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HLD-SERIES HYDRAULIC DRUM DUMPERS

Receiving Instructions

After delivery, remove the packaging from the product. Inspect the product closely to determine whether it sustained damage during transport. If damage is discovered, record a complete description of it on the bill of lading. If the product is undamaged, discard the packaging.

NOTE: The end-user is solely responsible for confirming that product design, use, and maintenance comply with laws, regulations, codes, and mandatory standards applied where the product is used.

Technical Service & Replacement Parts

For answers to questions not addressed in these instructions and to order replacement parts, labels, and accessories, call our Technical Service and Parts Department at (260) 665-7586. The Department can also be contacted online at https://www.vestil.com/page-parts-request.php.

Electronic Copies of Instruction Manuals

Additional copies of this instruction manual may be downloaded from https://www.vestil.com/page-manuals.php.

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SPECIFICATIONS

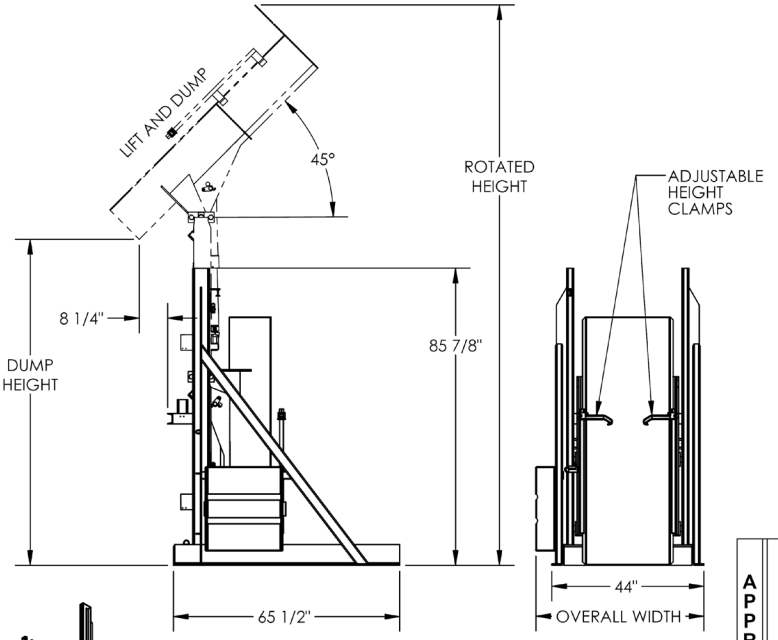
Documents that provide specifications for HLD series hydraulic drum dumpers are available online to anyone who visits Vestil's website. Specifications include dimensions, net weight, and capacity information. To access the appropriate specifications document, navigate to the HLD webpage at https://www.vestil.com/product.php?FID=767. Scroll the page to the entry for the specific model you purchased. Click the button in the "PDF" column that looks like a pencil inside a blue-bordered box. A PDF file will open. This file is the specifications document. Print a copy of the document and keep it with your copy of this manual. If your model is not included on the HLD webpage, or if you cannot access and/or print the specifications document, contact the *TECHNICAL SERVICE DEPT*. Contact information for the department is provided on the cover page of this manual. The following is an exemplar specifications document.

NOTE: 1IN. = 2.54CM; 1KG = 2.2 LB.

LIFT-AND-DUMP HYDRAULIC DRUM DUMPERS - HLD-94-10-S

APPROX WEIGHT: 1124.70 lbs.
DOES NOT INCLUDE WEIGHT OF POWER OR PACKAGING!!!

*** ANY ADDITIONS, DELETIONS, OR OMISSIONS MUST BE CORRECTED ON THIS DRAWING AS THIS DRAWING WILL BE CONSIDERED ALL INCLUSIVE ***
ALL GRAPHICS PROVIDED ARE FOR REFERENCE ONLY. IF CERTAIN DIMENSIONS ARE CRITICAL PLEASE VERIFY THOSE DIMENSIONS WITH YOUR SALESPERSON



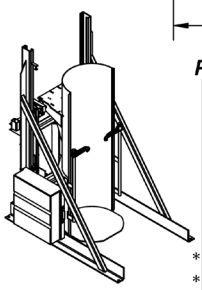
STANDARD FEATURES

MODEL NUMBER IS HLD-94-10-S
LIFT AND DUMP DESIGN
INDEPENDENT LIFT AND DUMP OPERATION
MAX. DUMP HEIGHT IS 94"
MIN. DUMP HEIGHT IS 48"
OVERALL WIDTH IS 51"
OVERALL LENGTH IS 65 1/2"
LEVEL HEIGHT IS 85 7/8"
ROTATED HEIGHT IS 163"
DUMP ANGLE IS 45°
UNIT IS STATIONARY
MAX CAPACITY IS 1,000 LBS.
WARNING:
CHECK LOCAL AND STATE CODES!
3000 PSI HYD. COMPONENT RATING

SPECIAL FEATURES

NONE

DIMENSION TOLERANCE ± 1/4"



PLEASE CIRCLE SPECIFICATIONS:

POWER	AC	~~* DC~~	~~* AIR/OIL~~	
MOTOR VOLTAGE	~~115~~	~~208~~	~~230~~	460
DEDICATED CIRCUIT REQUIRED				
MOTOR PHASE	~~SINGLE~~	THREE		
CONTROL	HAND	~~* FOOT~~		
~ ALL BATTERY CHARGERS ARE 115V AC ~				
* BATTERY CHRG.	REMOTE	ON-BOARD		
* CHRG. INDICATOR	YES	NO		

* AVAILABLE AT ADDITIONAL COST

APPROVAL

I, THE UNDERSIGNED, AGREE THAT THE PRODUCT AS REPRESENTED SATISFIES DESIGN AND DIMENSION REQUIREMENTS. I ALSO ACKNOWLEDGE MY DUTY TO CONFIRM PRODUCT AND INSTALLATION COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS AND STANDARDS.
ANY MODIFIED UNITS ARE NON-RETURNABLE
[ ] As drawn [ ] As marked
Signed:_____ Date:_____
Printed Name:_____
LEAD TIME WILL START UPON RECEIPT OF SIGNED APPROVAL DRAWING

FOR INTERNAL USE ONLY PROJECT SIGN OFF	
SALES	
ENG.	
FAB.	
POWER	

DISTRIBUTOR'S NAME: VESTIL MANUFACTURING
P.O.# X
W.O.# X
DRAWN BY: CA
DATE: 09/02/2011
SALES: X
REFERENCE: X
SCALE: 1:34
FILE NAME: 09-007-099
QUOTED LEAD TIME: X
QUOTE # X

SIGNAL WORDS

This manual uses SIGNAL WORDS to indicate the likelihood of personal injuries, as well as the probable seriousness of those injuries, if the product is misused in the ways described. Other signal words call attention to uses of the product likely to cause property damage. The following are signal words used in this manual and their definitions.

⚠ DANGER	**Identifies a hazardous situation which, if not avoided, WILL result in DEATH or SERIOUS INJURY. Use of this signal word is limited to the most extreme situations.**
⚠ WARNING	**Identifies a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY.**
⚠ CAUTION	**Indicates a hazardous situation which, if not avoided, COULD result in MINOR or MODERATE injury.**
NOTICE	**Identifies practices likely to result in product/property damage, such as operation that might damage the product.**

SAFETY INSTRUCTIONS

Vestil strives to identify all hazards associated with the use of our products. However, material handling is dangerous and no manual can address every risk. The most effective way to avoid injury is for the end-user to exercise sound judgment whenever using this product.

⚠ DANGER

Electrocution might result if any part of the dumper contacts electrified wires.

- DO NOT *contact* electrified wires with any part of the dumper or an applied load.
- DO NOT install or use the HLD in an area where contact with electrified wires might occur.
- Always inspect the usage area for unusual conditions that require special precautions *before* operating the dumper.

⚠ WARNING

Improper or careless operation could result in serious personal injuries or death.

- ONLY use the drum dumper as a means for emptying appropriately sized drums. See *OPERATING THE DRUM DUMPER* on p. 5.
- DO NOT use a damaged dumper. Inspect the dumper as instructed the *INSPECTIONS* section of this manual on p. 6. DO NOT use the HLD unless it is in *SATISFACOTRY CONDITION*. See *RECORD OF SATISFACTORY CONDITION* on p. 4.
- DO NOT stand beneath or travel under the dumper chute while it is elevated or allow others to do so.
- DO NOT lift people with the chute or allow people to ride on the chute.
- DO NOT use UNLESS all labels shown in the *LABELING DIAGRAM* on p. 18 are in place, undamaged, and easily readable.
- DO NOT exceed the maximum rated load of the dumper. The weight of the drum to be dumped plus the weight of its contents must not exceed the maximum rated load.
- DO NOT modify the box dumper in any way UNLESS you first obtain express, written approval from Vestil. Unapproved modifications might make the dumper unsafe to use, and could result in operator and/or bystander injury.
- Avoid contact with the drum chute and loads applied to the chute. This drum chute that elevates and pivots. Stand to the side of the dumper and watch the chute carefully while operating the dumper.
- DO NOT operate dumper unless BOTH drum clamps securely engage the drum rim. See Figures 2A and 2B on p. 5
- DO NOT the dumper unattended if the chute is elevated and/or tilted. Immediately after dumping a drum, return the chute to the home position and remove dumped drum from the chute.
- DO NOT modify this product in any way. Modifications automatically void the *LIMITED WARRANTY* and might make the table unsafe to use
- Instruct all people to clear the area around the dumper BEFORE operating it.
- DO NOT load or operate the dumper UNLESS it is either securely attached to floor (HLD-##-##-S models) or both floor locks are applied (HLD-##-##-P models).

INSTALLING THE DRUM DUMPER

NOTE: Only Applies to Stationary Units **HLD-94-10-S, HLD-94-15-S, HLD-116-10-S, HLD-116-15-S.**

Responsibility for complying with local building code requirements, municipal/county ordinances, state OSHA requirements, etc. rests exclusively with the end-user. The instructions that appear below are recommendations about essential, minimum steps necessary for safe installation. If law enforced where the dumper is used requires you to depart from these directions, Vestil is not responsible for *any* consequential damages sustained as a result of the installation.

Installation requires the following equipment, tools, and materials:

- Forklift rated for loads equal to the net weight of your HLD model. See *Specifications* document
- Lag bolts: ½ in. by at least 4in. (length) [approximately equivalent to 1.3cm by at least 10.2cm]
- Masonry drill and ½ in. masonry drill bit
- Wrench: ½ in.
- Grout and steel shims
- Power supply circuit matched to motor voltage and current requirements

NOTE: The end-user is responsible for providing over-current and short circuit protection. Refer to the appropriate *ELECTRICAL CIRCUIT DIAGRAM* on p. 10-12.

