

**Intertek**

**REPORT  
INTERTEK TESTING SERVICES**

3933 US ROUTE 11

CORTLAND, NEW YORK 13045

**SECTION 1**

**PURPOSE AND TEST PROCEDURE**

**PURPOSE:**

The purpose of the test was to determine if the production brake hoses supplied by the National Highway Traffic Safety Administration met the requirements of Federal Motor Vehicle Safety Standard Number 106 entitled "Brake Hoses".

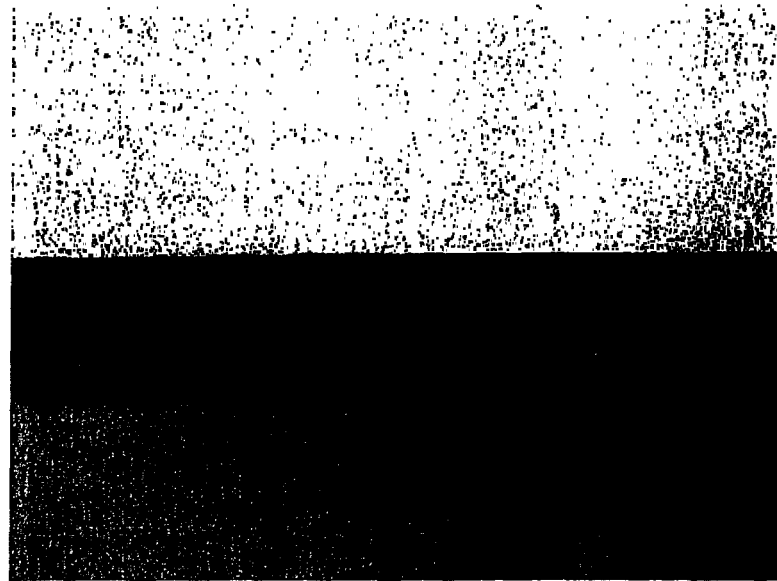
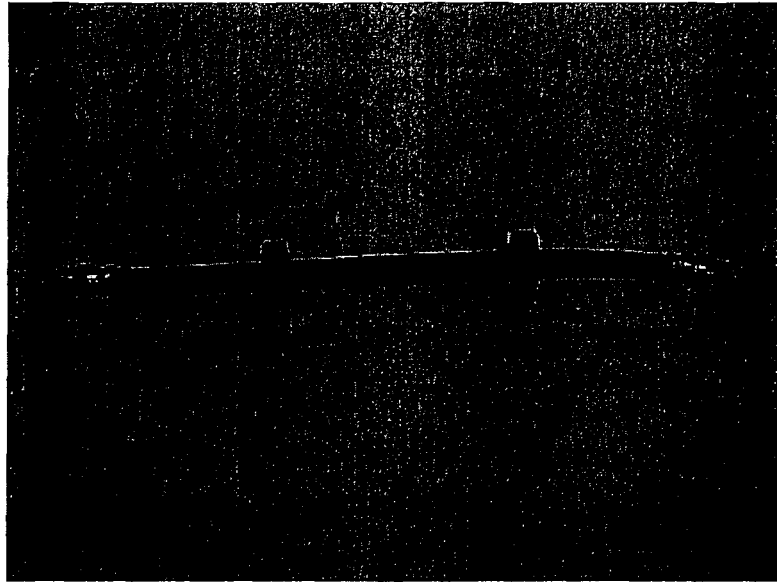
**TEST PROCEDURE:**

The "Intertek Test Procedure for FMVSS No. 106" submitted to and approved by the National Highway Traffic Safety Administration contains the specific procedures used to conduct this test.

This procedure will not be interpreted to be in conflict with any portion of FMVSS 106 or the Office of Vehicle Safety Compliance's Test Procedure and any amendments in effect as noted by the applicable contract.

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**Photograph of Hose Assembly**



Recorded by: Adrian Pless

Date: 11/22/05

Approved by: Rick George

Date: 11/28/05

**SUMMARY OF HYDRAULIC BRAKE HOSE TESTING RESULTS**

Group No.: 004/06

Nominal Hose I.D.: 1/8 inches

VEHICLE MFR: N/A PART NO.: N/A  
 HOSE ASSY MFR: JP Group Denmark PART NO: 080409303  
 HOSE STOCK MFR: "LALT"

TYPE OF HOSE ASSY: \_\_\_-Veh Specific\*; X -Aftermarket (NON-OEM)\*; \_\_\_-Special Test\*  
 \*These types of assys are NOT subject to Label Inspection PASS/FAIL Criteria.

TYPE OF END FITTING: X -Permanent; \_\_\_ -Reusable; \_\_\_ -Renewable

**SUMMARY: (P = PASSED, F = FAILED, N/A = NOT APPLICABLE)**

TEST NAME	HOSE NUMBER																			Spare
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Label Insp	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
2 Constrict Test *	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	F	F	P	P	F
3 Expan Test	P	P	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4 Burst Test **	P	F	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	N/A	N/A	F	N/A	
5 Whip Test	N/A	N/A	N/A	N/A	P	P	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	N/A	N/A	N/A
6 Tensile Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P	P	P	N/A	N/A	N/A	N/A	N/A	P	N/A	N/A
7 Cold Box Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8 Salt Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	N/A	N/A	N/A	N/A	N/A	N/A
9 Ozone Test	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	N/A	N/A	N/A	N/A	N/A
10 Water Absorp.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	P	P	N/A	N/A
11 Fluid Compat.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	F	N/A
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	Spare

Remarks:

\* As per DOT (see e-mail 10/20/05), continue testing using failed hoses. Save failed spare.

