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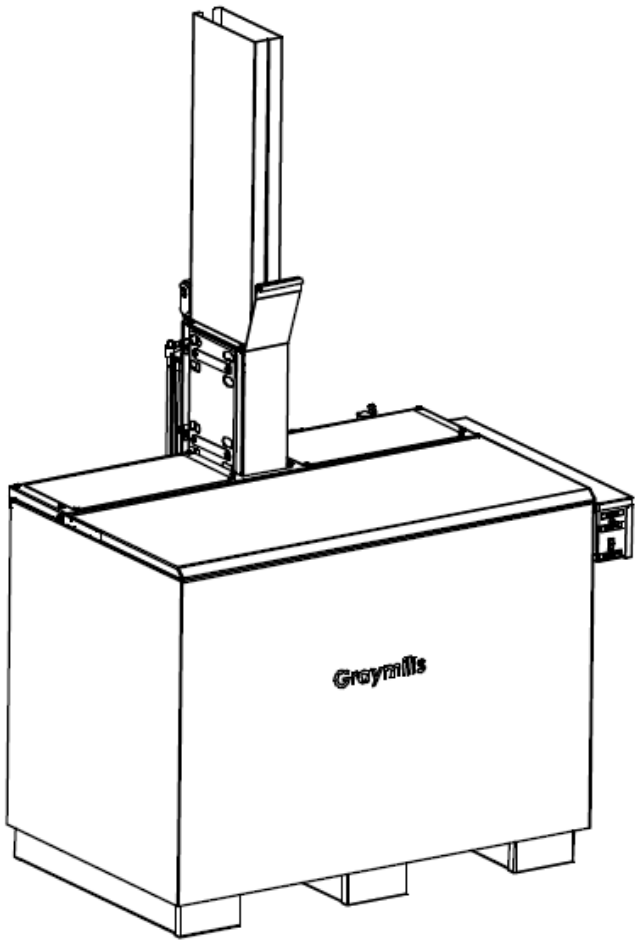
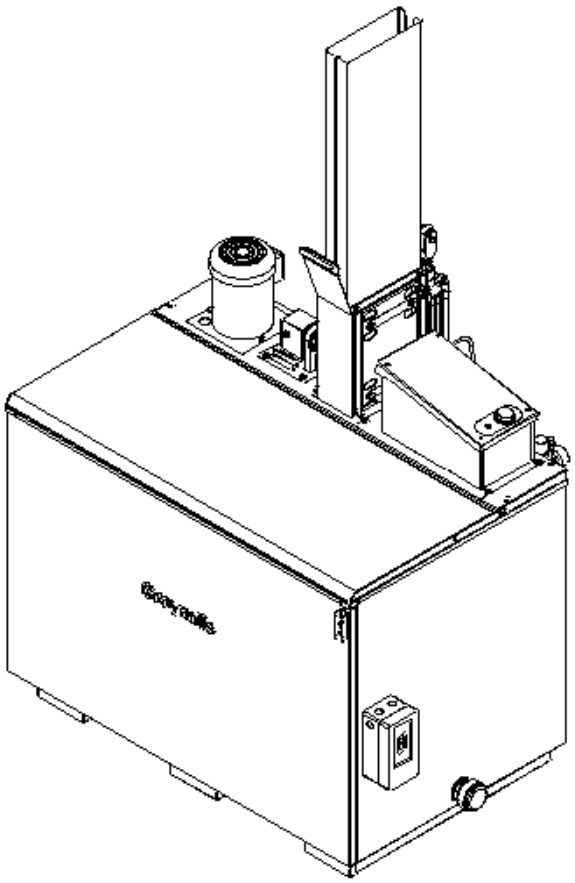
GRAYMILLS



TL-SERIES LIFTKLEEN® PARTS CLEANERS — AQUEOUS/SOLVENT

Operations and Maintenance Instructions

TL-17 SOLVENT PARTS CLEANER



TLHS-18 AQUEOUS PARTS CLEANER

SAFETY WARNINGS

You will find various types of safety information on the following pages and on the labels attached to Graymills equipment. The following Safety Statements explain their meaning:

⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid personal injury or death.
⚠ DANGER	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
CAUTION	CAUTION, without the safety alert symbol, is used to address practices not related to personal injury.

⚠ CAUTION

Never work with equipment you feel may be unsafe. Contact your Supervisor immediately if you feel a piece of equipment is in an unsafe condition.

SAFTEY WARNINGS – HEATED MACHINES (TLHS18)

THESE UNITS USE AQUEOUS SOLUTIONS ONLY

⚠ DANGER

Use only nonflammable, non-combustible, water-based alkaline cleaning compounds. Graymills recommends our Aquatene® line of Aqueous Detergents.

If you have any questions regarding the correct fluids to use in this unit, call Graymills at (773) 248-6825 and ask for Customer Service.

Do NOT fill with or contaminate cleaning fluid with any flammable or combustible material such as gasoline, alcohol, mineral spirits, etc. Drain parts to be cleaned of any flammable or combustible material before placing inside cleaning tank. Even small quantities can create a dangerous fire hazard.

Follow all directions, Warnings, Cautions and Dangers for the cleaning material being used.

Maximum operating temperature is 180°F. Higher temperatures will cause increased risk of personal injury and damage the unit. Remember, any temperature above 115°F can cause severe burns. Equipment itself will be hot. Use caution.

CAUTION

Turn heater off, using heater control panel (Fig.1B) when unit is to be idle for extended periods (overnight or weekends). Liquid could evaporate enough to damage heater coil.

⚠ CAUTION

Pump intake (the pump is an optional feature) is above heater coil. If solution does not circulate, liquid level is too low. Turn heater and pump off immediately. Failure to keep coil immersed can cause heater to burn out.

SAFTEY WARNINGS – UNHEATED MACHINES (TL17)

THESE UNITS USE SOLVENT SOLUTIONS ONLY

⚠ DANGER

Do NOT install near open flames or heat. Do NOT smoke near parts cleaner.

Be sure to follow label instructions provided with any fluid used in this unit. Use only fluids with a flash point of 104°F or higher. Graymills recommends Super or Regular Agitene® (Flashpoint approx. 105°F). Do NOT use gasoline, alcohol, carburetor cleaners, metal strippers or chlorinated solvents. Use of such unauthorized materials can cause a health and safety hazard which might result in serious personal injury or death. If you have any questions regarding the correct fluids to use in this unit, call Graymills at (773) 248-6825 and ask for Customer Service.

