



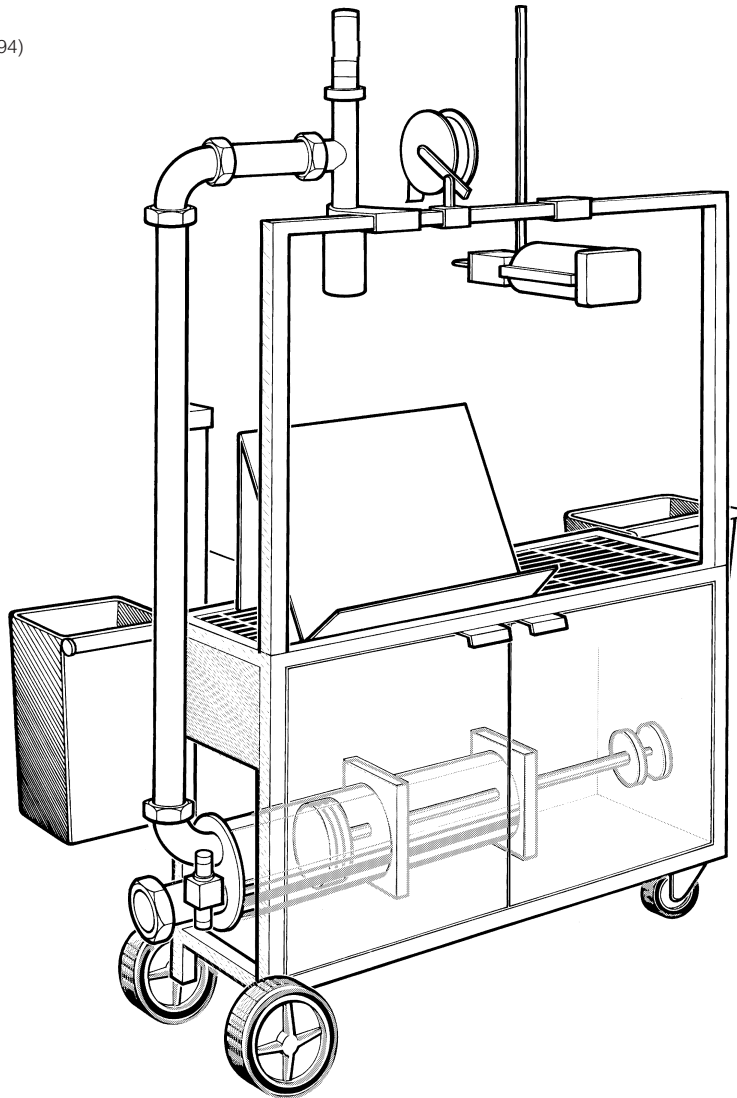
Operators Manual

Installation, Operation & Service

Metering Filling Station

MODEL: MFS

(for Models built after June, 1994)



Grid Assembly: KE00908



1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

Enodis

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SE95019 Rev. 8

INSTALLATION

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.

PACKAGED ITEMS

Packaged items that are shipped loose with the unit include:

- (1) 2" Wrench
- (1) 3" Wrench
- (2) Trash Containers
- (1) Assortment of spare "O" Rings
- (1) Air Hose Assembly
- (2) Food Hose Assemblies
- (1) Food Grade Grease
- (1) Spring
- (1) Bolt
- (1) Cleaning Hose
- (1) Brush Kit
- (1) 3" 90° Elbow
- (1) Lug Nut Wrench

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.

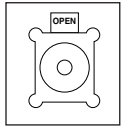
INSTALLATION CHECKS

AIR PRESSURE

Complete the following steps with the 3" dia. Food Product Hose (**15**) not connected:

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 Pressure Regulator Dial (**20**) or supply pressure if required.

Note: If there is no air to unit check:



Air Quick Connect on Mixer Kettle

A/ The kettle's Air Quick Connect is pushed upward to the "OPEN" position.

B/ Open the back Access Doors (**17**) and check that the Main Air Shut Off Valve (**22**) is pressed inwards.

SINGLE STROKE

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

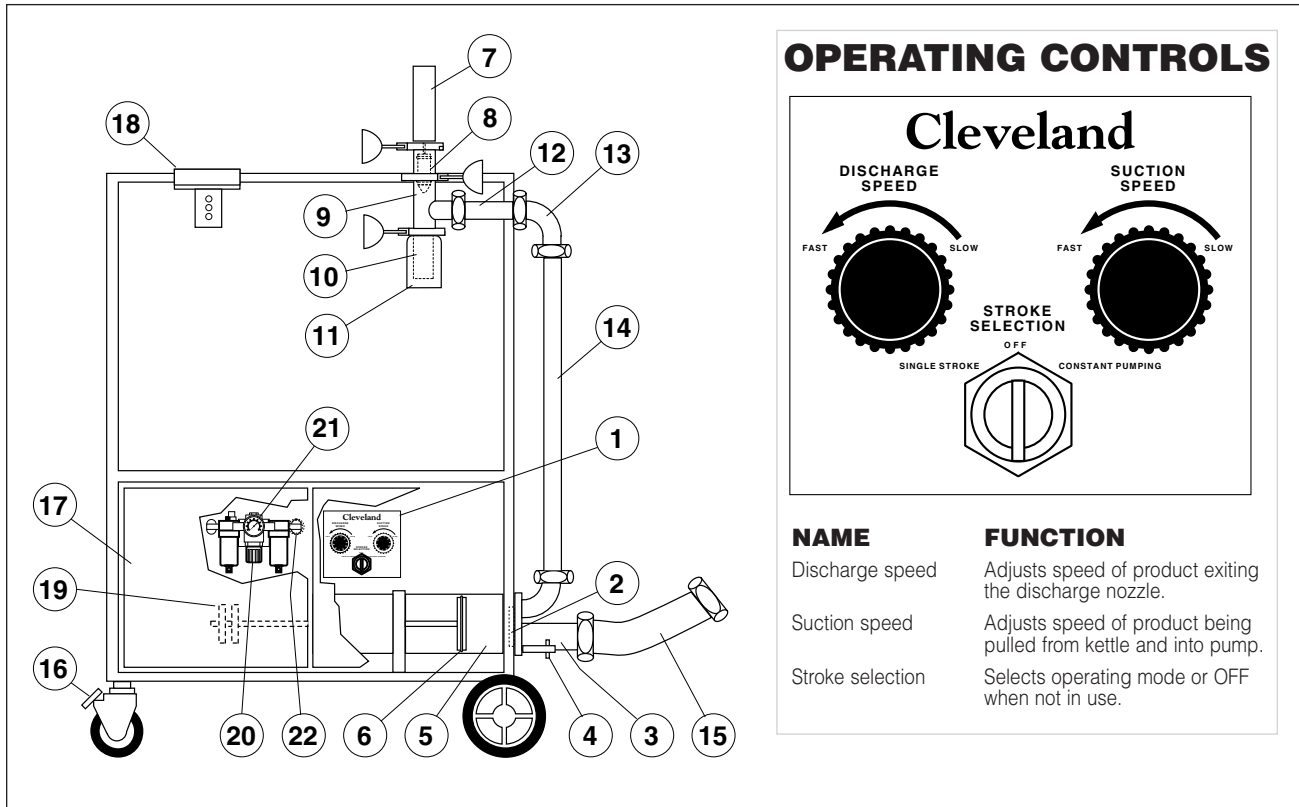
- ⇒ First, hand-tighten.
- ⇒ Then, snug with wrench.

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



General Parts Drawing

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.	2" dia. Short Connector Pipe	
13.	2" Elbow	
14.	2" dia. Long Connector Pipe	
15.	3" dia. Food Product Hose	3" dia. hose to connect Metering Filling Station hose to kettle.
16.	Brake	Locks pump in position.
17.	Access Doors	
18.	Clipper Bracket	Mounting bracket for optional clipper.
19.	Adjusting Wheels	Used for setting desired pumping volume.
20.	Pressure Regulator Dial	Used to regulate air pressure.
21.	Pressure Gauge	Shows operating pressure.
22.	Main Air Shut Off Valve	Disconnects air supply to unit. (Back side of Metering Filling Station)

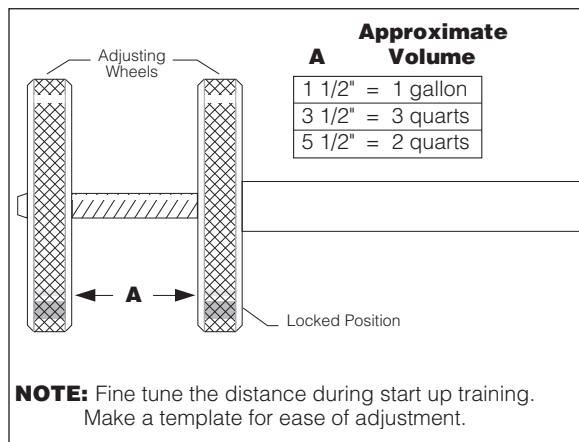
AS A SAFETY FEATURE THE DISCHARGE NOZZLE (11) WILL AUTOMATICALLY CLOSE AND THE PUMP WILL REVERSE ANY TIME YOU RELEASE THE TRIGGER LEVER (10).

PUMPING

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

- ⇒ First, hand-tighten.
- ⇒ Then, snug with wrench.

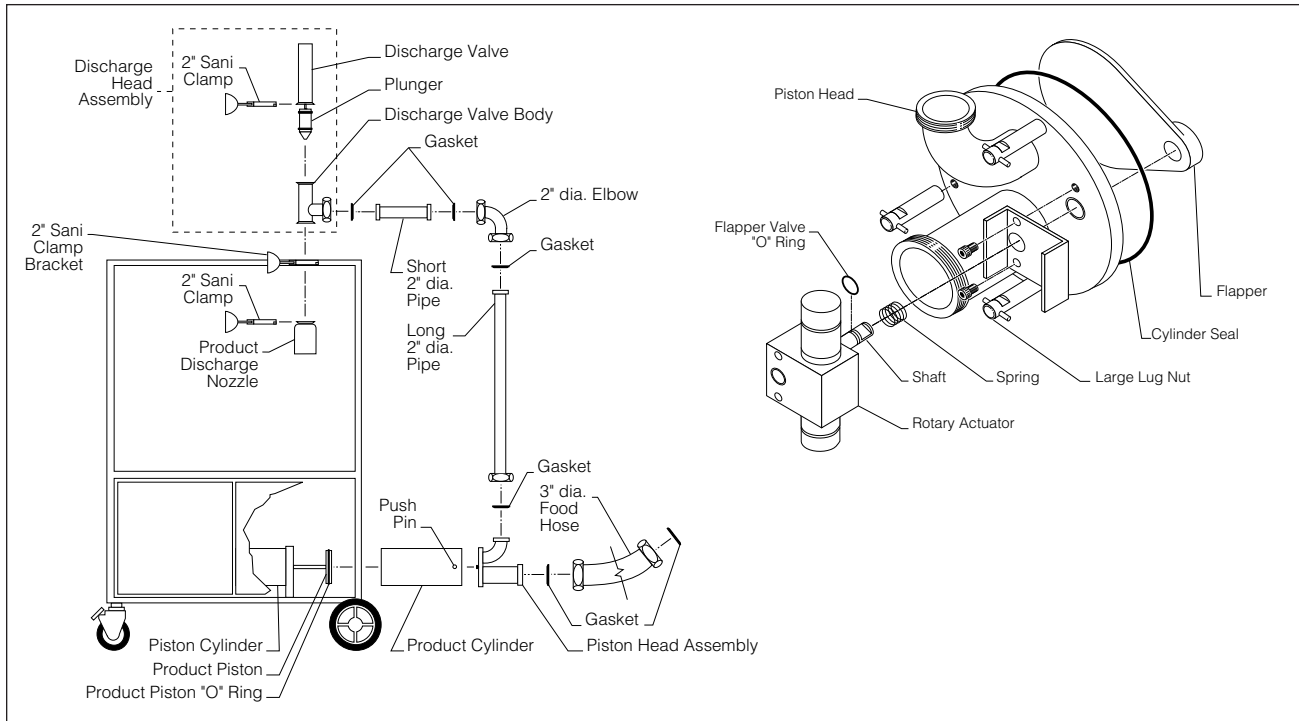
1. Using 3" gasket, connect one end of the 3" dia. Food Product Hose (15) to kettle.
2. Position metering filling station for ease of operation and connect other end of 3" dia. Food Product Hose (15) - if required use 3" 90° elbow.
3. Connect air hose to kettle and metering filling station.
4. Open the back Access Doors (17) and check that the Main Air Shut Off Valve (22) is pressed inwards.
5. Open front Access Doors (17) of metering filling station.
6. Set Stroke Selection Switch on Control Panel (1) for "SINGLE STROKE".
8. Open product discharge valve on kettle.
9. Place bag over Discharge Nozzle (11).
10. With Stroke Selection Switch on Control Panel (1) set on "SINGLE STROKE", pull and hold Trigger Lever (10) against Discharge Nozzle (11) until pump has stopped; if a second stroke is required, repeat process.
11. Move bag over to clipper and clip closed (refer to clipper operating instruction manual).
12. Pump a couple of bags to check volume and speed.
 - ⇒ To adjust volume, measure between Adjusting Wheels (19) for correct setting.
 - ⇒ To adjust speed, turn Discharge Speed or Suction Speed on Control Panel (1) as required.
 - ⇒ Adjust pump speed faster for thinner products and slower for thicker.
13. Continue pumping until all product has been emptied from kettle.



