

TABLE OF CONTENTS VC 416 / 516 MANUAL

| <u>PAGE</u> | DESCRIPTION | REF. NO. |
|------------------|---|----------------------|
| 1 | READ THIS FIRST | 416723 |
| 2 | IMPORTANT WARNING | 416272 |
| 3 | BODY PROP AND WARNING / CAUTION DECALS | 416288 |
| 4 | ▲ WARNING & CAUTION DECAL LOCATIONS | 416128 |
| 5 | ▲ DECAL DRAWINGS & LIST | 628820 |
| 6 | VC416CAPACITIES | 416266 |
| 7 | VC516CAPACITIES | . 516203 |
| 8 | MOUNTING DIMENSIONS | |
| 9 | STANDARD HOIST (WITHOUT SUBFRAME) MOUNTING INSTRUCTIONS | |
| 10 | STANDARD HOIST (WITHOUT SUBFRAME) MOUNTING INSTRUCTIONS | |
| 11 | STANDARD HOIST (WITHOUT SUBFRAME) MOUNTING INSTRUCTIONS | |
| 12 | SUBFRAME HOIST MOUNTING INSTRUCTIONS | |
| 13 | SUBFRAME HOIST MOUNTING INSTRUCTIONS | |
| 14 | SUBFRAME MOUNTING INSTRUCTIONS | |
| 15 | SUBFRAME HOIST MOUNTING INSTRUCTIONS | |
| 16 | SUBFRAME HOIST MOUNTING INSTRUCTIONS | |
| 17 | CABLE / HANDLE ASSEMBLY INSTRUCTIONS | |
| 18 | PTO CABLE INSTALLATION | |
| 19 | DIRECT MOUNT ("SPLIT") PUMP CONFIG. & REPLACEMENT PARTS LIST. | |
| 20 | SPDG HOSE CONNECTION DIAGRAM VC416, VC516 | |
| 21 | HYDRAULIC POWER UNIT GROUNDING | |
| 22 | ELECTRIC POWER UNIT INSTALLATION - ES & ED | |
| 23 | MONARCHED POWER UNIT (416081M) INSTALLATION | |
| 24 | MONARCHED POWER UNIT (416081M) W/PUSH BUTTON INSTALLATION. | |
| 25 | ES POWER UNIT INSTALLATION | |
| 26 | MONARCHES POWER UNIT (40058M/MHD) INSTALLATION | |
| 27 | MONARCHES POWER UNIT (40058M/MHD) W/ PUSH BUTTON INSTALL | |
| 28 | FILLING RESERVOIR - ES & ED | |
| 29 | REAR HINGE AND UPPER PIVOTS INSTALLATION | |
| 30 | LIFTING ANGLE INSTALLATION | |
| 31 | PTO PUMP OPERATIONED & ES POWER UNIT OPERATION | |
| 32 | | |
| 33 | BODY PROP(S) OPERATION | |
| 34 | SERVICE & MAINTENANCE | |
| 35 | GREASE POINTS FOR HOISTS | |
| 36 37 | REPLACEMENT PARTS DRAWING (PAGE 1) | |
| 3 <i>1</i> 38 | REPLACEMENT PARTS DRAWING (PAGE 2)REPLACEMENT PARTS LIST | |
| 39 | REPLACEMENT PARTS DRAWING (416081MED POWER UNIT) | . 410731 . 116509 |
| 39 40 | REPLACEMENT PARTS DRAWING (416061MED POWER UNIT) REPLACEMENT PARTS DRAWING & LIST (40058M/MHD POWER UNIT) | |
| 40 41 | PTO PUMP CABLE REPLACEMENT PARTS DRAWING & LIST | |
| 41 42 | WARRANTY POLICY | |
| 42 | WAINTAINT FOLICT | . 12-000/3 |

-P DECALS AND PACKAGE INCLUDES:

 15254
 CAUTION STAND CLEAR
 2 PCS.

 416052
 CAUTION DECAL
 2 PCS.

 416084
 SAFETY PROP DECAL
 1 PC.

 6069
 PLASTIC BAG
 1 PC.

| VENCO MANUFACTURING, INC. | TABLE OF CONTENTS | 8-12-05H | SECTION _ |
|---------------------------|-------------------|----------|-----------|
| | VC 416 / 516 | 7-28-05G | 416754 |

READ THIS FIRST

BE SURE TO DO THE FOLLOWING AND YOU WILL AVOID THE MOST COMMON INSTALLATION MISTAKES.

1. HOIST MUST BE LEVEL SEE PAGE: 416272.

2. MUST HAVE 2" SPACE SEE PAGE: 416272.

3. SUFFICIENT OVERHANG SEE PAGE: 416266 OR 516023.

4. USE PUMP WHICH MEETS VENCO SPECIFICATION SEE PAGE: 416138.

5. IF YOU ARE USING AN "ELECTRIC HYD POWER UNIT", IT MUST BE PROPERLY GROUNDED TO THE TRUCK FRAME USING THE SUPPLIED #4 GAGE BLACK BATTERY CABLE OR EQUIV. - FAILURE TO PROPERLY GROUND POWER UNIT MAY RESULT IN VOIDING OF THE UNIT'S WARRANTY.

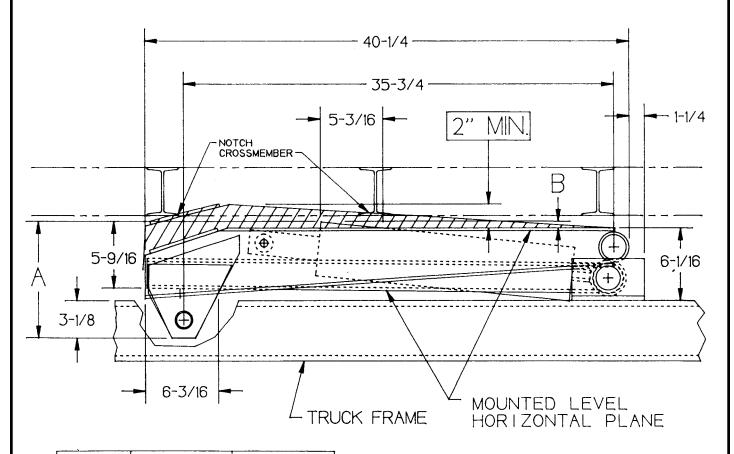
| VENCO MANUFACTURING, INC. | CAUTION NOTE | 12-01-04A | SECTION |
|---------------------------|--------------|-----------|---------|
| WENCE MANUFACTURING, INC. | VC416 / 516 | 10-30-01 | 416723 |

IMPORTANT WARNING

416/516 MODELS

WHEN INSTALLING THE HOIST, BE SURE TO KEEP THE HOIST ON A HORIZONTAL PLANE (LEVEL) WITH THE TRUCK FRAME. SEE DIAGRAM BELOW.

A MINIMUM CLEARANCE OF 2" IS REQUIRED BETWEEN THE HOIST (UPPER ARM) AND THE CROSS MEMBERS IN ORDER TO PREVENT A MECHANICAL LOCKOUT. IF CLEARANCE IS LESS THAN 2" THEN CROSSMEMBERS MUST BE NOTCHED ABOVE ARMS.



| MODEL | DIM. A | DIM. B |
|-------|---------|--------|
| 416 | 9-11/16 | 9/16 |
| 516 | 10-3/16 | 1-1/16 |

SCALE 1/8"=1"

| VENCO MANUEACTURING INC | IMPORTANT WARNING | 7-14-98 | SECTION H100 |
|-------------------------|-------------------|-----------------------|-----------------|
| MANUFACTURING, INC. | VC 416/516 | SUPERCEDES 10-9-92 | 416272 |

IC. Body Props

One (1) body prop shall be furnished as a standard item on Venco hoists. Federal regulations require that hoists used for construction bodies require two (2) body props, and hoists used on truck beds over 15 feet should have two (2) body props:

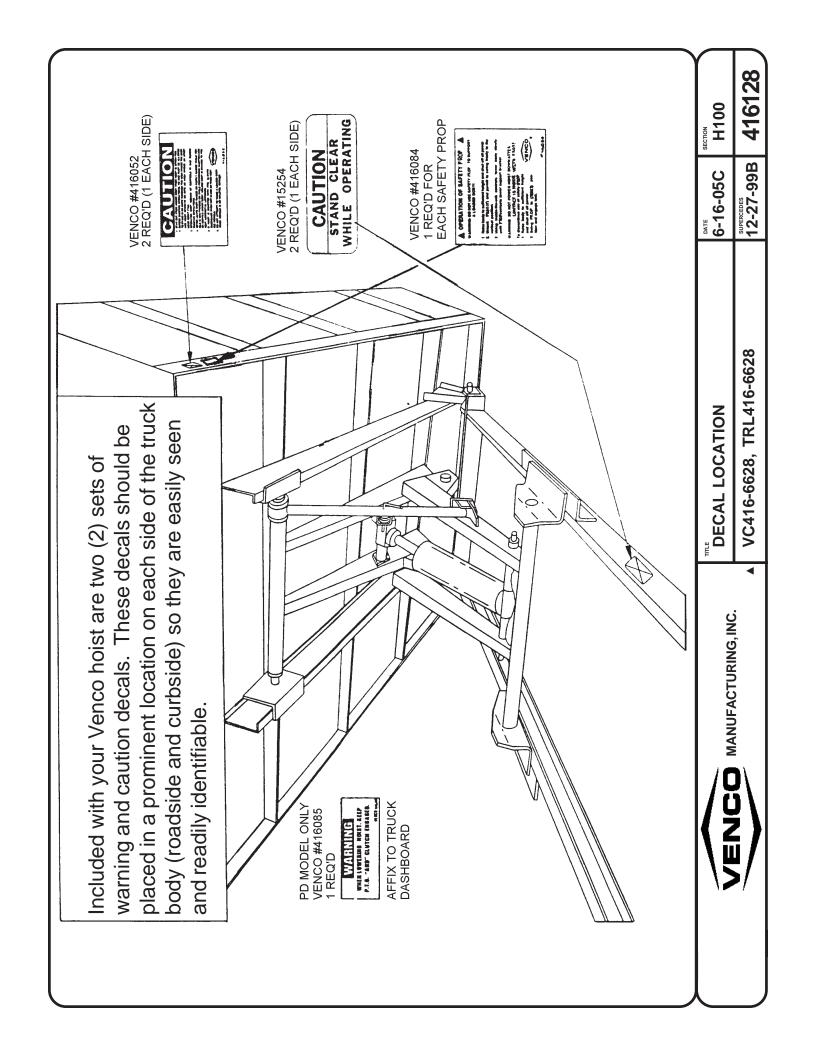
A. If additional body props are required, please designate on your purchase order, or contact our sales office.

Warning and Caution Decals

Included with your Venco hoist are two (2) sets of warning and caution decals. These decals should be placed in a visible location on each side of the truck body (roadside and curbside) so they are easily seen and readily identifiable. See drawing no. 416128 for locations.

The manufacturer recommends that the VC416/516 hoist system be installed by an authorized distributor of Venco products. No responsibility is assumed or implied as to the integrity of any Venco product not furnished, supplied and installed by an authorized distributor.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 7-14-98 | H100 |
|---------------------------|-------------------|------------|--------|
| WANDFACTORING, INC. | VC 416/516 | SUPERCEDES | 416288 |



PART NO.: 416052

DECAL: **CAUTION STAY CLEAR**

FUNCTION: To provide operator with a

summary of key hoist operating

procedures.

2 QUANTITY:

PLACEMENT: One on each side of body.

PART NO.: 416084

DECAL: SAFETY PROP OPERATION

FUNCTION: To inform the operator of proper

operation of safety prop.

QUANTITY: 1 For each safety prop. \triangle

PLACEMENT: On side of body closest to safety

prop(s).

PART NO.: 15254

DECAL: **CAUTION STAND CLEAR**

FUNCTION: To inform the operator to

stay clear of body / hoist.

QUANTITY: 2

PLACEMENT: One on each side of truck frame.

PART NO 416085

DECAL: WARNING WHEN LOWERING

FUNCTION: To inform the operator to keep

P.T.O. and clutch engaged when

lowering the hoist.

QUANTITY: 1

PLACEMENT: Affixed to truck dashboard.



- 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
- OPERATOR MUST REMAIN AT CONTROLS IN CAB DURING DUMPING OPERATIONS.
- NEVER LEAVE BODY RAISED OR PARTLY RAISED WHILE VEHICLE IS UNATTENDED OR WHILE PERFORMING MAINTENANCE OR SERVICE UNDER BODY, UNLESS BODY IS BRACED TO PREVENT ACCIDENTAL LOWERING.