Do NOT contaminate cleaning compounds with any flammable materials (materials with less than 104°F flash point), such as gasoline, alcohol, etc. Drain parts to be cleaned of any flammable material before placing inside cleaning tank. Even small quantities can create a dangerous fire hazard

⚠ CAUTION

The TL17 Unit is equipped with a fusible safety link cover mechanism (Fig.9) designed to SEND PLATFORM DOWN AND CLOSE LID. In the event of a fire, the fusible link will melt at 165°F, permitting the cover to slam shut and reduce the oxygen supply to the fire.

HEATED (TLHS18) AND UNHEATED (TL17) MACHINES

⚠ CAUTION

If any cleaning solutions are splashed on clothing, remove wet clothing promptly and thoroughly wash body areas that have been in contact with the solution. Do NOT permit saturated clothing to remain in contact with skin.

Cleaning solutions may irritate skin and eyes. If splashed in eyes, flush thoroughly with water. Consult Material Safety Data Sheet (MSDS) and a physician. Always wear appropriate safety items such as gloves, apron, safety glasses or goggles.

- If you have any questions regarding the correct fluids to use in this unit, call Graymills at (773) 248-6825 and ask for Customer Service.

⚠CAUTION

The TL17 Unit is equipped with a fusible safety link cover mechanism (Fig.9) designed to SEND PLATFORM DOWN AND CLOSE LID in the event of a fire, the fusible link will melt at 165°F permitting the cover to shut, reducing oxygen supply to the fire.

⚠WARNING

Unit must be properly grounded to prevent electric shock hazard. Connect only to three prong outlet. Should cord become cracked, frayed or damaged in any way, it should be repaired immediately by a qualified electrician. Never use an extension cord.

Since operator safety at all times is a priority, we strongly recommend that, whether or not required by local code, this equipment be connected only into a power supply equipped with a "Ground Fault Interrupter" (GFI). All electrical connections should conform to national/local codes and be made by qualified personnel.

⚠WARNING

These units have moving parts, pinch-points and close tolerances. Always stand clear of lift platform (Fig.4D) and lid (Fig.4D) when operating as the lid could unexpectedly open or the platform operate. Keep hands and fingers away from tank when operating platform. (See the OPERATION section.)

⚠CAUTION

Inspect (optional) pump, heater, electrical cords, plugs, and fusible link (F) each time unit is cleaned. Do NOT use if any wear or damage is noticed until impaired components are repaired or replaced. Never operate if fusible fire link is not in place and functional.

Fill tank to recommended operating capacity range before plugging in power cord. (See the SPECIFICATIONS section.)

⚠WARNING

Before performing any maintenance on this unit be sure to disconnect electric power.

SPECIFICATIONS

	TL17 Tank Model	TLHS18 Tank Model
Inside Tank Dimensions	49" x 30" x 33-1/2"	49" x 30" x 33-1/2"
Liquid Immersion Depth	15"	15"
Liquid Capacity	150 gals.	150 gals.
Drain	2" NPT	2" NPT
Lift Platform		
Dimensions	45"X 17"	47" x 18"
Weight Capacity	300 lbs. @ 90 PSI	300 lbs. @ 90 PSI
Agitation Stroke Length	3"	3"
Strokes per minute	60 - 80	60 - 80
Air Inlet	1/4" NPT	1/4" NPT
Heater	N/A	9 KW
Thermostat Range	N/A	Ambient - 180°F
Heat-up Time (70°F - 150°F)	N/A	5 hrs
Agitation Pump (Optional)		
HP	3/4	3/4
Gallons per hour	3,000	3,000
Power Requirement Options (Voltage/Hertz/Phase)		
Controls	115/60/1	115/60/1
Heater	N/A	230/60/1 or 3
	N/A	460/60/3
Agitation Pump (Optional)	230/60/1 or 3	230/60/1 or 3
	460/60/3	460/60/3
Amperage, Maximum	6A @ 230V, 1Ph	45A @ 230V, 1Ph
Power Cord (Requires 20A. Receptacle)	8 ft. with 20A., 230V AC plug	Hard Wire

Note: 460V 3Ph units require direct wiring by user in compliance with all electrical codes. Separate fused disconnect switch is recommended on all models.

GETTING STARTED – HEATED (TLHS18) AND UNHEATED (TL17)

If you have purchased a hot tank unit, consider the convenience of providing water supply and drain facilities. Have the required electrical service installed by a qualified electrician in compliance with all electrical codes. Consult the nameplate on the machine and the SPECIFICATIONS Section of this manual for the electrical service requirements.

⚠WARNING

To prevent electrical shock hazard, this equipment must be properly grounded. Connect only to a properly grounded electrical outlet. Do NOT use extension cords or attempt to defeat the grounding pin on the electrical plug connector. For added safety, a ground fault interrupter is recommended.

Provide the required compressed air supply to the installation site. Although the TL-SERIES is equipped with a 1/4" air connection, it is recommended that a 3/8" to 1/2" supply be provided, depending upon the length of the supply line.

To insure smooth operation of the pneumatic lift, a filter - regulator combination should be installed in the air supply.

The TL-SERIES lift mechanism requires an air supply pressure of 80 psig minimum and 100 psig maximum for proper operation (Do NOT exceed 100 psig).

NOTE: Lift capacity is proportional to air supply pressure. Specified lift capacity is with 90 psig air inlet pressure. For example, an air inlet supply pressure of 70 psig will reduce lift capacity by 22%.

Unpacking Machine

When the machine is received, check the exterior packaging for damage or signs of improper handling. Report any shipping damage immediately to the freight carrier who delivered the equipment. If the exterior packaging is not damaged, proceed with the following:

1. Carefully remove the outer carton.
2. Remove all packing materials from inside the tank.
3. Do NOT connect the electric or air service until instructed to do so.

INSTALLATION

Site Preparation

Before installing the TL-SERIES, careful consideration should be given to the place of operation. Place unit on a smooth, level surface.

⚠CAUTION

The work area should be well ventilated.

Provide adequate lighting in the work area to allow observation of the cleaning process and the floor area around the machine.

Be sure to allow adequate room to bring work to and from the machine. Provide sufficient clearance around the machine for fluid changeovers and servicing.

SAFTEY PROCEDURE – HEATED AND UNHEATED

⚠WARNING

To prevent injury, keep hands and body clear of the lid (Fig.4A), lift platform (Fig.4D) and lift mechanism at all times.

