

Administrator
National Highway Traffic Safety Administration
Washington D.C. 20590

Request for: Exemption Inconsequential Noncompliance

July 28, 2008,

Dear Sir,

I am the newly appointed Safety and Standards Manager for Kalmar Industries USA. I am making a request for exemption from the notice and remedy requirements of a non-conformance that has been recently brought to my attention. This recall notice number is 07V-256 which was obtained in May 2007 by our Director of Engineering, Mr. Keith Pfannenstiel. Unfortunately some time has expired during the correspondences between Mr. Pfannenstiel and persons in the "Recall Division". I assure you it is not our intention to procrastinate on this issue, but Mr. Pfannenstiel has been unsuccessfully trying to obtain a clarification concerning this recall. I wish to bring this issue to a conclusion.

The hose assembly noncompliance was remedied in our Ottawa Ks. production facility starting June 1, 2007. Since that time we have out sourced the manufacture of brake hose assemblies to an approved DOT fabricator.

Pursuant to 49 CFR 556 "Exemption for Inconsequential Defect or Noncompliance", I am submitting the attached petition for your review.

In accordance with the rule, please find the attached three printed copies for your review. In addition I have enclosed electronic copies in pdf format on three CD's.

Sincerely yours

A handwritten signature in black ink, appearing to read 'Harold King', with a stylized flourish at the end.

Harold King
Global Safety & Standards Manger



07V-256 Brake Hose Non compliance

Petition for Exemption for Inconsequential Defect or Non compliance

Manufacturer:

Kalmar Industries USA, LLC
415 E. Dundee St
Ottawa, Kansas 66067
Organized as a "Limited Liability Corporation" in the State of Texas

Vehicle Model: Ottawa 30, Ottawa 50, Ottawa 60

Noncompliance: Air Brake hose with crimped end fitting

The noncompliance noted was that in our manufacturing process we had substituted an a "U Series" Weatherhead crimp type hose end fitting in place of a "P Series" type fitting. This brake hose assembly had two of these mechanically crimped permanently attached fittings. The combination of this non DOT approved fitting with a DOT approved hose is the issue.

This noncompliance had possibly occurred on units produced from 1997 until May 2007. This noncompliance air brake hose assembly was only used on rear axle brake chambers in a rear drive axle position when an axle suspension was installed.

Units Affected:

The units affected would be Kalmar "Ottawa Models": Model 30, Model 50 and Model 60. These are "Terminal Tractors" which normally operate with a trailer attached at speeds less than 15 MPH when loaded. There are generally confined to non-public terminals where they move trailers in a confined space.

The number of units produced during this time frame is:

Year	No. of Units	Year	No. of Units
1997	25	1998	52
1999	91	2000	73
2001	53	2002	56
2003	35	2004	56
2005	60	2006	53
2007	51		

Total Number of Units affected: 605



Test Results:

FMVSS 571.106 Air Brake Hose

Test were performed on three sample hoses manufactured with the Weatherhead series "U" fitting and "H33806" hose. Tests were performed by "Kalmar Industries Engineering" and by "Eaton Engineering Test Laboratory".

Test Data Summary

Tested By:	Kalmar	Eaton	
Sample 3/8 ID Hose	No.1	No.2	No.3
Burst Test	1200 PSI	1480 PSI	1480 PSI
Leak Rate Test	1 PSI-5 MIN		
Tensile Strength Test	325 LBS	351 Lbs	294 Lbs
	Pass	Pass	Fail

Attachment 1: Kalmar Engineering Test Report

Attachment 2: Eaton Engineering Test Report No. 224756

Incident Reports

Our investigation resulted in no findings. There have been no reports for the affected hose part numbers regarding any type of failure. Our search encompassed our records for the past ten years.

There is no warranty claim history for the affected hose part numbers.

There is no significant part sales history for the affected hose part numbers.

Summary

Compliance with FMVSS 571.121 requires that air brake systems pressure can not exceed 150 PSI max pressure. Those systems must be pressure regulated. These noncompliance hose assembly provide a significant safety factor for air pressure leak and burst pressure.

Since axles with suspensions must allow for movement between chassis and axle, all air brake lines are routed to allow motion without placing air brake lines in tension. Air brake hoses are installed with a loop in the hose with allows for this motion. Hoses do not see a tension load of significance value.

Attachment 3: Brake Hose Installation

Attachment 4: Design Position Brake Hose

Kalmar Industries Corp.
415 East Dundee Street
Ottawa, KS 66067, USA
www.kalmarind-northamerica.com

Tel. 785-242-2200

All of these vehicles have FMVSS 571.121 brake systems. In that the brake hose assembly in question was used on rear drive axles brake lines. If a hose failure occurred, the secondary brake system remains intact and functional. It would be used to stop the vehicle.

All of these vehicles have mechanical spring brakes installed on the drive axles. In the advent of air pressure lost in the system. These brakes would apply and bring the vehicle to a stop.

From these facts presented and since there has not been any reported incident with this noncompliance air brake hose assembly. We strongly request that an exemption for inconsequential noncompliance be awarded.

Table of attachments:

- Attachment 1: Kalmar Engineering Test Report No. TR00022
- Attachment 2: Eaton Engineering Test Report No. 224756
- Attachment 3: Brake Hose Installation
- Attachment 4: Design Position Brake Hose

July 28, 2008
H King



ENGINEERING

TEST REPORT

REPORT NUMBER:

224756

Eaton
Technical Center
Maumee, Ohio U.S.A.

TITLE: Burst and Tensile Testing of H33806 hose with U-series fittings

DATE: 6/1/2006

TESTED BY: LAB TECHNICIAN


Neil Schwab

CHECKED BY: LAB SUPERVISOR

WRITTEN: ENGINEER

APPROVED: ENGINEERING SUPERVISOR

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Eaton Test Laboratory



ENGINEERING
TEST REPORT

REPORT NUMBER:

224756

TR TRACKING AND CONTENT CHECK - IN:

Date Req'd By:	6/8/2007	Project No.:	24911
Requested By:	Troy Lutz	Approved By:	
Test Sample(s):	☒ Return All	☐ Return all only if failure occurs	
Witness Required?	☐ Yes	☒ No	
If Yes, Witness Name, Title and Organization:			
Hose Manufacturer: Enter name or plant location below			
Eaton Forest City			
Customer:			
Reference Part Numbers:	H33806, 06U-XXX		



ENGINEERING
TEST REPORT

REPORT NUMBER:

224756

PURPOSE:

To assess the performance of H33806 with U series fittings.

TEST TYPE:

DESIGN SUITABILITY:



FORMAL QUALIFICATION:



NEW APPROVED SOURCE:



PERIODIC CONTROL:



SUMMARY:



BACKGROUND:

REFERENCES:

ES 4257 Rev -

TEST SPECIMENS:

SAMPLES 1-4

Hose: H33806

Manufacturer: Forest City

Fittings: A end:06U-M06

B end:06U-J06



ENGINEERING TEST REPORT

REPORT NUMBER:

224756

HOSE CRIMP DATA SHEET (INCHES)

Assembly Date: _____

Hose Style: H33806 with U series

Date: 6/1/2007

Sample No.	End	Crimp Diameter						Original Nipple ID	Crimp Tooling		Crimped Nipple ID	Nipple Collapse	Comments
		1	2	3	4	Ovality	Avg.		Collet	Display			
1	A	0.801	0.800	0.801	0.798	0.003	0.800						
	B	0.802	0.801	0.800	0.800	0.002	0.801						
2	A	0.801	0.800	0.799	0.800	0.002	0.800						
	B	0.801	0.800	0.801	0.800	0.001	0.801						
3	A	0.801	0.801	0.800	0.801	0.001	0.801						
	B	0.802	0.801	0.801	0.801	0.001	0.801						
4	A	0.801	0.799	0.800	0.800	0.002	0.800						
	B	0.800	0.801	0.800	0.801	0.001	0.801						
5	A												
	B												
6	A												
	B												
		Max 0.003 0.801							Max				
		Avg 0.002 0.800							Avg				
		Min 0.001 0.800							Min				

HOSE CRIMP DATA SHEET (MILLIMETERS)

Assembly Date: _____

Hose Style: H33806 with U series

Date: 6/1/2007

Sample No.	End	Crimp Diameter						Original Nipple ID	Crimp Tooling		Crimped Nipple ID	Nipple Collapse	Comments
		1	2	3	4	Ovality	Avg.		Collet	Display			
1	A	20.345	20.320	20.345	20.269	0.076	20.320						
	B	20.371	20.345	20.320	20.320	0.051	20.339						
2	A	20.345	20.320	20.295	20.320	0.051	20.320						
	B	20.345	20.320	20.345	20.320	0.025	20.333						
3	A	20.333	20.345	20.320	20.345	0.025	20.336						
	B	20.358	20.345	20.333	20.345	0.025	20.345						
4	A	20.345	20.295	20.320	20.307	0.051	20.317						
	B	20.320	20.345	20.320	20.345	0.025	20.333						
5	A												
	B												
6	A												
	B												
		Max 0.076 20.345							Max				
		Avg 0.041 20.330							Avg				
		Min 0.025 20.317							Min				



ENGINEERING
TEST REPORT

REPORT NUMBER:

224756

TEST TABLE:

TEST SEQUENCE LOG

TEST TYPE	SAMPLE NUMBER																			
Assembly	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Burst	X	X																		
Tensile			X	X																

NOTES:

TEST SEQUENCE LOG

TEST TYPE	SAMPLE NUMBER																			
Assembly	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

NOTES:



ENGINEERING
TEST REPORT

REPORT NUMBER:

224756

TEST PROCEDURES AND RESULTS:

Test procedures and results shown on the following pages of this report.

