



Vestil Manufacturing Corp.

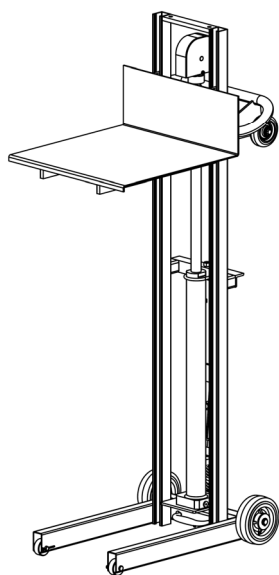
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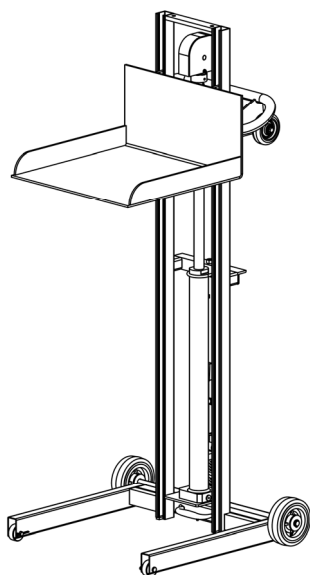
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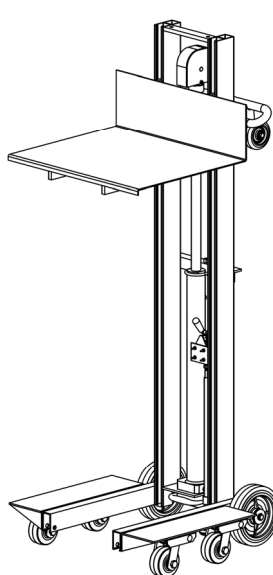
LLH, LLPH, ALLH, & ALLPH Light Load Lifters Use and Maintenance Manual



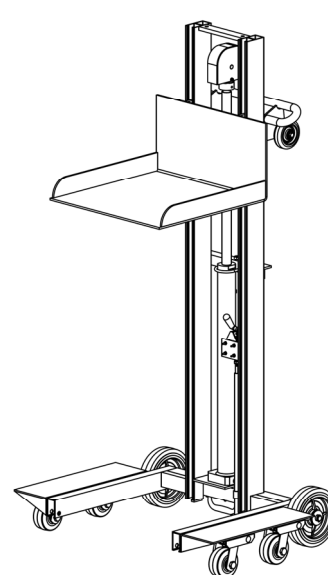
(A)LLH-FW



(A)LLPH-FW



(A)LLH-4SFL



(A)LLPH-4SFL

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:

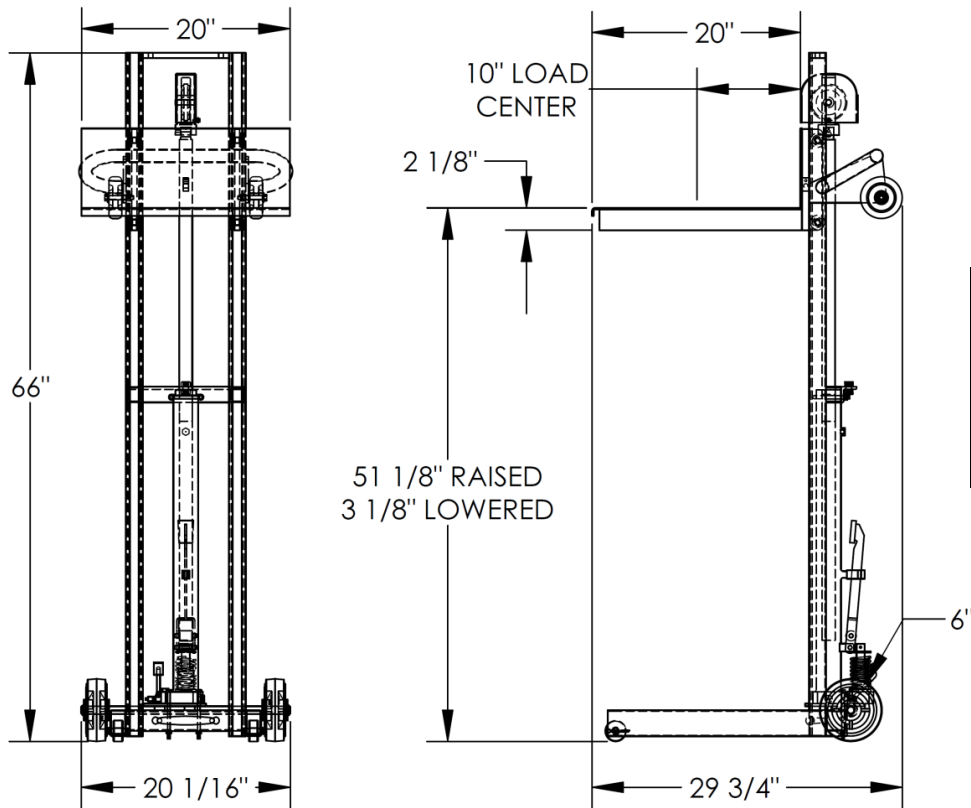
The end-user is solely responsible for confirming that product design, installation, use, and maintenance comply with laws, regulations, codes, and mandatory standards applied where the product is used.

Table of Contents

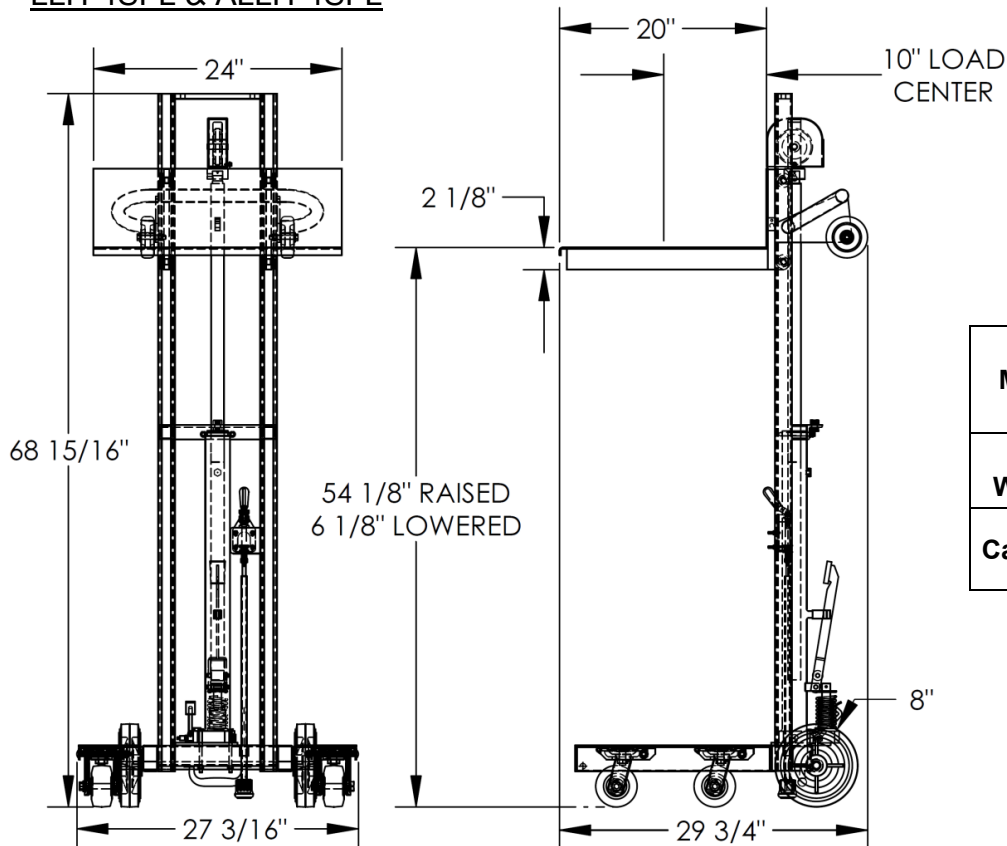
Specifications (dimensions, capacity, net weight): LLH & ALLH.....	2
Specifications (dimensions, capacity, net weight): LLPH & ALLPH.....	3
Signal Words.....	4
Hazards of Improper Use.....	4
LLH-202053-FW Exploded Parts Diagram & Bill of Materials.....	5
ALLH-2020-FW Exploded Parts Diagram & Bill of Materials.....	6
LLH-242056-4SFL Exploded Parts diagram & Bill of materials.....	7
ALLH-2420-4SFL Exploded Parts Diagram & Bill of Materials.....	8
LLPH-500-FW Exploded Parts Diagram & Bill of Materials.....	9
ALLPH-500-FW Exploded Parts Diagram & Bill of Materials.....	10
LLPH-500-4SFL Exploded Parts Diagram & Bill of Materials.....	11
ALLPH-500-4SFL Exploded Parts Diagram & Bill of Materials.....	12
Raising and Lowering the Deck.....	13
Use Instructions.....	13 - 14
Inspections & Maintenance.....	15
Troubleshooting.....	16
Detailed Troubleshooting – Hydraulic Foot Pump.....	17
Foot Pump Maintenance Diagrams.....	18 – 21
Hydraulic Circuit Diagram.....	21
Hydraulic System Operation.....	22
Labeling Diagram.....	22
Limited Warranty.....	23

Specifications:

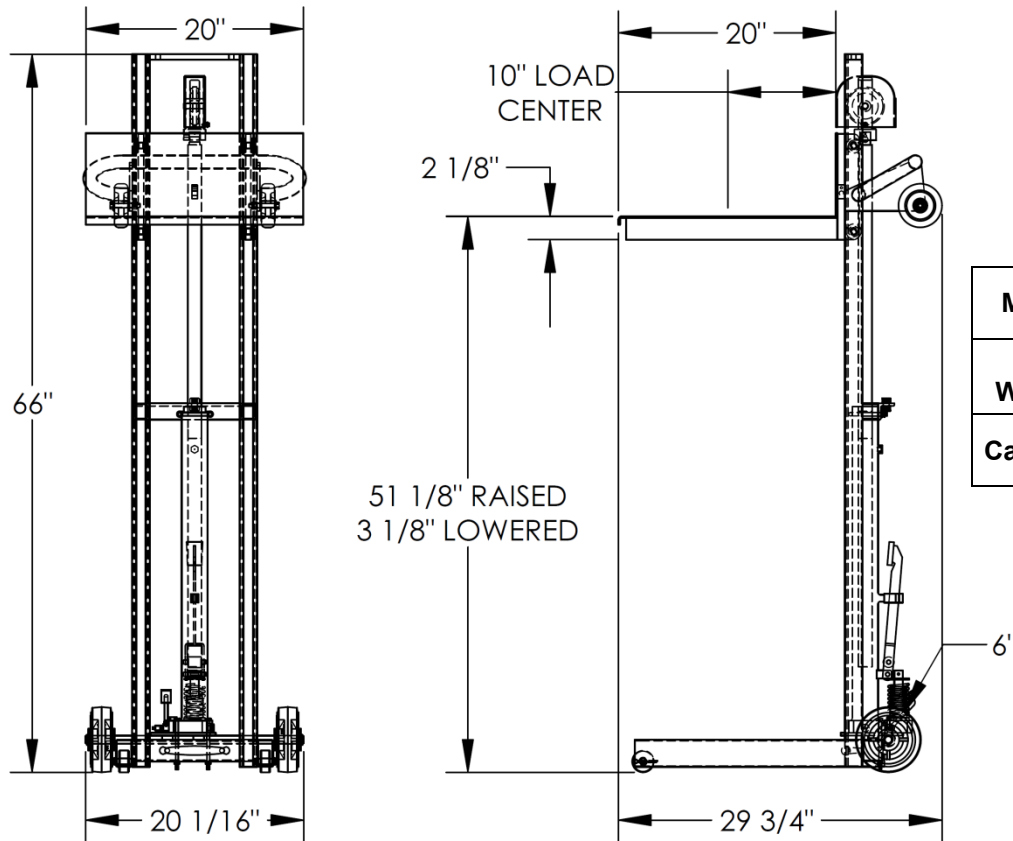
Dimensions and other product specifications for standard units appear in the diagrams and tables below.

