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# OWNER'S MANUAL

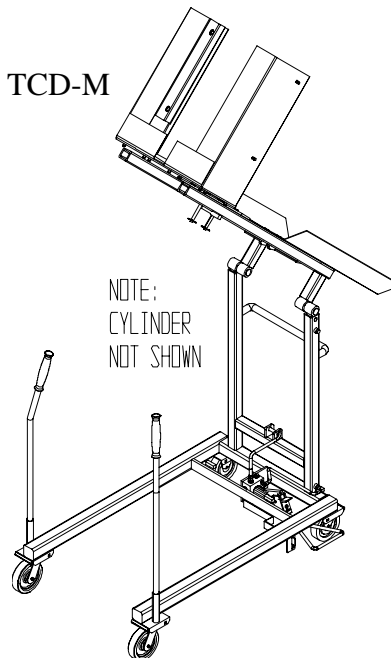
## MODELS TCD-M & TCD-U

Installation & Operation Instructions .....	2-3	Power Unit's Operation, TCD-DC .....	9
Routine Maintenance & Safety Checks .....	4	Troubleshooting, TDC-M.....	10
Exploded Parts Drawing & BOM, TCD-M .....	5A - 5B	Troubleshooting, TDC-DC .....	11
Exploded Parts Drawing & BOM, TCD-U .....	6A - 6D	Safety Label Identification .....	12
Electrical Diagram & Elec/Hyd BOM .....	7	Warranty .....	13
Hydraulic Diagrams .....	8		

### IMPORTANT NOTES, WARNINGS AND SAFETY INSTRUCTIONS

Ensure that all employees understand and follow the following.

- ☞ Failure to read and understand this owner's manual before using or servicing the trash can dumper constitutes a misuse of the product. All persons who will use or care for this product must be familiar with this material.
- The tilt carrier must be fully lowered and the load must be removed before any work is performed on the dumper.
- Ensure that all safety and warning labels stay in place and are legible.
- Do not use the dumper if any damage or unusual noise is observed.
- Always watch the carrier and the container carefully when the dumper is in operation.
- The dumper is intended for use only on compacted, improved surfaces.
- Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 cSt @ 40°C), or Dexron transmission fluid.
- Contact the manufacturer for any needed MSDS information.
- ◆ Do not perform any modifications to the dumper without the manufacturer's approval. Failure to receive authorization for changes to the equipment could void the warranty.
- ◆ Maintenance and repairs are to be done only by personnel qualified to perform the required work. Consideration will not be given for warranty repair charges without prior written authorization by the manufacturer.



### WHEN ORDERING

#### REPLACEMENT PARTS:

We take pride in using quality parts on the equipment we manufacture. We are not responsible for equipment problems resulting from the use of unapproved replacement parts.

To order replacement or spare parts for this equipment, contact the factory.

In any communication with the factory please be prepared to provide the machine's serial number, which is indicated on the machine dataplate.

#### RECEIVING INSTRUCTIONS

Every unit is thoroughly tested and inspected prior to shipment. However, it is possible that the unit could incur damage during transit.

Inspect the unit closely when it arrives. *If you see evidence of damage or rough handling to either the packaging or to the product when it is being unloaded, immediately make a note of it on the Bill Of Lading!*

It is important that you remove the product's packaging upon its arrival to ensure that there is no concealed damage or to enable a timely claim with the carrier for freight damage.

Also verify that the product and its specifications are as ordered.

## INSTALLATION INSTRUCTIONS - TCD-DC

*Consult the factory in the event there are any questions or problems at the time of installation, or for information regarding optional features not covered by the owner's manual.*

- Modifications or additions made to the trash can dumper without prior manufacturer's authorization may void the dumper's warranty. The addition of ancillary equipment to the dumper may necessitate that its load capacity be reduced.
- The end-user must verify that the supplied equipment is installed so it will be suited to the environment in which it will be used.

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## OPERATION INSTRUCTIONS - TCD-DC, -M

- *Ensure that all employees involved in the operation of this dumper understand and follow these instructions!*

The standard model TCD trash can dumper is suitable for use indoors in most industrial and commercial locations. It is intended to be used to dump dry, non-hazardous refuse materials from our model TH-32, TH-64, or 95-GLT trash cans (or an approved equivalent).

### Loading:

The load rating, in pounds, is shown on the machine dataplate located high on the right upright, above the push bar (see the labels page). It indicates the net capacity of the dumper with a relatively loose load that will not cling to the inside of the trash can.

Do not exceed a rate of three feet per second when rolling the dumper across the ground.

*Note:* The addition of any ancillary equipment to the dumper's carrier by third parties must be taken into account when determining the maximum load to be placed in the trash can.

*Warning:* Do not exceed the dumper's load rating. Injury to personnel or permanent damage to the dumper could result from exceeding the listed capacity.

To dump a trash can, roll an appropriate style of trash can (see paragraph two, above) into the carrier with the push handle outward. The trash can must be centered in the carrier with its lid touching against the dump chute.

### Operation:

*Warning:* Keep all personnel clear of the machine when it is in operation. Be certain no part of any person or object is under any part of the trash can carrier before lowering the unit.

*Caution:* Always carefully watch the unit and the load being dumped when it is in operation.

- The manual foot pump dumper utilizes a two-speed foot pump with an ergonomic triangular foot treadle to raise the carrier. Relative to standing in front of the dumper's upright push handles, it is located on the far right side corner. For light loads, the pump can be used on its higher-volume setting. For moderate to heavy loads, the pump's low-volume setting must be used.
- The DC-powered dumper is furnished with a constant-pressure (dead-man style) pushbutton control. Pressing the "UP" pushbutton will turn on the power unit to raise the carrier. The platform will raise only while the control is pressed. Upon releasing the control, the carrier will stop and hold its position. Pressing the "DOWN" pushbutton will energize the lowering valve to allow the carrier to descend by gravity (the motor does not run). Again, releasing the control will stop the carrier movement, and the unit will hold its position.

*On DC-powered units,* attempting to tilt the carrier when the battery is low will cause the motor relay protection to prevent the motor's operation. Adequate battery voltage is indicated by a green LED on the motor relay. See the next page for more notes regarding operation of battery-powered units.

*Caution:* Never use the dumper if any damage or unusual noise is observed, if it is in need of repairs, or if it seems to be malfunctioning. Notify your supervisor or maintenance personnel if you notice anything out of the ordinary.

Ensure that all safety and warning labels stay in place and are legible. Refer to the labels page in this manual.

## **ADDITIONAL INSTRUCTIONS FOR BATTERY-POWERED UNITS**

*Note: If this product has the 24V powered traction-drive option, consult that option's information for more specific details regarding the batteries and battery charger.*

### **Warning!**

- ! Working with or near lead acid batteries is dangerous. Batteries contain sulfuric acid and produce explosive gases. A battery explosion could result in loss of eyesight or serious burns.
- ! Do not smoke or allow a spark or flame near batteries. Charge batteries in locations that are clean, dry, and well ventilated. Do not lay tools or anything metallic on top of any battery. All repairs to a battery must be made by experienced and qualified personnel.
- ! When working with batteries, remove personal items such as rings, bracelets, necklaces, and watches. Batteries can produce enough energy to weld jewelry to metal, causing a severe burn.
- ! Always have fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- ! Operating the battery with a low battery voltage can cause premature motor contact failure.
- ! Do not expose the tilter or charger to rain or adverse conditions.
- ! Replace defective cords or wires immediately.
- ! Check the battery's water level frequently.

### **Battery Charger Operating Instructions**

Never operate the charger with either of the cables coiled. Operating a battery charger with the cord either coiled or wrapped around itself could cause the cord to overheat, melt, and cause a short-circuit or a fire.

Connection: the ribbed wire of the charger's output cord must be connected to the battery's negative (-) terminal. The non-ribbed wire (with words printed on it) must be connected to the battery's positive (+) terminal.

When properly connected, the charger will indicate the status of its output:

Flashing green LED - the charger is not seeing a good connection to the battery.

Solid yellow LED - the charger is providing charging current to the battery.

Solid green LED - the charger is maintaining a fully charged battery.

Plug the charger into a standard 115V receptacle. If an extension cord must be used, keep it as short as possible.

*Caution:* Remember to unplug the charger before moving the equipment. Failure to do so could cause damage to cords, receptacles, and other equipment.

The battery charger can be left connected to the battery indefinitely without risk of harming the battery.

### **Troubleshooting:**

If the unit does not operate, check all of the wiring connections to make sure they're both mechanically and electrically sound - specifically at the battery, the motor, and at any location a wire is connected to the chassis. Also, make sure the quick-connect plug on the end of the pendant control cord is plugged in correctly (if applicable).

