

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

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NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MEETING

Howell, Rosa (NHTSA)

From: Peters, Michael C (Mike)
Sent: Thursday, February 23, 2012 12:09 PM
To: Nelson, Tom E; Van Laar, Richard L (Rick); Fox, Bob E
Cc: Legg, Timothy A
Subject: Fw: Meeting of February 28, 2012; cancel with hopeful reschedule

Importance: High

From: Dise, David E. [<mailto:David.Dise@montgomerycountymd.gov>]
Sent: Thursday, February 23, 2012 10:58 AM
To: dennnis_moughemer@nav-international.com <dennnis_moughemer@nav-international.com>; Peters, Michael C (Mike); srohrer@rohrerbus.com <srohrer@rohrerbus.com>; kellenberger@rohrerbus.com <kellenberger@rohrerbus.com>; jresnik@championbus.com <jresnik@championbus.com>; lees@championbus.com <lees@championbus.com>
Cc: Stickley, Keith <Keith.Stickley@montgomerycountymd.gov>; Schatz, James <Jim.Schatz@montgomerycountymd.gov>; Conlon, Scott <Scott.Conlon@montgomerycountymd.gov>; Markovs, John <John.Markovs@montgomerycountymd.gov>; Foncannon, Scott <Scott.Foncannon@montgomerycountymd.gov>
Subject: Meeting of February 28, 2012; cancel with hopeful reschedule

It is my understanding from the e-mail traffic I have read that International, Rohrer and Champion are either reluctant or unwilling to meet with the County if our attorneys are present. Let me begin by stating that we have no problem with any party to this discussion bringing their attorney along. However, since there is some anxiety over this issue we will cancel the meeting for the 28th and try to reschedule for a date and time when attorneys and staff can meet. Let me be perfectly clear on this matter; the County will not meet unless our attorneys are present.

Gentlemen; over a brief and recent period of time Montgomery County has experienced five Champion bus fires, with four of these being total losses. By the grace of God, we have had no serious injury or loss of life resulting from these fires. Nevertheless, this is simply unsatisfactory. I assumed that we would all like to discuss this matter for two basic reasons; (1) buses are not generally supposed to burst into flames, and (2) we are all interested in knowing why this is happening with great frequency resulting from apparent different causes on a particular make and model of bus made by International and Champion and sold through Rohrer. From discussions with other owners of Champion buses we know that our experiences with mechanical failures is not unique, although at this time we appear to be the only owner of burned out buses.

Please let me know if you are willing to meet. If so, the County will happily make the arrangements.

David Dise
Director, Department of General Services
Montgomery County, MD
101 Monroe Street
Rockville, MD 20850
240-777-6191
david.dise@montgomerycountymd.gov

Howell, Rosa (NHTSA)

From: Fox, Bob E
Sent: Wednesday, February 22, 2012 10:58 AM
To: Van Laar, Richard L (Rick)
Subject: Fwd: Meeting with Rohr, Champion and International Representatives

FYI on email from champion to MC

Sent from my iPhone

Begin forwarded message:

From: John Resnik <jresnik@championbus.com>
Date: February 22, 2012 9:44:56 AM CST
To: John Resnik <jresnik@championbus.com>, "Peters, Michael C (Mike)" <Mike.Peters@Navistar.com>, "'jim.schatz@montgomerycountymd.gov'" <jim.schatz@montgomerycountymd.gov>, "'kellenberger@rohrerbus.com'" <kellenberger@rohrerbus.com>, "Fox, Bob E" <Bob.Fox@Navistar.com>, "David.Dise@montgomerycountymd.gov" <David.Dise@montgomerycountymd.gov>
Cc: "'aimanse@eldorado-ca.com'" <aimanse@eldorado-ca.com>
Subject: RE: Meeting with Rohr, Champion and International Representatives

Mr. Dise –

At Mr. Schatz' request, I am forwarding this directly to you as well.

As noted below, International personnel will not be able to attend because attorneys will be present.

We certainly want to assist with any issues; therefore, I recommend a conference call to discuss the issues before we meet face to face.

I am unable to meet on the 28th, but will be glad to set up a future meeting, once we are properly prepared to discuss in person.

Thanks –

John

From: John Resnik
Sent: Tuesday, February 21, 2012 11:12 AM
To: 'Peters, Michael C (Mike)'; 'jim.schatz@montgomerycountymd.gov'; 'kellenberger@rohrerbus.com'; Fox, Bob E
Cc: 'aimanse@eldorado-ca.com'
Subject: RE: Meeting with Rohr, Champion and International Representatives

All –

I agree with Mike. And as I understand, Mike may not be able to attend if there are to be attorneys present.

It seems to make more sense to have a conference call before we talk face to face so we can be prepared to discuss the issues.

Right now, my travel schedule is overbooked, and it may not be possible for me to attend the meeting on the 28th. Can we set up a conference call to get the issues out on the table, then we can set up a face to face meeting when we can be prepared to discuss them?

Jim – I'm not familiar with the chain of command at your organization, so if you could forward this to whomever you feel is appropriate, I would appreciate it.

John

From: Peters, Michael C (Mike) [<mailto:Mike.Peters@Navistar.com>]
Sent: Tuesday, February 21, 2012 9:19 AM
To: 'jim.schatz@montgomerycountymd.gov'; 'kellenberger@rohrerbus.com'; John Resnik; Fox, Bob E; Peters, Michael C (Mike)
Subject: Re: Meeting with Rohr, Champion and International Representatives

I would like to see an agenda prior to the meeting. I would like to be ready for any questions you may have. Please e-mail me a copy as soon as possibly.

Thank you
Mike Peters

From: Schatz, James [<mailto:Jim.Schatz@montgomerycountymd.gov>]
Sent: Tuesday, February 21, 2012 08:07 AM
To: Peters, Michael C (Mike); Ken Ellenberger <kellenberger@rohrerbus.com>; jresnik@championbus.com <jresnik@championbus.com>
Subject: FW: Meeting with Rohr, Champion and International Representatives

Gentlemen,
I have been asked to pass this information on to you. Please read below.

Thanks,
Jim Schatz
Division of Fleet Management
Montgomery County Department of General Services
16630 Crabbs Branch Way
Rockville, Md. 20855
Office 240-777-5697
Cell - 240-372-2972
jim.schatz@montgomerycountymd.gov

From: Dise, David E.
Sent: Thursday, February 16, 2012 06:23 PM
To: Stickley, Keith; Conlon, Scott
Subject: FW: Meeting with Rohr, Champion and International Representatives

Please follow up...

David Dise
Director, Department of General Services
Montgomery County, MD
240-777-6191
david.dise@montgomerycountymd.gov

-----Original Message-----

From: Markovs, John

Sent: Thursday, February 16, 2012 4:11 PM

To: Dise, David E.

Subject: Meeting with Rohr, Champion and International Representatives

David:

Please remember to have your staff notify Rohr, Champion and International that the Office of the County Attorney will be present at the meeting and that they have the option of bringing their legal counsel to the meeting. They all need to be told in advance that the County will have its lawyers at the meeting.

John P. Markovs
Associate County Attorney
Division of Finance and Procurement
Office of the County Attorney
101 Monroe Street, 3rd Floor
Rockville, Maryland 20850
Office (240) 777-6725
Cell (301) 525-3643
Fax (240) 777-6706
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Howell, Rosa (NHTSA)

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To: 'jim.schatz@montgomerycountymd.gov'; 'kellenberger@rohrerbus.com'; 'JResnik@Championbus.com'; Fox, Bob E; Peters, Michael C (Mike)
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John P. Markovs
Associate County Attorney
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e-mail: john.markovs@montgomerycountymd.gov

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NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

7W493507

Stahl, Doug R

From: Avery, Duane R
Sent: Wednesday, June 06, 2007 2:09 PM
To: Stahl, Doug R
Cc: Avery, Duane R
Subject: FW: Need info on 3200 IM park brake system

When the vehicle left Springfield, the buzzer and light was programmed to activate at approximately 67 psi

The pressure/spring apply curve is on drawing 2005283c93.

It is based on force verse stroke. Note 1 has the release pressure information.

Duane R. Avery
Brake Systems
Chassis Systems Engineering
International Truck and Engine
(260)461-7523 desk
(260) 438-5021 cell

From: Stahl, Doug R
Sent: Tuesday, June 05, 2007 5:23 PM
To: Avery, Duane R
Subject: Need info on 3200 IM park brake system

Duane,

I'm investigating a fire related to the parking brake system that occurred during delivery of a 3200 Low Floor "Integrated Mobility" bus and I need a bit of info.

The 3200 bus (VIN : 1HVBTAFM67W [REDACTED]) uses 04GAY park brake feature which is the QSP trans mounted, spring actuated – air release can with NGV air system.

I need to know at what air pressure the low air pressure warning would engage and the air pressure/spring apply curve for the canister.

Thanks.

Doug Stahl

INTERNATIONAL Truck and Engine Corporation
Truck Reliability Center / Product Integrity
3033 Wayne Trace, Fort Wayne, IN 46806
260-461-1862 Phone, -1942 Fax
Doug.Stahl@NAV-International.com



= MAIN CHARACTERISTIC

1

DIMENSION SHOWN APPLIES TO FULLY CAGED CONDITION
SHIPPING DIMENSION: 2.25

[57.2]

DIMENSIONS IN () ARE FOR REFERENCE ONLY

DIMENSIONS IN

[] ARE METRIC

LUBRICATE SEALS AND SLIDING COMPONENTS PER HALDEX SPEC ESM-3083

MAXIMUM ACTUATOR VOLUME = 51.0 CU IN.

[836 cc]

MAXIMUM WORKING PRESSURE = 200 PSI

[1379 kPa]

MAXIMUM RELEASE PRESSURE = 64 PSI

[441 kPa]

MINIMUM HOLD-OFF PRESSURE = 58 PSI

[400 kPa]

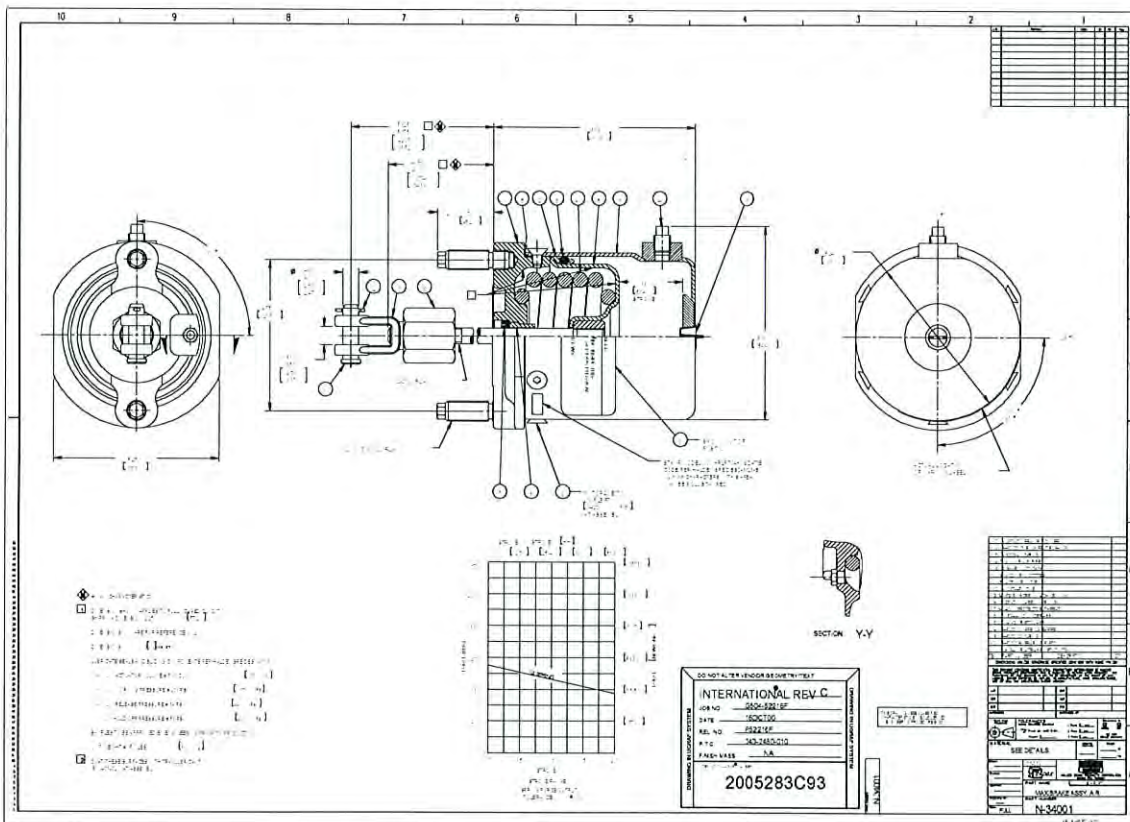
SAMPLES TO BE APPROVED BY ENGINEERING PRIOR TO PRODUCTION

UNIT WEIGHT = 15.0 LBS

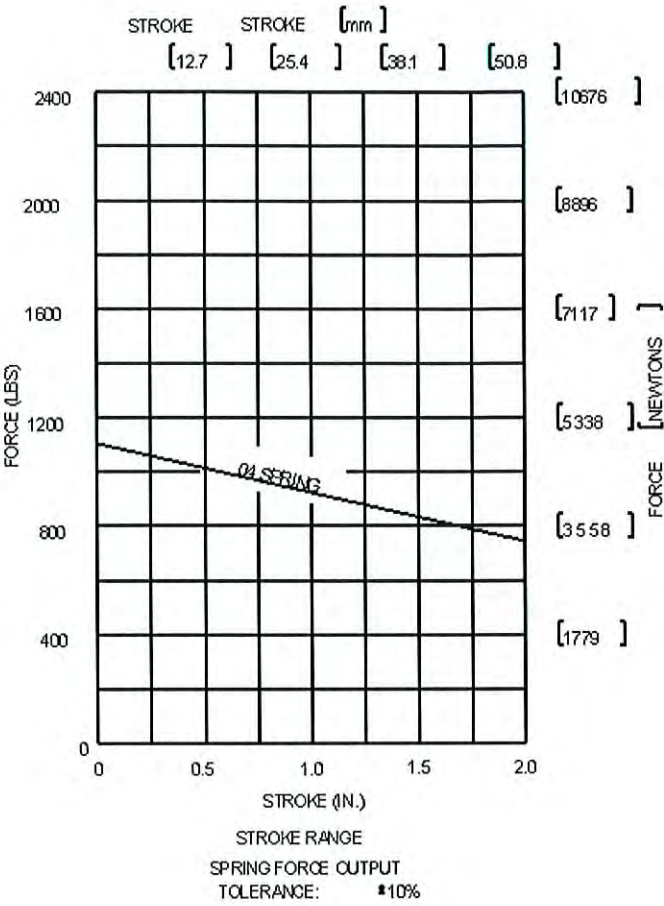
[6.8 kg]

2

COAT THESE SURFACES WITH TR-3 LUBRICANT
(P/N 4034021) AT ASSEMBLY

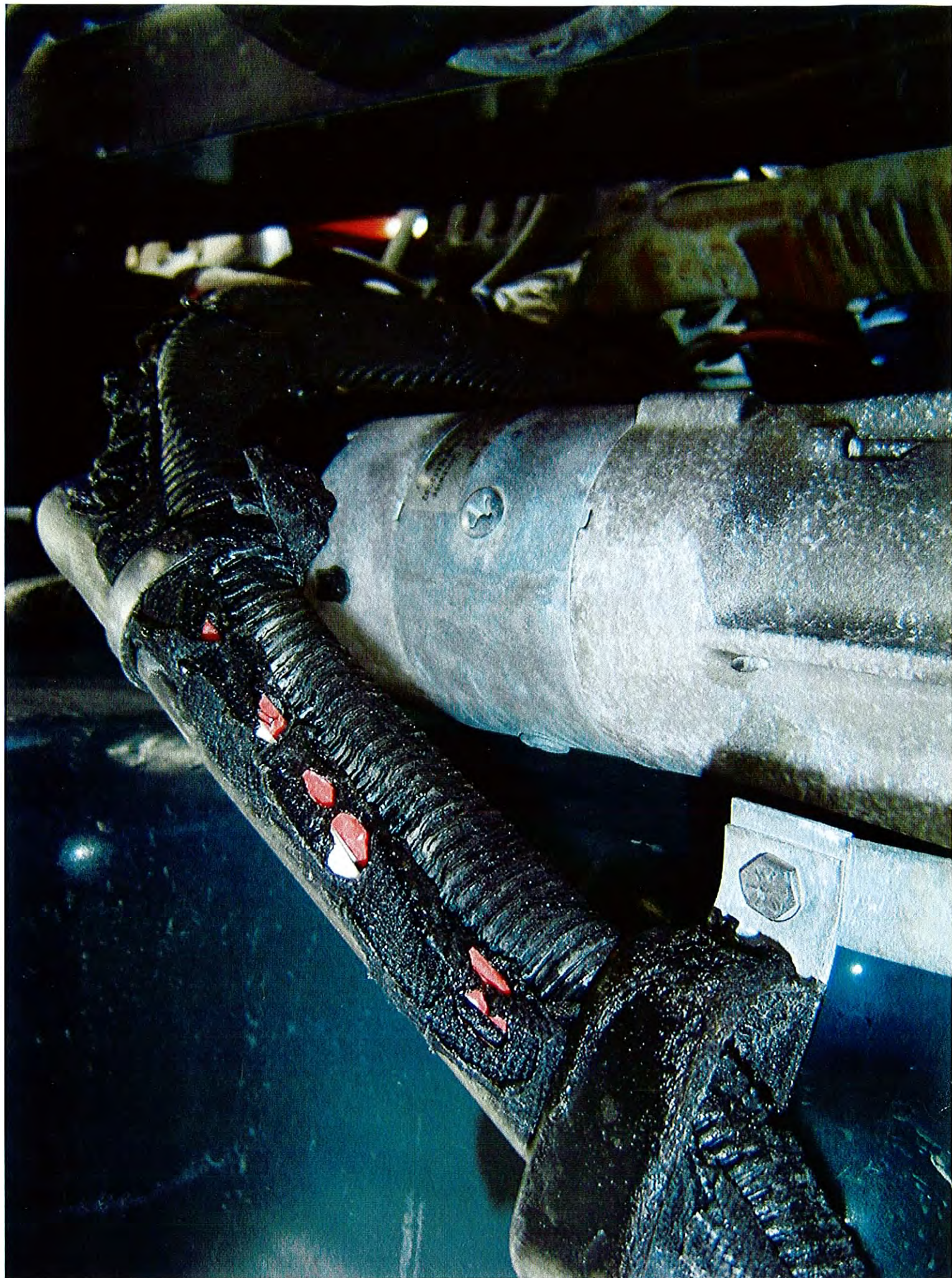


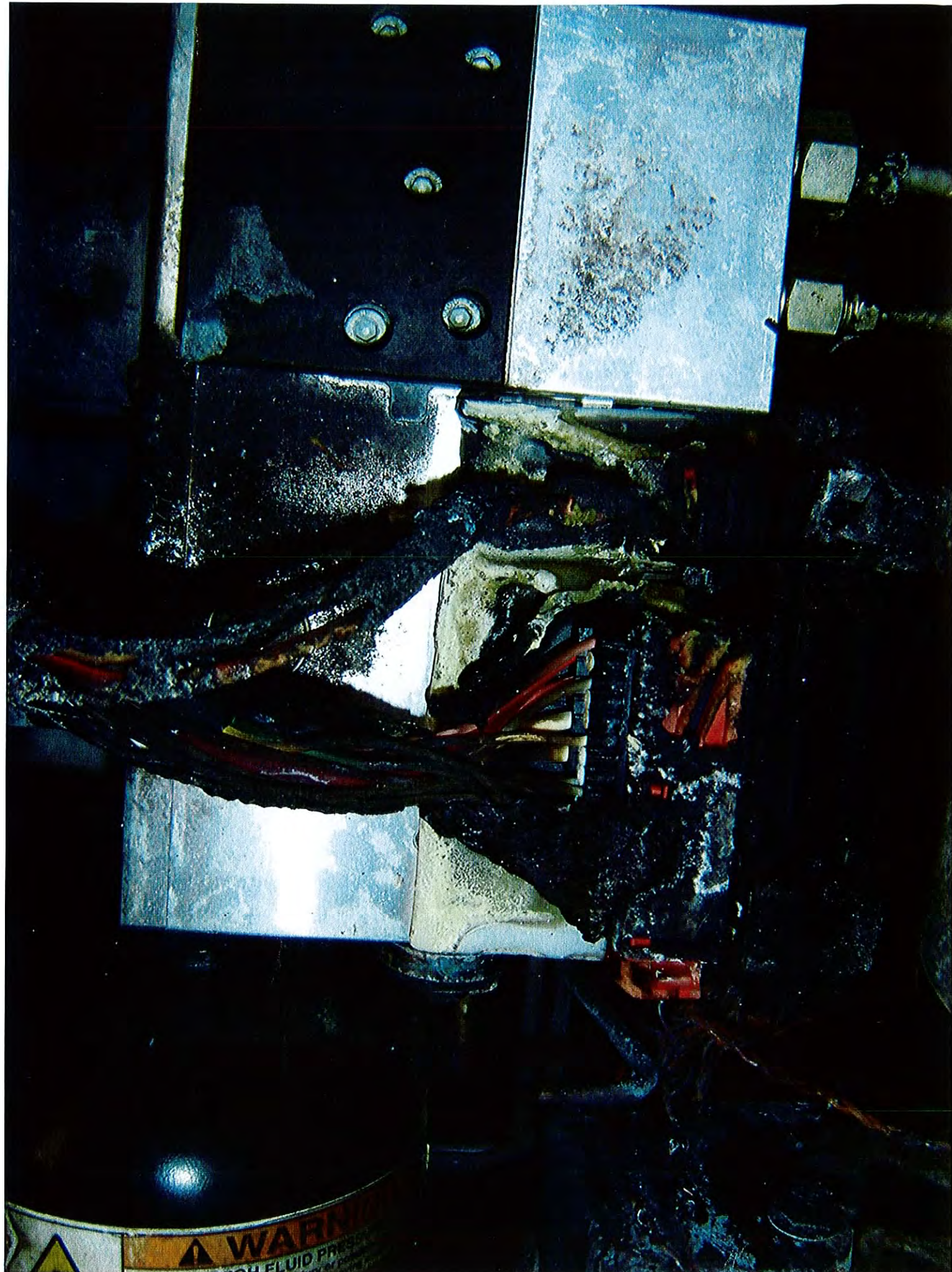
AT ASSEMBLY

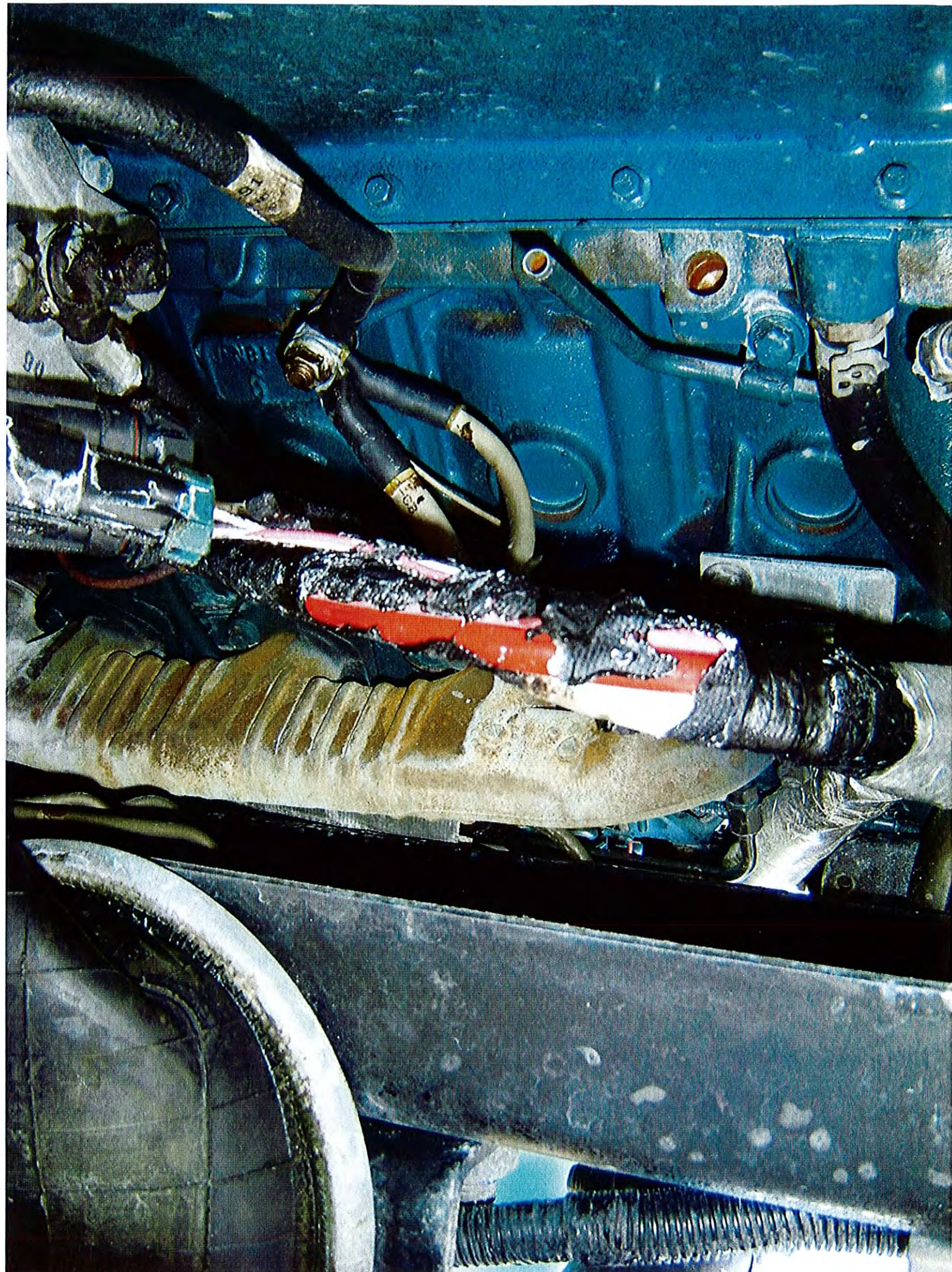


DRAWING IN UGR AF SYSTEM	DO NOT
	INT
	JOB NO
	DATE
	REL. N
	P.T.O.
	FINISH
	INTERM







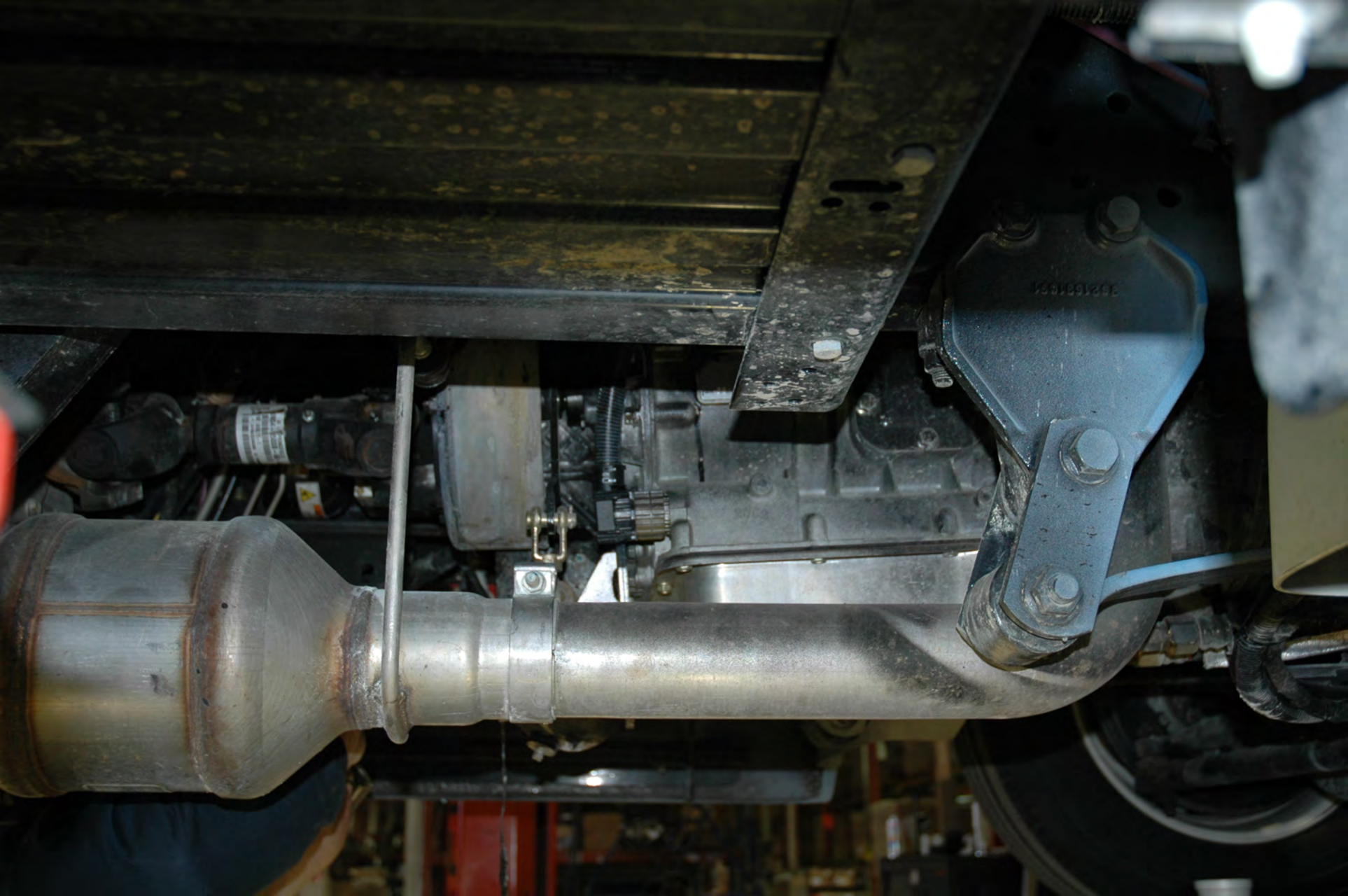




W. P. Ket.
built at Shell













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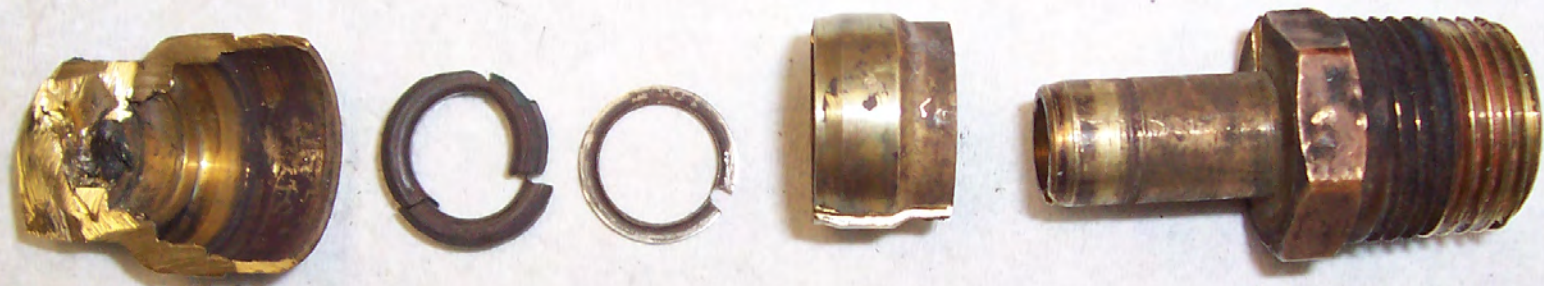
NAVISTOR TRUCK GROUP

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MC Unit 5218







PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5218

2007 Champion Air System
Testing Report

2007 Champion / International Bus Air System Testing Report

February 24, 2001

In a continuing effort to evaluate all potential areas of failures that could be a possible cause of the bus fire involving 075218, Ric Willard of the National Highway Traffic Safety Administration (NHTSA) and [REDACTED] Fleet Management (Fleet) performed air system testing on a bus from the 2007 Champion / International bus fleet. The testing was to evaluate the ability of the air system to maintain an air supply in the event of a breach in the parking brake air supply line between the park brake application valve and the park brake chamber.

