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## VC 416 / 516 MANUAL

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### -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.



MANUFACTURING, INC.

TITLE  
**TABLE OF CONTENTS**

**VC 416 / 516**

DATE  
**11-19-02C**

SUPERCEDES  
**9-4-02B**

SECTION  
**-**

**416734**

# 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.



MANUFACTURING, INC.

TITLE

CAUTION NOTE

VC416 / 516

DATE

10-30-01

SUPERCEDES

-

SECTION

-

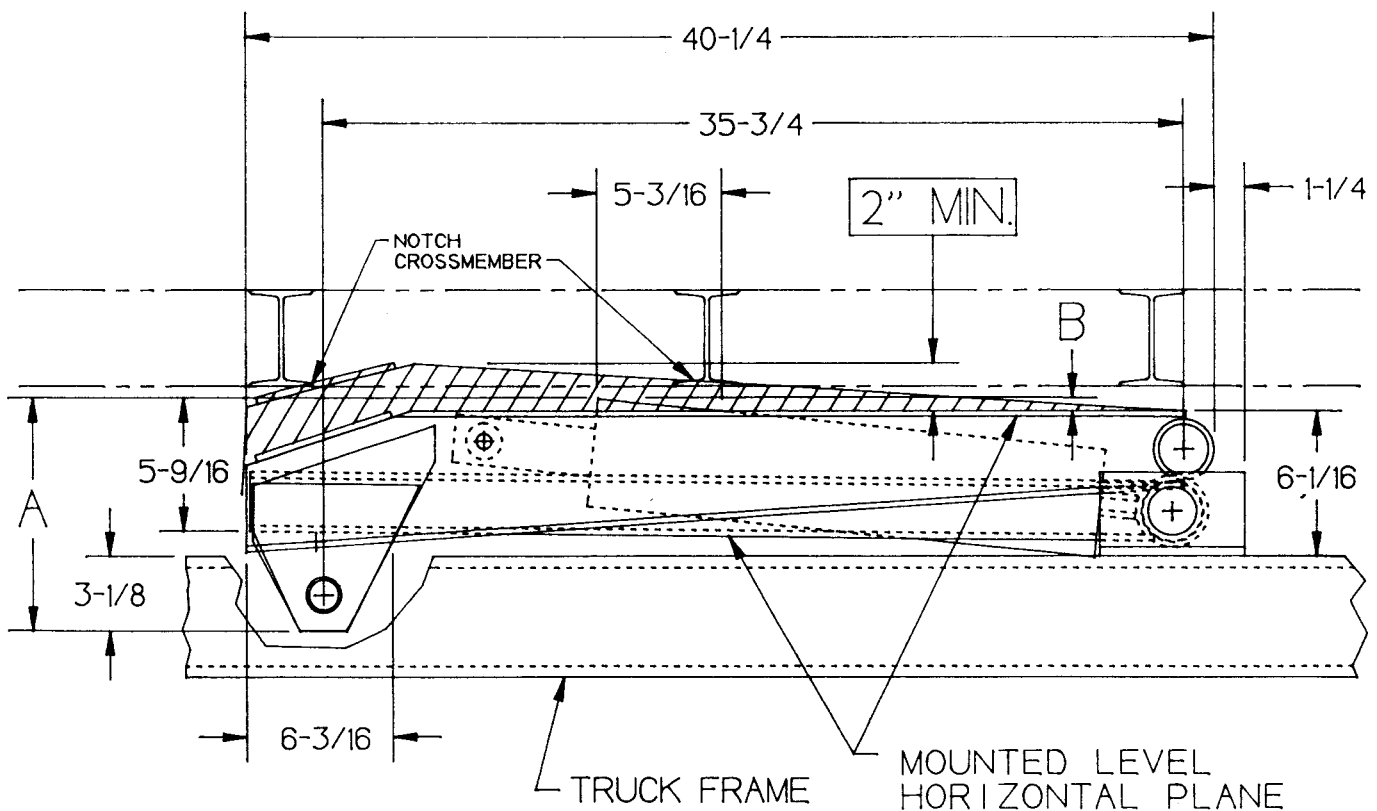
416723

# 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"



MANUFACTURING, INC.

TITLE  
**IMPORTANT WARNING**

VC 416/516

DATE  
**7-14-98**

SUPERCEDES  
**10-9-92**

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**H100**

**416272**

## I C. 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.



MANUFACTURING, INC.

TITLE

**INST INSTRUCTIONS**

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SECTION

**H100**

**VC 416/516**

SUPERCEDES

-

**416288**

Included with your Venco hoist are two (2) sets of warning and caution decals. These decals should be placed in a prominent location on each side of the truck body (roadside and curbside) so they are easily seen and readily identifiable. ▲

PD MODEL ONLY  
VENCO #416085  
1 REQ'D



AFFIX TO TRUCK  
DASHBOARD

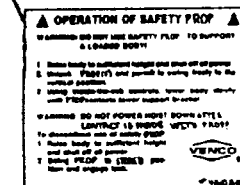
VENCO #416052  
2 REQ'D (1 EACH SIDE)



VENCO #15254  
2 REQ'D (1 EACH SIDE)



VENCO #416084  
1 REQ'D FOR  
EACH SAFETY PROP



MANUFACTURING, INC.

TITLE

DECAL LOCATION

VC 416/516, VC 520 - 6628

DATE

12-27-99B

SUPERCEDES

7-13-98A

SECTION

H100

416128

**GENERAL INFORMATION:**

MODEL: VC 416\*(SF)

DUMP CLASS: 10

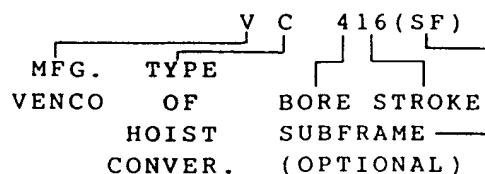
CONVERSION CLASS: B

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".

**\*POWER SOURCE**

ES-ELECTRIC SINGLE ACTING

ED-ELECTRIC DOUBLE ACTING

PD-POWER TAKE-OFF DOUBLE ACTING

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



MANUFACTURING, INC.

TITLE

CAPACITY CHART

VC 416

DATE

7-14-98

SUPERCEDES  
2-28-90

SECTION

H100

416266

**GENERAL INFORMATION:**

MODEL: VC 516\*(SF)

DUMP CLASS: 20

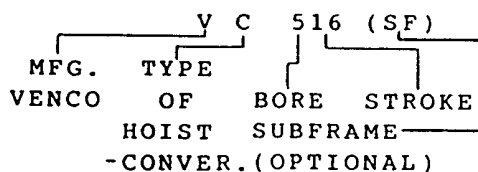
CONVERSION CLASS: C

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".

**\*POWER SOURCE**

ES-ELECTRIC SINGLE ACTING

ED-ELECTRIC DOUBLE ACTING

PD-POWER TAKE-OFF DOUBLE ACTING

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	84	30	11.9	10.8	9.8
12	108	6	7.7	6.9	6.4
13	84	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



MANUFACTURING, INC.

TITLE

CAPACITY CHART

VC 516

DATE

7-14-98

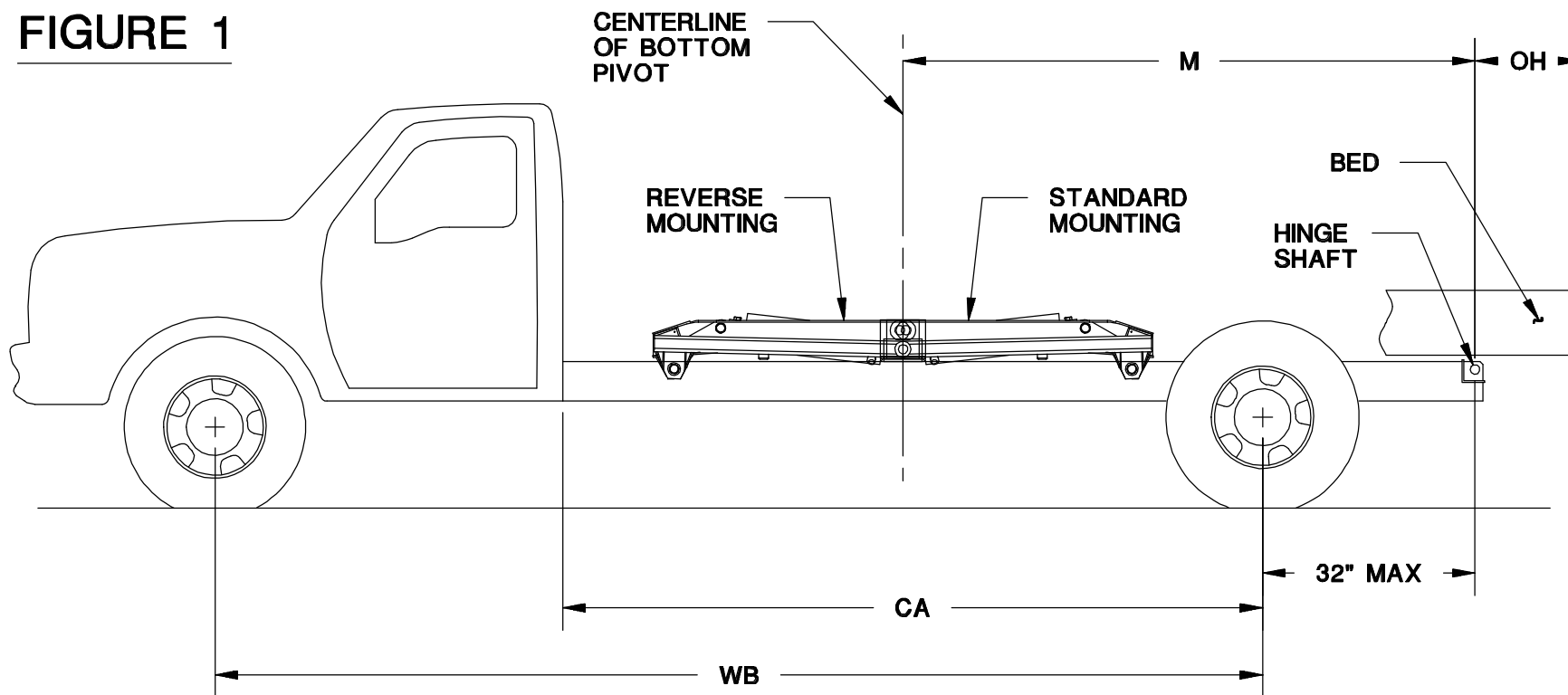
SUPERCEDES  
2-28-90

SECTION

H100

516203

# FIGURE 1



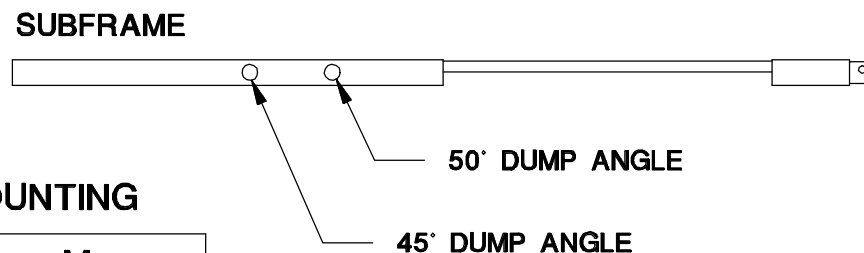
## VC 416/516 HOISTS

### STANDARD MOUNTING

DUMP ANGLE	M
40°	88
45°	78-3/4
50°	71-1/4

### REVERSE MOUNTING

DUMP ANGLE	M
40°	88-1/2
45°	79
50°	71-3/4



TITLE  
MOUNTING DIMENSIONS

VC 416/516 HOIST

DATE  
9-30-98A

SUPERSEDES  
6-3-98

SECTION  
H100

416286



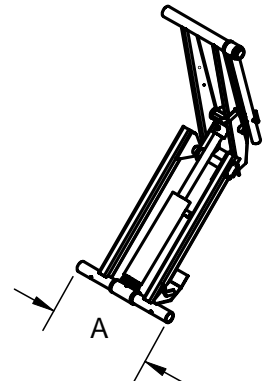
## II A.

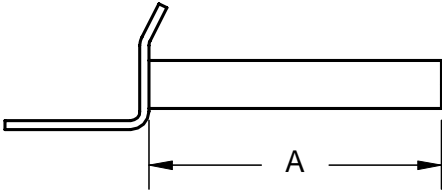
### STANDARD HOIST MOUNTING INSTRUCTIONS

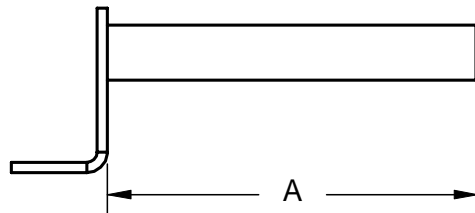
1. Moving the hoist along the truck frame forward or rearward will affect the hoist's performance. A forward movement will reduce the dump angle and increase capacity. A backward movement will increase dump angle and decrease capacity.
2. The VC-416/516 Hoist is designed for 34" to 29.5" frame widths. 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 page 9 thru 13.

QTY.	PART NO.	DESCRIPTION
1	416421	Lower Pivot Tube
2	416405	Lower Pivot Assy.
2	416258	Upper Lift Shaft Assy.

\* - Original length shipped from factory

Lower Pivot Tube 416420		
Frame Width	Dim A.	
34	27-3/4"*	
31.3	25-1/16"	
29.5	23-1/4"	

Lower Pivot Assy. 416420		
Frame Width	Dim A.	
34	12-1/4"*	
31.3	10-7/8"	
29.5	10"	

Upper Lift Shaft Assy. 416258		
Frame Width	Dim A.	
34	13-1/2"*	
31.3	12-1/2"	
29.5	11-5/8"	



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

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6-7-01

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H200

VC 416/516

SUPERSEDES

-

416489

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.