A fully charged lead acid battery in good condition at room temperature should read 12.65 volts. At 11.9 volts it is considered to be fully discharged and in need of charging. When checking battery voltage, wait at least 1/2 hour after the charger has been turned off before checking the battery's voltage.

If the batteries don't seem to be taking a charge, check the charger's 115V supply circuit and the charger's output with a voltmeter. If all check okay, confirm the battery's state of charge using a hydrometer or a voltmeter.

## **ROUTINE MAINTENANCE & SAFETY CHECKS - TCD-DC, -M**

- *Warning: Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work.*
- *Warning: Fully lower the can carrier to the ground before beginning any inspections or work on the unit.*
- *Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment.*

(A) Before each use inspect for the following:

- 1.) Frayed wires (DC units only).
- 2.) Oil leaks
- 3.) Pinched or chafed hoses
- 4.) Damage or structural deformation to the structural members, the cylinder brackets, etc.
- 5.) Unusual noise or binding, or evidence thereof.
- 6.) Proper functioning of the upper-travel limit switch (DC units only).

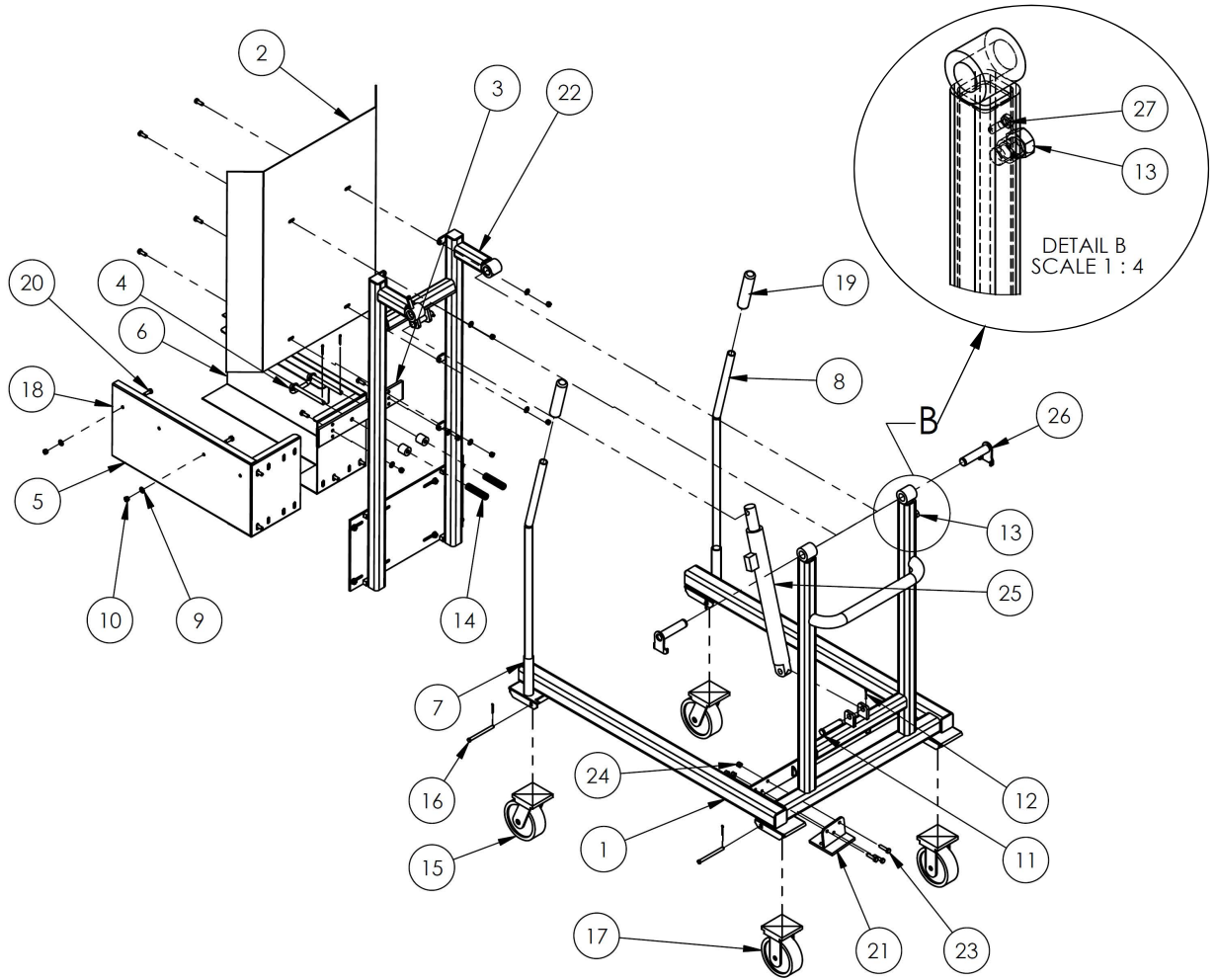
(B) Inspect monthly for:

- 1.) The oil level. Oil should be approximately 1" below the reservoir's fill hole with the carrier in the fully lowered position. See below for the hydraulic oil specification.
- 2.) Worn or damaged hydraulic hoses
- 3.) Worn or damaged electrical wires (DC units only).
- 4.) Pivot point wear.
- 5.) Integrity of the retaining hardware on all pivot point pins, etc.
- 6.) Looseness, wear, or damage to the casters' bearings, mounting hardware, or surface material.
- 7.) Proper functioning of any hand- or foot-operated mechanisms.
- 8.) Proper water level in the battery (DC units only).
- 9.) Unusual noises or movement during operation.
- 10.) All the information, safety, and warning labels being in place and in good condition. (See the labels page.)
- 11.) The need to clean off dirt and debris.

(C) Yearly inspection

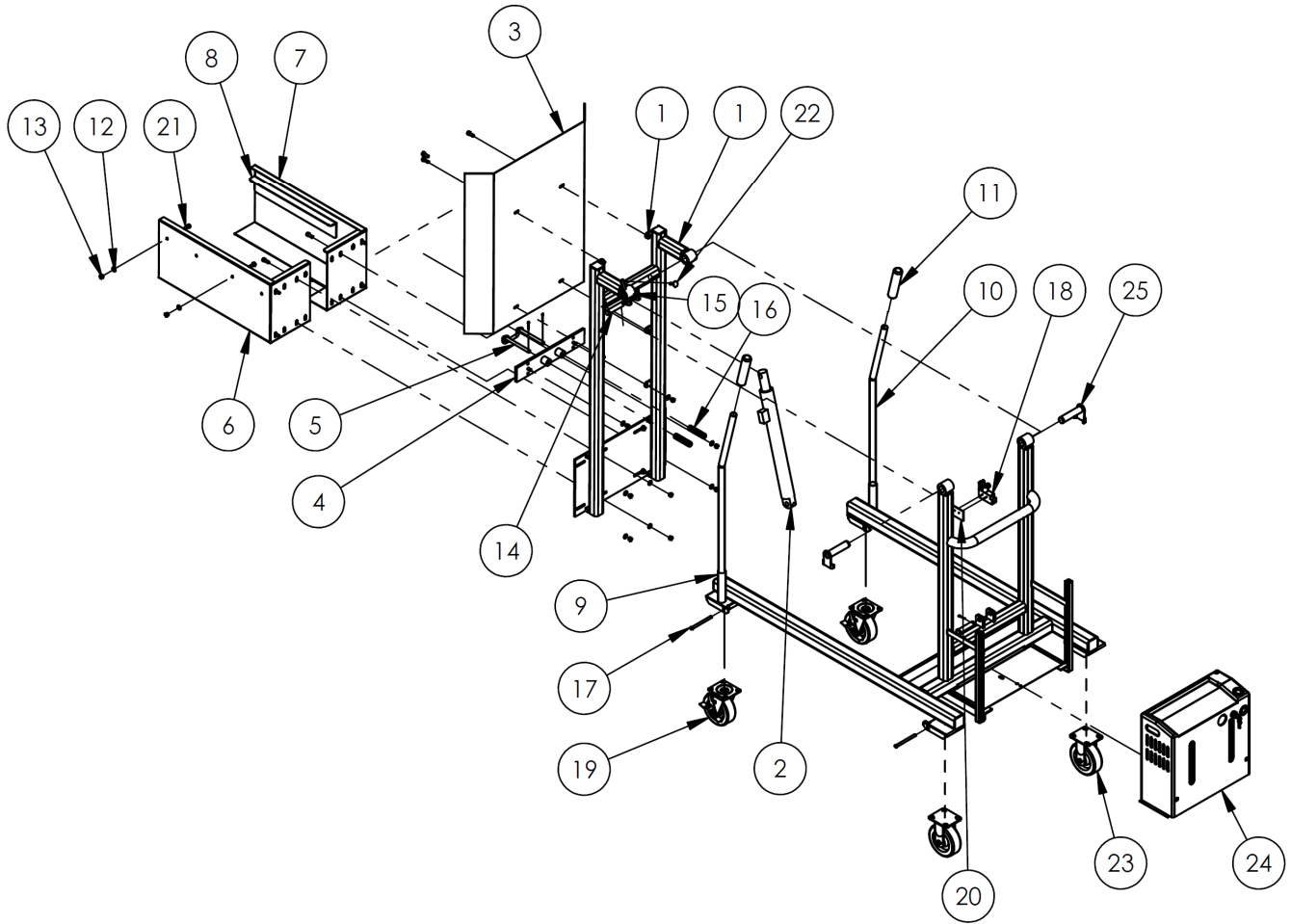
The oil should be changed if the oil darkens, becomes gritty, or turns a milky color (indicating the presence of water). Replace with an anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F, (ISO 32 at 40°C). Ex: AW 32 or HO 150 hydraulic oil, or a non-synthetic transmission fluid. You may use a synthetic transmission fluid if you flush the system with the synthetic fluid before filling the reservoir.