\*\* Burst failures (e-mail DOT 11/21/05)

Recorded by: Adrian Pless

Date: 11/22/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-1A  
HYDRAULIC BRAKE HOSE LABELING INSPECTION - HOSE**

Group No.: 004/06

Nominal Hose I.D.: 1/8 inches

TYPE OF ASSY: \_\_\_-Veh Specific\*;  X -Aftermarket (NON-OEM)\*; \_\_\_-Special Test\*  
 \*These types of assys are NOT subject to Label Inspection PASS/FAIL Criteria.

MARKINGS ON HOSE:

DOT Line – No Markings

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Other Line – 171 611 701 LALT

TORQUE STRIPES\*(2) ON HOSE: \_\_\_-Yes;  X -No  
 \*Required on AFTERMARKET ASSYS only

PASS	FAIL	N/A
	X	

DATE CODE ON HOSES			
HOSE NO.	DATE CODE	HOSE NO.	DATE CODE
1	None	11	None
2	None	12	None
3	None	13	None
4	None	14	None
5	None	15	None
6	None	16	None
7	None	17	None
8	None	18	None
9	None	19	None
10	None	Spare	None

REMARKS:

Recorded by: Adrian Pless

Date: 10/10/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-1B  
HYDRAULIC BRAKE HOSE LABELING INSPECTION - ASSEMBLY**

Group No.: 004/06

Nominal Hose I.D.: 1/8 inches

TYPE OF ASSY: \_\_\_-Veh Specific\*; X-Aftermarket (NON-OEM)\*; \_\_\_-Special Test\*  
 \*These types of assys are NOT subject to Label Inspection PASS/FAIL Criteria.

MARKINGS ON BAND\*: No band  
 (Metal Band unless otherwise noted)

If band is NOT present, check Data Sheet No. H-1C  
 Option Selection for PASS/FAIL judgement for  
 AFTERMARKET ASSEMBLIES

<b>PASS</b>	<b>FAIL</b>	<b>N/A</b>
	<b>X</b>	

\*If marking on any hose assembly band is different than recorded above, copy the marking and identify by hose number in the space below.

REMARKS:

Recorded by: Adrian Pless

Date: 10/10/05

Approved by: Rick George

Date: 11/2805

**DATA SHEET NO. H-1C**  
**HYDRAULIC BRAKE HOSE LABELING INSPECTION - END FITTINGS**

Group No.: 004/06

Nominal Hose I.D.: 1/8 inches

TYPE OF HOSE ASSYS.: \_\_\_-Veh. Spec\*; \_X\_-Aftermarket (NON-OEM); \_\_\_-Special Test\*

\*These types of assemblies are NOT SUBJECT to Label Inspection PASS/FAIL criteria.

MARKINGS ON END FITTINGS\*: (Each hose assy end must be marked with an "A" or "B" by lab)

\*If band is NOT present, one fitting on Aftermarket Assys must have manufacturer's ID.

HOSE NO.	"A" END <u>Banio Bolt</u>	"B" END <u>Female</u>	PASS, FAIL, N/A
1	No Markings	No Markings	Fail
2	No Markings	No Markings	Fail
3	No Markings	No Markings	Fail
4	No Markings	No Markings	Fail
5	No Markings	No Markings	Fail
6	No Markings	No Markings	Fail
7	No Markings	No Markings	Fail
8	No Markings	No Markings	Fail
9	No Markings	No Markings	Fail
10	No Markings	No Markings	Fail
11	No Markings	No Markings	Fail
12	No Markings	No Markings	Fail
13	No Markings	No Markings	Fail
14	No Markings	No Markings	Fail
15	No Markings	No Markings	Fail
16	No Markings	No Markings	Fail
17	No Markings	No Markings	Fail
18	No Markings	No Markings	Fail
19	No Markings	No Markings	Fail
spare	No Markings	No Markings	Fail

REMARKS:

Recorded by: Adrian Pless

Date: 10/10/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-2**  
**HYDRAULIC BRAKE HOSE CONSTRICTION TEST**

GROUP NO.: 004/06

TEST DATE: 10/10/05

HOSE ID: 1/8"

AMBIENT TEMP: 75°F; PLUG SIZE USED: 0.0796"; (NOTE: 0.0795" Min Dia. For 1/8" ID hose)

Each end of the hose assembly must be marked with an "A" or "B" by the laboratory.

The constriction of the bore was measured at both ends using the size gage plug as shown above.

HOSE NO.	END	PASS	FAIL	MAX. DRILL SIZE
1	A B	X		
2	A B	X		
3	A B	X		
4	A B	X		
5	A B	X		
6	A B	X		
7	A B	X		
8	A B	X		
9	A B	X		
10	A B	X		
11	A B	X		
12	A B	X		
13	A B	X		
14	A B		X	0.0660"
15	A B		X	0.0660"
16	A B		X	0.0660"
17	A B		X	0.0660"
18	A B	X		
19	A B	X		
spare	A B		X	0.0660"

Recorded by: Adrián Pless

Date: 10/10/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-3**  
**HYDRAULIC BRAKE HOSE VOLUMETRIC EXPANSION TEST**

GROUP NO: 004/06

HOSE TYPE: HR\*

TEST DATE: 11/22/05

HOSE NOMINAL ID: 1/8"

EXPANSION AMBIENT TEMPERATURE: 75°F

The free length(FL) of each specimen was measured in hundredths of an inch between the end fittings while hanging in a straight position.

The expansion reading was taken 3 times so that the final reading taken on the burette is the total of the 3 expansions. This reading divided by 3 is considered as the final volumetric expansion of the hose and recorded in hundredths of a cubic centimeter.