LLH-FW & ALLH-FW

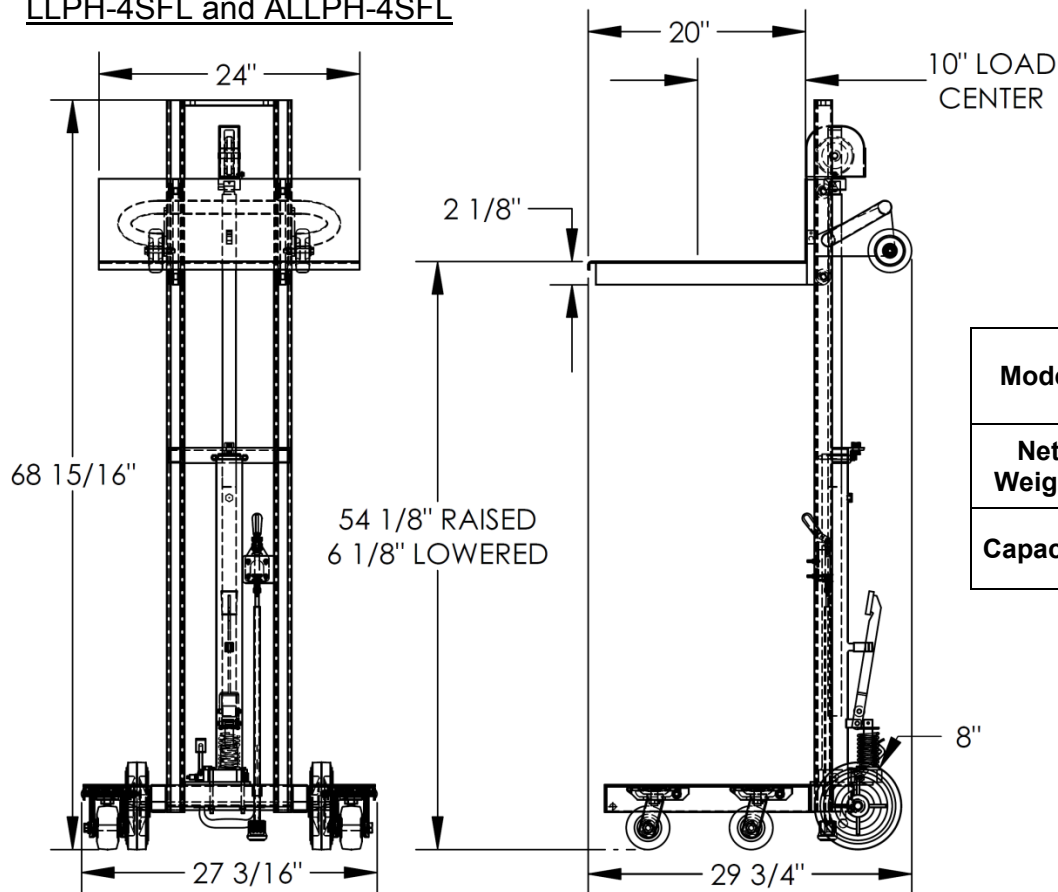
Model	LLH-202053-FW	ALLH-2020-FW
Net Weight	178 lb. 80.7 kg	130 lb. 59.1 kg
Capacity	500 lb. 227.3 kg	400 lb. 181.8 kg

LLH-4SFL & ALLH-4SFL

Model	LLH-202053-4SFL	ALLH-2020-4SFL
Net Weight	239 lb. 108.3 kg	173 lb. 78.6 kg
Capacity	500 lb. 227.3 kg	400 lb. 181.8 kg

LLPH-FW and ALLPH-FW

Model	LLPH-500-FW	ALLPH-500-FW
Net Weight	203 lb. 92.3 kg	139 lb. 63.2 kg
Capacity	500 lb. 227.3 kg	400 lb. 181.8 kg

LLPH-4SFL and ALLPH-4SFL

Model	LLPH-500-4SFL	ALLPH-500-4SFL
Net Weight	260 lb. 118.1 kg	181 lb. 82.1 kg
Capacity	500 lb. 227.3 kg	400 lb. 181.8 kg

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 cause property damage. The signal words used appear below along with the meaning of each word:



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.



Identifies a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY**.



Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE** injury.



Identifies practices likely to result in product/property damage, such as operation that might damage the product.

Hazards of Improper Use:

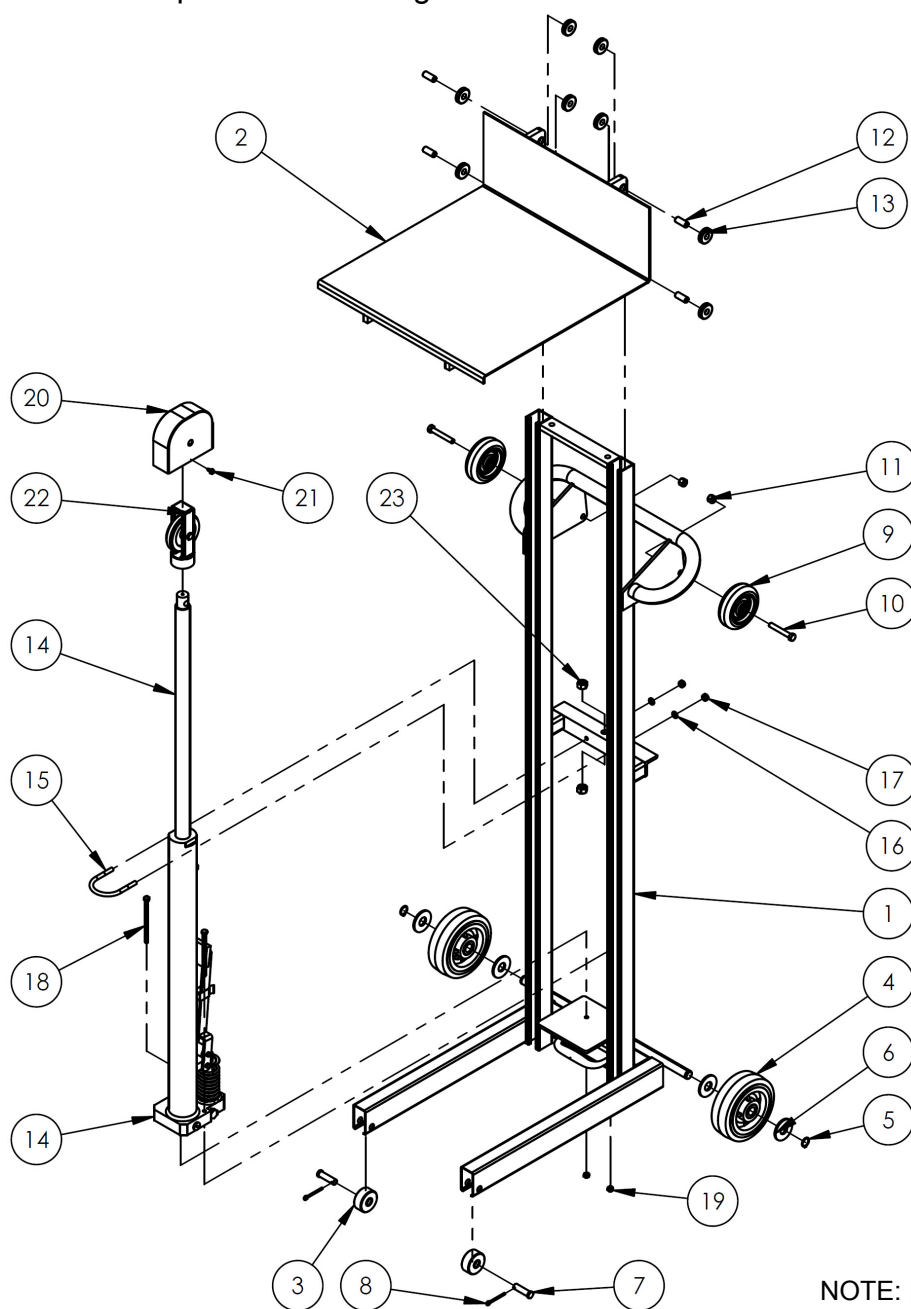
We strive to identify foreseeable hazards associated with the use of our products. However, material handling is inherently dangerous and no manual can address every risk. The end-user ultimately is responsible for exercising sound judgment at all times.



Material handling is dangerous. Improper or careless operation might result in serious personal injuries. Always apply material handling techniques learned during training and use the product properly.

- ***Failure to read and understand the entire manual before assembling, using or servicing the product constitutes misuse.*** Read the manual to refresh your understanding of proper use and maintenance procedures as necessary.
- Inspect the lifter before each use according to the instructions that appear on p. 15. **DO NOT** use the lifter unless it is in normal operating condition. Inspect the unit before each use according to the inspection instructions to determine whether the unit is functioning normally. **DO NOT** use the lifter unless it passes *every* part of the inspection or until it is restored to normal operating condition.
- **ALWAYS** inspect the area where the lifter will be used. Inspect the area for unusual conditions that might require special precautions or that might require you to use equipment instead of this lifter.
- Regardless of whether the lifter is loaded or unloaded, **DO NOT** stand or travel under the deck.
- Instruct others to stay clear of the device and the supported load during operation.
- Avoid contact with moving parts during operation. In particular, avoid contact with the cable, deck, wheels and rollers.
- **DO NOT** allow people to ride on the lifter.
- **ALWAYS** load the deck properly by following the list or recommendations below. Failure to properly position a load on the deck might result in injury:
 1. **DO NOT** exceed the maximum rated load (capacity). The rated load appears on label 287 as shown in "Labeling diagram" on p. 22 (also see "Product specifications" tables on pp. 2 & 3.)
 2. **ALWAYS** properly center and evenly distribute the load. **DO NOT** handle off-center loads or loads that cannot be centered.
 3. Start and stop gradually to avoid upsetting the load on the deck. Strap loads to the deck if they might roll or slide.
 4. **NEVER** tilt the lifter while carrying a load. All wheels and casters must maintain contact with the ground when a load is on the deck.
- **ALWAYS** observe the deck while raising and lowering it. The deck should rise smoothly and evenly from side-to-side. Watch for binding or jerky movement and listen for unusual noises. Tag the unit "Out of order" and do not use it if you observe anything abnormal.
- Only use this lifter on even, level ground. **DO NOT** transport loads over inclines or stairs.
- Enlist a coworker to help you lift, load, and unload the unit whenever necessary.
- **DO NOT** perform maintenance on this product **UNLESS** it is unloaded and the deck is lowered. If the unit requires repairs, **ONLY** install manufacturer-approved replacement parts.
- Before leaving the unit unattended, unload it and lower the deck.
- **DO NOT** use the lifter **UNLESS** all labels are in place and readable (see "Labeling diagram" on p. 22).
- **DO NOT** modify this product in any way. Modifying the lifter automatically voids the limited warranty and might make it unsafe to use.

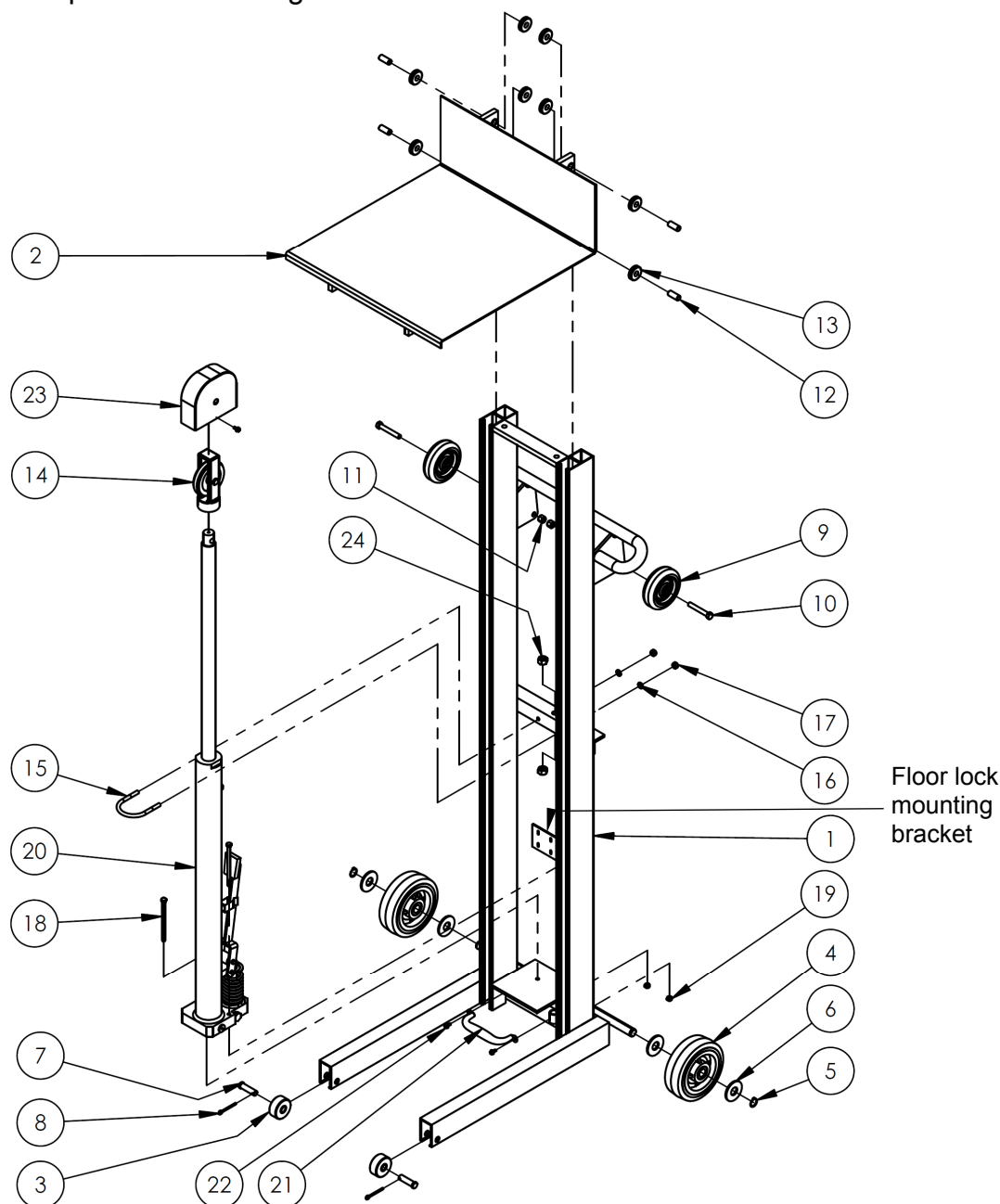
LLH-202053-FW Exploded Parts Diagram & Bill of Materials



NOTE: Item 24 not shown.

