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# HR-520 HOIST

## Installation & Operation Manual

To Be Filled In By Installer

Hoist Serial #: \_\_\_\_\_

Pump Installation  
And Operation Manual#: \_\_\_\_\_

In Service Date: \_\_\_\_\_

Dealer: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, ZIP: \_\_\_\_\_

Dealer Phone Number: \_\_\_\_\_

*Use this manual only if installing or operating a model HR-520 hoist. This manual should be kept in truck glove compartment for reference when needed.*

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# Warnings

**WARNING:** Installing or operating this hoist without first understanding the proper installation and operation procedures can lead to serious injury or death. **Always** read and understand fully all installation and operation manuals before installing or operating this equipment.

**WARNING:** Welding, oxy-fuel cutting, or grinding sparks can cause fuel to ignite which in turn can lead to injury or death. **Always** take adequate steps to avoid ignition of fuel from fuel tanks when welding, grinding, or oxy-fuel cutting during equipment installation.

**WARNING:** Heat from the truck's exhaust system can cause hydraulic component failure and may lead to a fire which could cause injury or death. **Always** install equipment in locations where heat from the exhaust system will not damage any hydraulic component.

**WARNING:** Being under a raised body can result in serious injury or death should the body inadvertently descend. **Never** position yourself or allow others to position themselves under a **loaded** body. **Always** prop the **unloaded** body up using the body prop or body props supplied. **Remember** body props are to be used only on an **unloaded** body.

**WARNING:** Malfunctioning equipment can cause property damage, injury or death. **Always** have faulty equipment repaired before continuing its use. If required, consult the manufacturer.

**WARNING:** Overloading of a truck can cause truck component damage or an accident which may cause injury or death. **Never** exceed the gross vehicle weight (GVW) or the gross axle weight (GAW) rating of your vehicle or trailer.

**WARNING:** The inadvertent shorting of the truck's electrical supply can cause a fire or equipment damage that could lead to injury or death. **Always** disconnect the vehicle battery prior to installing, servicing or repairing the pump.

**WARNING:** Connecting the hoist to a hydraulic system with more pressure (psi) or flow (gpm) than is recommended by the hoist manufacturer can cause the hoist to fail during the dumping of a load. This could lead to damage, serious injury, or death. **Be sure** you have the correct pressure and flow. Consult the manufacturer if you do not know the recommended pressure and flow.

**WARNING:** Adjusting the hydraulic pressure to more than the recommended setting may cause the hoist to fail during the dumping of a load. This could cause damage,

serious injury, or death. **Never** adjust the pressure on your own. Consult the manufacturer if the hydraulic pressure is in question. Have only a qualified person set the hydraulic pressure. **Never** adjust the pressure to more than the recommended amount.

**WARNING:** Fluid under pressure can pierce the skin and enter bloodstream, causing serious injury or death. **Always** wear eye protection and protective clothing when working around hydraulic systems.

**WARNING:** Damage to brake lines during equipment installation, or installing bolts or equipment in such a way that the line will rub and become damaged can lead to brake failure which can cause an accident and can lead to severe injury or death. **Always** take adequate steps to prevent brake line damage during installation and isolate brake lines from installed equipment.

**WARNING:** Never install a cable on a truck while the body is raised without first blocking, bracing, or propping the body up to prevent the body from inadvertently falling when the control valve lever is moved. A falling body will result in serious injury or death if the control valve lever is moved while someone is under the non-supported body.

**WARNING:** Do not raise or drive a raised body against a power line. Bring body in contact with a power line or power source will result in serious injury or death by electrocution.

**WARNING:** Do not raise or drive a raised body against another object. Doing so could result in equipment damage or property damage, bodily injury or death.

**WARNING:** Do not dump while on uneven ground or if vehicle is in an uneven position from side to side. Dumping unevenly can cause vehicle to overturn and cause equipment or property damage, personal injury, or death.

**WARNING:** Stay clear of dump body when dumping. Moving vehicle parts or the moving load could cause injury or death.

**WARNING:** Check load making sure that rocks or any other object will not spill out of vehicle while transporting load. Falling objects can cause equipment damage or property damage, bodily injury or death.

**WARNING:** Make sure all doors are closed and latched before moving vehicle. Swinging doors or falling objects can cause equipment or property damage, bodily injury or death.

# Caution

The hydraulic system supplied with a given hoist manufactured by Rugby Manufacturing Co. is made up of components (pump, valves, reservoir, hoses, cylinder, etc.) that are designated to be compatible with each other.

If you substitute hydraulic components, it is your responsibility to BE SURE they are compatible with the other components supplied by Rugby Manufacturing Co. Incompatible hydraulic components may cause failure of the hoist which in turn could damage the truck, damage other property, and cause human injury or death.

All Rugby Manufacturing Company's liability and warranty for a given hoist will be voided if it is determined by Rugby Manufacturing Co. that substituted hydraulic components were used that were incompatible with those supplied by Rugby Manufacturing Co.

