



Operators Manual

Metering Filling Station Installation & Operation

For units built after August 2011

MFS



For your future reference.

Model # _____

Serial # _____

Model # & Serial #.
(Open front panel to view rating label.)



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**Read the manual thoroughly.
Improper installation, operation or
maintenance can cause property
damage, injury or death.**

TABLE OF CONTENTS

For your safety	1-2
Preventative Maintenance	2
Installation	3
Operating Instructions	4-5
Cleaning Instructions	6-8



FOR YOUR SAFETY / POUR VOTRE SÉCURITÉ / PARA SU SEGURIDAD

FOR YOUR SAFETY

Do not store or use gasoline or any other flammable liquids and vapours in the vicinity of this or any other appliance.

POUR VOTRE SÉCURITÉ

Ne pas entreposer ou utiliser d'essence ou d'autres liquides ou vapeurs inflammables à proximité de cet appareil ou de tout autre appareil.

PARA SU SEGURIDAD

No guarde ni use gasolina o cualesquiera otros líquidos o vapores inflamables en las cercanías de éste o cualquier otro aparato.

WARNING: Improper installation, adjustment, alteration, service, maintenance or operation can cause property damage, injury or death. Read the installation and operating instructions thoroughly before installing or servicing this equipment.

AVERTISSEMENT : Une mauvaise installation, un réglage inadapté, une modification non appropriée ou un manque d'entretien peuvent occasionner des dommages matériels, des blessures ou même la mort. Lire la notice de montage et d'exploitation avant d'installer ou d'entretenir cet équipement.

ADVERTENCIA: La instalación, ajuste, alteración, servicio, mantenimiento o funcionamiento incorrectos pueden causar daños a la propiedad, lesiones o muerte. Lea detenidamente las instrucciones de instalación y de operación antes de instalar o darle servicio a este equipo.

This appliance is not to be used by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Cet appareil ne doit pas être utilisé par des personnes dont les capacités physiques, sensorielles ou mentales sont réduites, ou des personnes dénuées d'expérience ou de connaissance, sauf si elles ont pu bénéficier, par l'intermédiaire d'une personne responsable de leur sécurité, d'une surveillance ou d'instructions préalables concernant l'utilisation de l'appareil.

Este aparato no debe ser utilizado por personas con capacidades físicas, sensoriales o mentales reducidas, o que no tengan la experiencia y los conocimientos adecuados, a menos que estas personas hayan recibido supervisión e instrucciones en cuanto al uso del aparato por la persona responsable de la seguridad de ellas.

This appliance is not for use by children and they must be supervised not to play with it.

Cet appareil n'est pas destiné à être utilisé par des enfants et ils doivent être surveillés pour s'assurer qu'ils ne jouent pas avec l'appareil.

Guarde este manual para su referencia.

Retain this manual for your reference.

Conservez ce manuel pour votre référence

FOR YOUR SAFETY / POUR VOTRE SÉCURITÉ / PARA SU SEGURIDAD

Hazard warnings are for your safety. Absence of a warning does not mean the hazard is not present. Unforeseen actions may result in unanticipated hazards. / Les avertissements de danger sont pour votre sécurité. L'absence d'un avertissement ne signifie pas que le danger n'est pas présent. Les

actions imprévues peuvent entraîner des dangers imprévus. / Las advertencias sobre los peligros son para su seguridad. La ausencia de una advertencia no significa que el peligro no está presente. Las acciones imprevistas podrían resultar en peligros no anticipados.

IMPORTANT / IMPORTANT / IMPORTANTE



Inspect unit daily for proper operation. / Inspectez l'unité tous les jours pour son bon fonctionnement. / Inspeccione diariamente el funcionamiento correcto de la unidad.



Bag clippers come in various models. Follow all safety instructions in their specific manual. / Il existe une variété de modèles de pinces de sacs. Suivez toutes les consignes de sécurité figurant dans leur propre manuel. / Las engrapadoras de bolsas vienen en varios modelos. Siga todas las instrucciones de seguridad en su propio manual

CAUTION / ATTENTION / PRECAUCIÓN



Keep hands away from moving parts and pinch points. / Gardez les mains loin des pièces mobiles et des points de pincement. / Mantenga las manos lejos de piezas móviles y puntos de presión muy localizada.