⚠CAUTION

When turning air on, off, or operating the lift platform (Fig.4D), stay clear of the lid (Fig.4A), the lift platform and operating mechanism, as the lid could unexpectedly open or the platform operate.

Never operate unit without safety shroud (Fig.2A) fully in place. See Safety Procedure for CONNECTING AIR SUPPLY in the following section

CONNECTING AIR SUPPLY – HEATED AND UNHEATED

⚠CAUTION

While connecting the air supply (Fig.3A) to the quick disconnect fitting (Fig.3C) on the rear of the lift, make sure that the sleeve valve (Fig.3B) is pulled toward the quick disconnect fitting, thus disconnecting air from the lift mechanism. This will prevent sudden movement of the lift platform (Fig.4D) and possible sudden opening of the lid (Fig.4A) while the air is being connected.

1. Unpack air supply and connectors. Install air fittings (Figs.3B,3C) as shown in Fig. 3 (Figs.5B,5C).
2. After the air supply is connected, slide the sleeve valve forward toward the machine to turn on the air supply. (Follow Safety Procedure by keeping clear of lid and operating mechanisms.)
3. With the air connected, depress and hold the toggle switch down (Fig.4B). The lift platform should remain in the lowered position.
4. Momentarily press and release the toggle switch (Fig.4B). The platform should begin oscillating up and down with approximately a 3" stroke. With the tank empty and no load on the platform, operation can sometimes be somewhat noisy and rough.
5. Press and hold the toggle switch. The lid will begin to open and the platform should rise and remain in the raised position.

ADJUSTING PLATFORM SPEED – HEATED AND UNHEATED

Two sensors are located on the cylinder body. Leaving the lower sensor in place, adjust the upper sensor 1”-3” above it. Placing the upper sensor more than 3” above will result in the lid arm contacting lid when agitating.

Two independent speed control muffler screws (Fig.5C) are provided to control the vertical speed of the platform. The “UP” and “DOWN” speeds of the platform should be equal when the platform holds the intended workload. The speed control muffler screws are located at the rear control box.

1. To adjust the platform speed, first loosen the jam nut (Fig.5B) on the speed control, as applicable. To prevent the lid from slamming upon opening, adjust control muffler screws (Fig.5C) down to an appropriate speed.
2. **⚠CAUTION**

   With everyone clear of the unit, adjust the speed control muffler screw with a thin bladed screwdriver. Screw the control out to increase platform speed and in to reduce speed. Retighten the jam nut after speed control adjustment has been made (Fig.5B).

INSTALLATION – HEATED

⚠DANGER

Only non-flammable, water-based cleaning compounds can be used in heated tanks. Do NOT use any flammable, combustible solvents, or petroleum-based products.

1. The tank should be filled to approximately 6" below the rim with our Aquatene® series of cleaning fluids. Follow all label directions. Watch for splashing.
2. Connect heater module to the power supply. Turn the

temperature control knob on the heater control panel (Fig.1B) slowly clockwise to desired setting. A click will be heard and the signal light should come on indicating that the heating element is active. After a few minutes the fluid should begin to heat up. Complete heat-up times vary with fluid amount and operating temperature required.

⚠CAUTION

NEVER ATTEMPT TO ADJUST THERMOSTAT HIGHER THAN FACTORY SET MAXIMUM AS A DANGEROUS SITUATION WILL BE CREATED.

3. (Optional) Check voltage of pump motor (Fig.1A). This information can be found on the metal plate affixed to the motor housing. Be sure it is the same cycle (hertz), phase and voltage as your electric power source before connecting the Turbo pump to the voltage source.

NOTE: 230V, single phase heated models have an auxiliary outlet on the heater module for connecting the pump electrical cord.

4. (Optional) Turn on the pump switch and observe the fluid action in the cleaning tank. Uniform fluid agitation should be seen in all portions of the cleaning tank. If necessary, the pipe elbow on the pump discharge can be adjusted to direct the fluid flow as desired (but never in an upward direction that could cause splashing).

INSTALLATION – UNHEATED

⚠DANGER

Only a combustible solvent can be used in a cold cleaning tank and must have a flash point of 104°F or higher. Do NOT contaminate the solvent with gasoline or other flammable liquids with a flash point below 104°F as a severe fire hazard will result.

The parts cleaner is equipped with a tank cover including a fusible link safety mechanism to close the cover in case of a tank fire. Do NOT operate the machine without a properly functioning fusible link.

1. The tank should be filled to approximately 6" below the rim with Regular Agitene®, Super Agitene®, or similar mineral spirits type cleaning fluid. **Do not use chlorinated solvents.**
2. (Optional) Connect the Turbo pump to the proper grounded voltage source. Check voltage of pump motor (Fig.1A). This information can be found on the metal plate affixed to the motor housing. Be sure it is the same cycle (hertz), phase and voltage as your electric power source before connecting the Turbo pump to the voltage source .
3. (Optional) Turn on the pump switch and observe the fluid action in the cleaning tank. Uniform fluid agitation should be seen in all portions of the cleaning tank. If necessary, the pipe elbow on the pump discharge can be adjusted to direct the fluid flow as desired (but never in an upward direction that would cause splashing).

OPERATION – HEATED MACHINES

⚠DANGER

A flammable or combustible solvent must never be used in a heated parts cleaner. Use only water-based cleaners. Drain parts which may have flammable or unsafe fluids in them.

Follow all Safety Procedures and Warnings/ Cautions listed below and in previous sections.

1. Turn temperature control knob on the heater control panel (Fig.1B) to desired operating temperature. The signal light will remain lit until liquid reaches set temperature.
2. **⚠CAUTION**

   Keep clear during operation. Raise the lift platform (Fig.4D) to the uppermost position, opening the lid (Fig.4A).
3. Load the parts to be cleaned in a parts basket and place the basket on the lift platform (do NOT exceed weight limit). Larger parts may be loaded directly on the lift platform. Use appropriate lifting techniques for heavy parts.
4. Press and release the toggle switch (Fig.4B). Keep clear. The lift platform will lower into the tank, lid will close, and the platform will begin agitating up and down with an approximately 3" stroke. Lift platform may be held stationary at lower position by pressing and holding the (Fig.4B) toggle switch for several seconds.
5. (Optional) Turn on the Turbo pump option initiating fluid agitation.
6. After the required cleaning period, press toggle switch up and hold (Fig.4B). The lid will open and lift platform will rise to the load/unload position.

⚠CAUTION

Keep clear of lift platform - Be sure that everyone is away from lid and platform before starting to prevent injury.

