



## J2 TECHNICAL ARTICAL

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### THE REAR AXLE - DIFFERENTIAL, RING GEAR AND PINION

The standard rear end ratio on the J2 was 8/43. According to Blower's shop manual, an alternative ratio was 8/47. Unless someone has tampered with your unit, you will find your ratio stamped on top of the aluminum casting of the differential, just in front on the axle banjo housing.

According the the MMM Register, Mr. Barry Linger ( a noted authority) gear sets have been made for the J2 in the following ratios: 8/37, 8/41, 8/43, 8/39, 8/45. For those who are not familiar with what that ratio means, it is the number of teeth on the pinion/number of teeth on the ring gear. The smaller the ratio (8/37) the more power there is at the axle but the slower the top speed of the car.

While the standard ratio of the J2 was 8/43, the standard for the J3 was 9/43. The standard ratios for the J1 and the J4 were both 8/43. If you need to replace your total differential you can use the J1 or the J4 as well as of course a J2. With only a slight grinding of the clearance slots on the banjo housing, you can even use a J3 differential assembly. Since the J3 ring gear is a larger diameter gear it has a very close fit in the banjo housing but once the assembly slots are enlarged, it will fit. The only other change is that the pinion of the J3 is slightly longer thus the length of the drive shaft will be shortened slightly. Since there is some room for movement in the drive shaft, there should be no problem here.

If you desire to change your ratio, both ring gear and pinion must be changed. If you just need to replace one of the two, this is possible as long as (1) you use the same type of bevel as currently there, (2) you re-set both for proper tooth load. Setting the ring gear and pinion will be covered in a separate technical article. (or see article No. 27)

If you need to make a new gasket for the differential housing, the outside diameter is 7 3/4" and the inside diameter is 6 5/16".