BURST PRESSURE TEST

SAMPLES NUMBER:

1,2

PROCEDURES:

The assemblies were attached by one end to a pressure source and extended straight without restraint. The free end was suitably capped or plugged and pressure was applied at a uniform rate (pressurization time not to exceed 30 seconds) until failure.

TEST FLUID:

Water

MINIMUM BURST PRESSURE:

62 bar (900 psi)

RESULTS:

PASS

SAMPLE NUMBER	BURST PRESSURE	DESCRIPTION OF FAILURE
1	102 bar (1480 psi)	Free Hose Burst
2	102 bar (1480 psi)	Free Hose Burst



ENGINEERING

TEST REPORT

REPORT NUMBER:

224756

TENSILE STRENGTH TEST

SAMPLES NUMBER:

3,4

PROCEDURES:

The hose assembly shall be placed in tensile testing machine provided with a recording device. The specimen shall be held in the testing machine so that the hose and fittings have a straight centerline corresponding to the direction of the machine pull. The testing machine shall be operated at a separation speed of 25 mm/minute (1 inch/min) until failure occurs, either by separation of the hose from the end fittings or by rupture of the hose structure. Failure of the 6.3 mm (.250 inch) and smaller size shall occur no less than 1100 N (250 lbs) and the larger sizes at no less than 1450 N (325 lbs).

SEPARATION SPEED:

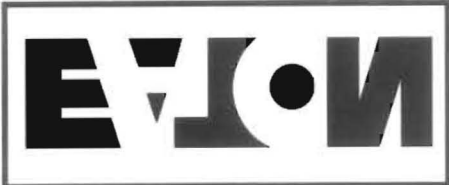
25 mm/minute (1 inch/min)

MINIMUM FORCE REQUIRED
TO CAUSE FAILURE:

1450 N (325 lbs)

RESULTS:

SAMPLE NUMBER	TENSILE STRENGTH	DESCRIPTION OF FAILURE
3	1307N (294lbf)	Hose pulled out of socket
4	1561N (351lbf)	Hose pulled out of socket



ENGINEERING
TEST REPORT

REPORT NUMBER:

224756

CONCLUSIONS:



ENGINEERING
TEST REPORT

REPORT NUMBER:

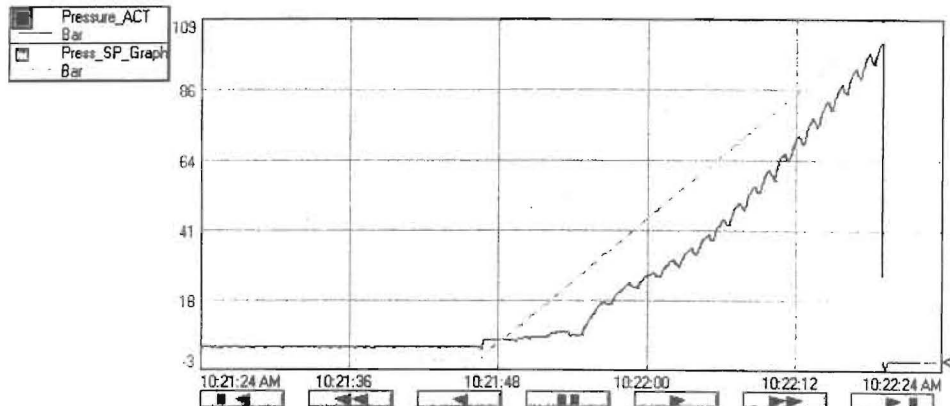
224756

APPENDIX:

Burst Data Sheets:

BURST TEST

H33806 w/ U-series



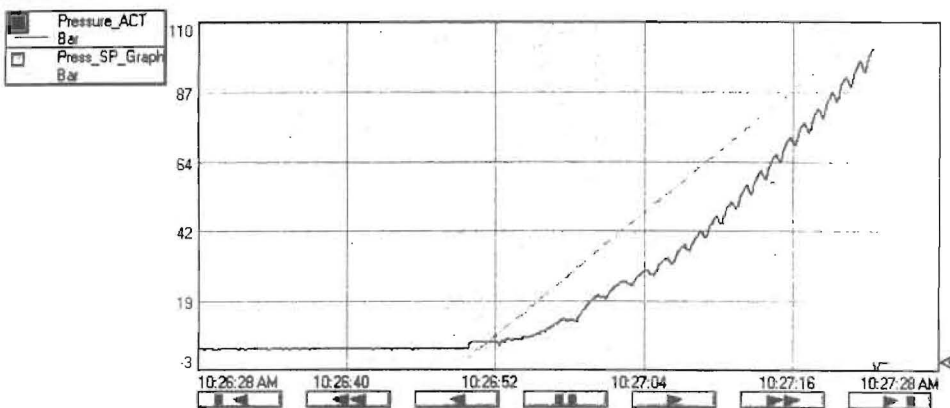
Pressure Actual: 0 bar
Burst Pressure: 102 bar
Wednesday, May 30, 2007
H33806 w/ U-series
1480 psi
Sample No. 1
Start
Print Screen
Main Page

Free Hose Burst

La Miller

BURST TEST

H33806 w/ U-series



Pressure Actual: 0 bar
Burst Pressure: 102 bar
Wednesday, May 30, 2007
H33806 w/ U-series
1480 psi
Sample No. 2
Start
Print Screen
Main Page

Free Hose Burst

La Miller



Engineering Test Report

For

Brake Hose Qualification



Kalmar Industries Corporation

415 East Dundee Street
Ottawa, KS 66067 USA

Prepared for: Kalmar Industries Corporation

Prepared by: Steven Stonecash – Test Engineer

Approved by: Greg Lehman – Chief Engineer

Test Date: May 30, 2007

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Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

List of Acronyms and Abbreviations

PSI	Pounds per Square Inch
FMVSS	Federal Motor Vehicle Safety Standards
lbs	Pounds

Test Personnel and Witnesses

Steven Stonecash, Kalmar Industries
Terry Falls, Kalmar Industries

Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

1.0 Test Objectives

To determine if Kalmar's brake hose meets performance requirements defined by Federal Motor Vehicle Safety Standards (FMVSS) § 571.106, S7.3.8 Air Pressure, S7.3.9 Burst Strength and S7.3.10 Tensile Strength for brake hoses.

2.0 Test Hardware

Hose:

Kalmar Hose, Part Number 99802337 (SAE J1402 A), 12 inch long

Fittings:

Kalmar Fittings, Part Number 90010396, 2 each

The hose configuration shown in Figure 1



Figure 1

Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

3.0 Instrumentation

3.1 Pressure Gages

5,000 PSI

200 PSI

3.2 Timer

Robic, Model Number SC-554, Speed Timer Twin Chronograph Stop Watch

4.0 Data Collected

Bursting Pressure

Leak Rate

Tensile Strength Load

5.0 Test Procedure

Burst Test

Hose Configuration:

Kalmar Hose, Part Number 99802337 (SAE J1402 A), 12 inch long

Kalmar Fittings, Part Number 90010396, 2 each

The hose configuration shown in Figure 2



Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

Figure 2

The test hose was connected to the hydraulic supply line for an Ottawa 4x2 Terminal Tractor's cab tilt actuator, which supplied the pressure needed for this burst test.

Pressure in the line was raised to 800 PSI and held for 1 minute without failure. Then the pressure was gradually increased until failure, which occurred at 1200 PSI. The line ruptured at the point where the hose enters the fitting; see Figure 3.



Figure 3

Leak Rate Test

Hose Configuration:

Kalmar Hose, Part Number 99802337 (SAE J1402 A), 12 inch long

Kalmar Fittings, Part Number 90010396, 2 each

The hose configuration shown in Figure 4

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Figure 4

The test hose was connected to an air supply capable of supplying pressure in excess of 200 PSI. Hose pressure was raised to 200 PSI. Once 200 PSI was reached the test hose pressure was isolated by closing a ball valve. Pressure had dropped approximately 1 PSI over 5 minutes.

Tensile Strength Test

Hose Configuration:

Kalmar Hose, Part Number 99802337 (SAE J1402 A), 12 inch long

Kalmar Fittings, Part Number 90010396, 2 each

The hose configuration shown in Figure 5



Figure 5

A mass of 325 lbs was suspended from test hose for 1 minute without failure. Then a mass of 450 lbs was suspended for an additional minute without failure; see Figure 6.

Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

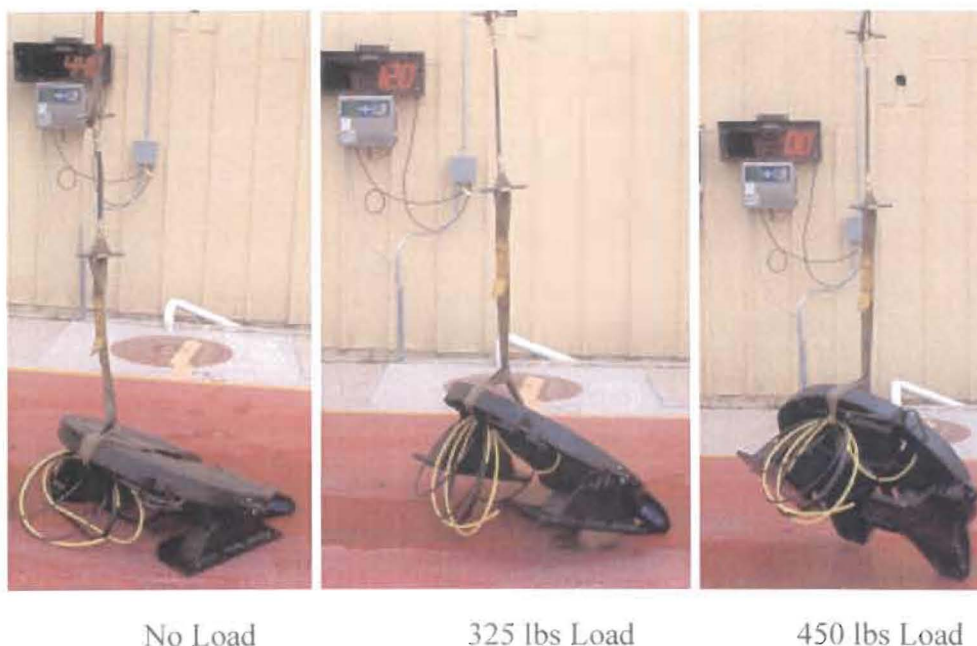


Figure 6

6.0 Results

Burst Test

Test hose ruptured at 1200 PSI

Leak Rate Test

Test hose leaked 1 PSI over five minutes

Tensile Strength Test

Test hose remained intact with a pull of 325 lbs

7.0 Conclusion

The test hose meets and exceeded performance requirements defined by Federal Motor Vehicle Safety Standards (FMVSS) § 571.106, S7.3.8 Air Pressure, S7.3.9 Burst Strength and S7.3.10 Tensile Strength for brake hoses.

Document ID: TR00022	Test Date: 05/31/2007	
Title: Brake Hose Qualification Test Report		Test Engineer: Steven Stonecash

End of Report Page

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ATTACHMENT NO. 3 BRAKE HOSE INSTALLATION

