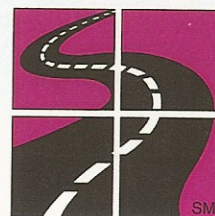


St. Barsabas Inc.

Tire Cradle Test

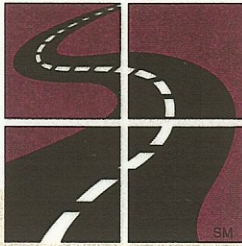
performed by

STANDARDS TESTING LABORATORIES, INC.



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**STANDARDS
TESTING LABS**

*Tough On Testing.*SM

REPORT CREATED FOR : John Potocki
 St. Barsabas Inc.
 P.O. Box 431
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REPORT CREATED BY: Tim Dietz
 Marketing, Technical Services

TEST PERFORMED: October 13, 1999

TEST REPORTED : October 26, 1999

On September 24, 1999, Standards Testing Laboratories conducted a comparison study of static tire flat spotting with the product "Tire Cradles". The scope of the test was to determine if the tire cradle would prevent flat spotting. The test samples were two P285/40ZR17 Pirelli P Zero Asymetrico tires mounted on 17x11 aluminum wheels.

The tire and wheel assemblies were run to the set conditions provided by the tire cradle's manufacturer. The test protocol required the tires to be measured on a high speed uniformity laser measurement machine establishing the tire's initial dynamic radial run-out, peak to peak levels, and 1-10 harmonics. This is to determine the tire's out of round characteristics. Once initially measured these numbers can be used as a base to compare against after the tire has flat spotted.

The mounted tires were then run to a warm up sequence for seventy five minutes at various speeds in the dynamics laboratory at an ambient temperature of 97 degrees Fahrenheit. The tire assemblies were then introduced to a static loaded condition on a cooled flat plate to promote flat spotting. Tire "A" was put on the flat plate using the tire cradle and tire "B" was put on the flat plate without using the tire cradle. Upon completion of the static loaded condition the tires were again measured for high speed uniformity to determine if flat spotting had occurred. The uniformity data showed that tire "A" did not flat spot with the use of the tire cradle and that tire "B" did flat spot without the use of a tire cradle.

This is a comparison between tire "A" and tire "B", both of the same brand that were performed in a controlled environment and has proven the merit of these test samples only. This is not conclusive for a complete comparison and evaluation with all of the Tire Cradles applications and various tire and wheel combinations without subjective ride and handling studies.

The following data is provided:

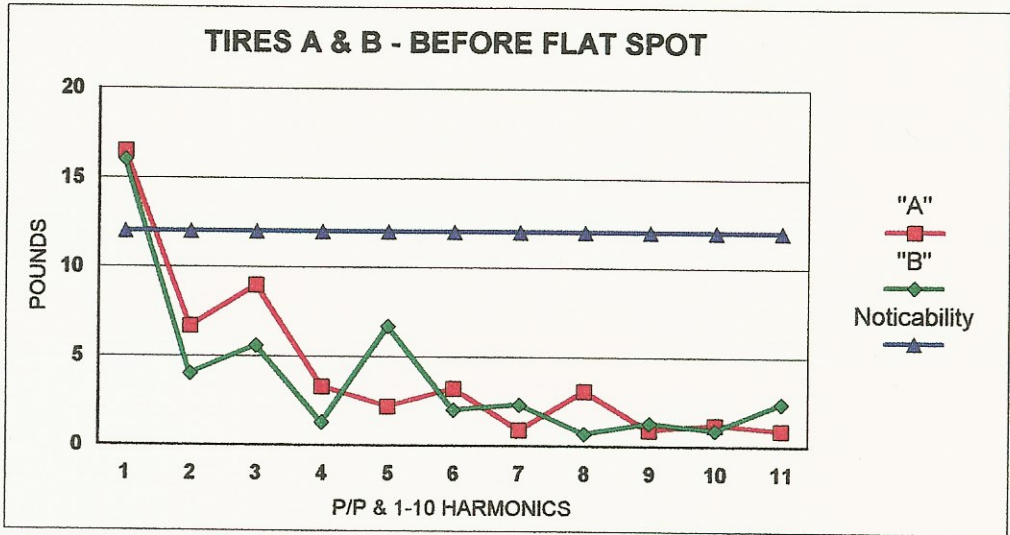
- Overall composite of uniformity measurements of tires "A" & "B"
- Test protocol and flat spot on tire "A"
- Composite of "before and after" uniformity measurements for tire "A"
- High Speed Uniformity measurements on tire "A"
- High Speed Uniformity results on tire "A"

- Test protocol and flat spot on tire "B"
- Composite of "before and after" uniformity measurements for tire "B"
- High Speed Uniformity measurements on tire "B"
- High Speed Uniformity results on tire "B"

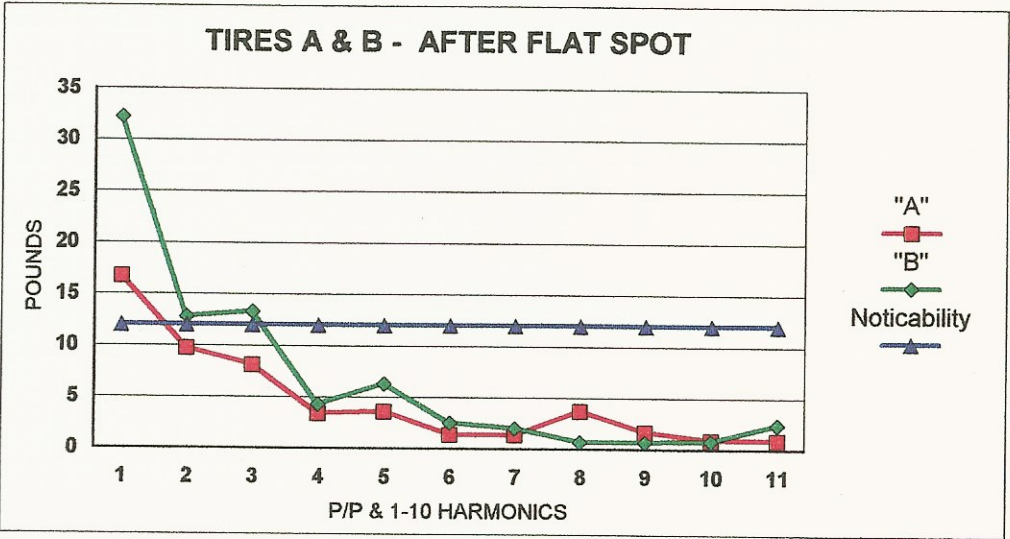
This summary of data is recorded in pounds force and has a tolerance of +/- 2 lbs. An average tire has a peak to peak value of 12 lbs that can be detected during normal ride and handling.

Tire "A" P285/40ZR17 Pirelli P Zero Asymetrico with Tire Cradle

Tire "B" P285/40ZR17 Pirelli P Zero Asymetrico without Tire Cradle.