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	21-514-004	Weldment, frame	1	13	21-027-003	Roller, guide	8
2	21-513-002	Weldment, deck, LLW/LLH	1	14	01-640-031	Pump, manual, 24in. stroke	1
3	21-527-002	Roller, subassembly + bushing	2	15	42034	$\frac{5}{16}$ in. – 18 UNC x $2\frac{1}{2}$ in. (ID) U-bolt	1
4	16-132-058	Wheel, PP-6x2-W	2	16	33620	$\frac{5}{16}$ in. z-plated lock washer	2
5	68015	$\frac{3}{4}$ in. external retaining ring	2	17	36104	$\frac{5}{16}$ in. – 18 z-plated hex nut	2
6	33018	$\frac{3}{4}$ in. USS z-plated flat washer	4	18	11021	$\frac{1}{4}$ in. – 20 UNC x $4\frac{1}{2}$ in. HHCS #2 z-plated bolt	2
7	21-112-003	$\frac{1}{2}$ in. x $1\frac{15}{16}$ in. clevis pin	2	19	36102	$\frac{1}{4}$ in. – 20 z-plated hex nut	2
8	65107	$\frac{5}{32}$ in. x 2in. cotter pin	2	20	21-524-004	Weldment, guard, pulley guard	1
9	16-132-009	PP-4/1.25-W	2	21	31802	8-18 x $\frac{1}{2}$ in. self-tapping screw	1
10	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ in. – 16 x $2\frac{1}{2}$ in.	2	22	33-542-001	Assembly, pulley, HYDRA	1
11	37024	$\frac{3}{8}$ in. Nylon lock nut	2	23	36110	$\frac{1}{2}$ in. – 13 zinc-plated hex nut	2
12	21-112-002	$\frac{1}{2}$ in. roller pin	4	24	33-542-003	Chain, chain assembly	1

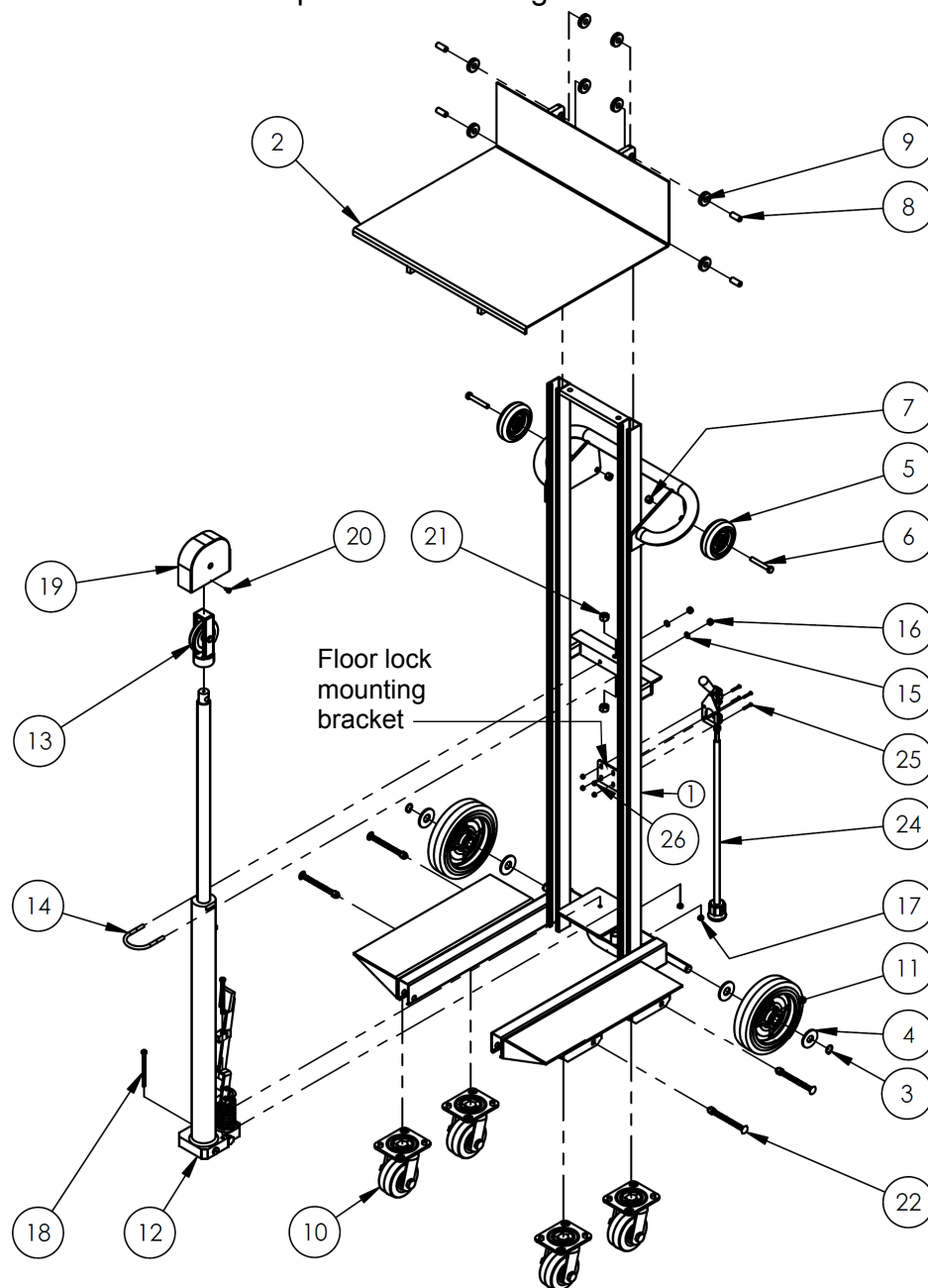
ALLH-2020-FW Exploded Parts Diagram & Bill of Materials

**NOTES:**

1. Item 25 not shown.
2. Diagram includes floor lock mounting bracket. Units ordered without the floor lock option lack this bracket.

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	21-514-013	Weldment, frame	1	13	21-027-003	Roller, guide	8
2	21-513-006	Weldment, deck, ALLW/ALLH	1	14	33-542-001	Assembly, pulley, HYDRA	1
3	21-527-002	Roller, subassembly + bushing	2	15	42034	$\frac{5}{16}$ in. – 18 UNC x $2\frac{1}{2}$ in. (ID) U-bolt	1
4	16-132-058	Wheel, PP-6x2-W	2	16	33620	$\frac{5}{16}$ in. z-plated lock washer	2
5	68015	$\frac{3}{4}$ in. external retaining ring	2	17	36104	$\frac{5}{16}$ in. – 18 z-plated hex nut	2
6	33018	$\frac{3}{4}$ in. USS z-plated flat washer	4	18	11021	$\frac{1}{4}$ in. – 20 UNC x $4\frac{1}{2}$ in. HHCS #2 z-plated bolt	2
7	21-112-003	$\frac{1}{2}$ in. x $1\frac{15}{16}$ in. clevis pin	2	19	36102	$\frac{1}{4}$ in. – 20 z-plated hex nut	2
8	65107	$\frac{5}{32}$ in. x 2in. cotter pin	2	20	01-640-031	Pump, manual, 24in. stroke	1
9	16-132-009	PP-4/1.25-W	2	21	13-025-004-002	Handle with holes	1
10	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ in. – 16 x $2\frac{1}{2}$ in.	2	22	31802	8-18 x $\frac{1}{2}$ in. self-tapping screw	3
11	37024	$\frac{3}{8}$ in. Nylon lock nut	2	23	21-524-004	Weldment, guard, pulley guard	1
12	21-112-002	$\frac{1}{2}$ in. roller pin	4	24	36110	$\frac{1}{2}$ in. – 13 zinc-plated hex nut	2
				25	33-542-003	Chain, chain assembly	1

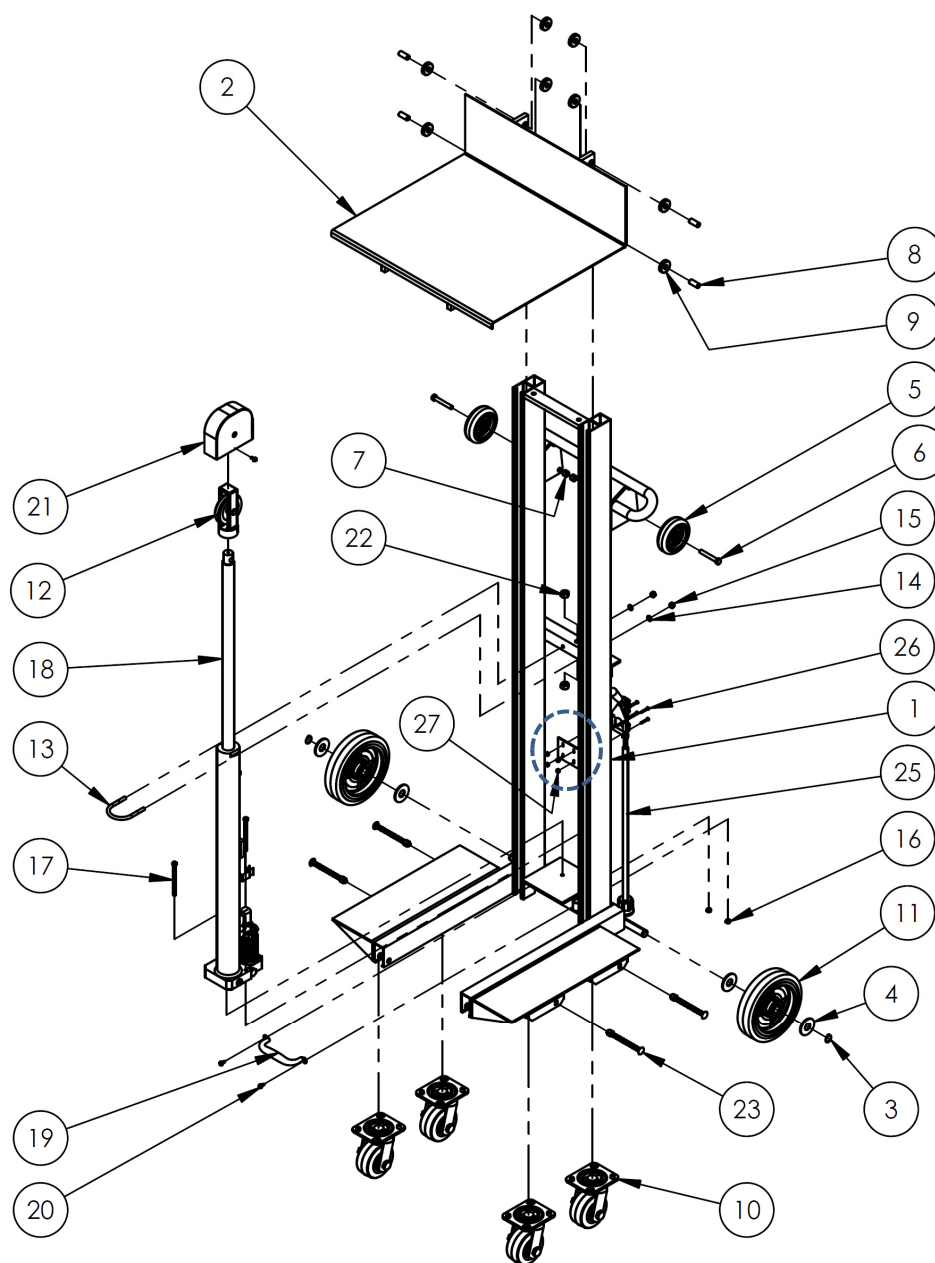
LLH-242056-4SFL Exploded Parts Diagram & Bill of Materials

**NOTES:**

1. Item 23 not shown in diagram.
2. Diagram includes floor lock mounting bracket. Units ordered without the floor lock option lack this bracket.
3. Item 22 is listed in the bill of materials as a carriage bolt and nut assembly. However, some units might use 0.374" x 4⁵/₈" clevis pins (99-612-006 and cotter pins (65074).

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	21-514-006	Weldment, frame	1	14	42034	⁵ / ₁₆ in. – 18 UNC x 2 ¹ / ₂ in. (ID) U-bolt	1
2	21-513-003	Weldment, deck, LLW/LLH-4SFL	1	15	33620	⁵ / ₁₆ in. z-plated lock washer	2
3	68015	³ / ₄ in. external retaining ring	2	16	36104	⁵ / ₁₆ in. – 18 z-plated hex nut	2
4	33018	³ / ₄ in. USS z-plated flat washer	4	17	36102	¹ / ₄ in. – 20 z-plated hex nut	2
5	16-132-009	PP-4/1.25-W	2	18	11019	¹ / ₄ in. – 20 UNC x 4in. HHCS #2 z-plated bolt	2
6	11113	HHCS #2 zinc-plated, ³ / ₈ in. – 16 x 2 ¹ / ₂ in.	2	19	21-524-004	Weldment, guard, pulley guard	1
7	37024	³ / ₈ in. Nylon lock nut	2	20	31802	8-18 x ¹ / ₂ in. self-tapping screw	1
8	21-112-002	¹ / ₂ in. roller pin	4	21	36110	¹ / ₂ in. – 13 zinc-plated hex nut	2
9	21-027-003	Roller, guide	8	22	99-612-001	Pin, bulldog bolt & nut assembly OR Clevis pin and cotter pin (see Notes)	4
10	16-132-011	4x2 mold-on rubber swivel caster	4	23	33-542-003	Chain, chain assembly	1
11	16-132-200	8x2 hard rubber wheel (red)	2	24	21-001-132	Floor lock assembly	1
12	01-640-031	Pump, manual, 24in. stroke	1	25	27402	RHSMS #8-32x1"	4
13	33-542-001	Assembly, pulley, HYDRA	1	26	37012	#8-32 Nylock Nut, zinc plated	4