If at any time during the test, an air bubble flows out of the hose, repeat the test allowing at least 5 minutes for the hose to recover.

**DO NOT MOVE THE HOSE BETWEEN THE THREE (3) EXPANSIONS!**

Expansion @ 1000 psig: (0.66 cc/ft allowed)		HOSE #1	HOSE #2	HOSE #3	HOSE #4
Hose Free Length (FL), Inches	FL	10.36"	10.48"	10.43"	10.39"
Hose Free Length (FL), feet	FL	0.86'	0.87'	0.87'	0.87'
Expansions @ 1000 psig	#1	0.325	0.350	0.400	0.300
	#2	0.325	0.350	0.400	0.300
	#3	0.350	0.350	0.400	0.325
Total of Three Expansions	T	1.000	1.050	1.200	0.925
Average = Total/3	A	0.333	0.350	0.400	0.308
Expansion (Actual/FL (feet))	E	0.388	0.402	0.460	0.354
Expansion @ 1500 psig: (0.79 cc/ft allowed)		HOSE #1	HOSE #2	HOSE #3	HOSE #4
Expansions @ 1500 psig	#1	0.450	0.475	0.550	0.400
	#2	0.450	0.475	0.550	0.350
	#3	0.450	0.450	0.500	0.350
Total of Three Expansions	T	1.350	1.400	1.600	1.100
Average = Total/3	A	0.450	0.466	0.533	0.366
Expansion (Actual/FL (feet))	E	0.523	0.536	0.613	0.421
	PASS	X	X	X	X
	FAIL				

\* Hoses not labeled as "HL" or "HR", from results; HR was selected.

Recorded by: Adrian Pless

Date: 11/22/05

Approved by: Rick George

Date: 11/28/05



**DATA SHEET NO. H-4**  
**HYDRAULIC BRAKE HOSE BURST STRENGTH TEST**

GROUP NO.: 004/06

HOSE TYPE: HL

TEST DATE: 11/22/05

AMBIENT TEMPERATURE: 75°F

The hose was connected to the pressure source and completely filled with water.

After all air was eliminated in the hose, the relief valve was closed and pressure applied at the rate of 12,000 to 18,000 psi per minute until it reached the hold pressure of 3,800 to 4,000 psi for 110 to 120 seconds.

After the expiration of the 2-minute hold period, the pressure was increased at the rate specified above until the specimen burst or reached 5,000-psig minimum.

HOSE NO.	ACTUAL PRESSURE ATTAINED, psig	MINIMUM ALLOWABLE BURST STRENGTH (psig)	PASS	FAIL
1	8,000 *	5,000	X	
2	4,000 **	5,000		X
3	8,000 *	5,000	X	
4	7,400	5,000	X	

REMARKS: \* Did not rupture, test stopped.

\*\* Hose ballooned on outer cover and ruptured during 4,000 psi 2 minute hold.

\*\*\* All specimens ballooned on outer cover.

Recorded by: Adrian Pless

Date: 11/22/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-5  
HYDRAULIC BRAKE HOSE WHIP (FATIGUE) TEST**

GROUP NO.: 004/06

AMBIENT TEMPERATURE: 74°F

	TIME	DATE
START OF TEST	8:45 PM	11/07/05
END OF TEST	12:45 AM	11/09/05
<b>TOTAL ELAPSED TEST TIME (hours) =</b>	40 hrs.	

The free length of each specimen was measured to within a tolerance of 0.015" between the end fittings while hanging in a straight position.

Water pressure of 220 to 235 psig was applied, and the hose and passages bled to eliminate air pockets or bubbles. The machine speed was 780 to 800 rpm, and total whip running time was a minimum of 40 hours.

See TP Table 2 for "Slack" requirements.

Inspect condition of the hoses after 35 hours and 40 hours of whip test running time. PASS/FAIL shall be based upon the condition at the 35-hour inspection.

		HOSE #5	HOSE #6	HOSE #7	HOSE #8
Hose Free Length	FL	10.45"	10.35"	10.33"	10.37"
Slack Setting	SS	1.75"	1.75"	1.75"	1.75"
Machine Setup Length (FL-SS)	MSL	8.70"	8.60"	8.58"	8.62"
Line Pressure (220-235 psig)	LP	220-235	220-235	220-235	220-235
Whip Test Running Time, hours (Minimum=40 hours)	ET	40 hrs.	40 hrs.	40 hrs.	40 hrs.

HOSE CONDITION AT 35 HOURS AND AT 40 HOURS				
HOSE NO.	AT 35 HOURS	AT 40 HOURS	DETERMINED @ 35 HRS	
			PASS	FAIL
5	Poor	Poor	X	
6	Poor	Poor	X	
7	Good	Good	X	
8	Poor	Poor	X	

Note: At start, hoses 5 and 6 have water "bubbles" on outer cover at 234 psi. After 1 hour, outer cover of 5, 6, and 8 are torn at stationary ends, no leaks.

Recorded by: Adrian Pless

Date: 11/09/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-6  
HYDRAULIC BRAKE HOSE TENSILE TEST**

GROUP NO.: 004/06

AMBIENT TEMP.: 77°F TEST DATE: 10/31/05

The hose assembly was mounted in the tensile machine so that the hose and end fittings had a straight centerline corresponding to the direction of the machine pull.