	"A"	"B"
Peak to Peak	16.5	16.0
1st Harmonic	6.7	4.0
2nd Harmonic	9.0	5.6
3rd Harmonic	3.3	1.3
4th Harmonic	2.2	6.7
5th Harmonic	3.2	2.0
6th Harmonic	0.9	2.3
7th Harmonic	3.1	0.7
8th Harmonic	0.9	1.3
9th Harmonic	1.2	0.9
10th Harmonic	0.9	2.4



	"A"	"B"
Peak to Peak	16.7	32.2
1st Harmonic	9.7	12.8
2nd Harmonic	8.1	13.3
3rd Harmonic	3.4	4.3
4th Harmonic	3.6	6.3
5th Harmonic	1.4	2.5
6th Harmonic	1.4	2.0
7th Harmonic	3.7	0.7
8th Harmonic	1.7	0.7
9th Harmonic	0.9	0.8
10th Harmonic	0.9	2.4

TIRE "A" - Test information

TEST TIRE : P285/40ZR17 Pirelli P Zero Asymetrico
TEST WHEEL: 17x11 Aluminum wheel
TEST LOAD: 850 lbs.
TEST SPEED: various
TEST PRESSURE: 30 psi
TEST DURATION: 75 minutes

TIRE "A" - Test protocol

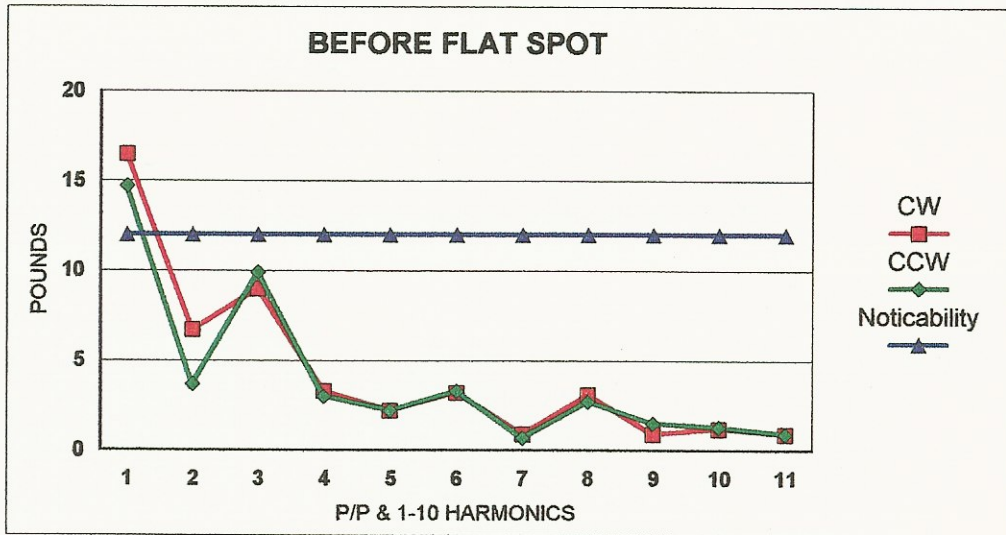
- Measure tire for High Speed Uniformity
- Run tire in the Dynamics Laboratory
- Flat spot tire on plate using the Tire Cradle.
- Measure tire for High Speed Uniformity

Tire "A" which is a P285/40ZR17 Pirelli P Zero Asymetrico tire was mounted on 17x11 aluminum wheel and was run to the above set conditions provided by the tire cradle's manufacturer. The test first called for the tire to be measured on a high speed uniformity laser measurement machine establishing the tire's initial dynamic radial run-out, peak to peak levels, and 1-10 harmonics. The mounted tires were then run to a warm up sequence for seventy five minutes at various speeds in the dynamics laboratory at an ambient temperature of 97 degrees Fahrenheit. The tire assembly was then introduced to a static loaded condition on a cooled flat plate to promote flat spotting. Tire "A" was put on the flat plate using the tire cradle.

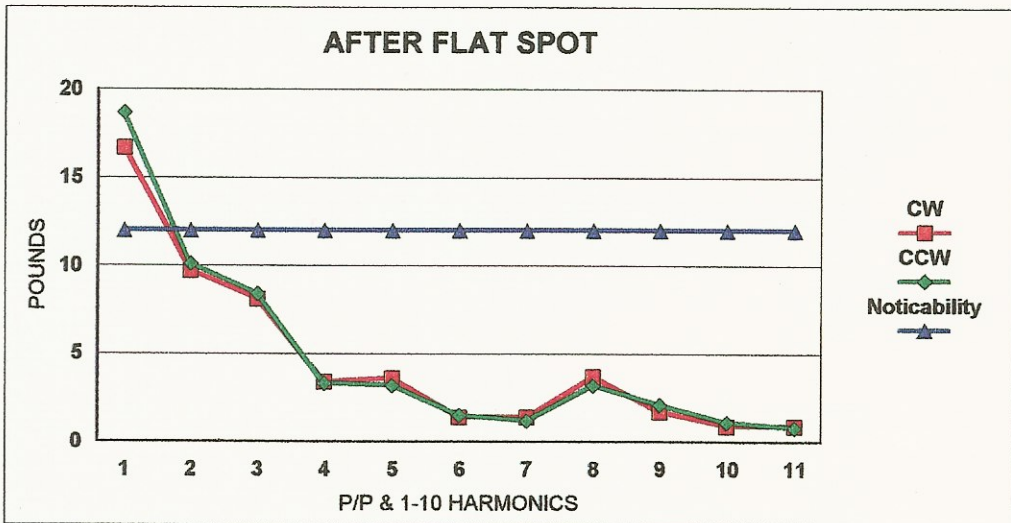


Upon completion of the static loaded condition the tire was again measured for high speed uniformity to determine if flat spotting had occurred. The uniformity data on the following page shows that tire "A" did not flat spot with the use of the tire cradle.

