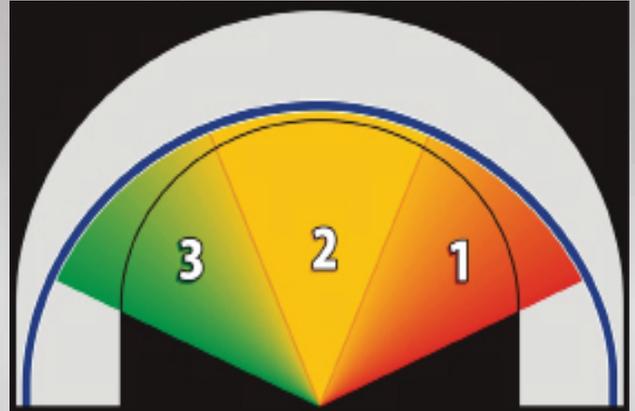


BHE LIMITED MODIFIED SHOCK TUNING

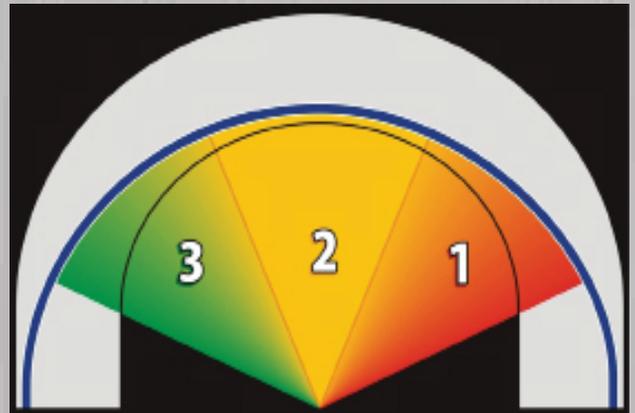
- Shocks are the “Brains” of your Suspension. They are a timing device allowing the suspension to move slower or faster and stay there less time or more time. Shocks allow the transfer of weight when you want it to load a specific tire.

1. First shock to change is the RF depending on the track conditions and driver input. The RF-S is designed to get the chassis over on the right front sooner which helps when the race track slows down in Phase 1 of the corner. This will help the driver feel the front end similar to when the track was faster. The RF-S is designed to get the chassis on the right front sooner in phase 1 through 2 but also allows weight to transfer back to the rear of the car in phase 3. We accomplish this by taking rebound out of the RF-S shock. This gives the driver maximum feel of the front end.



- High speed fast momentum race tracks require more compression to allow the driver to drive farther into the corner. Slow slick race tracks require less compression allowing weight transfer sooner to RF. This helps the car to turn in a slower corner entry situation.

2. Second change recommend is the right rear. The RR-S which is softer on compression and stiffer on rebound. This allows the weight to transfer faster and will tighten the chassis on corner entry phase 1 when the track slows down. The increase rebound will keep the chassis over on the right rear longer increasing traction off the corner. Sometime this shock can cause the chassis to push in the middle of the corner and may require more rear steer when using it. The only time I will change the right rear first is in a heavy rough condition using the RR-HR, which has more compression and less rebound. This would then be my first change if the track was very heavy, rough, or has a big cushion. This would give the racecar more stability in that condition. The right rear carries the most side load of all the tires and affects the chassis in phase 1, 2, and 3 plus all the way around the track. The RR shock is the most abused of the 4 shocks. This shock should be rebuilt every 20 nights of racing to insure you get optimum performance.

