
MOUNTING INSTRUCTIONS FOR TOW N' STOW STANDARD AND BRUTE TOW BARS

Stowing the tow bar flat – Section 1.

As illustrated in Figures 11-15.

This is the most concealed stow method

Tow N' Stow tow bars are compatible with custom mounting brackets to fit most cars and some trucks. Top view in Figure 11 is an example of one for a car. They hook to some tow bars at clevis tabs 33. Tow N Stow tow bars use receiver tubes 35 as in top views of Figures 12 and 13. This allows you to put the tow bar exactly where you want it. Receiver tubes 35 in Figure 12 are welded to the outsides of clevises 33 with the Standard tow bar. With the Brute, a 1 1/2" square tube is welded between clevice 33 and receiver tubes 35, because the Brute is slightly longer. Then the tow bar mounts to the receiver tubes as in Figures 12 and 13, which illustrate both the Brute and the Standard. When the tow bar tongue goes over the right receiver tube in Figure 12, pin 36 slides through both eyebolts and into the top tow bar arm in Figure 12 with the Standard tow bar. With the Brute it slides in between both tow bar arms. A 1/2" grade-5 pin 36 has a tapered left end and has a 9/64" hole placed 9/16" from under its head, and a 11/64" hole placed 3-3/16" from under the head, and is 5-1/2" long. The tow bar latches in Figure 12 are 7/8" higher than the top receiver tubes – allow for this, and mount the receiver tube that goes into the tongue a 1/2" lower than the other so the tongue can go over it. Referring to Figures 11 or 12, plate or angle iron 37 guides the loose tow bar arm

into position when the pin 36 is removed, and can extend all the way to the other side for positioning and strength. Pin 36 is used for stowing and towing. With the Brute, don't weld within 2-1/4" from the end of the receiver tube that enters the tongue. A 1/2" grade-5 pin 38 in Figure 12 going through both (all) receiver tubes holds the inner receiver tube.

The receiver tubes I stock for the Standard tow bar are 11-gauge and 1-1/4" X 7" inside a 12-gauge 1-1/2" X 8". For the Brute, a 1-1/4" X 3/16" receiver; inside a 12-gauge 1-1/2" X 8", inside a 12-gauge 1-3/4" X 8". Call for price and availability on custom brackets.

You can mount the tow bar the same way making your own brackets. Mount the receiver tubes under the bumper **as illustrated on page 3**. Receiver tubes 35 can then be further apart that what is shown in Figures 14 and 15, but the length of pin 36 must increase proportionately.

Special Application Uses:

You could have three holes through the inner receiver tube. With the pin in the furthest back hole you couldn't use the tow bar; but would completely hide and protect it. In the second hole you could use it and store it flat. In the third hole you could swing it up in front of the grill in an "A", or store it flat, or store it on edge. The receiver tubes and mounts must be made stronger, the further it telescopes out. By using 12-gauge or .100" wall tubing, you can put tubes inside of tubes to make as

strong as necessary. You could use a 2" outer, 1/4" thick, and a 1-1/2" inner, 5/16" thick. You could also have the back of the receiver tube lower than the front so it telescopes out as it goes up, so the receiver tubes are substantially parallel with the tow bar in toying position. Going beyond this could drastically affect the rating, and hasn't been tested.

Folding – Section 2.

As shown in Figure 1 – To fold the tow bar crossways, retract bottom arm 21. Measure your tow bar from point 22, which is the inner right eyebolt, to point 23, the inner left eyebolt. Pipe 27 holds the tongue pin.

The inner eyebolts on the tow vehicle should be the distance from point 22 to point 23 on your tow bar. You can go further apart and still mount crossways, but not less without extra fabricating. It helps to do this on a board first as a template. If this is done exactly the first time, it will save a lot of time putting the left inner eyebolt 23 through the slot in the tongue of your tow bar. The eyebolt pin () can then go through both left eyebolts, or a bridge pin can go through eyebolt 23, and the pin can be left in U-joint 24. Eyebolts should be centered, (drawing not exact). Make sure plate 25 in Figure 2 is long enough so member 26 doesn't knock the hook pin out during slop. Use a lynch pin, and put it underneath. The later Ford pickups have a bracket between the bumper and the frame that is too light and needs to be reinforced from the back plate to the frame. Check all the stress points.

