

Thank you for purchasing MIP products. We at MIP pride ourselves in quality and innovation. Hundreds of man hours were spent developing and track testing our Patent Pending MIP Bypass1™ product line. We designed and built custom dynos to precisely check each stage during development to assure race ready kits. As you begin to install your MIP Bypass1™, you are entering into a new level of RC car performance developed and designed by MIP racers. Once again, thank you. **Patents Pending U.S. & Abroad!**

Eustace Moore Jr.: Founder of MIP 1978

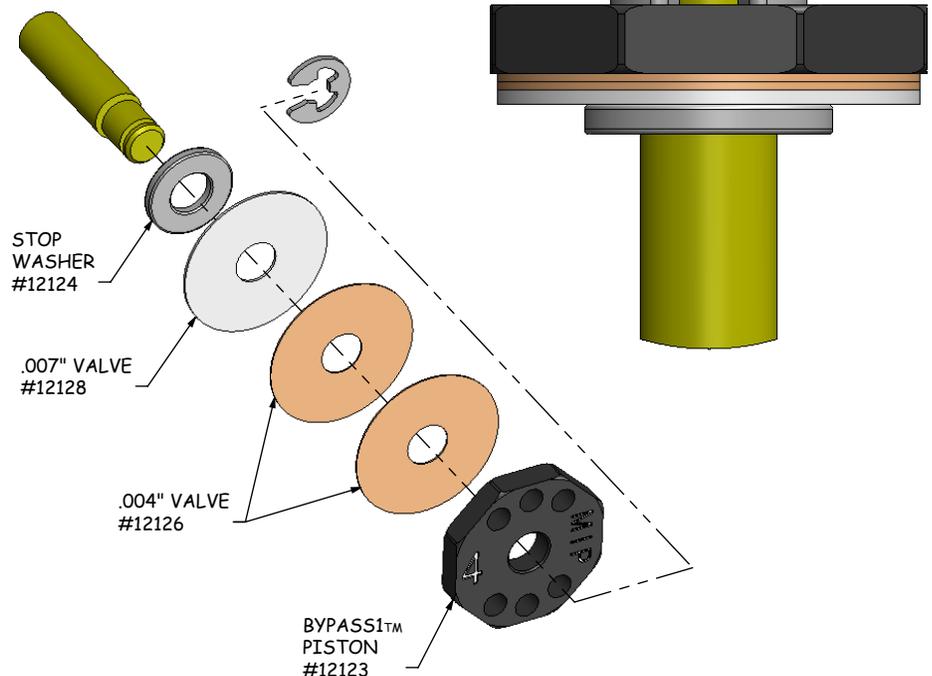
## Installation:

1. Disassemble your standard shocks and remove stock pistons.
2. Slide MIP Bypass1™ Stop Washer, Color coded Valves and Piston onto the shock shaft as shown below.
3. Snap the upper e-clip onto the shock shaft to secure the assembly. MIP Bypass1™ should spin freely on the shock shaft when properly attached. Be careful not to scrape or damage the MIP Bypass1™ assembly when snapping on the e-clips. **DO NOT INSTALL LOWER E-CLIP.** It is not used in this assembly!
4. Re-assemble shocks with MIP Bypass1™ system along with the same oil, springs, & ride height you ran before. Get ready for a new RC car experience! Be sure to try all the MIP Bypass1™ valve stacks included in your kit. The experience will help you to enhance your knowledge of RC chassis set-ups.

