

60660 SUBKIT

DODGE 2500 / 3500 SHORT AND LONG BED

7/18/2014

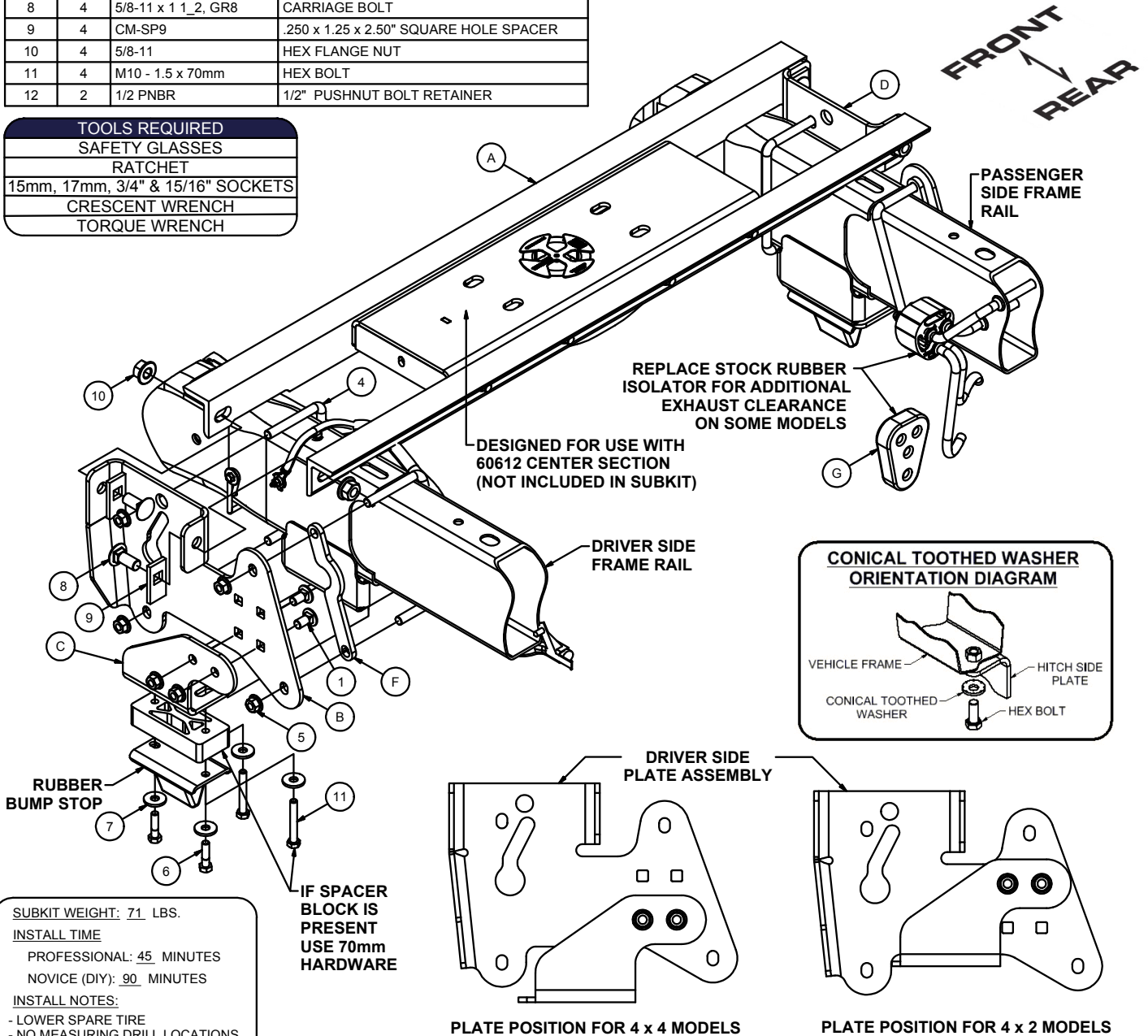
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WARNING!! BRAKE, FUEL, AND ELECTRICAL LINES MAY NEED TO BE LOOSENED OR REPOSITIONED TO PROVIDE CLEARANCE FOR NEW HARDWARE. SOME MODELS MAY REQUIRE MODIFICATION OR REMOVAL OF HEAT SHIELDS. ON SHORT BED MODELS, CHECK FOR ADEQUATE TURNING CLEARANCE BETWEEN THE FRONT OF ALL TRAILERS AND THE TRUCK CAB. ON TWO WHEEL DRIVE TRUCKS A CLEARANCE CHECK MUST BE PERFORMED WHEN TRUCK IS LOADED AND UNLOADED TO VERIFY THE INVERTED BALL WILL NOT INTERFERE WITH THE TOP OF THE DIFFERENTIAL

