



## **Breaking Down the Corner to Adjust Handling**

With the summer race season in full swing, we at PMP Chassis would like to address common issues of searching for the balance of side bite and forward bite.

1. The biggest mistake we see guys making is getting themselves in situations where they're too tight entering the corner or across the center and due to that they end up loose on corner exit. Breaking down the corner and understanding that every adjustment changes the action of the car but also has an equal reaction to the handling characteristics. In simple terms, your entry is where your corner starts and it's where your entire problem with your car rotating through the center and exit of the corner. Too much emphasis is focused on corner exit and not understanding or focusing nearly enough on corner entry and rotating through the center to carry the momentum to achieve better forward drive. A majority of issues start there and creating issues with corner exit with forward bite. Driving styles and tendencies also come into play especially in dirt track racing where conditions are constantly changing. In reality rarely will you feel like your car is 100% perfect during a night. In dirt track racing, track conditions change from hooked up and tacky to developing slick spots, ruts, dry top, tacky top, or develops a various sized cushion. Corner entry and perfecting the combination of throttle control and corner braking techniques are just as important to setup regardless of chassis you are currently running. Causing the car to be too tight and not rotate the center of the corner.
2. Here are some examples of setup mistakes we see when looking for forward drive off the corner.
  - a. Decreasing Right Rear Wheel spacing drastically.
  - b. Reducing stagger below 6" on 1/5 mile or shorter tracks
  - c. Drastically reducing chassis tilt
  - d. Moving top wing back where you lose the balance of the down force from front to rear of the car.

These are the most common mistakes in chassis tuning to affect corner entry making your car tight on entry and not rotating the center. Typically a driver will unknowingly shake the car or pitch it in on corner entry and cause the car to snap free, greatly affecting exit where you usually lose more drive off the corner or cause a four wheel drift.

3. Shocks! Shocks are the most misunderstood fine tuning device on a micro sprint. Regardless of what brand of shock or if it is a twin tube or mono tube shock (which is often incorrectly referred to as a gas shock) you need to have dyno sheets measuring the compression and rebound stages. In simple terms, if you do not have the information of how your shocks are valved with dyno readings, you can not tune the handling of your car. It is impossible to provide tech support to full range of to your setup program.

■ POS 8 - 6.00 in/sec, 6.00 in/sec (gas force removed)

Collected: 4:14:19 PM Thursday August 4, 2011	Shock Name:
Shock ID:	Vehicle:
Location:	Compression Valving:
Rebound Valving:	Piston Valving:
Other Valving:	Compression Setting:
Rebound Setting:	Preload Setting:
Test Run: E FULL POS TEST	Dyno Serial Number: Q 2000
Configuration:	Instruction: POS 8
Software Version: Shock 6.2.58	Warmup Type: None
Gas Test Type: None	Min_Force: -134.65 lbs
Peak_Displacement: 1.00 in	Max_Displacement: 1.00 in
Max_Force: 91.88 lbs	Shaft_Diameter: 0.63 in
Min_Displacement: -1.00 in	Peak_Force: 134.65 lbs
Amplitude: 1.00 in	Min_Force: -121.34 lbs
Peak_Displacement: 1.00 in	Max_Displacement: 1.00 in
Max_Force: 91.88 lbs	Min_Displacement: -1.00 in
Peak_Force: 121.34 lbs	
Notes:	

Stroke	Peak Velocity	Gas Test	Seal Drag	Temperature	Test Speed
2.00 in	6.40 in/sec	6.93 lbs	N/A	12,353.29 F	6.00 in/sec

Velocity	CO	RC	CC	RO	CA	RA
0.00	-13.55	-13.18	3.59	3.57	-4.98	-4.81
1.00	14.69	-64.32	19.42	-54.47	17.06	-59.40
2.00	27.72	-82.62	34.45	-80.00	31.08	-81.31
3.00	42.28	-93.75	48.40	-90.97	45.34	-92.36
4.00	55.91	-103.59	61.20	-101.46	58.55	-102.52
5.00	68.73	-113.77	71.67	-111.75	70.20	-112.76
6.00	80.27	-124.52	82.30	-123.58	81.29	-124.05

Serial Number	Model	Notes	Compression		Rebound		Tested on
			1 ips	3-ips	1 ips	3 ips	
SW RF	Maxwell 1	STIFF	46	82	-42	-114	4/2/2004
SW RF		-1	47	83	-36	-108	
SW RF		-2	47	83	-29	-101	
SW RF		-3	47	83	-15	-87	
SW RF		-4	46	83	-5	-67	
SW RF		-5	46	82	0	-39	
SW RF		-6	47	83	3	-25	
SW RF		-7	47	83	2	-23	

Tested on a Maxwell Industries Dyno for Maxwell Industries

Above are examples of shock dyno sheets. The top sheet is a Roehrig Dyno Sheet one you would get with your shock when purchased or rebuilt from most manufacturers such as ARS or CSI. The bottom sheet is a spreadsheet, one you would receive from a Maxwell dynoed shock dyno.

We will be adding more information on updated set up combinations along with information on how to understand how the shock functions, valving, and tuning recommendations.