TABLE OF CONTENTS
VC 520 MANUAL

BOOKMARKS THUMBNAILS

-P DECALS AND PACKAGE INCLUDES:

12524	CAUTION STAND CLEAR	2 PCS.
416052	CAUTION DECAL	2 PCS.
416084	SAFETY PROP DECAL	1 PC.
6066	PLASTIC BAG	1 PC.

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: 416086, 416272.

2. MUST HAVE 2” SPACE
   SEE PAGE: 416086.

3. SUFFICIENT OVERHANG
   SEE PAGE: 520069, 620010, 628020, 552010, 662052 OR 662851.

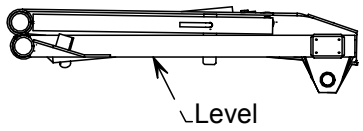
4. USE PUMP WHICH MEETS VENCO SPECIFICATION
   SEE PAGE: 416138.

IMPORTANT WARNING

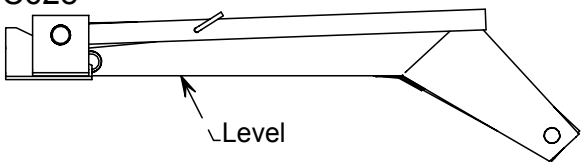
* All VENCO Conversion Hoists - VC416 thru VC6628 *

1 When installing the hoist, be sure to keep the hoist on a horizontal plane - LEVEL - with the truck frame.

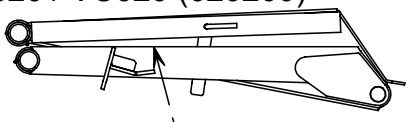
VC416 / VC516



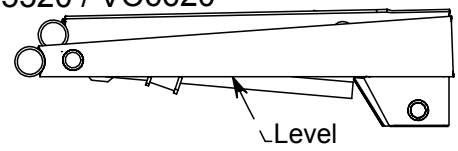
VC628



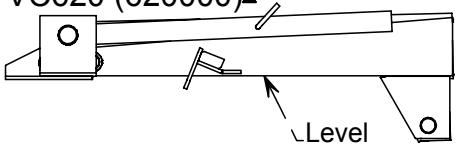
VC520 / VC620 (620200) ▲



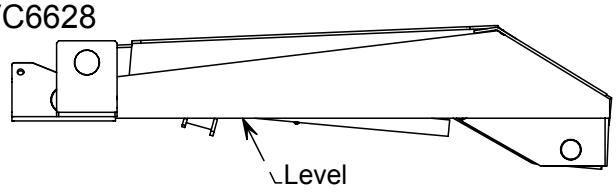
VC5520 / VC6620



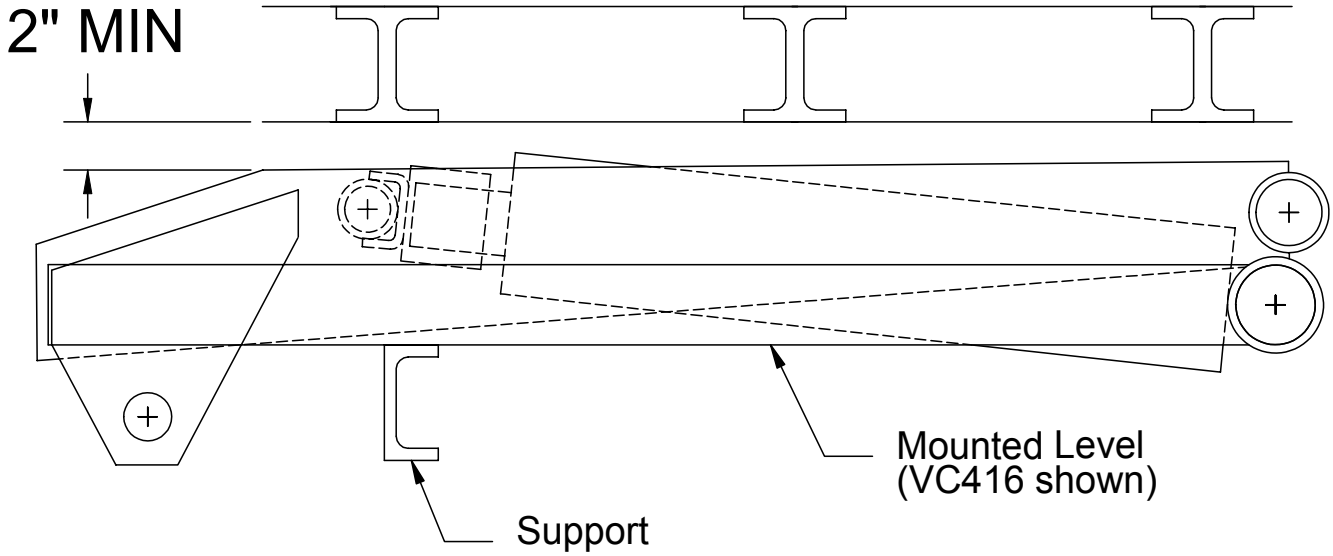
VC620 (620000)▲



VC6628

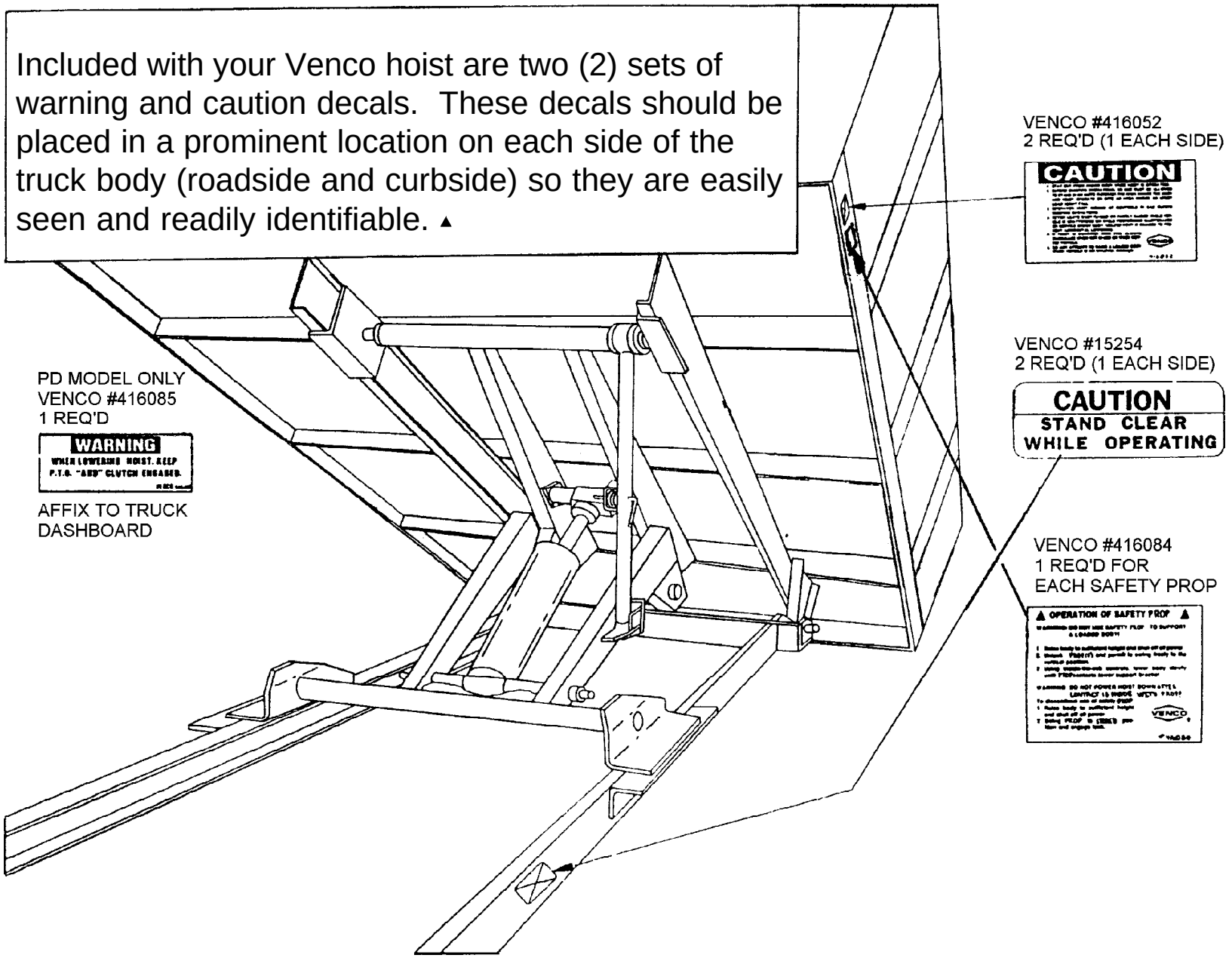


2 A minimum clearance of 2" is required between the hoist (upper arm) and the body cross members in order to prevent a mechanical lockout.



VENCO MANUFACTURING, INC.	TITLE IMPORTANT WARNING	DATE 6-12-03F	SECTION H150
	VENCO HOISTS	SUPERSEDES 11-7-02E	416086

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. ▲



VENCO MANUFACTURING, INC.	TITLE	DATE	SECTION
	DECAL LOCATION	12-27-99B	H100
	VC 416/516, VC 520 - 6628	SUPERCEDES 7-13-98A	416128

VENCO HOIST MODEL VC 520 (NON-SUBFRAME)

CAPACITIES ARE BASED ON WATER LEVELS AND UNDIMINISHING LOADS. DUE TO THE VARIATIONS IN TRUCK EQUIPMENT AND CAB-AXLE LENGTHS (CA), THE DATA PROVIDED ON THIS PAGE IS TO BE USED AS A GUIDELINE ONLY.

DUMP CLASS: 40
CONVERSION CLASS: D
WEIGHT: 445 LBS
POWER SOURCE: PD - POWER TAKE OFF DOUBLE ACTING
ES - ELECTRIC SINGLE ACTING
ED - ELECTRIC DOUBLE ACTING
ADDITIONAL DATA:
SINGLE CYLINDER (5" BORE x 20" STROKE)
CA: 84"-138"
DUMP ANGLE: 40°-50°
MOUNTING HEIGHT REQ'D: 7-1/2"
▲

CONVERSION APPLICATIONS VC 520 WITHOUT SUBFRAME					
BODY	CA	REAR O.H.	40° (TON)	45° (TON)	50°(TON)
12'	84"	30"	16.2	14.5	13.1
13'	84"	42"	18.9	16.9	15.3
13'	102"	24"	12.6	11.3	10.2
13'	108"	18"	11.3	10.1	9.2
14'	102"	36"	14.2	12.7	11.4
14'	108"	30"	12.6	11.3	10.2
14'	114"	24"	11.3	10.1	9.2
14'	120"	18"	10.3	9.2	8.3
14'	124"	14"	9.7	8.7	7.8
14'	126"	12"	9.5	8.4	7.6
15'	102"	48"	16.2	14.5	13.1
15'	108"	42"	14.2	12.7	11.4
15'	120"	30"	11.3	10.1	9.2
15'	124"	26"	10.6	9.5	8.6
15'	126"	24"	10.3	9.2	8.3
15'	138"	12"	8.7	7.8	7.0

DUMP APPLICATIONS VC 520 WITHOUT SUBFRAME					
BODY	CA	REAR O.H.	40° (TON)	45° (TON)	50° (TON)
8'	-	12"	18.9	16.9	15.3
9'	-	12"	16.2	14.5	13.1
10'	-	12"	14.2	12.7	11.4

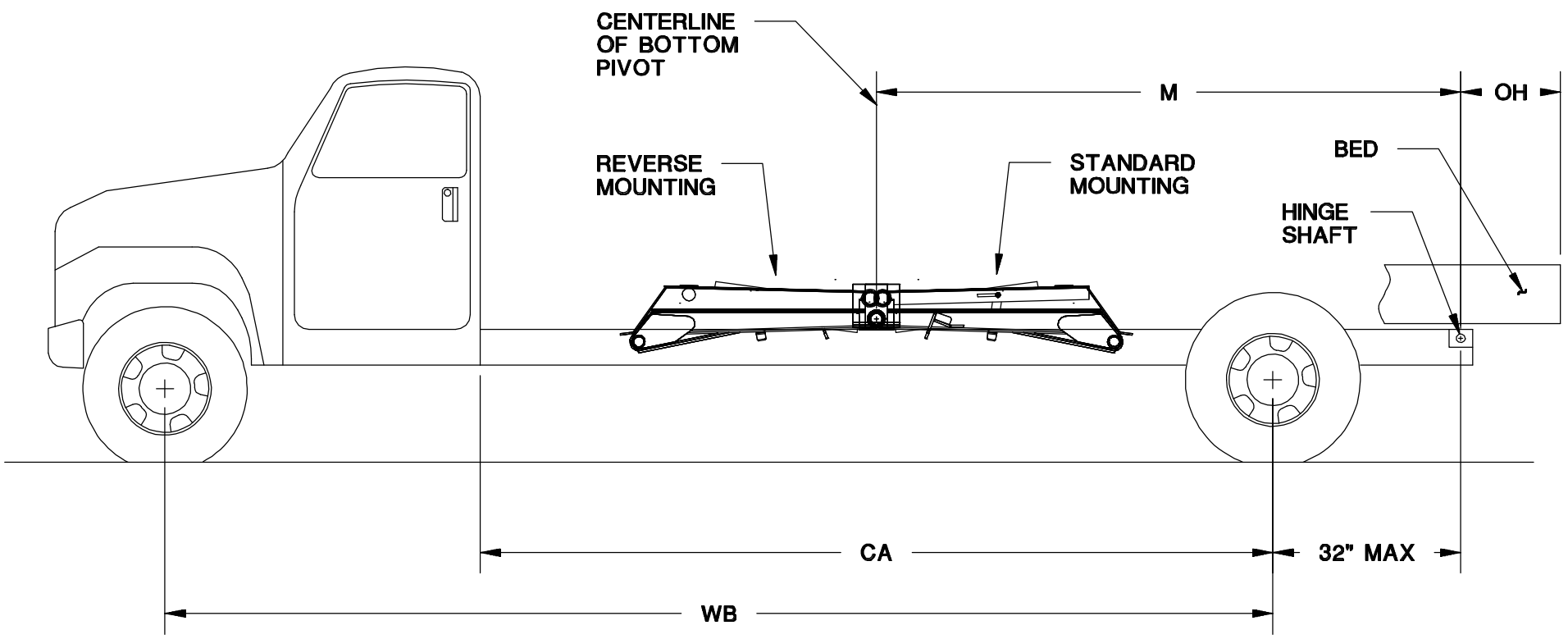
VENCO HOIST MODEL VC 520 WITH SUBFRAME

CAPACITIES ARE BASED ON WATER LEVELS AND UNDIMINISHING LOADS. DUE TO THE VARIATIONS IN TRUCK EQUIPMENT AND CAB-AXLE LENGTHS (CA), THE DATA PROVIDED ON THIS PAGE IS TO BE USED AS A GUIDELINE ONLY.

DUMP CLASS: 40
CONVERSION CLASS: D
WEIGHT: 675 LBS
POWER SOURCE: PD - POWER TAKE OFF DOUBLE ACTING
ES - ELECTRIC SINGLE ACTING
ED - ELECTRIC DOUBLE ACTING
ADDITIONAL DATA:
SINGLE CYLINDER (5" BORE x 20" STROKE)
CA: 84"-138"
DUMP ANGLE: 45°-50°
MOUNTING HEIGHT REQ'D: ▲
▲ SUB FRAME HEIGHT - 4-1/2"
▲ MOUNTING HEIGHT ABOVE SUB FRAME - 6-3/4"

CONVERSION APPLICATIONS VC 520 WITH SUBFRAME					
BODY	CA	REAR O.H.	45° (TON)	47° (TON)	50°(TON)
12'	84"	30"	14.7	14.1	13.2
13'	84"	42"	17.1	16.4	15.4
13'	102"	24"	11.4	11.0	10.3
13'	108"	18"	10.3	9.9	9.2
14'	102"	36"	12.8	12.3	11.5
14'	108"	30"	11.4	11.0	10.3
14'	114"	24"	10.3	9.9	9.2
14'	120"	18"	9.3	9.0	8.4
14'	124"	14"	8.8	8.5	7.9
14'	126"	12"	8.6	8.2	7.7
15'	102"	48"	14.7	14.1	13.2
15'	108"	42"	12.8	12.3	11.5
15'	120"	30"	10.3	9.9	9.2
15'	124"	26"	9.6	9.3	8.7
15'	126"	24"	9.3	9.0	8.4
15'	138"	12"	7.9	7.6	7.1

DUMP APPLICATIONS VC 520 WITH SUBFRAME					
BODY	CA	REAR O.H.	45° (TON)	47° (TON)	50° (TON)
8'	-	12"	17.1	16.4	15.4
9'	-	12"	14.7	14.1	13.2
10'	-	12"	12.8	12.3	11.5



VC 520 HOIST (NON-SUBFRAME)

STANDARD / REVERSE MOUNTING

DUMP ANGLE	M
40˚	105"
45˚	94"
50˚	85"

FIGURE 1.A

VENCO MANUFACTURING, INC.	TITLE MOUNTING DIMENSIONS	DATE 11-16-98	SECTION H100
	VC 520 HOIST	SUPERSEDES -	520603

HOIST MOUNTING INSTRUCTIONS (VC 520 NON-SUBFRAME ONLY)

Refer to drawings 520601 or 520603 (on the preceding pages).