If a metal shaving or other obstruction gets between the tubes so it won't telescope, hook the tow bar to a vehicle, prop the latches open and drive away slowly to free it and clear the obstruction.

When storing crossways as in Figure 1, tow bar arm 20 is disconnected from the passenger side eyebolts and lays loose on top of arm 21. (It is shown lifted up for illustration only.) Inner eyebolt 23 enters one of the hole-slots in the tongue.

Laws on safety chains, turn signals, and rear braking may vary from state and province. Check with authorities. Use safety chains when meeting traffic, or stop your farm vehicle and wait for them to pass.

NOTE: To make un-hooking easier, back up slightly before unhooking. At least once per year, check and tighten all bumper bolts, and check bumper brackets for cracks or other stress indicators. **The back plates can be patterns for receiver tube eyebolts. (Would use two per eyebolt.) Pry bars can be cold-bent in or out as preferred. Longer eyebolts are available. Also extra eyebolts for another vehicle.**

Section 3 & 4 – Applicable to both tow bars.

The only time the inner eyebolt slot in the tongue is used, is if the inner eyebolts are spaced from 24" to 27-1/2" apart.

On your tow bar, looking at Figure 1, measure from the center of the slot in the tongue you will use – to the center of where your inner eyebolt will be on the drivers side. This is the best eyebolt spacing, if attainable. Now, when the left tow bar arm is telescoped in all the way, the inner eyebolt on the passenger side will enter the slot in the tongue. (You won't have to telescope it in and out.)

The Brute roller release tow bar is rated at 7,500 lbs. when the inner eyebolts are 27-1/2" apart. When the eyebolts are 24" apart the rating drops to 7,000 lbs., and the left arm bows in the crush test.

When the inner eyebolts are 32-1/2" apart the rating drops to approximately 6,800 lbs., and the right arm bows in the crush test. This is because the tongue hole is only centered with the tow bar at 27-1/2". To understand this better; move the arms of the tow bar and watch the tongue hole pressure point.

It takes 22,500 lbs. to crush the Brute. Mount the eyebolts to hold 3X the maximum weight of each vehicle load it will pull.

When the eyebolts are only 24" apart there is more weakness before the latches lock (when one arm is extended and the other arm is retracted.) The remedy is to back up the rear vehicle after hooking. This locks at least one arm. **Don't go down hill, use brakes, turn, or otherwise do any open field or highway driving until both latches are locked.**

Use either a 5/8" G8 pin or a 3/4" G5 pin or bolt. Use a 1" or larger hole in the tow vehicle for sufficient slop. The Standard tow bar can use a 5/8" grade-2 pin or bolt.

The following is for mounting eyebolts in a bumper, but can be used for mounting receiver tubes also:

Figure 4 is a top view of an eyebolt mount. Figure 5 is the same in a side view.

1st) Put the longest back plate 11 in fig.4 against the bumper. (make any bends needed to match your curvature, as shown on page 2)

2nd) Place the short back plate 12 next to the long back plate 11, make any bends necessary, and then weld the two together.

3rd) Weld a rod 8 (or use a short welding rod) to the back plates and to the plate 14. (Plate 14 could be 1/2" X 1-1/2" X 6" long flat iron.)

4th) Determine approximately where plate 14 would hit the frame if they were longer and bent right. Mark that "spot".

5th) Put the back plates behind the bumper, and bend plate 14 toward the "spot".

6th) Remove the back plates 11 & 12 and plate 14, and then weld the three together.

7th) Install the eyebolts, back plates and plate 14, and tighten eyebolts. (Torque to 70 ft. lbs.)

8th) Bolt or weld irons 15 in Figure 5, similar to plates 14, to the "spot" extending toward and overlapping plates 14 by about 4 inches.

9th) Weld or bolt plates 14 to plates 15.

The Standard tow bar mount can eliminate the short back-plate 11 - unless you might pull heavier loads on it with a Brute later.

Depending on the length of plates 14 and 15, and how much welding you have room for, you may want another plate overlapping plates 14 and 15 in a "T" or angle.