 IF HOIST IS EQUIPPED WITH PTO, ALWAYS DISENGAGE WHEN NOT IN USE OR WHEN

LOAD MIGHT FALL

MOVING VEHICLE.
DO NOT ATTEMPT TO RAISE A LOADED BODY

WHEN VEHICLE IS ON UNLEVEL GROUND

VENCO[®]

416052

A OPERATION OF SAFETY PROP A

WARNING: DO NOT USE SAFETY PROP TO SUPPORT A LOADED BODY!

- Raise body to sufficient height and shut off all power.
 Unlock PROP(S) and permit to swing freely to the
 vertical and services.
- vertical position.

 3. Using inside-the-cab controls, lower body slowly until PROP contacts lower support bracket.

WARNING: DO NOT POWER HOIST DOWN AFTER CONTACT IS MADE WITH PROP!

- To discontinue use of safety PROP
- Raise body to sufficient height and shut off all power.
 Swing PROP to STORED pos-
- ition and engage lock.









SECTION **DECAL LIST** 8-29-05B SUPERSEDES

VC416-6628, TRL416-6628│ 8-15-05A

628820

GENERAL INFORMATION:

MFG.

416(SF)

*POWER SOURCE

MODEL: VC 416*(SF) DUMP CLASS: 10

TYPE VENCO OF

ES-ELECTRIC SINGLE BORE STROKE ACTING

HOIST

SUBFRAME -ED-ELECTRIC DOUBLE

ACTING

CONVERSION CLASS: B

CONVER. (OPTIONAL)

PD-POWER TAKE-OFF DOUBLE ACTING

WEIGHT: 450 lbs. W/SUBFRAME 550 LBS.

DATA: 4" BORE, 16" STROKE, CA 60"- 108"

DUMP ANGLE 40°-50°, SUBFRAME 45° or 50°

MOUNTING HEIGHT REQ'D. 5-3/4", LONG BEAMS 5".

CAPACITIES ARE BASED ON WATER LEVELS AND NON-DIMINISHING LOADS. DUE TO THE VARIATIONS IN TRUCK EQUIPMENT AND CAB-AXLE (CA), THE DATA PROVIDED IN THIS MANUAL IS FOR GENERAL GUIDELINES ONLY.

VC 416 (SF) CONVERSION APPLICATION

| BODY LENGTH | CAB TO AXLE | REAR OVERHANG | CAPACITY 40° DUMP (TON) | CAPACITY 45° DUMP (TON) | CAPACITY 50° DUMP (TON) |
|----------------|----------------|------------------|-------------------------------|-------------------------------|-------------------------------|
| 8 ' | 60" | 6 " | 7.6 | 6.9 | 6.4 |
| 9 • | 60" | 18" | 8.9 | 8.0 | 7.4 |
| 9 ' | 72" | 6 " | 6.7 | 6.0 | 5.5 |
| 9'6" | 72" | 12" | 7.0 | 6.4 | 6.0 |
| 10' | 60" | 30" | 10.7 | 9.7 | 8.8 |
| 10' | 72" | 18" | 7.6 | 6.9 | 6.3 |
| 10' | 84" | 6 " | 6.0 | 5.4 | 5.0 |
| 12' | 72" | 42" | 10.7 | 9.7 | 8.8 |
| 12' | 84" | 30" | 7.6 | 6.9 | 6.3 |
| 12' | 108" | 6 " | 4.8 | 4.4 | 4.0 |

VC 416 (SF) DUMP APPLICATION

| BODY LENGTH | REAR OVERHANG | CAPACITY 50° DUMP (TON) |
|----------------|------------------|-------------------------------|
| 8 ' | 12" | 7.1 |
| 9 ' | 12" | 6.1 |
| 10' | 12 " | 5.3 |
| 12' | 12" | 4.3 |

| | CAPACITY CHART | ^{DATE} 7-14-98 | SECTION H100 |
|---------------------------|----------------|----------------------------|--------------|
| VENCO MANUFACTURING, INC. | VC 416 | SUPERCEDES 2-28-90 | 416266 |

GENERAL INFORMATION:

MODEL: VC 516*(SF)

CONVERSION CLASS: C

DUMP CLASS: 20

516 (SF) MFG. TYPE VENCO BORE STROKE OF HOIST SUBFRAME

*POWER SOURCE

ES-ELECTRIC SINGLE ACTING

ED-ELECTRIC DOUBLE ACTING

DOUBLE ACTING

PD-POWER TAKE-OFF

-CONVER.(OPTIONAL)

WEIGHT: 500 lbs. W/SUBFRAME 600 LBS.

DATA: 5" BORE, 16" STROKE, CA 60"- 108"

DUMP ANGLE 40°-50°, SUBFRAME 45° OR 50°

MOUNTING HEIGHT REQ'D. 5-3/4", LONG BEAMS 5".

CAPACITIES ARE BASED ON WATER LEVELS AND NON-DIMINISHING LOADS. DUE TO THE VARIATIONS IN TRUCK EQUIPMENT AND CAB-AXLE (CA), THE DATA PROVIDED IN THIS MANUAL IS FOR GENERAL GUIDELINES ONLY.

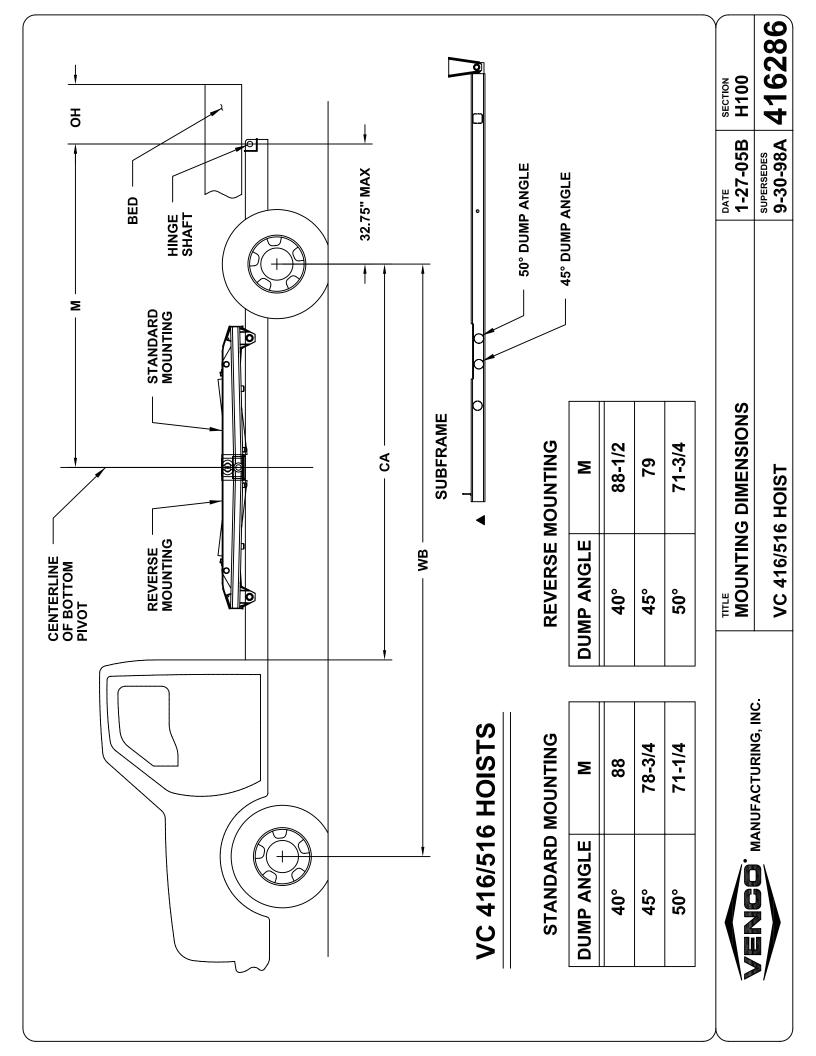
VC 516 (SF) CONVERSION APPLICATION

| BODY LENGTH (FEET) | CA (INCHES) | REAR OVERHANG (INCHES) | CAPACITY 40° DUMP (TON) | CAPACITY 45° DUMP (TON) | CAPACITY 50° DUMP (TON) |
|--------------------------|----------------|------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 8 | 60 | 6 | 11.9 | 10.8 | 10.0 |
| 9 | 60 | 18 | 13.9 | 12.6 | 11.5 |
| 9 | 72 | 6 | 10.4 | 9.4 | 8.6 |
| 9' 6" | 72 | 12 | 11.1 | 10.0 | 9.3 |
| 10 | 60 | 30 | 16.7 | 15.1 | 13.8 |
| 10 | 72 | 18 | 11.9 | 10.8 | 9.8 |
| 10 | 84 | 6 | 9.3 | 8.4 | 7.8 |
| 12 | 72 | 42 | 16.7 | 15.1 | 13.8 |
| 12 | 8 4 | 30 | 11.9 | 10.8 | 9.8 |
| 12 | 108 | 6 | 7.7 | 6.9 | 6.4 |
| 13 | 8 4 | 42 | 13.9 | 12.6 | 11.5 |
| 13 | 102 | 24 | 9.3 | 8.4 | 7.6 |
| 13 | 108 | 18 | 8.4 | 7.5 | 6.9 |

VC 516 (SF) DUMP APPLICATION

| BODY LENGTH (FEET) | REAR OVERHANG (INCHES) | CAPACITY 50° DUMP (TON) |
|-----------------------|---------------------------|----------------------------|
| 8 | 12 | 11.1 |
| 9 | 12 | 9.5 |
| 10 | 12 | 8.3 |
| 12 | 12 | 6.7 |

| WANTE A OF LIDING INC. | CAPACITY CHART | 7-14-98 | SECTION H100 |
|---------------------------|----------------|-----------------------|--------------|
| VENCO MANUFACTURING, INC. | VC 516 | SUPERCEDES 2-28-90 | 516203 |



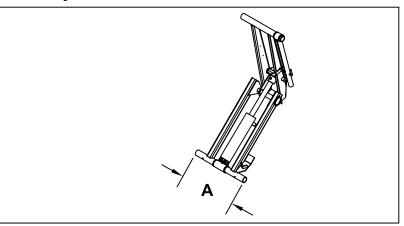
II A. STANDARD HOIST MOUNTING INSTRUCTIONS

- 1. Moving the hoist along the truck frame forward or rearward will affect the hoist's performance. A forward movement will reduce the dump angle and increase capacity. A backward movement will increase dump angle and decrease capacity.
- 2. The VC-416/516 Hoist is designed for 34" to 29.5" frame widths. The hoist is shipped from the factory for mounting on 34" O.D. frames. For a frame width O.D. smaller than 34", the following parts will have to be shortened as noted below. For the Subframe Hoist, see pages 12 thru 16. ▲

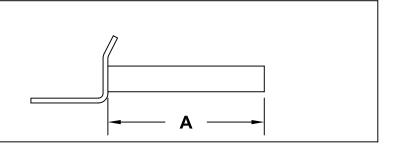
| QTY. | PART NO. | DESCRIPTION |
|------|----------|------------------------|
| 1 | 520540 ▲ | Lower Pivot Tube |
| 2 | 520563 | Lower Pivot Assy. |
| 2 | 520562 | Upper Lift Shaft Assy. |

* - Original length shipped from factory

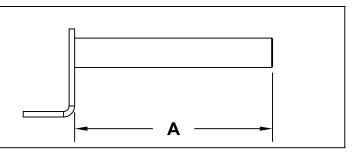
| Lower Pivot Tube 520540 ▲ | | |
|------------------------------|----------|--|
| Frame Width Dim A. | | |
| 34 | 27-3/4"* | |
| 31.3 | 25-1/16" | |
| 29.5 | 23-1/4" | |



| Lower Pivot Assy. 520563 | | |
|-----------------------------|----------|--|
| Frame Width Dim A. | | |
| 34 | 12-1/4"* | |
| 31.3 | 10-7/8" | |
| 29.5 | 10" | |



| Upper Lift Shaft Assy. 520562 | | |
|----------------------------------|----------|--|
| Frame Width Dim A. | | |
| 34 | 13-1/2"* | |
| 31.3 | 12-1/2" | |
| 29.5 | 11-5/8" | |



| | elibebeenee | 416489 | |
|-------------------|-------------|--------|--|
| INST INSTRUCTIONS | 11-10-05B | H200 | |

3. Refer to figures 1 and 2.

CAUTION

If a distance of more than 38" is exceeded between the centers of the rear axle and rear hinge assembly, additional reinforcement of the truck frame will be required.