Surfaces and product may be hot! Wear protective equipment. / Les surfaces et le produit peuvent être chauds! Portez un équipement de protection. / ¡Las superficies y el producto pueden estar calientes! Utilice equipo protector.



Hot! / Chauds! / ¡Caliente!



Do not climb, sit or stand on equipment. / Il ne faut pas monter, s'asseoir ni se tenir debout sur l'équipement. / No subirse, ni sentarse ni pararse sobre el equipo.



Stand clear of product discharge path when discharging hot product. / Écartez-vous du chemin de décharge d'un produit chaud. / Permanezca alejado de la ruta de descarga del producto al vaciar producto caliente.



Use wheel locks. / Utiliser des verrous de roue. / Utilizar bloqueos de la rueda.



Do not remove guards or operate without them. / Ne pas supprimer les gardes ou fonctionner sans eux. / No retire los guardias ni funcionar sin ellos.



Floor may become slippery from product spillage. / Déversement de produit peut causer de plancher à être glissant. / Derrame de producto puede causar piso a ser resbaladizo.

SERVICING / ENTRETIEN / SERVICIO



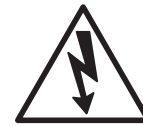
Have a qualified service technician maintain your equipment. / Demandez à un technicien en entretien et en réparation qualifié d'effectuer l'entretien de votre équipement. / Haga que un técnico de servicio calificado mantenga su equipo.



Remove air pressure prior to servicing or cleaning. / Dépressurisez avant tout entretien. / Despresurizar antes de darle servicio.

PREVENTATIVE MAINTENANCE

FOR MAINTENANCE AND REPAIRS CONTACT YOUR AUTHORIZED MANITOWOC SERVICE AGENCY AND HAVE A QUALIFIED SERVICE TECHNICIAN MAINTAIN YOUR EQUIPMENT.



DAILY PRE-STARTUP INSPECTION

1. Unit has been assembled properly and all hose and pipe fittings are tight.
2. Check air pressure.
3. Test single stroke operation.
4. Test continuous operation.



WEEKLY

1. 95 to 100 psi. air pressure.
2. Check air filter collector.
3. Check all fittings for leaks-oil level.
4. Lubricator should be adjusted to disperse 1 drop of oil per 14-18 cycles. (None detergent oil)
5. The flapper valve assembly must removed and inspected for signs wear and proper adjustment.
6. Check for loose fasteners, switches, pistons heads, etc.
7. Gaskets and O-ring wear.

INSTALLATION

RECEIVING INSPECTION

Before unpacking visually inspect the unit for evidence of damage during shipping.

If damage is noticed, do not unpack the unit, follow shipping damage instructions

SHIPPING DAMAGE INSTRUCTIONS

If shipping damage to the unit is discovered or suspected, observe the following guidelines in preparing a shipping damage claim.

1. Write down a description of the damage or the reason for suspecting damage as soon as it is discovered. This will help in filling out the claim forms later.
2. As soon as damage is discovered or suspected, notify the carrier that delivered the shipment.
3. Arrange for the carrier's representative to examine the damage.
4. Fill out all carrier claims forms and have the examining carrier sign and date each form.

UNCRATING

Caution:

Straps under tension and will snap when cut.

Carton may contain staples and Skid contains Nails.

Use proper safety equipment and precautions.

Unit is heavy use adequate help or lifting equipment as needed.

1. Carefully cut any straps from container.
2. Lift off carton.
3. Inspect for hidden damage.
If found refer to "SHIPPING DAMAGE INSTRUCTIONS".
4. Cut strap holding unit.
5. Remove manual. Write down the model# and serial# of the unit onto the front of this manual.
6. Lift unit off skid.
7. Remove and replace accessories in a secure area.
8. Discard packaging material according to local and or state requirements.

ASSEMBLY

The Metering Filling Station is a mobile unit that requires no assembly to complete unless a clipper has been shipped with the unit. It does however ship with a number of loose items that are required for its use. These items should be stored in a convenient location.

CLIPPER

If a clipper is supplied with the unit, it must be mounted. Remove it from the box and connect it to the mounting bar using part #FA11509 bolt (supplied). Connect one end of the short air hose (supplied) to the clipper and the other end to the male quick connect on the end of the MFS.

INSTALLATION REQUIREMENTS

Compressed Air

This unit requires a constant 25 c.f.m. (cubic feet per minute) at 90 to 100 p.s.i. (pounds per square inch).