Usually plate 14 angles upward to the frame. Estimate this before you cut one. If room is a problem, cut a little off the short backplates 12. (The bumper isn't shown in Figure 5.) Sometimes removing the bumper is necessary.

Figure 6 is a rear pickup bumper with plate 18 bolted to it, so the tow bar tongue won't be damaged when turning. (A receiver tube also works.) It has a key hole 21 with a slot to accommodate a cable with a knot at the end. Weld and tape cable end after knot. The cable knot is inserted in hole 21 of Figure 8 and slid to the right slot. Figure 8 is a bolt with a rod welded to it. Put the left spring portion of Figure 8 in the small hole to prevent the cable from coming out. You lift Figure 8 up and turn sideways in the small hole to enter and exit the cable with the knot at the end.

Bolt 23 in Figure 8 enters and exits keyhole 21. Maybe double the thickness at keyhole 22? Put a ring or wire in the cable know before tightening in case you want to secure the end in storage. If the Standard tow bar unhooks when moving, the inner tubes buckle. The Brute? Always use a safety chain or cable. Figure 8 could be just a bolt with a pin in it also. You can then run the cable inside the left arm of the tow bar and clamp it to the frame.

To Release Pressure

With the Brute, push down on the pry bar lever, and turn the rollers simultaneously. If it still does not release, remove the key from the spring and insert it in the slot in the washer welded to the roller. To minimize pressure, have the vehicles straight when stopping. The tow bar doesn't develop strength until latches are locked. The roller holders on the Brute can be removed. Make a spring lifter as in Figure 3 out of 1/4" rod. Lift the spring and pull the roller holder back. Then push forward on the top of the pry bar, and out. (The knot in the cable could also be Figure 7.) A cable can also run through both tow bar arms culminating at the knot, (preferred).

Section 5

Mounting a tow bar flat under the bumper on 88-99 Chevy pickups.

Mounting on all late model trucks will be similar. The drawings Figures A-E are 50% scale, so double all measurements. The existing curved tow hooks are removed, and two 2-1/2" X 3/8" angle irons take their place. Figure A is the right one (passenger side) of the two.