7. Allow the workload to drain back into the tank before removing from the platform.

NOTE: Because of the wide range of applications, the required cleaning time usually will be determined by experience under actual use conditions.

OPERATION – UNHEATED MACHINES

⚠CAUTION

1. **Keep clear during operation**. Raise the lift platform (Fig.4D) to the uppermost position, opening the lid (Fig.4A).
2. Load the parts to be cleaned on the lift platform (do NOT exceed weight limit). Use appropriate lifting techniques for heavy parts.
3. Press and release the lower air control switch (Fig.4B). Keep clear. The lift platform will lower into the tank, lid will close, and the platform will begin agitating up and down with an approximately 3" stroke. Lift platform may be held stationary at lowest position by pressing and holding the switch for several seconds.
4. (Optional) Turn on the Turbo pump option to begin fluid agitation.
5. After the required cleaning period, press and hold the toggle switch up (Fig.4B). Keep clear. The lid will open and lift platform will rise to the load/unload position.

⚠CAUTION

Keep clear of lift platform - Be sure that everyone is away from lid and platform before starting to prevent injury.

6. Allow the workload to drain back into the tank before removing from the platform.

NOTE: Because of the wide range of applications, the required cleaning time usually will be determined by experience under actual use conditions.

MAINTENANCE – HEATED AND UNHEATED

⚠WARNING

Follow all Lock Out procedures before performing any service or maintenance.

Lock Out Procedures

1. When performing any maintenance tasks on the Liftkleen, make sure that the master on/off air line valve is in the “OFF” position.
2. Disconnect the main air supply to the rack to remove residual air pressure.

3. Turn electric power to machine “OFF” at main disconnect.
4. Unplug and/or disconnect all power to the machine.

⚠WARNING

Before performing any repairs or internal maintenance on this machine, disconnect the electrical power supply and the compressed air supply (Fig.3A). Review “Connecting Air Supply.” Follow all lock-out procedures (see above). If heated, be sure liquid is cool.

NOTE: Refer all electrical service to a qualified electrician.

Daily

- Check the fluid level in the tank. Maintain the fluid level at about 6" below the tank rim.
- Check around the machine for fluid leaks. Repair any fluid leaks immediately.
- Inspect all electrical cords and plugs. Replace worn or frayed cables or damaged plugs immediately.
- On unheated models, check the fusible link safety mechanism (Fig.9) on tank lid (Fig.4A) for noticeable damage. If necessary, replace, following instructions provided with Fusible Link Assembly.
- When using water-based cleaning fluids, remove any floating oil from the cleaning fluid daily.
  - Graymills offers an optional oil skimmer feature (Part No. TLK-OSK) which can be added at time of purchase or as a field retrofit and is ideal for floating oil removal.
  - Graymills Oil Absorbent Pads (Part No. OAP-25) are ideal for surface oil removal.
  - A Graymills Oil Separator may be used to perform continuous oil separation during operation.
  - A Graymills Turbo Boost Filtration System (Models TBF 24 or 36) sweeps the bottom of the parts cleaner tank at a rate fast enough to remove contaminants on a continuous basis while increasing agitation.
  - Contact Customer Service for further details.

Weekly

- Check the air hose and connector for damage or wear. Replace damaged air hose or fitting immediately.
- Check the lift mechanism for smooth operation. For problems with the lift mechanism, refer to the TROUBLESHOOTING Section.
- Lift out heater module and inspect heating element. Any foreign materials should be removed by gentle scrubbing with a wire bristle brush or equivalent.

CAUTION

Neglecting the cleaning of the heating element will cause premature failure. Do NOT allow oil or sludge to bake onto the heater element, as premature heater burnout will result. Warranty is voided if this occurs.

As Necessary

- To prevent damage to painted surfaces, wipe up any solvent or cleaning fluid spills immediately.
- When the cleaning action of the solvent or detergent solution diminishes, drain the tank and recharge with fresh fluid. To extend the life of water-based detergents, additional concentrate may be added to restore cleaning effectiveness.
- Each time you remove the lift platform for cleaning, inspect the vertical tube. Contact manufacture if wear is evident.

⚠CAUTION

Always dispose of used cleaning fluid properly. Refer to the cleaning chemical manufacturer's package label for instructions.

Lubrication

- Lubricate the roller wheels against the vertical shaft with #10 machine oil or a silicone spray lubricant at approximate one-month intervals. It will be necessary to temporarily remove the lift cylinder sheet metal safety shroud (Fig.2A) to gain access to the roller wheels.

⚠CAUTION

Always follow lock-out procedures and replace safety shroud.

- The pump motor (Fig.1A) is equipped with sealed ball bearings and requires no additional lubrication.

V-Groove Roller Maintenance

1. Remove clips (Fig.8E) from one side of housing on all four shafts.
2. Remove the “Factory Set Plates” (Fig.8F). These plates are required to be reinstalled to assist in keeping the proper tension against the vertical shaft and rollers.
3. Release Pressure on back rollers (Fig.8B) by loosening (Fig.10B) 3/8-16 jam nuts locking 3/8-16 bolts (Fig.10A) pushing against back roller shafts.
4. Once nuts are loose, back out the 3/8-16 bolts about 1/4 to 1/2” to relieve pressure off rollers.
5. Remove the Roller Cover (Fig.8A) by sliding up to unlock it from slots.
6. Push shaft out through housing and roller spacers (Fig.8C) and V-groove rollers (Fig.8B)
7. Inspect roller bearing, grease rollers at this time, damaged bearings or rollers should be replaced.
8. Inspect vertical shaft for wear; damaged vertical shaft should be replaced.