The air must be filtered of oil, moisture and dirt. The dew point of the supply air must be less than 65°F. The Metering Filling Station is equipped with its' own air oiler system, therefore, no oil should

be added to the supply air. We recommend the compressed air system be equipped with a drier, filter, and automatic water dump on the air compressor receiver tank. If the distance between the tank and the unit is less than 100 feet then a minimum line size of 3/4" is required. A distance of 100 to 300 feet requires a minimum 1" line.

Connect one end of air line (supplied) to the metering filling station and the other end to the kettle air outlet fitting.

If you do not have a Cleveland kettle with air connection built-in then you must attach the female quick connect (supplied) to your air supply.

Electrical

No electrical connection is required unless the unit comes equipped with a Thermal Assurance Package (TAP) option. This requires a 115V. 1PH. grounded outlet.

INSTALLATION CHECKS

AIR PRESSURE

1. Connect supply air to metering filling station.
2. Open front Access Doors (**17**) on metering filling station.
3. Set Stroke Selection Switch on Control Panel (**1**) for "CONSTANT PUMPING".
4. Hold Trigger Lever (**10**) and read Pressure Gauge (**21**) as pump is operating. Pressure should not drop less than 90 psi or exceed 110 psi.
5. Adjust as required.

Note: If there is no air to unit check the kettle's Air Quick Connect is pushed upward to the "OPEN" position.



SINGLE STROKE

Note: Use 3" gaskets in all hex nut couplings on food hose.

⇒ First, hand-tighten.

⇒ Then, snug with wrench.

1. Using 3" gasket, connect the 3" dia. Food Product Hose (**15**) to metering filling station and kettle.
2. Add water to kettle and open kettle's product discharge valve.
3. Open front Access Doors (**17**) of metering filling station.
4. Set Stroke Selection Switch on Control Panel (**1**) for "SINGLE STROKE".
5. Place bag over Discharge Nozzle (**11**).
6. Pull and hold Trigger Lever (**10**).
7. Product piston should go all the way forward, then return and stop.
8. Release Trigger Lever (**10**).
9. Repeat test two to four times, product will start to discharge into bag.

