

CAUTION: Welding

Welding joints is a common practice in racing, however, it is not a method we at BORGESON would recommend. Hairline cracks, which may be all but invisible to the unaided eye, could cause a weld to fail under severe stress. It may also be illegal in some states to weld steering system components on a car used on the street. Improper grounding can cause damage which will result in the failure of the steering. Overheating, which can occur at relatively low temperatures, can distort the yoke and melt the grease out of the needle bearings or damage the seals. This can prevent the joint from operating freely and it may fail. Cooling a weld too quickly can cause cracks, leading to sudden failure. Also, welding is a permanent connection that makes disassembly almost impossible should it become necessary.

CAUTION: welding plated materials can cause severe health problems. If welding is the only option, it should only be done by a qualified welder ...remember, your life depends on it.

CAUTION: Keying and Set Screws

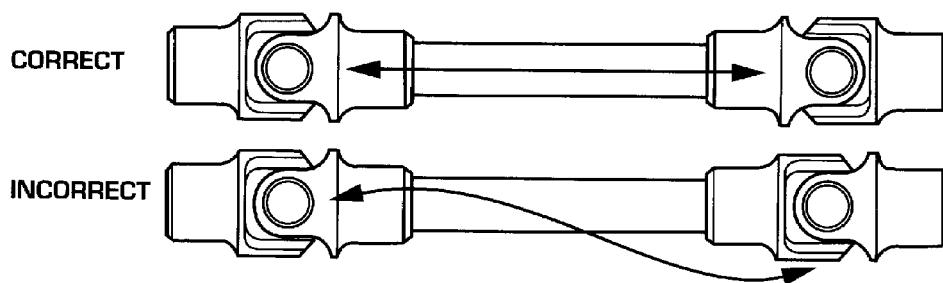
Using a key, as is done in many industrial applications, can transmit power effectively from the shaft to the joint. A key, however, is not suitable to take sudden shock (such as from a pothole or accident) which can distort or shear the key or shaft keyway. This may cause play to develop in the system or, even worse, failure. It should be noted that in industrial applications, *keys are designed to shear to prevent damage to expensive components. In automotive applications a sheared key will cause extensive damage* by causing a loss of control of the vehicle.

Set screws should never be used to secure smooth bore joints.

They should only be used as a method to prevent a splined or "Double D" shaft from disengaging from the joint (an indentation or flat should be made for the set screw on splined or DD shafts).

U-Joint Orientation

When two joints are used on a shaft, **the forks of the yokes closest to each other should be in line**, or "in phase". Premature wear or binding can result if the u-joints are not phased properly. If the u-joints are at a severe angle, even if they are phased correctly, a hard spot in the steering may occur for no apparent reason. If this happens, index the u-joints two or three splines in one direction. The hard spot should disappear or be minimized.



CAUTION: Do Not Use Flex Cable

Another less common (and definitely not recommended) method of getting from the column to the rack or box is to use flex cabling from a Pinto (this cable is no longer available from Ford). Ford only used these for a couple of years before switching to joints and shafts, which should tell you something. When a heavier engine is put into a larger heavier car, a flex cable is not reliable.