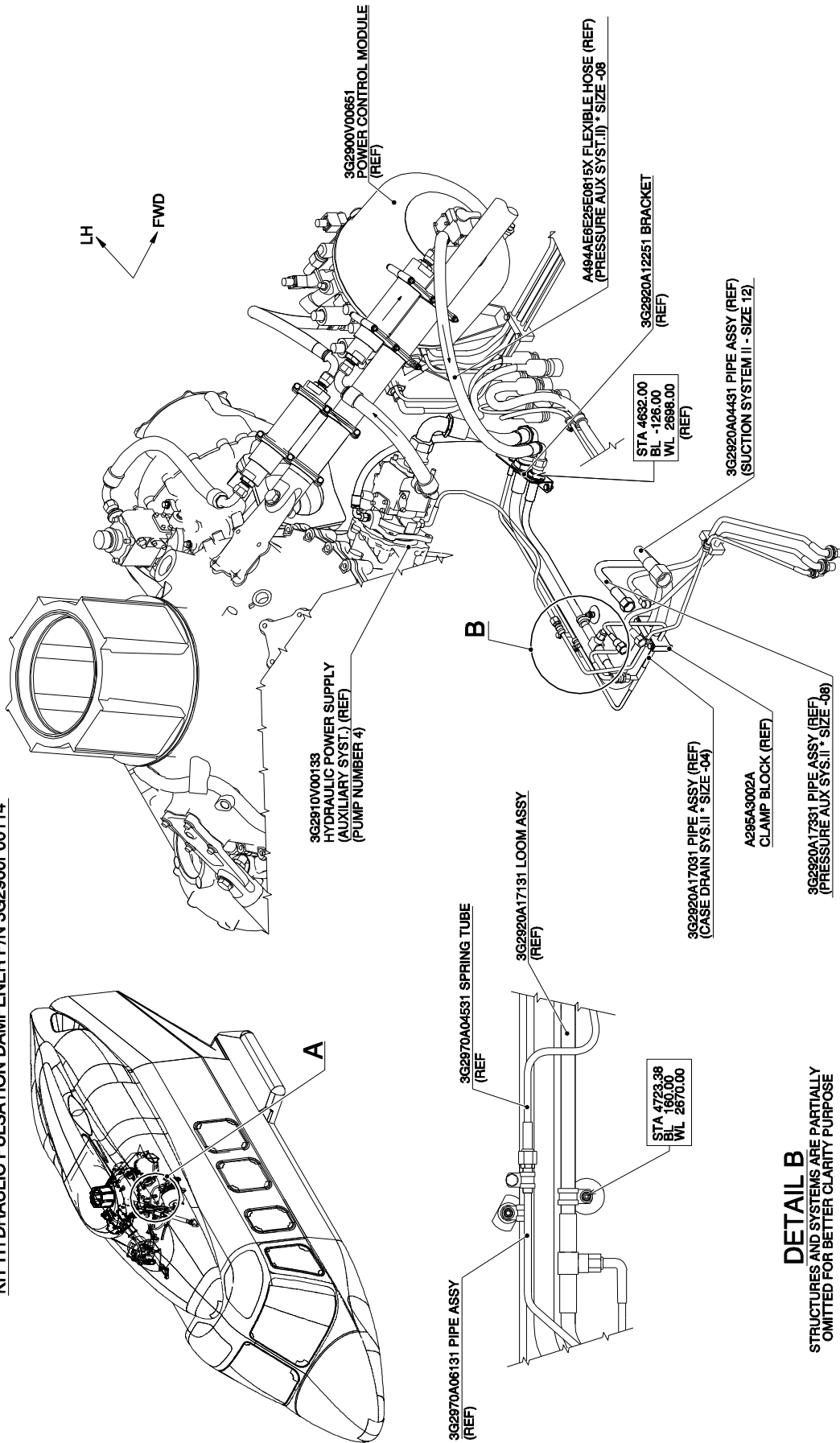
DETAIL A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

DETAIL B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

DETAIL C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 3

3G2900A06114 HYDRAULIC LINES INSTALLATION
VALID ONLY FOR HELICOPTER EQUIPPED WITH
KIT HYDRAULIC PULSATION DAMPENER P/N 3G2900F00114