Several hoist parameters are given in the following table. These parameters are given as a general guide. To ensure component compatibility, consult Rugby Manufacturing Co.

| <i>HOIST MODEL</i>                                          | <i>HR-520</i> |
|-------------------------------------------------------------|---------------|
| "MAXIMUM" HYDRAULIC FLOW RATE (GPM)                         | 6 GPM         |
| "MAXIMUM" PRESSURE FOR RAISING PORTION OF DUMP CYCLE (PSI)  | 3200 PSI      |
| "MAXIMUM" PRESSURE FOR LOWERING PORTION OF DUMP CYCLE (PSI) | 1500 PSI      |

# Assembly Instructions:

## Body Prop Installation:

*A body prop is supplied with every HR-520 hoist package kit.*

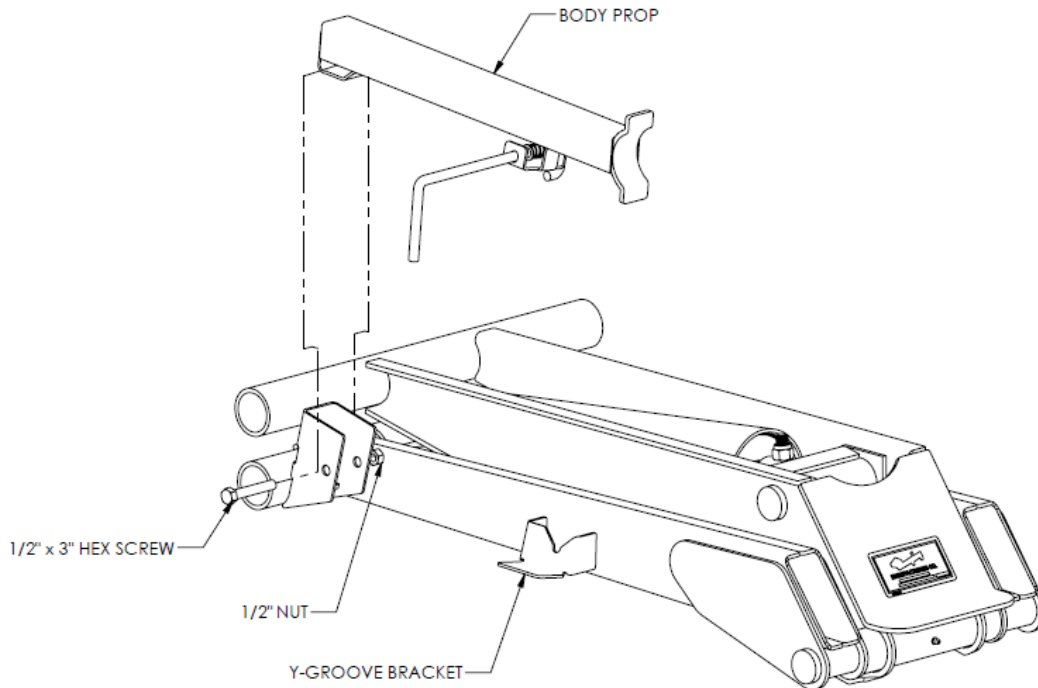


FIGURE 1

1. Insert the body prop into the body prop bracket, making sure that the handle hook is pointing towards the hoist. (*Figure 1*)
2. Fasten the body prop to the body prop bracket with the supplied 1/2" x 3" hex screw & locknut. Tighten locknut until body prop binds when moved, and then back off locknut just until body prop slides freely.
3. While pushing the handle in, lower the body prop to the down position. (The handle should be resting against the bottom of the Y groove).
4. With the handle still pushed in, rotate the handle until the handle hook locks against the bottom of the Y-groove bracket.

**NOTE:** To raise and lower body prop, see the "OPERATION" section of this manual.

# Hoist/Sub-frame Assembly:

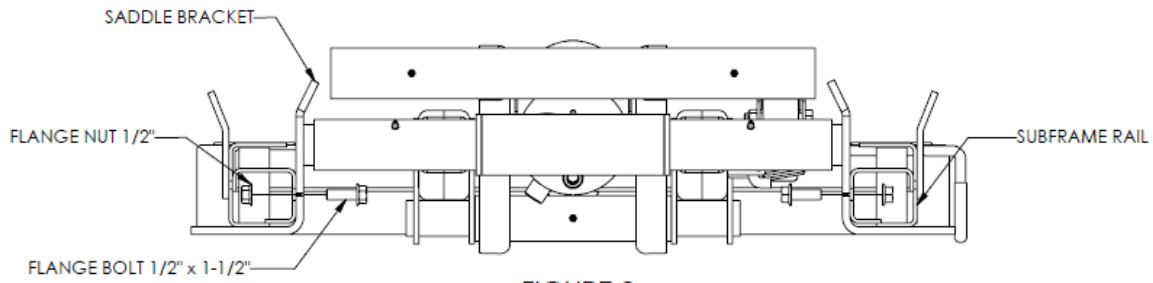


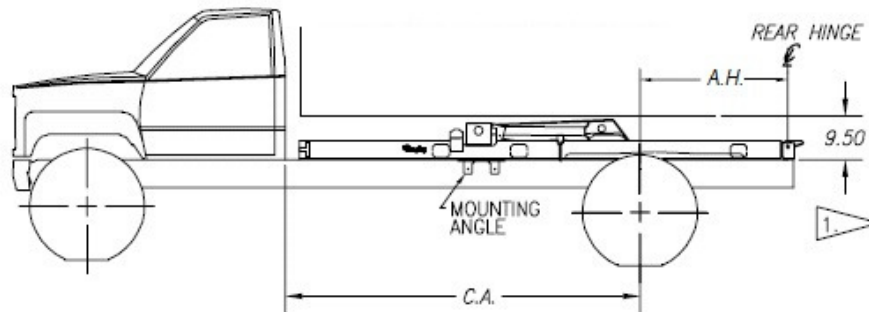
FIGURE 2

1. Position the hoist into the sub-frame and secure with four 1/2" x 1 1/2" flange bolts and nuts. To keep the hoist straight, align the saddle brackets of the hoist with the corresponding brackets in the sub-frame. (Figure 2)

**NOTE:** Torque all 1/2" fasteners to 90 ft. lb.

**NOTE:** Ensure that both saddle brackets are firmly seated against the bottom of the sub-frame after the hardware is tightened. It may be necessary to clamp the saddle bracket and sub-frame together to prevent a gap from existing between the two surfaces.