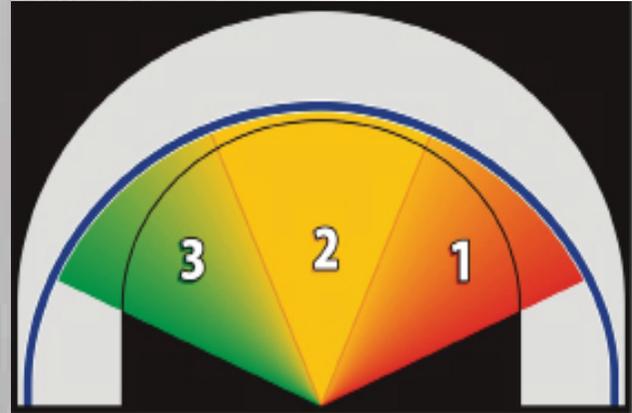


- High speed fast momentum race tracks with require more compression RR-B (4C) to allow the driver to drive farther into the corner. Slow slick race tracks require less compression (2C or 3C) allowing weight transfer sooner to RR. If the race track was very heavy and rough (up on the cushion) you would need a RR-HR to keep the chassis from rolling on the RR too fast, causing a side bite push.

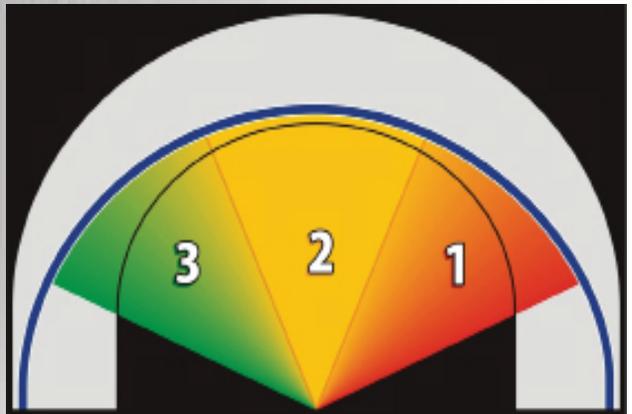
BHE LIMITED MODIFIED SHOCK TUNING

3. Third change to make is the LF. The normal LF-B has softer compression allowing the racecar to turn better into phase 1. With more rebound it slows weight transfer to the RR through phase 1. The LF-S shock is stiffer on compression allowing the chassis to be tighter on corner entry by transferring weight to the RR in phase 1 creating side bite in the corner under the throttle. We have found this to be a better change over a panhard bar change in most instances.

- This corner of the chassis has more effect on phase 1 and 2 for tuning. The LF-S should be run when the RR may need more side-bite.



4. Fourth shock to change is the LR. I like the standard LR-S in most all conditions. The other options are LR-B which has less compression and work good on heavy tacky track when you feel the racecar tractions up to quick. Location of the shock makes a big difference on how this works. If the shock is behind the rear end with the spring, it will need to be valved accordingly. This corner of the chassis affects handling through the entire corner - phases 1 on rebound. More rebound will free the racecar up on corner entry. Phase 2, and 3 are affected by the compression of the shock.

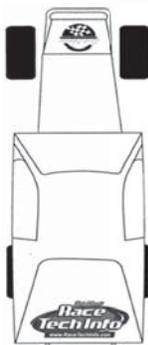


BHE LIMITED MODIFIED SHOCKS

Modified Tuning Guide

BASE SET-UP

BHE LF-B



BHE RF-B

Flat and semi-banked, smooth racetracks To somewhat rough, medium to fast speed conditions

Banked and momentum racetracks, smooth to somewhat rough, medium speed conditions

BHE LR-S

BHE RR-B

NOTES:

This set-up works well for a variety of track conditions.

SLICK TRACK SET-UP

BHE LF-B
OR
BHE LF-S



BHE RF-S

Slick racetracks, especially stop & go, slow corner speed types

NOTES:

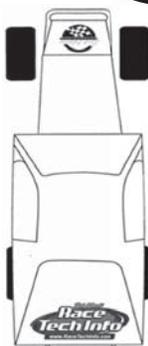
This package promotes weight transfer and body roll and tends to tighten overall handling. Use if running Base Set-up (described above) and additional traction is needed.