- a. Mark the location for the rear hinge. This location should be immediately behind a truck crossmember. The hole center of the rear pivot angle should not be more than 6" rearward of the rear spring hanger.
- b. See Figure 2, cut a 90° cut-out in the truck frame (both sides).
- c. Position the angle iron frame of the rear hinge assembly in the truck frame cut-outs. Make sure the rear pivot angle assembly is properly positioned on the truck frame. Weld all around truck frame and hinge assembly joint.

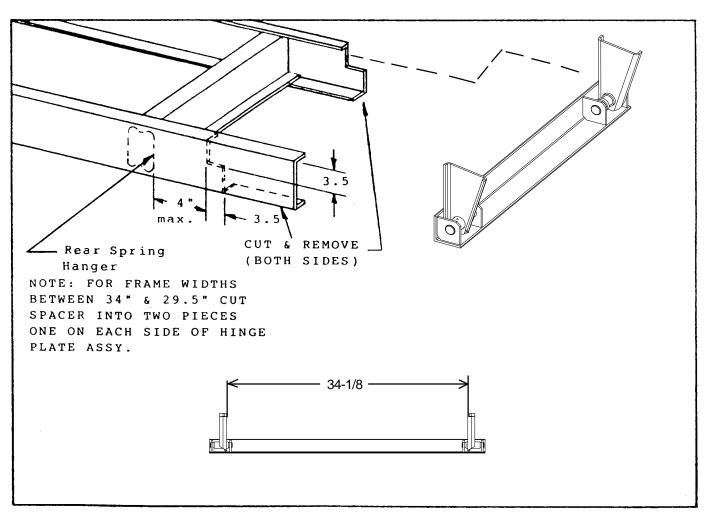


FIGURE 2 - FRAME MODIFICATION AND REAR HINGE ATTACHMENT

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 5-24-01A | H200 |
|---------------------------|-------------------|----------|--------|
| WANDI ACTORING, INC. | VC 416/516 | 7-14-98 | 416290 |

- 4. Locate the hoist on the truck frame, making sure to center and square the hoist to the truck frame. The VC-416/516 hoist is designed to rest on the truck frame as shown in Fig. 3. A section of the hoist extends below the truck frame level, thus the hist may have to be moved slightly forward or backward to avoid frame crossmembers. The distance between the rear hinge assembly center and hoist dimension. Table "A", figure 1 refers to dump angles associated with the "M" dimension.
- 5. After the hoist is positioned, place a mounting angle (Fig. 3) under each of the lower pivots and against the truck frame. Clamp securely in place. Drill through the mtg. angle and frame (17/32") and fasten mounting angle with two (2) 1-1/2" hex head grade 8 bolts, lock washers and hex nuts (both sides).

Caution

The hoist lower pivot assy. must sit flush on the truck frame. If rivet head inter ference is encountered, use a filler block or countersink clearance holes in the bottom of the lower pivot assy. Do not weld hoist mounting angle to truck frames. This may void the truck warranty.

6. With the hoist lower pivot assys. clamed to the mounting angles (3-1/2 x 3-1/2 x 5/16 - 10" lg.), weld the lower pivot assy. to the mounting angles. Position and secure the filler strips (wood or steel) to the truck frame (see fig. 3) The VC416/516 hoist requires at least 5-3/4" clearance above the truck frame.

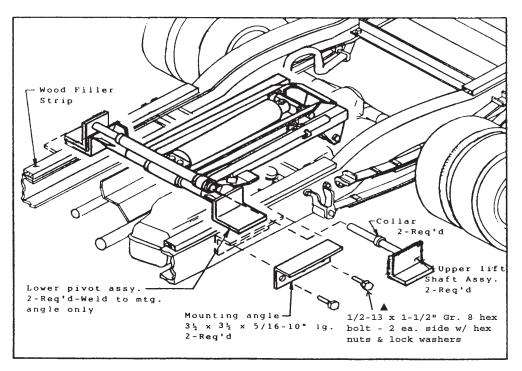
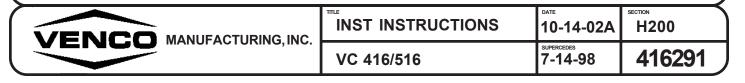


Figure 3 Mounting Angle/Lower Pivot Assembly



II B.

SUBFRAME HOIST MOUNTING INSTRUCTIONS

1. Before mounting the VC-416/516 subframe hoist, the following parts will have to be shortened for truck frame widths smaller than 34". The minimum frame width is 29.5"

| QTY. | Part No. | Description |
|------|----------|---------------------------------|
| 2 | 416739 | Upper lift shaft assy. |
| 1 | 416221 | Shaft-lower pivot subframe |
| 1 | 416222 | Shaft-rear hinge subframe |
| 2 | 416420 | Lower pivot assy. |
| 1 | 416253 | bar 1/4" x 2" x 33" long |
| 1 | 416254 | Angle 2" x 2" x 1/8" - 33" long |

* - Original length shipped from factory

| Upper Lift Sh 416739 | aft Assy. |
|-------------------------|-----------|
| Frame Width | Dim A. |
| 34" | 13-7/8"* |
| 31.3" | 12-1/2" |
| 29.5" | 11-5/8" |

| Shaft-lower piv 416221 | ot subframe | |
|---------------------------|-------------|-----|
| Frame Width | Dim A. | |
| 34" | 37"* ▲ | |
| 31.3" | 33-11/16" | - A |
| 29.5" | 32-7/8" | |

| Shaft-rear hin 416222 | ge subframe | |
|--------------------------|-------------|-----|
| Frame Width | Dim A. | |
| 34" | 39"* | |
| 31.3" | 36-5/16" | - A |
| 29.5" | 34-1/2" | |



| | elibebeenee | 416492 |
|-------------------|-------------|---------|
| INST INSTRUCTIONS | | |
| ri E | DATE | SECTION |

| Lower Pivot A 416420 | ssy. | |
|-------------------------|----------|-----|
| Frame Width | Dim A. | |
| 34" | 3-1/16"* | |
| 31.3" | 1-23/32" | |
| 29.5" | 13/16" | — A |

| Bar 1/4" x 2" - 416253 | - 33" | |
|---------------------------|----------|---|
| Frame Width | Dim A. | |
| 34" | 33"* | |
| 31.3" | 30-5/16" | A |
| 29.5" | 28-1/2" | |

| Channel W/ Power U | | |
|--------------------|-----------|---|
| Frame Width | Dim A. | |
| 34" | 33"* | A |
| 31.3" | 30-5/16"* | |
| 29.5" | 28-1/2"* | |

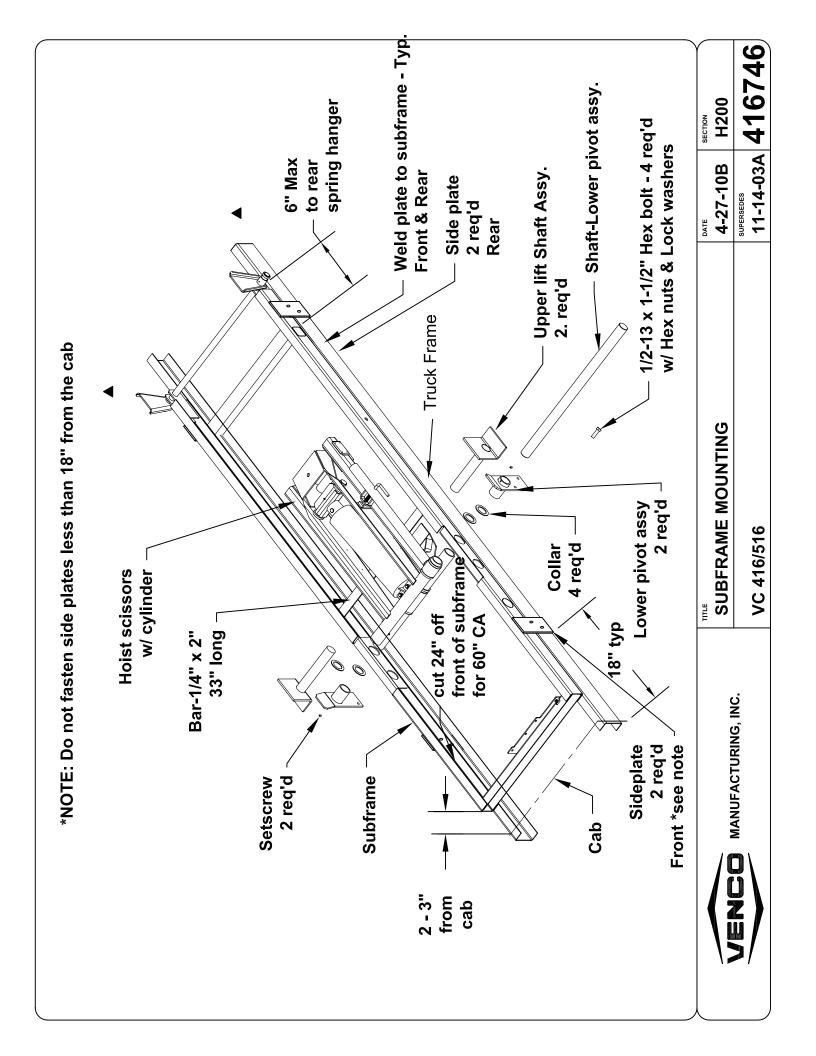
2. a. See Fig. 1 and Dwg. #416257

Position the right and left subframe assemblies on the truck frame. A wood filler strip will be required below each subframe assembly. The wood filler strips wil have to be drilled out in the frame rivet areas to provide a flat surface for the subframe. Holes can also be drilled in the bottom flange of the subframe, but

- b. wait until after step 3a.
 - Check the distance from the hoists lower pivot to the lowest point on the hoist scissors assembly to be sure there are not any obstructions, crossmembers, etc., that will interfere with the hoist mounting level with the truck frame.
- c. See Dwg. 416086.
 - Be sure that the hole center of the rear hinge pivot is not more than 6" rearward of the rear spring hanger. See Dwg. 416257. This location should
- 3. a. be immediately behind a truck crossmember. Mark the location for the rear hinge. The 2-9/16" Dia. hole in the front of the subframe is set up for a 45° dump angle and the hole closer to the rear hinge pivot is for a 50° dump angle. See fig. Note: For mounting on a Ford, the gas tank filler tube may be too close to the

body prop keeper on the hoist lower frame left side. The hoist will have to be shifted forward or rearward to avoid the gas filler tube.

| VC 416/516 | 9-12-02A | 416493 |
|-------------------|----------|---------|
| INST INSTRUCTIONS | 1-21-05B | H200 |
| TITLE | DATE | SECTION |



- 3.b. Clamp the subframe to the truck frame. Put a 2 x 4 in between the subframe rails to support the rear of the hoist scissors.
- 4.a. Slide a lower pivot assembly through the subframe 2-9/16" Dia. hole. (Front holes 45° Rear holes 50° dump)
 - b. Put the lower pivot shaft (2" Dia. C.F. Steel) through the tube on the lower pivot inserted in the previous step.
 - c. Slide one collar onto the shaft.
 - d. Set the hoist scissors w/ cylinder between the right and left subframe. Slide the lower pivot shaft through the lower pivot tube on the hoist.
 - e. Slide another collar onto the shaft.
 - f. Slide the other lower pivot assembly through the subframe and over the lower pivot shaft. Note: The bend on the lower pivot assemblies should be outward for body guides.
 - g. The hoist should be centered and squared to the truck frame. The collars should then be slid up against the lower pivot tube. Weld the outside edges of the collars to the lower pivot shaft.
- 5. Slide one collar onto each upper lift shaft assembly. Slide the upper lift shaft assemblies into the upper pivot tube, one on each side.
- 6.a. Clamp the lower pivot assemblies to the subframe so they are flush with the outside surface of the truck frame.
 - b. Be sure that the mounting holes in the lower pivot assemblies are not in the area of wiring or brake cables running on the inside of the truck frame. Drill 17/32" Dia. holes through the truck frame using the holes in the lower pivot assemblies as guide holes. Fasten the lower pivot assemblies to the truck frame w/ 1/2-13 x 1-1/2" hex bolts, 1/2-13 hex nuts and 1/2" lock washers, 2 each on each assembly.
- 7. Cut the truck frame channels off just behind the rear hinge pivot plates.
- 8.a. Do not fasten the side plates less that 18" from the truck cab. Clamp the side plates to the front of the subframe.

Note: The front side plates might not be required on a 60" CA truck when using the mounting for a 45° dump angle.

b. Clamp the side plates to the rear of the subframe just behind the rear spring hanger bracket.