2. Position the hoist with sub-frame on the truck frame as shown in Figure 3.



1. MINIMUM MOUNTING HEIGHT REQUIRED FROM BOTTOM OF TRUCK BODY TO TOP OF TRUCK FRAME.

| HR-520 APPLICATION CHART |        |               |                   |
|--------------------------|--------|---------------|-------------------|
| BODY LENGTH              | CA     | REAR OVERHANG | CAPACITY 50' DUMP |
| 8'                       | 60 IN. | 6 IN.         | 9.8 Ton           |
| 9'                       | 60 IN. | 18 IN.        | 11.5 Ton          |
| 10'                      | 60 IN. | 30 IN.        | 13.8 Ton          |
| 10'                      | 84 IN. | 6 IN.         | 7.6 Ton           |
| 12'                      | 84 IN. | 30 IN.        | 9.8 Ton           |

Capacities are based on water level, nondiminishing loads. Because of variations in truck equipment and cab axles (CA) the data contained in this sheet is provided only as a general guide.

**HR-520**  
DUMP CLASS 20

FIGURE 3

| A.H.    | APPLICATION                      |
|---------|----------------------------------|
| 34"     | STANDARD                         |
| 46"     | FORD                             |
| 51"5/2" | CHEVROLET & DODGE W/ REAR TANKS. |

3. Fasten the very rear end of the sub-frame to the truck by welding the rear hinge angle to the chassis frame as shown in Figure 4.

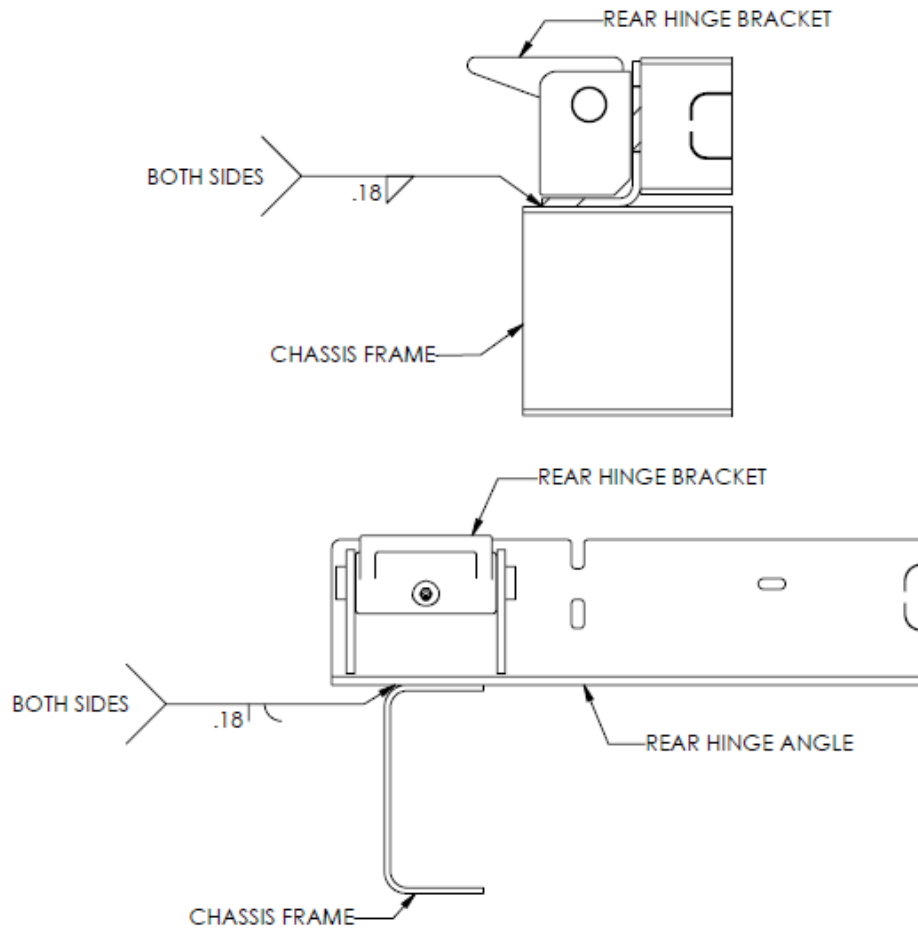


FIGURE 4

4. Position a mounting angle under each saddle flat located on each side of the sub-frame. Secure each mounting angle to the truck frame by drilling two  $17/32$ " Dia. holes and bolting the mounting angles to the truck frame using two  $1/2$ " x 2" GR 8 bolts, four flat washers, two lock washers and two nuts. (Figure 5).



