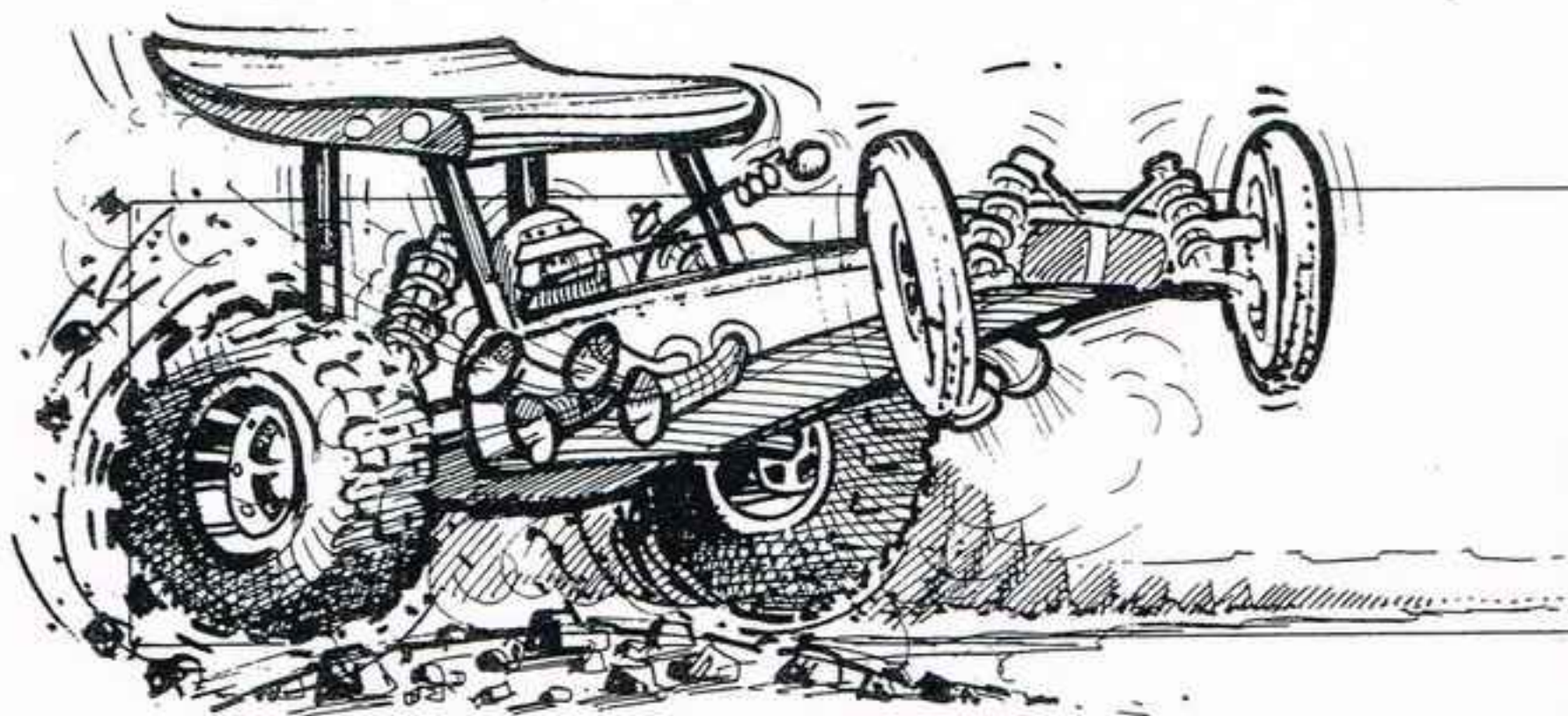


Accessories for



"Dirt Burners!"

**Manufacturers of the finest in
precision RC off road accessories.**

FAX (714) 622-2947

THORP

manufacturing inc.

380 S. EAST END, UNIT H,
POMONA, CA 91766 • (714) 622-6518

JRX2

HARD ANODIZED ALUMINUM GEARS

5100	DIFF GEAR SET.....	\$ 35.00	set.
5101	LEFT SIDE GEAR.....	\$ 11.00	ea.
5102	RIGHT SIDE GEAR.....	\$ 11.00	ea.
5103	DIFF MAIN GEAR.....	\$ 15.00	ea.
5104	TOP GEAR (DELRIN).....	\$ 4.00	ea.
5105	TOP SHAFT.....	\$ 4.00	ea.
5106	GEAR & SHAFT SET.....	\$ 7.00	set.

The THORP diff gear set is made of hard anodized aluminum and works especially well in giving you the winning edge in your truck conversion.

THORP MFG. INC. 380 SOUTH EAST END AVE., UNIT H, POMONA, CA. 91766

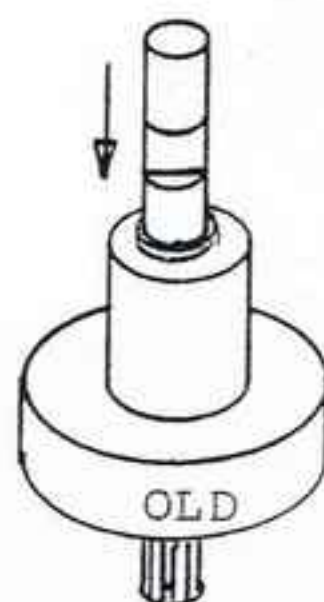
(714)622-6518

REV. 10/89

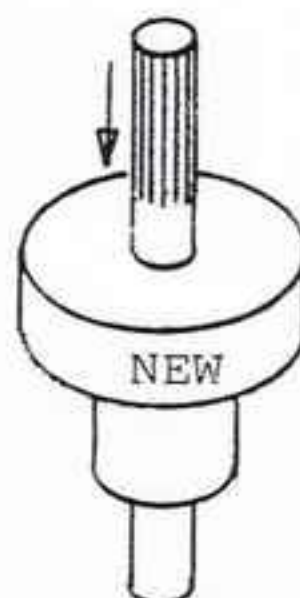
INSTRUCTIONS for THORP GEAR SETS for OPTIMA

It will be necessary to remove the shaft from your stock counter gear and install it in the new gear. Place the gear on something solid with about a 1/2" hole in it. You can also use a large flat washer over the open jaws of a vise or other suitable item. Drive the shaft down through the old gear to remove.

DRIVE OUT



DRIVE IN



To install the shaft into the new gear, insert the smooth end of the shaft through flat side of the gear and drive through until flush. DO NOT attempt to drive the splined end in first. It may not go straight and the gear will wobble.

STOCK GEARS

PINION	RATIO
9T	13.99-1
10T	12.60-1
11T	11.45-1
12T	10.50-1
13T	9.69-1
14T	9.00-1
15T	8.40-1
16T	7.86-1
17T	7.41-1
18T	6.99-1
19T	6.63-1
20T	6.30-1

OVERDRIVE GEARS

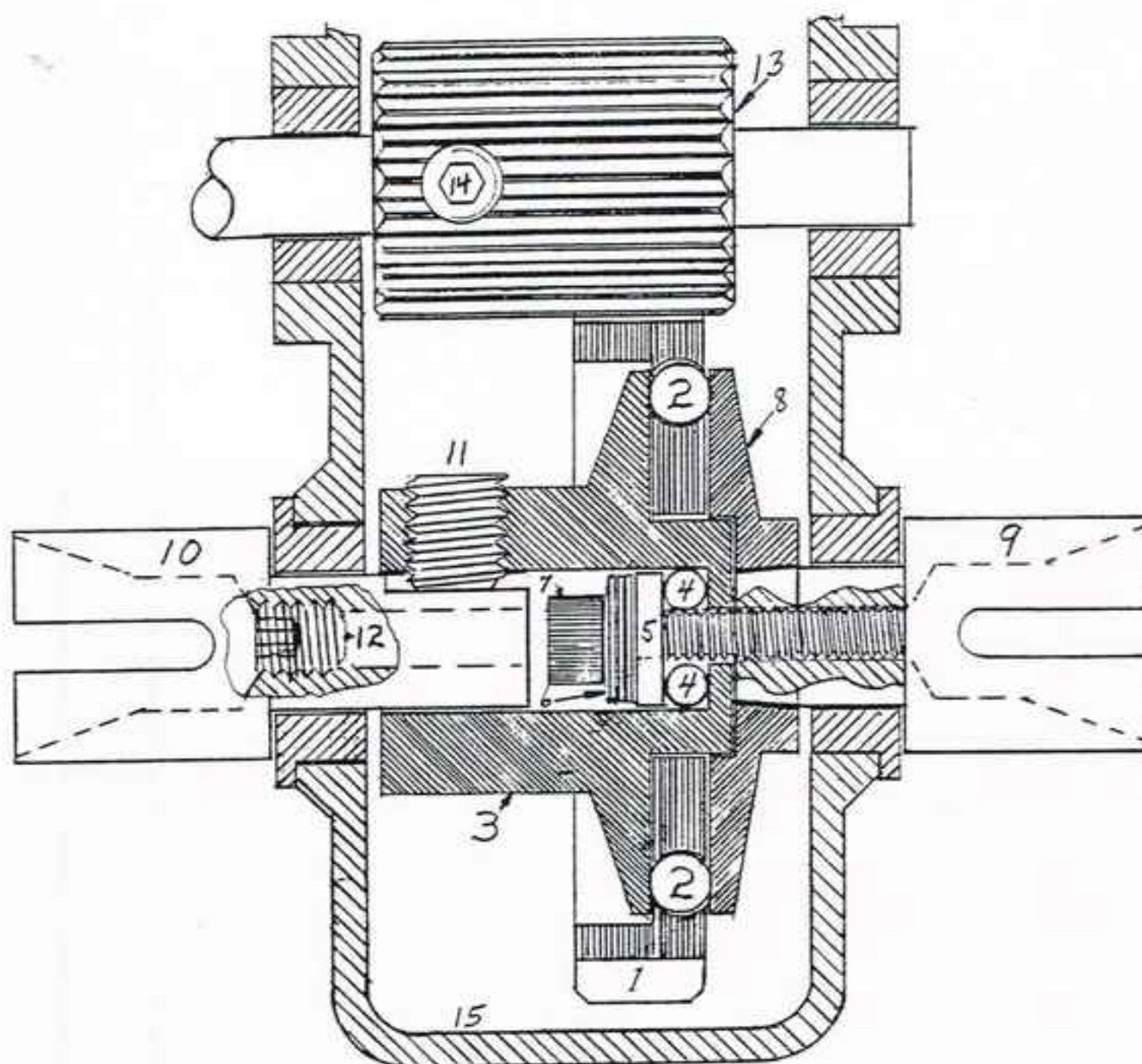
PINION	RATIO
9T	12.31-1
10T	11.08-1
11T	10.08-1
12T	9.23-1
13T	8.52-1
14T	7.91-1
15T	7.39-1
16T	6.93-1
17T	6.52-1
18T	6.15-1
19T	5.83-1
20T	5.54-1

UNDERDRIVE GEARS

PINION	RATIO
9T	14.66-1
10T	13.20-1
11T	12.00-1
12T	10.99-1
13T	10.15-1
14T	9.42-1
15T	8.79-1
16T	8.25-1
17T	7.76-1
18T	7.33-1
19T	6.94-1
20T	6.60-1