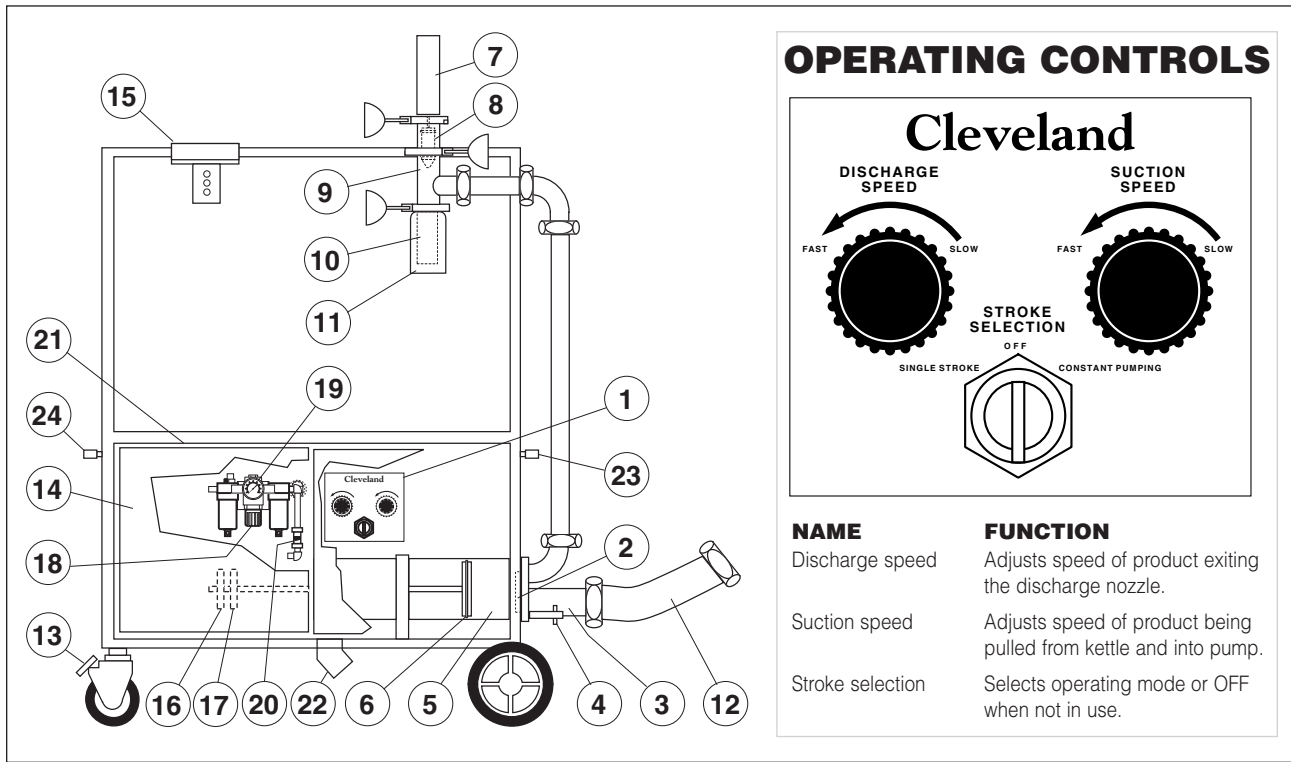


CLIPPER

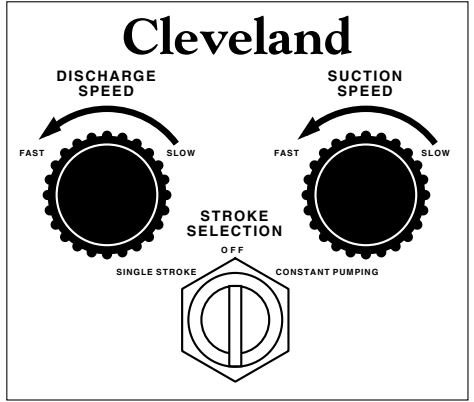
Refer to clipper operating instruction manual for safety and operating procedures.



OPERATING INSTRUCTIONS



OPERATING CONTROLS



NAME	FUNCTION
Discharge speed	Adjusts speed of product exiting the discharge nozzle.
Suction speed	Adjusts speed of product being pulled from kettle and into pump.
Stroke selection	Selects operating mode or OFF when not in use.

ITEM #	DESCRIPTION	FUNCTION
1.	Control Panel	Includes: A/ speed adjusters for suction and discharge. B/ stroke selection switch.
2.	Flapper Valve	Changes direction of product flow.
3.	Piston Head	
4.	Large Lug Nuts	Holds product head to product cylinder.
5.	Product Cylinder	Cylinder product is drawn into and discharged from.
6.	Product Piston	Moves product within the cylinder.
7.	Product Discharge Valve	Air cylinder that opens and closes discharge opening by moving plunger.
8.	Plunger	Opens and closes product discharge opening.
9.	Discharge Valve Body	
10.	Trigger Lever	Activates pumping action.
11.	Discharge Nozzle	Directs the flow of discharge product.
12.	3" dia. Food Product Hose	3" dia. hose to connect Metering Filling Station hose to kettle.
13.	Brake	Locks pump in position.
14.	Access Doors	
15.	Clipper Bracket	Mounting bracket for optional clipper.
16.	Adjustment Wheel	Used for setting desired pumping volume.
17.	Locking Wheel	
18.	Pressure Regulator Dial	Used to regulate air pressure.
19.	Pressure Gauge	Shows operating pressure.
20.	Slide Valve	Safety Valve. Slide down to vent air from system.
21.	Drain Pan	
22.	Drain Pan Discharge	
23.	Supply Air Connection	
24.	Supply Air Connection - Clipper	

OPERATION

1. Perform DAILY PRE-STARTUP INSPECTION.
2. Connect on end of the 3-inch diameter food hose to the kettle.
3. Position MFS for ease of operation and connect to the other end of the food hose. Additional hoses or a 90° elbow may be used.
4. Lock wheels.
5. Connect air hose from source to MFS.
6. Open VALVE on kettle. Food will flow into food hose.
7. Place casing over discharge nozzle.
8. Pull and hold trigger lever until pump has stopped. If a second or third stroke is required, repeat process or set STROKE SELECTION on CONSTANT PUMPING and hold trigger lever while food is being pumped.
9. Move bag over to clipper and clip bag. (refer to Tipper Tie operations manual)
10. Pump a couple of bags to check volume and speed.
11. SUCTION SPEED is the rate at which product is suctioned from kettle. Thick products should be suctioned at a slow speed. Thin products may be suctioned fast.
12. DISCHARGE SPEED is the rate at which product flows out of the discharge nozzle. Most products may discharge fast into bags. Discharge slowly into pans to reduce splashing hot food.
13. Continue to pump until all product has been emptied from the kettle.