Approximate Volume Setting Instructions

7. Using a ruler, set desired quantity by measuring between Adjusting Wheels for correct setting.

CLEANING INSTRUCTIONS



FLUSHING

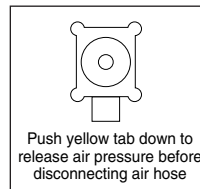
Between Recipes

1. To clean between batches of product, flush kettle and Metering Filling Station with a warm water and mild detergent 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.

DISASSEMBLY

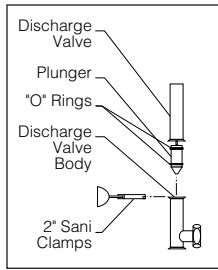
Note: Remove "O" rings using a wooden or plastic picker; do **NOT** use a sharp object.

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.



Air Quick Connect on Mixer Kettle

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 air lines (quick-disconnect fittings) from Discharge Valve.
4. Undo 2" Sani-Clamp, and remove Discharge Nozzle.
5. With 2" wrench, loosen nut on Discharge Valve Body and remove Discharge Head Assembly; place 2" gasket in warm water to soak.



Discharge Head Assembly

6. To disassemble Discharge Head Assembly, follow in order;

⇒ Remove 2" Sani-Clamp that holds Discharge Head Assembly together.

⇒ Separate parts by pulling them apart.

⇒ Using a wooden or plastic picker, remove "O" Rings from plunger.

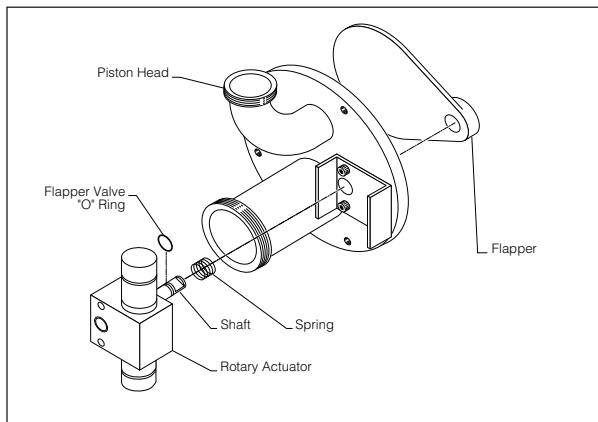
⇒ Put "O" Rings in warm water to soak; do **NOT** submerge discharge valve.

7. With 2" wrench, remove Short 2" dia. Pipe, 2" dia. Elbow and Long 2" dia. Pipe. Place all gaskets in soak bucket.

8. Remove two air lines from Rotary Actuator on Piston Head Assembly.

9. Using lug wrench, unscrew three Large Lug Nuts, and remove Piston Head Assembly.

10. Dismantle Piston Head Assembly as follows in order;



Piston Head Assembly

⇒ 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.

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

(Supplied courtesy of Nafem. For more information visit their web site at www.nafem.org)

Contrary to popular belief, stainless steels ARE susceptible to rusting.

Corrosion on metals is everywhere. It is recognized quickly on iron and steel as unsightly yellow/orange rust. Such metals are called "active" because they actively corrode in a natural environment when their atoms combine with oxygen to form rust.

Stainless steels are passive metals because they contain other metals, like chromium, nickel and manganese that stabilize the atoms. 400 series stainless steels are called ferritic, contain chromium, and are magnetic; 300 series stainless steels are called austenitic, contain chromium and nickel; and 200 series stainless, also austenitic, contains manganese, nitrogen and carbon. Austenitic types of stainless are not magnetic, and generally provide greater resistance to corrosion than ferritic types.

With 12-30 percent chromium, an invisible passive film covers the steel's surface acting as a shield against corrosion. As long as the film is intact and not broken or contaminated, the metal is passive and stain-less. If the passive film of stainless steel has been broken, equipment starts to corrode. At its end, it rusts.

Enemies of Stainless Steel

There are three basic things which can break down stainless steel's passivity layer and allow corrosion to occur.

1. Mechanical abrasion
2. Deposits and water
3. Chlorides

Mechanical abrasion means those things that will scratch a steel surface. Steel pads, wire brushes and scrapers are prime examples.

Water comes out of the faucet in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots, and when heated leave deposits behind that if left to sit, will break down the passive layer and rust stainless steel. Other deposits from food preparation and service must be properly removed.

Chlorides are found nearly everywhere. They are in water, food and table salt. One of the worst chloride perpetrators can come from household and industrial cleaners.

So what does all this mean? Don't Despair!

Here are a few steps that can help prevent stainless steel rust.

1. Use the proper tools.

When cleaning stainless steel products, use non-abrasive tools. Soft cloths and plastic scouring pads will not harm steel's passive layer. Stainless steel pads also can be used but the scrubbing motion must be in the direction of the manufacturers' polishing marks.

2. Clean with the polish lines.

Some stainless steel comes with visible polishing lines or "grain." When visible lines are present, always scrub in a motion parallel to the lines. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. Use alkaline, alkaline chlorinated or non-chloride containing cleaners.

While many traditional cleaners are loaded with chlorides, the industry is providing an ever-increasing choice of non-chloride cleaners. If you are not sure of chloride content in the cleaner used, contact your cleaner supplier. If your present cleaner contains chlorides, ask your supplier if they have an alternative. Avoid cleaners containing quaternary salts; it also can attack stainless steel and cause pitting and rusting.

4. Treat your water.

Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. To insure proper water treatment, call a treatment specialist.

5. Keep your food equipment clean.

Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides have a similar effect.

6. Rinse, rinse, rinse.

If chlorinated cleaners are used, rinse and wipe equipment and supplies dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping equipment down, allow it to air dry; oxygen helps maintain the stainless steel's passivity film.

7. Never use hydrochloric acid (muriatic acid) on stainless steel.

8. Regularly restore/passivate stainless steel.

Recommended cleaners for specific situations

Job	Cleaning Agent	Comments
Routine cleaning	Soap, ammonia, detergent, Medallion	Apply with cloth or sponge
Fingerprints & smears	Arcal 20, Lac-O-Nu Ecoshine	Provides barrier film
Stubborn stains & discoloration	Cameo, Talc, Zud, First Impression	Rub in direction of polish lines
Grease & fatty acids, blood, burnt-on-foods	Easy-off, De-Grease It Oven Aid	Excellent removal on all finishes
Grease & oil	Any good commercial detergent	Apply with sponge or cloth
Restoration/Passivation	Benefit, Super Sheen	

Review

1. Stainless steels rust when passivity (film-shield) breaks down as a result of scrapes, scratches, deposits and chlorides.
2. Stainless steel rust starts with pits and cracks.
3. Use the proper tools. Do not use steel pads, wire brushes or scrapers to clean stainless steel.
4. Use non-chlorinated cleaners at recommended concentrations. Use only chloride-free cleaners.
5. Soften your water. Use filters and softeners whenever possible.
6. Wipe off cleaning agent(s) and standing water as soon as possible. Prolonged contact causes eventual problems.

To learn more about chloride-stress corrosion and how to prevent it, contact the equipment manufacturer or cleaning materials supplier.

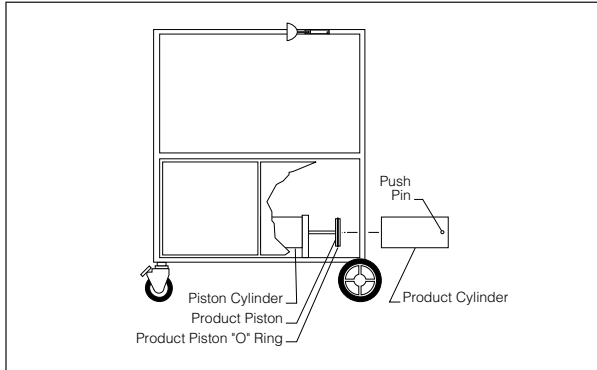
Developed by Packer Engineering, Naperville, Ill., an independent testing laboratory.

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:

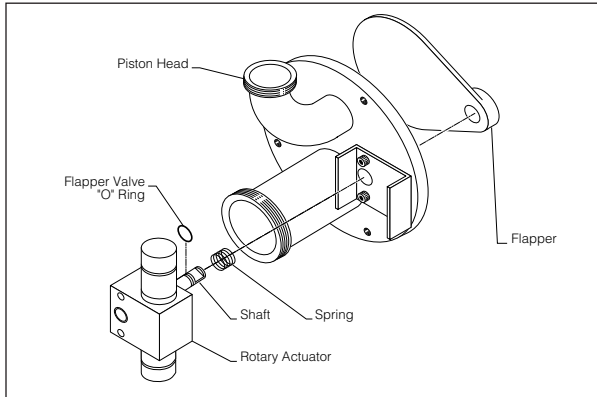


Product Piston/Cylinder Assembly

⇒ 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:



Piston Head Assembly

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

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

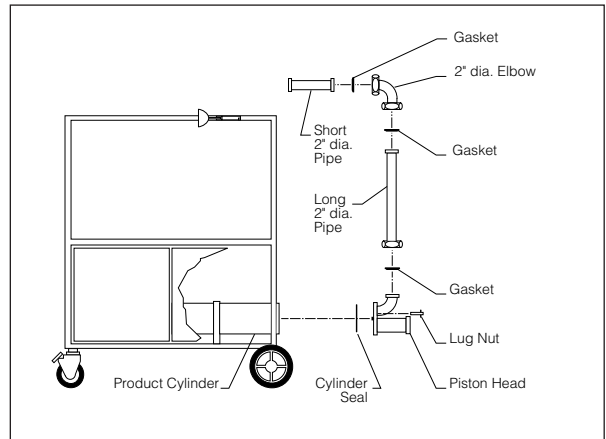
⇒ Put Spring on Shaft.