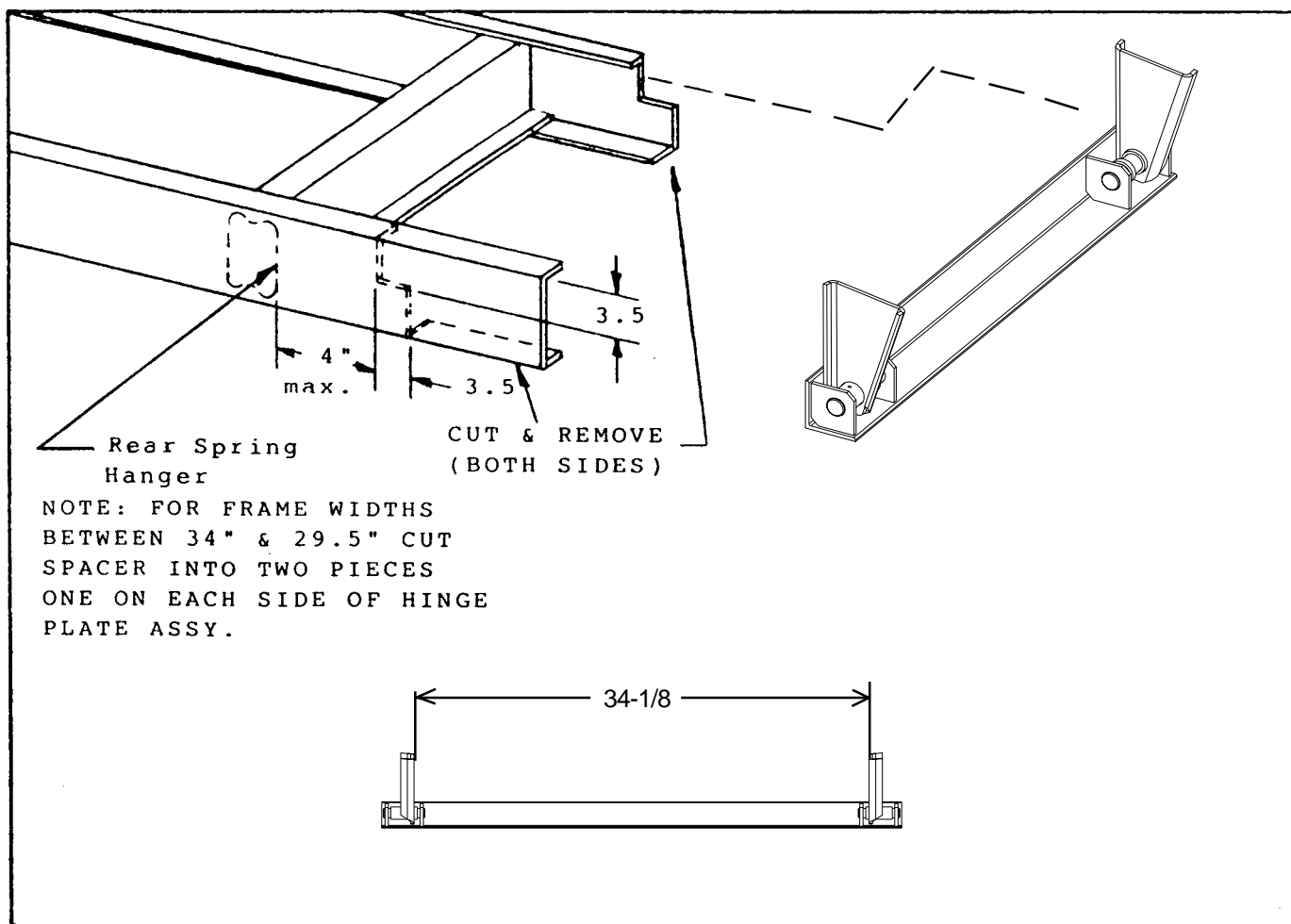


FIGURE 2 - FRAME MODIFICATION AND REAR HINGE ATTACHMENT



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

VC 416/516

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**5-24-01A**

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**7-14-98**

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**H200**

**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 hoist 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 interference 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. clamped to the mounting angles ( $3-1/2 \times 3-1/2 \times 5/16 - 10"$  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.

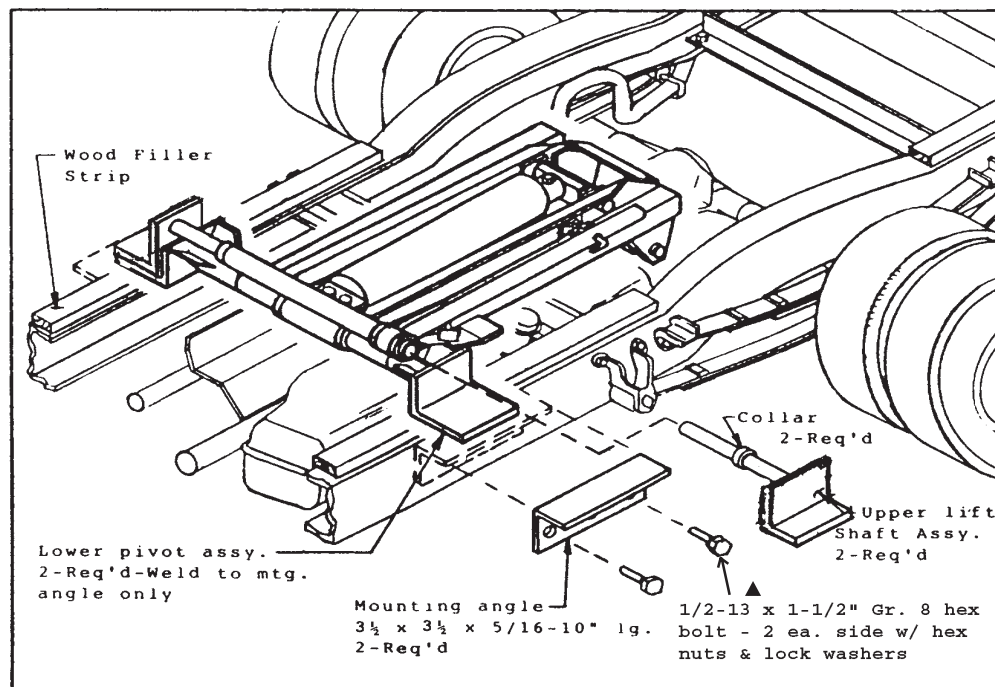


Figure 3 Mounting Angle/Lower Pivot Assembly



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**  
**VC 416/516**

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**10-14-02A**  
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**H200**  
**416291**

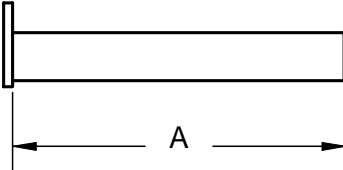
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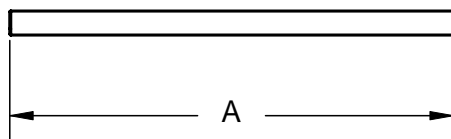
### SUBFRAME HOIST MOUNTING INSTRUCTIONS

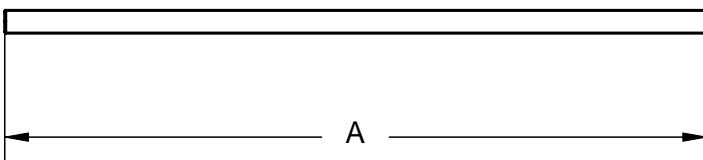
- Before mounting the VC-416/516 subframe hoist, the following parts will have to be shortened for truck frame widths smaller than 34". The minimum frame width is 29.5"

QTY.	Part No.	Description
2	416218	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 Shaft Assy. 416218		
Frame Width	Dim A.	
34"	13-7/8"*	
31.3"	12-1/2"	
29.5"	11-5/8"	

Shaft-lower pivot subframe 416221		
Frame Width	Dim A.	
34"	36-3/8"*	
31.3"	33-11/16"	
29.5"	32-7/8"	

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



MANUFACTURING, INC.

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6-8-01

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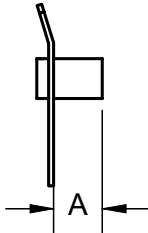
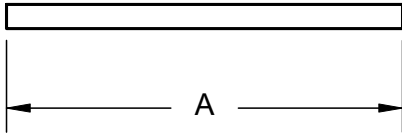
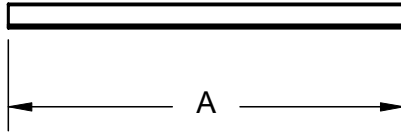
H200

VC 416/516

SUPERSEDES

-

416492

Lower Pivot Assy. 416420		
Frame Width	Dim A.	
34"	3-1/16"*	
31.3"	1-23/32"	
29.5"	13/16"	
Bar 1/4" x 2" - 33" 416253		
Frame Width	Dim A.	
34"	33"*	
31.3"	30-5/16"	
29.5"	28-1/2"	
Channel W/ Power Unit Mtg. Bracket ▲ 416506		
Frame Width	Dim A.	
34"	▲ 33"*	
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 will 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 wait until after step 3a.
- b. 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. See Dwg. 416086.
- c. 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 be immediately behind a truck crossmember. Mark the location for the rear hinge.
3. a. 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. Thoist will have to be shifted forward or rearward to avoid the gas filler tube.



MANUFACTURING, INC.

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INST INSTRUCTIONS

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9-12-02A

SECTION

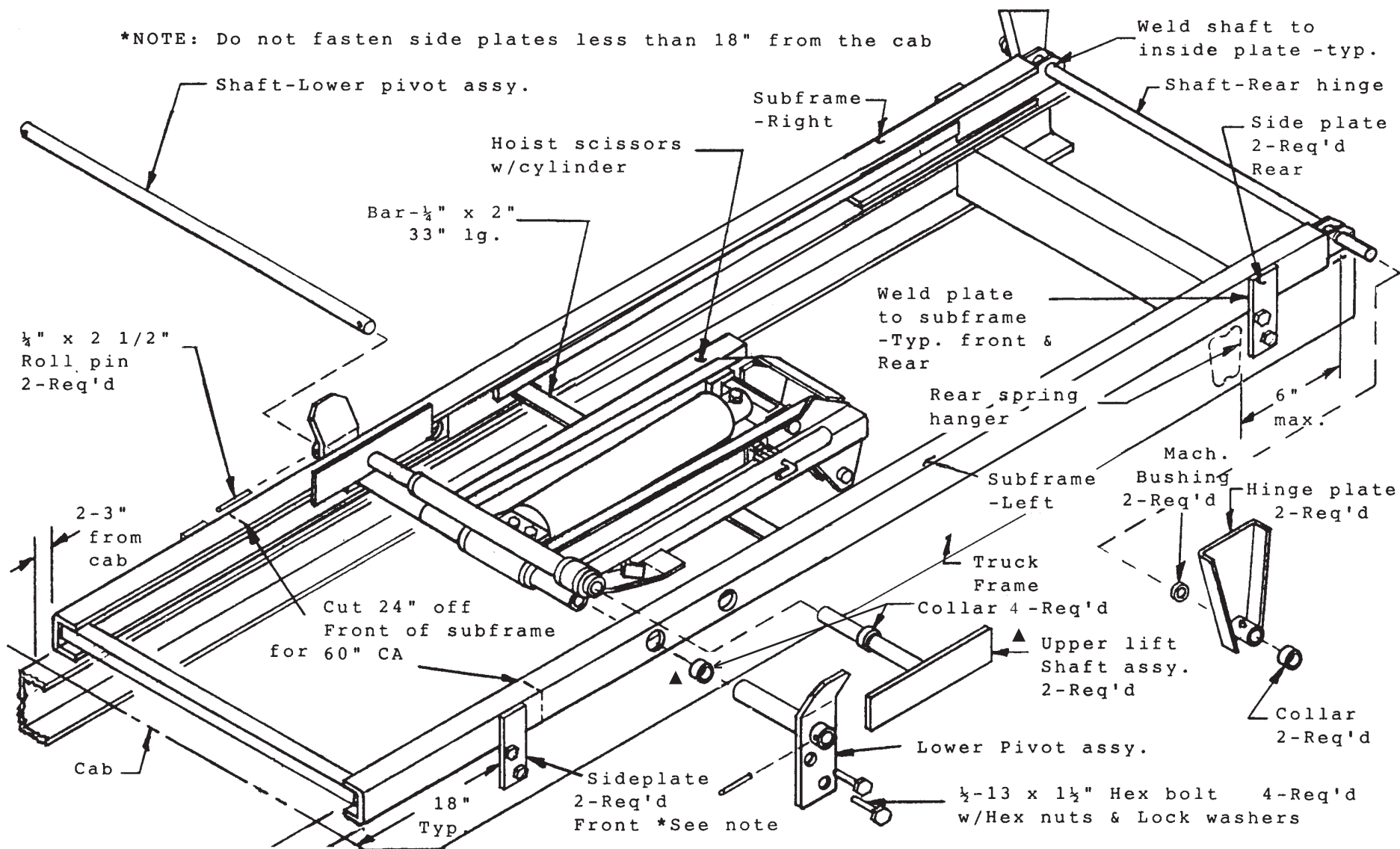
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VC 416/516

SUPERSEDES

6-8-01

416493



MANUFACTURING, INC.