**NOTE:** Torque all 1/2" fasteners to 90 ft. lb.

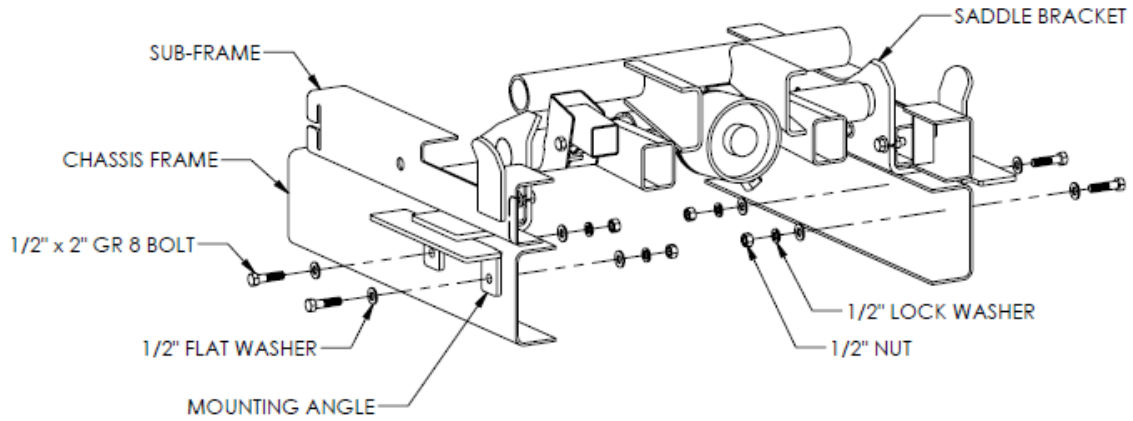


FIGURE 5

5. Finally, weld each mounting angle to its respective saddle flat. (*Figure 6*)

**NOTE:** DO NOT weld mounting angles or saddle flats to the truck frame.

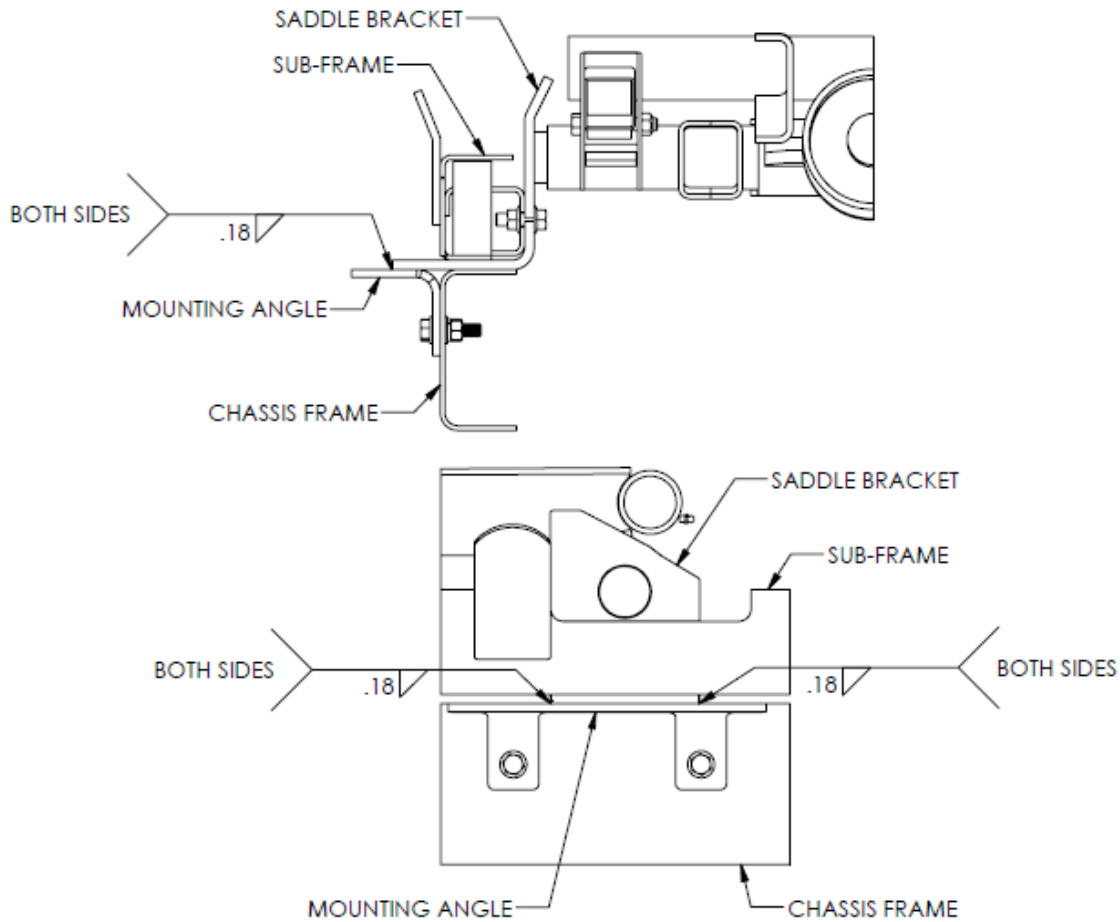


FIGURE 6

- Cut excess frame off behind the sub-frame rear hinge.

**IMPORTANT:** If the truck has fuel tanks located between the chassis frame rails, run the fillwell spout between the chassis frame rails through one of the sub-frame side channel knockouts and outside the chassis frame rails for access to refueling the truck. If an alternate location is needed for the fillwell spout, other than the knockout locations provided, cut a hole in the sub-frame side rail at the preferred location. Hole must not exceed 3" in diameter; or disturb the top or bottom flanges of the side rail and must be completely contained in the web portion of the side rail.

- Slide a lock collar onto each lifting shaft. Slide a lifting shaft with collar into each end of the hoist lifting tube (*Figure 7*).