CAUTION

If the distance between the center of the rear axle and the rear hinge assembly exceeds 38", additional reinforcement of the truck frame is necessary.

A. Mark the location for the rear hinge. Ideally this location will be immediately behind a truck cross member approximately 34" behind the center of the rear axle on a single axle truck.

B. Cut a 90° slot in each side of the frame as shown in Figure 2.

C. Position the angle iron frame of the rear hinge assembly in the truck frame cut outs. Make sure the rear hinge assembly is properly positioned on the truck frame. Weld all around truck frame rear hinge assembly joint (both sides).

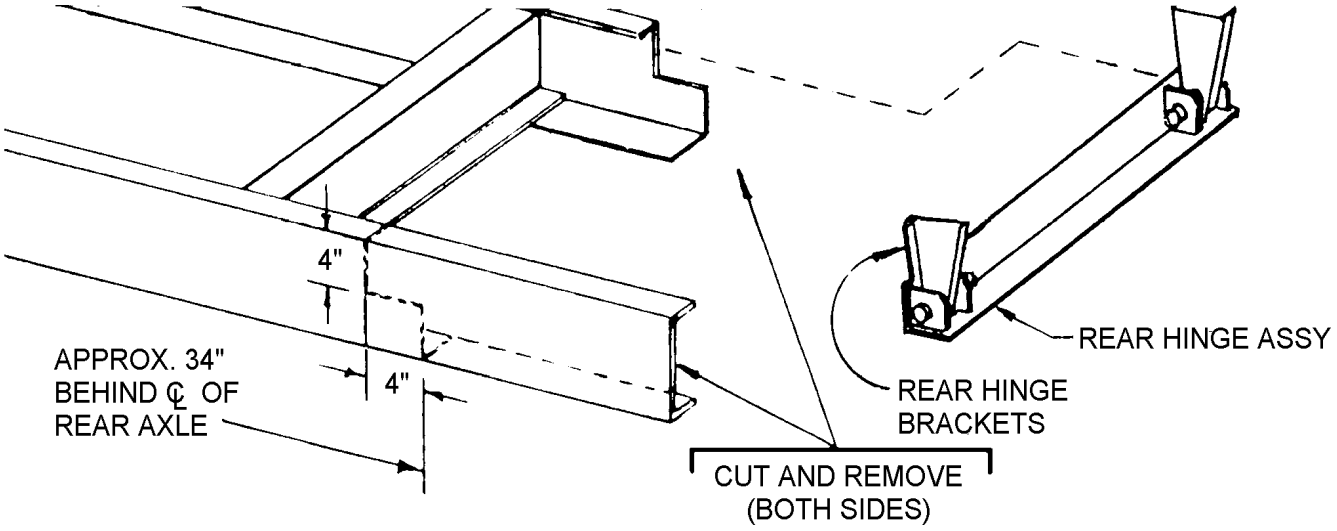


Figure 2 - Frame Modification and Rear Hinge Attachment

D. Locate the hoist on the truck frame, making sure to center and square the hoist to the truck frame. The VC Hoist is designed to rest on the truck frame. A section of the hoist extends below the truck frame level. Therefore, the hoist may have to be moved slightly forward or backward to avoid frame crossmembers. The distance between the rear hinge assembly center and the lower pivot is referred to as the "M" dimension. The table on drawing 520603 provides the dump angles associated with various "M" dimensions.

Note: Moving the hoist along the truck frame will affect the hoist's performance. A forward movement (toward cab) decreases dump angle and increases capacity. A backward movement increases dump angle and decreases capacity (see dwg. 520601).

HOIST MOUNTING INSTRUCTIONS (VC 520 / 620 NON-SUBFRAME ONLY)

E. After the hoist is positioned, place the mounting angles (Figure 3) under the lower pivot angles and against the truck frame. Clamp securely in place. Drill though the frame and install the mounting angle with two (2) 1/2" x 1-1/2" hex head cap screws, lock washers, and hex nuts, and four flatwashers (both sides).

NOTE: The hoist mounting bracket 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 angles.

Do not weld the hoist mounting bracket to the truck frame. This may void the truck warranty.

F. Weld each end of the lower pivot angle to its mounting angle as shown in Figure 3. Note the welding symbols. Do not weld to the truck frame.

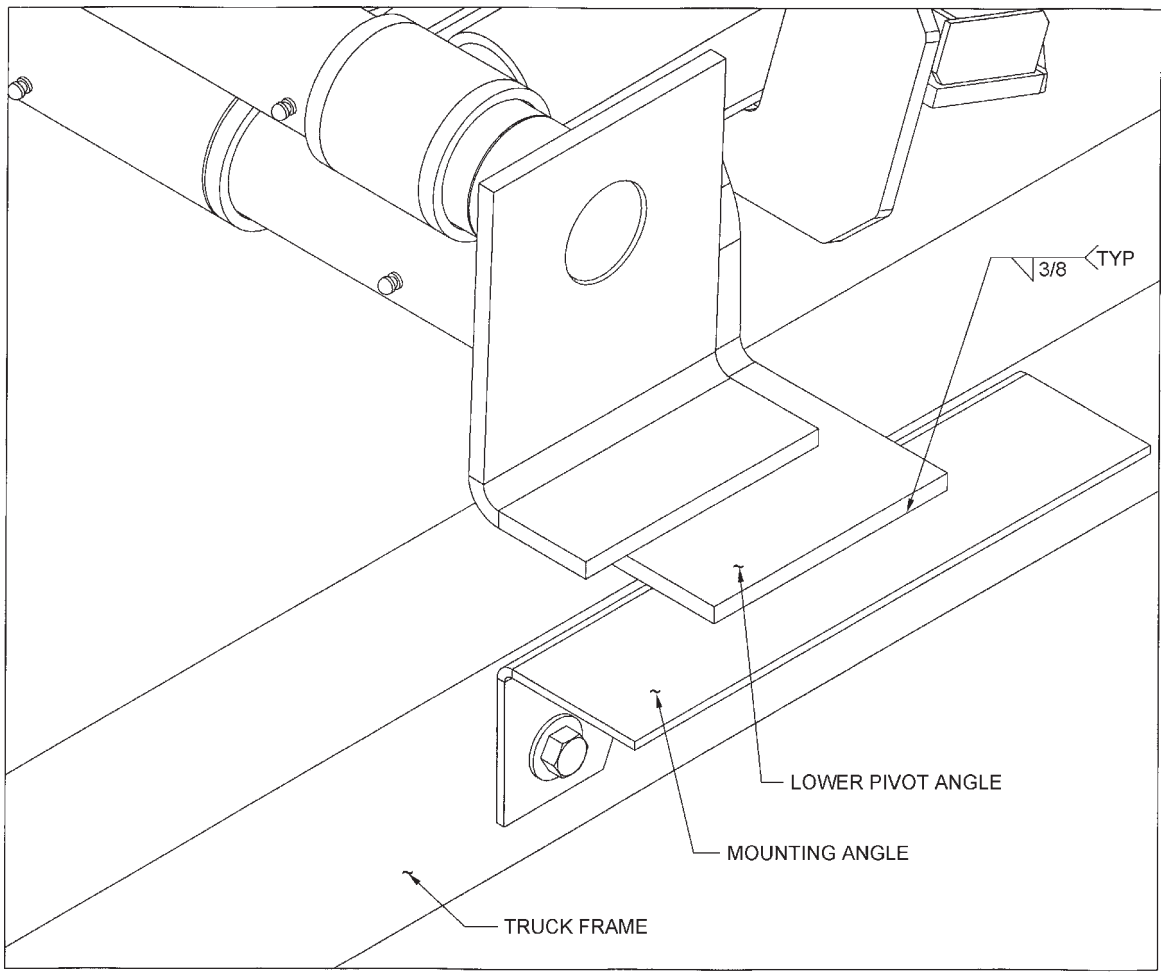


Figure 3 - Mounting Angle Assembly

HOIST MOUNTING INSTRUCTIONS (VC 520 WITH SUBFRAME ONLY)

Refer to drawing 520602 (on the preceding pages).

A. Position the hoist into the front half of the subframe by inserting the two lower pivot angles into the lower pivot tube on the scissors and then positioning that assembly inside the front half of the subframe. The two holes on each lower pivot angle should match up with a set of holes on the subframe mounting brace. The front set of holes on the subframe corresponds to a dump angle of 45 degrees, the middle to 47 degrees, and the rear to 50 degrees. See Dwg. 520607 for subframe features.

   NOTE: If any dump angle other than 50 degrees is desired, an additional crossmember will be required to support the rear knuckle of the scissors.

B. Fasten the lower pivot angles to the subframe using two (2) 1/2" x 1-1/2" hexhead cap screws, lockwashers, and nuts, and four (4) flatwashers (both sides). See Dwg. 520608 Figure 4a.

C. Position the hoist with the subframe front section onto the truck frame.

   NOTE: The front crossmember of the front section has only been tack welded into place. This was done to provide you with the flexibility to move the front crossmember and power unit, if desired. When the crossmember is where you want it, fully weld it into place.

D. Place the rear section of the subframe onto the truck frame.

   NOTE: A distance of less than 38" should be maintained between the center of the rear hinge and the center of the rear axle. If this distance exceeds 38", additional reinforcement of the truck frame may be necessary.

E. Trim off any truck frame that extends beyond the rear hinge.

F. Fasten the rear half of the subframe to the truck by welding the two frame tie down brackets onto the subframe, drilling corresponding holes through the truck frame, and using two (2) 1/2" x 1-1/2" hexhead cap screws, lockwashers, and nuts, and four (4) flatwashers (both sides). The tie down brackets should be located as close as possible to the rear hinge to insure stability.

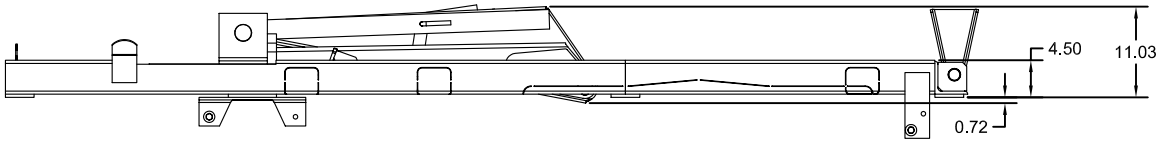
G. Fasten the two halves of the subframe together by welding the tabs extending from the rear half into the front half.

H. After the two halves are welded together, place the mounting angles under the lower pivot angles and against the truck frame. Clamp them securely in place. Drill through the frame and install the mounting angle with two (2) 1/2" x 1-1/2" hex head cap screws, lock washers, and hex nuts, and four (4) flatwashers (both sides). See Figure 5.

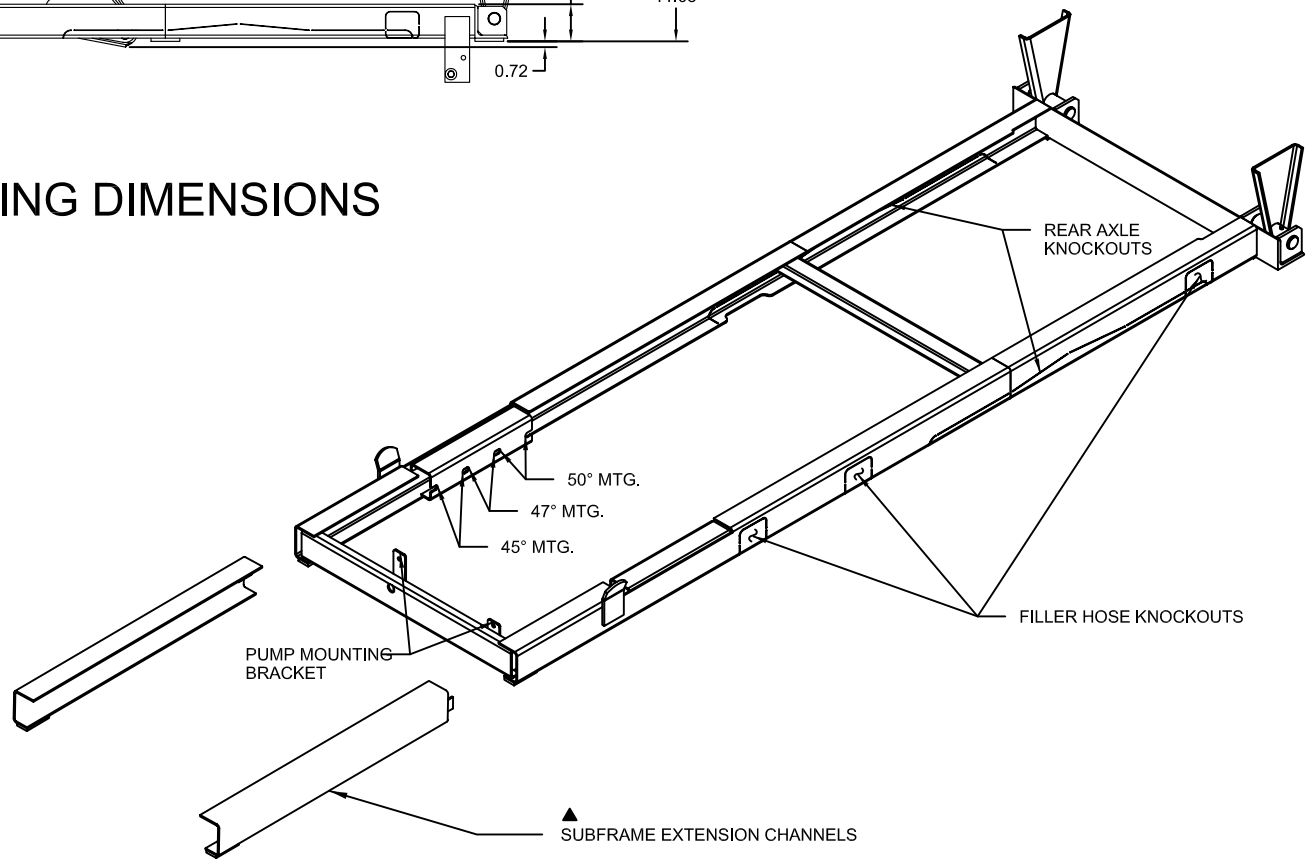
   NOTE: Do not weld the mounting angles to the truck frame. This may void the truck warranty.

I. Weld each end of the lower pivot angle to its mounting angle as shown in Dwg. 520608 Figure 4b. Note the welding symbols. Do not weld to the truck frame.