CAUTION

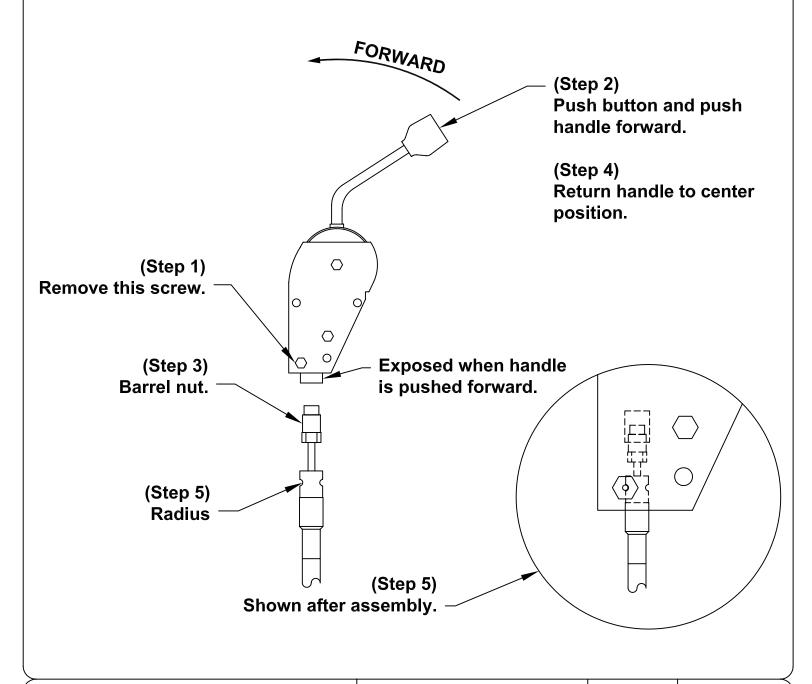
Be sure to cover all gas tanks and gas filler necks with a nonflammable covering before welding hoist parts or subframe together

| ENTURO MFG., INC. | INST INSTRUCTIONS | 9-23-03B | H200 | |
|-------------------|-------------------|-----------|--------|--|
| CINCINNATI, OHIO | VC 416/516 | 10-24-02A | 416294 | |

| 8.c. | Weld the front and rear side plates to the rig | ght and left subframe described in s | steps 8a. and 8b. | |
|------|---|--------------------------------------|-------------------|--------|
| 9. | Weld the 1/4" x 2" bar to the lower flange or as possible - shown on Dwg. 416746. ▲ | | | |
| | ac peccione enemicing right from tel. 2 | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | 4 |
| | ENTURO MFG., INC. | INST INSTRUCTIONS | 7-14-05B | H200 |
| | ENTURO MFG., INC. CINCINNATI, OHIO | VC 416/516 | 2-24-05A | 416295 |

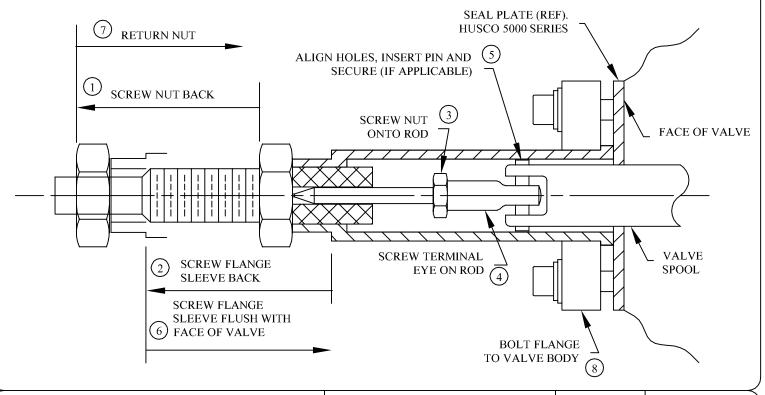
ATTACHING 620129 CABLE TO 620131 / 2 HANDLE

- Step 1. Remove lowest screw & nut.
- Step 2. Depress red button on top of handle. Push handle forward and hold.
- Step 3. While holding handle, thread "barrel nut" into threaded hole in bottom and tighten.
- Step 4. Release handle. Handle should return to center positon.
- Step 5. Replace screw & nut, making sure that radius on cable end is aligned with screw hole. After tightening screw, move handle forward and backward to make sure cable end is secure in console.



| WANDFACTURING, INC. | PTO PUMP CABLE | SUPERSEDES | 620246 |
|---------------------------|-------------------------|------------|---------|
| VENCO MANUFACTURING, INC. | CABLE / HANDLE ASSEMBLY | 9-17-04 | SECTION |

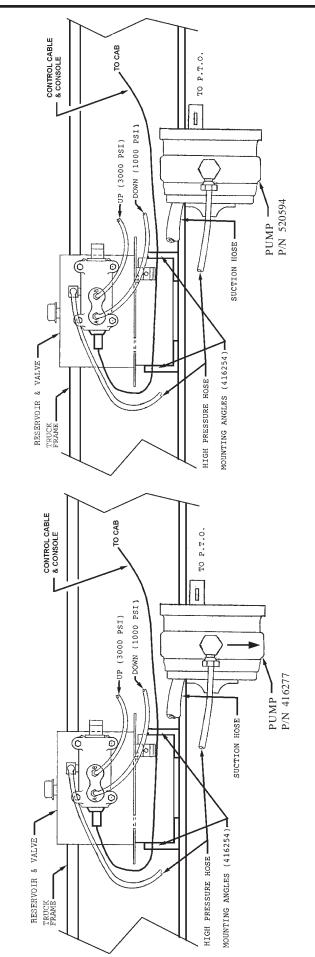
- 1. Thread .750-16 UNF jam nut entire length of threaded hub and onto cable.
- 2. Place flange on sleeve and turn flange/sleeve assembly entire length of threaded hub and onto cable.
- 3. Thread .250-28 UNF jam nut onto threaded rod unitl it bottoms.
- 4. Thread terminal eye onto threaded rod and bottom against jam nut, turn to align with spool slot and secure jam nut against terminal eye.
- 5. Slide terminal eye into slot in spool and align holes. Insert connecting pin and secure with cotter pin (if applicable).
- 6. With cable attached to valve and input device, thread the flange/sleeve assembly onto the threaded hub until it is flush with the valve face. When turning the flange/sleeve assembly, make sure the input device remains in the neutral position.
- 7. Tighten the .750-16 UNF jam nut against the sleeve to lock in position.
- 8. Bring flange into position and bolt assembly to valve housing using two (2) socket head cap screws and two (2) split lockwashers under head and two (2) flat washers under lockwashers. Tighten screws sufficiently to flatten lockwashers or secure flange. Caution any further torquing/overtightening will distort flange.



| VENCO MANUFACTURING, INC. | PTO PUMP CABLE INSTALL | 5-11-04 | SECTION - |
|---------------------------|------------------------|------------|-----------|
| WENCE MAINTACTORING, INC. | VC416 - 6628 | SUPERSEDES | 416755 |

DIRECTIONAL PUMP CONFIGURATION FOR VC416 - VC620

BI-ROTATIONAL PUMP CONFIGURATION FOR VC628 & UP



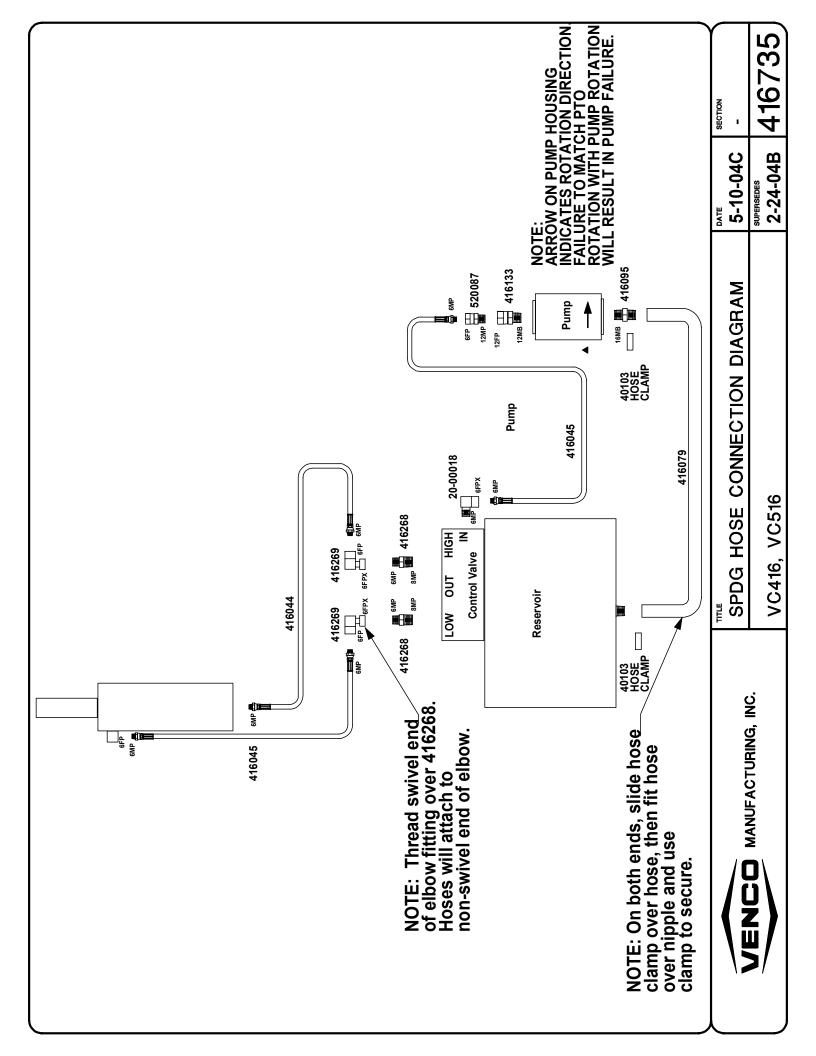
NOTE: ARROW ON PUMP HOUSING INDICATES ROTATION DIRECTION FAILURE TO MATCH PTO ROTATION WITH PUMP ROTATION WILL RESULT IN PUMP FAILURE.

NOTE: FOR BI-ROTATIONAL PUMP MOUNTING AND HOSE CONNECTION INFORMATION, SEE DRAWING 416812.

| Model | VC416 VC516 | VC520 VC620 | VC620 | VC628 | VC628 VC5520 VC6620 VC6628 | VC6620 | VC6628 |
|-------------------------|-----------------------------------|------------------|----------|-----------------------------------|----------------------------------|-------------------|------------|
| Control Cable & Console | | 620125 | - Curved | 620125 - Curved 620124 - Straight | traight | | |
| Up Hose | 416044 ▲ | • | \$520574 | | ◀ | (2) 520574 | |
| Down Hose | 416 | 416045 | | 628041 | (2) 41 | (2) 416045 | (2) 628041 |
| High Pressure Hose | | | 416 | 416045 | | | |
| Suction Hose | 416 | 416079 | | | 520088F |)88F | |
| Pump/Valve/Tank | 620011 (9 | 620011 (9 QUART) | | | 662077 (2 | 662077 (21 QUART) | |
| Pump (Only) | 416277 | 3277 | | | 520594 | 594 | |
| Moriton (Spling) | SAE "A" 2 BOLT MOUNTING FLANGE, | OUNTING FL | ANGE, | "SAE "B" | SAE "B" 2 BOLT MOUNTING FLANGE | JUNTING F | LANGE, |
| | 5/8"-9 SPLINE SHAFT, CCW ROTATION | FT, CCW RO | TATION | | 7/8"-13 SPLINE SHAFT | INE SHAFT | |

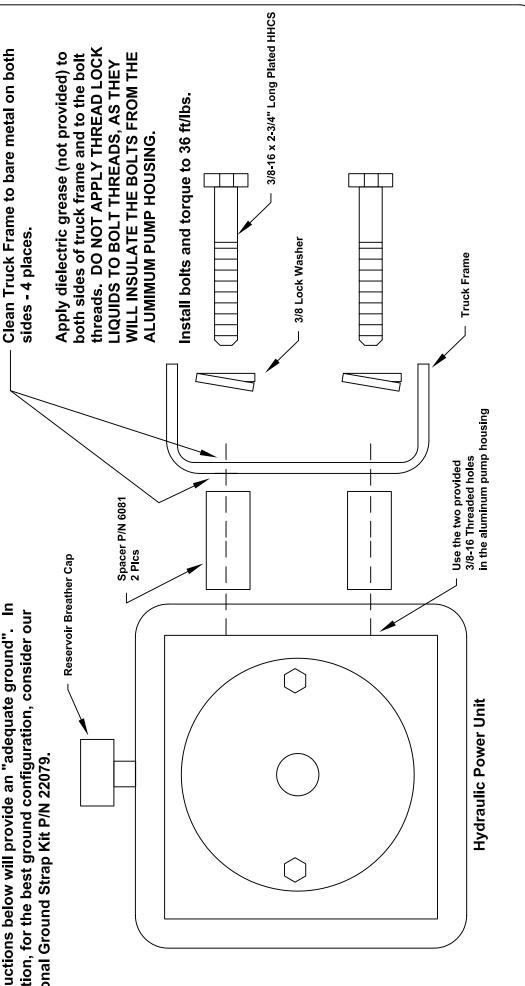


| SPLIT PUMP | 3-2-06C | H200 |
|---------------------------|----------|------|
| VC 416/516, VC 520 - 6628 | 10-6-05B | 416 |



Proper Grounding of Hydraulic Power Units - IMPORTANT!!!