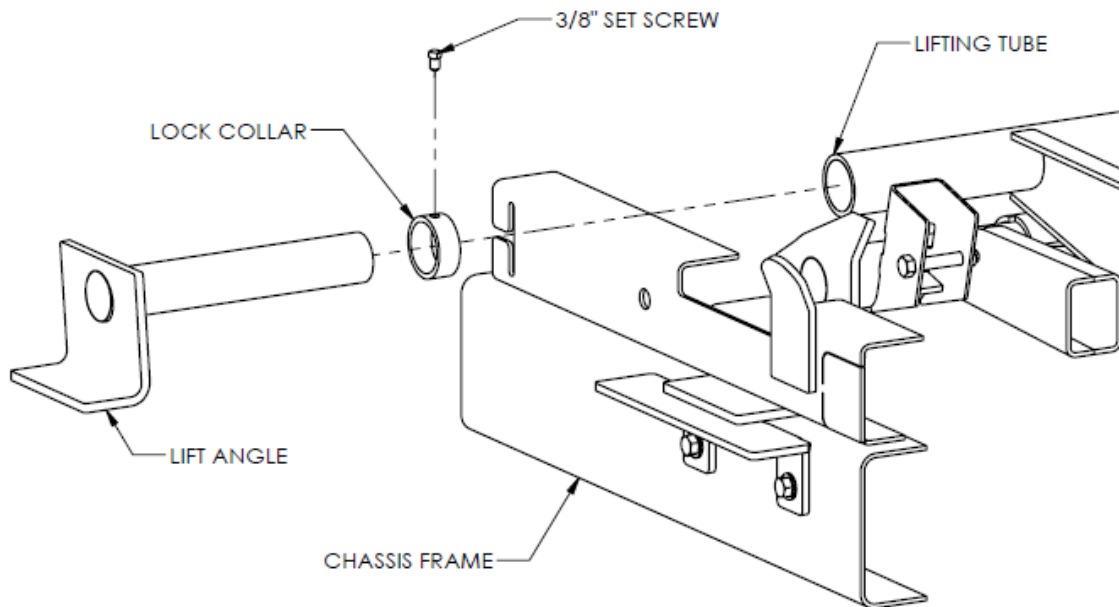


FIGURE 7

- Position the body with the long beams (just long beams if they are separate from body) onto the sub-frame.

**NOTE:** A clearance of at least 2" is required between the truck cab and the closest point on the truck body.

- Position the rear hinge brackets against the bottom side of the long beams. Once in position, weld the rear hinge brackets to the body long beams as shown in Figure 8.

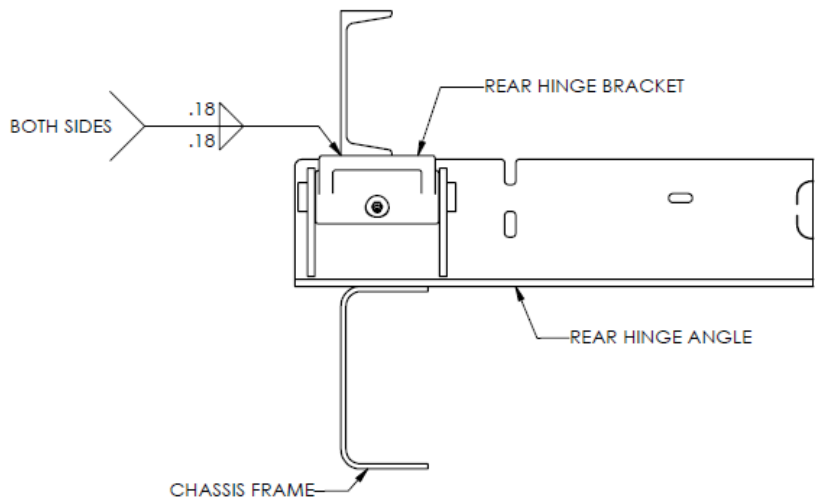
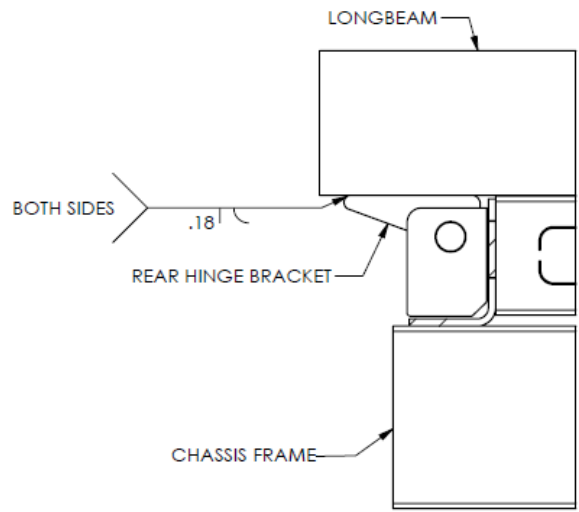


FIGURE 8

10. Slide each of the lifting shafts against the inside of the long beam channel. Weld the lifting shaft to secure the shaft to the long beam as shown in Figure 8. With the shaft secured, slide the lock collars against the hoist lifting tube and lock them there by tightening the 3/8 set screw. Torque each set screw to 24 ft. lb.

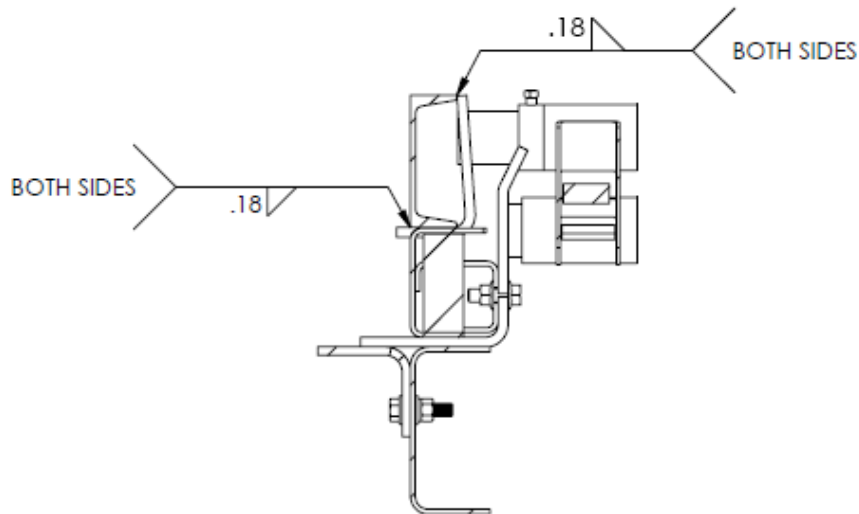


FIGURE 9

11. Install all grease fittings. For grease fitting locations, refer to Figure 7. Torque each grease fitting to 70 in. lb. Grease all grease fittings upon installation.