Step 1: Position the dumper as desired with a forklift.

Step 2: Drill holes approximately 4in. (10cm) deep.

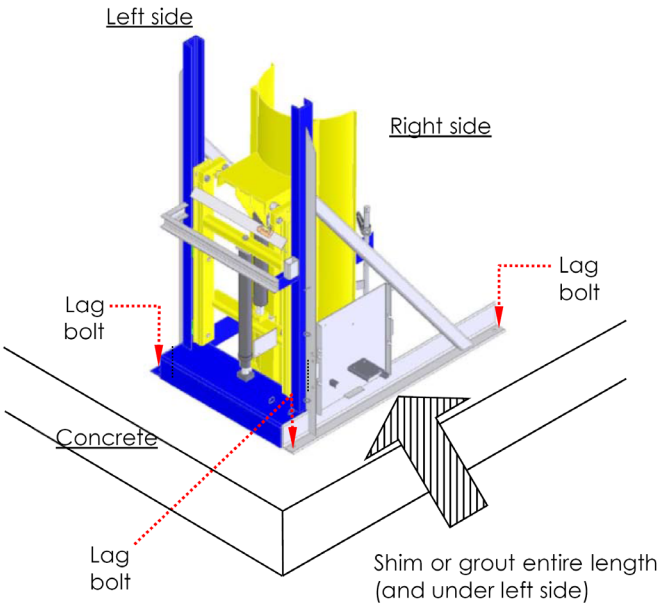
Step 3: Secure the dumper to the floor by inserting the lag bolts through the (5/8 in.) bolt holes in the anchor brackets (dotted lines in FIG. 1).

Step 4: Shim and/or grout the sides of the frame.

Step 5: Connect the power cord to the power supply.

Step 6: Read the *OPERATING THE DRUM DUMPER* section of this manual on p. 5. Then, cycle the dumper all the way up and back down. Press the LIFT RAISE button of the hand controller until the chute reaches its maximum elevation. Then, press the TILT RAISE button until the chute tilts as far as it can. Return the chute to the upright position by pressing the TILT LOWER button. Lower the chute to the home position by pressing the LIFT LOWER button.

FIG. 1: Installation diagram



Step 7: Check the oil level in the reservoir. Fully raise the chute (to the 45°) "dumping position," and then observe the level of oil in the reservoir. The surface of the oil should be 1 to 1½ inches below the fill hole.

RECORD OF SATISFACTORY CONDITION (THE "RECORD")

Before putting the unit into service, record its condition. Thoroughly photograph the unit from multiple angles. Include close range photographs of the drum clamps, pivot points, labeling, the chute, frame elements, and casters/wheels (HLD-##-##-P units) or floor anchoring sites (HLD-##-##-S stationary units). Use the handheld controller to raise and lower, and tilt and un-tilt the chute. Describe the motion of the chute, e.g. smooth and at a constant rate, as well as sounds produced by the power unit, the frame, and at pivot points. Remove the cover of the power unit and photograph the internal components. Collect all photographs and writings into a single file. This file is a record of the unit in *satisfactory condition*. Compare the results of all *INSPECTIONS* to this record to determine whether the unit is in satisfactory condition. Do not use the dumper unless it is in satisfactory condition. Purely cosmetic changes, like damaged paint/powdercoat, do not constitute changes from satisfactory condition. However, touchup paint should be applied to all affected areas as soon as damage occurs to prevent rusting and/or corrosion from occurring.

OPERATING THE DRUM DUMPER (ALL MODELS)

Load the chute.

1. Place the drum in the chute: The drum should rest against the back of the chute.

NOTE: Use only properly sized drums: HLD's are designed to dump open-top drums. Drum width and height must be such that both drum clamps can securely engage the lip of the drum. See Fig.'s 2A and 2B.

2. Secure the drum to the chute with the clamps: Adjust the position of the clamps on the clamp rails to match the height of the drum. Press down on the end of a clamp spring. See Fig. 2B. Rotate the clamps until the lip hooks are inside the drum. Press the clamps down until they solidly contact the top of the drum. Rotate the clamps so that the lip hooks press against the inside of the drum lip.

3. Dump the container:

NOTE: Apply BOTH floor locks of portable units BEFORE operating the chute.

a) Adjust the height of the chute/drum to the height of the waste receptacle that will receive the trash from the drum. To raise the chute *without tilting it*, press the RAISE LIFT portion of 4-point controller button. See FIGS. 3A, 3B. The cylinders will extend and elevate the chute only while the operator continues to press the button. The chute will maintain position once the button is released.

b) To tilt the chute and dump the contents of the drum, press the RAISE TILT button to raise the chute to the dumping position. The cylinders will extend and raise the chute only while the operator continues to press the button. The chute will maintain its position as of the instant the button is released.

NOTE: If the net weight of the drum and its contents exceeds the maximum rated load of the dumper, a relief valve (incorporated into the hydraulic system) will open. While the relief valve is open, the hydraulic cylinders will not extend, and therefore the chute will not be able to elevate or dump.

4. Return the chute to the loading position: press the LOWER TILT button on the controller to return the chute to the home position; then press the LOWER LIFT to lower the chute to the loading position.

5. Remove the emptied drum from the chute.

FIG. 2A: HLD side view

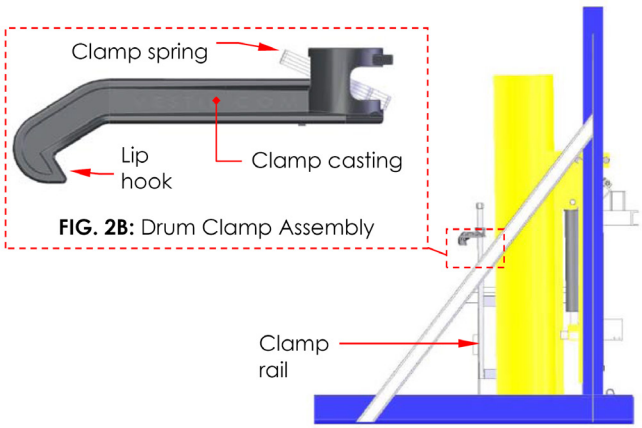
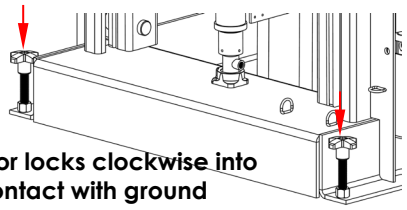


FIG. 2B: Drum Clamp Assembly

APPLY FLOOR LOCKS (PORTABLE UNITS)



Turn floor locks clockwise into solid contact with ground

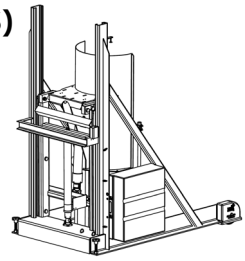
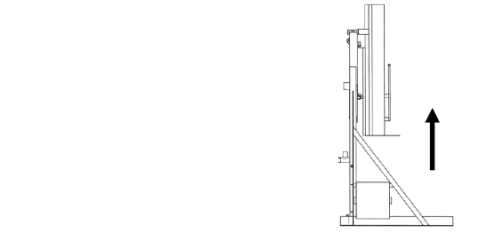
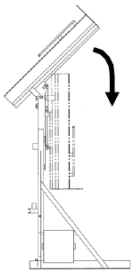


FIG. 3A: Pendant controller functions

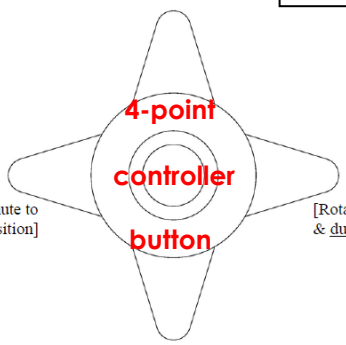


[Elevates the trash chute]
RAISE LIFT

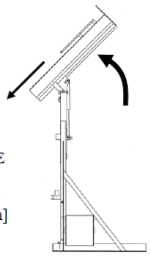
FIG 3B: Handheld controller



LOWER TILT
[Rotates chute to vertical position]

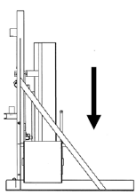


RAISE TILT
[Rotates chute & dumps trash]



LOWER LIFT
[Lowers the trash chute]

Chute in HOME position



INSPECTIONS

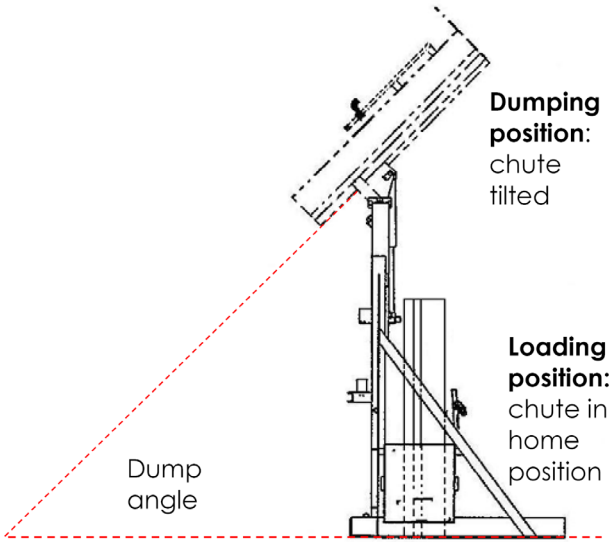
Regular maintenance is essential for maximizing the service life of this product. Compare all inspection results to the *RECORD OF SATISFACTORY CONDITION* discussed on p. 4. Only use the drum dumper if it is in satisfactory condition. If an inspection reveals any changes from satisfactory condition, complete all repairs before returning the dumper to service. Only use manufacturer-approved replacement parts.

DON'T GUESS! Contact *TECHNICAL SERVICE* if you have questions that are not addressed in these instructions or if you are uncertain how to address an issue discovered during an inspection. Technical Service can be contacted by calling (260) 665-7586 and asking for the Service and Parts Department or by submitting your questions through Vestil's online parts and service portal at https://www.vestil.com/page-parts-request.php.