Note: Hydraulic power units WILL run with a poor ground connection, BUT the service life of the motor and control valve coils WILL be greatly reduced unless a proper ground connection is made - see illustration below. The mounting instructions below will provide an "adequate ground". In addition, for the best ground configuration, consider our optional Ground Strap Kit P/N 22079.





| HYDRAULIC POWER UNIT GROUNDING | 6-3-05 |
|--|------------|
| | SUPERSEDES |
| VP6, VC416/516, VC520/620, VC628, TRL HOISTS | ı |

6368

SECTION

III POWER SOURCES

B. <u>Electric Double and Single Acting Pump Information</u>

Note: Pumps should be mounted in a horizontal position. Check hose lengths when choosing a pump mounting location.

See Dwgs. 416306 and 416307.

1. Position electric pump on truck frame, mark mounting holes on frame and drill through 7/16" dia. holes (2 places). Mount pump to frame with 3/8"-16 x 1" hex head bolts (grade 5).

Warning

High pressure (3000 psi) is developed by these pumps. Do not use hydraulic hoses that are crimped, cut, abraided, worn or damaged in anyway. Replace hydraulic hose(s) if any damaged condition exists. Use only hydraulic hose rated at a working pressure of 3000 PSI.

Use only steel fittings rated at a working pressure of 3000 PSI in the electric pump hydraulic system. Replace the fittings if found damaged (bent, cracked, threads damaged, etc.). Do not overtighten connections.

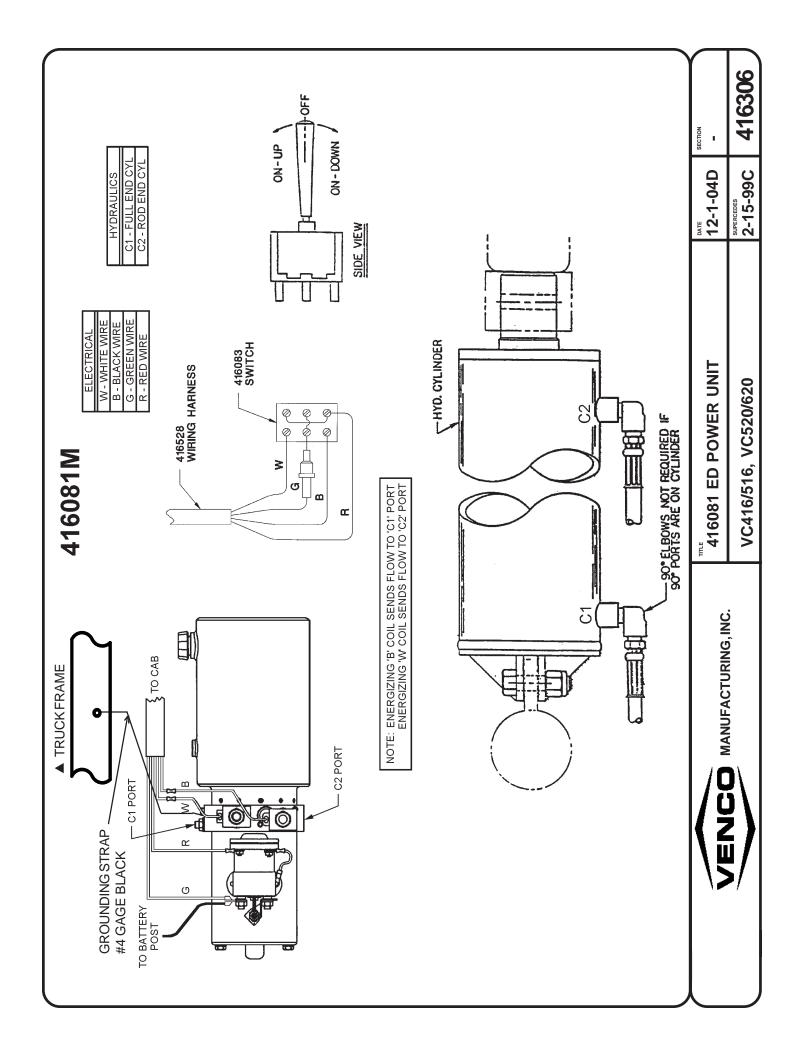
C. <u>Double Acting Electric Pump Installation.</u>

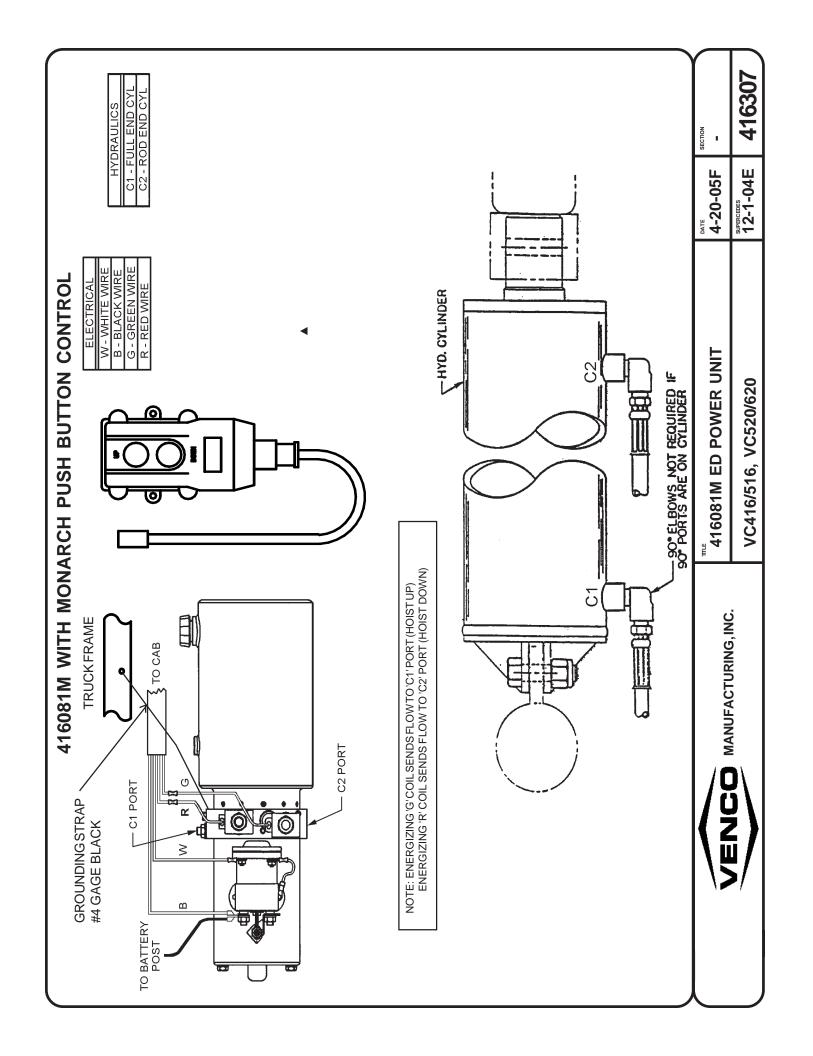
1a. Attach one end of 7' hose to elbow at port "B" (rod end) of the hoist cylinder. Elbow fittings are not required if 90° elbow ports are on the cylinder. Attach one end of the 5' hose to the hoist cylinder at port "A" (full end). See Dwgs. 416306 and 416307.

Note: The double acting power unit does not require an external flow control (it is built into the power unit).

- b. Attach free end of the 7' hose to the swivel elbow on the pump at port marked "B". Attache free end of the 5' hose directly to the pump port.
- 2a. Locate and attach electric pump switch and switch mount on truck dash.
- b. Attach proper color coded wiring from switch to solenoid and in-line fuse to center posts and lead under dash as shown. See Dwgs. 416306 and 416307.
- c. Attach positive lead (#4 gauge) from positive terminal of battery to other large post on motor solenoid. See Dwgs. 416306 and 416307.
- 3. Fill pump with commercial grade ATF-DEXRON III OIL 1/2" from the top of the reservoir.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 10-13-04B | H200 |
|---------------------------|-------------------|-----------|--------|
| WARRING ACTORING, INC. | | 3-10-04A | 416298 |