▲520 & 620 SUBFRAME FEATURES
(520501)



MOUNTING DIMENSIONS



VENCO MANUFACTURING, INC.	TITLE SUBFRAME FEATURES	DATE 8-26-03B	SECTION H200
	VC 520 / 620	SUPERSEDES 6-12-03A	**520607**

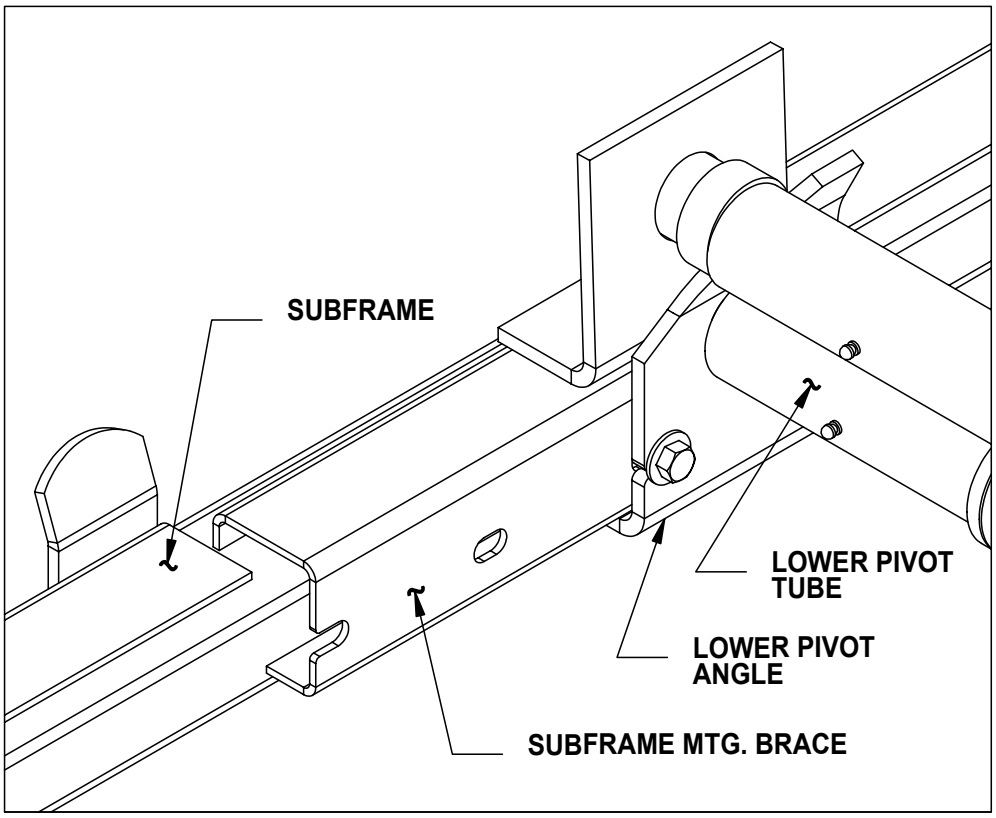


FIGURE 4a

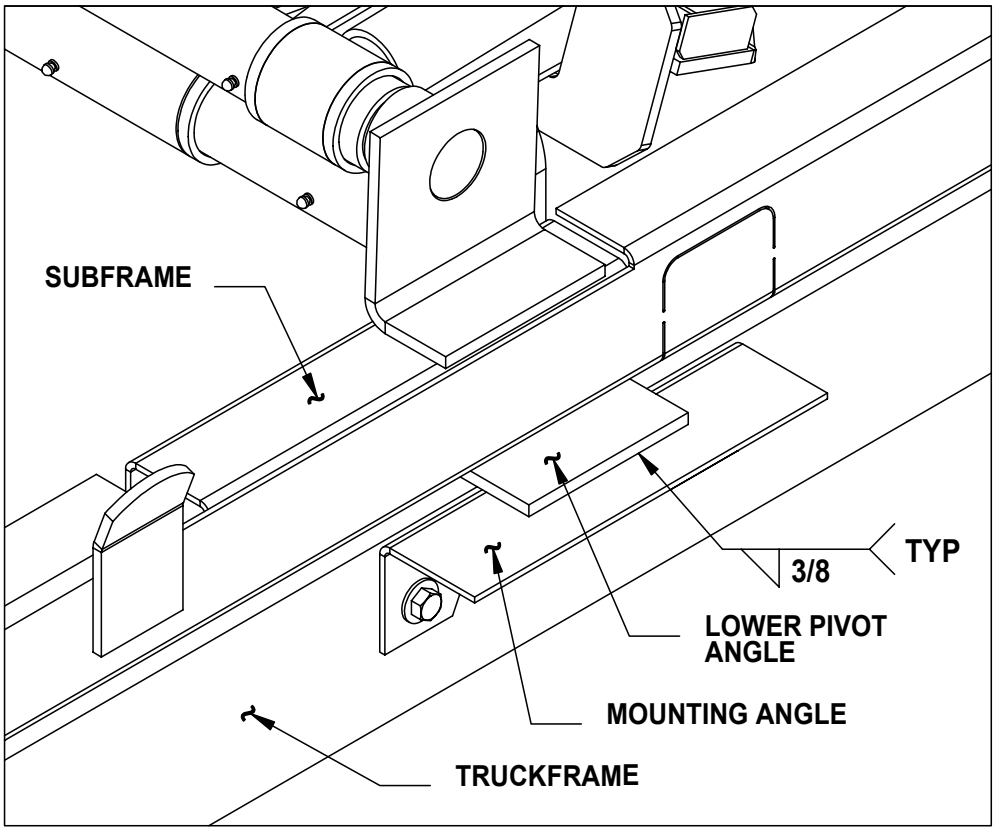


FIGURE 4b

HOIST MOUNTING INSTRUCTIONS (Continued)

G. Install the PTO pump per the following instructions and per the pump manufacturer's instructions.

1. See Figure 5. Position and bolt each pump bracket to the pump and secure with the 3/8 x 1-1/4" bolts and hex nuts (VC-520 requires only 2 pump brackets).

2. Position the pump assembly with brackets and securely clamp to the frame on the same side that the transmission mounted PTO shaft is located.

   Note: Position the pump brackets as high on the truck frame as possible when mounting the pump.

3. Two (2) 17/32" holes need to be drilled in the pump brackets and truck frame (Figure 5). Mark the hole locations as close to the truck frame flanges as possible. Drill 17/32" holes and install the 1/2" x 1-1/2" hex head cap screws with lockwashers and hex nuts.

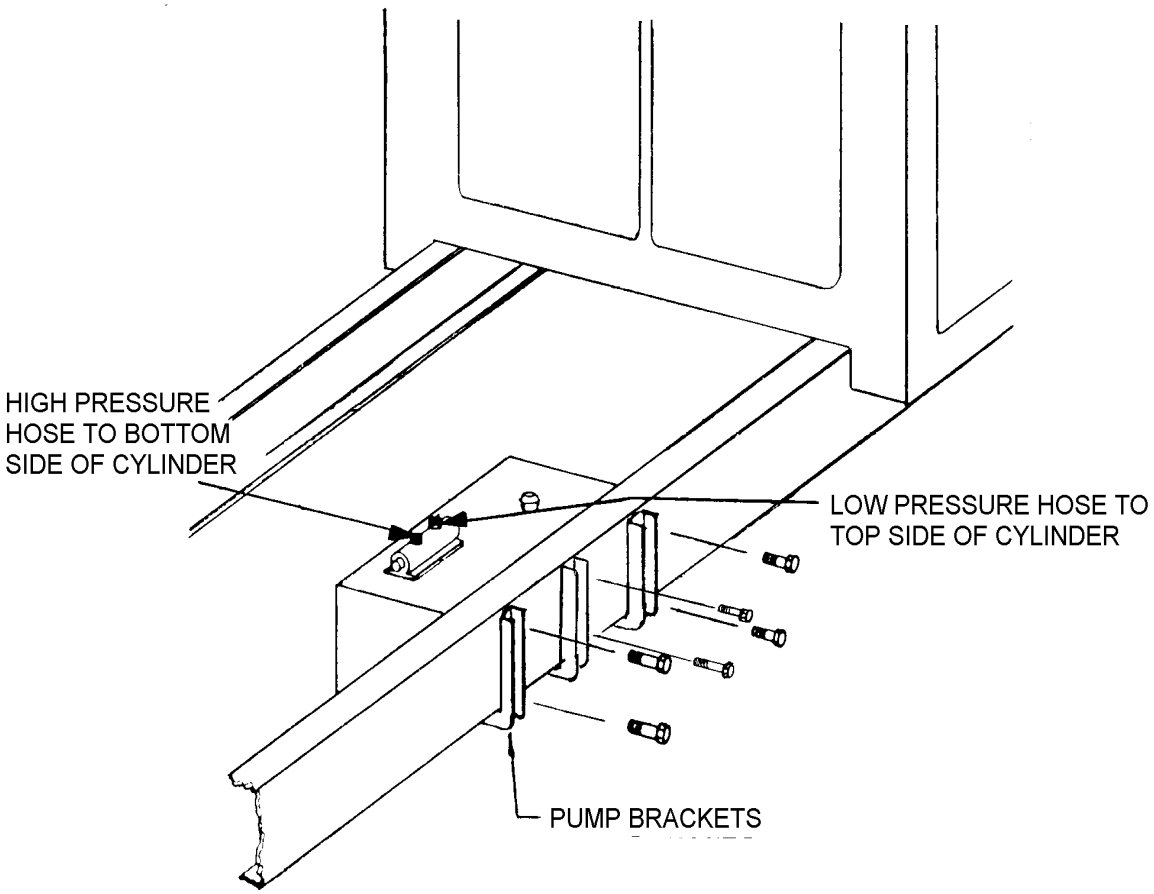


Figure 5 - Pump Installation

HOIST MOUNTING INSTRUCTIONS (Continued)

4. Install the truck PTO assembly using the manufacturer's instructions.
5. Determine the exact length "L" of the drive shaft (Figure 6). The drive shaft should be kept as short and level as possible.
6. Cut the 7/8" square drive shaft to the length that was determined in the previous steps.
7. The supplied U-joint (with the 1" round x 7/8" square slip yoke) fits on the pump drive shaft. The U-joint for the PTO is not furnished.
8. Trial fit each U-joint to the hex drive shaft and trial fit the drive shaft assembly to the pump and PTO. At this point, mark the set screw locations of the PTO U-joint on the square drive shaft. Disassemble the drive shaft assembly and countersink the drive shaft at the marked locations.
9. Assemble each U-joint to the hex drive shaft and install the drive shaft assembly. After installing, secure the PTO 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 loosen.
10. For additional pump and drive shaft mounting instructions, refer to the manufacturer's instructions included with the pump. Refer to Figures 6 and Dwg. 520078.

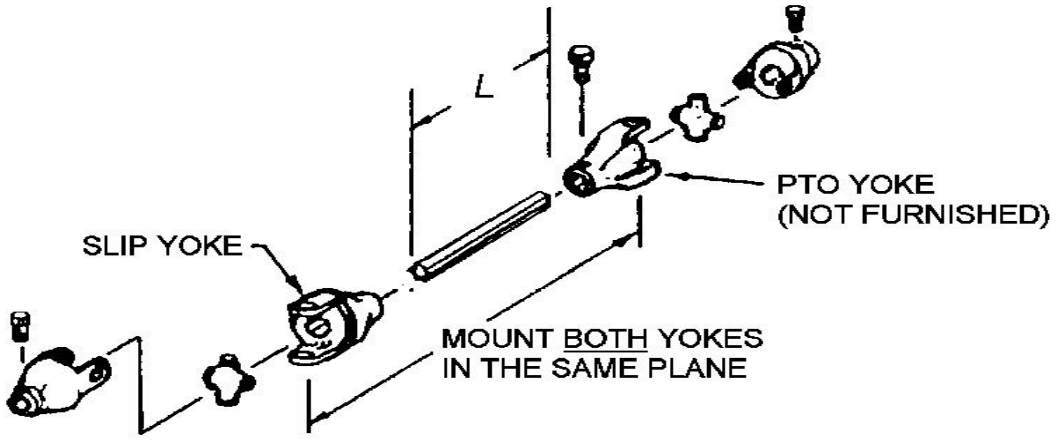
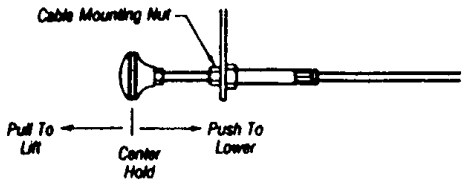


Figure 6 - Drive Shaft Assembly

H. Install hydraulic hoses per the following instructions:

1. 7' (or 7'-10") hose(s) installation - Connect one end of the hose to the front pump port (low pressure). Connect the other end of the hose to the rod end of the hoist cylinder (Figure 5).
2. 5' hose(s) installation - Connect one end of the hose to the rear pump port (high pressure). Connect the other end of the hose to the base end of the hoist cylinder (Figure 5).

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)

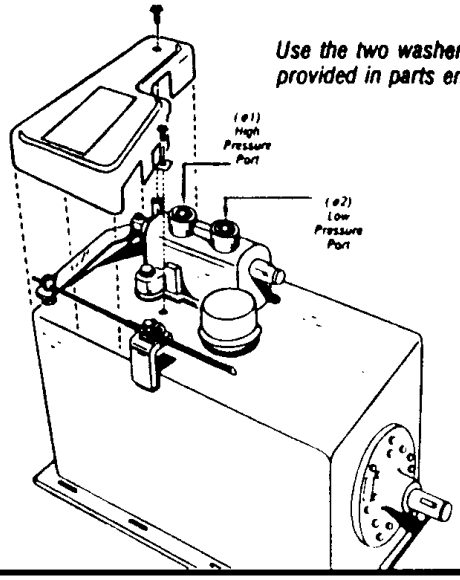
LEVER LOCATED TO THE REAR OF RESERVOIR ON THIS MODEL

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.



Use the two washer head screws provided in parts envelope.

"VALVE LEVER GUARD MUST BE INSTALLED"

Operate Hoist Only From Cab

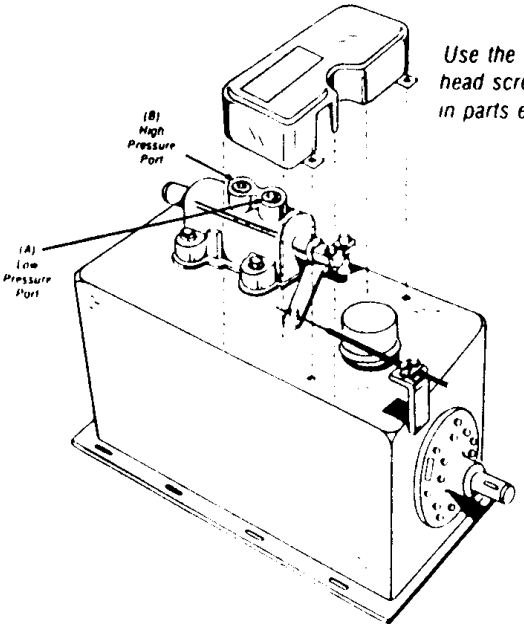
LEVER LOCATED TO THE FRONT OF RESERVOIR ON THIS MODEL

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

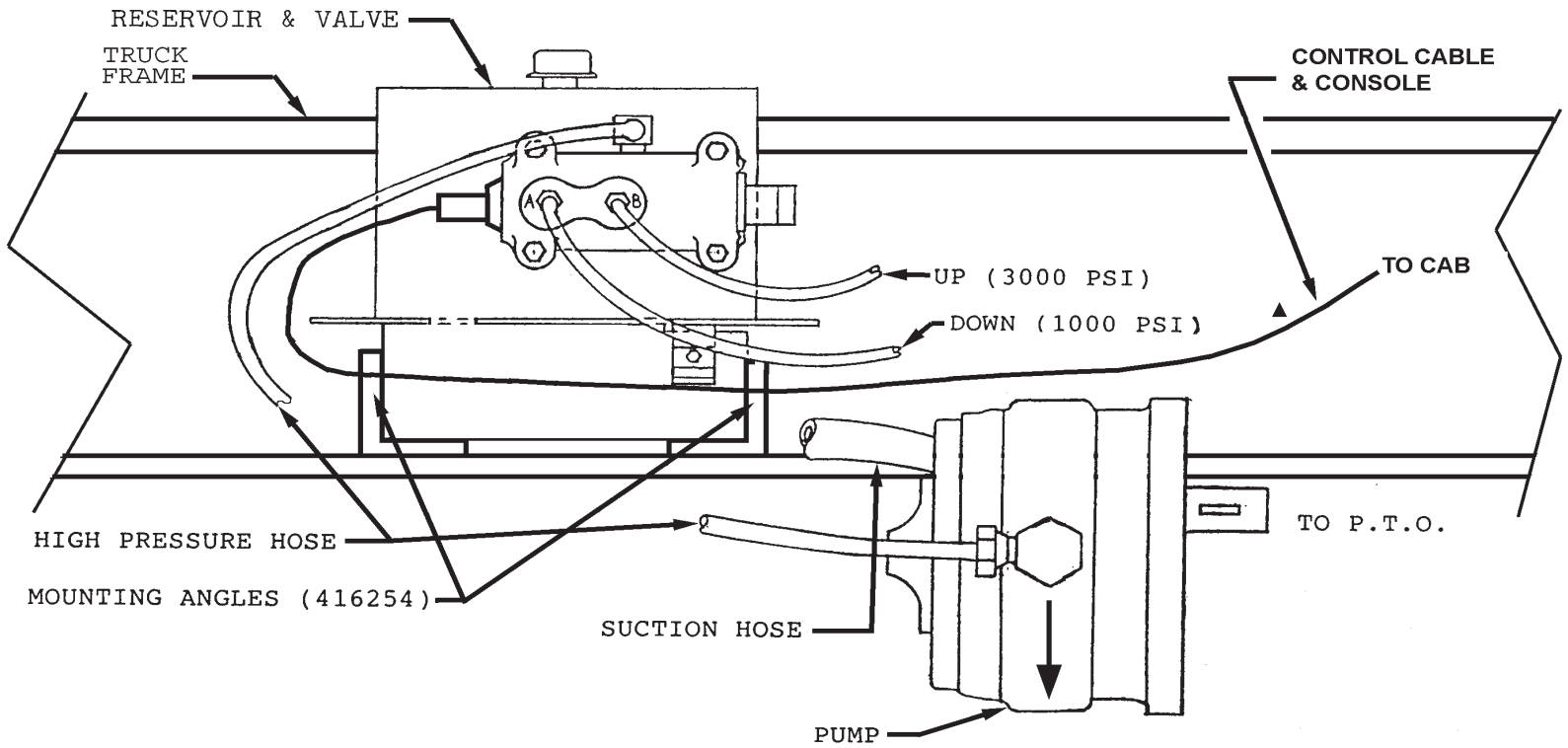
The low pressure port *A* should be connected to the rod end of hoist cyl.