The hose assembly was pulled at a rate of 1 inch/minute until failing as follows:

- A. Hose pulled out of the end fitting
- B. Hose ruptured

HOSE NO.	ACTUAL TOTAL LOAD AT TIME OF FAILURE (lbs)	TYPE OF FAILURE "A" OR "B"	MIN. ALLOW. TENSILE STRENGTH (lbs)	PASS	FAIL
9	376 lbs	A	325	X	
10	582 lbs	A	325	X	
11	353 lbs	A	325	X	
12	512 lbs	A	325	X	

REMARKS:

Recorded by: Adrian Pless

Date: 10/31/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-7**  
**HYDRAULIC BRAKE HOSE COLD BOX TEST**

GROUP NO.: 004/06

HOSE NOMINAL I.D.: 1/8"

The hose assembly was conditioned in the cold box in a straight position or natural position at -35°F to -40°F for 70 hours.

After the conditioning period and while still at this temperature, the hose assembly was bent around a wood mandrel of the diameter noted in the "REMARKS" section.

All crack and breaks are noted below.

**TEST RESULTS:**

HOSE #13	DATE	TIME	BOX TEMP. (°F)	EVIDENCE OF CRACKS OR BREAKS
IN BOX	10/17/05	3:30 PM	-40	None
OUT BOX	10/20/05	1:30 PM	-40	None
TOTAL EXPOSURE TIME = Hrs		70 hrs		

PASS	FAIL
X	

**REMARKS:**

Wood Mandrel diameter used = 3.00 inches

HOSE NOMINAL I.D.	TEST CYLINDER DIAMETER (+0.03, - 0)
LESS THAN 1/8"	2.50"
1/8"	3.00"
3/16" AND 1/4"	3.50"
GREATER THAN 1/4"	4.00"

**RESULTS:** External Inspection – No cracks  
Internal Inspection - No cracks

Recorded by: Adrian Pless

Date: 10/20/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-8  
HYDRAULIC BRAKE HOSE SALT SPRAY TEST - 24 HOURS**

GROUP NO.: 004/06

The hose assembly was subjected to a Salt Spray Test for 24 hours in accordance with the testing method of Salt Spray (Fog) testing ASTM B117.

The temperature in the salt chamber was continuously recorded.

HOSE #14	DATE	TIME	SALT SOLUTION PROP.		EVIDENCE OF RUST OR CORROSION
			Sp.Gr. @95±2°F	Ph	
IN Cabinet	11/02/05	10:30 AM	1.03	5.8	No
OUT Cabinet	11/03/05	10:30 AM	1.03	6.6	No

TEST RESULTS:

PASS	FAIL
X	

REMARKS: (Note all interruptions in test, cause, and length of time)

Recorded by: Adrian Pless

Date: 11/03/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-9  
HYDRAULIC BRAKE HOSE OZONE TEST - 70 HOURS**

GROUP NO.: 004/06

AMBIENT TEMPERATURE: 75°F

HOSE NO.: 15

HOSE NOMINAL I.D.: 1/8"

CYLINDER DIAMETER = 8 X HOSE NOMINAL O.D.= 3.25"

	TIME	DATE
<b>START OF TEST</b>	10:00 AM	11/11/05
<b>END OF TEST</b>	8:00 AM	11/14/05
<b>TOTAL EXPOSURE TIME (hrs) =</b>	70 hrs	

The brake hose was bound around a cylinder with a diameter of 3.25 inches and conditioned at room temperature for 24 hours.

The brake hose and cylinder were then exposed to an ozone concentration of 50 parts per 100 million by volume for 70 hours at a temperature of 98 to 104°F.

Examination of the hose under 7-power magnification yielded the following results:

TEST RESULTS: External inspection - no cracks

PASS	FAIL
X	

REMARKS:

Recorded by: Adrian Pless

Date: 11/14/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-10A**  
**HYDRAULIC BRAKE HOSE WATER ABSORPTION - BURST TEST**

GROUP NO.: 004/06

AMBIENT TEMPERATURE: 75°F

HOSE FREE LENGTH: 10.30"

HOSE NOMINAL I.D.: 1/8"

	TIME	DATE
<b>START OF TEST</b>	12:00 PM	11/18/05
<b>END OF TEST</b>	10:00 AM	11/21/05
<b>TOTAL IMMERSION TIME (hrs) =</b>	70 hrs	

The hose was prepared and immersed in distilled water at room temperature for 68 to 70 hours. Within 30 minutes after removal from the water, the Burst Strength Test was conducted in accordance with TP Paragraph 12.A.4.

HOSE NO.	ACTUAL PRESSURE ATTAINED, psig	MINIMUM ALLOWABLE BURST STRENGTH	PASS	FAIL
16	4,000 *	5,000 PSIG		X

## REMARKS:

\* Assembly leaked/ruptured at endfitting and hose connection during 4,000 psi 2 minute hold.

4,000 psi could not be maintained as hose outer cover ballooned and leaked (see photos).

Recorded by: Adrian Pless

Date: 11/21/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-10B**  
**HYDRAULIC BRAKE HOSE WATER ABSORPTION - WHIP TEST**

GROUP NO.: 004/06  
 HOSE FREE LENGTH: 10.45"

AMBIENT TEMPERATURE: 74°F  
 HOSE NOMINAL I.D.: 1/8"

	TIME	DATE
START OF TEST	10:30 AM	11/04/05
END OF TEST	8:30 AM	11/07/05
TOTAL IMMERSION TIME (hrs) =	70 hrs.	

The hose was prepared and immersed in distilled water at room temperature for 65 to 70 hours. Within 30 minutes after removal from the water, the Whip (Fatigue) Test was started in accordance with TP Paragraph 12.A.5.

	TIME	DATE
START OF WHIP TEST	8:45 AM	11/07/05
END OF WHIP TEST	12:45 AM	11/09/05
TOTAL WHIP TEST TIME (hrs) =	40 hrs.	