⇒ 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.



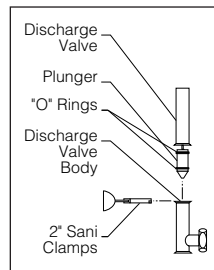
2" Piping Assembly

⇒ 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:

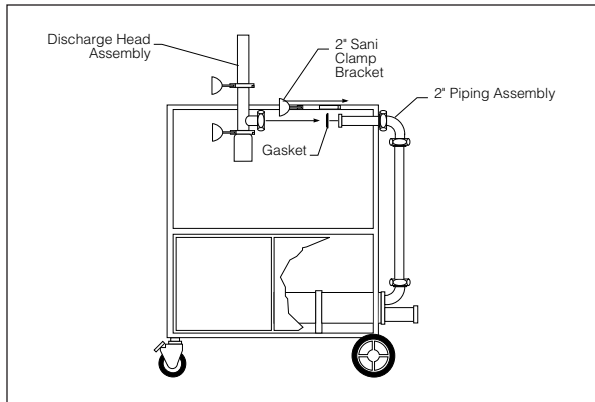


Discharge Head Assembly

⇒ 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:



Discharge Head/2" Piping Assembly

- ⇒ 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).

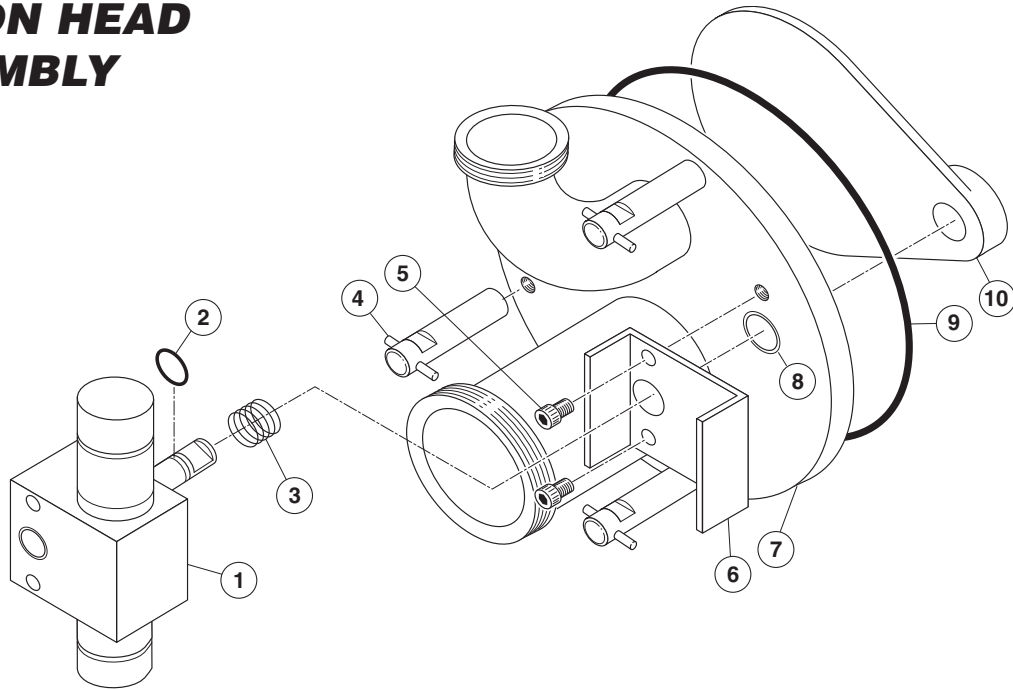
SERVICE PARTS

WARRANTY

Our Company supports a worldwide network of Maintenance and Repair Centers. Contact your nearest Maintenance and Repair Centre for replacement parts, service, or information regarding the proper maintenance and repair of your cooking equipment

In order to preserve the various agency safety certification (UL, NSF, ASME/Ntl. Bd., etc.), only factory-supplied replacement parts should be used. The use of other than factory supplied replacement parts will void warranty.

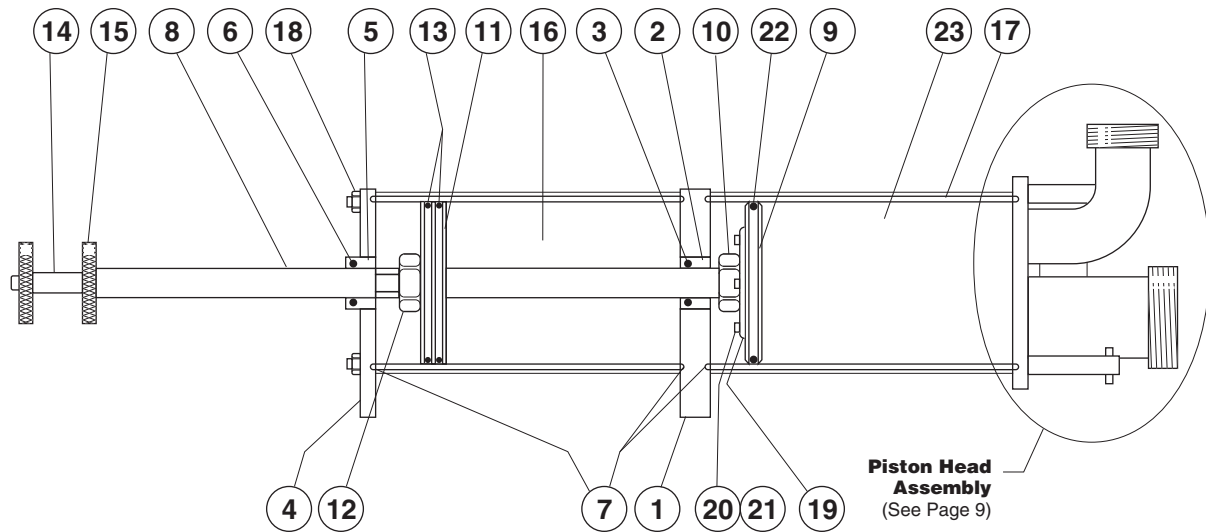
PISTON HEAD ASSEMBLY



PISTON HEAD ASSEMBLY

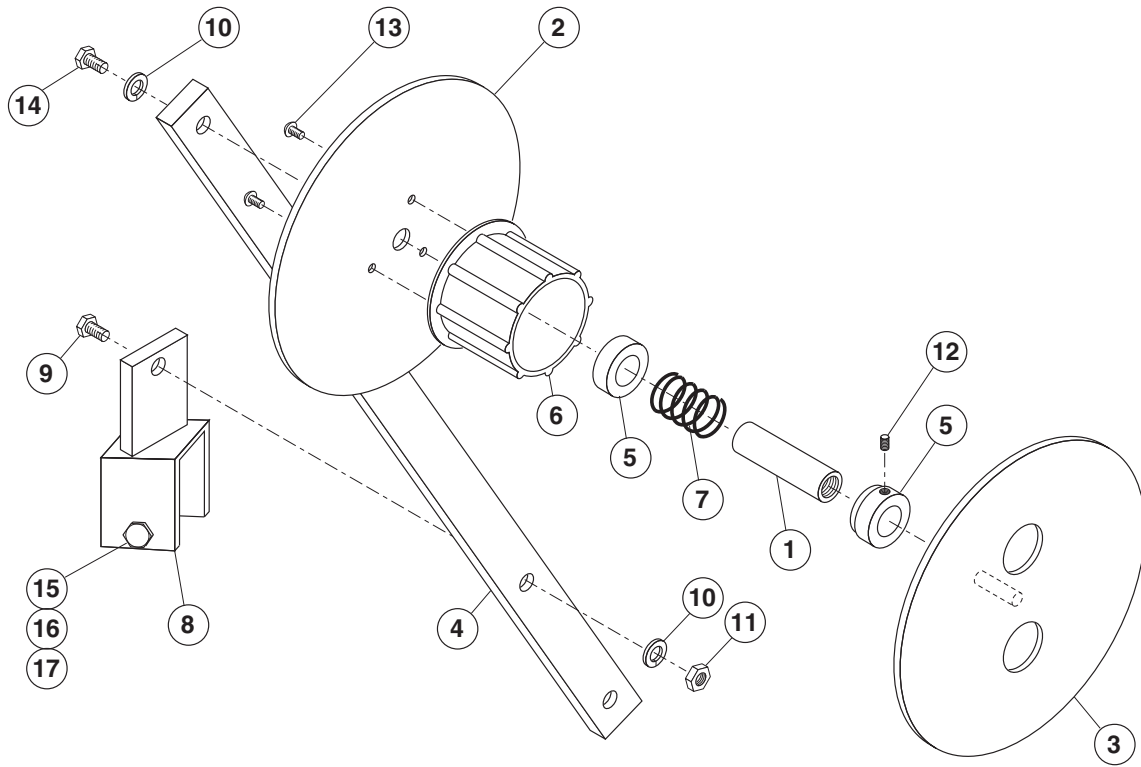
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1. - 10.	SE00068-1	Pump head assembly	1
1.	KE53014-1	Rotary actuator	1
ROTARY ACTUATOR REPAIR KITS	SE50454	Bearing kit	1
	SE50455	Seal kit	1
	SE50455-1	Gear shaft assembly	1
2.	FA05002-24	"O" Ring, cylinder	1
3.	KE53056	Spring	1
4.	KE01302	Lug nuts	3
5.	FA11322-1	Hex cap screws	2
6.	KE53659-1	Bracket	1
7.	KE53038-1	End plate	1
8.	KE53016	Bearing	1
9.	FA05002-2	"O" Ring, pump head	1
10.	KE53015-1	Valve Paddle	1

PUMP ASSEMBLY



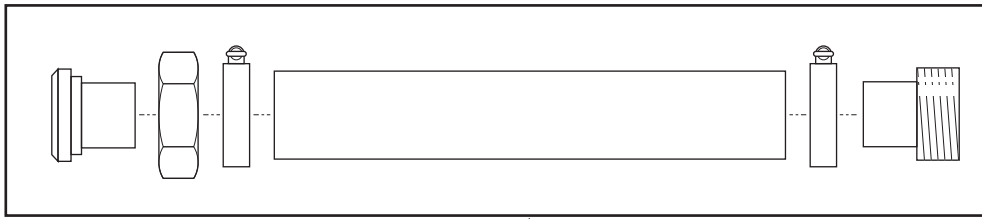
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE53037	Centre Plate	1
2.	KE53035	Piston Rod Bearing (Centre Plate)	1
3.	FA05002-6	"O" Ring	1
4.	KE53036	Pneumatic End Plate	1
5.	KE53034	Piston Rod Bearing	1
6.	FA05002-1	"O" Ring	1
7.	FA05002-2	"O" Ring	3
8.	KE01305	Piston Rod Assembly	1
9.	KE53031	Product Piston	1
10.	KE54404	Locknut, 1 1/4-7	1
11.	KE53030	Pneumatic Piston	1
12.	FA22501	Locknut, 1 5/8-12	1
13.	FA05002-26	"O" Ring	2
14.	KE01301	Adjustment Rod Weldment	1
15.	KE53051	Adjustment Lock Ring	1
16.	ST50025-1	Cylinder	1
17.	KE53043	Reach Rod	6
18.	FA21026	Hex Nut, 3/8-16	3
19.	KE54401	Backing Plate	1
20.	FA11258	Hex. Head Bolt, 1/4-20	6
21.	FA32008	Tooth Lockwasher	6
22.	FA05002-5	"O" Ring	1
23.	KE02005	Product Culinder Assembly	1