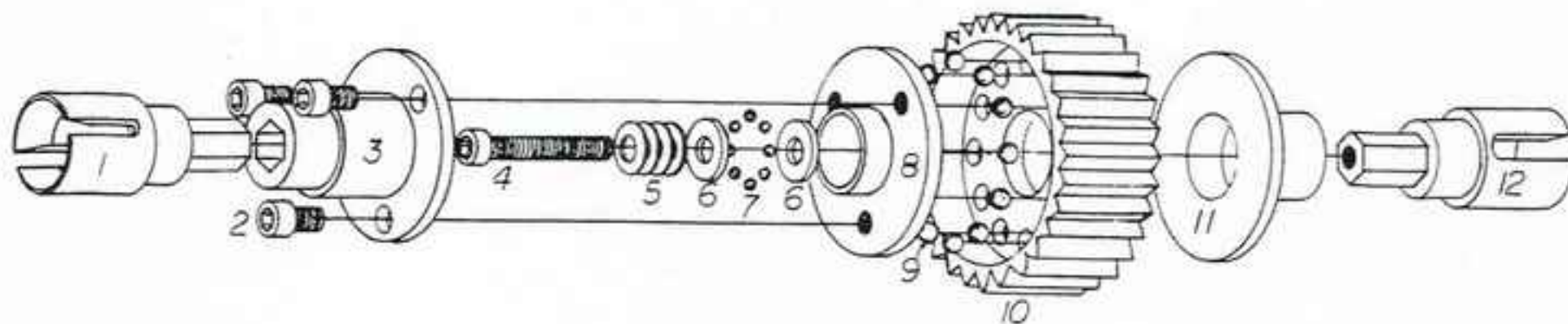
THORP DIFFERENTIAL for COX SCORPION

off road buggy



ITEM	PART NO.	DISCRIPTION	PRICE
	4630	DIFFERENTIAL with MATCHING PINION GEAR.....	\$ 60.00 ea.
1	4640	MAIN GEAR.....	\$ 12.00 ea.
2	4444///	3/32" SREEL BALLS.....12 per pkg.....	\$ 1.00 pkg.
3	4641 //	R.H. PRESSURE DISC & THRUST BEARING HOUSING	\$ 12.00 ea.
4	4441 H//	1/16" STEEL BALLS.....10 per pkg:.....	\$ 1.00 pkg.
5	4440 ///	THRUST BEARING WASHERS.....	\$ 1.50 ea.
6	4439///	SPRING WASHERS.....6 per pkg.....	\$ 1.00 pkg.
7	4642 /	ADJUSTING SCREW.....4 per pkg.....	\$ 1.25 pkg.
8	4643 /	L.H. PRESSURE DISC.....	\$ 8.00 ea.
9	4644 /	L.H. UNIVERSAL.....	\$ 8.00 ea.
10	4645 /	R.H. UNIVERSAL.....	\$ 8.00 ea.
11	4646 ///	8-32 X 3/16" SET SCREW.....5 per pkg.....	\$ 1.25 pkg.
12	4647//	4-40 X 1/8" SET SCREW.....6 per pkg.....	\$ 1.00 pkg.
13	4648f	PINION GEAR.....	\$ 7.00 ea.
14	4649/	6-32 X 1/8" SET SCREW.....6 per pkg.....	\$ 1.00 ea.
	4655/	PINION & GEAR SET FOR STOCK CLASS.....	\$ 27.00 set
	4656 //	SPUR GEAR FOR STOCK CLASS.(use with 4648)..	\$ 20.00 ea.

REAR DIFFERENTIAL FOR THE AVANTE VANQUISH



ITEM	PART NO.	DISCRIPTION	PRICE
	4950	REAR DIFFERENTIAL.....	\$ 50.00
1	4951	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4437	2-56X1/8" SOCKET CAP SCREW.....3 per pkg..	\$ 1.00 pkg.
3	4952	L.H. DIFF AXLE.....	\$ 7.00 ea.
4	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
5	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
6	4440	THRUST WASHTER.....2 per pkg..	\$ 3.00 p
7	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
8	4904	L.H. PRESSURE DISC.....	\$ 10.00 ea.
9	4444	3/32" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	4905	GEAR.....	\$ 8.00 ea.
11	4906	R.H. PRESSURE DISC.....	\$ 6.00 ea.
12	4957	R.H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

To install your differential into the gear case use the following steps: (1) Pull out the L.H. universal. (2) While holding the assembly together, loosen the adjusting screw until you can remove the R.H. universal. DO NOT remove the adjusting screw from the assembly. (3) Install the 8X14 MM bearings onto the ends of the assembly and insert the assembly into the case. (4) Insert the R.H. universal into the assembly and tighten the adjusting screw until you feel it stop suddenly. DO NOT FORCE IT. After it stops, back it up slightly, (about 1/8 turn or less) DO NOT OVER TIGHTEN. Over tightening may damage your differential. (5) Insert the L.H. universal and assembly is complete.

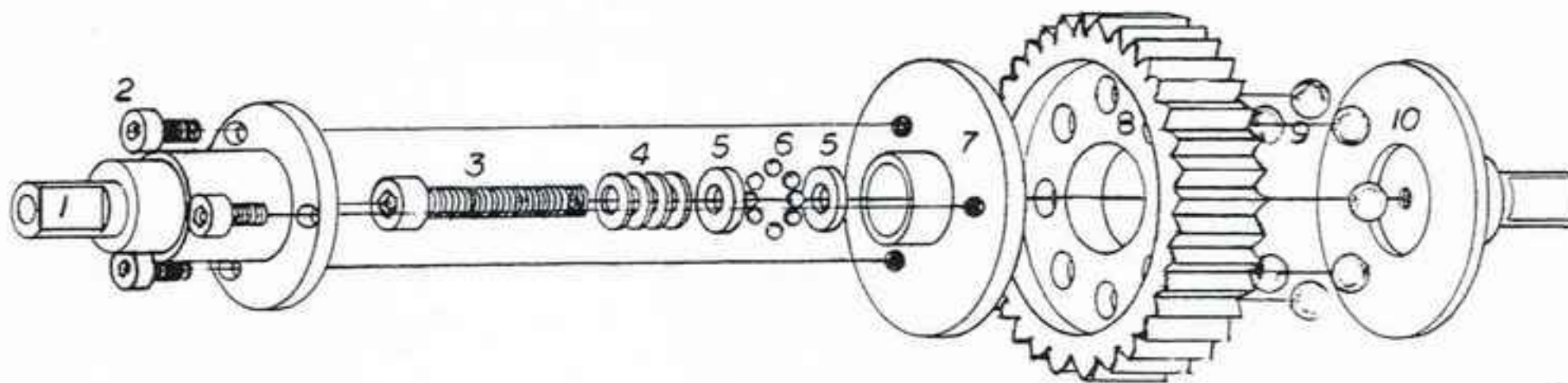
PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END, UNIT H, POMONA, CA. 91766

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REV 10/89

THORP DIFFERENTIAL for the ULTIMA



ITEM	PART NO.	DISCRIPTION	PRICE
	4660	DIFFERENTIAL.....	\$ 50.00 ea.
1	4661	L.H. HALF AXLE.....	\$ 12.00 ea.
2	4437	2-56X1/8" SOCKET CAP SCREW.....3 per pkg..	\$ 1.00 ea.
3	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
4	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
5	4440	THRUST WASHER.....2 per pkg..	\$ 3.00 pkg.
6	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
7	4662	PRESSURE DISC.....	\$ 10.00 ea.
8	4663	GEAR.....	\$ 8.00 ea.
9	4505	1/8" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	4664	R.H. PRESSURE DISC & HALF AXLE.....	\$ 12.00 pkg.

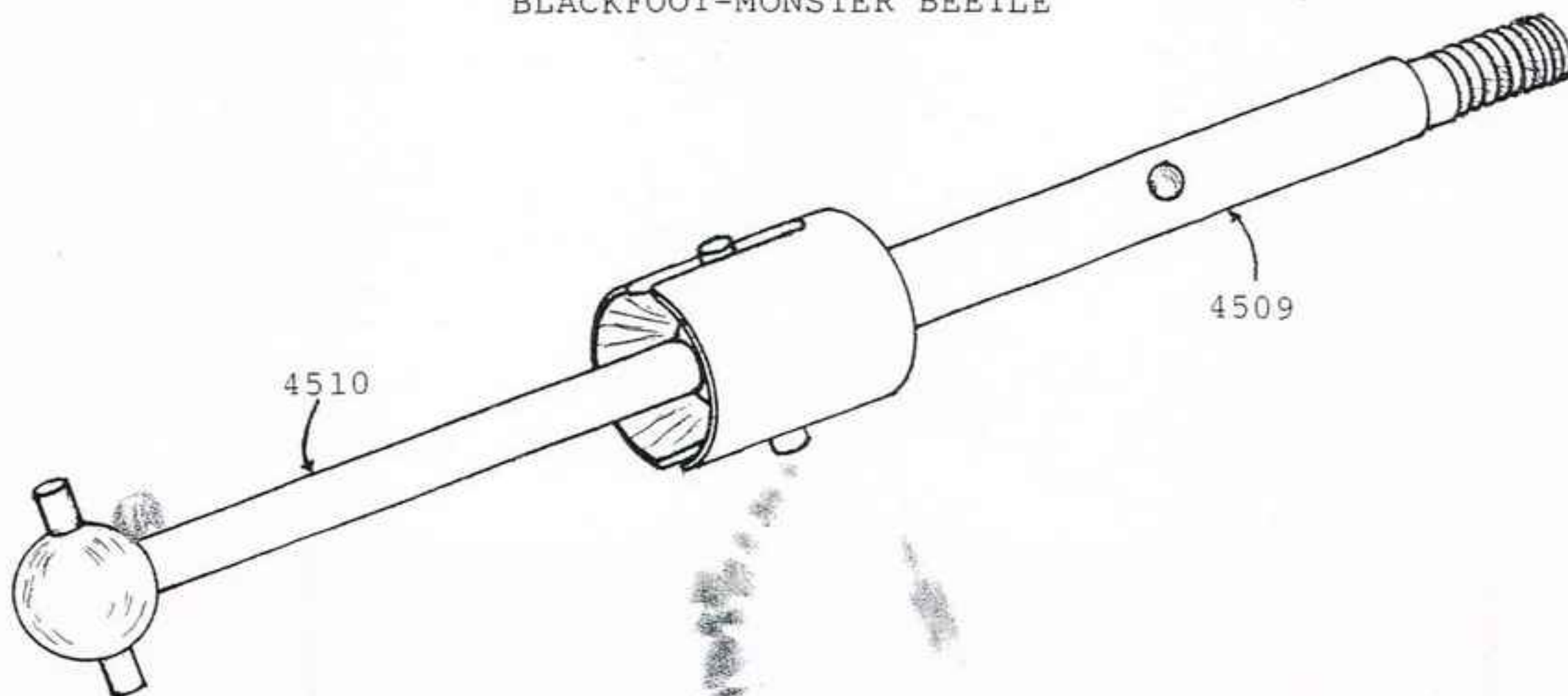
INSTRUCTIONS

This differential is designed to fit in place of the stock differential without any other modification. It has been adjusted to a medium pressure. This should be sufficient. However, if slippage occurs, increase pressure by inserting a 5/64" hex key through the L.H. half axle and turn the adjusting screw slightly clockwise. DO NOT OVER TIGHTEN. Excess pressure can damage the bearing races.