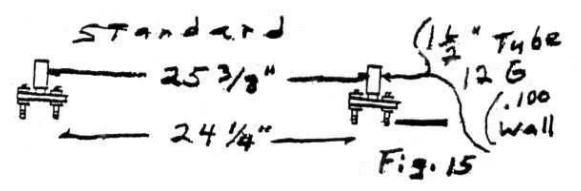
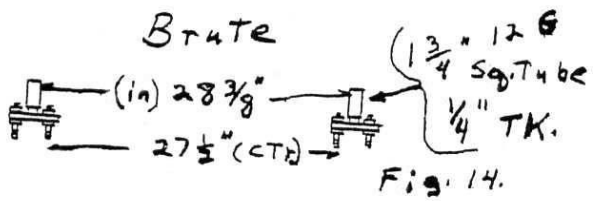
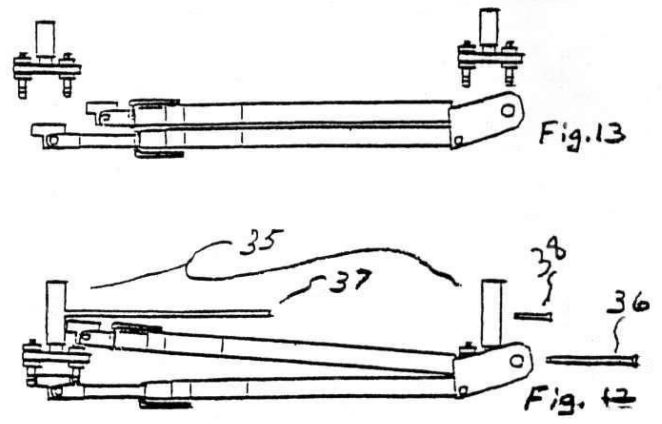
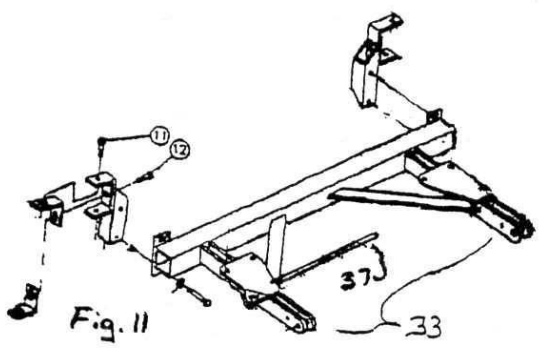
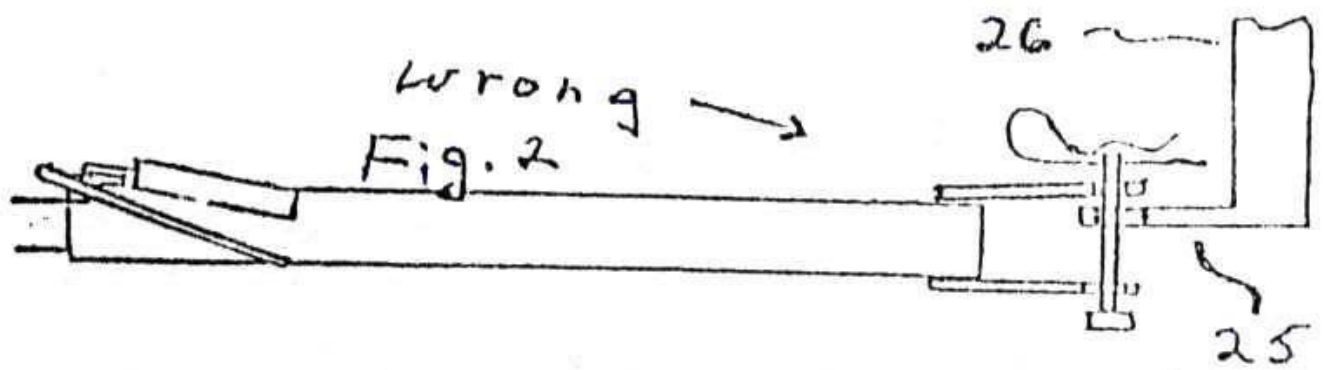
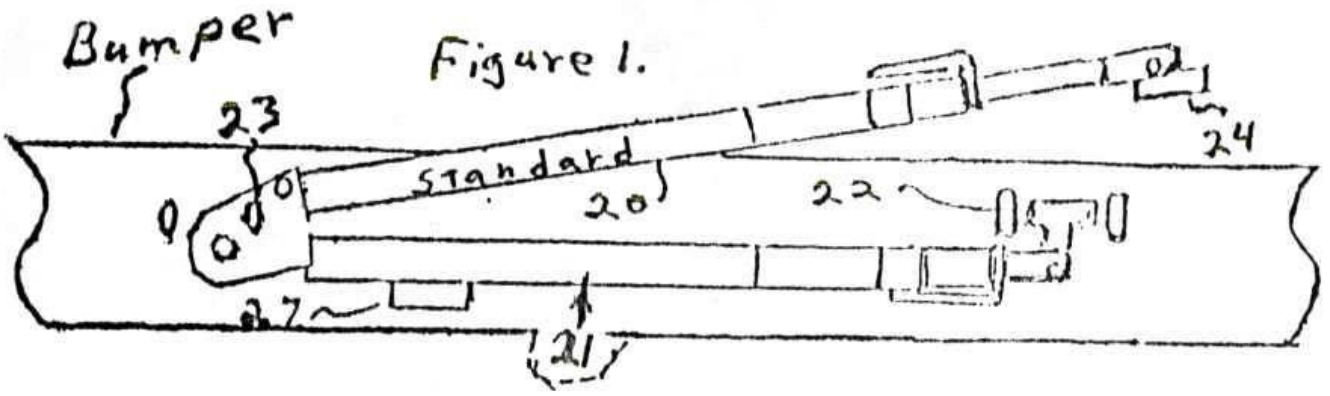
The length of Figure A iron determines how far under the bumper the tow bar is stored (under bumper or up in a-frame position). Mine is cut to 11-1/2" long which allows swinging the tow bar up in an "A", but it points forward at about a 45 degree angle. If the iron A was 13-1/2" long the "A" would be close to 90 degrees up and closer to the grill.