Before each use, inspect:

1. Wires: Look for damaged sheathing; exposed wire.
2. Hydraulic system: Check the oil tank and tubing/hoses for punctures, cuts, leaks.
3. Drum clamps: Inspect for damage such as deformation, looseness of fit, etc.
4. Frame: Check the cylinder brackets (elements welded to the frame to which the top and bottom of a cylinder are bolted/pinned), vertical and horizontal frame members, horizontal cross-member, and angle cross member, hinge blocks, and pivot shaft and spacer assemblies for cracking, deformation and corrosion.
5. Vertical lift limit switches: Press the LIFT RAISE button. The motor should stop as soon as the chute reaches maximum elevation. Press the LIFT LOWER button. The motor should turn off when the chute returns to home position.
6. Dump angle limit switches: Verify satisfactory function. The chute should not rotate more than:
Stationary [-S] units: 45 degrees
Mobile [-P] units: 40 degrees
7. Listen to the unit as it operates for unusual sounds e.g. grinding or popping, during operation. Watch for jerky movements. Contact maintenance personnel if you observe any unusual sound or movement and do not use the dumper until approved for service.

FIG. 4: Limit switch effect on dump angle



At least once per month, inspect the dumper as follows:

1. Oil level: Elevate and tilt the chute to dumping position; then observe the level of oil in the reservoir. The surface of the oil should be 1 to 1½ inches below the fill hole.
2. Pivot points: check the dumper for excessive wear at the pivot points between hydraulic cylinders and cylinder brackets, and between pivot shafts and hinge blocks;
3. Floor connection points: anchor bolts should prevent the frame from lifting off the ground during chute operation. Concrete around each anchor bolt should be intact—no cracking or flaking;
4. Fasteners: check each fastener connection. Tighten all loose connections;
5. Hoses and wires: check each wire and hose for damage (fraying, binding, etc.);
6. Labels: labels should be easily readable and undamaged, affixed to the dumper in the locations as shown in FIG. 8 on p. 13.
7. Drum clamps and springs: Inspect the clamps and clamp springs for damage deformation, looseness of fit. See FIG. 2A & 2B on p. 5. If a clamp cannot remain securely in place because the spring allows the clamp to slide down the clamp rail, then the clamp will not prevent a drum from sliding out of the chute. DO NOT use the drum dumper until the clamp springs have been replaced.

At least once per year, change the hydraulic oil if it becomes gritty or looks milky. Milky appearance is caused by water in the oil. With the chute in the home position, drain the oil and replace it with either Dexron transmission fluid or anti-wear hydraulic oil, viscosity grade 150 SUS at 100°F (ISO 32 cSt at 40°C).

POWER UNIT OPERATION

An electric motor directly coupled to a gear pump pressurizes the hydraulic system. Fluid pressure causes the lift and tilt cylinders to extend and retract. Cylinder movement performs the work required to raise and lower, and tilt and un-tilt the chute. A hydraulic manifold bolted directly onto the gear pump houses the hydraulic control components; each component is rated for 3,000psi working pressure. Important components of the power unit include:

- Electric motor: Motor voltage and phase (single or 3-phase) was selected at the time this unit was ordered. Every motor is dual-voltage capable.
- Gear pump: The pump shaft is coupled directly to the shaft of the electric motor. Several displacements are available that vary with the horsepower of the motor selected.
- Check valve: Prevents backflow of fluid through the pump. Allows the chute maintain position while the motor is inactive (no signal from the handheld controller).
- Pressure relief valve: While open, the valve provides a path for oil to return to the reservoir. The valve opens if hydraulic pressure exceeds 3,000psi.
- Lowering solenoid valve: An electrically-operated cartridge valve with an integral screen to keep contaminants from entering the valve.
- Pressure compensated flow control spool: The spool is located beneath the lowering valve. It governs the retraction rate of the cylinders and, therefore, the lowering rate of the drum chute. This component allows the chute to lower at a constant rate regardless of the weight of the drum and its contents.
- Hydraulic cylinders: Displacement style cylinders lift and tilt the chute. Each cylinder includes an integral bleeder valve located at top end. The valve is used to remove air from the hydraulic system.
- Velocity fuse: Safety device that prevents the flow of oil out of a cylinder if system pressure is disrupted. A cylinder cannot retract until its velocity fuse is deactivated, i.e. by repressuring the system.
- Hydraulic fluid: HO150 hydraulic fluid. To replenish the fluid, add anti-wear hydraulic fluid with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) like AW-32 or Dexron transmission fluid.

SEQUENCE OF OPERATION

Elevate the chute by pressing the RAISE LIFT button of the 4-point controller button. See FIGS. 3A & 3B, p. 5. In response to the signal from the controller, the motor turns and spins the gear pump. Oil flows out of the reservoir, through the suction filter and into the pump.

- The pump propels oil through the check valve to the lift cylinder (99-021-912-001 or 99-021-913-001 in the applicable exploded view).
- An upper travel limit switch turns off the motor when the chute reaches a preset elevation.
- Releasing the RAISE LIFT button immediately halts chute movement. The chute maintains position until a control button is pressed.

To lower the chute, press the LOWER LIFT button.

- Lowering valve opens and allows oil from the cylinders to bypass the check valve. Oil flows out of the cylinders to the reservoir through return hoses.
- Releasing the LOWER LIFT button during operation causes all downward movement to stop. The chute will remain in the same position until a control button is pressed.

To tilt the chute, press the RAISE TILT button. The motor turns and spins the gear pump. Oil is drawn from the reservoir, through the suction filter and into the pump.

- Pressurized oil flows through the check valve to the tilt cylinder (99-021-909-001 in FIGS. 9-12).
- Releasing the RAISE TILT button during operation immediately halts all chute movement.
- Additionally, an upper travel limit switch automatically turns off the motor when the chute reaches a preset 40° (mobile units) or 45° (stationary/bolt-down) tilt angle.

To un-tilt the chute, press the "LOWER TILT" button.

- Lowering valve opens and bypasses the check valve, which allows oil in the cylinders to flow to the reservoir (through return hoses).
- Releasing the LOWER TILT button during operation causes all chute rotation to stop. The chute will remain in the same position until you press the LOWER TILT button again and allow it to rotate back to the vertical orientation.

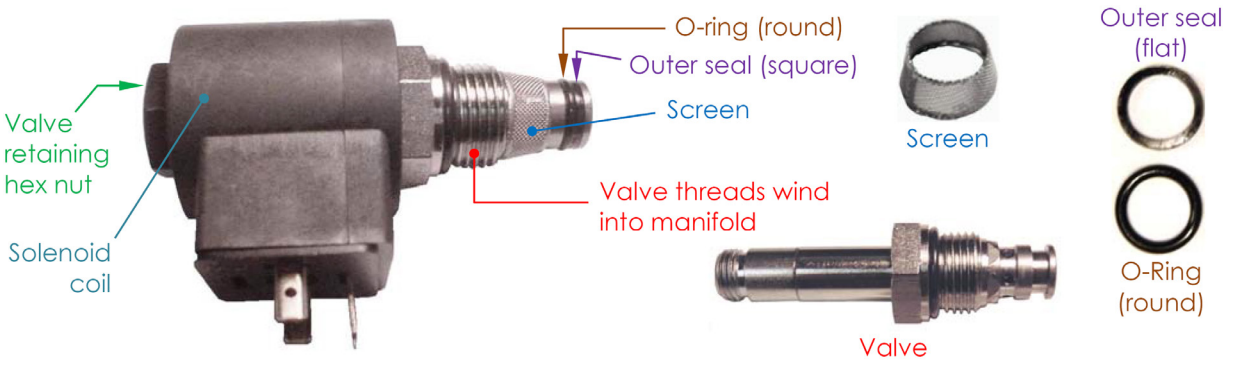
OPERATION ISSUES AND SOLUTIONS

If the chute slowly un-tilts without pressing the LOWER TILT button, or if the chute lowers without pressing the LOWER LIFT button, the lowering cartridge valve of the affected cylinder should be removed, inspected, and cleaned.

1. Press the LOWER TILT button until the chute is in home position (lower the chute completely).

2. Disconnect electrical power to the equipment.
3. If loaded, remove the load from the chute.
4. For either the tilt cylinder (99-021-909-01) or the lift cylinder (99-021-912-001 or 99-021-913-001), remove the valve retaining nut that fastens the solenoid coil to the valve stem, and then unscrew the valve from the manifold.
NOTE: The end of the valve threads into the manifold and therefore will not be visible until the valve is unwound from the manifold.

LOWERING SOLENOID CARTRIDGE VALVE ASSEMBLY



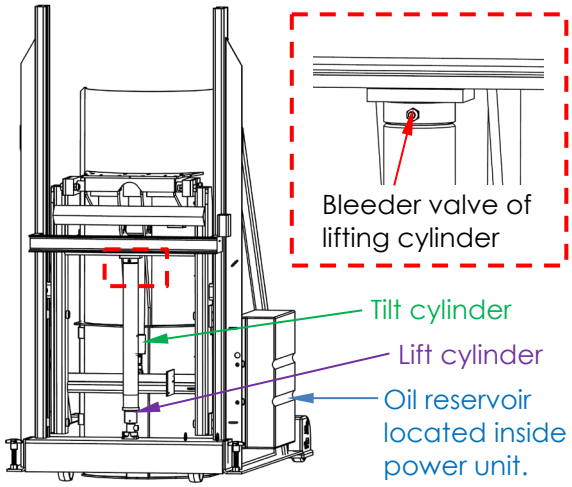
5. Inspect the outside of the valve. Look for debris inside of the valve cavity in the manifold. Replace the valve if the valve stem is bent.
6. Inspect the O-ring and the outer seal for cuts, tears etc.
7. If necessary, remove debris from the valve:
a. Use a small screwdriver to press on the end of the valve. Insert the screwdriver into the valve. A poppet inside the valve is normally closed by light spring tension. If the poppet is clear, it will move approximately 1/16 in. when pressed. Use compressed air or canned air to blow through the valve while pressing the poppet open. Mineral-spirits or kerosene can also be used to flush debris out of the valve.
b. If the poppet cannot move when pressed, the valve might be damaged. Replace the valve if the poppet cannot move.

NOTE: Some models include a flow control spool inside the lowering valve cavity of the manifold. It is visible once the valve is removed. The outer body of the lowering valve is threaded into the cavity; the inner part of the spool has a spring behind it and can move under gentle pressure. Use a small standard head screwdriver to gently press on the flow control spool to determine if it can move up and down. If the spool does not move, the spring or the entire spool must be replaced.
c. Reinstall the screen, followed by the O-ring and then the outer seal.
8. Reinstall the valve in the manifold. Tighten the valve to 20 ft·lb of torque.

REMOVING AIR FROM THE HYDRAULIC SYSTEM

Air is likely trapped inside the tilt cylinder or lift cylinder If the chute tilts very slowly when pressing the LOWER TILT button or if it rises slowly while pressing the LOWER LIFT button. Air trapped in a cylinder causes its velocity fuse to close. This prevents oil from flowing out of the cylinder.