Hardware			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	4	1/2-13 x 1, GR8	CARRIAGE BOLT
2	8	1/2-13 x 1 1/2, GR8	CARRIAGE BOLT
3	4	CM-SP12	.250 x 1.00 x 2.00" SQUARE HOLE SPACER
4	4	CM-1209-UBS	1/2-13 x 4 x 7.25 x 1 3/4 SQ U-BOLT
5	20	HFN 1213, GR8	HEX FLANGE NUT
6	4	M10 - 1.5 x 40mm	HEX BOLT
7	4	7/16"	CONICAL TOOTHED WASHER
8	4	5/8-11 x 1 1/2, GR8	CARRIAGE BOLT
9	4	CM-SP9	.250 x 1.25 x 2.50" SQUARE HOLE SPACER
10	4	5/8-11	HEX FLANGE NUT
11	4	M10 - 1.5 x 70mm	HEX BOLT
12	2	1/2 PNBR	1/2" PUSHNUT BOLT RETAINER

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
A	2	60660-CA	2.50 x 2.00 x .375" CROSS ARM
B	1	60660-DSWA	.250" DRIVER SIDE PLATE
C	1	60660-DSB	.250" DRIVER SIDE BRACKET
D	1	60660-PSWA	.250" PASSENGER SIDE PLATE
E	1	60660-PSB	.250" PASSENGER SIDE BRACKET
F	2	60660-SP	.313" SPACER PLATE
G	1	CM-C655-EH	EXHAUST HANGER

TOOLS REQUIRED	
SAFETY GLASSES	
RATCHET	
15mm, 17mm, 3/4" & 15/16" SOCKETS	
CRESCENT WRENCH	
TORQUE WRENCH	



SUBKIT WEIGHT: 71 LBS.

INSTALL TIME

PROFESSIONAL: 45 MINUTES

NOVICE (DIY): 90 MINUTES

INSTALL NOTES:

- LOWER SPARE TIRE
- NO MEASURING DRILL LOCATIONS
- NO DRILLING INTO FRAME

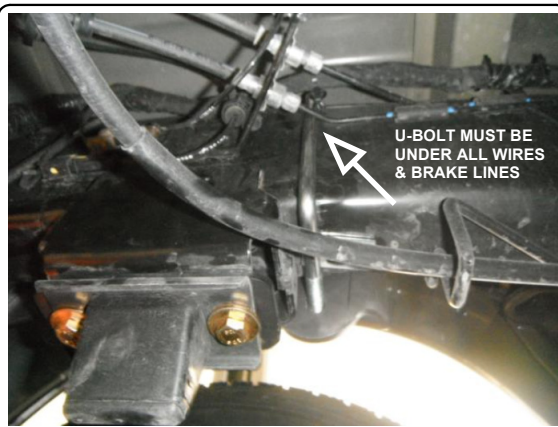
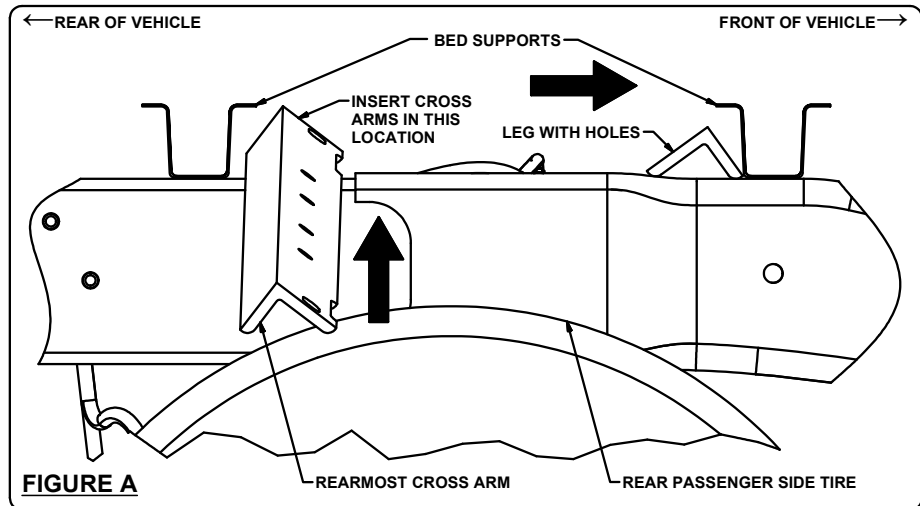
PERIODICALLY CHECK THIS GOOSENECK HITCH TO ENSURE THAT ALL FASTENERS ARE TIGHT AND THAT ALL STRUCTURAL COMPONENTS ARE SOUND.