LABEL DISPENSER

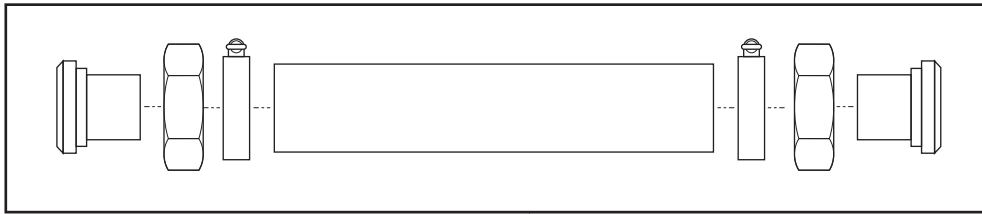


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1-17	KE01387	Label Dispenser Assembly	1
1.	KE53186	Hub Mounting Shaft	1
2.	KE53187	Labeller Back Plate	1
3.	KE01386	Labeller Front Plate Assembly	1
4.	KE53268	Bar	1
5.	KE54139	Bushing	1
6.	KE53265	Core Holder	1
7.	KE53266	Spring	1
8.	KE01383	Labeller Mount	1
9.	FA11258	Hexhead Screw	1
10.	FA31029	Lock washer	2
11.	FA21008	Hex Nut, #1/4-20	1
12.	FA19500	Hex Socket	1
13.	FA11056	Binding Head Screw, #6-32x1/2" lg.	3
14.	FA11260	Hexhead Screw, #1/4-20x1" lg.	1
15.	FA11328	Hex Head Screw	1
16.	FA31030	Lock Washer	1
17.	FA21024	Hex Nut	1

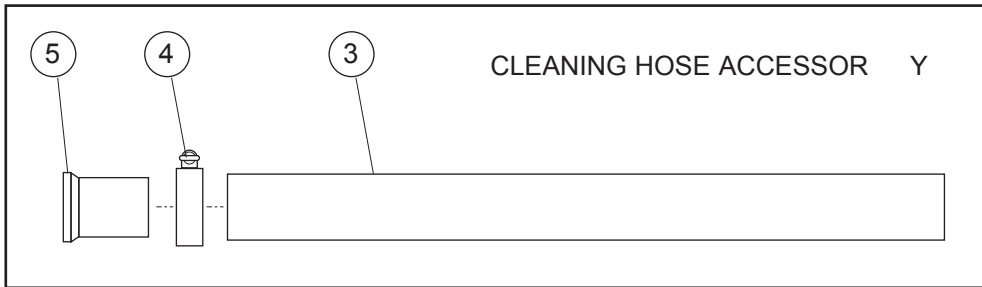
HOSE ASSEMBLIES



1

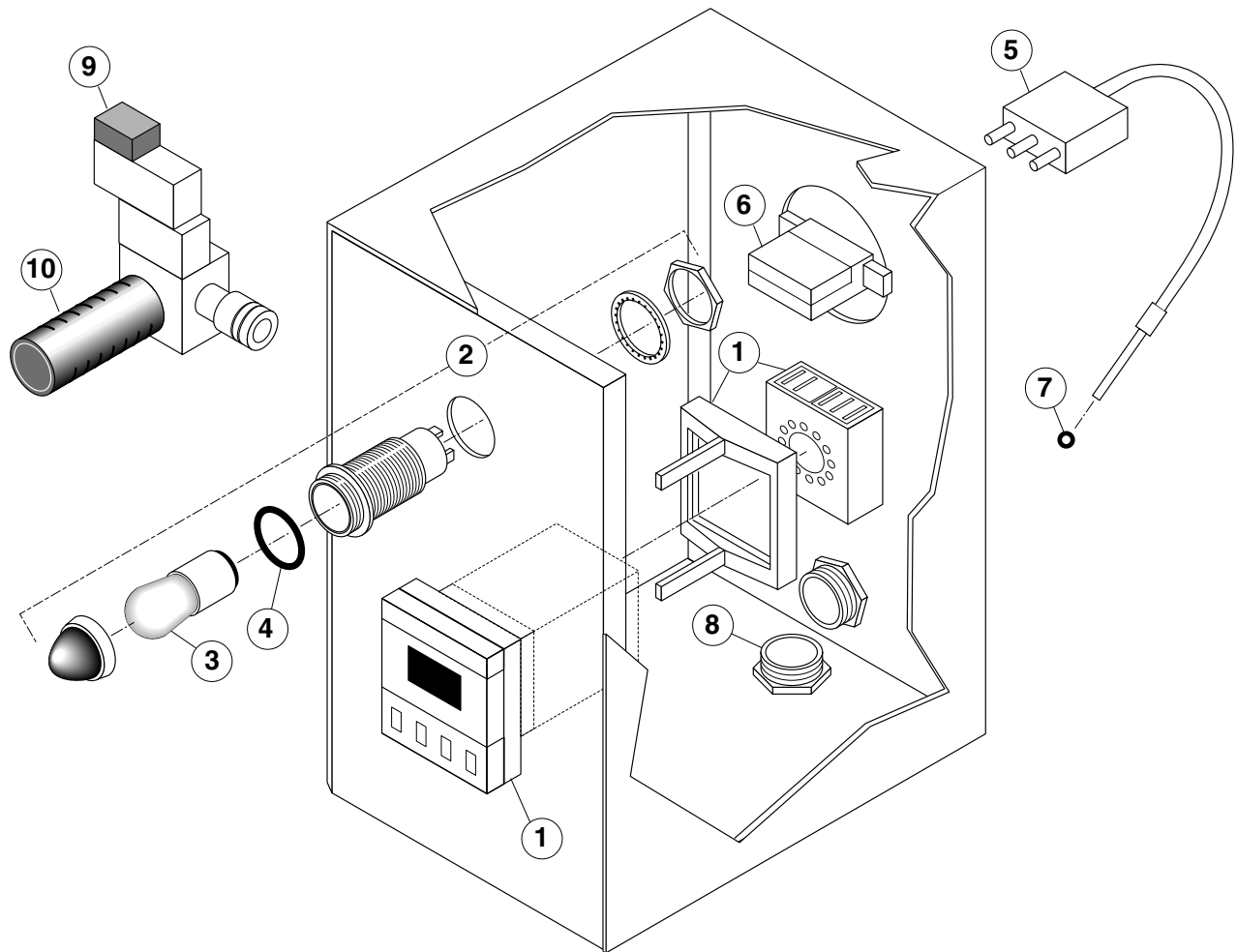


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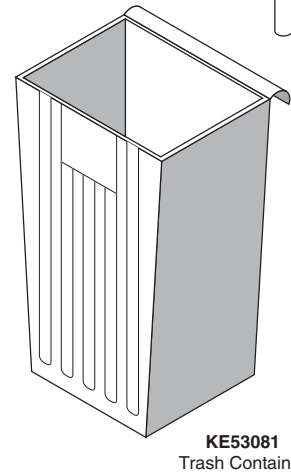
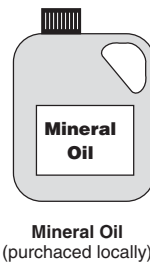
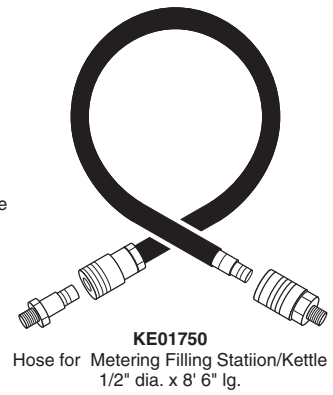
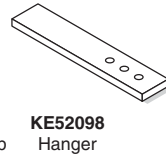
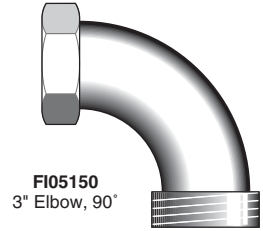
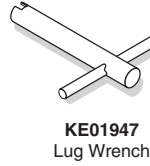
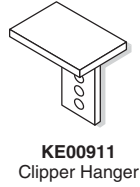
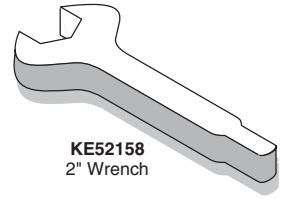
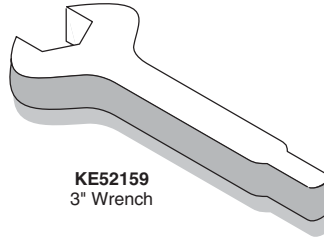
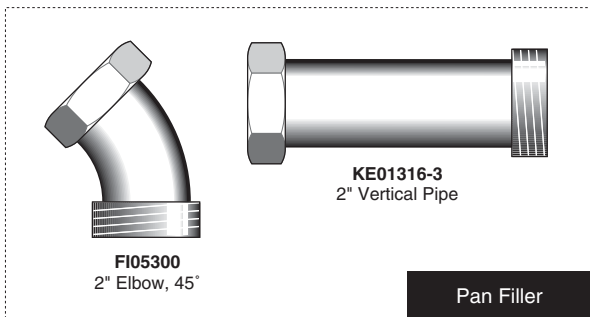
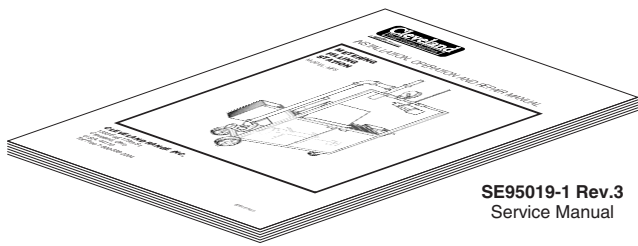
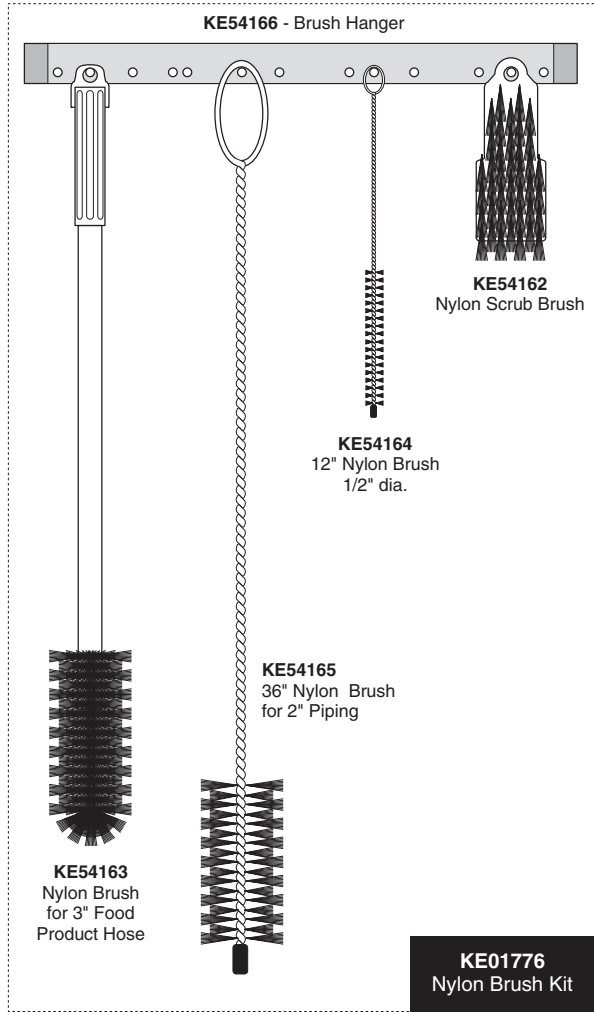
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE01749-3	Food Hose Assembly, 3'	1
2.	KE01749-2	Food Hose Assembly, 3'	1
3.	KE53099	Cleaning Hose	1
4.	FI05057	Hose Clamp	1
5.	FI05255	Hose Adapter 2"	1