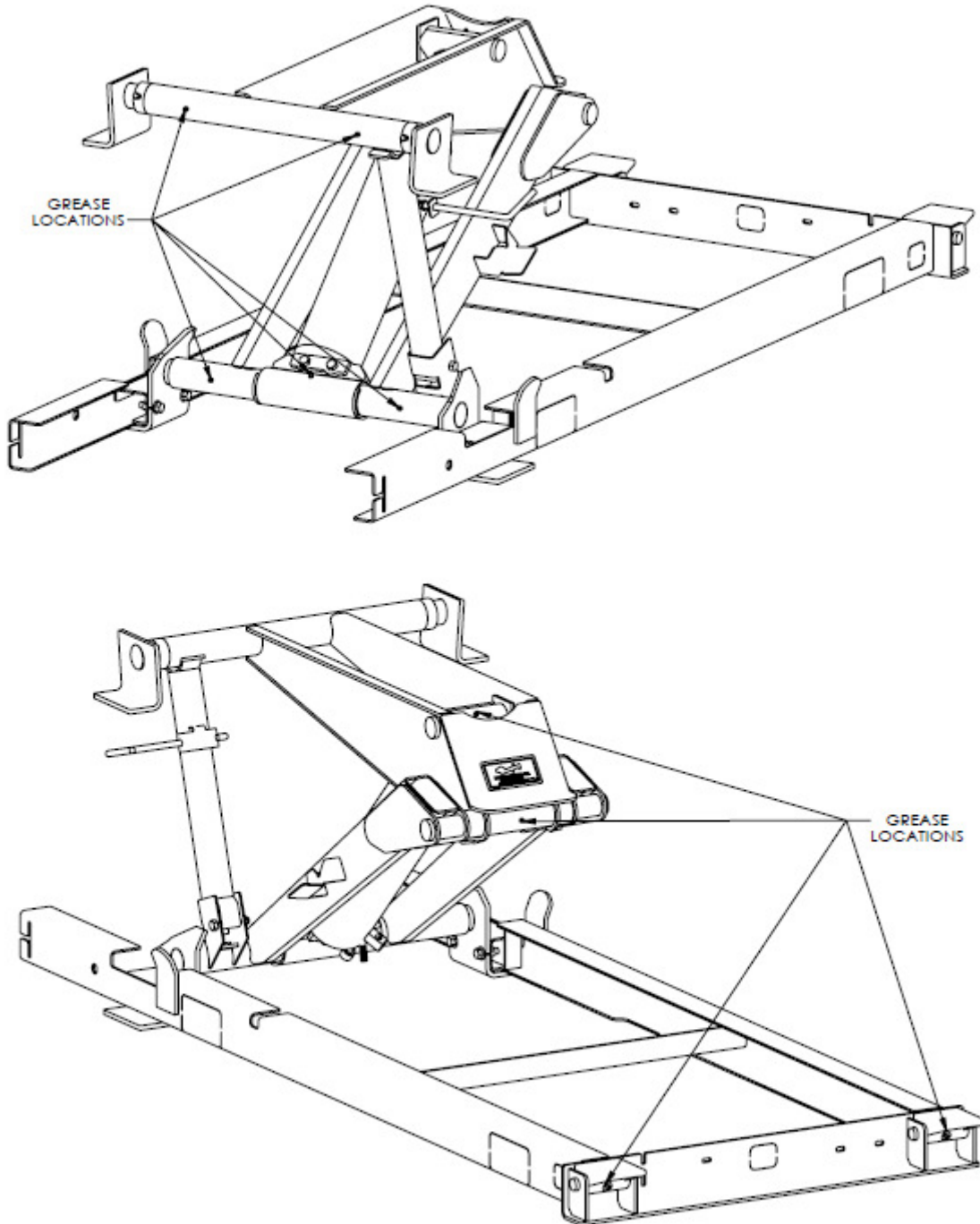


FIGURE 10

**IMPORTANT:** All hoist and sub-frame grease fittings should be greased at least every time the truck itself is greased.

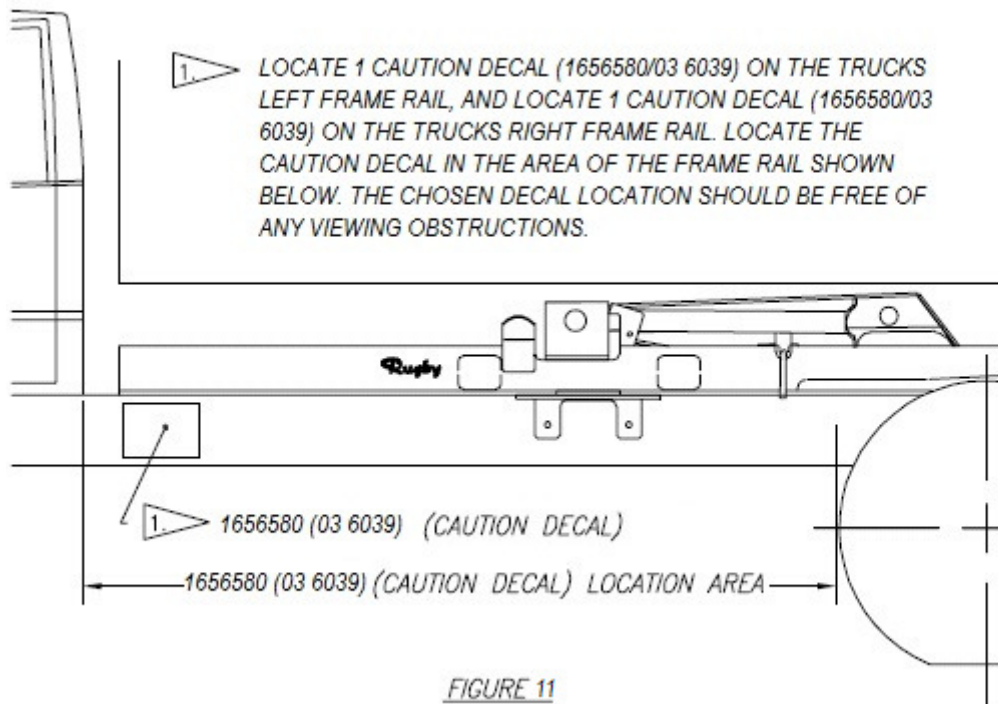
12. With the hoist and body completely installed, cycle the hoist several times to rid the hydraulic circuit of air.

