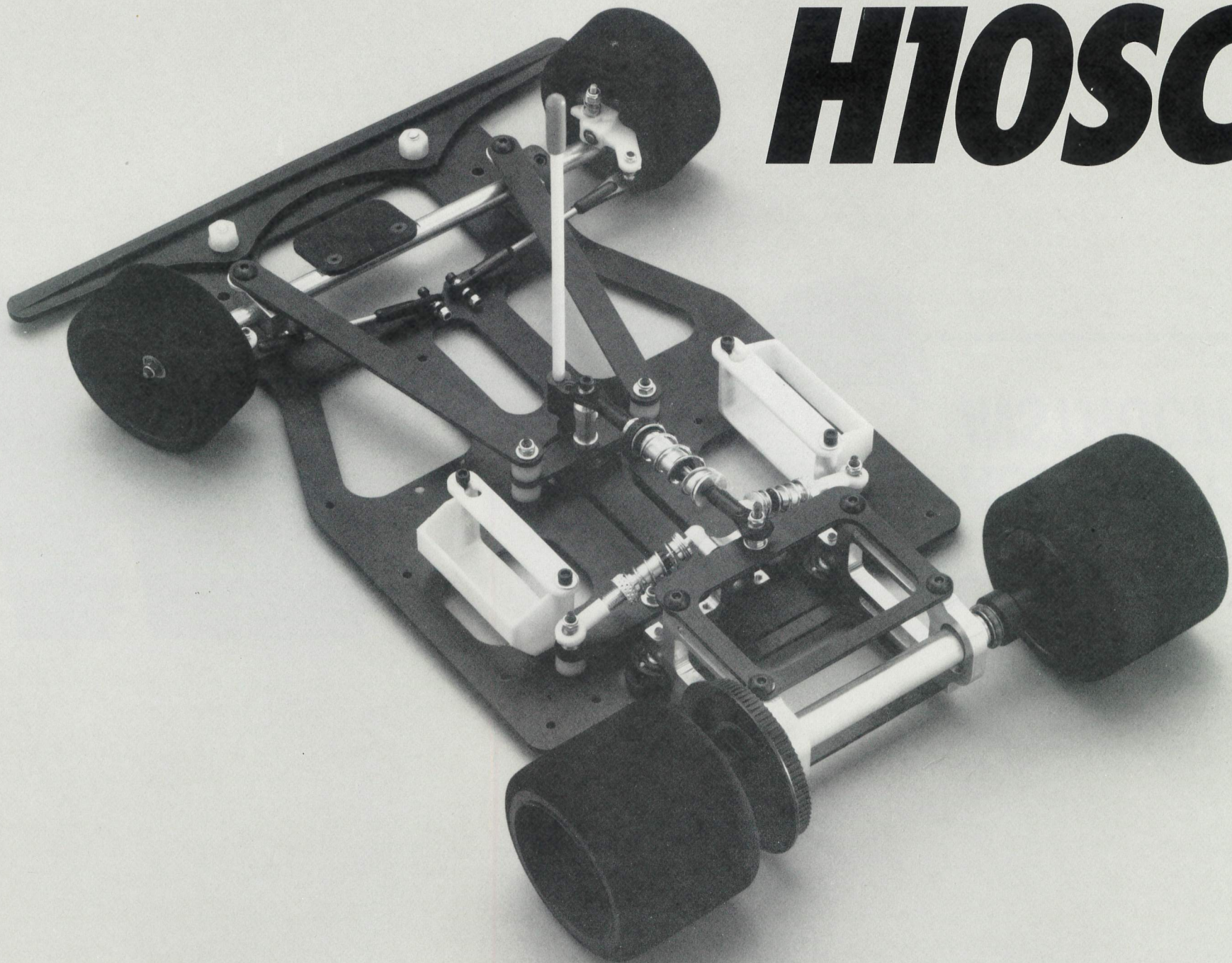


H10SC

***ASSEMBLY
INSTRUCTIONS***

H10SC



INTRODUCTION

The H10SC is a precision designed and manufactured 1/10 scale, on road race car, developed, tested and raced by S.S. Industries engineers and team drivers.

The H10SC offers exceptional performance advantages with its light weight, durable design and wide range of adjustability to dial in virtually any race track in the world.

The high quality and craftsmanship used in the manufacture of this American made kit should make assembly and set-up of the H10SC quick and trouble free.

ITEMS REQUIRED TO COMPLETE THIS CAR

Two-channel surface radio
Electronic speed control
Nicad batteries, 6- or 7-cell
05 motor
Shock oil
Double sided tape
Body

TOOLS NEEDED IN CONSTRUCTION OF THIS KIT

Phillips screwdrivers, #0 and #1
Hobby knife
Allen wrench, sizes #.050",
2.5mm, 1/16", and 3/32"
Nut drivers or sockets, 3/16" and
11/32"
Small vice
Small file
#30 drill bit

ASSEMBLY

To make assembly of this kit easier, the parts are packaged in bags and labeled by groups. To avoid losing or confusing parts, don't open the bags until that parts group is needed.

Note: Build the car first as we designed it. The car can be adjusted for a wide variety of track conditions, and small adjustments can make major improvements. Work with it before you make changes in the car design.

Note: White nylon parts may be dyed before assembly. Trim all flash from parts and trim battery boxes before dyeing. Add fabric dye to water and boil parts for 15 minutes.

CHASSIS PARTS GROUP (CH)

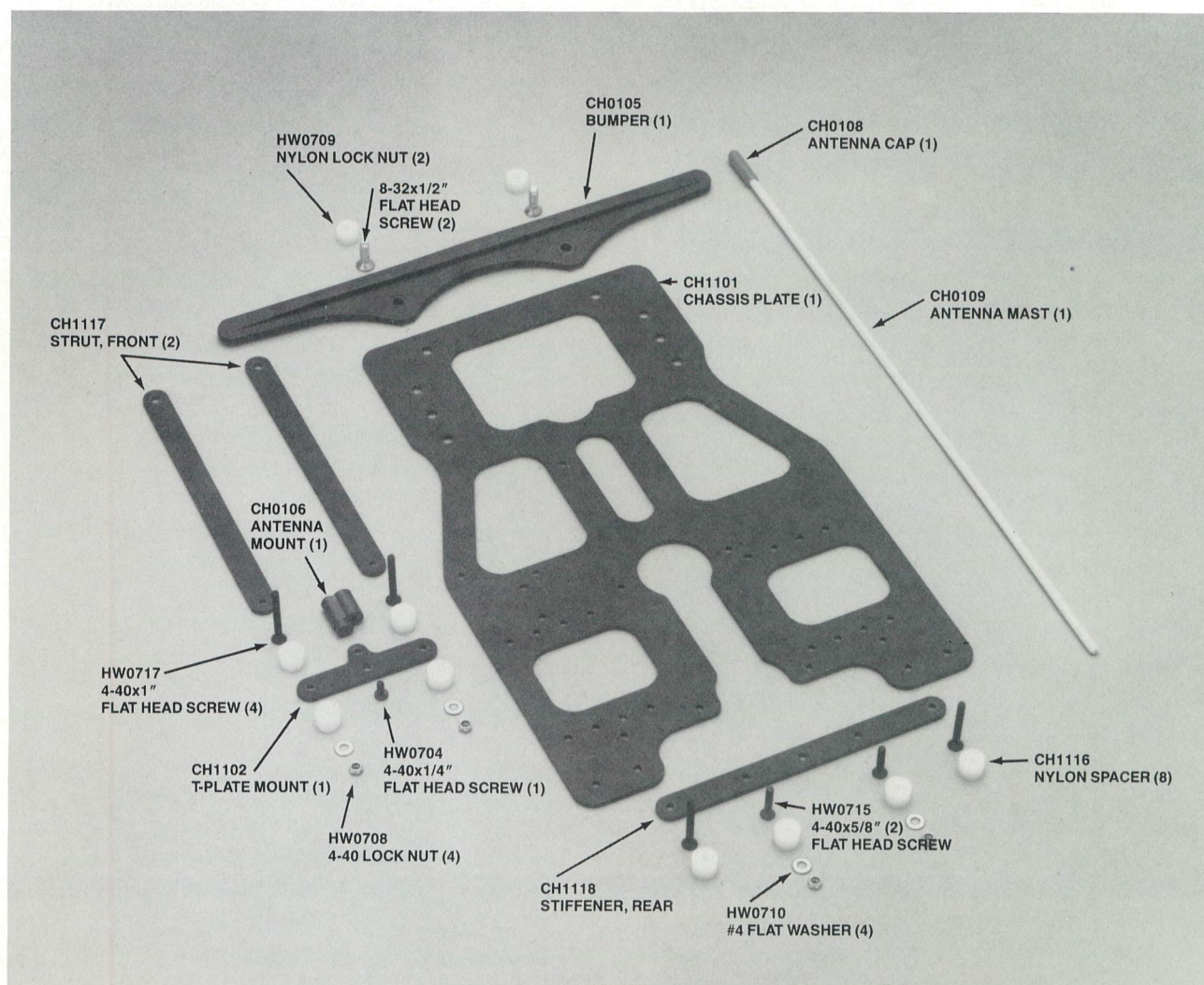
1. Locate parts bags containing chassis (CH) and hardware (HW) parts.
Note: The holes are countersunk in the bottom of the chassis plate.
2. Find 2 4-40 x 5/8" flathead screws, two nylon spacers and the rear stiffener (the one with five holes in it) and install the two screws in the holes located at the rear of the chassis on either side of the t-plate cut out. Place the two nylon spacers over the screws on the top side of the chassis and set rear stiffener on top of the nylon spacers. Locate two more nylon spacers and two 1" 4-40 screws and install in the same manner under the two outside holes in the rear stiffener. Place rear stiffener over spacers and use two #4 washers and two 4-40 micro nuts. Install on the two inner 4-40 screws.
3. Located 2 4-40 x 1" screws, two nylon spacers and install in the same manner in the two holes at the front of the t-plate cut out.
4. Located t-plate mount, antenna mount and one 4-40 x 1/4" button head screw and install antenna mount in the offset hole of the t-plate mount with the large hole in the antenna mount facing forward. Place the t-plate mount over the screws with the antenna mount to the front and install a nylon spacer over each of the two screws.
5. Locate and install the two front struts (using small holes in struts) over the 4-40 screws with the larger holes in the struts over the two middle 8 x 32 holes at the front and either side of the chassis.

