Prepared for:

Mr. Rob Crain Raze Motorsports 3263 W. Alpine Drive Beloit, WI. 53511 Project Number: 116-1386

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P.O. No.: CC

Sample Quantity & ID: (6) ATV handle bars – See Sample ID Below

Prepared by: Steve Hertig \_\_\_\_\_\_ Title: Engineering Tech

Reviewed by: Samuel Rappeport Our Title: Metallurgical Engineer

## Scope:

Perform custom static compression testing on samples submitted and prepared by the customer. Static compression rate to be 0.250"/min per customer request.



Figure 1 – Samples identified as "Specialty" in as received condition



Figure 2 – Samples identified as "Control" in as received condition



#### Sample Identification:

Samples submitted by the customer are fabricated by the customer.

Three (3) samples submitted display drilled and threaded holes on the front side of the ATV handle bars. These samples will be identified throughout the remainder of the report as "Specialty".

Three (3) samples submitted in specialized packaging do not include the drilled holes. These ATV handle bars will be identified throughout the remainder of the report as "Control".

#### **Testing Methods:**

## Method Type A:

- One samples of each type tested
- Compression testing to 100lbs in three directions
- Torque installation bolts to 25ft.lbs.
- Compression rate 0.250"/min

### **Method Type B:**

- One samples of each type tested
- Torque installation bolts to 25ft.lbs.
- Compression testing until permanent set
- Compression rate 0.250"/min
- Record permanent set

### Method Type C:

- · One samples of each type tested
- Torque installation bolts to 25ft.lbs.
- Compression testing until Failure
- Compression rate 0.250"/min



Figure 3 – Typical set up used for Method A, **Top**, Method B and Method C, Compression testing in direction of yellow arrow



Figure 4 – Typical set up used for Method A, Front, compression testing in direction of yellow arrow



Figure 5 - Figure 6 - Typical set up used for Method A, Rear, compression testing in direction of yellow arrow



### **Test Results:**

Test Methods: Custom static compression at 0.250"/min
Instrument: Instron 4204 Tensile Tester (screw machine)
Software: MTestQuattro

# **Static Compression Test Results Method A:**

Sample ID	Load (lbs)	Displacement @ Load (in)	Failure Mode
Control Top	100	0.1517	None
Specialty Top	100	0.1470	None
Control Front	100	0.2454	None
Specialty Front	100	0.2396	None
Control Rear	100	0.2509	None
Specialty Rear	100	0.2049	None