THERMAL ASSURANCE PACKAGE (OPTION)

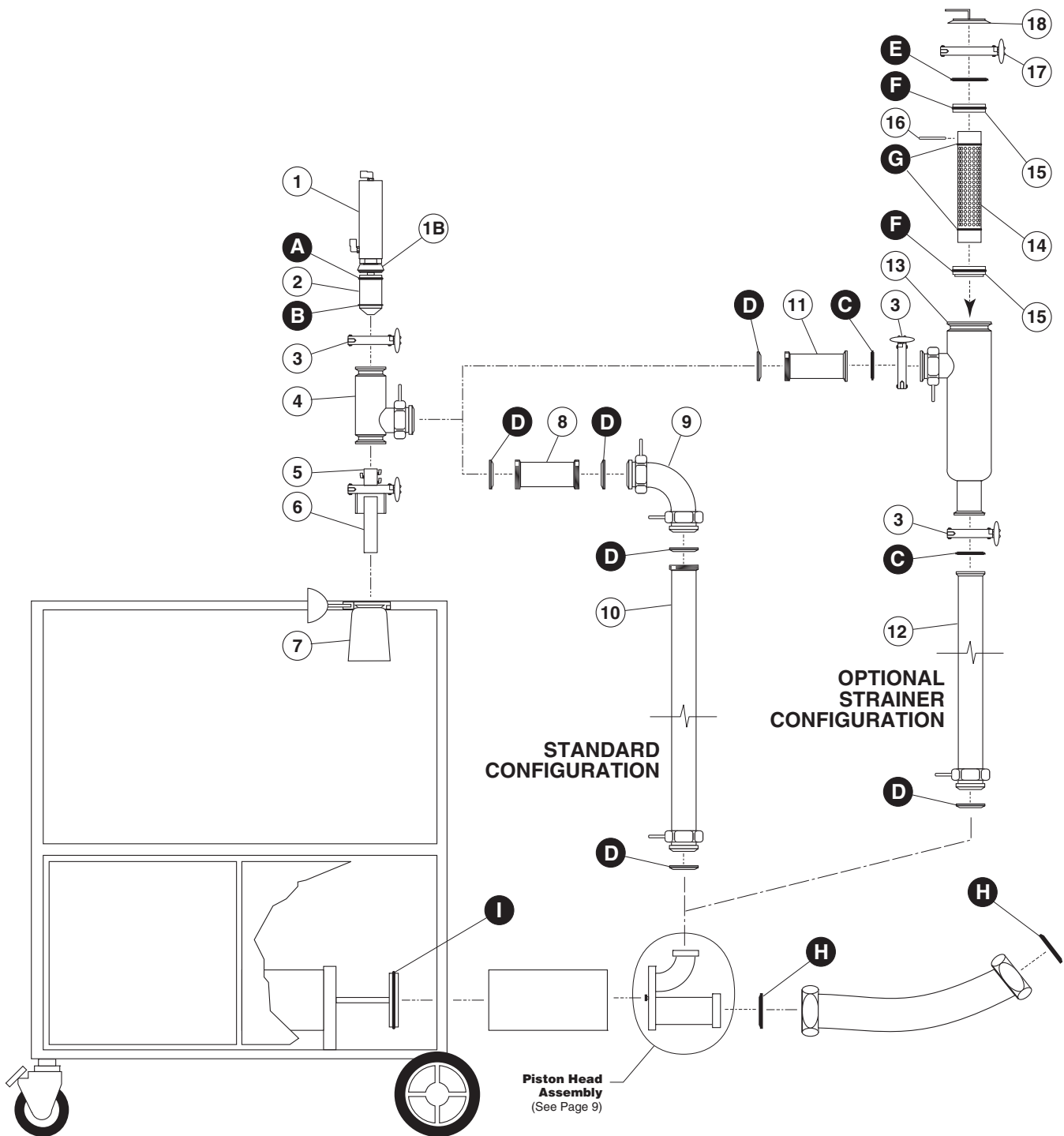


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE53479	Temperature Controller	1
2.	KE53200	Dialight Assembly (does not include bulb-)	1
3.	KE53208	Bulb	1
4.	FA05002-33	"O" Ring	1
5.	KE53206	RTD Sensor	1
6.	KE53207	Single Circuit Panel, 3 pin	1
7.	FA05002-28	"O" Ring	1
8.	KE54721-2	Watertight Connector	3
9.	KE53203	Clipper Lockout	1
10.	KE53210	Muffler	1
(not shown)	KE01420	RTD Sensor Adapter (for Elbow Assembly)	1

MISCELLANEOUS PARTS



PIPING ASSEMBLIES, "O" RINGS, GASKETS & SEALS



5" CASTERS KE53068
8" CASTERS KE52128

PIPING ASSEMBLIES

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE53270	Air Cylinder	1
1B.	KE53249	Mounting Nut, Air Cylinder	1
2.	KE53250	Plunger	1
3.	KE52087	Sani-clamp, 2"	1
		Standard Configuration	1
		Optional Strainer Configuration	3
4.	KE01385	Discharge Valve Body	1
5.	KE54287	Start Switch	1
6.	KE00905	Actuator Assembly	9
7.	KE01384	Discharge Nozzle	1
8.	KE00920	Short Connector Pipe, 2"	1
9.	KE01974	Elbow, 2"	1
10.	KE01316-1	Long Connector Pipe, 2"	1
11.	KE00920-1	Short Connector Pipe, 2"	1
12.	KE01316-2	Long Connector Pipe, 2"	1
13.	4893-47	Strainer Housing	1
14.	4568-4B	Strainer Assembly	1
15.	4560-60	End Assembly	2
16.	4561-67	Pin	1
17.	KE52344	Sani-clamp, 4"	1
18.	4888-47	Cap	1

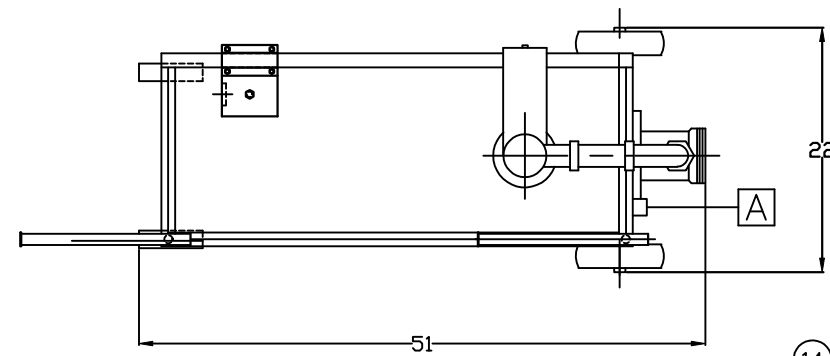
KE54520 – Complete Strainer Assembly

"O" RINGS, GASKETS & SEALS

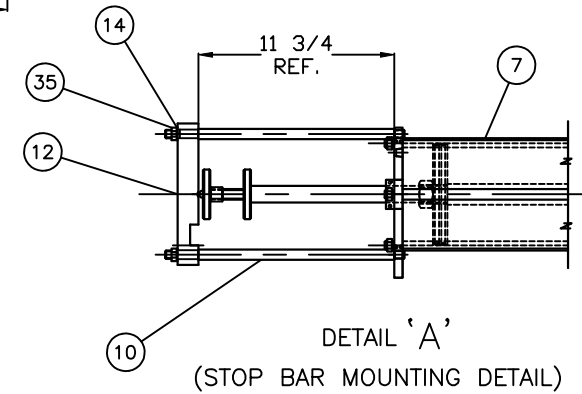
ITEM NO.	PART NO.	DESCRIPTION	QTY.
A.	FA05002-3	Upper Plunger "O" Ring	1
B.	FA05002-7	Lower Plunger "O" Ring	1
C.	KE52154	Sani-Clamp Gasket, 2"	2
D.	KE54810-1	Gasket, 2"	4
		Standard Configuration	4
		Optional Strainer Configuration	2
E.	KE52347	Sani-Clamp Seal, 4"	1
F.	FA00340	Housing "O" Ring	2
G.	FA00334	Strainer "O" Ring	2
H.	KE54810-3	Gasket, 3"	2
I.	FA05002-26	Product Piston "O" Ring	1

#	DESCRIPTION	DATE	APPROVED
L	Added item 65, 66, 67 & View 'C-C'.	11/09/2005	fvillarete

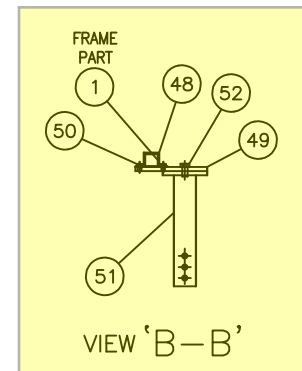
BILL OF MATERIALS			
ITEM	PART_#	DESCRIPTION	QTY
1	KE01310	FRAME WELDMENT	1
2	KE53068	SWIVEL CASTER	2
3	FA95005	TENSION PIN 3/16x1 1/4 LG.	4
4	KE52128	WHEEL, COLSON CASTER #5-8-921	2
5	KE52123	WASHER	4
6	FA11518-1	THUMB SCREW #3/8-16 x 1	2
7	KE01309	PUMP ASSY	1
8	FA11323	HEX HD BOLT #5/8-18x3/4 LG SS	1
9	FA31030	SPLIT LOCKWASHER #5/16 SS	4
10	KE53046	STOP REACH ROD	2
11	KE53047	STROKE MEASURE	1
12	KE53047	STOP BAR	1
13	FA21026	HEX NUT #3/8-16 SS	2
14	FA31033	SPLIT LOCK WASHER #1/2 SS	2
15	KE53044	LIMIT SW. MTG. BRKT	2
16	FA31029	SPLIT LOCKWASHER 1/4	2
19	KE01314	BASKET HANGER	2
20	KE95233	LABEL "AIR IN"	1
21	KE95235	LABEL "AIR TO CLIPPER"	1
22	KE52119	MAGNET MTG. BRKT.	2
23	FA31029	SPLIT LOCK WASHER 1/4"	4
24	FA21022	HEX NUT #1/4-20 SS	4
25	KE00908	WIRE GRID	1
26	KE95313	LABEL "MADE IN CANADA"	1
27	KE95089	NAMEPLATE "CLEVELAND" BLUE SS	1
28	KE52133	MAGNET SOUTHCO #02-10-201-10	4
29	KE00923	DOOR, LEFT HAND	1
30	KE00924	DOOR RIGHT HAND	1
31	KE01388	DOOR HINGE LEFT HAND	1
32	KE01712	PNEUMATIC COMPONENT ASSY	1
33	FA11256	HEX HD BOLT #1/4-20x1/2	2
34	FA31029	SPLIT LOCKWASHER 1/4"	2
35	FA21500	PLAIN NUT 1/2"	2
36	KE01389	DOOR HINGE RIGHT HAND	1
37	FA11145	BINDING HD. SCREW #10-32x3/8 SS	8
38	FA31027	HELICAL SPLIT LOCKWASHER #10 SS	8
39	KE54278	BOTTOM STOP FOR REMOVEABLE PANEL	2
40	KE01713	REMOVEABLE PANEL ASSY	1
41	KE95307	LABEL "MODEL AND SERIAL NO."	1
42	KE95010	NSF LABEL	1
43	KE54889	PVC TUBING, 3/8x10 FT. LG.	1
44	KE00925	DRAIN PIPE ASSY	1
45	KE01384	FILLER NOZZLE ASSY	1
46	KE00905	ACTUATOR ASSY	1
47	FA95081-1	BOLT MODIFICATION	2
48	KE52095	CLIPPER BAR CLAMP	1
49	KE52096	CLIPPER CLAMP PLATE	1
50	FA95081-1	BOLT MODIFICATION	4
51	KE00911	CLIPPER HANGER ASSY	1
52	FA95081-8	BOLT MODIFICATION	1
53	KE52154	GASKET T.C. #SC40B-2	1
54	KE01316	VERTICAL PIPE	1
55	KE01874	ELBOW 90° TRI-CANADA #2NN-2"	2
56	KE00920	DELIVERY PIPE SHORT	1
57	KE52287	GASKET TRICANADA #HDB40N-2	4
58	KE53270	DISCHARGE VALVE	1
59	FA00128	'O' RING	1
60	KE53249	CYLINDER MTG. NUT	1
61	KE53250	DISCHARGE VALVE PLUNGER	1
62	FA00222-1	'O' RING	2
63	KE01385	DISCHARGE VALVE BODY	1
64	KE52087	SANICLAMP T.C. #SC13HDWN-2	2
65	KE54890-1	BLANKING PLATE	1
66	KE54890-2	BLANKING PLATE	1
67	FA11137	BINDING HD SCREW SS #10-24 UNC x 3/4 LG.	1