Date: July 26, 2008

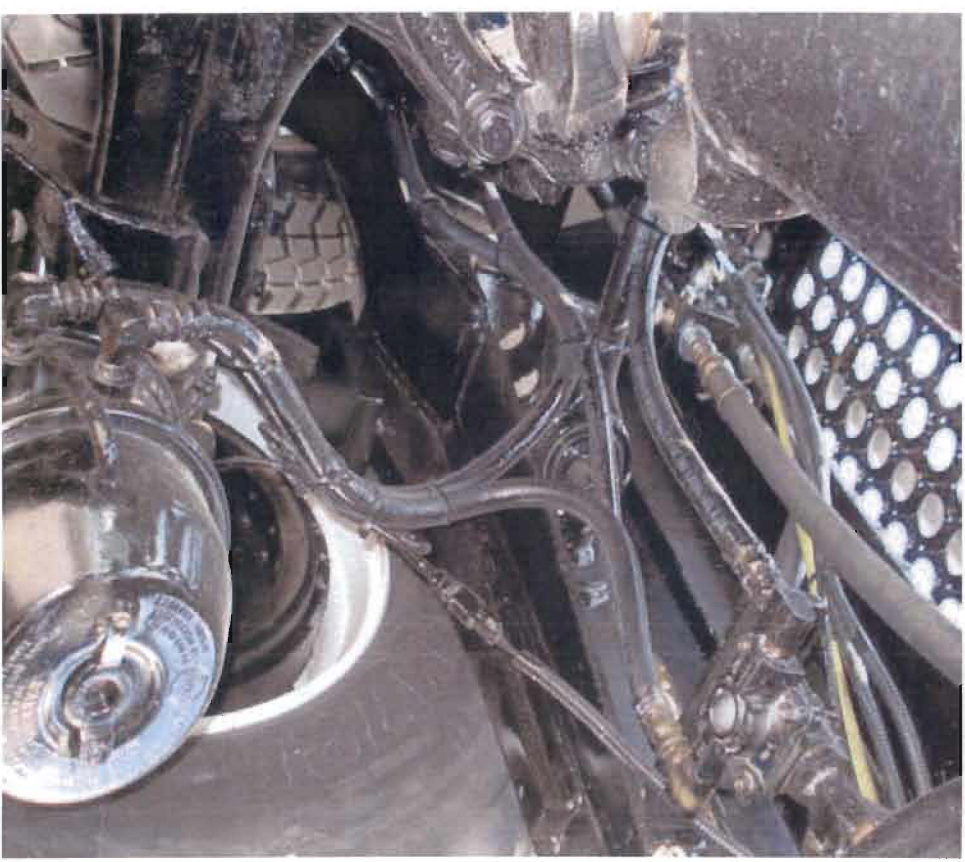
Harold King

Global Safety & Standards Manager

FRONT AXLE LEFT HAND WHEEL



FRONT AXLE LEFT HAND WHEEL



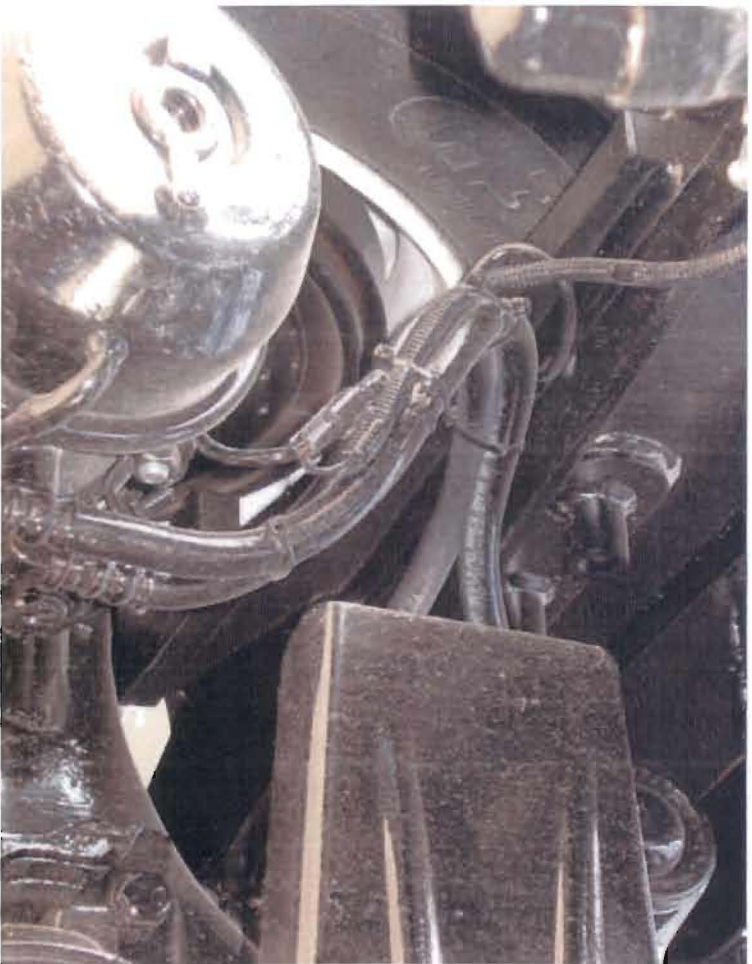
FRONT AXLE LEFT HAND WHEEL



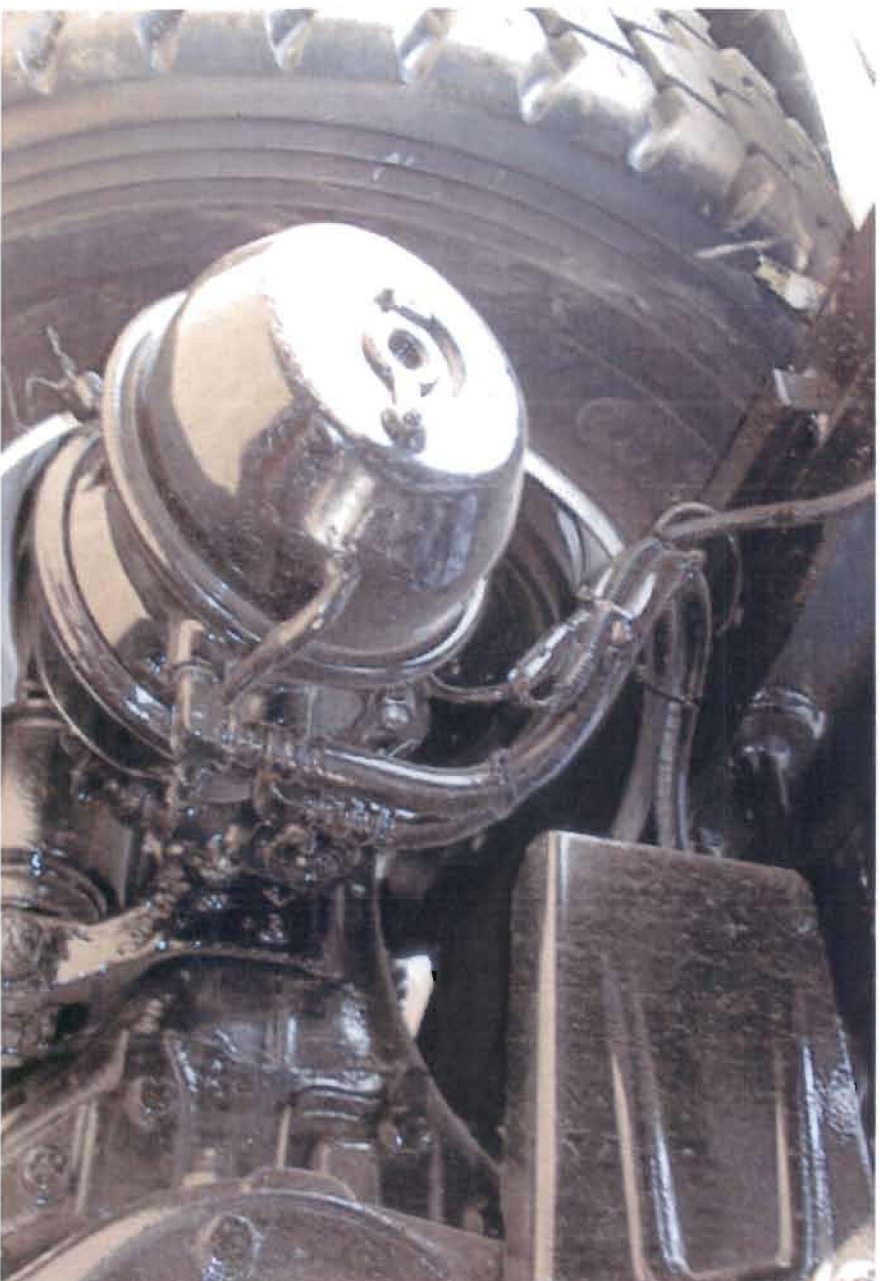
FRONT AXLE RIGHT HAND WHEEL