**IMPORTANT:** Several different types of pump and hydraulic components are available to power the HR-520. For installation information and operation, refer to the Installation and Operation Manual for your particular pump and hydraulic components.

**WARNING:** Installing or operating this hoist without first understanding the proper installation and operation procedures can lead to serious injury or death. Always read and understand fully all installation and operation manuals before installing or operating this equipment.

## Decal Locations:

Two 1654044 (03 6039) “Danger” decals are supplied with each HR-520. These decals must be positioned as shown in Figure 9.



**⚠ OPERATION OF BODY PROP ⚠**

**WARNING: Do not use body prop to support a loaded body!**

1. Raise body to sufficient height and shut off all power.
2. Release prop from latched position by turning prop handle clockwise while pushing handle in.
3. Grasp prop handle at arms length and rotate prop upwards to vertical position.
4. Push down until prop locks in vertical position.
5. Using inside-the-cab controls, lower body slowly until prop contacts hoist.

**WARNING: Do not power hoist down while on prop!**

6. To lower prop for operation of truck "reverse" the procedure of the above five steps.

**Rugby**<sup>®</sup>  
MANUFACTURING CO.  
009131

**⚠ DANGER**



1. STAY OUT FROM UNDER BODY WHEN HOIST IS OPERATING.
2. DURING DUMPING OPERATIONS, NO ONE MUST BE ALLOWED TO STAND IN OR MOVE THROUGH THE AREA WHERE THE BODY AND HOIST OPERATE OR INTO AN AREA WHERE AN UPSET LOAD MIGHT FALL.
3. OPERATOR MUST REMAIN AT CONTROLS IN CAB DURING DUMPING OPERATIONS.
4. NEVER LEAVE BODY RAISED OR PARTLY RAISED WHILE VEHICLE IS UNATTENDED OR PERFORMING MAINTENANCE OR SERVICE UNDER BODY, UNLESS BODY IS BRACED TO PREVENT ACCIDENTAL LOWERING.
5. IF HOIST PUMP IS PTO DRIVEN, ALWAYS DISENGAGE PTO WHEN HOIST IS NOT IN USE OR WHEN MOVING VEHICLE.
6. DO NOT ATTEMPT TO RAISE A LOADED BODY WHEN THE VEHICLE IS ON UNLEVEL GROUND.
7. NEVER JERK OR SHOCK A RAISED BODY TO LOOSEN A STUCK LOAD.

**WARNING:** Missing or damaged decals can lead to accidents which may cause serious injury or death. If any decals are missing or damaged, they must be replaced.

To obtain replacement decals, contact your "Rugby" dealer or contact:

Rugby Manufacturing Co.  
Industrial Park  
515 1st Street NE  
Rugby, ND 58368

# Operation of Body Prop

**WARNING:** Being under a raised body can result in serious injury or death should the body inadvertently descend. **Never** position yourself or allow others to position themselves under a **loaded** body. **Always** prop the **unloaded** body up using the body prop or props supplied. **Remember** body props are to be used only on an **unloaded** body.