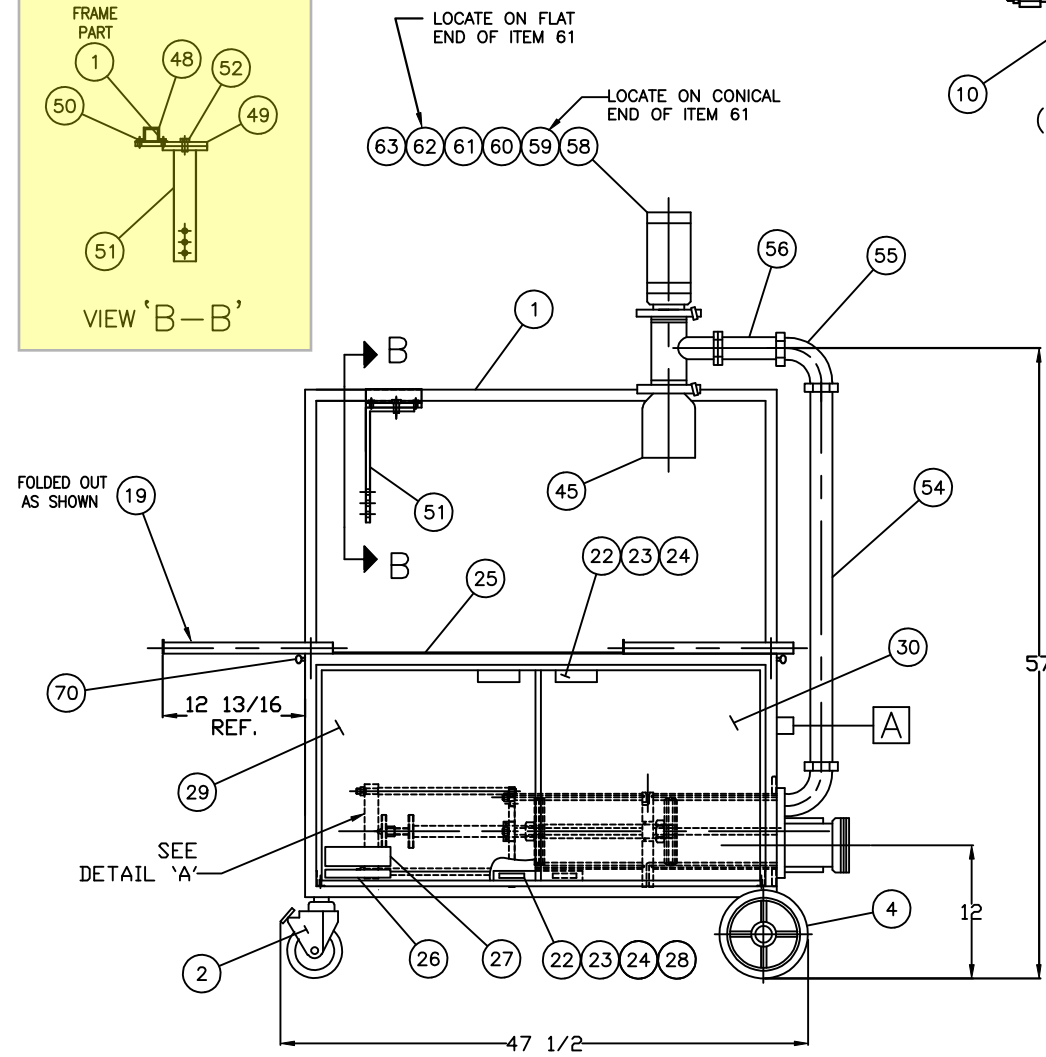
PLAN VIEW
(SOME DETAILS NOT SHOWN FOR CLARITY)



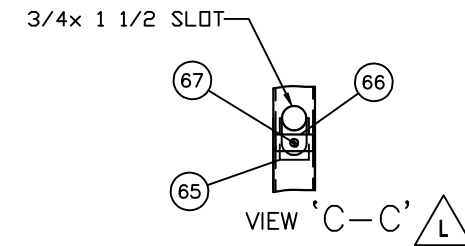
DETAIL 'A'
(STOP BAR MOUNTING DETAIL)



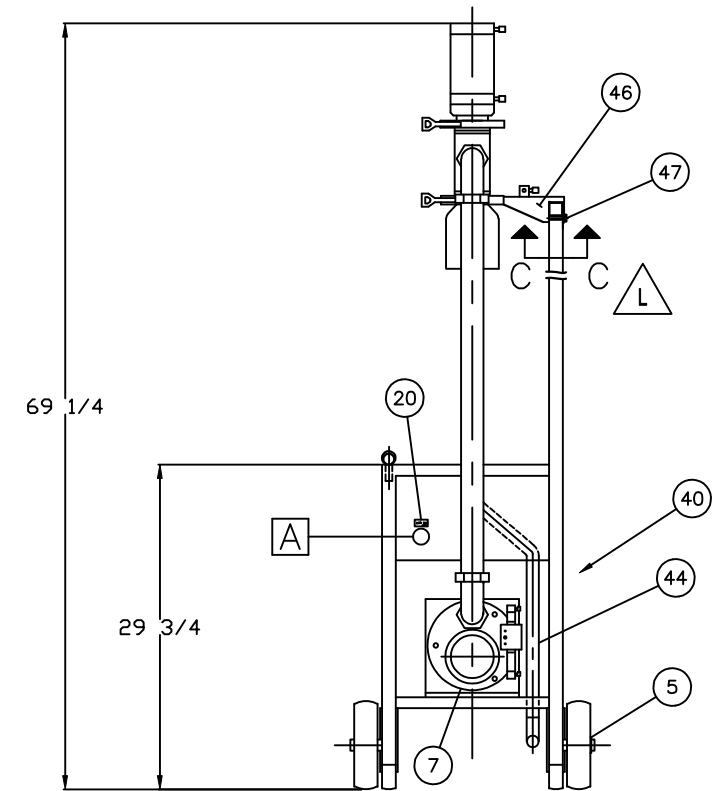
VIEW 'B-B'



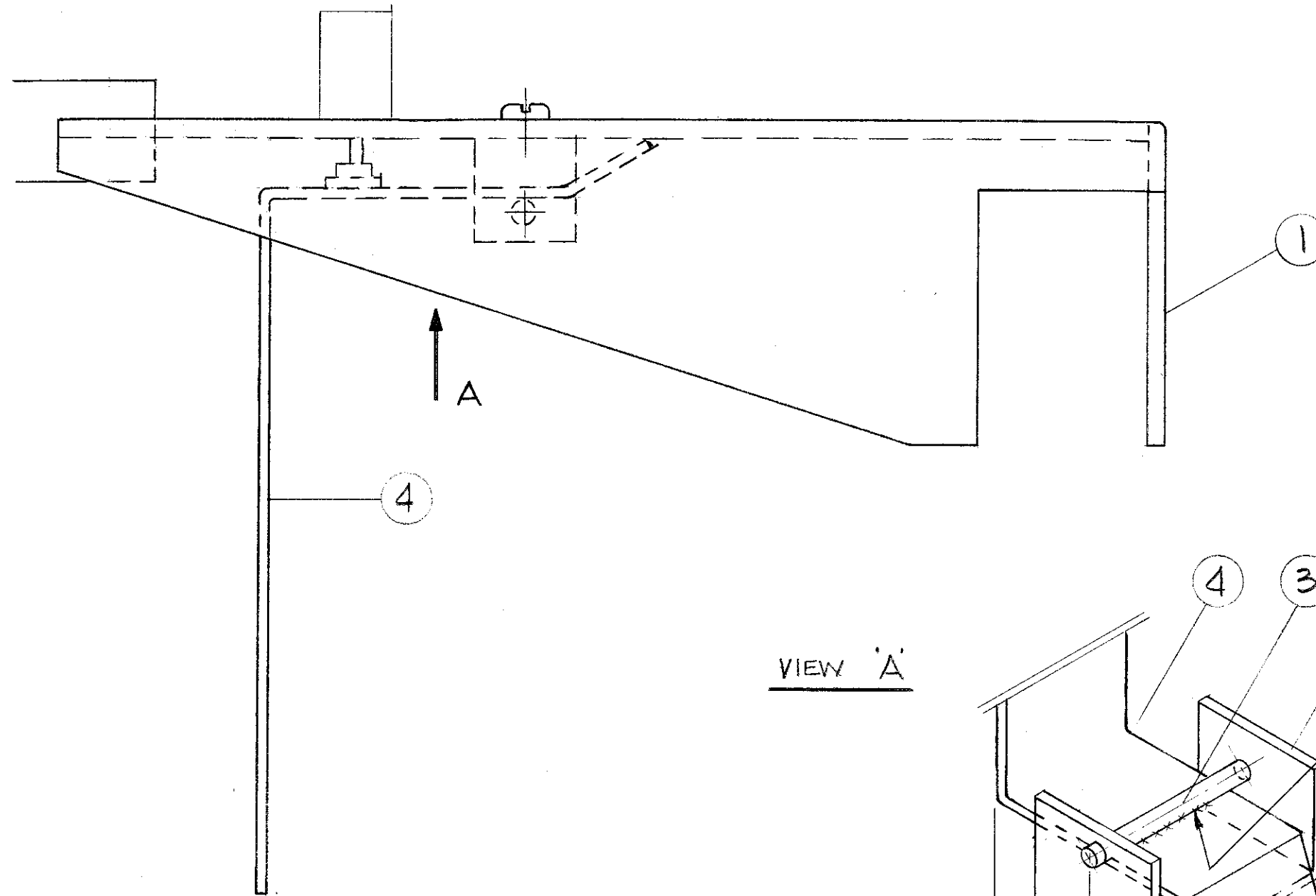
AIR [A] - 90-110 PSI , 25 CFM
1/2" FLEX HOSE SUPPLIED TO CONNECT
TO MIXER KETTLE.