If your differential gets completely out of adjustment, or when after rebuilding, screw the adjusting screw all the way in until it stops. Do not force it. Back the screw out about one flat on your hex key for an approximate adjustment.

4670	ULTIMA-OPTIMA OVERDRIVE GEAR SET-Includes part numbers 4734 and 4671. (Use for stock oval racing)	\$ 20.00 ea.
4734	CENTER GEAR - 20T pinion attached to the center of a 44T nylon spur gear (Matches with #4671).....	\$ 12.00 ea.
4671	26T COUNTER GEAR (Matches with #4734).....	\$ 8.00 ea.
4672	ULTIMA-OPTIMA UNDERDRIVE GEAR SET-Includes part numbers 4741 and 4673 (Use for modified motors).....	\$ 20.00 ea.
4741	CENTER GEAR - 18T steel pinion attached to the center of a 44T nylon spur gear. (Matches with #4673).....	\$ 12.00 ea.
4673	28T COUNTER GEAR (Matches with #4741).....	\$ 8.00 ea.
4738	FINAL PINION GEAR - steel.....	\$ 8.00 ea.
4665	ULTIMA-OPTIMA UNIVERSAL.....	\$ 8.00 pr.

DOG BONES AND REAR AXLES FOR THE FROG
BLACKFOOT-MONSTER BEETLE

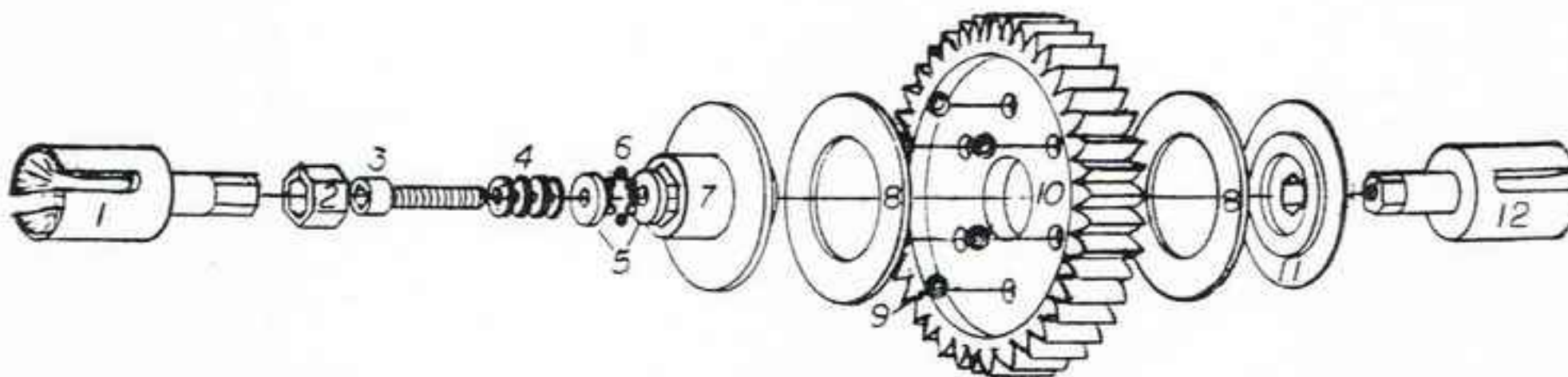


These dog bones and axles may be used on the TAMIYA FROG-SUBARU BRAT-BLACKFOOT-MONSTER BEETLE in conjunction with the THORP ball differential for the HOTSHOT. The stock HOTSHOT differential may also be used in the FROG with these parts.

If you already have a THORP #4500 ball differential in your car, it will only be necessary to buy the THORP HOTSHOT universals (part numbers 4551 and 4552) to use these parts.

PART NO.	DISCRIPTION	PRICE
4509	REAR AXLES including 8-32 NUTS.....	\$ 12.00 pr.
4510	DOG BONES.....	\$ 11.00 pr.
4550	DIFFERENTIAL.....	\$ 50.00 ea.
4551	L.H. UNIVERSAL.....	\$ 6.50 ea.
4552	R.H. UNIVERSAL.....	\$ 7.00 ea.
4707	8-32 NYLON LOCK NUTS.....6 per pkg.	\$ 1.00 pkg.
4520	COUNTER GEAR (must be used with THORP diff.) can not be used with stock Tamiya diff.....	\$ 12.00 ea.
4521	10 tooth extra long motor pinion.....	\$ 7.00 ea.
4522	11 tooth extra long motor pinion.....	\$ 7.00 ea.
4523	12 tooth extra long motor pinion.....	\$ 7.00 ea.
4524	13 tooth extra long motor pinion.....	\$ 7.00 ea.
4525	14 tooth extra long motor pinion.....	\$ 7.00 ea.
4526	15 tooth extra long motor pinion.....	\$ 7.00 ea.
4527	16 tooth extra long motor pinion.....	\$ 7.00 ea.
4530	OVERDRIVE COUNTER GEAR (must be used with THORP diff, can not be used with stock Tamiya)	\$ 12.00 ea.

THORP DIFFERENTIAL for the RAIDER



ITEM	PART NO.	DISCRIPTION	PRICE
	5200	DIFFERENTIAL.....	\$ 50.00 ea.
1	5201	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4502	HEX BUSHING.....	\$ 5.00 ea.
3	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
4	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
5	4440	THRUST BEARING WASHER.....2 per pkg..	\$ 3.00 pkg.
6	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
7	4503	L.H. PRESSURE DISC & THRUST BEARING HOUSING....	\$ 10.00 ea.
8	4504	DRIVE WASHER.....	\$ 1.50 ea.
9	4505	1/8" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	5202	GEAR.....	\$ 4.50 ea.
11	5203	R.H. PRESSURE DISC.....	\$ 7.00 ea.
12	5204	R.H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

THESE DIFFERENTIALS ARE DESIGNED FOR OFF ROAD USE. WHEN RUNNING ON ASPHALT OR CARPET SOME SLIPPAGE MAY OCCUR UNDER ACCELERATION.

It will be necessary to partially disassemble your differential to install the ball bearings onto the axles. Remove the LH universal and the hex bushing (items 1&2) from the left hand pressure disc. Unscrew the adjusting screw (item 3) from the right hand universal (item 12). Do not remove the screw from the housing. While holding the assembly together, remove the universal from the RH pressure disc. After installing the bearing onto the RH universal, reassemble. ADJUSTING THE SCREW TO THE PROPER TENSION: As the screw nears the bottom you will notice a little more resistance as the head of the screw contacts the spring washers. Continue turning the screw very carefully until you suddenly feel added resistance. Back the screw out slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Over tightening may damage your differential.

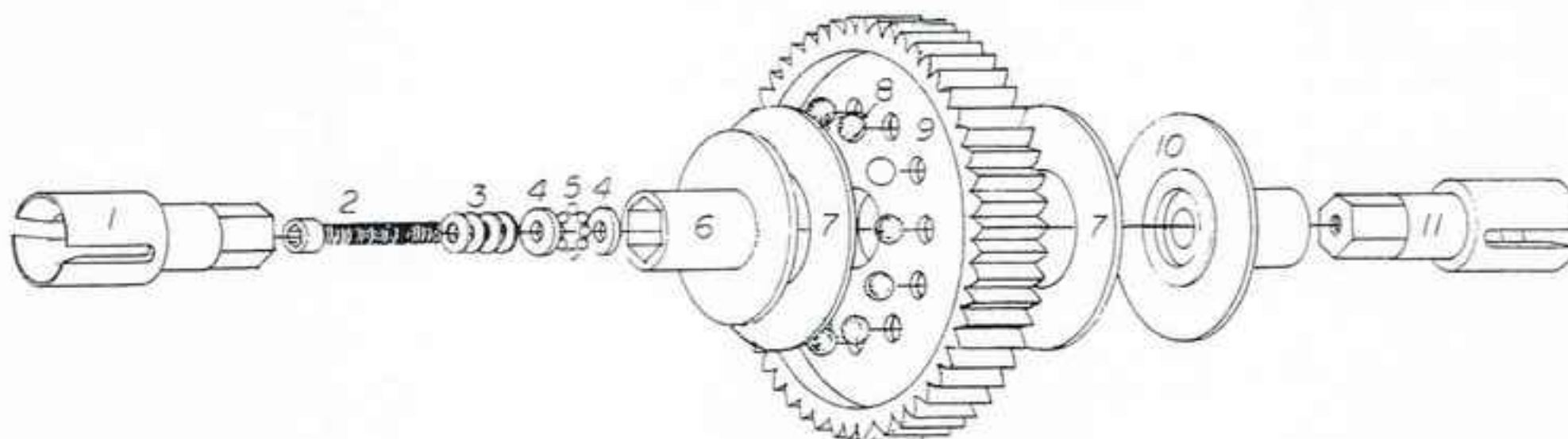
PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END UNIT H, POMONA, CA. 91766

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THORP DIFFERENTIAL for the BIG BRUTE DOUBLE DARE — HIGH RIDER CORVETTE — BIG BOSS

MUST BE USED WITH THE THORP DOG BONES & AXLES



ITEM	PART NO.	DISCRIPTION	PRICE
	4800	DIFFERENTIAL.....	\$ 50.00 ea.
1	4801	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4582	ADJUSTING SCREW.....2 per pkg.....	\$ 2.25 pkg.
3	4439	SPRING WASHERS.....6 per pkg.....	\$ 1.50 pkg.
4	4440	THRUST BEARING WASHER.....2 per pkg.....	\$ 3.00 pkg.
5	4441	1/16" STEEL BALLS.....10 per pkg.....	\$ 1.00 pkg.
6	4802	L.H. PRESSURE DISC.....	\$ 10.00 ea.
7	4504	DRIVE WASHER.....2 per pkg.....	\$ 1.50 pr.
8	4505	1/8" STEEL BALLS.....12 per pkg.....	\$ 1.00 pkg.
9	4803	52 TOOTH GEAR.....	\$ 7.50 ea.
10	4804	R.H. PRESSURE DISC.....	\$ 7.00 ea.
11	4805	R. H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

THESE DIFFERENTIALS ARE DESIGNED FOR OFF ROAD USE. WHEN RUNNING ON ASPHALT OR CARPET SOME SLIPPAGE MAY OCCUR UNDER ACCELERATION.

Your differential has been pre-assembled to make sure it is working properly. However, it will be necessary to partially disassemble it in order to install the differential into the car.

Step 1. Remove the L.H. universal (1) to gain access to the adjusting screw.

Step 2. Unscrew the adjusting screw (2) from the R.H. universal (11) while HOLDING everything together.

Step 3. Remove the R.H. universal and insert through the bearing which should be in place in the gear box.

Step 4. Re-assemble the differential onto the R.H. universal and tighten the adjusting screw until it stops suddenly. Then back the screw up very slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Over tightening may damage your differential.

Step 5. Assemble the gear case and insert the L.H. universal through the L.H. side of the gear case into the L.H. pressure disc.

PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

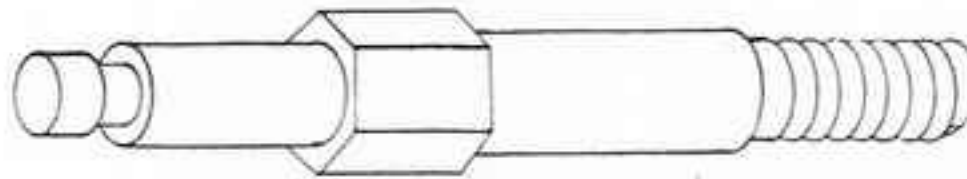
THORP MFG. INC. 380 SOUTH EAST END, UNIT H, POMONA, CA. 91766

(714)622-6518

HIGH PERFORMANCE ACCESSORIES

RC 10

4700 4 3/4" ALUMINUM WING..... \$10.00 ea.



4705 FRONT STUB AXLES - heavy duty 8-32 thread..... \$ 7.00 pr.
 4706 STUB AXLE WASHERS.....6 per pkg..... \$ 1.25 pkg.
 4707 8-32 LOCK NUTS.....6 per pkg..... \$ 1.00 pkg.

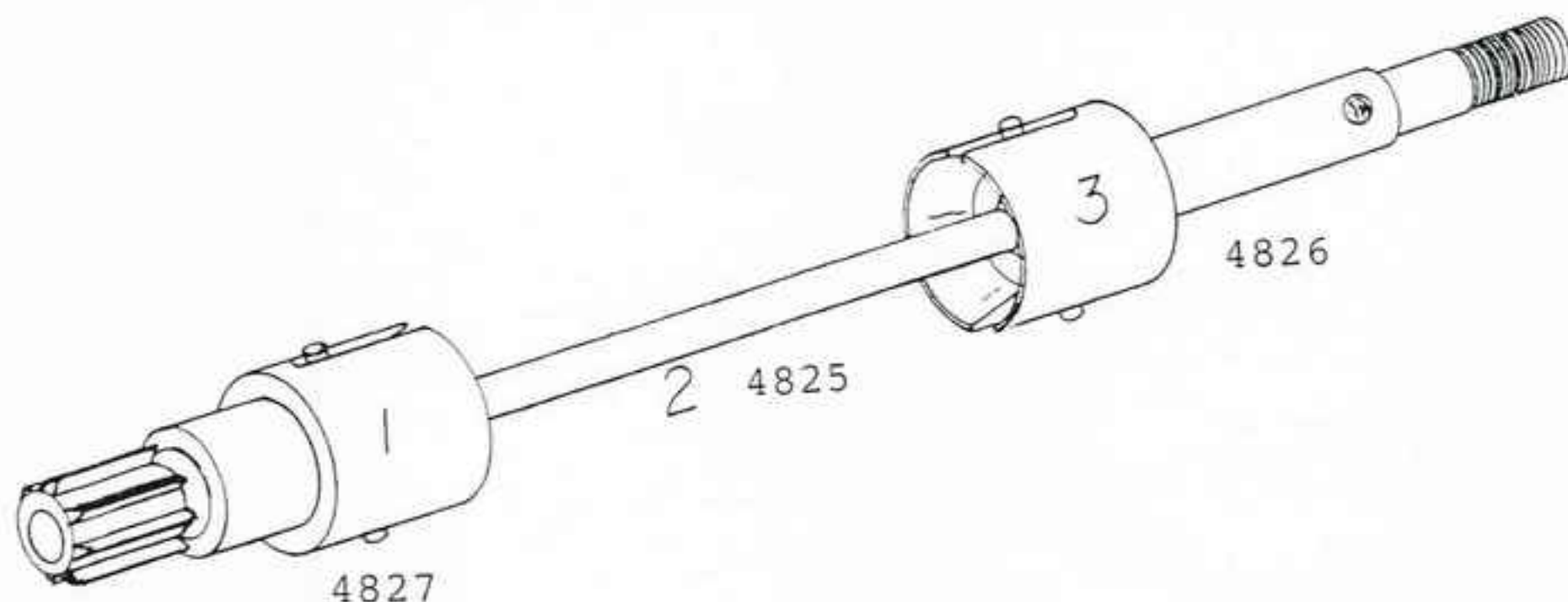


4710 TURNBUCKLE LINKAGE KIT - Right and left hand threads. No need to remove rod ends for adjustment. Includes front upper link, rear upper link, steering tie rods, and adjusting wrench..... \$12.00 kit.
 4711 FRONT UPPER LINK..... \$ 4.00 pr.
 4712 REAR UPPER LINK..... \$ 4.00 pr.
 4713 STEERING TIE RODS..... \$ 5.00 pr.
 4714 ADJUSTING WRENCH..... \$ 1.00 ea.

OPTIMA

4730 TURNBUCKLE LINKAGE KIT - Includes 4 camber adjusters, 2 steering linkages, and wrench..... \$ 12.00 kit
 4731F FRONT CAMBER ADJUSTER - 1 1/4 inch long..... \$ 4.00 pr.
 4731R REAR CAMBER ADJUSTER - 1 inch long..... \$ 4.00 pr.
 4732 STEERING LINKAGE..... \$ 5.00 pr.
 4714 ADJUSTING WRENCH..... \$ 1.00 ea.
 4670 OPTIMA-ULTIMA OVERDRIVE GEAR SET- Includes part numbers 4734 & 4671 (Use for stock oval racing).. \$ 20.00 set
 4734 CENTER GEAR - 20T steel pinion attached to the center of a 44T spur gear. Used with #4735..... \$ 12.00 ea.
 4671 COUNTER GEAR. 26T Used with #4734..... \$ 8.00 ea.
 4738 FINAL PINION GEAR - steel..... \$ 8.00 ea.
 4646 8-32x3/16" set screws.....5 per pkg..... \$ 1.25 pkg.
 4672 OPTIMA-ULTIMA UNDERDRIVE GEAR SET- Includes part numbers 4741 and 4673 (Use for modified motors).. \$ 20.00 ea.
 4741 CENTER GEAR - 18T steel pinion gear attached to the center of a 44T spur gear. Used with #4742... \$ 12.00 ea.
 4673 COUNTER GEAR - 28T Used with #4741..... \$ 8.00 ea.
 4674 OPTIMA COUNTER SHAFT..... \$ 5.00 ea.

DOG BONES AND REAR AXLES FOR THE BIG BRUTE
DOUBLE DARE-HIGH RIDER CORVETTE



These dog bones #4825 and axles #4826 MUST be used with the THORP differential on the KYOSHO BIG BRUTE-DOUBLE DARE-HIGH RIDER CORVETTE.

If you have a stock differential it will only be necessary to buy the THORP universals part number 4827 to use these parts.

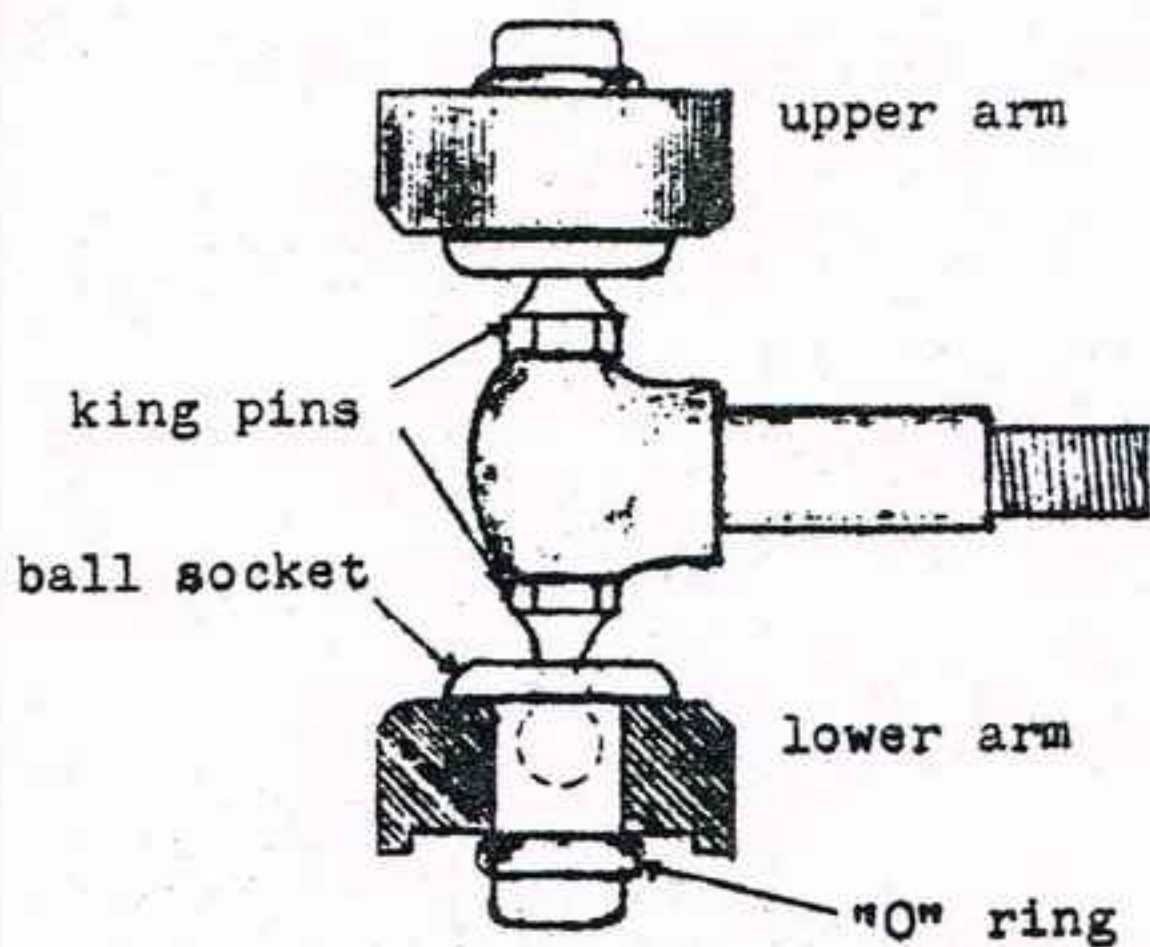
PART NO.	DISCRIPTION	PRICE
4827	UNIVERSAL (to be used with STOCK DIFF ONLY).....	\$ 12.00 pr.
4801	L.H. UNIVERSAL (to be used with THORP diff).....	\$ 6 50 ea.
4805	R.H. UNIVERSAL (to be used with THORP diff).....	\$ 7.00 ea.
4825	DOG BONES.....	\$ 11.00 pr.
4826	AXLES.....	\$ 12.00 pr.
4830	COMPLETE DOG BONE AND AXLE KIT for stock differential includes 4825, 4826, 4827.....	\$ 35.00 set.
4820	COUNTER GEAR (fits THORP or stock diff).....	\$ 12.00 ea.
4821	IDLE GEAR (fits THORP or stock diff).....	\$ 12.00 ea.
4835	HUB AND AXLE SET (heavy duty).....	\$ 25.00 set.
4836	HUB (aluminum).....	\$ 14.00 pr.
4837	AXLE (heavy duty).....	\$ 11.00 pr.