- Put the chute in HOME position, i.e. lower the chute.
- Unload the chute.
- Find the bleeder valve located at the top of the appropriate (lift or tilt) cylinder: 1) Part no. 99-021-909-001 if the chute un-tilts slowly; 2) part no. 99-021-912-001 or 99-021-913-001 if the chute assembly descends slowly. Hold a rag over the valve and open it about 1/2 turn with a 3/8" or 5/16" wrench. Oil and air will sputter from the valve. Jog the motor by pressing the appropriate control button (RAISE TILT or RAISE LIFT) for just a second. If air continues to escape from the bleeder valve, jog the motor several more times. Wait at least 5 seconds between successive jogs.
- When air is no longer observed and only a clear stream of oil flows from the bleeder valve, close the valve.



- Check the oil level in the reservoir. If the surface of the oil is more than 1 to 1½ in. below the fill hole, add oil until it is between 1 and 1½ inches of the fill hole.

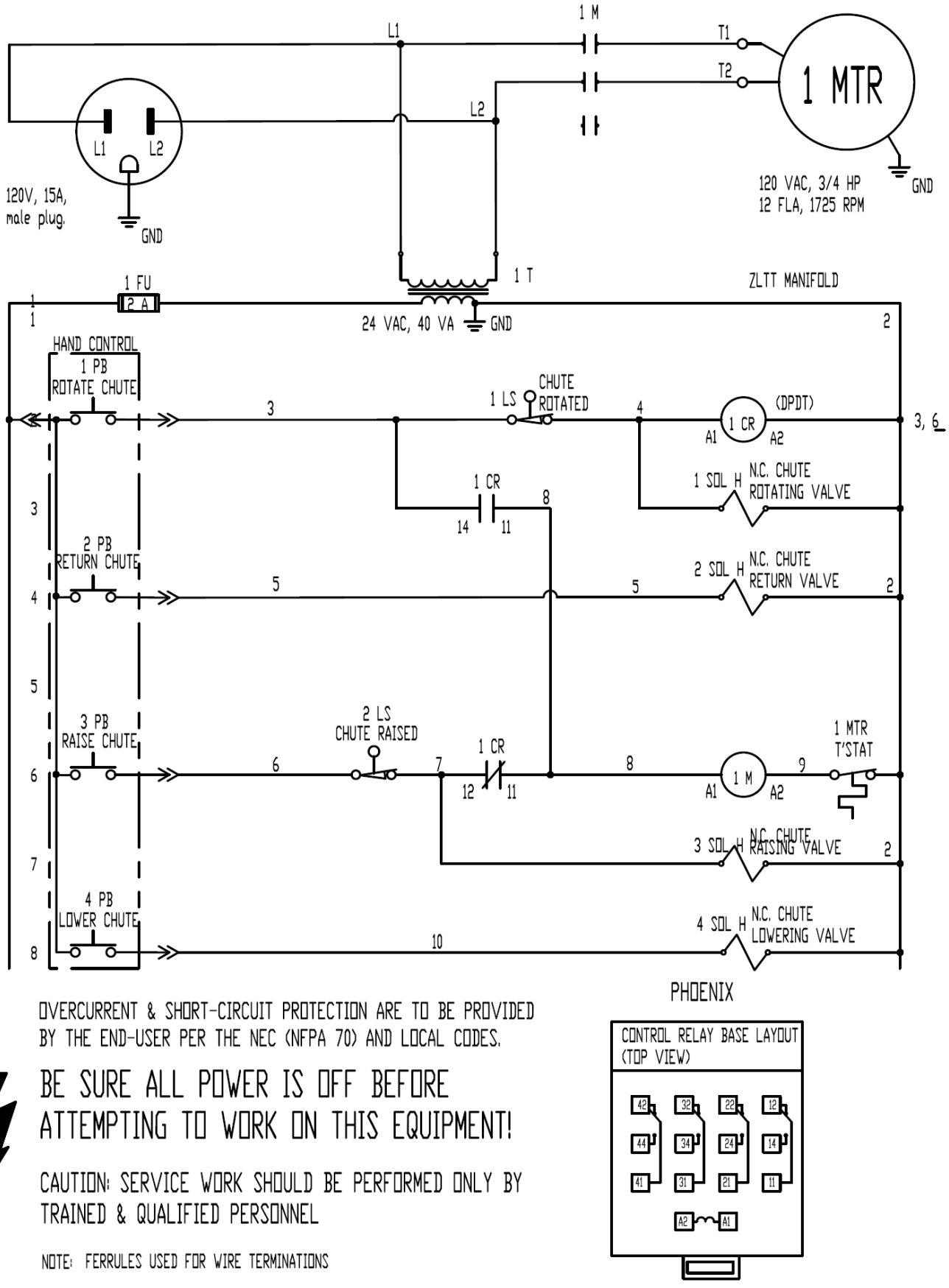
TROUBLESHOOTING GUIDE

⚠ WARNING

DO NOT attempt to resolve any issue described below UNLESS the chute is in home position and the power supply is disconnected.

Issue:	Possible cause(s):	Solution:
1. Power unit doesn't run when LIFT RAISE button is pressed.	**1a**.Transformer fuse is blown. **b**. No supply voltage. **c**. Upper-travel limit switch is engaged or bad. **d**. Faulty connection in control circuit. **e**. Bad control transformer. **f**. Open motor relay coil. **g**. (DC units) Low battery voltage.	**1a**. Test with meter; replace if bad. **b**. Test with meter. Check fuses, breakers, and overloads to determine the cause. **c**. Inspect and test switch. Replace if bad. **d**. Test all parts of circuit with meter. **e**. Check for 24 VAC; replace if bad. **f**. Test with meter; replace if bad. **g**. Test with meter. Charge battery if low (is motor relay LED on?)
2. Motor runs properly, chute doesn't move. Motor and pump not noisy.	**2a**. Incorrect motor rotation. **b**. Pump failure. **c**. Low hydraulic fluid level.	**2a**. Verify motor shaft rotates counterclockwise. **b**. Consult factory for replacement. **c**. Ensure reservoir is filled.
3. Motor or control enclosure hums, chatters, or buzzes, or some type of squeal can be heard; the chute does not move, or the chute moves only slowly.	**3a**. See 2b above. **b**. Excess voltage drop to motor due to power wire size too small, wire run too long, or incoming voltage too low. **c**. Motor is "single-phasing". **d**. Pressure relief opening at full pressure. **e**. Debris in the oil preventing the lowering valve or the check valve from closing.	**3a**. Same as 2b. **b**. Check power installation for adequacy. Check incoming voltage *while motor is running*. Correct problem(s). **c**. Determine cause of loss of voltage on one phase; correct. **d**. Check for structural damage or binding of the rollers, etc. Check for chute overload condition. **e**. Remove and inspect. Clean the valve with mineral spirits.
4. Chute elevates; then drifts down.	**4**. See 3e above.	**4**. Same as 3e.
5. Chute lowers too slowly.	**5a**. Flow control spool is stuck. **b**. Pinched hose. **c**. Velocity fuse locking (chute only slowly creeps down).	**5a**. Remove plug from FC port; push down on the center of the flow spool to ensure it moves freely. **b**. Check pressure, supply, and return hoses for kinks. **c**. Same as 7 (below).
6. Chute lowers too quickly.	**6a**. See 3e. **b**. Flow control spool is stuck.	**6a**. Same as 3e. **b**. Same as 5a.
7. Spongy or jerky chute motion.	**7**. Air in the hydraulic cylinders.	**7.** Bleed air per procedure described in this manual.

FIG. 5: 115VAC, single phase electrical system diagram (09-124-027 REV. B)



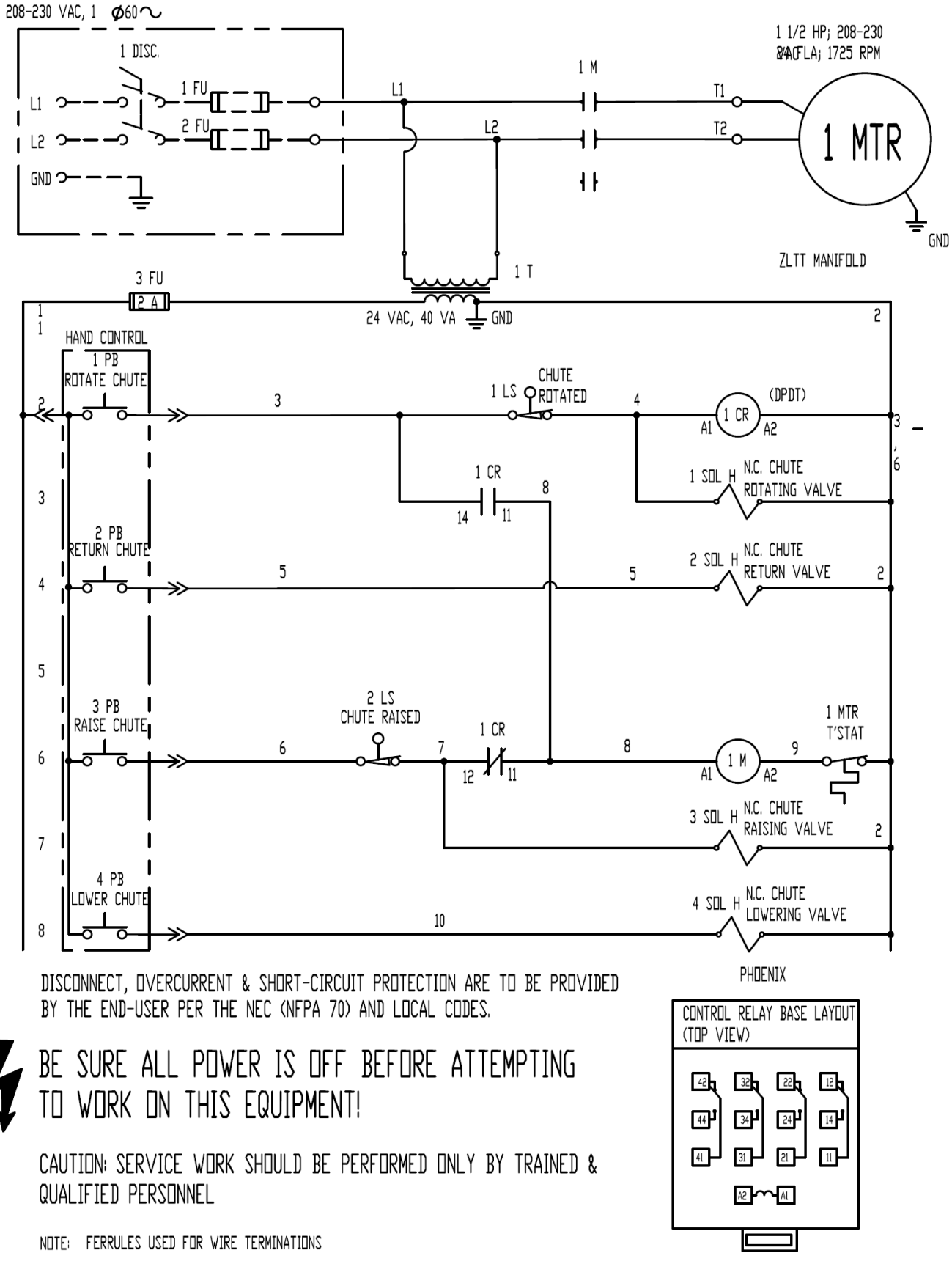
OVERCURRENT & SHORT-CIRCUIT PROTECTION ARE TO BE PROVIDED BY THE END-USER PER THE NEC (NFPA 70) AND LOCAL CODES.

BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!

CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL

NOTE: FERRULES USED FOR WIRE TERMINATIONS

FIG. 6: 208-230VAC, 1-phase electrical circuit diagram (09-124-028 REV. C)



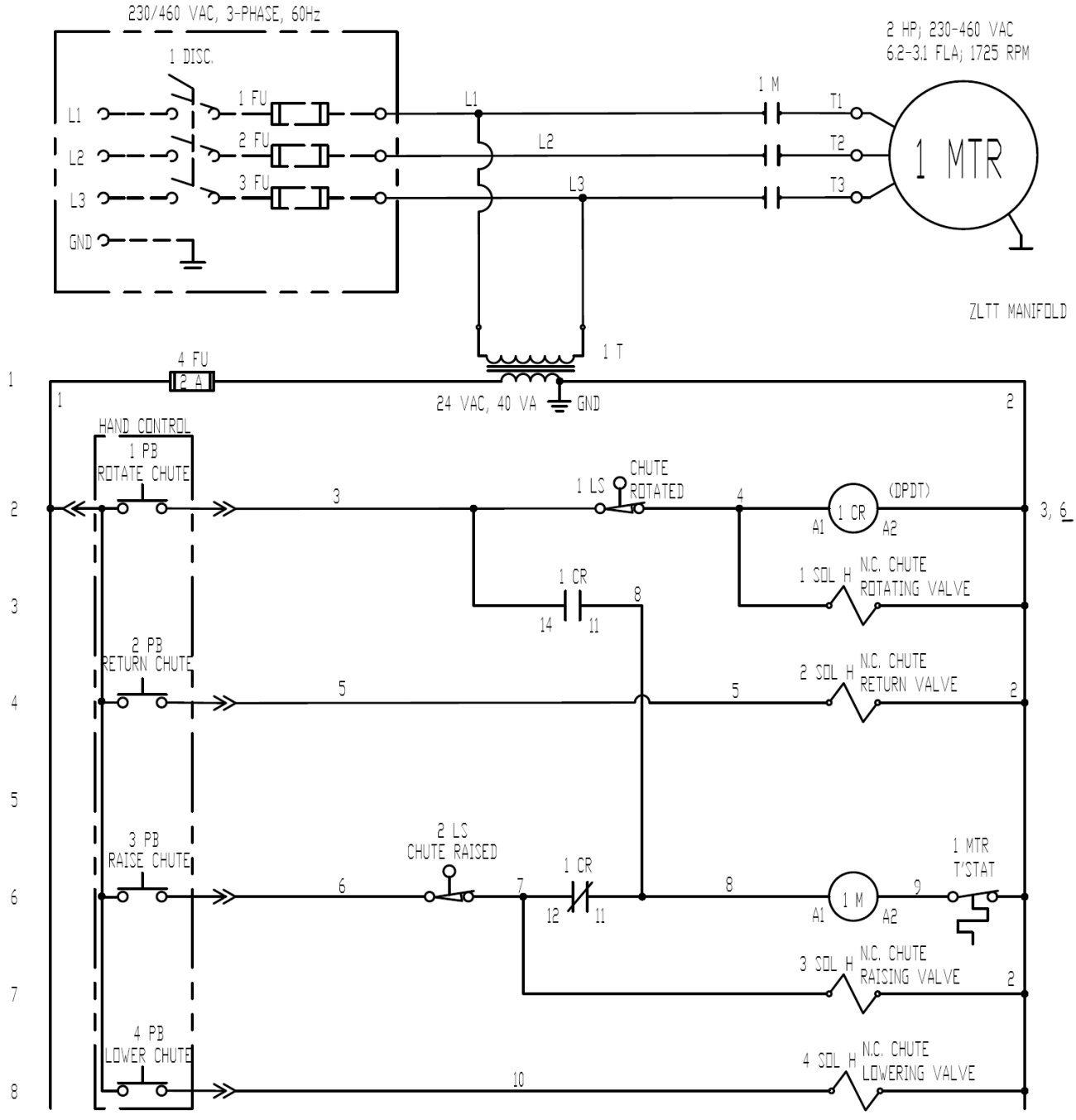
DISCONNECT, OVERCURRENT & SHORT-CIRCUIT PROTECTION ARE TO BE PROVIDED BY THE END-USER PER THE NEC (NFPA 70) AND LOCAL CODES.

BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!

CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL

NOTE: FERRULES USED FOR WIRE TERMINATIONS

FIG. 7: 230/460VAC, 3-PHASE ELECTRICAL SYSTEM DIAGRAM



DISCONNECT, OVERCURRENT & SHORT-CIRCUIT PROTECTION ARE TO BE PROVIDED BY THE END-USER PER THE NEC (NFPA 70) AND LOCAL CODES.

BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!

CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL

NOTE: FERRULES USED FOR WIRE TERMINATIONS.

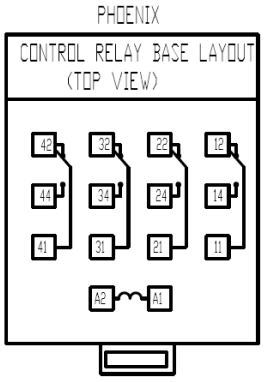


FIG. 8: HYDRAULIC CIRCUIT DIAGRAM (99-125-005)

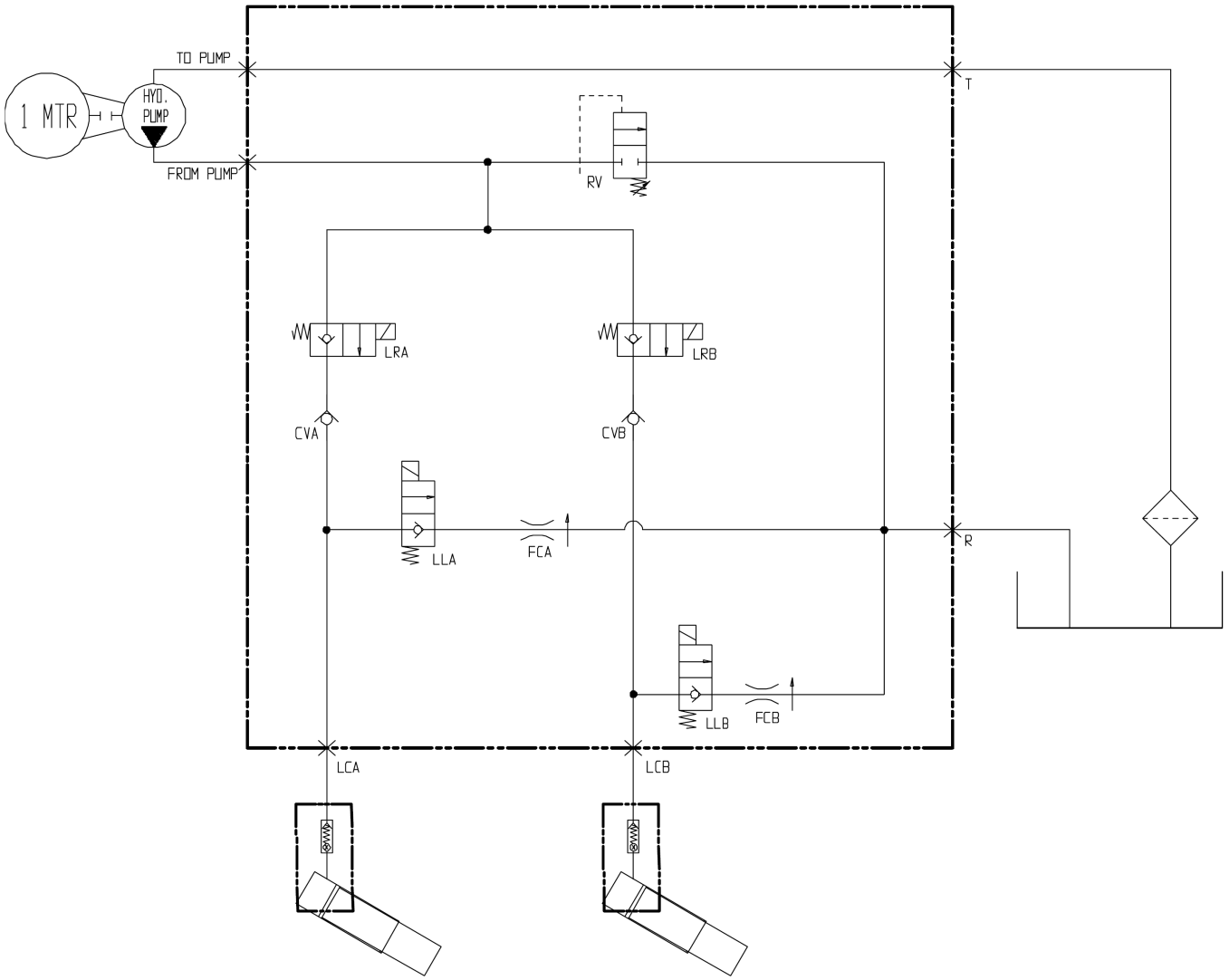
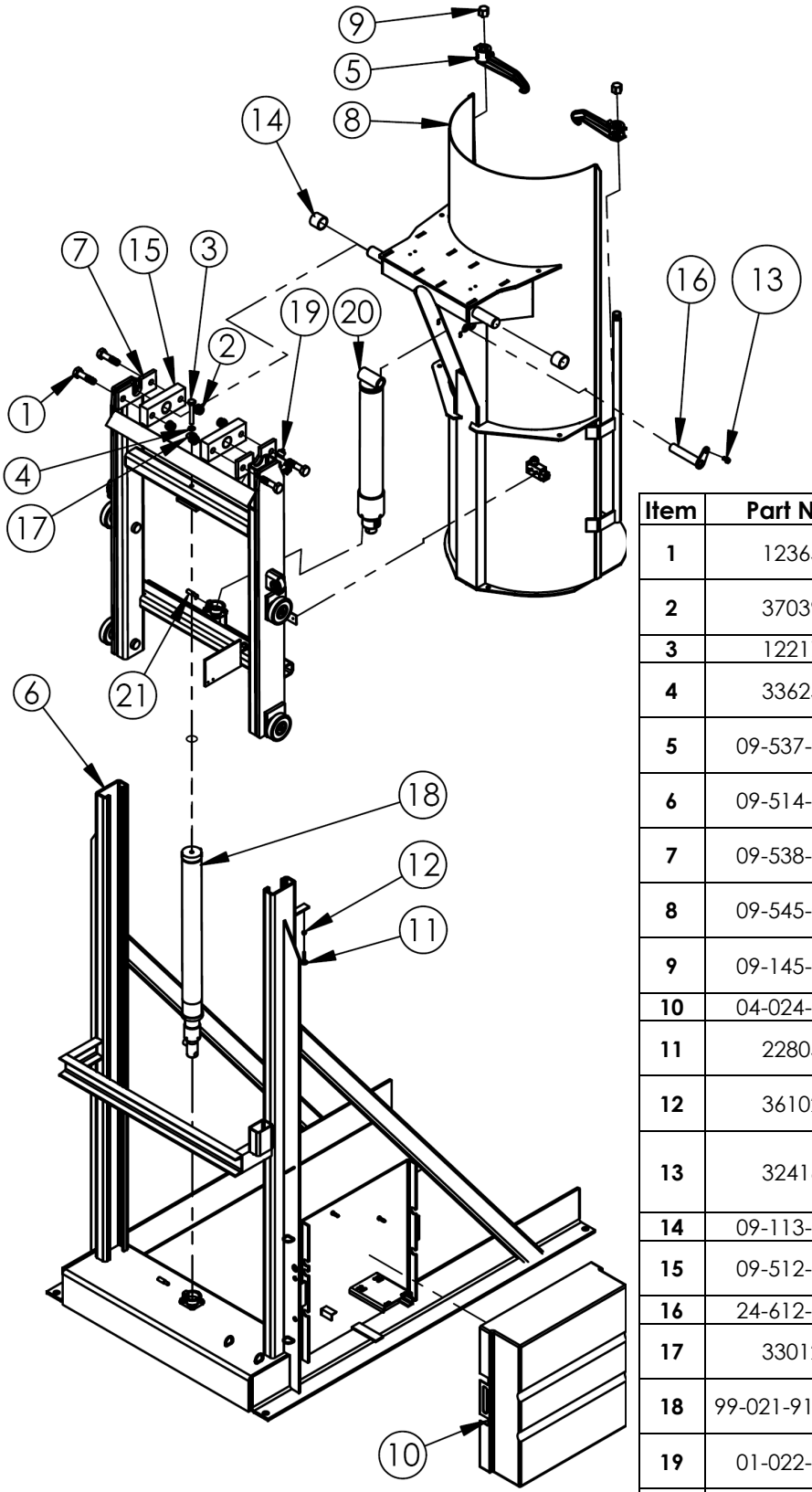