The testing took place on February 24, 2001 at Fleet's EMOC shop located at [REDACTED] Rockville, Md. [REDACTED]. Bus 075196 was used for the testing. 075196 is part of the 2007 Champion / International bus order and is an exemplar bus to 075218.

Bus Body: 2007 Champion EZ-Trans
Bus Chassis: 2007 International 3200 IM
Engine: International VT365
Engine Curb Idle: 600 RPM
Engine High Idle: 2800 RPM No Load
Air Compressor: Bendix Tu-Flo 550
Air supply line from Compressor to air tank: 5/8' O.D. Plastic Brake hose
Air supply line from application valve to Chamber: 3/8' O.D. Plastic Brake hose

The goals of the testing were to evaluate the following:

- a. Is the air system cable of sustaining the supply tank system pressure when a minor or major leak occurs in the parking brake system
- b. Will the system maintain enough pressure to keep the low air light, audible alarm and parking brake light off
- c. If not, how long will it take the air system to bleed off enough to activate the low air light and alarm and parking brake light
- d. Could a leak cause the parking brake system to apply partially or full and not activate any of the warning devises

An air conditioning manifold set and a homemade shutoff device was fabricated and use for the testing. (see pictures below)



The air conditioning manifold set from the fully closed position to the fully open position is 2 $\frac{3}{4}$ turns. For purposes of this test the following definitions will be used,

Minor leak – 1 $\frac{1}{4}$ turns open from the fully closed position

Major leak – 2 $\frac{3}{4}$ turns open from the fully closed position

Wide open – the 3/8 supply line at the parking brake chamber was disconnected, as if the line was fully breached.

All air leaks in this testing were simulated at the point where the air line fitting attaches to the parking brake chamber.

Prior to testing the bus air system was tested for operation and leakage according to DOT standards for driver's pre-trip inspections.

The following is the results of that testing.

Test 1

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and no air leaks
33 seconds

Test 2

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and no air leaks
22 seconds

Test 3

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak
28 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 4

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak

Air pressure dropped to 80 psi and sustained that pressure for 1 minute until test was ended. No lights or alarms were activated.

Test 5

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak
18 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 6

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and major air leak
14 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 7

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and major air leak

Air pressure dropped to 82 psi and sustained that pressure for 1 minute until test was ended. No lights or alarms were activated.

Test 8

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and major air leak

19 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 9

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

10 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 10

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

11 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 11

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

18 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 12

Engine running at 700 rpm air system at 90 psi with a minor leak

19 seconds for partial parking brake application and simultaneous low air light and audible alarm at 75 psi.

Test 13

Engine running at 1000 rpm air system at 90 psi with a minor leak

22 seconds for partial parking brake application and simultaneous low air light and audible alarm at 75 psi.

Test 14

Engine running at 1500 rpm air system at 90 psi with a minor leak

Dropped to 79 psi and maintained pressure until test ended at 1 minute. No push rod movement.

Test 15

Engine running at 1500 rpm air system at 90 psi with a major leak
Dropped to 80 psi and maintained pressure until test ended at 1 minute. No push rod movement.

Note 1: Test 12 through 15 are not necessary with a wide open air leak because we know with the air line fully disconnected from the chamber that the parking brake is fully applied.

Note 2: With the engine at a steady state of 1500 rpms the air leaks could be modified at varying levels from minor to major so that partial brake application of up to 1/4" inches could be maintained, without the driver's low air light, audible alarm, or parking brake light activation.

Addendum to the above testing

On March 2, 2011, Jim Schatz of Montgomery County Fleet Management and Mike Peters of Navistar IC Bus conducted a final test on another exemplar bus (075207) from the 2007 Champion/ International bus fleet. The testing took place at Fleet's [REDACTED] [REDACTED] Rockville, Md. [REDACTED]. Only one test was preformed.

The goal of the test was to see if the buses air system would build air pressure from 40 psi (just above the pressure when the parking brake application valve will automatically apply) to 75psi and turn off the low air light and audible alarm.

The test revealed that at an engine speed of 2500 rpm with the parking brake supply line fully disconnected at the chamber the buses air system was able to build the air pressure and deactivate the low air warning devices in 1 minute and 23 seconds. The parking brake light went out as soon as the parking brake application valve was pushed in and remained out for the duration of the test.

Conclusion

Testing demonstrated that it is possible to have a partial or full parking brake application at certain engine RPMs no matter the size of the leak in the parking brake air circuit without warning to the driver.

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

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MC Unit 5218

075218 Equipment records

Company:	001
Equipment Number:	075218
Year:	2007
Make:	INTERNATIONAL ; INTERNATIONAL
Model:	3200 IM : 3200 INTEGRATED MOBILITY
Color:	BLUE/LT : BLUE LIGHT BLUE
Location:	
Meters:	M: 73875;
License:	
Title:	
Serial Number:	1HVBTA6M67W
Employee:	0400 : AGENCY CODE FOR BUSES MANUAL FUEL ENTRIES
Shop:	STS : STS-Small Bus Transit Shop
Site:	
Class:	9HCU : BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
Department:	51815 : DOT-TRANSIT SERVICES-Ride-On Small Bus Service
EAC:	02
Acquire Date:	05/26/2007
Acquire Cost:	0.00
Service Date:	07/26/2007
Life Expectancy (Months):	84
Dispose Date:	
Dispose Cost:	0.00
Dispose Status:	
Trans Size:	AL 2000
Engine:	INT 6L 365
Tire Size 1:	245/70R19.5
Tire Size 2:	245/70R19.5
GVW:	23500
Fuel Types:	D, ,
Keys:	Z248,
Repl.By:	
Bill Code:	B
Comment1:	INTERNATIONAL TEST BUS
Comment2:	DO NOT REPAIR AXLE/BRAKES-NOTIFY SCHATZ
Comment3:	REPLACED 015129

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

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MC Unit 5218

075218 Maintenance records

1.1.10 - 12.30.10

WO Company:001 [REDACTED]
 WO Department:51815 00T-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop:STS STS-Small Bus Transit Shop

Equipment: 075218 License: [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTA6M67K [REDACTED]
 Model: 3200 IM Misc. Field:
 Location:

CUSTOMER COPY

Date In: 08/13/2010 07:44

Date Out: 11/12/2010 11:06

WO Total Cost: 161.27

WO Status: C

Last [REDACTED]

Bill Code: B

Last WO Date: 12/10/2010

Operator: JSZ

Department: 51815:00T-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTO
M	71681		M	73864	73864

PM SERVICE

Due	Type	Type Description
77857	A	A PM SERVICE
77857	B	B PM SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
-----	------	-----------	----	----	-----	-------------	------------

SUBLET REPAIRS

Vendor	Date Back	RTY	Description
KING34CR	10/15/2010	3014BR0165BN	VENDOR REPAIR: (SUBLET) Frame Box Battery Repair
	Parts: 0.00	Labor: 0.00	Other: 0.00 Tax: 0.00 Sublet Cost: 57.50
KING34CR	09/02/2010	3032SY0155BN	VENDOR REPAIR: (SUBLET) Cranking System SwitchBatt Mast Install
	Parts: 0.00	Labor: 0.00	Other: 0.00 Tax: 0.00 Sublet Cost: 103.77

PARTS ISSUED

Str	Part Number	Part Description	QTY	Unit Cost	Total Cost
-----	-------------	------------------	-----	-----------	------------

MISCELLANEOUS COSTS

Code	Description	Misc. Cost
------	-------------	------------

CREDITS

Date	Description	Credit Amount
------	-------------	---------------

Work Order Total: 161.27

Parts: 0.00	Labor: 0.00	Sublet: 161.27	Misc Cost: 0.00	Credit: 0.00
-------------	-------------	----------------	-----------------	--------------

NOTES

Took to Kingmor for Telma Retarder install - 08/13/2010 @ 07:43:51 - jgs

Kingmor -- Installed battery master switch - jgs - 09/22/2010 @ 12:32:05

Kingmor - Updated Telma power cable and circuit protection.
 Repaired battery box to prvent batteries from moving around - jgs - 11/12/2010 @ 09:23:50

WO Department: 508010004 DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop: STS STS-Small Bus Transit Shop

Equipment: 075218 License: [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTAFM67H [REDACTED]
 Model: 3200 IM Misc. Field:
 Location:

CUSTOMER COPY

Date In: 09/08/2009 19:41

Date Out: 09/25/2009 18:13

WO Total Cost: 4196.47

WO Status: C

Last WO [REDACTED]

Bill Code: B

Last WO Date: 12/10/2010

Operator: SF

Department: 51815:DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: 001 [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
M	71678		M	73864	73864

PH SERVICE

Due	Type	Type Description
77857	A	A PH SERVICE
77857	B	B PH SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
865	09/25/2009	1.52333	N	1	2013DJ1155BN	GENERAL VEHICLE REPAIR Brake Group Disc Pad Brake Install	92.57
865	09/24/2009	1.38083	N	1	2019HS0155BN	GENERAL VEHICLE REPAIR Hub,Wheel Hub Wheel Assem Install	83.91
865	09/23/2009	0.18472	N	1	2013RZ1115BN	GENERAL VEHICLE REPAIR Brake Group Rotor Brake Hyd Replace Rear	11.23
861	09/25/2009	1.48083	N	1	2019HS0155BN	GENERAL VEHICLE REPAIR Hub,Wheel Hub Wheel Assem Install	89.99
851	09/24/2009	0.69861	N	1	2013DJ1160BN	GENERAL VEHICLE REPAIR Brake Group Disc Pad Brake Remove	42.45
851	09/24/2009	0.81000	N	1	2013C11160BN	GENERAL VEHICLE REPAIR Brake Group Caliper Brake Remove	49.22
851	09/24/2009	0.98583	N	1	2013000020BN	GENERAL VEHICLE REPAIR Brake Group System Inspect	59.91
844	09/25/2009	0.55528	N	1	2013000001BN	GENERAL VEHICLE REPAIR Brake Group System Diagnosis	33.74
844	09/25/2009	0.99972	N	1	2TV0UNI030BN	GENERAL VEHICLE REPAIR Total Vehicle Unit Test Drive	60.75
844	09/25/2009	3.07556	N	1	2013CU0320BN	GENERAL VEHICLE REPAIR Brake Group Cyl BrakeMaster Bleed	186.90
843	09/25/2009	3.20028	N	1	2013000320BN	GENERAL VEHICLE REPAIR Brake Group System Bleed	194.48
835	09/23/2009	1.44417	N	1	2017TH0160BN	GENERAL VEHICLE REPAIR Tire / Tube Tire Remove	87.76
835	09/23/2009	0.59722	N	1	2017TH0160BN	GENERAL VEHICLE REPAIR Tire / Tube Tire Remove	36.29
835	09/23/2009	0.30472	N	1	2007HE0165BN	GENERAL VEHICLE REPAIR Glass-Component Mirror Repair	18.52
835	09/23/2009	0.11194	N	1	2034LN2165BN	GENERAL VEHICLE REPAIR Light System Light Interior Repair	6.80
835	09/23/2009	0.86944	N	1	2034LN1165BN	GENERAL VEHICLE REPAIR Light System Light Exterior Repair	52.84
835	09/23/2009	1.12611	N	1	ICCKUNI020BS	INSPECTION Circle Chk Insp Unit Inspect	68.43
820	09/09/2009	1.89278	N	1	2TV0UNI210NN	GENERAL VEHICLE REPAIR Total Vehicle Unit Transport/Move	115.02
816	09/25/2009	7.17556	Y	1	2013DJ1115BN	GENERAL VEHICLE REPAIR Brake Group Disc Pad Brake Replace Rear	654.09

REPAIRS PERFORMED

HID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
816	09/24/2009	1.25583	Y	1	2013DJ11158N	GENERAL VEHICLE REPAIR Brake Group Disc Pad Brake Replace Rear	114.48
816	09/24/2009	5.81778	Y	1	2013DJ11158N	GENERAL VEHICLE REPAIR Brake Group Disc Pad Brake Replace Rear	530.32

SUBLET REPAIRS

Vendor	Date Back	RTY	Description
KNEA50TU	09/23/2009	V047S60100NN	VENOOR WARRANTY REPAIR Emission System Sensor Replace
Parts: 0.00	Labor: 0.00	Other: 0.00	Tax: 0.00 Sublet Cost: 0.00
KNEA50TU	09/23/2009	V047S62100NN	VENDOR WARRANTY REPAIR Emission System Sensor EGR Replace
Parts: 0.00	Labor: 0.00	Other: 0.00	Tax: 0.00 Sublet Cost: 0.00
KNEA50TU	09/23/2009	3032B000708N	VENDOR REPAIR: (SUBLET) Cranking System Battery Charge
Parts: 0.00	Labor: 56.00	Other: 30.60	Tax: 0.00 Sublet Cost: 86.60

PARTS ISSUED

Str	Part Number	Part Description	QTY	Unit Cost	Total Cost
N	ECV7561SITT	LAMP RED BRAKE LED REAR 07 INTL	1	23.27	23.27
N	2594596c1	ROTOR BRAKE REAR 07 INTL **ONLY**	2	147.33	294.66
N	pfh078611	PAD BRAKE REAR-07 INT'L	1	92.00	92.00
N	38776	SEAL REAR WHEEL 07 INT'L	2	30.17	60.34
N	3566166C1	GASKET AXLE REAR 07 INTERNATIONAL	2	3.19	6.38
N	1003	BULB 1003 12V	1	0.70	0.70
N	2589555c1	HOSE BRAKE REAR ROADSIDE L/S 07 INT	1	18.71	18.71
N	2589556c1	HOSE BRAKE REAR CURB SIDE(R/S) 07 INT	1	18.67	18.67
N	2593419c91	CALIPER LEFT/RIGHT REAR 07 INTL	2	286.28	572.56
N	fp39520	RACE OUTER REAR WHEEL 01/02 & 07 INT'L	2	17.32	34.64
N	hd209	KIT BEARING INNER REAR WHEEL 07 INT'L	2	57.01	114.02
N	470422C1	WASHER HUB LOCK REAR 07 INTL	2	3.13	6.26
N	FP39585	BEARING OUTER REAR WHEEL 01-02 INT'L	1	19.86	19.86
N	hd209	KIT BEARING INNER REAR WHEEL 07 INT'L	1	57.01	57.01
N	38776	SEAL REAR WHEEL 07 INT'L	1	30.17	30.17
N	470422C1	WASHER HUB LOCK REAR 07 INTL	1	3.13	3.13
N	2509252c92	KIT CALIPER SLIDE PIN 01-07 INT	2	42.06	84.12
N	2587199C1	CAP MASTER CYLINDER 07	1	46.11	46.11
N	3506	CLAMP HOSE #6 7/16"-7/8"	2	0.34	0.68
N	39590	BEARING OUTER REAR CONE 07 INTL	2	15.94	31.88

MISCELLANEOUS COSTS

Code	Description	Misc. Cost
SHOP/ENV	MISC SHOP SUPPLIES/ENVIRONMENTAL CHARGES	5.00

CREDITS

Date	Description	Credit Amount
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Work Order Total: 4196.47

Parts: 1515.17	Labor: 2589.70	Sublet: 86.60	Misc Cost: 5.00	Credit: 0.00
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NOTES

[] AT TIMES ENGINE WILL LOOSE ACCELERATION AND WILL NOT GO FORWARD. ENGINE AND STOP LIGHTS COMES ON
 NOTE: SEVERAL ATTEMPTS HAVE BEEN MADE TO REMEDY THIS COMPLINT UNSUCCESSFULLY. BUS WILL BE REFERRED TO VENDOR, SHANN 09/08/2009 @ 19:43:52

note 9/9/09 JL

@@@@@@@@

deliver bus to K-Neal in gaithersburg for warranty repairs

@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@

@

[] REAR AC "BF" CODE SETS AND AC INOP

[835] CIRCLE CHECK

[] REPLACE REAR BRAKES

[851] REMOVE TIRE AND UNBOLTED CALIPERS, REMOVED
PADS

Note: Rotors are in good conditon and no excessive play on hubs.

SLIDING PINS ON BOTH SIDES ARE SMOOTH AND FREE and
do not need to be replaced; Shann 9-24-09 4:01am

[851] CLEAN, LUBE AND REINSTALL ORIGINAL SLIDING PINS

[816] GOT SERVICE MANUAL AND BLEED PROCEDURE AND
EMAIL FROM CC

[816] NOTICED THAT RIGHT REAR ROTOR HAD HEAT
DAMAGE. WHEN I REMOVED THE HUBS I NOTICED METAL
FLAKES IN THE OIL AND SCORING OF THE BEARINGS SO I
REPLACED INNER AND OUTER BEARINGS ON BOTH HUBS
PER CC.

[816] REMOVE LEFT AND RIGHT REAR HUBS

[816] INSTALLED NEW BEARINGS, ROTORS AND SEALS ON
BOTH REAR HUBS.

[816] FOLLOWING BRAKE BLEED PROCEDURE PULL TWO 30
AMP FUSES, CONNECTED LAPTOP, VARIFIED FLUID LEVEL,
DEPRESSURIZED SYSTEM, LAPTOP SHOWED 18 PSI ON
FRONT AND REAR ACCUMULATORS WOULD NOT GO LOWER,
TURNED KEY OFF, REMOVED LAPTOP AND DISCONNECTED
BATTERIES, VARIFIED BRAKE FLUID AT MAX.

[816] BEGAN REMOVING BOTH REAR BRAKE LINES BUT DID
NOT FINISH, RAN OUT OF TIME BEFORE LUNCH.

[816] AFTER LUNCH FINISHED REMOVING REAR BRAKE LINES
AND CONNECTED RIGHT REAR LINE TO LINE COMING FROM
CONTROL UNIT AND TO RIGHT REAR CALIPER. HOLD DOWN
CLAMPS STILL NEED TO BE CONNECTED AND REST OF THE
PARTS NEED TO BE INSTALLED. TIME TO LOG OUT. HAD
DIFFICULTY REMOVING OLD LINES DUE TO RUSTED

BOLTS.-----861-----Installed r/r hub assembly onto bus, which
already had rotor, bearing races and seal installed onto it. Torqued
hub nut, installed r/r axle, and filled hub with gear oil.----865---
Attempted to install l/r hub onto bus. Inner bearing does not want
to slide into place on spindle ass.. C.C. Keith instructed us both to
move on to another bus for now.

[816] 9/25/09 WHEN I CLOCKED IN WAS ASSIGNED TO THIS
JOB. RIGHT HUB WAS INSTALLED BUT NOT LEFT, THE LEFT
INNER BEARING WAS STICKING. I USED 120 GRIT
SANDPAPER TO POLISH BEARING AND IT WENT ON THE
SPINDLE OK. I INSTALLED BEARING IN LEFT HUB, INSTALLED
NEW SEAL AND INSTALLED HUB ON LEFT SIDE.

[816] REPLACE LEFT AND RIGHT REAR CALIPERS, CHECKED
SLIDE PIN PER EMAIL AND SLIDE PINS WERE OK.

[816] INSTALL PADS. HAD TO STOP AT THIS POINT DUE TO
LACK OF TIME

[843,844] BLEED BRAKE SYSTEM AS PER ISIS AND FILL OUT
CHECK SHEET.

[844] install left rear tires

[843] install right rear tires

[835] REPAIR RIGHT REAR BRAKE LIGHT

[835] REPAIR INTERIOR LIGHT

[835] REPOSITION CROSS OVER MIRROR

[844] ROAD TEST for 20 miles take rotors temps

[caliper188, rotor151] left front temp

[caliper193, rotor146] right front temp

[caliper111, rotor is difficult when not on a lift] left rear temp
[caliper118] right rear temp

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POSTED K-NEAL INVOICE BW41985 10/30/09 JL . CLOSED
WORK ORDER .

WO Company: 001 [REDACTED]
 WO Department: 51815 DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop: STS STS-Small Bus Transit Shop

Equipment: 075218 License: [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTA6M67W [REDACTED]
 Model: 3200 IM Misc. Field:
 Location:

CUSTOMER COPY

Date In: 09/09/2010 09:54

Date Out: 00:00

WO Total Cost: 1745.00

WO Status: N

Last WO# [REDACTED]

Bill Code: B

Last WO Date: 12/10/2010

Operator: JL

Department: 51815:DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: 001 [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
M	71857		M	73864	73864

PM SERVICE

Due	Type	Type Description
77857	A	A PM SERVICE
77857	B	B PM SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
852	09/14/2010	0.86667	N	1	1264000165BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Wheelchair lift System Repair	51.96
852	09/14/2010	0.65694	N	1	1264000190BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Wheelchair lift System Wiring Repair	39.38
852	09/13/2010	2.34333	N	1	1122000015BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Door Bus System PerformanceTest	140.48
852	09/13/2010	0.28111	N	1	1043PB0165BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Exhaust Engine Pipe Exhaust Repair	16.85
852	09/13/2010	0.93194	N	1	1043PB0165BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Exhaust Engine Pipe Exhaust Repair	55.87
852	09/13/2010	1.20917	N	1	1TV0UNI540BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Total Vehicle Unit Steam Clean	72.49
852	09/13/2010	0.68722	N	1	1032B00070BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Cranking System Battery Charge	41.20
852	09/13/2010	0.06556	N	1	1TV0UNI540BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Total Vehicle Unit Steam Clean	3.93
820	09/09/2010	0.01167	N	1	PHA BS	PM SERVICE REPAIR: (PREVENTIVE MAINTENANCE) A Service List	0.00
353	11/21/2010	0.57750	N	1	1TV0UNI030BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Total Vehicle Unit Test Drive	34.62
353	11/21/2010	0.47889	N	1	1032B00070BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Cranking System Battery Charge	28.71
353	11/21/2010	1.30250	N	1	1052FBX155BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Electrical Acc Fare Box Install	78.08
353	11/21/2010	3.01056	N	1	1052FBX155BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Electrical Acc Fare Box Install	180.48
353	11/21/2010	3.56000	N	1	1TV0MH0Z98BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Total Vehicle Misc. Parts Trip For Parts	213.42
353	11/10/2010	2.50028	N	1	2TV0UNI210BN	GENERAL VEHICLE REPAIR Total Vehicle Unit Transport/Move	149.89
353	09/13/2010	0.36944	N	1	1122000001BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Door Bus System Diagnosis	22.15
353	09/13/2010	1.14306	N	1	1034LN2001BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Light System	68.53

REPAIRS PERFORMED						
NID	Date	Labor Hrs	OT	SH	RTY	Description
353	09/13/2010	2.00778	N	1	1024000001BS	Light Interior Diagnosis REPAIRED FROM PM: (DISCOVERED REPAIRS) Drive Shaft System Diagnosis
353	09/13/2010	0.07611	N	1	1030000001BS	REPAIRED FROM PM: (DISCOVERED REPAIRS) Electrical System Diagnosis

SUBLET REPAIRS						
Vendor	Date Back	RTY	Description			
VECT93CH	09/09/2010	3PMIUNI020BN	VENDOR REPAIR: (SUBLET) PHI Inspect Unit Inspect			
Parts: 0.00	Labor: 194.30	Other: 0.00	Tax: 0.00	Sublet Cost: 194.30		

PARTS ISSUED						
Str	Part Number	Part Description	QTY	Unit Cost	Total Cost	
N	1840752C91	FILTER OIL 07 (CARTRIDGE)	1	17.78	17.78	
N	59-19609-000	DECAL BATTERY DISCONNECT	1	1.87	1.87	
N	F72T12/CH	TUBE FLOURESCENT 72"	2	43.39	86.78	
N	AT0-5	FUSE 5 AMP BLADE	1	0.87	0.87	
N	AL700945S	RESTRAINT W/C (L/H) 07	1	115.43	115.43	

MISCELLANEOUS COSTS		
Code	Description	Misc. Cost
SHOP/ENV	MISC SHOP SUPPLIES/ENVIRONMENTAL CHARGES	5.00

CREDITS		
Date	Description	Credit Amount

Work Order Total: 1745.00

Parts: 222.73	Labor: 1322.97	Sublet: 194.30	Misc Cost: 5.00	Credit: 0.00
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NOTES	
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[] PM A

[852] steam clean
 [852] engine operation
 [852] transmission operation
 [852] steering operation
 [852] gauge operation
 [852] brake / throttle operation
 [852] telma retarder / dash display operation

log on and off on work order

09/09/2010 @ 16:39:53 JL

@@@ 075218 @@@@@@@@ 375851 @

[851] exhaust pipe crushed
 [353] driver line out of time - shafts in phase - OK'd by Joe
 [353] brake fluid low - found level to be right between min and max line - OK'd by Joe
 [] right rear badly damage
 [353] install battery cover
 [353] install step well cover curb side
 [353] battery cut switch decal missing
 [353] install on/off designations for cut off switch
 [353] passenger light out on the right(2)
 [P/O] 2 w/c restraints missing AL700771-1
 [P/O] 1 w/c restraints missing AL700945S
 [353.] registration out on the bus
 [] orbital missing

[353] fare box missing - had to drill holes for fare
box to fit
11/21/2010 @ 19:45:12 being installed by MID 353
[353] remove old batteries from inside of bus
[852] passenger door wont close
[852] w/c ramp dont work

@@@@@@@@

Notes : Per Jim Schatz . take bus to K-Neal in
Gaithersburg . they will do the rear brakes
.11/10/10 JL

[353] transport to K-Neal

All repairs completed and bus released.

