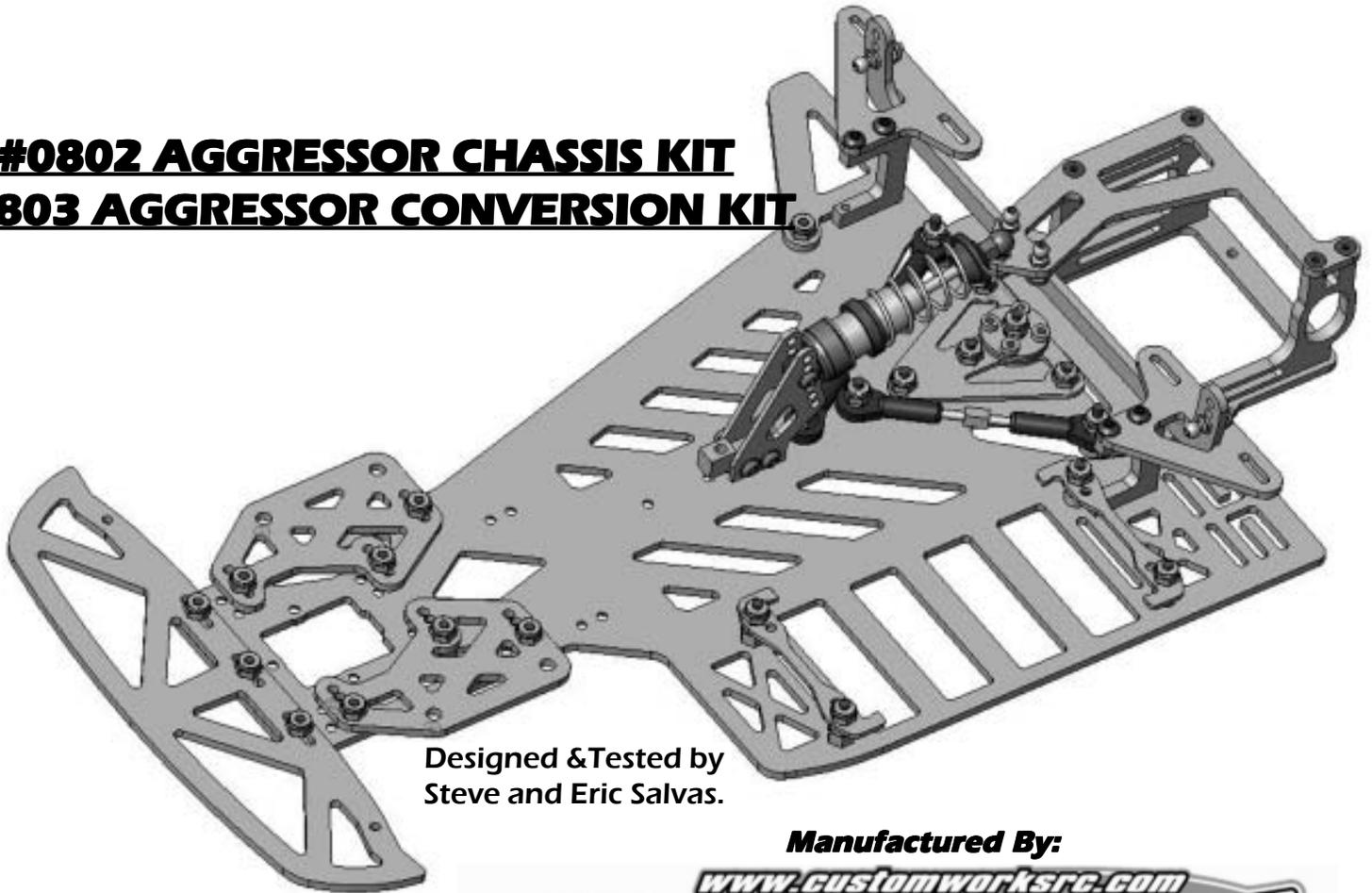


CUSTOM WORKS **AGGRESSOR** **SE**

#0802 AGGRESSOR CHASSIS KIT
#0803 AGGRESSOR CONVERSION KIT



Designed & Tested by
Steve and Eric Salvas.