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSES	REMEDY
Lift platform (Fig.4D) does not oscillate	Air valve assembly improperly adjusted	Check sensors in back on cylinder: sensors have indicators; verify light illuminates when platform passes.
		Remove 2 hoses from main valve. Ensure air is passing through from cylinder. Bad valves should be replaced.
Lift platform does not remain in down position	Part has fallen under platform, preventing it from reaching lowest position of travel	Remove four slotted screws and platform grid, permitting access to lift part from tank.
	Not enough air pressure: 80 psig min., 100 psig max.	Check air supply, hoses, and connectors
"UP" speed is different from "DOWN" speed	Speed control muffler is improperly adjusted.	Adjust the speed control muffler screws (Fig.5C) at the rear of the lift column. Tighten jam nuts (Fig.5B) when finished.
Lift platform does not come to "UP" position	Overloaded. Load exceeds recommended weight capacity	Open lid and use chain hoist to remove heavy part.
Heated units do not reach desired fluid temperature	Heating element dirty	Clean element
	Heater element burned out	Replace heater element
	Thermostat defective	Replace thermostat
Lift platform bangs at full top or bottom position	Air cylinder cushion screws (Fig.9G) require adjustment	Screw in air cylinder cushion screws to reduce banging
Rollers are squeaking	Bearings need grease.	Grease rollers
	Rust on wheels and/or vertical bar	Spray lubricant on wheels and/or vertical bar
Lid won't open when rack comes to top	Air pressure may be too low to lift load and lid	Increase air pressure to 100 psig

If your problem is not listed above or problems persist, please contact Graymills for further assistance. 1-888-472-9645

REPLACEMENT PARTS LIST

TL-17 AND TLHS-18 LIFTER KIT ASSEMBLY

Part Number	Description
746-92478	Air Cylinder
729-05951	1/4" Polyethylene
729-90678	Tubing
746-06374	Speed Control/Muffler
738-92485	Sol. Valve 5 Port
770-92282	Toggle Switch 3P
C-92505	Air Fitting Assembly
770-09192	Toggle Switch 2P
777-04152	115V Cord and Plug

TLHS-18 HEATED

Part Number	Description
772-06196	Indicator Light
776-07847	Cord
778-07877	Plug
780-08642	Thermostat
780-07466	Heater
778-04821*	Receptacle (*Single Phase Units)

PUMP AND MOTOR (OPTIONAL)

Part Number	Description
337-04059	Motor, 3/4 HP
526-16960-74	Impeller
755-03193-81	Slot Nut
573-12029-63	Coupling
744-13709	Gasket
770-92282*	Toggle Switch (*Single phase units)
779-04024	Connector
660-13199-35	Pump Cover Plate
744-13709	Gasket
438-24298-S	Pump Body
551-18736-86	Shaft

TL-17 UNHEATED

Part Number	Description
451-24446	Safety Link Assembly
738-92351	3-Way Bleed Valve
749-09925	Flow-Thru Brush
390-09663	1/40 HP Pump
770-08112	Rocker Switch
777-09499	115V 20A GFI
603-41490-4	50 micron replacement filter pad (4 pack)

WARRANTY

Graymills Corporation warrants that the equipment manufactured and delivered hereunder when properly installed and maintained, shall be free from defects in workmanship.

This warranty does not apply to damages or defects caused by operator carelessness, misuse, abuse, improper application, or abnormal use; the use of add-on parts or equipment which damages or impairs the proper function of the unit and modifications made by Buyer.

Graymills' obligation under this Warranty shall be limited to:

1. Replacing or repairing tank and structural parts within one year from the date of installation or 13 months from the date of shipment whichever occurs first. The decision to replace rather than repair shall be made by **Graymills Corporation**;
2. Replacing or repairing components supplied but not manufactured by **Graymills**, such as pneumatic cylinders, controls, pneumatic systems, motors, heater controls and heaters to the extent such components are warranted by the original manufacturer's warranty, provided that Buyer gives **Graymills** prompt notice of any defect or failure and satisfactory proof thereof.

Before **Graymills** can repair or replace a defective part under warranty, call **Graymills** for a Return Merchandise Authorization number (RMA number must appear on outside of package or it will be refused and returned). Upon prepaid return to **Graymills**' factory, **Graymills**' examination must disclose such part to be defective.

This warranty does **not** apply to expendable parts such as rollers, bearings, cylinder packings and any other parts which need replacement periodically due to normal wear nor to rusting of a mild steel heated unit used with aqueous (water) based cleaning solutions. A new warranty period shall not be established for repaired or replaced materials, or products. Such items shall remain under warranty for only the remainder of the warranty period of the original materials or products. **Graymills** warrants that the equipment will function mechanically as quoted in the published specification. **Graymills** does not warrant process performance nor does **Graymills** assume liability for equipment selection, adaption or installation.

The foregoing warranties are in lieu of all other warranties whether oral, written, expressed, implied or statutory. Implied warranties of fitness for a particular purpose and merchantability shall not apply. **Graymills**' warranty obligations and Buyer's remedies thereunder (except as to title) are solely and exclusively as stated herein. In no case will Graymills be liable for consequential damages, loss of production or any other loss incurred because of interruption of service

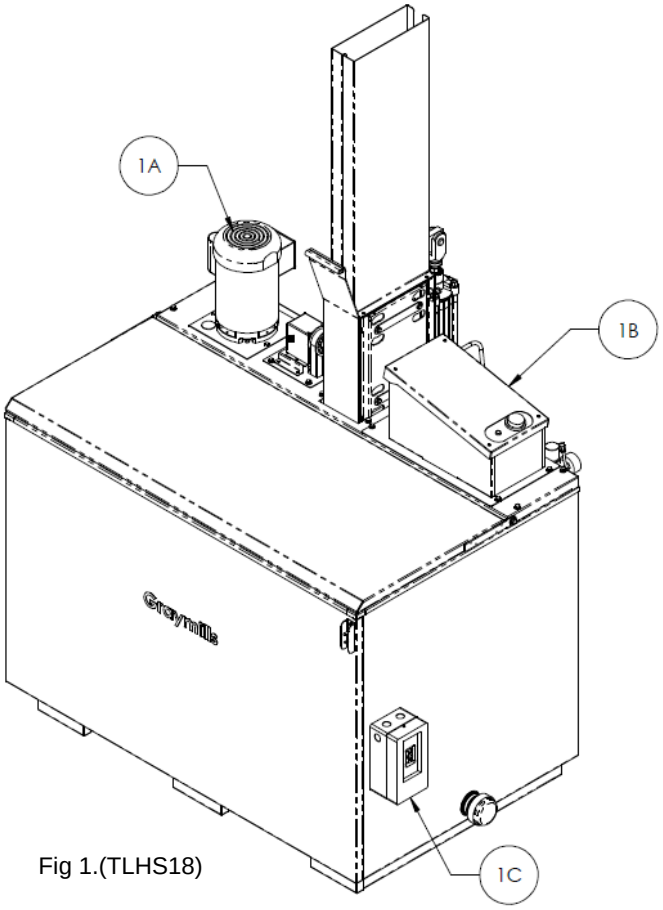


Fig 1.(TLHS18)