11/21/2010 @ 22:47:38 Shann

11/22/2010 @ 16:51:14 on order w/ damion k.neal

2 al700771-1 wheel chair restraints

11-30-10.

RECD FROM K NEAL & CHGD

PART # AL700945S QTY 1

11/30/2010 @ 18:09:43 JP.

eta 12/03 .ccm

ORDERED FROM JOSE @ CREATIVE BUS P/N
AL700945S & AL700771-1 W/C RESTRAINT.
ETA. 11/30/10.

WO Company: 001 [REDACTED]
 WO Department: 51815 DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop: STS STS-Small Bus Transit Shop

Equipment: 075218 License: [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTA6M67W [REDACTED]
 Model: 3200 IH Misc. Field:
 Location:

CUSTOMER COPY

Date In: 12/02/2010 10:37

Date Out: 12/02/2010 15:22

WO Total Cost: 23.88

WO Status: C

Bill Code: B

Last WO Date: 12/10/2010

Operator: JL

Department: 51815:DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: 001 [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
M	73065	Y	M	73864	73864

PM SERVICE

Due	Type	Type Description
77857	A	A PM SERVICE
77857	B	B PM SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
823	12/02/2010	0.39833	N	1	2035DES165BN	GENERAL VEHICLE REPAIR Multi-Electronic Destination Sign Repair	23.88

SUBLET REPAIRS

Vendor	Date Back	RTY	Description
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PARTS ISSUED

Str	Part Number	Part Description	QTY	Unit Cost	Total Cost
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MISCELLANEOUS COSTS

Code	Description	Misc. Cost
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CREDITS

Date	Description	Credit Amount
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Work Order Total: 23.88

Parts: 0.00	Labor: 23.88	Sublet: 0.00	Misc Cost: 0.00	Credit: 0.00
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NOTES

VCR : 075218
 [823] ODK KEY PAD FAILED DOWN- reinstalled

and gave bus back

WO Company:001 [REDACTED]
 WO Department:51815 DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop:STS STS-Small Bus Transit Shop

Equipment: 075218 License: [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTAFM67H [REDACTED]
 Model: 3200 IM Misc. Field:
 Location:

CUSTOMER COPY

Date In: 12/03/2010 12:39
 Date Out: 12/04/2010 01:13
 WO Total Cost: 172.61
 WO Status: C Last WO# [REDACTED]
 Bill Code: B Last WO Date: 12/10/2010
 Operator: JL

Department: 51815:DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: 001 [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
M	73227		M	73864	73864

PM SERVICE

Due	Type	Type Description
77857	A	A PM SERVICE
77857	B	B PM SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
861	12/03/2010	1.19944	N	1	2004BL0100BN	GENERAL VEHICLE REPAIR Heating Vent Blower Heater Replace	71.91
822	12/03/2010	0.76556	N	1	2004000020BN	GENERAL VEHICLE REPAIR Heating Vent System Inspect	45.90

SUBLET REPAIRS

Vendor	Date Back	RTY	Description
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PARTS ISSUED

Str	Part Number	Part Description	QTY	Unit Cost	Total Cost
N	1013175	MOTOR HEATER 12V 01-07 INT'L	1	49.80	49.80

MISCELLANEOUS COSTS

Code	Description	Misc. Cost
SHOP/ENV	MISC SHOP SUPPLIES/ENVIRONMENTAL CHARGES	5.00

CREDITS

Date	Description	Credit Amount
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Work Order Total: 172.61

Parts: 49.80 Labor: 117.81 Sublet: 0.00 Misc Cost: 5.00 Credit: 0.00

NOTES

VCR : 075218
 [] PASSENGER AREA HEATER MAKING NOISE . 822 found
 the rear heater motor making noise , shaft bushing bad -
 causing fan to hit the case . notice that the motor only has high
 speed . no low speed . CCJL to remove fuse on mulitplex
 module C to stop power to fan motor . step well heater and
 curb side heater are working on both speeds
 000000000000

Notes : ride on will shop bus tonight for further repairs to change

out motor

12/03/2010 @ 15:14:46 JL

will work order in R status.

oooooooooooo

[861] replace rear heater motor (Removed rear seat for access
and replaced rear heater blower motor.)

[861] install high speed fuse in Multitplex module c -(FUSE
TAPED TO ELECTRICAL DOOR IN SIDE .

WO Company:001 [REDACTED]
 WO Department:51815 DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 WO Shop:STS STS-Small Bus Transit Shop

Equipment: 075218 License [REDACTED]

Color: BLUE/LT Engine: INT 6L 365
 Year: 2007 GVW: 23500
 Make: INTERNATIONAL Serial: 1HVBTAFM67W [REDACTED]
 Model: 3200 IM Misc. Field:
 Location:

CUSTOMER COPY



Date In: 12/10/2010 10:50

Date Out: 00:00

WO Total Cost: 797.28

WO Status: H

Last [REDACTED]

Bill Code: B

Last WO Date: 12/10/2010

Operator: JL

Department: 51815:DOT-TRANSIT SERVICES-Ride-On Small Bus Service
 Class: 9HCU:BUS,13-18 PASS,PARATRANSIT,WHLCHAIR
 Company: [REDACTED]
 Monitor Group: BP:BUS- PURCHASED TIRE
 Site: [REDACTED]

METERS

WO Meter	Reading	Override?	Eq Meter	Actual	LTD
M	73820		M	73864	73864

PM SERVICE

Due	Type	Type Description
77857	A	A PM SERVICE
77857	B	B PM SERVICE

REPAIRS PERFORMED

MID	Date	Labor Hrs	OT	SH	RTY	Description	Labor Cost
861	12/10/2010	1.87000	N	1	2048000001BN	GENERAL VEHICLE REPAIR Driveability System Diagnosis	112.11
823	12/10/2010	0.90694	N	1	2TV0UNI030BN	GENERAL VEHICLE REPAIR Total Vehicle Unit Test Drive	54.37
822	12/11/2010	2.79556	N	1	2TV0UNI210BN	GENERAL VEHICLE REPAIR Total Vehicle Unit Transport/Move	167.59
821	12/11/2010	2.77389	N	1	2TV0UNI210BN	GENERAL VEHICLE REPAIR Total Vehicle Unit Transport/Move	166.29
811	12/22/2010	3.14556	N	1	2034LN2165BS	GENERAL VEHICLE REPAIR Light System Light Interior Repair	188.58
811	12/22/2010	1.78389	N	1	ICCKUNI020BS	INSPECTION Circle Chk Insp Unit Inspect	106.94

SUBLET REPAIRS

Vendor	Date Back	RTY	Description
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PARTS ISSUED

Str	Part Number	Part Description	QTY	Unit Cost	Total Cost
N	1003	BULB 1003 12V	2	0.70	1.40

MISCELLANEOUS COSTS

Code	Description	Misc. Cost
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CREDITS

Date	Description	Credit Amount
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Work Order Total: 797.28

Parts: 1.40 Labor: 795.88 Sublet: 0.00 Misc Cost: 0.00 Credit: 0.00

NOTES

VCR : 075218

[] WHEN ACCELERATING BUS HAS A STALL IN THE
ENGINE (HAPPENS IN HIGH GEAR)-823ROAD TESTED BUS
AND DID CONFIRM THAT WHILE ACCELERATING FROM
25MPH AND UP BUS HAS HESITATION, ALSO NOTICED
THAT TRANS WOULD SLIP. --861--ROAD TESTED BUS AND
FOUND BUS HAS ENGINE MISS AND WILL NEED TO BE
SENT TO K-NEAL FOR INJECTOR REPLACEMENT.

@@@@@@@@@@@@@@@@

Notes : deliver to K-Neal in Gaithersburg 12/11/10 JL
problem : engine missing
[821/822] transport to k-neal

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Notes: Charles and Colt deliver bus back to STS.12/22/10 JL
Spoke with Travis got what repairs were done . Remove intake
and cleaned intake . cleaned EGR valve . replace injector # 3 .

waiting on invoice for more details that was done on repairs

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[811] circle check
[811] rear dome light out
[811] calibrar RNI
[811] l/r half seal leaking at diff

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5218

Coordinateors Report

Accident Investigation Report

Rockville, Md.

Operator Veh. 1 [REDACTED]		Investigator: [REDACTED]
Date: Dec. 30, 2010		Time: 6:00am
Police Report #: N/A		Name & Station: N/A
Acc. Location: [REDACTED]		
V1, Year, Make & Tag #: 2007 / International / LG82031		
Stock Number: 5218	V1 Disabled? Yes.	
Ops License No: T-62-48-6122 Virginia	Operator S.S. No:	
Ops Address: 539 Orchid Street N.W Vienna Va. 22180		
V2, Year, Make & Tag #: N/A		
V2 Owner, Address & Phone #: N/A		
V2 Driver, Address & Phone #: N/A		
Insurance Co: V1) Self insured.		
Damage V1: V1 caught on fire at the White Flint Metro Station.		
Damage V2: N/A		
Injuries: No injuries.		
Witnesses:		
Weather: Cold	Road Cond.: Dry.	Federal Codes:
Accident Type:		

Coordinator Initial and Date: _____

Note: Our Operator must submit a signed, dated, written statement describing the accident.

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5218

Drivers Incident Report 2

PRIVILEGED AND CONFIDENTIAL

PASSENGER - OPERATOR INCIDENT REPORT

At the request of the Manager, Safety and Training, Division of Transit Services, for the purpose of improving service, and the office of the County Attorney, in anticipation of litigation, please complete this form in cases of alleged passenger/citizen injury, operator/passenger fare disputes requiring assistance, disruptive passenger and/or unusual occurrences.

OPERATOR'S STATEMENT

TIME: GOOD RUN/BLOCK/ROUTE 125 / 1012 / 75 BUS # 52-18 DATE 12/30/2010

LOCATION [REDACTED]

DESCRIPTION (INCLUDE WHY, HOW, WHAT)

AST I ROUNDED CORNER NAMED MANATEE & ROCKWELL BLVD. I
HEARD A BREAKING SOUND UNDER BUS / SMOKE & SMOELLY SMOKE STARTED
COMING FROM UNDER ENGINE COMPARTMENT. I ATTEMPTED TO USE FIRE
EXTINGUISHER ONLY GOT IT HALF UNHOOKED BEFORE EXITING BUS &

INJURED'S NAME/ADDRESS _____

WITNESSES NAME & PHONE NUMBER N/A

OPERATORS NAME: SIGNATURE [REDACTED]

PRINT [REDACTED]

COORDINATORS REPORT:

TIME ARRIVED: _____

OBSERVATIONS: _____

POLICE NOTIFIED? Y _____ N _____ POLICE REPT? Y _____ N _____ REPORT NUMBER? _____

COORDINATORS NAME: SIGNATURE _____

PRINT _____

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5218

Fire and Rescue Report

DFRS

FIRE MARSHAL REPORTS

Alarm Date Between {12/30/2010} And {12/30/2010}
and Incident Number = "10-0145570"

Unit	Response Code	Dispatch	Enroute	Arrival	Clear	F M R O
Incident Number: 10-0145570	Alarm Date: 12/30/2010			Alarm Time: 05:20:54		

Address:

ROCKVILLE, MD [REDACTED]

BC703 BC703 1 Emergency 05:21:12 05:24:59 X
CANCELLED REPORT BY LT. REO' IT WAS HOLDING OPEN THE INCIDENT REPORT.
[REDACTED]

E723 E723 1 Emergency 05:21:12 05:22:47 05:28:49 05:24:59 X
ARRIVED AT THE METRO STATION AT MARINELLI AND THE PIKE TO FIND A SMALLER RIDE ON BUS ON FIRE.
IT WAS EXTINGUISHED WITH A 1 3/4 " LINE BY FF EVANS AND MFF LAWRENCE. E721 PICKED UP THE PLUG
BEHIND THE BUS AND STRETCHED US A SUPPLY LINE, BUT IT WAS NEVER USED. WE CHECKED FOR
EXTENSION, FOUND NONE AND LEFT. THE TAG NO. OF THE BUS IS [REDACTED]
[REDACTED]

A723 A723 1 Emergency 05:21:12 05:22:57 05:24:59 05:24:59 X
A-723 ASSISTED E-723 ON A BUS FIRE WITH MAN POWER. REPORT BY LT.REO' IT WAS HOLDING OPEN THE
INCIDENT REPORT.
[REDACTED]

E721 E721 1 Emergency 05:21:12 05:23:59 05:29:19 05:24:59 X
Called for Bus on fire

Layed supply line to E723

Assist with mopping up bus fire
[REDACTED]

AT723 AT723 1 Emergency 05:21:12 05:22:33 05:27:24 05:24:59 X
AT-723 AOS WITH E-723 WE HAD A SMALL RIDE ON BUS ON FIRE MOST OF THE FIRE WAS CONTAINED TO THE
ENGINE COMPARTMENT WE ASSISTED IN OPENING THE SIDE DOOR AND TAKING OUT THE WINDOWS.
[REDACTED]

EVENT HISTORY RECORDS

Event #: F100145570
 Time: 30-Dec-2010/05:20:54
 Response Level: 1
 Src: 9
 Info:
 Address:
 Phone:

Priority: 6
 Type: FIR/LGVH

Loc: [REDACTED] ROCKVILLE
 Caller: [REDACTED]

EVENT REMARKS

30-Dec-2010/05:20:54 BR4568 CAD89
 RIDE ON BUS ON FIRE // CALLER IS RIDE ON DISPATCH / ADVISED HIS DRIVER TOLD
 HIM BUS WAS STARTING TO CATCH FIRE
 30-Dec-2010/05:21:44 SC5238 CAD88
 RIDE ON BUS # 5128 IN PARKING LOT

EVENT SUMMARY

Status	Status Date	By	At
WAI	30-Dec-2010/05:20:54	BR4568	CAD89
DSP	30-Dec-2010/05:21:12	DM1228	CAD91
ENR	30-Dec-2010/05:22:33	AT723	FR0058
ONS	30-Dec-2010/05:24:59	A723	FR0066
CLS	30-Dec-2010/06:03:22	AT723	FR0058

EVENT CHRONOLOGY

Date/Time	Segment	Workstation	Operator	Description
12/30/2010-05:20:54	ENTRY	CAD89	BR4568	\$F100000811
12/30/2010-05:20:54	XREF	CAD89	BR4568	#P100407842
12/30/2010-05:21:04	SUGG	CAD91	DM1228	E723 (E.M) , E721 (E.M) , AT723 (SS.M) , A723 (A.M) , BC703 (DC.M) , D3 (FD.!)
12/30/2010-05:21:12	DSP	CAD91	DM1228	E723 (E) E721 (E) AT723 (SS) A723 (A) BC703 (DC) D3 (FD)
12/30/2010-05:21:12	PRIUNIT	CAD91	DM1228	E723
12/30/2010-05:21:44	CHNG	CAD88	SC5238	Remarks Entered;
12/30/2010-05:21:51	AIQ	CAD92	SK6601	D3
12/30/2010-05:22:33	ENR	FR0058	AT723	AT723
12/30/2010-05:22:47	ENR	FR0200	E723	E723
12/30/2010-05:22:57	ENR	FR0066	A723	A723
12/30/2010-05:23:59	ENR	CAD92	SK6601	E721
12/30/2010-05:24:16	STATUSX			Unit BC703 Status timer expired after 3 MIN

12/30/2010-05:24:59	ONS	FR0066	A723	A723
12/30/2010-05:25:15	CHNG	CAD92	SK6601	Location: 5200 NICHOLSON LA / 5098 NICHOLSON CT ,MCG ==> 5600 MARINELLI RD / 11610 ROCKVILLE PIK ,MCG ;Atom: 2302 ==> 2313;
12/30/2010-05:27:24	ONS	FR0058	AT723	AT723
12/30/2010-05:28:29	AIQ	CAD92	SK6601	BC703
12/30/2010-05:28:49	ONS	CAD92	SK6601	E723
12/30/2010-05:29:19	ONS	FR0087	E721	E721
12/30/2010-05:45:02	STATUSX			Unit A723 Status timer expired after 20 MIN
12/30/2010-05:47:26	STATUSX			Unit AT723 Status timer expired after 20 MIN
12/30/2010-05:48:50	STATUSX			Unit E723 Status timer expired after 20 MIN
12/30/2010-05:49:20	STATUSX			Unit E721 Status timer expired after 20 MIN
12/30/2010-06:01:18	AOR	FR0200	E723	E723
12/30/2010-06:01:44	AOR	FR0087	E721	E721
12/30/2010-06:02:55	AOR	FR0066	A723	A723
12/30/2010-06:03:22	AOR	FR0058	AT723	AT723
12/30/2010-06:03:22	CLOSE	FR0058	AT723	

UNIT SUMMARY

Unit	Date/Time	Status
-----	-----	-----
E723	12/30/2010-05:21:12	DSP
E723	12/30/2010-05:22:47	ENR
E723	12/30/2010-05:28:49	ONS
E723	12/30/2010-06:01:18	AOR
E721	12/30/2010-05:21:12	DSP
E721	12/30/2010-05:23:59	ENR
E721	12/30/2010-05:29:19	ONS
E721	12/30/2010-06:01:44	AOR
AT723	12/30/2010-05:21:12	DSP
AT723	12/30/2010-05:22:33	ENR
AT723	12/30/2010-05:27:24	ONS
AT723	12/30/2010-06:03:22	AOR
A723	12/30/2010-05:21:12	DSP
A723	12/30/2010-05:22:57	ENR
A723	12/30/2010-05:24:59	ONS
A723	12/30/2010-06:02:55	AOR

BC703	12/30/2010-05:21:12	DSP
BC703	12/30/2010-05:28:29	AIQ
D3	12/30/2010-05:21:12	DSP
D3	12/30/2010-05:21:51	AIQ

EVENT HISTORY RECORDS

Event #: P100407842
 Time: 30-Dec-2010/05:20:54
 Response Level: 1
 Src: 9
 Info:
 Address:
 Phone:

Priority: 3
 Type: AUTOFIRE

Loc: [REDACTED] ROCKVILLE
 Caller: [REDACTED]

EVENT REMARKS

30-Dec-2010/05:20:54 BR4568 CAD89
 RIDE ON BUS ON FIRE // CALLER IS RIDE ON DISPATCH / ADVISED HIS DRIVER TOLD
 HIM BUS WAS STARTING TO CATCH FIRE
 30-Dec-2010/06:03:11 15618 CAD52
 B256 EVERYTHING IS OPEN, ROAD ICY FROM FIRE EQUIP

EVENT SUMMARY

Status	Status Date	By	At
WAI	30-Dec-2010/05:20:54	BR4568	CAD89
DSP	30-Dec-2010/05:21:47	11900	CAD52
ONS	30-Dec-2010/05:26:10	11900	CAD52
CLS	30-Dec-2010/06:42:24	11900	CAD52

EVENT CHRONOLOGY

Date/Time	Segment	Workstation	Operator	Description
12/30/2010-05:20:54	ENTRY	CAD89	BR4568	
12/30/2010-05:20:54	XREF	CAD89	BR4568	#F100145570
12/30/2010-05:21:36	SUGG	CAD52	11900	8E22 (PAT)
12/30/2010-05:21:37	AVRRSUGG	CAD52	11900	Response Req 1: 8A1[T/1.53;D/1.16]
12/30/2010-05:21:47	DSP	CAD52	11900	8E22 (PAT)
12/30/2010-05:21:47	PRIUNIT	CAD52	11900	8E22
12/30/2010-05:25:15	CHNG	CAD92	SK6601	Location: 5200 NICHOLSON LA / 5098 NICHOLSON CT ,MCG ==> 5600 MARINELLI RD / 11610 ROCKVILLE PIK ,MCG ;
12/30/2010-05:26:10	DOS	CAD52	11900	8D11 (PATS)
12/30/2010-05:26:47	STATUSX			Unit 8E22 Status timer expired after 5 MIN
12/30/2010-05:28:59	ONS	PM0494	2228	8E22
12/30/2010-05:41:14	STATUSX			Unit 8D11 Status timer expired after 15 MIN
12/30/2010-05:42:17	CNTACT	CAD52	11900	8D11, TIMER RESET

12/30/2010-05:44:03	STATUSX			Unit 8E22 Status timer expired after 15 MIN
12/30/2010-05:44:24	CNTACT	CAD52	11900	8E22, TIMER RESET
12/30/2010-05:55:09	ASSTER	CAD52	15618	B256 (TRF)
12/30/2010-05:57:21	CONTACTX			Unit 8D11 Contact timer expired after 15 MIN
12/30/2010-05:57:40	CNTACT	CAD52	15618	8E22 B256 8D11 [TIMER SET 15 MIN]
12/30/2010-06:03:11	SUPP	CAD52	15618	
12/30/2010-06:03:22	XCLOSE	FR0058	AT723	F100145570
12/30/2010-06:07:10	CLEAR	CAD52	11900	8D11
12/30/2010-06:07:13	ONS	CAD52	11900	B256
12/30/2010-06:11:08	CLEAR	PM0494	2228	8E22
12/30/2010-06:11:37	MISC	CAD52	11900	B256,ST AND CO RDS NOTIFIED AND ENR NO ETA
12/30/2010-06:18:03	REMINQ	PM0051	2094	B256,MILES_VEHICLE_QRY LIC=JFC395 LIS=MD LIT=PC LIY=2010
12/30/2010-06:22:16	STATUSX			Unit B256 Status timer expired after 15 MIN
12/30/2010-06:23:15	CNTACT	CAD52	11900	B256, TIMER RESET
12/30/2010-06:38:17	CONTACTX			Unit B256 Contact timer expired after 15 MIN
12/30/2010-06:42:24	CLEAR	CAD52	11900	B256 D/28131
12/30/2010-06:42:24	CLOSE	CAD52	11900	D/28131
12/30/2010-06:43:40	GDISP	CAD52	11900	D/29351

UNIT SUMMARY

Unit	Date/Time	Status
-----	-----	-----
8E22	12/30/2010-05:21:47	DSP
8E22	12/30/2010-05:28:59	ONS
8E22	12/30/2010-06:11:08	AV
8D11	12/30/2010-05:26:10	DSP
8D11	12/30/2010-05:26:10	ONS
8D11	12/30/2010-06:07:10	AV
B256	12/30/2010-05:55:09	DSP
B256	12/30/2010-05:55:09	ENR
B256	12/30/2010-06:07:13	ONS
B256	12/30/2010-06:42:24	AV

K1 Person/Entity Involved ☐ Local Option ☐ Business name (if applicable) ☐ Area Code ☐ Phone Number

☐ Check This Box if same address as incident location. Then skip the three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State Zip Code

☐ More people involved? Check this box and attach Supplemental Forms (NFIRS-1S) as necessary

K2 Owner ☐ Same as person involved? Then check this box and skip the rest of this section. ☐ Local Option ☐ Business name (if Applicable) ☐ Area Code ☐ Phone Number

☐ Check this box if same address as incident location. Then skip the three duplicate address lines.

Mr., Ms., Mrs. First Name MI Last Name Suffix

Number Prefix Street or Highway Street Type Suffix

Post Office Box Apt./Suite/Room City

State Zip Code

L Remarks ☐ Local Option

12/30/2010 06:33:14 LW6538

#On 12/30/2010 at 05:20:54 dispatched To [REDACTED] ROCKVILLE, MD 20852.
The location is a .

The event was dispatched for a: LRG VEH; BX TRK; RV; BUS

The incident was determined to be a(n) Mobile property (vehicle) fire, Other.

First unit arrived on scene at 05:24:59.

The following actions were performed on scene:
Extinguishment by fire service personnel

Units responding were:
Unit A723 responded.
Unit AT723 responded.
Unit BC703 responded.
Unit E721 responded.
Unit E723 responded and took these actions:
Extinguishment by fire service

L Authorization

LW6538 Logan, William M F/R LIEUT 12 30 2010
Officer in charge ID Signature Position or rank Assignment Month Day Year

Check Box if same as Officer in charge. ☒ LW6538 Logan, William M F/R LIEUT 12 30 2010
Member making report ID Signature Position or rank Assignment Month Day Year

MM DD YYYY										Complete Narrative	
15555		12	30	2010	23	10-0145570	000				
FDID *	State *	Incident Date *		Station	Incident Number *	Exposure *					

Narrative:

12/30/2010 06:33:14 LW6538

#On 12/30/2010 at 05:20:54 dispatched To [REDACTED] ROCKVILLE, MD [REDACTED]
The location is a .

The event was dispatched for a: LRG VEH; BX TRK; RV; BUS

The incident was determined to be a(n) Mobile property (vehicle) fire, Other.

First unit arrived on scene at 05:24:59.

The following actions were performed on scene:
Extinguishment by fire service personnel

Units responding were:

Unit A723 responded.

Unit AT723 responded.

Unit BC703 responded.

Unit E721 responded.

Unit E723 responded and took these actions:
Extinguishment by fire service

05:24:59 all units back in service.

15555 FDID		12 30 Incident Date	2010	23 Station	10-0145570 Incident Number	000 Exposure	Responding Units/Personnel
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Unit	Notify Time	Enroute Time	Arrival Time	Cleared Time
A723 A723	05:21:12	05:22:57	05:24:59	06:02:55

Staff ID\Staff Name	Activity	Rank	Position	Role
PM9660 Chindblom, Marilynne E	On Incident	Fire/Rescue	DRIVER CERTI	
WJ2964 Ward, Jeffery M	On Incident	Fire/Rescue	Officer in C	

Unit Narrative

A-723 ASSISTED E-723 ON A BUS FIRE WITH MAN POWER. REPORT BY LT.REO' IT WAS HOLDING OPEN THE INCIDENT REPORT.

AT723 AT723	05:21:12	05:22:33	05:27:24	06:03:22
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Staff ID\Staff Name	Activity	Rank	Position	Role
ES6469 Edney, Stephen C	On Incident	Fire/Rescue	DRIVER BACKU	
MM9528 Markett, Matthew C	On Incident	Fire/Rescue	Right	
OR9378 O'Brien, Robert E	On Incident	Fire/Rescue	Officer in C	

Unit Narrative

AT-723 AOS WITH E-723 WE HAD A SMALL RIDE ON BUS ON FIRE MOST OF THE FIRE WAS CONTAINED TO THE ENGINE COMPARTMENT WE ASSISTED IN OPENING THE SIDE DOOR AND TAKING OUT THE WINDOWS.

BC703 BC703	05:21:12			05:28:29
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Staff ID\Staff Name	Activity	Rank	Position	Role
DR7672 Dawson, Russell W	On Incident	LFRD Fire/R	Officer in C	

Unit Narrative

CANCELLED REPORT BY LT. REO' IT WAS HOLDING OPEN THE INCIDENT REPORT.

