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+ Denotes a dealer with a Chassis Jig

SET-UP MANUAL



2015 Edition

Setups for 1998 through 2015 cahssia year models.

Mark Richards Racing, Inc.
DBA-Rocket Chassis
P.O. Box 69 (mail)
RT 73 North (shipping)
Shinnston, WV 26431

Phone: (304)-592-3200
Fax Line: (304)-592-3754

Web Site Address:
www.rocketchassis.com



WAIVER OF WARRANTY

(EXPRESSED OR IMPLIED)

NO GUARANTEE

**THIS PRODUCT AND EACH PART THEROF,
IS SOLD "AS IS" AND WITH ALL FAULTS,**

**THERE IS NO WARRANTY EITHER
EXPRESSED OR IMPLIED.**

**ROCKET CHASSIS – MARK RICHARDS RACING INC.
WILL NOT BE LIABLE FOR LOSS, DAMAGE, OR INJURY
ARISING FROM THE USE OR MISUSE OF THIS PRODUCT.**

RACING IS A DANGEROUS ACTIVITY.

**THE USER SHALL DETERMINE THE SUITABILITY AND
SAFETY OF THE PRODUCT FOR ITS INTENDED USE,
AND THE USER ASSUMES ALL RESPONSIBILITY
AND RISK IN CONNECTION THEREWITH.**

Warranty Disclaimer

This vehicle is not intended, designed nor destined for use on any public highway or roadway. No specific use is recommended, intended or contemplated by MARK RICHARDS RACING, INC. Because some environments may subject this vehicle or its components to severe stress, and its components are effected by many forces beyond the foresee ability and control of MARK RICHARDS RACING, INC. This vehicle and all components on this vehicle are sold: **Without Warranty OF Merchantability Or Of Fitness For Any Purpose. No Warranty Expressed Or Implied Accompanies This Vehicle Or Its Components And** The Purchaser And / Or User, Having Inspected And Accepted The Finished Product, Makes The Sole Determination Of Its Suitability For Use In An Application Of His Or Her Design. By inspection and acceptance of this vehicle and its components, the user or the installer assumes all risks of damage, injury or death. *ANY FORM OF OFF ROAD RACING IS A DANGEROUS ACTIVITY.*

PEOPLE CAN AND DO GET INJURED OR KILLED

NO GUARANTEE FOR SAFETY –EXPRESSED OR IMPLIED

IMPORTANT INFORMATION

Congratulations on your purchase of a Rocket Chassis – Mark Richards Racing Inc. race car. Before beginning the assembly and setup of this vehicle, read and understand the following information. **FAILURE TO READ AND UNDERSTAND THIS INFORMATION MAY LEAD TO AN OCCURRENCE OR MALFUNCTION WHICH WILL INCREASE THE RISK OF SERIOUS INJURY OR DEATH.**

- Use only fasteners supplied by Mark Richards Racing, Inc. or their exact equivalent, and use them in the manner and position detailed in these instructions and the parts list supplied with this manual.
- Tighten all fasteners to recommended or industry standard torque specifications. (See “Torque Specifications” page in this manual for any non-standard fasteners there)
- Replace any fasteners which are damaged in any way or which may have been over-tightened.
- Where nylon lock nuts or other lock nuts are used , replace nut each time it is removed.
- Light-weight components may increase performance, but are more likely to fail under stress. **DO NOT USE ANY COMPONENT NOT APPROVED BY MARK RICHARDS RACING, INC. IN THE ASSEMBLY AND OR OPERATION OF THIS RACE CAR.**
- Adjustments to the suspension will affect the driver’s ability to control the race car. Do not operate this race car with any suspension settings not recommended by Rocket Chassis unless qualified.
- **DO NOT OPERATE VEHICLE WITH ANY SAFETY GUARD REMOVED.**
- **DO NOT OPERATE MOTOR WITHOUT ADEQUATE VENTILATION.** Running engines give off carbon monoxide, AN ODERLESS, COLORLESS, POISON GAS. **BREATHING CARBON MONOXIDE WILL CAUSE NAUSEA, FAINTING AND DEATH.**
- **FUELS USED IN MOTORSPORTS ARE EXTREMELY FLAMABLE AND EXPLOSIVE FIRE OR EXPLOSION CAN CAUSE SERVE BURNS OR DEATH.**
- **THIS VEHICLE IS NOT EQUIPPED WITH ANY TYPE OF FIRE SYSTEM.**
- This race car is not equipped with a parking brake. **USE CAUTION TO PREVENT INJURY OR DEATH CAUSED BY A ROLLING CAR.**
- Do not work under or near a car, which is raised on a jack. **ALWAYS SUPPORT CAR WITH JACKSTANDS OR WORKSTANDS BEFORE WORKING NEAR OR UNDER IT.**
- Tire mounting should only be performed by qualified personal. Always tighten all fasteners to industry specified torque. **CAREFULLY INSPECT FOR DAMAGE AFTER ANY CAR TO CARS OR CAR TO BARRIER CONTACT. REPLACE DAMAGED TIRES BEFORE RESUMING OPERATION OF RACE CAR.**
- Running engines produce heat. **CONTACT WITH HOT AREAS OF ENGINE AND EXHAUST CAN CAUSE BURNS ON CONTACT.**
- Replace any component, which is damaged or worn before resuming operation of race car. **INSPECT ALL COMPONENTS ON RACE CAR AFTER ANY CAR TO CAR OR CAR TO BARRIER CONTACT.**
- Read and understand all instructions supplied with components, parts or accessories not supplied by Mark Richards Racing, Inc. before installing them on this race car. In the event that any instruction conflicts with those contained in this manual, consult Mark Richards Racing, Inc. or a qualified expert BEFORE OPERATING RACE CAR WITH THOSE SAID COMPONENTS.
- **AUTO RACING IS A VERY DANGEROUS ACTIVITY WITH HIGH RISK OF SERIOUS INJURY OR DEATH, WHICH CANNOT BE ELIMINATED. FAILURE TO OPERATE THIS RACE CAR IN CONFORMITY WITH THESE INSTRUCTIONS INCREASES THE RISK OF INJURY OR DEATH.**

WARRANTY DISCLAIMER - Waiver of warranty (express or implied) No Guarantee these products and each part thereof, is sold AS-IS and with all faults. There is NO WARRANTY either express or implied. Rocket Chassis-Mark Richards Racing Ent., Inc. will NOT be liable for loss damage, injury or death arising from the use of these products. RACING IS A DANGEROUS ACTIVITY! The user shall determine the suitability and safety of the product for it's intended use, and the user assumes ALL responsibility and risk in connection therewith. ANY FORM OF OFF-ROAD RACING IS A DANGEROUS ACTIVITY! PEOPLE CAN AND DO GET INJURED AND KILLED!

ORDERING - You can order by, phone, fax, internet, or walk in. All orders will be sent as soon as possible. Sometimes we will drop ship all or part of your order. We ship UPS daily. Next day air and second day services are available through UPS. Truck line freight is also available with a special handling and packaging fee of \$100.00 plus freight and company charges. A truck deliveries must be paid in advance. NO COD's on merchandise sent by truck freight. We do not guarantee delivery times. We recommend when ordering to supply as much information as possible to assure you receive the correct parts. We will not be responsible for parts that were ordered incorrectly. If we accidentally ship you the wrong parts, please let us know as soon as possible. We will re-ship you the parts. All we ask is that you return the incorrect parts to us freight collect as soon as possible.

TERMS - All sales are COD and will be paid for in full when products are picked up or shipped. You may pay in cash, certified check, money order, or credit card (Company or Personal check must be approved in advance). We accept MasterCard, VISA, and Discover. We recommend keeping a credit card number on file so we can ship your parts as soon as we receive your order. We are not in the finance business.

DEPOSITS - Chassis require a 30% deposit when ordering. You will be put in line in the order in which we receive deposits. The deposits are refundable in merchandise only.

PRICING - Prices are subject to change at anytime without prior notice. Due to the number of outside suppliers that we use, we cannot guarantee prices. Some suppliers change their prices quite frequently. Although we will honor any price quoted or estimated within 30 days. Once a sale is made your price will be set.

WV STATE SALES TAX 6% - Merchandise shipped out of state by common carrier is exempt from WV State Sales Tax. All in state shipments will be charged the state sales tax. Orders picked up at Mark Richards Racing Ent., Inc. will be charged a state sales tax unless prior exemption forms are on file at Mark Richards Ent., Inc. The state of West Virginia only recognizes businesses that are in business for resale only for sales tax exemption. Having a state tax ID number doesn't mean you are exempt from state sales tax.

CHASSIS REPAIR - Chassis may be repaired or modified at our shop by appointment on a first come first serve basis. No frame repairs will be scheduled on Fridays. To avoid additional labor and time in repairing your chassis, please take the following steps:

1. Wash and clean the chassis thoroughly.
2. Remove engine and suspension as needed.
3. Remove as much sheet metal as needed.