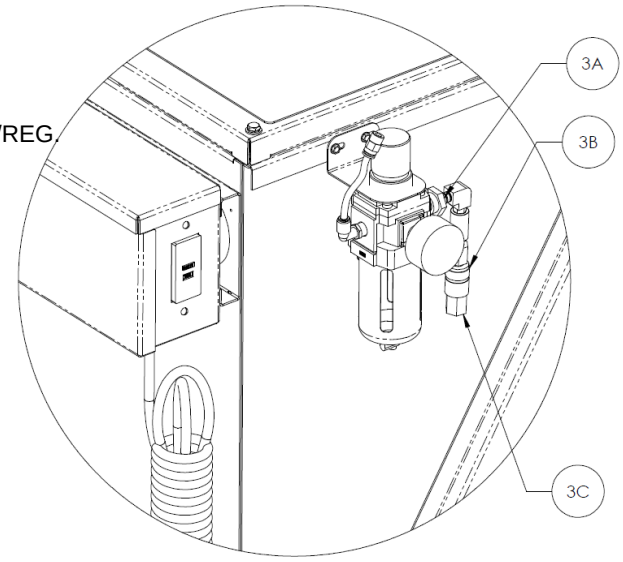


Fig3.
FILTER/REG.

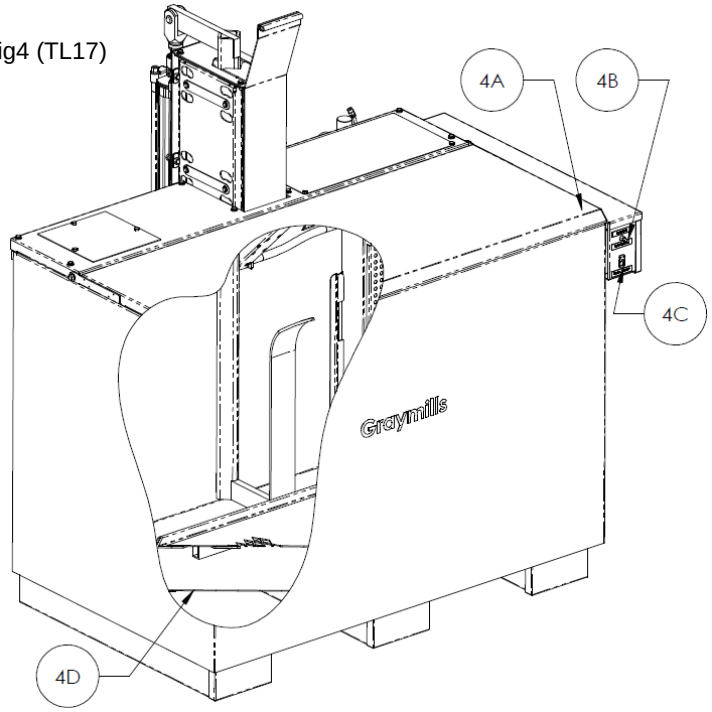


Fig4 (TL17)

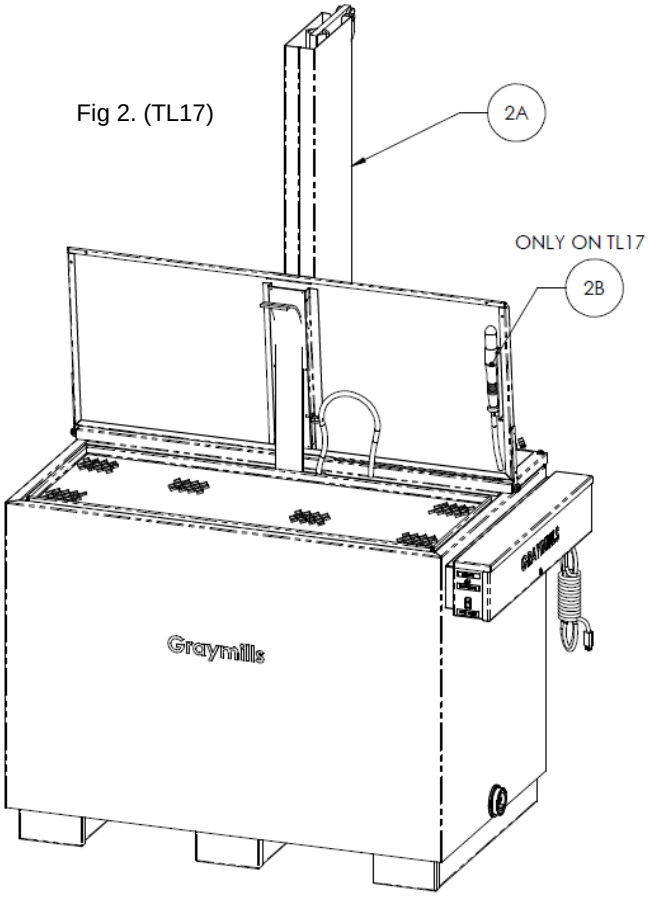
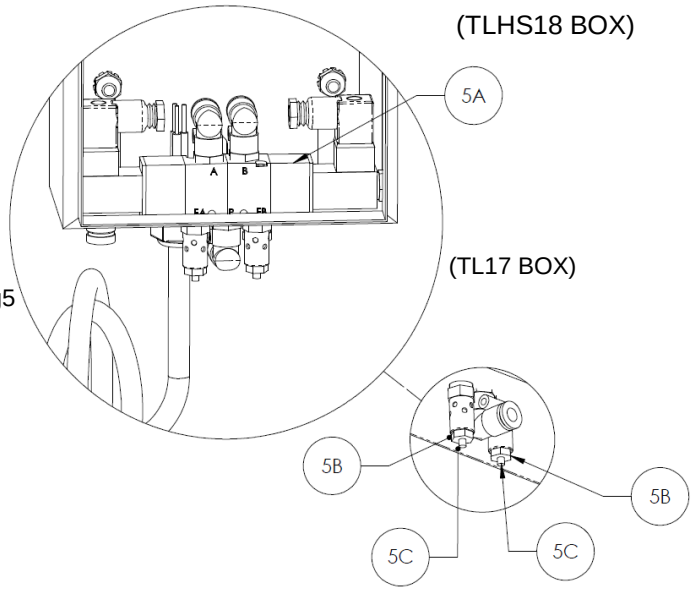


Fig 2. (TL17)

(TLHS18 BOX)



(TL17 BOX)

Fig5

Graymills

Fig 6 (TLHS18)