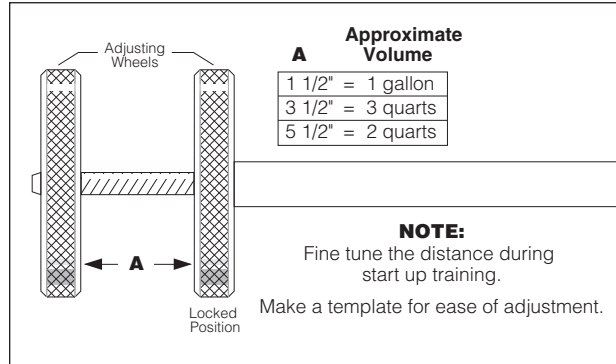


FLUSHING & SANITIZING

BETWEEN RECIPES

1. To clean between batches of product, flush kettle and Metering Filling Station with a warm water and mild detergent or sanitizing solution from kettle to loosen and remove food particles.
2. Remove product Discharge Nozzle and replace it with cleaning hose.
3. Place end of cleaning hose over a drain.
4. Switch stroke selector switch to "CONSTANT PUMPING".
5. Pull and hold trigger lever against discharge valve nozzle until kettle has been emptied.
6. Add clean water to kettle, and repeat process to rinse units.

SETTING VOLUME



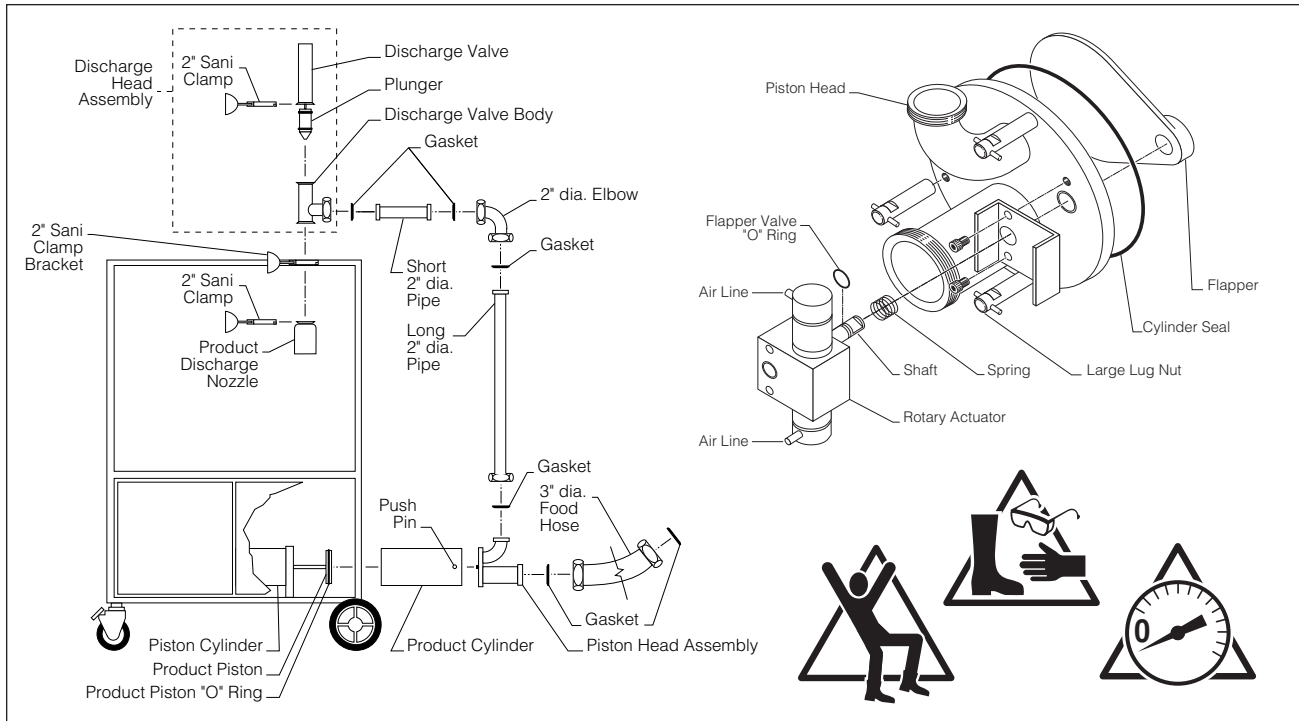
METHOD "A"

