

1. OVERVIEW

We are able to put a single bend in our senders, with some restrictions. The pictures at right show the typical applications. This writeup discusses the rules and considerations.

2. RULES AND CONSIDERATIONS

A. NO BUSHINGS

Typically you will not be able to have a bend in a sender which has a bushing mount. That's because it would whack into the top or sides of the tank as you tried to screw it in.

B. ONE BEND, NEAR HEAD

We don't do multiple bends, and typically the sender won't sense normally between the bend and the head, so the bends we put in are close to the head: about 2.5" from the head on a fuel sender, and 2" from the head on a water sender. These are the distances that our bending tools create.

C. OUR BEND VERSUS YOUR BEND: FUEL SENDERS

Senders up to 24" long can be made with 1/4" tubing. That tubing is flexible enough to be bent by hand. When people want to bend their own tubing, they specify the bendable distance, such as CGF-24-4" bendable, which means the top 4 inches of the 24 inch probe have been insulated to allow bending.

Senders made with our standard 1/2" tubing require our special bender.

D. OUR BEND VERSUS YOUR BEND: WATER SENDERS

Water senders have a PVC outer tube. That can be bent by heating it with a heatgun until it gets soft and bending by hand. No special insulation is needed above the bend because water senders are already made with insulated wire.

E. OUR BEND VERSUS YOUR BEND: COST

We charge \$2 to do a bend.

F. SPECIFYING THE BEND LENGTHS

We specify our bends as follows: CGF-xx+2.5@yy or CGW-xx+2@yy, where xx is the distance from the bend to the bottom of the tube, and yy is the angle that the tube is bent versus straight. As shown, XX will normally be tank height minus 2.5 for a side mount. For a top mount, XX is about the square root of [(tank ht - 3) squared + (horizontal distance) squared], and YY is the \tan^{-1} of [(tank ht - 3) divided by horizontal distance]. If you want, you can fax us a sketch of the tank (with sender location) to have us do the calculations.

G. SPECIFYING THE HOLE ORIENTATION

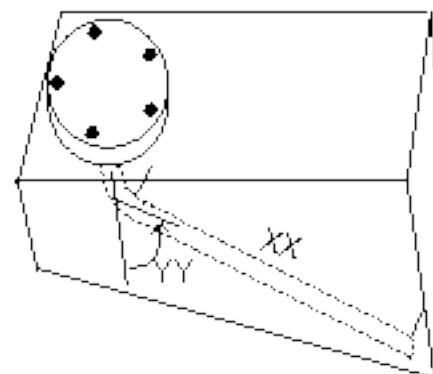
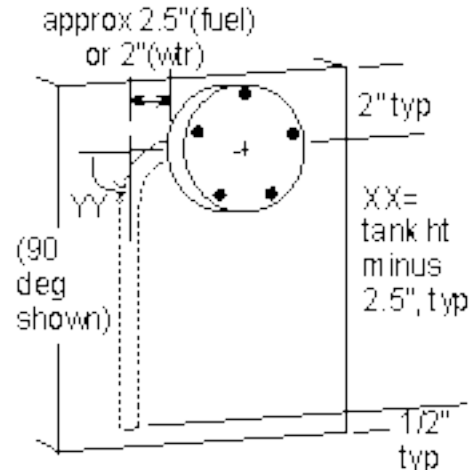
Hole orientation with respect to bend determines which direction the tubing will point. We specify the hole orientation as 5 hole@wide=zz o'clock, where the o'clock is determined from a template we fax. It's not possible to determine our o'clock number from just looking at the terminal screws or potentiometers on an existing sender, because some of our circuit boards have been laid out differently with respect to the holes. For a new installation where you haven't drilled the holes yet, we would send "5 hole@wide=8:00".

H. FULL AT BEND ON SIDE MOUNT

Note that the highest the fuel can get on a sidemount sender is about 2" from the top of the tank, where the bend occurs. This means the reading will be Full at that point, and any further rise in fuel level will not increase the gauge reading.

I. CLEARANCE

Remember that you will need to get the sender around the bend, past any baffles, to insert it.



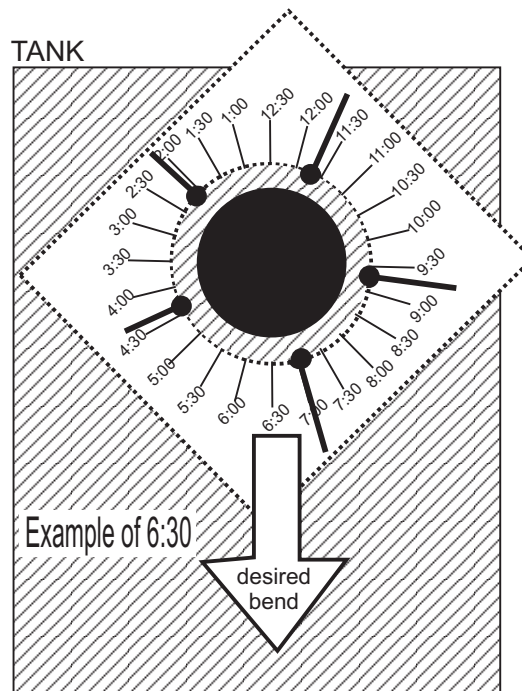
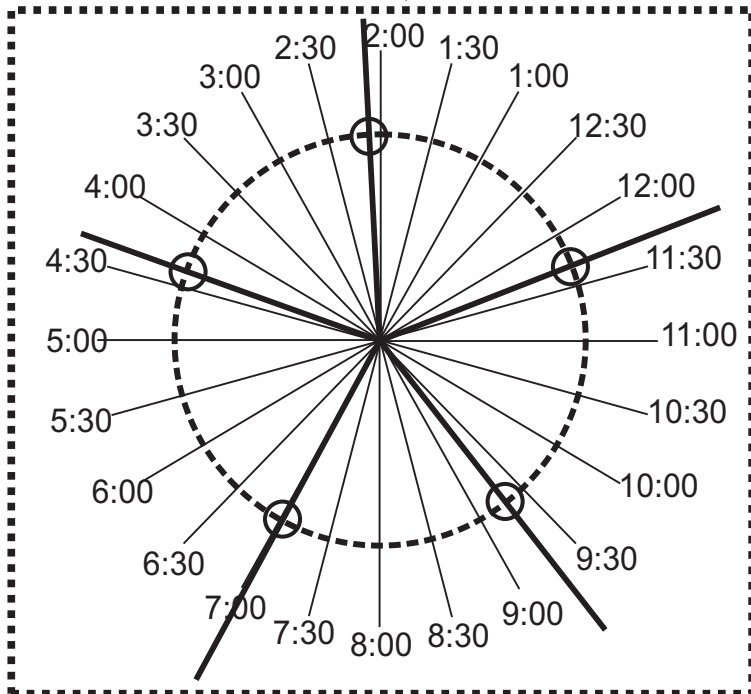
INSTRUCTIONS

A. Cut out the dotted square and circle below. YOU MUST DO THIS. Please dont just eyeball it.

B. Rotate the cutout on the tank opening or face of the original sender (not the back) through all 5 rotations of the tick marks.

C. Once you've found the best of the 5 rotations, which o'clock number is pointing the direction you want the bend to point? _____

CUT OUT DOTTED SQUARE AND CIRCLE



Drawing changes:
9/19/06: Correct to actual
size.