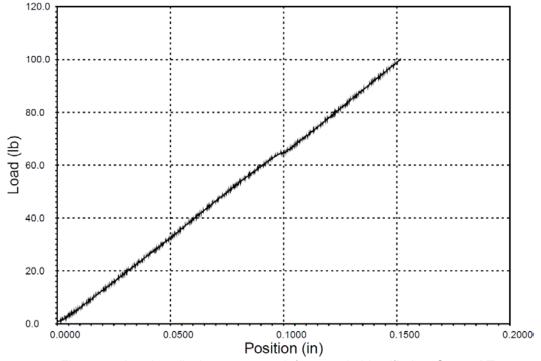


Figure 7 – Load vs displacement graph for sample identified as Control Top

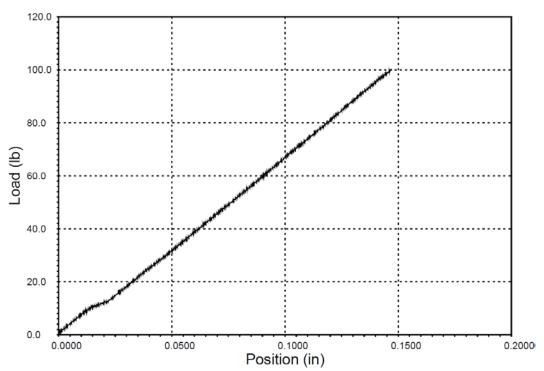


Figure 8 – Load vs displacement graph for sample identified as Specialty Top

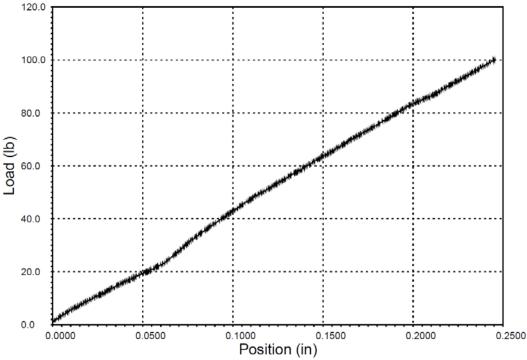


Figure 9 – Load vs displacement graph for sample identified as Control Front

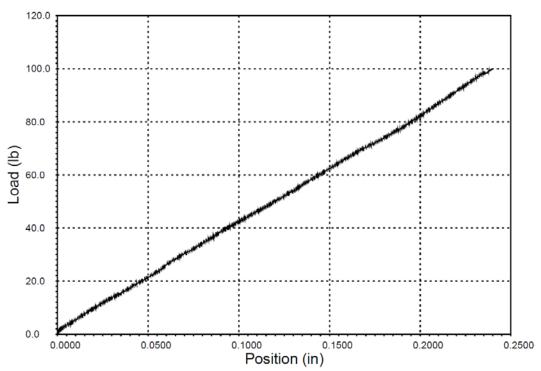


Figure 10 - Load vs displacement graph for sample identified as Specialty Front

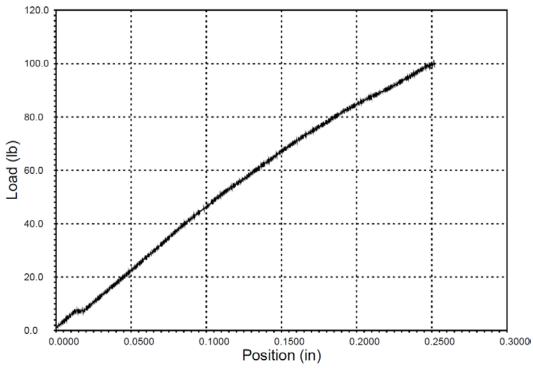


Figure 11 - Load vs displacement graph for sample identified as Control Rear





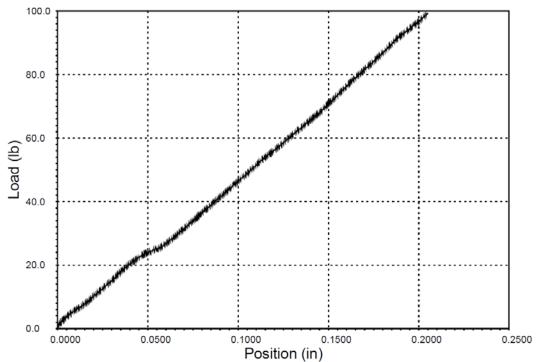


Figure 12 - Load vs displacement graph for sample identified as Specialty Rear

# **Static Compression Test Results Method B:**

Sample ID	Load (lbs)	Displacement at Load (in)	Permanent set (in)	Failure Mode
Control	550	0.9327	0.0970	None
Specialty	550	0.1470	0.1273	None

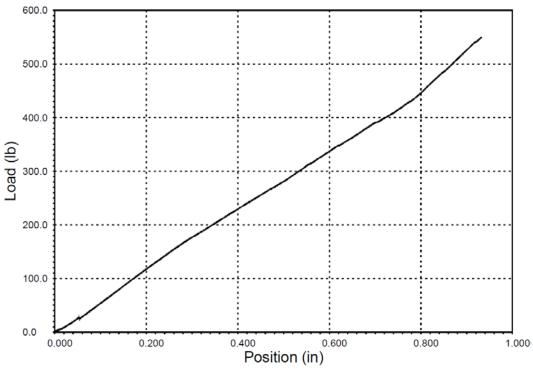


Figure 13 – Permanent set testing, Load vs displacement graph for sample identified as Control

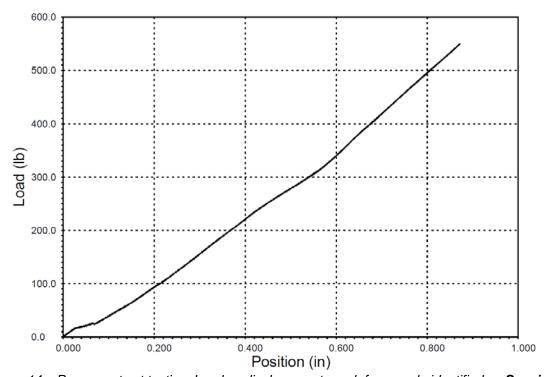


Figure 14 – Permanent set testing, Load vs displacement graph for sample identified as Specialty



## **Static Compression Test Results Method C:**

Sample ID	Peak Load (lbs)	Displacement at Peak Load (in)	Failure Mode
Control	807.1	1.6393	Bending and permanent set of ~3in.
Specialty	807.4	1.6876	Fracture through the drilled hole

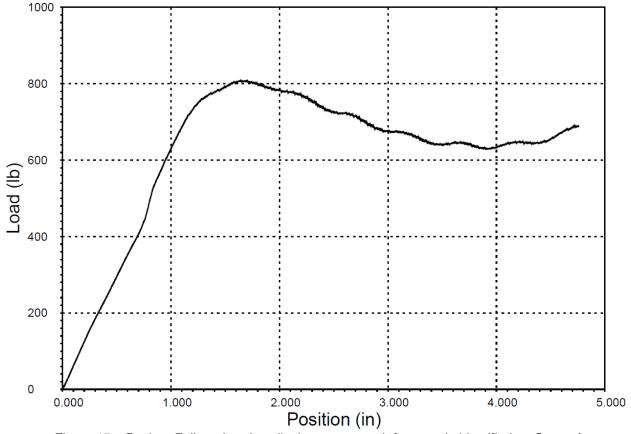


Figure 15 – Push to Failure, Load vs displacement graph for sample identified as Control

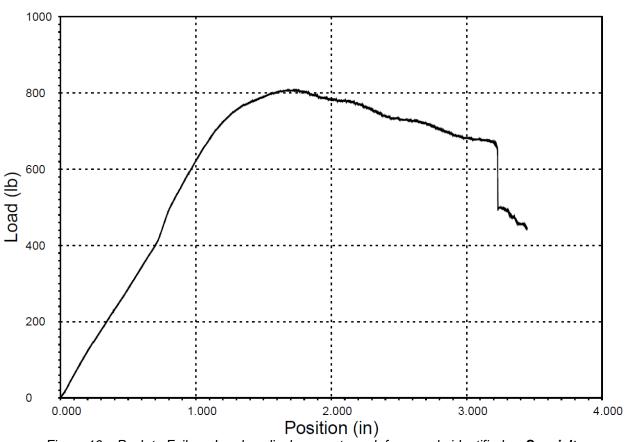


Figure 16 - Push to Failure, Load vs displacement graph for sample identified as Specialty



Figure 17 – Photo depicting **Control** sample post compression testing to failure, Top sample is not tested, Bottom sample depicting the permanent bending



Figure 18 – Photo depicting **Specialty** sample post compression testing to failure, Top sample is not tested, Bottom sample depicting the permanent bending and fracture



Figure 19 – Photo depicting failure mode magnified on the Specialty sample post compression testing to failure