PART #4449

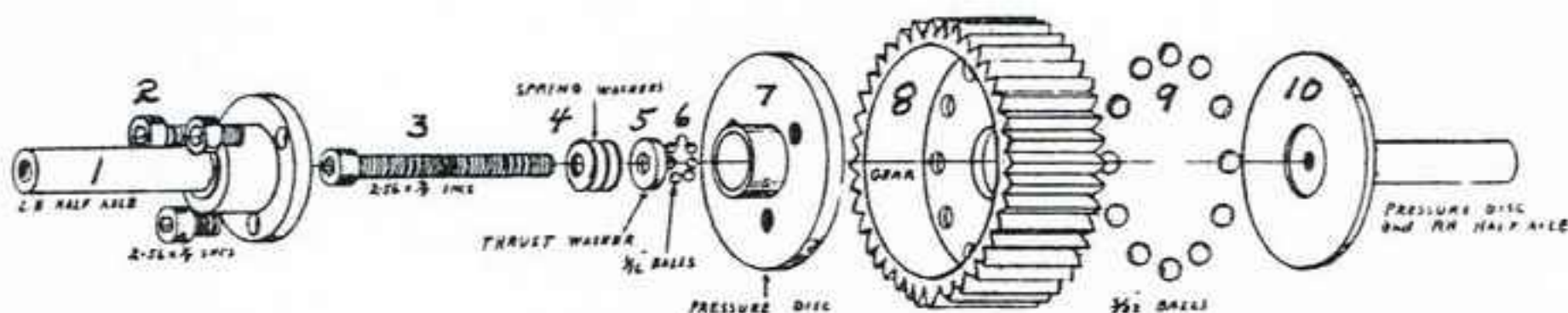
\$ 4.00 Set of 4

KING PIN BALL SOCKETS

IMPORTANT: You must snap ball sockets onto king pins BEFORE inserting into swing arms. After inserting sockets into swing arms install an "O" ring into groove to hold into place.



THORP DIFFERENTIAL for TAMIYA off road BUGGIES



ITEMS	PART #	DISCRIPTION	PRICE
	4435 /	Differential for Tamiya Off Road Buggies	\$50.00 ea.
1	4436 /	L.H. half axle	\$12.00 ea.
2	4437	2-56x1/8" socket cap screws 3 per pkg.	\$ 1.00 pkg.
3	4438	2-56x7/8" socket cap screws 3 per pkg.	\$ 1.00 pkg.
4	4439 / / / /	Spring washers 6 per pkg.	\$ 1.00 pkg.
5	4440 /	Thrust washer	\$ 1.50 ea.
6	4441 / / / /	1/16" steels balls 10 per pkg.	\$ 1.00 pkg.
7	4442 /	Pressure disc	\$10.00 ea.
8	4443	Gear	\$12.00 ea.
9	4444 / / / /	3/32" steel balls 12 per pkg.	\$ 1.00 pkg.
10	4445 /	Pressure disc & R.H. half axle	\$12.00 ea.

INSTRUCTIONS

This differential is designed to fit right in place of the stock final gear without any other modification. It has been adjusted to a medium pressure. This should be sufficient. However, if slippage occurs increase tension by inserting a 5/64" key through the L.H. half axle and turn the pressure screw slightly clockwise. DO NOT OVER TIGHTEN. Excess pressure can damage the bearing races.

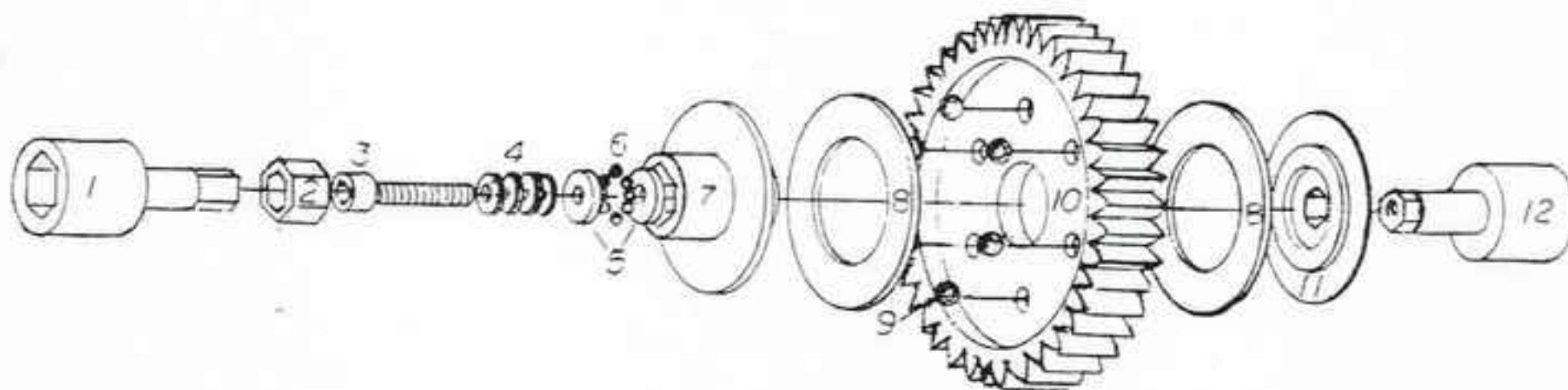
THORP MFG.

380 SOUTH EAST END, UNIT H

POMONA, CA. 91766

(714) 622-6518

THORP DIFFERENTIAL for the FROG-SUBARU BRAT-BLACKFOOT-MONSTER BEETLE



ITEM	PART NO.	DISCRIPTION	PRICE
	4500	DIFFERENTIAL.....	\$ 50.00
1	4501	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4502	HEX BUSHING.....	\$ 5.00 ea.
3	-4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
4	-4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
5	-4440	THRUST BEARING WASHER.....2 per pkg..	\$ 3.00 pkg.
6	-4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
7	4503	L.H. PRESSURE DISC & THRUST BEARING HOUSING....	\$ 10.00 ea.
8	4504	DRIVE WASHER.....	\$ 1.50 ea.
9	4505	1/8" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	4506	GEAR.....	\$ 4.50 ea.
11	4507	R.H. PRESSURE DISC.....	\$ 7.00 ea.
12	4508	R.H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

It will be necessary to partially disassemble your differential to install the ball bearings onto the axles. Remove the LH universal and the hex bushing (items 1&2) from the left hand pressure disc. Unscrew the adjusting screw (item 5) from the right hand universal (item 12). Do not remove the screw from the housing. While holding the assembly together, remove the universal from the RH pressure disc. After installing the bearing onto the RH universal, reassemble. **ADJUSTING THE SCREW TO THE PROPER TENSION:** As the screw nears the bottom you will notice a little more resistance as the head of the screw contacts the spring washers. Continue turning the screw very carefully until you suddenly feel added resistance. Back the screw out slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Over tightening may damage your differential.

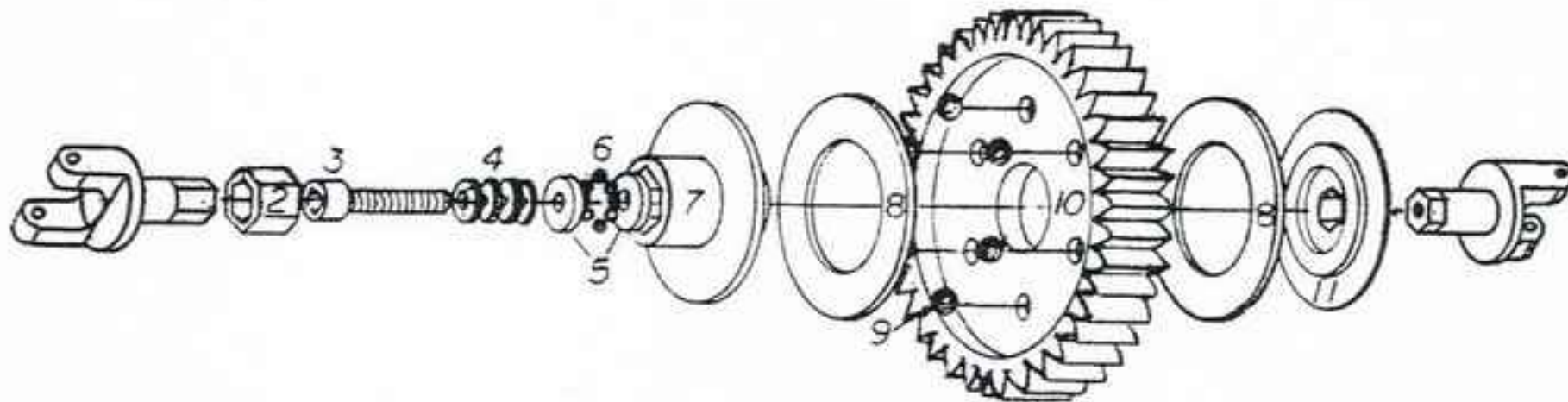
PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END, UNIT H, POMONA, CA. 91766

(714)622-6518

2/89/Don

THORP DIFFERENTIAL FOR THE BLACKFOOT-MONSTER BEETLE



ITEM	PART NO.	DISCRIPTION	PRICE
	2020	TELESCOPING DRIVE LINE DIFF KIT INCLUDES: (4540, 4512, 4520, 4536, 4538, 4539).....	\$105.00 ea.
	4540	DIFFERENTIAL (YOKE TYPE).....	\$ 50.00 ea.
1	4534	L.H. DRIVE YOKE.....	\$ 7.00 ea.
2	4502	HEX BUSHING.....	\$ 5.00 ea.
3	4582	ADJUSTING SCREW.....2 per pkg.....	\$ 2.25 pkg.
4	4439	SPRING WASHERS.....6 per pkg.....	\$ 1.50 pkg.
5	4440	THRUST BEARING WASHER.....2 per pkg.....	\$ 3.00 pkg.
6	4441	1/16" STEEL BALLS.....10 per pkg.....	\$ 1.00 pkg.
7	4503	L.H. PRESSURE DISC & THRUST BEARING HOUSING....	\$ 10.00 ea.
8	4504	DRIVE WASHER.....2 per pkg.....	\$ 1.50 pkg.
9	4505	1/8" STEEL BALLS.....12 per pkg.....	\$ 1.00 pkg.
10	4506	GEAR.....	\$ 4.50 ea.
11	4507	R.H. PRESSURE DISC.....	\$ 7.00 ea.
12	4535	R.H. DRIVE YOKE.....	\$ 7.50 ea.

INSTRUCTIONS

THESE DIFFERENTIALS ARE DESIGNED FOR OFF ROAD USE. WHEN RUNNING ON ASPHALT OR CARPET SOME SLIPPAGE MAY OCCUR UNDER ACCELERATION.