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



Use the two washer head screws provided in parts envelope.

VENCO MANUFACTURING, INC.	TITLE PTO PUMP CABLE INST	DATE 7-13-98A	SECTION H200
	VC 520 - 6628	SUPERCEDES 3-15-90	520078

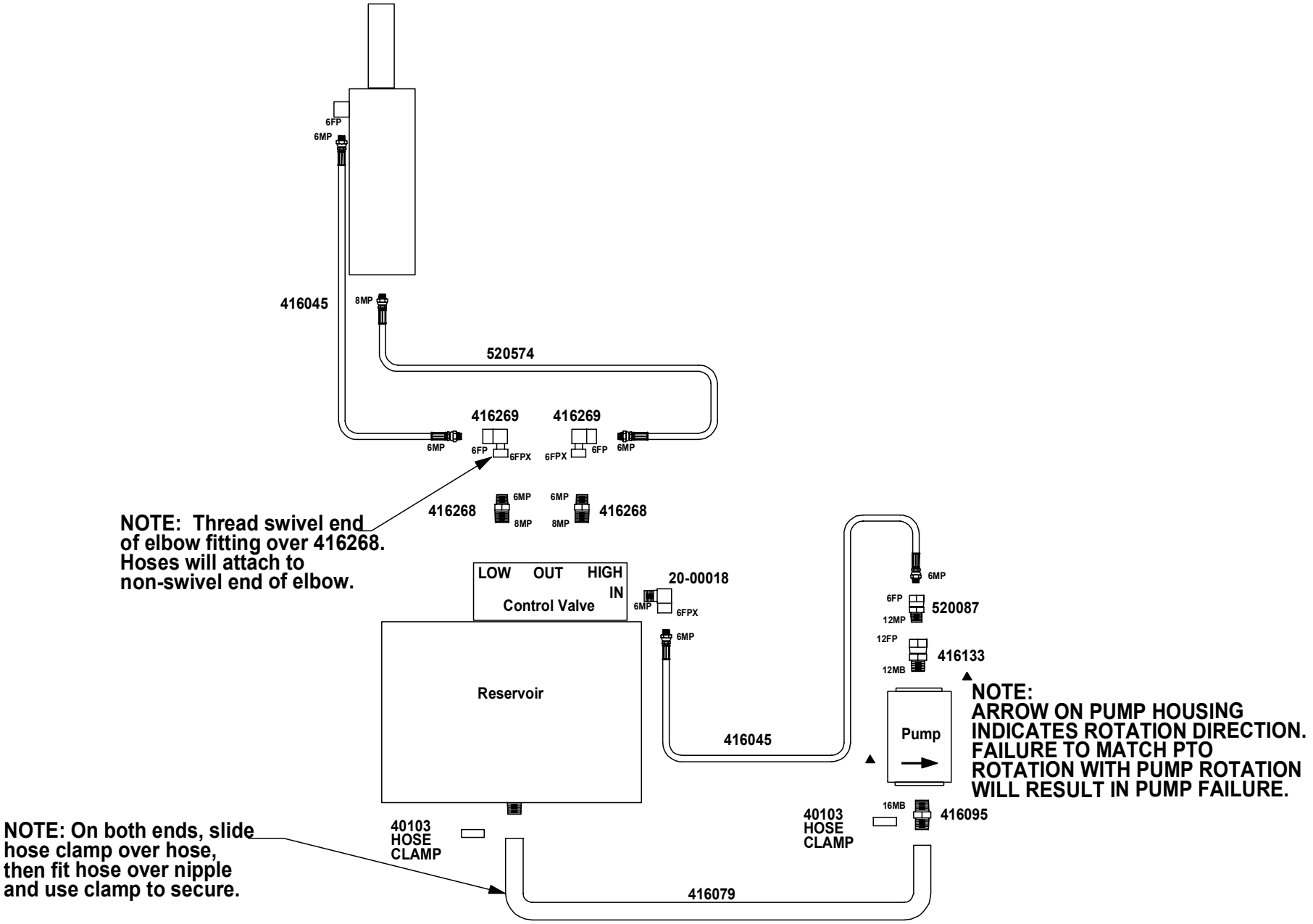


NOTE: ARROW ON PUMP HOUSING INDICATES ROTATION DIRECTION FAILURE TO MATCH PTO ROTATION WITH PUMP ROTATION WILL RESULT IN PUMP FAILURE.

Model	VC416	VC516	VC520	VC620	VC628	VC5520	VC6620	VC6628
▲ Control Cable & Console	620125 - Curved 620124 - Straight							
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			

VENCO MANUFACTURING, INC.

TITLE	DATE	SECTION
SPLIT PUMP	5-11-04H	H200
VC 416/516, VC 520 - 6628	SUPERCEDES 4-15-04G	416138



VENCO MANUFACTURING, INC.

TITLE	DATE	SECTION
SPDG HOSE CONNECTION DIAGRAM	4-15-04B	-
VC520, VC620	SUPERSEDES 2-24-04A	520573

Williams® Machine & Tool Co.

MANUFACTURERS OF HYDRAULIC PISTON PUMPS

⚠ CAUTION

The Gear Pump you have purchased is a single rotation Gear Pump. Installation of this Gear Pump into a system that does not match the rotation of the Gear Pump may result in Personal Injury and/or Property Damage.

The Gear Pump you have purchased is a single rotation Gear Pump. The direction of rotation can be found by using the Williams Machine and Tool Co.'s Model Number. Directly following the Model Number are the letters CCW or CW. These letters indicate the direction of rotation for the Gear Pump. CCW indicates a counter-clockwise rotation. CW indicates a clockwise rotation. Pump shaft rotation is determined by viewing pump from the shaft end.

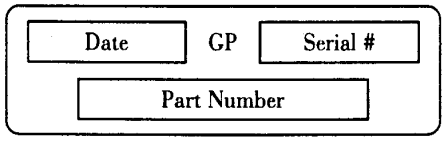
Example: GP1538 CCW. The CCW indicates a counter-clockwise rotation.

To verify the direction of rotation of your Gear Pump, perform the following steps:

1.) Locate the Part Number on the Gear Pump. The Part Number, Serial Number, and date code are located on the rear of the Gear Pump.

2.) Part Numbers ending in an even number are clockwise rotation (CW). Part Numbers ending in an odd number are counter-clockwise rotation (CCW).

Example: 1830201. The last number is 1 (an odd number). This indicates a counter-clockwise rotation (CCW).



The following chart specifies torque requirements for the SAE O' ring plugs installed into the side or rear ports of the Gear Pump. Any combination of inlet and outlet ports may be used, ie., inlet large rear port. outlet small side port; inlet large side and outlet small rear ports; or both side ports or both rear ports. One inlet and one outlet port must be plugged for proper Gear Pump operation.

PORT SIZE (SAE)	TORQUE (FT. LBS.)
3/4 - 16	15 - 20
7/8 - 14	20 - 25
1-1/16 - 12	30 - 35
1-5/16 - 12	45 - 50
1-5/8 - 12	65 - 70

HOIST MOUNTING INSTRUCTIONS (Continued)

I. Position and secure the filler strips (liner or sleeper) to the truck frame.

The VC 520 with subframe requires a minimum of 9-1/2" clearance above the truck frame.

The VC 520 (non-subframe) requires a minimum of 7-1/2" clearance above the truck frame.

Note: If the hoist needs to be mounted higher due to interference between the hoist knuckle and the truck frame, additional clearance above the truck frame will be required.

Example (**Non-subframe model**):
Assuming that a 7-1/2" clearance is required and 6" long beams are on the truck body, a liner of at least 1-1/2" net will be required to obtain the minimum clearance required to mount the hoist.
6" + 1-1/2" = 7-1/2" min.

J. Position the body longitudinals (long beams) onto the truck frame / subframe.

Note: At least 2" clearance between the cab and closest point on the truck body is required.

K. Place the rear hinge brackets in the vertical position (Dwg. 520604 Figure 2). Weld and/or bolt the brackets to the longitudinals. If bolted, mark and drill each bracket four (4) places (17/32" holes) and secure the brackets to the longitudinals using eight (8) 1/2"-13 x 1-1/2" Grade 8 hex head cap screws, eight (8) 1/2" lockwashers, and eight (8) 1/2"-13 hex nuts. See installation drawing 662861 for more information regarding the mounting of the rear hinge brackets to the body.

L. **Refer to Drawing 520610 on the following page**. Make sure that the dump body longitudinals are resting flush on the top of the lifting angles. Weld the top of both lifting angles (the vertical "leg") to the top flanges of the body longitudinals - a reinforcement plate may be required to fill the space between the lifting angles and body longitudinals. Weld all around the lifting angles, body longitudinals, and reinforcement plates (if used). **Be sure that your installation follows the method shown on the following page - Drawing 520610**.

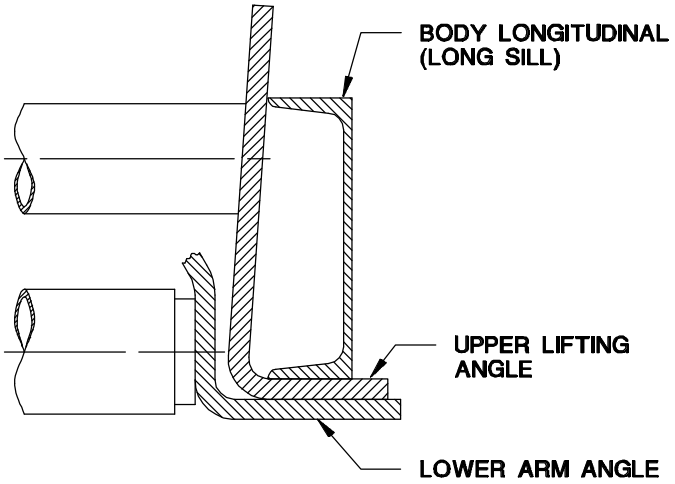
Note: Step "L" (above) is a critical installation procedure that must be carefully followed to ensure a successful hoist installation. Deviation from the suggested installation method may result in damage to the hoist.

IMPORTANT!

WHEN INSTALLING THE UPPER LIFTING ANGLES, THE GOAL IS TO COMPLETELY "BOX IN" THE LIFTING ANGLE, BODY LONG SILL, AND REINFORCEMENT PLATE - 100% WELD.

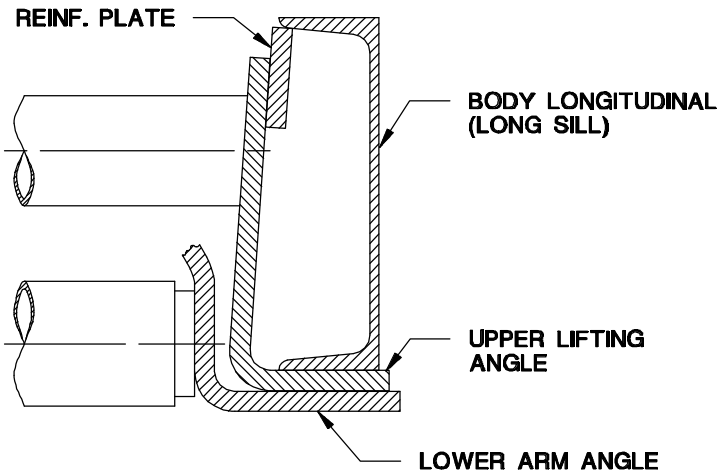
SITUATION A:

LIFTING ANGLE FULLY ENVELOPS BODY LONG SILL

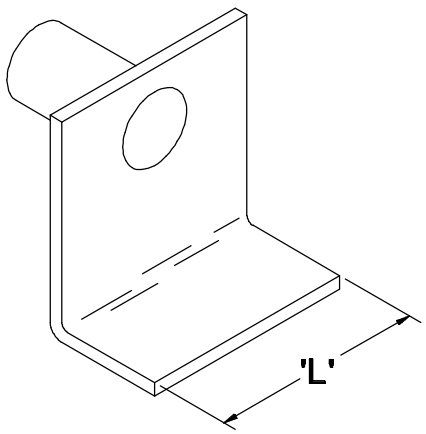


SITUATION B:

LIFTING ANGLE DOES NOT ENVELOP BODY LONG SILL AND A REINFORCEMENT PLATE IS REQUIRED



NOTE: THE REINFORCEMENT PLATE SHOULD BE THE SAME LENGTH AS THE LIFTING ARM. SEE 'L' DIMENSION BELOW.



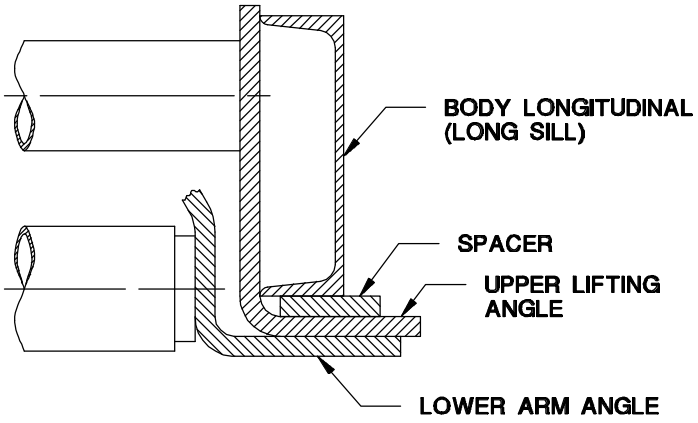
VENCO MANUFACTURING, INC.	TITLE INST. INSTRUCTIONS	DATE 11-17-98	SECTION H200
	VC-520	SUPERSEDES -	520610

IMPORTANT!

WHEN INSTALLING THE UPPER LIFTING ANGLES, THE GOAL IS TO COMPLETELY "BOX IN" THE LIFTING ANGLE, BODY LONG SILL, SPACER, AND REINFORCEMENT PLATE - 100% WELD.

