



Kingpin Maintenance and Replacement Recommendations

July 8, 1994

KINGPIN MAINTENANCE:

Inspection and maintenance of the trailer upper coupler and kingpin is just as important as the inspection and maintenance of its mating component, the fifth wheel. The following procedures are based upon recommendations outlined in SAE J2228. They should be completed every three months, or 30,000 miles, to assure proper and safe kingpin/fifth wheel coupling:

1. Upper Coupler Plate Flatness:

Using a 48" straight edge, check the flatness in all directions. Any bumps, valleys or warping will cause uneven loading of the fifth wheel, which could result in damage to the top plate and poor lock life. Replace the trailer upper coupler plate if flatness exceeds the specifications shown in *Figure 1*.

2. Inspect the Kingpin for Straightness:

Using a square or Holland Kingpin Gage (TF-0110) check to see if the kingpin is bent. A bent kingpin accelerates lock wear and may interfere with proper fifth wheel locking. This also may indicate damage. The kingpin should be replaced if it exceeds 1° from square in any direction (see *Figure 1*).

3. Inspect the Kingpin for Proper Length:

Using a Holland Kingpin Gage, check the length as shown in *Figure 2*.



CAUTION

If a lube plate is used in your operation, make sure to check the kingpin length. The kingpin must be sized to compensate for the thickness of the lube plate.

For more information, see

Holland Service Bulletin XL-SB4. Otherwise, the kingpin will be too short. If the kingpin length is improper, the kingpin should be replaced.

4. Inspect the Kingpin for Wear:

Using a Holland Kingpin Gage, check the wear on both the 2" and 2.88" diameters. Wear of 1/8" (.13") is indicated if the appropriate diameter enters the gage slot. Replace the kingpin if the gage slides into the appropriate gage slot (see *Figure 3*).

5. Check the Kingpin Mounting:

In addition to being a safety hazard, a loose mounting will cause excessive chucking and rapid lock wear. Reinstall or replace any kingpin which is not securely mounted.

- 6. Check the Kingpin for Damage:** Inspect the kingpin for any nicks, gouges, deformation or cracks which may interfere or affect the safe use of the kingpin. Replace the kingpin if any damage is noted.

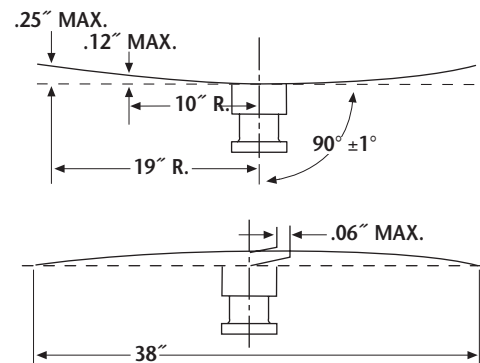


FIGURE 1



FIGURE 2



FIGURE 3

KINGPIN WELD REPAIRS PROHIBITED:

Kingpins are made from quenched and tempered alloy steel. Weld repairs of any type will affect the strength and wear resistance of the kingpin. Additionally, arc strikes or weld craters could develop a stress riser, leading to a fatigue failure. For these reasons, Holland warns against any weld repairs. If any deficiencies are noted during kingpin inspection, the kingpin should be replaced (see *Figure 4*).

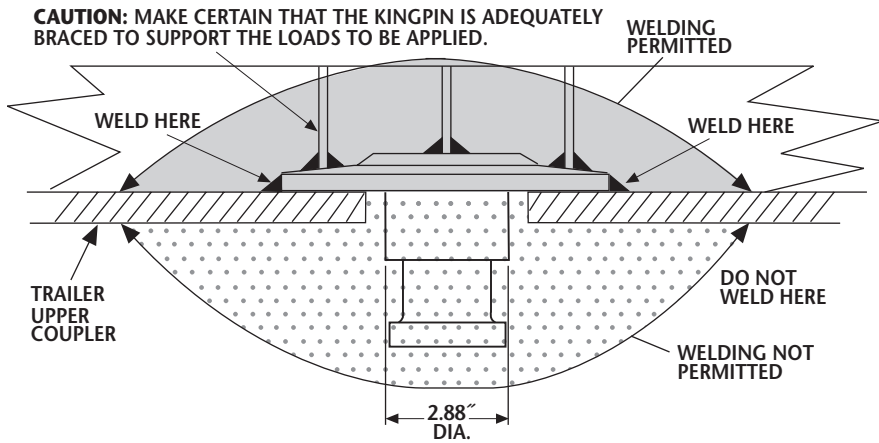
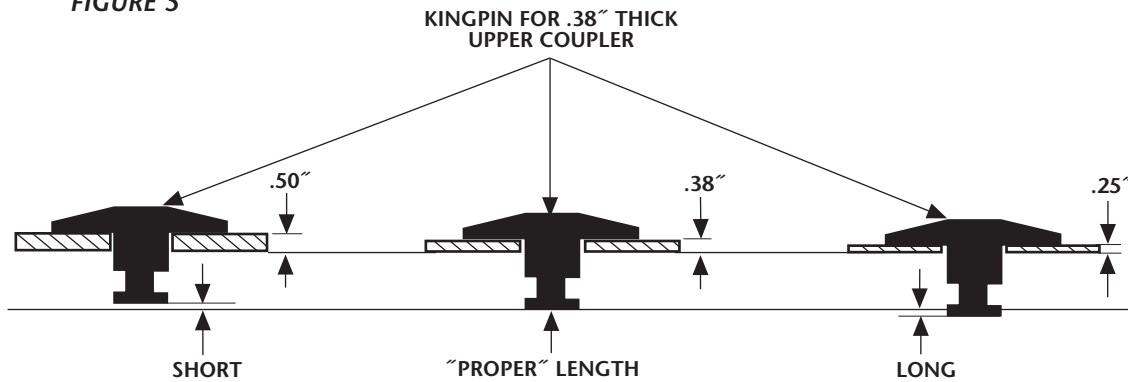


FIGURE 4

KINGPIN REPLACEMENT RECOMMENDATIONS:

1. A kingpin should be selected which is similar to the type removed, or if of a different style, one which can be adequately braced. The kingpin must also be matched to the thickness of the upper coupler to maintain the SAE dimensions. Kingpins are manufactured in different lengths to match the thickness of the upper coupler. Improper selection will result in a kingpin that is too long or too short. See *Figure 5*.

FIGURE 5



2. Installation Procedure Recommendations:

Because of its important role, the kingpin must be properly installed. Proper installation includes an adequate upper coupler design, with bracing, which meets the requirements of SAE J133 and welding personnel who are properly trained and certified. To determine the specific material used in your kingpin, refer to the proper kingpin literature. The kingpin must not be welded to the upper coupler at the 2.88" diameter interface (see *Figure 4*). Finally, the installer should take adequate precautions to protect the trailer, himself, and others during the installation process (see Holland Service Bulletin XL-SB14 for additional welding procedures on motor vehicles).



WARNING

When welding, use a procedure which assures a sound, good quality weld which protects the welding operator and others. Overwelding may cause distortion and damage and underwelding may not develop sufficient strength. A low hydrogen process and AWS E70XX filler metal are recommended. Take precautions to insure that the vehicle electrical system is not damaged by the welding.

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