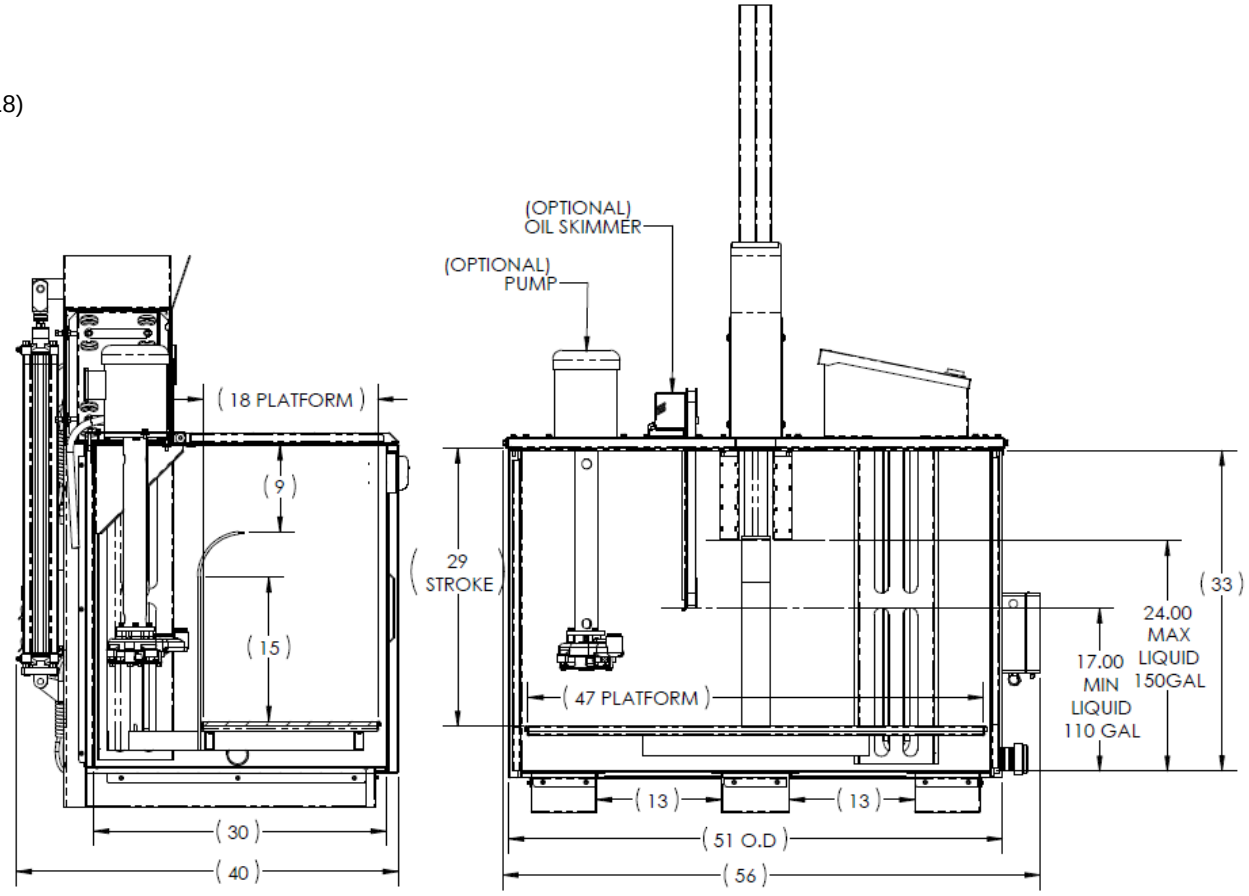


Fig 7(TL17)

