

FREE PLANS FOR A HITCH ADAPTOR

Many of our customers ask, "How detailed are the drawings and instructions?" So we decided to include a free set of plans to show an example. Due to space limitations we have selected a simple project to show the style, format and detailing of the CADplans drawings. The included drawings are of one of our creations, Hitch Adapter.

Hitch Adapter was created for a friend that was always borrowing our trailer to haul a few long boards. The accessory simply slides into the 2"x2" receiver hitch of a pickup truck and will stabilize long loads. Few pickups are equipped with tie downs in the bed and even tie downs do not let you conveniently restrain long objects.

Many times you want to haul some steel pipe, boards or a ladder in the back of your pick-up, but they are longer than the bed of the truck. Hitch Adapter, shown here, will slide into the receiver that is on most trucks to allow you to stabilize that long load.

The Hitch Adapter plans were created using a type of CAD software called solids. This software actually creates the items in the computer in 3 dimensions. The solids program is so accurate the program generates many other engineering details including the weight of each part.

CONSTRUCTION

The Hitch Adapter is fabricated from two (2) sizes of square tubing, some flat stock and three (3) pins. We recommend welding Hitch Adapter with a high strength welding process such as 6011 or 7018 stick welding. We don't recommend small MIG welders (under 200 amps) and easy weld rods such as 6013 because they produce inferior welds on the thickness of parts typically found in the CADplans equipment.

1. Start by determining the distance from the receiver hitch on your truck to the tailgate, when the tailgate is down. Use this dimension to adjust the length of Item 03 shown on **Sheet 01**. Fabricate the parts of Hitch Adapter out to Item 06.
2. Using a long straight edge or string, determine the distance from the bed of your truck to Point "A" shown on **Sheet 01**. Subtract 2" from this dimension and this is the length of Item 07. This must be done with the unit partially assembled (up to Item 06) and installed on the truck to account for the clearances in the square tubing you have acquired. This will result in the support surface of Hitch Adapter being slightly higher than the bed of your truck. That's OK, when it is loaded the assembly will flex down a little. After determining the dimension, complete Hitch Adapter.
3. Paint Hitch Adapter a nice shade of red and add a couple of reflectors so everybody can see it. Always add a flag to your load per local regulations. Check with local authorities for regulations concerning Hitch Adapter prior to use.

As you can see the dimensions are kept to a minimum to keep the drawings as clear as possible. All necessary information is in the plans and the instructions. Rather than cluttering the drawings with dimensions many times it is better to give part details like size and length in the Item Description area of the drawing. This keeps the drawing free of extra dimensions so details are shown better.

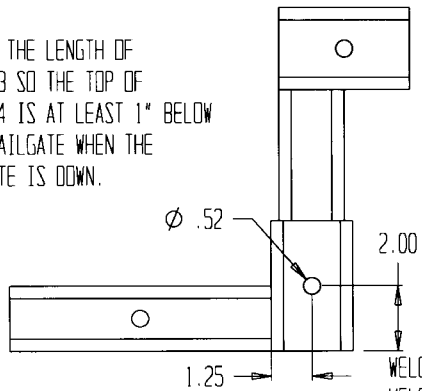
The parts of Hitch Adapter are simple. Don't feel bad about abandoning a part and starting over. This is better than having a defective part in your assembly. Remember that you are Quality Control. Make the part correct so you won't have a problem later.

Remember this is a load stabilizer. It is intended to stabilize long loads, not necessarily heavy loads. Hitch Adapter can be bent if you attempt to carry excessive weight with it. Also remember CADplans makes no claim of fitness of Hitch Adapter for any purpose. The builder accepts all liability responsibility including safety and compliance with provisions of any laws or acts. CADplans Corp. accepts no liability for the use of these plans. If you have any questions feel free to call John at 1-540 992-4758.