Place a #4 washer and 4-40 micro nut over each screw and secure.

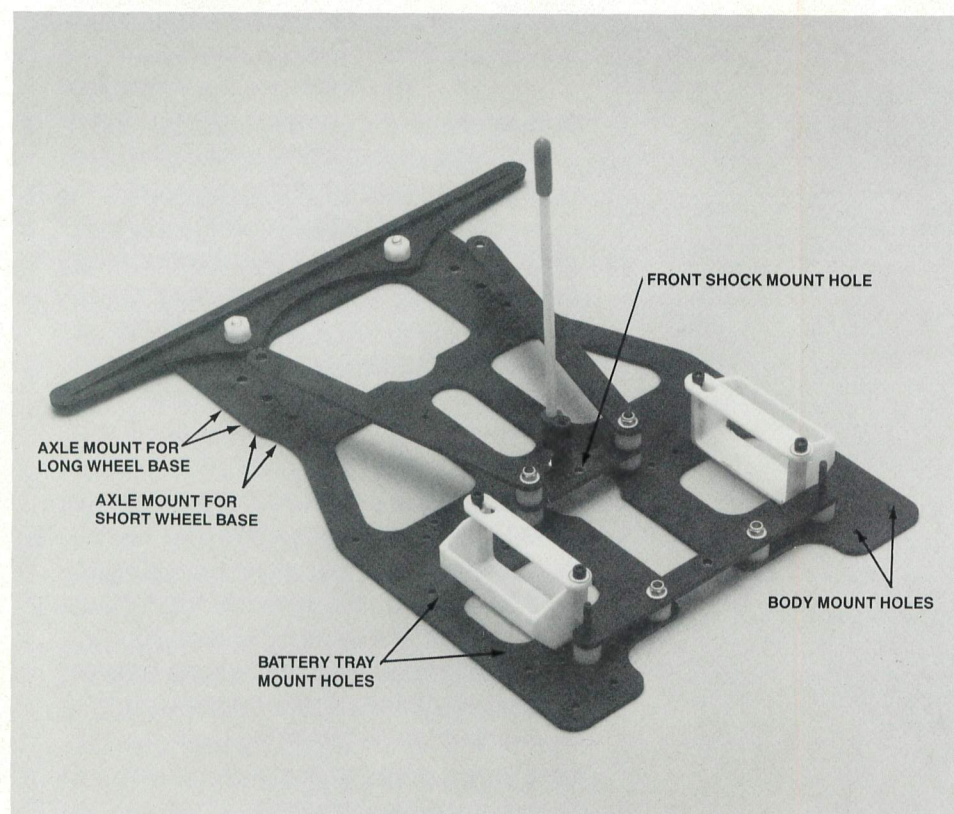
6. Locate front bumper, two 8/32 x 1/2" flathead Phillips screws and two nylon 8/32 nuts and install bumper on the top side of the chassis.

7. Locate and trim battery trays as shown in photographs. Install trimmed battery trays, using 4-40 x 1/2" flathead screws to chassis.

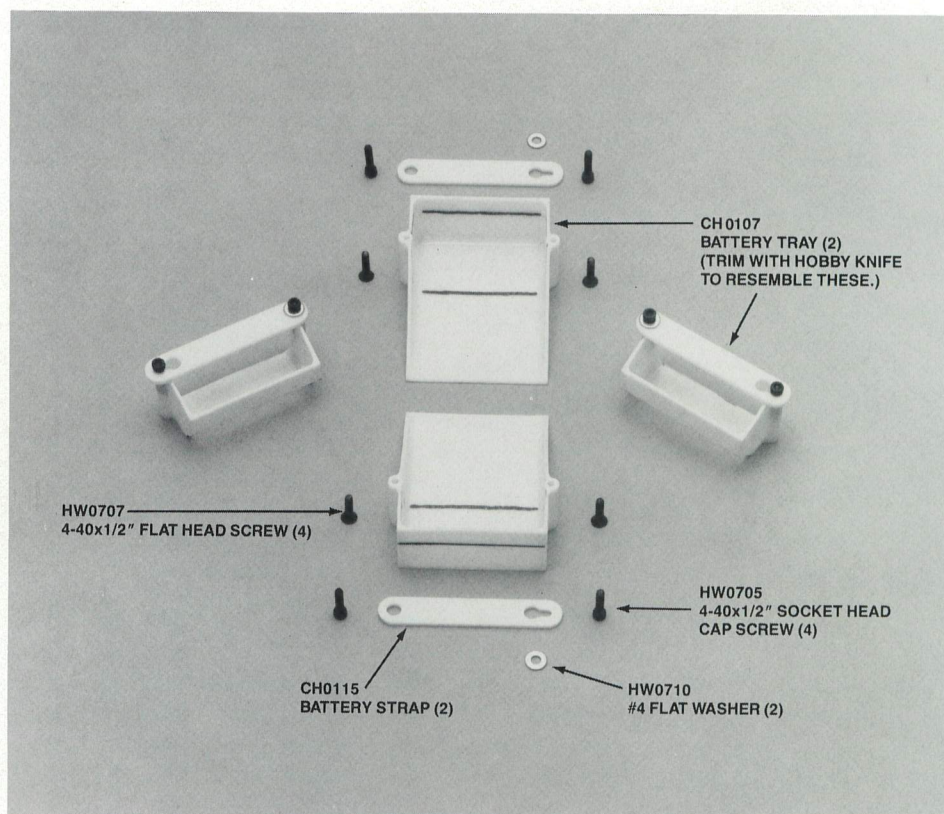
Note: Trays may be spaced for use of 6- or 7-cell flat pack batteries. The trays may also be offset to shift weight for oval racing.