E721 E721	05:21:12	05:23:59	05:29:19	06:01:44
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Staff ID\Staff Name	Activity	Rank	Position	Role
GJ8137 Greer, Justin K	On Incident	Fire/Rescue	Left	
SM0523 Slater, Michael A	On Incident	Fire/Rescue	Officer in C	
WC8029 Walls, Corey A	On Incident	Fire/Rescue	Left	
WC8643 Wainwright, Christopher	On Incident	Fire/Rescue	DRIVER CERTI	

Unit Narrative

Called for Bus on fire

Layed supply line to E723

Assist with mopping up bus fire

15555

FDID

State

12

30

Incident Date

2010

23

Station

10-0145570

Incident Number

000

Exposure

Responding
Units/Personnel

Unit	Notify Time	Enroute Time	Arrival Time	Cleared Time
E723 E723	05:21:12	05:22:47	05:28:49	06:01:18

Staff ID\Staff Name	Activity	Rank	Position	Role
EC6381 Evans, Corey W	On Incident	Fire/Rescue	Right	
LT8867 Lawrence, Thomas M	On Incident	Fire/Rescue	Left	
LW6538 Logan, William M	On Incident	Fire/Rescue	Officer in C	
RM9440 Reising, Michael F	On Incident	Fire/Rescue	DRIVER PRIMA	

Unit Narrative

ARRIVED AT THE METRO STATION AT MARINELLI AND THE PIKE TO FIND A SMALLER RIDE ON BUS ON FIRE. IT WAS EXTINGUISHED WITH A 1 3/4 " LINE BY FF EVANS AND MFF LAWRENCE. E721 PICKED UP THE PLUG BEHIND THE BUS AND STRETCHED US A SUPPLY LINE, BUT IT WAS NEVER USED. WE CHECKED FOR EXTENSION, FOUND NONE AND LEFT. THE TAG NO. OF THE BUS IS LG 82031

PE12-008

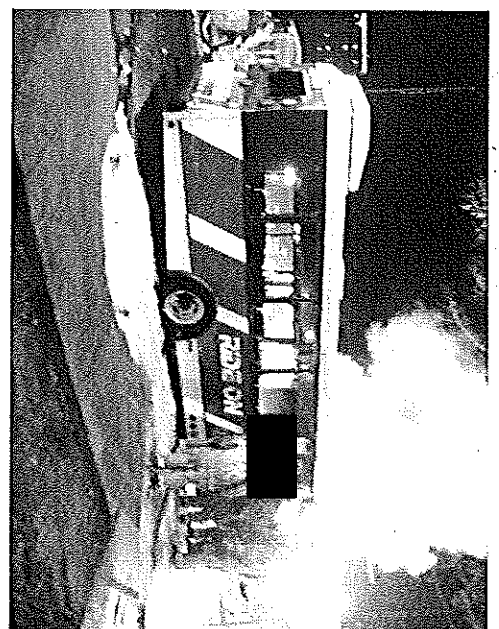
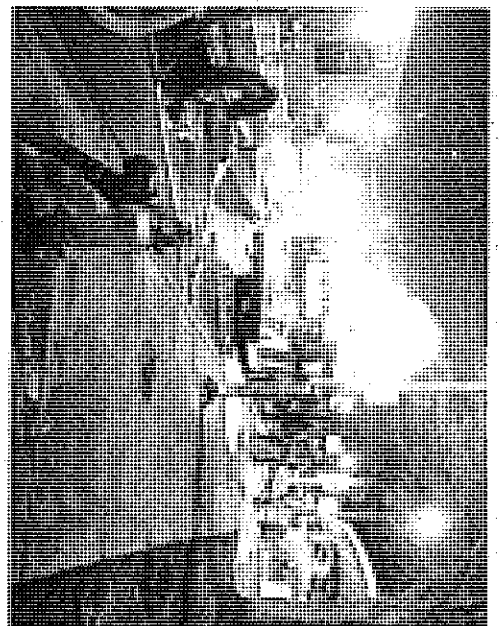
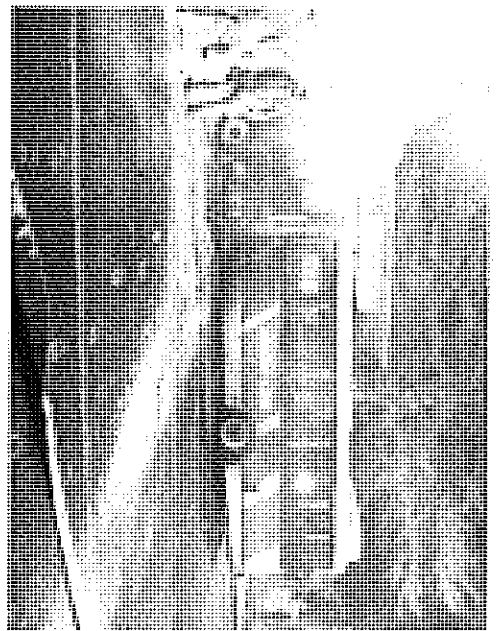
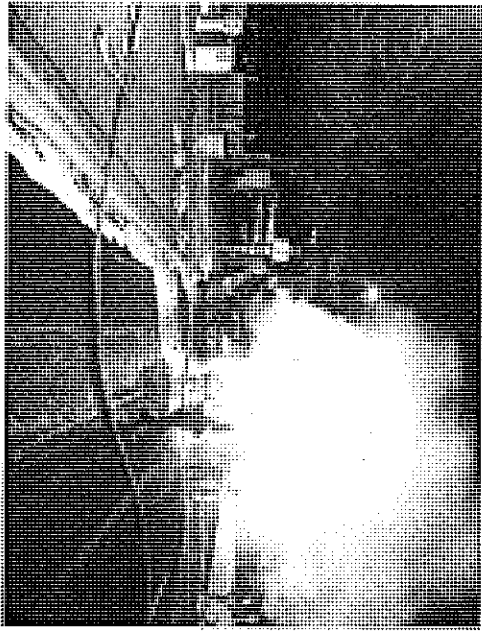
NAVISTOR TRUCK GROUP

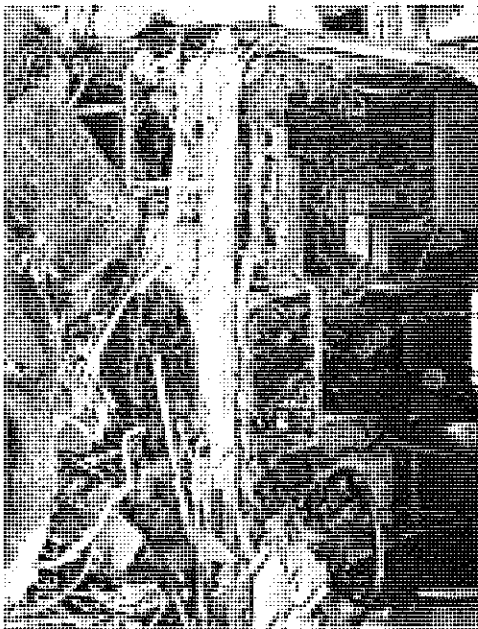
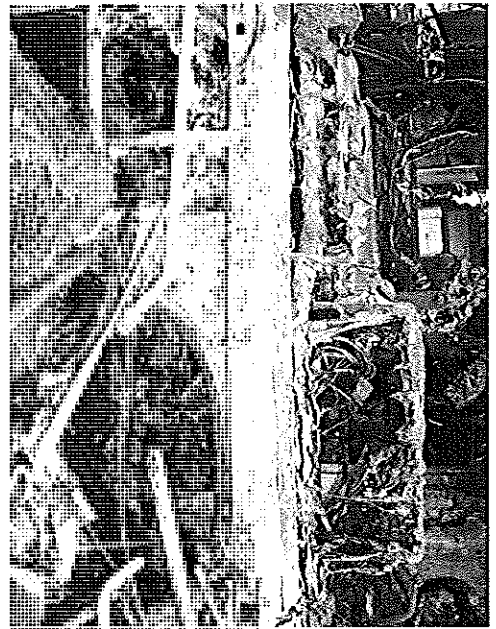
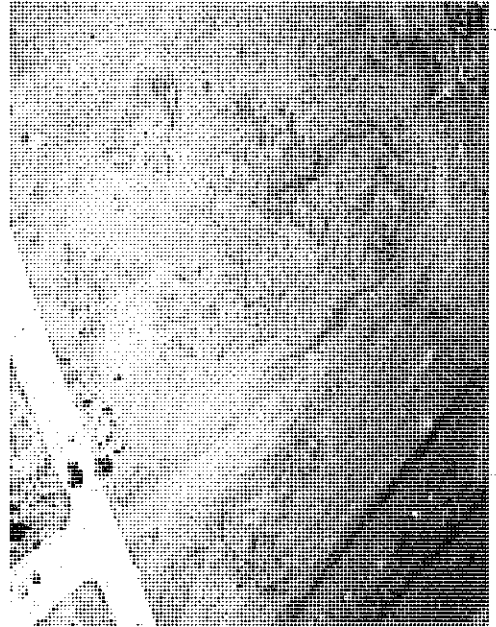
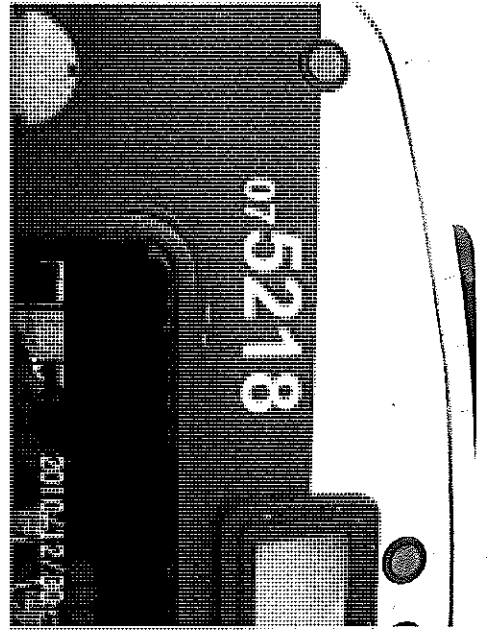
5-18-2012

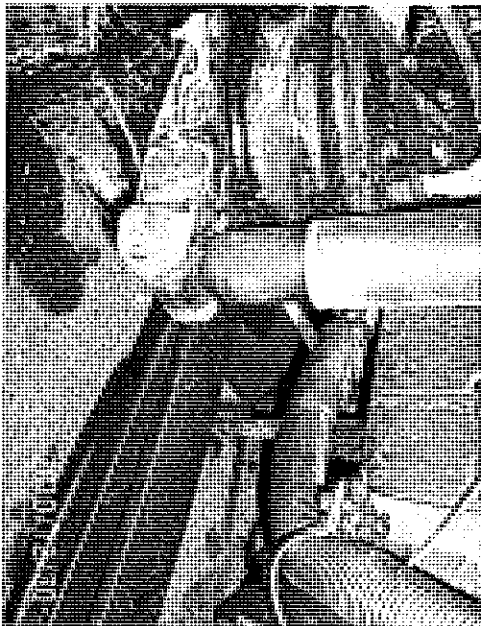
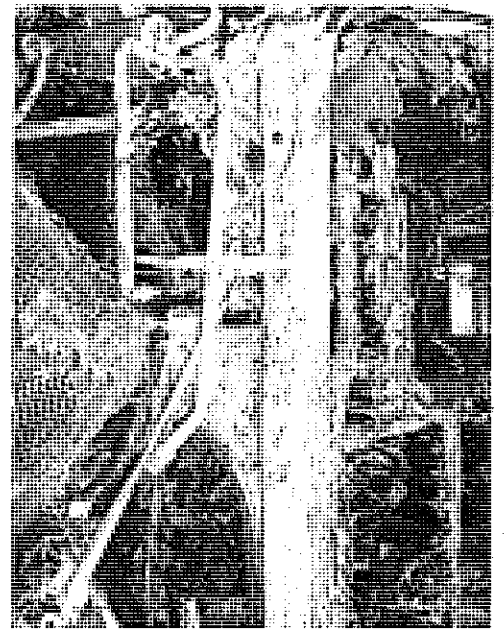
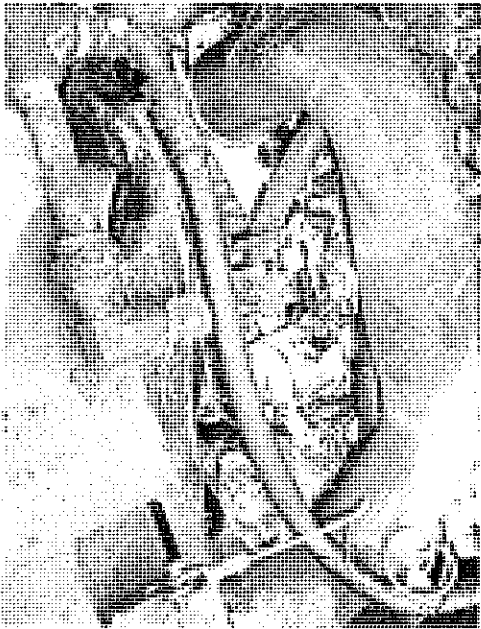
Request 2 & 3

MC Unit 5218

Fire pictures 1







PE12-008

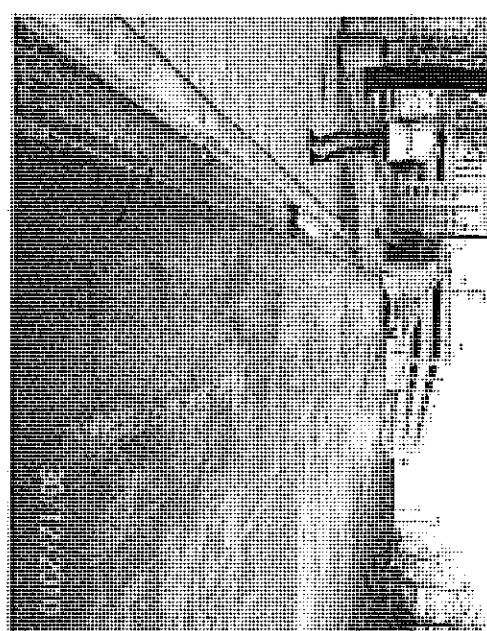
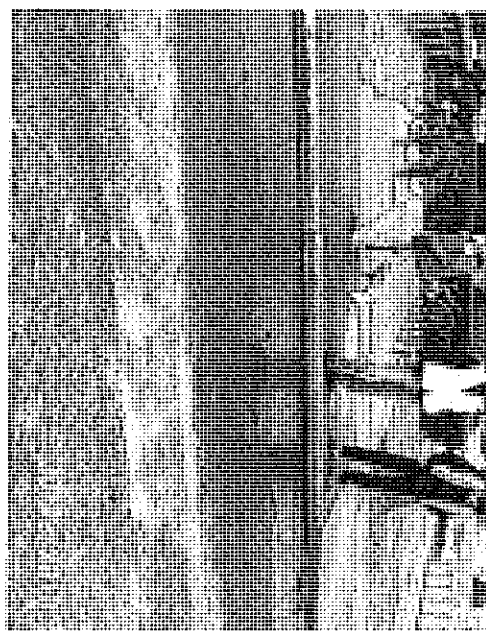
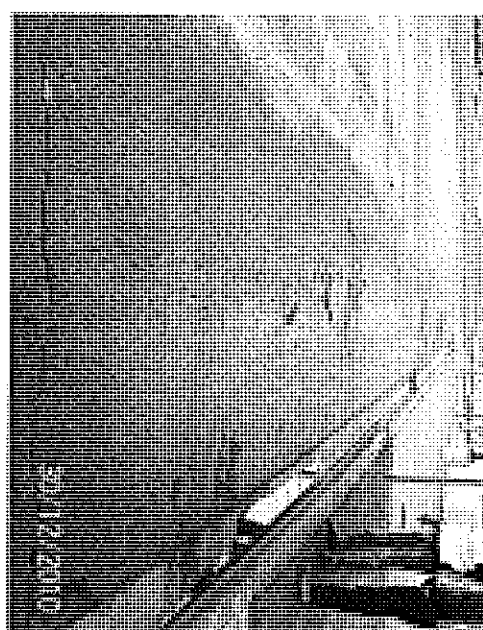
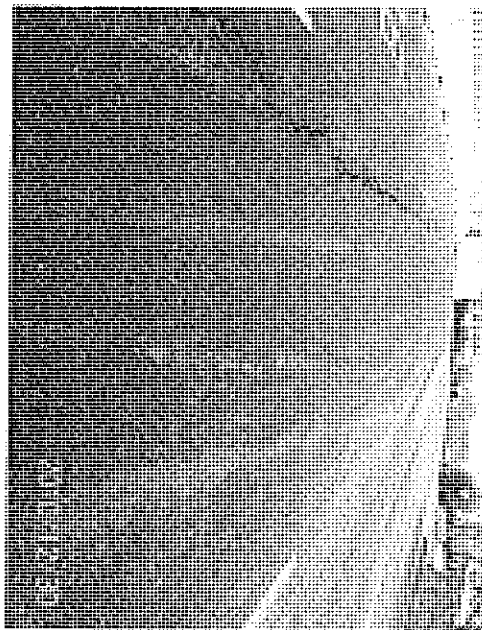
NAVISTOR TRUCK GROUP

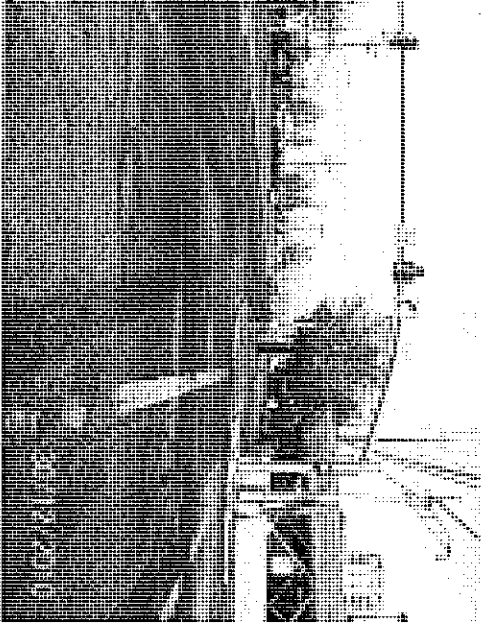
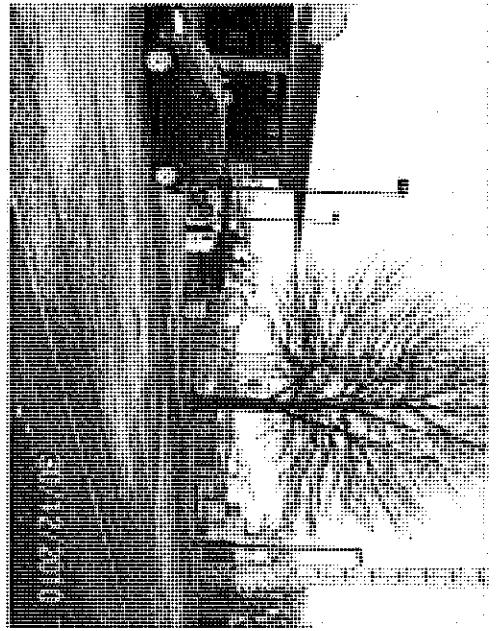
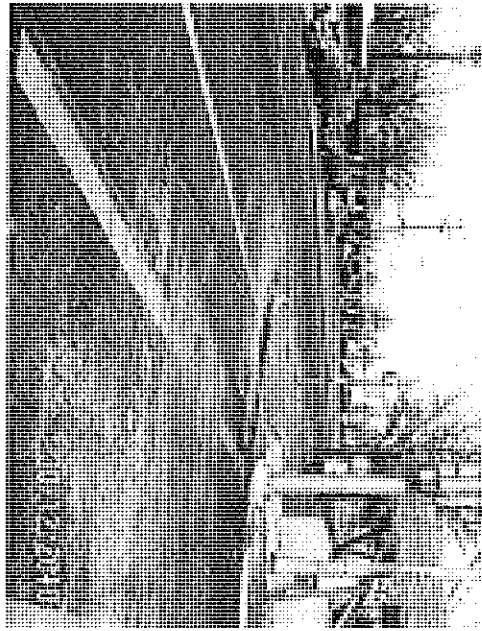
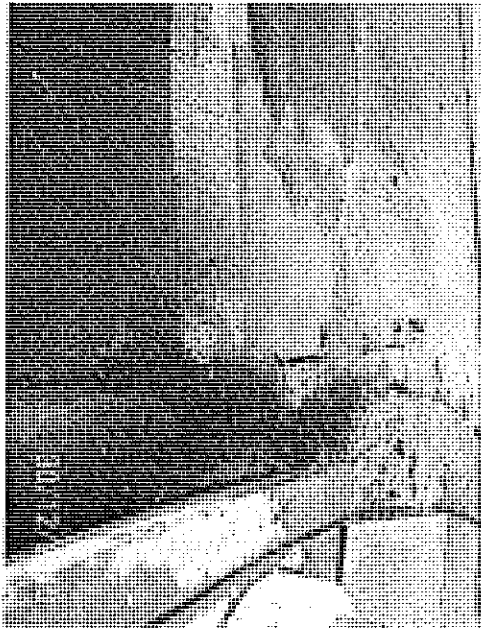
5-18-2012

Request 2 & 3

MC Unit 5218

Fire pictures 2





5:41 AM



HD

CAM-166 M



PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5206

Investigation Report of Fire on
Montgomery County Bus

075206 Rev 2



Investigation
of Fire
On Bus #075206

Prepared by:



and



March 30, 2012

**Transit Resource Center
5840 Red Bug Lake Road, Suite #165
Winter Springs, FL 32708
407-977-4500**

Investigation Report of Fire on [REDACTED]

Bus #075206 on February 7, 2012

On February 7, 2012, a mid-sized bus owned by [REDACTED], MD and operated by Ride-On had a fire that resulted in major damage to the vehicle. The bus, Unit #075206, is a 2007 International body-on-chassis vehicle with a body manufactured by Champion Bus. The power train consists of an International VT365, turbo-charged V-8 diesel engine and an Allison B-400 transmission. It is one of a fleet of fifty (50), 2007 Champion/International buses operated by Montgomery County Department of Transportation, Division of Transit Services (Ride-On), and maintained by the Division of Fleet Management Services, Department of General Services. The investigation of this fire took place on February 22, 2012, at the Division of Fleet Management Services Heavy Maintenance Facility in Rockville, MD.

The Investigation

Transit Resource Center (TRC) was retained by the Division of Fleet Management Services to investigate the causes of the event described above. The investigation included the following actions:

1. A review of all the maintenance and service records on bus #075206 from [REDACTED] County's Fleet Management Division.
2. A thorough review of all available manufacturer's maintenance information and wiring diagrams.
3. A review of the operator's and supervisor's reports as well as the fire department reports and logs.
4. A thorough inspection of bus #075206 at the heavy maintenance facility by the investigation team which included representatives from: NHTSA, Navistar, Champion Bus, and [REDACTED] Fleet Management Division. Critical parts were removed during the investigation for disassembly and a detailed inspection.
5. Review of the videos from the bus video system.

Observations of Fire

The written operators statement and supervisory reports (attached) indicated that the operator was deadheading bus #075206 north on Colesville Road from the [REDACTED] station to

the [REDACTED]. At about 7:36 am, as the bus approached the intersection of Colesville Road and Oakleaf Drive the bus operator said he heard a “big noise” and noticed a large amount of smoke coming from the dash board area. He said at that point the bus lost power and he had to coast to the side of the road so he could park the bus safely. Operator Ndeutchoua called Central at 7:37 and reported his bus was on fire. The Silver Spring Fire Department arrived on the scene at 7:46 and proceeded to extinguish the fire. Subsequent reviews of the on-vehicle video system showed a large plume of smoke appear out of the rear window of the bus at 7:37 am, confirming the operator’s statement.



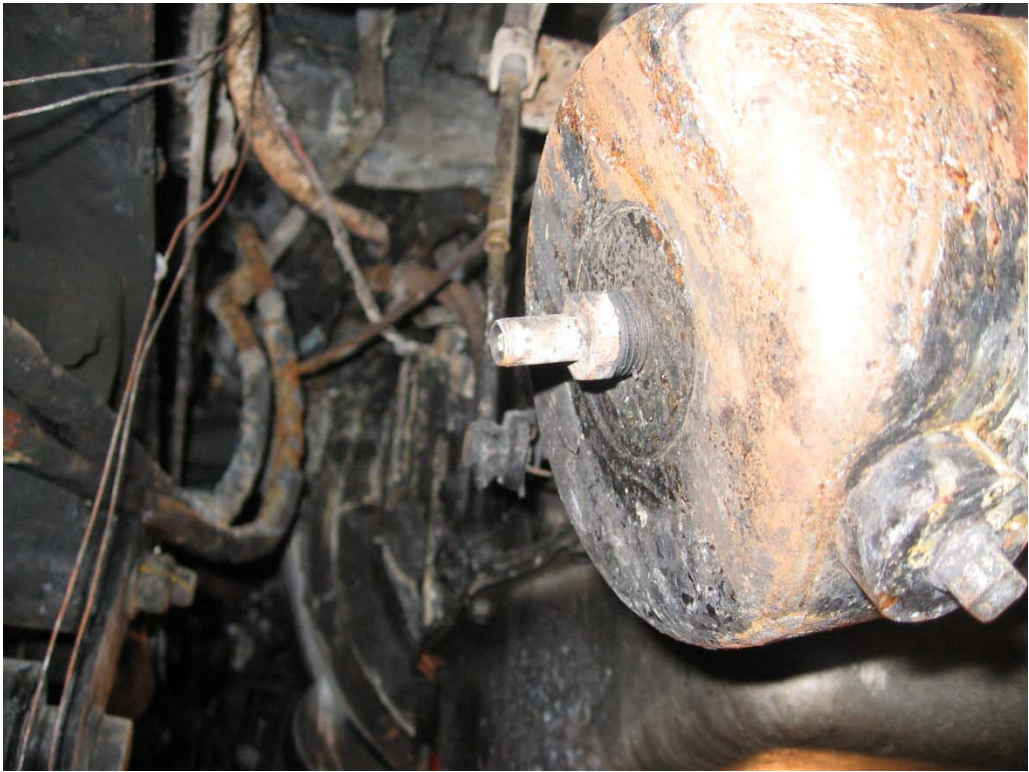
Inspection Observations

The inspection of bus #075206 revealed that the most severe fire damage occurred above and adjacent to the rear of the transmission. The parking brake drum showed signs of extreme heat. The plastic “doghouse” above the transmission was destroyed by the fire which allowed the flames to penetrate the driver’s area of the bus. The dash panel, driver’s seat and all adjacent panels were totally destroyed by the fire. The heat from the driver’s area penetrated the ceiling panels and ignited the fiberglass roof cap, causing severe damage. It is alarming how fast the flames spread on this bus. Two buses from this fleet experienced major fires in 2010 and a third bus was destroyed in December of 2011. All four bus fires exhibited similar rapid rates of flame engulfment. The interior materials seemed to act as an accelerant for the fires. It definitely brings into question whether all the materials used in the interior of this model bus meet the requirements of the automotive interior flammability standard, FMVSS 302. This question will be addressed further in the recommendations section.





The evidence of high heat in the parking brake drum and the signs of intense heat above the rear of the transmission were exactly like that found in January 2011 when the team investigated a major fire on bus #075218. That investigation concluded that the fire had been caused by a parking brake that applied while the bus was operating. In that investigation the team discovered that the air fitting on the parking brake chamber had failed causing the parking brake chamber to apply. Closer examination of the parking brake on bus #075206 revealed signs of excessive heat in the outer circumferential area of the steel drum. The brake shoes had significant wear and the edges of the lining material were gray in color indicating they had severely overheated. The mechanism was in the full "on" position. There was no air line connected to the brake chamber but the inner portion of what appeared to be the swivel fitting was still threaded into the back of the chamber. About twelve inches of nylon air line with what appeared to be the other half of the swivel fitting was found under the bus at the scene of the fire. The team carefully examined the piece of line and concluded that it had been connected to the brake chamber and that the swivel fitting had failed prior to the fire exactly like the occurrence on bus # 075218 one year ago. The brake drum was removed from bus #075206; revealing that the surfaces of the drum were scored badly and the linings were severely overheated from dragging.





Low Air Warning System

In this incident the operator gave no indication that the parking brake had activated and he did not report seeing any warning lights or hearing any warning buzzers. As part of the investigation of the previous fire on bus #075218, [REDACTED] and Ric Willard from NHTSA proved that the parking brake on this fleet of Champion/International buses could apply without the low air warning buzzer or light activating. Since no change has been made to the low air warning system on these buses in the last year, the investigation team concluded that the low air warnings did not activate on bus #075206 when the air line separated from parking brake chamber.

Fire Analysis

The source of ignition for the fire on bus #075206 appears to have been the extreme heat that was generated when the parking brake applied by itself and began dragging as the operator deadheaded the bus northbound on [REDACTED]. The heat ignited the grease and oil soaked wire harnesses that are routed adjacent to the parking brake and caused the nylon fuel lines routed above the parking brake to melt and begin to leak. The leaking diesel fuel erupted into flames that quickly spread to the “doghouse” over the transmission. The photo below of an example bus shows the close proximity of the oil soaked wire harnesses and fuel lines to the parking brake drum.



Recommendations

The fire on bus #075206 resulted in a total loss. TRC feels that this was a repeat occurrence of the fire on bus #075218. It is unfortunate that International and Champion Bus did not follow the recommendations made in TRC's investigative report of the fire on bus #075218. TRC would like to reiterate these recommendations with the hope that the parties involved will pursue them to avert future fires:

- The use of a swivel fitting on the parking brake chamber appears to be more for ease of assembly than a mechanical function. This fitting should be replaced by a properly oriented solid 90 degree pipe fitting. The line could then be coupled to it by a straight line fitting. The air line should be lengthened to allow several inches of slack to allow for engine movement. [REDACTED] has begun a fleet retrofit of this line and fitting. TRC strongly recommends this fleet retrofit be completed as soon as possible
- TRC recommends that International and/or Champion investigate an improved operator warning system to indicate when the bus is operating with the parking brake either partially or fully applied. They should seriously consider an audible alarm that would operate when the parking brake is applied with the bus in gear.
- The spread of the fire was accelerated by the melting and subsequent rupture of the fuel lines. The fuel lines are routed with the wire bundles along the left side frame rail and across the chassis above the transmission. This puts the fuel lines in jeopardy from damage caused by heat from electrical faults or other causes. International should look at rerouting the fuel lines along the right side frame rail. This suggestion may not be cost effective as a retrofit, but International should definitely look at a redesign on future buses. A retrofit alternative would be to protect the fuel lines with a high temperature, fire proof loom such as Aeroquip "Firesleeve". The longer that fuel line integrity can be maintained, the less chance there is of catastrophic fire damage.
- What was extremely alarming about the fires on all buses was how quickly it spread to the cab interior, where the plastic materials used to finish the cab quickly ignited. One concern is the plastic "doghouse" used to access the transmission. The rest of the firewall and floor in this area are steel, which naturally resist flame propagation. TRC recommends that the transmission access cover be retrofitted with a fire-proof, insulating blanket. The installation of this material will increase the integrity of the cover for a longer period of time; which could prevent the spread of flames into the bus interior before the fire can be extinguished. The flame spread rate experienced in this fire as well

as the three other fires on sister coaches appears to be very high. One or more of the materials used in the construction of these buses may not be in conformance with this safety standard FMVSS 302. It is recommended that the bus body builder and chassis supplier provide copies of their FMVSS 302btest data for all materials used in the construction of these buses to [REDACTED] [REDACTED].