NOTE: Measurements in thousands of an inch		HOSE #17
Hose Free Length:	FL	10.45"
Slack Setting	SS	1.75"
Machine Setup Length (FL-SS)	MSL	8.70"
Line Pressure (220 -235 psig)	LP	220-235
Whip Test Running Time, hrs (min. = 40 hrs)	ET	40 hrs.

HOSE CONDITION AT 35 HOURS AND AT 40 HOURS				
HOSE NO.	AT 35 HOURS	AT 40 HOURS	DETERMINED @ 35 HOURS	
			PASS	FAIL
17	Poor	Poor	X	

REMARKS: Outer cover cracked near stationary end, did not ruptured.

Recorded by: Adrian Pless

Date: 11/09/05

Approved by: Rick George

Date: 11/28/05



**DATA SHEET NO. H-10C**  
**HYDRAULIC BRAKE HOSE WATER ABSORPTION - TENSILE TEST**

GROUP NO.:004/06

AMBIENT TEMPERATURE: 75°F

HOSE FREE LENGTH: 10.47"

HOSE NOMINAL I.D.: 1/8"

	TIME	DATE
START OF IMMERSION TEST	12:30 PM	11/14/05
END OF IMMERSION TEST	10:30 AM	11/17/05
TOTAL IMMERSION TIME (hrs) =	70 hrs	

The hose was prepared and immersed in distilled water at room temperature for 65 to 70 hours. Within 30 minutes after removal from the water, the Tensile Strength Test was started in accordance with TP Paragraph 12.A.6.

HOSE NO.	ACTUAL TOTAL LOAD AT TIME OF FAILURE (lbs)	TYPE OF FAILURE ("A" OR "B")	MIN. ALLOW. TENSILE STRENGTH	PASS	FAIL
18	552	A	325 lbs.	X	

FAILURE TYPES: A = Hose pulled out of end fitting  
 B = Hose ruptured

REMARKS:

Recorded by: Adrian Pless

Date: 11/17/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-11**  
**HYDRAULIC BRAKE HOSE BRAKE FLUID COMPATIBILITY TEST**

GROUP NO.: 004/06

HOSE NUMBER: 19

	DATE	TIME
<b>START OF TEST</b>	11/18/05	11:00 AM
<b>END OF TEST</b>	11/21/05	9:00 AM
<b>TOTAL IMMERSION TIME (hrs) =</b>	70 hrs	

The hose was attached to a 1 pint reservoir of Compatibility fluid and placed vertically in an oven at 195 to 200°F for 70 hours. After removal, the hose was cooled for 30 minutes.

Cool Period:            Start Time - 9:00 AM            End Time – 9:40 AM

TOTAL Cool Time – 40 Minutes

The Constriction Test was performed in accordance with the TP Paragraph 12.A.2.

HOSE NO.	END	PASS	FAIL
19	A	X	
	B	X	

The Burst Strength Test was performed in accordance with the TP Paragraph 12.A.4.

HOSE NO.	ACTUAL PRESSURE ATTAINED, psig	MINIMUM ALLOWABLE BURST STRENGTH	TYPE OF FAILURE
19	4,000 *	5,000 PSIG	Rupture*

REMARKS: \* Assembly leaked/ruptured during 4,000 psi 2 minute hold.  
 4,000 psi hold could not be maintained as hose outer cover ballooned and leaked (see photos).

Recorded by: Adrian Pless

Date: 11/21/05

Approved by: Rick George

Date: 11/28/05

**DATA SHEET NO. H-12**  
**HYDRAULIC BRAKE HOSE TRACER CORD COLOR IDENTIFICATION TEST**

GROUP NO.: 004/06

TEST DATE: 11/22/05

After completion of all tests, remove a portion of the hose outer cover in all NONFAILING samples to determine the color of the tracer cord woven into the outer braid; tracer cord may be woven into inner braid on some hose assemblies.

<b>SPECIMEN NO.</b>	<b>CORD COLOR</b>	<b>R.M.A. IDENTIFICATION</b>
1	None	No RMA I.D.
2	Not Checked	Failure of burst test
3	None	
4	None	
5	None	
6	None	
7	None	
8	None	
9	None	
10	None	
11	None	
12	None	
13	None	
14	None	
15	None	
16	Not checked	Failure of burst test
17	None	
18	None	
19	Not checked	Failure of burst test
SPARE	Not checked	Failure of constriction