ASSEMBLED

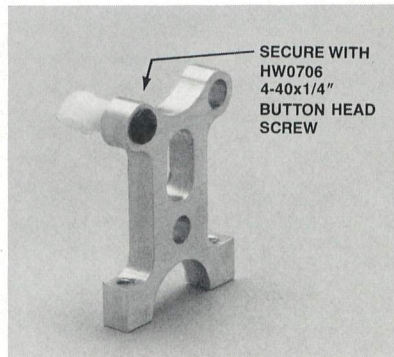
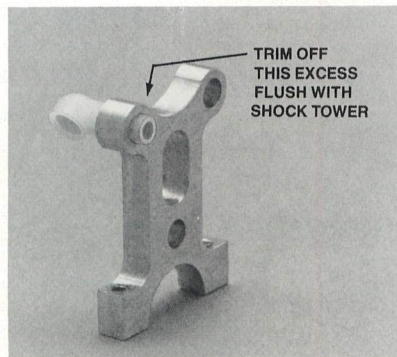
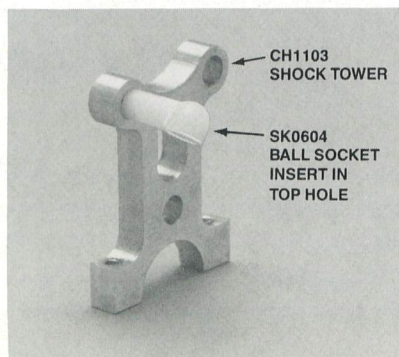
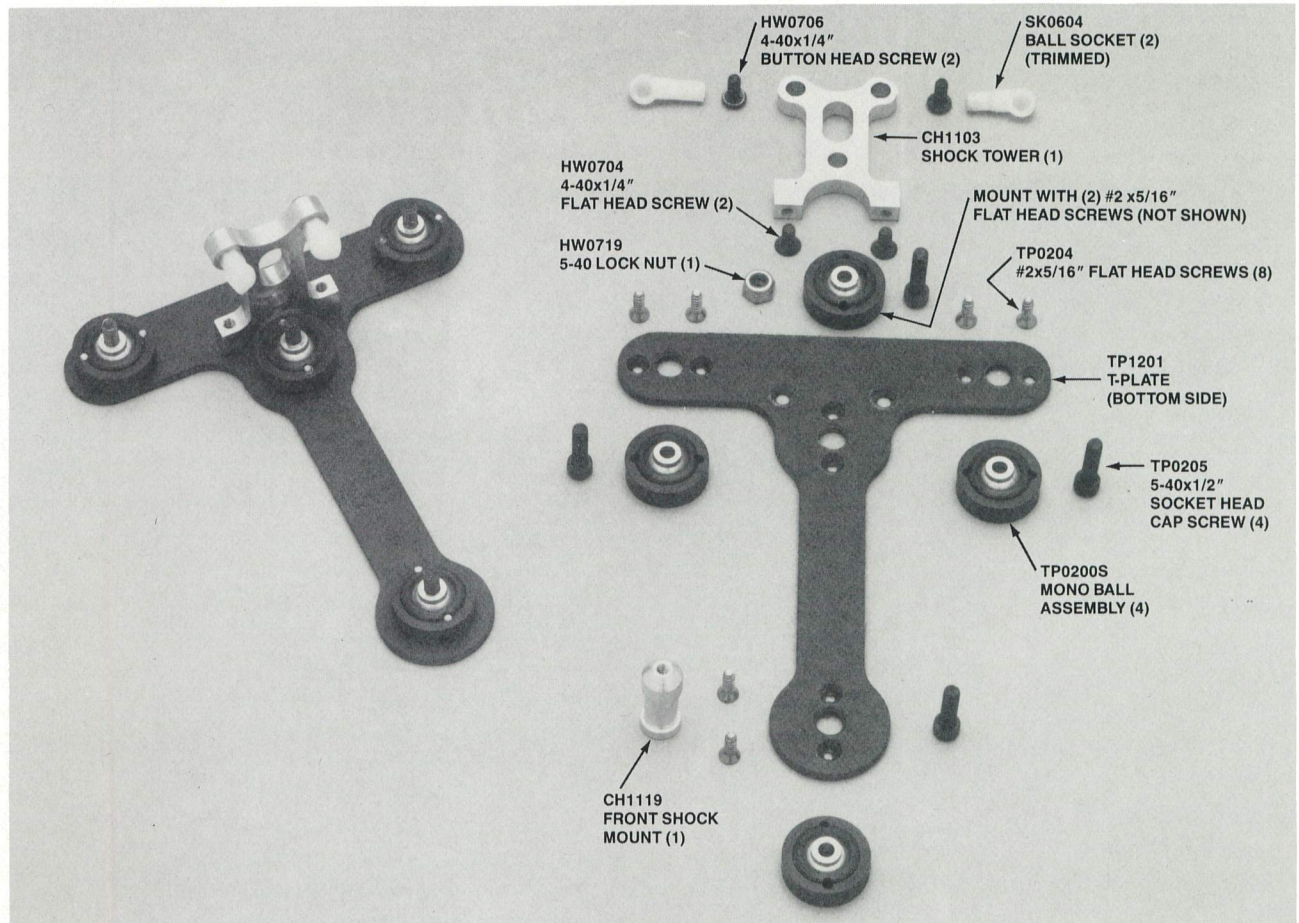


BATTERY TRAYS



T-PLATE PARTS GROUP (TP)

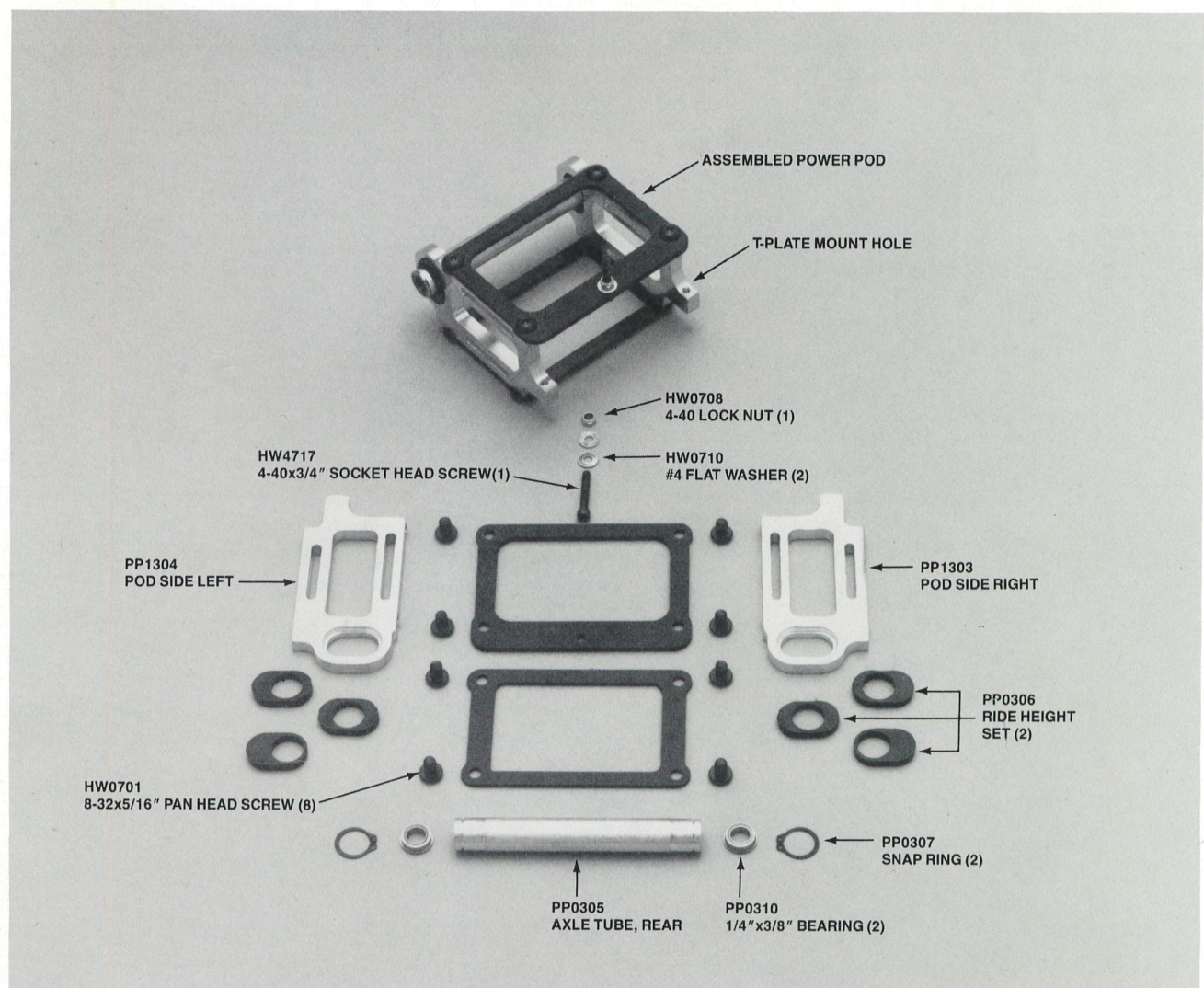
1. Locate parts bag containing t-plate (TP) shock tower and hardware (HW) parts.
Note: Molding flash in screw holes of mono ball sockets may need to be removed with a hobby knife.
2. Install each mono ball assembly onto the top of t-plate and secure with two # 2-56 x 5/16" flathead screws each. Tighten screws carefully to prevent distorting or cracking the mono ball socket. Do not over tighten the screws.
3. Install the shock tower onto the t-plate using two 4-40 x 1/4" flathead screws.
4. Install ball cups into two top holes in shock tower from the front of the t-plate and trim off excess at the back side of the shock tower. Secure with two 4-40 x 1/4" button head screws.
5. Locate front shock mount, two 5-40 x 1/2" screws and insert 5-40 screw in from the bottom and front of the t-plate into hole in antenna mount into the bottom of front shock mount and secure.
6. Locate 5-40 lock nut and insert 5-40 x 1/2" screw through mono ball from bottom then hole in rear stiffener and secure with 5-40 lock nut.