Manufactured By:

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REQUIRED READING...UNDERSTAND THIS MANUAL!

Thank You and Congratulations on purchasing the **AGGRESSOR SE!** Within this kit you will find a race winning car with over 21 years worth of **CUSTOM WORKS** design and quality. In order for you to realize this race car's winning potential it is important to follow the written text along with the pictures included. The steps required to build this car are very easy, as long as you read before you build.

In an effort to reduce costs to the racers and allow greater freedom for part choices, some of the components usually included with pan car kits have been omitted so you may use any other manufacturers "hop-up" version of these parts and save the cost for these items in the kit.

The 0803 **AGGRESSOR CHASSIS KIT** will require a front suspension, side shocks and body mounts to complete a rolling chassis. The 0804 **AGGRESSOR CONVERSION KIT** will require all that of the 0803 but also including the aluminum parts and rear axle assembly. The 0803 Conversion is only to convert original Aggressor kits! Not other manufacturers kit to CustomWorks.

The instructional format for building this car is to follow each step's part "call-out" as to which part is used in each of the steps. All hardware and parts (screws, washers, nuts, etc...) are referred to by their CustomWorks replacement part number in the instructions. In the event you need a part, this is the part number you will want to order. To help clarify which screw or nut the instruction is calling for refer to the **HARDWARE REFERENCE** supplement within each step. The size of the screw or nut should match the "shadow" of the same piece very closely.

Screw ID's are: **FH**=Flat Head **BH**=Button Head **SH**=Socket Head **SS**=Set Screw

BUILDING TIPS:

-Using some type of thread locking fluid is suggested for all parts where metal screws thread into other metal parts. We suggest using a lite setting strength thread lock for the reason you may want to take the screw out one day. Remember it only takes a very small amount to secure the screw.

-Do **NOT** use power screwdrivers to drive screws into parts. The fast rotation speed can easily melt and strip plastic parts or cross-thread into the aluminum parts.

-Lightly sand the edges of graphite pieces using a medium grade sandpaper to avoid splinters. Run a thin bead of Super Glue around the edges to give pieces greater durability.

SUGGESTED TOOLS

400 Grit Sandpaper
Hobby Scissors
Small Needle Nose Pliers

Wire Cutters
X-Acto Knife
Phillips Head Screw Driver

Blue Loctite
3/16" Wrench

Step #1 FRONT SUSPENSION MOUNTS



8140 Qty 1
AGR SE Chassis

8142 Qty 1
AGR SE Bumper

8152 1 EACH
Front Susp Bracket
LEFT AND RIGHT

5263 Qty 9
4-40 x 3/8 FH Screw

5217 Qty 9
4-40 Lock Nut

8152R SUGGESTED MOUNTING LOCATION #3 (2ND WIDEST)

8152 L

8142

5263

5217

8140

8152L SUGGESTED MOUNTING LOCATION #1 (FULL NARROW)

TRAILING OPTIONS AVAILABLE IN WIDTH OPTIONS 1 OR 2 ONLY

LONG WHEELBASE

SHORT WHEELBASE

WIDTH LOCATIONS 4 3 2 1

USE CENTER LOCATION TO BEGIN MOUNTING FRONT BUMPER

Step #2 REAR SUSPENSION MOUNTS



8146 Qty 1
Side Shock Tower

8047 Qty 1
Pivot Ball Carrier

8048 Qty 1
Pivot Ball

8150 Qty 1
Pivot Ball Plate

8153 Qty 2
Body Mount

8144 Qty 1
Nerf Bar

5262 Qty 4
4-40 x 1/4 FH Screw

5252 Qty 6
4-40 x 1/4 BH Screw

5263 Qty 1
4-40 x 3/8 FH Screw

5264 Qty 4
4-40 x 1/2 FH Screw

1255 Qty 8
Spacer

8120 Qty 2
Ball Stud

5217 Qty 7
4-40 Lock Nut

5201 Qty 4
2-56 x 1/4 BH

5217

8120

5252

8153

5252

8122 FROM ORIGINAL KIT.

8048

8047

5201 X4

5262

5264 X4

1255 * (2) PER 5264 SCREW TO MOUNT THE 8150 PIVOT PLATE.

