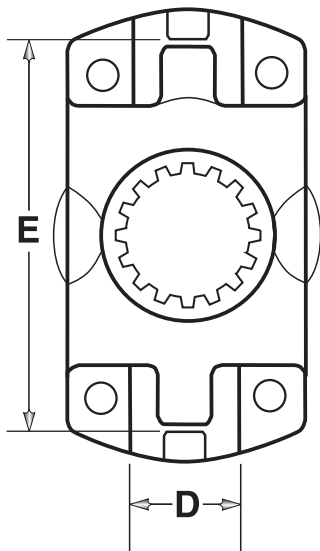


HOW TO MEASURE FOR DRIVE SHAFTS-ONE PIECE

You are ready to measure for your drive shaft when your car has its engine, transmission and third member in place. The body need not be on the chassis at this time. If you wish to verify that body weight will not affect the ideal measurement, distribute enough friends around the frame rails and measure again. If there is a difference note it and send it along with your order.

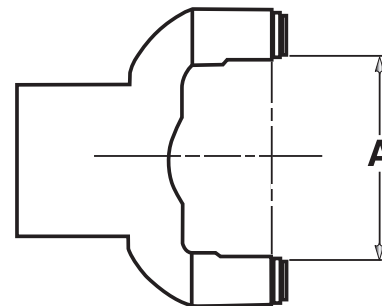
ONE PART DRIVESHAFT MEASUREMENTS

■ MEASURE FOR U-JOINT AT THIRD MEMBER YOKE



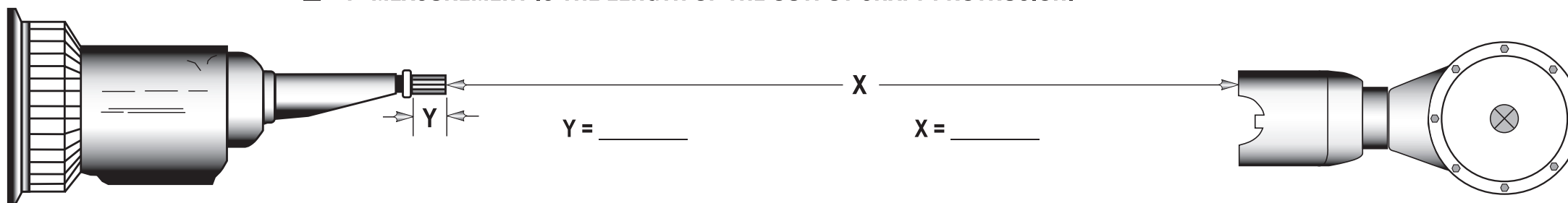
- E = 3-7/32" D = 1-1/16"
- E = 3-7/32" D = 1-1/8"
- E = 3-5/8" D = 1-1/16"
- E = 3-5/8" D = 1-1/8"
- E = 3-5/8" D = 1-3/16"
- E = 4-3/16" D = 1-3/16"
- E = 4-3/16" D = 1-3/8"
- E = 4-31/32" D = 1-3/8"

**THESE DIMENSIONS
MUST BE ACCURATE.
IF YOU DON'T GET
THEM, CHECK FOR
WEAR AT "E" OR "A".**



- SOME CHRYSLER CORP.**
- A = 2-1/8"
 - A = 2-5/8"
- SOME GENERAL MOTORS**
- A = 2-9/16"

- "X" MEASUREMENT IS FROM THE TIP OF THE TRANSMISSION OUTPUT SHAFT TO THE CENTERLINE OF U-JOINT AT THE THIRD MEMBER. THIS WILL BE THE FLAT SURFACE WHERE THE U-BOLT HOLE IS DRILLED.
- "Y" MEASUREMENT IS THE LENGTH OF THE OUTPUT SHAFT PROTRUSION.



TRANSMISSION MAKE & MODEL: _____ DIFFERENTIAL MAKE & MODEL: _____

NOTE: TH400 TRANS OUTPUT SHAFT DRILLED & TAPPED UNDRILLED

HANDY TIPS!

- THE VEHICLE MUST BE MEASURED AS IT IS TO OPERATE. JACKING UP THE VEHICLE WILL CHANGE YOUR DIMENSIONS.
- IF YOUR VEHICLE HAS A BOLT-ON TRANSMISSION YOKE, MEASURE BETWEEN U-JOINT CENTERLINES
- IF THERE IS A FLANGE MOUNT ON EITHER OR BOTH ENDS, MEASURE TO ITS FACE.
- WHEN YOU INSTALL U-BOLTS DO NOT OVER TIGHTEN THEM. "D" DIMENSION 1-1/16" AND 1-1/8" : 14-17 FT. LB.; 1-3/16" : 20-24 FT. LB.; 1-3/8" : 32-37 FT. LB.