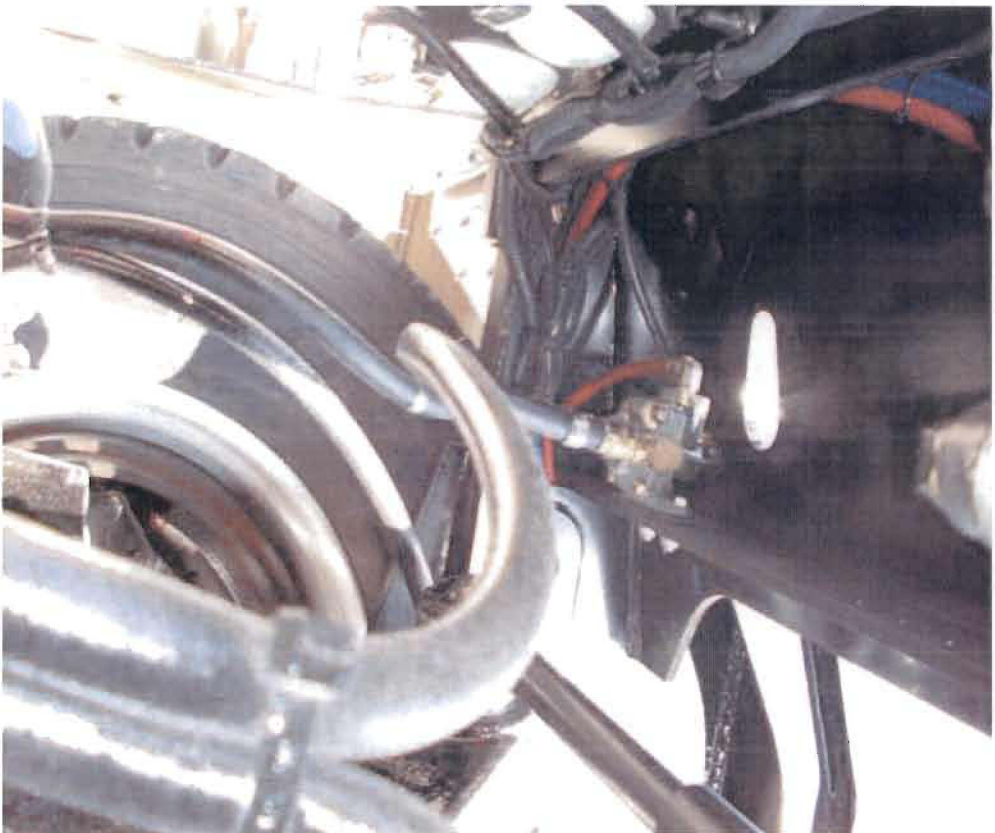
FRONT AXLE RIGHT HAND WHEEL



FRONT AXLE RIGHT HAND WHEEL



REAR AXLE LEFT HAND WHEEL



REAR AXLE LEHT HAND WHEEL



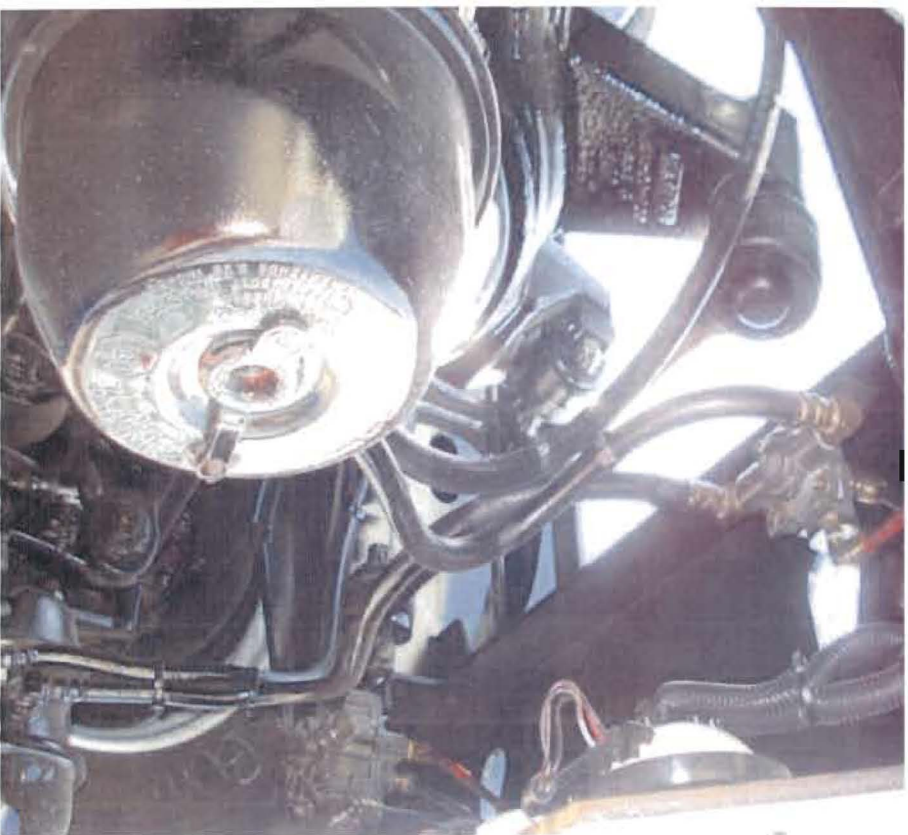
REAR AXLE LEFT HAND WHEEL



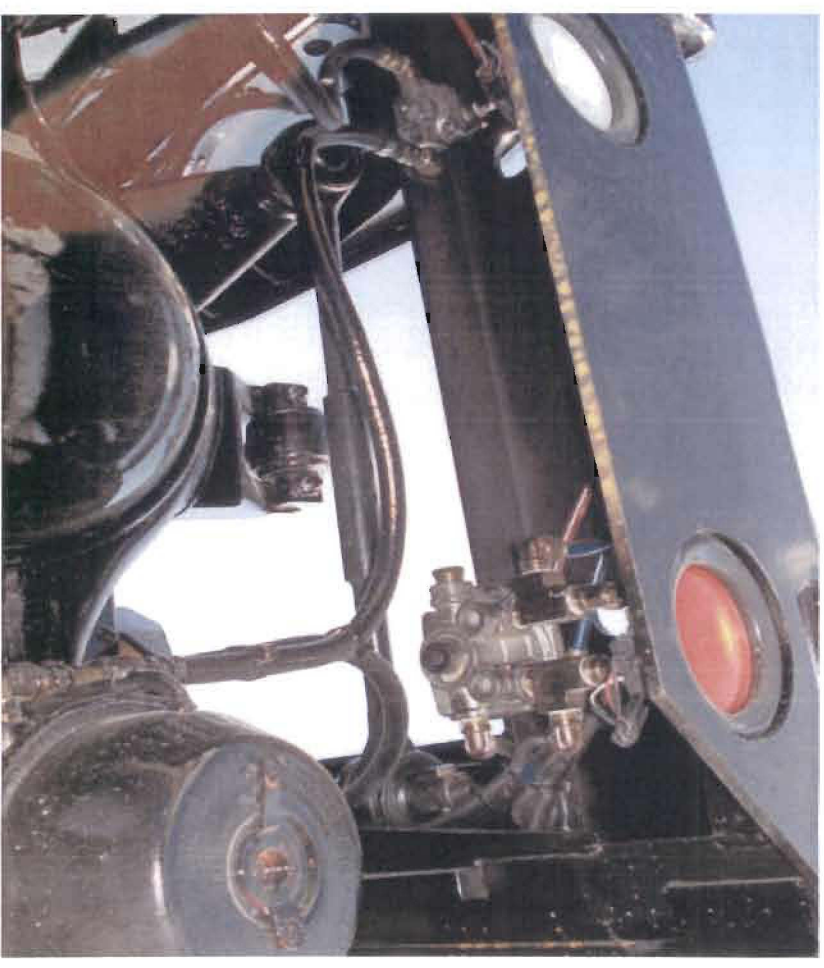
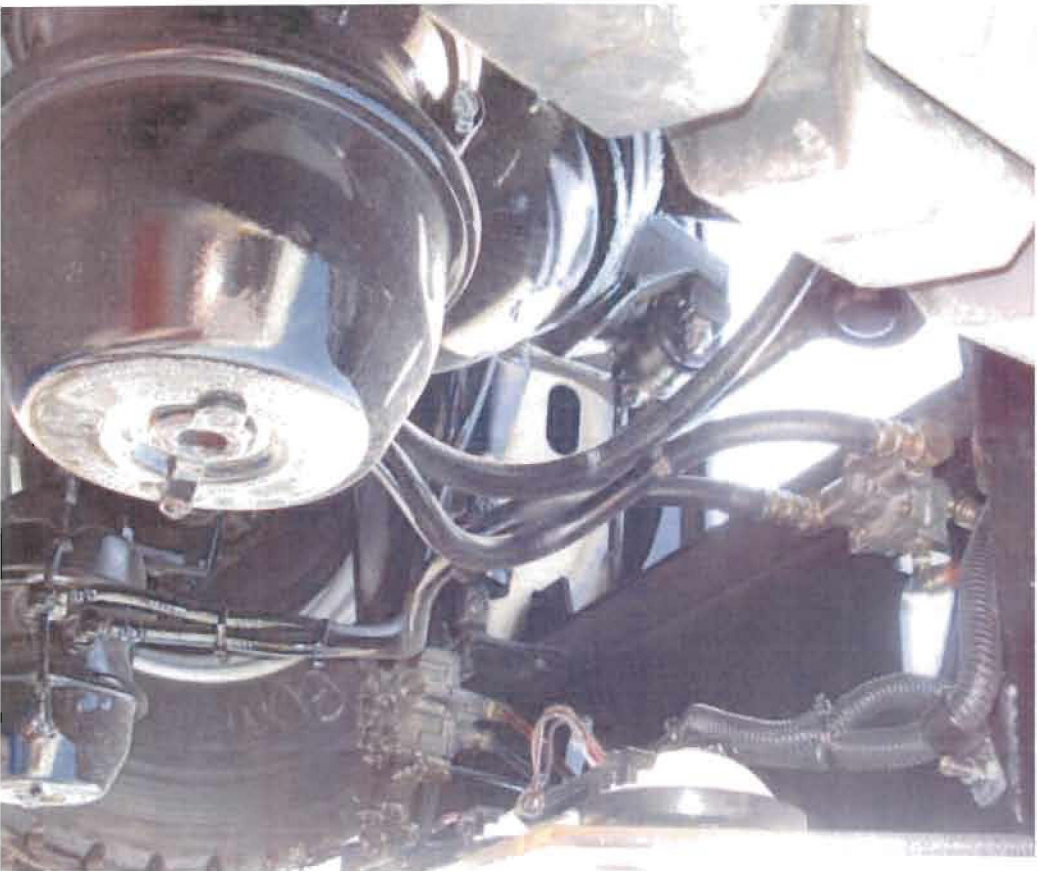
REAR AXLE RIGHT HAND WHEEL