8150

5263

5217

8144

TWO BODY MOUNT LOCATIONS:
- USE THE INNER MOST SLOTS FOR TRADITIONAL UPRIGHT STYLE MOUNTS.
- USE THE OUTER MOST SLOTS FOR SIDE MOUNTING POSTS, ADDITIONAL SUPPORT, OR UPRIGHT MOUNTS FOR TRUCK BODIES.

Step #3 REAR POD AND CONTROL LINKS



8148 Qty 1
Top Plate

8149 Qty 1
Bottom Plate

8120 Qty 3
Ball Stud

5213 Qty 4
Ball End

5233 Qty 2
4-40 Coned Washer

5223 Qty 1
1.75" TI Turnbuckle

5225 Qty 1
2" TI Turnbuckle

1:1
5262 Qty 8
4-40 x 1/4 FH Screw

1:1
5265 Qty 5
4-40 x 5/8 FH Screw

5217 Qty 8
4-40 Lock Nut

7047 Qty 4
Shim ".015 THICK

1:1

1:1

5213 -THE 2 CONTROL LINKS ARE DIFFERENT LENGTHS. LONGER LINK ON RIGHT SIDE OF CHASSIS.

SUGGESTED LINK LENGTH, CENTER OF PIVOT BALL:
SHORT LINK: 2.455" LONG LINK: 3.007"

YOU MUST FINE TUNE THE LINKS SO THAT THE REAR POD MOVEMENT IS PERFECTLY FREE!!!!

7047 SHIM .015" THICK USE (2)

8120

5217

8148

5262

8020 FROM ORIGINAL KIT

8149

8021 FROM ORIGINAL KIT

7047 SHIM .015" THICK USE (2)

5265

5225

5217

5223

5233

Step #4 BATTERY MOUNTS / CENTER SHOCK



8154 Qty 2
Battery Strap Mounts

1:1
5265 Qty 4
4-40 x 5/8 FH Screw

2214 Qty 2
.250" Hex Spacer

5217 Qty 4
4-40 Lock Nut

7209 Qty 4
Spacer

8154

1:1

5265

2214

5217

7209

8153

CENTER SHOCK TOWER FROM ORIGINAL KIT.

5217

8154

5265

2214

USE (2) 7209 SPACERS PER SIDE FOR THIS 8154.

SUGGESTED CENTER SHOCK:
CUSTOMWORKS #1419
MEDIUM BODY/MEDIUM SHAFT

TO USE BATTERY STRAP MOUNTS:
-CUT TAPE ROUGHLY A LITTLE MORE THAN TWICE THE BATTERY LENGTH.
-CENTER TAPE ON TOP OF BATTERY WITH ADHESIVE SIDE FACING UP.
-THREAD TAPE DOWN BETWEEN THE BATTERY AND 8154.
-PULL TAPE UNDER THE 8154, REMOVE ALL SLACK, AND ATTACH TO TAPE ON TOP OF BATTERY. BOTH ADHESIVE SIDES WILL ATTACH TO ONE ANOTHER.

TO REMOVE BATTERY:
REMOVE THE 5217 NUTS ON THE FRONT STRAP MOUNT, PULL THE 8154 OFF OF THE POSTS. THE TAPE ACTS ONLY AS A STRAP, NO NEED FOR CONSTANTLY TAPING BATTERIES IN AND OUT!

