FORM CT1005 RAM Coupler oval track racing clutch

Caution! Be sure you understand the operating principles of this product before using it. It is important to practice using the coupler before you go racing.

Danger! You must remember that pushing in the pedal will engage the cone clutch and move the car forward. Be sure other vehicles and people are clear of your car when operating this product.

The Ram Coupler is a clutch with a direct drive lockup feature. It has a small cone clutch that is used to get the car rolling. Once the car is moving, the lockup mechanism is engaged and full power can be applied. There are circumstances where the coupler may not be suited for your application. Heavier cars are more difficult to get moving with the cone clutch, and accelerated wear will occur to the friction lining. Vehicles using transmissions with first or first and second gear removed will also be more difficult to get moving and wear the friction lining more quickly.

If you are uncertain whether the coupler is for you, contact the factory before installing the unit. Couplers that have been bolted up cannot be accepted for refund or exchange!

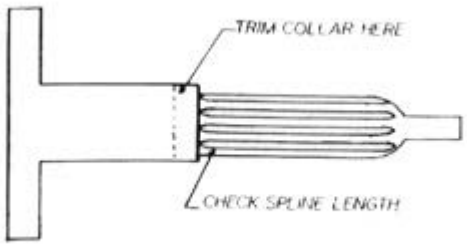
Special instructions – What must first be done to use this unit

TRANSMISSION & MOUNTS

Mounts must be of the solid type (no rubber isolators). This may require a support from the rear of the bellhousing to the back of the engine. A rear transmission mount is also recommended.

Check to see that when the transmission is installed, the bearing retainer collar does not keep the steel cone from engaging the direct drive splines in the top plate. Some models require trimming material from the front of the collar for proper engagement.

Check the spline depth on the input shaft as some transmissions may not have enough spline to allow the cone to engage the top plate properly.



Collar length may need to be trimmed in some instances

LINKAGES

The RAM Coupler can be used successfully with either hydraulic master/slave or mechanical linkages. Mechanical linkages with a 3:1 lever ratio will work best. When using a hydraulic cylinder, be sure to check that the adjustment is such that the steel cone will completely engage in the friction lining when the pedal is depressed AND return far enough when the pedal is released to completely engage the splines in the top plate. In order to achieve this, it may be necessary to adjust the cylinder position or adjust the pivot ball to correct the fork angle. A return spring on the fork is recommended.

Please note: Never run the release bearing so tight that it is constantly riding on the top of the steel cone. Not only will this damage the cone and bearing, but shock to the chassis under race conditions may cause the bearing to pop the cone out of the top plate splines.

MOTOR PLATES

A motor plate or spacer may be needed to provide adequate room to install the coupler.

BELLHOUSINGS

Use only approved or properly reinforced bellhousing as excessive deflection will cause problems in getting the car under way.

BELLHOUSING ALIGNMENT

Bellhousing alignment is critical to the operation of your RAM Coupler. A misaligned bellhousing will cause erratic clutch operation, extreme chatter with cone engagement, and engagement problems with the direct drive spline. Most bellhousing manufacturers include instructions with their bellhousings.

To check alignment, use a dial indicator with the base mounted to the crankshaft flange to check the transmission pilot hole for concentricity to the crankshaft centerline within .010". Check the face of the bellhousing (where the transmission mounts) for squareness to the back of the block. Variance should be no more than .010" side to side and top to bottom.

INSTALLATION INSTRUCTIONS

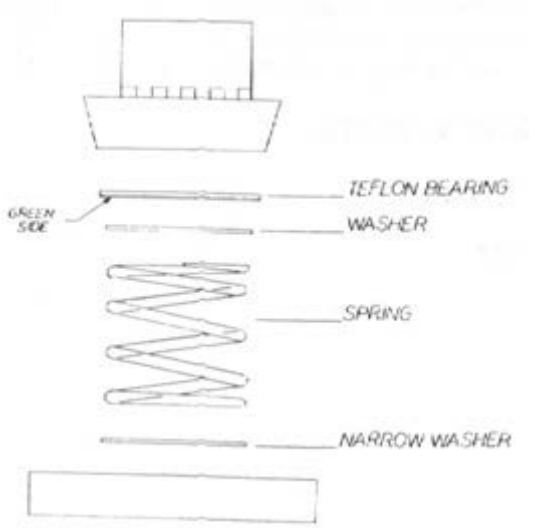
Check the pilot bushing and replace if worn. A bad pilot bushing may cause the input shaft to run out and cause engagement problems with the coupler cone.

Disassemble the coupler unit by removing the three 12 point bolts at the top plate. Familiarize yourself with the parts by referring to the enclosed exploded diagram.

Bolt the bottom plate to the crankshaft, sandwiching the flexplate between the two. Torque the bolts to 60 ft/lbs.

Install the center plate by inserting the three guide pins into the bottom plate.

Next, prepare the cone/spring/bearing/washer assembly for installation. Placement of bearing and washers should be as in the figure below. Install the cone and related parts and place the top plate over the cone and onto the guide pins.



Location of bearing and washers with spring

Install the 3 bolts and torque to 40 ft/lbs.

OPERATING INSTRUCTIONS:

Please note: Operating a coupler is NOT like using a conventional clutch. You will need to practice moving the car and engaging the lockup before actually racing the car.

TO START ENGINE:

Either depress the pedal approximately half way down to move the coupler to the neutral (center) position, or take the transmission out of gear.

TO MOVE THE CAR:

Depress the pedal to full stroke, applying adequate force to engage the cone clutch. Unlike starting off with a regular clutch, the initial engagement should be done with the lowest RPM possible as excessive slippage will cause short friction lining life. Once the car is moving, (approx. 10 mph), release the pedal. Subsequent shifts can be made by depressing the pedal approximately half way, (to the neutral position), and synchronizing the engine RPM to the driveline speed to re-engage the lockup.

RESTARTS:

If it becomes necessary to start and stop during a race DO NOT hold the coupler in the neutral position for extended periods. This will cause premature wear in the bearing as well as transfer heat to the spring, causing fatigue and the possibility of disengagement.

REPLACEMENTS PARTS:

Friction lining kit	28524
Spring	28537
Bearing kit	28528

EXPLODED DIAGRAM