If you make it that long I would recommend welding the iron to the frame also. You could make the iron 2-1/4" shorter than the 11-1/2" (9-1/4"), but it will be harder to get at. If you change the length, add or subtract the distance at the arrow 10 section.

Figure B shows the front of both irons A, including the back plates welded to the angle irons. I positioned them as shown to get the inner eyebolts the right distance.

A notch, 1" X 1-1/4", in Figure C needs to be cut out of the left angle iron for the tow bar tongue. A crossways angle iron, 1/8" X 2", in Figure D, is welded to the lengthwise irons. This strengthens and positions the tow bar when folding. A thin bent plate 21 snugs the tow bar in storage and is welded to the right "A" iron.

Figure E is an optional pin lock bracket. A 3/16" X 3/4" flat is welded to the back plate 22, and bent and twisted. Another iron is bolted at the hole and hinged so it drops in front of and on the eyebolt pin, securing it.



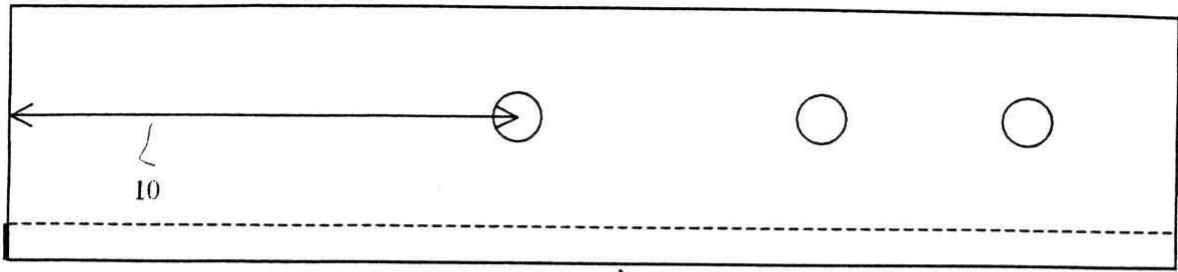


Figure A ↑

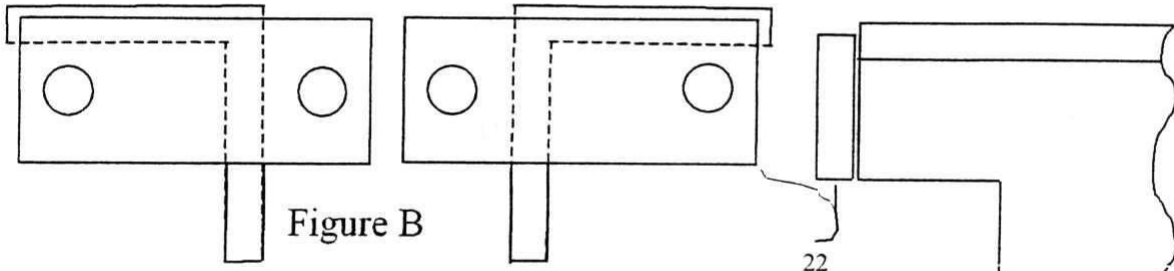


Figure B

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Figure C ↑

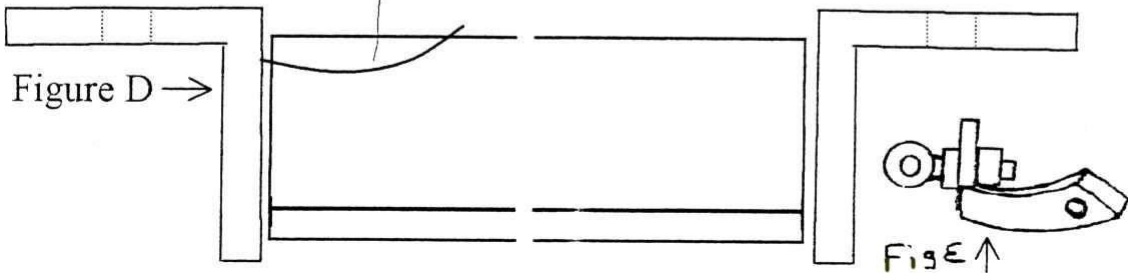


Figure D →

Figure E ↑

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