RETURN POLICY - Parts may be returned up to 60 days from the date of purchase. A 10% restocking fee and all return freight costs will be charged. Follow the three steps below when returning merchandise.

1. Return authorization is required in advance prior to shipment.
2. A copy of the invoice must accompany the parts being returned.
3. There will be no cash refund on returned merchandise. Only credit will be issued to be used towards future purchases.



MARK RICHARDS RACING INC.

PO BOX 69
Shinnston, WV 26431

Phone: 304-592-3200
Fax: 888-ROCKET-5
Web: rocketchassis.com

WARNING

ALL CHASSIS SETTING AND ADJUSTMENTS ARE INTENDED FOR USE BY PROFESSIONAL RACE TEAMS AND TO BE PERFORMED BY QUALIFIED TECHNICIANS. IF YOU ARE NOT QUALIFIED TO PERFORM THIS WORK, SEEK THE ASSISTANCE OF A QUALIFIED TECHNICIAN. IF YOUR DRIVER IS NOT EXPERIENCED IN THE OPERATION OF A RACE CAR OF THIS TYPE, SEEK THE ASSISTANCE OF A QUALIFIED RACE DRIVING INSTRUCTOR OR RACING SCHOOL BEFORE OPERATING THIS RACE CAR.

SERIOUS INJURY OR DEATH CAN OCCUR IN AUTO RACING

CHASSIS ADJUSTMENTS TO IMPROVE PERFORMANCE IN SPECIFIC AREAS

Auto racing, especially on dirt tracks, requires finding a delicate balance of adjustments which will maximize the performance of the race car both relating to acceleration and top speed on the straights and reducing the need to slow or increase the speed through the corners.

Any adjustment, which will improve the performance of the race car relating to its ability to accelerate in a straight line, may decrease its ability to maintain speed while cornering. Conversely, those adjustments, which will enable the race car to go faster while cornering, may decrease its ability to accelerate in a straight line. **DRIVER'S ABILITY TO CONTROL THE RACE CAR MAY BE ADVERSELY AFFECTED AFTER CHASSIS ADJUSTMENT. USE CAUTION WHEN RESUMING OPERATION AFTER ANY CHASSIS ADJUSTMENT.**

DO NOT WORK ON RACE CAR BEFORE SUPPORTING IT ON ADEQUATE JACK STANDS OR OTHER SUITABLE WORK STANDS. NEVER WORK NEAR OR UNDER A RACE CAR SUPPORTED ONLY BY A JACK. WORK ONLY ON LEVEL, HARD SURFACES CAPABLE OF SUPPORTING STANDS.

IMPORTANT

Inspect race car after every day of racing. When inspecting for suspension binding, it is imperative that the condition of all rod ends be checked. While performance may be adversely affected by any rod ends which are not free, **ANY ROD END WHICH IS WORN BEYOND TOLERANCE MUST BE REPLACED BEFORE OPERATION OF THIS RACE CAR IS RESUMED.**

**ANY BENT COMPONENTS MUST BE REPLACED.
DO NOT ATTEMPT TO STRAIGHTEN OR ADJUST.**



THIS RACE CAR IS NOT EQUIPPED WITH A PARKING BRAKE . WHEELS MUST BE BLOCKED OR CHOCKED TO PREVENT CAR FROM ROLLING WHEN PLACED ON SCALES. BEFORE ADJUSTING SUSPENSION SETTINGS WHILE SCALING RACE CAR RAISE IT OFF SCALE AND SUPPORT IT ON JACK STANDS OR WORK STANDS.

DO NOT USE ANY COMPONENTS NOT APPROVED BY MARK RICHARDS RACING, INC. IF UNSURE OF SUITABILITY OF A COMPONENT FOR USE ON YOUR ROCKET CHASSIS RACE CAR, CALL (304)-592-3200 OR WRITE TO MARK RICHARDS RACING, INC. BEFORE OPERATING RACE CAR WITH THAT COMPONENT INSTALLED.

WARNING

NEVER OPERATE THIS VEHICLE

- Without proper training or experience.
- At speeds faster than your skills.
- In dangerous environments or conditions.

WARNING

Due to the stresses exerted on modern racing chassis, every chassis must be inspected for cracks or other signs of fatigue after every race day. Stress fractures can occur in chassis that have not been crashed, because some environments may subject this chassis and/or its components to severe stress, it and its components are effected by many forces beyond the foreseeability and control of MARK RICHARDS RACING, INC.

It is not sufficient to examine suspension and drive-train mounting points as stresses are transmitted throughout the chassis structure as well. If you are not qualified to make this inspection, have the chassis examined by a qualified technician regularly. Do not use a chassis with any sign of cracking or stress failure, until repairs have been made by a qualified welder.

If you need further information, contact Mark Richards Racing, Inc., builder of Rocket Chassis (304) 592-3200.

The M2's adjustments

To obtain recommended values listed below:

1. Adjust knob clockwise to a lightly seated "full-stiff" position before making adjustments.
2. Turn knob counter-clockwise the recommended amount of clicks.

Turn knobs clockwise to stiffen dampening



Front [all] Left and Right			
3260 & 3270 COMPRESSION		3260 & 3270 REBOUND	
VALVE	CLICKS	VALVE	CLICKS
6.25	C-0	6	R-0
6	C-1	5.5	R-5
5.5	C-2	5	R-8
5	C-5	4.5	R-14
4.5	C-8	4	R-24
4	C-12	3.5	R-38
3.5	C-15		
3	C-22		

Rear [4-Link]							
Left Rear Behind				Right Rear			
3290L COMPRESSION		3290L REBOUND		3290R COMPRESSION		3290R REBOUND	
VALVE	CLICKS	VALVE	CLICKS	VALVE	CLICKS	VALVE	CLICKS
6.25	C-0	4.5	R-0	6.25	C-0	5.5	R-0
6	C-1	4.25	R-5	6	C-1	5	R-5
5.5	C-2	4	R-8	5.5	C-2	4.5	R-10
5	C-5	3.5	R-12	5	C-5	4	R-20
4.5	C-8	3	R-24	4.5	C-8	3.5	R-38
4	C-12	2.5	R-38	4	C-12		
3.5	C-15			3.5	C-15		
3	C-22			3	C-22		

Rear [Swing-Arm]			
Left and Right			
3280SA & 3290SA COMPRESSION		3280SA & 3290SA REBOUND	
VALVE	CLICKS	VALVE	CLICKS
6.25	C-0	6	R-0
6	C-1	5.5	R-5
5.5	C-2	5	R-8
5	C-5	4.5	R-14
4.5	C-8	4	R-24
4	C-12	3.5	R-38
3.5	C-15		
3	C-22		

The adjustments below will provide you with numerous time proven fixes for most handling problems. The listed chassis adjustments will help only if you apply the correct adjustment(s) to the handling problem(s) at hand. Keep in mind that most adjustments used to correct on-throttle handling problems are opposite of those used to correct off-throttle handling and vice versa, so be precise in your analysis. The chassis adjustments have been tailored to the corner entry, middle, and exit sections of the race track and are separated between on and off-throttle handling. Adjustments are given to correct tight and loose handling problems.

4-Link Tuning

Starting Point (50 PSI)

(MOST INTERMEDIATE TO FAST TRACKS)

LEFT FRONT		RIGHT FRONT	
C-5	R-8	C-5	R-8

LEFT REAR		RIGHT REAR	
C-5	R-8	C-12	R-20

Slick (100 PSI: left) (35 PSI: Right)

LEFT FRONT		RIGHT FRONT	
C-0	R-FO (Full Open)	C-FO	R-0

LEFT REAR		RIGHT REAR	
C-0	R-FO	C-FO	R-0

Fast / Muddy (100 PSI)

LEFT FRONT		RIGHT FRONT	
C-8	R-0	C-8	R-0

LEFT REAR		RIGHT REAR	
C-12	R-0	C-8	R-10

Rough (150 PSI)

LEFT FRONT		RIGHT FRONT	
C-FO	R-10	C-FO	R-10

LEFT REAR		RIGHT REAR	
C-FO	R-0	C-FO	R-10

To Tighten

CORNER ENTRY

(on throttle)

CHASSIS ADJUSTMENTS

- Increase wedge
- Soften RR spring
- Drop left bottom 4-link on chassis
- Stiffen LF spring (banked track)
- Add caster

CORNER ENTRY

(off throttle)

SHOCK ADJUSTMENTS

- Increase compression LR Traction Shock
- Decrease compression RR

- Increase rebound 5th coil shock

CHASSIS ADJUSTMENTS

- Stiffen LF spring
- Drop right bottom 4-link rod on chassis
- Soften RF spring (can also loosen exit)

MIDDLE CORNER

(off throttle)