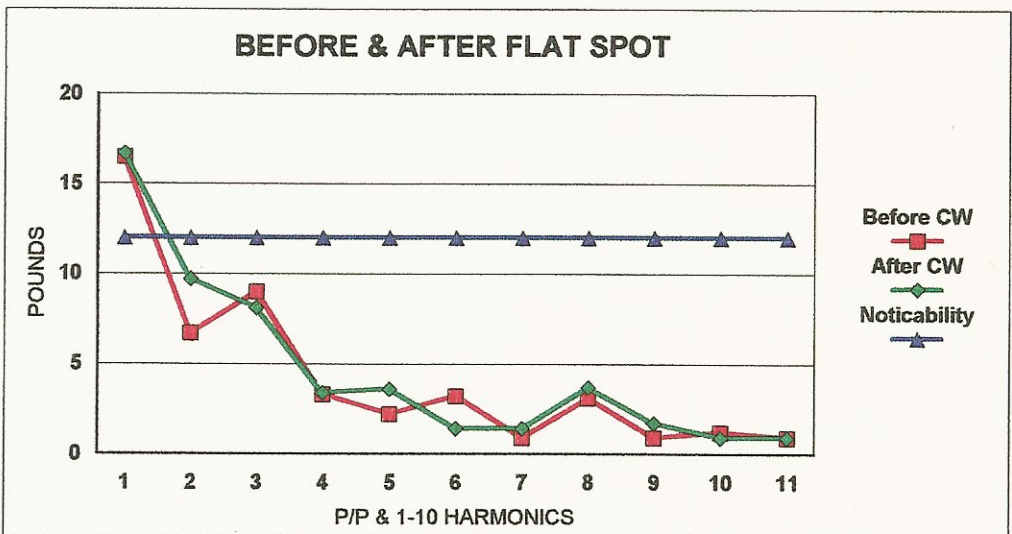
Tire "A" P285/40ZR17 Pirelli P Zero Asymetrico with Tire Cradle



	<u>CW</u>	<u>CCW</u>
Peak to Peak	16.5	14.7
1st Harmonic	6.7	3.7
2nd Harmonic	9.0	9.9
3rd Harmonic	3.3	3.0
4th Harmonic	2.2	2.2
5th Harmonic	3.2	3.3
6th Harmonic	0.9	0.7
7th Harmonic	3.1	2.7
8th Harmonic	0.9	1.5
9th Harmonic	1.2	1.3
10th Harmonic	0.9	0.9



	<u>CW</u>	<u>CCW</u>
Peak to Peak	16.7	18.7
1st Harmonic	9.7	10.1
2nd Harmonic	8.1	8.4
3rd Harmonic	3.4	3.3
4th Harmonic	3.6	3.2
5th Harmonic	1.4	1.5
6th Harmonic	1.4	1.2
7th Harmonic	3.7	3.2
8th Harmonic	1.7	2.1
9th Harmonic	0.9	1.1
10th Harmonic	0.9	0.8



	<u>Before</u>	<u>After</u>
Peak to Peak	16.5	16.7
1st Harmonic	6.7	9.7
2nd Harmonic	9.0	8.1
3rd Harmonic	3.3	3.4
4th Harmonic	2.2	3.6
5th Harmonic	3.2	1.4
6th Harmonic	0.9	1.4
7th Harmonic	3.1	3.7
8th Harmonic	0.9	1.7
9th Harmonic	1.2	0.9
10th Harmonic	0.9	0.9

DATE: 9 Sep 1999	TIME: 9:58:34 AM	STEP NO.: 1														
MFGR: PIRELLI	SIZE: 285/40ZR17	SPEC:	SERIAL: XBDMXKAU 427	DESIGN: ASIMMETR	WARM-UP: NONE											
TIRE NO.: 1	NO. HARMONICS: 10	MACHINE: B	WHL. NO.:	SPEED: 60 RPM	ORIENT.: SLASH											
TITLE: STL TESTING			WHL MFGR:	TOOLING: 17X11 SPLIT												
COMMENTS:			WHL. TYPE:	MACHINE EFFECTS CORRECTION : NO												
	LOAD (LBS)	PRESS. (PSI)	SPEED (MPH)	SPEED (RPM)	SPEED (RPS)	ELAPSED	IMBAL.	R MAG	R PHA	F/A MAG	F/A PHA					
SPECIFIED	1244.0	30.0		60.0				N/A	N/A	N/A	N/A					
ACTUAL CW	1236.2	30.3	4.6	59.8	0.996	00:01:44	CW									
ACTUAL CCW	1246.1	30.3	4.7	60.1	1.001	00:03:00	CCW									
CONICITY:	OFFSET	LAT CW	LAT CCW	PLYSTEER	CONICITY		REVS/MILE		LOADED RADIUS (IN)							
	-1.77	99.78	-96.06	97.92	1.86		CW	CCW	CW 12.24	CCW 12.24						
M A G	RADIAL FORCE LBS		LATERAL FORCE LBS		FORE/AFT FORCE LBS		OVERTURNING MOMENT FT-LBS		ALIGNING MOMENT N/A		RUNOUT LSW IN	RUNOUT LEFT IN	RUNOUT CENTER IN	RUNOUT RIGHT IN	RUNOUT RSW IN	
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	
	P/P	16.5	14.7	6.2	5.7	0.0	0.0	8.18	6.53			0.018		0.015		0.017
	1	6.7	3.7	3.6	3.4	0.0	0.0	3.80	3.66			0.008		0.006		0.012
	2	9.0	9.9	3.0	2.8	0.0	0.0	3.37	1.52			0.006		0.008		0.003
	3	3.3	3.0	1.0	0.3	0.0	0.0	0.98	0.99			0.002		0.004		0.004
	4	2.2	2.2	0.6	0.7	0.0	0.0	0.59	0.49			0.000		0.002		0.002
	5	3.2	3.3	1.3	1.7	0.0	0.0	1.19	1.39			0.003		0.001		0.001
	6	0.9	0.7	0.3	0.5	0.0	0.0	0.30	0.52			0.002		0.001		0.001
	7	3.1	2.7	0.3	0.4	0.0	0.0	1.24	1.11			0.003		0.001		0.002
	8	0.9	1.5	0.7	0.7	0.0	0.0	1.26	1.15			0.002		0.003		0.002
	9	1.2	1.3	0.4	0.4	0.0	0.0	0.44	0.53			0.001		0.002		0.002
	10	0.9	0.9	0.3	0.3	0.0	0.0	0.67	0.58			0.002		0.001		0.002
P H A	RADIAL FORCE DEG		LATERAL FORCE DEG		FORE/AFT FORCE DEG		OVERTURNING MOMENT DEG		ALIGNING MOMENT N/A		RUNOUT LSW DEG	RUNOUT LEFT DEG	RUNOUT CENTER DEG	RUNOUT RIGHT DEG	RUNOUT RSW DEG	
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	
	1	282	295	310	326	195	9	113	126			126		256		287
	2	133	136	9	160	14	143	115	106			140		127		171
	3	104	106	76	87	70	116	40	52			112		4		112
	4	14	22	69	65	61	38	44	51			71		64		26
	5	47	53	20	23	29	47	66	68			64		55		48
	6	51	55	51	51	19	2	23	24			24		10		47
	7	44	47	10	1	25	26	35	37			37		41		1
	8	33	37	30	34	18	20	2	6			4		26		28
	9	11	15	11	13	15	30	21	25			30		5		12
	10	1	6	21	27	36	22	3	8			35		17		34