Attachments

OPERATOR'S STATEMENT

Silver Spring/Bethesda Ride-On
8710 Brookville Rd. Bldg. "H"
Silver Spring Md 20910
301-565-7321

I Was deadhead to [REDACTED] to pick
up the 21 around 7:36 Am with the Bus 5206.
When on Route 29 and Oakleaf Dr I hear
I ~~was~~ big noise coming from the Engine Compartment
and a enorme quantity of smoke
coming from the dash board. I was on
Nord bond on 29. I apply ~~the~~ accelerator
but the bus those not react, I move on the
side where save it and park the Bus.
I call central to inform that my Bus is on
fire that was on 7:37 Am.

Signature [REDACTED]

Date: 2/7/12

Accident Investigation Report

Dept. of Transportation - Silver Spring/Bethesda Ride-On
8710 Brookville Rd. Bldg. H., Silver Spring, Md. 20910 (301) 565-7321

Operator: [REDACTED]	Investigator: [REDACTED]
Date: February 7, 2012	Time: 7:40am
Police Report : N/A	Name& Station: N/A
Acc. Location : Colesville Road & Oakleaf Drive	

V1, Year, Make & Tag: 2007 Champion Tag# [REDACTED]	
Stock Number: 5206	V1 Disabled? Yes
Ops License [REDACTED]	Operator's ID: 1854
Ops Address [REDACTED] Lanham, Md [REDACTED]	

V2, Year, Make & Tag: N/A
V2 Owner, Address: N/A
V2 Driver, Address & Phone: N/A
Insurance Co: N/A

Damage V1: Bus burned completely through.
Damage V2: N/A
Injuries: None

Witnesses: None

Weather: Clear	Road Cond: Dry	Federal Codes:
Accident Type:		

Glenn R. Simms

February 7, 2012

Signature: _____ Date: _____

Coordinator Signature Note: Our Operator must submit a signed, dated, written statement describing the accident.

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 2 & 3

MC Unit 5206

Montgomery Co Bus 5206 brass
Fitting Presentation1.pdf

Howell, Rosa (NHTSA)

From: Peters, Michael C (Mike)
Sent: Saturday, February 25, 2012 3:04 PM
To: Fox, Bob E; Van Laar, Richard L (Rick); Screeton, Brian C
Cc: Peters, Michael C (Mike)
Subject: Pictures of the parking brake chamber brass fitting. Montgomery Co. 5206
Attachments: Montgomery Co Bus 5206 brass Fitting Presentation1.pptx

Take a look. Montgomery Co. Brass Fitting.

Thank you



A NAVISTAR COMPANY

Michael C. Peters (Mike)
Fleet Service Manager- IC Bus
Customer Service Operations
Navistar Inc.
317-422-1140 Office
317-412-0982 Cell
mike.peters@navistar.com

Montgomery Co. 5206 Parking Brake Chamber Brass Fitting

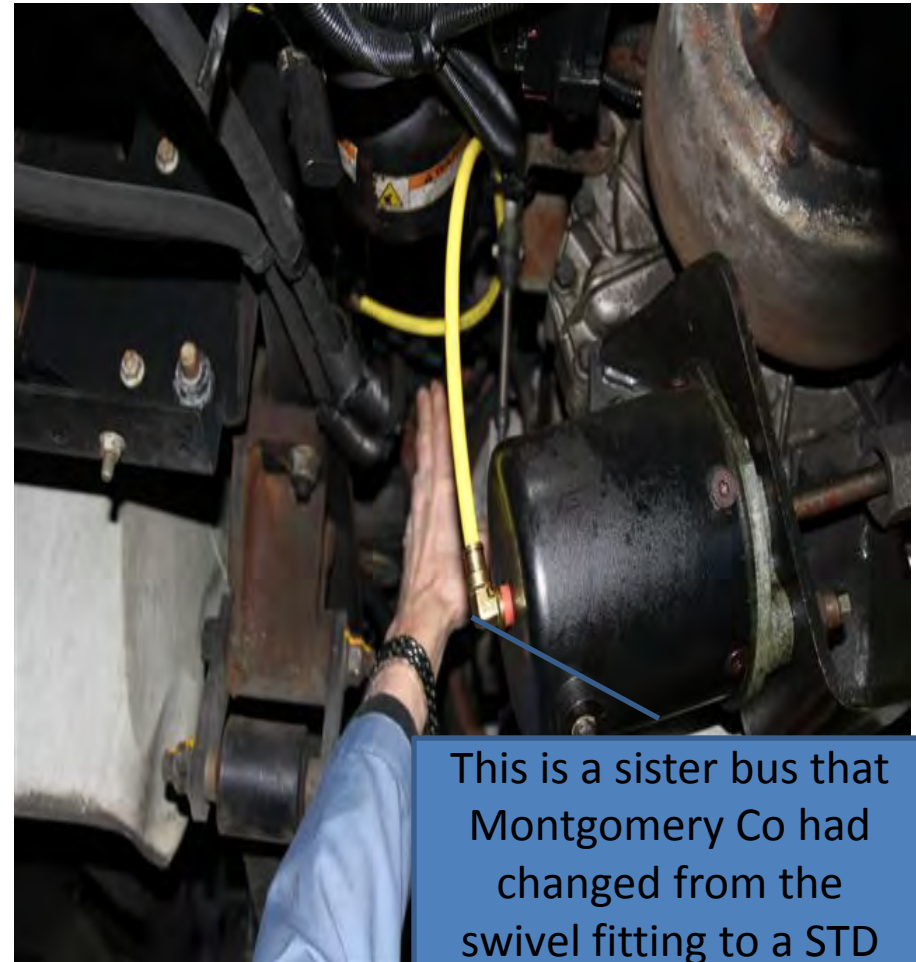


This picture depicts the threaded end of the fitting into the parking brake chamber. This is the nipple that was left after the swivel came off.

Brass Fitting from unit 5206



This picture shows the part of the brass fitting that connects to the valve in the in the frame rail. This was found laying under the bus.



This is a sister bus that Montgomery Co had changed from the swivel fitting to a STD 45fitting

Montgomery Co. Brass Fitting Parking Brake Chamber



If you look at the end of the nipple you see a small groove. This is where the flat snap washer locks into.

Cut away view of the swivel fitting



PE12-008

NAVISTOR TRUCK GROUP

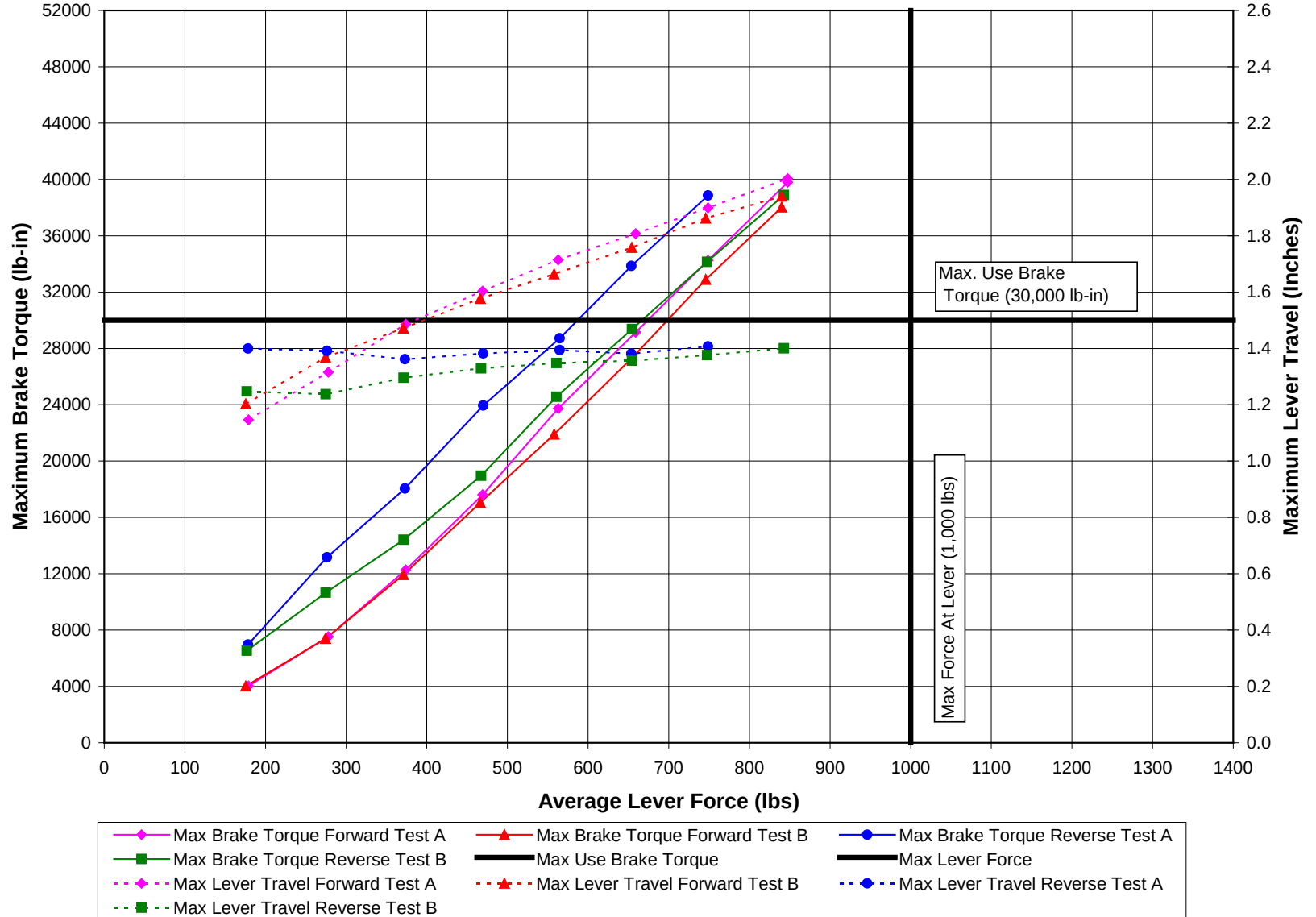
5-18-2012

Request 9

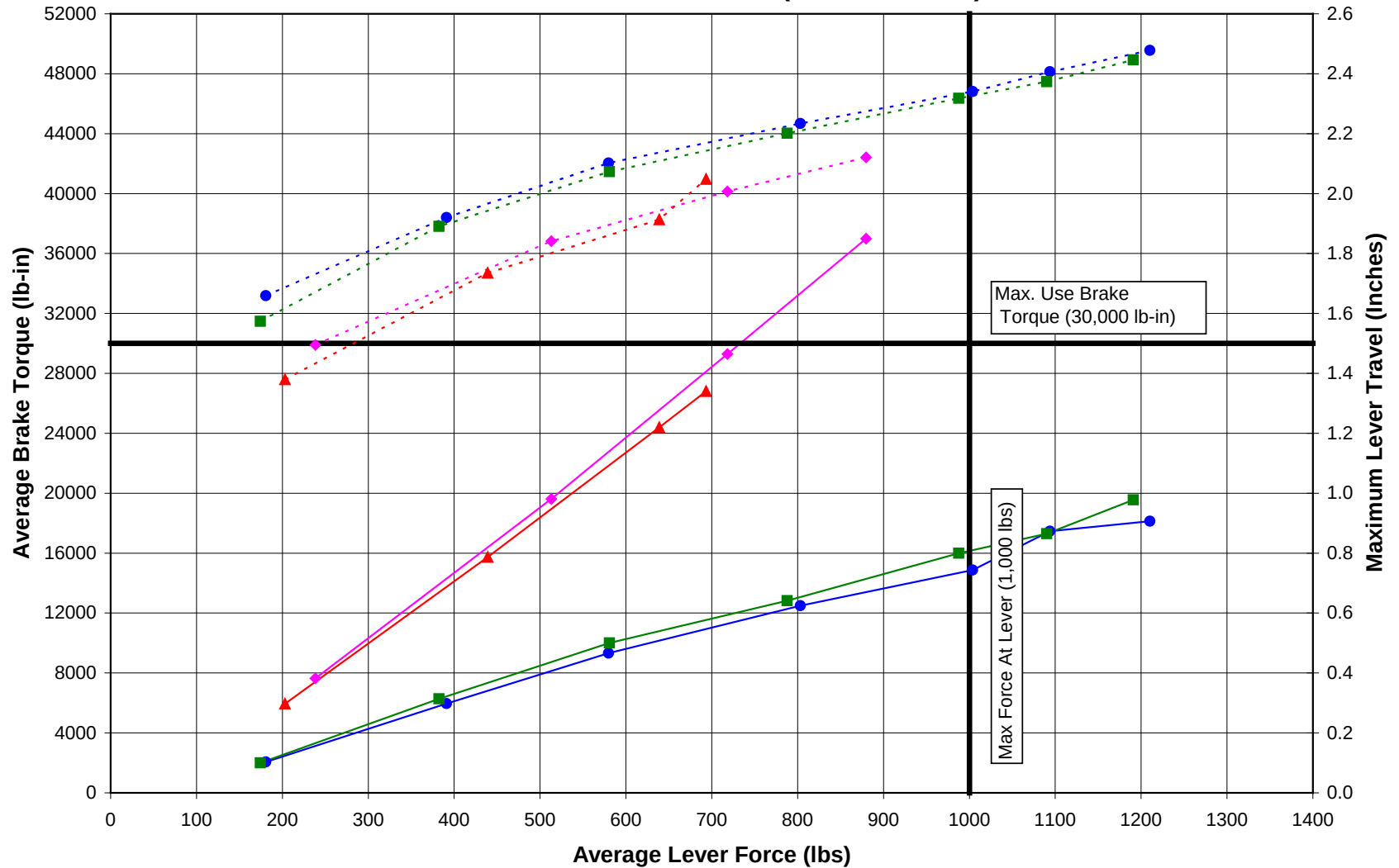
9x3 stat and dynamic perf

4152205 02202009

9 X 3 Park Brake Pre-Burnish Static Forward & Reverse **D-2001-0035 P/N 4152205 (Abex 3027-108)**

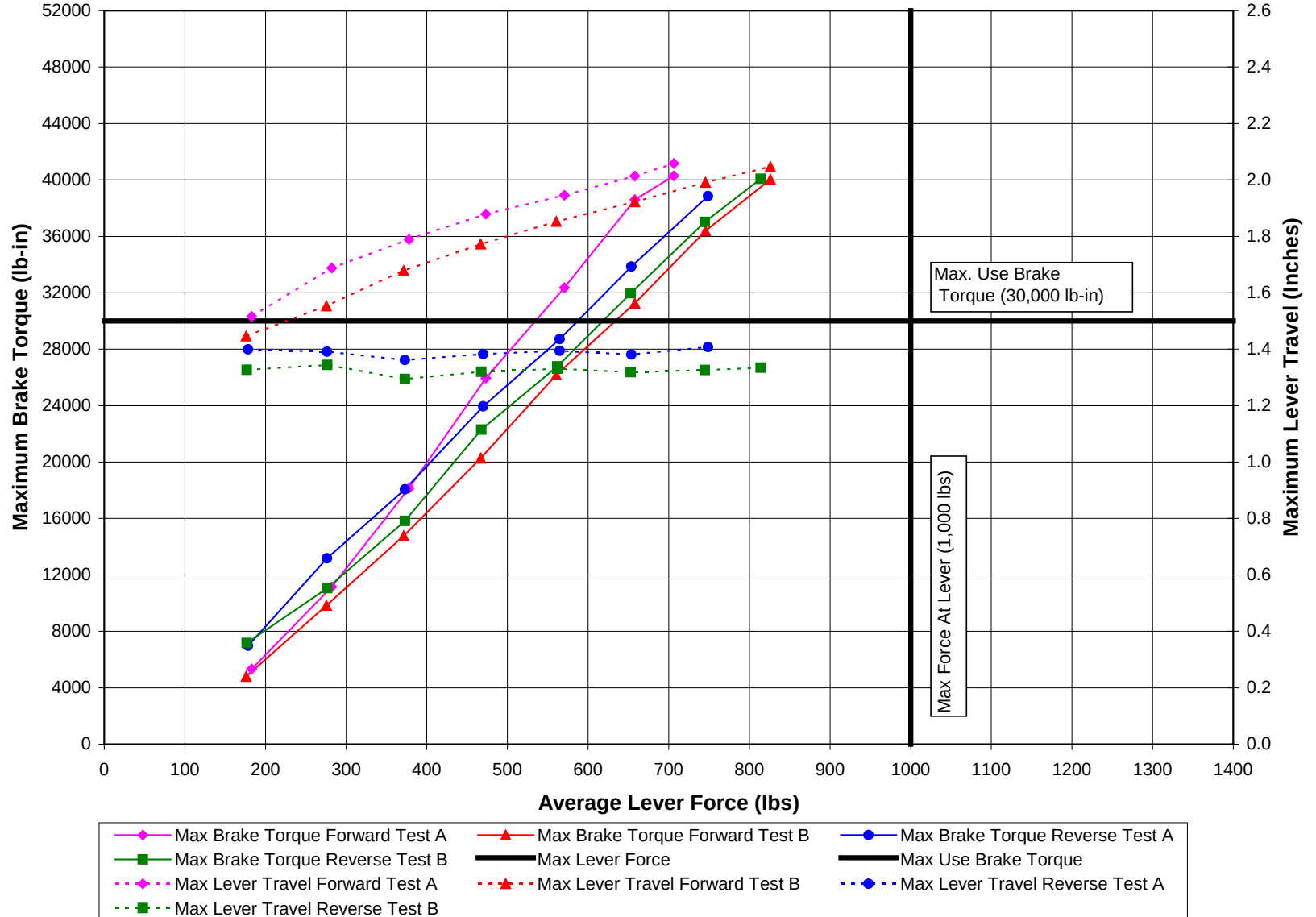


9 X 3 Park Brake Pre-Burnish Dynamic 5 & 20 mph Forward D-2001-0035 P/N 4152205 (Abex 3027-108)

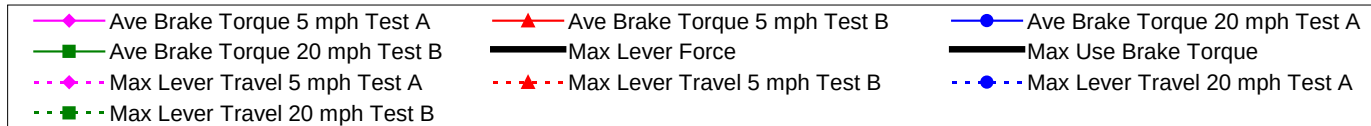
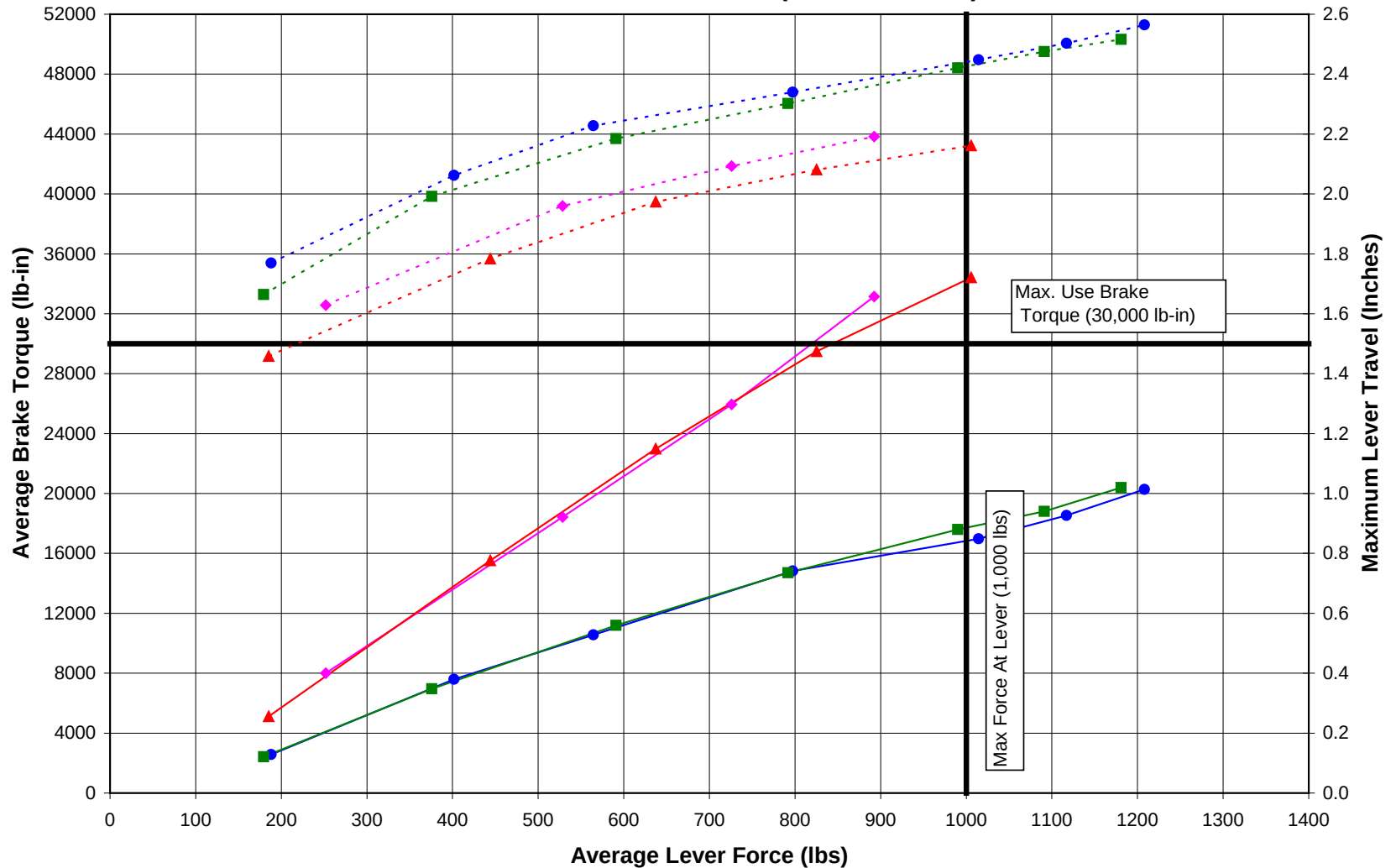


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|----------------------------------|---------------------------------|----------------------------------|
| ◆ Ave Brake Torque 5 mph Test A | ▲ Ave Brake Torque 5 mph Test B | ● Ave Brake Torque 20 mph Test A |
| ■ Ave Brake Torque 20 mph Test B | — Max Lever Force | — Max Use Brake Torque |
| ◆ Max Lever Travel 5 mph Test A | ▲ Max Lever Travel 5 mph Test B | ● Max Lever Travel 20 mph Test A |
| ■ Max Lever Travel 20 mph Test B | | |

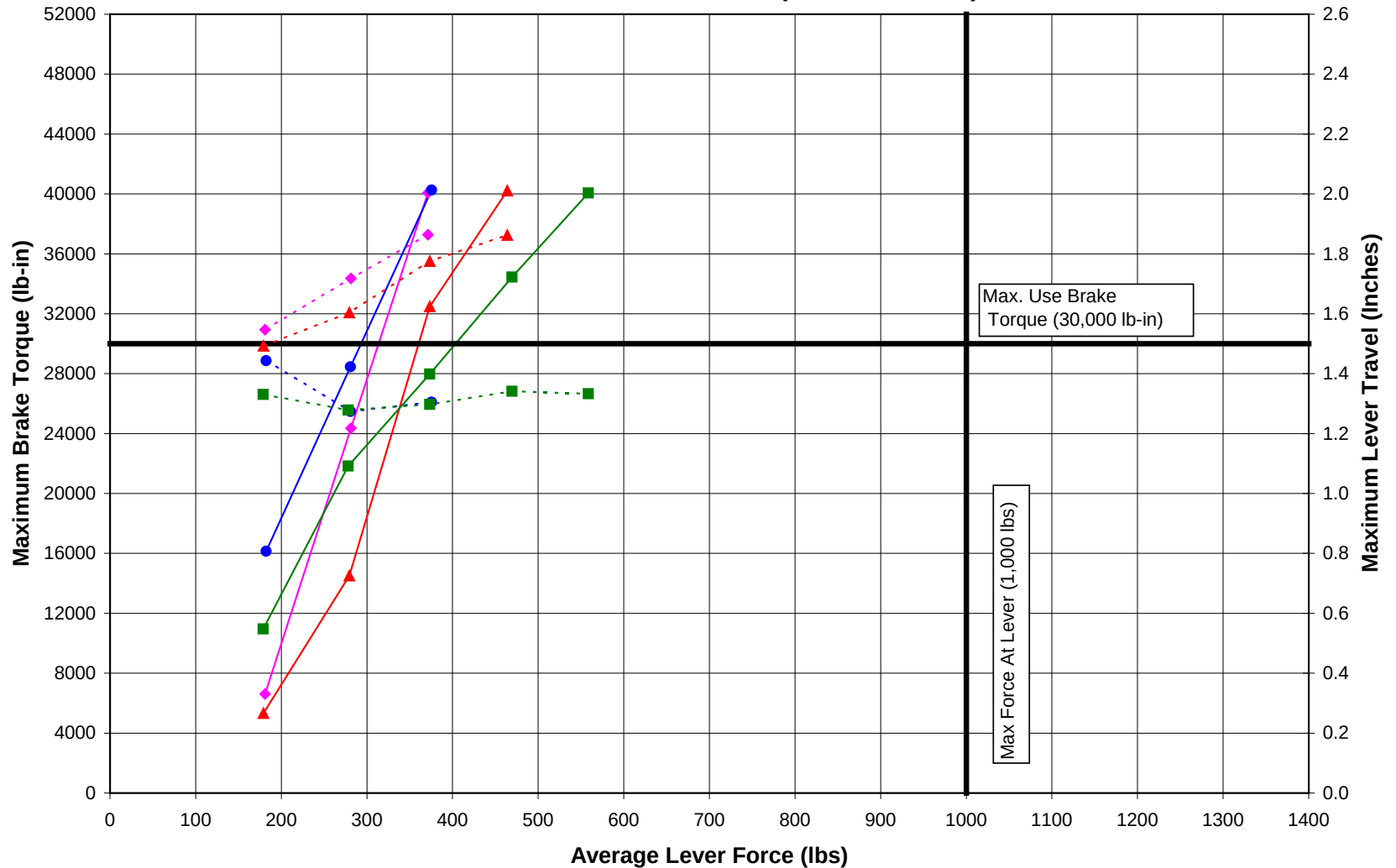
9 X 3 Park Brake 10 Stop Post-Burnish Static Forward & Reverse **D-2001-0035 P/N 4152205 (Abex 3027-108)**