**Exploded Parts Diagram and Bill of Materials -- TCD-M-48; TCD-M-60; & TCD-M-72**



Item no.	Part no.	Description	Quantity
1	34-514-017	Weldment, frame, base, TDC-M	1
2	34-045-013	Chute, formed	1
3	34-516-007	Weldment, bracket, tote retainer, TCD	1
4	34-514-018	Weldment, frame, tote retainer, TCD	1
5	34-516-008	Weldment, bracket, wheel cradle, left	1
6	34-516-009	Weldment, bracket, wheel cradle, right	1
7	34-016-052	Bracket, handle, socket, TCD	2
8	09-025-005	Handle, formed	2
9	33008	$\frac{3}{8}$ in. USS flat washer, zinc-plated	18
10	36106	$\frac{3}{8}$ in. - 16 hex nut, zinc-plated	18
11	66171	$\frac{3}{4}$ in. x $3\frac{1}{2}$ in. clevis pin	2
12	65077	$\frac{1}{8}$ in. x $1\frac{1}{4}$ in. cotter pin, zinc-plated	8
13	75050	$\frac{5}{8}$ in. - 11 x 1in. brass hex head cap screw	1
14	34-146-003	Spring	2
15	16-132-127	Caster, PH-6/2-RB-S-SB	2
16	99-112-006	Clevis pin	4
17	16-132-029	Caster, PH-6/2-RB-R	2
18	34-016-046	Bracket, formed, TCD	2
19	13-025-003	$1\frac{1}{8}$ in. diameter white grips	2
20	11105	$\frac{3}{8}$ in. - 16 x 1in. HHCS #2, zinc-plated bolt	18
21	34-516-011	Weldment, foot pump mounting bracket	1
22	34-538-008	Weldment, carriage, wheel cradle, TCD	1
23	11109	$\frac{3}{8}$ in. - 16 x $1\frac{1}{2}$ in. HHCS #2, zinc-plated bolt	3
24	37024	$\frac{3}{8}$ in. nylock insert nut	3
25	09-021-004	Cylinder, displacement, hydraulic HDC	1
26	34-612-004	Weldment, pin retainer	2
27	11003	$\frac{1}{4}$ in. - 20 UNC x $\frac{3}{4}$ in. bolt	1

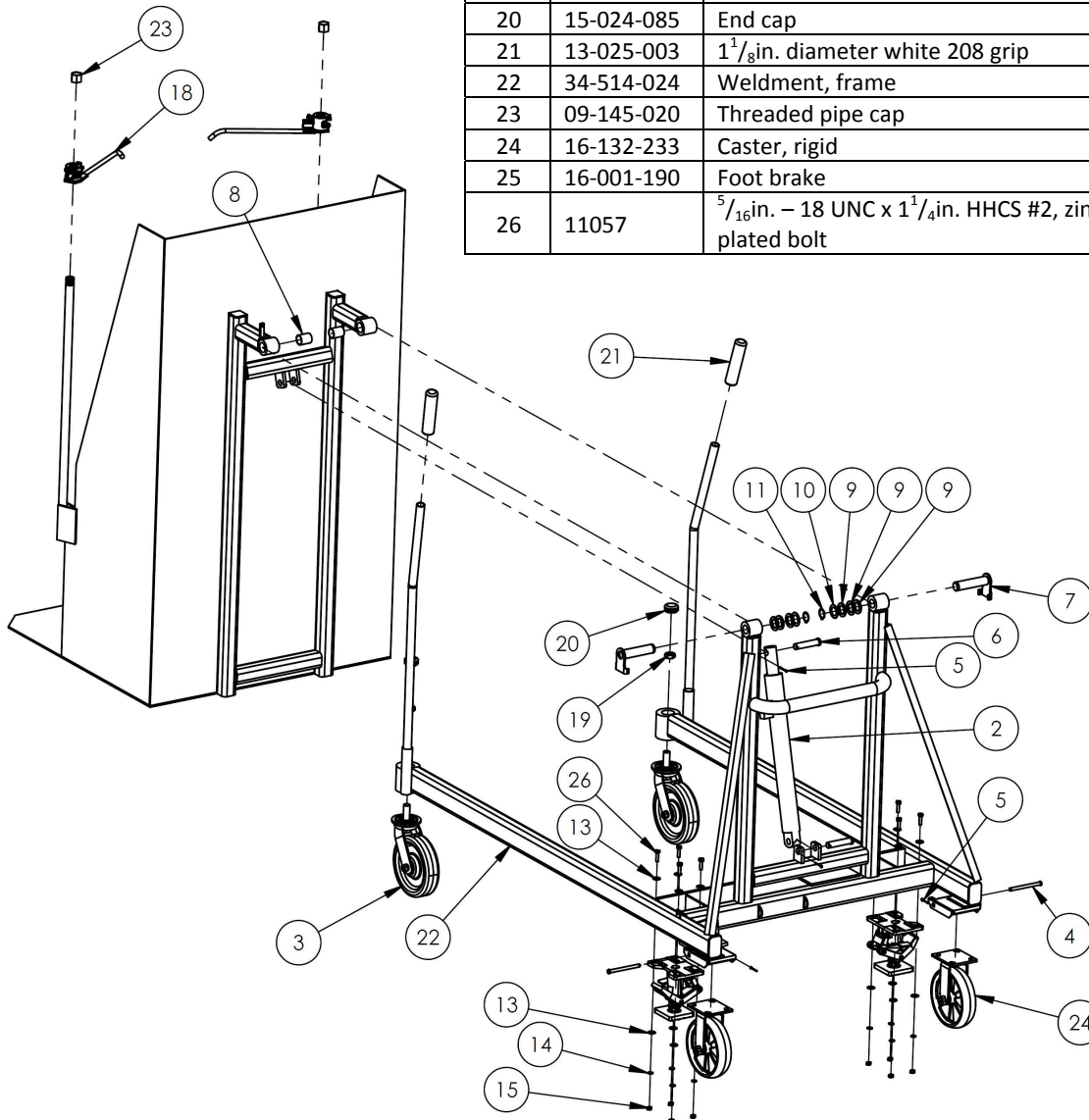
**Exploded Parts Diagram and Bill of Materials -- TCD-M-48-DC; TCD-M-60-DC; & TCD-M-72-DC**



Item no.	Part no.	Description	Quantity
1	34-538-008	Weldment, carriage, wheel cradle, TCD	1
2	09-021-004	Cylinder, displacement, hydraulic, HDC	1
3	34-045-013	Chute, formed	1
4	34-516-007	Weldment, bracket, trash bin retainer, TCD	1
5	34-514-018	Weldment, frame, trash bin retainer, TCD	1
6	34-516-008	Weldment, bracket, wheel cradle, left, TCD	1
7	34-516-009	Weldment, bracket, wheel cradle, right, TCD	1
8	34-016-046	Bracket, formed, TCD	2
9	34-016-052	Bracket, handle, socket, TCD	2
10	09-025-005	Handle, formed	2
11	13-025-003	Grips, 1 <sup>1</sup> / <sub>8</sub> in. diameter, white 208	2
12	33008	<sup>3</sup> / <sub>8</sub> in. USS flat washer, zinc-plated	18
13	36106	<sup>3</sup> / <sub>8</sub> in. – 16 hex nut, zinc-plated	18
14	66171	Clevis pin, <sup>3</sup> / <sub>4</sub> in. x 3 <sup>1</sup> / <sub>2</sub> in.	2
15	65077	Cotter pin, zinc-plated, <sup>1</sup> / <sub>8</sub> in. x 1 <sup>1</sup> / <sub>4</sub> in.	8
16	34-146-003	Spring	2
17	99-112-006	Pin, clevis	4
18	01-022-001	Switch, roller arm limit	1
19	16-132-127	Caster, PH-6X2-RB-S-SB	2
20	34-514-022	Weldment, frame, base, TCD-AC	1
21	11105	<sup>3</sup> / <sub>8</sub> in. – 16 x 1in. HHCS #2, zinc-plated bolt	18
22	22804	Elevator bolt, limit switch	1
23	16-132-029	Caster, PH-6X2-RB-R	2
24	99-158-002	Final assembly, modular power unit, DC	1
25	34-612-004	Weldment, pin retainer	2