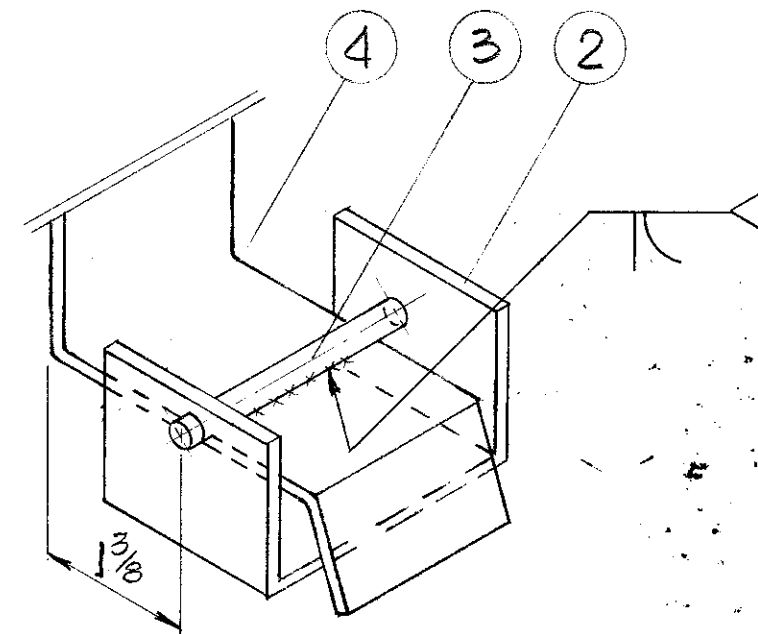
ASSEMBLY INSTRUCTIONS:
AFTER TUBING BUNDLE IS FED THROUGH SLOT,
INSERT ITEM 65 INTO SLOT, FASTEN WITH
ITEM 66 & 67. REDUCE SLOT OPENING AND
TIGHTEN ASSEMBLY.



L



VIEW 'A'



DIMENSIONS UNLESS OTHERWISE SPECIFIED	
FRACTIONAL	± 0.002 in.
DECIMAL	± 0.001 in.
DECIMAL	± 0.005 in.
ANGLES	± 1/2 deg.
DO NOT USE REF. DIMENSIONS	

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CLEVELAND RANGE LTD.

TORONTO
CANADA

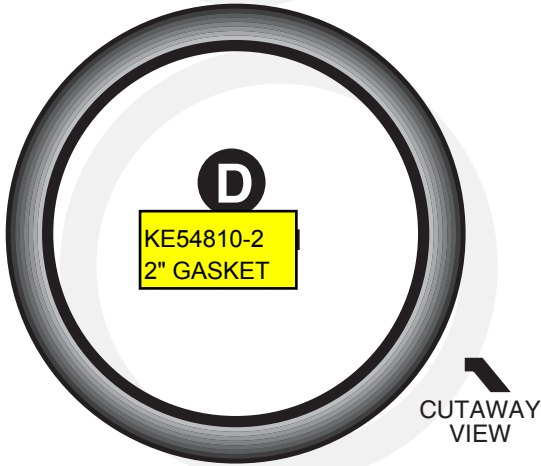
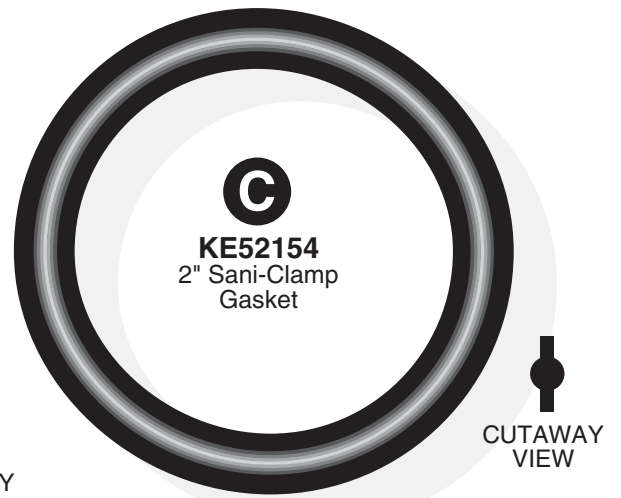
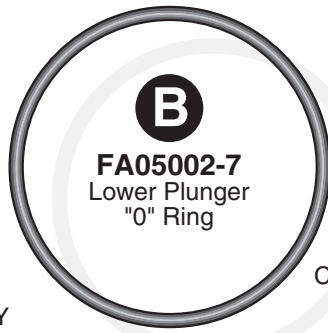
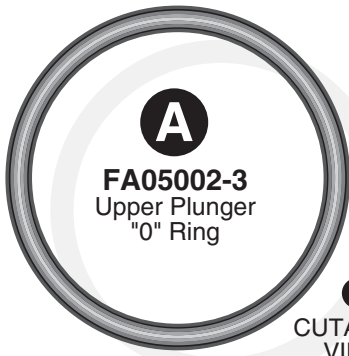
MFS

ACTUATOR ASS'Y

REV. No.	REV. DATE	DESCRIPTION
C	Sept '94	ECN 2121
B	OCT'93	ECN 1978
A		RELEASED

DRAWING No.	REVISION No.
KE00905	C
SCALE NONE	
ISSUE DATE	DRAWN BY
APR. 09/86	A. SHAIKH

"O" RINGS, GASKETS & SEALS



"O" RINGS, GASKETS & SEALS

G

FA00334
Strainer "O" Ring

CUTAWAY
VIEW

H

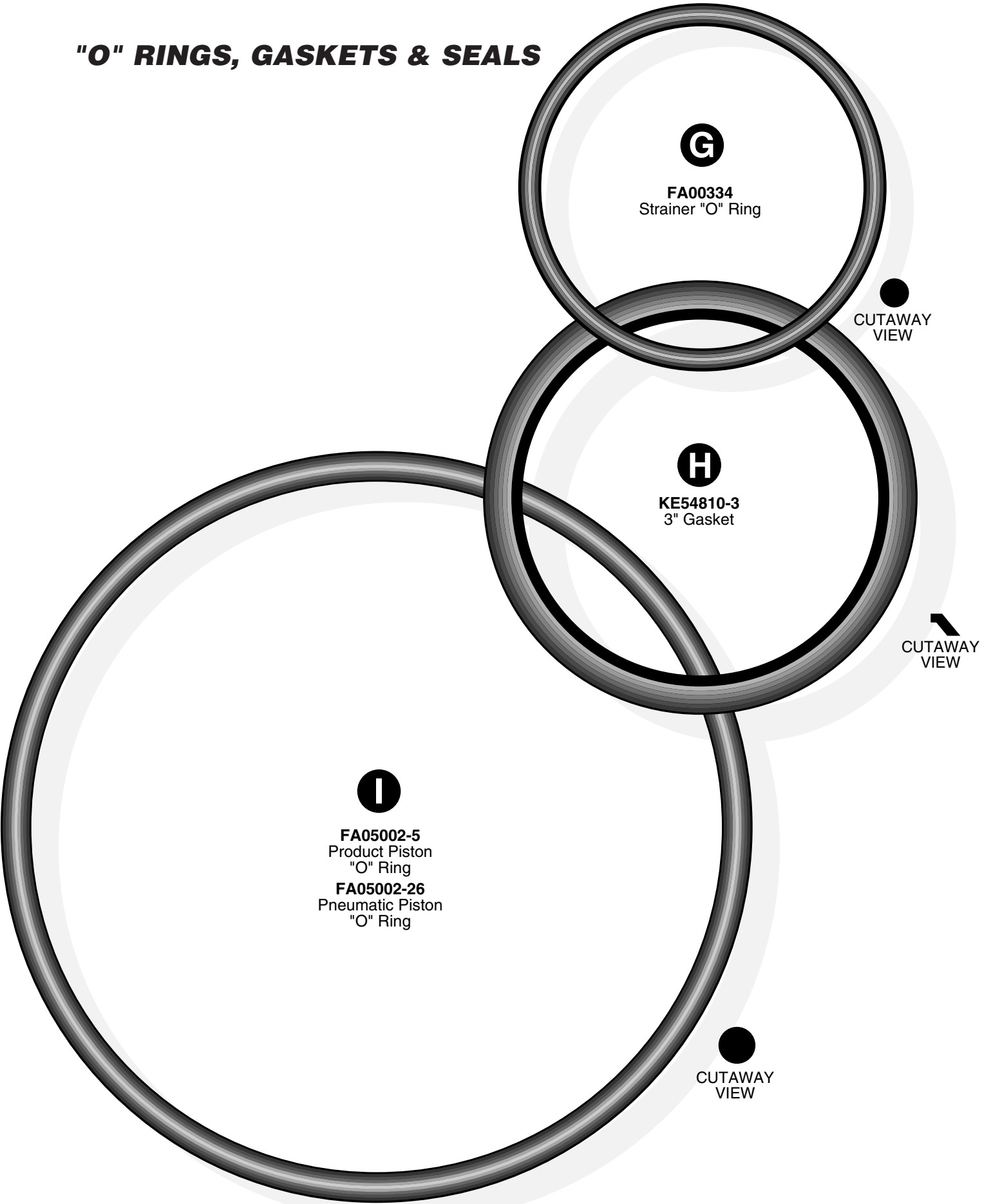
KE54810-3
3" Gasket

CUTAWAY
VIEW

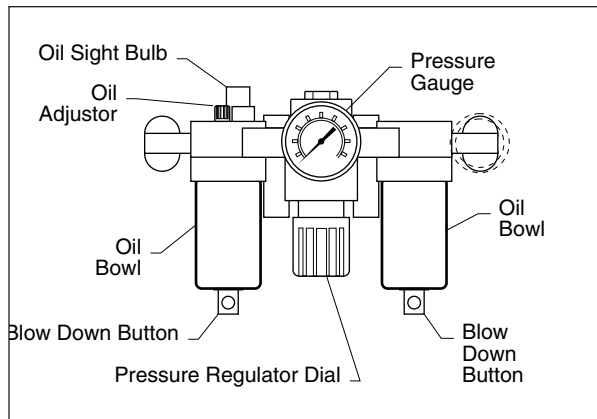
I

FA05002-5
Product Piston
"O" Ring
FA05002-26
Pneumatic Piston
"O" Ring

CUTAWAY
VIEW



MAINTENANCE

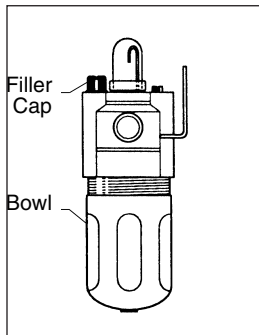


Air Regulator

AIR PRESSURE

1. Adjust air regulator or line pressure so that air pressure gauge reads 90 - 100 psi when unit is running on continuous cycle (stroke selector switch is set on "constant pumping").

OIL FILLING PROCEDURE

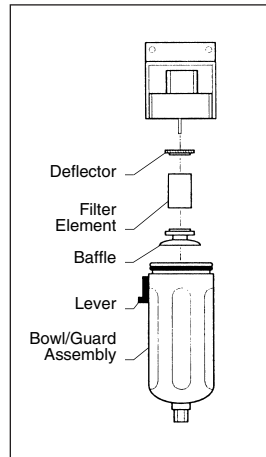


Lubricator

The lubricator puts one drop of oil into the air lines for every ten to fifteen cycles of the product piston. This ratio should be checked weekly and the oil level should be checked daily.