9 X 3 Park Brake 10 Stop Post-Burnish Dynamic 5 & 20 mph Forward **D-2001-0035 P/N 4152205 (Abex 3027-108)**

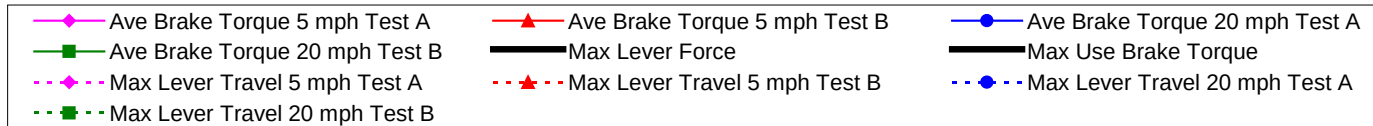
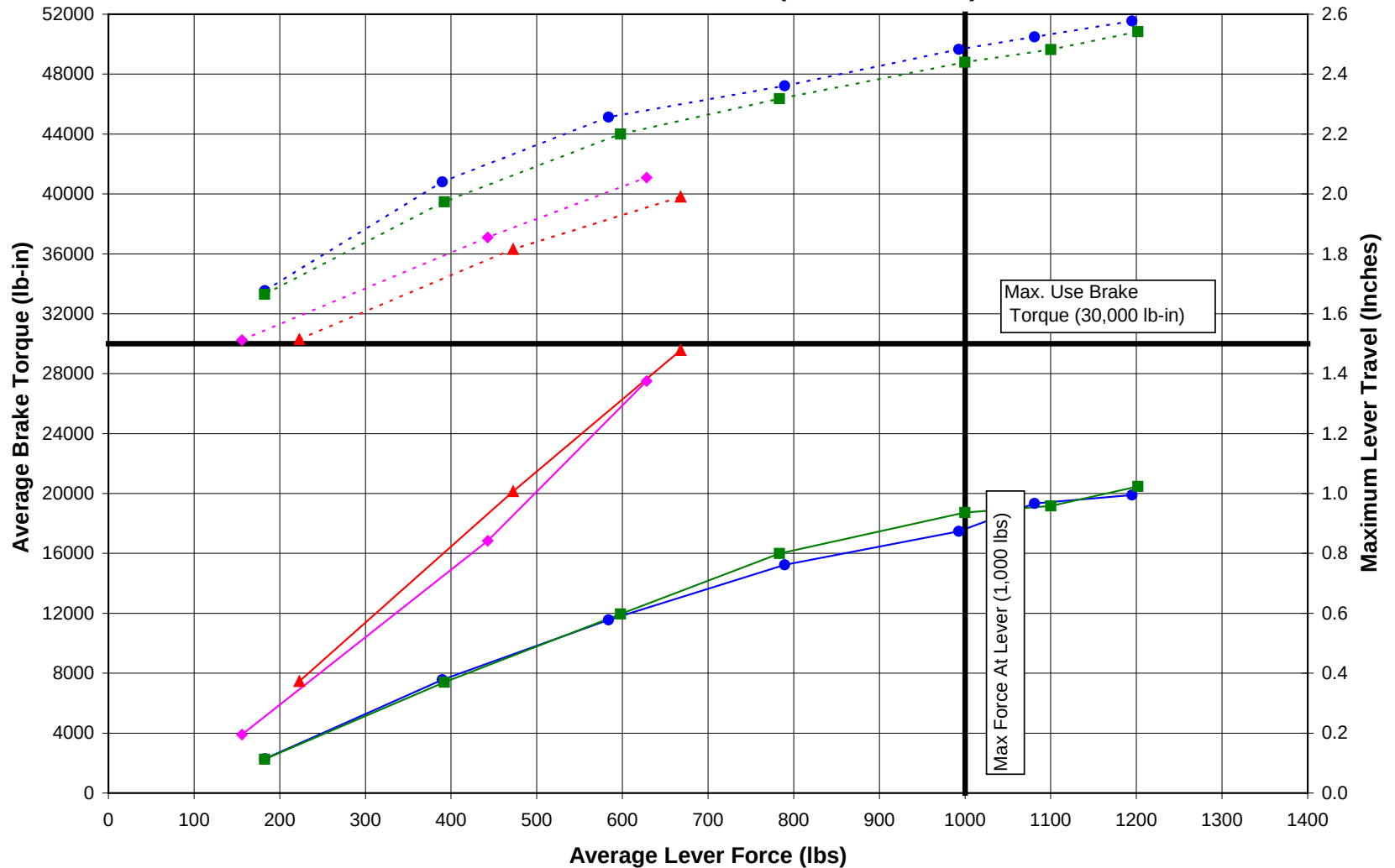


9 X 3 Park Brake 100 Stop Post-Burnish Static Forward & Reverse **D-2001-0035 P/N 4152205 (Abex 3027-108)**



- | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|
| ◆ Max Brake Torque Forward Test A | ▲ Max Brake Torque Forward Test B | ● Max Brake Torque Reverse Test A |
| ■ Max Brake Torque Reverse Test B | — Max Lever Force | — Max Use Brake Torque |
| ◆ Max Lever Travel Forward Test A | ★ Max Lever Travel Forward Test B | ● Max Lever Travel Reverse Test A |
| ■ Max Lever Travel Reverse Test B | | |

9 X 3 Park Brake 100 Stop Post-Burnish Dynamic 5 & 20 mph Forward
D-2001-0035 P/N 4152205 (Abex 3027-108)



	1st Static Forward			1st Static Reverse			1st Dynamic 5 mph Forward			1st Dynamic 20 mph Forward		
Test Sample	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
A	178.81	4038	1.1463	178.35	6973	1.3996	238.32	7645	1.4948	180.73	2069	1.659
	277.96	7526	1.3153	276.41	13175	1.391	513.1	19620	1.8415	391.1	5960	1.9202
	373.9	12278	1.4863	372.8	18058	1.3617	718.3	29283	2.0069	579.8	9320	2.1021
	469.3	17612	1.6034	469.9	23951	1.3825	879.8	36991	2.121	803.3	12494	2.234
	562.9	23734	1.7139	564.7	28718	1.3941				1003.8	14878	2.3408
	659.1	29142	1.8073	653.6	33860	1.3813				1093.7	17472	2.4067
	748.8	34257	1.8989	748.8	38859	1.4075				1210.2	18125	2.4781
	847.3	39793	2.0026									
	2nd Static Forward			2nd Static Reverse			2nd Dynamic 5 mph Forward			2nd Dynamic 20 mph Forward		
	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
A	182.93	5319	1.5162	182.29	8097	1.4521	252.05	7999	1.6285	188.15	2570	1.7695
	282.17	11151	1.6877	282.27	13236	1.5064	528.5	18421	1.9599	401.7	7602	2.0618
	377.9	18143	1.789	377.7	17957	1.4087	725.9	25950	2.093	564.4	10553	2.2279
	473.3	25941	1.8793	472.2	23154	1.3862	892.5	33146	2.1918	797.3	14832	2.3395
	570.7	32365	1.9459	567.9	28672	1.4386				1014.3	16974	2.4482
	658	38600	2.0136	659.2	33424	1.4374				1117	18540	2.5031
	706.3	40291	2.0582	753	38752	1.4435				1208	20267	2.5648
	3rd Static Forward			3rd Static Reverse			3rd Dynamic 5 mph Forward			3rd Dynamic 20 mph Forward		
	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
A	181.1	6619	1.5473	182.38	16147	1.4435	155.92	3909	1.5125	182.65	2283	1.6773
	281.26	24366	1.7176	280.89	28465	1.2738	442.8	16837	1.8549	389.7	7566	2.0399
	371.2	40074	1.8641	375.5	40260	1.305	628.4	27509	2.0545	583.8	11554	2.2565
										789.5	15232	2.3609
										992.6	17472	2.4824
										1081	19343	2.5245
										1194.8	19892	2.5776

	1st Static Forward			1st Static Reverse			1st Dynamic 5 mph Forward			1st Dynamic 20 mph Forward		
Test Sample	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
B	175.51	4010	1.203	176.89	6525	1.247	203.07	5936	1.3794	174.41	1999	1.5735
	274.48	7395	1.3678	274.76	10648	1.2378	439.1	15744	1.7353	382.3	6269	1.8903
	371	11933	1.4716	371.3	14420	1.2958	638.9	24390	1.9129	581	10010	2.0734
	466.4	17045	1.5766	467.3	18967	1.3294	693.3	26801	2.0478	787.9	12824	2.201
	557.9	21903	1.6639	560.8	24570	1.3483				987.7	16001	2.3182
	654.2	27317	1.7579	654.4	29368	1.3562				1090	17301	2.3731
	745.9	32893	1.8622	747.6	34153	1.3758				1191	19553	2.4464
	840	38023	1.9398	842.9	38893	1.4002						
	2nd Static Forward			2nd Static Reverse			2nd Dynamic 5 mph Forward			2nd Dynamic 20 mph Forward		
	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
B	175.88	4798	1.446	176.89	7169	1.3269	185.31	5112	1.4582	179.36	2417	1.6645
	275.58	9839	1.5528	276.5	11057	1.3446	444	15528	1.7841	375.7	6967	1.9916
	371.4	14762	1.6785	372.9	15818	1.294	637.3	22983	1.9739	591	11203	2.1845
	466.8	20273	1.7725	467.7	22294	1.3202	825.1	29490	2.0808	791.8	14701	2.3023
	560.5	26179	1.8525	561.9	26777	1.3306	1005.6	34416	2.1613	990.1	17597	2.4207
	658	31254	1.9221	652.8	31968	1.3184				1091.1	18799	2.4751
	745.4	36393	1.991	744.8	37022	1.3263				1181	20389	2.5159
	826.1	40037	2.0472	814	40071	1.3343						
	3rd Static Forward			3rd Static Reverse			3rd Dynamic 5 mph Forward			3rd Dynamic 20 mph Forward		
	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Max Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel	Average Lever Force	Average Brake Torque	Max Lever Travel
B	179.17	5332	1.4924	178.99	10959	1.3306	222.94	7453	1.5143	182.38	2261	1.6651
	279.43	14515	1.6041	278.05	21830	1.2787	472.5	20130	1.8152	392.2	7404	1.9733
	373.5	32487	1.7756	373.5	27967	1.297	668	29557	1.9904	597.9	11948	2.1998
	464	40220	1.8628	469.5	34452	1.3416				783.3	15989	2.3182
				558.7	40056	1.333				999.9	18723	2.4396
										1100.1	19175	2.4818
										1201.8	20466	2.5416

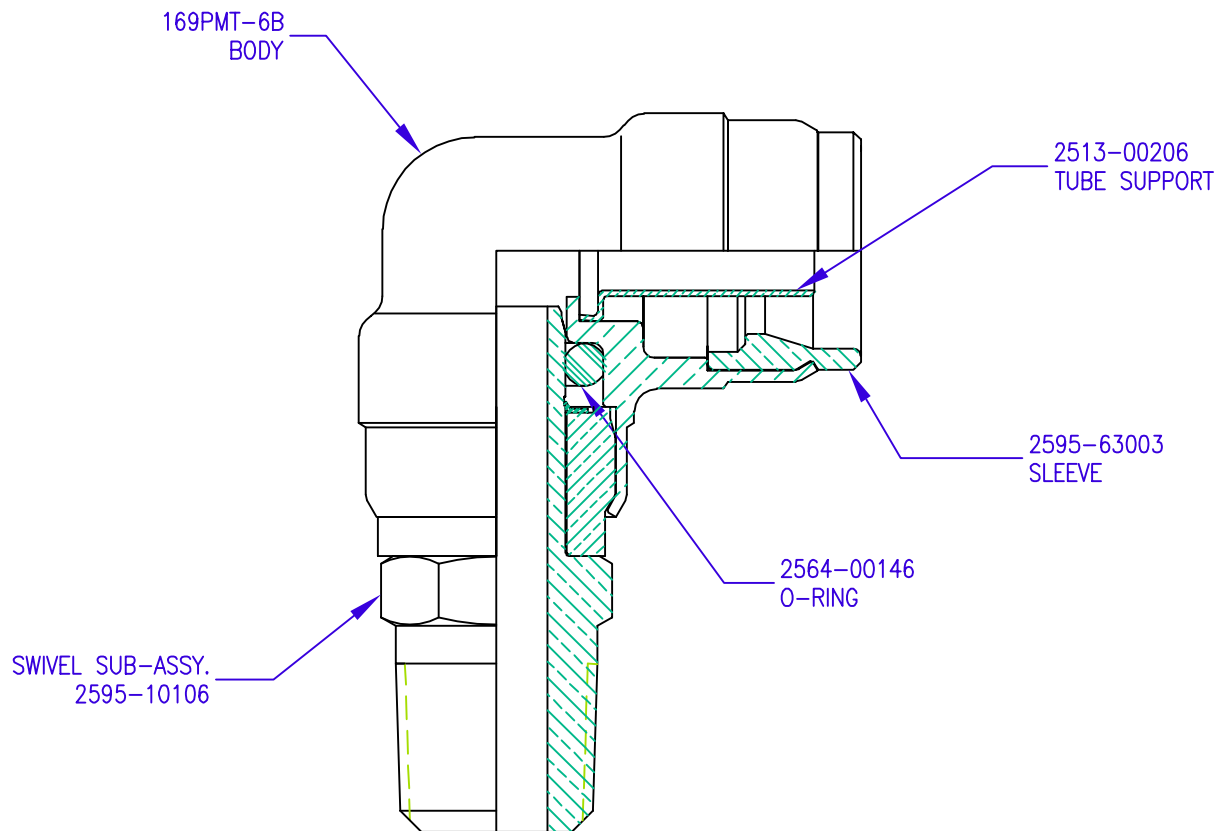
PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 9

90 degree positionable fitting



NOTES:
O-RING IS TO BE LUBRICATED
PRIOR TO ASSEMBLY.

TOLERANCES
UNLESS OTHERWISE NOTED:
.XX ± .XXX ±
FRAC. ± ANG. ±

C4190

RELEASE

4/06

SCH

E.C.N.

CHG
NO

CHANGES

DATE

BY

MAKE FROM

NOTED

FINISH

HEAT TREAT

MATERIAL



PARKER HANNIFIN CORP
BRASS PRODUCTS DIVISION
300 PARKER DR OTSEGO, MI 49078

TITLE

MALE ELBOW SWIVEL SUB-ASSEMBLY

SIZE

A

PART NUMBER

169PMT-6-4BA

REV.

DWG SCALE

2:1

BY

SAP

DRAWN

DATE

8/95

BY

SCH

APPROVED

DATE

4/06

PE12-008

NAVISTOR TRUCK GROUP

5-18-2012

Request 9

2007 Champion Air System
Testing Report

2007 Champion / International Bus Air System Testing Report

February 24, 2001

In a continuing effort to evaluate all potential areas of failures that could be a possible cause of the bus fire involving 075218, Ric Willard of the National Highway Traffic Safety Administration (NHTSA) and [REDACTED] Fleet Management (Fleet) performed air system testing on a bus from the 2007 Champion / International bus fleet. The testing was to evaluate the ability of the air system to maintain an air supply in the event of a breach in the parking brake air supply line between the park brake application valve and the park brake chamber.

The testing took place on February 24, 2001 at Fleet's EMOC shop located at [REDACTED] Rockville, Md. [REDACTED]. Bus 075196 was used for the testing. 075196 is part of the 2007 Champion / International bus order and is an exemplar bus to 075218.

Bus Body: 2007 Champion EZ-Trans
Bus Chassis: 2007 International 3200 IM
Engine: International VT365
Engine Curb Idle: 600 RPM
Engine High Idle: 2800 RPM No Load
Air Compressor: Bendix Tu-Flo 550
Air supply line from Compressor to air tank: 5/8' O.D. Plastic Brake hose
Air supply line from application valve to Chamber: 3/8' O.D. Plastic Brake hose

The goals of the testing were to evaluate the following:

- a. Is the air system cable of sustaining the supply tank system pressure when a minor or major leak occurs in the parking brake system
- b. Will the system maintain enough pressure to keep the low air light, audible alarm and parking brake light off
- c. If not, how long will it take the air system to bleed off enough to activate the low air light and alarm and parking brake light
- d. Could a leak cause the parking brake system to apply partially or full and not activate any of the warning devises

An air conditioning manifold set and a homemade shutoff device was fabricated and use for the testing. (see pictures below)



The air conditioning manifold set from the fully closed position to the fully open position is 2 ¾ turns. For purposes of this test the following definitions will be used,

Minor leak – 1 ¼ turns open from the fully closed position

Major leak – 2 ¾ turns open from the fully closed position

Wide open – the 3/8 supply line at the parking brake chamber was disconnected, as if the line was fully breached.

All air leaks in this testing were simulated at the point where the air line fitting attaches to the parking brake chamber.

Prior to testing the bus air system was tested for operation and leakage according to DOT standards for driver's pre-trip inspections.

The following is the results of that testing.

Test 1

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and no air leaks
33 seconds

Test 2

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and no air leaks
22 seconds

Test 3

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak
28 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 4

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak

Air pressure dropped to 80 psi and sustained that pressure for 1 minute until test was ended. No lights or alarms were activated.

Test 5

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and minor air leak
18 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 6

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and major air leak
14 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 7

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and major air leak

Air pressure dropped to 82 psi and sustained that pressure for 1 minute until test was ended. No lights or alarms were activated.

Test 8

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and major air leak

19 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 9

Engine running at 700 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

10 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 10

Engine running at 1000 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

11 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 11

Engine running at 1500 rpm, air system at 90 psi pressurizing to 120 psi and wide open air leak

18 seconds, system did not sustain air pressure and activated low air light and audible alarm at 75 psi, but did not activate parking brake light.

Test 12

Engine running at 700 rpm air system at 90 psi with a minor leak

19 seconds for partial parking brake application and simultaneous low air light and audible alarm at 75 psi.

Test 13

Engine running at 1000 rpm air system at 90 psi with a minor leak

22 seconds for partial parking brake application and simultaneous low air light and audible alarm at 75 psi.

Test 14

Engine running at 1500 rpm air system at 90 psi with a minor leak

Dropped to 79 psi and maintained pressure until test ended at 1 minute. No push rod movement.

Test 15

Engine running at 1500 rpm air system at 90 psi with a major leak
Dropped to 80 psi and maintained pressure until test ended at 1 minute. No push rod movement.

Note 1: Test 12 through 15 are not necessary with a wide open air leak because we know with the air line fully disconnected from the chamber that the parking brake is fully applied.

Note 2: With the engine at a steady state of 1500 rpms the air leaks could be modified at varying levels from minor to major so that partial brake application of up to 1/4" inches could be maintained, without the driver's low air light, audible alarm, or parking brake light activation.

Addendum to the above testing

On March 2, 2011, [REDACTED] Fleet Management and Mike Peters of Navistar IC Bus conducted a final test on another exemplar bus (075207) from the 2007 Champion/ International bus fleet. The testing took place at Fleet's [REDACTED] [REDACTED] Rockville, Md. [REDACTED]. Only one test was preformed.

The goal of the test was to see if the buses air system would build air pressure from 40 psi (just above the pressure when the parking brake application valve will automatically apply) to 75psi and turn off the low air light and audible alarm.

The test revealed that at an engine speed of 2500 rpm with the parking brake supply line fully disconnected at the chamber the buses air system was able to build the air pressure and deactivate the low air warning devices in 1 minute and 23 seconds. The parking brake light went out as soon as the parking brake application valve was pushed in and remained out for the duration of the test.

Conclusion

Testing demonstrated that it is possible to have a partial or full parking brake application at certain engine RPMs no matter the size of the leak in the parking brake air circuit with out warning to the driver.

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5-18-2012

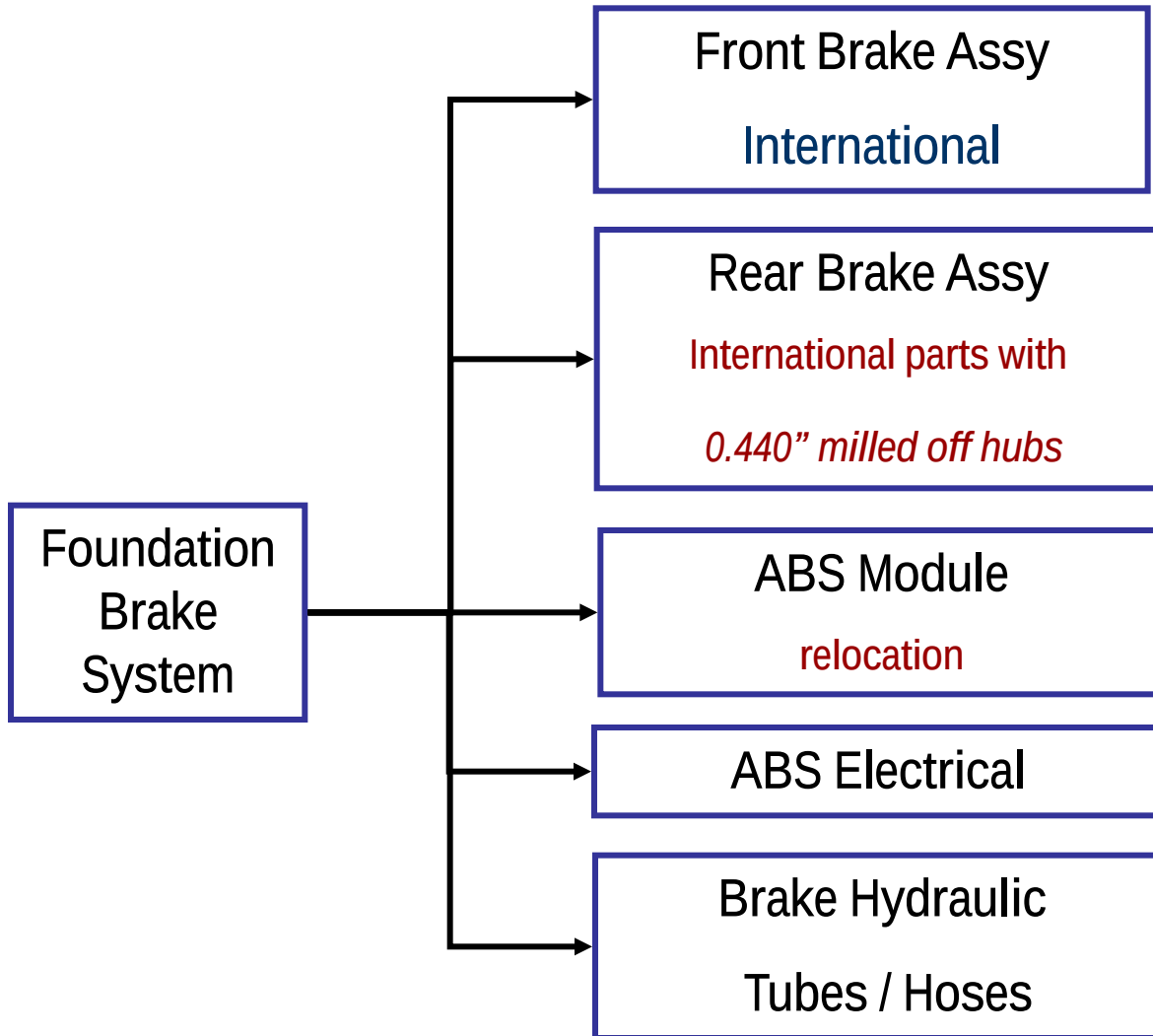
Request 9

DiagramFile -

FOUNDATIONBRAKES

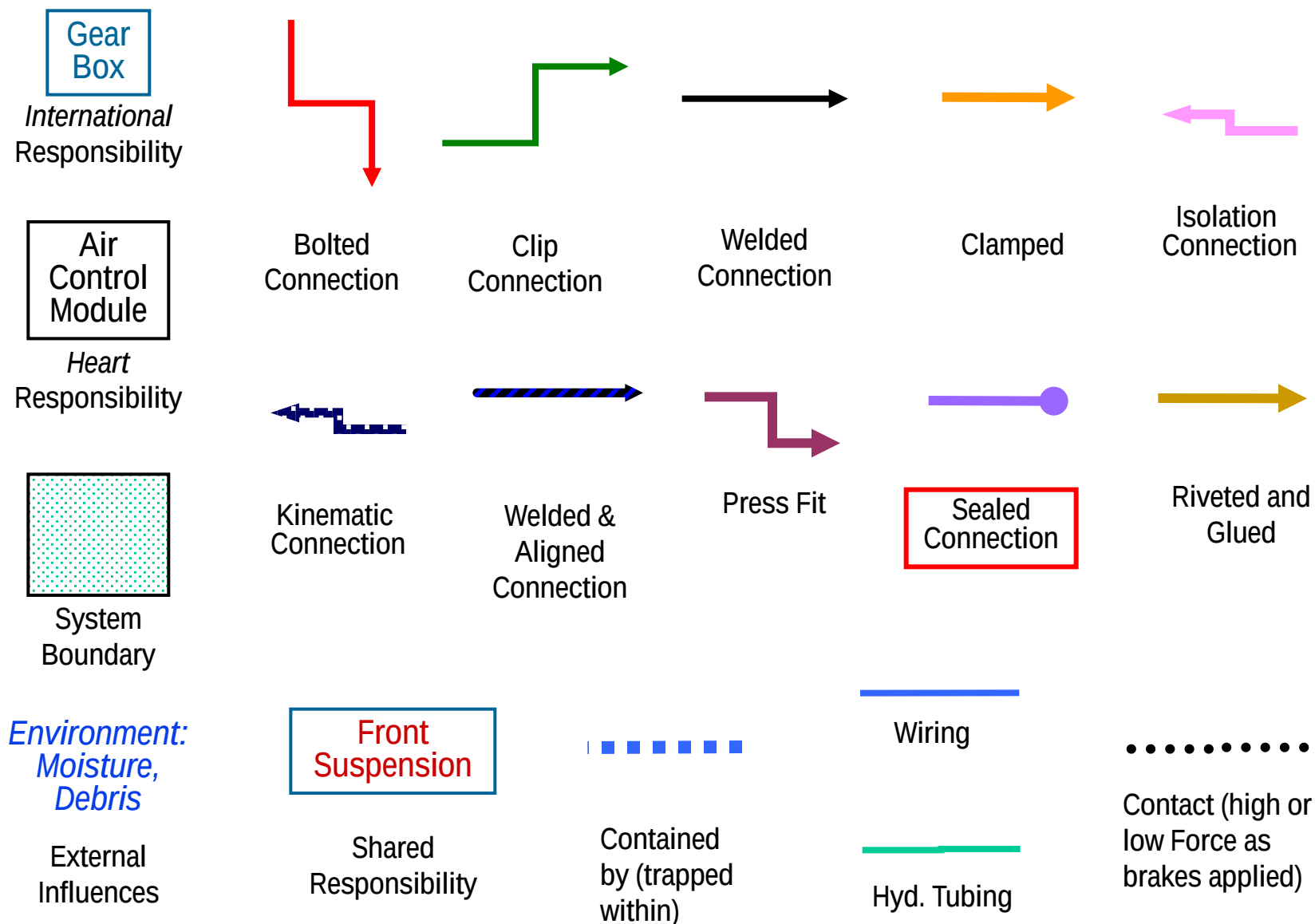


Block Diagram: Foundation Brake System





Legend For Boundary Diagram





Foundation Brakes: Boundary Diagram

Front Brake Assy

(International)

Electrical
Wiring &
Hyd. Tubing
(steel w/
anchor brkts,
routing clips &
hyd. fittings)

ABS Module
(relocated)

Electrical
Wiring

Hyd.
Tubing
(steel
with
fittings)

Wheel
Brake
Hoses
(rubber w/
anchor
brkts &
hyd.
fittings)

Rear Brake Assy

Caliper Assy. (relocated)