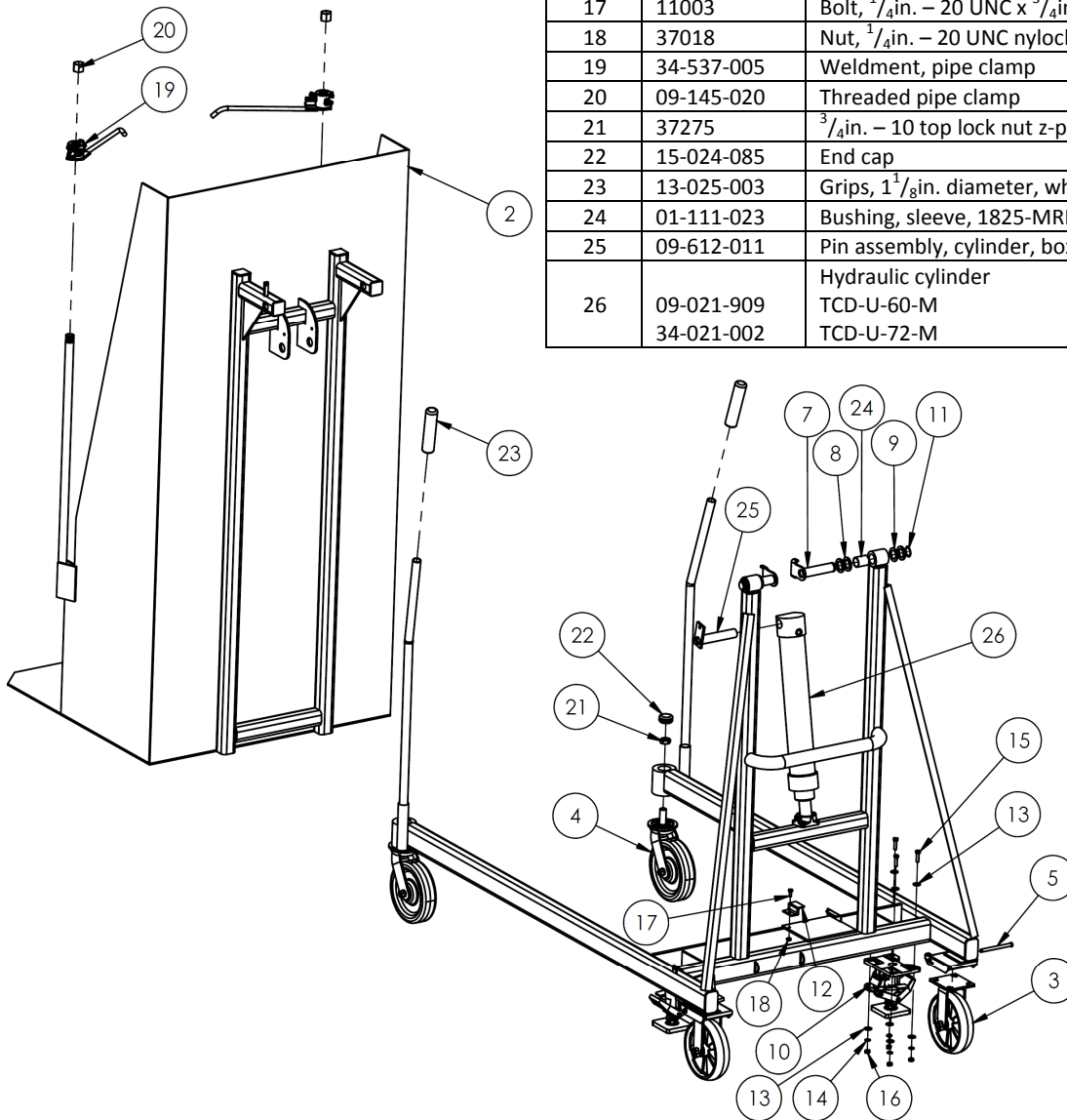
**Exploded Parts Diagram and Bill of Materials -- TCD-U-48-M**

Item no.	Part no.	Description	Quantity
1	34-545-008	Weldment, chute	1
2	09-021-004	Cylinder, displacement, hydraulic, HDC	1
3	16-132-181	Stem caster, PH-8/2-RB-S	2
4	99-112-006	Pin, clevis	2
5	65077	Cotter pin z-plated, 1/8 in. x 1 1/4 in.	4
6	66171	Clevis pin, 3/4 in. x 3 1/2 in.	2
7	34-612-004	Weldment, pin retainer	2
8	01-111-023	Bushing, sleeve, 1825-MRP	2
9	33456	1 1/8 in. I.D. 10ga. machine bushing	6
10	33454	1 1/8 in. I.D. 18ga. machine bushing	2
11	68021	1 1/8 in. external retaining ring	2
12	34-516-013	Weldment, bolt on tank bracket	1
13	33006	5/16 in. USS flat washer z-plated	16
14	33620	5/16 in. lock washer z-plated	8
15	36104	5/16 in. - 18 zinc-plated hex nut	8
16	11003	1/4 in. - 20 UNC x 3/4 in. bolt	1
17	37018	1/4 in. - 20 UNC nylock nut, zinc-plated	1
18	34-537-005	Weldment, pipe clamp	2
19	37275	3/4 in. - 10 top lock nut, zinc-plated, grade C	2
20	15-024-085	End cap	2
21	13-025-003	1 1/8 in. diameter white 208 grip	2
22	34-514-024	Weldment, frame	1
23	09-145-020	Threaded pipe cap	2
24	16-132-233	Caster, rigid	2
25	16-001-190	Foot brake	2
26	11057	5/16 in. - 18 UNC x 1 1/4 in. HHCS #2, zinc-plated bolt	8