TITLE  
SUBFRAME MOUNTING

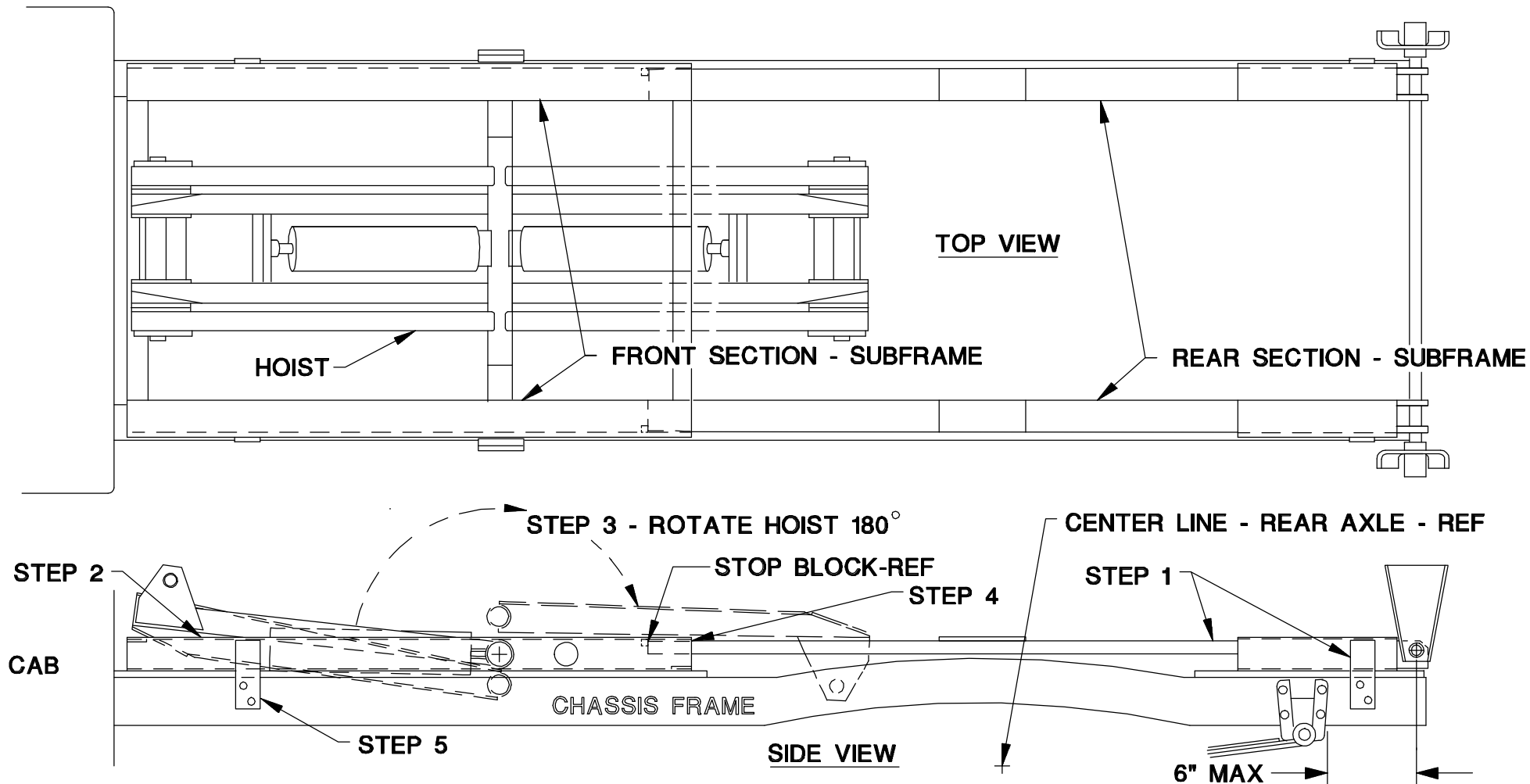
VC 416/516

DATE  
10-25-02D

SUPERCEDES  
6-22-01C

SECTION  
H200

416257



NOTE: SEE FIG. 1 - LOCATION GUIDE / DUMP ANGLE AND REAR HINGE PIVOT LOCATION BEFORE STARTING.

STEP 1 - INSTALL REAR SECTION OF SUBFRAME, BOLT SHEAR PLATES TO CHASSIS FRAME.

STEP 2 - INSTALL FRONT SECTION OF SUBFRAME. BE SURE FRONT SECTION IS PARALLEL WITH REAR SECTION.

STEP 3 - ROTATE HOIST 180° (FROM 9:00 POSITION TO 3:00 POSITION) - AS SHOWN.

STEP 4 - SLIDE REAR SECTION INTO FRONT SECTION TO STOP BLOCK- WELD SECTIONS OF SUBFRAME TOGETHER.

STEP 5 - BOLT FRONT SHEAR PLATES TO CHASSIS FRAME.



TITLE  
SUBFRAME ASSEMBLY

VC 416/516

DATE  
7-14-98A

SUPERSEDES  
8-16-96

SECTION  
H200

416281

- 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.a. Slide one collar onto each upper lift shaft assembly. Slide the upper lift shaft assemblies into the upper pivot tube, one on each side.
- b. Turn the upper lift shaft assembly so the shaft is as low as possible - toward the lower pivot tube.
- 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 than 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



MFG., INC.  
CINCINNATI, OHIO

TITLE  
**INST INSTRUCTIONS**

**VC 416/516**

DATE  
**10-24-02A**

SUPERCEDES  
**7-14-98**

SECTION  
**H200**

**416294**



- 8.c. Weld the front and rear side plates to the right and left subframe described in steps 8a. and 8b.
- 9.a. Weld the 2 x 2 x 1/8" angle between the front of the right and left subframe
- b. Weld the 1/4" x 2" bar to the lower flange on the front channel of the right and left subframe as far rearward as possible- shown on Dwg. 416257.
10. Slide the shaft for the rear hinge through the pivot plates on the rear of the right and left subframe. Center the shaft so an equal amount is extending outward on each side of the subframe. Spot weld the shaft to the inside pivot plates on the right and left subframe.
11. Add a machine bushing, hinge plate and collar to each side of the rear hinge shaft. Do not weld collars to the rear hinge shaft at this time.



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

VC 416/516

DATE

7-15-98

SUPERCEDES

-

SECTION

H200

416295

### III Power Sources

Pump - Proceed to the following paragraphs for installation instructions on your specific pump. Also, see the manufacturers instructions.

#### A. P.T.O. Unit

-Standard PD (Reg. P.T.O. D/A) Pump - See Fig. 6

-Option PD Split Pump (P.T.O. D/A) - See 416138

- 1.a. See Fig.4 , position and bolt each pump bracket to the pump and secure with the  $\frac{3}{8}$  x  $1\frac{1}{4}$ " bolts and hex nuts.
- b. Position the pump assembly with brackets and securely clamp to the frame on the same side that the transmission mounted P.T.O. shaft is located.
- c. Two (2)  $\frac{17}{32}$ " Dia. holes need to be drilled in the pump brackets and truck frame (see Fig.4 ). Mark the hole locations as close to the truck frame flanges as possible. Drill  $\frac{17}{32}$ " Dia. holes and install the  $\frac{1}{2}$  x  $1\frac{1}{2}$ " hex head cap screws with lockwashers and hex nuts.  
Note: See Warning listed under III.B.1.

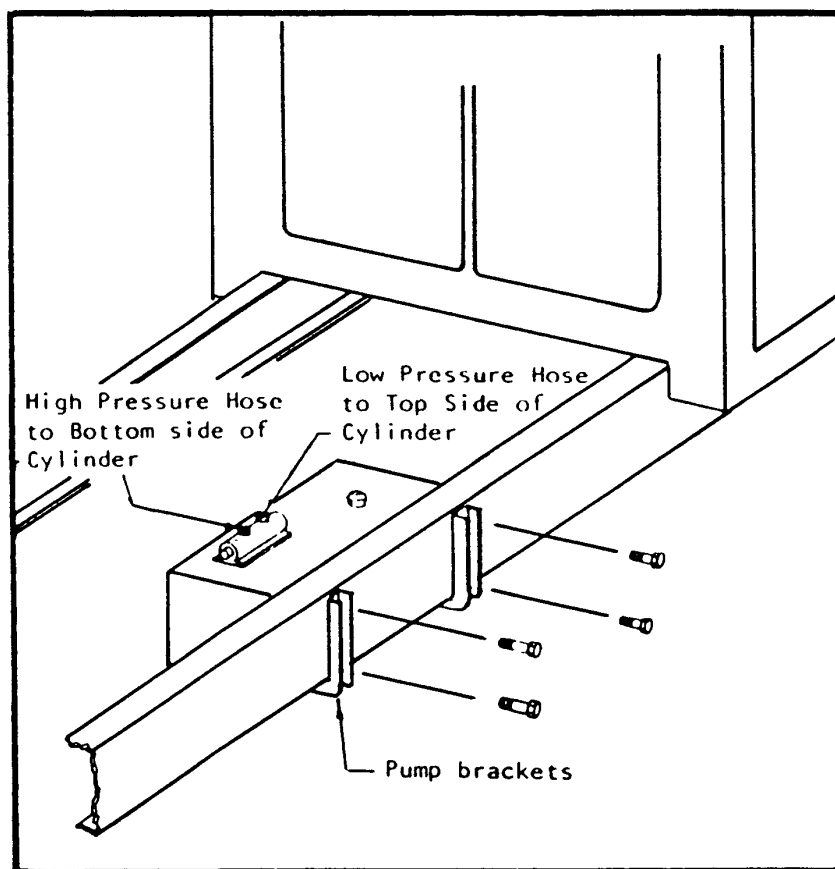


FIGURE 4 - PUMP INSTALLATION



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

**VC 416/516**

DATE  
**7-15-98**

SUPERCEDES  
**-**

SECTION  
**H200**

**416296**

- 2.a. Install the truck P.T.O. assembly, using the manufacturers instructions enclosed with it.
  - b. Determine the exact length "L" of the drive shaft (see Fig. 5 ). The drive shaft should be kept as short and level as possible.
  - c. Cut the 7/8" hex drive shaft to the length that was determined in step 2.b. above.
  - d. The two (2) supplied U-joints are not identical, the U-joint with the 1" round x 7/8" hex slip is to go on the pump drive shaft and the 7/8" round x 7/8" hex U-joint (not furnished) or other size - is to go on the truck P.T.O.
  - e. Trial fit each U-joint to the hex drive shaft and trial fit drive shaft assembly to pump and P.T.O. at this point, mark the set screw locations of the P.T.O. U-joint on the hex drive shaft. Disassemble drive shaft assembly and counter-sink drive shaft at marked locations.
  - f. Assemble each U-joint to the hex drive shaft and install the drive shaft assembly. After installing, secure P.T.O. U-joint to the drive shaft using 3/8" x 5/8" drilled hex head set screw (furnished). Safety wire all (3) screws to insure that they do not come loose.
  - g. For additional pump and drive shaft mounting instructions, refer to the manufacturers instructions included with the pump.
3. Hose Connections - (See Fig.4, See 416138 for split pump)
    - a. Connect one end of the 7' hose to the front pump port (low pressure). Connect the other end of the hose to the rod end of the hoist cylinder.
    - b. Connect one end of the 5' hose to the rear pump port (high pressure). Connect the other end of the hose to the bottom end of the hoist cylinder (base).
  4. Fill the pump reservoir with DEXRON 220 oil or equivalent.

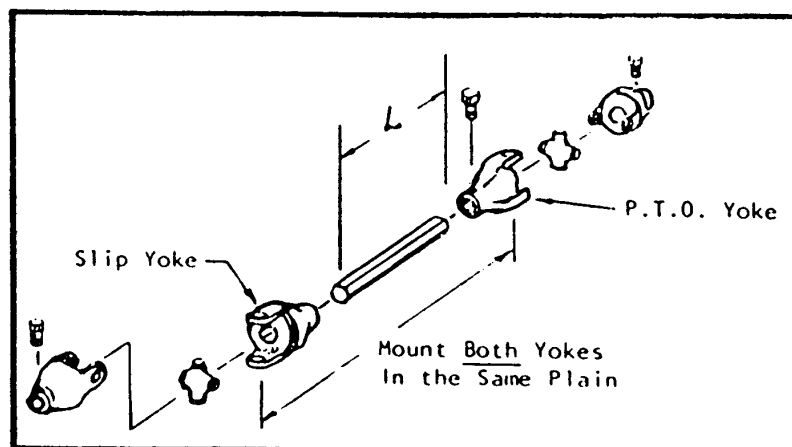


FIGURE 5 - DRIVE SHAFT ASSEMBLY



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

**VC 416/516**

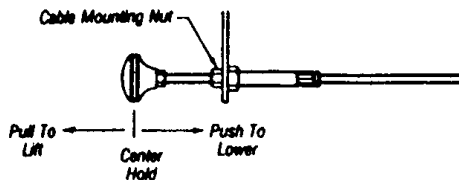
DATE  
**7-15-98**

SUPERCEDES  
**-**

SECTION  
**H200**

**416297**

## CORRECT CONTROL CABLE OPERATION



**NOTE** When installing cable control make sure lever moves full distance before knob hits cable mounting nut (When pushed in to lower hoist)

### LEVER LOCATED TO THE REAR OF RESERVOIR ON THIS MODEL

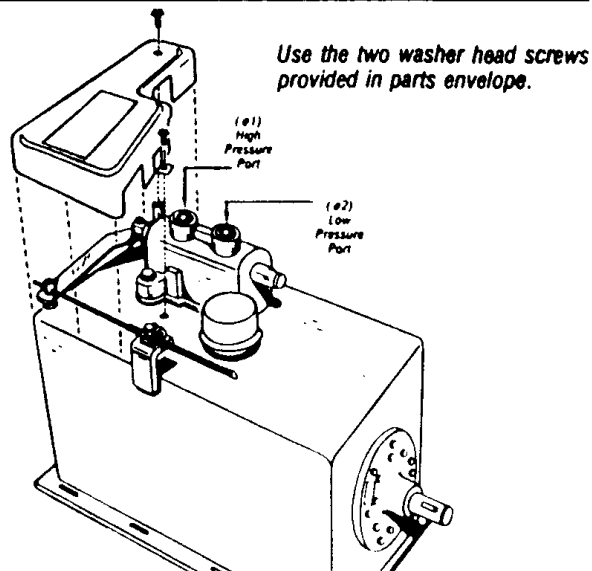
#### HOIST CONTROL VALVE CONNECTIONS

The high pressure port 1 must be connected to the lifting end of the hoist cylinders in order for the pump to produce maximum lifting pressure.