ALLH-2420-4SFL Exploded Parts Diagram & Bill of Materials

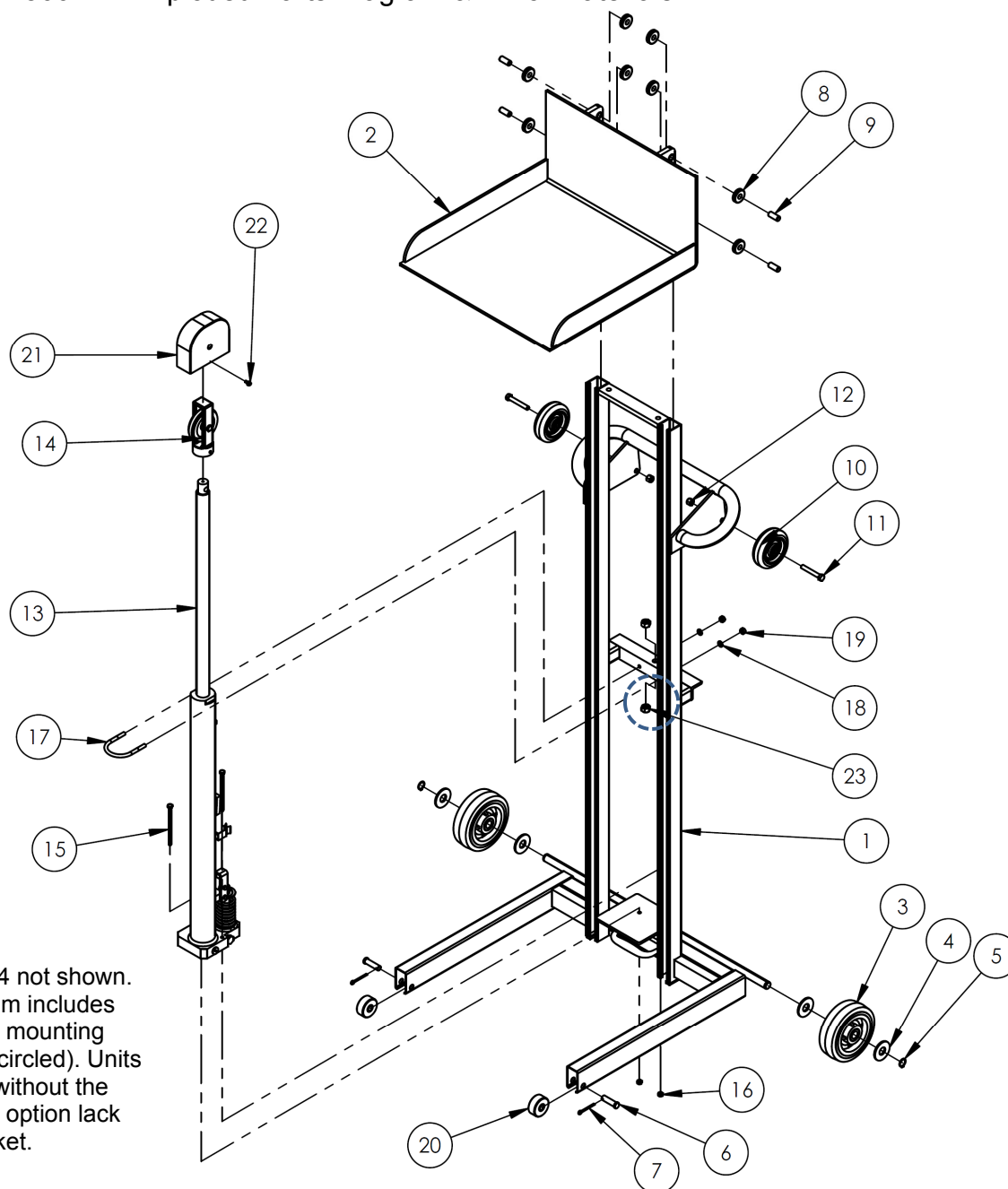


NOTES:

1. Item 24 not shown.
2. Diagram includes floor lock bracket (circled). Units ordered without the floor lock option lack this bracket.

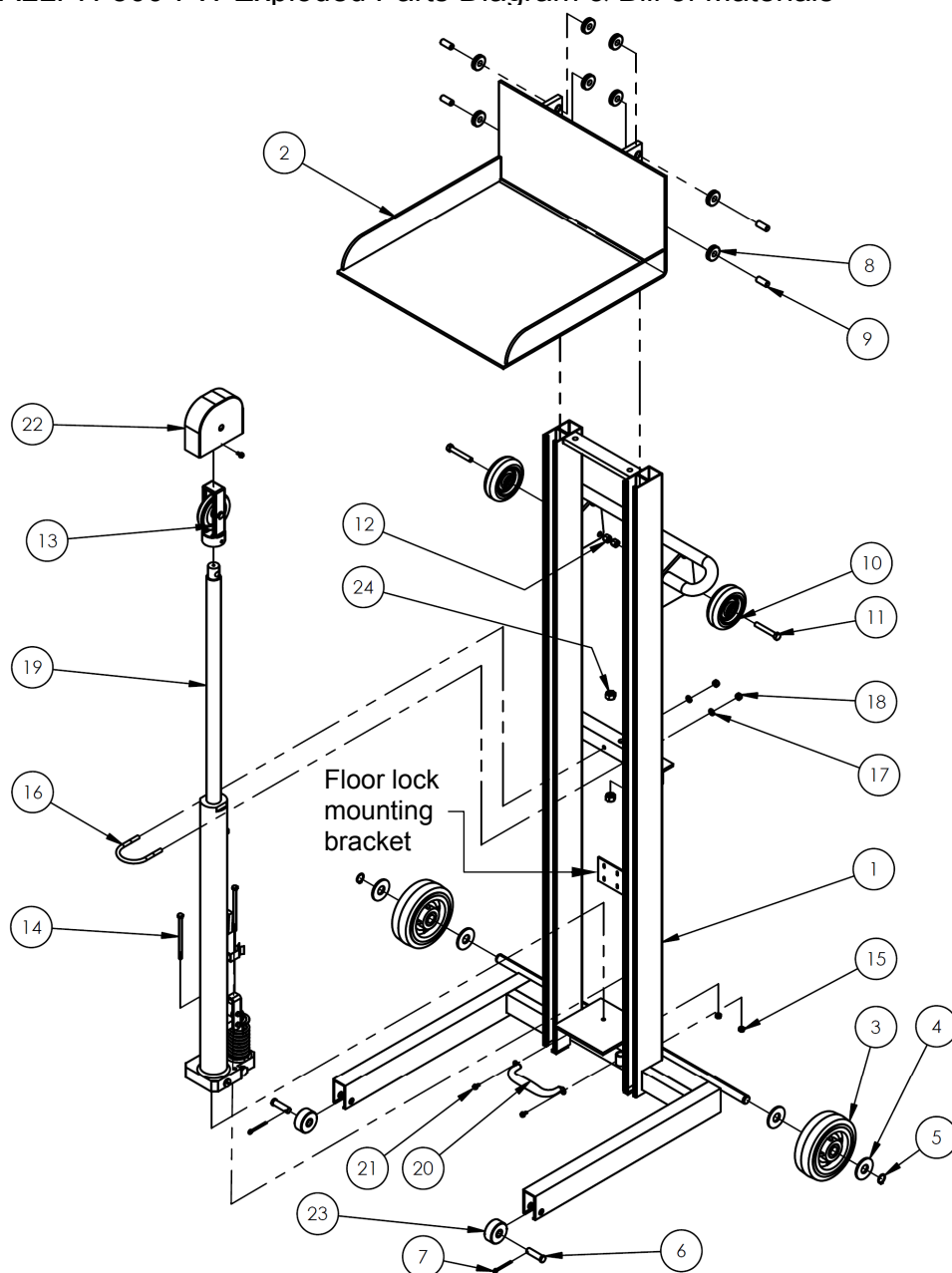
Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	21-514-015	Weldment, frame	1	13	42034	$\frac{5}{16}$ in. – 18 UNC x $2\frac{1}{2}$ in. (ID) U-bolt	1
2	21-513-007	Weldment, deck, ALLW/ALLH-4SFL	1	14	33620	$\frac{5}{16}$ in. z-plated lock washer	2
3	68015	$\frac{3}{4}$ in. external retaining ring	2	15	36104	$\frac{5}{16}$ in. – 18 z-plated hex nut	2
4	33018	$\frac{3}{4}$ in. USS z-plated flat washer	4	16	36102	$\frac{1}{4}$ in. – 20 z-plated hex nut	2
5	16-132-009	PP-4/1.25-W	2	17	11019	$\frac{1}{4}$ in. – 20 UNC x 4in. HHCS #2 z-plated bolt	2
6	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ in. – 16 x $2\frac{1}{2}$ in.	2	18	01-640-031	Pump, manual, 24in. stroke	1
7	37024	$\frac{3}{8}$ in. Nylon lock nut	2	19	13-025-004-002	Handle with holes	1
8	21-112-002	$\frac{1}{2}$ in. roller pin	4	20	31802	8-18 x $\frac{1}{2}$ in. self-tapping screw	3
9	21-027-003	Roller, guide	8	21	21-524-004	Weldment, guard, pulley guard	1
10	16-132-011	4x2 mold-on rubber swivel caster	4	22	36110	$\frac{1}{2}$ in. – 13 zinc-plated hex nut	2
11	16-132-200	8x2 hard rubber wheel (red)	2	23	99-612-001	Pin, bulldog nut + bolt assembly	4
12	33-542-001	Assembly, pulley, HYDRA	1	24	33-542-003	Chain, chain assembly	1

LLPH-500-FW Exploded Parts Diagram & Bill of Materials



Item	Part no.	Description	Quantity	Item	Part no.	Description	Quantity
1	42-514-018	Weldment, frame	1	13	01-640-031	Pump, manual, 24in. stroke	1
2	33-513-032	Weldment, deck	1	14	33-542-001	Assembly, pulley, HYDRA	1
3	16-132-058	Wheel, PP-6x2-W	2	15	11021	$\frac{1}{4}$ in. – 20 UNC x $4\frac{1}{2}$ in. HHCS #2 z-plated bolt	2
4	33018	$\frac{3}{4}$ in. USS z-plated flat washer	4	16	36102	$\frac{1}{4}$ in. – 20 z-plated hex nut	2
5	68015	$\frac{3}{4}$ in. external retaining ring	2	17	42034	$\frac{5}{16}$ in. – 18 x $2\frac{1}{2}$ in. (ID) U-bolt	
6	21-112-003	$\frac{1}{2}$ in. x $1\frac{15}{16}$ in. clevis pin	2	18	33620	$\frac{5}{16}$ in. z-plated lock washer	2
7	65107	$\frac{5}{32}$ in. x 2in. cotter pin	2	19	36104	$\frac{5}{16}$ in. – 18 z-plated hex nut	2
8	21-027-003	Roller, guide	8	20	21-527-002	Roller, subassembly with bushing, LLW/LLH	1
9	21-112-002	$\frac{1}{2}$ in. roller pin	4	21	21-524-004	Weldment, guard, pulley guard	1
10	16-132-009	PP-4/1.25-W	2	22	31802	8-18 x $\frac{1}{2}$ in. self-tapping screw	1
11	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ in. – 16 x $2\frac{1}{2}$ in.	2	23	36110	$\frac{1}{2}$ in. – 13 zinc-plated hex nut	2
12	37024	$\frac{3}{8}$ in. Nylon lock nut	2	24	33-542-003	Chain, chain assembly	1

ALLPH-500-FW Exploded Parts Diagram & Bill of Materials

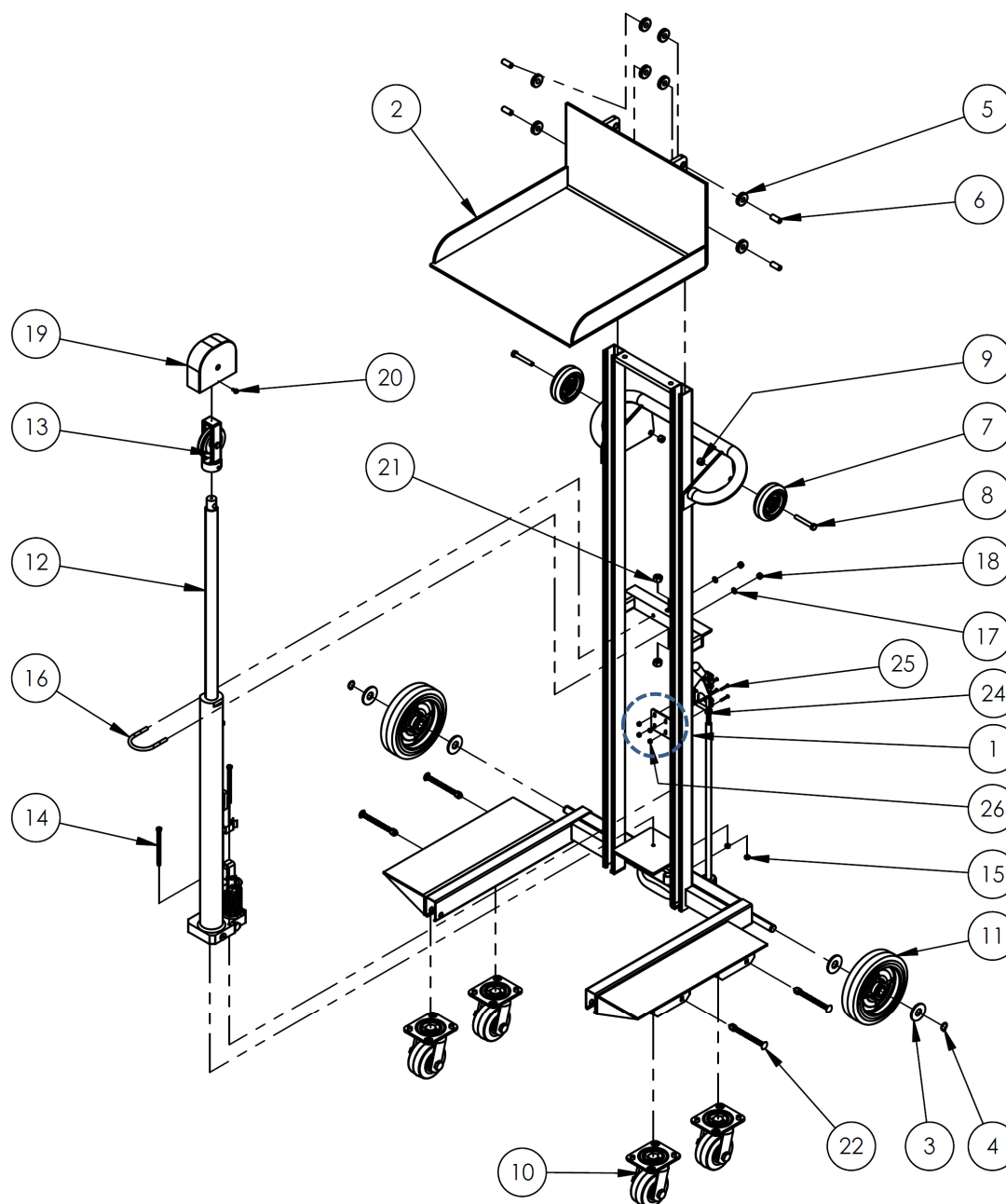


NOTES:

1. Item 25 not shown.
2. Diagram includes floor lock mounting bracket. Units ordered without the floor lock option lack this bracket.