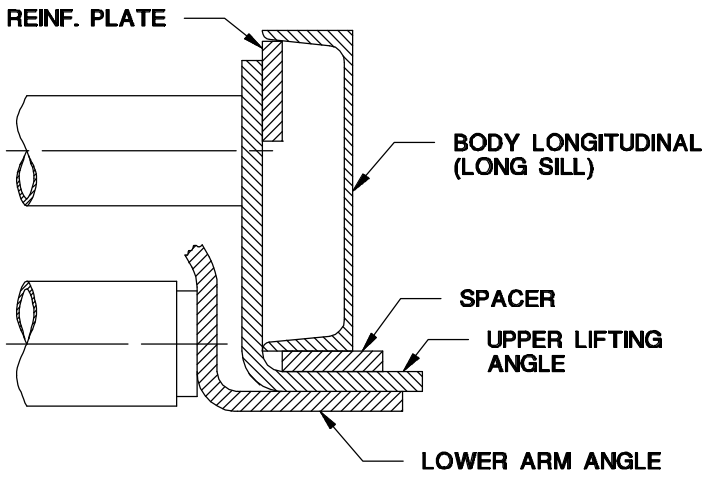
SITUATION A:

LIFTING ANGLE FULLY ENVELOPS BODY LONG SILL

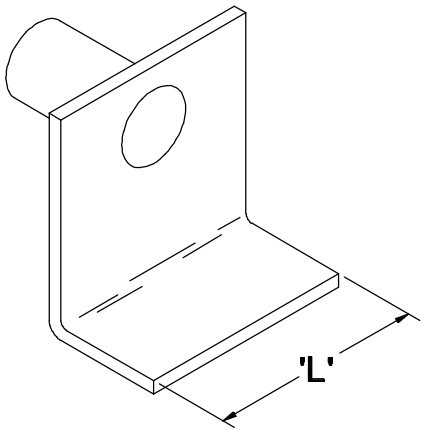


SITUATION B:

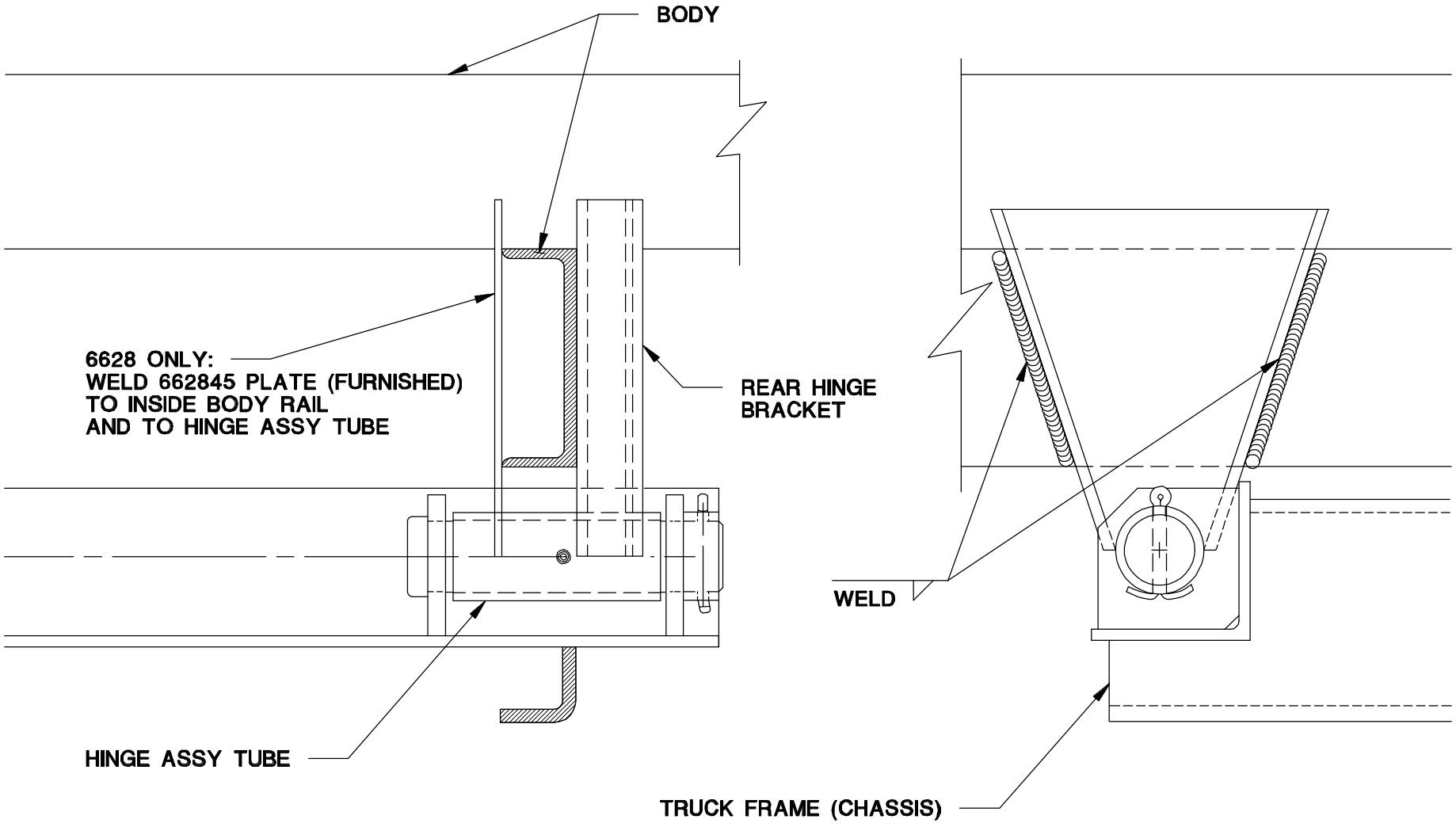
LIFTING ANGLE DOES NOT ENVELOP BODY LONG SILL AND A REINFORCEMENT PLATE IS REQUIRED



NOTE: THE SPACER AND REINFORCEMENT PLATE SHOULD BE THE SAME LENGTH AS THE LIFTING ARM. SEE 'L' DIMENSION BELOW.



VENCO MANUFACTURING, INC.	TITLE	DATE	SECTION
	INST. INSTRUCTIONS	5-20-98	H200
	VC-520 - VC-6628	SUPERSEDES -	520093



VENCO MANUFACTURING, INC.	TITLE REAR HINGE TO BED MTG. INSTR.	DATE 10-23-97	SECTION H200
	VC 520 - VC 6628	SUPERSEDES -	662861

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 completing 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).

▲

STEP3 - 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

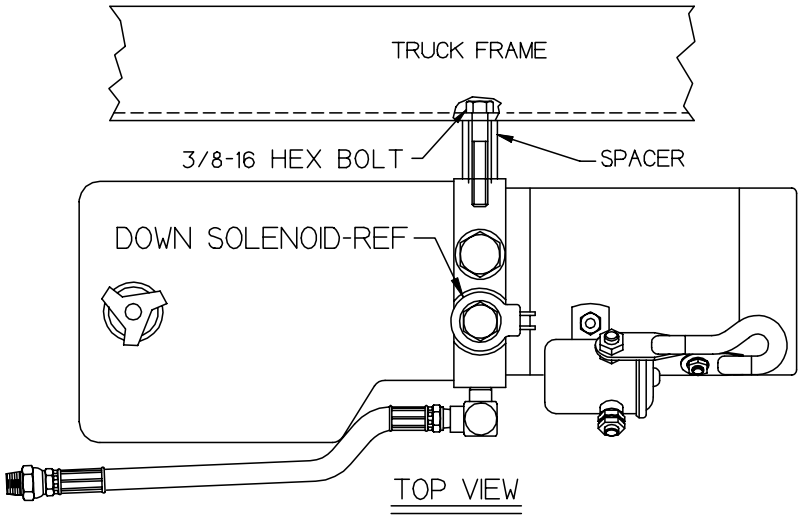
Step 2 - Add 3.5 qts.

Step 4 - Add 2.0 qts.

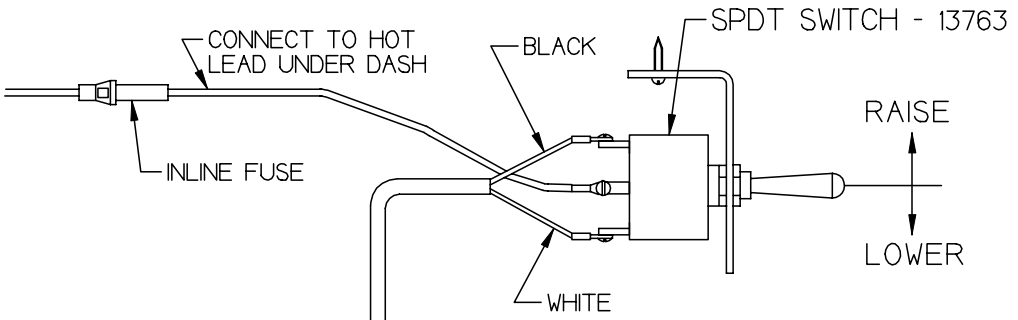
Step 6 - Add 0.0 qts. (none req'd)

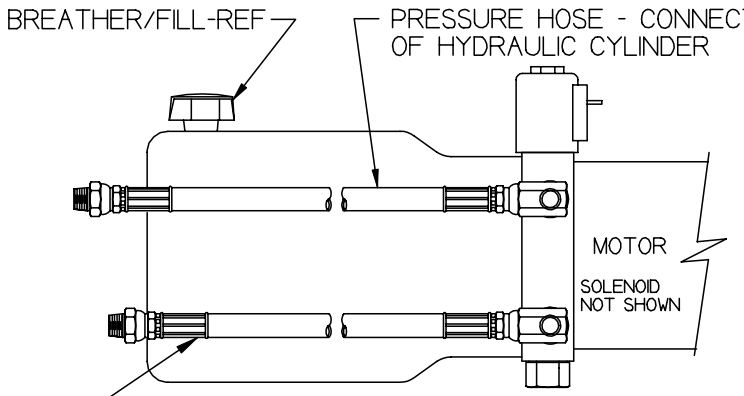
= 5.5 qts. total

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



TOP VIEW



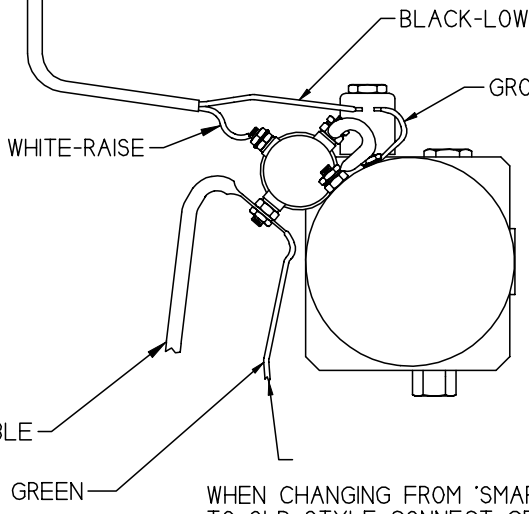


SIDE VIEW

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.

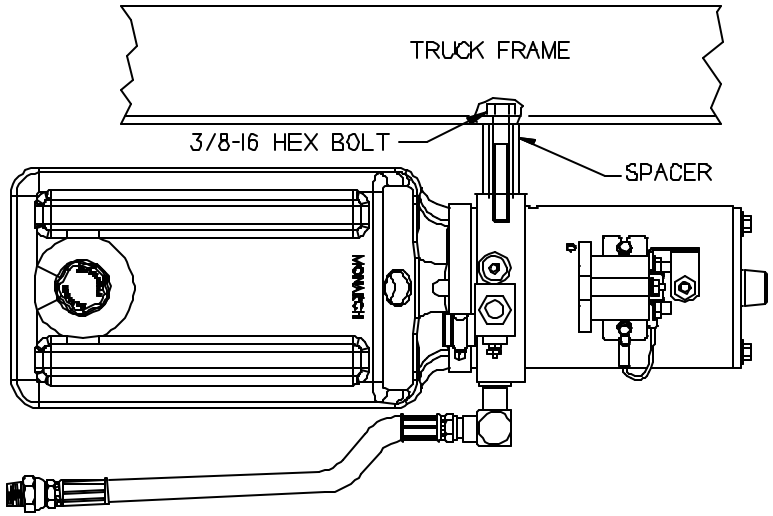


WHEN CHANGING FROM 'SMART' SOLENOID TO OLD STYLE CONNECT GREEN WIRE HERE. CONNECT BLACK TO EITHER WIRE ON RELEASE SOLENOID AND GROUND THE OTHER WIRE.

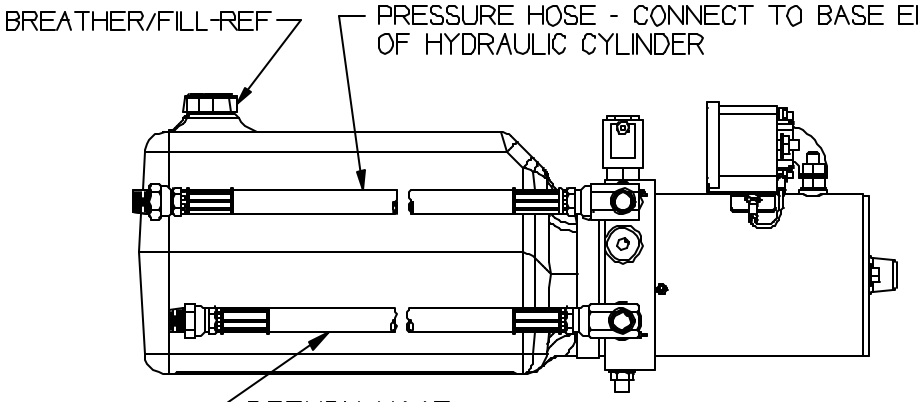
VENCO MANUFACTURING, INC.	TITLE PLUMBING & WIRING DIAGRAM	DATE 7-18-00	SECTION H200
	FENNER ES POWER UNIT 40058-2B	SUPERSEDES 7-6-98	6133B

40058M

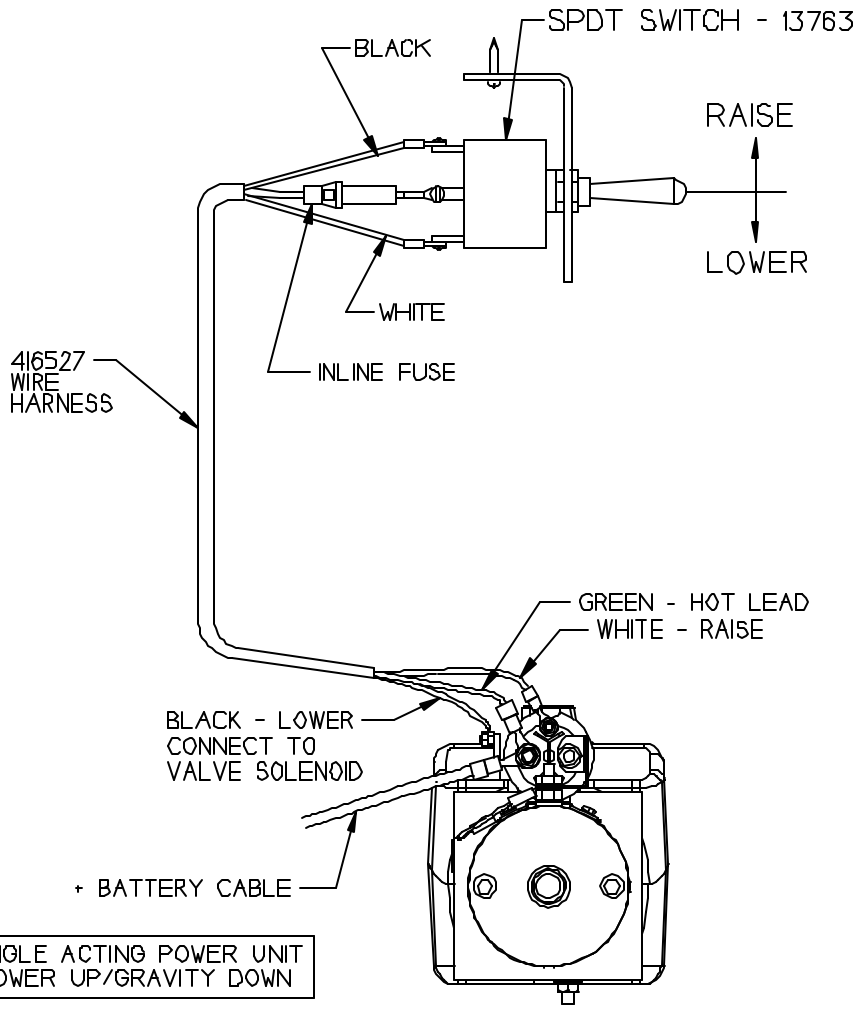
* IF SPACERS ARE NOT USED USE 1" LG. BOLTS



TOP VIEW



SIDE VIEW



SINGLE ACTING POWER UNIT
-POWER UP/GRAVITY DOWN

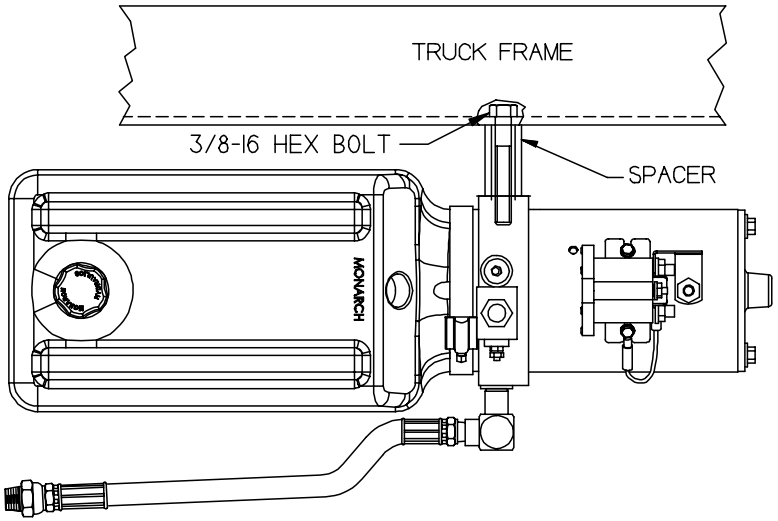
NOTE: BE SURE POWER UNIT HAS GROUND TO TRUCK FRAME.