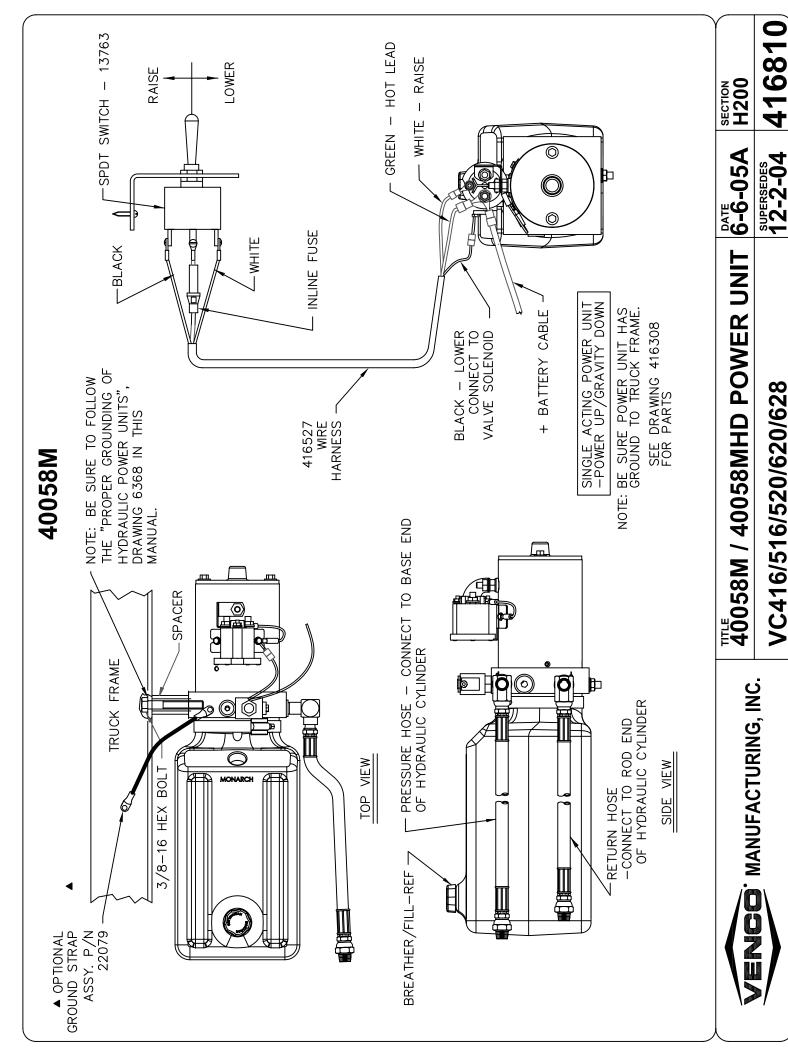




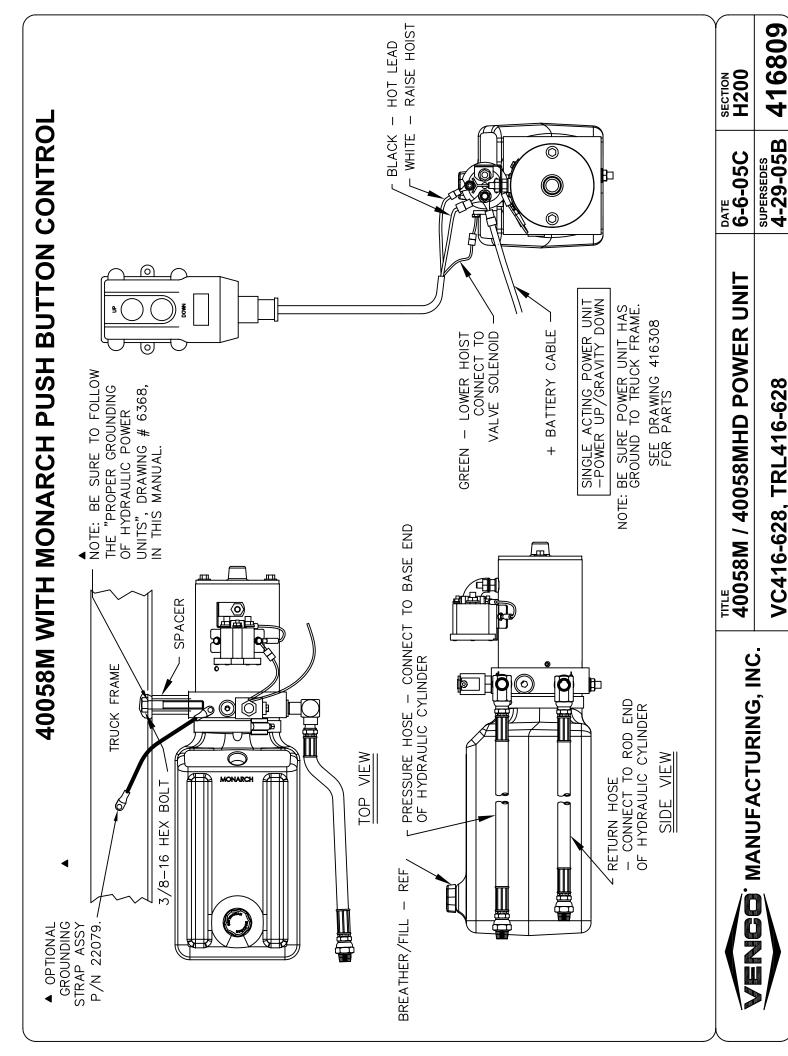
III POWER SOURCES

- D. <u>SINGLE ACTING ELECTRIC HYDRAULIC PUMP</u> See Dwgs. 416315 and 416316.
- a. Mount the electric hydraulic power unit in a horizontal position with reservoir breather upward. Check the hose lengths before mounting the power unit. See Dwgs. 416315 and 416316.
 - b. Position the power unit on the truck frame. Check inside of frame channel before marking hole locations. (wires or brake may be in this area.) Mark mounting holes on the frame and drill 7/16" dia. throught two places. Mount the power unit to the frame with a 3/16-16 x 1" hex head bolts (grade 5).
- 2. a. Install 90° elbow adapter to the pressure port on power unit. Attach end of 5' hose to elbow fitting in pressure port.
- 3. a. Locate and attach the toggle switch and mounting plate to the truck dash or other suitable location inside cab.
 - b. Attach proper color wire from toggle switch to motor solenoid (start switch). Attach other lead to the toggle switch bottom post and the other end to the linear solenoid on the side of the power unit. Connect the inline fuse to the center post on the toggle switch and the other end to the hot lead under the dash.
 - c. Attach the battery cable to the solenoid post indicated Dwgs. 416315 and 416316. Connect the other end of the battery cable to the positive terminal on the battery.
- 4. a. Install the 5' hose to the elbow in the pressure port of the power unit.
 - b. To prime the hydraulic system and force most of the air out of the system, obtain a clean container, place the loose end of the 5' hose into the container. Alternately cycle switch, one second on, one second off until oil comes out of the 5' hose. Attach the loose end of the 5' hose to the cylinder base port. If there is not a 90° port on the cylinder, add a 90° st. elbow to the cylinder baseport, then attache the hose to the elbow.
 - c. Fasten the 7' hose to the rod end of the cylinder. If the cylinder doesn't have a 90° port, add a 90° st. elbow to the rod end cylinder port, then attach the hose to the elbow.
 - d. Connect the other end of the 7' hose to the elbow fitting on the return port of the power unit.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 3-10-04A | H200 |
|---------------------------|-------------------|----------|--------|
| WANDI ACTORING, INC. | VC416/516 | 7-15-98 | 416299 |



VC416/516/520/620/628



VC416-628, TRL416-628

| | HOIST MODEL(S) | VP/VC6 | TRL313 | VC416, TRL416 | VC516, TRL516 | VC520, TRL520 | VC620, TRL620 | VC628, TRL628 |
|--------|--|-------------|------------------|--|------------------|------------------|-----------------------------|--------------------|
| | ES/ED Hyd Pwr Unit Part Number | 6426 / 6425 | 40058M / 416081M | 40058M / 416081M 40058M / 416081M 40058M / 416081M 40058M / 416081M 40058MHD / 416081M 40058MHD / 416081M 40058MHD / 416081M | 40058M / 416081M | 40058M / 416081M | 40058MHD / 416081M | 40058MHD / 416081M |
| | Reservoir Capacity (Quarts) | 3.4 / 3.4 | 4.6/3.4 | 4.6 / 3.4 | 4.6/3.4 | 4.6 / 3.4 | 5.4 / 3.4 | 5.4/3.4 |
| | Total Hydraulic Fluid Required (Quarts) | 4 | 4 | 9 | 8 | 6 | 12 | 15 |
| Step 1 | Attach base-end hose to cylinder. Do NOT attach the Rod-end hose at this time. | YES | YES | YES | YES | YES | YES | YES |
| Step 2 | Fill the hydraulic reservoir as recommended below. Use only hydraulic fluid - Tellus 32 or equivalent is recommended. | | | | | | | |
| 2a | With the hoist in the down position, add the indicated indicated amount (Quarts) of hydraulic fluid. | 2 | 2 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 2b | Raise hoist one-quarter of the way (approximately 12° dumping angle) and add the indicated amount (Quarts) of hydraulic fluid. | | | • | - | 1.5 | 2 | ю |
| 2c | Raise hoist one-half of the way (approximately 22-25° dumping angle) and add the indicated amount (Quarts) of hydraulic fluid. | 2 | 2 | 1.5 | 1 | 1.5 | 2 | ъ |
| 2d | Raise hoist three-quarters of the way (approximately 36° dumping angle) and add the indicated amount (Quarts) of hydraulic fluid. | , | ı | • | - | 1.5 | 7 | ю |
| 2e | Raise hoist completely (45-50° dumping angle) and add the indicated amount (Quarts) of hydraulic fluid. DO NOT "TOP OFF" or you will likely have overflow when the hoist is lowered. | 0 | 0 | - | 1.5 | - | 2.5 | 2.5 |
| Step 3 | Attach the remaining hose to the Rod-end of they cylinder (not req'd on VP/VC6 & TRL313 hoists w/ ES hyd pwr unit) | ED ONLY | ED ONLY | YES | YES | YES | YES | YES |
| | | | FILLING F | LING HYDRAULIC RESERVOIR | RESERVOIR | | _{рьте} 6-16-05С | SECTION |
| | MENCIONING, INC. | ; | %-90//dA | VP/VC6-628, TRL313-628 | 528 | | 6-18-03B | 416140 |

IV Attaching Rear Hinge and Upper Pivots to Body

- A. Rear Hinge
- 1. Position the body logitudinals (channels) onto the truck frame or subframe.
- 2. Place rear hinge plates in the vertical position. Weld and/or bolt plates to logitudinals. If bolted, mark and drill each plate (4) places (17/32" dia.); secure plates to body channels using (8) 1/2"-13 x 1-1/2" grade 8 hex head cap screws, (8) 1/2" lockwashers and 1/2"-13 hex nuts.
- 3. For the subframe hoist, slide the hinge shaft collars over against the hinge plate assembly pipe and weld to outside of hinge shaft. See 416257.
- B. Upper Pivots

▲ Subframe Hoist-

1a. Position lift shaft assemblies securely against the body channels with body against frame rails or filler strip.

▲ Standard Hoist-

1b. Use Lift Shaft Assy. with angle. Weld angle to Body Channel - all around - each side. Weld BODY GUIDE to angle on LOWER PIVOT (2 PL.)-See 416255 SHT. 1 - Item 27. See next page (FIG.10) to weld Lift Angles to Body Channel.

CAUTION: Before operating the hoist, read the operations section of this manual.

- 2. Raise the body to a moderate position and prop the body in a secured position. Cover any gas tanks and filler necks with a non-flammable material before welding. Weld the upper lift shaft assys. to the body channels all around each side. Slide the shaft collars against the upper pivot tube. Weld the outside edge of the collar to the upper lift shaft (2" dia,), See Fig. 9.
- 3. With the hoist and body completely installed, operate hoist system per the instructions in this manual and P.T.O. manufacturer's instructions.

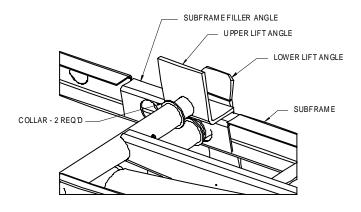
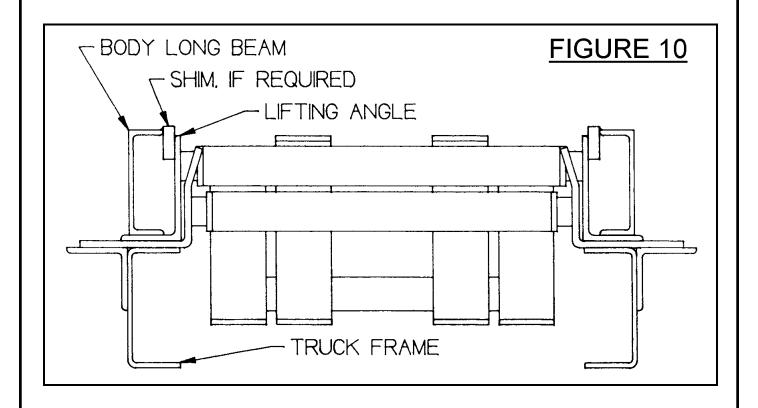


Figure 9

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 2-24-05A | H200 |
|---------------------------|-------------------|----------|--------|
| MARKET ACTORING, INC. | VC 416/516 | 7-14-03 | 416747 |



| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 7-15-98A | H200 |
|---------------------------|-------------------|----------|--------|
| MANOT ACTORING, INC. | VC 416/516 | 9-16-92 | 416273 |

V Power Source Operation

A. P.T.O. Pump Operation

Warning

Do not operate the pump at more than 1000 RPM. Severe hoist system damage could result. The P.T.O. speed to engine speed is governed by the gear ratio of the P.T.O. drive installed in the truck transmission.

Caution

For long service and safety from VC-416/516 hoinst, it is important that the following procedure be followed each time the hoist is operated.

- 1. Engage the P.T.O. from the truck cab, adjust engine speed to obtain correct P.T.O. and lift speed desired.
- Pull the knob marked "pump" out. This will cause the hoist to raise.

Caution

Do not allow pump bypass for long periods of time as this will put stress on the whole hydraulic and electrical systems.

3. When the hoist has reached it's maximum capacity, the pump will bypass through the relief valve. To prevent the pump from bypassing, push the knob marked "pump" to the middle or "center" position. Whenever the pump knob is centered, the hoist will stop moving and hold it's position.

Note: The Venco Hoists, powered by P.T.O. drive pumps, must be powered down. Failure to "power down" will cause the reservoir to overflow.

- 4. To lower the hoist, push the pump knob in.
- 5. Fully raise and lower the hoist several times to purge the hydraulic system of air.
- 6. To lock the hoist against the truck frame when it is in the down position, push the pump knob in. When the pump bypasses, place the knob in the center "hold" position.

Warning

Do not drive truck without first disengaging P.T.O. drive shaft. Severe damage may occur.

7. Disengage P.T.O. from transmission as per manufacturers instructions.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 7-15-98 | H200 |
|---------------------------|-------------------|------------|--------|
| MANOTACTORING, INC. | VC 416/516 | SUPERCEDES | 416301 |

V Power Source Operation

B. Double Acting Pump Operation

- Push and hold the toggle switch located on the control box to the side marked up. This will start the pump and will raise the hoist.
- When the hoist reaches it's limit, the pump will bypass. Care should be taken not to let the pump bypass for long periods, as it will put stress on the whole hydraulic system. To prevent the pump from bypassing, release the toggle switch and allow it to center. In this position the pump will stop and hold the hoist in position.
- 3. To lower the hoist, push and hold the toggle switch in the down position. This will start the pump and will lower the hoist. When the body contacts the frame the pump will bypass - release the switch.
- 4. Fully extend and retract cylinder several times to purge system of air to obtain proper hydraulic/lifting action. Check for hydraulic leaks at fittings and hoses. Tighten fittings or replace leaking hoses if necessary.