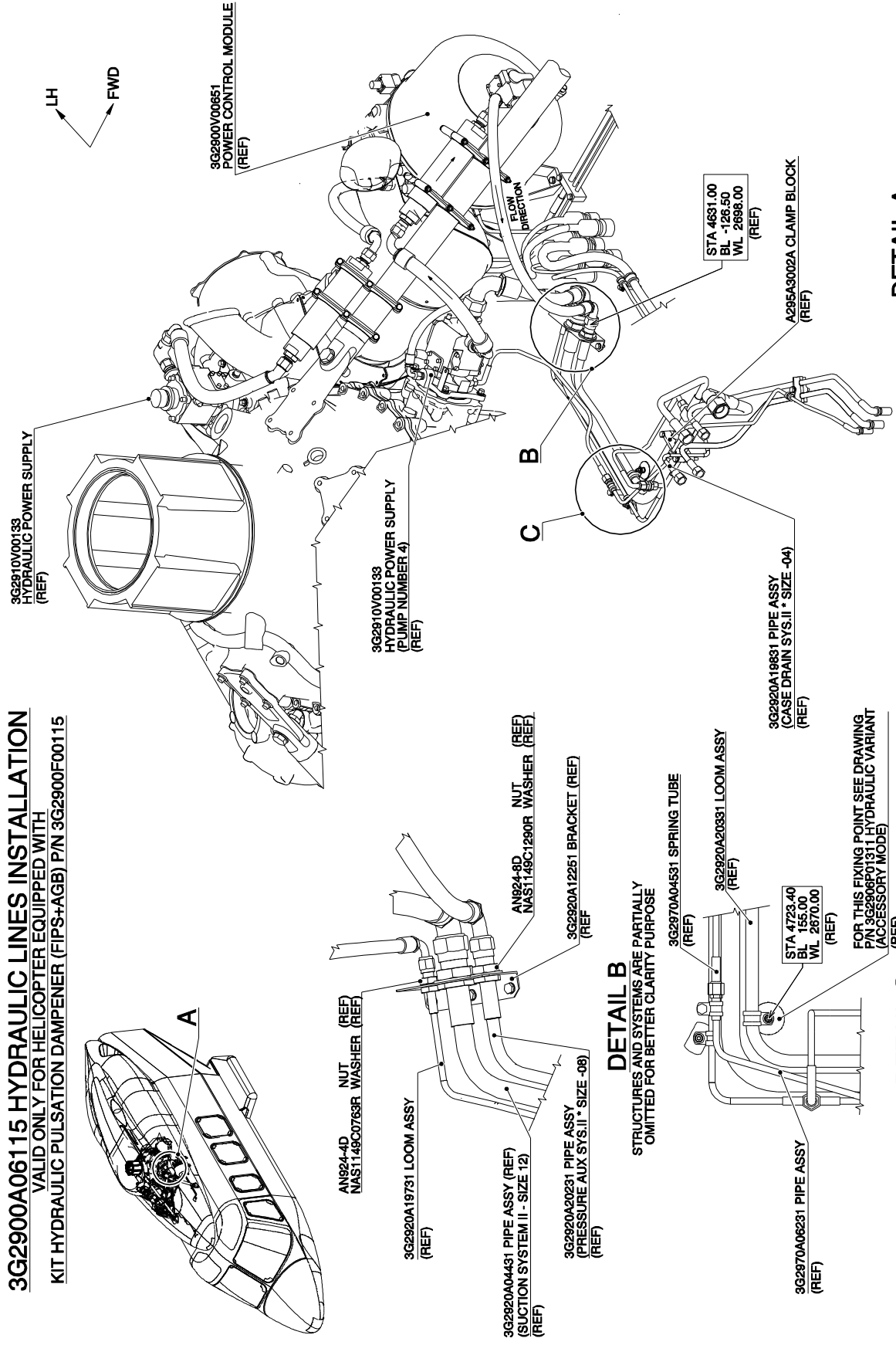


DETAIL A
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

DETAIL B
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 4

3G2900A06115 HYDRAULIC LINES INSTALLATION
VALID ONLY FOR HELICOPTER EQUIPPED WITH
KIT HYDRAULIC PULSATION DAMPENER (FIPS+AGB) P/N 3G2900F00115



