

SERVICE INSTRUCTIONS #0049



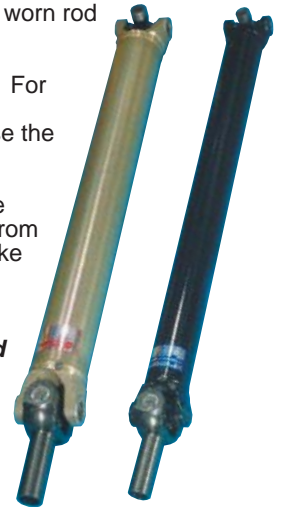
**MARK WILLIAMS
DRIVESHAFTS**

March 16, 2012

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INSTALLATION NOTES :

- 1) Chromoly and aluminum driveshafts with solid universal joints are pre-lubed so no grease is required. Masterline Driveshafts with grease joints require lubrication every 3,000 miles.
- 2) Check to make sure that the universal joint operating angles are the same (see figure 1). The Centerline that runs through the engine-transmission must be parallel to the centerline of the pinion. If both are parallel the universal joint operating angles will be the same.
Adjust the four link or ladder bars to achieve this condition. Four link bars are superior to ladder bars when trying to maintain operating angles over the travel range of the suspension. The practice of lowering the pinion to compensate for spring windup does not apply to cars with four link or ladder bar suspensions. If there is deflection due to worn rod ends or under sized tubes, slight compensation can be made, this however is a questionable practice.
- 3) Check to make sure that the universal joint angles are less than the maximum angle shown in figure 2. For most drag racing applications, the maximum operating angle should be less than 2 degrees. However, a minimum operating angle of a 1/2" degree will prevent brinnelling of the roller bearings and in turn increase the life of the universal joint.
- 4) Examine the amount of slip that the driveshaft front yoke has with the transmission. Move the rear axle through the full range of motion allowed by the suspension. Make sure that the yoke has 3/8" clearance from bottoming out, with the rear axle in the furthestmost forward position. Conversely, the transmission slip yoke must also be fully engaged into the transmission tail shaft bushing when the axle is at the most rearward position.
- 5) torque the rear "U" bolts to 15 to 20 ft. lb. **Over torquing will only distort the bearing cups and bind the u-joints.**

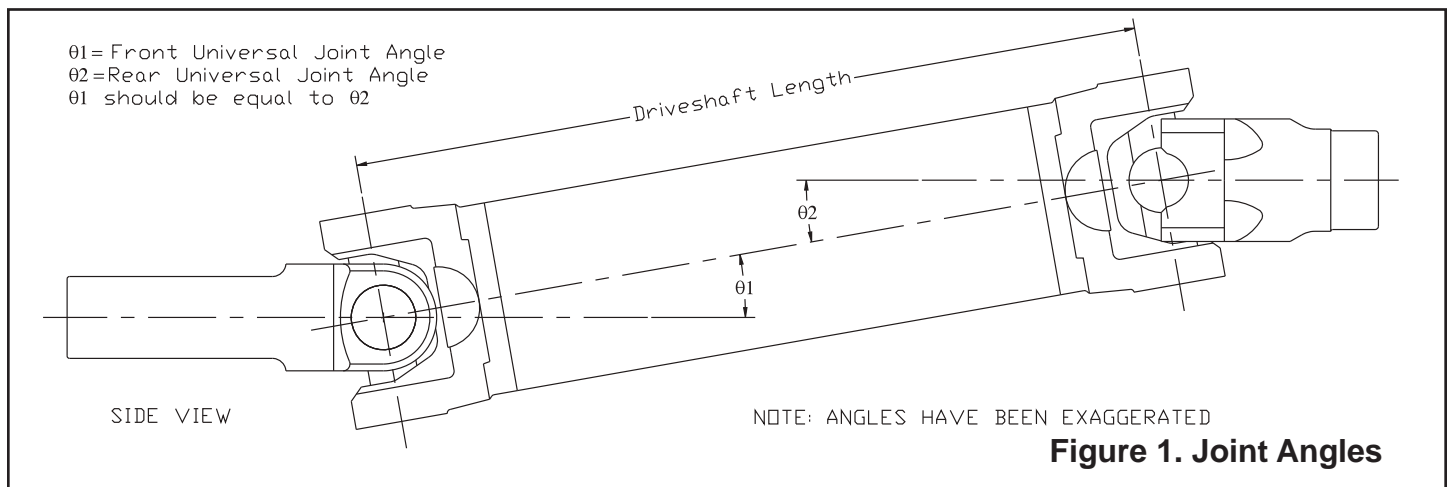


MAINTENANCE REQUIREMENTS :

Check the torque of the "U" bolts (see step 5 above). Visually inspect the shaft for cracks, dents, or scratches that might lead to a failure. Check to make sure that the operation of the universal joints is smooth. If a knocking movement is present, the universal joints should be replaced. Joints with lube fittings should be serviced every 3000 miles.

VIBRATION CONTROL:

In order to avoid vibrations in the driveshaft, it must be operated below the critical speed. The critical speed is the rotational speed that coincides with the natural vibration frequency of the shaft. At this speed the shaft becomes dynamically unstable and vibrations are likely to occur. The critical speed of a MW driveshaft can be determined given the driveshaft length (see figure 1 & table 1). 6061 Aluminum shafts should be calculated at 85% of the MMC ratings.



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Figure 2.



Critical Speeds of MW driveshafts (rpm)

Table 1.

MW Part Number	44	46	48	50	52	54	56	58	60
39985 3.5" Bonded 6061	10,257	9,366	8,586	7,899	7,292	6,752	6,270	5,838	5,449
39990 4" Bonded 6061	11,850	10,817	9,913	9,118	8,415	7,791	7,233	6,733	6,284
ML-39200 3.5" 6061 Aluminum	10,233	9,345	8,567	7,883	7,278	6,739	6,259	5,828	5,440
ML-39300 4" 6061 Aluminum	11,747	10,727	9,835	9,049	8,354	7,736	7,185	6,690	6,245
39550 4" Bonded 7075	12,039	10,989	10,071	9,264	8,549	7,915	7,348	6,841	6,384
39555 3.5" Bonded 7075	9,739	8,893	8,152	7,500	6,924	6,411	5,953	5,543	5,174
39890 4" 1480 Bonded 7075	12,039	10,989	10,071	9,264	8,550	7,915	7,349	6,841	6,384
39100 3.75" Carbon Fiber	13,641	12,453	11,414	10,500	9,692	8,973	8,331	7,756	7,239
39880 3.5" Chromoly 1480	10,561	9,641	8,836	8,128	7,502	6,945	6,449	6,003	5,603
39800 3" 4130 Steel	9,025	8,238	7,550	6,945	6,410	5,934	5,510	5,129	4,787
39850 3.5" 4130 Steel	10,464	9,557	8,762	8,063	7,444	6,894	6,403	5,963	5,566
ML-600 3.0" Mild Steel	8,905	8,129	7,450	6,854	6,326	5,856	5,437	5,062	4,724
39640 4" Mild Steel	11,858	10,829	9,929	9,136	8,435	7,811	7,254	6,755	6,306
39650 3.5" Mild Steel	10,435	9,528	8,734	8,036	7,418	6,869	6,378	5,939	5,543