C. Single Acting Pump Operation

- Push and hold the toggle switch located on the control box to the side marked up. This will start the pump and will raise the hoist.
- When the hoist reaches it's limit, the pump will bypass. Care should be taken not to let the pump bypass for long periods, as it will put stress on the whole hydraulic system. To prevent the pump from bypassing, release the toggle switch and allow it to center. In this position the pump will stop and hold the hoist in position.
- 3. To lower the hoist, push and hold the toggle switch in the down position. This will start and open a valve and allow gravity to lower the hoist.
- 4. Cycle hoist system several times up and down to force out any air that may be in the hydraulic system.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 7-15-98 | H200 |
|---------------------------|-------------------|------------|--------|
| MANOT ACTORING, INC. | VC 416/516 | SUPERCEDES | 416302 |

VI Body Prop(s): Federal regulation 1926.01, paragraph 10, requires the use of a body prop. Accordingly, all Venco Hoist units will have included as a standard item, a body prop (safety strut).

Warning

Do not place arms, hands or any part of the body between truck longitudinal (long beams) or moving parts to pull body prop release/locking pin.

Do not use the body prop(s) to support a loaded truck body

Caution

Body prop(s) should be free swinging to a vertical position, after the locking pin is released.

Read operation of safety strut and caution decals before operating hoist.

- A.1. The body prop is designed for use only when the truck body is empty. The purpose of the body prop is to provide a safety strut for use when maintenance or repairs are performed on an unloaded truck body in the raised position.
 - 2. One (1) body prop shall be furnished for truck bodies up to and including 15 feet. For bodies above 15 feet in length, two (2) body props should be used.
 - a. Construction truck bodies Two (2) body props are required.
- B.1. To disengage the body prop(s) from the hoist frame, use a suitable tool to pull out the spring loaded release pin. This will release the body prop so that it may swing downward to a vertical position.
 - 2. Make sure that the body prop(s) are aligned with the body prop foot rest (body prop will be in vertical position), then allow the truck body to move downward until the body prop is seated in the foot rest.

Warning

Use extreme care when reseating body prop(s) in the locked position.

3. To disengage the body prop(s), raise the truck body until the body prop(s) swing freely away from the foot pad. Using a suitable tool, place tool in a leverage position on the body prop and propel sharply to the right and upward, so that the locking pin can be compressed and seated in the locking pin hole. Make certain the body prop is latched securely before hoist is operated.

| VENCO MANUFACTURING, INC. | INST INSTRUCTIONS | 7-15-98 | H200 |
|---------------------------|-------------------|------------|--------|
| marter acronine, inc. | VC 416/516 | SUPERCEDES | 416303 |

VII Lubrication and Maintenance

- A. Hoist Unit Lubrication Lubricate hoist system as follows:
 - 1. P.T.O. driven pump tighten and grease the lube fittings in the P.T.O. drive shaft assembly.
 - 2. Grease all lube fittings on the hoist unit.
 - 3. Grease rear hinge assembly.
 - 4. The hoist system should be serviced at the same time the truck is serviced. Service the hoist more frequently with heavy usage.

B. Hydraulic Systems Maintenance

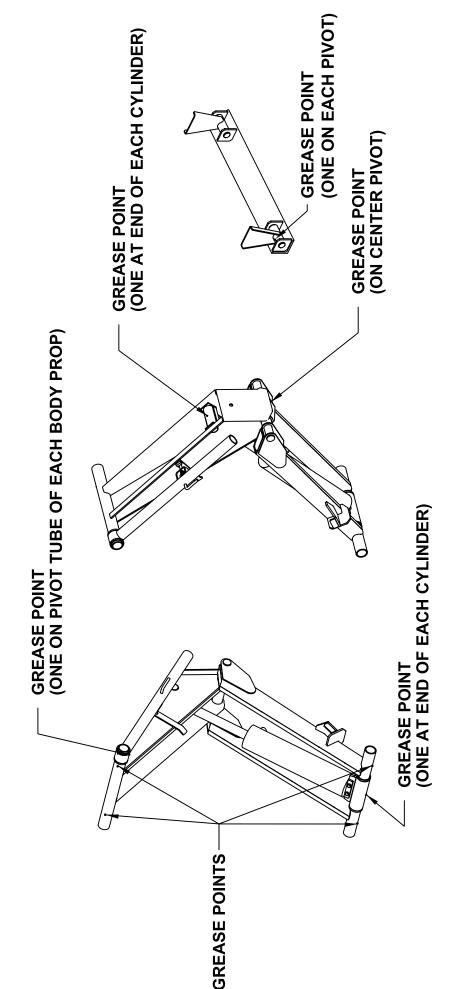
- The most frequent cause of failure is dirt in the hydraulic system.
 - a. Recheck hydraulic fluid level periodically to properly perform the dual function of lubricaiton and transmission of power. We recommend the use of MULTI-PURPOSE ATF DEXRON II for electric D/A and S/A units to obtain maximum unit and fluid life. Use DEXRON 220 oil for P.T.O. units.
 - b. Make frequent inspection of hydraulic fluid and change if contaminated.
 - c. Drain and replace hydraulic oil in electric pump each time truck is serviced. Service the pump unit more frequently with heavy usage.
 - d. Use a clean funnel fitted with a fine wire mesh screen to fill the reservoir with oil. Do not use a cloth strainer. Most pump failures, valve malfunctions and short life can be caused by dirt or other material (water, chips, lint) getting into the hydraulic system.
 - e. Periodically inspect inlet screen filter. To gain access to filter; drain the reservoir of oil and remove the screws which attach the reservoir to the motor adapter. The filter is screwed on to the pipe nipple which leads to the pump.
 - f. Note the position of the filter before removing it from the pump housing. Use a suitable solvent to clean the filter. Reassemble the filter to the pump housing as positioned orginally.

Electric D/A only

All double solenoid manifold mounted valves are equipped with manual "over-ride" and can be actuated by inserting a small blunt object into the end of the valve to manually shift the valve. The body should not be in the raised position when manually over-riding the system. This can be done to break dirt away or to check and see if spool is shifting.



HOIST GREASE POINTS



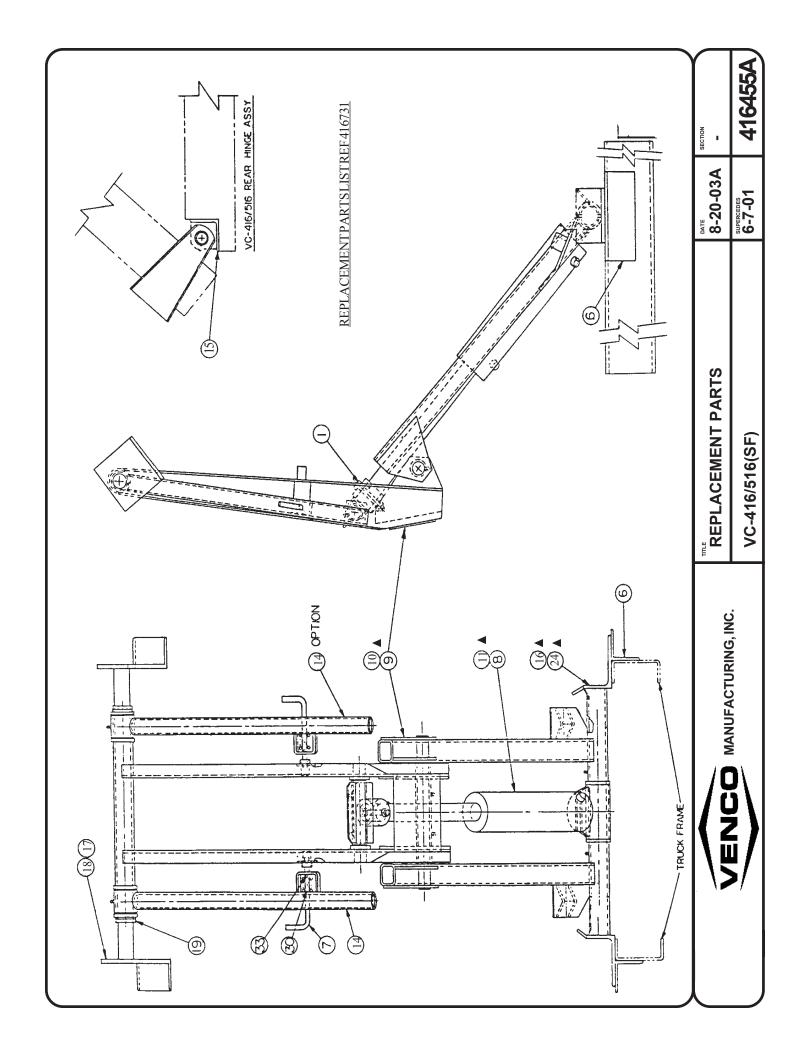
TO ENSURE THE RELIABLE PERFORMANCE OF YOUR VENCO HOIST, IT IS NECESSARY THAT YOU GREASE THE HOIST AT THE TIME OF TRUCK SERVICE WITH CHASSIS GREASE. THE GREASE POINTS FOR THE HOIST SCISSORS AND REAR HINGE ARE SHOWN ABOVE. ADDITIONAL FITTINGS FOR TWIN CYLINDER HOISTS AND ADDITIONAL BODY PROPS ARE ALSO NOTED.

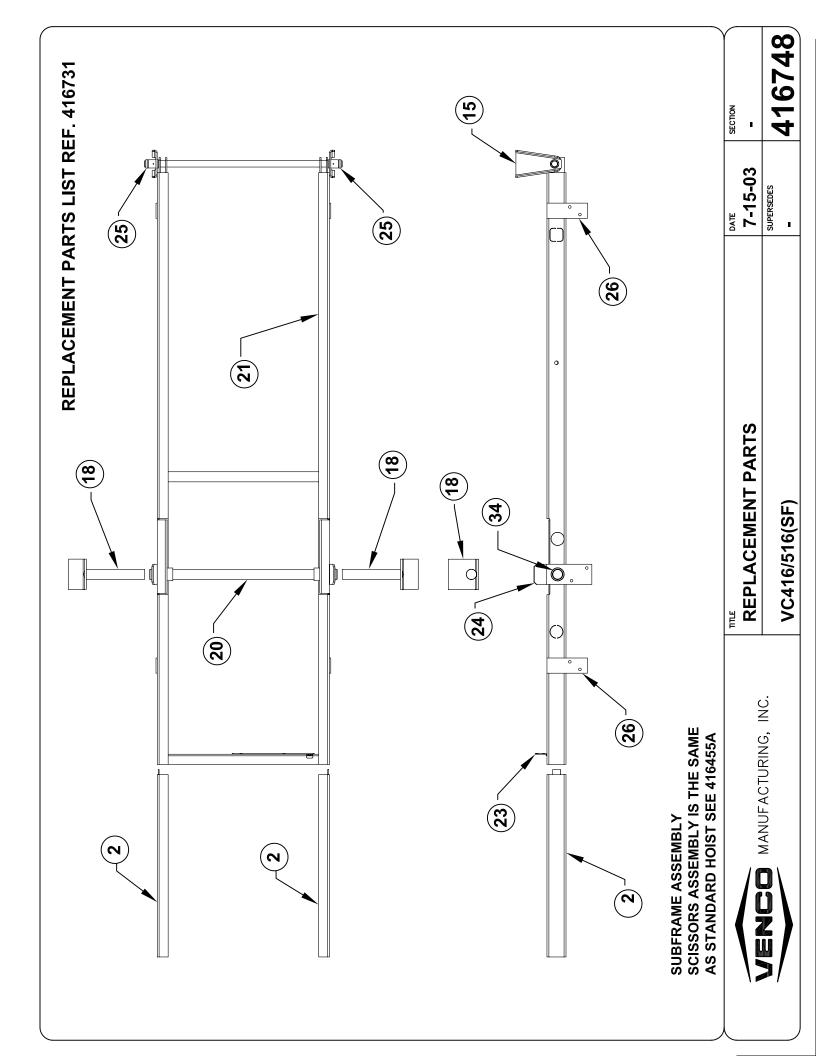


| GREASE POINTS FOR HOISTS | 3-11-05A | |
|--------------------------------------|------------|----|
| | SUPERSEDES | |
| VC416/516/520/620/628/5520/6620/6628 | 9-4-02 | 57 |