DETAIL A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

DETAIL B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

DETAIL C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 5

**VALID ONLY FOR HELICOPTER EQUIPPED WITH
UPPER DECK HYDRAULIC VARIANT (ACCESSORY MODE) P/N 3G2906P01311**

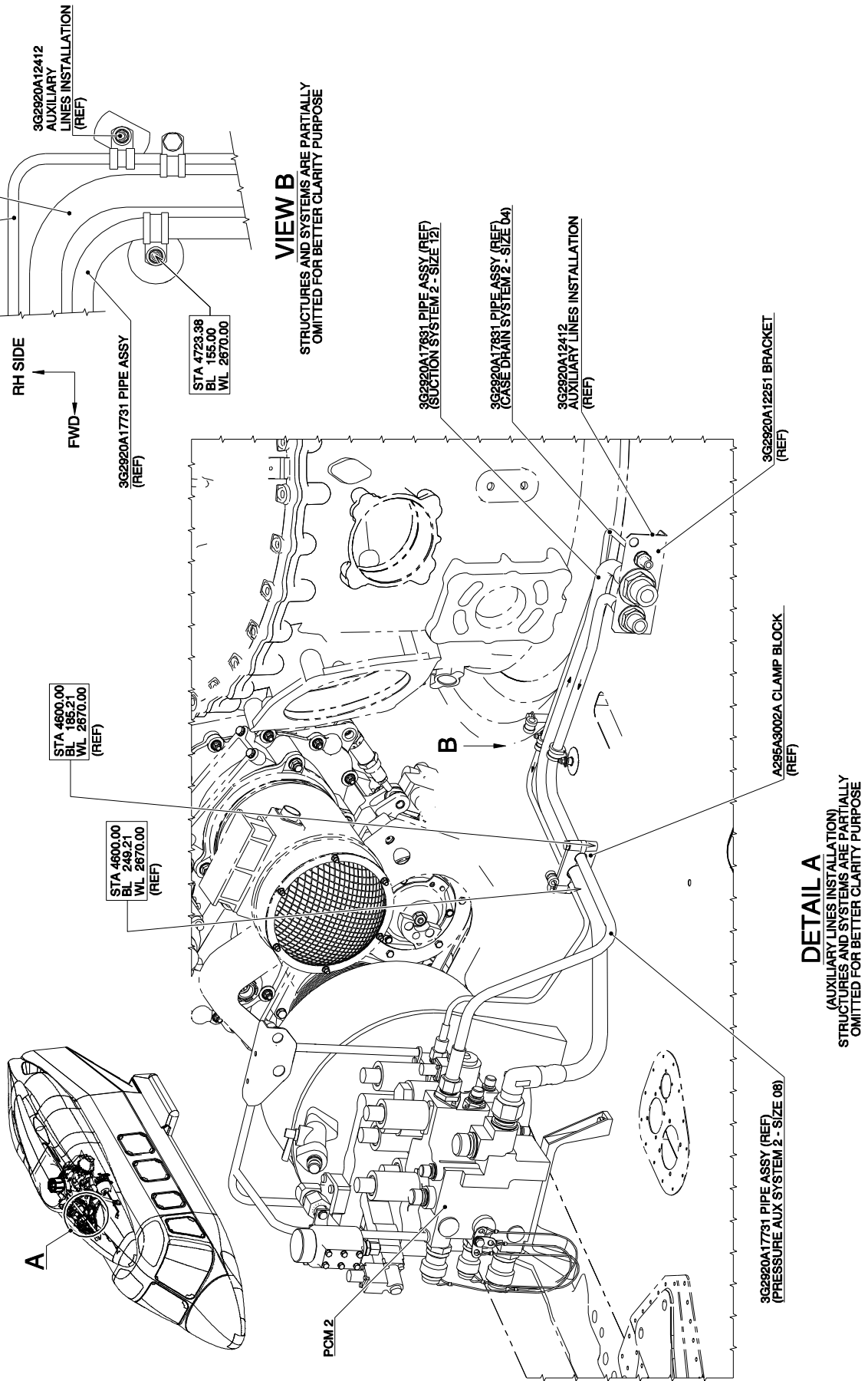
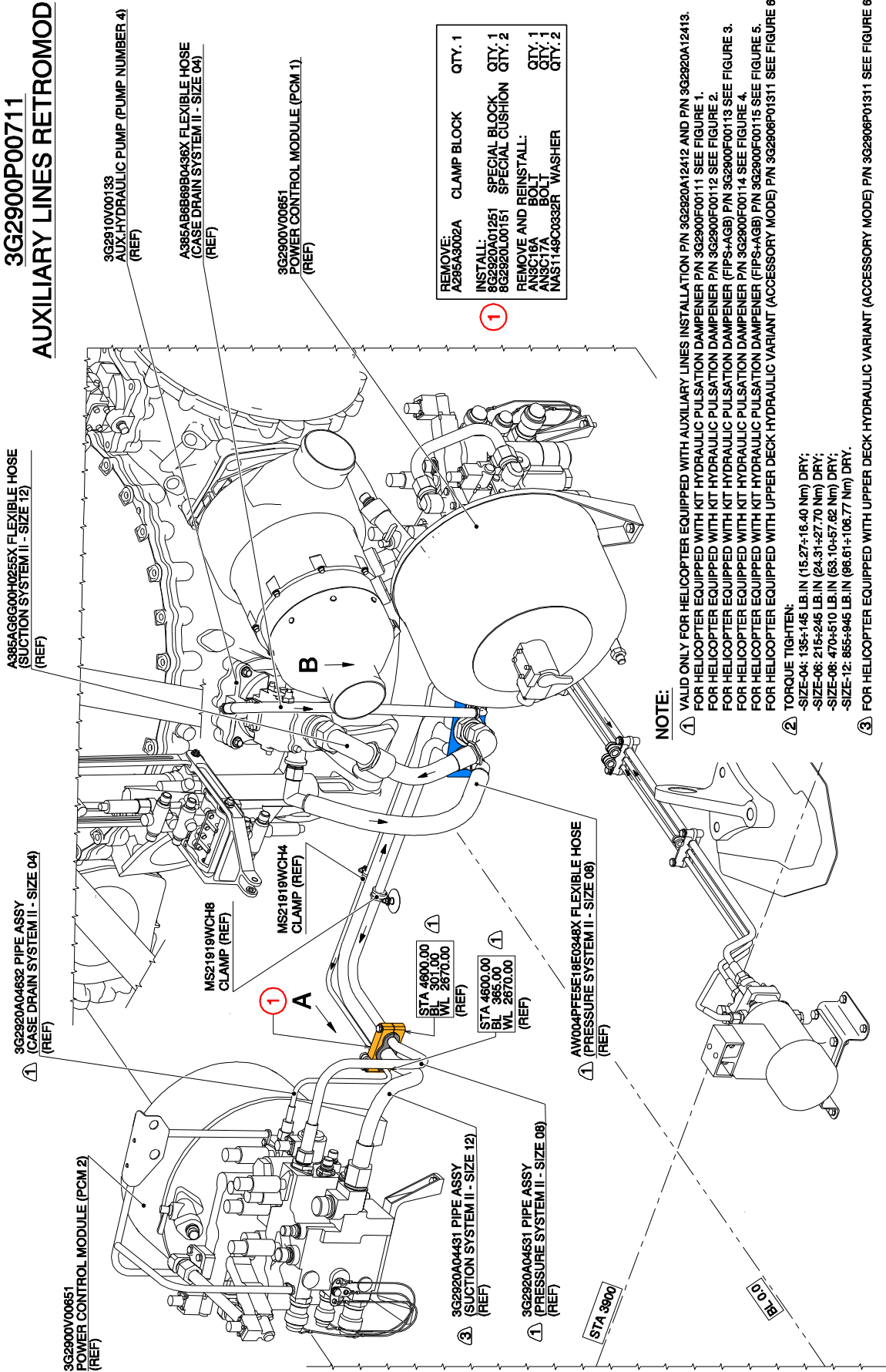