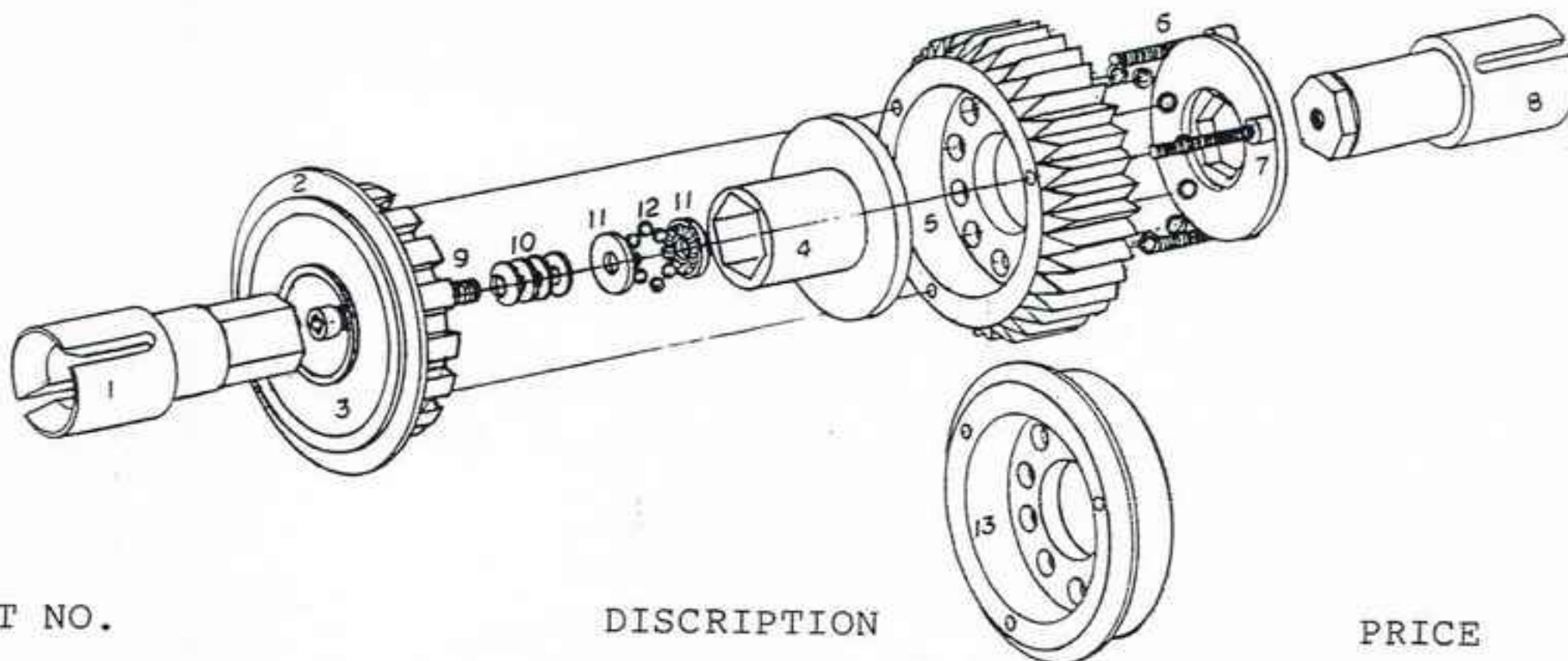
It will be necessary to partially disassemble your differential to install the ball bearings onto the axles. Remove the L.H. drive yoke and the hex bushing (items 1&2) from the left hand pressure disc. Unscrew the adjusting screw (item 3) from the right hand drive yoke (item 12). Do not remove the screw from the housing. While holding the assembly together, remove the RH drive yoke from the RH pressure disc. After installing the bearing onto the RH drive yoke , reassemble. ADJUSTING THE SCREW TO THE PROPER TENSION: As the screw nears to bottom you will notice a little more resistance as the head of the screw contacts the spring washers. Continue turning the screw very carefully until you suddenly feel it stop. Back the screw out slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Overtightening may damage your differential.

PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END AVE., UNIT H, POMONA, CA. 91766

(714) 622-6518

THORP DIFFERENTIAL for OPTIMA-MID SERIES



ITEM	PART NO.	DISCRIPTION	PRICE
	5000	FRONT DIFFERENTIAL.....	\$ 50.00 ea.
	5050	REAR DIFFERENTIAL.....	\$ 54.00 ea.
1	5001	L.H. UNIVERSAL.....	\$ 6.00 ea.
2	5002	RING.....	\$ 1.50 ea.
3	5003	PULLEY.....	\$ 6.00 ea.
4	5004	L.H. PRESSURE DISC.....	\$ 10.00 ea.
5	5005	GEAR (REAR DIFF ONLY).....	\$ 8.00 ea.
6	5006	080 SOCKET CAP SCREW.....3 per pkg.....	\$ 1.25 pkg.
7	5007	R.H. PRESSURE DISC.....	\$ 6.00 ea.
8	5008	R.H. UNIVERSAL.....	\$ 6.50 ea.
9	4582	ADJUSTING SCREW.....2 per pkg.....	\$ 2.25 pkg.
10	4439	SPRING WASHERS.....6 per pkg.....	\$ 1.50 pkg.
11	4440	THRUST WASHERS.....2 per pkg.....	\$ 3.00 pkg.
12	4441	1/16" STEEL BALLS.....10 per pkg.....	\$ 1.00 pkg.
13	5009	BALL HOUSING (FRONT DIFF ONLY).....	\$ 4.00 ea.
14	4444	3/32" STEEL BALLS.....12 per pkg.....	\$ 1.00 pkg.
	5020	COUNTER GEAR SET (OPTIMA MID SERIES).....	\$ 12.00 set.
	5021	OPTIMA MID TOP GEAR.....	\$ 7.00 ea.
	5022	OPTIMA MID COUNTER GEAR.....	\$ 5.00 ea.

INSTRUCTIONS

THESE DIFFERENTIALS ARE DESIGNED FOR OFF ROAD USE. WHEN RUNNING ON ASPHALT OR CARPET SOME SLIPPAGE MAY OCCUR UNDER ACCELERATION.

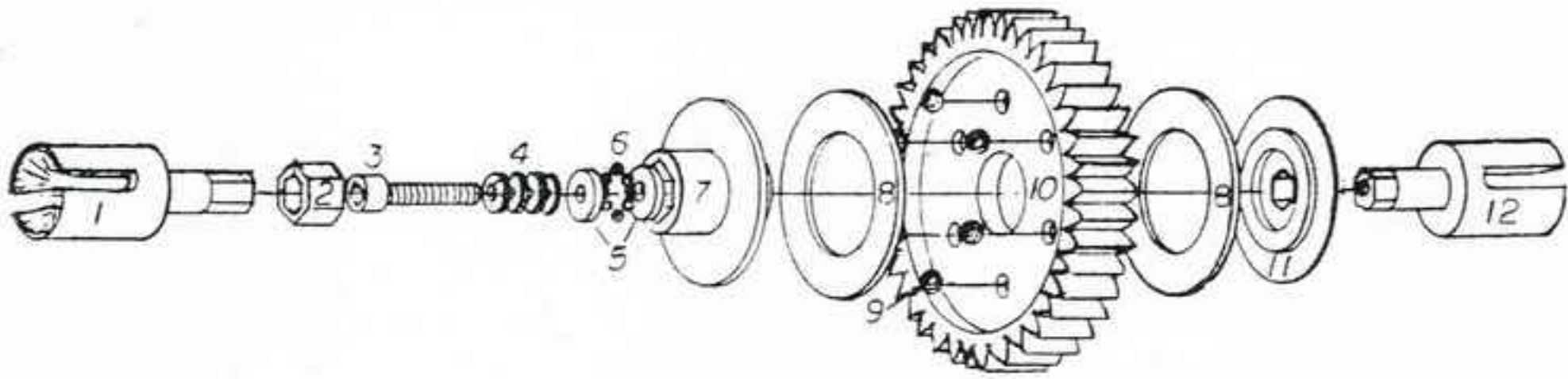
Your differential has been pre-assembled to make sure it is working properly. However, it will be necessary to partially disassemble it in order to install the differential into the car.

STEP 1. Remove the L.H. universal (1) to gain access to the adjusting screw. STEP 2. Unscrew the adjusting screw (9) from the R.H. universal (8) while HOLDING everything together. STEP 3 Remove R.H. universal and insert through the bearing. STEP 4 reassemble differential onto the R.H. universal and tighten the adjusting screw until it stops suddenly. Then back screw up very slightly , but no more than 1/8 turn. Any further adjustment can be made after you run the car. STEP 5 assemble the gear case and insert the L.H. universal through the L.H. side of the gear case into the L.H. pressure disc.

PLEASE NOTE: When replacing the 1/16" thrust ball DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END AVE. UNIT H, POMONA, CA. 91766

THORP DIFFERENTIAL for the BLACKFOOT- MONSTER BEETLE HOTSHOT-



ITEM	PART NO.	DISCRIPTION	PRICE
	2000	DIFF KIT INCLUDES (4550,4520,4510,4512,4513)...	\$ 93.00 ea.
	4550	DIFFERENTIAL.....	\$ 50.00 ea.
1	4551	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4502	HEX BUSHING.....	\$ 5.00 ea.
3	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
4	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
5	4440	THRUST BEARING WASHER.....2 per pkg..	\$ 3.00 pkg.
6	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
7	4503	L.H. PRESSURE DISC & THRUST BEARING HOUSING....	\$ 10.00 ea.
8	4504	DRIVE WASHER.....	\$ 1.50 ea.
9	4505	1/8" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	4506	GEAR.....	\$ 4.50 ea.
11	4507	R.H. PRESSURE DISC.....	\$ 7.00 ea.
12	4552	R.H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

THESE DIFFERENTIALS ARE DESIGNED FOR OFF ROAD USE. WHEN RUNNING ON ASPHALT OR CARPET SOME SLIPPAGE MAY OCCUR UNDER ACCELERATION.

It will be necessary to partially disassemble your differential to install the ball bearings onto the axles. Remove the LH universal and the hex bushing (items 1&2) from the left hand pressure disc. Unscrew the adjusting screw (item 3) from the right hand universal (item 12). Do not remove the screw from the housing. While holding the assembly together, remove the universal from the RH pressure disc. After installing the bearing onto the RH universal, reassemble. ADJUSTING THE SCREW TO THE PROPER TENSION: As the screw nears the bottom you will notice a little more resistance as the head of the screw contacts the spring washers. Continue turning the screw very carefully until you suddenly feel added resistance. Back the screw out slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Over tightening may damage your differential.

PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

THORP MFG. INC. 380 SOUTH EAST END AVE., UNIT H, POMONA, CA. 91766

(714)622-6518

4471	REAR AXLE - unbendable and nearly unbreakable high speed tool steel - for use with THORP rear hubs #4473	\$20.00 pr
4473	REAR HUBS - for HOLIDAY wheels - must use rear axle \$4471	\$ 8.00 pr.
2025	LUG SCREWS - 4-40x3/8" socket cap screws 6 per pkg.	\$ 1.00 pkg.
241	SET SCREWS - 10-32x1/4" for hubs	\$.60 pkg.
4490	WING - 4 3/4" aluminum	\$ 9.95 ea.
4491	WING MOUNTS	\$ 5.00 pr.

* NOT STANDARD DISCOUNT
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THORP manufacturing inc.

Superior products for the modeling industry!

380 SOUTH EAST END, UNIT H
POMONA, CA. 91766
(714) 622-6518

OCTOBER 1, 1989

OFF ROAD ACCESSORIES

4420	GEAR ADAPTER.....	\$ 7.00 ea.
2013	4-40 X 1/4 FH PHILLIPS MACHINE SCREWS..8 per pkg.	\$ 2.00 pkg.
4460	20 TOOTH MOTOR PINION - steel.....	\$ 7.00 ea.
4579	ADJUSTING SCREW KIT (fits all THORP diffs).....	\$ 1.50 ea.
3020	20 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3021	21 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3022	22 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3023	23 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3024	24 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3025	25 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3026	26 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3027	27 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3028	28 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3029	29 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.
3030	30 TOOTH 48P MOTOR PINION.....	\$ 5.50 ea.