Recorded by: Adrian Pless

Date: 11/22/05

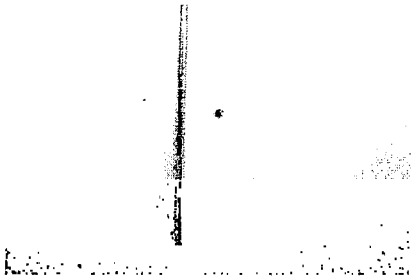
Approved by: Rick George

Date: 11/28/05

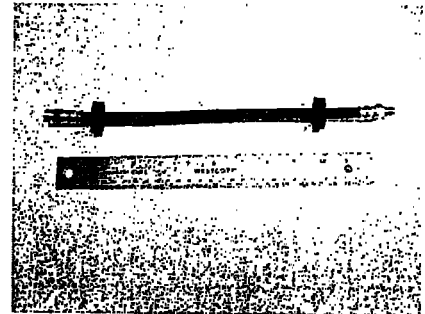
### Constriction Photos



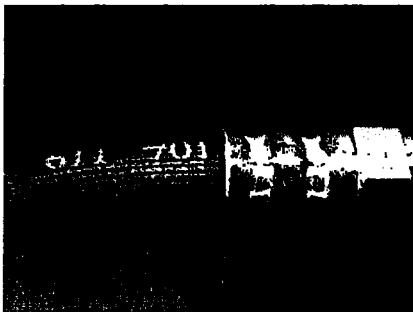
0.0660 Probe with same hose



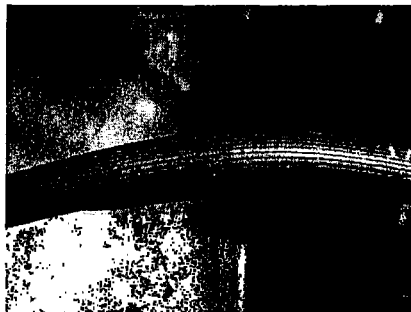
0.0796 Pin and 0.795 ball



004-06 Assembly



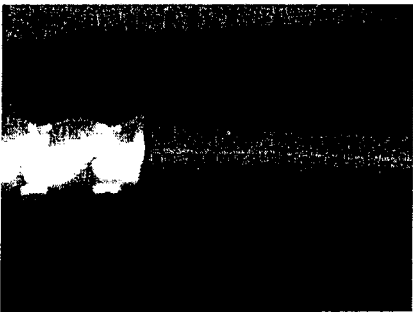
235 psi cover bubble near fitting



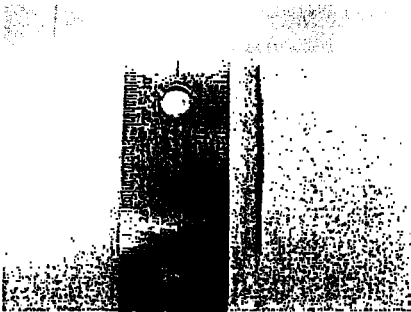
235 psi cover bubble whip test



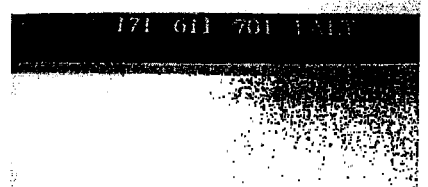
Another constriction



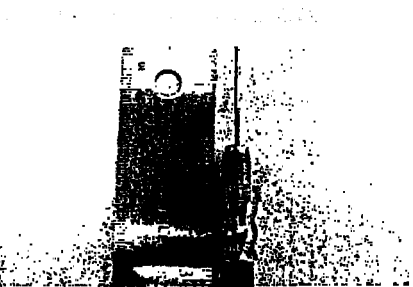
Bubble at 235 psi whip test



Length of 0.796 in gage

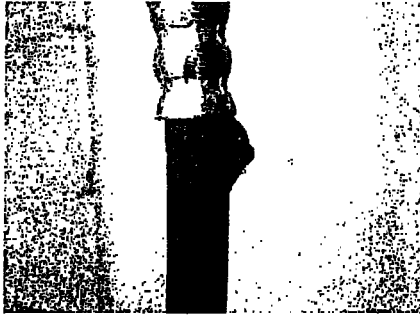


Only markings on assembly



Stopped by constriction

### Compatibility Burst, Wet Burst and Expansion Burst Photos



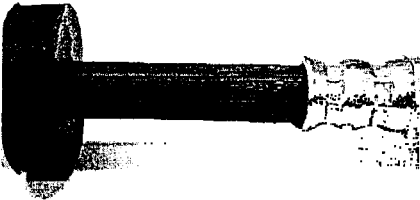
004-06 Compatibility failure



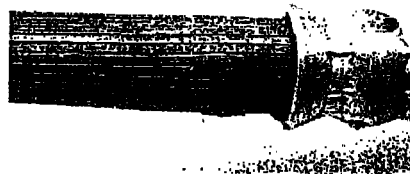
004-06 Compatibility Leak



004-06 Compatibility burst failure



004-06 Hose 2 rupture at 4000 psi



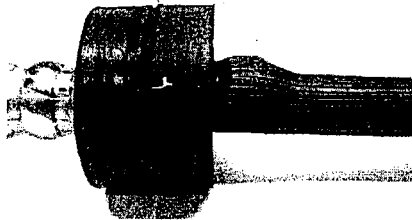
004-06 Hose 2 rupture



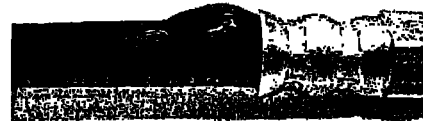
004-06 Hose 3 ballooning



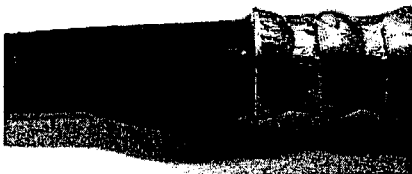
004-06 Hose 3 ballooning (2)



004-06 Post burst bubble



004-06 Post burst bubble (2)