The low pressure port 2 should be connected to the rod end of hoist cyl.

#### FOR DOUBLE ACTING HOIST

(Power Up — Hold — Power Down)  
If hose connections are reversed hoist will not lift full loads.



## "VALVE LEVER GUARD MUST BE INSTALLED" Operate Hoist Only From Cab

### LEVER LOCATED TO THE FRONT OF RESERVOIR ON THIS MODEL

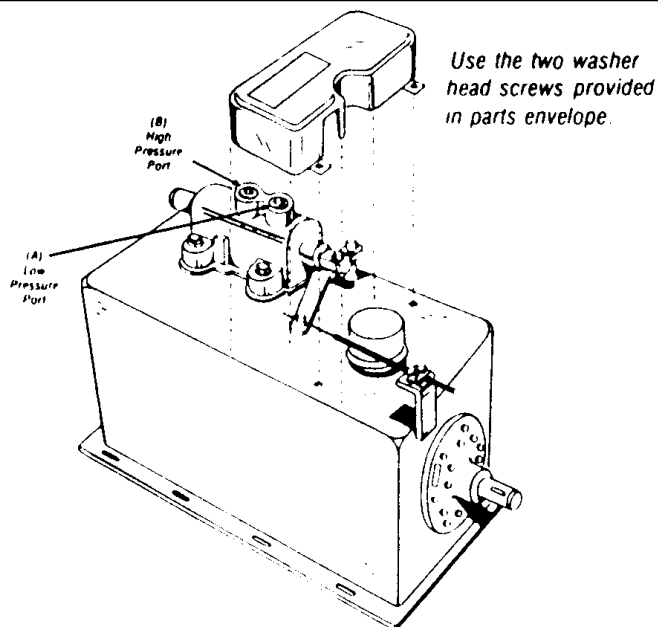
#### HOIST CONTROL VALVE CONNECTIONS

The high pressure port B must be connected to the lifting end of the hoist cylinders in order for the pump to produce maximum lifting pressures

The low pressure port A should be connected to the rod end of hoist cyl.

#### FOR DOUBLE ACTING HOIST

(Power Up — Hold — Power Down)  
If hose connections are reversed hoist will not lift full loads



MANUFACTURING, INC.

TITLE

PTO PUMP CABLE INST

VC 520 - 6628

DATE

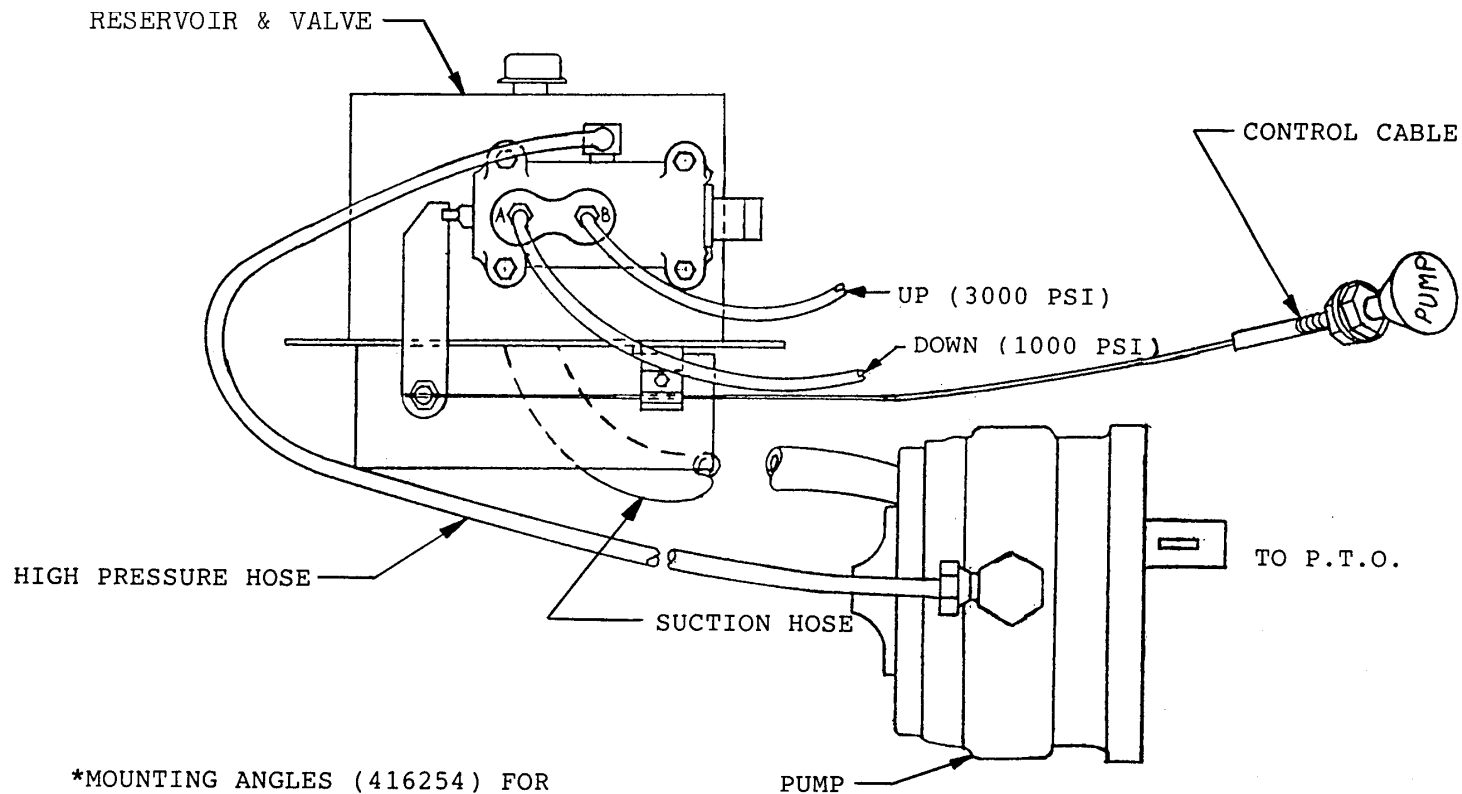
7-13-98A

SUPERCEDES  
3-15-90

SECTION

H200

520078



\*MOUNTING ANGLES (416254) FOR  
WILLIAMS RESERVOIR NOT SHOWN

Model	VC416	VC516	VC520	VC620	VC628	VC5520	VC6620	VC6628
Control Cable	416041							
Up Hose	416044					(2) 416044		
Down Hose	416045				628041	(2) 416045		(2) 628041
High Pressure Hose	416045							
Suction Hose	416079				520088F			
Pump/Valve/Tank	620011				662077			
Pump (Only)	416277				520090			
Mounting/Spline Information	SAE "A" 2 BOLT MOUNTING FLANGE, 5/8"-9 SPLINE SHAFT, CCW ROTATION ▲				SAE "B" 2 BOLT MOUNTING FLANGE, 7/8"-13 SPLINE SHAFT, CCW ROTATION ▲			



MANUFACTURING, INC.

TITLE  
**SPLIT PUMP**

VC 416/516, VC 520 - 6628

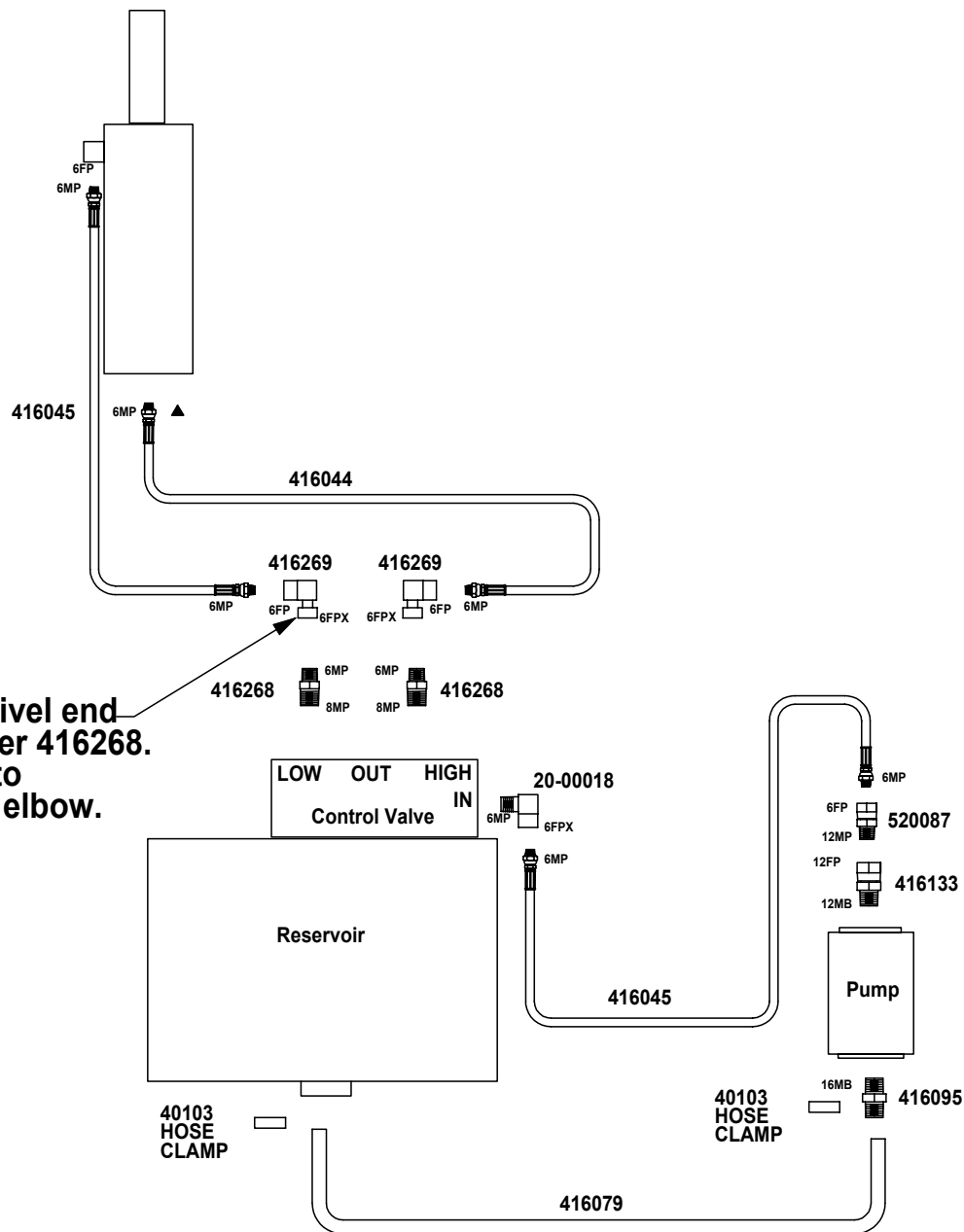
DATE  
**10-16-00E**

SUPERCEDES  
**12-8-99D**

SECTION  
**H200**

**416138**

**NOTE:** Thread swivel end of elbow fitting over 416268. Hoses will attach to non-swivel end of elbow.



TITLE  
**SPDG HOSE CONNECTION DIAGRAM**  
 VC416, VC516 ▲

DATE  
**11-14-02A**  
 SUPERSEDES  
**7-3-02**

SECTION  
 -  
**416735**

### III. Power Sources

#### B. Electric Double and Single Acting Pump Information

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

See Dwg. 416080 (Fenner Double-Acting) or 416306 (Monarch Double-Acting).

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, abraded, 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 over tighten connections.

#### C. Double Acting Electric Pump Installation

- 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 Dwg. 416080 (Fenner Double-Acting) or 416306 (Monarch Double-Acting).

Note: The Monarch 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". Attach free end of the 5' hose to the flow control valve (Fenner power unit only) on the pump at port marked "A" - on the Monarch power unit the 5' hose attaches 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 hot lead under dash as shown. See Dwg. 416080 (Fenner Double-Acting) or 416306 (Monarch Double-Acting).
- c. Attach positive lead (▲ #4 gauge) from positive terminal of battery to other large post on motor solenoid. See Dwg. 416080 (Fenner Double Acting) or 416306 (Monarch Double-Acting).
3. Fill pump with commercial grade ATF-DEXRON II oil 1/2" from the top of the reservoir.