Completed Valve Assembly

### VALVE CHART

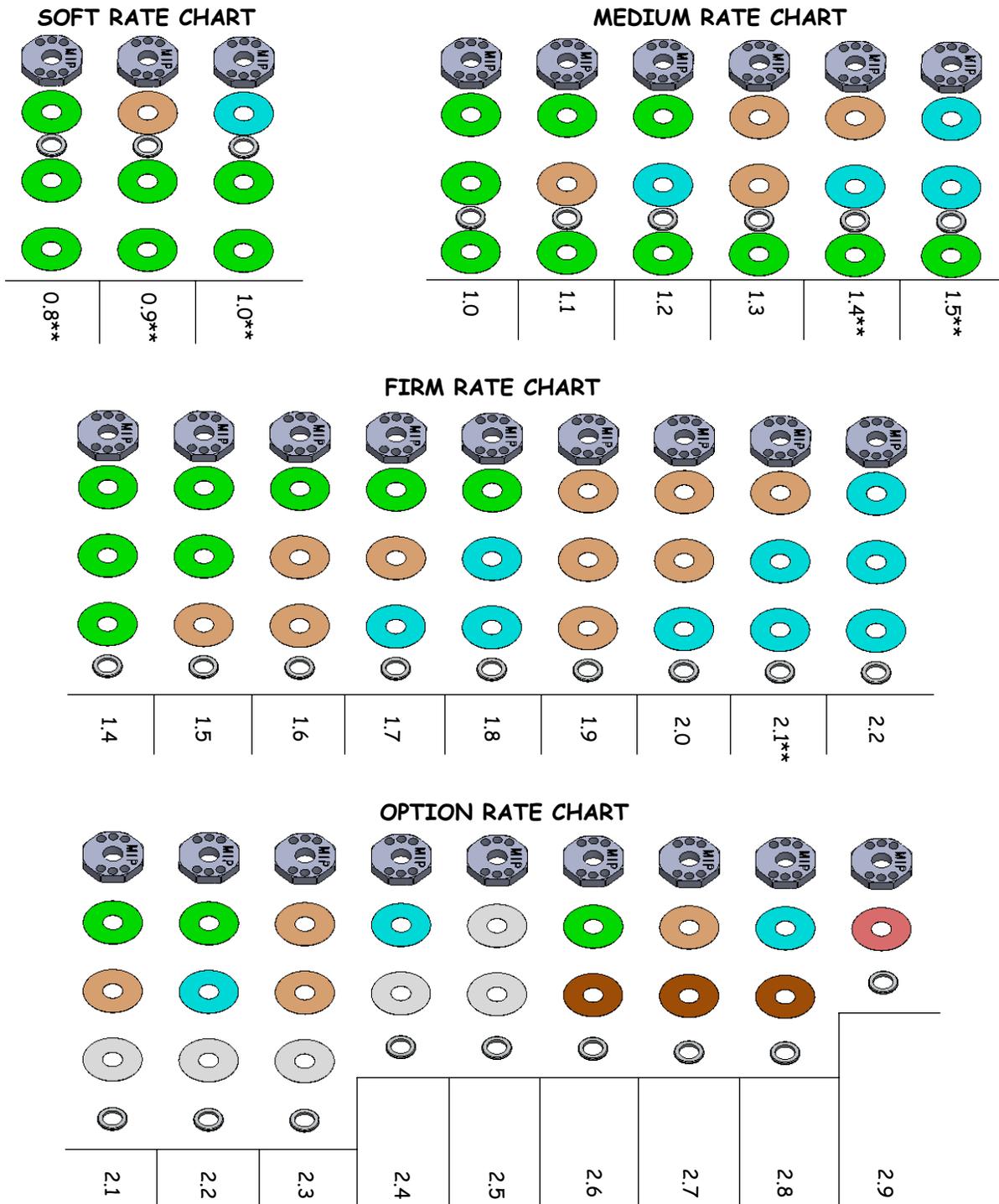
- #13  .003" Green
- #14  .004" Tan
- #15  .005" Blue
- #16  .007" Matte
- #17  .010" Brown
- #18  .015" Pink



# MIP Bypass1™

\*\*\* ALL VALVE STACKS SHOULD EQUAL .011" ~ .015" TOTAL FOR CONSISTENT RESULTS!

\*\* Possible Valve Combinations included with Kit #12122



**\* Standard & Replacement Valves:**

- 12125 - MIP Bypass1™, #13 Valves, .003 Green (6)
- 12126 - MIP Bypass1™, #14 Valves, .004 Tan (6)
- 12127 - MIP Bypass1™, #15 Valves, .005 Blue (6)

- 12128 - MIP Bypass1™, #16 Valves, .007 Matte (4)
- 12129 - MIP Bypass1™, #17 Valves, .010 Brown (4)
- 12130 - MIP Bypass1™, #18 Valves, .015 Pink (4)