004-06 Post wet burst



004-06 Wet burst ballooning



004-06 Wet burst failure



004-06 Wet burst leak



004-06 Wet Burst

BRAKE HOSE 171.611.701B RECALL

Exhibit to  
Section VI  
of Part 573  
Report

PHONE CALL LOG

DATE	TIME	TALKED TO:	COMPANY NAME	PHONE	TOTAL PURCH	RETURNING	NOTES:	
-	-	-	JC WHITNEY	(312) 431-6052	20	-	previously advised	
1/19/2006	10:15AM	GARY CHASE	R & J WAREHOUSE	(501) 375-7814	39	0	stocks hose as 191.611.701, has 24 of these in stock - not ours, sent a bulletin/messages to all stores that bought these hoses notifying them of the recall, sold 26 last year	
1/19/2006	10:25AM	STEVEN MASZY	TRIANGLE AUTO PARTS	(407) 644-5688	6	0	cust said has 0 in stock, says it's virtually impossible to trace who he sold these to, sells retail.	
1/20/2006	1:53AM	JANA VERMEER	VERMEER AUTO PARTS	(614) 836-5014	56	1 (so far)	gave all info, will check inventory & call me back, also asked to attempt to recall from their customers	call back 1/23 DONE 1/24 SEE BELOW
1/24/2006	12:40PM	JANA VERMEER	VERMEER AUTO PARTS	(614) 836-5014			left voicemail - call again later	call back 1/24
1/26/2006	2:18PM	JANA VERMEER	VERMEER AUTO PARTS	(614) 836-5014			only found 1 on shelf at one of their stores	follow up 2/3
1/19/2006	10:28AM	JOHN VIKING	VIKING IMPORT FOREIGN CAR	(704) 374-0222	6	0	has 3 in stock, not ours, will try to contact customers that bought hoses purch from us to recall from them, difficult - most likely already on vehicles, told him we will pay for all expenses incurred to replace those on vehicles, call back 1/23	call back 1/23 DONE 1/24 SEE BELOW
1/24/2006	12:43PM	JOHN VIKING	VIKING IMPORT FOREIGN CAR	(704) 374-0222			checked sales history, the ones sold were to cash account, cannot trace - attempted to recall them	
1/19/2006	10:35AM	RON BAKER	STREET & SAND TOYS	(954) 491-8085	17	7	shows 7 in stock, checking brand/entry/markings & will call me back	call back 1/20 DONE SEE BELOW
1/20/2006	2:03PM	RON BAKER	STREET & SAND TOYS	(954) 491-8085			f/u with Ron, said all 7 hoses are BRAX, need to issue call tag, cannot recall the other 10 he bought from us, has old computer system, cannot trace back	issue call tag 1/20, 3 lbs attn: Ron Baker DONE TRKG#1Z3489232644472 723
1/19/2006	10:42AM	DICK RIZZE	PARTS FOR IMPORTS	(954) 741-7121	18	0	does not stock this item, were ordered for specific customer orders & exported right away	

## BRAKE HOSE 171.611.701B RECALL

## PHONE CALL LOG

DATE	TIME	TALKED TO:	COMPANY NAME	PHONE	TOTAL PURCH	RETURNING	NOTES:	
1/19/2006	10:43AM	DICK ROESLE	M & D FOREIGN CAR PARTS	(850) 432-9388	6	0	gave him all info., will check inventory and call me back this afternoon	call back 1/20, 2:08PM left msg w/recept. for him to call me back, call again 1/23 DONE 1/24 SEE BELOW
1/24/2006	12:47PM	DICK ROESLE	M & D FOREIGN CAR PARTS	(850) 432-9388			checked shelf, none in stock, virtually impossible to trace who sold to.	
1/19/2006	10:47AM	ROY HENNING	MOFOCO	(414) 963-1020	4	2	has 2 in stock, confirmed brand & marking on hose, need to issue UPS pick up - 1 lb /// sold 5 last year, can't trace other 2, paid cash, has receipt w/o name - retail	issue call tag 1/19 DONE TRKG#1Z3489232645278 969
1/19/2006	10:57AM	BOB HICKS	HICKS VW SERVICE	(919) 596-1026	2	0	gave him all info., will check inventory and call me back	call back 1/20 DONE SEE BELOW
1/20/2006	2:13PM	BOB HICKS	HICKS VW SERVICE	(919) 596-1026			does not stock this item, the 2 pcs he ordered were for a specific customer, has old computer system - cannot trace who sold to	
1/19/2006	11:04AM	RON	RON'S IMPORT AUTO PARTS	(865) 637-5744	4	0	gave him all info., will check inventory and call me back	call back 1/20 DONE SEE BELOW
1/20/2006	2:26AM	RON	RON'S IMPORT AUTO PARTS	(865) 637-5744			called back, does not have any in stock, there's no way he can trace who purchased them from him	
1/19/2006	11:10AM	DAVE BACK	DAS AUTOHAUS	(785) 843-9494	4	0	cust has 0 in stock, sold 2 to one cust & 2 to another, knows what cars they went on, will recall them from those vehicles, we will send replacement hoses and pay for charges incurred, will send us proof of replacements, need to issue UPS p/u for old hoses once replaced	call back 1/20 with ETA on replcmt hoses
1/19/2006	11:18AM	AUBREY WATSON	AUBREY WATSON	(803) 534-4923	2	0	0 in stock, hoses were put on a Rabbit same day cust received them, 2nd call no answer - need to call again, tell him to make attempt to recall from cust	call back 1/20 DONE SEE BELOW
1/20/2006	2:32PM	AUBREY WATSON	AUBREY WATSON	(803) 534-4923			will try to reach customer to recall hoses back (2 pcs) & call me back	call back 1/23 DONE 1/24 SEE BELOW
1/24/2006	12:48PM	AUBREY WATSON	AUBREY WATSON	(803) 534-4923			trying to reach customer, has not been able to yet, maybe this weekend - call back 1/30	call back 1/30
1/19/2006	2:07PM	KENNY MCLENDON	BAY AREA IMPORTS	(813) 933-9762	4	0	checked inventory, has some from Italy, not ours, will try to trace to whom he sold the 4 he bought from us, call him back 1/23 to check	call back 1/23