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INSTALLATION STEPS:

1. Temporarily remove spare tire and temporarily remove plastic wheel well covers (if vehicle is equipped with them and if they are a style which prevents hitch installation).
2. Insert cross arm (A) by sliding it between the frame and the bottom of the truck bed. It needs to be inserted so the leg without the holes will be against the bottom of the bed and the leg with the holes will face the rear of the vehicle, see **FIGURE A**. **NOTE:** Use a crescent wrench to bend the metal flange below the bed outward to allow the cross arms to be slid into position. The cross arm can be used as a lever to add additional bend to the flange, if needed. Insert the cross arm in the location shown in **FIGURE A** until it spans the frame rails. Slide the cross arm forward so that it is next to the forward bed support.
3. Insert the rearmost cross arm (A) in the same location that the first cross arm was inserted. Slide it in until it spans the frame rails. This needs to be inserted so the leg without the holes will be against the bottom of the bed and the leg with the holes will face the front of the vehicle, see **FIGURE A**.
4. Place the forward U-bolt (4) into position on the inside of the driver side frame rail. See **FIGURE B** for approximate location of the U-bolt. One or two of the wire harness clips may need to be unfastened from the inside of the driver side frame rail on some models for the U-bolt to be put into position. **NOTE: The U-bolts must be positioned under all the brake lines and wires, see FIGURE B.**
5. The rearmost rubber exhaust isolator may need to be replaced with the included isolator (G) on some models. Replace if needed for additional clearance between the exhaust and the hitch, see **PAGE 1**. This will only be needed on models with exhaust styles shown in **FIGURE C**.



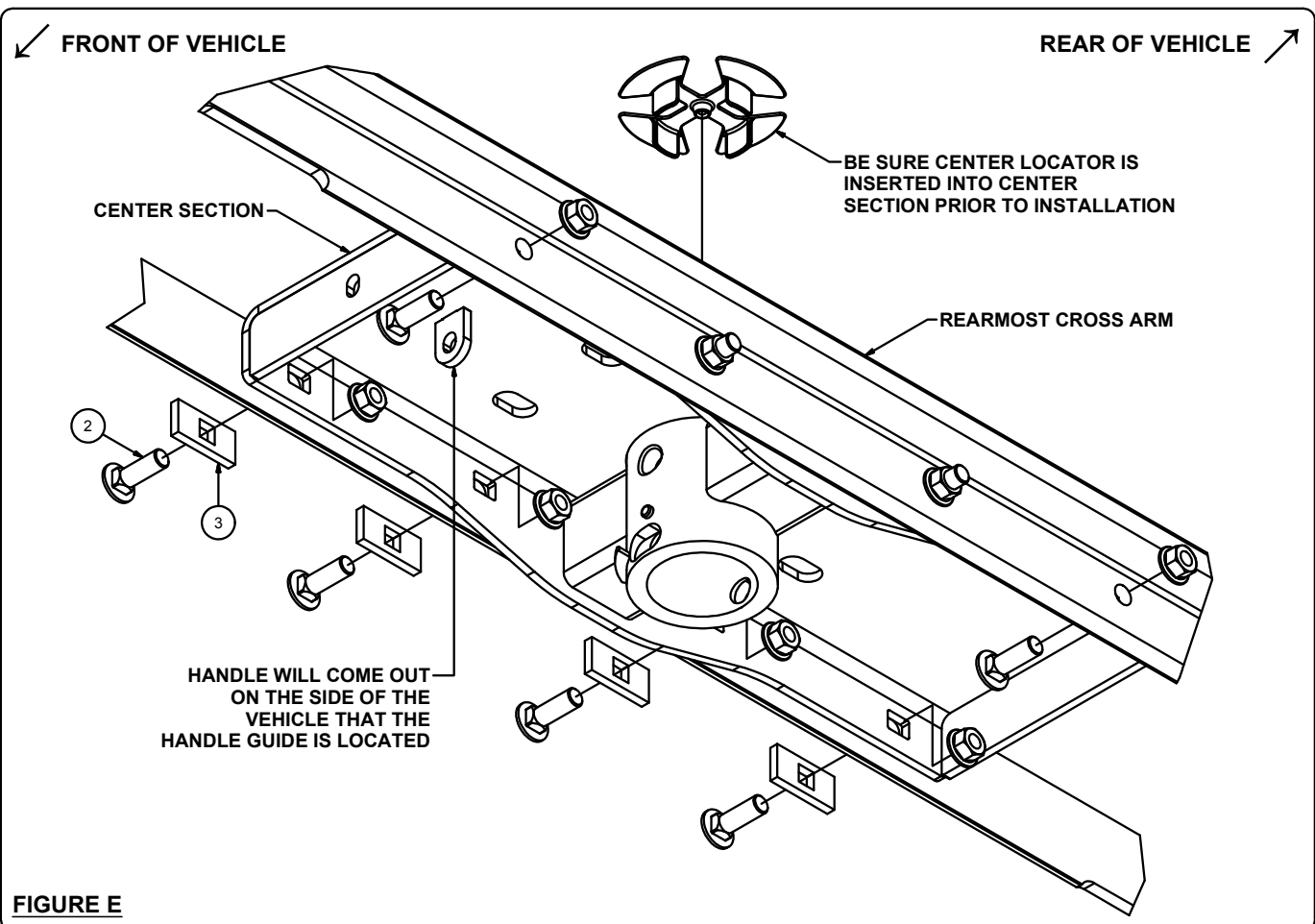
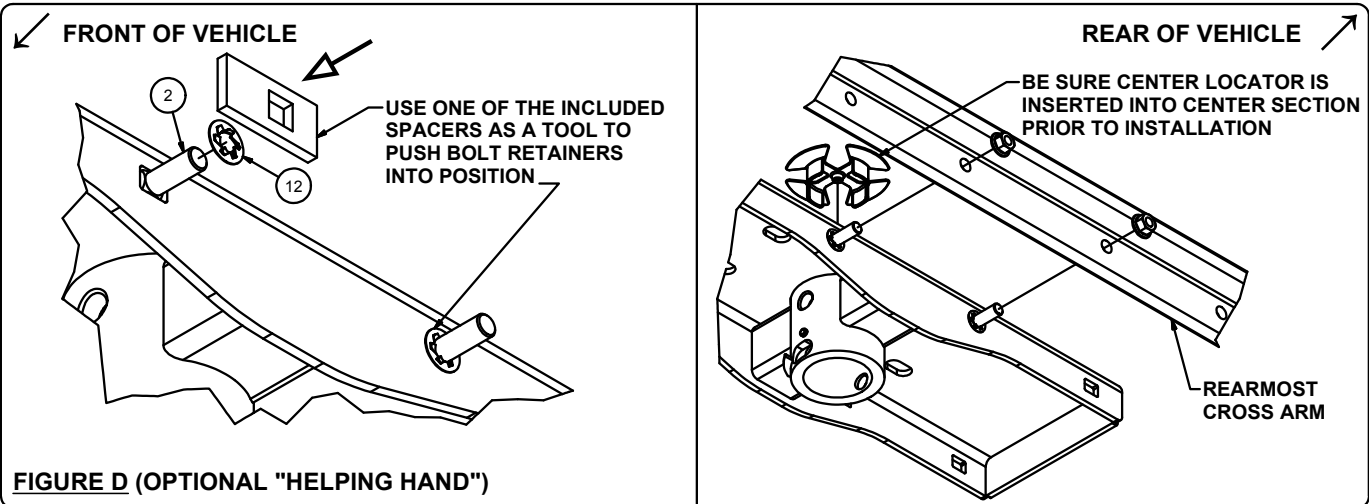
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3500 SHORT AND LONG BED