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

VC 416/516

DATE

9-29-00B

SUPERCEDES

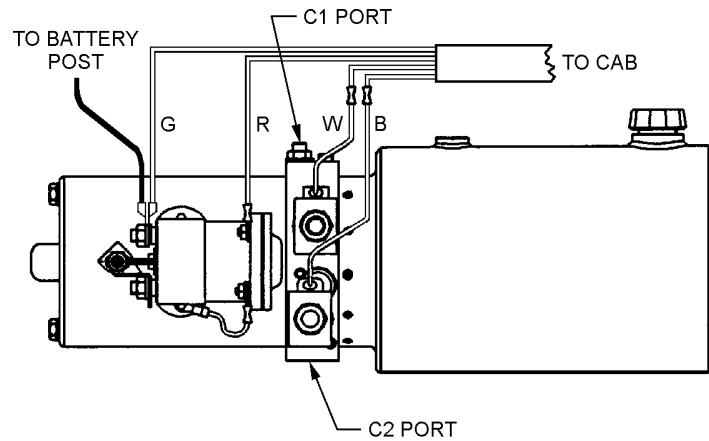
7-15-99A

SECTION

H200

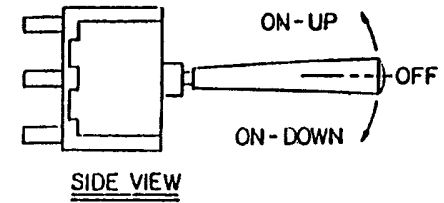
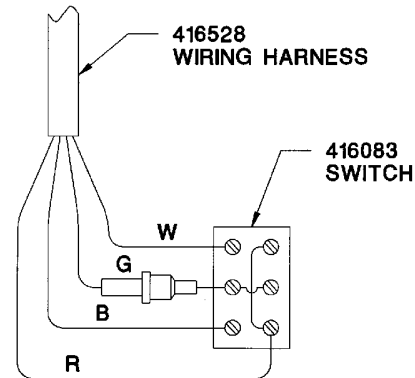
416298

# 416081M

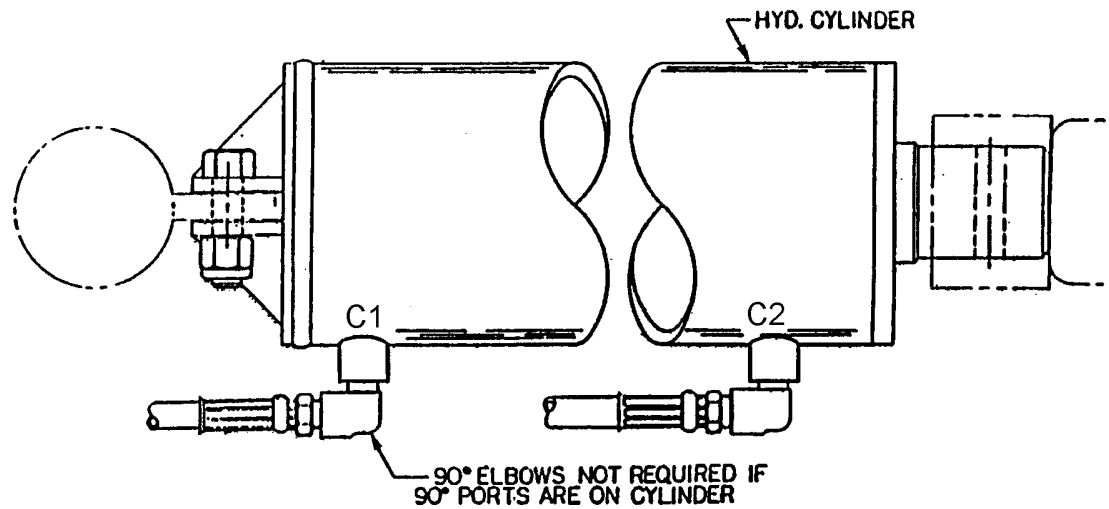


ELECTRICAL
W - WHITE WIRE
B - BLACK WIRE
G - GREEN WIRE
R - RED WIRE

HYDRAULICS
C1 - FULL END CYL
C2 - ROD END CYL



NOTE: ENERGIZING 'B' COIL SENDS FLOW TO 'C1' PORT  
ENERGIZING 'W' COIL SENDS FLOW TO 'C2' PORT



MANUFACTURING, INC.

TITLE  
416081 ED POWER UNIT

VC416/516, VC520/620

DATE  
2-15-99C

SUPERCEDES  
12-10-98B

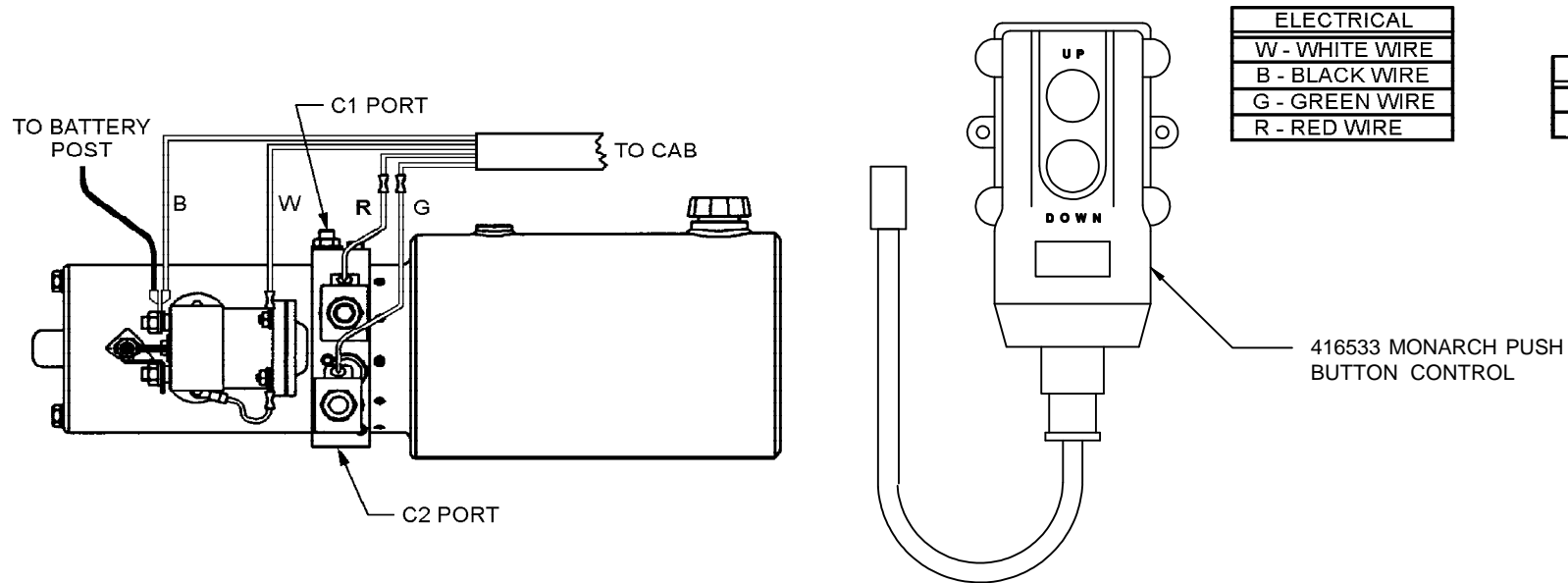
SECTION

-

416306



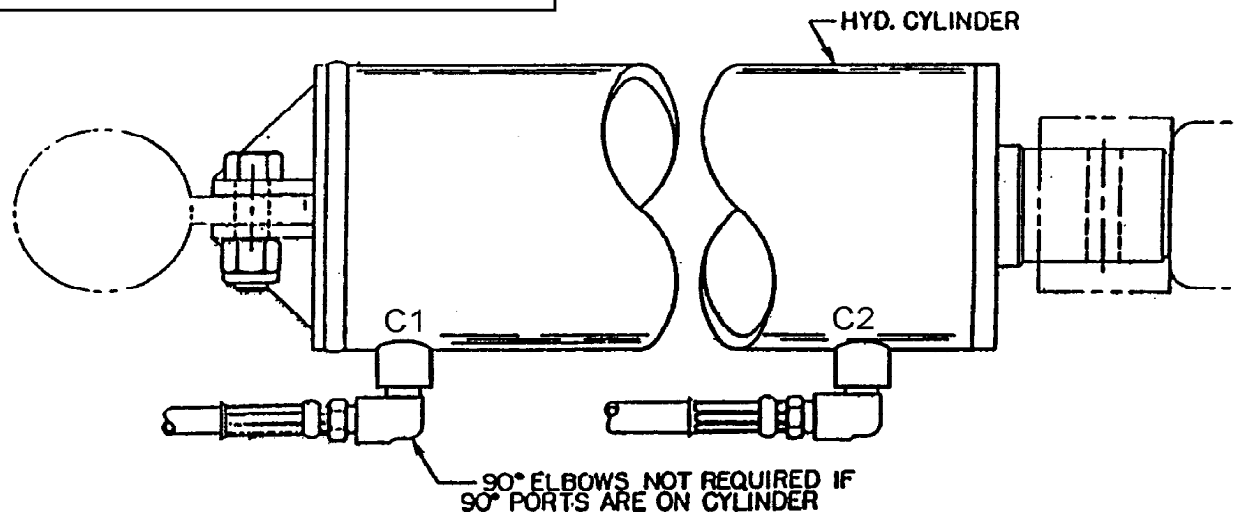
# 416081M WITH MONARCH PUSH BUTTON CONTROL



ELECTRICAL
W - WHITE WIRE
B - BLACK WIRE
G - GREEN WIRE
R - RED WIRE

HYDRAULICS
C1 - FULL END CYL
C2 - ROD END CYL

NOTE: ENERGIZING 'G' COIL SENDS FLOW TO 'C1' PORT (HOIST UP)  
ENERGIZING 'R' COIL SENDS FLOW TO 'C2' PORT (HOIST DOWN)



MANUFACTURING, INC.

TITLE  
416081M ED POWER UNIT

VC416/516, VC520/620

DATE  
9-21-99D

SUPERCEDES  
2-15-99C

SECTION

-

416307

### III Power Sources

#### D. SINGLE ACTING ELECTRIC HYDRAULIC PUMP

See Fig. 6132 FENNER

Fig. 8B (MTE)

1. 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 Fig. 8B if a MTE power unit is supplied and Fig. 6132 if a Fenner power unit is supplied.  
  
b. Position the power unit on the truck frame. Check inside of frame channel before marking hole locations. (Wires or brake lines maybe in this area.) Mark mounting holes on the frame and drill 7/16" dia. through two places. Mount the power unit to the frame with 3/8-16 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.  
  
b. Install a 90° elbow adapter to the return port on power unit. For a Fenner power unit an o-ring 90° swivel elbow adapter is supplied. If an MTE power unit is supplied add a 90° swivel elbow adapter to the return port as shown.
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 toggle switch and the other end to the hot lead under the dash.  
  
c. Attach the battery cable to the solenoid post indicated on Fig. 8B OR 6132. Connect the other end of the battery cable to the positive terminal on the battery.
4. a. Install the 5' hose to the 90° 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 attach the hose to the elbow.  
  
c. Fasten the 7' hose to the rod end of the cylinder. If the cylinder doesn't have 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.



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

**VC 416/516**

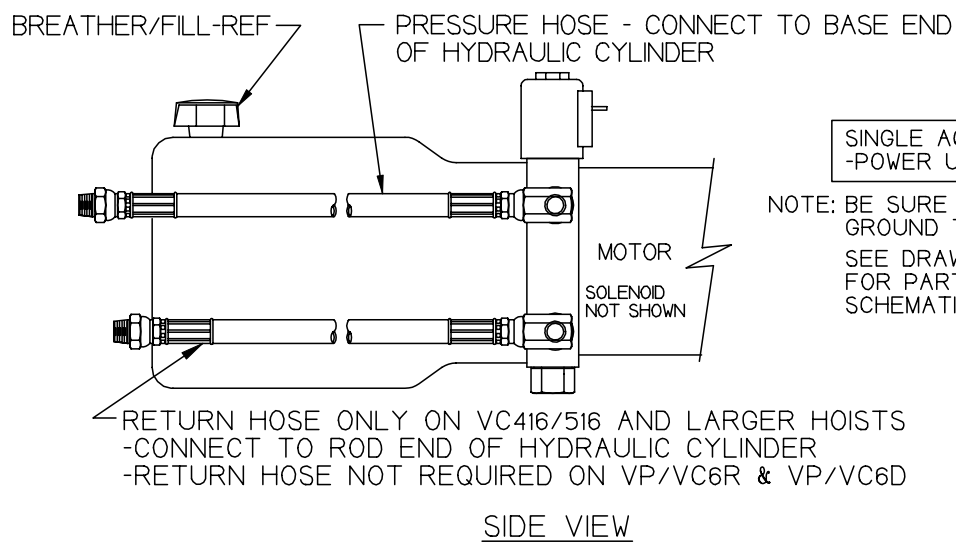
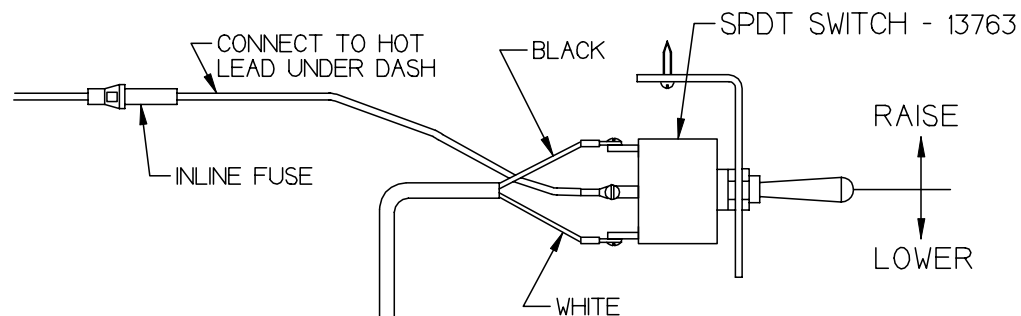
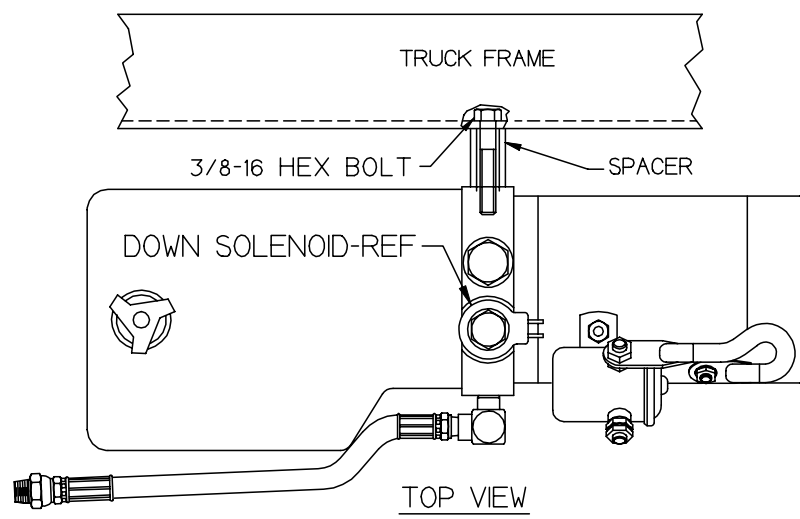
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**7-15-98**