Note: Be sure t-plate pivots smoothly on mono balls after installation. If plate binds, check ball assembly again.
Note: 5-40 t-plate mount screws are tightened by inserting a 3/32" allen wrench into the holes in bottom of t-plate.

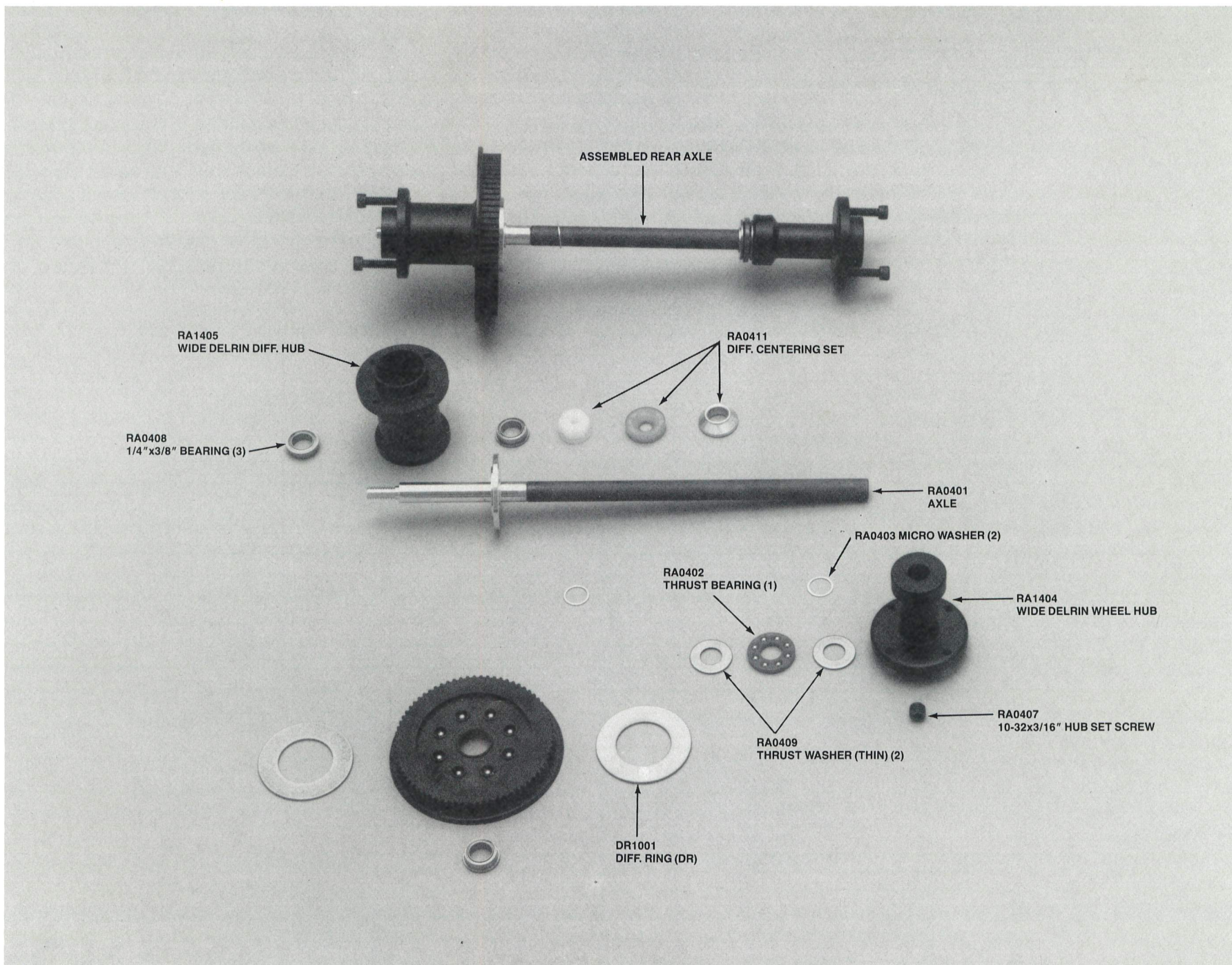
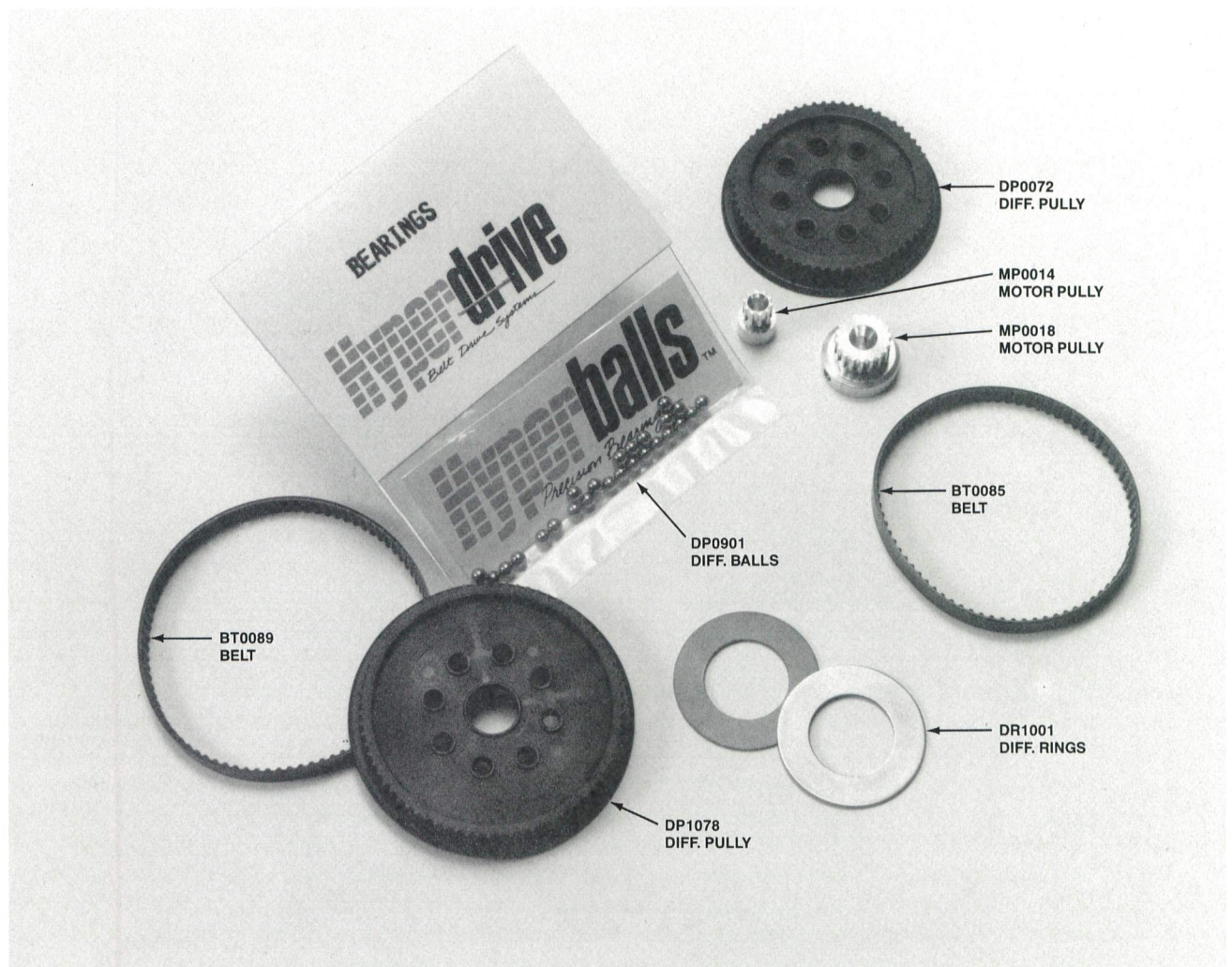
POWER POD PARTS GROUP (PP)