SHOCK ADJUSTMENTS

- Decrease compression RF & RR
- Decrease rebound LF
- Decrease rebound LR
- Increase compression LR Traction Shock
- Increase rebound 5th coil shock

CHASSIS ADJUSTMENTS

- Stiffen LF spring
- Soften RF spring (can also loosen exit)
- Drop panhard on pinion / raise on LS frame
- Shorten RS wheelbase / lengthen LS

MIDDLE CORNER

(on throttle)

SHOCK ADJUSTMENTS

- Decrease rebound front shocks
- Decrease rebound LR

CHASSIS ADJUSTMENTS

- Increase wedge
- Raise left top 4-link rod on chassis
- Soften LR spring

CORNER EXIT

(on throttle)

SHOCK ADJUSTMENTS

- Decrease rebound front shocks
- Decrease rebound LR

CHASSIS ADJUSTMENTS

- Increase wedge
- Raise left top 4-link rod on chassis
- Soften LR spring
- Drop right top 4-link rod on chassis

To Loosen

CORNER ENTRY

(on throttle)

CHASSIS ADJUSTMENTS

- Decrease wedge
- Stiffen RR spring (can also tighten off throttle handling)
- Raise both right side 4-link rods on chassis

CORNER ENTRY

(off throttle)

SHOCK ADJUSTMENTS

- Increase rebound LF / RF
- Decrease compression LF
- Increase compression RR
- Decrease 5th coil shock rebound

CHASSIS ADJUSTMENTS

- Soften LF spring
- Raise right bottom 4-link rod on chassis
- Stiffen RF spring (can also tighten exit)
- Stiffen 6th coil spring
- Raise panhard on pinion / drop on LS frame

MIDDLE CORNER

(off throttle)

SHOCK ADJUSTMENTS

- Increase rebound LF
- Increase compression RR
- Increase rebound RR
- Decrease rebound 5th coil shock

CHASSIS ADJUSTMENTS

- Soften LF spring
- Raise panhard on pinion / drop on LS frame
- Drop left top 4-link rod on birdcage & chassis
- Stiffen RF spring (can also tighten exit)

MIDDLE CORNER

(on throttle)

SHOCK ADJUSTMENTS

- Increase rebound front shocks

CHASSIS ADJUSTMENTS

- Decrease wedge
- Drop left top 4-link rod on chassis
- Raise right top 4-link rod on chassis
- Stiffen RR spring (can also tighten off throttle handling)

CORNER EXIT

(on throttle)

SHOCK ADJUSTMENTS

- Increase rebound RF
- Increase rebound LF

CHASSIS ADJUSTMENTS

- Decrease wedge (on throttle)
- Stiffen RR spring (can also tighten off throttle handling)
- Raise right top 4-link rod on chassis
- Drop left top 4-link rod on chassis



Recommended Genesis Shocks Setups For



Non Adjustable Series Rocket Black Front end

Average Track			Slick Track *		
Rocket	Left	Right	Rocket	Left	Right
Front	G173-5	G1SO74-5	Front	G175-3	G1SO73-8
5th coil	G173-7		5th coil	G173-7	
Left in frt.	G194-0 with 2" shock ext		Left in frt.	G194-0 with 2" shock ext	
Rear	G193-5	G194-5	Rear	G195-3	G193-5

* On Create type cars with limited power use above Slick track set up

Rocket Blue Front end cars

Average Track			Slick Track *		
Rocket	Left	Right	Rocket	Left	Right
Front	G173-5	G1SO74-5	Front	G175-3	G1SO74-8
5th coil	G173-7		5th coil	G173-7	
Left in frt.	G194-0 with 2" shock ext		Left in frt.	G195-0 with 2" shock ext	
Rear	G193-5	G194-5	Rear	G195-3	G194-6

Suggested gas pressure on left rear in front of axle 100# psi, if more lift is need add gas pressure.

Suggested gas pressure on average to slick tracks 60 to 70# psi, on rough or heavy tracks 100 to 125#psi

* Note on some cars the right front upper control arm will hit the shock or bulb. If more control arm clearance is needed, order your right front shock with a 5350 small diameter bulb and offset eyering. (G1SO7#-# Shock).

* In some cases you can increase the rebound in the right front shock to help the car turn in and thru the middle of the corner like a G1SO73-8 or G1SO74-8 or add more rebound.

Single and Double Adjustable Shocks

To Adjust the Compression or Rebound sides turn knob until arrow points to desired valve settings.

- ❖ Do not force pointer beyond the number range, as this may result in internal damage to the adjusters.



Components List

Standard Front End Rocket Black Spindles

Left Front Suspension

-Upper Control Arm- 11 ¼"
-Lower Control Arm- 15 1/8"
-Spindle- Rocket Black
-Tie Rod- 12" tube 5/8" heims

Right Front Suspension

-Upper Control Arm- 8 ¼"
-Lower Control Arm- 19 1/8"
-Spindle- Rocket Black
-Tie Rod-16" tube 5/8" heims
** RF-19 ½" set length

Rack- 19 ¾" Center to Center Length (Recommended ratio- 4")

Wide/Narrow Combo Front End Rocket Blue/Gray Spindles

Left Front Suspension

-Upper Control Arm- 11 ¼"
-Lower Control Arm- 17 1/8"
-Spindle- Rocket Adjustable Gray
-Tie Rod- 14" tube 5/8" heims

Right Front Suspension

-Upper Control Arm- 8 ¼"
-Lower Control Arm- 19 1/8"
-Spindle- Rocket Adjustable Gray
-Tie Rod- 16 ½" steel bent tube 5/8" heims
** RF-19 7/8" set length

Rack-18 ¼" Narrow/19 ¼" Wide Center to Center Length (recommended ratio-4")
1/8" plates under rack for rack cross members (non-solid plate) prior to March 2011

Orange Front End Rocket Orange Spindles

Left Front Suspension

-Upper Control Arm- 11"
-Lower Control Arm- 17 1/8"
-Spindle- Rocket Adjustable Orange
-Tie Rod- 14" tube 5/8" heims

Right Front Suspension

-Upper Control Arm- 9"
-Lower Control Arm- 18 1/8"
-Spindle- Rocket Adjustable Orange
-Tie Rod- 15 ½" steel bent tube 5/8" heims
** RF-18 7/8" set length

Rack-19 ¼" Center to Center Length (recommended ratio-4")
1/4" plates under rack

4 Link Rear Suspension (with Black or Blue Front)

Left Rear

-LR Upper Radius Rod 15" tube 5/8"heims- 18 1/4" Set Length
-*LR Upper (short) Radius Rod 14" tube 5/8"heims- 16 ¾" Set Length
*use with shortener bracket
-LR Lower Radius Rod 12" tube 5/8"heims- 15" Set Length

Right Rear

-RR Upper Radius Rod 15" tube 5/8"heims- 18 ½" Set Length
-RR Lower radius Rod 12" tube 5/8"heims- 15 ¼" Set Length
Panhard Bar: J-bar 20 ¼" to 21" adjustable Straight Bar: 16" to 17" adjustable
Lift Bar: 36" to 44" Rocket Component Stabilizer Bar: 11" tube 5/8" heims 14 ¼" set length

4 Link Rear Suspension Orange

Left Rear

-LR Upper Radius Rod 14" tube 5/8"heims- 17" Set Length
-LR Lower Radius Rod 12" tube 5/8"heims- 15" Set Length

Right Rear

-RR Upper Radius Rod 15" tube 5/8"heims- 18" Set Length
-RR Lower radius Rod 12" tube 5/8"heims- 15" Set Length
Panhard Bar: J-bar 20" to 20 ¾" adjustable Straight Bar: 16" to 17" adjustable
Lift Bar: 36" to 44" Rocket Component Stabilizer Bar: 11" tube 5/8" heims 14 ¼" set length



Components List

Shock & Springs

- LF: 7" Shock w/10" Spring Rates Varies With Setup
- RF: 7" Shock w/12" Spring Rates Varies With Setup
- LR: 9" Shock w/14" Spring Rates Varies With Setup
- LR Front: 9" Shock w/extension if needed- 25 1/2" center to center (4-link)
- RR: 9" Shock w/12" Spring Rates Varies With Setup
- 5th Coil: 7" Shock/10" Spring

Brake System

- Master Cylinders:
 - 1" Front and Rear
 - 3/4" for Transmission

- Calipers:
 - Wilwood SL w/ 1.750/ 1.875 pistons,
 - U.S. Brake 1.750/1.875 Billet Caliper

****CHECK BRAKE PRESSURES WITH BRAKES ADJUSTED TO ALL REAR
-SET REAR TO 600 PSI AND FRONT SHOULD READ 250-300PSI**

- Pads:
 - Polymatrix A or B
 - Performance Friction 97 or 01

Drive Train

- Brinn Transmission: 35"-35 1/2" driveshaft with long yoke
- Bert Transmission: 37 1/2"-38" driveshaft
- RR axle 36" gun drilled
- LR axle 33"adjusted to approx. 34 1/4" STD gun drilled
- ORANGE FRONT CAR
 - axle 32" adjusted to approx. 33 1/4" gun drilled
 - 1" wheel spacer for left rear