SEE DRAWING 416308 FOR PARTS

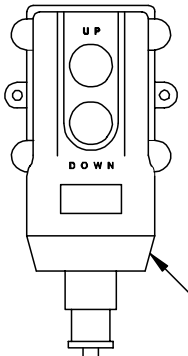
VENCO MANUFACTURING, INC.	TITLE: 40058M / 40058MHD POWER UNIT	DATE: 3-10-04	SECTION: H200
	VC416/516/520/620/628	SUPERSEDES: -	416315

40058M WITH MONARCH PUSH BUTTON CONTROL

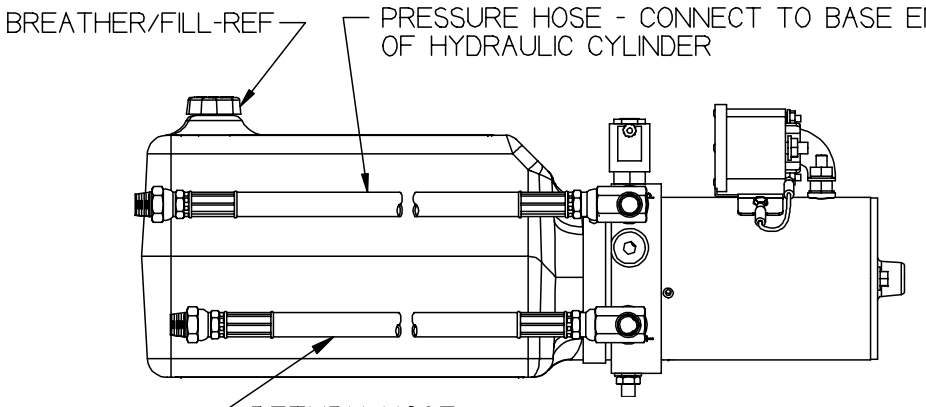
* IF SPACERS ARE NOT USED USE 1" LG. BOLTS



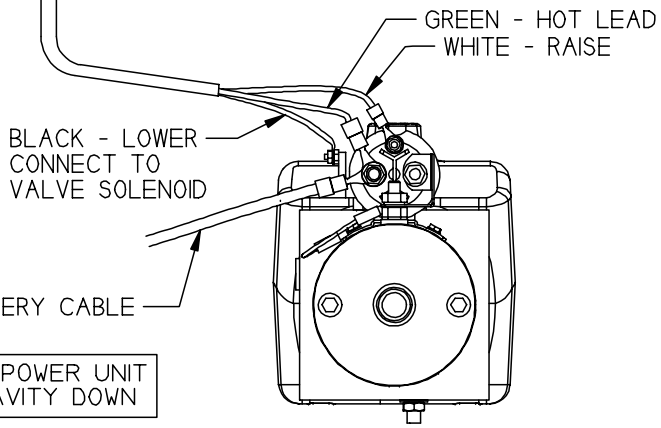
TOP VIEW



416541 PUSH BUTTON CONTROL



SIDE VIEW



SINGLE ACTING POWER UNIT
-POWER UP/GRAVITY DOWN

NOTE: BE SURE POWER UNIT HAS GROUND TO TRUCK FRAME.

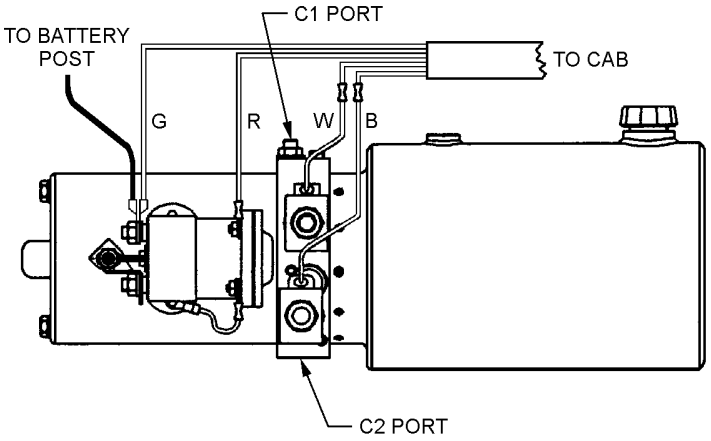
SEE DRAWING 416308 FOR PARTS

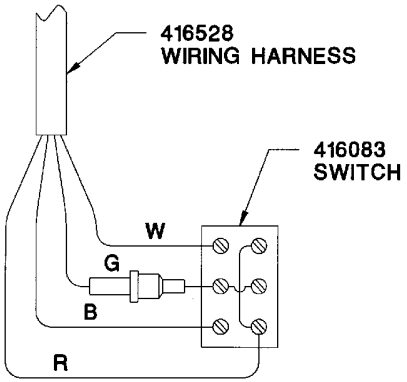
VENCO MANUFACTURING, INC.	TITLE 40058M / 40058MHD POWER UNIT	DATE 3-10-04	SECTION H200
	VC416/516/520/620/628	SUPERSEDES -	416316

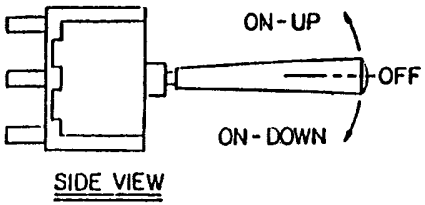
416081M

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

HYDRAULICS
C1 - FULL END CYL
C2 - ROD END CYL

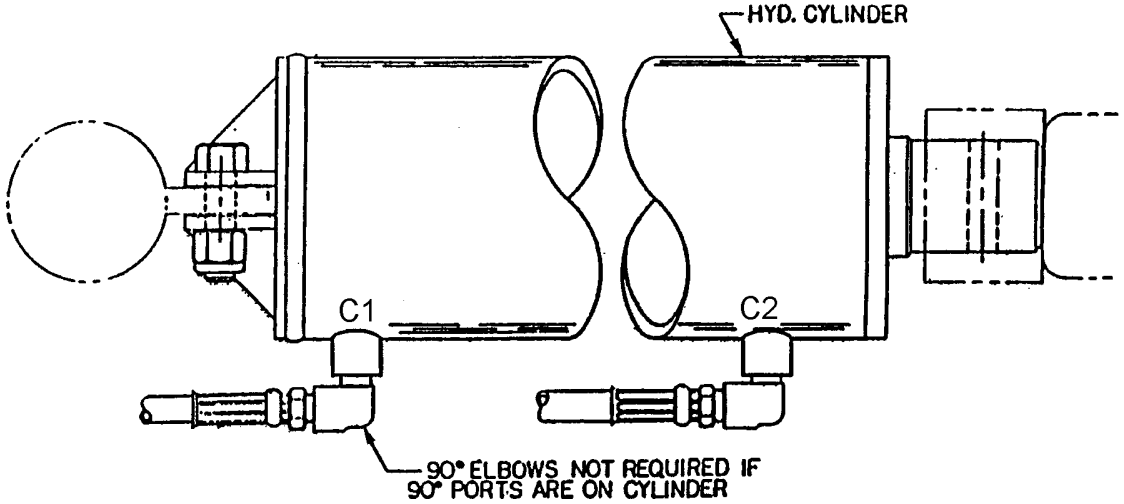






SIDE VIEW

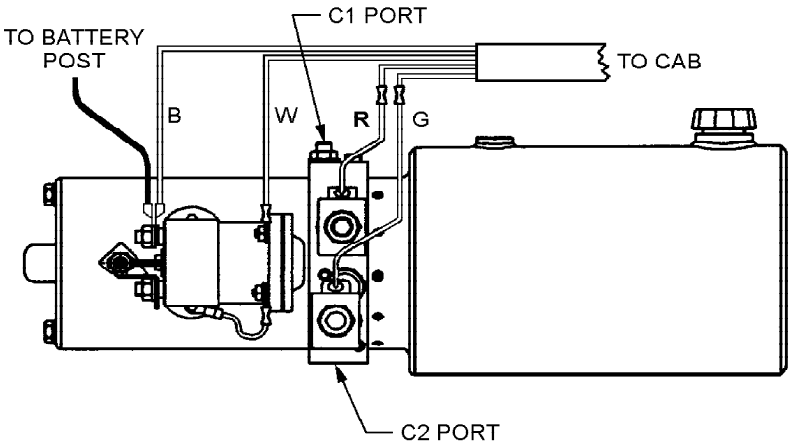
NOTE: ENERGIZING 'B' COIL SENDS FLOW TO 'C1' PORT
ENERGIZING 'W' COIL SENDS FLOW TO 'C2' PORT



VENCO MANUFACTURING, INC.

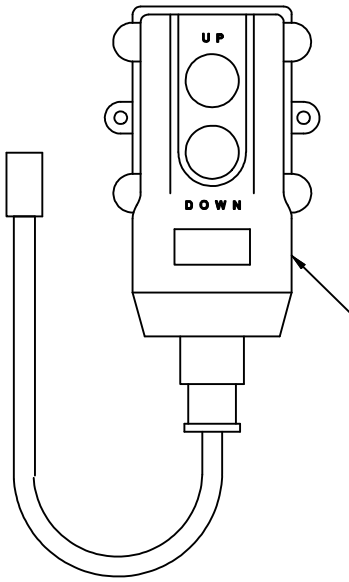
TITLE	DATE	SECTION
416081 ED POWER UNIT	2-15-99C	-
VC416/516, VC520/620	SUPERCEDES 12-10-98B	416306

416081M WITH MONARCH PUSH BUTTON CONTROL



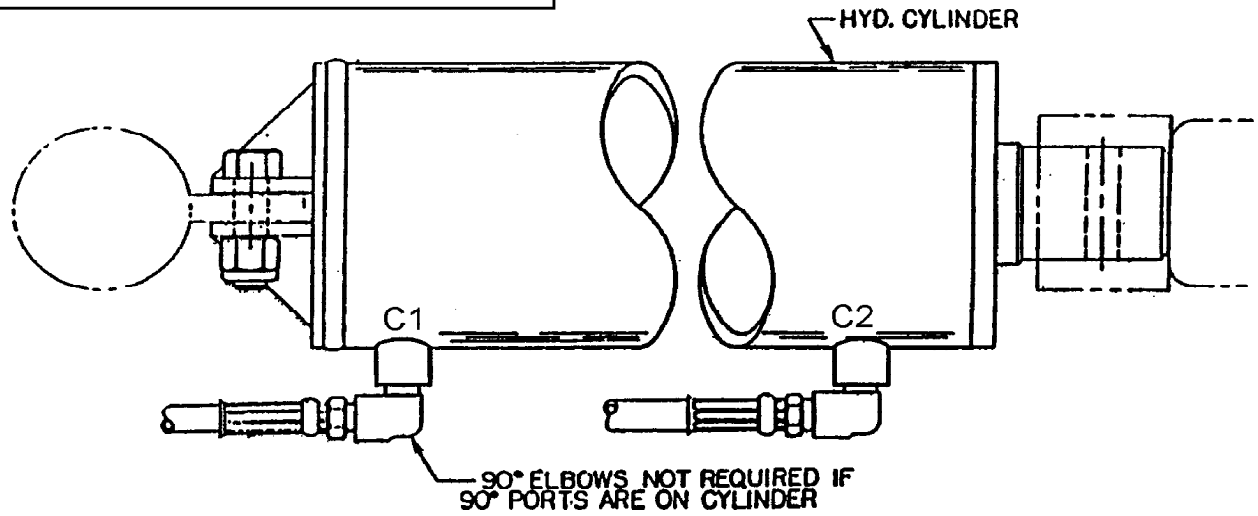
ELECTRICAL
W - WHITE WIRE
B - BLACK WIRE
G - GREEN WIRE
R - RED WIRE

HYDRAULICS
C1 - FULL END CYL
C2 - ROD END CYL



416533 MONARCH PUSH BUTTON CONTROL

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



VENCO MANUFACTURING, INC.

TITLE	DATE	SECTION
416081M ED POWER UNIT	9-21-99D	-
VC416/516, VC520/620	SUPERCEDES 2-15-99C	416307

HOIST MAINTENANCE AND OPERATION INSTRUCTIONS

A. Hoist Unit Lubrication

1. PTO Driven Pump - Tighten and grease (with high quality commercial grade grease) the lube fittings located in the PTO drive shaft assembly.
2. Lubricate all grease fittings on the hoist unit.
3. Lubricate the rear hinge assembly.
4. The hoist system should be serviced at the same time the truck is serviced, and sooner if the hoist unit is performing heavy duty service.
5. Pump Reservoir - Shall be filled with the recommended oil per the manufacturer's instructions. Periodically check the hydraulic fluid and change when the truck engine oil is changed.

B. PTO Pump Operation

With the hoist and body completely installed, cycle the hoist several times to purge the hydraulic system of air. Operate the hoist system per the instructions in this manual and per the PTO manufacturer's instructions.

WARNING

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

CAUTION

For long service and safety from VC Hoists, it is important that the following procedure be followed each time the hoist is operated:

1. Engage the PTO from the truck cab and adjust the engine speed to obtain the correct PTO and lift speed desired.
2. Pull the pump knob out. This will cause the hoist to raise. Refer to Drawing 520078.
3. When the hoist has reached its maximum capacity, the pump will bypass through the relief valve. To prevent the pump from bypassing, push the pump knob to the center/middle position. Whenever the pump knob is centered, the hoist will stop moving and hold its position.

   CAUTION

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

4. To lower the hoist, push the pump knob in.

   NOTE

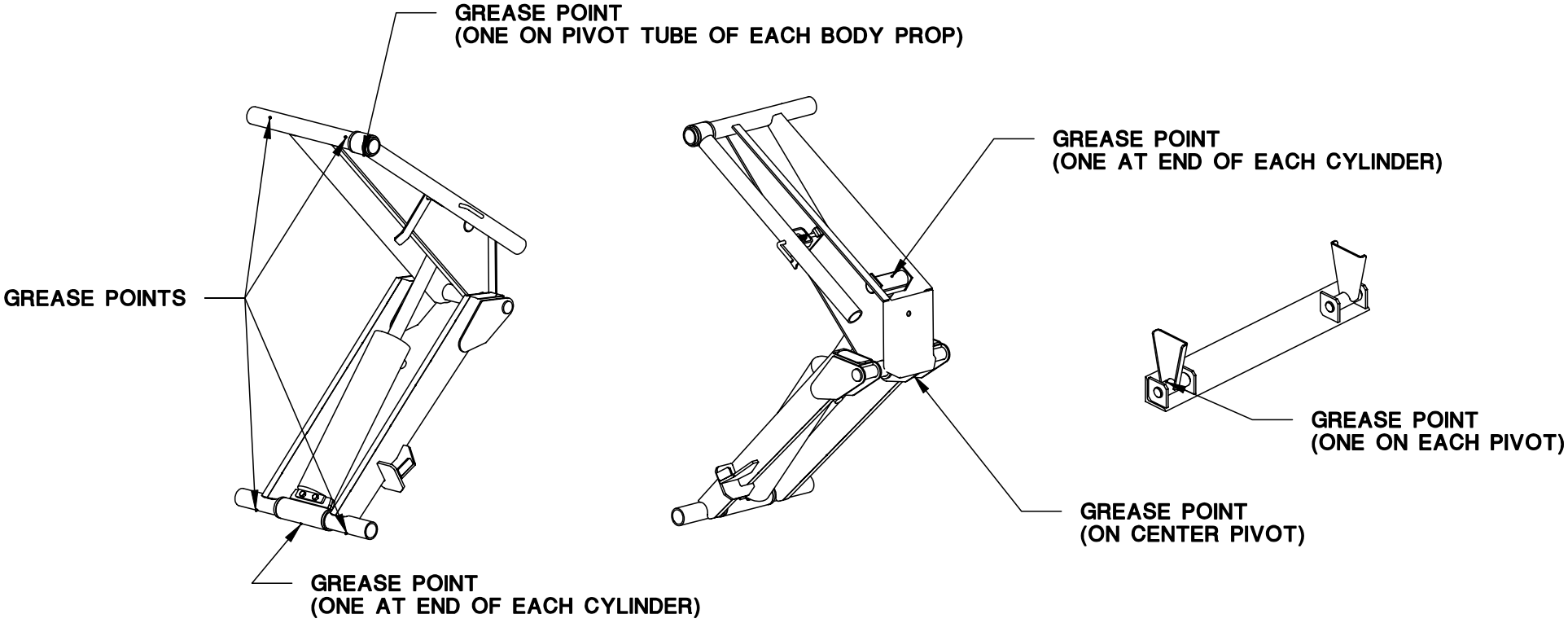
   The Venco Hoists powered by PTO drive pumps must be "powered down". Failure to "power down" will cause the reservoir to overflow.