Shock Bag

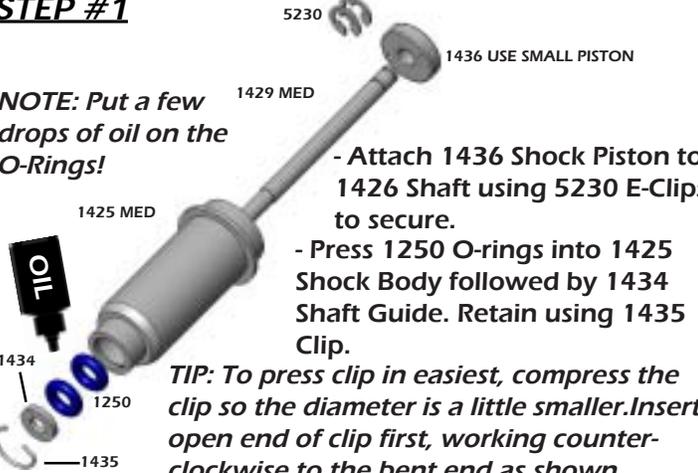
Shock Assembly



<p>-Parts for Step#1</p>	 1425 Qty 1 Medium Shock Body	 1429 Qty1 Medium Shock Shaft	 1434 Qty1 Shaft Guide	 1250 Qty 2 O-Ring	 1435 Qty 2 Retaining Clip	 1436 Qty1 Shaft Guide	 5230 Qty2 E-Clip
<p>-Parts for Step#2</p>	 1427 Qty4 Shaft Guide	 1426 Qty1 Threaded Cap	 1428 Qty 1 Firm Bladder (BLACK)	 1432 Qty1 Spring Collar			 8130 Qty 2 Ball Cup
<p>-Parts for Step#3</p>	 1442 Qty1 Spring	 1431 Qty1 Spring Bucket	 1430 Qty1 Mount Ball				

STEP #1

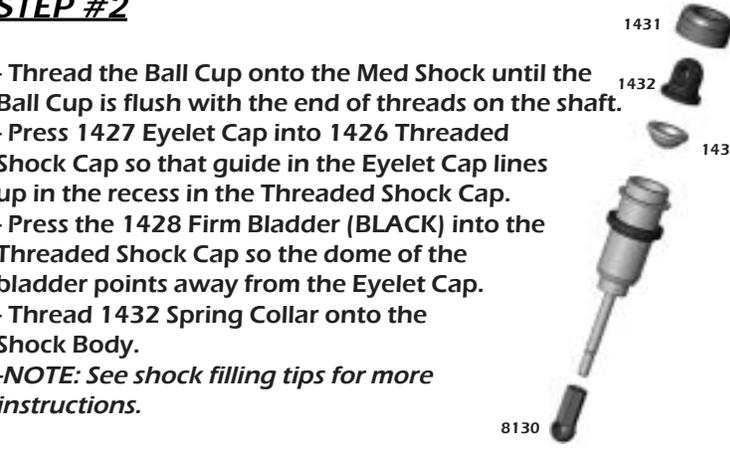
NOTE: Put a few drops of oil on the O-Rings!



- Attach 1436 Shock Piston to 1426 Shaft using 5230 E-Clips to secure.
- Press 1250 O-rings into 1425 Shock Body followed by 1434 Shaft Guide. Retain using 1435 Clip.

TIP: To press clip in easiest, compress the clip so the diameter is a little smaller. Insert open end of clip first, working counter-clockwise to the bent end as shown.