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INSTALLATION STEPS CONTINUED:

6. Raise the center section into position. **OPTIONAL:** Two pushnut bolt retainers (11) are included to give a "helping hand" to the installation process. If desired, put two 1/2" x 1 1/2" carriage bolts (2) in through the centermost slots on the side of the center section that will fasten to rear cross arm. Be sure the serrations in the bolt retainers are angled away from the center section and push a bolt retainer onto the two carriage bolts. Use one of the included spacers as a tool to push the bolt retainers into position, see **FIGURE D**. **NOTE:** The gooseneck handle will come out on the side of the vehicle that the handle guide is located. Be sure center locator is inserted into the center section cylinder prior to installing. Loosely attach to the front cross arm by placing four 1/2" x 1 1/2" carriage bolts (2) with four CM-SP12 spacers (3) in through the forward cross arm and attach center section with four 1/2" hex flange nuts (5), see **FIGURE E**.
7. Slide the rearmost cross arm forward and loosely attach to the center section by inserting four 1/2" x 1 1/2" carriage bolts (2) in through the center and out the rearmost cross arm. Attach with four 1/2" hex flange nuts (5), see **FIGURE E**.
8. Loosely assemble the side plates with brackets (B & C) and (D & E) using 1/2" x 1" carriage bolts (1) and 1/2" hex flange nuts (5). The brackets will attach to the top set of holes on the side plates for two wheel drive models and the bottom set of holes for four wheel drive models, see **PAGE 1**.
9. Remove the the rubber bump stop from underneath each frame rail by removing two M10 bolts from each. Save the rubber bump stops for reinstallation but the hardware removed will not be reinstalled, see **PAGE 1**.
10. Place driver side plate assembly over the U-bolt (4) which was positioned in step 4. Attach to the U-bolt with two 1/2" hex flange nuts (5). **NOTE:** The ground wire on the outside of the driver side frame rail on 2012 and earlier models must not be pinched between the driver side plate (B) and frame. This ground wire may need to be loosened, rotated slightly and retightened for the plate to be put into position.
11. Insert the rearward U-bolt (4) over the inside of the driver side frame rail and position the spacer (F) between the plate and frame rail in the orientation shown on **PAGE 1**. Loosely attach to the driver side plate assembly using two 1/2" hex flange nuts (5). One of the wire harness clips may need to be unfastened from the inside of the driver side frame rail on some models for the U-bolt to be placed into position.
12. Clamp the driver side plate assembly between the rubber bump stop and frame rail using the supplied 7/16" conical toothed washers (7) and M10 x 40mm hex bolts (6). Use the M10 x 70mm hex bolts (11) if spacer block is present.
13. Attach driver side plate assembly to the cross arms by inserting 5/8" x 1 1/2" carriage bolts (8) with CM-SP9 spacers (9) in through the driver side plate (B) and out the cross arms (A). Attach with 5/8" hex flange nuts (10), see **PAGE 1**.
14. Insert the forward U-bolt (4) into position on the inside of the passenger side frame rail and loosely attach the passenger side plate assembly using two 1/2" hex flange nuts (5). Repeat steps 11 -13 on the passenger side with this plate assembly.
15. Verify the center section is centered on the vehicle by checking that the sides of the center section are in the same location on bed ribs.
16. Torque all fasteners in the following order: **First:** Torque the center section to the cross arms. **Second:** Torque the side plate brackets to the truck frame. **Third:** Torque side plate assemblies and the U-bolts to the side plates. **Forth:** Torque the side plates to the cross arms. Torque all 5/8" fasteners to 210 ft-lbs, 1/2" fasteners to 110 ft-lbs and M10 hardware to 45 ft-lbs.