5. 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.
6. Disengage PTO from transmission per the manufacturer's instructions.

   WARNING

   Do not drive the truck without first disengaging the PTO drive shaft. Failure to disengage the PTO drive shaft may result in severe damage to the pump and pump drive unit.

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.

VENCO MANUFACTURING, INC.	TITLE	DATE	SECTION
	GREASE POINTS FOR HOISTS	9-4-02	-
	VC416/516/520/620/628/5520/6620/6628	SUPERSEDES -	520054

BODY PROP USE AND WARNINGS

D. Body prop(s): Federal Regulation 1926.601, 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). See Paragraphs D.1. & D.2. below.

WARNING

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

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

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

Read operation of safety strut and caution labels before operating the hoist.

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 inspection 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 longer than 15 feet in length, two (2) body props should be used.

   Note: For all dump bodies two (2) body props are required.

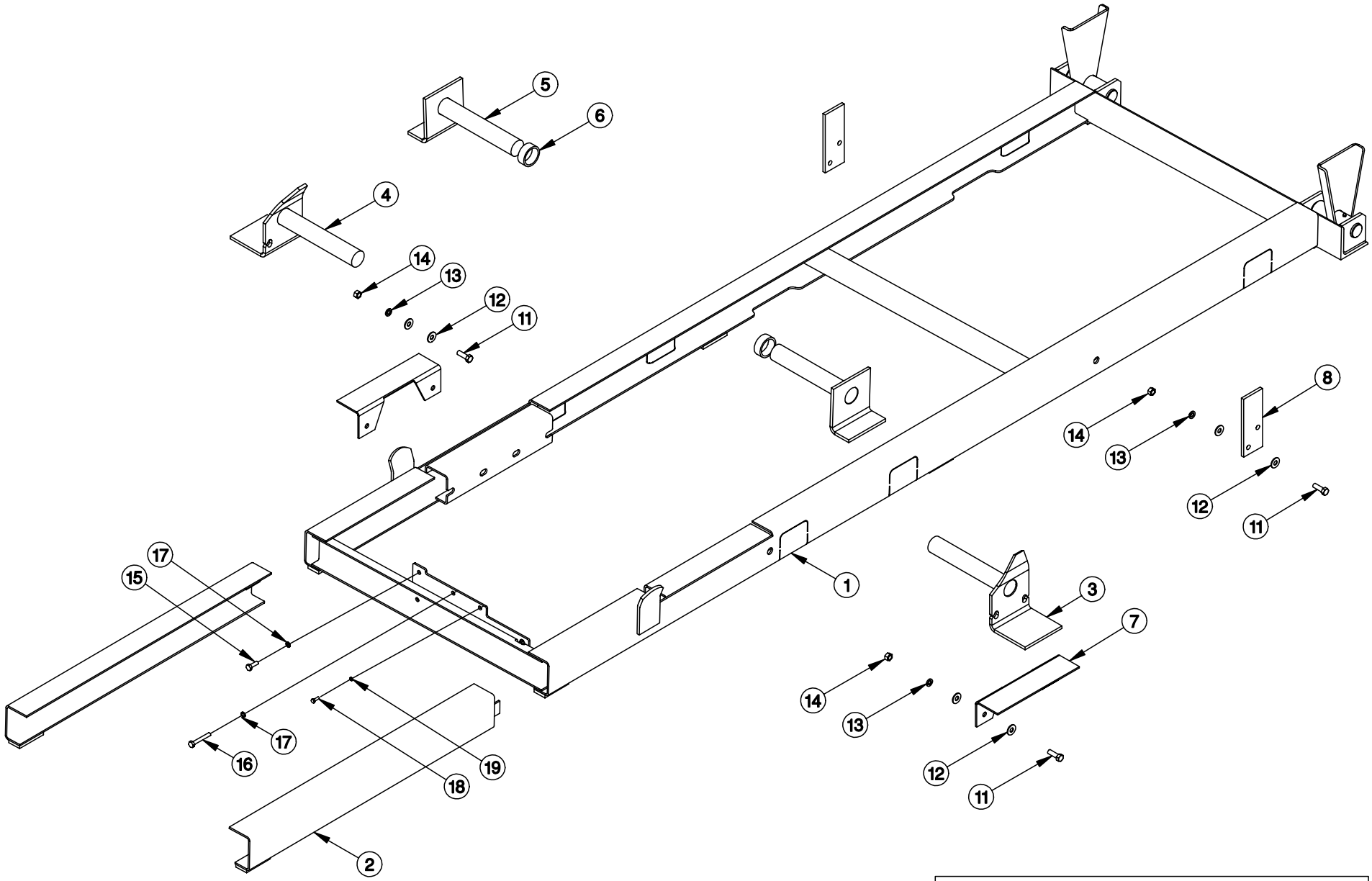
3. On models equipped with a spring-loaded release pin, use a suitable tool to pull out the release pin to release the body prop from the hoist frame. This will release the body prop allowing it to swing downward to a vertical position.

4. Make sure that the body prop is aligned with the body prop foot rest (the body prop will be in a vertical position), then allow the truck body to move downward until the body prop is seated in the foot rest. Note: Do not power down after making contact with body prop foot rest.

5. To disengage the body prop, raise the truck body until the body prop swings freely away from the foot pad. Using a suitable tool, place the tool in a leverage position on the body prop and propel sharply to the left and upward (or 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 the hoist is operated.

   WARNING

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



REPLACEMENT PARTS LIST REF 520612

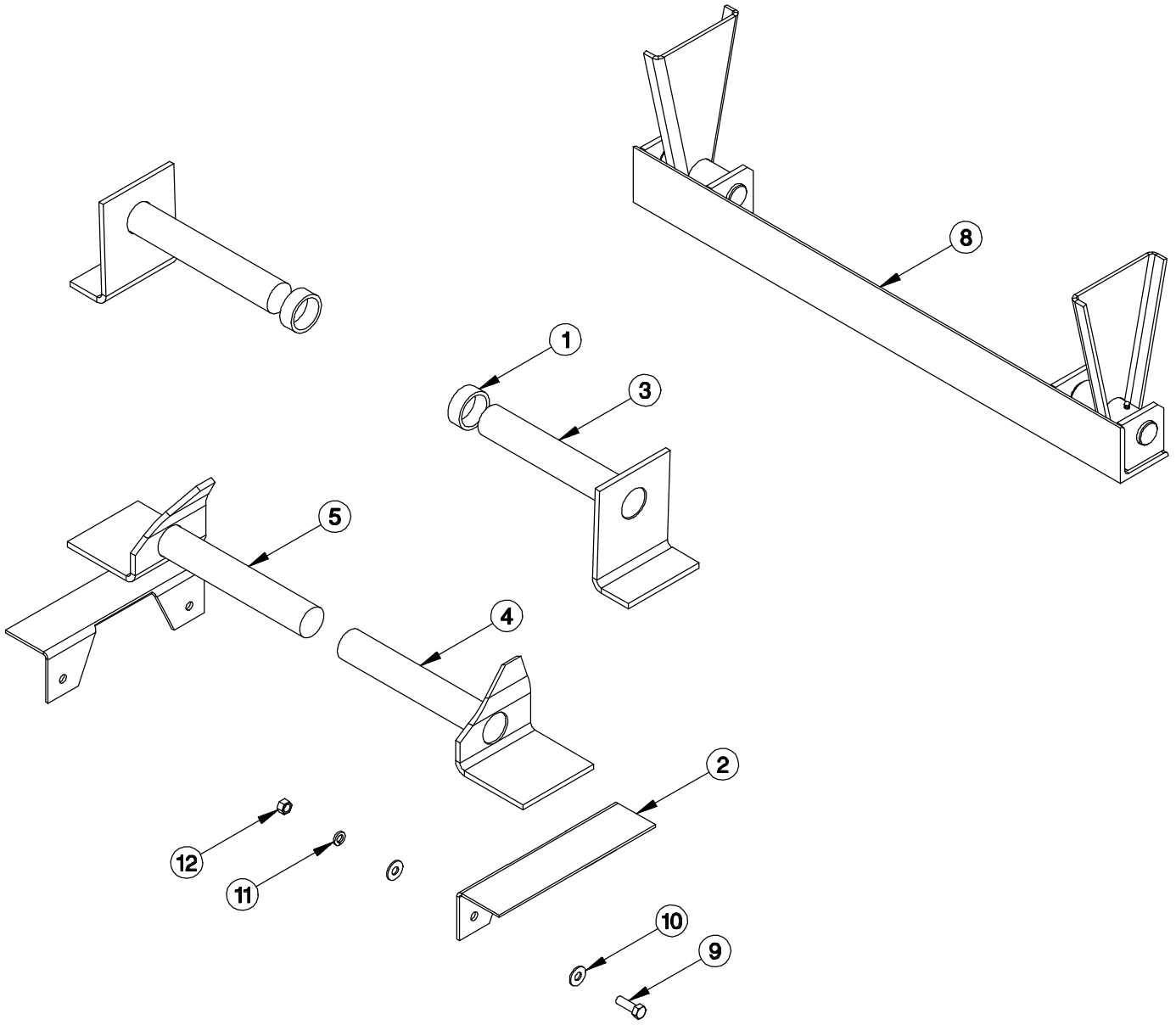
VENCO MANUFACTURING, INC.	TITLE REPLACEMENT PARTS DRAWING	DATE 4-24-03A	SECTION H200
	VC 520 WITH SUBFRAME	SUPERSEDES 11-17-98	520611

VC 520 WITH SUBFRAME
REPLACEMENT PARTS LIST

ITEM	PART NUMBER	QTY	DESCRIPTION
1	▲ 520590	1 ▲	SUBFRAME WELDED ASSEMBLY
2	▲ 520588	- ▲	SUBFRAME EXTENSION KIT (OPTIONAL)
3	520524-1	1	LOWER PIVOT ASSEMBLY - RIGHT
4	520524-2	1	LOWER PIVOT ASSEMBLY - LEFT
5	520527	2	UPPER PIVOT ASSEMBLY
6	520530	2	COLLAR - UPPER PIVOT
7	520531	2	FRAME MOUNTING ANGLE
8	520532	2	BRACKET - FRAME TIE DOWN
9	* 520533	1	PRESSURE HOSE - MALE 5' X 3/8"
10	* 416045	1	RETURN HOSE - MALE 7' X 3/8
11	!HHCS05013150	12	HEX HEAD CAP SCREW - 1/2"-13 x 1-1/2" LG.
12	!FWSH-050	24	FLAT WASHER - 1/2"
13	!LWSH-050	12	LOCK WASHER - 1/2"
14	!HNUT-05013	12	HEX NUT - 1/2"-13
15	!HHCS03816075	1	HEX HEAD CAP SCREW - 3/8"-16 x 3/4" LG.
16	!HHCS03816200	1	HEX HEAD CAP SCREW - 3/8"-16 x 2" LG.
17	!LWSH-038	2	LOCK WASHER - 3/8"
18	!HHCS02520075	1	HEX HEAD CAP SCREW - 1/4"-20 x 3/4" LG. (ES ONLY)
19	!LWSH-025	1	LOCK WASHER - 1/4" (ES ONLY)
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	-	-	-
28	-	-	-
29	-	-	-
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-

* ITEM NOT SHOWN ON DRAWING

REPLACEMENT PARTS DWG REF 520611



REPLACEMENT PARTS LIST REF 520614

VENCO MANUFACTURING, INC.

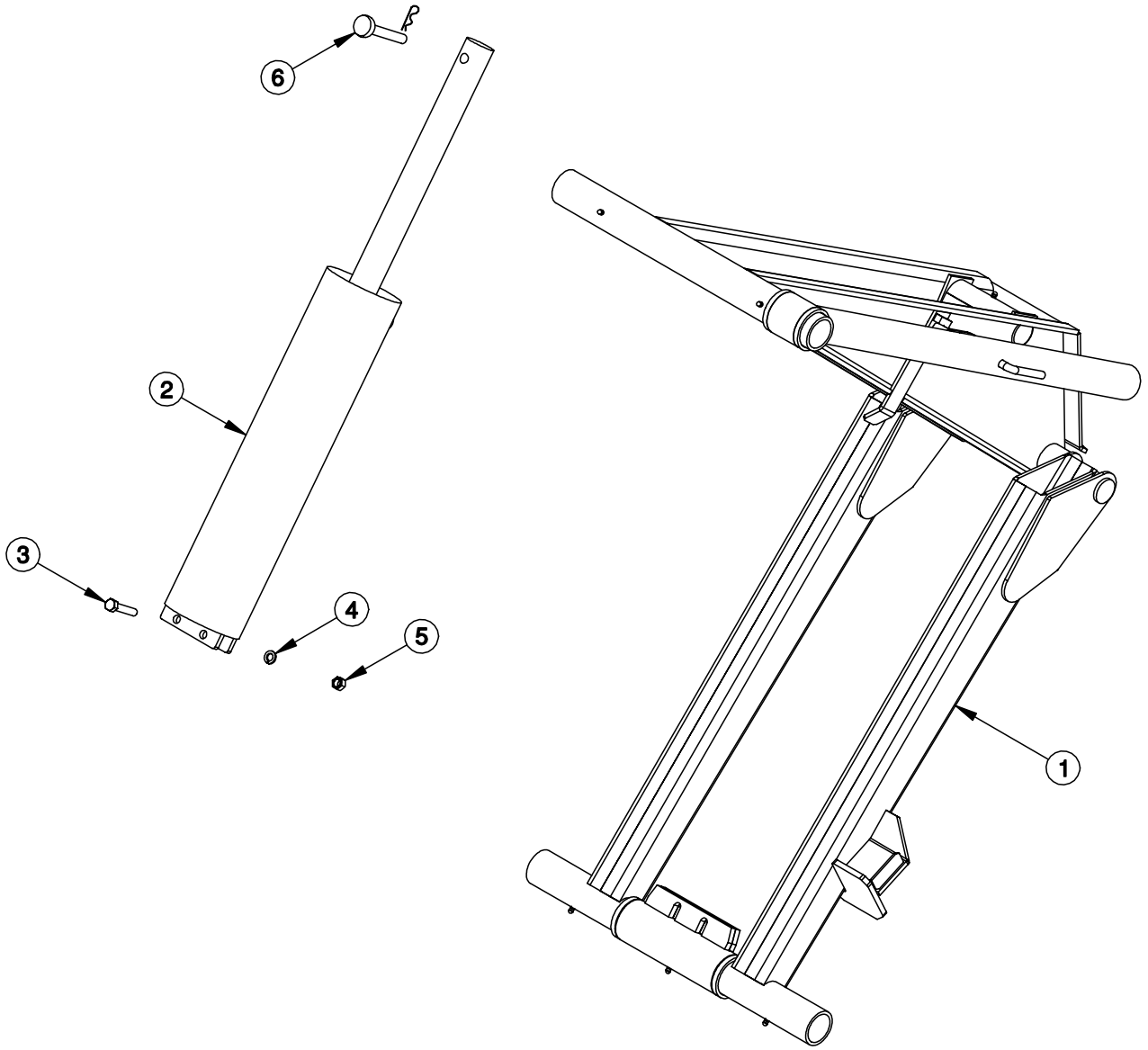
TITLE	DATE	SECTION
REPLACEMENT PARTS DRAWING	11-17-98	H200
VC 520 (NON-SUBFRAME)	SUPERSEDES -	520613

VC 520 (NON-SUBFRAME)
REPLACEMENT PARTS LIST

ITEM	PART NUMBER	QTY	DESCRIPTION
1	520530	2	COLLAR - UPPER PIVOT
2	520531	2	FRAME MOUNTING ANGLE
3	520562	2	UPPER PIVOT ASSY
4	520563-1	1	LOWER PIVOT ASSEMBLY ▲
5	520563-2	1	LOWER PIVOT ASSEMBLY ▲
6	* 520533	1	PRESSURE HOSE - MALE 5' X 3/8"
7	* 416045	1	RETURN HOSE - MALE 7' X 3/8
8	662057	1	REAR HINGE ASSY
9	!HHCS05013150	4	HEX HEAD CAP SCREW - 1/2"-13 x 1-1/2" LG.
10	!FWSH-050	8	FLAT WASHER - 1/2"
11	!LWSH-050	4	LOCK WASHER - 1/2"
12	!HNUT-05013	4	HEX NUT - 1/2"-13
13	-	-	-
14	-	-	-
15	-	-	-
16	-	-	-
17	-	-	-
18	-	-	-
19	-	-	-
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	-	-	-
28	-	-	-
29	-	-	-
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-