ITEM #	ITEM DESCRIPTION	QTY
01	2x2x3/16" x 8" SQUARE TUBE	1
02	2.5x2.5x3/16" x 4" SQUARE TUBE	1
03	2x2x3/16" x 8" SQUARE TUBE (or as req.)	1
04	2.5x2.5x3/16" x 4" SQUARE TUBE	1
05	2x2x3/16" x 48" SQUARE TUBE	1

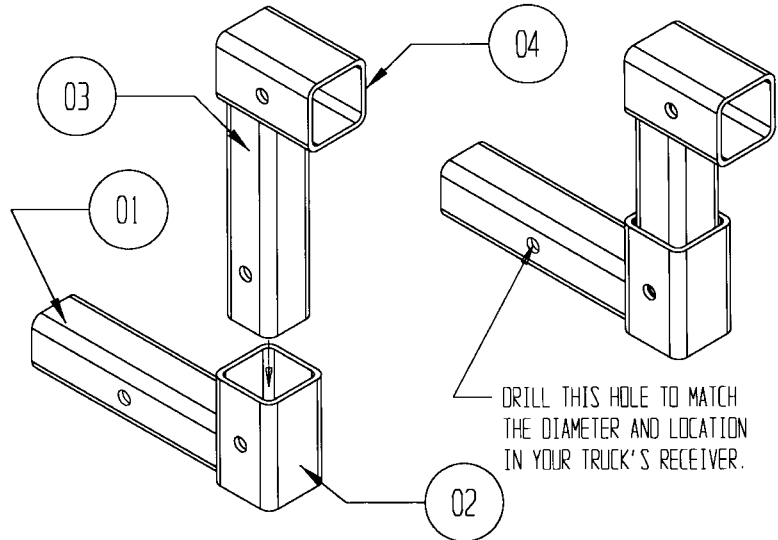
ADJUST THE LENGTH OF ITEM 01 TO CLEAR THE BUMPER IF REQUIRED.

ADJUST THE LENGTH OF ITEM 03 SO THE TOP OF ITEM 04 IS AT LEAST 1" BELOW YOUR TAILGATE WHEN THE TAILGATE IS DOWN.

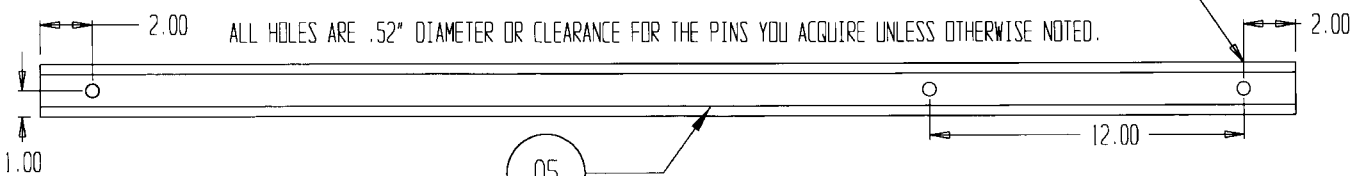


WELD ITEM 01 CENTERED ON AND AT THE BOTTOM EDGE OF ITEM 02
WELD ITEM 03 CENTERED ON AND AT THE BACK EDGE OF ITEM 04

DRILL HOLE IN ITEM 03 MATCHING HOLE LOCATION IN ITEM 02



DRILL THIS HOLE TO MATCH THE DIAMETER AND LOCATION IN YOUR TRUCK'S RECEIVER.



ALL HOLES ARE .52" DIAMETER OR CLEARANCE FOR THE PINS YOU ACQUIRE UNLESS OTHERWISE NOTED.

BUILDER ASSUMES ALL LIABILITY WITH THE USE OF THESE PLANS.

ITEMS 02, & 04 ARE IDENTICAL BUT WERE GIVEN UNIQUE NUMBERS BECAUSE OF WELDING NOTE.



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TITLE: RECEIVER ADAPTER		
Designed By Mikulas	DWG TYPE: PART DRAWING	
DATE: 11/05/98	REV #: 1	MODEL #: Hitch Adapter
ALL DRAWINGS ARE DIMENSIONED USING INCHES		

ITEM #	ITEM DESCRIPTION	QTY
06	2.5x2.5x3/16" x 4" SQUARE TUBE (STEEL)	1
07	2x2x3/16" x 8" SQUARE TUBE (STEEL)	1
08	2x2x3/16" x 8" SQUARE TUBE (STEEL)	1
09	1/4x2" x 6" STEEL BAR	2
10	1/2" DIAMETER PIN AND RETAINER	3