DATE: 13 Oct 1999		TIME: 9:08:20 AM		STEP NO.: 1											
MFGR: PIRELLI		SIZE: 285/40ZR17		SPEC:		SERIAL: XBDMXKAU 427		DESIGN: ASIMMETR		WARM-UP: NONE					
TIRE NO.: 1B		NO. HARMONICS: 10		MACHINE: B		WHL. NO.:		SPEED: 60 RPM		ORIENT.: SLASH					
TITLE: 17" STL TESTING						WHL MFGR:		TOOLING: 11X17 SPLIT							
COMMENTS: TEST AFTER FLAT SPOT						WHL. TYPE:		MACHINE EFFECTS CORRECTION : NO							
	LOAD (LBS)	PRESS. (PSI)	SPEED (MPH)	SPEED (RPM)	SPEED (RPS)	ELAPSED	IMBAL.	R MAG	R PHA	F/A MAG	F/A PHA				
SPECIFIED	1244.0	30.0		60.0				N/A	N/A	N/A	N/A				
ACTUAL CW	1245.6	29.9	4.4	60.0	0.999	00:01:44	CW								
ACTUAL CCW	1237.1	29.9	4.4	60.0	1.001	00:03:00	CCW								
CONICITY:		OFFSET		LAT CW		LAT CCW		PLYSTEER		CONICITY		REVS/MILE		LOADED RADIUS (IN)	
		-1.77		97.37		-83.95		90.66		6.71		CW CCW		CW 12.19 CCW 12.21	
M A G	RADIAL FORCE LBS		LATERAL FORCE LBS		FORE/AFT FORCE LBS		OVERTURNING MOMENT FT-LBS		ALIGNING MOMENT N/A		RUNOUT LSW IN	RUNOUT LEFT IN	RUNOUT CENTER IN	RUNOUT RIGHT IN	RUNOUT RSW IN
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW
	P/P	16.7	18.7	8.8	6.9	0.0	0.0	10.39	8.61			0.026		0.018	
1	9.7	10.1	6.1	5.6	0.0	0.0	5.77	5.46			0.017		0.007		0.010
2	8.1	8.4	3.5	1.7	0.0	0.0	4.55	2.57			0.007		0.011		0.005
3	3.4	3.3	1.0	0.3	0.0	0.0	1.42	1.43			0.002		0.006		0.004
4	3.6	3.2	1.3	1.1	0.0	0.0	0.63	0.27			0.002		0.002		0.002
5	1.4	1.5	1.0	1.3	0.0	0.0	1.16	1.31			0.003		0.003		0.000
6	1.4	1.2	0.4	0.6	0.0	0.0	0.39	0.68			0.001		0.003		0.001
7	3.7	3.2	0.6	0.3	0.0	0.0	1.69	1.45			0.003		0.001		0.002
8	1.7	2.1	0.3	0.4	0.0	0.0	0.75	0.61			0.002		0.002		0.001
9	0.9	1.1	0.3	0.4	0.0	0.0	0.46	0.52			0.001		0.001		0.002
10	0.9	0.8	0.3	0.3	0.0	0.0	0.67	0.65			0.002		0.002		0.002
P H A	RADIAL FORCE DEG		LATERAL FORCE DEG		FORE/AFT FORCE DEG		OVERTURNING MOMENT DEG		ALIGNING MOMENT N/A		RUNOUT LSW DEG	RUNOUT LEFT DEG	RUNOUT CENTER DEG	RUNOUT RIGHT DEG	RUNOUT RSW DEG
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW
	1	184	170	308	320	279	266	108	117			125		191	
2	108	114	20	177	151	78	117	116			111		99		52
3	12	19	87	11	91	31	46	61			28		20		2
4	12	19	67	65	54	32	27	31			7		49		23
5	50	58	23	24	16	64	69	71			68		60		27
6	1	5	55	58	1	51	24	28			26		16		49
7	44	48	13	8	24	13	36	39			39		46		1
8	35	38	30	36	10	19	0	6			44		27		32
9	11	15	11	13	39	9	21	26			28		1		13
10	35	5	23	28	11	35	5	10			1		13		33

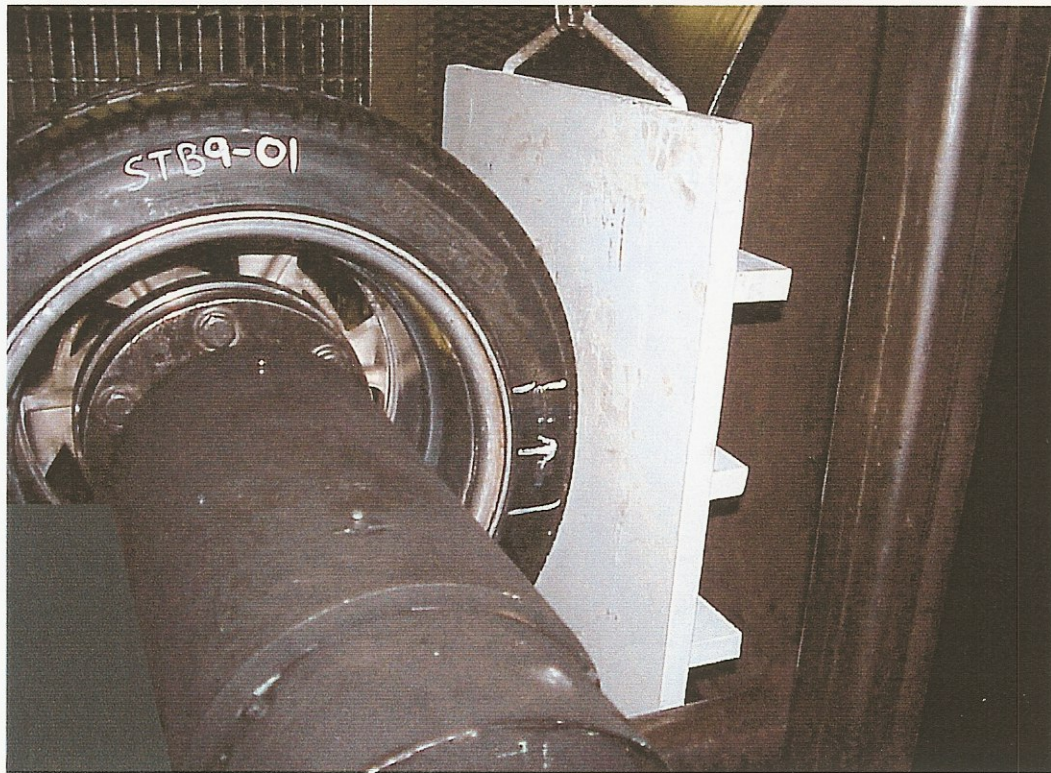
TIRE "B" - Test information

TEST TIRE : P285/40ZR17 Pirelli P Zero Asymetrico
TEST WHEEL: 17x11 Aluminum wheel
TEST LOAD: 850 lbs.
TEST SPEED: various
TEST PRESSURE: 30 psi
TEST DURATION: 75 minutes