1. Locate parts bags with power pod (PP) and hardware (HW) parts.
Note: Oval groove for ride height adjustment inserts must face toward the outside of assembled pod.
2. Install right and left pod sides to bottom plate with four 8-32 x 5/16" pan head screws.
3. Install top plate to pod sides with four 8-32 x 5/16" pan head screws. 4-40 hole in top plate goes to front.
4. Locate ride height adjusters, six pieces, for initial set-up, use the two with the hole in the center position. Install axle tube into side pod axle slots, then press ride height adjusters over axle tube and into grooves on pod sides. Install snap rings into grooves in axle tube.
5. Install two, 1/4" x 3/8" bearings into axle tube ends.
6. Locate 4-40 x 3/4" screw, two #4 washers and one 4-40 micro lock nut. Install one #4 washer onto 4-40 screw and insert through hole in top plate from bottom side. Then install other #4 washer onto screw then secure with 4-40 micro lock nut.
7. Install power pod assembly onto t-plate by aligning 5-40 x 1/2" allen head screws in mono balls with holes in bottom front of power pod and tighten with 3/32" allen wrench.
Note: Be sure power pod pivots smoothly on mono balls after installation. If pod binds, recheck ball assembly.



REAR AXLE PARTS GROUP (RA)

1. Locate parts bag with rear axle (RA) and drive set (DS) parts.
2. Install one micro washer onto axle long side, and push axle through axle tube and bearings.
3. Install second micro washer then, one thrust bearing set (two thin washers, one thrust bearing) onto right side followed by wheel hub and set screw. Tighten wheel hub set screw onto axle and then remove hub. File a flat on axle where set screw made a mark on axle. There should be a small amount of side play when hub is tight (approx. .010" to .015").
4. Press two, 1/4" x 3/8" bearings into diff. hub. Press one 1/4" x 3/8" bearing into diff. pulley of your choice. Install eight hyper balls into diff. pulley (use no grease on balls or pulley). Place one diff. ring (dull side first) onto left side of axle, followed by diff. pulley, second ring (dull side away from pulley), and diff. hub onto end of axle. Place one thrust bearing set (thick washer, bearing, thin washer), then diff. centering set (belleville washer, small nylon washer, nylon nut). Screw nylon nut down until it touches washers. Do not tighten. You will adjust diff. at a later time.



FRONT AXLE PARTS GROUP (FA)

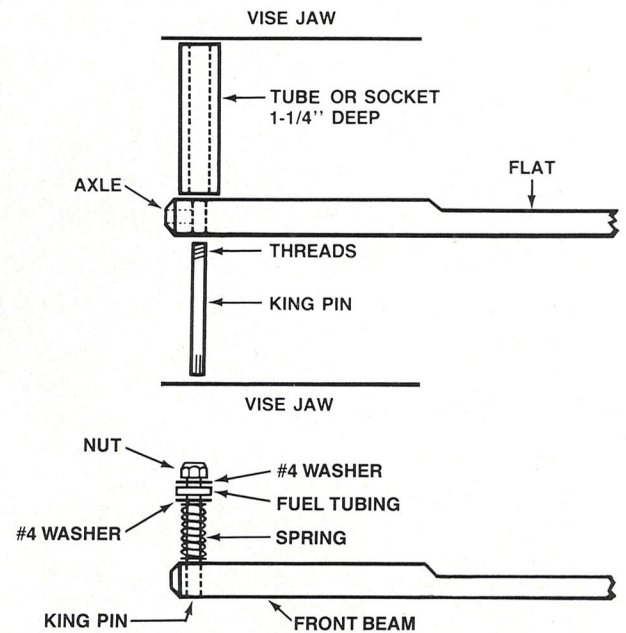
1. Locate parts bags with front axle (FA) and hardware (HW).
2. Locate front axle and two king pins. Start one king pin through hole in bottom left side of axle, threaded end of king pin first.
Note: Flat on axle faces up and to left side of car. Start king pins from opposite side of axle.
Press king pin into axle by using a small 1-1/4" long piece of metal tubing or a small socket 1-1/4" deep. Place tubing or socket over hole in top of axle, and place assembly in a vise and press king pin through axle into tube. (See diagram.)
3. Place left axle mount block onto axle followed by right mount block.
Note: Slot in right block should face the rear with the long side down.
4. Following procedure in Step 2, install right side king pin. Place 4-40 x 1/8" set screw into each end of axle and tighten with .050" allen wrench.
5. Install servo tray onto top of axle flat with two 4-40 x 1/4" flat head screws.
Note: Servo tray should extend toward front of axle.
6. Take one steering block and one axle stub, press axle stub into steering block making sure hex flats on axle align with hex hole in block. Install "E" clip. Assemble second block and axle.
Note: Steering blocks and stub axles are identical and can be used on either side of car.
7. Place steering blocks onto king pins with arm to the rear.

- Note:** Due to variations in molding tolerances, the steering blocks may not fit on the king pins properly. If the block does not slide smoothly on the king pin, run a #30 drill bit through the block.
8. Place springs, #4 x .005" flat washers and 4-40 lock nuts onto king pins. For initial set-up, screw lock nut down until king pin is flush with top of nut.
 9. Locate four, 4-40 x 2-56 heim joints and two, 4-40 x 1-3/4" threaded rods. Thread one heim joint onto each end of each rod. Leave room in each heim joint for later toe-in adjustment. Attach one heim joint to each steering arm. Place joint on bottom of arm with brass cone washer as a spacer. With this arrangement, the tie rods will align with the center holes in servo saver and run parallel with the axle.
 10. Assemble front axle to chassis using three, 8-32 x 1/2" and one, 8-32 x 3/4" flat head screws. Align front axle assembly with holes in front of chassis. Install the front struts onto front blocks using two 8-32 x 5/16" pan head screws and by placing one #10 washer under each of the two struts. This is needed for tie rod clearance.
Note: Using center and front hole will make wheel base 1/2" longer than using center and rear holes. Mount axle using 8-32 x 3/4" long screw in right rear mount hole-hole with slot through it. Center axle in chassis by measuring from end of axle to outside of axle mount. For initial set-