* ITEM NOT SHOWN ON DRAWING

REPLACEMENT PARTS DWG REF 520613



REPLACEMENT PARTS LIST REF 520615

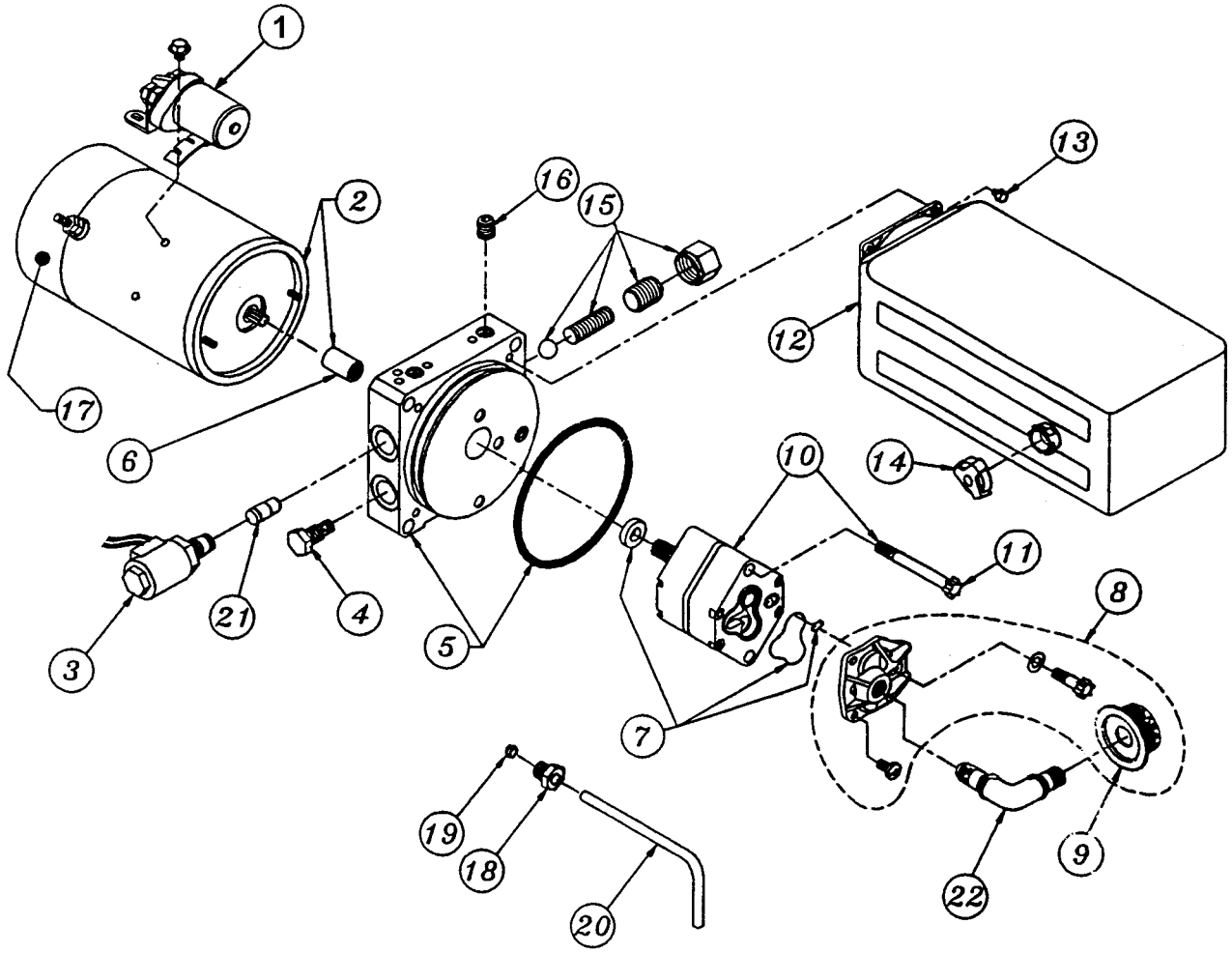
VENCO MANUFACTURING, INC.	TITLE REPLACEMENT PARTS DRAWING	DATE 8-4-00	SECTION H200
	VC 520	SUPERSEDES -	520616

520503
REPLACEMENT PARTS LIST

ITEM	PART NUMBER	QTY	DESCRIPTION
1	520502	1	SCISSORS ASSEMBLY
2	520504	1	HYDRAULIC CYLINDER
3	!HHCS05013275-8	2	HEX HEAD CAP SCREW - 1/2"-13 x 2-3/4" LG. GR. 8
4	!LWSH-050	2	LOCK WASHER - 1/2"
5	!HNUT-05013	2	HEX NUT - 1/2"-13
6	416545	1	5/8 X 3-1/2 CLEVIS PIN ASSEMBLY ▲
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-
11	-	-	-
12	-	-	-
13	-	-	-
14	-	-	-
15	-	-	-
16	-	-	-
17	-	-	-
18	-	-	-
19	-	-	-
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	-	-	-
28	-	-	-
29	-	-	-
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-

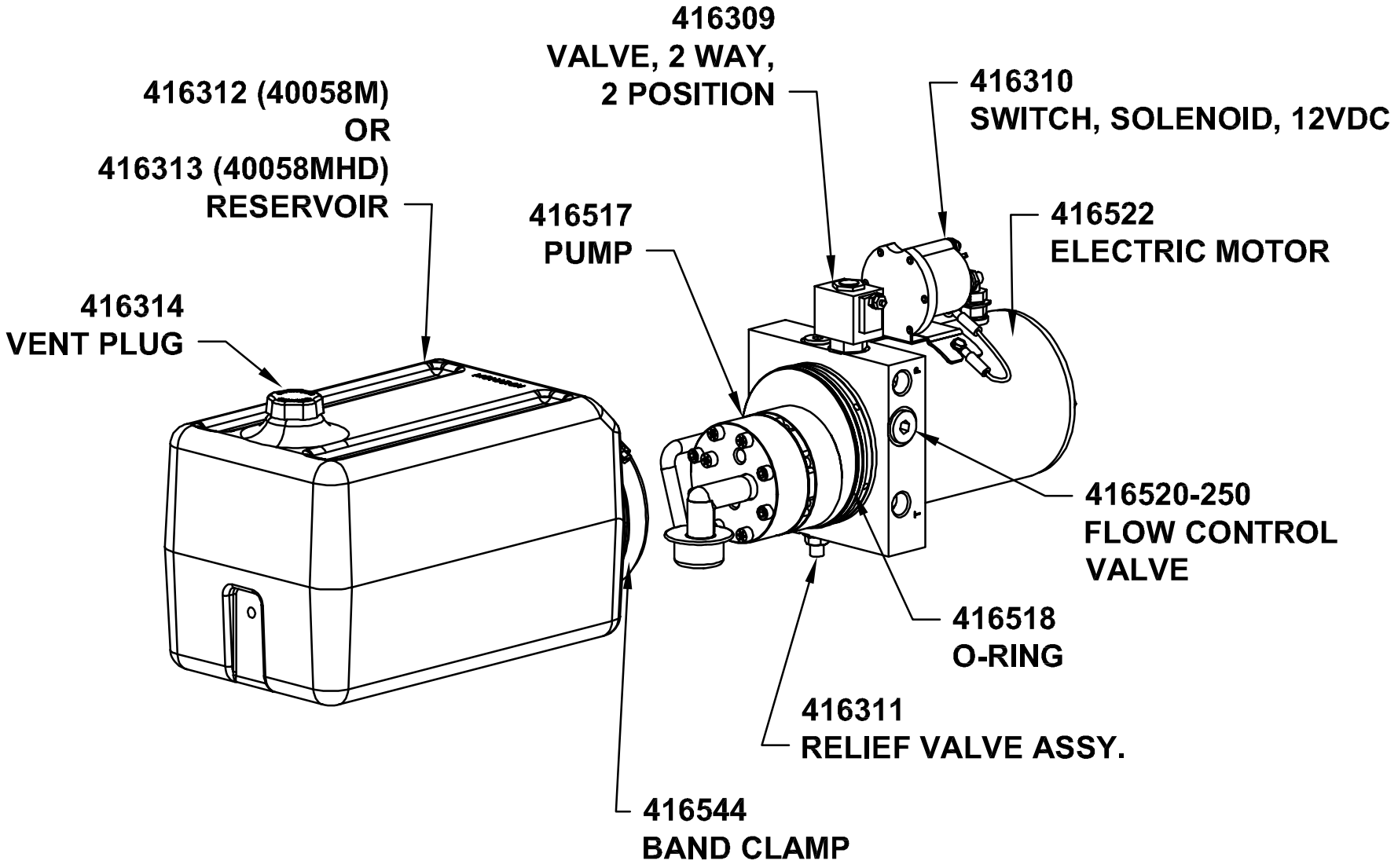
REPLACEMENT PARTS DWG REF 520503

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



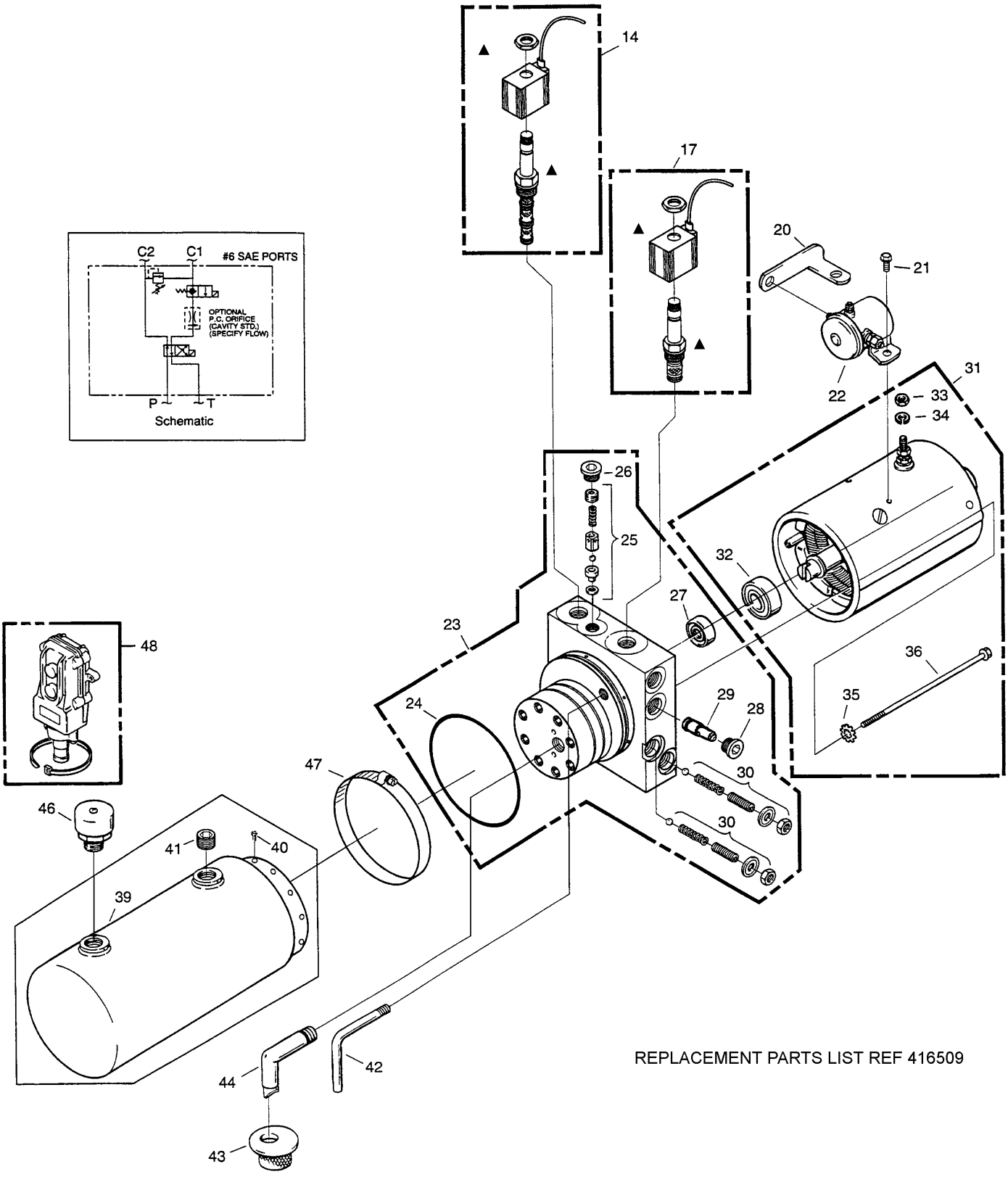
ITEM NO.	DESCRIPTION	FENNER P/N	QTY.
1	SOLENOID 12 VDC	4795-AA ▲	1
2	MOTOR 12 VDC	1787-AC	1
3	VALVE NC 12 VDC	EI-1019-04	1
4	VALVE CARTRIDGE CHECK	2507-AA	1
5	RESERVOIR O-RING	G1-1073-48	1
6	COUPLING	1118-AA	1
7	PUMP O-RING KIT	K-40	1
8	INLET PLUMBING KIT	KH	1
9	FILTER	1611-AA	1
10	PUMP ASSEMBLY	PS-2.0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



VENCO MANUFACTURING, INC.	TITLE PARTS LIST & DRAWING	DATE 2-4-04	SECTION -
	40058M & 40058MHD POWER UNITS	SUPERSEDES -	416308

REPLACEMENT PARTS 416081M



REPLACEMENT PARTS LIST REF 416509

VENCO MANUFACTURING, INC.	TITLE: REPL. PARTS DWG	DATE: 4-11-00B	SECTION: -
	416081M POWER UNIT	SUPERCEDES: 11-17-99A	416508

ITEM #	PART #	DESCRIPTION
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	416510	VALVE, 4 WAY - 2 POSITION (12V)
15	-	-
16	-	-
17	416513	VALVE, 2 WAY - 2 POSITION, 12 VDC, GROUNDED
18	-	-
19	-	-
20	-	STRAP, MOTOR-SOLENOID CONNECTING
21	-	SCREW, ROUND HEAD MACHINE 10-32 x 1/4"
22 ▲	416310	SWITCH, SOLENOID, 12VDC, 3-POST GROUNDED
23	416517	PUMP ASSY, GEAR CODE 03 (#6 SAE PORTS)
24	416518	O-RING, INDUSTRIAL (3-5/8 x 3-7/8 x 1/8)
25	416519	PARTS KIT, VALVE ASSY, POPPET/BALL CHECK
26	-	PLUG
27	-	SEAL
28	-	PLUG, #8 SAE
29	416520	VALVE, PRESS COMP. ORIFICE (2.5 GPM)
30	416521	PARTS KIT, RELIEF VALVE
31	416522	MOTOR, ELECTRIC, 12 VDC
32	-	BEARING, BASE, MOTOR
33	-	HEX NUT - 5/16-24
34	-	LOCK WASHER - 5/16"
35	-	STAR WASHER - 1/4"
36	-	HEX HEAD CAP SCREW - 1/4-20 x 6-1/2"
37	-	-
38	-	-
39	416523	PLASTIC RESERVOIR - 6.5" X 5.5" X 10"
40	-	THREAD FORMING SCREW - 10-24 x 3/8"

ITEM #	PART #	DESCRIPTION
41	-	PLUG - 3/8" NPTF
42	-	RETURN TUBE - 1/8"
43	-	FILTER SCREEN (SUCTION)
44	-	FILTER SUCTION TUBE - 3/8" NPTF 90 DEG.
45	-	-
46	416524	PLUG, VENT 3/8" NPT
47	416544	BAND CLAMP
48	416525	BOX ASSEMBLY, PUSH BUTTON (WEATHER PROOF)
49	-	-
50	-	-
51	-	-
52	-	-
53	-	-
54	-	-
55	-	-
56	-	-
57	-	-
58	-	-
59	-	-
60	-	-
61	-	-
62	-	-
63	-	-
64	-	-
65	-	-
66	-	-
67	-	-
68	-	-
69	-	-
70	-	-
71	-	-
72	-	-
73	-	-
74	-	-
75	-	-
76	-	-
77	-	-
78	-	-
79	-	-
80	-	-

REPLACEMENT PARTS DWG REF 416508

VENCO MANUFACTURING, INC.

REPLACEMENT PARTS LIST	4-30-04E	-
416081M POWER UNIT	7-27-01D	416509