TIRE "B" - Test protocol

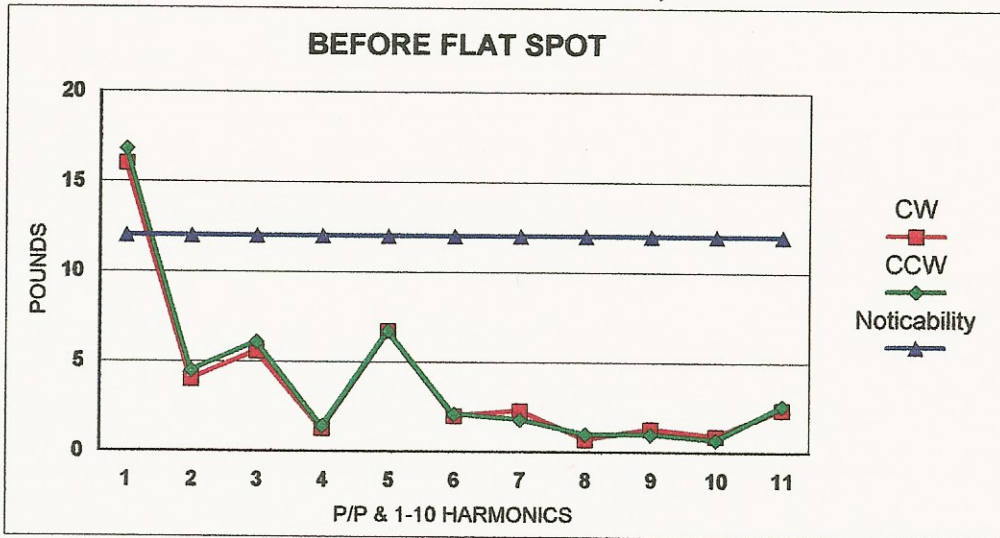
- Measure tire for High Speed Uniformity
- Run tire in the Dynamics Laboratory
- Flat spot tire on plate without using the Tire Cradle.
- Measure tire for High Speed Uniformity

Tire "B" which is a P285/40ZR17 Pirelli P Zero Asymetrico tire was mounted on 17x11 aluminum wheel and was run to the above set conditions provided by the tire cradle's manufacturer. The test first called for the tire to be measured on a high speed uniformity laser measurement machine establishing the tire's initial dynamic radial run-out, peak to peak levels, and 1-10 harmonics. The mounted tires were then run to a warm up sequence for seventy five minutes at various speeds in the dynamics laboratory at an ambient temperature of 97 degrees Fahrenheit. The tire assembly was then introduced to a static loaded condition on a cooled flat plate to promote flat spotting. Tire "B" was put on the flat plate without using the tire cradle.

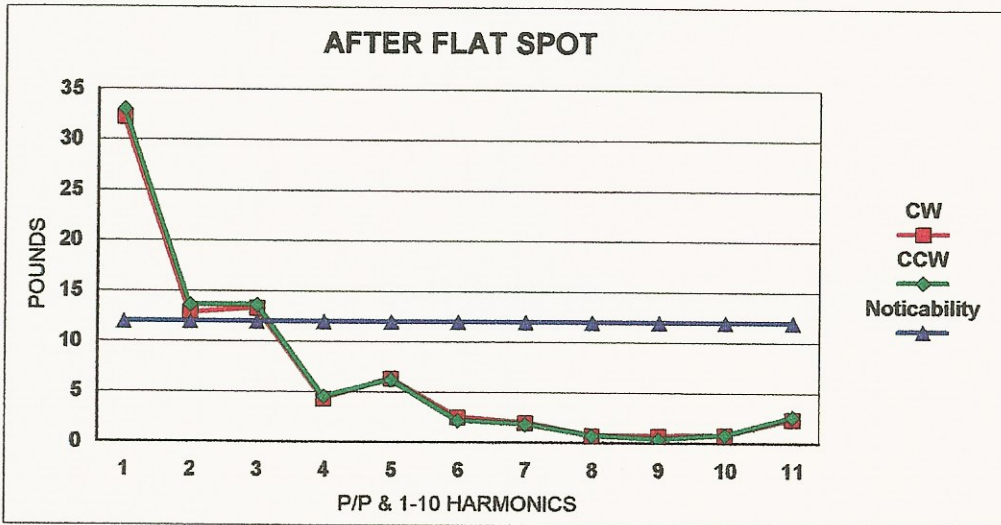


Upon completion of the static loaded condition the tire was again measured for high speed uniformity to determine if flat spotting had occurred. The uniformity data on the following page shows that tire "B" did flat spot without the use of the tire cradle.

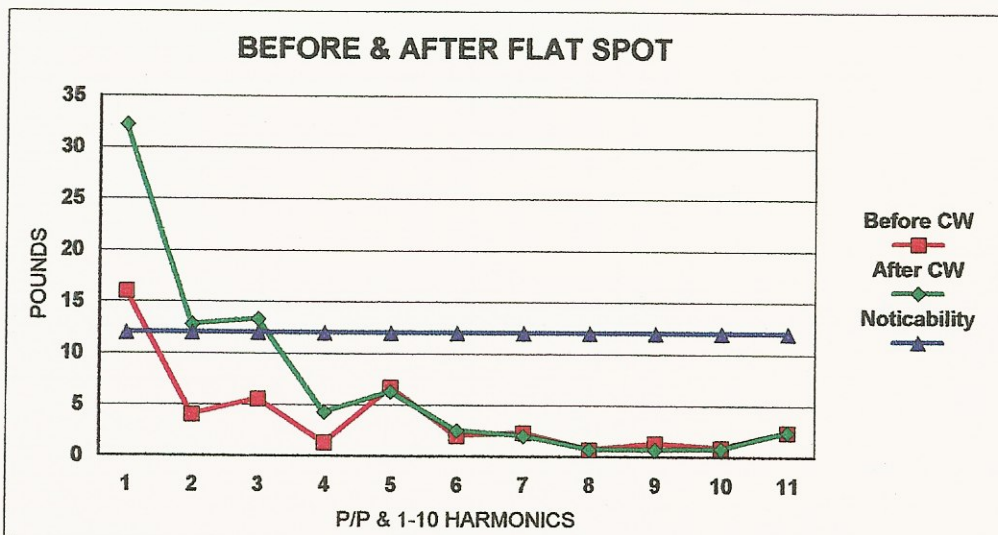
Tire "B" P285/40ZR17 Pirelli P Zero Asymetrico without Tire Cradle



	<u>CW</u>	<u>CCW</u>
Peak to Peak	16.0	16.8
1st Harmonic	4.0	4.5
2nd Harmonic	5.6	6.1
3rd Harmonic	1.3	1.4
4th Harmonic	6.7	6.7
5th Harmonic	2.0	2.1
6th Harmonic	2.3	1.8
7th Harmonic	0.7	1.0
8th Harmonic	1.3	1.0
9th Harmonic	0.9	0.7
10th Harmonic	2.4	2.6