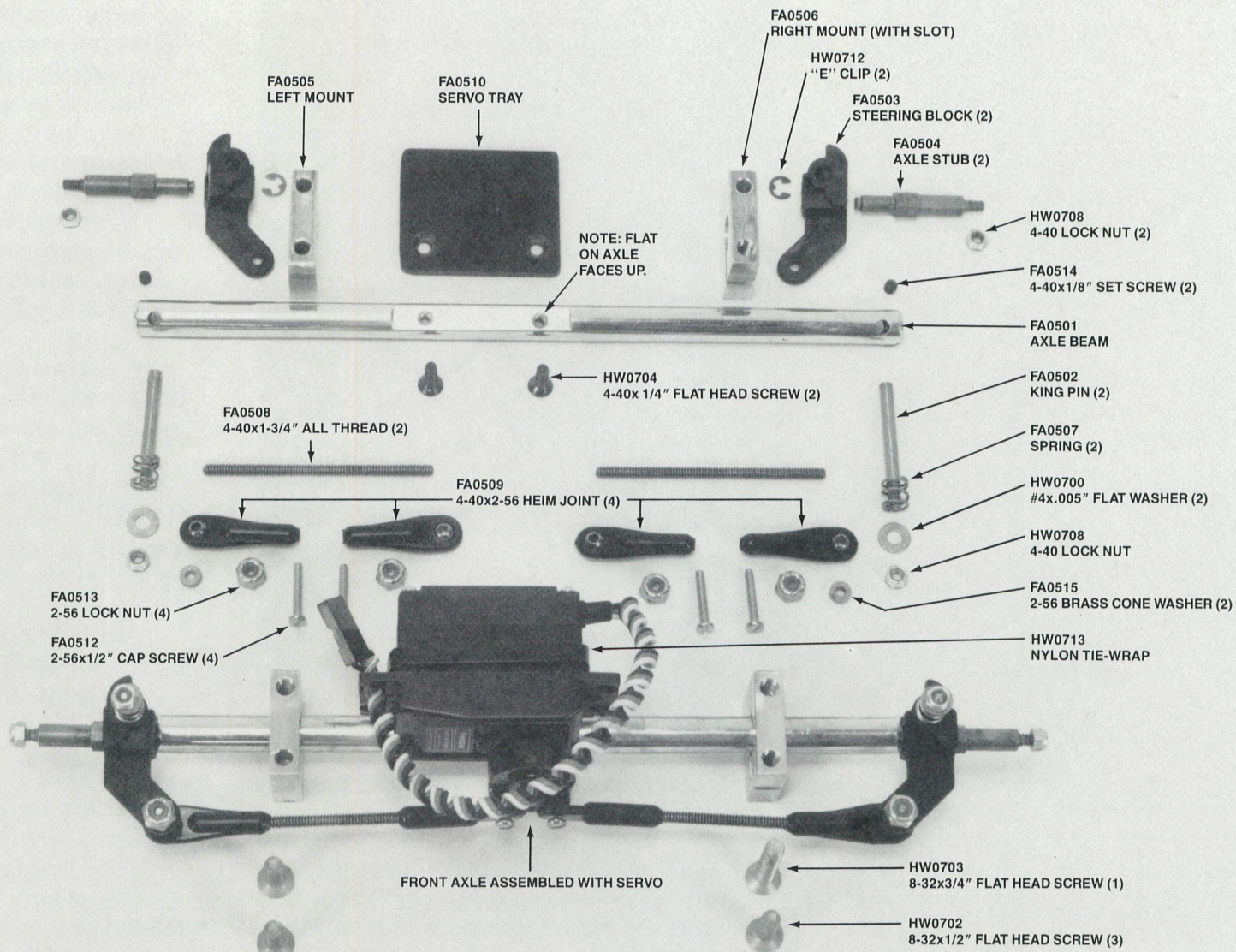
up, adjust axle caster by setting servo tray parallel with chassis plate. This gives about 4 degrees caster.

Note: You may use the four #10 aluminum flat washers as spacers under the axle blocks to lower the chassis for carpet tracks or for use with taller front tires.

Note: For better front suspension dampening, use a piece of fuel tubing and an extra #4 washer between the nut and the suspension spring. Also, the use of a very thick silicone lube such as Bud's diff lube on the king pin and the steering block will improve the action of the front suspension.



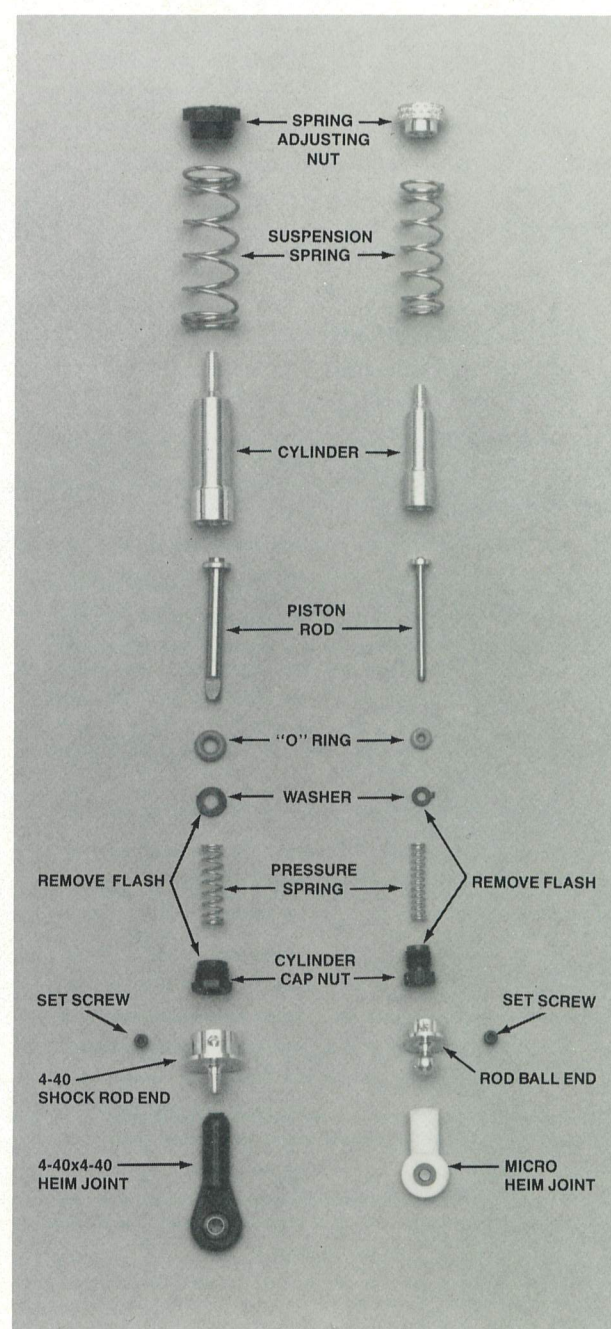
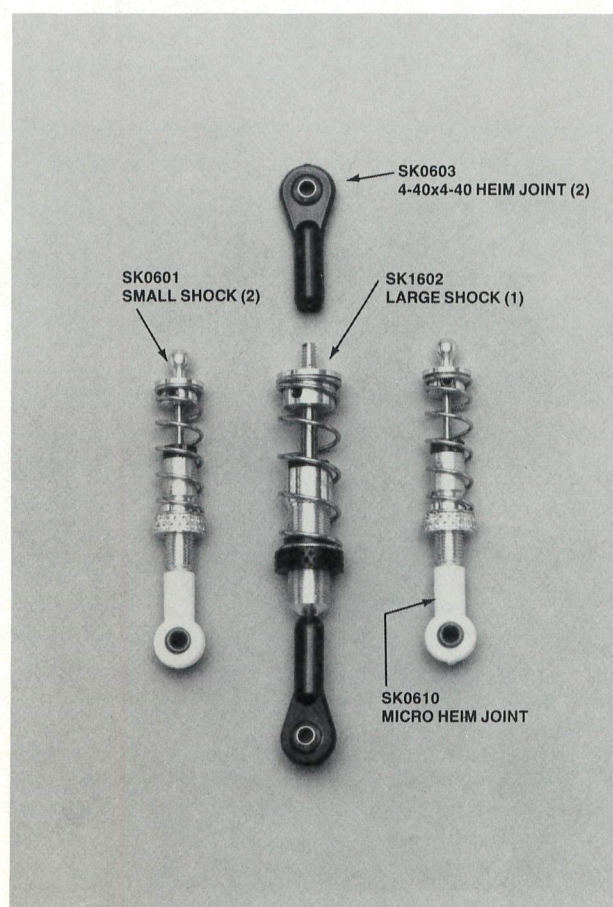
Note: For better front suspension dampening use a piece of fuel tubing and an extra #4 washer between the nut and the suspension spring. Also the use of a very thick silicon lube such as Bud's diff lube on the king pin and the steering block will improve the action of the front suspension.