TOOLS

* 4408	5.5 MM NUT DRIVER.....	\$ 4.00 ea.
* 4409	7 MM NUT DRIVER - fits TAMIYA SPINDLE NUTS.....	\$ 4.00 ea.
* 4410	1.5 MM HEX DRIVER - ground from high speed drill blanks and are guaranteed not to round off under normal usage. NOT GUARANTEED AGAINST BREAKAGE....	\$ 12.00 ea.
* 4413	2 MM HEX DRIVER - same as above.....	\$ 12.00 ea.
* 4411	2.5 MM HEX DRIVER - same as above.....	\$ 12.00 ea.
* 4412	2.5 MM BALL HEX DRIVER - same as above.....	\$ 13.00 ea.
* 4414	3 MM HEX DRIVER - same as above.....	\$ 13.00 ea.
* DB-2	.050" fits 4-40 set screws.....	\$ 12.00 ea.
* DB-4	1.16" fits 6-32 set screws	\$ 12.00 ea.
* DB-5	5/64 fits 8-32 set screws and 2/56 cap screws....	\$ 12.00 ea.
* DB-6	3/32" fits 10-32 set screws and 4-40 cap screws..	\$ 12.00 ea.
* DBB-6	3/32" BALL fits 10-32 set screws and 4-40 caps...	\$ 13.00 ea.
* DB-8	1/8" fits 1/4 set screws and 10-32 FH screws.....	\$ 13.00 ea.

* NOT STANDARD DISCOUNT

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THORP Manufacturing

RADIO CONTROL CAR PRODUCTS

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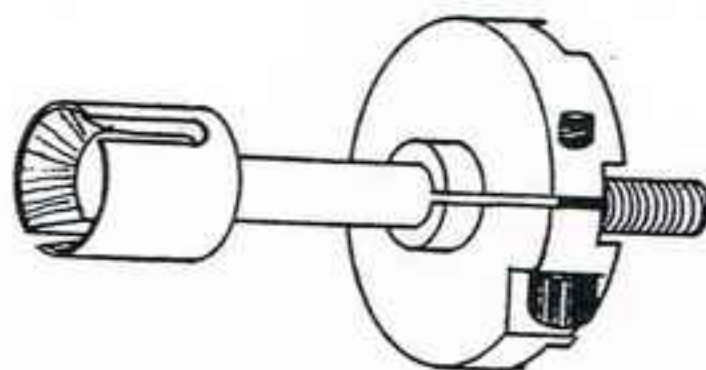
AUGUST 10, 1982

ACCESSORIES for TAMIYA OFF ROAD BUGGIES

4409	9/36" NUT DRIVER - fits TAMIYA spindle nuts	\$ 3.26 ea.
4410	1.5 MM HEX DRIVER - ground from high speed	\$11.00 ea.
	drill blanks and are guaranteed not to round off.	
4411	2.5 MM HEX DRIVER - same as above	\$11.00 ea.
4412	2.5 MM BALL HEX DRIVER - same as above	\$12.00 ea.
4415	SIDE RAILS - single	\$ 7.95 pr.
4416	SIDE RAILS - double	\$18.95 pr.
4420	GEAR ADAPTER	\$ 6.95 ea.
2013	4-40x $\frac{1}{4}$ " FH PHILLIPS MACHINE SCREWS 8 per pkg.	\$ 2.00 pkg.
4421	PINION GEAR - 12 tooth	\$ 3.00 ea.
4422	PINION GEAR - 13 tooth	\$ 3.00 ea.
4423	PINION GEAR - 14 tooth	\$ 3.00 ea.
4424	PINION GEAR - 15 tooth	\$ 3.00 ea.
4425	PINION GEAR - 16 tooth	\$ 3.00 ea.
4426	SPUR GEAR - 46 tooth	\$ 2.00 ea.
4427	SPUR GEAR - 48 tooth	\$ 2.00 ea.
4428	SPUR GEAR - 50 tooth	\$ 2.00 ea.
4435	DIFFERENTIAL - designed to fit right in place of the stock final gear without any other modification	\$50.00 ea.
4448	"O" RINGS - for king pin ball sockets 5 per pkg.	\$ 1.00
4449	KING PIN BALL SOCKETS 4 per pkg.	\$ 4.00 pkg.
4451	FRONT HUBS - to adapt THORP wheels - bored for standard TAMIYA bearings	\$ 8.00 pr.
4452	BALL BEARINGS - standard TAMIYA size 4 per pkg.	\$15.00 pkg.
4455	FRONT WHEEL KIT - includes 1" wide wheels mounted with .. smooth sponge - THORP hubs bored for TAMIYA bearings	\$21.50 kit
4461	FRONT WHEELS MOUNTED - with smooth sponge - THORP front hubs required #4451	\$13.50 pr.

BLACKFOOT-MONSTER BEETLE ACCESSORIES

2000 COMPLETE DRIVE TRAIN KIT INCLUDES.....
 DIFFERNETIAL # 4550, COUNTER GEAR # 4520,
 DOG BONES # 4510, BLACKFOOT HUBS # 4512, BLACK-
 FOOT AXLES # 4513..... \$ 93.00 ea.



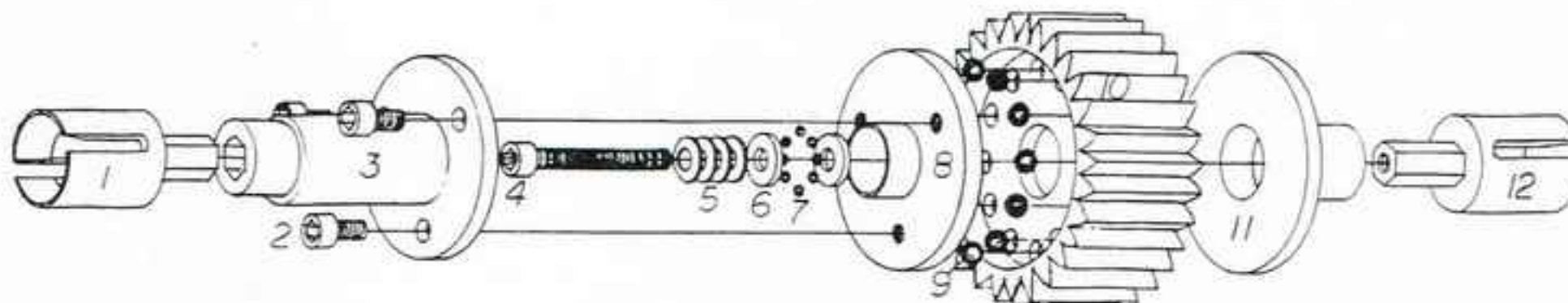
4511 HUB AND AXLE KIT..... \$ 25.00 set.
 4512 BLACKFOOT ALUMINUM HUB..... \$ 14.00 Pr.
 4513 BLACKFOOT AXLES..... \$ 11.00 pr.
 4520 COUNTER GEAR (must be used with the THORP diff) \$ 12.00 ea.
 4530 OVER DRIVE COUNTER GEAR (must be used with
 Thorp diff, can not be used with stock diff).. \$ 12.00 ea.

FALCON-FX10

4585 REAR AXLES- for use with 4570 dog bones..... \$ 12.00 pr.
 4570 DOG BONES..... \$ 11.00 pr.
 4571 UNIVERSALS for use with stock differential and
 part numbers 4585 and 4570..... \$ 13.00 pr.
 4572 COMPLETE DOG BONE AND AXLE KIT for stock
 differential. Includes 4585, 4570, and 4571.... \$ 35.00 set.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

FRONT DIFFERENTIAL FOR THE AVANTE VANQUISH



ITEM	PART NO.	DISCRIPTION	PRICE
	4900	FRONT DIFFERENTIAL.....	\$ 50.00
1	4901	L.H. UNIVERSAL.....	\$ 6.50 ea.
2	4437	2-56X1/8" SOCKET CAP SCREW.....3 per pkg..	\$ 1.00 pkg.
3	4902	L.H. DIFF AXLE.....	\$ 7.00 ea.
4	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
5	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
6	4440	THRUST WASHERS.....2 per pkg..	\$ 3.00 pkg.
7	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
8	4904	L.H. PRESSURE DISC.....	\$ 10.00 ea.
9	4444	3/32" STEEL BALLS.....12 per pkg..	\$ 1.00 pkg.
10	4905	GEAR.....	\$ 8.00 ea.
11	4906	R.H. PRESSURE DISC.....	\$ 6.00 ea.
12	4907	R.H. UNIVERSAL.....	\$ 7.00 ea.

INSTRUCTIONS

To install your differential into the gear case use the following steps:
 (1) Pull out the L.H. universal. (2) While holding the assembly together, loosen the adjusting screw until you can remove the R.H. universal. DO NOT remove the adjusting screw from the assembly. (3) Install the 8X14 MM bearings onto ends of the assembly and insert the assembly into the case. (4) Insert the R.H. universal into the assembly and tighten the adjusting screw until you feel it stop suddenly. DO NOT FORCE IT. After it stops, back it up slightly. (about 1/8 turn or less) DO NOT OVER TIGHTEN. Over tightening may damage your differential. (5) Insert the L.H. universal and assembly is complete.

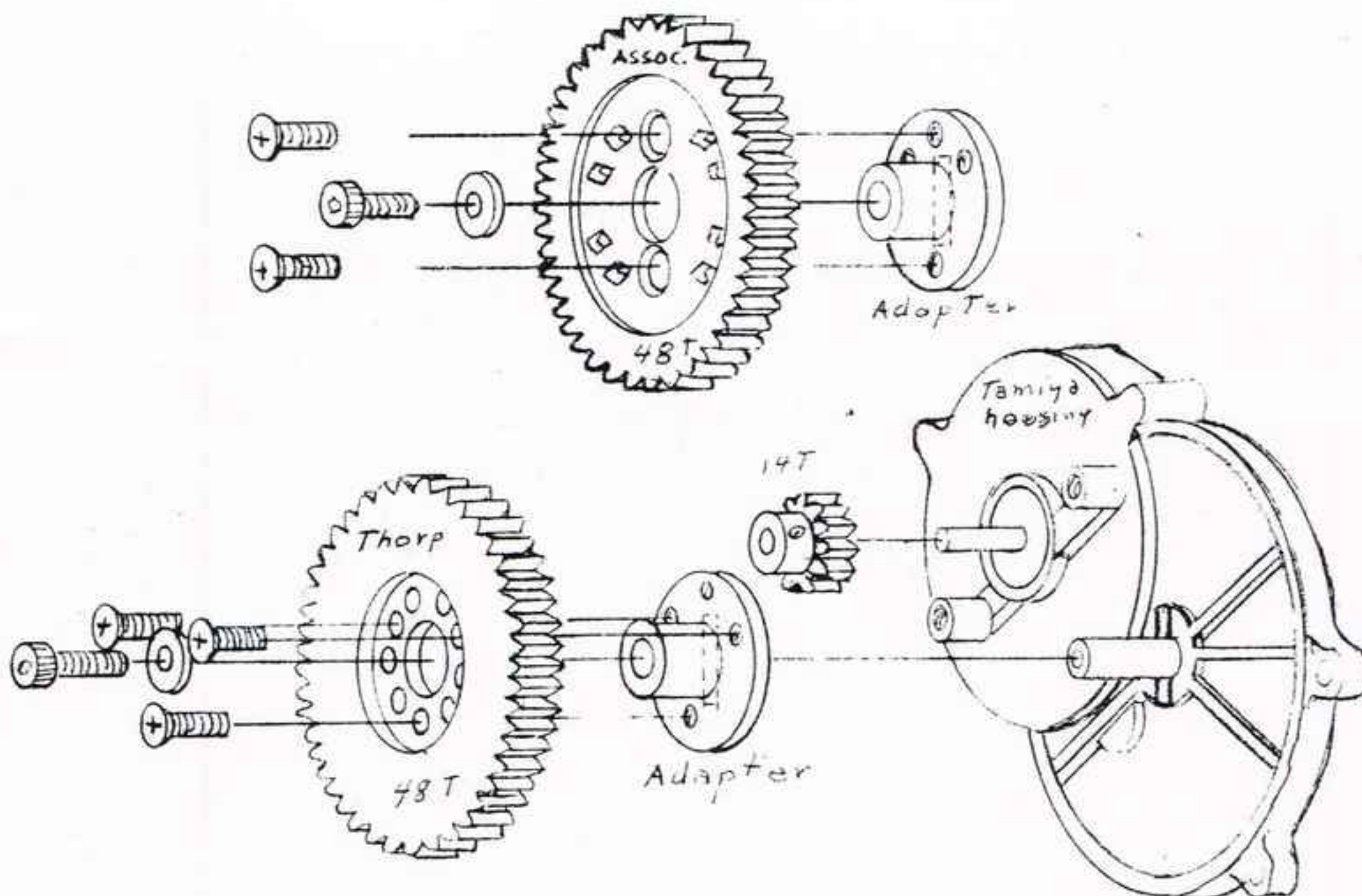
PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.