	<u>CW</u>	<u>CCW</u>
Peak to Peak	32.2	33.0
1st Harmonic	12.8	13.6
2nd Harmonic	13.3	13.6
3rd Harmonic	4.3	4.5
4th Harmonic	6.3	6.2
5th Harmonic	2.5	2.2
6th Harmonic	2.0	1.8
7th Harmonic	0.7	0.7
8th Harmonic	0.7	0.4
9th Harmonic	0.8	0.8
10th Harmonic	2.4	2.6



	<u>Before</u>	<u>After</u>
Peak to Peak	16.0	32.2
1st Harmonic	4.0	12.8
2nd Harmonic	5.6	13.3
3rd Harmonic	1.3	4.3
4th Harmonic	6.7	6.3
5th Harmonic	2.0	2.5
6th Harmonic	2.3	2.0
7th Harmonic	0.7	0.7
8th Harmonic	1.3	0.7
9th Harmonic	0.9	0.8
10th Harmonic	2.4	2.4

DATE: 9 Sep 1999		TIME: 10:30: 1 AM		STEP NO.: 1						OPER.: CCR					
MFGR: PIRELLI		SIZE: 285/40ZR17		SPEC:		SERIAL: XBDMXKAU 427				DESIGN: ASIMMETR		WARM-UP: NONE			
TIRE NO.: 2		NO. HARMONICS: 10		MACHINE: B		WHL. NO.:				SPEED: 60 RPM		ORIENT.: SLASH			
TITLE: STL TESTING						WHL MFGR:				TOOLING: 17X11 SPLIT					
COMMENTS:						WHL. TYPE:				MACHINE EFFECTS CORRECTION : NO					
		LOAD (LBS)	PRESS. (PSI)	SPEED (MPH)	SPEED (RPM)	SPEED (RPS)	ELAPSED		IMBAL.	R MAG	R PHA	F/A MAG	F/A PHA		
SPECIFIED		1244.0	30.0		60.0					N/A	N/A	N/A	N/A		
ACTUAL CW		1246.6	30.3	4.6	59.8	0.997	00:02:12		CW						
ACTUAL CCW		1239.3	30.3	4.4	60.2	1.004	00:03:28		CCW						
CONICITY:		OFFSET	LAT CW	LAT CCW	PLYSTEER	CONICITY		REVS/MILE		LOADED RADIUS (IN)					
		-1.77	95.54	-95.93	95.73	-0.19		CW	CCW	CW 12.21	CCW 12.23				
M A G	RADIAL FORCE LBS		LATERAL FORCE LBS		FORE/AFT FORCE LBS		OVERTURNING MOMENT FT-LBS		ALIGNING MOMENT N/A		RUNOUT LSW IN	RUNOUT LEFT IN	RUNOUT CENTER IN	RUNOUT RIGHT IN	RUNOUT RSW IN
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CW	CW	CW	CW
	P/P	16.0	16.8	12.7	11.8	0.0	0.0	5.82	7.85			0.019		0.019	
1	4.0	4.5	6.3	2.0	0.0	0.0	1.78	2.93			0.005		0.003		0.014
2	5.6	6.1	5.4	7.5	0.0	0.0	2.12	3.60			0.003		0.012		0.004
3	1.3	1.4	2.3	1.7	0.0	0.0	0.70	0.50			0.004		0.005		0.004
4	6.7	6.7	2.4	2.7	0.0	0.0	1.41	1.71			0.005		0.003		0.004
5	2.0	2.1	1.0	1.0	0.0	0.0	0.45	0.65			0.002		0.001		0.003
6	2.3	1.8	0.4	0.5	0.0	0.0	1.27	1.28			0.004		0.001		0.001
7	0.7	1.0	0.6	0.7	0.0	0.0	0.85	0.93			0.001		0.001		0.001
8	1.3	1.0	0.7	0.7	0.0	0.0	1.00	0.85			0.003		0.002		0.000
9	0.9	0.7	0.5	0.6	0.0	0.0	0.76	0.78			0.002		0.002		0.001
10	2.4	2.6	0.3	0.4	0.0	0.0	0.55	0.42			0.002		0.001		0.003
P H A	RADIAL FORCE DEG		LATERAL FORCE DEG		FORE/AFT FORCE DEG		OVERTURNING MOMENT DEG		ALIGNING MOMENT N/A		RUNOUT LSW DEG	RUNOUT LEFT DEG	RUNOUT CENTER DEG	RUNOUT RIGHT DEG	RUNOUT RSW DEG
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CW	CW	CW	CW
	1	146	147	164	169	231	145	85	137			355		182	
2	146	150	168	158	159	128	79	64			47		138		135
3	12	20	28	24	84	18	90	80			99		26		13
4	29	36	88	86	54	72	36	37			33		31		36
5	67	1	28	29	69	2	49	51			59		66		68
6	22	26	54	50	19	7	17	20			20		33		46
7	11	16	18	23	38	39	43	48			44		2		9
8	8	10	37	43	31	20	14	19			13		28		23
9	25	28	17	21	16	16	37	2			32		11		23
10	8	12	34	7	9	23	13	20			7		32		4