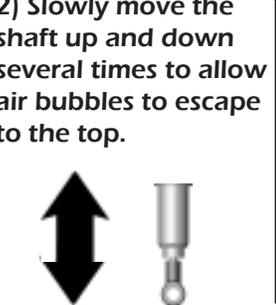
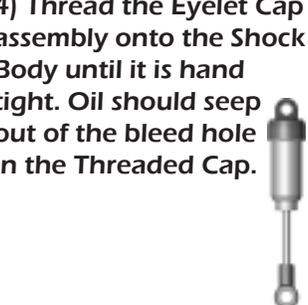
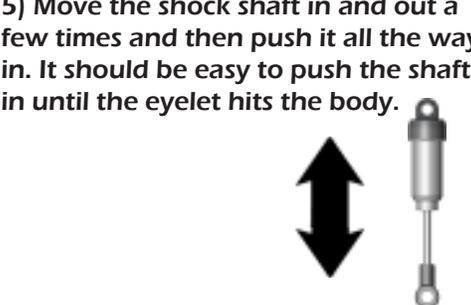
STEP #2

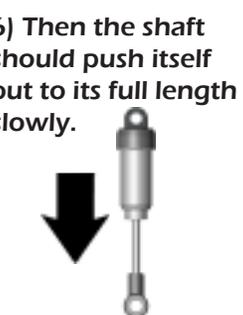
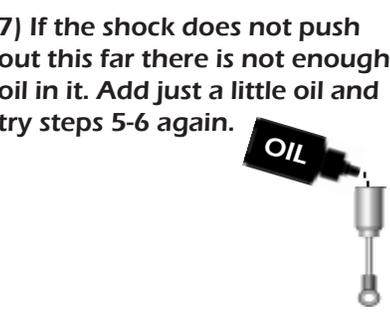


- Thread the Ball Cup onto the Med Shock until the Ball Cup is flush with the end of threads on the shaft.
- Press 1427 Eyelet Cap into 1426 Threaded Shock Cap so that guide in the Eyelet Cap lines up in the recess in the Threaded Shock Cap.
- Press the 1428 Firm Bladder (BLACK) into the Threaded Shock Cap so the dome of the bladder points away from the Eyelet Cap.
- Thread 1432 Spring Collar onto the Shock Body.

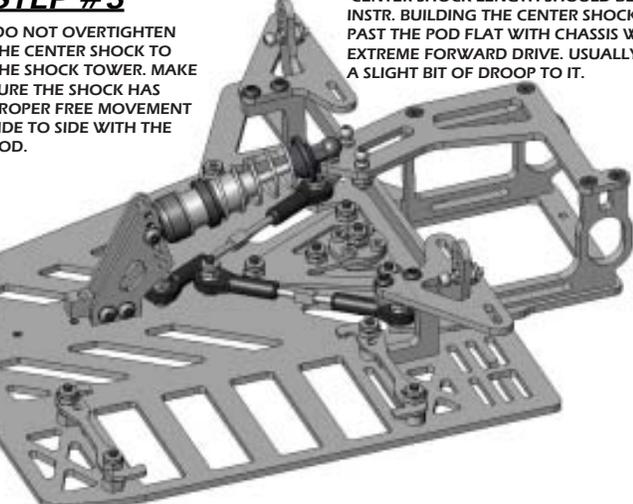
-NOTE: See shock filling tips for more instructions.

SHOCK FILLING INSTRUCTIONS:

- Holding the shock upright, fill with oil until the top of the body. 
- Slowly move the shaft up and down several times to allow air bubbles to escape to the top. 
- Refill with oil to the top of the shock body. 
- Thread the Eyelet Cap assembly onto the Shock Body until it is hand tight. Oil should seep out of the bleed hole in the Threaded Cap. 
- Move the shock shaft in and out a few times and then push it all the way in. It should be easy to push the shaft in until the eyelet hits the body. 

- Then the shaft should push itself out to its full length slowly. 
- If the shock does not push out this far there is not enough oil in it. Add just a little oil and try steps 5-6 again. 
- If the shock rebounds too fast, or you cannot push the shaft in until the eyelet hits the body, there is too much oil. Loosen the cap about 2 full turns and pump out a small amount of oil by pushing the shaft in. Retighten the cap and try steps 5-6 again.