SUPERCEDES  
**-**

SECTION  
**H200**

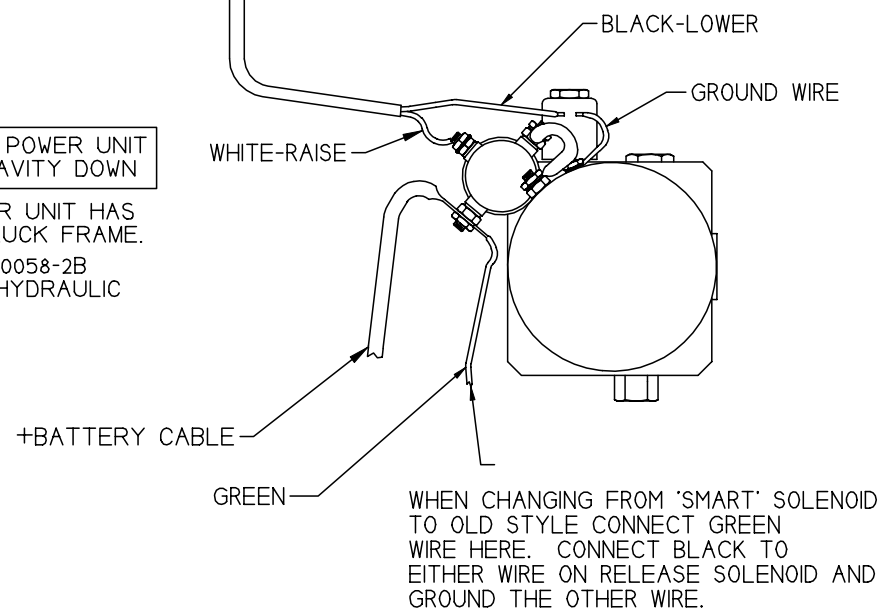
**416299**

\* IF SPACERS ARE NOT USED USE 1" LG. BOLTS



SINGLE ACTING POWER UNIT  
-POWER UP/GRAVITY DOWN

NOTE: BE SURE POWER UNIT HAS  
GROUND TO TRUCK FRAME.  
SEE DRAWING 40058-2B  
FOR PARTS & HYDRAULIC  
SCHEMATIC.



MANUFACTURING, INC.

TITLE  
PLUMBING & WIRING DIAGRAM

FENNER ES POWER UNIT 40058-2B

DATE  
7-18-00

SUPERSEDES  
7-6-98

SECTION  
H200

6133B

## INSTRUCTIONS FOR FILLING THE RESERVOIR OF ELECTRIC HYDRAULIC POWER UNITS

THE FOLLOWING HOIST MODELS ARE INCLUDED:  
VP/VC-6(R), VC-416/516, VC-520 - ES & ED, VC-620 - ES & ED ▲

MODEL NO.	RESERVOIR CAPACITY	TOTAL FLUID REQ'D
VP/VC-6(R)ED	2 QTS.	3.5 QTS
VC-416 ES/ED	4 QTS.	5.5 QTS
VC-516 ES/ED	4 QTS.	7.5 QTS
VC-520 ES/ED	4 QTS.	9.0 QTS.
▲ VC-620 ES/ED	4 QTS.	12.0 QTS.

### PROCEDURE

STEP 1 - On 416, 516, 520 ES, 620 ES models only, do not  
attach rod end hose to the cylinder until after complet-  
ing Steps 2 thru 6.

STEP 2 - Remove the reservoir breather. With the hoist in the  
down position, fill the reservoir with ISO viscosity  
grade 32 hydraulic oil (Tellus 32 or equivalent) - 3.5  
qts. for 416, 516, 520, 620 and 2 qts. for VP-6(R).

STEP 3 - Raise the hoist halfway (22-25° dump angle,  
approx. 8" of cylinder stroke).

STEP 4 - Fill the reservoir with an additional 2 qts. for VP-6(R),  
416, 516 and 3 qts. for 520, 620. ▲

STEP 5 - Raise the hoist completely.

STEP 6 - Refill the reservoir with the remaining fluid required.

STEP 7 - Attach hose to rod end of cylinder on the 416, 516,  
520 ES, 620ES models. ▲

Example: VC-416 ES/ED Hoist

Step 2 - Add 3.5 qts.

Step 4 - Add 2.0 qts.

Step 6 - Add 0.0 qts. (none req'd)

= 5.5 qts. total



MANUFACTURING, INC.

TITLE

**FILLING HYD. RESERV.**

DATE

**6-18-03B**

SECTION

**H300**

**VP/VC6(R) VC 620 - V C520**

SUPERCEDES

**7-30-02A**

**416140**

#### IV Attaching Rear Hinge and Upper Pivots to Body

##### A. Rear Hinge

1. Position the body longitudinals (channels) onto the truck frame or subframe.
2. Place rear hinge plates in the vertical position. Weld and/or bolt plates to longitudinals. 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) each 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-

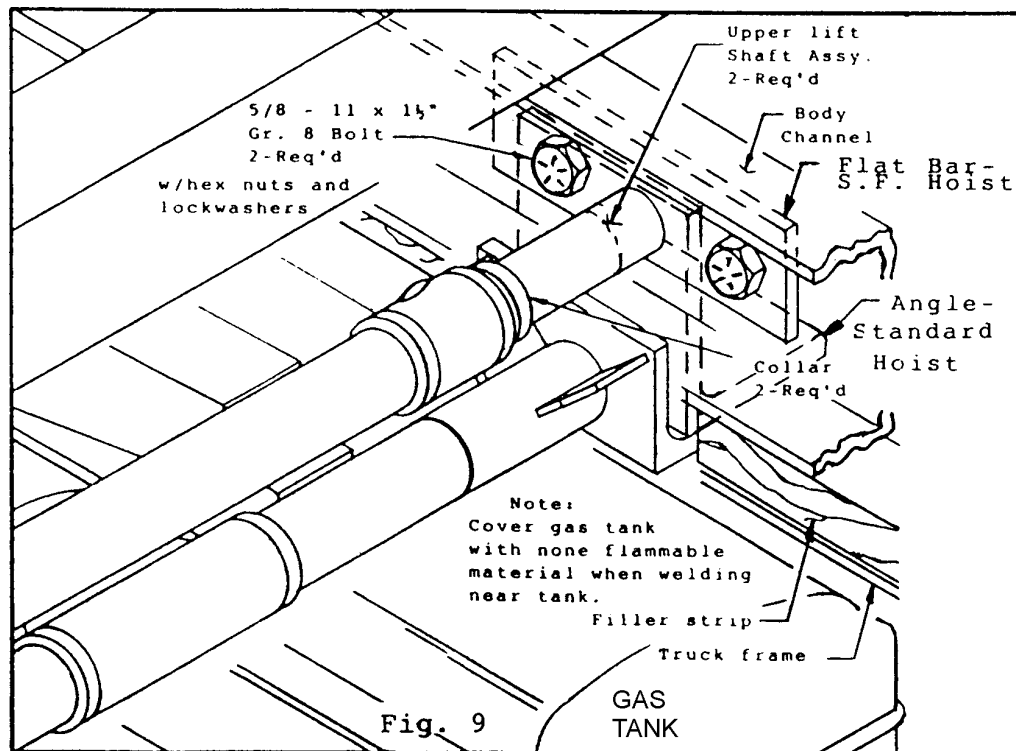
- 1a. Position lift shaft assemblies securely against the inside surface of the body channels with body against frame rails or filler strip. If a gas tank is too close to the mounting area, bolt the upper lift shaft assembly to the body channels. Use 5/8-11 hex nuts and 5/8 lockwashers.

###### 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 (2PL.)-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. manufacturers instructions.



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

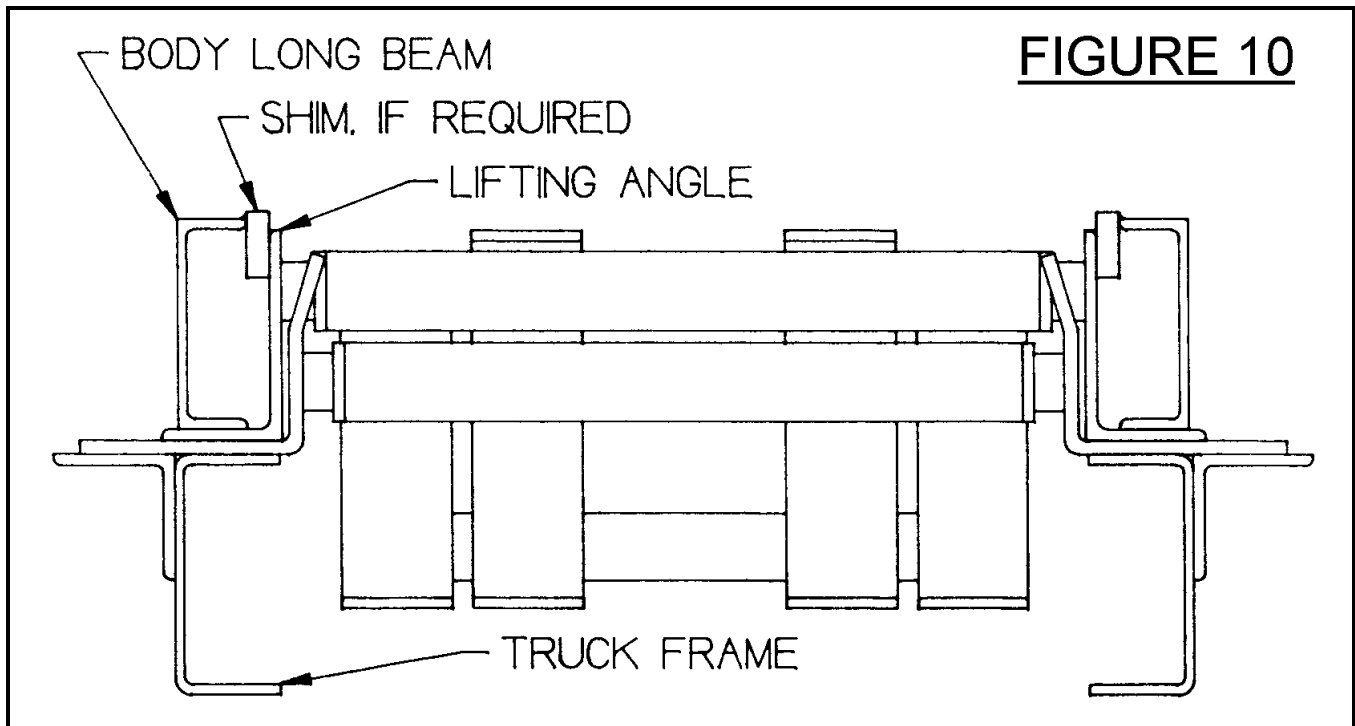
**VC 416/516**

DATE  
**7-15-98**

SUPERCEDES  
**-**

SECTION  
**H200**

**416300**



MANUFACTURING, INC.

TITLE  
INST INSTRUCTIONS

VC 416/516

DATE  
7-15-98A

SUPERCEDES  
9-16-92

SECTION  
H200

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 hoists, 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.
2. 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.



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

VC 416/516

DATE

7-15-98

SUPERCEDES

-

SECTION

H200

416301

## V Power Source Operation

### B. Double Acting Pump Operation

1. 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.
2. 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

1. 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.
2. 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.



MANUFACTURING, INC.

TITLE  
**INST INSTRUCTIONS**

**VC 416/516**

DATE  
**7-15-98**

SUPERCEDES  
**-**

SECTION  
**H200**

**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.



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

DATE

7-15-98

SECTION

H200

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

1. 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 lubrication 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 originally.

2. 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.



MANUFACTURING, INC.