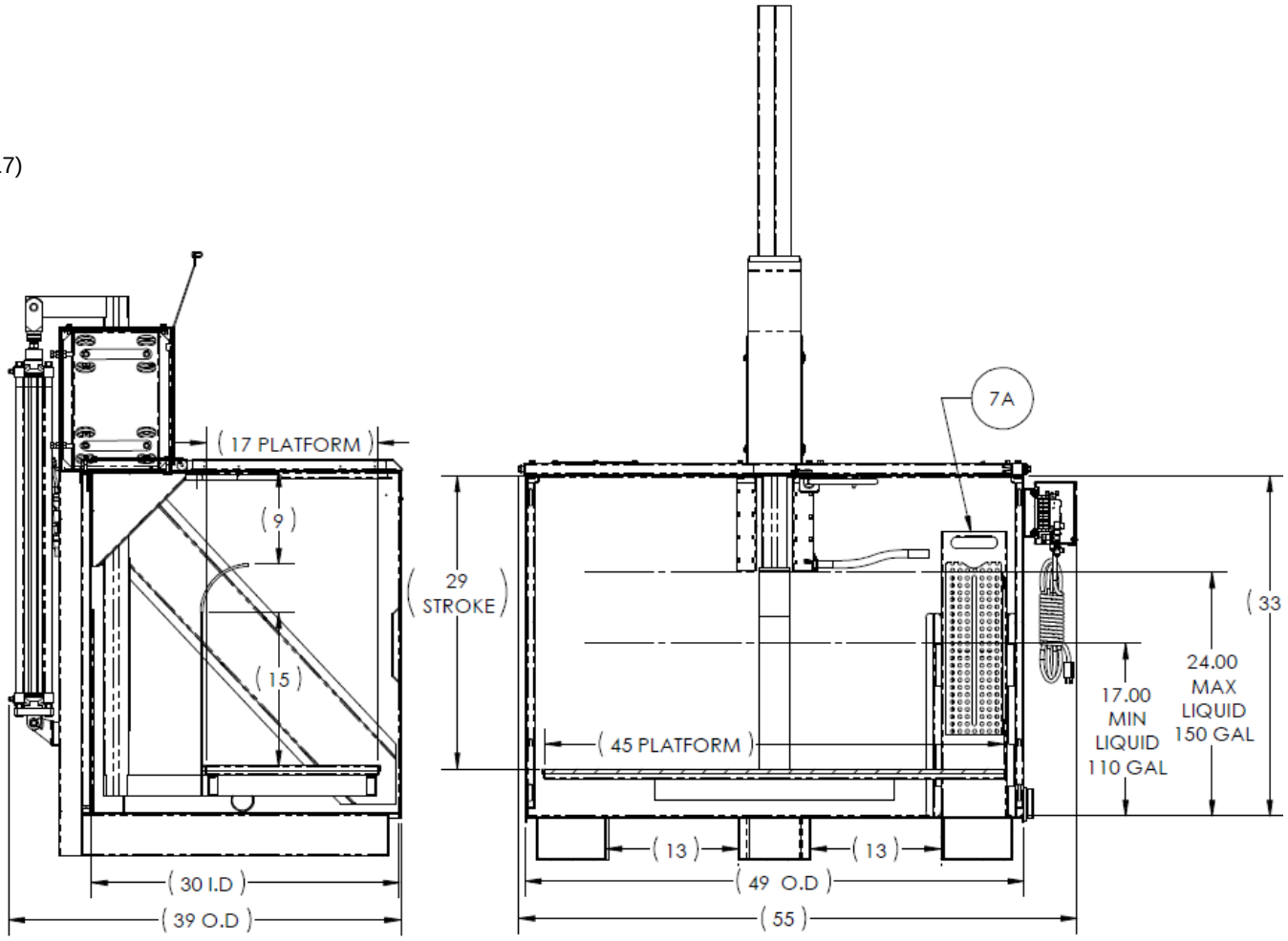


Fig. 8 V-Roller Detail

8A)	431-41161	COVER
8B)	761-92495	V-GROOVE ROLLER
8C)	573-41187-41	SPACER
8D)	569-41175-88	SHAFT
8E)	756-06286-88	CLIP
8F)	647-41189-81	FACTORY SET-PLATE

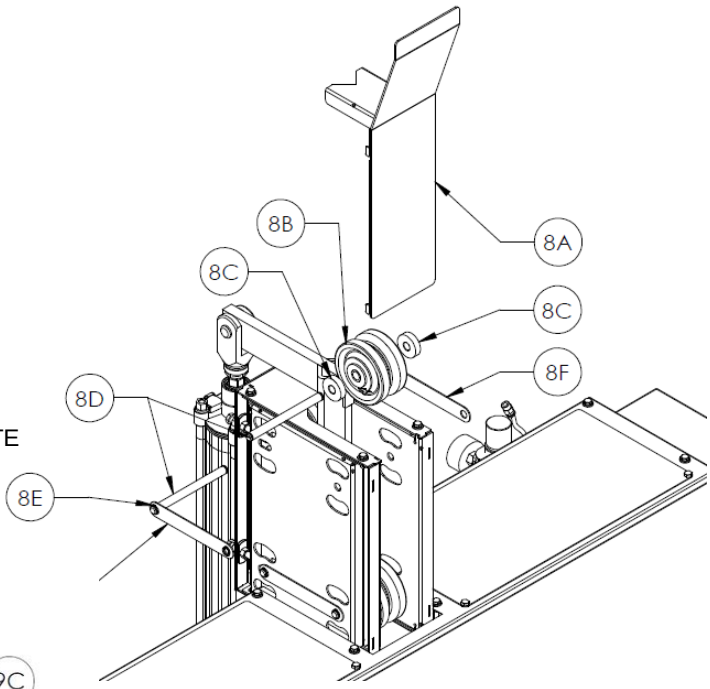
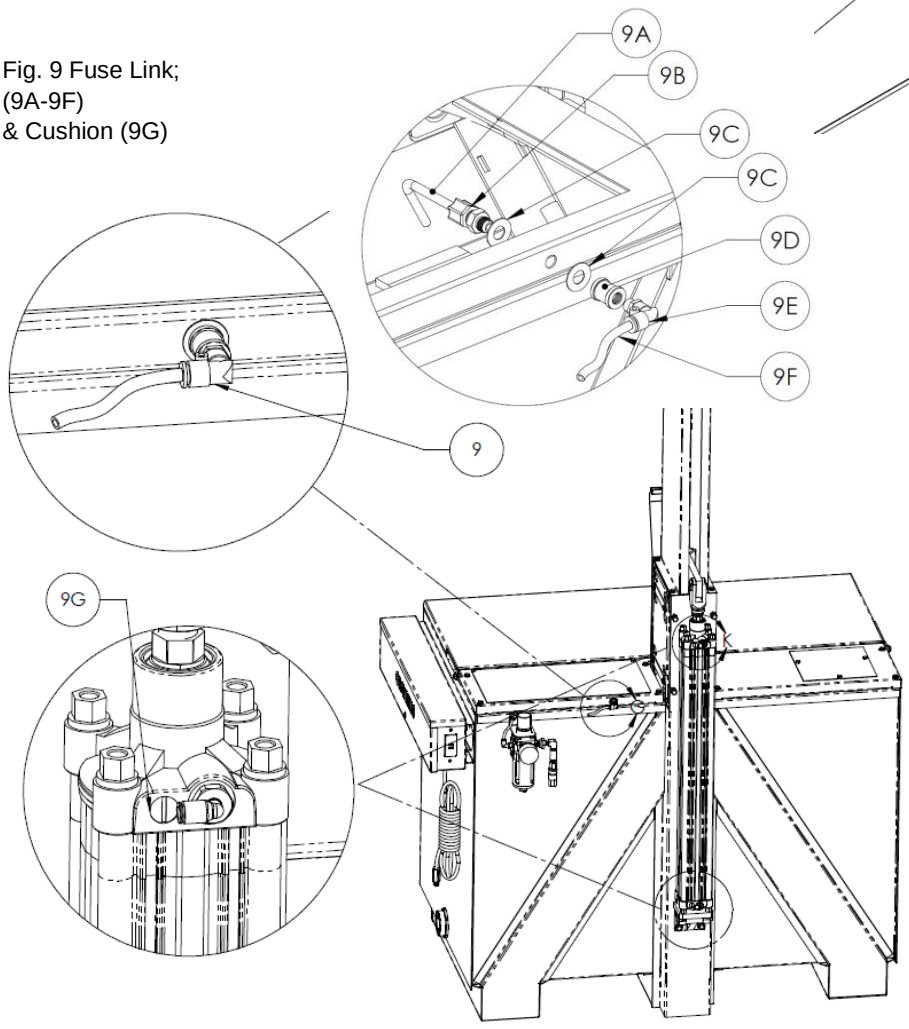


Fig. 9 Fuse Link;
(9A-9F)
& Cushion (9G)



9A)	451-24446	SAFETY LINK ASSY
9B)	735-03018-41	MALE CONN
9C)	754-00600-88	WASHER
9D)	724-02777-41	PIPE COUPLING
9E)	735-06259	ELBOW TUBE/ NPT
9F)	729-90678	TUBING

Fig.10 Pressure Bolts (Top View)