SHOCK ADJUSTMENT GUIDE



Öhlins Dirt Late Model-LMJ Series

Compression and Rebound Adjustments

Recommended starting point settings

Swing Arm Cars

Left Front	-12 clicks compression -15 clicks rebound
Right Front	-12 clicks compression -15 clicks rebound
Left Rear	-10 clicks compression -15 clicks rebound
Right Rear	-10 clicks compression -15 clicks rebound

Heavy	4-Link Cars	Standard	Slick
-5 -5	Left Front	-10 clicks compression -15 clicks rebound	-5 -25
-10 -8	Right Front	-15 clicks compression -8 clicks rebound	Full Soft -3
-3 -10	Left Rear	-8 clicks compression -20 clicks rebound	-3 -35
-5 -5	Right Rear	-10 clicks compression -12 clicks rebound	-15 -8

These are recommended starting settings for all race tracks; for best results your actual settings may vary depending on track conditions, spring rates, and other chassis set-up variables. When making compression adjustments move 3 – 5 clicks at a time. When adjusting the rebound, move 5 clicks at a time. Moving the adjusters more than these recommendations at one time may result in going past the optimum setting giving a false sense of which direction to go.

When the track is rough, close all adjusters up 3 – 5 clicks all around the car on both compression and rebound. When track is slick open all adjusters 3 – 5 clicks on both compression and rebound.

Rebound adjustment

The rebound knob has approximately 60 clicks available although after 35 clicks it is not as effective. All rebound adjustments are set by first closing the knob fully (maximum stiff position) and then backing out the desired number of clicks.



External Adjuster

Compression adjustment

The compression knob has 24 clicks available. All compression adjustments are made by first closing the knob fully (turning the knob clockwise in the direction of the H arrow) and then backing out the desired number of clicks.



Reservoir Adjuster

5th Coil Standard

Standard	-15 clicks
To add traction	-10 clicks
To take away traction	-20 clicks

Dummy Standard

Full soft	
To free up car add 10 clicks at a time	

703-C Old Spartanburg Road
Hendersonville, NC 28792

Tel: 828-692-4525
Fax: 828-692-0595



DIRT LATE MODEL RECOMMENDED INTEGRA INTERNAL DOUBLE ADJUSTABLE SHOCK SETTINGS

SHOCK SETTINGS

Integra Internal Double Adjustable Shocks are sent from the factory on a standard intermediate setting, minus gas pressure.

GAS PRESSURE

STANDARD

Left Front Compression Adjuster Set -6 Clicks From Full Stiff Rebound Adjuster Set -4 Clicks From Full Stiff	Right Front High Rebound O.S. and Orange Compression Adjuster Set -8 Clicks From Full Stiff Rebound Adjuster Set -3 Clicks From Full Stiff	Front 50 PSI
Left Rear Compression Adjuster Set -8 Clicks From Full Stiff Rebound Adjuster Set -8 Clicks From Full Stiff	Right Rear Compression Adjuster Set -6 Clicks From Full Stiff Rebound Adjuster Set -7 Clicks From Full Stiff	Rear 50 PSI

HEAVY/FAST

Left Front Compression Adjuster Set -10 Clicks From Full Stiff Rebound Adjuster Set Full Stiff	Right Front High Rebound O.S. and Orange Compression Adjuster Set -2 Clicks From Full Stiff Rebound Adjuster Set Full Stiff	Front 75 PSI
Left Rear Compression Adjuster Set -10 Clicks From Full Stiff Rebound Adjuster Set Full Stiff	Right Rear Compression Adjuster Set -4 Clicks From Full Stiff Rebound Adjuster Set -10 Clicks From Full Stiff (If track is rough set Rebound Adjuster to Full Stiff.)	Rear 50 PSI

SLICK/TIGHT CORNERS (Stop And Go - Paperclip Style)

Left Front Compression Adjuster Set -2 Clicks From Full Stiff Rebound Adjuster Set -5 Clicks From Full Stiff	Right Front High Rebound O.S. and Orange Compression Adjuster Set -8 Clicks From Full Stiff Rebound Adjuster Set -6 Clicks From Full Stiff	Front 50 PSI
Left Rear Compression Adjuster Set -8 Clicks From Full Stiff Rebound Adjuster Set -10 Clicks From Full Stiff	Right Rear Compression Adjuster Set -10 Clicks From Full Stiff Rebound Adjuster Set -10 Clicks From Full Stiff	Rear 50 PSI

SLICK/MOMENTUM CORNERS (Sweeping Corner)

Left Front Compression Adjuster Set -1 Click From Full Stiff Rebound Adjuster Set Full Stiff	Right Front High Rebound O.S. and Orange Compression Adjuster Set -10 Clicks From Full Stiff Rebound Adjuster Set Full Stiff	Front 50 PSI
Left Rear Compression Adjuster Set -1 Click From Full Stiff Rebound Adjuster Set -10 Clicks From Full Stiff	Right Rear Compression Adjuster Set -6 Clicks From Full Stiff Rebound Adjuster Set -8 Clicks From Full Stiff	Rear 50 PSI

OPTIONS

Right Front Orange Compression Adjuster Set -8 Clicks From Full Stiff Rebound Adjuster Set -3 Clicks From Full Stiff (Shock has softer compression and stiffer rebound)	Right Rear DSP Compression Adjuster Set -6 Clicks From Full Stiff Rebound Adjuster Set -7 Clicks From Full Stiff (For slick track conditions)
Left Rear Canister LB Compression Adjuster Set on #2 Rebound Adjuster Set -8 Clicks From Full Stiff	Right Rear Spec Compression Adjuster Set -7 Clicks From Full Stiff Rebound Adjuster Set -7 Clicks From Full Stiff (Shock has specifically designed compression and rebound valve codes for spec tire rules)

TUNING ADJUSTMENTS ARE MADE IN A FEW EASY STEPS:

- Turn the rod-end selector knob to the desired position. C = Compression R = Rebound. See step 1, above right.
- Lightly dial the adjuster knob towards the "+" side of the window until it stops. See step 2, right.
(DO NOT OVERTIGHTEN OR INTERNAL DAMAGE MAY OCCUR!)

- There are 11 total clicks available in full sweep.
- Count clicks back toward the "-" side of the window until the proper setting is achieved.

See step 3, right

ADJUSTMENT NOTES

- Compression and rebound adjustments are completely independent of one another.

- "+" Symbolizes more, or "stiffer" valving.

- "-" Symbolizes less, or "softer" valving.

- All recommended settings are achieved from full stiff. (Always start with adjuster knob at full "+" then count backwards toward "-").

NOTE: ALL NECESSARY PRECAUTIONS SHOULD BE USED TO KEEP DIRT AND DEBRIS FROM ROD END ADJUSTER!

Rod end selector for compression or rebound



Integra Internal Double Adjustable 2012.dxp 02-02-12



Identify Four Link Bracket Type

-Cars prior to November 2001 (Identifiable with 1 single long slot cut in bracket between upper rod adjustment holes and lower rod adjustment holes).

- Scale top rods in 2nd (middle) hole/race top rods in 3rd (top) hole
- Scale bottom rods in 2nd hole up, counting from bottom
- Left bottom bar race position is 3rd hole up from bottom
- Right bottom bar race position is 2nd hole up from bottom

-Cars after November 2001-December 2008 (Identifiable with 2 shorter slots cut in bracket between upper rod adjustment holes and lower rod adjustment holes) or most recently called Rocket 2 mounts, with "Rocket" cut into plates.

-IDENTIFY THAT BOTTOM LEFT BRACKET IS BOLT ON

- Scale top rods in 1st (bottom) hole
- Race top rod in 2nd if 5/8" holes
- Left top shortener bracket has 4 5/8" holes. Race in 2nd hole
- Race top rod in 3rd if 1/2" holes
- Left top shortener bracket has 7 1/2" holes. Race in 3rd hole
- Scale bottom rod in 2nd hole up, counting from bottom
- Left bottom bar race position is 3rd hole up from bottom, if a 6 hole bolt on bottom bracket
- Left bottom bar race position is 4th hole up from bottom, if a 7 hole bolt on bottom bracket
- Right bottom bar race position is 2nd hole (brackets have 3, 6, or 7 holes)

-Most cars built in late 2008 to the current model year (excluding Orange cars) have Rocket 1 mounts. "Rocket" will also be cut into these plates.