DATE: 13 Oct 1999		TIME: 9:15:37 AM		STEP NO.: 1											
MFGR: PIRELLI		SIZE: 285/40ZR17		SPEC:		SERIAL: XBDMXKAU 427		DESIGN: ASIMMETR		WARM-UP: NONE					
TIRE NO.: 2B		NO. HARMONICS: 10		MACHINE: B		WHL. NO.:		SPEED: 60 RPM		ORIENT.: SLASH					
TITLE: 17" STL TESTING						WHL MFGR:			TOOLING: 11X17 SPLIT						
COMMENTS: TEST AFTER FLAT SPOT						WHL. TYPE:			MACHINE EFFECTS CORRECTION : NO						
	LOAD (LBS)	PRESS. (PSI)	SPEED (MPH)	SPEED (RPM)	SPEED (RPS)	ELAPSED	IMBAL.	R MAG	R PHA	F/A MAG	F/A PHA				
SPECIFIED	1244.0	30.0		60.0				N/A	N/A	N/A	N/A				
ACTUAL CW	1243.9	29.9	4.5	60.0	1.001	00:01:50	CW								
ACTUAL CCW	1237.8	29.9	4.6	60.0	1.000	00:03:06	CCW								
CONICITY:	OFFSET	LAT CW	LAT CCW	PLYSTEER	CONICITY	REVS/MILE		LOADED RADIUS (IN)							
	-1.77	91.40	-83.31	87.35	4.05	CW	CCW	CW 12.18	CCW 12.19						
M A G	RADIAL FORCE LBS		LATERAL FORCE LBS		FORE/AFT FORCE LBS		OVERTURNING MOMENT FT-LBS		ALIGNING MOMENT N/A		RUNOUT LSW IN	RUNOUT LEFT IN	RUNOUT CENTER IN	RUNOUT RIGHT IN	RUNOUT RSW IN
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW
P/P	32.2	33.0	9.0	8.9	0.0	0.0	5.69	7.61			0.015		0.027		0.021
1	12.8	13.6	1.6	1.8	0.0	0.0	2.56	3.49			0.008		0.004		0.013
2	13.3	13.6	4.7	5.9	0.0	0.0	1.43	1.96			0.004		0.016		0.008
3	4.3	4.5	2.0	1.7	0.0	0.0	0.97	1.03			0.002		0.008		0.003
4	6.3	6.2	2.6	2.7	0.0	0.0	1.78	2.00			0.004		0.004		0.002
5	2.5	2.2	0.9	0.8	0.0	0.0	0.61	0.61			0.002		0.002		0.002
6	2.0	1.8	0.3	0.4	0.0	0.0	1.17	1.15			0.004		0.003		0.000
7	0.7	0.7	0.7	0.7	0.0	0.0	0.89	0.88			0.002		0.002		0.002
8	0.7	0.4	0.4	0.4	0.0	0.0	0.71	0.50			0.003		0.003		0.001
9	0.8	0.8	0.5	0.5	0.0	0.0	0.63	0.66			0.001		0.002		0.002
10	2.4	2.6	0.2	0.3	0.0	0.0	0.52	0.38			0.002		0.001		0.003
P H A	RADIAL FORCE DEG		LATERAL FORCE DEG		FORE/AFT FORCE DEG		OVERTURNING MOMENT DEG		ALIGNING MOMENT N/A		RUNOUT LSW DEG	RUNOUT LEFT DEG	RUNOUT CENTER DEG	RUNOUT RIGHT DEG	RUNOUT RSW DEG
	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW	CCW	CW
1	90	95	187	273	37	37	117	124			42		40		349
2	140	143	171	154	2	114	100	54			142		136		138
3	39	43	19	16	118	1	63	62			81		33		14
4	26	33	83	83	69	43	28	31			27		31		43
5	63	69	25	28	34	1	48	50			59		62		71
6	22	28	52	50	8	25	16	20			17		38		50
7	1	11	22	24	7	25	48	0			48		4		7
8	12	15	36	43	5	5	10	17			14		30		24
9	19	22	17	20	28	18	38	2			31		9		19
10	7	11	33	6	9	28	12	18			6		30		4

STANDARDS TESTING LABORATORIES

ST. BARSABAS

L9-568

SPEC. NO. [CUSTOMER]
 TYPE TEST [FLAT PLATE]
 TEST DURATION [97.25 HRS]
 TIRE NUMBER []

DATE [9-21-99]
 TEST NO. [STB9-01]
 MACHINE NO. []
 STATION NO. [19]

TIRE NAME [PIRELLI ASIMMETRICO] LOAD RANGE [S]
 TIRE SIZE [285/40ZR17] ID.NO. [XBCMCKAU109] TT/TL [TL]
 MAX.INFLA.SINGLE [51] MAX.LOAD SINGLE [1764] D.O.T. [Y]
 DUAL [NA] DUAL [NA] T.W.I. [Y]
 CARCASS CORD MAT. [R] BELT CORD MAT. [S,N,R] RIM NO []
 NO. PLYS SIDEWALL [2] NO.PLYS TREAD [6] CONSTR. [RAD]
 TEST RIM SIZE [17x11] PRETEST INSPECTION []

SPECIAL INSTRUCTION

* AFTER TIRE RUNS FOR 15 MIN. AT 35 MPH. STOP TIR AND PUT THE FLATE PLATE IN BETWEEN TIRE AND ROAD WHEEL.

* DO NOT USE THE TIRE CRADLE SUPPLIED BY CUSTOMER

* PLATE TEMP 63° TIRE TEMP 103°

TEST DATA

AIR PRESSURE	30							32
AMBIENT TEMP.	97	98	98	99	97	98	98	96
TEST LOAD	0	850	850	850	850	850	850	850
ACTUAL LOAD	0	853	849	851	851	850	850	850
TEST SPEED	0	50	90	35	0	0	0	0
TECHNICIAN	CP	CP	CP	CP	DB	CD	DB	CD
DATE	9-21	9-21	9-21	9-21	9-22	9-23	9-24	9-25
CHECK TIME	1140	1155	1240	1255	1255	1255	1255	1255
TEST MILES	0	12	79.5	88.2	88.2	88.2	88.2	88.2
TEST CYCLE HRS	0	.25	.75	.25	24	24	24	24
TOTAL HOURS	0	.25	1	1.25	25.25	49.25	73.25	97.25

TEST DURATION [97.25] DATE COMPLETED [9-25-99] TOTAL MILES [88.2]

REASON FOR REMOVAL : Test Complete.

TECHNICIAN : C. DeGordon

APPROVED BY : 

STANDARDS TESTING LABORATORIES

ST. BARSABAS

L9-568

SPEC. NO. [CUSTOMER] DATE [9-27-99]
 TYPE TEST [FLAT PLATE] TEST NO. [STB9-02]
 TEST DURATION [97.25 HRS] MACHINE NO. []
 TIRE NUMBER [] STATION NO. [19]

TIRE NAME [PIRELLI ASIMMETRICO] LOAD RANGE [S]
 TIRE SIZE [285/40ZR17] ID.NO. [XBCMCKAU427] TT/TL [TL]
 MAX.INFLA.SINGLE [51] MAX.LOAD SINGLE [1764] D.O.T. [Y]
 DUAL [NA] DUAL [NA] T.W.I. [Y]
 CARCASS CORD MAT. [R] BELT CORD MAT. [S,N,R] RIM NO []
 NO. PLYS SIDEWALL [2] NO.PLYS TREAD [6] CONSTR. [RAD]
 TEST RIM SIZE [17x11] PRETEST INSPECTION []

SPECIAL INSTRUCTION

* AFTER TIRE RUNS FOR 15 MIN. AT 35 MPH. STOP TIR AND PUT THE FLATE
 PLATE IN BETWEEN TIRE AND ROAD WHEEL.

* USE THE TIRE CRADLE SUPPLIED BY CUSTOMER

PLATE TEMP 59°

TIRE TEMP 117°

TEST DATA

AIR PRESSURE	30							32
AMBIENT TEMP.	96	97	97	97	97	97	98	98
TEST LOAD	0	850	850	850	850	850	850	850
ACTUAL LOAD	0	852	850	850	850	850	850	850
TEST SPEED	0	50	90	35	0	0	0	0
TECHNICIAN	CP	CP	DB	DB	DB	CD	DB	CD
DATE	9-27	9-27	9-27	9-27	9-28	9-29	9-30	10-01
CHECK TIME	0743	0758	0843	0858	0858	0858	0850	0858
TEST MILES	0	12	79.5	88.2	88.2	88.2	88.2	88.2
TEST CYCLE HRS	0	.25	.75	.25	24	24	24	24
TOTAL HOURS	0	.25	1	1.25	25.25	49.25	73.25	97.25

TEST DURATION [97.25] DATE COMPLETED [10-01-99] TOTAL MILES [88.2]
 REASON FOR REMOVAL : Test Complete.