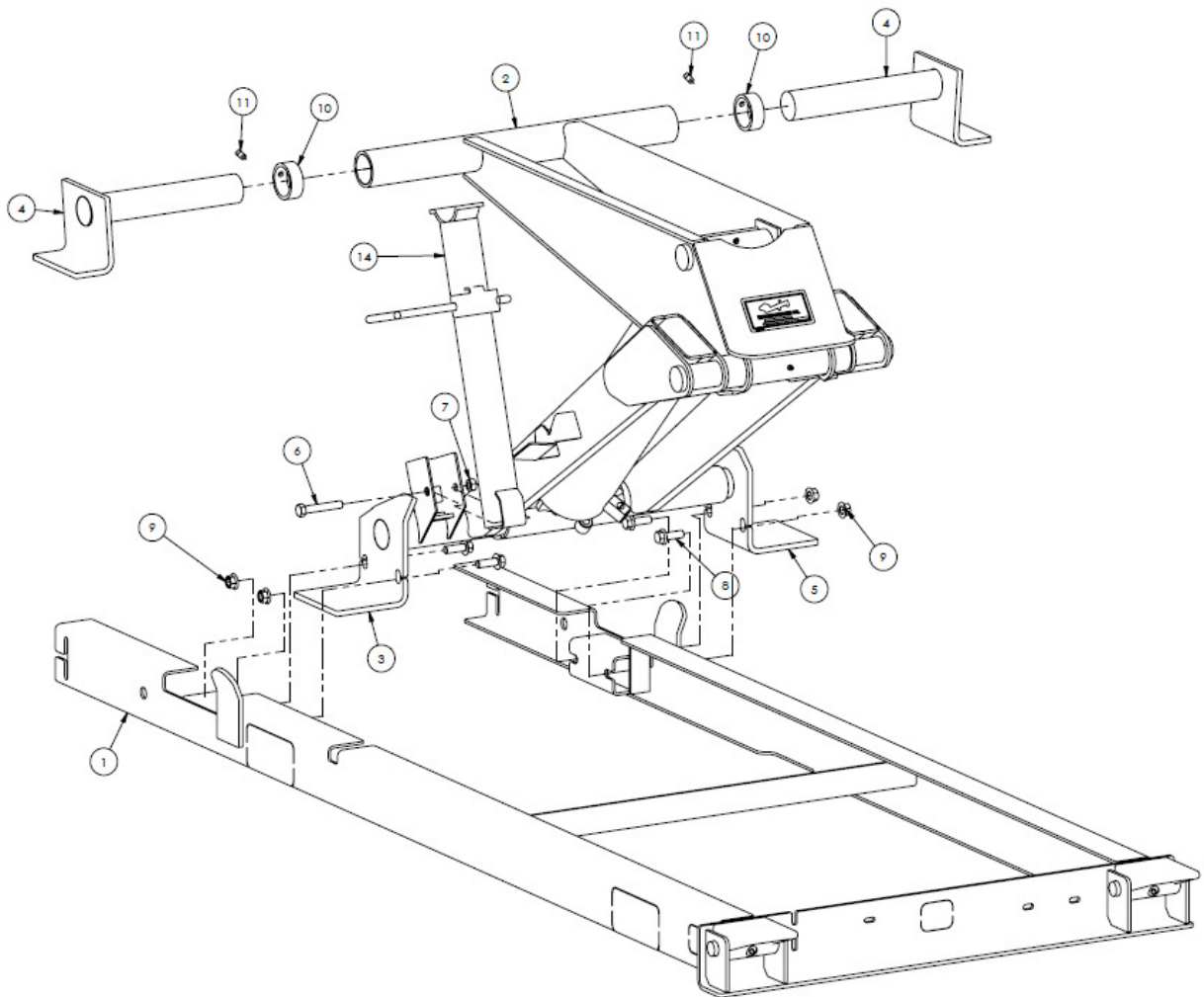
1. Raise body to sufficient height and shut off all power.
2. Grasp prop from latched position by turning prop handle clockwise while pushing handle in.
3. Grasp prop handle at arms length and rotate prop upwards to vertical position.
4. Push down until prop locks in vertical position.
5. Using inside-the-cab controls, lower body slowly until prop contacts hoist.

**CAUTION:** Do not power hoist down while on prop.

6. To lower prop for operation of truck, “reverse” the procedure of the above five steps.

# HR-520 Hoist w/ 60" CA Sub-Frame

| ITEM | PART NUMBER | DESCRIPTION                           | QTY |
|------|-------------|---------------------------------------|-----|
| 1    | 1571503     | SUB-FRAME ASS'Y, 60CA HR-520          | 1   |
| 2    | 1313107     | HR-520 HOIST ASSY                     | 1   |
| 3    | 1655782     | SADDLE BRACKET SA / LEFT / 520 & 540  | 1   |
| 4    | 1655627     | LIFT ANGLE SA / HR-520/540            | 2   |
| 5    | 1655783     | SADDLE BRACKET SA / RIGHT / 520 & 540 | 1   |
| 6    | 1653825     | HHC SCREW, 1/2-13 X 3, GR5, PLT       | 1   |
| 7    | 1653861     | NUT, 1/2-13 TOPLOCK, GR C STL, PLT    | 1   |
| 8    | 1577459     | FLANGE BOLT, 1/2-13 X 1-1/2, GR5      | 4   |
| 9    | 1576016     | NUT, 1/2-13 FLANGE, GR5 STL, PLT      | 4   |
| 10   | 1654905     | LOCK COLLAR                           | 2   |
| 11   | 1653845     | SET SCREW, 3/8-16 X 0.5 SQR HD, PLN   | 2   |
| 12   | 1520370     | FITTING, GREASE, THREAD FORMING       | 6   |
| 14   | 1655659     | TUBE SA, BODY PROP, HR SERIES         | 1   |





# HR-520 Hoist w/ 84" CA Sub-Frame

| ITEM | PART NUMBER | DESCRIPTION                           | QTY |
|------|-------------|---------------------------------------|-----|
| 1    | 1657363     | SUB-FRAME ASS'Y, 84CA HR-520          | 1   |
| 2    | 1313107     | HR-520 HOIST ASSY                     | 1   |
| 3    | 1655782     | SADDLE BRACKET SA / LEFT / 520 & 540  | 1   |
| 4    | 1655627     | LIFT ANGLE SA / HR-520/540            | 2   |
| 5    | 1655783     | SADDLE BRACKET SA / RIGHT / 520 & 540 | 1   |
| 6    | 1653825     | HHC SCREW, 1/2-13 X 3, GR5, PLT       | 1   |
| 7    | 1653861     | NUT, 1/2-13 TOPLOCK, GR C STL, PLT    | 1   |
| 8    | 1577459     | FLANGE BOLT, 1/2-13 X 1-1/2, GR5      | 4   |
| 9    | 1576016     | NUT, 1/2-13 FLANGE, GR5 STL, PLT      | 4   |
| 10   | 1654905     | LOCK COLLAR                           | 2   |
| 11   | 1653845     | SET SCREW, 3/8-16 X 0.5 SQR HD, PLN   | 2   |
| 12   | 1520370     | FITTING, GREASE, THREAD FORMING       | 6   |
| 14   | 1655659     | TUBE SA, BODY PROP, HR SERIES         | 1   |
| 15   | 1657363     | SUB-FRAME ASS'Y, 84CA HR-520          | 1   |