DATE

0054





416255A, 416532 REPLACEMENT PARTS LIST

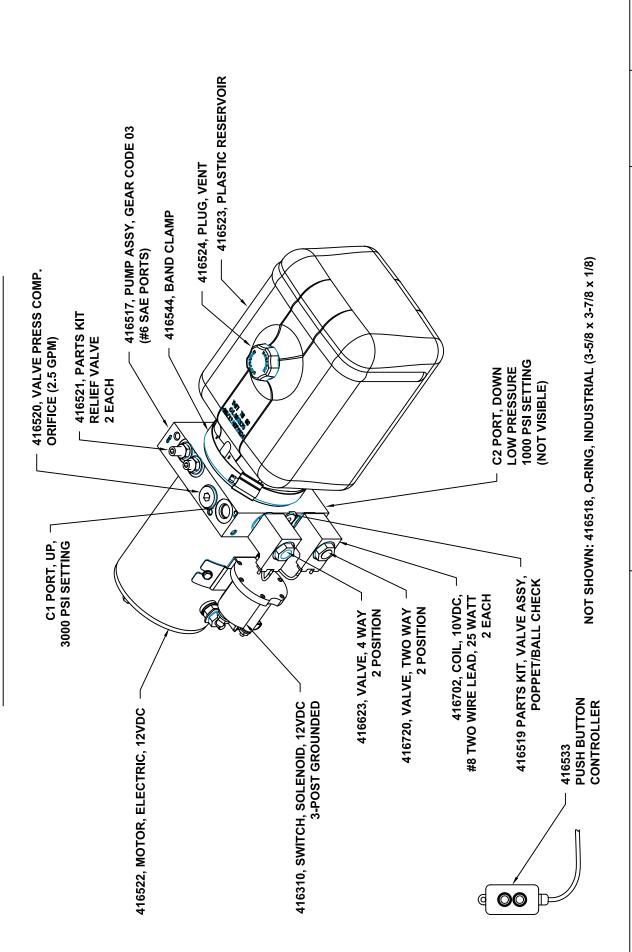
| ITEM | PARTNO. | QTY S.F. | QTY NON | DESCRIPTION |
|----------------------------|--|-----------------------|-----------------------|---|
| 1 2 3 4 5 | 416545 416744 416259 @416044 @416045 | 1 1 1 1 | 1 - - 1 | 5/8 - 3-1/2 CLEVIS W/ H.P. COTTER SUBFRAME EXTENSION KIT SUBFRAME PIVOT KIT ASSEMBLY HOSE ASSEMBLY - 5 FT. HOSE ASSEMBLY - 7 FT. |
| 6 7 8 9 10 | 520063 416068-1 416127 416402-2 516402-2 | 2 1 1 1 | - 1 1 1 | MOUNTING ANGLE LOCKING PIN 416 CYLINDER 416 SCISSORS ASSEMBLY WITH OUT CYLINDER 516 SCISSORS ASSEMBLY WITH OUT CYLINDER |
| 11 12 13 14 15 | 516127 @416210 @416211 416212 416207 | 1 2 2 1 | 1 2 2 1 1 | 516 CYLINDER HEX HEAD CAP SCREW - 1/2"-13 x 1-3/4" NYLON LOCK NUT - 1/2"-13 BODY PROP ASSEMBLY - INCLUDES ITEMS: 7, 30, 33 REAR HINGE ASSEMBLY |
| 16 17 18 19 20 | ▲ 520563 520562 * 416739 416220 * 416221 | - - 2 2 1 | 2 2 - 2 | LOWER PIVOT ASSEMBLY UPPER LIFT SHAFT ASSEMBLY (NON SUBFRAME ONLY) UPPER LIFT SHAFT ASSEMBLY (SUBFRAME ONLY) COLLAR UPPER PIVOT (REGULAR HOIST AND SUBFRAME) SHAFT - LOWER PIVOT ASSEMBLY |
| 21 22 23 24 25 | * 416738 - * 520512 * 416420 * 416246 | 1 - 1 2 2 | - - - | SUBFRAME WELDED ASSEMBLY - PUMP MOUNTING BRACKET LOWER PIVOT ASSEMBLY COLLAR - REAR HINGE |
| 26 27 28 29 30 | * 416247 - - - - 00170 | 4 - - - 1 | - - - - | SIDE PLATE SPRING |
| 31 32 33 34 35 | 416221 - 20-00022 416219 - | 1 - 1 2 1 | - 1 2 1 | SHAFT, SUBFRAME, LOWER PIVOT - ROLL PIN - 5/32" x 1" SET SCREW - 5/16"-18 POWER UNIT (SEE OPTIONS BELOW) A. 40058 - ELECTRIC S/A HYD B. 416081 - ELECTRIC D/A HYD C. 416046 - PTO D/A HYD D. 416075 - PTO D/A WITH SPLIT PUMP |

^{*} ITEMS USED ON VC-416/516 SUBFRAME ONLY @ ITEMS NOT SHOWN ON DRAWING

REPLACEMENT PARTS DWG REF 416255A, 416748 NOTE: CLEVIS PIN FOR MULTI-PIECE HINGE IS 416215

| VENCO MANUFACTURING, INC. | REPL. PARTS LIST | 10-22-04C | SECTION |
|---------------------------|------------------|-----------|---------|
| WANDFACTURING, INC. | VC-416/516(SF) | 5-24-04B | 416731 |

REPLACEMENT PARTS 416081M





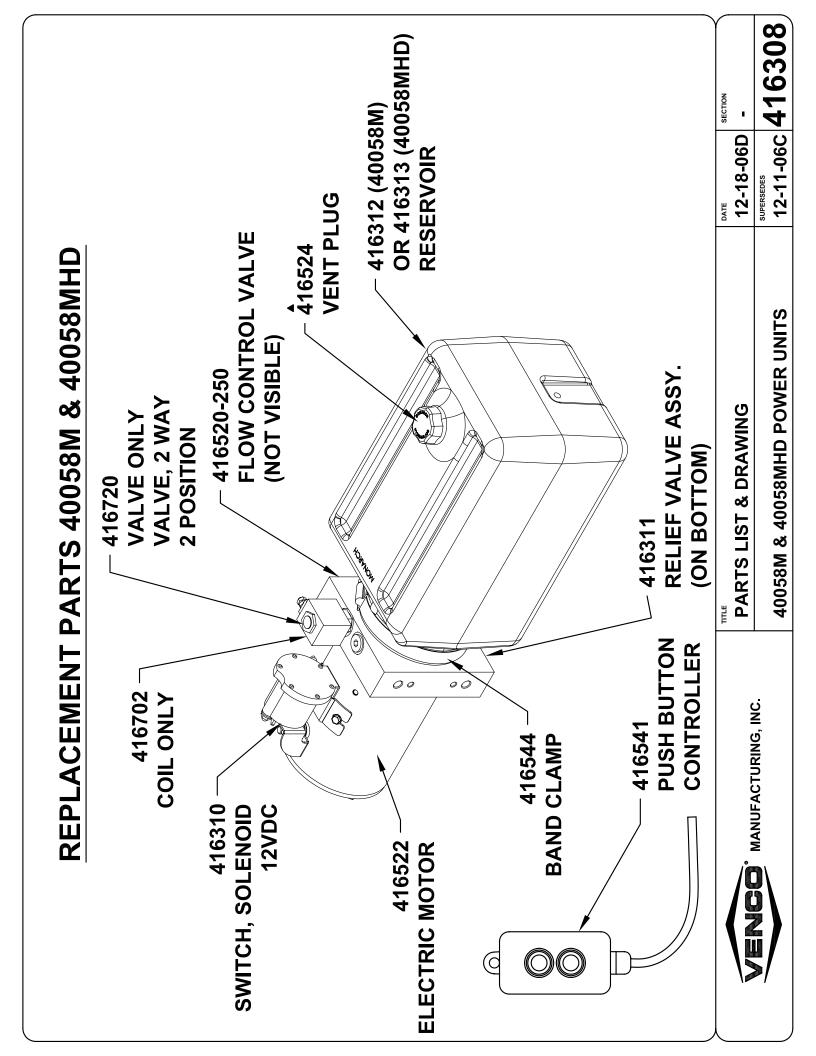
| пте |
|---------------------------|
| REPLACEMENT PARTS DRAWING |
| |

416081M POWER UNIT

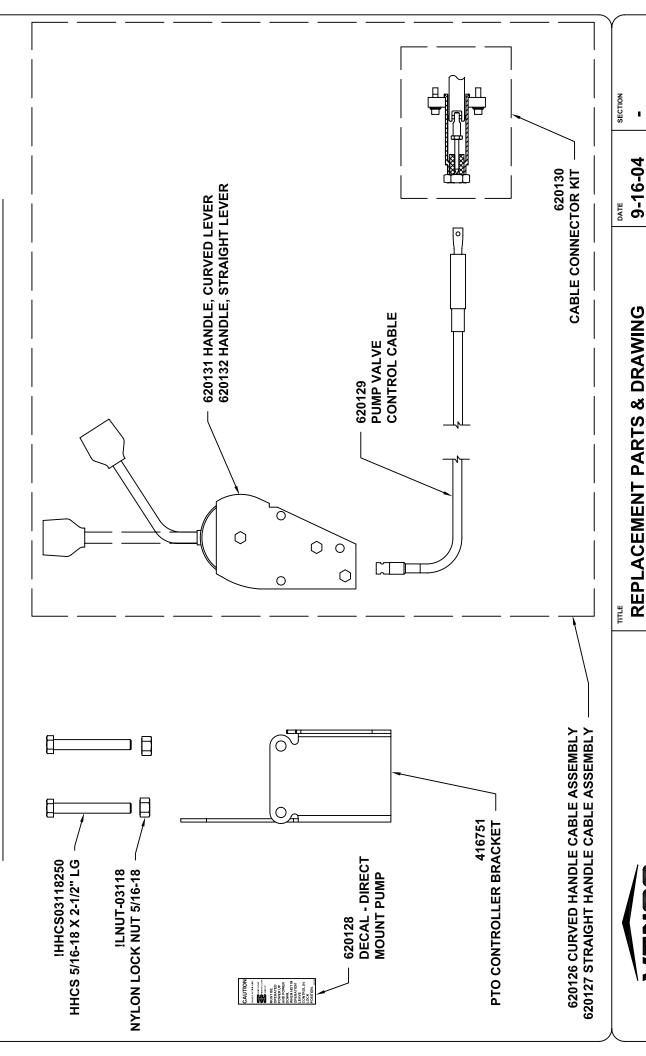
| | 416508 | | |
|-----------|------------|----------|--|
| 12-11-06E | SUPERSEDES | 7-27-05D | |
| | | | |

SECTION

DATE



620124 CABLE & CONSOLE KIT - STRAIGHT HANDLE 620125 CABLE & CONSOLE KIT - CURVED HANDLE



620245

SUPERSEDES

PTO PUMP CABLE

MANUFACTURING, INC.



LIMITED WARRANTY POLICY

This limited policy warrants new products of Venco to be free from defects in material and workmanship for a period of three (3) years from date of original installation. This warranty covers:

- Repair or replacement of product
- · Labor to repair or replace product
- · Freight to return and/or replace product

We shall not be liable for any contingent liabilities arising out of the improper function of any products. Warranty shall become void if the product is improperly installed, modified, damaged, abused or used for application other than intended use.

WARRANTY CLAIMS

Venco Manufacturing, Inc. will make a good faith effort for prompt correction or other adjustment with respect to any product, which proves to be defective after our inspection and within the warranty period. Before any repairs are attempted or before returning any product, your Venco Distributor is required to obtain a warranty claim number. This number is necessary for any claim to be considered. To obtain a warranty claim number, Venco requires the model and serial number. Only authorized Venco Distributors can perform warranty. For the name and address of your local Venco Distributor call the Warranty Claim Department – 513-772-8448.

WARNING – It is the responsibility of the installer to insure the installation is completed according to the manufacturer's recommendations, insure the ultimate user understands how to operate product in a safe manner and understands the need for regular service and maintenance by an authorized Venco Distributor. No modifications or alterations may be made to any Venco products without the expressed written consent of the manufacturer. Reinstallation of any Venco product must be done by an authorized Venco Distributor, to the standards of the industry including maintenance, service and affixing of all instruction, safety and warning decals. Users should again be instructed as to the safe operation at time of delivery. Maintenance, service, operation and safety warning decals are available on request from Venco Manufacturing, Inc.

VENCO MANUFACTURING, INC

DIVISION OF COLLINS ASSOCIATES, INC

12110 BEST PLACE • CINCINNATI, OHIO 45241

513.772.8448

www.venturo.com