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	42-514-017	Weldment, frame	1	13	33-542-001	Assembly, pulley, HYDRA	1
2	21-513-038	Weldment, deck, ALLP	1	14	11021	$\frac{1}{4}$ in. – 20 UNC x $4\frac{1}{2}$ in. HHCS #2 z-plated bolt	2
3	16-132-058	Wheel, PP-6x2-W	2	15	36102	$\frac{1}{4}$ in. – 20 z-plated hex nut	2
4	33018	$\frac{3}{4}$ in. USS z-plated flat washer	4	16	42034	$\frac{5}{16}$ in. – 18 x $2\frac{1}{2}$ in. (ID) U-bolt	
5	68015	$\frac{3}{4}$ in. external retaining ring	2	17	33620	$\frac{5}{16}$ in. z-plated lock washer	2
6	21-112-003	$\frac{1}{2}$ in. x $1\frac{15}{16}$ in. clevis pin	2	18	36104	$\frac{5}{16}$ in. – 18 z-plated hex nut	2
7	65107	$\frac{5}{32}$ in. x 2in. cotter pin	2	19	01-640-031	Pump, manual, 24in. stroke	1
8	21-027-003	Roller, guide	8	20	13-025-004-002	Handle, with holes	1
9	21-112-002	$\frac{1}{2}$ in. roller pin	4	21	31802	8-18 x $\frac{1}{2}$ in. self-tapping screw	1
10	16-132-009	PP-4/1.25-W	2	22	21-524-004	Weldment, guard, pulley guard	1
11	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ in. – 16 x $2\frac{1}{2}$ in.	2	23	21-527-002	Roller, subassembly with bushing, LLW/LLH	1
12	37024	$\frac{3}{8}$ in. Nylon lock nut	2	24	36110	$\frac{1}{2}$ in. – 13 zinc-plated hex nut	2
				25	33-542-003	Chain, chain assembly	1

LLPH-500-4SFL Exploded Parts Diagram & Bill of Materials

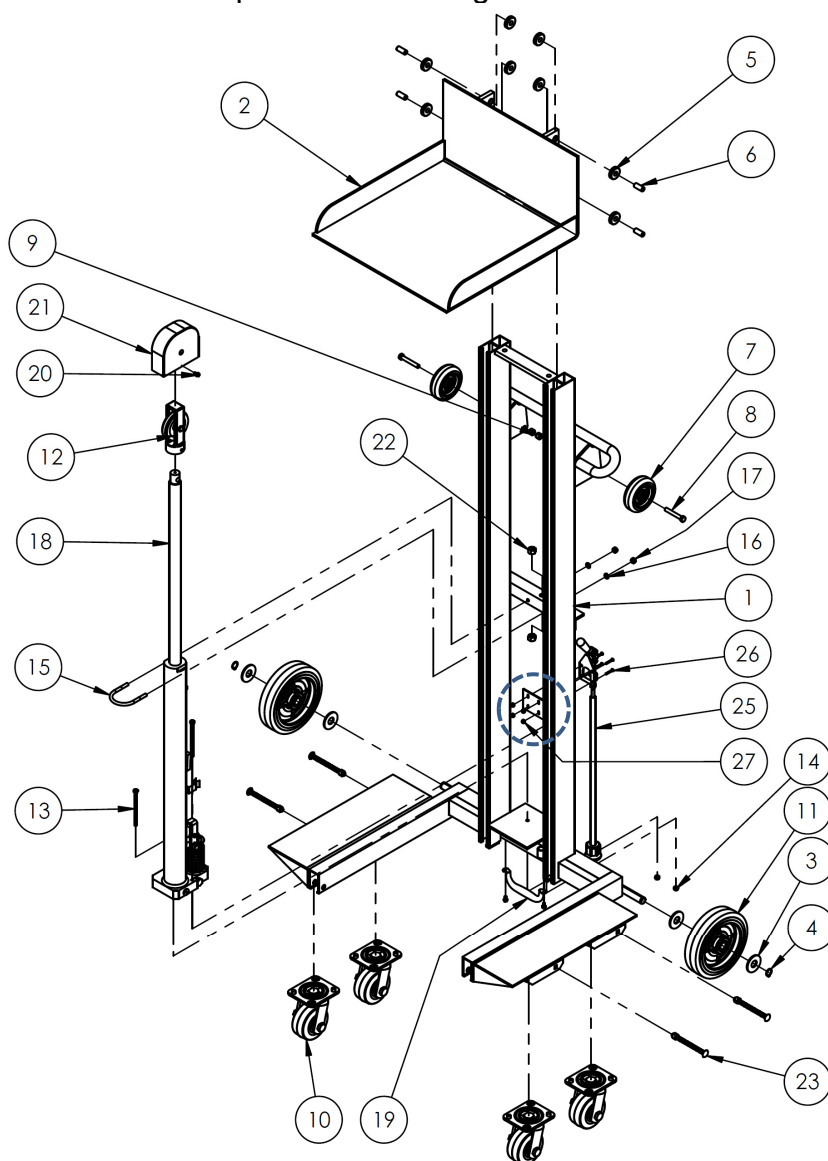


NOTES:

1. Item 23 not shown.
2. Diagram includes floor lock mounting bracket (circled). Units ordered without the floor lock option lack this bracket.
3. Item 22 is listed in the bill of materials as a carriage bolt and nut assembly. However, some units might use 0.374" x 4⁵/₈" clevis pins (99-612-006) and cotter pins (65074).

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	42-514-020	Weldment, frame	1	13	33-542-001	Assembly, pulley, HYDRA	1
2	33-513-032	Weldment, deck	1	14	11021	¹ / ₄ in. – 20 UNC x 4 ¹ / ₂ in. HHCS #2 z-plated bolt	2
3	33018	³ / ₄ in. USS z-plated flat washer	4	15	36102	¹ / ₄ in. – 20 z-plated hex nut	2
4	68015	³ / ₄ in. external retaining ring	2	16	42034	⁵ / ₁₆ in. – 18 x 2 ¹ / ₂ in. (ID) U-bolt	
5	21-027-003	Roller, guide	8	17	33620	⁵ / ₁₆ in. z-plated lock washer	2
6	21-112-002	¹ / ₂ in. roller pin	4	18	36104	⁵ / ₁₆ in. – 18 z-plated hex nut	2
7	16-132-009	Wheel, PP-4/1.25-W	2	19	21-524-004	Weldment, guard, pulley guard	1
8	11113	HHCS #2 zinc-plated, ³ / ₈ in. – 16 x 2 ¹ / ₂ in.	2	20	31802	8-18 x ¹ / ₂ in. self-tapping screw	1
9	37024	³ / ₈ in. Nylon lock nut	2	21	36110	¹ / ₂ in. – 13 zinc-plated hex nut	2
10	16-132-011	4x2 mold-on rubber swivel caster	4	22	99-612-001	Pin, bulldog bolt + nut assembly	4
11	16-132-200	8x2 hard rubber wheel, red	2	23	33-542-003	Chain assembly (#50), HYDRAPULLEY	1
12	01-640-031	Pump, manual, 24in. stroke	1				

ALLPH-500-4SFL Exploded Parts Diagram & Bill of Materials



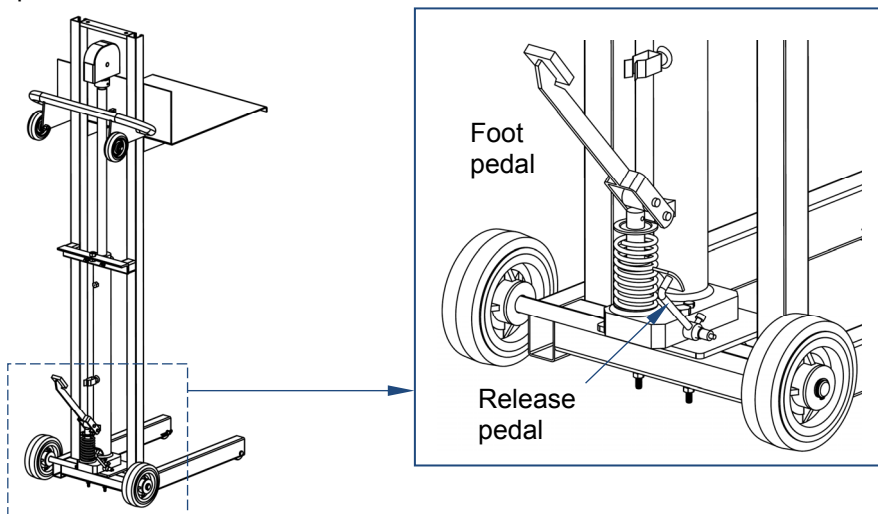
NOTES:

1. Item 24 not shown.
2. Diagram includes floor lock mounting bracket (circled). Units ordered without the floor lock option lack this bracket.

Item	Part no.	Description	Qty.	Item	Part no.	Description	Qty.
1	42-514-019	Weldment, frame	1	15	42034	U-bolt, zinc plated, $\frac{5}{16}$ "-18x2" pipe size	1
2	33-513-038	Weldment, deck	1	16	33620	Lock washer, medium split, $\frac{5}{16}$ "	2
3	33018	$\frac{3}{4}$ " USS z-plated flat washer	4	17	36104	Hex nut, gr. A, zinc plated, $\frac{5}{16}$ "-18	2
4	68015	$\frac{3}{4}$ " external retaining ring	2	18	01-640-031	Pump, manual, 24" stroke	1
5	21-027-003	Roller, guide	8	19	13-025-004-002	Handle	1
6	21-112-002	$\frac{1}{2}$ " roller pin	4	20	31802	Screw, self-tapping screw	3
7	16-132-009	Wheel, PP-4/1.25-W	2	21	21-524-004	Weldment, guard, pulley guard	1
8	11113	HHCS #2 zinc-plated, $\frac{3}{8}$ " - 16 x 2 $\frac{1}{2}$ "	2	22	36110	Hex nut, zinc plated, $\frac{1}{2}$ "-13	2
9	37024	$\frac{3}{8}$ " Nylon lock nut	2	23	99-612-001	Pin, caster receiver, bolt and nut	4
10	16-132-011	4x2 mold-on rubber swivel caster	4	24	33-542-003	Chain, chain assembly	1
11	16-132-200	8x2 hard rubber wheel, red	2	25	21-001-132	Floor lock assembly, manual	1
12	33-542-001	Assembly, pulley	1	26	27402	Screw, round head, slotted, #8-32x1"	4
13	11021	$\frac{1}{4}$ " - 20 UNC x 4 $\frac{1}{2}$ in. HHCS #2 z-plated bolt	2	27	37012	#8-32 Nylock nut, zinc plated	4
14	36102	Hex nut, gr. A, zinc plated, $\frac{1}{4}$ "-10	2				

Raising and lowering the deck:

To elevate the platform, press and release the foot pedal. The platform rises ~1 inch per pedal stroke. To lower the deck, press the release pedal. To fully lower the deck, hold the release pedal down until the platform reaches its lower travel limit and stops.



Use Instructions:

This product is a “manually-propelled high lift industrial truck” according to the national standard ANSI/ITSDF B56.10-2012 (“B56.10”). Acquire a copy of B56.10, which is available at no cost through the ITSDf website (www.itsdf.org), and review the operation recommendations. Instructions in this manual are meant to **supplement** those recommendations.

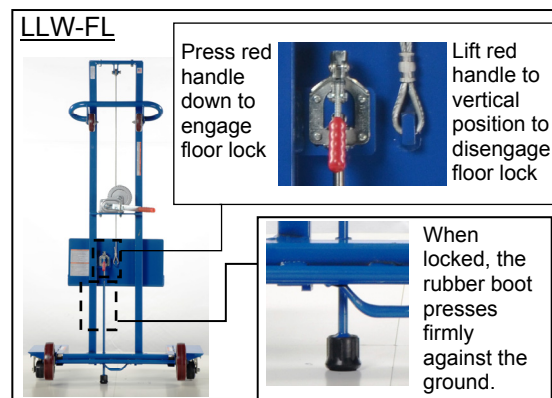
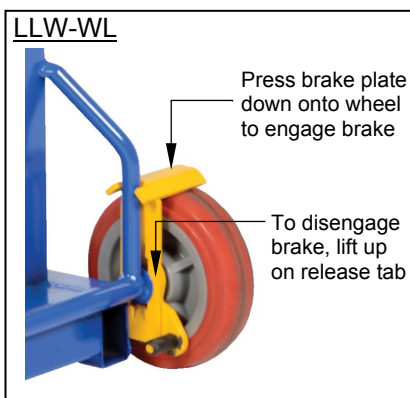
ONLY use this device after completing the training program outlined in B56.10, sections 4.17 and 4.18.1-4.

- Develop safe working habits and an awareness of hazardous conditions occurring or present during operation of the lifter.
- Inspect the area where the lifter will be used **before each use** to identify unusual operating conditions. Implement additional safety precautions as conditions require. Conditions might include:
 1. Irregularities in the floor/surface;
 2. Debris or other obstructions on the floor/surface;
 3. Unsound surfaces or surfaces that cannot support your weight plus the weight of the lifter and load.
- Perform the following **function test before each use**:
 1. Raise and lower the deck and confirm normal operating condition of the lift mechanisms.
 2. Test the casters/wheels: wheels should roll smoothly, should not be severely worn, and should be rigidly fastened to the frame of the lifter.

Inspect the lifter as recommended in the “Inspections & Maintenance” section of this manual (p. 15). Use the lifter only if it is in normal operating condition.