-Left side mounts are identifiable by having no bolt on lower rod shortener bracket and have 7 lower holes for adjustment

- Scale top left rod in 1st (bottom) hole
- Race top left rod in 3rd (center) hole
- Shortener bracket has "T" engraved and 5 holes. Race in 3rd (center) hole.
- Scale bottom left rod in 3rd hole
- Race bottom left rod in 5th hole

-Right side mounts are identifiable by having 5 lower holes for adjustment

- Scale top right rod in 1st (bottom) hole
- Race top right rod in 3rd (center) hole
- Scale bottom right rod in 3rd hole up from bottom
- Race bottom right rod in 3rd hole up from bottom

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www.integrashocksandsprings.com



Identify Four Link Bracket Type

-Orange Front End Cars

-Left side mounts are identifiable by having no bolt on lower rod shortener bracket and have 5 lower holes for adjustment

- Scale top left rod in center scale hole between top rod and bottom rod adjustment holes
- Race top left rod in 2nd (center) hole
- Scale bottom left rod in 1st hole
- Race bottom left rod in 4th hole

-Right side mounts are identifiable by having 4 lower holes for adjustment

- Scale top right rod in center scale hole between top rod and bottom rod adjustment holes
- Race top right rod in 2nd (center) hole
- Scale bottom right rod in 3rd hole up from bottom
- Race bottom right rod in 3rd hole up from bottom

INTEGRA CANISTER DOUBLE ADJUSTABLE SHOCK



SHOCK SETTINGS

Integra Double Adjustable Shocks are sent from the factory on a standard intermediate setting, minus gas pressure.

GAS PRESSURE*

STANDARD

Left Front Compression Adjuster Set On 3 Rebound Adjuster Set - 3 Clicks	Right Front Medium Rebound Compression Adjuster Set On 2 Rebound Adjuster Set - 3 Clicks	Front 75 PSI
Left Rear Compression Adjuster Set On 2 Rebound Adjuster Set - 8 Clicks	Right Rear Compression Adjuster Set On 3 Rebound Adjuster Set - 8 Clicks	Rear 50 PSI

HEAVY/ROUGH

Left Front Compression Adjuster Set On 2 Rebound Adjuster Set Full Stiff	Right Front Medium Rebound Compression Adjuster Set On 3 Rebound Adjuster Set Full Stiff	Front 100 PSI
Left Rear Compression Adjuster Set On 1 Rebound Adjuster Set Full Stiff	Right Rear Compression Adjuster Set On 4 Rebound Adjuster Set Full Stiff	Rear 75 PSI

SLICK/TIGHT CORNERS

Left Front Compression Adjuster Set On 4 Rebound Adjuster Set - 5 Clicks	Right Front Medium Rebound Compression Adjuster Set On 1 Rebound Adjuster Set - 3 Clicks	Front 50 PSI
Left Rear Compression Adjuster Set On 3 Rebound Adjuster Set -16 Clicks	Right Rear Compression Adjuster Set On 2 Rebound Adjuster Set - 4 Clicks	Rear 50 PSI

SLICK/MOMENTUM CORNERS

Left Front Compression Adjuster Set On 5 Rebound Adjuster Set Full Stiff	Right Front High Rebound Compression Adjuster Set On 2 Rebound Adjuster Set Full Stiff	Front 50 PSI
Left Rear Compression Adjuster Set On 4 Rebound Adjuster Set -12 Clicks	Right Rear Compression Adjuster Set On 2 Rebound Adjuster Set -10 Clicks	Rear 50 PSI

OPTIONS

Right Front - High Rebound Compression Adjuster Set on 2 Rebound Adjuster Set -3 Clicks From Full Stiff (Shock has standard compression and stiffer rebound)	Left Rear Slick Compression Adjuster Set on 2 Rebound Adjuster -8 Clicks From Full Stiff (Shock has stiffer compression and softer rebound for slick conditions)
	Right Rear #2 Compression Adjuster Set on 2 Rebound Adjuster Set -8 Clicks From Full Stiff (Shock has softer compression and softer rebound for slick conditions)

*Maximum Gas Pressure Used Should Not Exceed 250 PSI.
Minimum Gas Pressure Used Should Be No Less Than 35 PSI

COMPRESSION ADJUSTER

REBOUND ADJUSTER

TUNING ADJUSTMENTS ARE MADE IN A FEW EASY STEPS:

COMPRESSION ADJUSTER

- Compression adjuster is set by turning the knob on the canister to the inscribed mark

REBOUND ADJUSTER

- Rebound adjuster knob has a positive stop on full stiff and full soft settings
- Rebound adjustments should be made by turning the rod end adjuster knob all the way to the positive (clockwise) setting, then counting clicks toward the negative (counter clockwise) setting



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ROCKET CHASSIS MAINTENANCE/PREPARATION

Date_____ Car# & Laps_____ Engine# & Laps_____

1. Check and clean O-berg filter after every event
2. Cover carburetor and distributor, remove radiator
3. Wash car thoroughly
4. Wash tires, wheels, filters, and any equipment
5. Clean and inspect distributor cap, carburetor, and radiator
6. Take inventory of what you made need for upcoming week
 - Parts
 - Tires
7. Straighten or replace any sheet metal
8. Check frame, welds, and suspension parts for cracks or bends
 - Spindles
 - Control arms
 - Ball joints
 - Four link rods
 - Rear end (bells, tubes)
 - Torque arm
 - Hubs
 - Wheels
 - U-joints (change every 500 laps)
9. Grease and lubricate any heims, u-joints, fittings, ball joints
10. Inspect all belts and pulleys
11. Check valve springs (as required)
12. Change spark plugs (as required)
13. Check and or replace fluids
 - Oil (change as required)_____ Laps
 - Transmission fluid (change as required)_____ Laps
 - Rear end grease
 - Power steering fluid (change every 500 laps)
 - Brake fluid (change every 500 laps)
14. Check or change fuel filter (every 250 laps)
15. Check brake pads and rotors
16. Clean and repack wheel bearings (every 500 laps)
17. Inspect axles and drive flanges
18. Remove and inspect shocks (shafts, heims, gas pressure)
19. Charge battery
20. Check all nuts and bolts
21. Inspect, replace, groove, and sipe any tires as necessary
22. Prepare car for set-up or next event

FASTNERS TORQUE SPECIFICATIONS

			Recommended Torque Bolt Only		
Bolt Diameter	TPI Treads Per Inch	Area Stress	Grade 2 Torque/ Ft-Lbs	Grade 5 Torque/Ft-Lbs	Grade 8 Torque/Ft-Lbs
1/4 USS	20	0.0318	5	8	12
1/4 SAE	24	0.0364	6	10	14
5/16 USS	18	0.0524	11	17	25
5/16 SAE	24	0.058	12	19	27
3/8 USS	16	0.0775	20	31	44
3/8 SAE	24	0.0878	23	35	49
7/16 USS	14	0.1063	32	49	70
7/16 SAE	20	0.1187	36	55	78
1/2 USS	13	0.1419	49	75	106
1/2 SAE	20	0.1599	55	85	120
9/16 USS	12	0.182	70	109	154
9/16 SAE	18	0.203	79	121	171
5/8 USS	11	0.226	97	150	212
5/8 SAE	18	0.256	110	170	240
3/4 USS	10	0.334	172	266	376
3/4 SAE	16	0.373	192	297	420

SPECIAL FASTNER RECOMMENDED TORQUE SPECIFICATIONS

	Recommended Torque
Wheel Bearing/Hub Nuts	15 Ft-Lbs
Wheel Lug Nuts (check after every race)	130-135 Ft-Lbs
Beadlock Ring Mounting Bolts 5/16 USS	22-24 Ft-Lbs
Axle Drive Cap Bolts 7/16 USS	40-45 Ft-Lbs
Rotor/Hub Mounting Bolts 5/16 USS	22-24 Ft-Lbs
Caliper Mounting Bolts 7/16 USS/SAE	35-40 Ft-Lbs
Any parts with Nylon lock nut 1/4 USS	30 Inch-Lbs
Any parts with Nylon lock nut 5/16 USS	60 Inch-Lbs
Any parts with Nylon lock nut 3/8 USS	80 Inch-Lbs
Any parts with Nylon lock nut 3/8 SAE	80 Inch-Lbs
Any parts with Nylon lock nut 7/16 USS	100 Inch-Lbs
Any parts with Nylon lock nut 7/16 SAE	100 Inch-Lbs
Any parts with Nylon lock nut 1/2 USS	150 Inch-Lbs
Any parts with Nylon lock nut 1/2 SAE	150 Inch-Lbs
Any parts with Nylon lock nut 5/8 USS	300 Inch-Lbs
Any parts with Nylon lock nut 5/8 SAE	300 Inch-Lbs
Any parts with Nylon lock nut 3/4 USS	400 Inch-Lbs
Any parts with Nylon lock nut 3/4 SAE	400 Inch-Lbs

***REPLACE NYLON LOCK NUTS EACH TIME IT IS REMOVED



Additional Setup Information and Adjustments

Radius Rod Locations: We recommend scaling the car with the radius rods in a neutral position to eliminate the indexing effect that severe angles cause. This will allow making adjustments more predictable throughout the set-up. After scaling with radius rods in the neutral scaling position you will need to relocate some of them to a standard starting point. Standard starting locations depend on which brackets are installed on chassis.