FIG. 9: HLD-94-10-S & HLD-94-15-S Exploded View and Bill of Materials (09-006-099)



Item	Part No.	Description	Qty.
1	12365	3/4-10 X 3 HHCS # 5 PLAIN, GRADE 5	4
2	37039	NYLOCK NUT Z PLATED, GRADE 2, Ø3/4 - 10	4
3	12217	1/2-13 X 3.5 HHCS #5	1
4	33625	LOCK WASHER, MEDIUM SPLIT, PLAIN FINISH, 1/2"	1
5	09-537-013	ASSEMBLY,PIPE CLAMP,CASTING	2
6	09-514-100	WELDMENT, BASE, STATIONARY	1
7	09-538-025	SUB-ASSEMBLY, CARRIAGE W/ ROLLERS, STATIONARY	1
8	09-545-030	WELDMENT, SUB-ASSEMBLY, CHUTE	1
9	09-145-020	SPECIALTY HARDWARE, HEX PIPE CAP	2
10	04-024-001	POWER UP, RED COVER	1
11	22805	ELEVATOR BOLT, GRADE A, LIMIT SWITCH	1
12	36102	HEX NUT, GRADE A, ZINC PLATED, 1/4-20	1
13	32416	THREAD CUTTING SCREW, SLOTTED, TYPE F, ZINC PLATED, 5/16-18 X 3/4	1
14	09-113-039	SPACER, HINGE	2
15	09-512-003	SUB-ASSEMBLY, HINGE BLOCK	2
16	24-612-003	WELDMENT, CYLINDER PIN	1
17	33012	FLAT WASHER, LOW CARBON, ZINC FINISH, 1/2"	1
18	99-021-912-001	CYLINDER, HYDRAULIC, Ø1 1/2" x 48", TELESCOPIC STYLE	1
19	01-022-021	SWITCH, LIMIT, TOP PLUNGER	2
20	99-021-909-001	CYLINDER, HYDRAULIC, Ø2 1/2" x 18" RAM STYLE	1
21	01-118-001	BOLT, CYLINDER RETAINING	2

FIG. 10: HLD-94-10-P & HLD-94-15-P Exploded View and Bill of Materials (09-006-106)

NOTE:
99-612-001 (BOLT AND NUT) ARE INTERCHANGEABLE WITH 99-112-006 AND 65076.

Item	Part No.	Description	Qty.
1	09-514-153	WELDMENT, BASE, PORTABLE	1
2	12365	3/4-10 X 3 HHCS # 5 PLAIN, GRADE 5	4
3	37039	NYLOCK NUT Z PLATED, GRADE 2, Ø3/4 - 10	4
4	12217	1/2-13 X 3.5 HHCS #5	1
5	33012	FLAT WASHER, LOW CARBON, ZINC FINISH, 1/2"	1
6	33625	LOCK WASHER, MEDIUM SPLIT, PLAIN FINISH, 1/2"	1
7	09-537-013	ASSEMBLY,PIPE CLAMP,CASTING	2
8	01-022-021	SWITCH, LIMIT, TOP PLUNGER	2
9	08-025-008	4-HANDLE BOLT, 4 INCH (FLOOR LOCK)	2
10	09-538-028	SUB-ASSEMBLY, CARRIAGE W/ ROLLERS, PORTABLE	1
11	09-545-030	WELDMENT, SUB-ASSEMBLY, CHUTE	1
12	09-145-020	SPECIALTY HARDWARE, HEX PIPE CAP	2
13	37030	1/2"-13 NYLON INSERT LOCK NUT, GRADE 2	2
14	11217	HEX BOLT, GRADE A, ZINC PLATED, 1/2-13 X 3 1/2"	2
15	16-132-216	CASTER, WHEEL, GFN-8/2-W	2
16	04-024-001	POWER UP, RED COVER	1
17	22805	ELEVATOR BOLT, GRADE A, LIMIT SWITCH	1
18	36102	HEX NUT, GRADE A, ZINC PLATED, 1/4-20	1
19	32416	THREAD CUTTING SCREW, SLOTTED, TYPE F, ZINC PLATED, 5/16-18 X 3/4	1
20	09-113-039	SPACER, HINGE	2
21	09-512-003	SUB-ASSEMBLY, HINGE BLOCK	2
22	16-132-262	CASTER, 6X2 SWIVEL, GLASS FILLED NYLON	2
23	99-612-001	PIN, BULLDOG BOLT AND NUT ASSEMBLY	2
24	01-118-001	BOLT, CYLINDER RETAINING	2
25	24-612-003	WELDMENT, CYLINDER PIN	1
26	99-021-912-001	CYLINDER, HYDRAULIC, Ø1 1/2" x 48", TELESCOPIC STYLE	1
27	99-021-909-001	CYLINDER, HYDRAULIC, Ø2 1/2" x 18" RAM STYLE	1

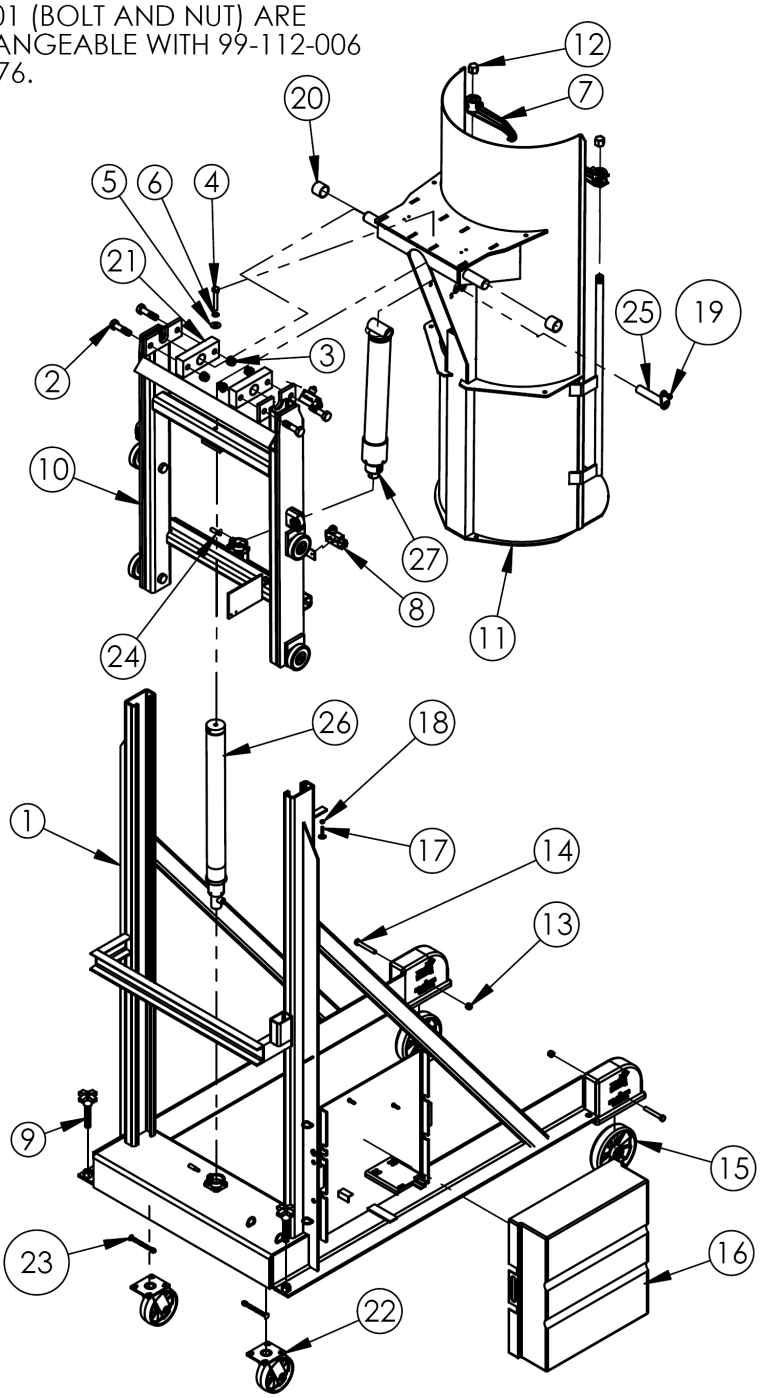


FIG. 11: HLD-116-10-S & HLD-116-15-S Exploded View and Bill of Materials (09-006-098)