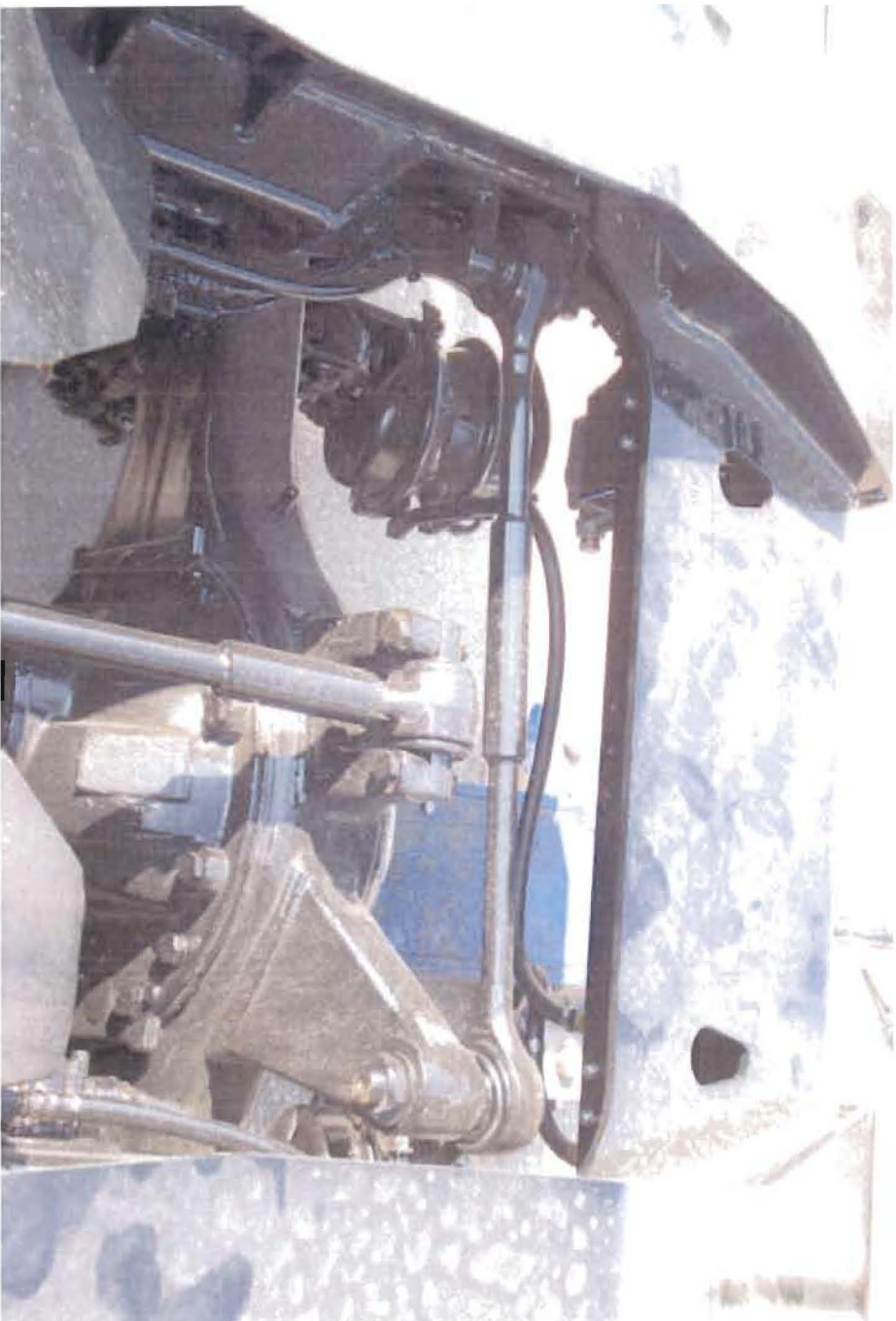
REAR AXLE RIGHT HAND WHEEL



REAR AXLE RIGHT HAND WHEEL



REAR AXLE RIGHT HAND WHEEL



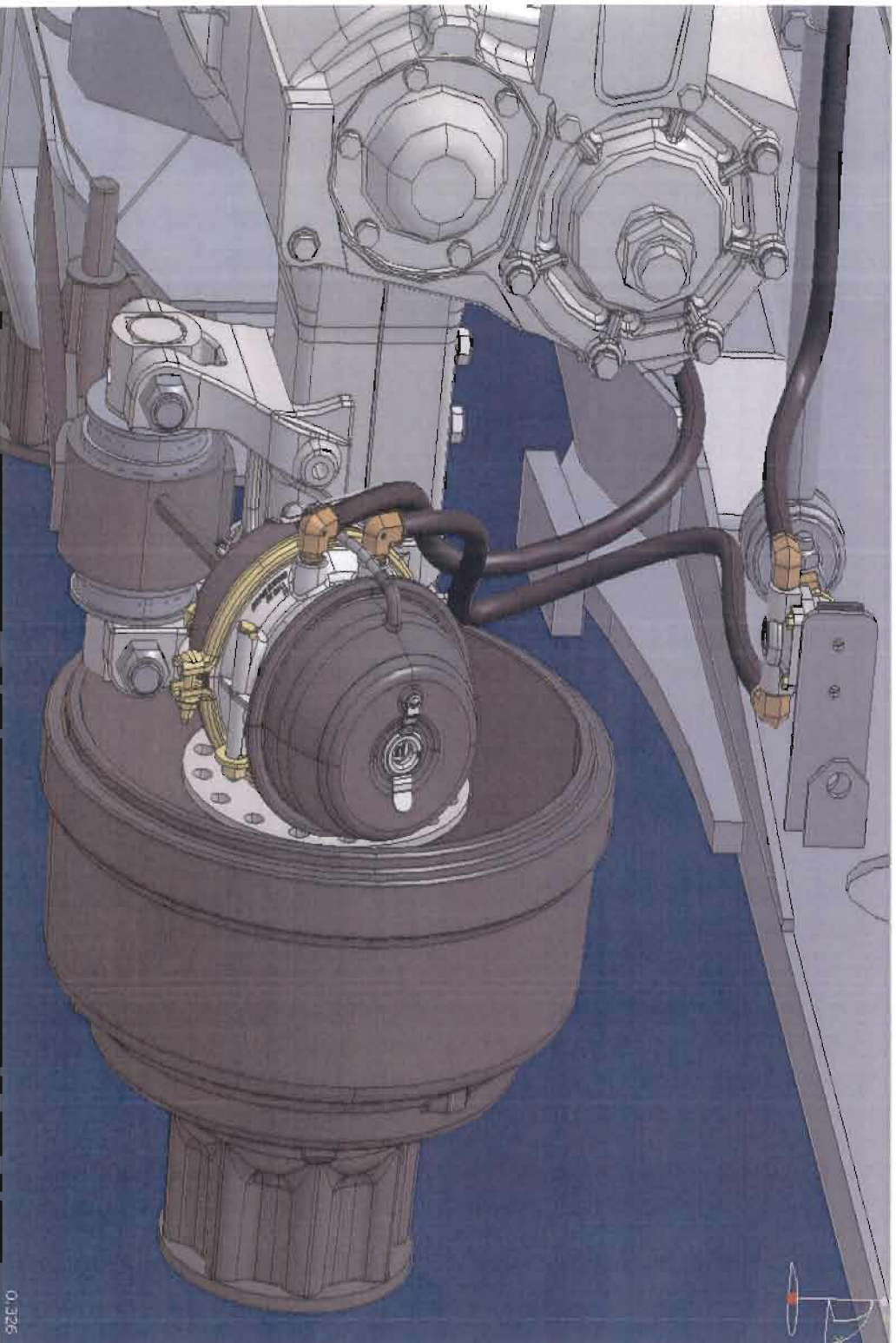
Attachment No. 4

Air Brake Hose – Design Positions

Date: July 28, 2008

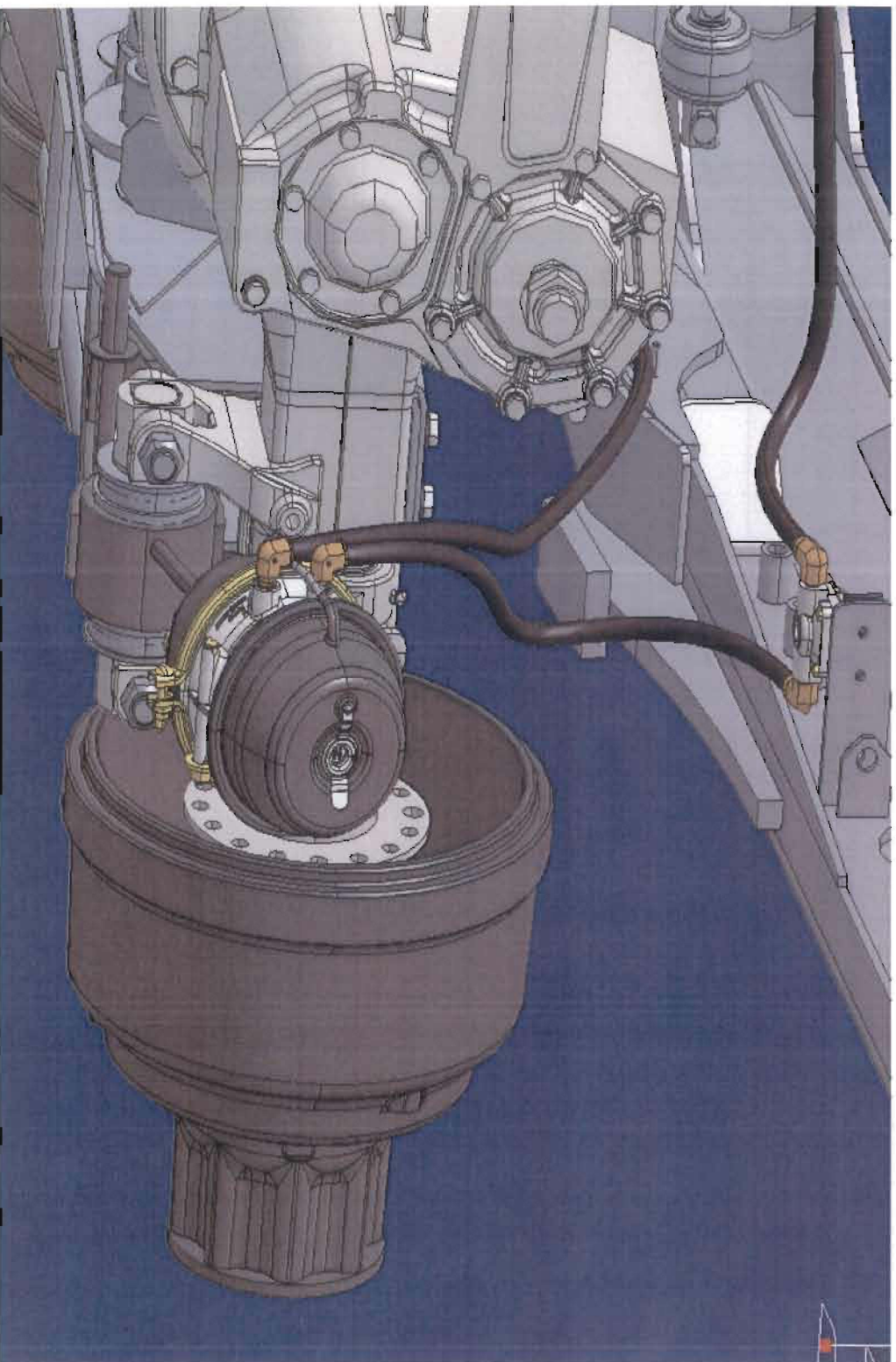
Harold King
Global Safety & Standards Manager