Brake Pads*

Slider Kits*

Backing Plate

Tie Bar

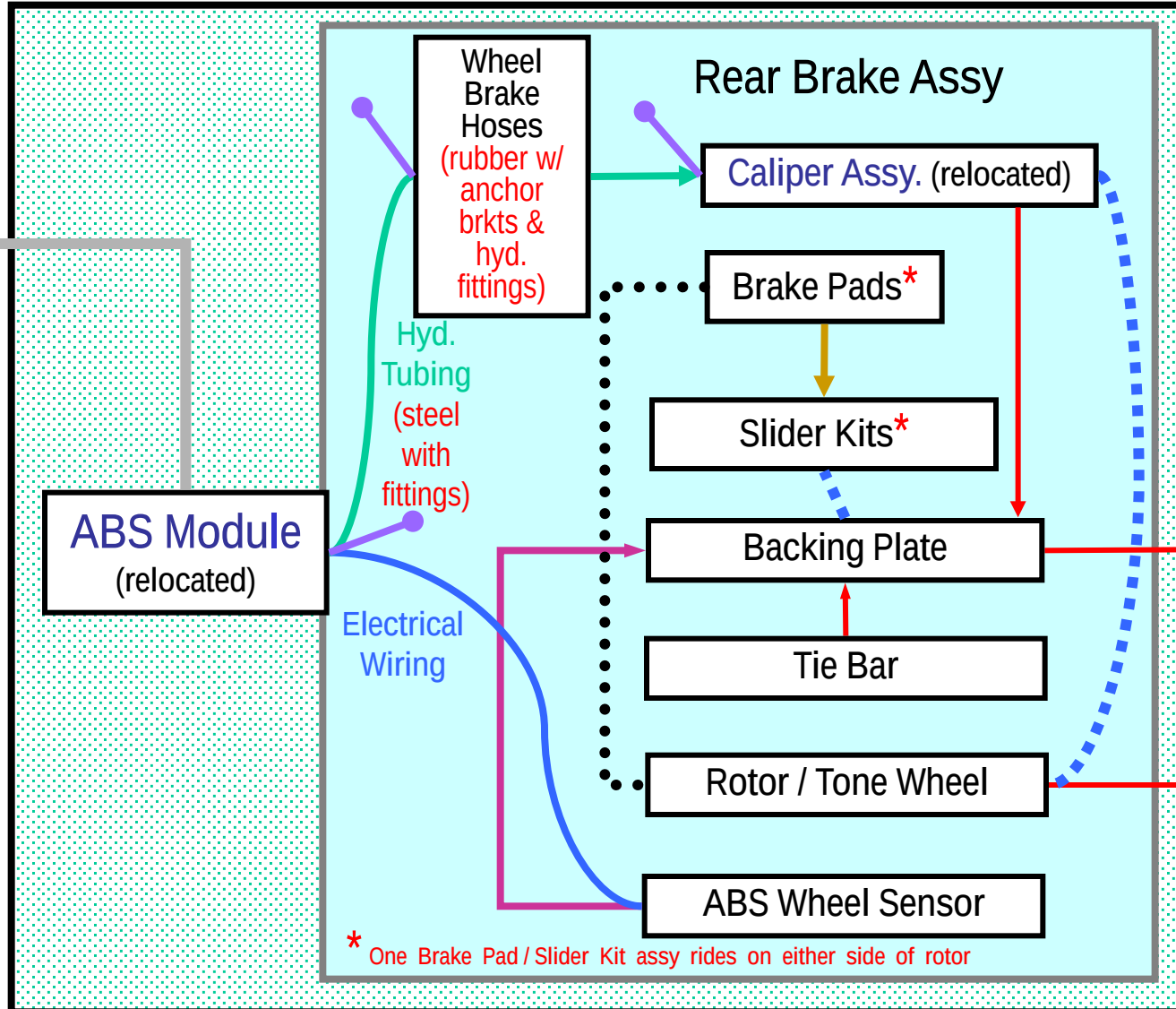
Rotor / Tone Wheel

ABS Wheel Sensor

Geared
Wheel
End

Rear
Hub

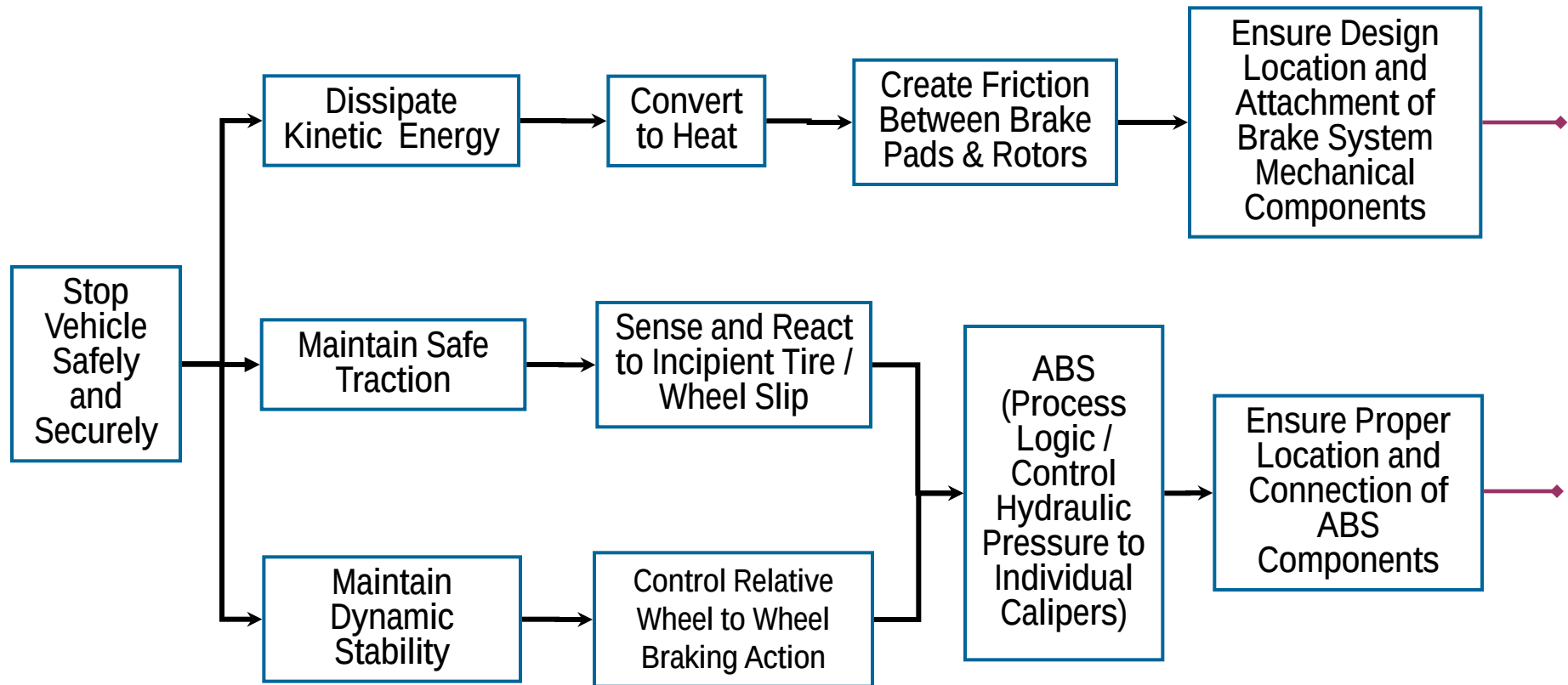
* One Brake Pad / Slider Kit assy rides on either side of rotor





Foundation Brake System

Function Diagram: Basic Functions

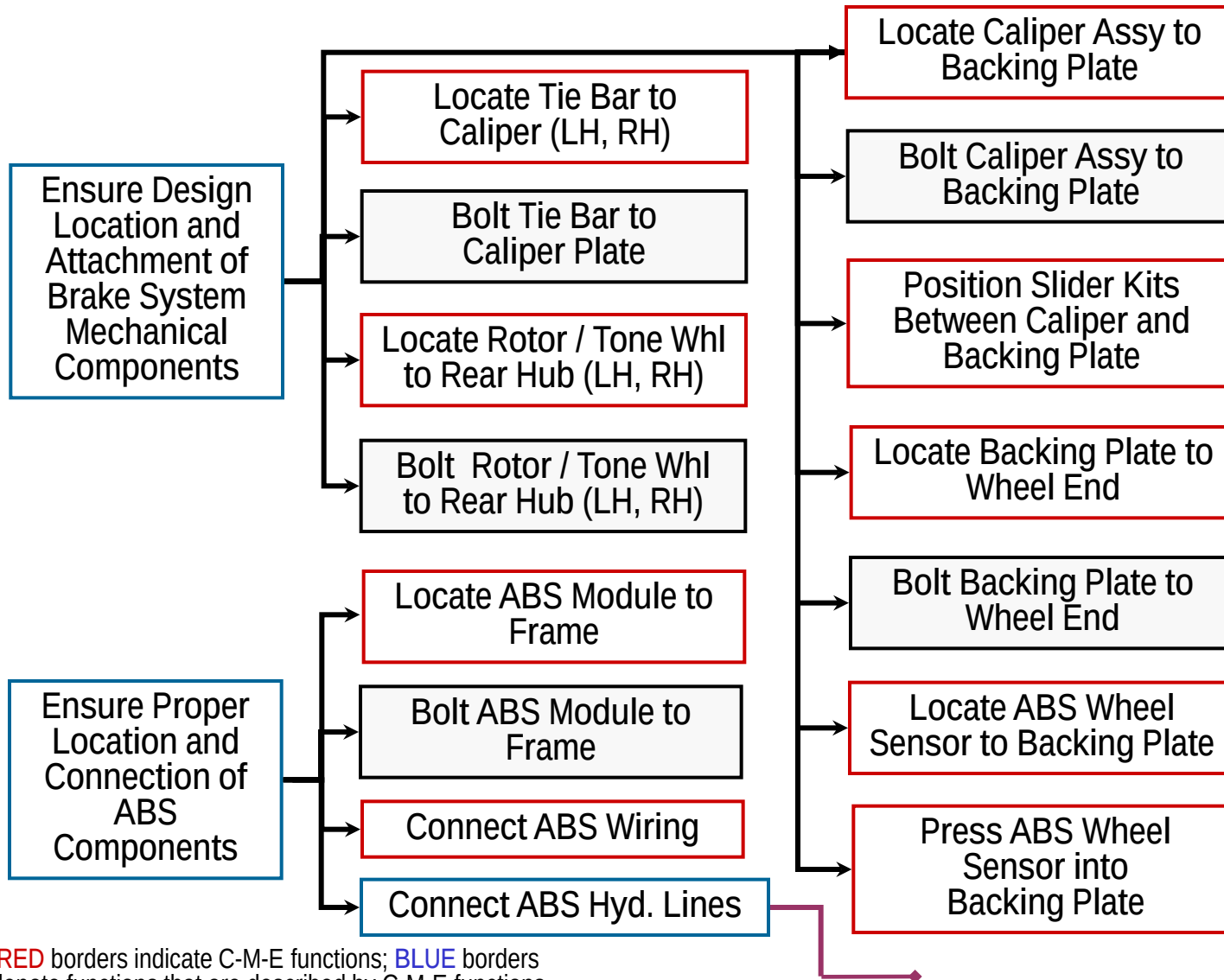


RED borders indicate C-M-E functions; BLUE borders denote functions that are described by C-M-E functions



Foundation Brake System

Function Diagram: Basic Functions

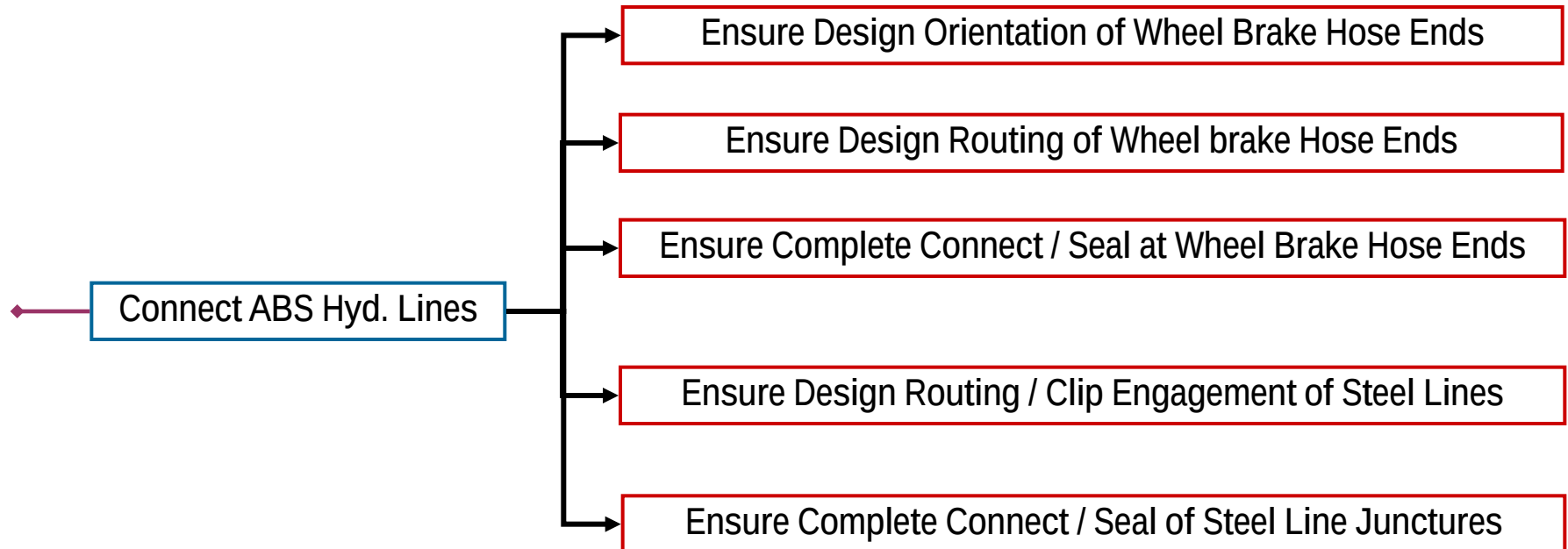


RED borders indicate C-M-E functions; BLUE borders denote functions that are described by C-M-E functions



Foundation Brake System

Function Diagram: Basic Functions



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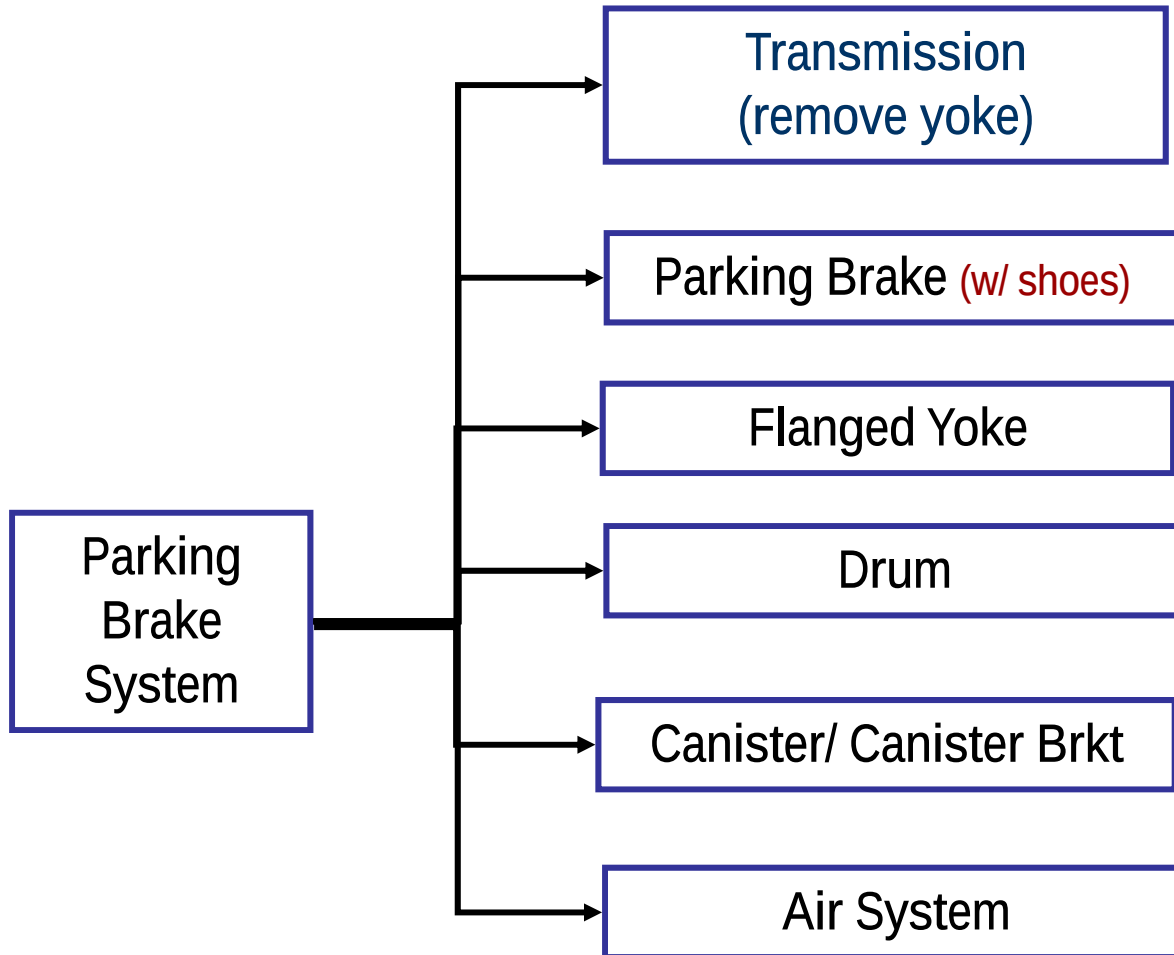
5-18-2012

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DiagramFile-PARKBRAKE

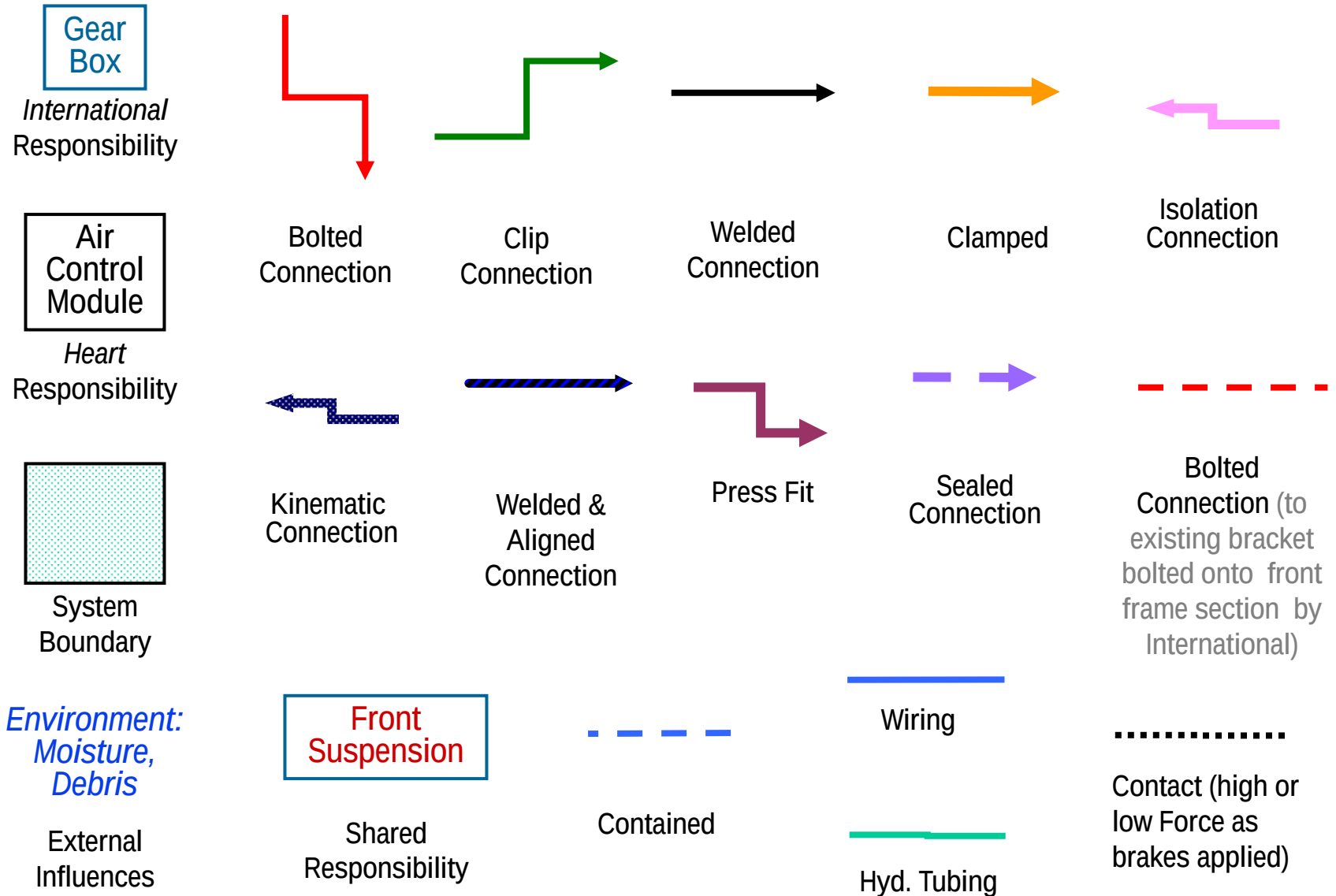


Block Diagram: Park Brake System





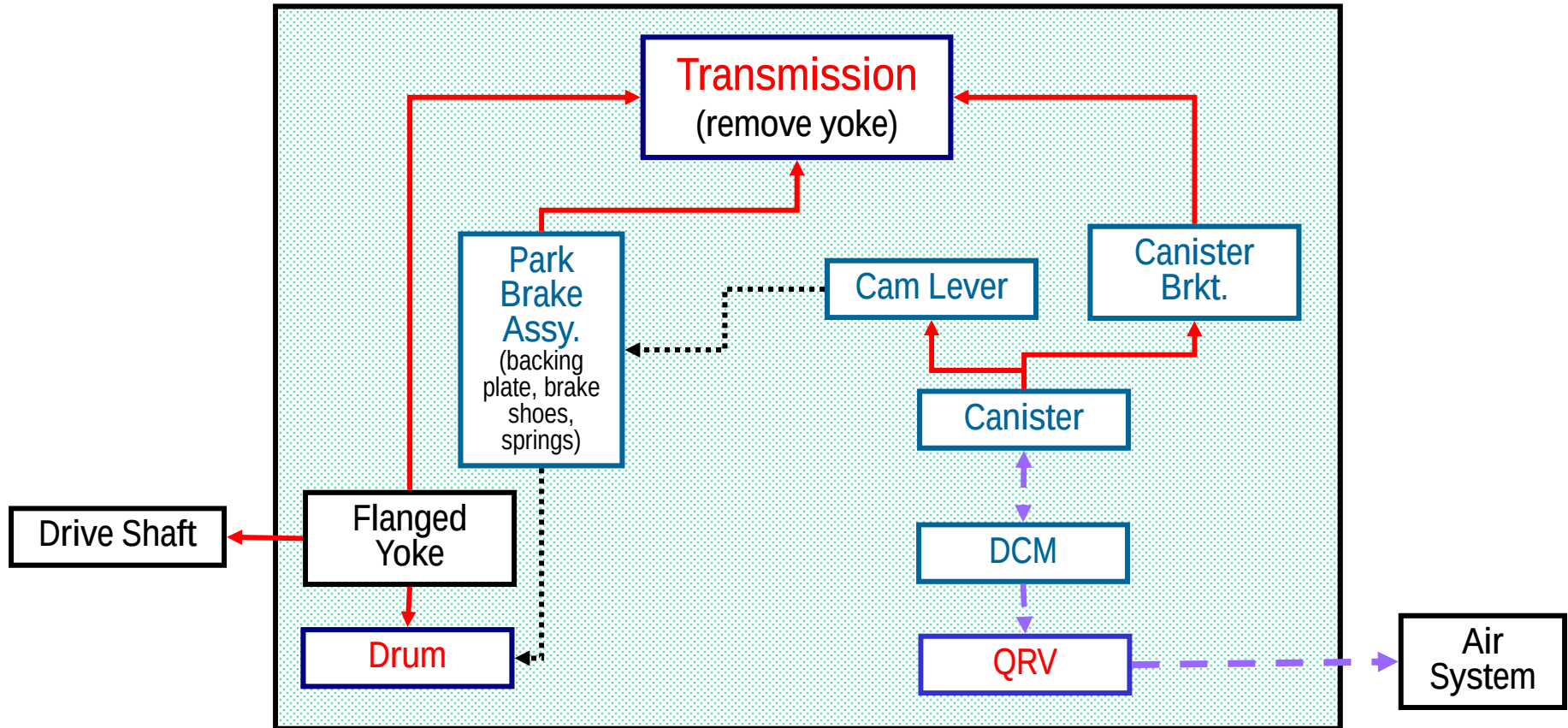
Legend For Boundary Diagram





Park Brakes:

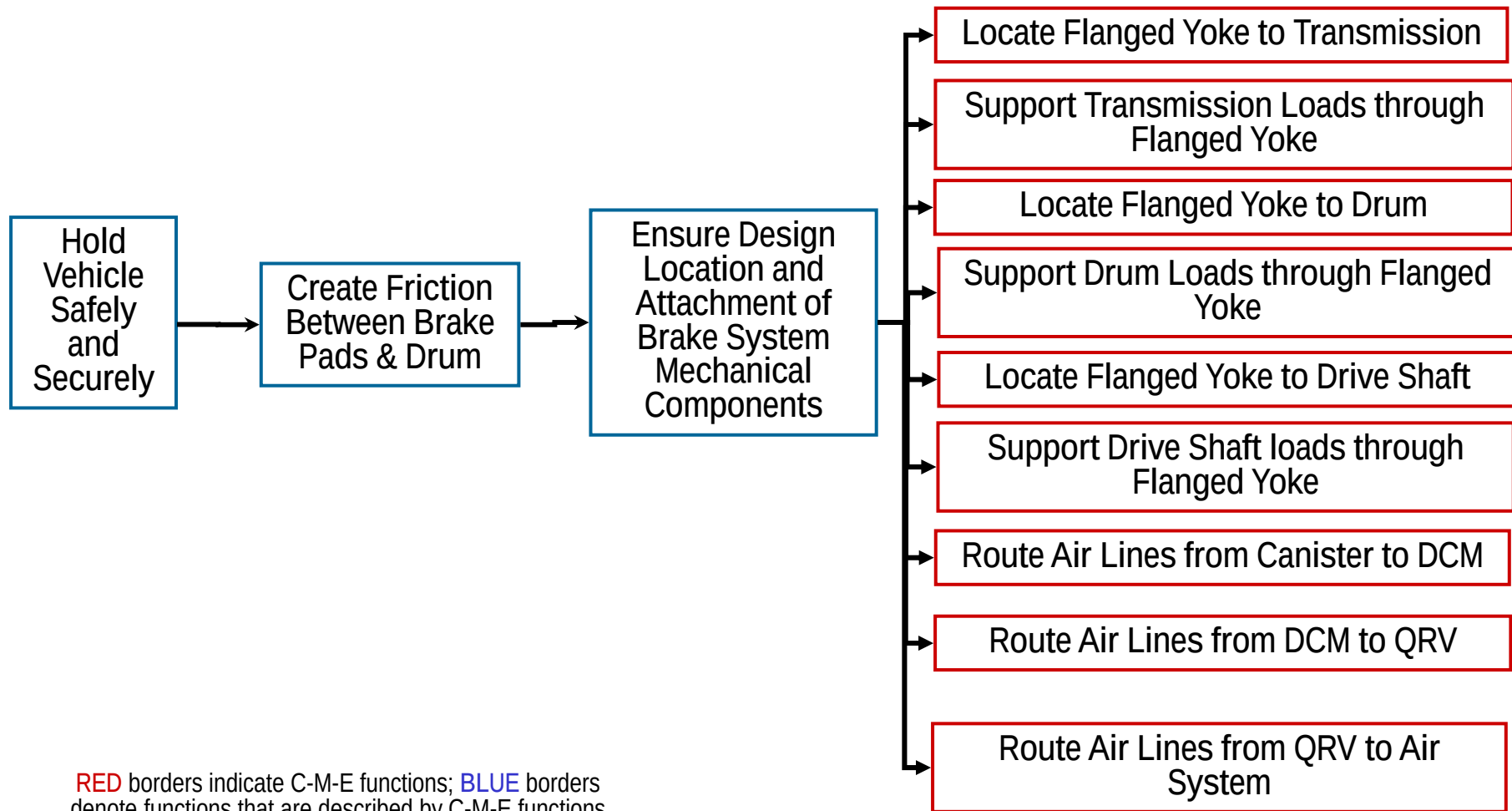
Boundary Diagram





Park Brake System

Function Diagram: Basic Functions



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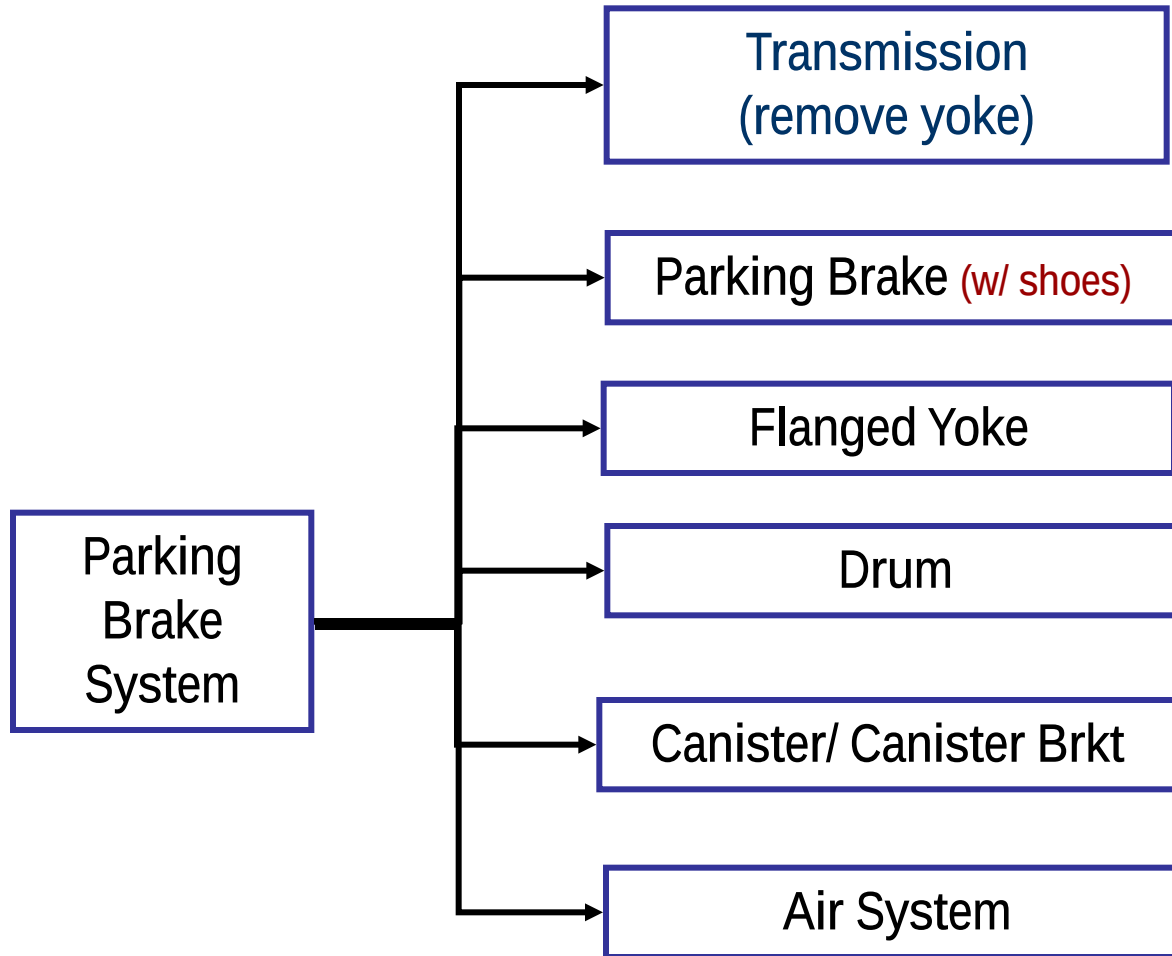
Request 9