1. Open front doors of MFS.
2. Release air pressure by pulling down on SLIDE VALVE.
3. Loosen locking wheel.
4. Turn adjustment wheel as required.
5. Tighten locking wheel.
6. Pull slide valve to pressure system.

METHOD "B"

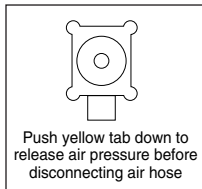
1. Set pump to single stroke.
2. Close SUCTION SPEED VALVE.
3. Trigger pump. It should move about 1/2 cycle and stop.
4. Close DISCHARGE SPEED VALVE.
5. Release air pressure by pulling down on SLIDE VALVE.
6. Loosen locking wheel.
7. Turn adjustment wheel as required.
8. Tighten locking wheel.
9. Open SUCTION SPEED VALVE.
10. Open DISCHARGE SPEED VALVE.
11. Pull slide valve to pressure system.

CLEANING INSTRUCTIONS



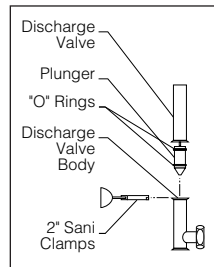
DISASSEMBLY

Note: Remove "O" rings using a wooden or plastic picker; do NOT use a sharp object.
 Note: Prepare a properly diluted solution of authorized cleaning solution in a plastic soak bucket taken from a freshly filled sink to receive small parts, gaskets, and "O" rings.



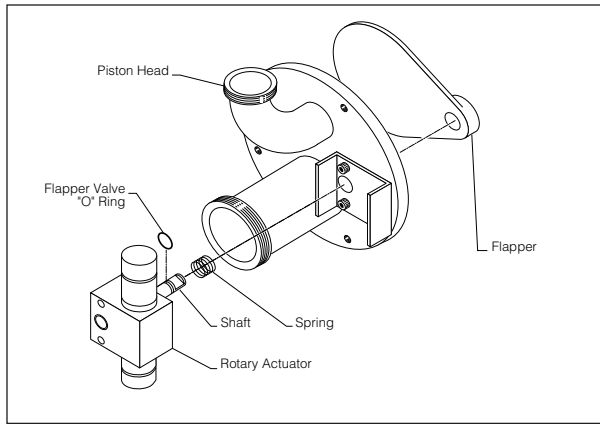
1. Move slide valve on kettle's air quick connect to down position to vent air from metering filling station.

2. Disconnect main air line from Metering Filling Station.
3. Remove 3" food hoses.
4. Remove two air lines (quick-disconnect fittings) from Rotary Acuator.
5. Undo 2" Sani-Clamp, and remove Discharge Nozzle.
6. Undo Sani Clamp on Discharge Valve Body and remove Discharge Head Assembly; place 2" gasket in warm water to soak.



7. Disassemble Discharge Head Assembly, follow in order;
 ⇒ Remove 2" Sani-Clamp that holds Discharge Head Assembly together.
 ⇒ Separate parts by pulling them apart.
 Discharge Head Assembly=

- ⇒ Using a wooden or plastic picker, remove "O" Rings from plunger.
- ⇒ Put "O" Rings in warm water to soak; do NOT submerge discharge valve.
8. With 2" wrench, remove Short 2" dia. Pipe, 2" dia. Elbow and Long 2" dia. Pipe. Place all gaskets in soak bucket.
9. Remove two air lines from Rotary Actuator on Piston Head Assembly.
10. Using lug wrench, unscrew three Large Lug Nuts, and remove Piston Head Assembly.
11. Dismantle Piston Head Assembly as follows in order;



⇒ Push Rotary Actuator toward Piston Head to remove Flapper, place Flapper in soak bucket.

⇒ Remove Rotary Actuator, placing small spring in soak bucket.