TECHNICIAN : C. DeGordon

APPROVED BY :

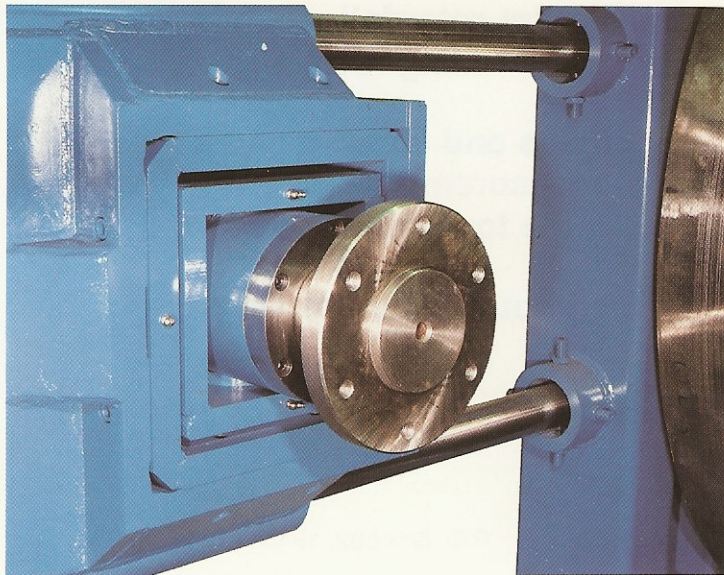
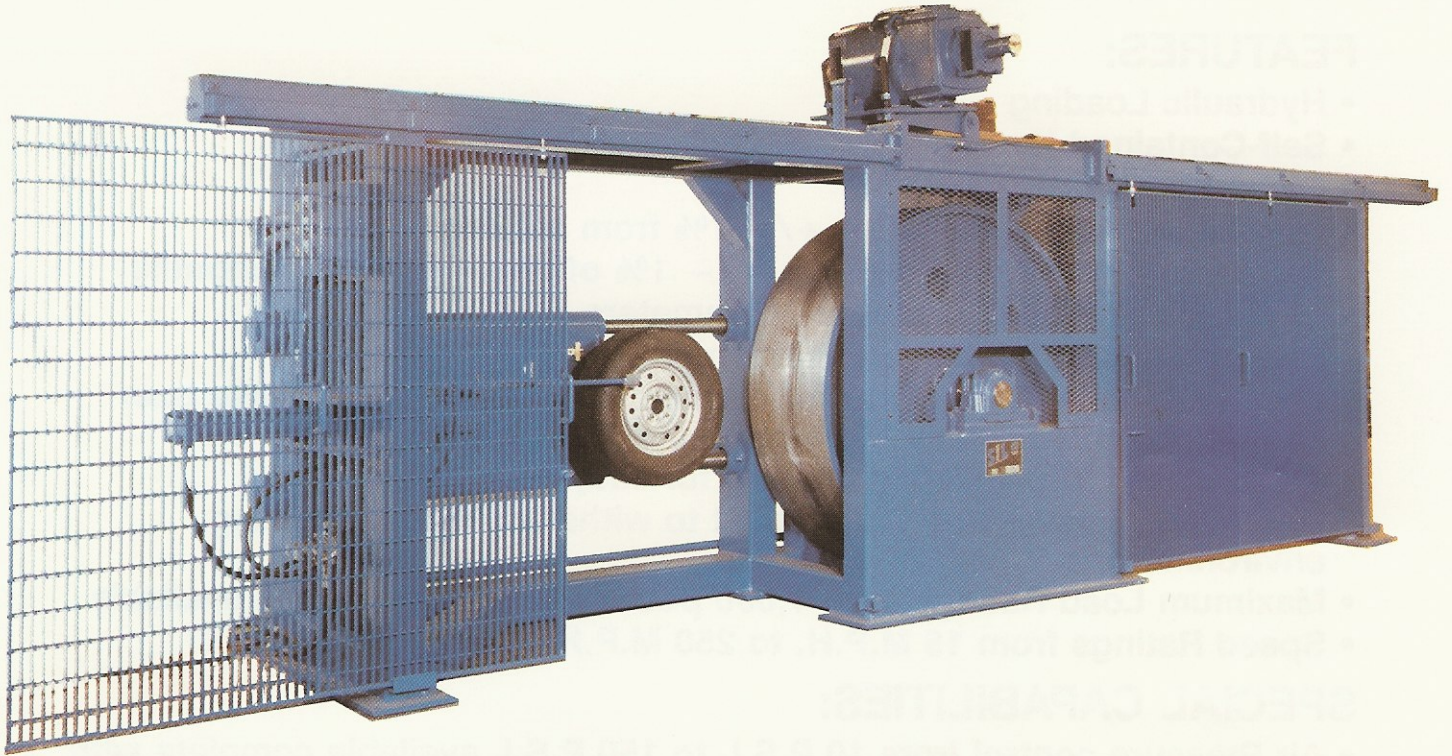


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TIRE AND WHEEL

TEST MACHINES



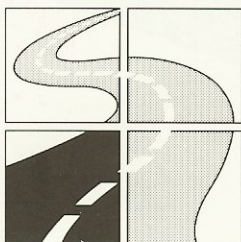
RADIAL FATIGUE TWO-POSITION WHEEL AND TIRE TEST MACHINE

FEATURES:

- Hydraulic Loading
- Self-Contained Hydraulic Power Unit
- Closed Loop Control
- Control Stability better than $\pm 1\%$ from setpoint
- Calibration Stability better than $\pm 1\%$ of reading over six months
- Digital Display of all measured parameters
- English / Metric Switchable metering
- Low Hysteresis Roundways for carriage movement provide less than 20 pounds "break-away" force to move the carriage mechanism
- Cantilevered Wheel/Tire mounting for easy access
- One Piece, Heavy-Duty Frame built to withstand a harsh testing environment
- Maximum Load Ratings from 1,000 pounds to 50,000 pounds available
- Speed Ratings from 15 M.P.H. to 250 M.P.H.

SPECIAL CAPABILITIES:

- Air Pressure control from 10 P.S.I. to 150 P.S.I. available complete with remote inflate/deflate for safety
- Slip and Camber control up to ± 10 Degrees, constant and cyclic
- Lateral Force measurement capability
- Spindle Braking available for safety and for tire retardation while testing
- Standard Machine can be easily converted for rolling resistance measurement
- Slip Rings can be provided for thermocouples and strain gauges
- Ambient and Contained Air Temperature measurement
- NBS traceable Calibration Standards available for Load, Speed, and Air Pressure
- Machine can be easily interfaced to STL computer Control/Data Acquisition



STL

MACHINERY DIVISION

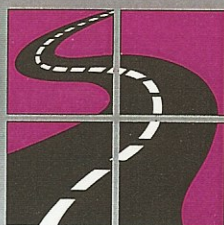
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