(REFER TO 60612 GOOSENECK HITCH INSTRUCTIONS FOR INSTALLATION COMPLETION AND OPERATING PROCEDURES)

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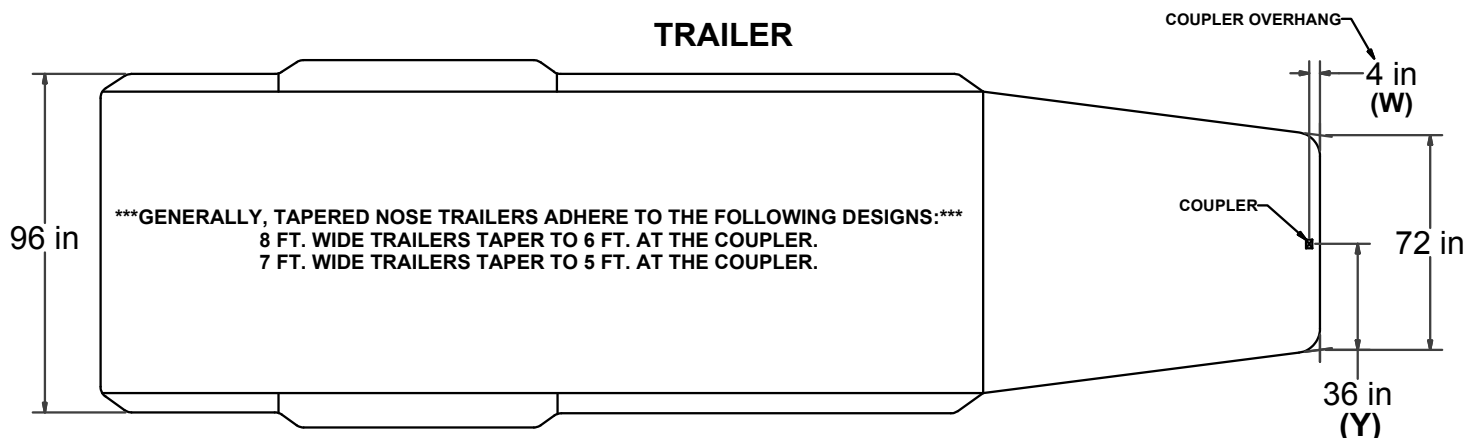
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CAB TO TRAILER CLEARANCE

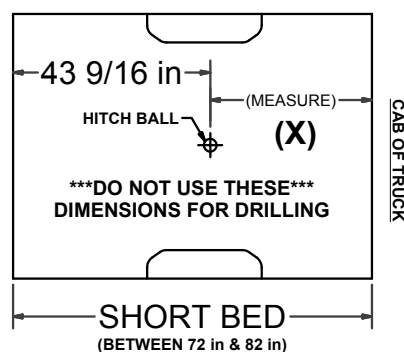
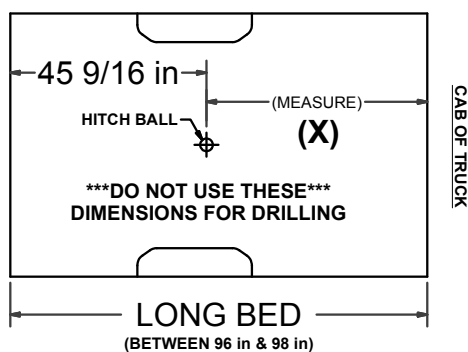
****REMOVAL OF REAR WINDOW ACCESSORIES MAY BE REQUIRED.****

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TRAILER



LONG & SHORT TRUCK BEDS



CLEARANCE CALCULATION

$$\begin{matrix} \text{(CAB TO BALL CENTER)} & - & 1/2 \text{ (TRAILER WIDTH)} & = & \text{(MINIMUM CLEARANCE)} \\ \text{(X)} & - & \text{(Y)} & = & \text{(Z)} \end{matrix}$$

IF THERE IS AN OVERHANG FROM THE COUPLER THEN THE EQUATION IS:

$$\begin{matrix} \text{[(X) - (W)]} & - & \text{(Y)} & = & \text{(Z)} \end{matrix}$$

***IF (Z) IS POSITIVE, TRAILER **WILL NOT** INTERFERE WITH CAB OF TRUCK.
 IF (Z) IS NEGATIVE, TRAILER **WILL** INTERFERE WITH CAB OF TRUCK!!!