STEP #3



-DO NOT OVERTIGHTEN THE CENTER SHOCK TO THE SHOCK TOWER. MAKE SURE THE SHOCK HAS PROPER FREE MOVEMENT SIDE TO SIDE WITH THE POD.

-CENTER SHOCK LENGTH SHOULD BE VERY CLOSE PER INSTR. BUILDING THE CENTER SHOCK WITH NO DROOP PAST THE POD FLAT WITH CHASSIS WILL MAKE FOR EXTREME FORWARD DRIVE. USUALLY POD SHOULD HAVE A SLIGHT BIT OF DROOP TO IT.

CONGRATULATIONS!!! You have now completed the assembly process of your new Custom Works AGGRESSOR SE. In the next section of this manual you will find some basic setup hints and advice. It is important to remember that all tracks and racing surfaces are different. Therefore the suggestions we give you are general in nature and should by no means be treated as the only options.

MAINTENANCE:

- Occasionally dirt will get into the moving and pivoting locations in your car. It is best to periodically clean you car to keep all the suspension components moving freely. Read the tips below to keep your car running at its best!
- The rear link pivot system lacks the simplicity of the standard t-bar car especially in terms of crashes. It is IMPORTANT that after a good wreck to pop the shocks off the rear pod to double check the pod movement is still free in all directions. All to often this is over looked after a crash and a day of frustration begins due to the pod movement binding.
- Since the entire suspension is held up by the center shock it will require a little more attention as well. Conversely there are ALOT more tuning options you can now do with the car by simply changing various dynamics of your center shock set-up.
- Differential Maintenance is needed when the action of the diff feels “notchy”. Usually cleaning the diff parts, re-sand the thrust and diff plates with 400 paper, and lube appropriately will be all that is needed to bring back to new. Ignoring your differential will lead to handling woes and increase transmission temps, which will cause part failure.

TUNING TIPS: These are some general guidelines for optimizing handling performance. None of these “tips” are EVER set in stone. On any given day this manual or any chassis engineering book or guru can be proved wrong by the stop watch. A good way to approach chassis set-up is to try one change, practice it, think how the car felt different from before, and compare lap times from the stop watch.....this will never fail.

<u>Car Pushes (understeers):</u>	<u>Car Is Loose (oversteers):</u>	<u>Car Is Erratic:</u>
<ul style="list-style-type: none"> - Slide rear wing forward - Less wing angle - Less tweak/wedge to chassis using side shocks - Stiffer side shock springs - Softer front springs - Stiffer center shock spring - Increase center shock collar, raise chassis ride height - Softer front tires - Stiffer rear tires - Lower front ride height - Raise rear ride height - Move front suspension mounts to the left - Push RR away from pod, LR closer to pod - Less Castor or More Camber 	<ul style="list-style-type: none"> - Install wing to rear of car - Slide rear wing toward rear - More wing angle, NOT FLAT! - Add tweak/wedge to chassis using side shocks - Softer side shock springs - Stiffer front springs - Softer center shock spring - Decrease center shock collar, lower chassis ride height - Harder front tire or just RF - Softer rear tires - Raise front ride height - Lower rear ride height - Move front suspension mounts to the right - Bring RR closer to pod, LR away - More Castor, Less Camber 	<ul style="list-style-type: none"> - Bent Suspension Pin, check for free movement. - Bound Ball Joint: Links should spin free on balls while mounted to the car. - Bent or Loose Links: Pod movement should be free - Wore out Bearings or Completely Seized Bearings - Chunked Tire: Check to see if foam or rubber tire is still glued to wheel. - Loose Screws: Especially chassis screws, add Blue Loctite to prevent. - Shocks: Either Bound-up or Out of Oil. Must swivel freely on mounts. - Foreign Objects: Unlucky Dirt/Stones preventing Suspension or Steering Movement. - Blown Differential - Radio Problem: Bad Servo, Weak Servo Saver Spring, Transmitter Pot blown.

SPECIAL THANKS to Steve and Eric Salvas.