TITLE

INST INSTRUCTIONS

VC 416/516

DATE

7-15-98

SUPERCEDES

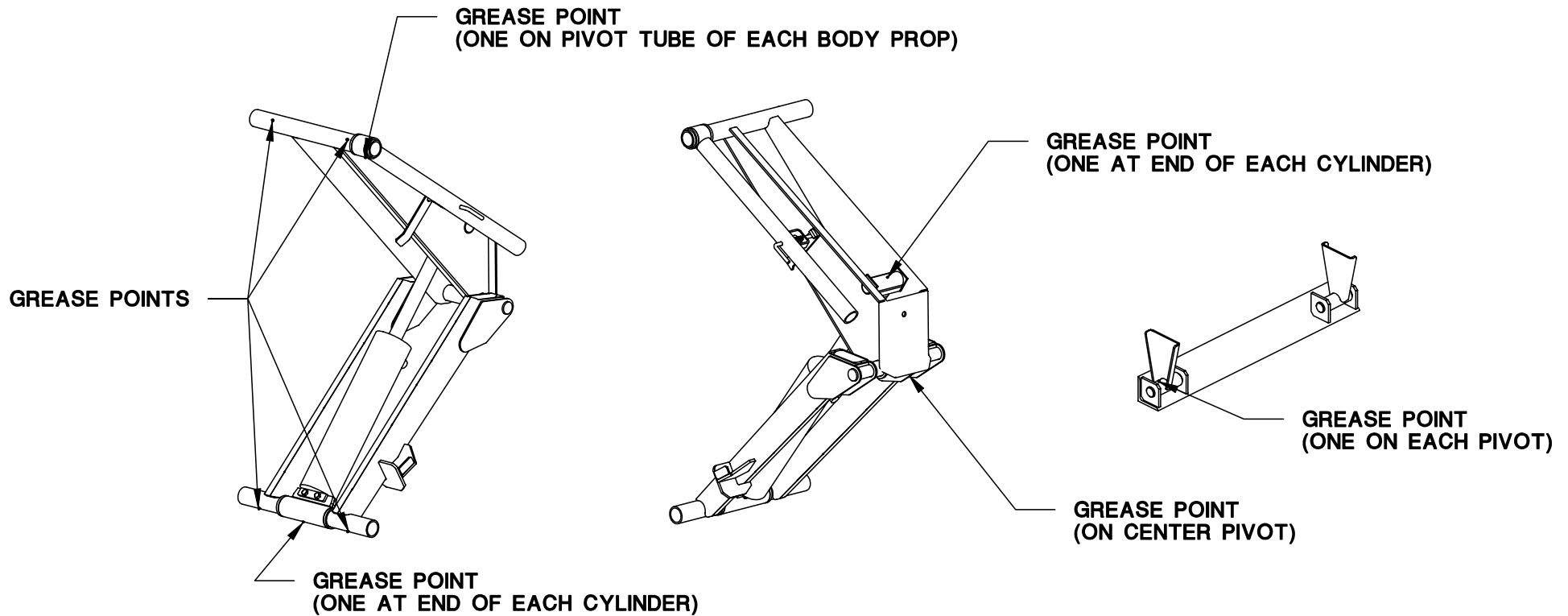
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SECTION

H200

416304

# 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.



TITLE

GREASE POINTS FOR HOISTS

DATE

9-4-02

SECTION

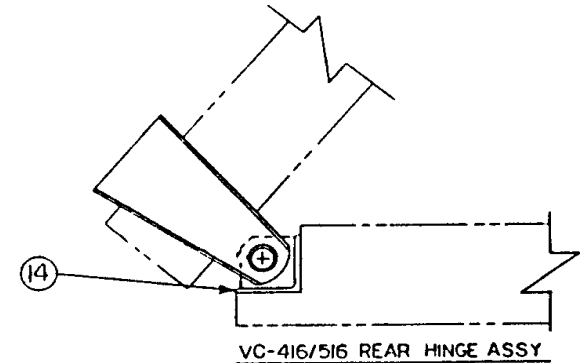
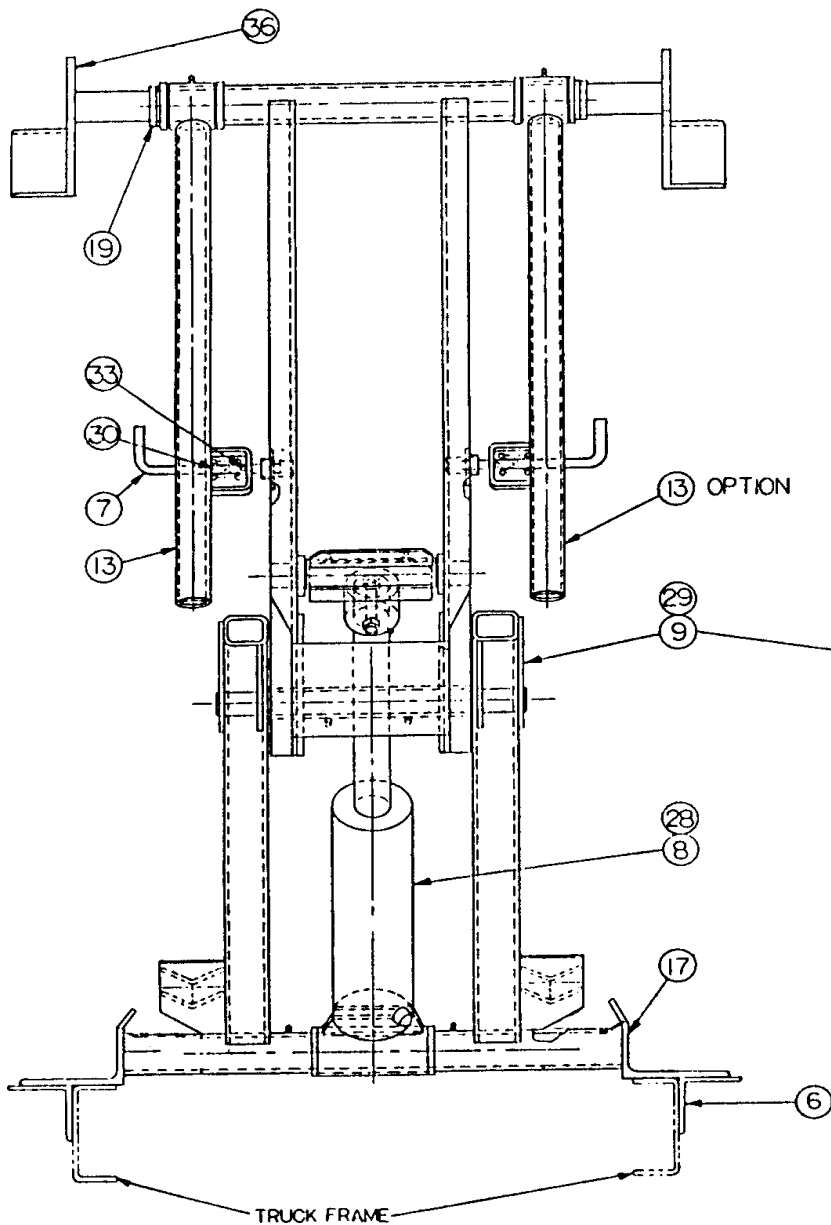
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VC416/516/520/620/628/5520/6620/6628

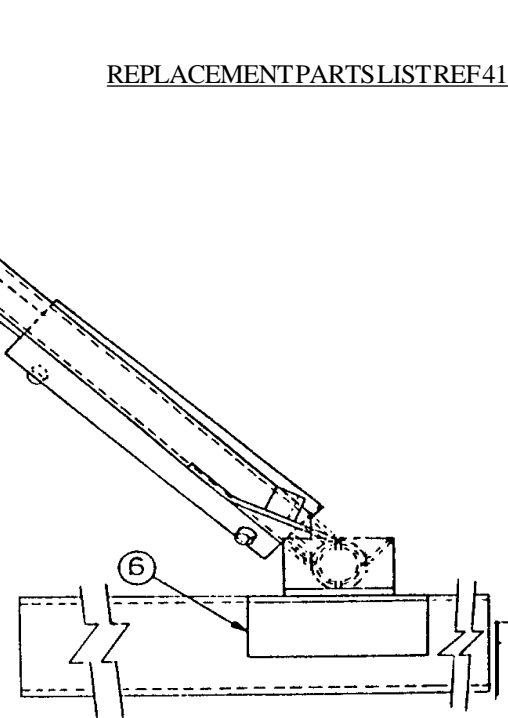
SUPERSEDES

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520054



REPLACEMENT PARTS LIST REF 416731



MANUFACTURING, INC.

TITLE

REPLACEMENT PARTS

VC-416/516(SF)

DATE

6-7-01

SUPERCEDES

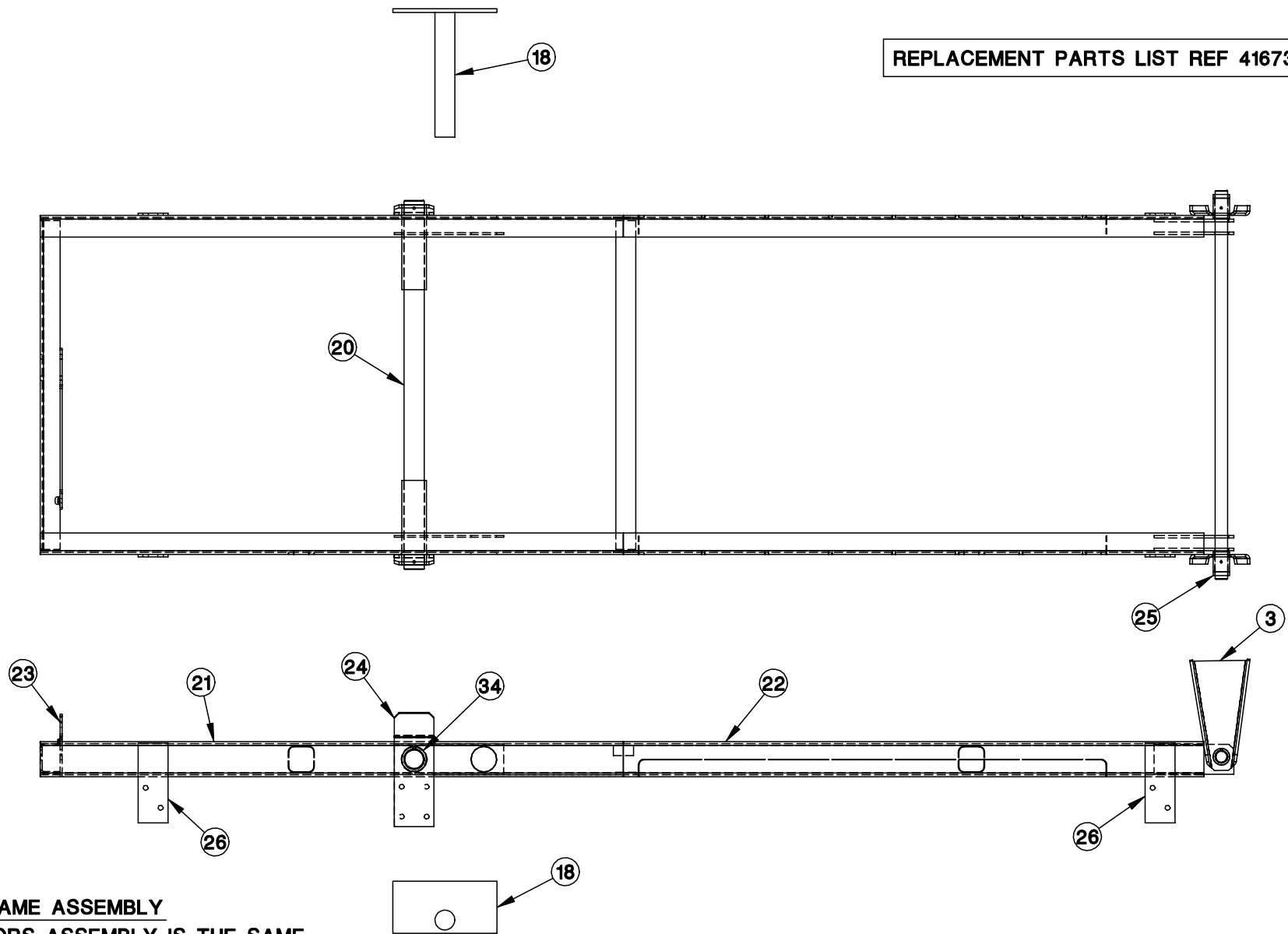
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SECTION

-

416455A

REPLACEMENT PARTS LIST REF 416731



**SUBFRAME ASSEMBLY**  
**SCISSORS ASSEMBLY IS THE SAME**  
**AS STANDARD HOIST SEE 416455A**



TITLE  
**REPLACEMENT PARTS**

DATE  
**6-8-01**

SECTION  
**-**

**VC416/516(SF)**

SUPERSEDES  
**-**

**416732**

## 416255A, 416532 REPLACEMENT PARTS LIST

ITEM	PART NUMBER	QTY	DESCRIPTION
1	416545	1	5/8 - 3-1/2 CLEVIS W/ H.P. COTTER
2	-	-	-
3	416259	1	SUBFRAME PIVOT KIT ASSEMBLY
4	@ 416044	1	HOSE ASSEMBLY - 5 FT.
5	@ 416045	1	HOSE ASSEMBLY - 7 FT.
6	520063	2	MOUNTING ANGLE
7	416068-1	1	LOCKING PIN
8	416127	1	CYLINDER
9	416402-2	1	SCISSORS ASSEMBLY WITH OUT CYLINDER
10	-	-	-
11	@ 416210	2	HEX HEAD CAP SCREW - 1/2"-13 x 1-3/4"
12	@ 416211	2	NYLON LOCK NUT - 1/2"-13
13	416212	1	BODY PROP ASSEMBLY - INCLUDES ITEMS: 7, 30, 33
14	416207	1	REAR HINGE ASSEMBLY
15	-	-	-
16	-	-	-
17	416405	2	LOWER PIVOT ASSEMBLY
18	* 416218	2	UPPER LIFT SHAFT ASSEMBLY
19	416220	2	COLLAR UPPER PIVOT (REGULAR HOIST AND SUBFRAME)
20	* 416221	1	SHAFT - LOWER PIVOT ASSEMBLY
21	* 416502	1	SUBFRAME, FRONT ASSEMBLY
22	* 416501	1	SUBFRAME, REAR ASSEMBLY
23	* 520512	1	PUMP MOUNTING BRACKET
24	* 416420	2	LOWER PIVOT ASSEMBLY
25	* 416246	2	COLLAR - REAR HINGE
26	* 416247	4	SIDE PLATE
27	-	-	-
28	516127	1	CYLINDER (VC-516 ONLY)
29	516202-2	1	SCISSORS ASSEMBLY WITH OUT CYLINDER (VC-516 ONLY)
30	00170	1	SPRING
31	-	-	-
32	-	-	-
33	20-00022	1	ROLL PIN - 5/32" x 1"
34	416219	2	SET SCREW - 5/16"-18
35	-	1	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
36	416258	2	UPPER LIFT SHAFT ASSEMBLY WITH ANGLE

\* ITEMS USED ON VC-416/516 SUBFRAME ONLY  
@ ITEMS NOT SHOWN ON DRAWING

REPLACEMENT PARTS DWG REF 416255A, 416532  
NOTE: CLEVIS PIN FOR MULTI-PIECE HINGE IS 416215



MANUFACTURING, INC.