**Exploded Parts Diagram and Bill of Materials -- TCD-U-60-M & TCD-U-72-M**

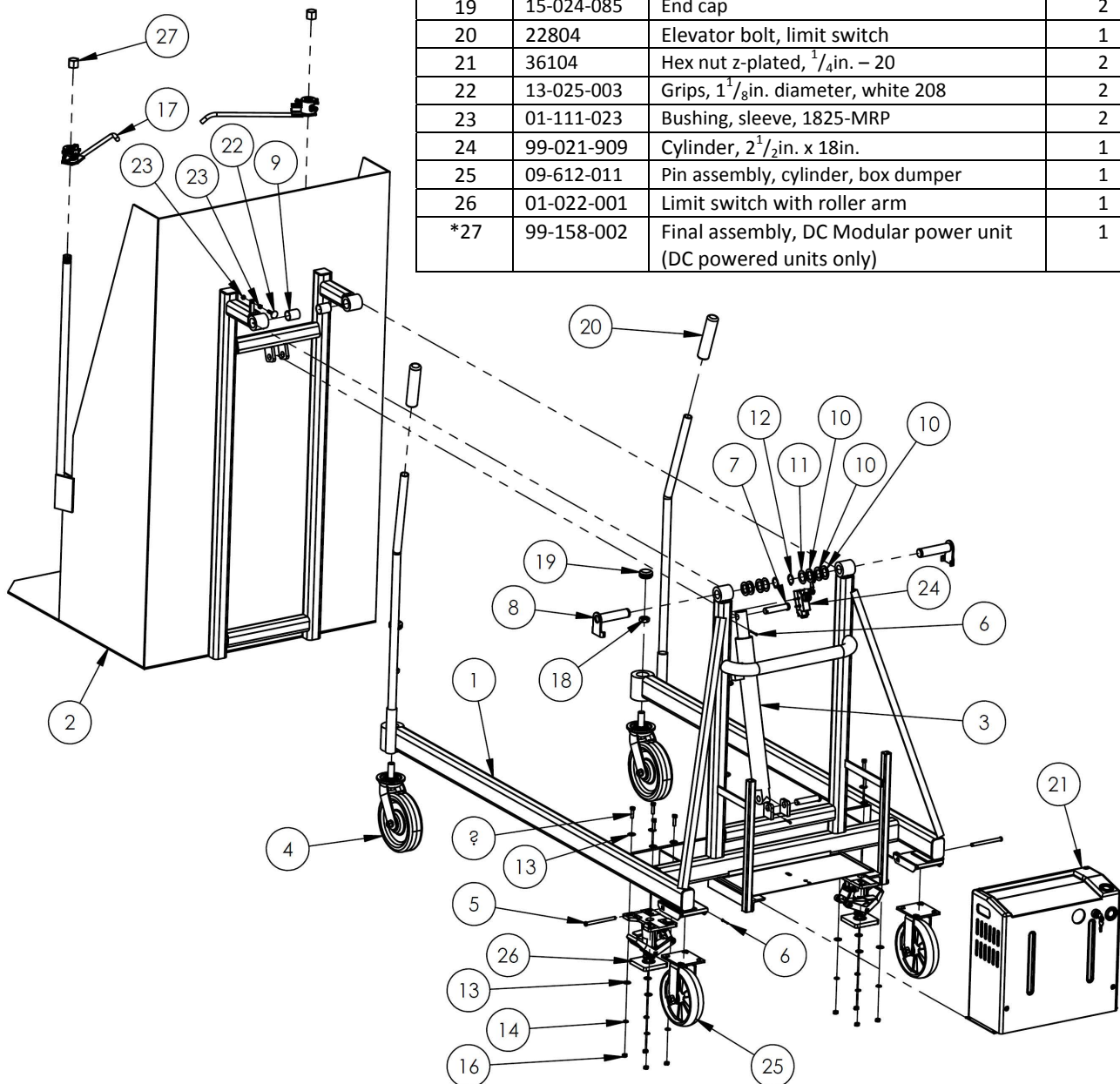
Item no.	Part no.	Description	Quantity
1	34-514-033	Weldment, frame TCD-U-60-M	1
	34-514-035	TCD-U-72-M	1
2	34-545-015	Weldment, chute TCD-U-60-M	1
	34-545-016	TCD-U-72-M	1
3	16-132-233	Caster, rigid	2
4	16-132-181	Stem caster, PH-8/2-RB-S	2
5	99-112-006	Pin, clevis	2
6	65077	Cotter pin z-plated, 1/8 in. x 1 1/4 in.	2
7	34-612-004	Weldment, pin retainer	2
8	33456	1 1/8 in. I.D. 10ga. machine bushing	6
9	33454	1 1/8 in. I.D. 18ga. machine bushing	2
10	16-001-190	Foot brake	2
11	68021	1 1/8 in. external retaining ring	2
12	34-516-013	Weldment, bolt on bracket	1
13	33006	5/16 in. USS flat washer z-plated	16
14	33620	5/16 in. lock washer z-plated	8
15	11057	HHCS #2 z-plated, 5/16 in. - 18 x 1 1/4 in.	8
16	36104	Hex nut z-plated, 5/16 in. - 18	8
17	11003	Bolt, 1/4 in. - 20 UNC x 3/4 in.	1
18	37018	Nut, 1/4 in. - 20 UNC nylock nut z-plated	1
19	34-537-005	Weldment, pipe clamp	2
20	09-145-020	Threaded pipe clamp	2
21	37275	3/4 in. - 10 top lock nut z-plated, grade C	2
22	15-024-085	End cap	2
23	13-025-003	Grips, 1 1/8 in. diameter, white 208	2
24	01-111-023	Bushing, sleeve, 1825-MRP	2
25	09-612-011	Pin assembly, cylinder, box dumper	1
26	09-021-909	Hydraulic cylinder TCD-U-60-M	1
	34-021-002	TCD-U-72-M	1





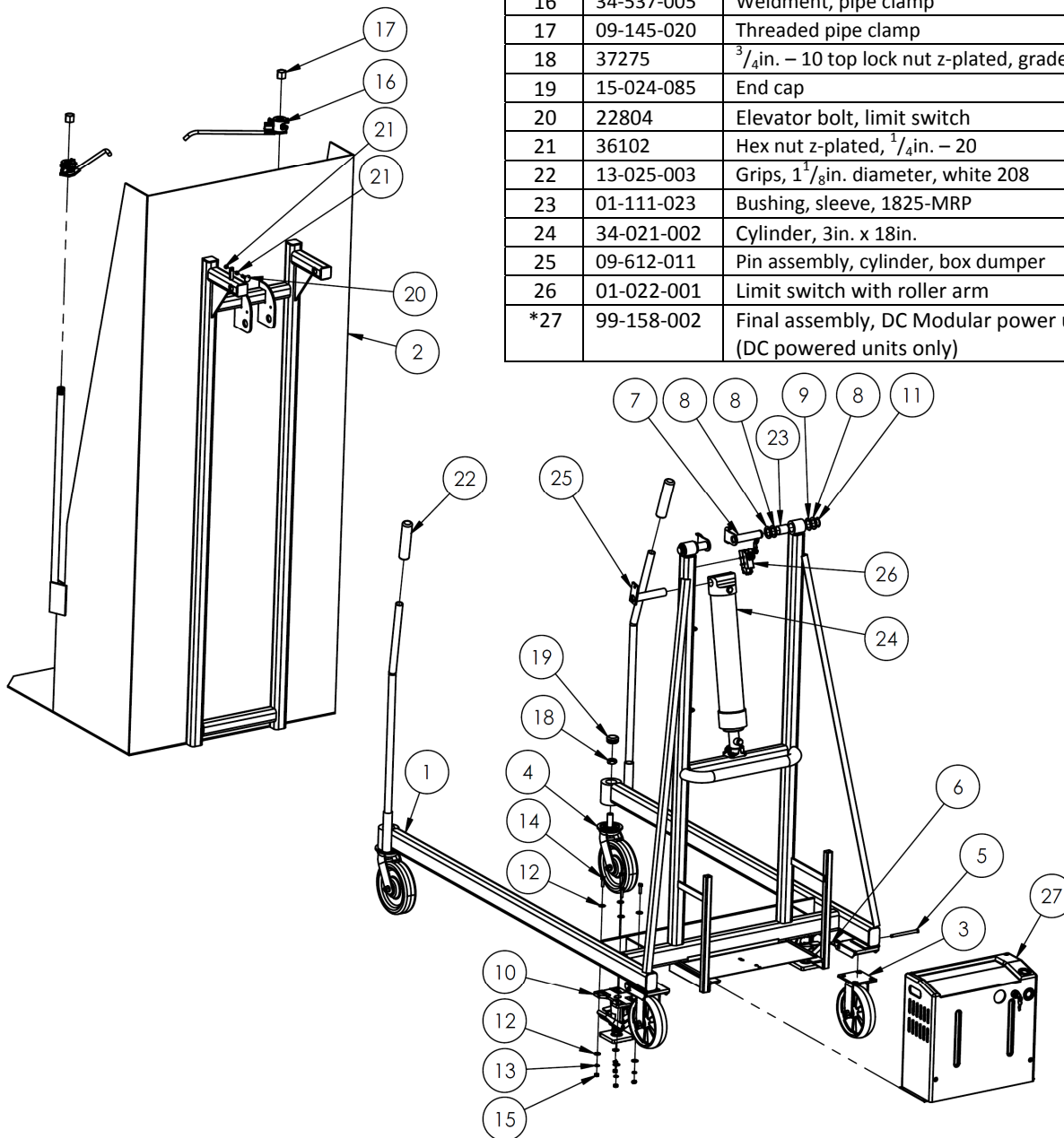
**Exploded Parts Diagram and  
Bill of Materials -- TCD-U-48-AC  
& TCD-U-48-DC**

Item no.	Part no.	Description	Quantity
1	34-514-034	Weldment, frame	1
2	34-545-015	Weldment, chute	1
3	16-132-233	Caster, rigid	2
4	16-132-181	Stem caster, PH-8/2-RB-S	2
5	99-112-006	Pin, clevis	2
6	65077	Cotter pin z-plated, $\frac{1}{8}$ in. x $1\frac{1}{4}$ in.	2
7	34-612-004	Weldment, pin retainer	2
8	33456	$1\frac{1}{8}$ in. I.D. 10ga. machine bushing	6
9	33454	$1\frac{1}{8}$ in. I.D. 18ga. machine bushing	2
10	16-001-190	Foot brake	2
11	68021	$1\frac{1}{8}$ in. external retaining ring	2
12	33006	$\frac{5}{16}$ in. USS flat washer z-plated	16
13	33620	$\frac{5}{16}$ in. lock washer z-plated	8
14	11057	HHCS #2 z-plated, $\frac{5}{16}$ in. – 18 x $1\frac{1}{4}$ in.	8
15	36104	Hex nut z-plated, $\frac{5}{16}$ in. – 18	8
16	34-537-005	Weldment, pipe clamp	2
17	09-145-020	Threaded pipe clamp	2
18	37275	$\frac{3}{4}$ in. – 10 top lock nut z-plated, grade C	2
19	15-024-085	End cap	2
20	22804	Elevator bolt, limit switch	1
21	36104	Hex nut z-plated, $\frac{1}{4}$ in. – 20	2
22	13-025-003	Grips, $1\frac{1}{8}$ in. diameter, white 208	2
23	01-111-023	Bushing, sleeve, 1825-MRP	2
24	99-021-909	Cylinder, $2\frac{1}{2}$ in. x 18in.	1
25	09-612-011	Pin assembly, cylinder, box dumper	1
26	01-022-001	Limit switch with roller arm	1
*27	99-158-002	Final assembly, DC Modular power unit (DC powered units only)	1