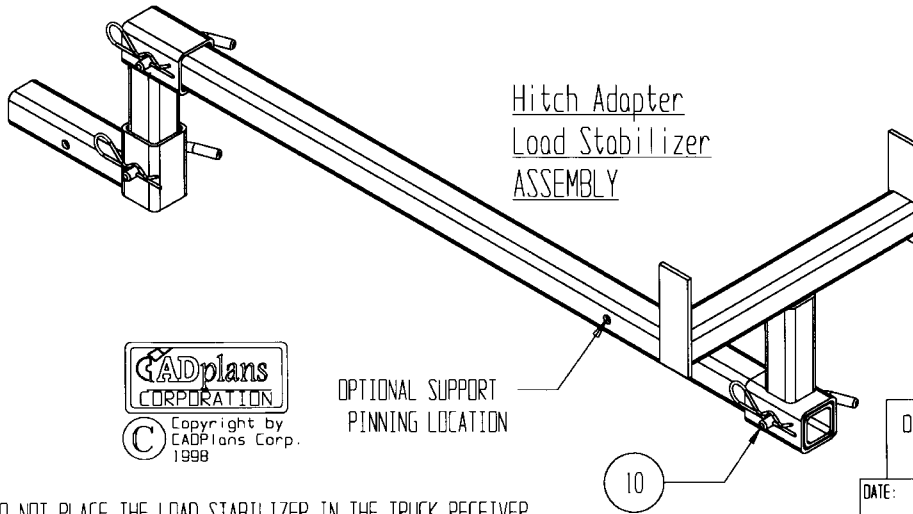
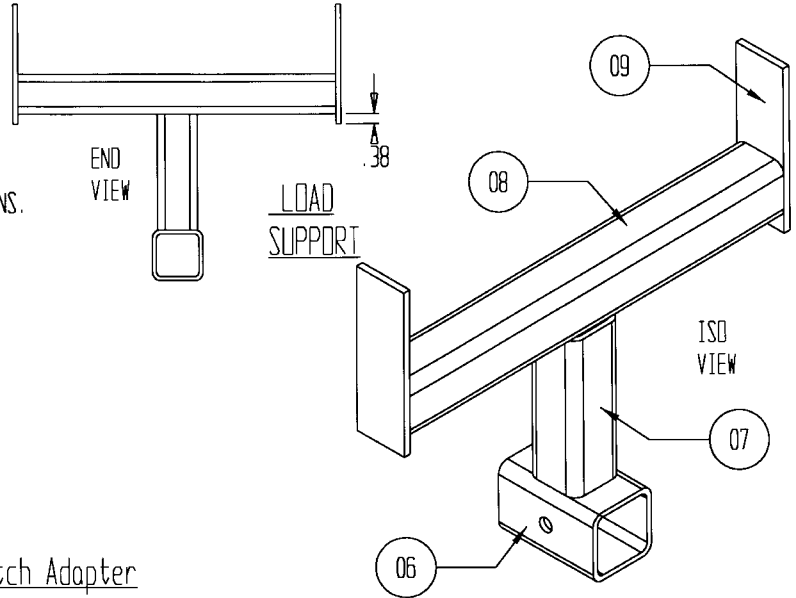
ADJUST LENGTH OF ITEM 07 AS DETAILED IN THE INSTRUCTIONS.

WELD ITEM 07 CENTERED ON ITEM 06.

WELD ITEM 08 CENTERED ON ITEM 07.

WELD THE ITEM 09'S TO ITEM 08 AS DIMENSIONED.

PIN THE LOAD SUPPORT ASSEMBLY TO ITEM 05 PER LOAD LENGTH REQUIREMENTS. THE OPTIONAL HOLE IS FOR SHORTER LOADS.



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Designed By Mikulas	TITLE: SUPPORT & ASSEMBLY	
	DWG TYPE: ASSEMBLY DWG.	
DATE: 11/05/98	REV #: 1	MODEL #: Hitch Adapter
ALL DRAWINGS ARE DIMENSIONED USING INCHES		

DO NOT PLACE THE LOAD STABILIZER IN THE TRUCK RECEIVER UNLESS YOU ARE CARRYING A PROPERLY FLAGGED/MARKED LOAD.