TITLE  
**REPL. PARTS LIST**

**VC-416/516(SF)**

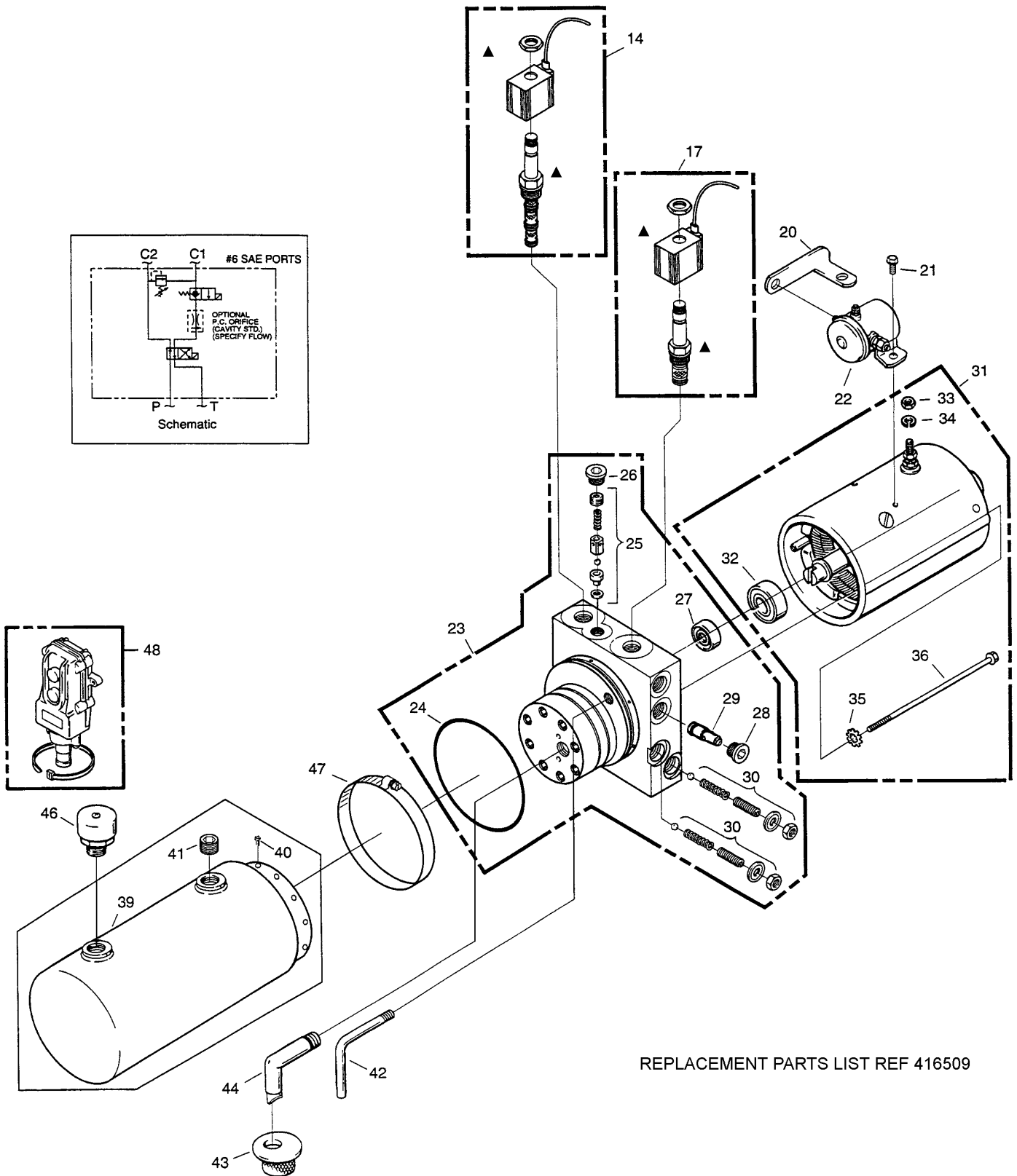
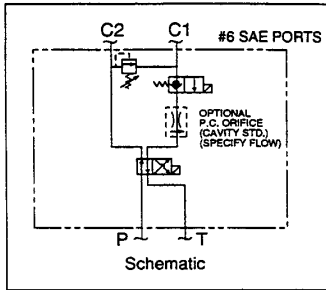
DATE  
**6-8-01**

SUPERCEDES  
-

SECTION  
-

**416731**

# REPLACEMENT PARTS 416081M



REPLACEMENT PARTS LIST REF 416509



MANUFACTURING, INC.

TITLE  
REPL. PARTS DWG

416081M POWER UNIT

DATE  
4-11-00B

SUPERCEDES  
11-17-99A

SECTION

416508

ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	-	-	41	-	PLUG - 3/8" NPTF
2	-	-	42	-	RETURN TUBE - 1/8"
3	-	-	43	-	FILTER SCREEN (SUCTION)
4	-	-	44	-	FILTER SUCTION TUBE - 3/8" NPTF 90 DEG.
5	-	-	45	-	-
6	-	-	46	416524	PLUG, VENT 3/8" NPT
7	-	-	47	416544	BAND CLAMP
8	-	-	48	416525	BOX ASSEMBLY, PUSH BUTTON (WEATHER
9	-	-	PROOF)	-	-
10	-	-	49	-	-
11	-	-	50	-	-
12	-	-	51	-	-
13	-	-	52	-	-
14	416510	VALVE, 4 WAY - 2 POSITION (12V)	53	-	-
15	-	-	54	-	-
16	-	-	55	-	-
17	416513	VALVE, 2 WAY - 2 POSITION, 12 VDC, GROUNDED	56	-	-
18	-	-	57	-	-
19	-	-	58	-	-
20	-	STRAP, MOTOR-SOLENOID CONNECTING	59	-	-
21	-	SCREW, ROUND HEAD MACHINE 10-32 x 1/4"	60	-	-
22	416516	SWITCH, SOLENOID, 12VDC, 3-POST GROUNDED	61	-	-
23	416517	PUMP ASSY, GEAR CODE 03 (#6 SAE PORTS)	62	-	-
24	416518	O-RING, INDUSTRIAL (3-5/8 x 3-7/8 x 1/8)	63	-	-
25	416519	PARTS KIT, VALVE ASSY, POPPET/BALL CHECK	64	-	-
26	-	PLUG	65	-	-
27	-	SEAL	66	-	-
28	-	PLUG, #8 SAE	67	-	-
29	416520	VALVE, PRESS COMP. ORIFICE (2.5 GPM) ▲	68	-	-
30	416521	PARTS KIT, RELIEF VALVE	69	-	-
31	416522	MOTOR, ELECTRIC, 12 VDC	70	-	-
32	-	BEARING, BASE, MOTOR	71	-	-
33	-	HEX NUT - 5/16-24	72	-	-
34	-	LOCK WASHER - 5/16"	73	-	-
35	-	STAR WASHER - 1/4"	74	-	-
36	-	HEX HEAD CAP SCREW - 1/4-20 x 6-1/2"	75	-	-
37	-	-	76	-	-
38	-	-	77	-	-
39	416523	PLASTIC RESERVOIR - 6.5" X 5.5" X 10"	78	-	-
40	-	THREAD FORMING SCREW - 10-24 x 3/8"	79	-	-
			80	-	-
					REPLACEMENT PARTS DWG REF 416508



MANUFACTURING, INC.

TITLE

REPLACEMENT PARTS LIST

DATE

7-27-01D

SECTION

-

416081M POWER UNIT

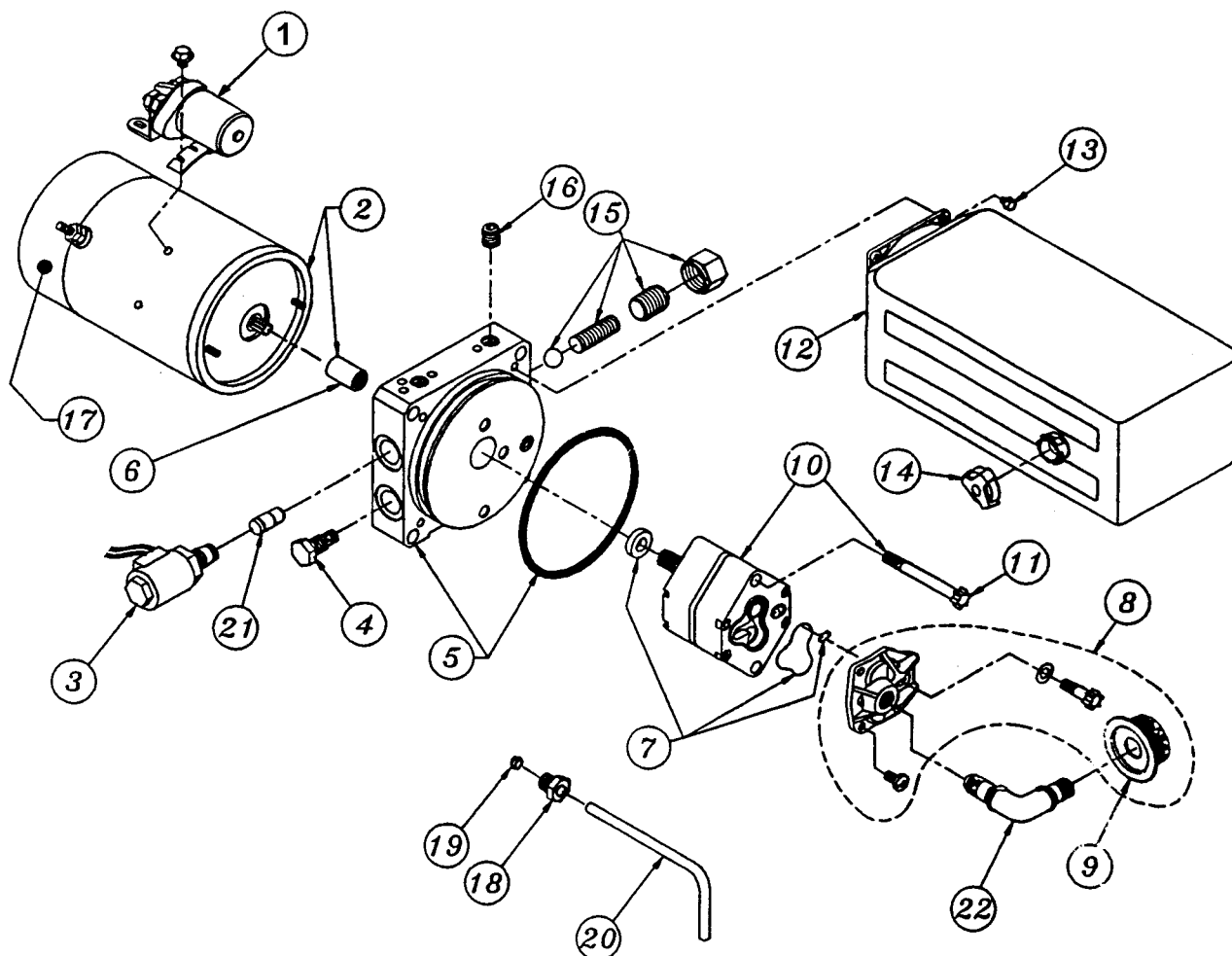
SUPERCEDES

6-21-01C

416509



## 40058-2 SINGLE-ACTING HYDRAULIC POWER UNIT SERVICE PARTS LIST



ITEM NO.	DESCRIPTION	FENNER P/N	QTY.
1	SOLENOID 12 VDC	4795-AA ▲	1
2	MOTOR 12 VDC	1787-AC	1
3	VALVE NC 12 VDC	EI-1019-04	1
4	VALVE CARTRIDGE CHECK	2507-AA	1
5	RESERVOIR O-RING	G1-1073-48	1
6	COUPLING	1118-AA	1
7	PUMP O-RING KIT	K-40	1
8	INLET PLUMBING KIT	KH	1
9	FILTER	1611-AA	1
10	PUMP ASSEMBLY	PS-2.0	1
11	PUMP MOUNTING BOLT	2825-AA	2

ITEM NO.	DESCRIPTION	FENNER P/N	QTY.
12	RESERVOIR	3856-AC	1
13	RESERVOIR SCREW	3346-AA	4
14	BREATHER	8060-CC	1
15	ADJ. RELIEF VALVE ASSY	RV-2	1
16	PLUG	1456-AA	1
17	MOTOR BRUSH KIT	K-90	1
18	COMPRESSION NUT	816-217	1
19	TUBE SLEEVE	816-218	1
20	RETURN TUBE	T2-1006-28	1
21	FLOW CONTROL	FC-2.5	1
22	INLET ELBOW ASSEMBLY	S7-4000-09	1



**MANUFACTURING, INC.**

# TITLE

## SERVICE PARTS LIST

## VP/VC 6, VC 416/516/520

DATE  
**3-28-02B**

SUPERCEDES  
**12-3-98A**

SECTION  
**H400**

**40058-2**