- For 7 hole bottom left side brackets w/ extension bracket start with LR bottom rod in 4th hole.
- For 7 hole bottom left side brackets w/o extension bracket start with LR bottom rod in 5th hole.
- For all original 6 hole bottom left side brackets w/ extensions start with LR bottom rod in 3rd hole.
- All upper rods should start in middle holes whether 3 hole or 5 hole upper brackets.
- Short LR upper bar works best when instant traction is needed in middle of corner to help car to turn on exit.
 - 4 hole shortener bracket (5/8” holes) start in 2nd hole from bottom.
 - 7 hole shortener bracket (1/2” holes) start in 3rd hole from bottom.
 - 5 hole shortener bracket (1/2” holes and “T” cut in bracket) start in 3rd hole from bottom.
- For 5 hole bottom RR, start in 3rd hole up (middle hole).
- For 3, 6, or 7 hole bottom RR, start in 2nd hole up.

Indexing: “Indexing”- is a term used in dirt late model racing it means to lower the top radius rod on birdcage. The birdcages on a Rocket Chassis have 4 positions with the top being the standard position. Usually “indexing” is done on the LR birdcage to increase LR drive and decrease side bite. Indexing the LR birdcage is usually done either at ½” or 1” as an adjustment. So when is the best time to index? Indexing works best on tracks that the car needs to turn quickly and go forward quickly like sharp cornered/paperclip type tracks with brown traction in middle and exits of corners. When side bite is needed, the track has long corners, or the track is evenly slick bottom to top, indexing is not a good option. We recommend indexing with 18 ¼” upper rods only.

Panhard Bar: The panhard bar in a dirt late model locates the rearend assembly from the chassis. But this bar can effect greatly how the car handles as it controls the rear roll center. Adjustments made to the panhard bar are usually done to adjust the car in the middle of turn. The panhard bars biggest load is in the apex of the turn. That is where the biggest effect of adjustment will be felt. Usually more angle produces more side-bite. Too much panhard bar angle takes away forward traction as the panhard bar can stiffen the rear suspension. Adjust the panhard bar with the adjustments recommended in each set-up.

ROCKET TRACK NOTES

DATE:

TRACK:

CAR:

PRACTICE

TYPE

CONDITION

GEAR

SPRINGS

LF		RF	
LR		RR	
5TH			

SHOCKS	REB.	COMP.		
LF			RF	
LRF			RR	
LRB				

LINKS				
LT		RT		
LB		RB		
COMMENTS				
WHEELBASE				

PANHARD BAR	
FRAME	
PINION	
PULL BAR LOC.	
WRAP UP SHOCK	

COMMENTS

TURNES

LF		RF	
LR		RR	

FUEL

LAPS

TIME TRIALS

TYPE

CONDITION

GEAR

SPRINGS

LF		RF	
LR		RR	
5TH			

SHOCKS	REB.	COMP.		
LF			RF	
LRF			RR	
LRB				

LINKS				
LT		RT		
LB		RB		
COMMENTS				
WHEELBASE				

PANHARD BAR	
FRAME	
PINION	
PULL BAR LOC.	
WRAP UP SHOCK	

COMMENTS

TURNES

LF		RF	
LR		RR	

FUEL

LAPS

HEAT

TYPE

CONDITION

GEAR

SPRINGS

LF		RF	
LR		RR	
5TH			

SHOCKS	REB.	COMP.		
LF			RF	
LRF			RR	
LRB				

LINKS				
LT		RT		
LB		RB		
COMMENTS				
WHEELBASE				

PANHARD BAR	
FRAME	
PINION	
PULL BAR LOC.	
WRAP UP SHOCK	

COMMENTS

TURNES

LF		RF	
LR		RR	

FUEL

LAPS

FEATURE

TYPE

CONDITION

GEAR

SPRINGS

LF		RF	
LR		RR	
5TH			

SHOCKS	REB.	COMP.		
LF			RF	
LRF			RR	
LRB				

LINKS				
LT		RT		
LB		RB		
COMMENTS				
WHEELBASE				

PANHARD BAR	
FRAME	
PINION	
PULL BAR LOC.	
WRAP UP SHOCK	

COMMENTS

TURNES

LF		RF	
LR		RR	

FUEL

LAPS

ROCKET SET-UP SHEET

DATE: _____ CAR # _____ TYPE: 4 LINK

WHEEL WEIGHTS		FUEL		RIDE HEIGHTS	
LF		TOTAL		LF	
RF		LEFT		RF	
LR		REAR		LR	
RR		WEDGE		RR	
				S TO S	

BALLAST _____

FRONT END		PANARD BAR			
	LF	RF	FRAME	PINION	C TO C
CASTER			J-BAR		
CAMBER			STRT.		
TOE			BUD		

LIFT BAR		
LENGTH	38	Measurement
SPRING	300 1/4 PRE	
	350 6TH PRE	

SHOCKS TYPE	
PRESSURE	
LF	
RF	
LR	
RR	
DUMMY	
LIFT BAR	

SPRINGS

LF	Measurement
550	
500	

LR	Measurement
200	

RF	Measurement
425	
400	
375	
350	
325	
300	

RR	IN	OUT
225		
250		

NOTES



Additional Setup Information and Adjustments

Rock or Tilt: When track conditions slick off, one adjustment that has become very popular is to tilt chassis statically rather than softening RF spring. Usually a noticeable adjustment would be to subtract approximately 1/4" to 5/8" worth of turns off of the RF coil over nut (lower RF ride height). Then add 1/4" to 5/8" worth of turns back in LR to regain wedge. We do not recommend pre-loading LR spring past the adjuster nut touching the spring.

LR Drop: The distance between upper frame rail and top of axle tube. Start at (Blue/Gray Combo cars with underslung) 12 7/8" to 13 1/8" with rear suspension in full drop. Adjust with bolt on clamp attached to underslung bar under LR axle tube.

ORANGE FRONT CARS ARE MEASURED FROM BOTTOM OF THE TAB WELDED TO BOTTOM OF THE TOP FRAME RAIL TO THE TOP OF THE BIRDCAGE CLAMP THAT HOLDS THE BIRDCAGE FROM SLIDING BACK AND FORTH. THAT MEASUREMENT IS 16".

****YOU WILL TYPICALLY NEED TO GRIND THE BOTTOM OF THE LEFT BELL FLAT WHERE IT CONTACTS THE CLAMP ON THE UNDERSLUNG BAR.**

ROCKET CHASSIS SET-UP PROCEDURE

1. Prepare car for scaling/ALWAYS USE DRIVERS WEIGHT IN SEAT

- Car should be completely serviced with all fluids and components (*RECENTLY STARTED*)
- Put 4-link rods in scaling positions
 - Depends on the style of bracket “IDENTIFY FOUR LINK BRACKET TYPE”
- Detach dummy shock from birdcage, but still attached to frame
- Determine scaling fuel load
 - To determine scaling fuel load in gallons, make note of how much fuel is consumed under normal race conditions.
- The scaling fuel load should be roughly in between before feature and after feature fuel load
- Set air pressure and stagger in tires
 - Stagger for front tires should be 0-1” with air pressure set at 10LF 12RF
 - Stagger for rear tires should be about 4” with air pressure set at 6LR 10RR
 - Do not increase/decrease air pressure to reach desired stagger
 - We designate 4 wheels and tires to be used every time for scaling

2. Prepare scaling area

- Make sure floor is within 1/8” of level over the designated area
 - You can determine this using a transit or laser leveling device
 - Shim the scales as necessary
- Designate this area for specifically for scaling every time
- Assign each scale a corner of the car and maintain it for that corner

3. Rough in ride heights front/rear and the side to side lateral location

4. Add ballast as needed to reach desired total weight and percentages

5. Re-rough in ride heights front and rear

6. Set front end specifications

- Camber, caster, toe

7. Set rear end specifications

- Re-check rear ride heights
- Check panhard bar location on frame and pinion. (8 3/4” frame, bottom position of pinion)
- Check/set lateral location of rear end
- Check/set torque arm to be level.
 - This is adjusted by 6th coil device length
- Set 6th coil pre-load (1/4”-1/2”)
- Check pinion angle. (7-7.5 degrees)
- Set 5th coil pre-load (1/4”)

8. Re-check ride heights/adjust wedge accordingly for specific set-up

- Always maintain proper ride heights while adjusting wedge

9. Re-check tire air pressure, ride heights, wedge, rear end locations, percentages

- Check springs for each corner for set-up and record
- Always maintaining ride heights and wedge

10. Prepare to race

- Move 4-link rods for race conditions and attach dummy shock



Tuning Guide

TO TIGHTEN DECELERATION HANDLING

- Stiffen LF spring
- Stiffen RR spring
- Drop bottom right link on frame
- Soften 6th coil spring

