

# Merlyn Limited Slip Insert for R200 Differential

## Recommendation for normal streetuse:

Only load the LSD lightly. Over loading the LSD will result in oversteer (loose) in cornering and instability during high speed braking. This is for the safety of all other road users around you.

On all street car, the loading of the LSD has very little to do with its horsepower. In another word, do not put more springs in just because the car has 300 or 600 HP. It takes very little to hold both wheels together in straight line acceleration. An LSD is a handling device, therefore the setup of an LSD is not dependent on the horsepower output of the car.

## Recommendation for road circuit racing:

It is up to the setup engineer to determine the amount of slippage available to the wheels. Unlike conventional LSD's, we recommend using the Loctite ViperLube Synthetic differential gear oil with no additive needed. This gear oil has a flash point of 415°F and the viscosity does not change from 40°C to 100°C. This gear oil can be purchased through us.

### - Maximum operating temperature

An oil cooler is necessary when operating temperature exceeds 250°F. Keep the operating temp as low as possible. Case venting is also very important as pressure built inside the carrier, there's a potential of fluid leakage and or seal blow out which leads to rapid fluid lost.

## Loading the LSD

There is no practical mathematical way to determine the number of springs you should use. The most reliable way of finding out is to test drive the car after each setup starting with the minimum # of springs up to the maximum number of spring until the desired slippage is obtained. A good place to start for a car with normal street tires is with 4 springs.

## Testing the LSD

Use the same set of tires when testing the LSD after each setup. If the car is for normal street use, put the street tires on. This is important because the limit of the LSD loading ultimately determined by the gripping ability of the tires.

## Installation Recommendations

**To insure proper operation, the main spider gears (the larger set which the plates are making contact with) should be machined flat to provide an even surface for the clutches. (Do not grind the gear faces by hand)**

1. Wash all parts and inspect all gears and bearings. Replace any overly worn bearing, shims, and gears.
2. Apply a small amount of new differential oil on the Kevlar discs and the limited slip unit.
3. Place the unit and clutch discs between the spider gears and insert the spindle (diff pin) **carefully**. Use only material softer than the unit itself to lightly tap the parts in place. **Be patient** when fitting the spindle into the center hole because it is a slip fit.
4. Never use any abrasive material to enlarge the center hole as it will throw off the tolerances.
5. After installing the insert, clutch discs, AND the half shafts, remove the two retaining clips on the insert and take out the four pins.

**Note: DO NOT LEAVE THE PINS INSIDE** as they will fly off and destroy the gears very quickly!

Keep the clips and the pins around for the removal of the unit.