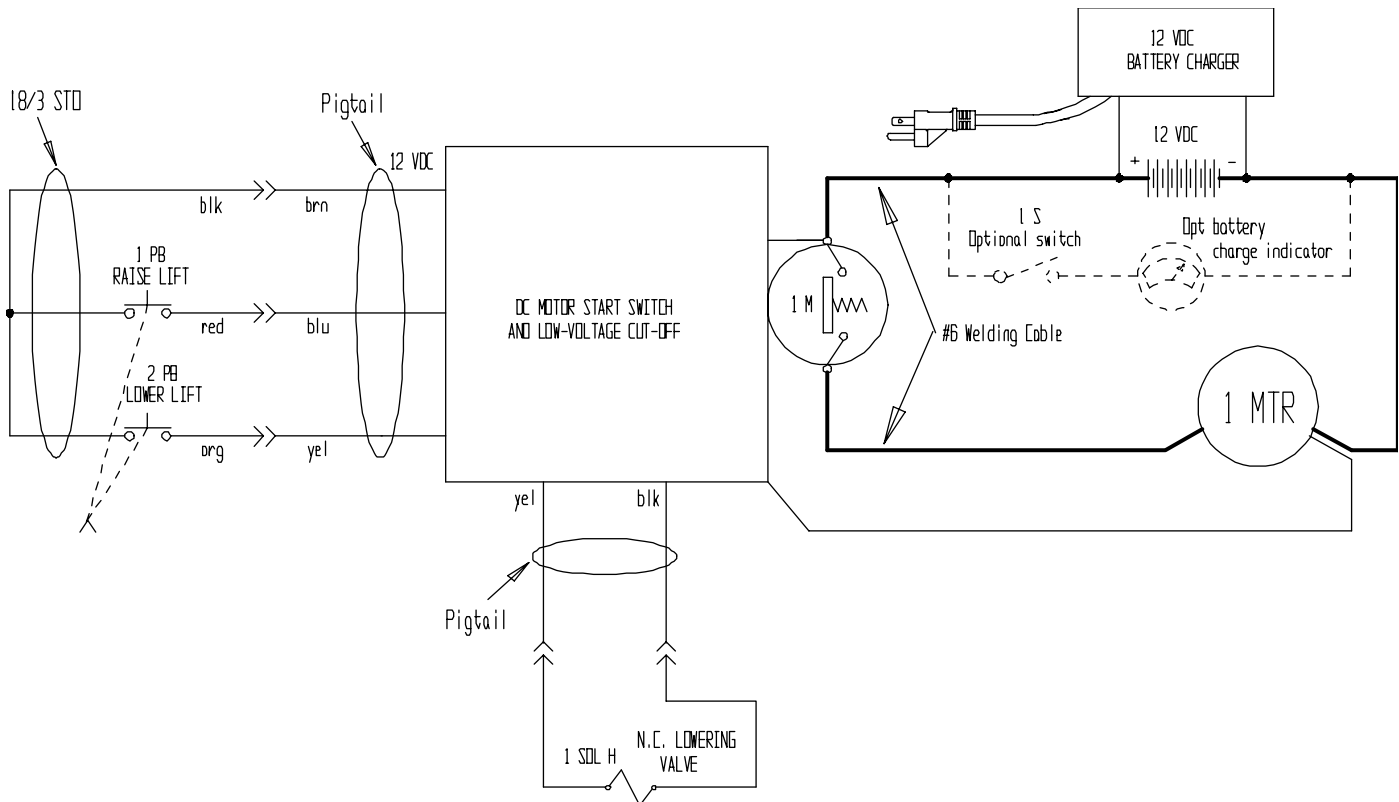
**Exploded Parts Diagram and Bill of Materials -- TCD-U-72-AC & TCD-U-72-DC**

Item no.	Part no.	Description	Quantity
1	34-514-036	Weldment, frame	1
2	34-545-016	Weldment, chute	1
3	16-132-233	Caster, rigid	2
4	16-132-181	Stem caster, PH-8/2-RB-S	2
5	99-112-006	Pin, clevis	2
6	65077	Cotter pin z-plated, $\frac{1}{8}$ in. x $1\frac{1}{4}$ in.	2
7	34-612-004	Weldment, pin retainer	2
8	33456	$1\frac{1}{8}$ in. I.D. 10ga. machine bushing	6
9	33454	$1\frac{1}{8}$ in. I.D. 18ga. machine bushing	2
10	16-001-190	Foot brake	2
11	68021	$1\frac{1}{8}$ in. external retaining ring	2
12	33006	$\frac{5}{16}$ in. USS flat washer z-plated	16
13	33620	$\frac{5}{16}$ in. lock washer z-plated	8
14	11057	HHCS #2 z-plated, $\frac{5}{16}$ in. - 18 x $1\frac{1}{4}$ in.	8
15	36104	Hex nut z-plated, $\frac{5}{16}$ in. - 18	8
16	34-537-005	Weldment, pipe clamp	2
17	09-145-020	Threaded pipe clamp	2
18	37275	$\frac{3}{4}$ in. - 10 top lock nut z-plated, grade C	2
19	15-024-085	End cap	2
20	22804	Elevator bolt, limit switch	1
21	36102	Hex nut z-plated, $\frac{1}{4}$ in. - 20	2
22	13-025-003	Grips, $1\frac{1}{8}$ in. diameter, white 208	2
23	01-111-023	Bushing, sleeve, 1825-MRP	2
24	34-021-002	Cylinder, 3in. x 18in.	1
25	09-612-011	Pin assembly, cylinder, box dumper	1
26	01-022-001	Limit switch with roller arm	1
*27	99-158-002	Final assembly, DC Modular power unit (DC powered units only)	1



## ELECTRICAL DIAGRAM -- TCD-DC

- *Warning: Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work. Ensure that all system pressure and power have been removed before attempting to work on the electrical or hydraulic systems.*
- *Warning: The can carrier must fully lowered and power must be removed before any work is performed on the dumper.*
- *Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment.*