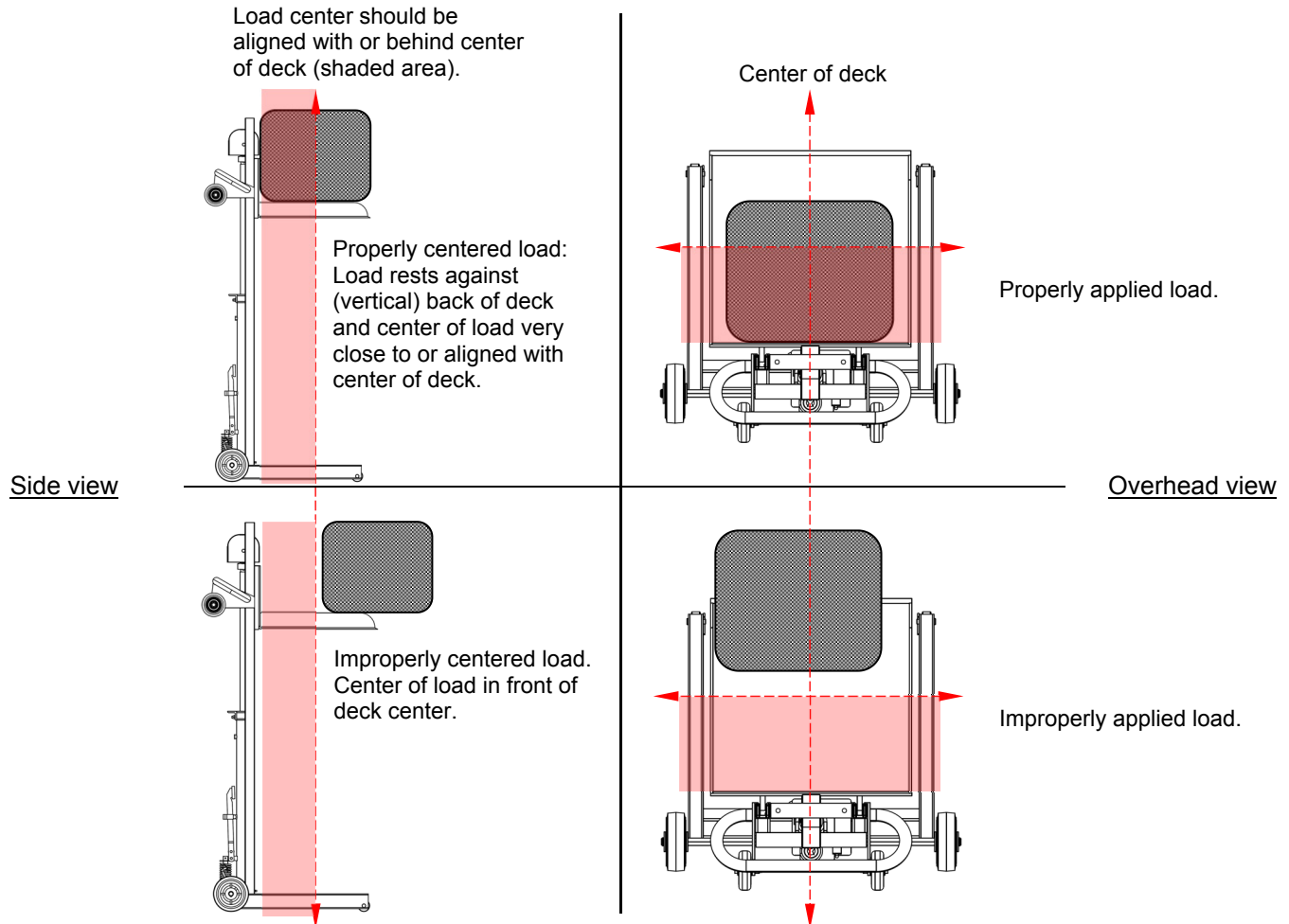
Step 1: Grasp the handle with both hands. Walk behind the lifter and keep your feet away from the wheels.

Step 2: Move the lifter to load. If the lifter is equipped with either a floor lock (option LLW-FL) or a wheel lock (option LLW-WL) engage the device.



Step 3: Raise the deck to bring it to the level of the load. Press the foot pedal until the deck reaches the desired height.

Step 4: Place the load on the deck. The load should rest against the vertical wall (the “back”) of the deck. The center of the load should either align with the center of the deck or be behind it (see red shaded areas in diagrams below). Secure it to the deck (with ratchet straps, for example) to prevent sliding, rolling, etc.



Step 5: Press the release pedal (see p. 13) to lower the deck. Lower the deck to just a few inches above the ground before transporting the load. At the unloading destination:

- Lock the casters or set the brake or floor lock;
- Pump the foot pedal to raise the deck to a comfortable height; and
- Remove the load.

Step 6: Lower the deck and return the lifter to its storage location. Engage the brake or floor lock, if so equipped. Store the lifter in a dry, indoor location.

Inspections & Maintenance:

Regular inspections and maintenance are necessary to keep the device in normal condition.

- Periodically lubricate moving parts.
- Keep the product clean and dry.
- Only use manufacturer- approved replacement parts.

Before using the lifter for the first time, create a written record that describes its appearance and functions. Include detailed descriptions about the frame, casters, wheels, deck, deck rollers, and the lifting mechanisms (winch pulleys). Raise and lower the deck. Include observations about how the deck moves and sounds as it travels up and down the mast. Describe the operation of the winch/foot pump. This written record establishes "normal condition". When conducting future inspections, compare those observations with the record to determine if a component requires repair or replacement.

At least once every 2 weeks, visually inspect the following components:

1. Foot pump, chain, and pulley: examine chain links and coupling hardware for elongations, twists, and breaks. Cycle the deck up and down. Verify that the cylinder extends and retracts smoothly. The chain should move without binding, catching, or jumping. Make sure that the pulley rotates freely and is securely fastened to the mast
2. Frame (mast, base, deck, and deck rollers): examine the frame members for damaged welds, severe rusting, cracks, bends, etc. Remove rust with steel wool. Clean the affected areas and apply touch-up paint.
3. Casters and wheels: check each caster and wheel for wobbling, damage, and severe wear. Wheels and casters should roll smoothly. Clean the casters to remove grit from the surfaces, if necessary.
4. Hardware: examine the pins, bolts, nuts, etc. Tighten loose fasteners.
5. Floor lock: if your unit is equipped with the floor lock option confirm that it makes solid contact with the ground when applied. Check the condition of the rubber pad. Replace the pad if wear or damage affects its function.

Maintenance: Implement a maintenance program to ensure that the lifter functions properly. Page 9 of ANSI/ITSDF standard B56.10-2006, "Manually propelled high lift industrial trucks", describes recommended maintenance procedures. A copy of the standard is downloadable for free from the ITSDF website (see www.itsdf.org). Apply those recommendations in conjunction with the following steps.

1. Tag the lifter, "Out of Service."
2. Inspect the lifter as described above. If deformity, corrosion, rusting, or excessive wear of structural members is present, DO NOT use the lifter. If the deck does not move smoothly or makes noise as it moves up or down the upright, apply a silicon wax or silicon spray to the inside of the mast frame.
3. Remove any dirt or other matter from the cable and pulleys and other lifter surfaces.
4. Perform all other necessary adjustments and/or repairs. DO NOT modify the lifter.
5. Make a dated record of the repairs, adjustments and/or replacements made.
6. Platform, mast and platform rollers: cycle the platform up and down while listening for unusual noises and watching for binding or rough movement.

Troubleshooting Guide:

Fully lower the deck before beginning maintenance work on the lifter. If an issue with your lifter is not addressed in the table below, contact Vestil for answers.

Issue / Problem	Possible Causes	Suggested Corrective Action
1. I pump the pedal, but the deck does not rise; -OR- I can move the pedal with very little force.	A. Oil not getting through the pump because i) too little oil in reservoir or ii) pump is air-locked. B. Relief valve is opening. C. Foreign material holding inlet check valve open. D. Foreign matter in release valve.	A. i) Check oil level in reservoir. ii) Bleed air from hydraulics (see "Remove air trapped inside hydraulic system," p. 17). B. Verify that load does not exceed lifter's maximum rated load (see "Specifications" on p.2 or 3) C. Remove material from inlet check valve assembly (see "Cleaning the Inlet Check Valve Assembly," p. 17; diagrams on pp. 18 & 20). D. Disassemble release valve and clean the components. (See diagram of release valve assembly on p. 18).
2. Deck rises during pedal down stroke, but lowers during pedal upstroke.	A. Foreign material preventing outlet-check from closing.	A. Clean outlet check assembly
3. Deck rises but does not maintain raised position (slowly returns to lowered position over time).	A. Foreign material holding outlet-check open B. Foreign material holding relief-valve open C. Foreign material holding release-valve open	A. Disassemble and clean the outlet check valve components. B. Disassemble and clean the relief-valve components. C. Disassemble and clean the release-valve components.
4. Deck rises when pedal pumped, but in smaller increments than normal.	A. Foreign matter holding open relief valve. B. Foreign matter holding inlet check valve open. C. Foreign matter holding outlet check open.	A. Disassemble and clean the relief valve components. B. Disassemble and clean inlet check valve parts. (see "Cleaning the Inlet Check Valve Assembly," p. 17; diagrams on pp. 18 & 20). C. Clean outlet check assembly.
5. Great effort required to operate foot pump.	A. Operating pressure exceeds the pump's force capability.	A. Reduce load weight.
6. Deck will not lower.	A. Release pedal screw out of adjustment. B. Pedal not properly positioned on release cam. C. Pedal lock-screw not tight. D. Release cam broken. E. Debris obstructing flow control. F. Internal components missing. G. Something preventing deck cam roller bearing(s) from rolling	A. See "Release pedal adjustment" on page 16. B. Pedal lock screw must be seated into the mating detent on the release-cam. C. The screw must be snug against the release cam to prevent it from rotating relative to the cam during use. D. Replace broken components. E. Flush the jack assembly and add fresh hydraulic fluid. F. Study exploded parts diagram (p. 5-12); replace and install components as shown. G. Inspect frame for obstructions interfering with roller bearing movement; remove obstruction(s).
7. Deck lowers maddeningly slowly when release pedal pressed.	A. Release pedal screw improperly adjusted. B. Pedal not properly positioned on release cam. C. Pedal lock screw not tight. D. Release cam broken. E. Debris obstructing flow control.	A. See "Release pedal adjustment" on page 16. B. Pedal lock screw must be seated in the mating detent on the release-cam. C. The screw must be snug against the release cam to prevent it from rotating relative to the cam during use. D. Replace broken components. E. Flush jack assembly and install new fluid.
8. Deck lowers too quickly.	A. Release pedal screw out of adjustment. B. Pedal lock-screw not properly positioned on release cam.	A. See "Release pedal adjustment" procedure on page 16. B. Pedal lock screw must be seated into the mating detent on the release-cam.
9. Deck lowers in jerks.	A. Air trapped in hydraulic system.	A. Bleed air from system (see "Remove air trapped inside hydraulic system," p. 17). B. Add oil to hydraulic reservoir.

Detailed Troubleshooting — Hydraulic Foot Pump

The following tools are required to resolve the issues listed above:

- 5mm hex key wrench
- Standard (flat head) screwdriver
- Adjustable crescent wrench

Hydraulic Fluid Level Adjustment

1. Remove the fill/breather plug.
2. Hydraulic fluid level should be 2 - 2.5 inches below the bottom of the fill hole when the cylinder rod is fully lowered. Do not overfill the reservoir; if overfilled, oil may leak or seep around the fill plug.

NOTICE ONLY use ISO AW-32 anti-wear hydraulic pump oil. The oil must be clean; strain the oil, if necessary, before adding it to the reservoir.

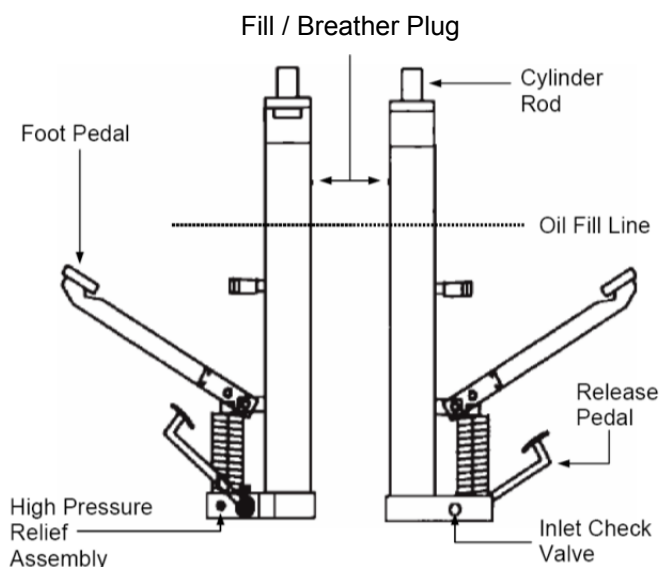
Remove Air Trapped Inside Hydraulic System

1. Pump the foot pedal until the cylinder rod is fully extended. The small hole near the base of the rod will pass by the high pressure seal and air will automatically vent into the reservoir tube.