DiagramFile-

PARKINGBRAKES

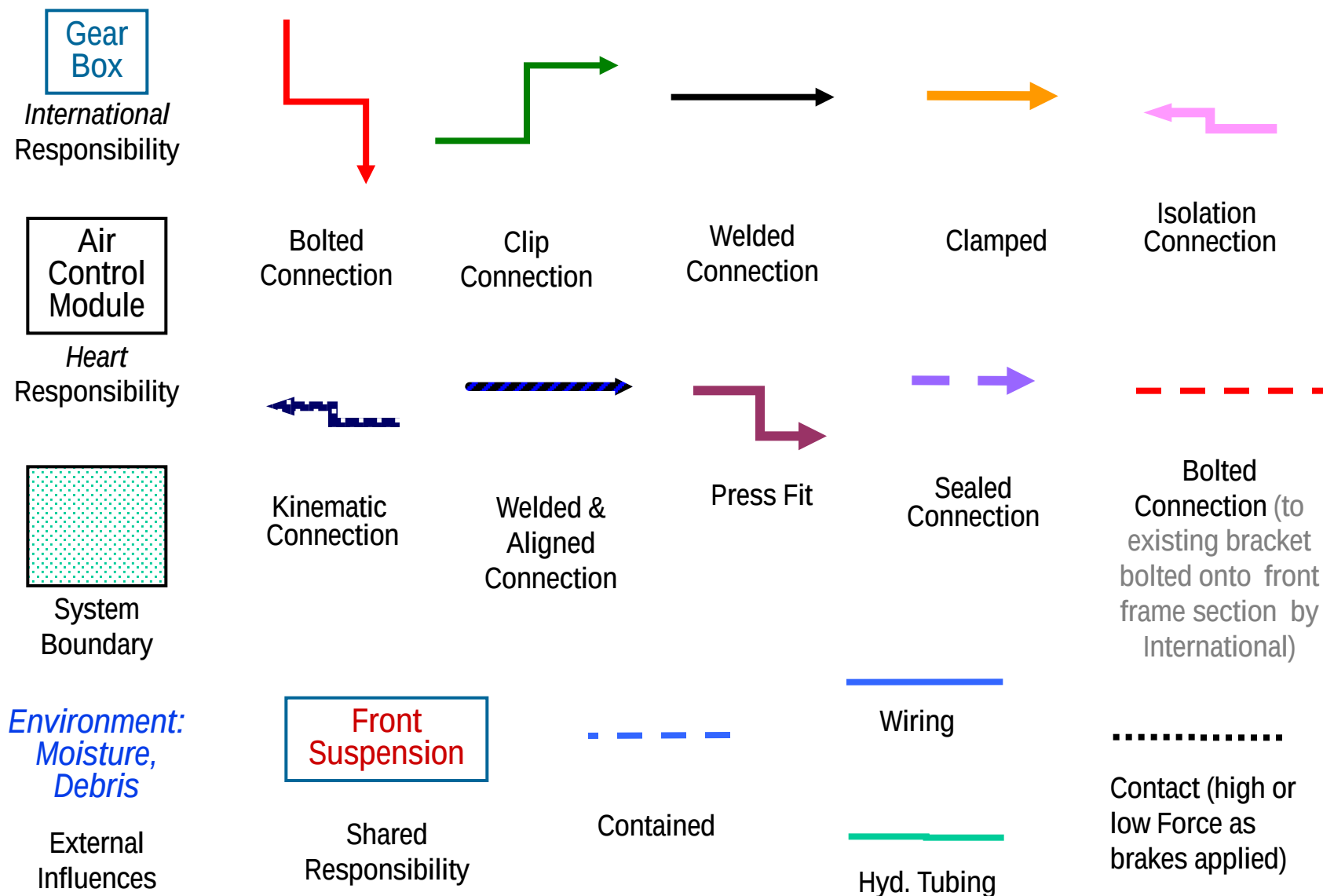


Block Diagram: Parking Brake System





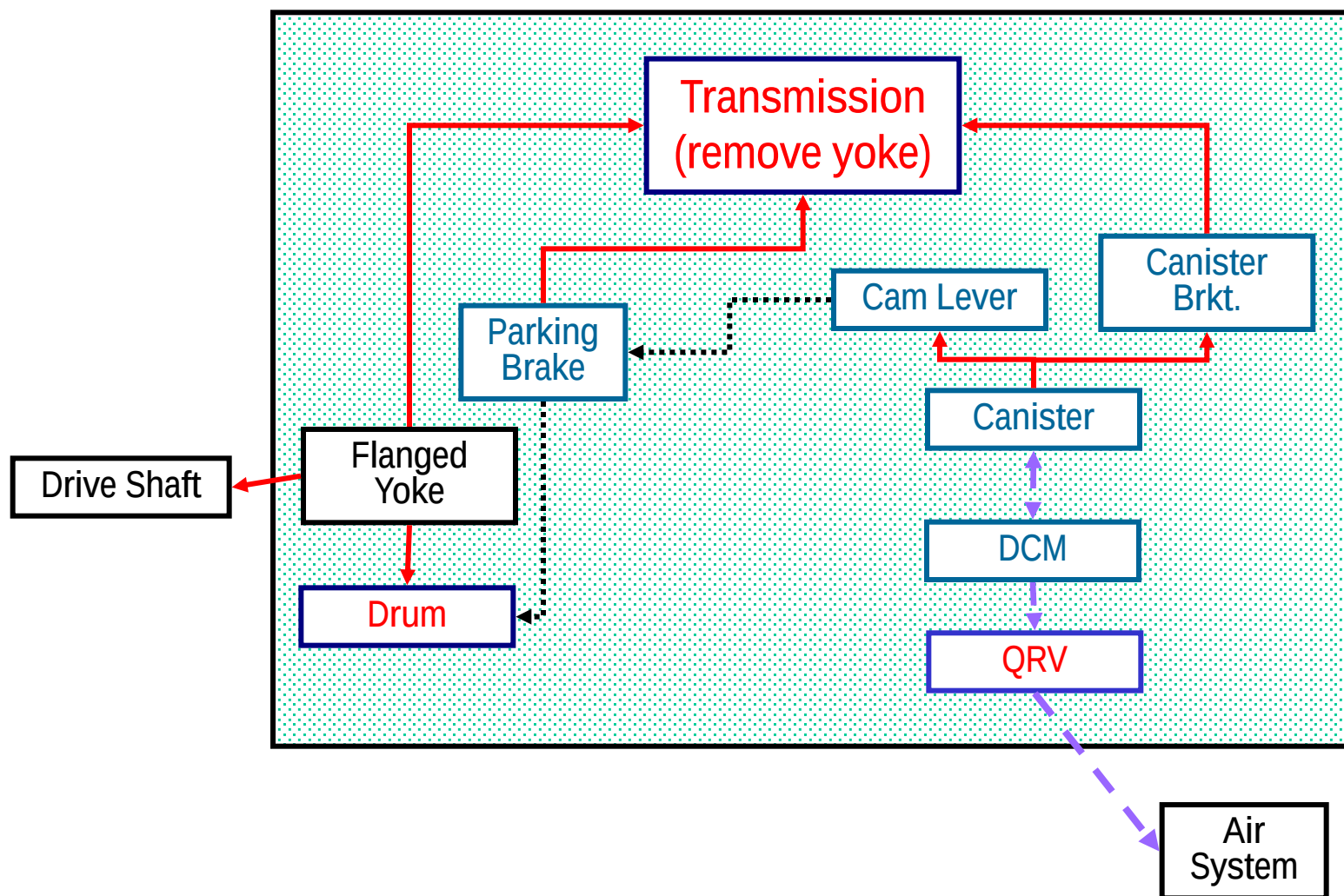
Legend For Boundary Diagram





Parking Brakes:

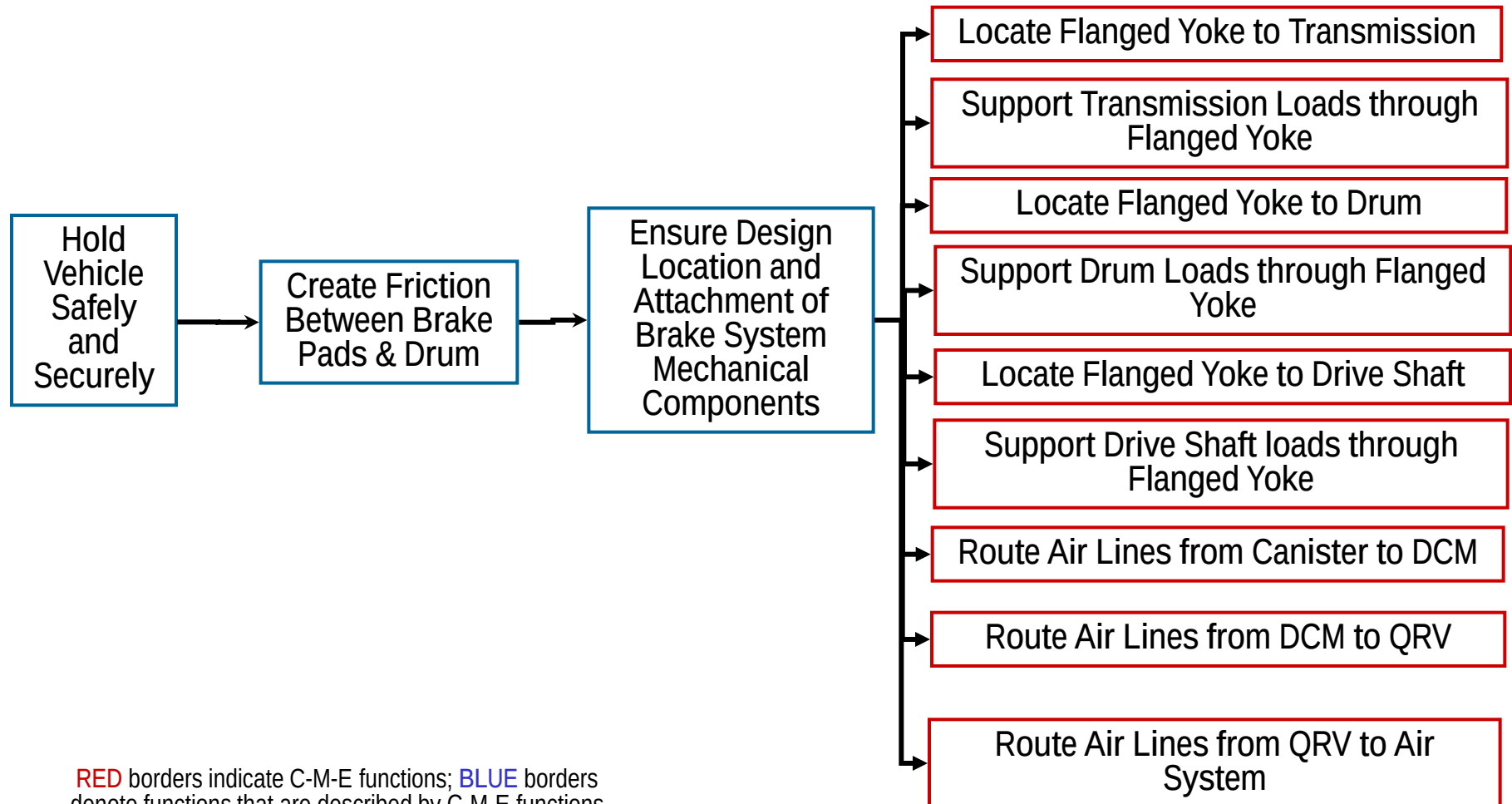
Boundary Diagram





Parking Brake System

Function Diagram: Basic Functions



RED borders indicate C-M-E functions; BLUE borders denote functions that are described by C-M-E functions

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Haladex Brake Chamber

PE12-008

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5-18-2012

Request 9

Park brake Release Test

	DVP & R Sign-Off		Document #: 06
	Title: Park Brake Release Test		Revision: 1
Reported By: Jim Bartel		Approved By:	Revision Date: 1/26/05
PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION			

SUBJECT:

Release of air actuated parking brake with onboard air supply.

OBJECT:

Assure that sufficient air pressure is available to release the air actuated parking brake after cycling the front kneel function twice and the rear kneel function once.

CONCLUSIONS:

The parking brake can be released on all chassis models as long as the air pressure in the on board reservoir(s) remains above 60 psi throughout the test procedure. Note: the parking brake requires a minimum of 45 psi to release.

MATERIALS/ PARTS #:

International 3200 IM
WB: 200", 217", 254"

METHOD:

With the vehicle idling and the air system at the shut-off pressure of 125 psi, the air system is cycled as follows:

- The front suspension is kneeled by opening the passenger door.
- The front is returned to ride height by closing the passenger door
- As soon as the front suspension returns to ride height the front is kneeled again by opening the passenger door and the rear is kneeled by deploying the wheelchair ramp.
- As soon as the vehicle is fully kneeled, the ramp is returned to the stowed position and the passenger door is closed.
While observing the dash mounted air gage, actuate the parking brake release control when the air pressure reaches the lowest reading. Record the lowest air pressure reading.
- Immediately place the transmission in drive and accelerate away, noting any indication of drag caused by the parking brake.
- The system is considered a pass if the parking brake completely releases and no drag is noted while accelerating from the parked condition.

	DVP & R Sign-Off		Document #: 06
	Title: Park Brake Release Test		Revision: 1
Reported By: Jim Bartel		Approved By:	Revision Date: 1/26/05
PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION			

TEST ANALYSIS RESULTS:

Table 1: Dash Gauge Pressure (fully loaded Bus # 402)

Run #	Pressure (psi)
1	92
2	93
3	92
4	92
5	91
6	93

*** Note: All Cycle test done while vehicle is in idle never dropped below 90 psi**

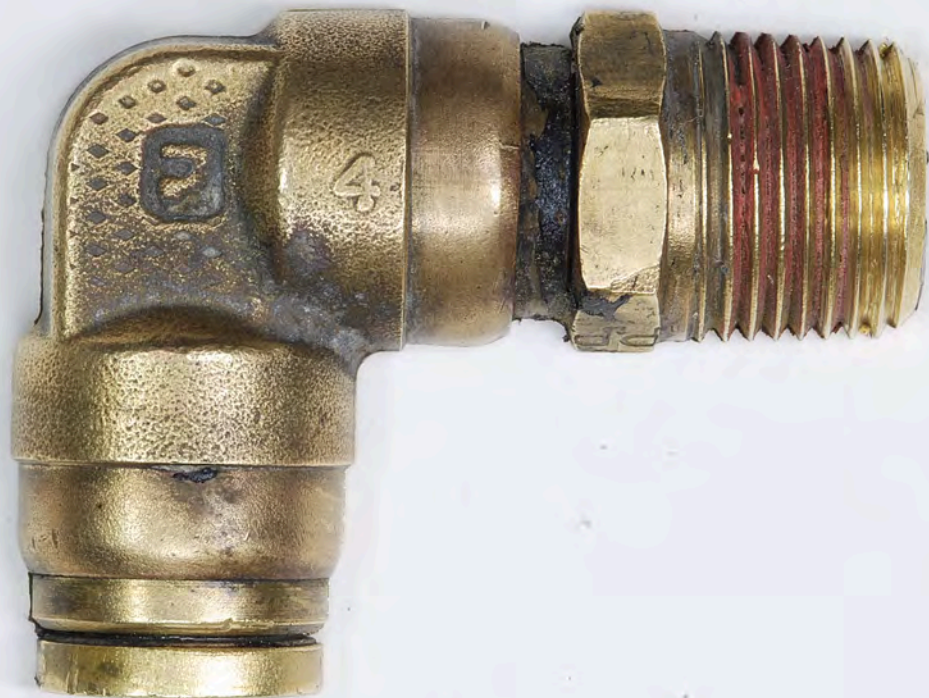
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PB Fitting Exemplar



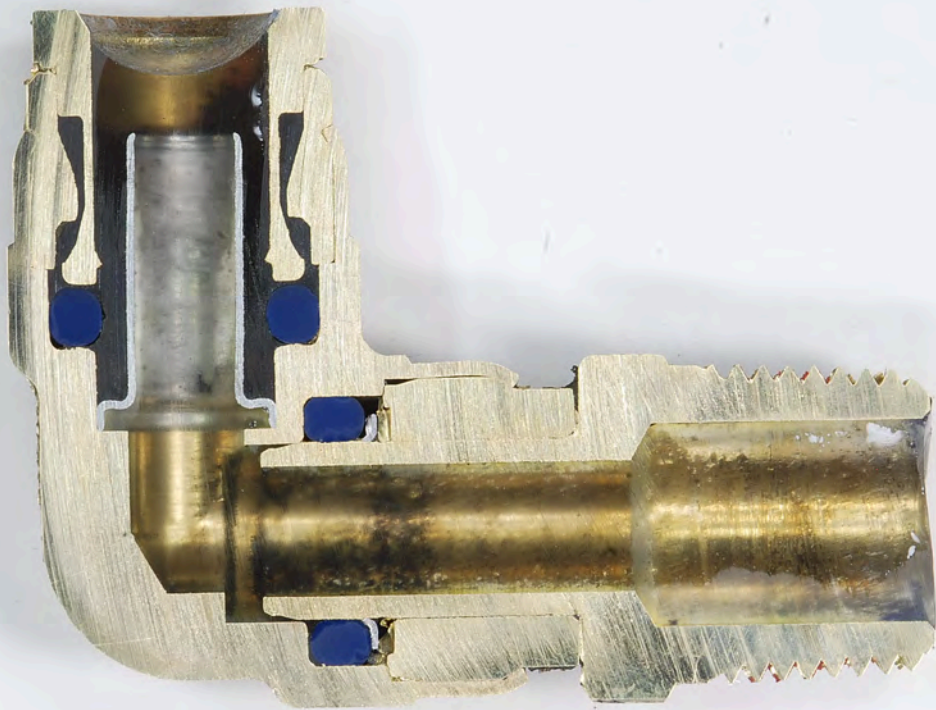
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Request 9

PB Fitting Section



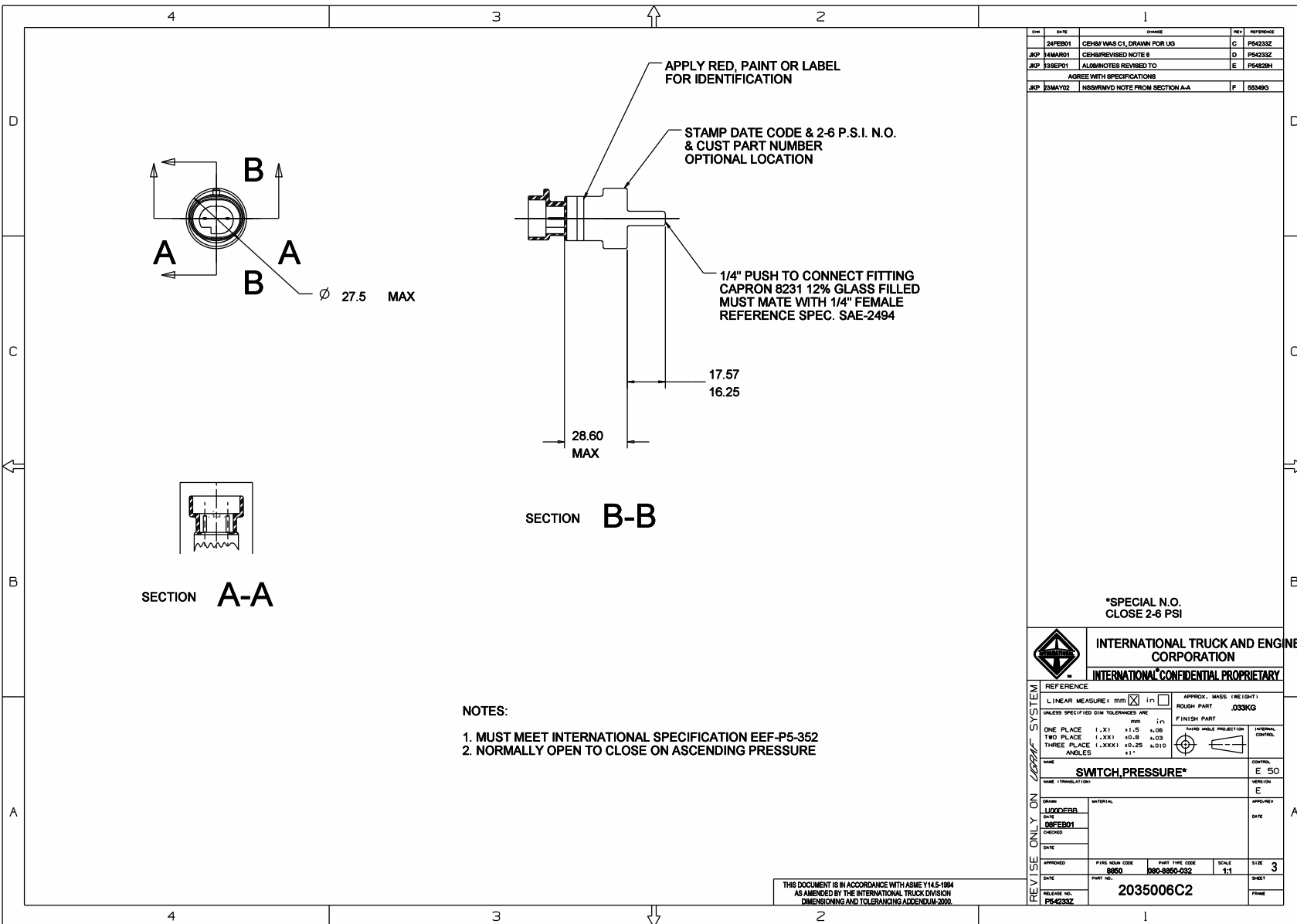
PE12-008

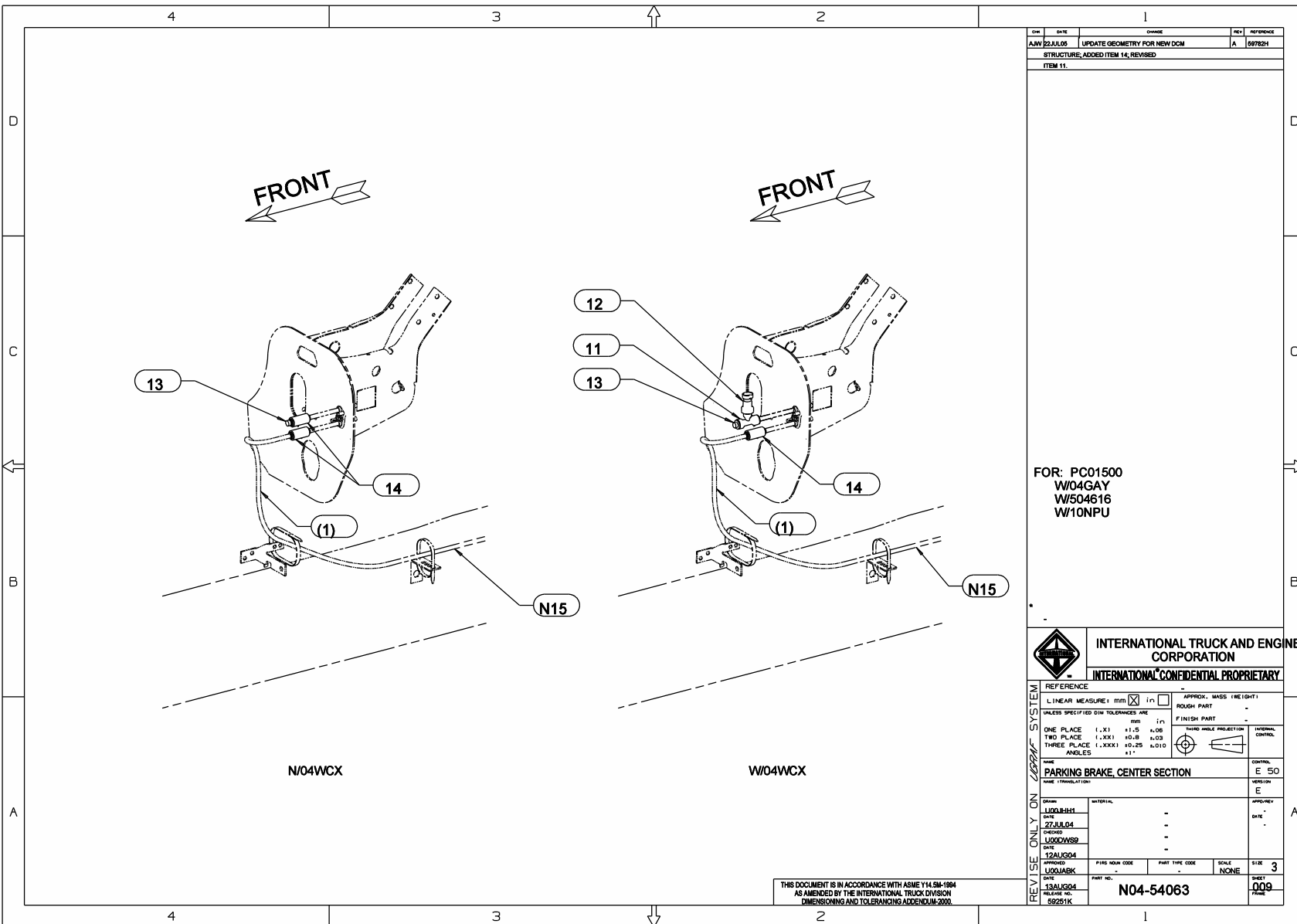
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Request 9

Pressure switch for PC01500





FOR: PC01500
W/04GAY
W/504616
W/10NPU



INTERNATIONAL TRUCK AND ENGINE CORPORATION

INTERNATIONAL CONFIDENTIAL PROPRIETARY

REFERENCE		APPROX. MASS (WEIGHT)	
LINEAR MEASURE: ☒ IN ☐ FT		ROUGH PART	
UNLESS SPECIFIED DIM TOLERANCES ARE:		FINISH PART	
ONE PLACE	±.1	±.5	±.06
TWO PLACE	±.01	±.03	±.01
THREE PLACE	±.001	±.005	±.001
ANGLES	±1°		
NAME: PARKING BRAKE, CENTER SECTION		CONTROL: E 50	
NAME (TRANSLATION):		VERSION: E	
DESIGN: U000B-H1	MATERIAL:	APPROVED:	
DATE: 27JUL04		DATE:	
DRAWN: U000W-89			
DATE: 12AUG04			
APPROVED: U000ARK			
DATE: 13AUG04			
RELEASE NO: 59281K			
PART NO: N04-54063		SCALE: NONE	
		SIZE: 3	
		SHEET: 009	

THIS DOCUMENT IS IN ACCORDANCE WITH ASME Y14.5M-1994
AS AMENDED BY THE INTERNATIONAL TRUCK DIVISION
DIMENSIONING AND TOLERANCING ADDENDUM-2000.

PE12-008

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5-18-2012

Request 9

SAAR Parkbrake System
Diagram

3200IM Spring Apply Air Release (SAAR) Parking Brake Diagram