## BRAKE HOSE 171.611.701B RECALL

## PHONE CALL LOG

DATE	TIME	TALKED TO:	COMPANY NAME	PHONE	TOTAL PURCH	RETURNING	NOTES:	
1/19/2006	2:20PM	JEREMIAH	AUTOMOTIVE MACHINE	(817) 335-9331	34	11	shows some in stock, will check if bought from us, check brand & call me back, also said he will try to contact any customer he has sold these to, gave him all info. (marking/brand/how many he bought from us) & told him we will pay for all charges incurred to get them back	will call me back / if not call back 1/23 DONE SEE BELOW
1/24/2006	12:53PM	JEREMIAH	AUTOMOTIVE MACHINE	(817) 335-9331			has 9 on the shelf, traced a pair & contacted customer, gave him until 1/25th to return them. Issue UPS pick up - 2 lbs	issue call tag 1/25 DONE TRKG#1Z3489232645905 503
1/26/2006	2:13PM	JEREMIAH	AUTOMOTIVE MACHINE	(817) 335-9331			confirmed he was able to get 2 from a customer	
1/19/2006	2:27PM	DENNY MCNUT	MINI CAR PERFORMANCE	(419) 476-3300	2	2	has 2 in stock, confirmed brand & marking on hose, need to issue UPS pick up - 1 lb	issue call tag 1/19 DONE TRKG#1Z3489232644865 586
1/19/2006	2:29PM	HEINZ SCHMIDT	BAC IMPORTED CAR PARTS	(386) 252-1483	2	1	will check shelf & call me back 1/20	call back 1/20 DONE SEE BELOW
1/20/2006	2:35PM	HEINZ SCHMIDT	BAC IMPORTED CAR PARTS	(386) 252-1483			did not have chance to check shelf, call back on 1/23	call back 1/23 DONE 1/24 SEE BELOW
1/24/2006	1:03PM	HEINZ SCHMIDT	BAC IMPORTED CAR PARTS	(386) 252-1483			will check shelf & call me back, has 3 on shelf, confirmed 1 from Brax-DK - issue call tag	issue call tag - 1 lb 1/25 DONE TRKG#1Z3489232644109 714
1/19/2006	2:33PM	ED PANZARELLA	NORTH WEST GARAGE	(941) 752-6112	2	0	will check shelf & call me back by end of day	call back 1/20 if no answer yet DONE SEE BELOW
1/19/2006	4:10PM	ED PANZARELLA	NORTH WEST GARAGE	(941) 752-6112			0 in stock, does not keep track of what vehicles he puts parts on	
1/19/2006	2:47PM	JOHN RUTTERFORD	GENERAL PARTS INC	(505) 266-5896	2	1	1 on shelf, confirmed brand/cntry, will issue call tag for, call back & speak to Jerry, he will check if he can trace other one & attempt to recall.	call back 1/23 - Jerry /// issue call tag 1/19 DONE TRKG#1Z3489232643455 575 (for 1 pce on shelf)
1/19/2006	2:56PM	MARTY	EUCLID FOREIGN MOTORS	(216) 481-9200	1	0	0 in stock, will attempt to recall from cust sold to - (done)	



**BRAKE HOSE 171.611.701B RECALL**

**PHONE CALL LOG**

DATE	TIME	TALKED TO:	COMPANY NAME	PHONE	TOTAL PURCH	RETURNING	NOTES:	
1/19/2006	3:04PM	RICHARD HUETTER	PACIFIC PARTS INTERNATIONAL	(818) 700-8001	25	16	gave him all info. & explained we need him to attempt to recall from his cust if not in stock / will check shelf & call me back	call back 1/20 DONE SEE BELOW
1/19/2006	3:33PM	ROBERT	PACIFIC PARTS INTERNATIONAL	(818) 700-8001			Robert called back, checked inventory, they have 16 of the 25 we sold them, said it will be almost impossible to trace which customer was sold which brand of the hoses	issue call tag 1/19 (6 lbs- attn: Richard Huetter/Robert) DONE TRKG#1Z3489232645704 999
1/19/2006	3:10PM	AL ASHTON	J-BUGS	(310) 644-7142	4	0	left msg for him to call back rgdg recall	call back 1/20 DONE SEE BELOW
1/20/2006	2:58PM	AL ASHTON	J-BUGS	(310) 644-7142			checked inventory, has some not from us, no way he can trace who he sold ours to.	
1/20/2006	11:00AM	PARISH	C & R IMPORT AUTO PARTS INC.	(251) 344-3577	5	3	1 in stock-AL store, 2 in stock-Ft. Walton store (850)243-0776, Paul Carr /// Per Parish, 2 others they bought from us were sold to cash customers on 12/04 & 7/04, issue call tag for 1 pc AL store	issue call tag 1/20 (1 lb) attn: Parish DONE TRKG#1Z3489232645303 734
1/20/2006	11:05AM	PAUL CARR	C & R IMPORT AUTO PARTS INC.	(850) 243-0776			issuing call tag for 2 pcs (see above notes)	issue call tag 1/20 (1 lb) attn: Paul Carr DONE TRKG#1Z3489232644304 146
1/20/2006	1:50PM	JOSEPH SCHMIDT	JOS H. SCHMIDT VW REPAIR	(570) 474-5104	1	1	left msg with details of recall, wait for him to call back after checking if he still has the 1 pce he bought from us, or if he could recall it from his cust	call again 1/23
1/20/2006	2:20PM	JOSEPH SCHMIDT	JOS H. SCHMIDT VW REPAIR	(570) 474-5104			called me back, said the 1 pce he has the marking "LALT", will send to us by mail	cust mailing 1 hose back, no call tag needed