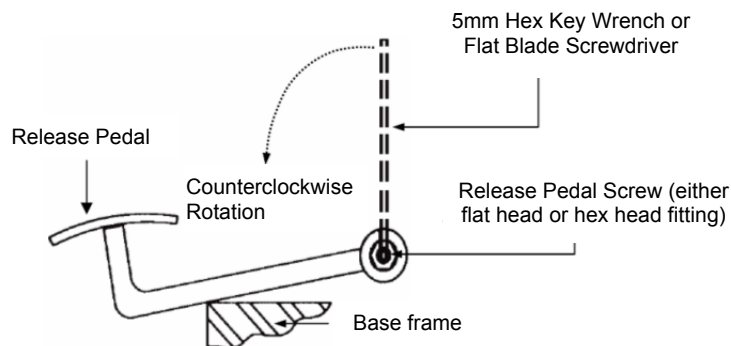
Release Pedal Adjustment

1. Loosen the release pedal screw retaining nut (p. 19).
2. Loosen the release pedal screw: $\frac{1}{2}$ to a full counterclockwise turn using either a 5mm hex key wrench (Allen wrench) or flat blade screwdriver.
3. Apply a test weight to the deck; pump the foot pedal until the deck rises ~2ft; then press the release pedal down. [If the deck lowers, turn the release pedal screw by another $\frac{1}{2}$ turn, and repeat step 3. The deck should not lower when you press the release pedal.]
4. Turn release pedal screw *clockwise* $\frac{1}{8}$ to $\frac{1}{4}$ turn; repeat step 3. The deck now *should* lower; if it does not, turn the screw clockwise by another $\frac{1}{8}$ turn. Repeat this step until the desired deck-lowering rate is achieved.
5. Tighten the retaining nut. To prevent the screw from rotating while tightening the nut, either hold the screw with your fingers or insert the 5mm hex key wrench (or flat blade screwdriver) into the fitting.

Proper Hydraulic Fluid Level



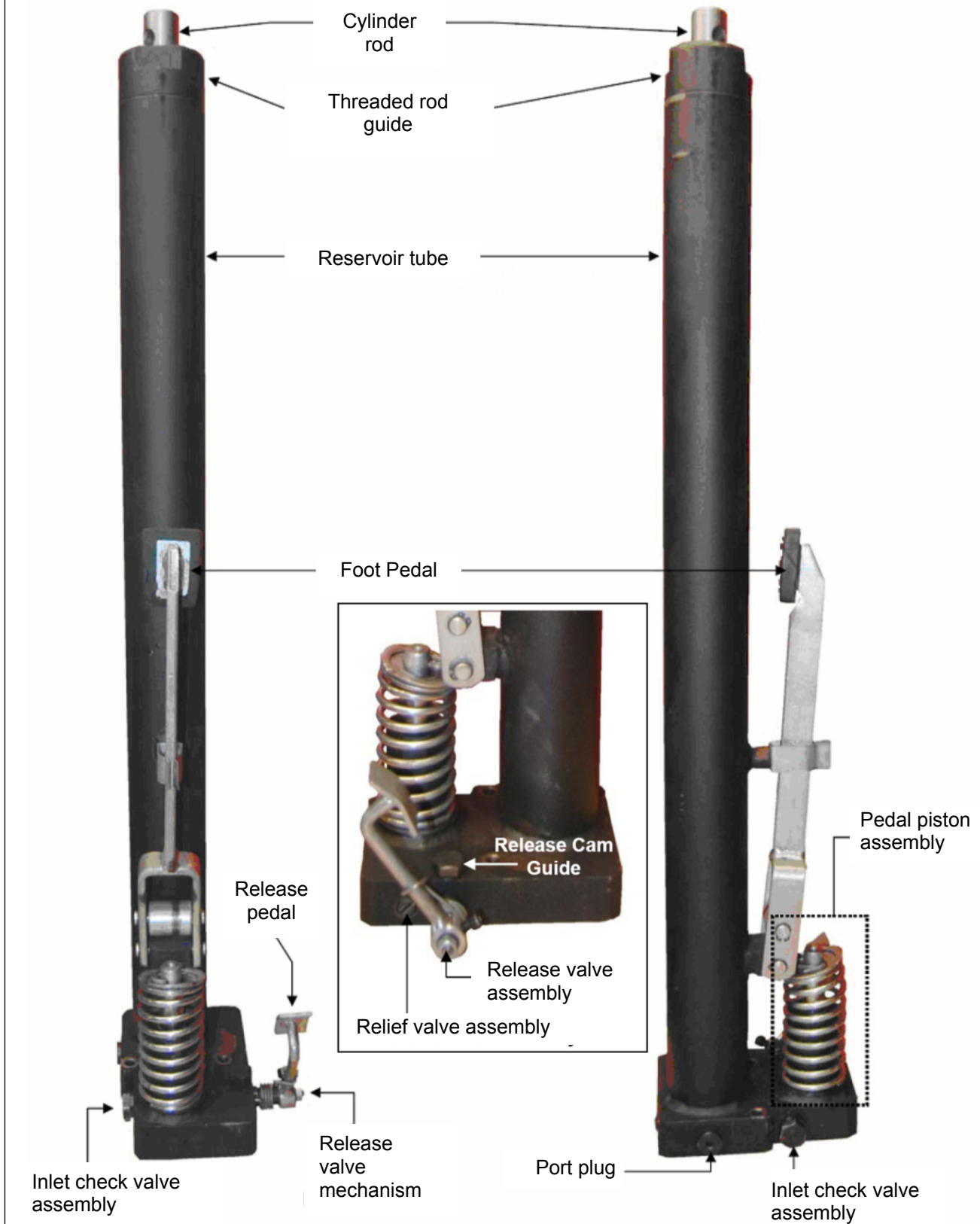
Release Pedal Adjustment



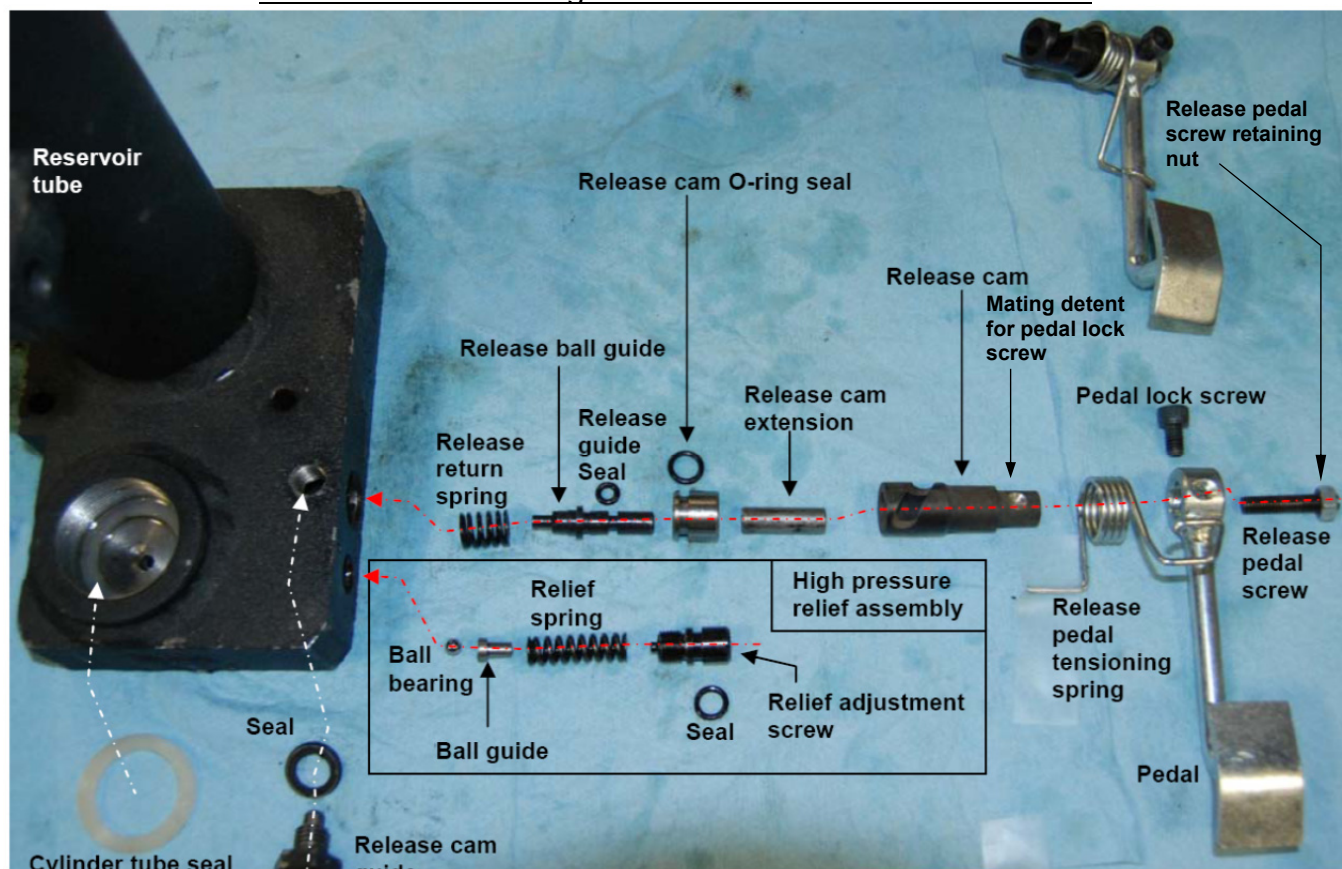
Cleaning Inlet Check Valve Assembly

1. Remove inlet check port plug with a crescent wrench (see p. 20).
2. Clean the valve components.
3. While the valve is disassembled, pump the foot pedal at least 5 times. Fluid will discharge from the inlet check valve opening, which should dislodge debris clogging the valve.
4. Reassemble the valve & reconnect the port plug.
5. Add hydraulic fluid as necessary according to the "Hydraulic Fluid Level Adjustment" instructions above.

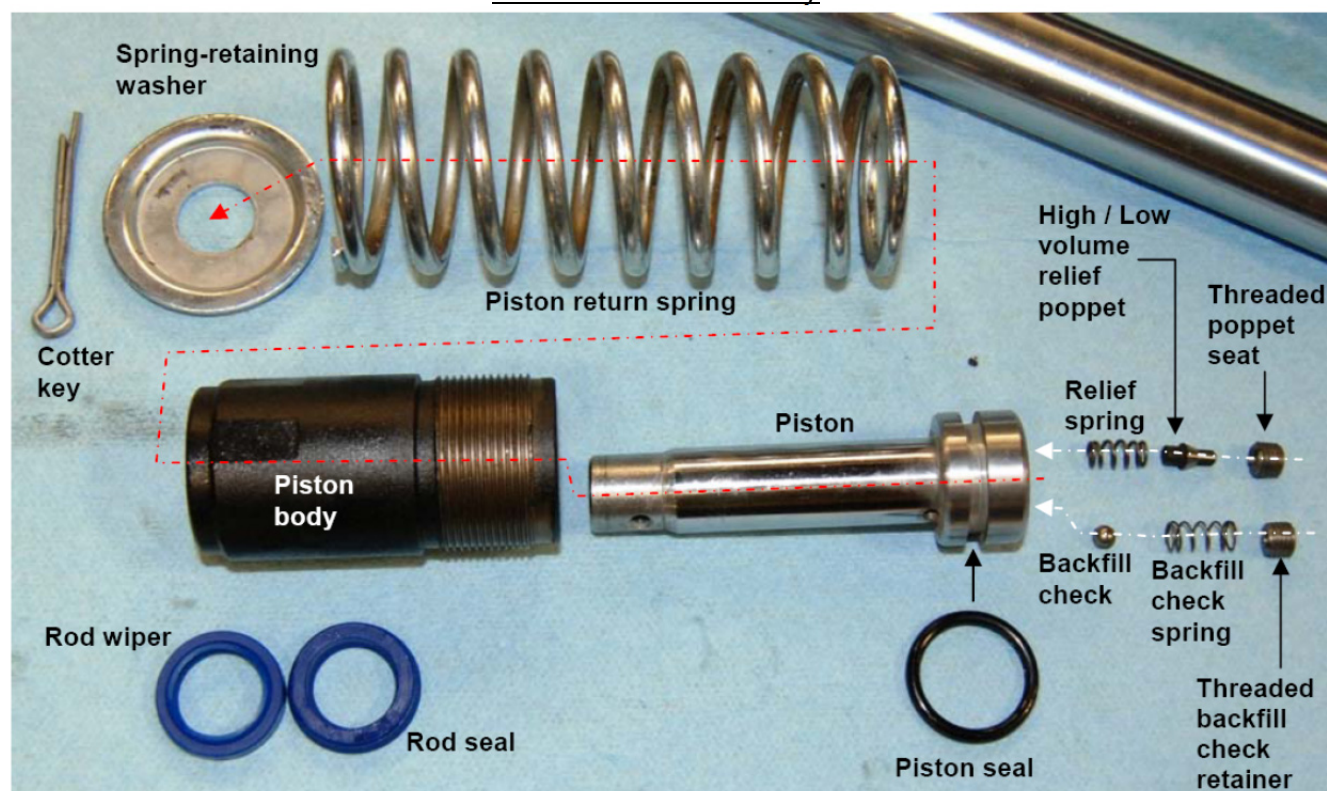
Hydraulic foot pump



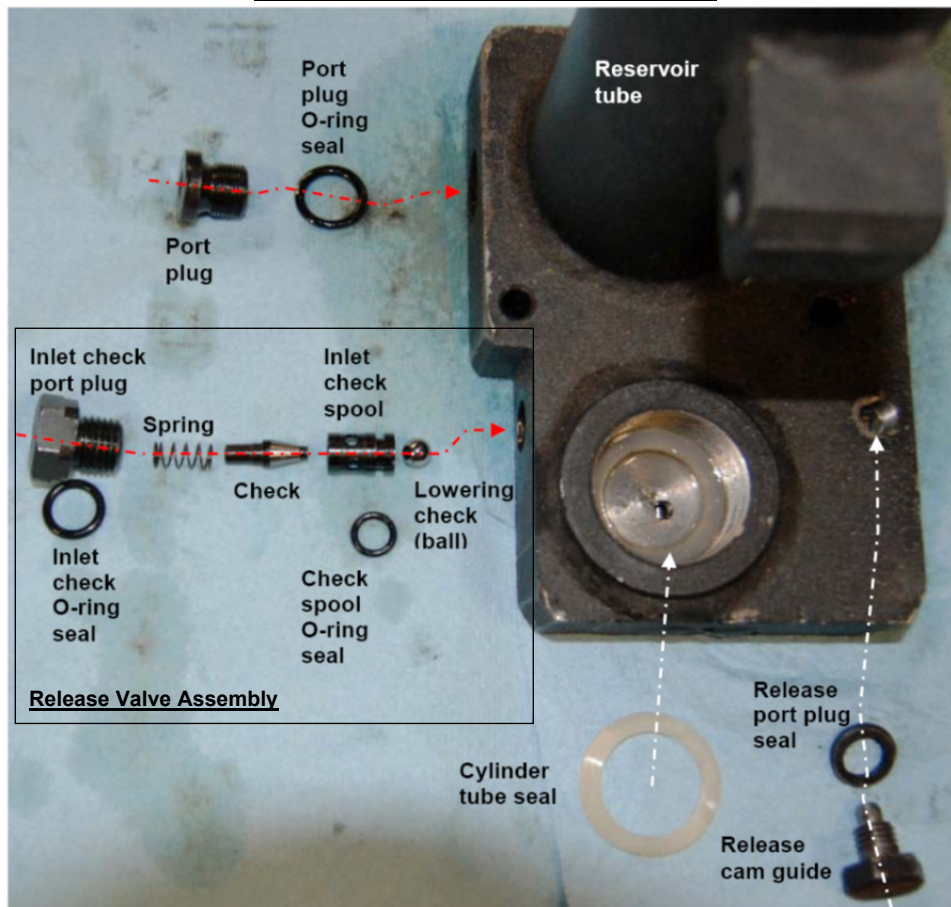
Hydraulic Foot Pump Release Valve and High Pressure Relief Valve Assemblies