Left Hand Front Wheel Max Collapsed

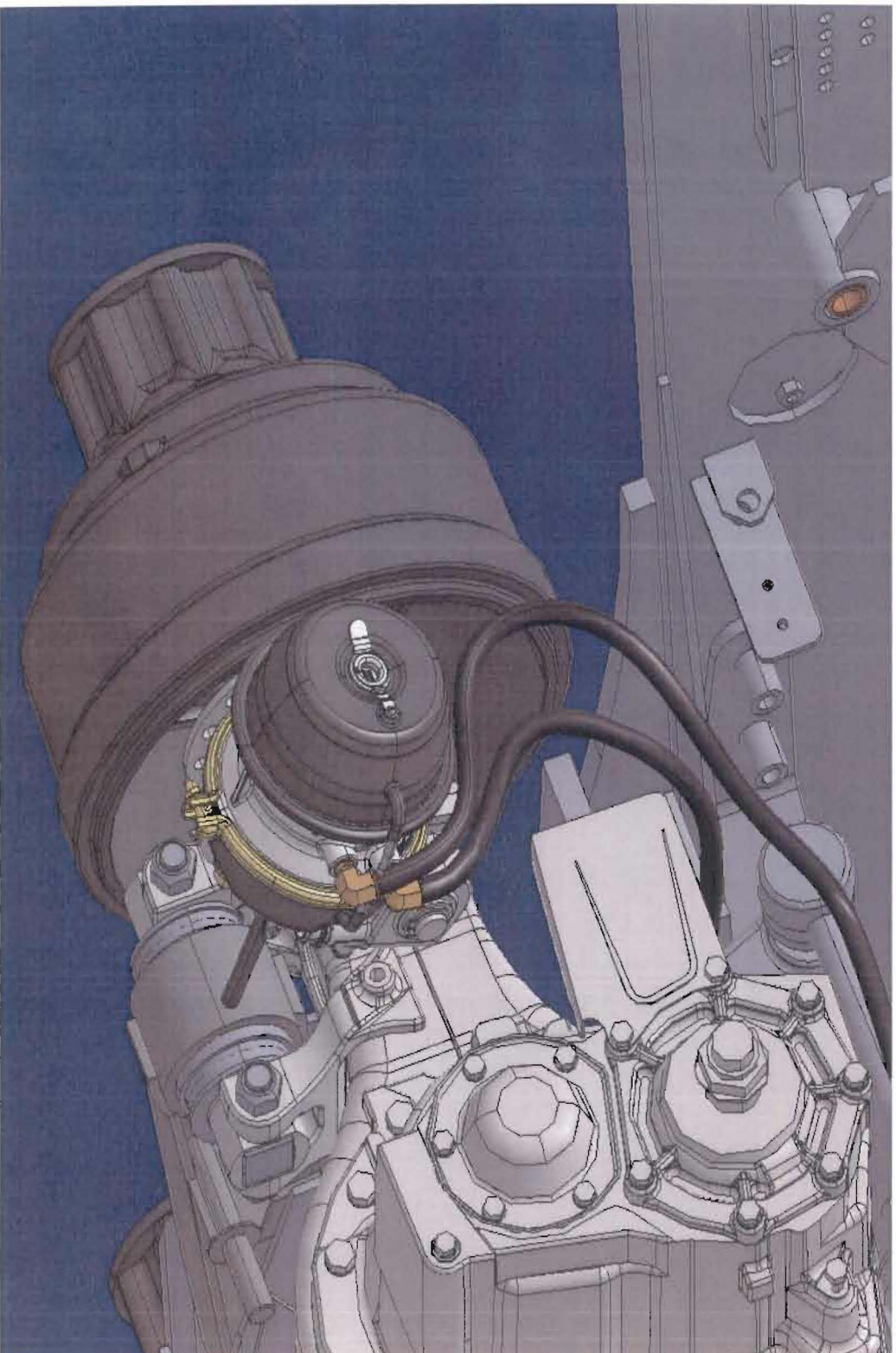


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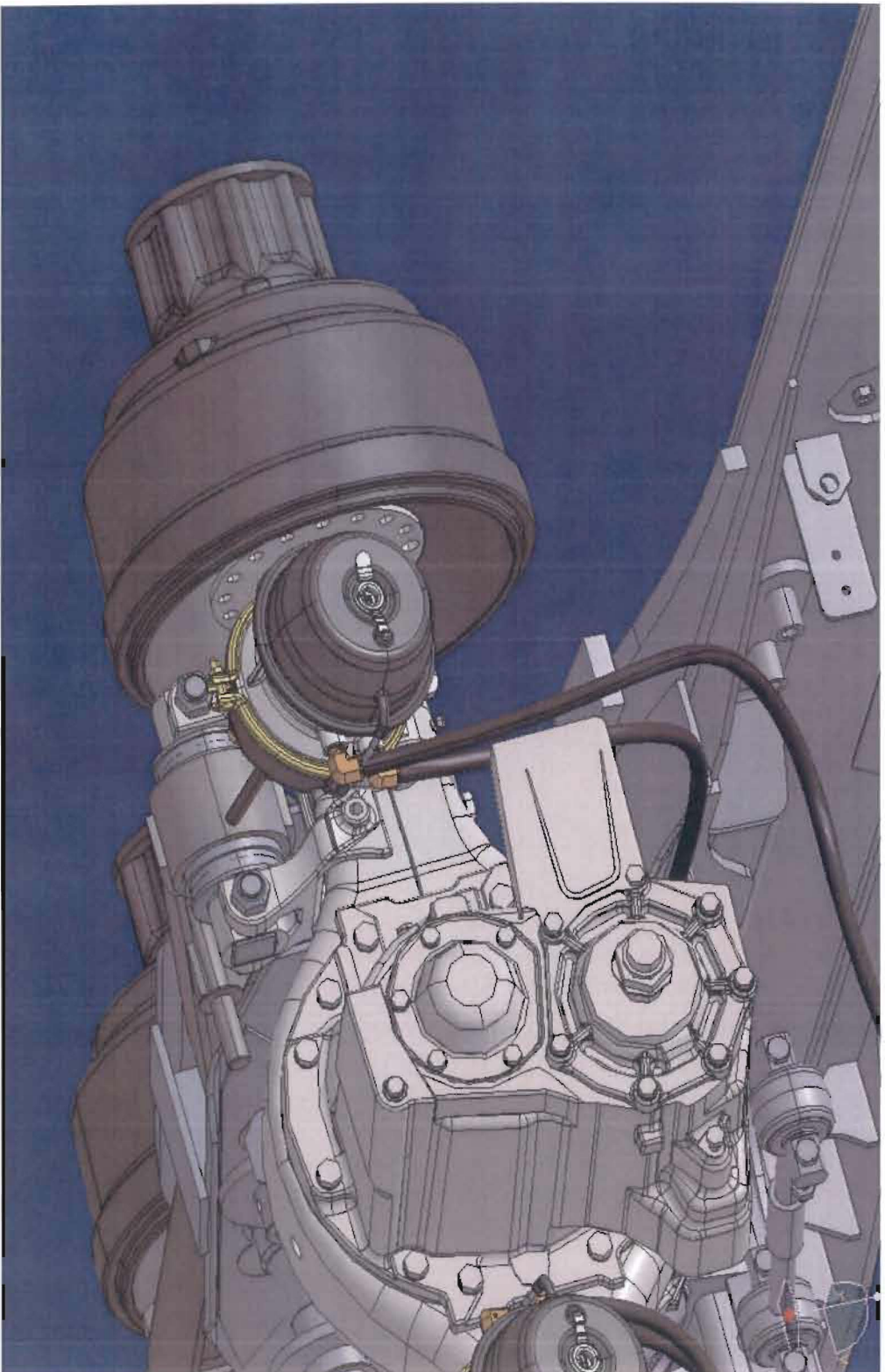
Left Hand Front Wheel Max Extended