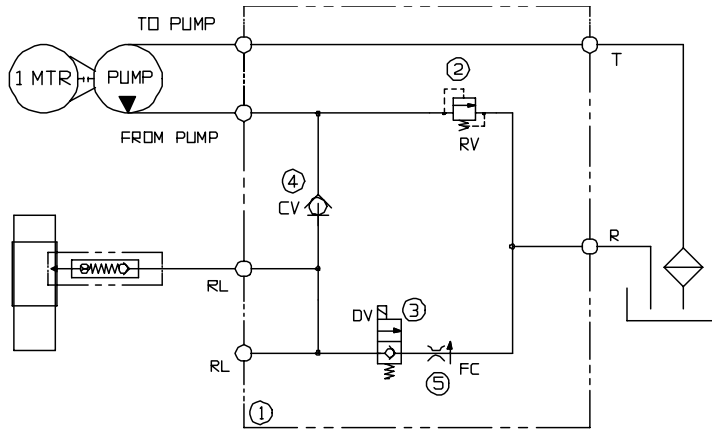


## ELECTRIC / HYDRAULIC BOM -- TCD-DC

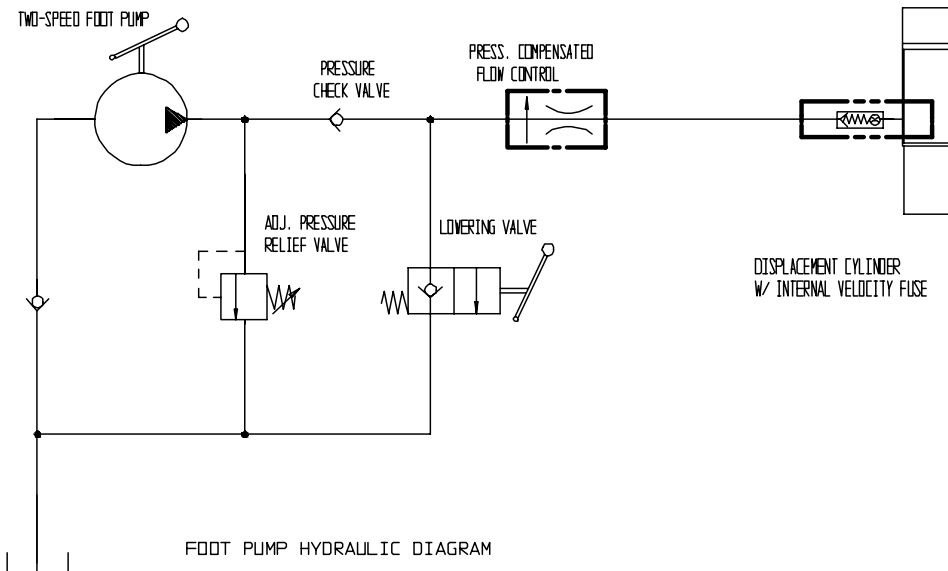
Item #:	Qty.:	Part number:	Part description:
		Electrical parts:	
1	1	15-022-004	Motor contactor (solenoid start switch, with connectors)
2	1	A-402DSC	Enclosure, junction box, 2" x 2" x 4" D
3	1	99-034-008	Solenoid coil, 12 VDC
4	1	01-022-015	Control, handheld, 2-button
5	1	01-033-012	18/3 coil cord, 18"-90"
6	1	01-033-024	18/3 cord, 24" long, with 4-pin plug
		Hydraulic parts:	
7	1	99-153-006	Valve, relief, 210 bar
8	1	99-153-015	Valve, solenoid, N.C.
9	1	99-153-011	Valve, check
10	1	99-153-038	Flow control spool, 1.0 gpm
11	1	99-127-001	Manifold, lift-hold-lower
12	1	01-143-021	Pump, hydraulic, .073 in <sup>3</sup> /rev
13	1	01-031-	Fitting, intake screen
14	1	HO 150	Hydraulic fluid (quarts)

## HYDRAULIC DIAGRAM - LIFT-HOLD-LOWER CIRCUITS

- *Warning: Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work. Fully lower the can carrier and ensure that all system pressure and power have been removed, before attempting to work on the electrical or hydraulic systems.*
- *Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment*
- *Caution: Do not use brake fluid or jack oils in the hydraulic system. If oil is needed, use an anti-wear hydraulic oil with a viscosity of 150 SUS at 100°F (ISO 32 @ 40°C), or non-synthetic transmission fluid.*



ELECTRIC / HYDRAULIC DIAGRAM



FOOT PUMP HYDRAULIC DIAGRAM

## THE POWER UNIT'S OPERATION - TDC-DC

The electric / hydraulic trash can dumper utilizes an electric motor directly coupled to a gear-type hydraulic pump to produce the needed fluid pressure and flow to allow the cylinder(s) to perform the work of dumping a trash can.

A hydraulic manifold houses the hydraulic control components, and is bolted directly onto the gear pump.

The power unit's hydraulic components are all rated for 3,000 psi working pressure.

↗ Important parts of the power unit include:

- The electric motor operates on a 12 VDC deep-cycle battery supply.
- The gear pump. Its shaft is coupled directly to the shaft of the electric motor.
- The check valve. Its purpose is to prevent the backflow of fluid through the pump. In this way it allows the carrier to be held at a given elevation indefinitely.
- The pressure relief valve. Its job is to open a path for fluid to flow back to the reservoir in the event that the fluid pressure built up by the pump exceeds 3,000 psi. Thus the system cannot see more than 3,000 psi.
- The lowering solenoid valve. This is an electrically operated cartridge valve. It contains a screen to keep contaminants from entering the valve.
- The pressure-compensated flow control spool. This rests under or adjacent to the lowering valve, and regulates the fluid flow back to the reservoir when the valve opens. It allows the carrier to always lower at the same rate regardless of whether there is a load on the carrier or not.
- The hydraulic tilt cylinder. This is a displacement-style cylinder.
- The safety velocity fuse. This is a device that is installed in the cylinder's hose port. It closes quickly in the event of a catastrophic hose failure to prevent the carrier from collapsing down. The carrier remains stationary until pressure is reapplied to the system.
- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic fluid with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) such as AW-32 or Dexron transmission fluid are acceptable.

When the trash can carrier is to be raised, press the "UP" pushbutton. The motor turns, and in turning it spins the hydraulic gear pump. Oil is drawn from the reservoir through the suction filter and into the pump. The pump pushes the then-pressurized oil through the check valve and out to the cylinder.

When the carrier is to be lowered, press the "DOWN" pushbutton. The lowering valve opens, bypassing the check valve and allowing the oil in the cylinder to return back to the reservoir through the return hose. The rate at which the carrier lowers is regulated by the internal pressure-compensated flow spool.

↗ In the event that the carrier creeps down slowly after releasing the "DOWN" control, it will be necessary to remove the lowering cartridge valve for inspection and cleaning, as follows:

- ◆ Lower the carrier until it is fully lowered.
- ◆ Remove any load from the carrier.
- ◆ Remove the nut holding the solenoid coil on the valve stem, then remove the coil, and then unscrew the valve from the manifold.
- ◆ Inspect the valve for contaminants, and the valve's o-rings and back-up washers for cuts, tears, or other damage.
- ◆ With the valve immersed in mineral spirits or kerosene, use a thin tool such as a small screwdriver or a small hex wrench to push the poppet in and out several times from the bottom end of the valve. The valve should move freely, about 1/16" from closed to open position. If it sticks in, the valve stem could be bent and will need to be replaced if it doesn't free up after cleaning. Blow the valve off with a compressed-air gun while again pushing the poppet in and out.
- ◆ Inspect the bottom of the manifold's valve cavity for contaminants.
- ◆ Again with the thin tool, press on the middle of the flow control spool located in the bottom of the cavity. It should move down and back up freely.
- ◆ Reinstall the valve into the manifold, tightening the valve with approximately 20 lb-ft of torque.

↗ If the carrier lowers extremely slowly, or not at all, the cylinder's velocity fuse could be closing. This can be caused by air in the hydraulic cylinder. To bleed the air from the system:

- ◆ Lower the carrier until it is fully lowered.
- ◆ Remove any load from the carrier.
- ◆ Loosen the hose fitting about ½ turn where it attaches at the cylinder port.
- ◆ Jog the motor for ½ second (DC unit) or pump the manual foot treadle (manual unit) once or twice. Oil and air will sputter from the fitting - once no air is observed, tighten the fitting.

## TROUBLESHOOTING GUIDE -- TDC-DC

**Warning:** Before performing any troubleshooting task, always lower the carrier to the floor.

*Consult the factory for problems at time of installation, or for any problems not addressed below.*

<u>Problem:</u>	<u>Possible cause(s):</u>	<u>Action:</u>
Carrier does not raise, motor does not run.	Upper-travel limit switch is engaged or bad. Bad connection in control circuit. Open motor relay coil. Battery voltage low.  Bad connection between motor relay and battery negative.	Inspect and test switch. Replace if bad. Test all parts of circuit with meter. Test with meter; replace if bad. Test with meter. Charge battery if low (is motor relay LED on?) Loosen and clean all electrical connections, then retighten.
Motor runs properly, carrier doesn't raise. Motor and pump not noisy.	Pump has failed. Fluid level is low.	Consult factory for replacement. Ensure that oil reservoir is filled.
Motor runs, but the carrier raises only slowly.	See previous item above, for when carrier doesn't raise. Pressure relief opening at full pressure.  Contamination holding open the lowering valve or the check valve.	Same as above.  Check for structural damage or binding. Check for carrier overload condition. Remove and inspect. Clean per instructions in this manual.
Carrier raises, then drifts down.	See last paragraph, above.	Same as above.
Carrier lowers too quickly.	See above. Flow control spool is stuck.	Same as above. See below.
Carrier lowers too slowly.	Flow control spool is stuck.  Pinched hose.  Velocity fuse locking (carrier only slowly creeps down).	Remove plug from FC port; push on flow spool to ensure it is fully pressed into the cavity. Check pressure, supply, and return hoses for kinks. Same as for jerky carrier motion.
Carrier won't lower.	Velocity fuse locking. No supply voltage. Valve solenoid is bad.  Bad connection in control circuit. Physical blockage of the structure.  Solenoid valve or suction hose screen plugged.	Same as for jerky carrier motion. Test battery voltage with meter. Check the solenoid with a multimeter on diode-check function. (Reading for ohms will not provide an accurate test of the coil.) Test all parts of circuit with meter. Inspect for foreign material or objects that might block the carrier. Remove and inspect. Clean per instructions in this manual.
Spongy or jerky carrier motion.	Excessive air in the hydraulic cylinder(s).	Bleed air per procedure described in this manual.

- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) such as AW 32 or a non-synthetic transmission fluid is acceptable.

## TROUBLESHOOTING GUIDE -- TDC-M

**Warning:** Before performing any troubleshooting task, always lower the carrier to the floor.

*Consult the factory for problems at time of installation, or for any problems not addressed below.*

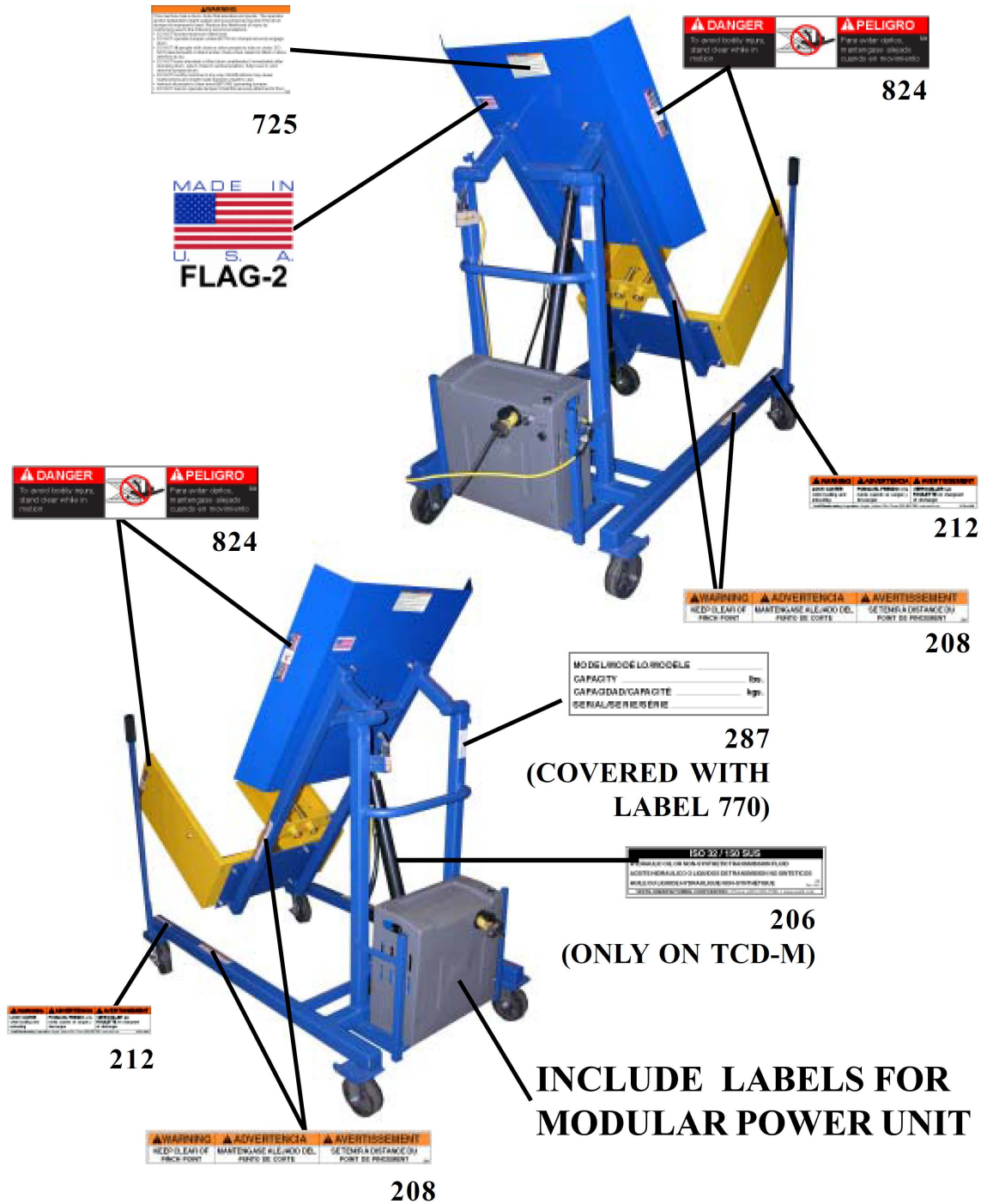
<u>Problem:</u>	<u>Possible cause(s):</u>	<u>Action:</u>
Platform does not raise when the foot treadle is pressed. Foot treadle goes down without excessive force.	No oil getting through the pump -- not enough oil in reservoir, or the pump has become "air-locked."  Pinched or kinked hose.  Relief valve is opening.  Inlet check valve assembly being held open by contamination.	Check the reservoir's oil level. It might be necessary to bleed air from the pump piston at the socket-head screw located on the left side of the pump cylinder.  Visually inspect all hoses. Replace or reposition as necessary.  Check for excessive load on the platform.  Open the port on the left side of the pump and clean any foreign material from the ball and its seat. Press the foot treadle to help flush any contamination out of the port.
Carrier will lift under no load, but not when fully loaded. Foot treadle goes down without excessive force.	Same as above. Contamination holding open the relief valve assembly.  Air in the pump piston.	Same as above. Open the port to the right of the release pedal. Inspect and clean the parts. Press the foot treadle to flush contamination out of the port. Bleed air from the pump piston. See first paragraph, above.
Carrier raises with the pump downstroke, but lowers with the pump upstroke.	Outlet check valve assembly being held open by contamination.	Open the port on the left side of the pump and clean any foreign material from the ball and its seat.
Carrier raises, then drifts down.	Same as above.	Same as above.
Carrier raises, but in smaller increments than normal.	Contamination holding open the relief valve assembly or the inlet check valve assembly.	Reference the instructions above for cleaning each assembly.
Excessive effort is required to operate the foot pump.	Operating pressure is too high for effective use at the current pump displacement.	Slide the speed selector forward to put the pump into low volume operation. Check for excessive load on the carrier.
Carrier won't lower when the release pedal is pressed, or lowers too slowly.	Pinched hose.  Release pin is bent or broken.  Velocity fuse is locked. Object under the platform, or obstructing the leg assembly movement or roller travel. Damage to the leg assembly structure.  Flow control spool sticking or plugged by contamination.	Check all hoses for kinks, crimped spots, or visual damage. Reroute or replace as necessary.  Inspect the release pin under the release pedal. It should protrude 3/16", and should move in and out by 1/8" + .  Bleed air from the cylinder. Inspect for and remove any physical obstructions.  Inspect for evidence of rubbing, binding, twisting, etc.  Remove the pressure hose to access and inspect the flow control. Push on the outside edge of the flow spool to ensure it is fully pressed into the cavity, and on the center to verify that it moves freely.
Carrier lowers too quickly.	Same as last item above.	Same as last item above.
Carrier lowers with a jerky motion.	Air in the hydraulic system, especially the cylinder(s).	Bleed air from the system at the cylinder.

- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic oil with a viscosity grade of 150 SUS at 100°F (ISO 32 @ 40°C) such as AW 32 or a non-synthetic transmission fluid is acceptable.

# Label Placement Diagram

Routinely inspect and clean all labels affixed to the product to maintain legibility from safe viewing distances. Contact the manufacturer for replacement labels.

(TCD-M-DC SHOWN)





## 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 if the part is 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.

### What is an “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 any of the following methods:

Mail	Fax	Email
Vestil Manufacturing Corporation 2999 North Wayne Street, PO Box 507 Angola, IN 46703	(260) 665-1339 Phone (260) 665-7586	sales@vestil.com

In the written request, list the parts believed to be defective and include the address where replacements should be delivered.

### What is covered under the warranty?

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 may require you to send the entire product, or just the defective part or parts, to its facility in Angola, IN. The warranty covers defects in the following original dynamic components: motors, hydraulic pumps, electronic controllers, switches 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 components is 1 year. The warranty period begins on the date when Vestil ships the product to the warrantee. If the product was purchased from an authorized distributor, the period begins when the distributor ships the product. Vestil may extend the 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?

1. Labor;
2. Freight;
3. Occurrence of any of the following, which automatically voids the warranty:
  - Product misuse;
  - Negligent operation or repair;
  - Corrosion or use in corrosive environments;
  - Inadequate or improper maintenance;
  - Damage sustained during shipping;
  - Collisions or other incidental contacts causing damage to the product;
  - Unauthorized modifications: DO NOT modify the product IN ANY WAY without first receiving written

authorization from Vestil. Modification(s) might make the product unsafe to use or might cause excessive and/or abnormal wear.

### 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.