⇒ Do NOT submerge Rotary Actuator.

11. Pull product cylinder off product piston.

⇒ Do NOT use pliers or any other tool that could damage the inside wall of the cylinder.

12. Using plastic or woden picker, remove "O" ring from Product Piston.

CLEANING

WARNING: Do not submerge Discharge Valve or Rotary Actuator in water, damage to air cylinders will result.

⇒ Always turn off equipment power before using water.

⇒ Never use steel wool for cleaning; particles may become embedded and rust.

⇒ Clean unit in the following order:

A/ Warm water and mild detergent solution.

B/ Clear rinse.

C/ Properly diluted sanitizing solution (see Sanitizing Solution Chart) to sanitize after cleaning.

⇒ Do **NOT** use chloride cleaners; they may damage stainless steel surface.

⇒ For difficult cleaning applications, one of the following can be used: alcohol, baking soda, vinegar, or a solution of ammonia in water.

1. Clean all parts (except Discharge Valve and Rotary Actuator) with hot soapy water or run them through the dish washer.

2. Clean the interior of the 2" inch pipes and the 3" dia. food product hose using the brushes provided.

3. Inspect "O" rings and gaskets for cuts, distortion, or wear, replace if required.

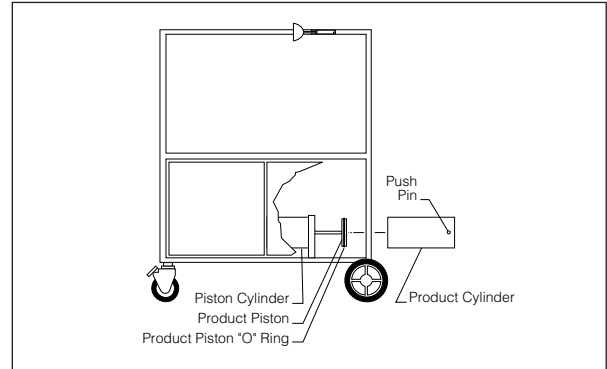
4. Leave part disassembled overnight.

ASSEMBLY

NOTE: To eliminate any chance of recontamination of unit, wear sanitary disposable gloves during reassembly after cleaning.

This startup procedure assumes the unit is fully disassembled.

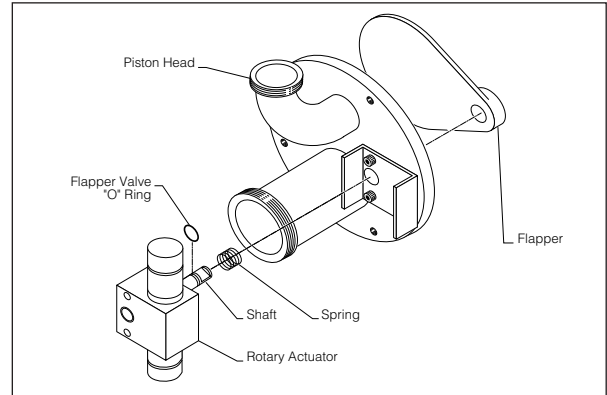
1. Attach Product Cylinder to Piston Cylinder as follows:



⇒ Inspect Product Piston "O" Ring (replace if worn) on Product Piston - lubricate with food grade grease.

⇒ Push Product Cylinder over Product Piston and seat firmly in groove (push pin must be located as illustrated).

2. Assemble Piston Head Assembly as follows in order:



⇒ Inspect Flapper Valve "O" ring on rotary actuator (replace if worn).

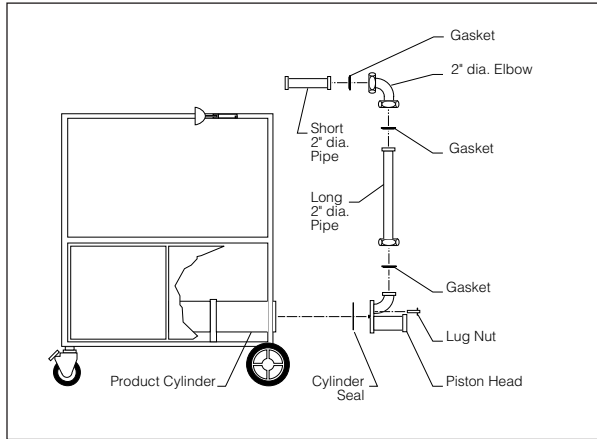
⇒ Lubricate "O" ring with food grade grease and put on shaft.