Item	Part No.	Description	Qty.
1	09-514-099	WELDMENT, BASE, STATIONARY	1
2	09-538-026	SUB-ASSEMBLY, CARRIAGE W/ ROLLERS, STATIONARY	1
3	12217	1/2-13 X 3.5 HHCS #5	1
4	37039	NYLOCK NUT Z PLATED, GRADE 2, Ø3/4 - 10	4
5	12365	3/4-10 X 3 HHCS # 5 PLAIN, GRADE 5	4
6	09-537-013	ASSEMBLY,PIPE CLAMP,CASTING	2
7	33625	LOCK WASHER, MEDIUM SPLIT, PLAIN FINISH, 1/2"	1
8	09-545-031	WELDMENT, SUB-ASSEMBLY, CHUTE	1
9	09-145-020	SPECIALTY HARDWARE, HEX PIPE CAP	2
10	04-024-001	POWER UP, RED COVER	1
11	22805	ELEVATOR BOLT, GRADE A, LIMIT SWITCH	1
12	36102	HEX NUT, GRADE A, ZINC PLATED, 1/4-20	1
13	32416	THREAD CUTTING SCREW, SLOTTED, TYPE F, ZINC PLATED, 5/16-18 X 3/4	1
14	09-113-039	SPACER, HINGE	2
15	09-512-003	SUB-ASSEMBLY, HINGE BLOCK	2
16	24-612-003	WELDMENT, CYLINDER PIN	1
17	33012	FLAT WASHER, LOW CARBON, ZINC FINISH, 1/2"	1
18	01-022-021	SWITCH, LIMIT, TOP PLUNGER	2
19	99-021-913-001	CYLINDER, HYDRAULIC, Ø1 1/2" x 58", TELESCOPIC STYLE	1
20	11111	HEX BOLT, GRADE A, ZINC PLATED, 3/8" - 16 x 2"	4
21	99-021-909-001	CYLINDER, HYDRAULIC, Ø2 1/2" x 18" RAM STYLE	1
22	01-118-001	BOLT, CYLINDER RETAINING	2

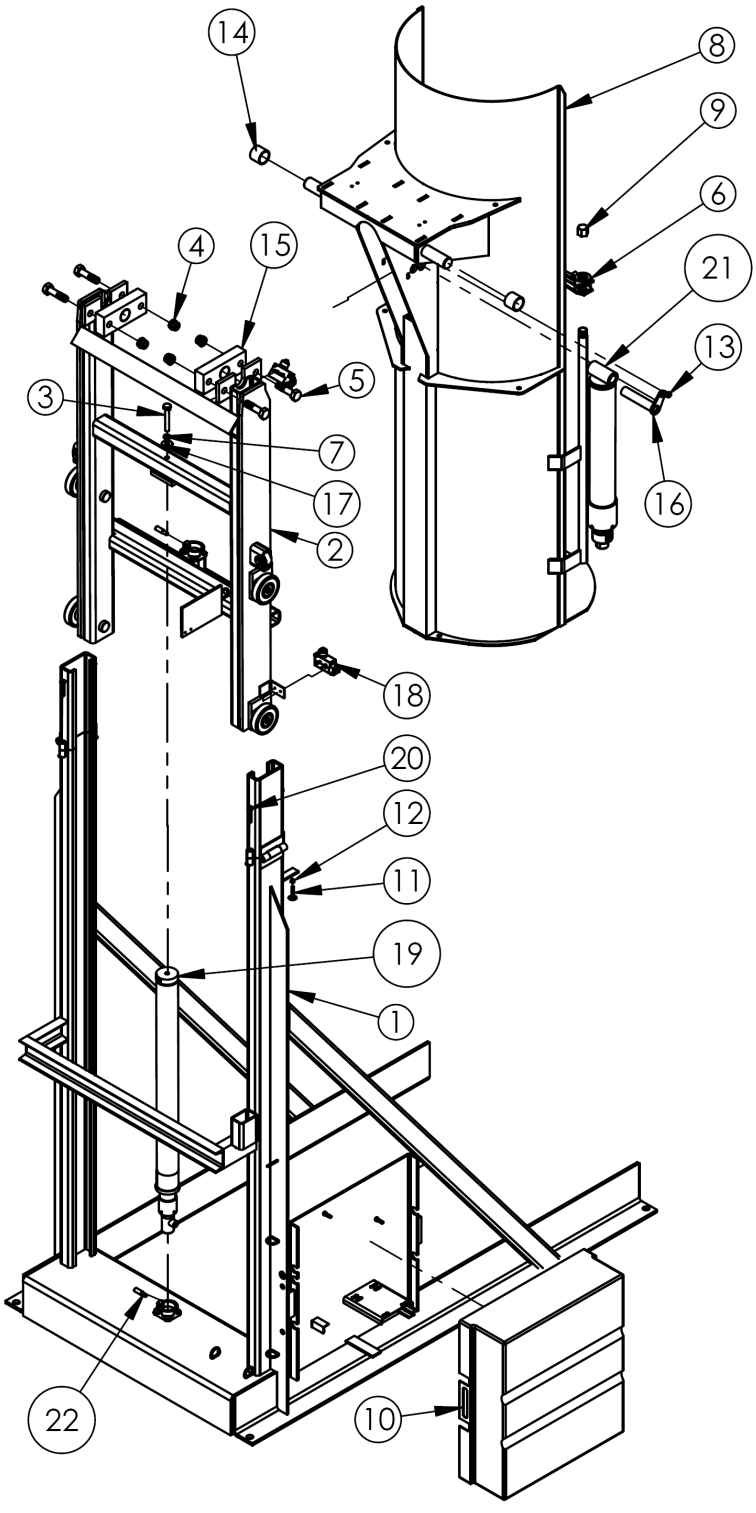


FIG. 12: HLD-116-10-P & HLD-116-15-P Exploded View and Bill of Materials (09-006-107)

Item	Part No.	Description	Qty.
1	12217	1/2-13 X 3.5 HHCS #5	1
2	37039	NYLOCK NUT Z PLATED, GRADE 2, Ø3/4 - 10	4
3	12365	3/4-10 X 3 HHCS # 5 PLAIN, GRADE 5	4
4	09-537-013	ASSEMBLY,PIPE CLAMP,CASTING	2
5	33625	LOCK WASHER, MEDIUM SPLIT, PLAIN FINISH, 1/2"	1
6	08-025-008	4-HANDLE BOLT, 4 INCH (FLOOR LOCK)	2
7	37030	1/2"-13 NYLON INSERT LOCK NUT, GRADE 2	2
8	09-514-152	WELDMENT, BASE, PORTABLE	1
9	09-538-027	SUB-ASSEMBLY, CARRIAGE W/ ROLLERS, PORTABLE	1
10	16-132-262	CASTER, 6X2 SWIVEL, GLASS FILLED NYLON	2
11	09-545-031	WELDMENT, SUB-ASSEMBLY, CHUTE	1
12	09-145-020	SPECIALTY HARDWARE, HEX PIPE CAP	2
13	11217	HEX BOLT, GRADE A, ZINC PLATED, 1/2-13 X 3 1/2"	2
14	04-024-001	POWER UP, RED COVER	1
15	22805	ELEVATOR BOLT, GRADE A, LIMIT SWITCH	1
16	36102	HEX NUT, GRADE A, ZINC PLATED, 1/4-20	1
17	32416	THREAD CUTTING SCREW, SLOTTED, TYPE F, ZINC PLATED, 5/16-18 X 3/4	1
18	09-113-039	SPACER, HINGE	2
19	09-512-003	SUB-ASSEMBLY, HINGE BLOCK	2
20	33012	FLAT WASHER, LOW CARBON, ZINC FINISH, 1/2"	1
21	01-022-021	SWITCH, LIMIT, TOP PLUNGER	2
22	16-132-216	CASTER, WHEEL, GFN-8/2-W	2
23	99-612-001	PIN, BULLDOG BOLT AND NUT ASSEMBLY	2
24	24-612-003	WELDMENT, CYLINDER PIN	1
25	11111	HEX BOLT, GRADE A, ZINC PLATED, 3/8" - 16 x 2"	4
26	01-118-001	BOLT, CYLINDER RETAINING	2
27	99-021-909-001	CYLINDER, HYDRAULIC, Ø2 1/2" x 18" RAM STYLE	1
28	99-021-913-001	CYLINDER, HYDRAULIC, Ø1 1/2" x 58", TELESCOPIC STYLE	1

NOTE:
99-612-001 (BOLT AND NUT) ARE INTERCHANGEABLE WITH 99-112-006 AND 65076.