Pedal Piston Assembly



Inlet Check Valve Assembly



Threaded Rod Guide



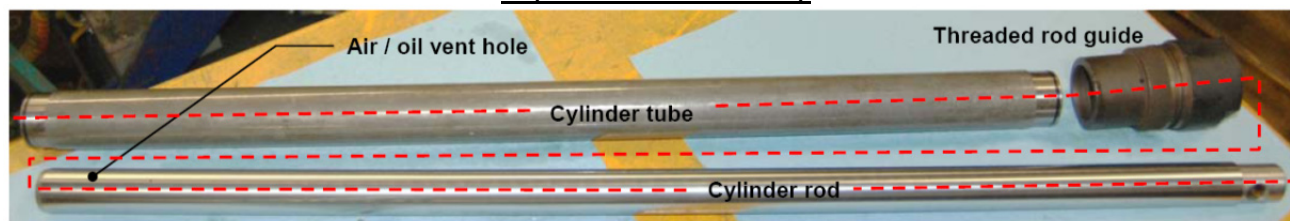
Top End



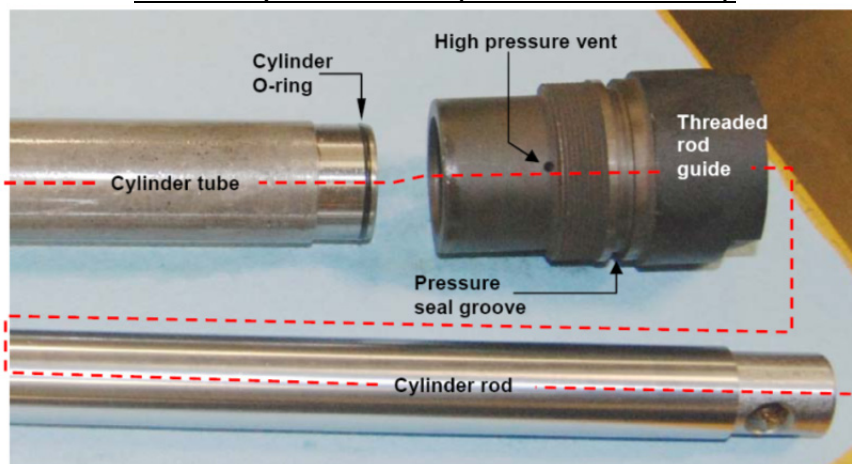
Bottom End



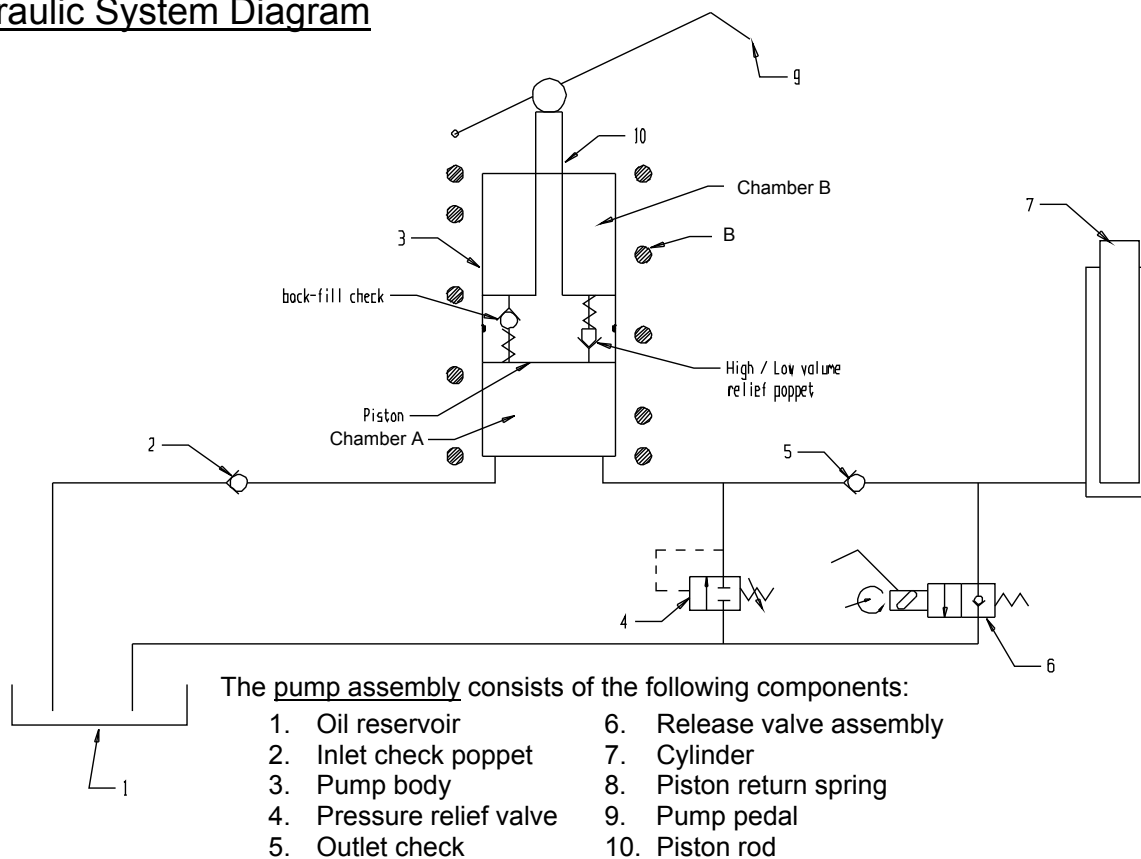
Cylinder Assembly



Close-up View of Cylinder Assembly



Hydraulic System Diagram



The following are the primary components of the two-speed mechanism of the piston assembly:

- Piston blind-side – Chamber A
- Rod-side – Chamber B
- Back-fill check
- High-volume / low-volume relief poppet
- Piston rod

Hydraulic System Operation: (refer to circuit diagram on p. 21)

Raising the deck:

The sequence begins with the foot pedal in the neutral, or “home”, position. The operator first activates the hydraulic system by pressing the foot pedal down. This is referred to as a “power-stroke”. After releasing the foot pedal, the piston return spring (B) exerts an upward force on the piston. Consequently, oil flows from the reservoir, through the inlet check valve, and into chamber A. At the same time, oil trapped in chamber B (from a prior cycle) flows across the back-fill check into chamber A. When another power stroke occurs, the inlet check valve closes, which prevents oil from flowing back into the reservoir; simultaneously, the outlet check valve opens and oil flows into the cylinder. In preparation for the next stroke, the piston return spring forces the piston and the foot pedal back to the home position. Chamber A again fills with oil as the piston rises.

The pump piston has two modes of operation: 1) Low-pressure, high-volume; and 2) High-pressure, low-volume.

1. Low-pressure, High-volume.

When raising an unloaded or lightly loaded platform, the piston will function in low-pressure mode. As the operator presses the foot pedal (power stroke):

- Back-fill check remains closed;
- High / low volume relief poppet remains closed; and
- All oil in chamber A flows into the cylinder.

2. High-pressure, low-volume

When raising a partly loaded or heavily loaded platform, the piston will function in high-pressure mode. As the operator executes a power stroke, the back-check remains closed:

- High / low volume relief poppet opens;
- A volume of oil equal to the annulus (piston diameter minus the rod diameter) flows from A to B;
- Oil equal to the cross-sectional area of the rod flows to the cylinder; and
- The opening force of the high / low volume relief poppet adds to the cylinder load resistance.

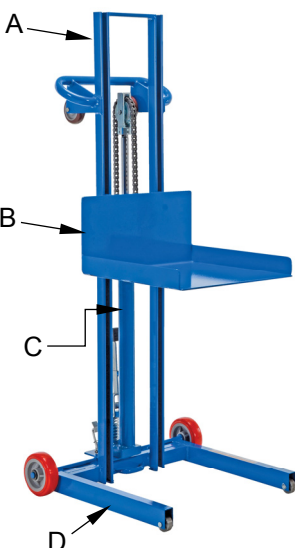
Pressure relief system

If a load that exceeds the maximum rated load is placed on the deck, or a mechanical malfunction interferes with the movement of the deck, the pressure relief valve will open during a power-stroke. The pressure relief valve reduces the likelihood that excessive loads will damage the lifter frame or the hydraulic system. The pressure relief valve shunts oil directly from chamber A to the reservoir.

Release valve assembly

The foot-actuated release valve assembly is the mechanism that allows the deck to lower. When the release pedal is pressed down, the release valve opens, and oil flows from the cylinder to the reservoir. The lowering rate is adjustable; instructions appear under “Release pedal adjustment” on p. 17. Lowering rate is also variable: the farther down the release pedal is pressed, the more rapidly the deck descends. The weight of a load on the deck affects the flow rate, and therefore, a heavier load will lower more rapidly than a lighter load, regardless of the lowering rate selected. When the operator lets the pedal loose, the release pedal tensioning spring returns the release pedal to the home position, which automatically closes the valve.

Labeling diagram: The lifter should always be labeled as shown below. Contact Vestil to order replacement labels.



A: Label 287 (on back side of mast)

MODEL/MODELO/MODELE _____	
STATIC CAPACITY (evenly distributed) _____	lbs.
LA CAPACIDAD CONSTANTE (distribuida uniformemente) _____	kgs.
CAPACITÉ STATIQUE (distribuée régulièrement) _____	kgs.
SERIAL/SERIE/SÉRIE _____	
287 REV 0812	

C: Label 206 (on cylinder; only units with foot pump)

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

D: Label 208 (on both outriggers)

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

B: Label 527 (on back side of mast)

⚠ WARNING
Only trained, authorized persons should operate this device. Improper operation might result in serious personal injuries sustained by the truck operator and/or bystanders. Operators must observe the following safety-enhancing practices:
• BEFORE operating, inspect mast, carriage, forks/deck, cable/chain, wheels, and brakes for damage. DO NOT use if damaged.
• ALWAYS walk travel path before using truck to identify hazards:
1 DO NOT contact electrical lines or overhead objects with device or load;
2 DO NOT travel up/down inclines if an alternate route is available;
3 DO NOT travel over debris.
• ONLY travel with forks/deck in lowest position appropriate for conditions.
• ALWAYS center and evenly distribute loads on forks/deck.
• ALWAYS secure load to forks/deck.
• ONLY drive or operate truck functions from operator position.
• DO NOT exceed maximum rated load (capacity).
• DO NOT allow people to ride on device.
• DO NOT lift loads over people. DO NOT permit people to stand beneath the forks/deck when raised (loaded or unloaded).
• DO NOT leave unattended UNTIL fully lowered AND unloaded.
• DO NOT modify device in any way.
⚠ ADVERTENCIA
Solo personas entrenadas y autorizadas deben operar este equipo. La operación inadecuada podría resultar en daños serios al operador del camión y/o a los transeúntes. Los operadores deben observar y seguir las siguientes prácticas de seguridad:
• ANTES de usar, inspeccione el mástil, el equipo, las horquillas/plataforma, cable/cadena, ruedas y frenos por daños. No use si se observan daños.
• SIEMPRE camine el trayecto de viaje antes de usar el camión para identificar riesgos:
1 NO toque las líneas eléctricas u objetos altos con el dispositivo o la carga.
2 NO viaje en inclinaciones de subida y bajada si hay otra ruta alternativa.
3 NO viaje sobre escombros.
• SOLO viaje con las horquillas/plataforma en la posición de descenso más apropiada para las condiciones.
• SIEMPRE centre y distribuya las cargas uniformemente en las horquillas/plataforma.
• SIEMPRE asegure la carga a las horquillas/plataforma.
• SOLO conduzca u opere las funciones del camión desde la posición del operador.
• NO exceda la capacidad máxima tasada de carga.
• NO permita que la gente viaje en el equipo.
• NO eleve las cargas sobre la gente. NO permita que la gente camine debajo de las horquillas/plataforma cuando esté elevada (con carga o sin carga).
• NO deje el equipo desatendido HASTA que este completamente cargado Y descargado.
• NO modifique el equipo de ninguna manera.
527-Rev 1/09

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
Vestil Manufacturing Corporation
2999 North Wayne Street, PO Box 507
Angola, IN 46703

Fax
(260) 665-1339
Phone
(260) 665-7586

Email
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 dynamic components is 90 days. For wearing parts, the warranty period is 90 days. The warranty periods begin on the date when 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 the warranty periods 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.