## What is MIP Bypass1™?

- Bypass1™ is a shock kit with pistons created by MIP's design team that change how all RC shocks work. Months of dyno and track testing of dozens of piston and valve designs have culminated in our Bypass1 configuration. Custom color coded valves, octagon shaped pistons and special configured stop washers all combine to create bypass shock technology only used on full scale vehicles. The name, Bypass1™ identifies how MIP has applied our bypass technology into RC shocks compression stroke. MIP Bypass1™ incorporates the use of standard shock oils that allow users to keep their same set-ups. MIP Bypass1™ valves combined with MIP's unique piston design virtually eliminate hi-velocity packing (hydraulic locking) caused by standard RC shocks with traditional orifice holes design. MIP Bypass1™ pistons use color coded valves with corresponding thicknesses to make valve selection quick and easy.

How do they work?

Traditional RC shock pistons are designed with orifice holes to meter compression and rebound dampening 50/50. Orifice holes are susceptible to packing (hydraulic lock) at higher shaft speeds which limit traction and handling. Some companies have tried to make pistons which change the compressive and rebound dampening but have always overlooked the issue of packing. Bypass1™ meters the oil around the piston to control the rebound dampening. As the piston moves into a Compressive stroke; the oil moves through the bypass orifices and into the valves flexing the valves; which results in bypass. This is in addition to the oil flowing around the piston.

## Bypass1™ Suspension Set-up Tips:

Over/under steer: Use softer MIP Bypass1™ valve stacks to over steer and heavy valve stacks to under steer.

Bottoming: Standard shocks pack and this creates the feeling that the chassis does not bottom out. With MIP Bypass1™ installed you will notice bottoming without the loss of stability or handling. Measure bottoming by how the chassis is affected and not by the bottoming itself!!

Jumping: MIP Bypass1™ changes the launch characteristics that standard shocks produce from packing. MIP Bypass1™ set-up with a soft valve stack will have low pop or spring off jumps, bumps and moguls. Running a soft valve stack is like pumping the chassis down. In short, the chassis will need more speed to pop (spring) off jumps, bumps and moguls. When heavy valve stacks are used, the chassis will pop (spring) higher and longer off jumps, bumps and moguls.

Ride height: With MIP Bypass1™ you don't need to change the ride height you nominally run. MIP's Bypass1™ has shock features unlike any other RC shock package. Running long travel is possible now that the suspension can absorb massive amounts of movement without packing.

## Maintenance:

Refill shocks with new shock oil daily under dusty track conditions or as needed. All RC shocks weep (oil loss from shaft stroking) and should be refilled or "topped off" daily. Replace seal packs (o-rings and guides) every week of racing or as needed. Replace worn stops and bumpers as needed. Track conditions will vary. Keeping shocks in race ready condition will assure winning performance.

Shocks are one of many components used to tune your chassis. Springs, tires, motors and gearing are just a few of the parts used to successfully dial your chassis in. Ruling out the shocks is MIP's job. Our MIP Bypass1™ valve stacks have been developed and tuned for racing conditions. Use our set-up charts and tech data at RealShocks.com to decide on the optimal package for your vehicle. Take the time to test different set-ups and learn the advantages of MIP Bypass1™. We will continue to develop new data and post updated charts regularly.

## Tech Talk:

Bypass is the opposite of pack. MIP's Bypass1™ gives your shocks compressive dampening at moderate shock shaft speeds. When the shock shaft speed exceeds the effective dampening rate of the valves, bypass accrues. Standard pistons by comparison pack as the shock shaft speed exceeds the effective flow rate of the orifices. The dampening rate increases as the shock shaft speed increases until the rate of speed exceeds the allowable rate of oil flow; also known as hydraulic lock.

With the MIP Bypass1™ installed. Shock oils are used to set the rebound dampening. Select shock oil weights for rebound dampening that will control the spring (shaft speed). "Over" dampening will slow down the stroke and impede traction and handling. "Under" dampening will speed up the stroke and allow the chassis to bounce. Likewise, the valves are used to set the compression dampening. Running too heavy of a valve stack will reduce traction and stability. Running too soft of a valve stack will allow the chassis to feel flat (no pop off jumps and bottoming over small bumps) but also allow the suspension to float over rough terrain with ease. Select the valve stack that gives you the feel that fits your driving style.