SHOCK PARTS GROUP (SK)

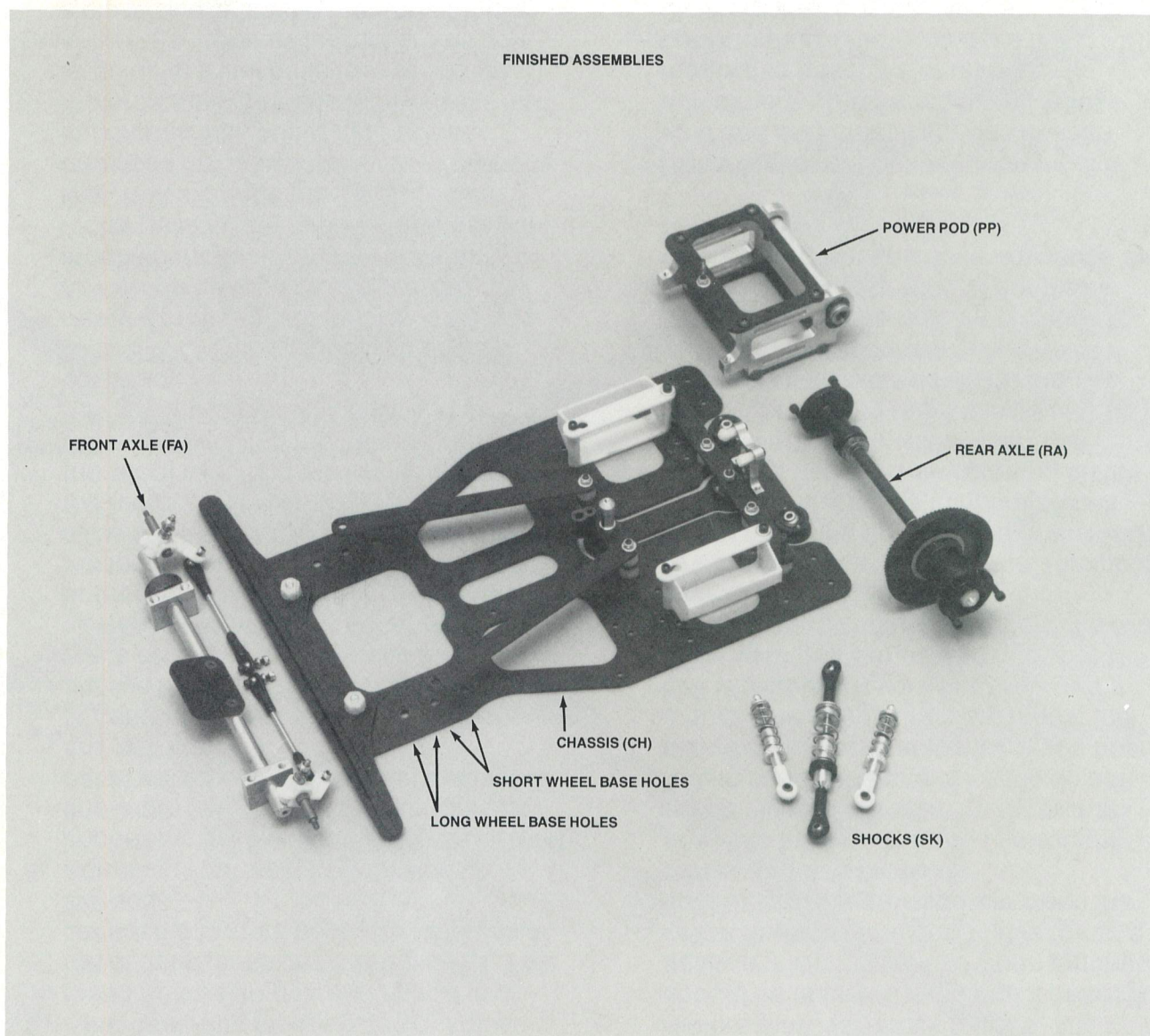
1. Locate parts bags containing shocks large (SL) and small (SM).
2. Remove molding flash from all plastic parts before assembly. Use sharp hobby knife or razor blade.
3. Tilt cylinder sideways and fill to bottom of threads with 10-wt. shock oil. Let oil run down side of cylinder to prevent air bubbles in oil.
4. Put a drop of shock oil on "O" ring and carefully slide all the way onto shock piston rod. Slide floating washer, pressure spring and cap nut onto rod assembly.
5. Install the piston rod assembly into the cylinder and start the cylinder cap nut 2 or 3 turns. Before tightening the cylinder nut, it is necessary to bleed excess oil from the cylinder.
6. To bleed oil from shock, compress rod, and as it is being released, tighten the nut 1/2 turn. Repeat until nut is fully seated on cylinder.
Note: The nut should be finger tight only. Do not use wrench on the nut.
7. The operation of shock should be smooth yet with firm resistance. A bumpy or intermittent resistance indicates air bubbles. If this occurs, repeat filling procedure.
Note: This shock absorber is pressurized and should extend fully by itself.
8. Attach rod ball end to shock rod using 4-40 set screw. Install suspension spring and spring adjusting nut.
Note: For initial set-up, use short spring on small shocks and gold spring on large shock.

9. Install small shocks onto car by snapping ball into sockets on shock tower. Attach shock body end to the two 4-40 x 1" screws at either end of the rear stiffener and secure with 4-40 micro nuts.
10. Install heim joint on rod end of large shock to top of top plate and secure with 4-40 micro nut. Install heim joint on body end of shock to the front shock mount with 4-40 x 3/8" screw.



FINAL ASSEMBLY

1. Mount rubber onto wheels using rubber cement or contact cement. True rubber by spinning wheel and sanding to desired diameter.
2. Mount rear wheels to hubs with four 4-40 x 1/2" socket head cap screws. Install four, 3/16" x 5/16" bearings into front axles.
3. Install body mounts onto chassis using one of the two sets of holes on outside rear corners of chassis. The front mounts can be installed onto bumper mount screws. Also, you can tap the front holes in axle mounts with a 8-32 tap and thread a 8-32 stud into mounts and install body mounts on the studs. Install mount collars at the height to fit your body.
4. When installing steering servo, use double sided tape. Align servo shaft in very center of axle. After centering servo onto tape, use nylon tie wrap around servo and mount.
5. Install radio equipment as required.



CHASSIS SET-UP

Make all chassis adjustments with all electronics, motor and batteries in place.

1. Set rear ride height shock by holding car up so that rear wheels are free and weight of pod is hanging on shock. Adjust spring so that adjustment nut just touches spring. Tightening the spring more will cause the car to turn quicker. A loose setting will add push to the car.
2. Set side shocks by tilting the power pod maximally to the right. This will completely unload the left side shock spring. Turn the spring adjusting nut until the spring just touches the shock rod end. In this position, the spring should rotate freely with minimal up and down play with no spring compression. Repeat on other shock.
3. To adjust front axle caster, loosen screw on right rear of front axle mount block. With servo plate parallel with chassis, the axle will have approximately 4 degrees caster. Increasing the caster angle to the rear will decrease steering response and increase straight line stability. More than 6 degrees will not be of any benefit. A setting nearer to 0 degrees, or king pin perpendicular to chassis plate, will help steering response on tight road courses while increasing 3 degrees to 5 degrees will help on larger ovals.
4. Front king pin spring stiffness can be adjusted by tightening the locknut on top of king pin.

5. After centering steering servo, adjust toe-in by screwing threading rod in or out of heim joints on steering arms. This car seems to work best with no toe-in or toe-out.

6. Adjusting your belt: Belt tension is important. Belts are easier to adjust than fine-tooth gears. However, attention to detail will pay off in extended battery life and belt life.