EXAMPLE:

STANDARD TRAILER

$$X - Y = Z$$

$$35 - 36 = -1$$

(TRAILER **WILL INTERFERE** WITH CAB)

TRAILER WITH OVERHANG

$$\text{[(X) - (W)]} - Y = Z$$

$$[35 - 4] - 36 = -5$$

(TRAILER **WILL INTERFERE** WITH CAB)

YOUR CALCULATION:

$$\text{(CAB TO BALL CENTER)} \quad \underline{\hspace{2cm}}$$

$$\text{(COUPLER OVERHANG)} \quad \underline{\hspace{2cm}}$$

$$1/2 \text{ (TRAILER WIDTH)} \quad \underline{\hspace{2cm}}$$

$$\text{(MINIMUM CLEARANCE)} \quad \underline{\hspace{2cm}}$$

60612

GOOSENECK HITCH

1/30/2013

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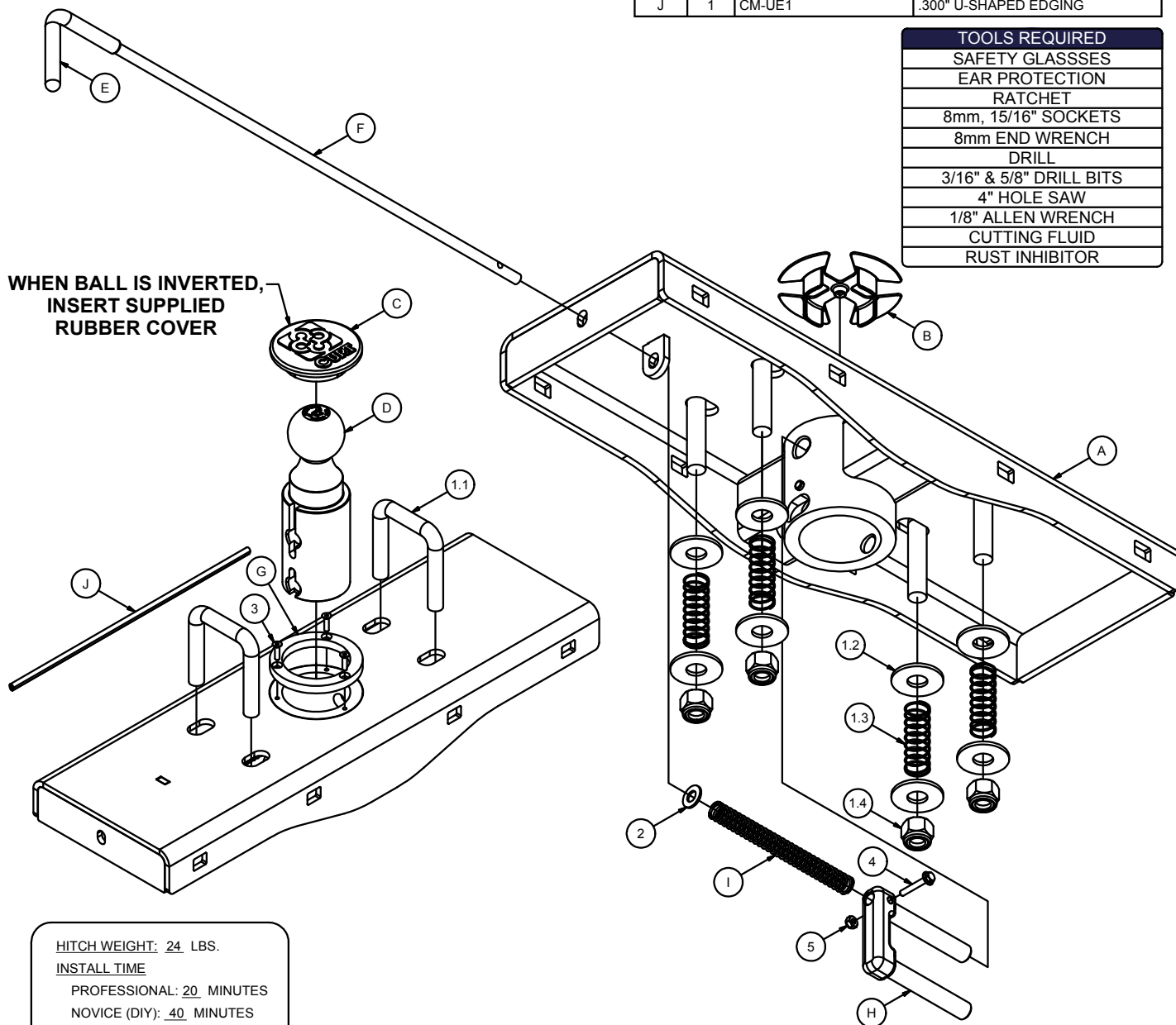
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Hardware List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	60612-CLA	SAFETY CHAIN LOOP ASSEMBLY
1.1	1	60612-UB	5/8" - 11 x 2.50" x 3.25" U-BOLT
1.2	4	5/8"	WASHER WIDE
1.3	2	CM-C113-UBS	U-BOLT SPRING
1.4	2	5_8-11 NYLOCK HEX NUT	5/8"-11-2B UNC NUT
2	2	3/8"	WASHER
3	3	#10-32 x 3/4	FLAT HEAD C'SUNK CAP SCREW
4	1	#10-24 x 1.25 HHFS	HEX HEAD FLANGE SCREW
5	1	#10-24 NYLOCK HEX NUT	NYLOCK HEX NUT