⇒ Put Spring on Shaft.

⇒ Slide Rotary Actuator Shaft thru hole in Piston Head.

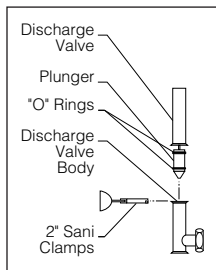
⇒ Mount Flapper to Shaft.

3. Assemble piston and piping as follows in order:
NOTE: Use 2" gaskets in all hex nut couplings.



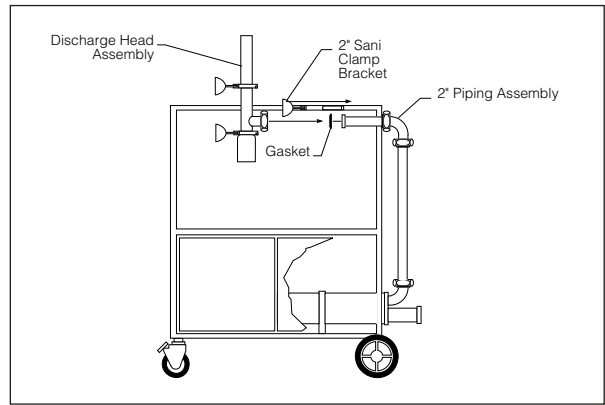
- ⇒ Put Cylinder Seal in place. Lubricate exposed portion of Cylinder Seal then mount Piston Head to Product Cylinder, and fasten in place with large Lug Nuts using lug wrench for final tightening.
- ⇒ Attach two 1/4" air lines to Rotary Actuator (black line on top).
- ⇒ Reassemble 2" piping (Long 2" dia. Pipe, 2" dia. Elbow and Short 2" dia. Pipe) on Piston Head as illustrated using gaskets shown.

4. Assemble discharge head assembly in order as follows:



- ⇒ Inspect and install "O" Rings (replace if worn) on Plunger - larger one in top groove - smaller one in bottom groove.
- ⇒ Push Plunger into Discharge Valve Body.
- ⇒ Attach Discharge Valve to Discharge Valve Body using 2" Sani-Clamp.
- ⇒ Attach Discharge Nozzle to Discharge Valve Body using 2" Sani-Clamp.

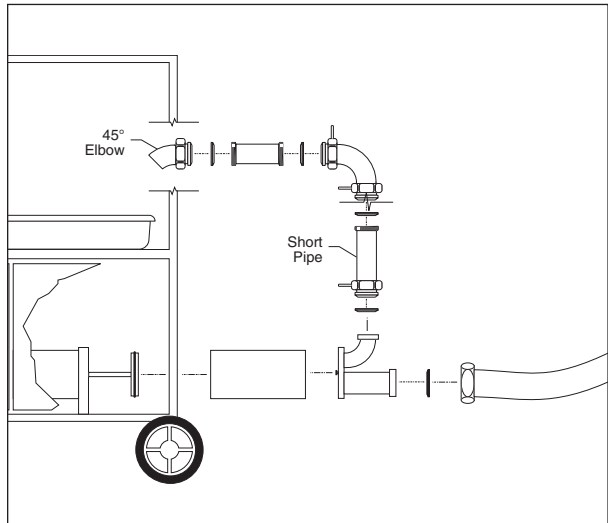
5. Attach Discharge Head Assembly as follows:



- ⇒ Mount Discharge Head Assembly on Short 2" diameter Pipe (use Gasket).
- ⇒ Rotate Discharge Head Assembly into 2" Sani-Clamp Bracket and fasten clamp.
- ⇒ Attach two 1/4" air lines to Discharge Valve (black on top).

6. Pan Filler System Option:

- ⇒ Using Short Pipe and 45° Elbow attach as shown



CLEANING PUMP BODY

1. Disconnect main air line from Metering Filling Station.
2. Move pump so that Drain Pan Discharge Outlet is over floor drain. Floor around unit may become slippery from cleaning.
3. Remove Drain Screen. Thoroughly wash and rinse the screen in a sink or a dishwasher.
4. Prepare a warm water and mild detergent solution.
5. Remove food soil using a nylon brush.
6. Rinse thoroughly.