BHE LR-S

BHE RR-B
OR RR-S

HEAVY and/or ROUGH TRACK SET-UP

BHE RF-B



BHE RF-HR

Heavy, fast, rough racetracks, and when racing on the cushion

BHE LR-B

BHE RR-HR

Part Number / Code System

LR: Left Rear suspension Location

B: Base Set-up

S: replacement for Base Set-up when track is slow/slick;

HR: replacement for Base Set-up when track is heavy/rough)

BHE

CUSTOM
SUSPENSIONS

BHE SHOCKS MAINTENANCE

SHOCK OIL

- Shocks are intended to gain heat from transferring energy from the spring. This heat is gained by the oil moving through the ports in the piston
- Oil changes viscosity due to heat gain or loss. Hot oil acts thinner and cold oil acts thicker.
- If the shock gains heat to a point the oil changes viscosity the resistance to the piston's movement is reduced which is what we call shock fade.
- Multiple heat cycles throughout weekends of racing also changes the over all viscosity of the oil and brings the shock fade quicker.
- Another aspect of changing the ability of the shock oil is when dirt is carried in through the dents/dings in the shaft.



DENTED BODIES

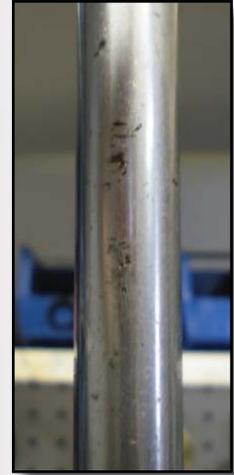
- In mono tube shocks the piston moves along the inner wall of the outside tube. Therefore any little dent in the body affects the area where the piston works.
- When piston rides through a dent, there significant chance ruining the shocks performance.
- A large enough dent will completely lock up the piston. This dent will just catch and eventually deteriorate the piston band and warp the piston
- Twin tube shocks can take a dent and it will not affect the piston movement if the dent isn't deep enough.
- There is a chance of the dent puncturing the gas bag which will cause constant aeration of the oil hindering the shocks performance.
- If you have a dent in your twin tube shocks be sure to check for a broken gas bag and if the dent reached the inner tube.



BHE SHOCKS MAINTENANCE

SHAFTS

- When the shaft is exposed to rocks and other debris the chances of shock failure are increased.
- Any pocket in the shaft can collect dirt which is then carried through the seals and mixes with the oil. As we discussed earlier this can hinder the oil's performance
- Along with dirt being carried into the oil, a sharp cut or nick from a rock or debris can cut the seals and create a leak.



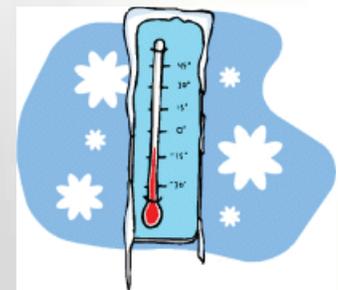
SEALS

- The seals in shocks have greatly improved over time but there is a fine line manufacturers balance on between keeping oil in and reducing stiction.
- Bottoming out the shock on the jamb nut can mushroom the seal. Be sure adjust your shock movement accordingly.
- Abused shafts and not cleaning off excess dirt from the shaft and seals can over time eat away at the seals and change the seals rubricity



OFFSEASON STORAGE

- Along with heat cycles in the oil, the cold cycles can also affect the oils viscosity. You should always keep your shocks in a temperature controlled area.
- Any seals in the shock can also be affected by extreme cold temperatures and constant temperature fluctuations. This is also why it's smart to keep your tires in a warm area throughout the off season.



BHE SHOCKS MAINTENANCE

SHOCK MAINTENANCE IS ESSENTIAL

HOW DO YOU KNOW WHO TO TRUST WITH YOUR SHOCK PROGRAM

Quality product

- Knowledge behind the particular product
- Research & Development
- Always progressing

Quality customer service

- Availability
- Turn-around time
- Someone who truly wants you to succeed
- Relationships

Results speak for themselves

- We believe, do what you know best and leave the others to the rest.

Proper preparation results in winning performance



BOB HARRIS ENTERPRISES AUTHORIZED SALES AND SERVICE CENTER FOR



**Offering
Complete Dyno
Service on for
ALL makes of
SHOCKS!**

- Factory Certified Technicians
- Quick Service & Turnaround
- Genuine Factory Shock Components