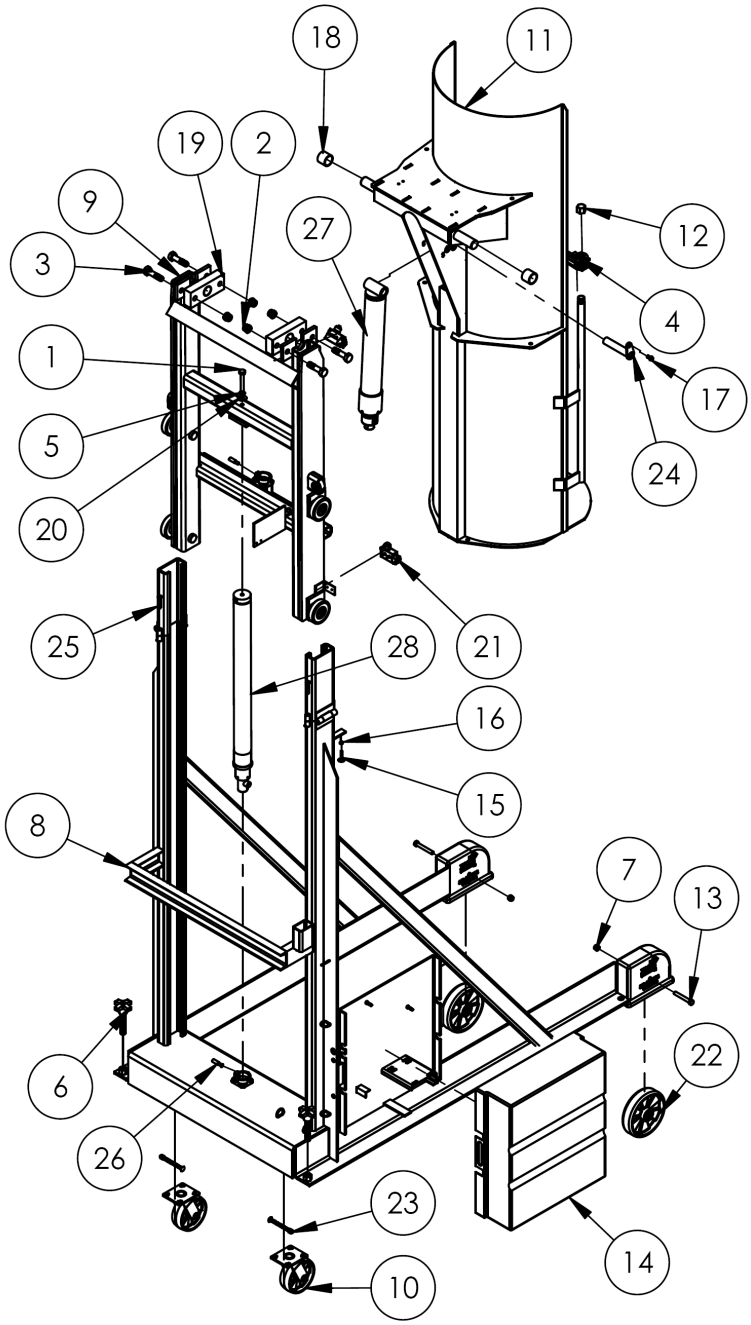
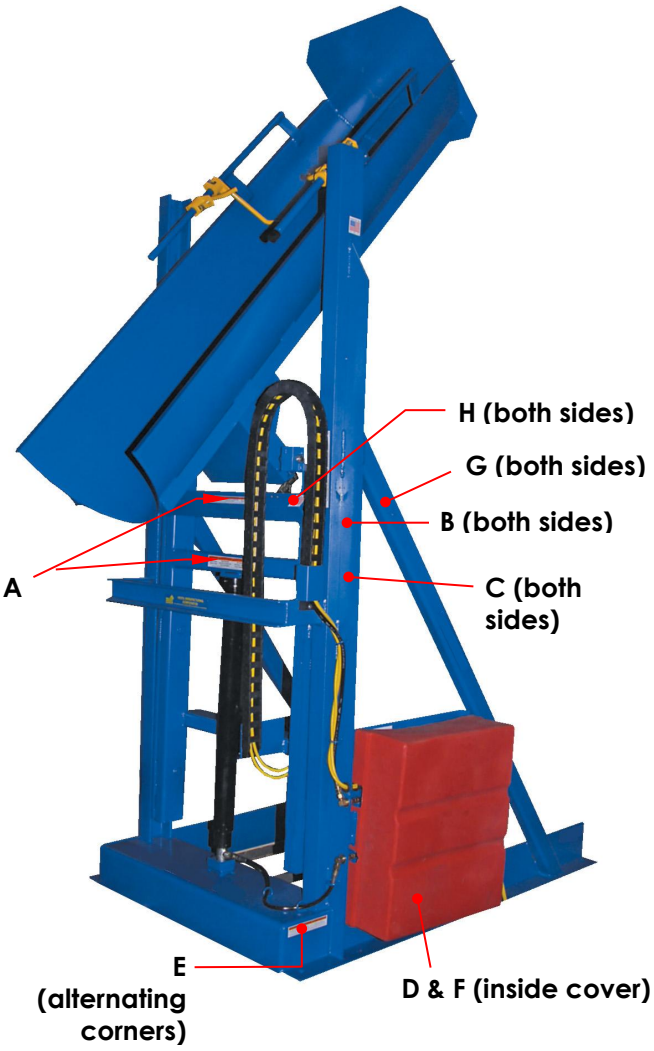


FIG. 13: LABELING DIAGRAM

The drum dumper should be labeled as shown in the diagrams. However, label content and location are subject to change so your product might not be labeled exactly as shown.

Replace all labels that are damaged, missing, or not easily readable (e.g. faded). To order replacement labels, contact the Technical Service and Replacement Parts Department online at http://www.vestilmfg.com/parts_info.htm. Alternatively, request replacement parts and/or service by calling (260) 665-7586 and asking the operator to connect you to the Parts Department.



A: Label #220

⚠ WARNING	⚠ ADVERTENCIA	⚠ AVERTISSEMENT
KEEP CLEAR WHEN IN USE	MANTENGASE ALEJADO CUANDO SE ESTA OPERANDO	SE TENIR À DISTANCE LORS DU FONCTIONNEMENT 220 rev 0111

B: Label #1153

MODEL / MODÉLO / MODÈLE _____
WEIGHT / PESO / MASS _____
CAPACITY / CAPACIDAD / CAPACITÉ _____
SERIAL / SERIE / SÉRIE _____
UNITS: 2.2 lb. = 1kg 1" (or 1in.) = 2.54cm 1153

C: Label #250

NOTICE	NOTA	AVIS
POWER SUPPLY: V/ Phase/ HZ CONTROL VOLTAGE: V AC		
CORRIENTE: V/ Fase/ HZ VOLTAJE DE CONTROL: V CA		
ALIMENTATION ÉLECTRIQUE: V/ Monophase/ HZ VOLTAGE DE CONTRÔLE: V AC		

D: Label #221

⚠ DANGER	ELECTRICAL SHOCK 221 Rev 0111 Shut power off and consult owners manual before working on this equipment.
⚠ PELIGRO	EI GOLPE ELECTRICO Corte la corriente consulte el manual de propietario antes de trabajar en este equipo.
⚠ DANGER	CHOC ELECTRIQUE Couper le courant et consulter le manuel d'utilisation avant de travailler sur cet équipement

E: Label #204

⚠ WARNING	⚠ ADVERTENCIA	⚠ AVERTISSEMENT
SECURE FRAME TO FLOOR	ASEGURE EL BASTIDOR AL PISO	FIXER SOLIDEMENT LE CADRE AU PLANCHER 204 Rev 11/10

F: Label #206

ISO 32 / 150 SUS
HYDRAULIC OIL OR NON-SYNTHETIC TRANSMISSION FLUID
ACEITE HIDRAULICO O LIQUIDOS DE TRANSMISION NO SINTETICOS
HUILE OU LIQUIDE HYDRAULIQUE NON-SYNTHÉTIQUE 206 Rev.1003
VESTIL MANUFACTURING CORPORATION • Phone (260) 665-7586 • www.vestil.com

G: Label #717

⚠ WARNING

The drum chute of this machine elevates and rotates. Consequently, the operator and/or bystanders might sustain serious personal injuries if the drum dumper is improperly used. Reduce the likelihood of injury by applying the following practices:

- DO NOT exceed maximum rated load.
- DO NOT operate dumper unless BOTH rim clamps securely engage drum.
- DO NOT lift people with chute or allow people to ride on chute. DO NOT pass beneath or stand under chute when raised or tilted or allow others to do so.
- DO NOT leave elevated or tilted drum unattended. Immediately after dumping drum, return chute to vertical position, fully lower it, and remove dumped drum.
- DO NOT modify machine in any way. Modifications may cause malfunctions and might make dumper unsafe to use.
- Instruct all people to clear area BEFORE operating dumper.
- DO NOT load or operate dumper UNLESS securely attached to floor.

717

H: Label #208 (on both left and right sides)

⚠ WARNING	⚠ ADVERTENCIA	⚠ AVERTISSEMENT
KEEP CLEAR OF PINCH POINT	MANTENGASE ALEJADO DEL PUNTO DE CORTE	SE TENIR À DISTANCE DU POINT DE PINCEMENT 208A

LIMITED WARRANTY

Vestil Manufacturing Corporation ("Vestil") warrants this product to be free of defects in material and workmanship during the warranty period. Our warranty obligation is to provide a replacement for a defective, original part covered by the warranty after we receive a proper request from the Warrantee (you) for warranty service.

Who may request service?

Only a warrantee may request service. You are a warrantee if you purchased the product from Vestil or from an authorized distributor AND Vestil has been fully paid.

Definition of "original part"?

An original part is a part used to make the product as shipped to the Warrantee.

What is a "proper request"?

A request for warranty service is proper if Vestil receives: 1) a photocopy of the Customer Invoice that displays the shipping date; AND 2) a written request for warranty service including your name and phone number. Send requests by one of the following methods:

US Mail	Fax	Email
Vestil Manufacturing Corporation	(260) 665-1339	info@vestil.com
2999 North Wayne Street, PO Box 507	Phone	Enter "Warranty service request"
Angola, IN 46703	(260) 665-7586	in the subject field.

In the written request, list the parts believed to be defective and include the address where replacements should be delivered. After Vestil receives your request for warranty service, an authorized representative will contact you to determine whether your claim is covered by the warranty. Before providing warranty service, Vestil will require you to send the entire product, or just the defective part (or parts), to its facility in Angola, IN.

What is covered under the warranty?

The warranty covers defects in the following original, dynamic parts: motors, hydraulic pumps, motor controllers, and cylinders. It also covers defects in original parts that wear under normal usage conditions ("wearing parts"), such as bearings, hoses, wheels, seals, brushes, and batteries.

How long is the warranty period?

The warranty period for original dynamic components is 1 year. For wearing parts, the warranty period is 90 days. Both warranty periods begin on the date Vestil ships the product to the Warrantee. If the product was purchased from an authorized distributor, the periods begin when the distributor ships the product. Vestil may, at its sole discretion, extend a warranty period for products shipped from authorized distributors by up to 30 days to account for shipping time.

If a defective part is covered by the warranty, what will Vestil do to correct the problem?

Vestil will provide an appropriate replacement for any *covered* part. An authorized representative of Vestil will contact you to discuss your claim.

What is not covered by the warranty?

The Warrantee (you) is responsible for paying labor costs and freight costs to return the product to Vestil for warranty service.

Events that automatically void this Limited Warranty.

- Misuse;
- Negligent assembly, installation, operation or repair;
- Installation/use in corrosive environments;
- Inadequate or improper maintenance;
- Damage sustained during shipping;
- Collisions or other accidents that damage the product;
- Unauthorized modifications: Do not modify the product IN ANY WAY without first receiving written authorization from Vestil.

Do any other warranties apply to the product?

Vestil Manufacturing Corp. makes no other express warranties. All implied warranties are disclaimed to the extent allowed by law. Any implied warranty not disclaimed is limited in scope to the terms of this Limited Warranty. Vestil makes no warranty or representation that this product complies with any state or local design, performance, or safety code or standard. Noncompliance with any such code or standard is not a defect in material or workmanship.