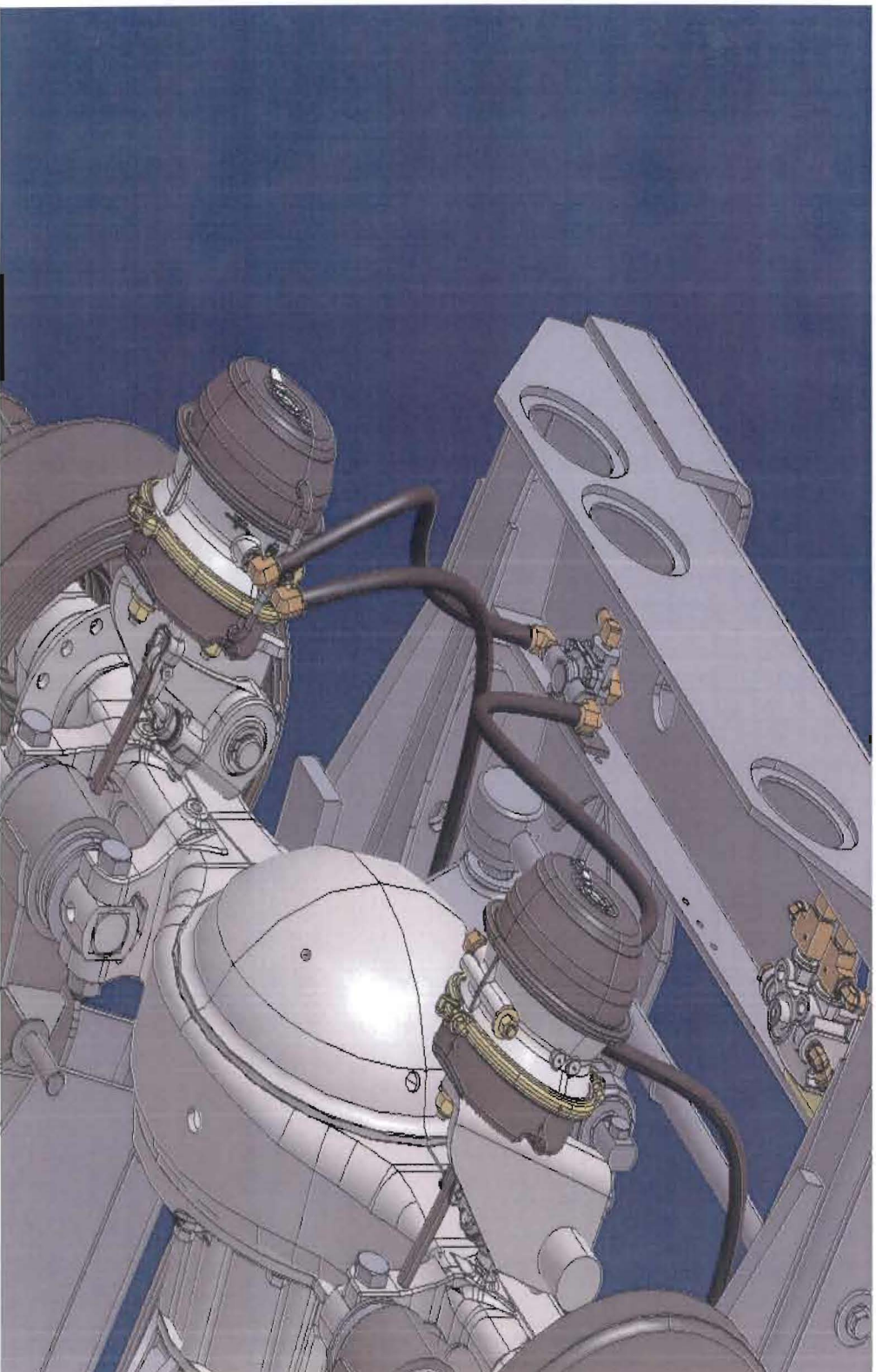
Right Hand Front Wheel Max Collapsed



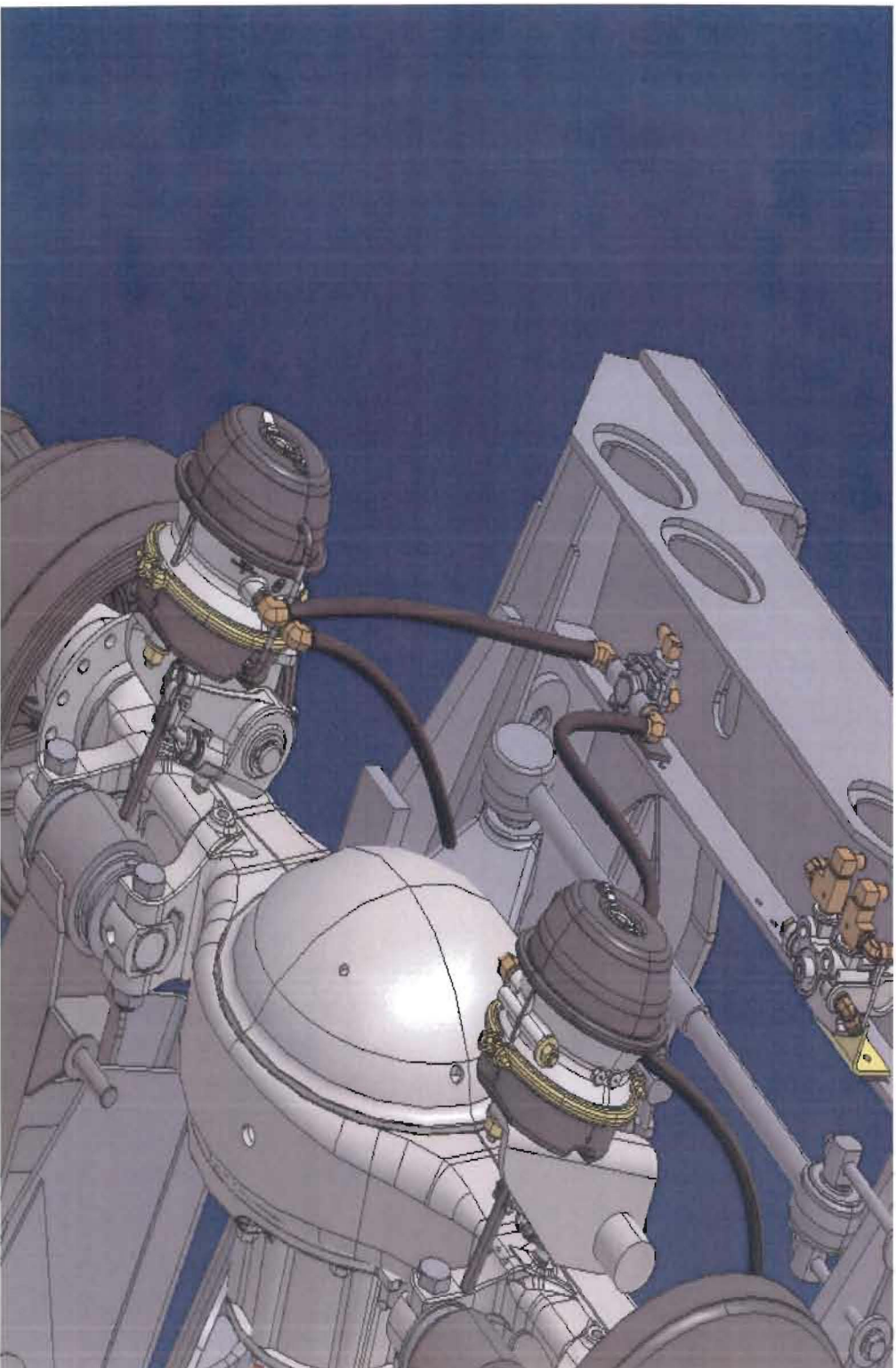
Right Hand Front Wheel Max Extended



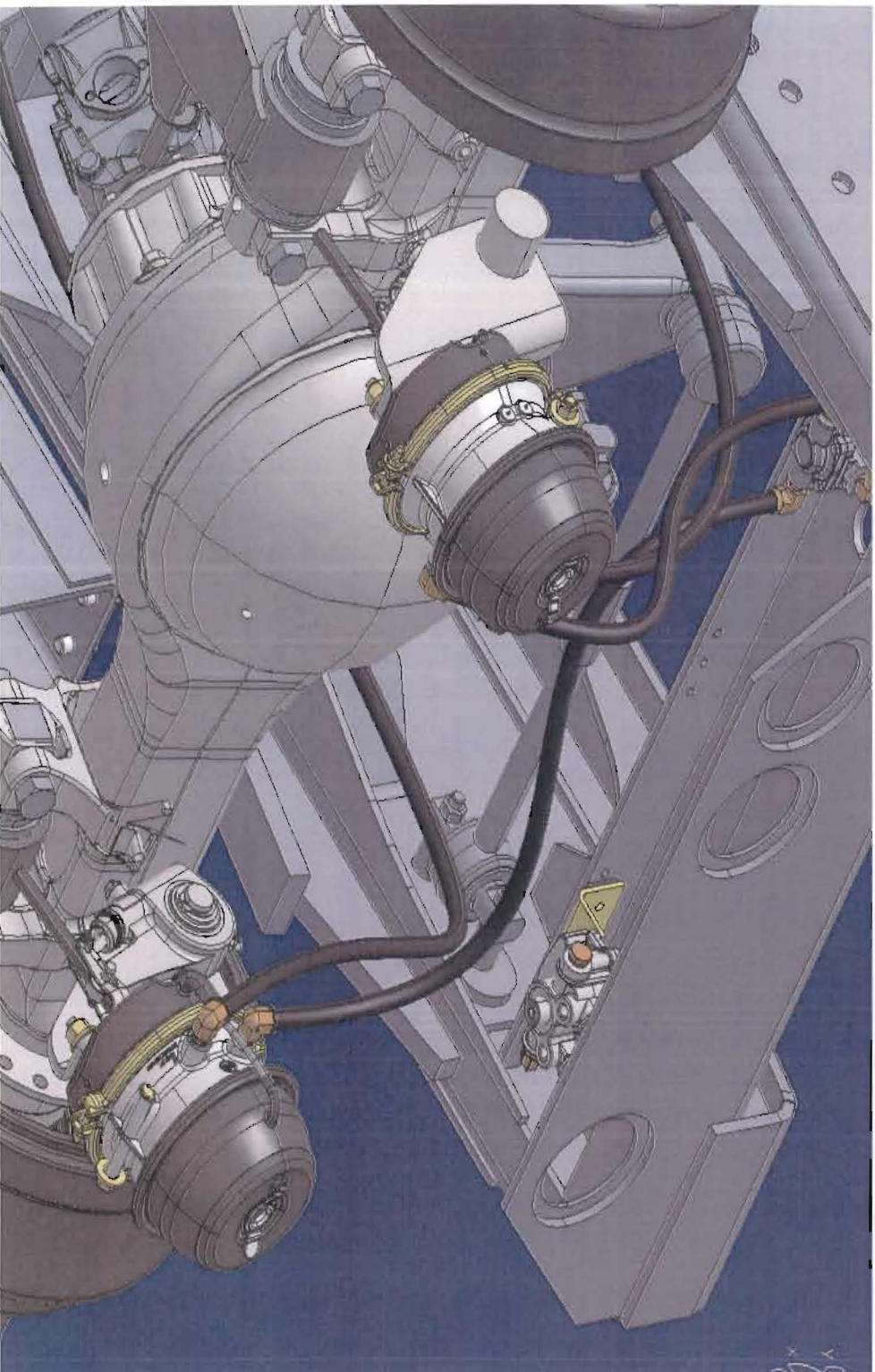
Left Hand Rear Wheel Max Collapsed



Left Hand Rear Wheel Max Extended



Right Hand Wheel Max Collapsed



Right Hand Wheel Max Extended