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
A	1	60612-WA	GOOSENECK CENTER SECTION
B	1	60611-CL	CENTER LOCATOR / TRIM SHIELD
C	1	66165	RUBBER COVER
D	1	CM-C60-B	TURNOVER BALL COMPLETE
E	1	CM-C60-H	VINYL HANDLE GRIP
F	1	CM-C60-R	.375" HANDLE ROD
G	1	CM-C600-CR	3.75 DIA. x .375" CHROME RING
H	1	CM-C600-CLP	CAST LOCK PIN
I	1	CM-C60-CS	7.5 LB COMPRESSION SPRING
J	1	CM-UE1	.300" U-SHAPED EDGING

TOOLS REQUIRED

SAFETY GLASSES
EAR PROTECTION
RATCHET
8mm, 15/16" SOCKETS
8mm END WRENCH
DRILL
3/16" & 5/8" DRILL BITS
4" HOLE SAW
1/8" ALLEN WRENCH
CUTTING FLUID
RUST INHIBITOR



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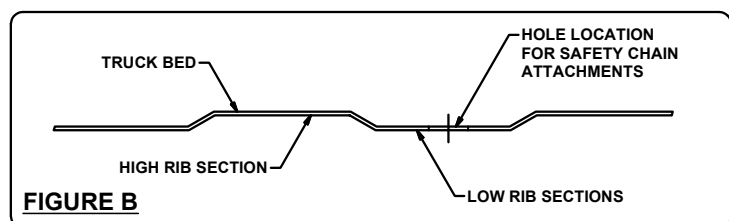
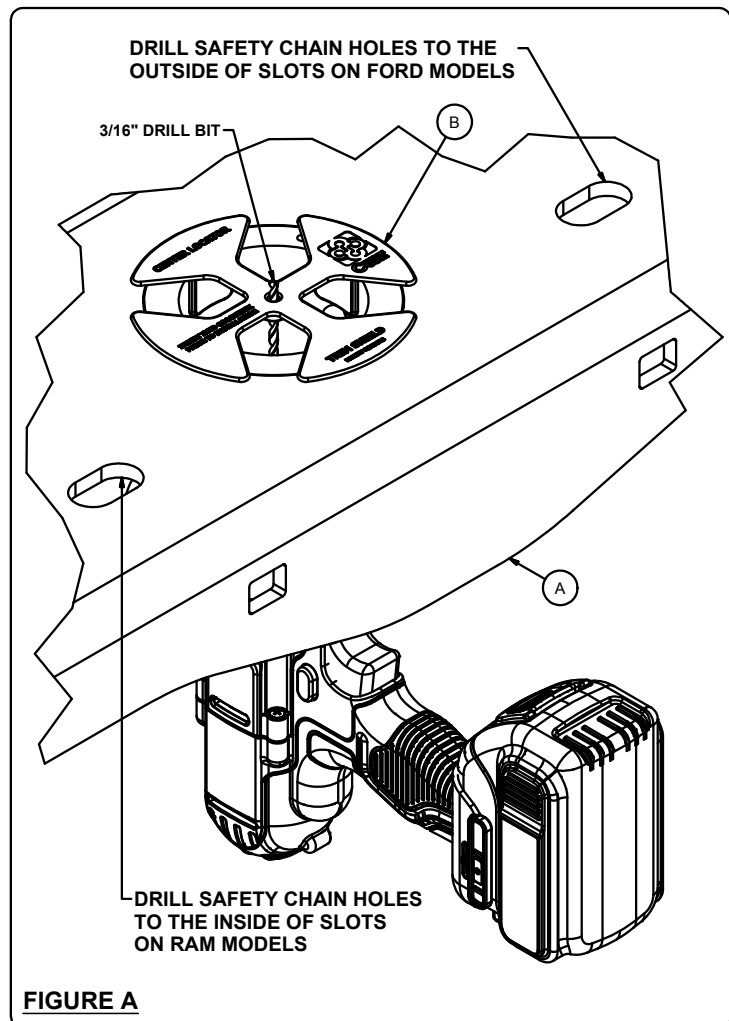
GOOSENECK HITCH