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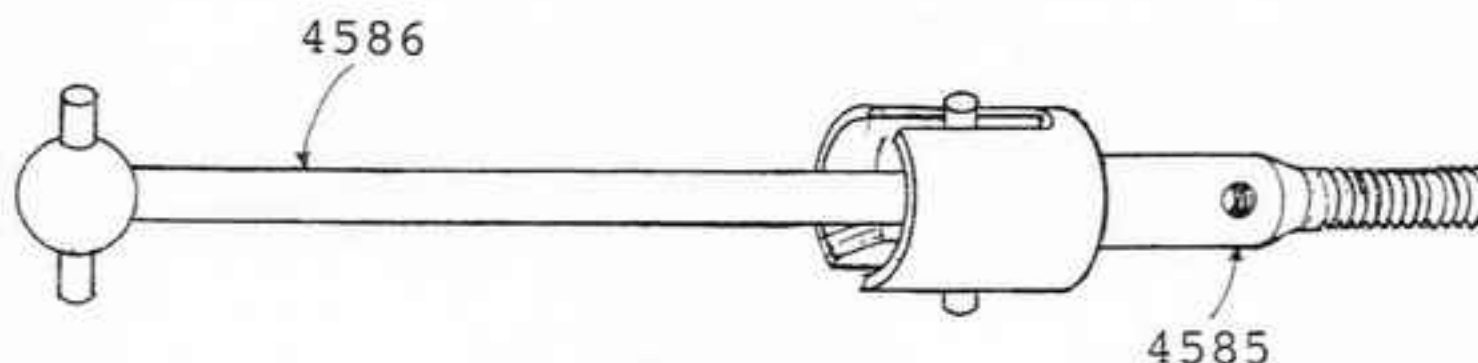
(714)622-6518

GEAR ADAPTER for TAMIYA OFF ROAD

4420	Gear adapter	\$6.95 ea.
2013	4-40x $\frac{1}{4}$ " FH Phillips machine screws ... 3 per pkg.	\$2.00 pkg.
4421	Pinion gear - 12 tooth	\$3.00 ea.
4422	Pinion gear - 13 tooth	\$3.00 ea.
4423	Pinion gear - 14 tooth	\$3.00 ea.
4424	Pinion gear - 15 tooth	\$3.00 ea.
4425	Pinion gear - 16 tooth	\$3.00 ea.
4426	Spur gear - 46 tooth	\$2.00 ea.
4427	Spur gear - 48 tooth	\$2.00 ea.
4428	Spur gear - 50 tooth	\$2.00 ea.



RATIO	PINION	SPUR	TYPE
5.75-1	16-T	46-T	Thorp
6.13-1	15-T	46-T	Thorp
6.40-1	15-T	48-T	Thorp
6.50-1	20-T	65-T	Stock
6.85-1	14-T	48-T	Thorp
7.7 -1	13-T	50-T	Thorp
8.33-1	12-T	50-T	Thorp
9.33-1	15-T	70-T	Stock

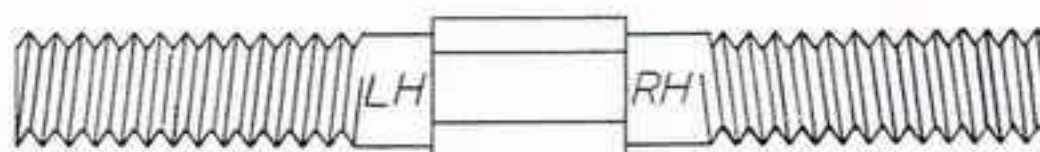


These dog bones and axles may be used on the TAMIYA Fox in conjunction with the THORP ball differential number 4581.

If you already have a THORP ball differential number 4580 in your FOX it will only be necessary to buy the THORP universals (part numbers 4551 and 4552) to convert your differential to the 4581 differential for use with these parts.

PART NO.	DISCRIPTION	PRICE
4585	REAR AXLES including 8-32 NUTS.....	\$ 12.00 pr.
4586	DOG BONES.....	\$ 11.00 pr.
4581	DIFFERENTIAL.....	\$ 50.00 ea.
4551	L.H. UNIVERSAL.....	\$ 6.50 ea.
4552	R.H. UNIVERSAL.....	\$ 7.00 ea.
4707	8-32 NYLON LOCK NUTS.....6 per pkg.	\$ 1.00 pkg.
4587	UNIVERSALS for use with stock differential and part nos. 4585 and 4586.....	\$ 13.00 pr.
4588	COMPLETE DOG BONE AND AXLE KIT for stock differential includes 4585,4586,and 4587.....	\$ 35.00 set.

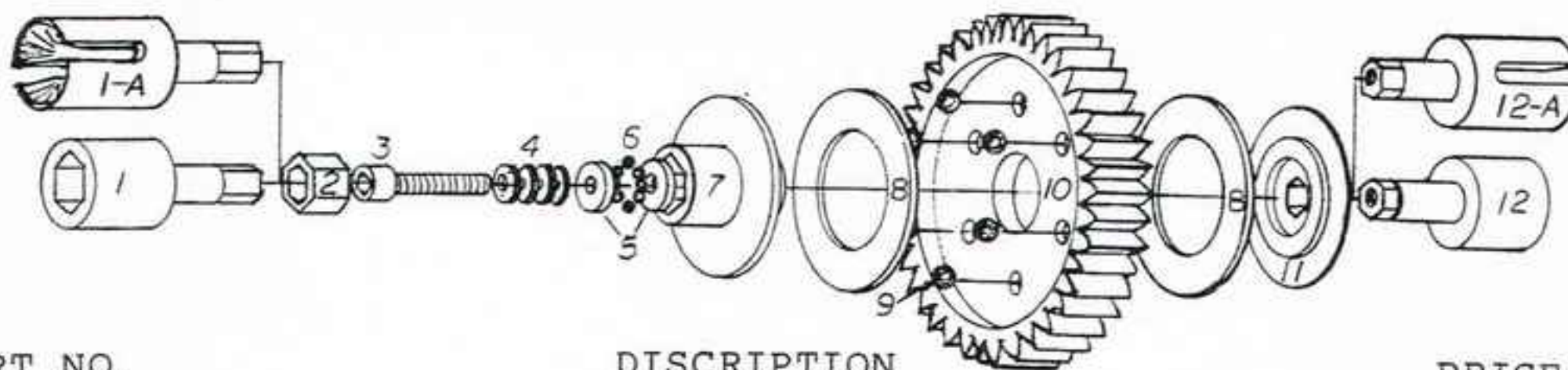
TURNBUCKLE STEERING LINKAGE



4590	RIGHT and LEFT HAND threaded rods for easy setting of toe-in without removing rod ends. INCLUDES: 2 rods and adjusting wrench.....	\$ 6.00 pkg.
4591	COUNTER GEAR.....	\$ 12.00 ea.
4592	OVERDRIVE COUNTER GEAR.....	\$ 12.00 ea.

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

THORP DIFFERENTIAL for the FOX



ITEM	PART NO.	DISCRIPTION	PRICE
	4580	DIFFERENTIAL for use with stock half shafts.... To use this differential it will be necessary to cut off the retainer from the differential end of the stock half shafts.	\$ 50.00 ea.
	4581	DIFFERENTIAL for use with optional THORP pin drive "dog bones" and rear axles as shown on back of page.....	\$ 50.00 ea.
1	4501	L.H. UNIVERSAL.....	\$ 6.50 ea.
1-A	4551	L.H. UNIVERSAL for 4581 differential.....	\$ 6.50 ea.
2	4502	HEX BUSHING.....	\$ 5.00 ea.
3	4582	ADJUSTING SCREW.....2 per pkg..	\$ 2.25 pkg.
4	4439	SPRING WASHERS.....6 per pkg..	\$ 1.50 pkg.
5	4440	THRUST BEARING WASHER.....2 per pkg..	\$ 3.00 pkg.
6	4441	1/16" STEEL BALLS.....10 per pkg..	\$ 1.00 pkg.
7	4583	L.H. PRESSURE DISC & THRUST BEARING HOUSING....	\$ 10.00 ea.
8	4504	DRIVE WASHER.....	\$ 1.50 ea.
9	4505	1/8" STEEL BALLS.....8 per pkg..	\$ 1.00 pkg.
10	4506	GEAR.....	\$ 4.50 ea.
11	4584	R.H. PRESSURE DISC.....	\$ 7.00 ea.
12	4508	R.H. UNIVERSAL.....	\$ 7.00 ea.
12-A	4552	R.H. UNIVERSAL for 4581 differential.....	\$ 7.00 ea.

INSTRUCTIONS

It will be necessary to partially disassemble your differential to install the ball bearings onto the axles. Remove the LH universal and the hex bushing (items 1&2) from the left hand pressure disc. Unscrew the adjusting screw (item 3) from the right hand universal (item 12). Do not remove the screw from the housing. While holding the assembly together, remove the universal from the RH pressure disc and insert it through the bearing in the gear case. Reassemble and adjust the differential. ADJUSTING THE SCREW TO THE PROPER TENSION: As the screw nears the bottom you will notice a little more resistance as the head of the screw contacts the spring washers. Continue turning the screw very carefully until you suddenly feel added resistance. Back the screw out slightly, but no more than 1/8 turn. Any further adjustment can be made after you run the car. DO NOT OVER TIGHTEN. Over tightening may damage your differential.

PLEASE NOTE: When replacing the 1/16" thrust balls DO NOT put in more than 8 balls even though 10 come in a package of replacement balls.