In general, once one has selected the pulleys he wishes to use, one should place his motor as far forward as possible and then select a belt that will appropriately fit. Minor adjustments on the motor can then be made. This will allow the maximum number of teeth on the motor pulley to engage the belt therefore reducing the likelihood of slippage and allowing the racer to run the belt slightly looser which will aid in efficiency.

With STOCK motors, belt slippage is rarely a problem and tension is easy to adjust. However, with some of the new modified motors running very small motor pulleys and large differential pulleys, belt slippage can be a problem if one does not adjust the system properly. In general, with super high power motors running small motor pulleys and large differential pulleys, one should adjust the motor as far forward as possible to maximize the number of motor pulley teeth engaging the belt. This is much more important with modified

motors than with stock motors. The belt should be adjusted such that it deflects easily a millimeter or two when touched with a fingertip. You don't have to run a tight belt to prevent slippage when the belt is adjusted properly.

All ratios have been tested thoroughly by the Hyperdrive team under enduro racing conditions and the belts do not slip when properly adjusted. If you hear a buzz when you punch the motor, the belt is slipping. If your batteries dump early, your belt is most likely too tight. When properly adjusted Hyperdrive runs silently.

Another important point is that the motor pulley must line up reasonably well with the differential pulley to optimize belt efficiency. If there is any binding on the belt, the efficiency will be lost. The Hyperdrive racing team has never had problems with belts riding off the pulleys. If a reasonable line up is accomplished, the belt may choose to ride off center very slightly but this is rarely a problem and does not cause the belt to fall off.

Note: Make only one adjustment at a time and only small changes in each adjustment. Remember, small adjustments can effect major changes in performance. Once you have the H10SC dialed to your driving style, only minor changes will be necessary for winning performance on a wide variety of tracks.

H10SC PARTS LIST

Parts Group	Qty.	Part Number	Description	Parts Group	Qty.	Part Number	Description	Parts Group	Qty.	Part Number	Description
Chassis Parts Group (CH)	1	CH-1101	Chassis Plate/Gr.	2	FA-0504	Axle Stub		1	SM-0622	Spring Pressure Micro	
	1	CH-1102	Plate Mount/Gr.	1	FA-0505	Left Mount		Shock Repair Kit Large (SL)	1	SK-0606	Shock Repair Kit Large
	1	CH-1103	Shock Tower	1	FA-0506	Right Mount			1	SL-0602	O-Ring, Shock
	1	CH-0105	Bumper	2	FA-0507	Spring		1	SL-0603	Washer, Shock	
	1	CH-0106	Antenna Mount	2	FA-0508	Threaded Rod		1	SL-0606	Nut Cylinder, Shock	
	2	CH-0107	Battery Tray	4	FA-0509	4-40x2-56 Heim Joint		1	SL-0607	Spring Pressure	
	1	CH-0108	Cap Antenna	1	FA-0510	Servo Tray/GR		Hardware Parts Group (HW)	2	HW-0700	#4x.005 Flat Washer
	1	CH-0109	Antenna Mast	4	FA-0511	3/16"x5/16" Bearing			10	HW-0701	8-32x5/16" Pan Head Screw
	2	CH-0110	Post Body/Fr.	4	FA-0512	2-56x1/2" Cap Screw			5	HW-0702	8-32x1/2" Flat Head Screw
	2	CH-0111	Body Post/Rear	4	FA-0513	Lock Nut 2-56			1	HW-0703	8-32x3/4" Flat Head Screw
	2	CH-0112	Collar Front Post	2	FA-0514	Set Screw 4-40x1/8"			4	HW-0704	4-40x1/4" Flat Head Screw
	2	CH-0113	Collar Rear Post	2	FA-0515	2-56 Brass Cone Washer			8	HW-0705	4-40x1/2" Socket Head Screw
	2	CH-0115	Battery Strap	2	SK-0601	Shock Kit Micro			3	HW-0706	4-40x1/4" Button Head Screw
	8	CH-1116	Nylon Spacer	2	SM-0614	Cap Nut Micro			6	HW-0707	4-40x1/2" Flat Head Screw
2	CH-1117	Strut Front/Gr.	2	SM-0616	Nut Adjuster Micro		12		HW-0708	4-40 Lock Nut	
1	CH-1118	Stiffener Rear/Gr.	2	SM-0617	Cylinder Micro		2		HW-0709	8-32 Nylon Lock Nut	
1	CH-1119	Front Shock Mount	2	SM-0618	O-Ring Micro		8	HW-0710	#4 Washer Thick Flat		
T-Plate Parts Group (TP)	1	TP-1201	T-Plate/Gr.	2	SM-0619	Washer Micro		6	HW-0711	#10 Alum. Flat Washer	
	4	TP-0200 S	Mono Ball Assembly	2	SM-0621	Rod End Micro		2	HW-0712	"E" Clip	
	8	TP-0204	#2x5/16" Flat Head Screw	2	SM-0622	Spring Pressure Micro		1	HW-0713	Nylon Tie Wrap	
	4	TP-0205	5-40x1/2" Socket Head Screw	2	SM-0623	Spring 5# Micro		2	HW-0714	3mm x 10 Motor Screw	
Power Pod Parts Group (PP)	1	PP-1301	Top Plate/Gr.	2	SM-0624	Spring 8.5# Micro		2	HW-0715	4-40x5/8" Flat Head Screw	
	1	PP-0302	Bottom Plate/Gr.	Shock Kit Large (SL)	1	SK-1602	Shock Kit Large	1	HW-0716	4-40x3/8" Socket Head Screw	
	1	PP-1303	Pod Side Right		1	SL-0601	Rod, Shock	4	HW-0717	4-40x1" Flat Head Screw	
	1	PP-1304	Pod Side Left		1	SL-0602	O-Ring, Shock	1	HW-0719	5-40 Lock Nut	
	1	PP-0305	Axle Tube, Rear		1	SL-0603	Washer, Shock	1	HW-4717	4-40x3/4" Socket Head Screw	
	1	PP-0306	Ride Height Set		1	SL-0604	Nut Adjuster, Shock	Wheels and Tires Parts Group (WT)	2	WT-0801	Wheel, Rear BBS
	2	PP-0307	Snap Ring		1	SL-0605	Cylinder, Shock		2	WT-0802	Wheel, Front BBS
2	PP-0310	1/4"x3/8" Bearing	1		SL-0606	Nut Cylinder, Shock	6		WT-0803	Green Tire Ring	
Rear Axle Parts Group (RA)	1	RA-0401	Axle, Rear Differential	1	SL-0607	Spring Pressure	Drive Set Parts Group (DS)	1	DP-0072	Diff Pulley 72 Tooth	
	1	RA-0402	Bearing, Thrust	1	SL-1609	4-40 Shock Rod End		1	DP-1078	Diff Pulley 78 Tooth	
	2	RA-0403	Micro Washer	1	SL-0611	Spring, Gold		1	20110	MP-0014 Motor Pulley	
	1	RA-1404	Wide Delrin Hub, Wheel	1	SL-0612	Spring, Silver		1	20118	MP-0018 Motor Pulley	
	1	RA-1405	Wide Delrin Hub, Diff	Shock Kit Parts Group (SK)	2	SK-0603		4-40x4-40 Heim Joint	1	BT-0085	Belt 85 Tooth
	2	RA-0407	Hub Set Screw 10-32x3/16"		2	SK-0604		Ball Cup	1	BT-0089	Belt 89 Tooth
	3	RA-0408	1/4"x3/8" Bearing		2	SK-0610		Micro Heim Joint	16	DB-0901	Hyperballs
	2	RA-0409	Thrust Washer Thin		Shock Repair Kit Micro (SM)	1		SK-0605	Shock Repair Kit Micro	1	DR-1001
1	RA-0411	Diff Centering Set	1	SM-0614		Cap Nut Micro	7	HW-5001	4-40x1/8" Set Screw		
Front Axle Parts Group (FA)	1	FA-0501	Axle Front Beam	1		SM-0618	O-Ring Micro	1	HW-5003	4-40x3/16" Set Screw	
	1	FA-1502	King Pins/pr	1		SM-0619	Washer Micro	1	AC-0203	Axle Alignment Collar	
	2	FA-0503	Steering Block								

Hyperdrive

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