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INSTALLATION STEPS: (After subkit installation)

1. Drill pilot hole from underneath the truck bed through the hole in center locator / trim shield (B) using a 3/16" drill bit, see **FIGURE A**.
2. Drill four holes for safety chain loops from underneath the truck bed using a 5/8" drill bit. Use the center section (A) as a guide. Drill holes should go through the low rib sections, see **FIGURE B**. **NOTE:** Drill holes should be to the outside of slots in the center section on Ford models and to the inside of slots on Ram models, see **FIGURE A**.
3. Drill hole from top of truck using 4" hole saw, take caution to not drill through the center locator / trim shield (B). **NOTE:** The use of cutting fluid will ease this process. Remove the center locator by pulling it up through the hole.
4. Deburr cut holes and spray exposed metal with rust inhibitor. **OPTIONAL:** Insert rubber edging (J) around 4" hole.
5. Place chrome ring (G) into position and fasten with three flat head cap screws (3).
6. Place two U-bolts (1.1) down through the holes drilled in step 2.
7. From underneath the truck place a washer (1.2), a spring (1.3), a washer (1.2) and a 5/8" nut (1.4) on each of the four U-bolt legs. Tighten the nuts until flush with the bottom of the U-bolt, see **PAGE 1**.
8. Insert cast lock pin (H) into the ball cylinder with handle hole located on top.
9. Insert handle (F) from outside vehicle, through the holes center section, see **PAGE 1**. **NOTE:** Some models may require use of a pliers to bend the metal flange below the bed outward to allow the handle to move without interference.
10. Slide one 3/8" washer (2) and the compression spring (I) over handle before inserting the handle (F) into the lock pin (H). Insert handle into locking pin and secure with a hex head flange screw (4) and nylock nut (5), see **PAGE 1**. **NOTE:** If needed, add or remove a 3/8" washer (2) to ensure proper pull length of locking pin.
11. If removed, reinstall plastic wheel well covers. **NOTE:** Some models may require trimming of the plastic wheel well cover. Trim as needed for reinstallation and access to the handle. Reinstall spare tire.



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60612 OPERATION:

1. Place handle in the unlock position by pulling it out as far as possible and rotating it clockwise. **NOTE:** Never operate vehicle with the handle in the unlocked position.
2. Insert ball into the desired position in the cylinder by aligning the ball groove with the cylinder pin. If the groove and pin are not aligned simply rotate the ball until it drops into place.
3. Place handle in the lock position by rotating it counter clockwise until locking pin snaps back into position.

BEFORE TOWING THE FIRST TIME:

- Verify adequate turning clearance between the truck cab / box corners and trailer(s).
- Check truck box clearance. There should be a minimum clearance of 6" between the bottom of the trailer(s) overhang and the top of the box sides.
- Verify the inverted ball will not interfere with the top of the differential when hauling heavy loads. This is especially important on two wheel drive models.
- Verify all hardware is torqued to the proper specification.
- Verify the trailer safety chain length. Too much slack in the chain may prevent maintaining control in the event of separation. Leave only enough slack to allow full turning without interference.
- Verify the trailer attachments to the safety chain loops are secure (cannot be shaken free during towing).

BEFORE TOWING EVERY TIME:

- Ensure all fasteners are tight and that all structural components are sound. **NOTE:** Do not tow trailer with worn or damaged parts.
- Attach trailer securely to both of the safety chain loops.
- Ensure the handle is in the lock position and that the locking pin passes completely through the ball and both walls of the hitch cylinder.
- Ensure the trailer weight does not exceed any part of your towing system. Be sure load is heavier towards front of the trailer while not exceeding the hitch tongue weight. Be sure trailer load is secured to prevent shifting and centered from left to right. **NOTE:** Never load the trailer heavier behind the trailer axle(s).
- Check trailer tires to ensure they are inflated to the proper specification.
- Verify trailer lights, electric brakes and breakaway switches are working properly.

MAINTENANCE:

- Keep hitch ball, cylinder and trailer coupler lubricated regularly. Use silicone spray or equivalent to prevent wear / rust.
- Keep hitch assembly and trailer coupler free of dirt and other foreign debris.

WARNING!!

- Vehicle performance (braking, handling, acceleration, turning radius) can be drastically affected by the trailer. Allow additional time / space for stopping, changing lanes, passing and turning.
- Do not tow more than one trailer at a time. This may cause loss of control.

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