To fill out figure 10, first measure for the pinion u-joint. If the pinion yoke has square tabs to center the u-joint measure between them for "E". Then measure the cap seat for "D". These measurements must be accurate because cap diameter varies by sixteenths of an inch. If there is no such tab, refer to the "Some Chrysler" or "Some GM" as appropriate. Check the box matching your results.

Next measure from the flat surface of the pinion yoke, where the fasteners attach the u-joint, to the flat end of the transmission output shaft. Note this as "X". Note the amount of splined shaft protruding past the transmission seal as "Y". Finally note the make and model of your transmission. With this information a drive shaft can be built to fit your car properly.

If you call Inland Empire Drive Line with this information be prepared for some additional discussion. We will want to know how much horse power your engine produces, whether it is a big or small block and whether it has a blower and/or a nitrous oxide system. We will ask about the intended use of your car, its tires, weight, and the maximum engine RPM. All these questions are intended to guide us in u-joint size and tube diameter selection.

Our recommendation to you will be based on both drive shaft capacity and safety.

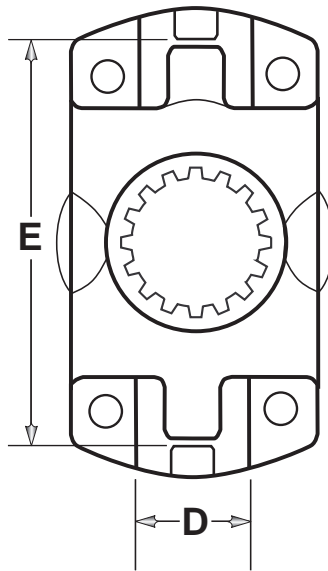
HOW TO MEASURE FOR DRIVE SHAFTS - TWO PIECE

Some cars will require a two-piece drive shaft system because of overall length or because of obstacles that must be avoided. Long wheel base cars, lowered cars, hydraulic and "X" frame cars all fall into this category. While the 1958 to 1964 Chevrolet cars are the most common example, long classics that had torque tubes, long bed pick up trucks and cab-over car haulers are some others.

Two-piece shaft systems are the means used to reduce Critical Speed where long spans exist. As described above, the Critical Speed of any shaft is a theoretical number reduced by both the physics at work in the shaft and by the uncertainties of the installation. While guidelines are published showing recommended maximum shaft lengths at various RPM, judgment is required when these lengths are approached. While each vehicle is different and no hard and fast length rule applies to all cases, start asking questions when your X measurement is 51 inches or more.

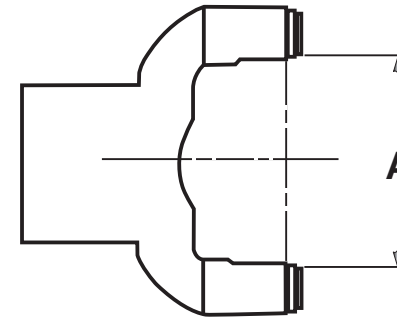
TWO PART DRIVESHAFT MEASUREMENTS

MEASURE FOR U-JOINT AT THIRD MEMBER YOKE



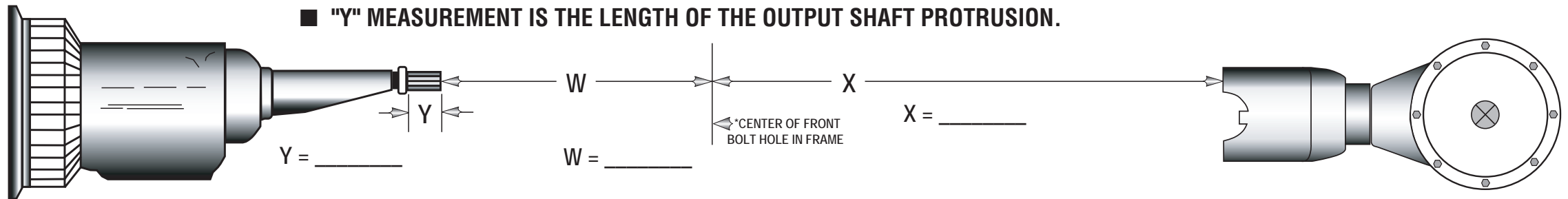
- E = 3-7/32" D = 1-1/16"
- E = 3-7/32" D = 1-1/8"
- E = 3-5/8" D = 1-1/16"
- E = 3-5/8" D = 1-1/8"
- E = 3-5/8" D = 1-3/16"
- E = 4-3/16" D = 1-3/16"
- E = 4-3/16" D = 1-3/8"
- E = 4-31/32" D = 1-3/8"