Figure 6

3G2900P00711
AUXILIARY LINES RETROMOD



GENERAL VIEW
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 7

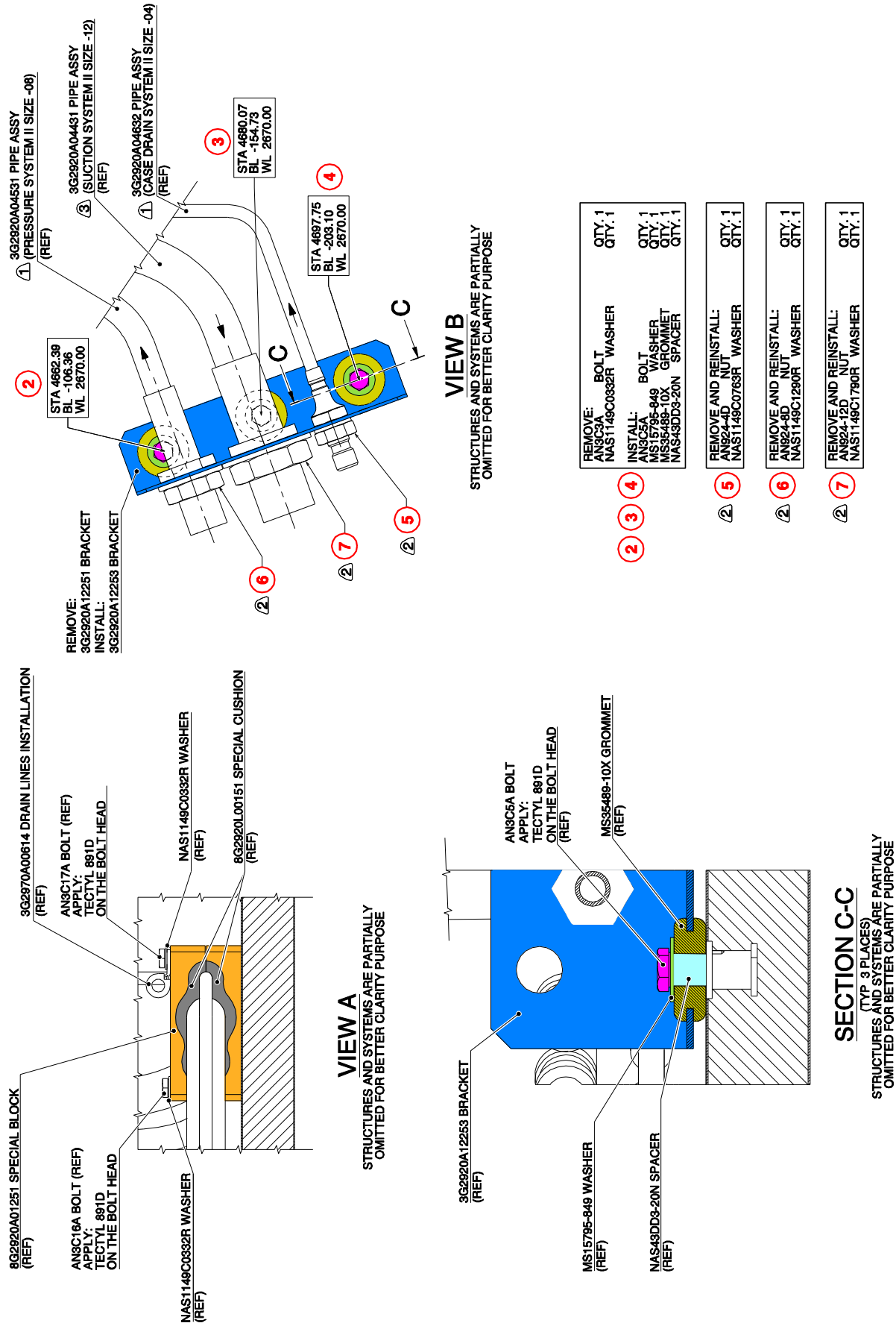


Figure 8

SB 139-672 – Inspection Report		
Date		
Helicopter S/N		
Flight Hours		
Customer		
Pipe P/N	Worn diameter [mm]	Intact diameter [mm]
Notes:		

Figure 9

Please send to the following address: LEONARDO S.p.A. CUSTOMER SUPPORT & SERVICES - ITALY PRODUCT SUPPORT ENGINEERING & LICENSES DEPT. Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	SERVICE BULLETIN COMPLIANCE FORM	Date:
	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.