TO LOOSEN DECELERATION HANDLING

- Raise panhard bar on pinion or lower on frame
- Soften LF spring
- Soften RR spring
- Raise bottom right link on frame
- Stiffen 6th coil spring
- Stiffen RR shock compression control
- Stiffen LR shock rebound control

TO TIGHTEN ACCELERATION HANDLING

- Increase LR ride height
- Increase wedge (may loosen deceleration handling)
- Soften RR shock compression control
- Reduce RR drive angle
- Drop bottom right link on frame
- Reduce LR and LF shock rebound control
- Reduce RF shock rebound control
- Shorten right rear wheelbase
- Decrease stagger

TO LOOSEN ACCELERATION HANDLING

- Lower LR top rod
- Decrease LR ride height
- Decrease wedge
 - example +1 LF/-1RF/-2LR/+2RR
- Soften RF spring
- Stiffen RR spring
- Increase RF shock rebound control
- Add stagger

TO LOOSEN OVERALL HANDLING

- Decrease rear weight
- Lower ballast (CG)
- Increase RR trail/LR lead

TO TIGHTEN OVERALL HANDLING

- Soften LS shock rebound control and RS shock compression control
- Increase LS ride height
 - Raises CG and increases hike
- Raise panhard bar on frame/lower on pinion

Rocket Chassis Setup: Orange Front End

- Setup Stagger: 0-1" Front 4" Rear. Air Pressures: LF-10 RF-12 LR-6 RR-10
- Setup with all parts and liquids.
- Setup with driver or drivers' equivalent weight in cockpit.
- Follow setup procedures in setup manual when applying this setup.

Springs (For shock settings refer to shock setting guide for brand of shock used)

- LF- 550
- LR- 200, Dummy shock 4c/0r in front must measure at least 25 ½" center to center. (shocks in inner holes on frame)
- RF- 350, Decrease RF spring to 325 for slick, 300 RF spring for extremely slick conditions.
- RR- 225, Increase RR spring to 250 to tighten corner entry and increase side bite. (shock in outer hole on frame)

Radius Rod Locations

- *Very Important:* Scale and setup with radius rods in neutral position.
- Top rods should be in middle scaling holes in the center of the brackets.
- LR bottom should be in bottom hole
- RR bottom should be in 3rd hole up
- Radius rod lengths: LT- 17" LB- 15" RT-18" RB- 15"
- Start with panhard bar @ 8 ¾" bottom of frame to center of slider mount and bottom hole, 5/8" below center on pinion. If more side bite is needed raise panhard bar on frame in ½" increment but maintaining side to side measurements. ***Look at drawing in setup manual for reference.
- Set side to side measurement. 17 1/4", 17 1/8" with wide bell on Frankland rear. ***Look at drawing in setup manual for reference.
- **MOVE RADIUS RODS AFTER SCALING**
- Top rods go in 2nd hole up (center between the 3 top ones), LR bottom rod starts in 4th hole up from bottom, and RR bottom rod starts in 3rd hole up from bottom.
- To free car in the center of the corner, lengthen right side rods 2 turns.
- If car is too tight raise panhard bar on pinion 1 hole, center of pinion, maintaining side to side measurements.

Ride Heights

- LF- 3" RF- 3 5/8". Front ride heights are to be measured between bottom of chassis and top of lower control arm.
- RR- 9 ¼" New Rocket billet birdcages. Top of birdcage to bottom of tab welded on underside of frame rail. ***Look at drawing in setup manual for reference on measurement location
- LR- No measurement given. This measurement changes with the amount of wedge used. Usually LR is about ¾"-1" higher than RR.
- Set drop of LR tire with car elevated, limiting travel with underslung bar under LR axle tube/bell. Drop should be 16" from top of birdcage clamp to bottom of tab frame rail.

Torque Arm

- 5th coil at 38"
- 7.5 degrees of pinion angle with chain tight and torque arm level.
- 5th coil- 300 or stacked 600x4"/ 350x 7". Preload either 1/4",
- 6th coil- 350 preloaded 1/2"

Front End Settings

- LF- Caster +1 ½ LF- Camber +5 ½ to +6
- RF- Caster +3 ½ RF- Camber -6 to -6 ½
- Toe-out 3/4" Preset RF tie rod to 18 7/8"

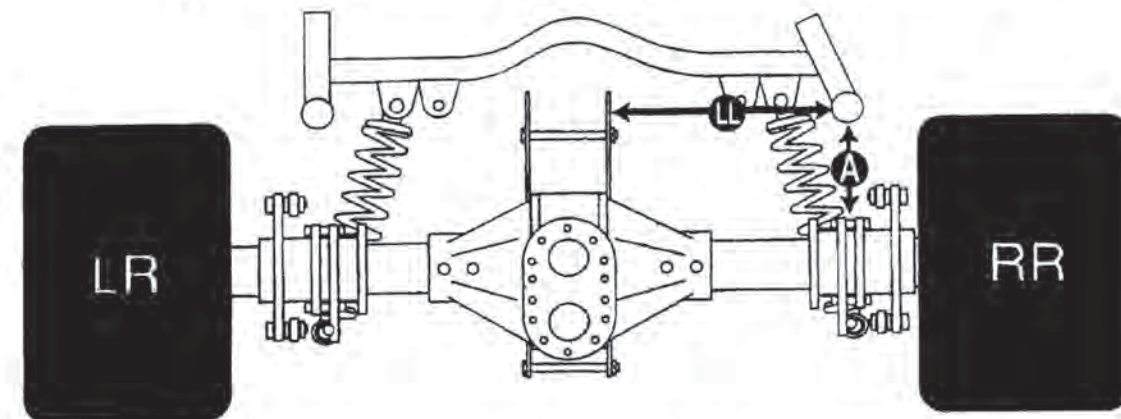
Setup and Percentages (with driver)

- Left Side..... 54-54.5%
- Rear54.3-54.8%
- Wedge170-180 lbs for scaling. Decrease wedge for tacky conditions. Increase wedge for slicker conditions when softening RF spring. LR shock adjuster nut should only touch spring when rear is in droop. No preload.

Ballast

- Add ballast on top of 5th coil bar beside oil tank, in front of fuel cell (no more than 30#), behind driver's seat, in left door, or under master cylinders to get percentages.
- If additional ballast is required to make weight, add to vertical 1 ¼" bar in front of 5th and 6th coil.
- Try to keep ballast 18" to 20" off ground. If car needs more side bite is needed raise ballast. Lower ballast when car is too tight.

Rear Ride Heights & Lateral Locations



A = Right rear ride height is measured from the bottom the RR frame rail (tab on the bottom of the rail on an orange front end car) to the top of the shock plate/shock plate bushing.

A = 6 ¾" standard car

A = 9 ¾" orange front end car

LL = Lateral location of rear end is measured from the inside of the right rear frame rail to the outside of the right lift bar plate/wrap up shock plate.

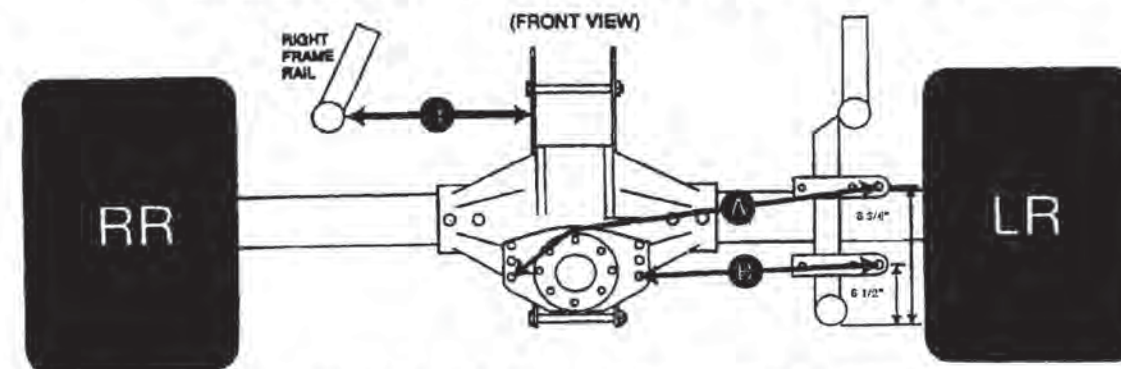
LL = 16 ¾" for 1 ¾" frame rail cars

LL = 16 ½" for 2" frame rail cars

LL = 17 ¼" for Orange front end cars

****TAKE 1/8" OFF LL MEASUREMENT IF WIDE FRANKLAND RIGHT BELL****

Panhard Bar Locations (Standard)



-Standard height for J-Bar (A) is 8 ¾" from the center of the slider to bottom of the frame and 5/8" below center of the pinion. The J-bar needs to be adjustable between 20 ¼"-21" long.