**THESE DIMENSIONS
MUST BE ACCURATE.
IF YOU DON'T GET
THEM, CHECK FOR
WEAR AT "E" OR "A".**



- SOME CHRYSLER CORP.**
- A = 2-1/8"
 - A = 2-5/8"
- SOME GENERAL MOTORS**
- A = 2-9/16"

- "W" MEASUREMENT IS FROM THE TIP OF THE TRANSMISSION OUTPUT SHAFT TO A CENTER BEARING BOLT HOLE OR SLOT.
- "X" MEASUREMENT IS FROM THE BOLT HOLE OR SLOT TO THE CENTERLINE OF U-JOIN A THE THIRD MEMBER. THIS WILL BE THE FLAT SURFACE WHERE THE U-BOLT HOLE IS DRILLED.
- "Y" MEASUREMENT IS THE LENGTH OF THE OUTPUT SHAFT PROTRUSION.



TRANSMISSION MAKE & MODEL: _____ DIFFERENTIAL MAKE & MODEL: _____

NOTE: TH400 TRANS OUTPUT SHAFT DRILLED & TAPPED UNDRILLED

HANDY TIPS!

- THE VEHICLE MUST BE MEASURED AS IT IS TO OPERATE. JACKING UP THE VEHICLE WILL CHANGE YOUR DIMENSIONS.
- IF YOUR VEHICLE HAS A BOLT-ON TRANSMISSION YOKE, MEASURE BETWEEN U-JOINT CENTERLINES
- IF THERE IS A FLANGE MOUNT ON EITHER OR BOTH ENDS, MEASURE TO ITS FACE.
- WHEN YOU INSTALL U-BOLTS DO NOT OVER TIGHTEN THEM. "D" DIMENSION 1-1/16" AND 1-1/8" : 14-17 FT. LB.; 1-3/16" : 20-24 FT. LB.; 1-3/8" : 32-37 FT. LB.

Figure 11 shows the measurements needed. The pinion joint is measured as above. In the case of the two-piece shaft, "W" is measured from the flat end of the transmission output shaft to the center of the slot for mounting the center support. "X" is measured from this slot center to the pinion yoke u-joint attaching hardware face. * '55 to '64 Chevrolet Only.

Angle set up for two-piece shafts is similar to the one piece. All 3 working angles should add up to zero. The easiest way to do this is mounting the front shaft section so it has zero degrees through the joint at the transmission. The rear shaft may then be treated as if it were a single shaft. Sometimes this is not possible and all three angles must be juggled to arrive at zero. It is a good idea to allow for some up and down adjustment at the center support mount so the angles may be tuned as necessary once the car is driven.

There is no hard and fast law governing shaft lengths. It is customary though, to divide the overall length 40% front and 60% rear. Our experience with motorhome manufacturers has taught us not to make either shaft, especially the front shaft, shorter than 18 inches. Available cross members, frame obstacles and u-joint angle cancellation will all play their part in dividing up the span.

All of the questions about power and intended use apply to the two-piece set. Like the one piece they can be upgraded in capacity. Unlike the one piece their tube diameter can actually be reduced because of the shorter shaft sections. This size reduction can eliminate a lot of floor pan, tunnel and seat bottom modification and may make a two-piece more economical to use where it isn't really required.

When planning your conversion, take the time to consult with as many experts as you can. A few minutes or hours of preparation can save you endless hours of rebuilding during the construction of your project as well as save you the agonies of misjudgment. There are many resources available through the internet as well as the reliable vendors who are working to sell you the products you need to do the job correctly, ask for their advice and use their knowledge.

— Greg

The logo for Inland Empire Driveline features the company name in a bold, sans-serif font. The words "INLAND EMPIRE" are on the top line, and "DRIVELINE" is on the bottom line. The text is centered and flanked by horizontal lines that resemble stylized wings or a double underline.

INLAND EMPIRE
DRIVELINE®

Check out an excellent selection of performance driveline & axles on our website.