-Standard height for left side pinion mounted J-Bar (B) is 6 ½" from the center of the slider to bottom of the frame and 5/8" below center of the pinion. The panhard bar needs to be adjustable between 16 ½"-17" long.

-WHEN CHANGING THE HEIGHT OF THE PANHARD BAR ON THE FRAME OR PINION REMEMBER TO RE-ADJUST LENGTH OF THE PANHARD BAR TO KEEP LATERAL LOCATION OF THE REAR END CONSISTANT WITH THE SCALING MEASUREMENTS.

Rocket Chassis Setup: Black Front End

- Setup Stagger: 0-1" Front 4"Rear. Air Pressures: LF-10 RF-12 LR-6 RR-10
- Setup with all parts and liquids.
- Setup with driver or drivers' equivalent weight in cockpit.
- Follow setup procedures in setup manual when applying this setup.

Springs (For shock settings refer to shock setting guide for brand of shock used)

- LF- 550, Increase LF spring to 650 to tighten corner entry.
- LR- 200, Dummy shock 4c/0r in front must measure at least 25 ½" center to center. (shocks in inner holes on frame)
- RF- 350, Decrease RF spring to 325- 300 for slick, 275-250 RF spring for extremely slick conditions.
- RR- 250, Decrease to 225 to free corner entry and decrease side bite. (shock in outer hole on frame)

Radius Rod Locations

- *Very Important:* Scale and setup with radius rods in neutral position.
- **REFER TO "IDENTIFY FOUR LINK BRACKET TYPE" PAGE**
- **MOVE RADIUS RODS TO RACE POSITION AFTER SCALING**
- Radius rod lengths: LT-18 ¼" LB- 15" RT-18 ½" RB- 15 ¼"
- Start with panhard bar @ 8 ¾" bottom of frame to center of slider mount and bottom hole, 5/8" below center of pinion.
- Set side to side measurement. ***Look at drawing in setup manual for reference. Cars built between 1/98 and 11/99 would be: 17 ¾". Cars built after 11/99 would be: 2" frames-16 ½", 1 ¾" frames-16 ¾", 1 ½" frames-17".
FRANKLAND WIDE RIGHT BELLS DECREASE SIDE TO SIDE MEASUREMNT BY 1/8".

Ride Heights

- LF- 3 7/8" RF-3 5/8" cars built with double box middle cross member. RF -4 1/8" cars built with round tube middle crossmember. Front ride heights are to be measured between bottom of chassis and top of lower control arm.
- RR- Varies between styles of birdcages. ***Look at drawing in setup manual for reference on measurement locations.
*Original welded TWM/Rocket birdcages 6 1/8"
**1st Version Billet Rocket birdcages 6 7/8"
***Newest Billet TWM/Rocket birdcages 6 3/4"
- LR- No measurement given. This measurement changes with the amount of wedge used. Usually LR is about ½" to ¾" higher than RR.

Torque Arm

- 5th coil at 38"
- 7.5 degrees of pinion angle with chain tight and torque arm level.
- 5th coil- 300 or stacked 600x4"/ 350x 7". Preload either 1/4".
- 6th coil- 350 preloaded 1/2"

Front End Settings

- LF- Caster +1 ½ LF- Camber +5 to +5 ½
- RF- Caster +3 ½ RF- Camber -5 ½ to -5 ¾
- Toe-out 1/2" Preset RF tie rod to 19 ½"

Setup and Percentages (with driver)

- Left Side 54.5% to 55.5%
- Rear54.5% to 55%
- Wedge150-160 lbs for scaling.

Ballast

- Add ballast on top of 5th coil bar beside oil tank, in front of fuel cell (no more than 30#), behind driver's seat, in left door, or under master cylinders to get percentages.
- If additional ballast is required to make weight, add to vertical 1 ¼" bar in front of 5th and 6th coil.
- Try to keep ballast 18" to 20" off ground.

Basic Additional Adjustments

- Shorten LR top rod to 16 ¾" for increased instant traction (use shortner bracket on frame). 2nd hole 5/8" holes, 3rd hole ½" holes.
- Decrease wedge for tacky conditions. Increase wedge (turns in left rear coil over) for slicker conditions when softening RF spring. (DO NOT PRELOAD LR SPRING PAST JUST TOUCHING THE SPRING WITH THE NUT)
- Index LR birdcage ½"to 1" to decrease side bite.
- If car is too tight raise panhard bar on pinion 1 hole/notch, maintaining side to side measurements.
- When more side bite is needed add turns to LR to rock up left side of car statically. Usually ¾" to 1"is a good adjustment to tighten car or add turns until adjuster nut touches spring when track slicks off.
- If more side bite is needed, raise panhard bar on frame in ½" increments but maintaining side to side measurements.
- Raise ballast for more side bite or movement. Lower ballast when car is too tight.

Rocket Chassis Setup: Blue/Gray Narrow/Wide Front End

- Setup Stagger: 0-1" Front 4"Rear. Air Pressures: LF-10 RF-12 LR-6 RR-10
- Setup with all parts and liquids.
- Setup with driver or drivers' equivalent weight in cockpit.
- Follow setup procedures in setup manual when applying this setup.

Springs (For shock settings refer to shock setting guide for brand of shock used)

- LF- 550
- LR- 200, Dummy shock 4c/0r in front must measure at least 25 ½" center to center. (shocks in inner holes on frame)
- RF- 375, Decrease RF spring to 350-325 for slick, 300 RF spring for extremely slick conditions.
- RR- 225, Increase RR spring to 250 to tighten corner entry and increase side bite. (shock in outer hole on frame)

Radius Rod Locations

- *Very Important:* Scale and setup with radius rods in neutral position
- **REFER TO "IDENTIFY FOUR LINK BRACKET TYPE" PAGE**
- **MOVE RADIUS RODS TO RACE POSITION AFTER SCALING**
- Radius rod lengths: LT-18 ¼" LB- 15" RT-18 ½" RB- 15 ¼"
- Start with panhard bar @ 8 ¾" bottom of frame to center of slider mount and bottom hole, 5/8" below center of pinion.
- Set side to side measurement. 1 ¾" frame cars 16 ¾", 16 5/8" with wide bell on Frankland rear. 2" frame cars 16 ½" or 16 3/8" with wide bell on Frankland rear. ***Look at drawing in setup manual for reference.

Ride Heights

- LF- 3" RF-3 ¼" cars built after mid 2007. 3 ¼" on cars prior to mid 2007. Front ride heights are to be measured between bottom of chassis and top of lower control arm.
- RR- 6 ¾" TWM/Rocket billet birdcages. ***Look at drawing in setup manual for reference on measurement location
- LR- No measurement given. This measurement changes with the amount of wedge used. Usually LR is about 5/8" to 7/8" higher than RR.
- Set drop of LR tire with car elevated, limiting travel with underslung bar under LR axle tube/bell. Drop should be 12 7/8"-13 1/8" from top of axle tube to bottom of frame rail.

Torque Arm

- 5th coil at 38"
- 7.5 degrees of pinion angle with chain tight and torque arm level.
- 5th coil- 300 or stacked 600x4"/ 350x 7". Preload either 1/4".
- 6th coil- 350 preloaded 1/2"

Front End Settings

- LF- Caster +1 ½ LF- Camber +5 ½ to +6
- RF- Caster +3 ½ RF- Camber -5 ¼ to -5 ¾
- Toe-out 3/4" Preset RF tie rod to 19 7/8"

Setup and Percentages (with driver)

- Left Side54-54.5%
- Rear54.3-54.8%
- Wedge125-135 lbs for scaling.

Ballast

- Add ballast on top of 5th coil bar beside oil tank, in front of fuel cell (no more than 30#), behind driver's seat, in left door, or under master cylinders to get percentages.
- If additional ballast is required to make weight, add to vertical 1 ¼" bar in front of 5th and 6th coil.
- Try to keep ballast 18" to 20" off ground

Basic Additional Adjustments

- Shorten LR top rod to 16 ¾" for increased instant traction (use shortner bracket on frame). 2nd hole 5/8" holes, 3rd hole ½" holes.
- Decrease wedge for tacky conditions. Increase wedge (turns in left rear coil over) for slicker conditions when softening RF spring. (DO NOT PRELOAD LR SPRING PAST JUST TOUCHING THE SPRING WITH THE NUT)
- Index LR birdcage ½"to 1" to decrease side bite.
- If car is too tight raise panhard bar on pinion 1 hole/notch, maintaining side to side measurements.
- When more side bite is needed add turns to LR to rock up left side of car statically. Usually ¾" to 1"is a good adjustment to tighten car or add turns until adjuster nut touches spring when track slicks off.
- If more side bite is needed, raise panhard bar on frame in ½" increments but maintaining side to side measurements.
- Raise ballast for more side bite or movement. Lower ballast when car is too tight.