1. Drip Adjustment-
 - ⇒ Observe the sight bulb on the top of the oiler. One drop of oil into the lines for every ten to fifteen cycles of the product piston.
 - ⇒ If adjustment is necessary turn the adjustment knob next to the sight bulb clockwise for more oil, counter clockwise for less oil.
2. Adding Oil-
 - Use only mineral oil in the oiler.
 - ⇒ Remove air supply from unit.
 - ⇒ Remove oiler cage and bowl. Fill to line and replace.

AIR FILTER REPLACEMENT PROCEDURE



Filter

The air filter is designed to separate a small amount of dirt and water from the supply air. This filter is NOT designed to clean air straight from the compressor. You must install a separate filter and drier in the supply line to deliver air with a dew point of less than 65° F.

1. Check for water accumulation daily. If water is present, push button at the bottom of bowl and allow the water to spray out.

NOTE: If the bowl has to be drained regularly (more than once a week) then the supply air has not been sufficiently dried.

2. If the air cartridge is dirty then it should be replaced.
 - ⇒ Remove air connection from unit.
 - ⇒ Remove cage and bowl.
 - ⇒ Turn disk to the left to remove.
 - ⇒ Install new cartridge.

PISTON TIMING

The amount of delay between the time the product piston reaches the end of a half stroke and the reversing of direction can be adjusted.

1. Remove the back panel.
2. The two flow controls are located to the left of the large shuttle valve on the right.

NOTE: The left flow control controls the delay after the discharge stroke is completed. The right flow control controls the the delay after the suction stroke is completed.

3. Loosen locking nut.
4. Set selector switch to continuous and have someone hold the tripper switch as you adjust the delay.
5. Retighten the locking nut.

ADJUSTMENT & SETTING OF AIR CUSHION EQUIPPED PUMP HEADS

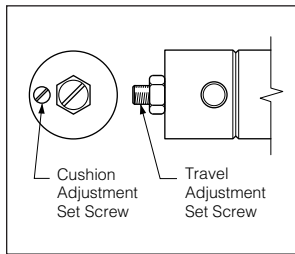


Figure 1

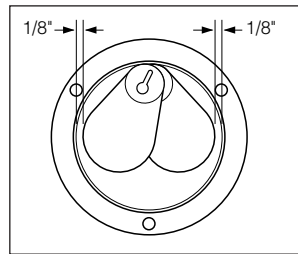


Figure 2

SECTION 1 - Adjustment of Valve Paddle Travel

NOTE: When looking at the pump head (paddle side), left side paddle travel is affected by the right side air cylinder travel adjustment set screw and vice versa.

1. Back off 9/16" lock nut on 3/8" dia. set screw as shown in Figure 1.
2. Adjust set screw until valve paddle is 1/8" away from inside O-ring land edge as shown in Figure 2.
3. Secure lock nut.
4. Recheck 1/8" distance between paddle and edge.
5. This side is now set. Follow the same procedure for the other side.

SECTION 2 - Setting of Air Cushion

NOTE A: Again left side paddle cushioning is affected by the right side air cylinder cushion set screw (3/16" dia.) and vice versa as shown in Figure 1.

NOTE B: Turning set screw in increases air cushion action and vice versa.

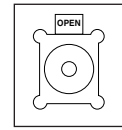
CAUTION: Avoid fingers around paddle travel area, personal injury may result.

1. Support the head assembly securely and connect the air lines to the rotary actuator air cylinders. Activate air to start rotary action.
2. Observe air cushion action at the end of each swing. Optimum cushion action can best be described as a controlled deceleration of the paddle at the end of the swing with complete elimination of rotational momentum in the shortest time possible. Adjust set screw to achieve results on both sides.

TROUBLE SHOOTING GUIDE

(reference drawings at back of manual)

1. If there is no air to unit check:



Air Quick Connect on Mixer Kettle

A/ Check that the kettle's Air Quick Connect is pushed upward to the "OPEN" position.

- B/** Open the back access doors and check that the 3 way spool valve is pressed inwards.

2. Made sure the air regulator (large black knob on back of panel) is turned on for pressure to enter system. To be sure enough pressure is in system, check for min. 60 PSI, otherwise valves might not shift.

3. Recommended operating pressure is 90 to 100 PSI.

4. If the unit seems to be covered in oil or the oil is dripping out of the mufflers, then turn lubricator output down. Correct setting is 1 drop every 10-15 strokes.

5. If the pump valve does not shift during operation or is slow in shifting, make sure the two Legris flow controls are not adjusted right in. If so, then back them off.

6. If pump cylinder is too slow then adjust large Aro flow controls to desired speed.

7. If a leak develops around the air valve 5 bank manifold, tighten the screws on top of valve and tighten manifold socket head bolts as these can loosen over time.

NOTE: Be careful with socket head bolts - do not tighten too much or clamps will bend on manifold increasing the leak.

8. If cylinder cycles one way but not back, check that the limit valves are hitting to make sure contact is made and signal is sent to either port 19 or 26 of the 5 station valve bank.

9. If cylinder still does not cycle, check or replace control valve assembly of the 5 station valve bank.

PNEUPAK TROUBLE SHOOTING GUIDE

1. No air, then turn red sleeve valve on.
 2. Make sure that the air regulator (large black knob on back of panel) is turned on for pressure to enter system. To be sure enough pressure is system, check for min. 60 PSI, otherwise valves might not shift.
 3. Recommend 80 to 90 PSI operating pressure.
 4. If the unit seems to be covered in oil, or the oil is dripping out of the mufflers, then turn lubricator output down.
 5. Problems within the complete system can result if too much oil is in the air lines and valves. This could cause the valves not to shift completely. Recommended oil to be used as lubricant is a Tellus 32 or ISO32. If oil is incompatible with Buna-N seals, the seals may swell and cause the valves and cylinders to stick.
 6. If the pump valve (large Airtec valve) does not shift during operation or is slow in shifting; make sure that the two Legris flow controls are not adjusted right in. If so, then back off.
 7. If pump cylinder is too slow then adjust large Aro flow controls to desired speed.
 8. If a leak develops around the air valve 5 bank manifold; tighten the screws on top of valve and tighten manifold socket head bolts as these may loosen over time.
- NOTE:** Be careful with socket head bolts --- Do not tighten too much or clamps will bend on manifold increasing the leak.
9. If pump cylinder cycles one way but not back; check that the limit valves are actuated to make sure contact is made and signal is sent to either port 19 or 26 of the 5 station valve bank.
 10. If cylinder still does not cycle, check or replace valve 1 & 3 (top and middle valve) of the 5 station valve bank.
 11. If leakage is detected around the selector switch then check to see if debris is hindering proper valve actuation. If this is not the case, then replace the selector switch.

BASIC OPERATION

Single Cycle Operation

Turn the selector switch to the single cycle. It will then do the following when the start switch is hit:

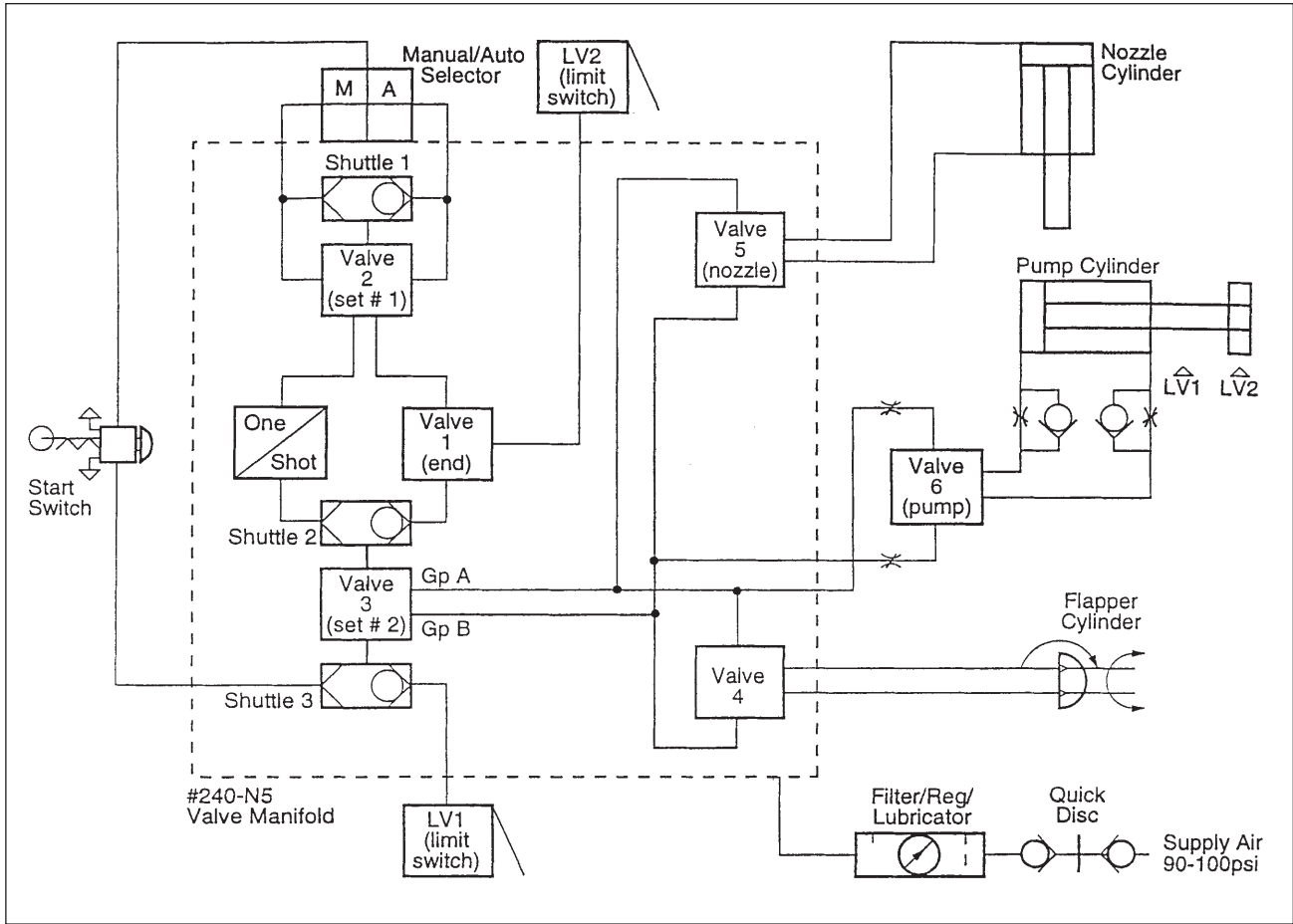
- Shifts valve No. 2 second from the top which turns off valve No. 1 and takes the signal away from Pt. 24.
- Single cycle valve is now turned on. It gives a one shot of air to valve No. 3 which shifts, and turns on Group A.
- The pump valve now shifts (Airtec Valve) Pt. 1 and valve No. 4 & 5 shifts Pt. 11 & 12. This actuates Air Cylinder & Rotary Actuator.
- When the pump reaches its full stroke, it hits LV1. This shifts valve No. 3 back through Pt. 19 which turns on Group B which shifts the pump valve (Airtec Valve) at Pt. 2 and shifts the valves NO. 4 & 5 back through Pt. 22 & 23 which actuates the Air Cylinder and Rotary Actuator to complete the single cycle.

Constant Pumping Path:

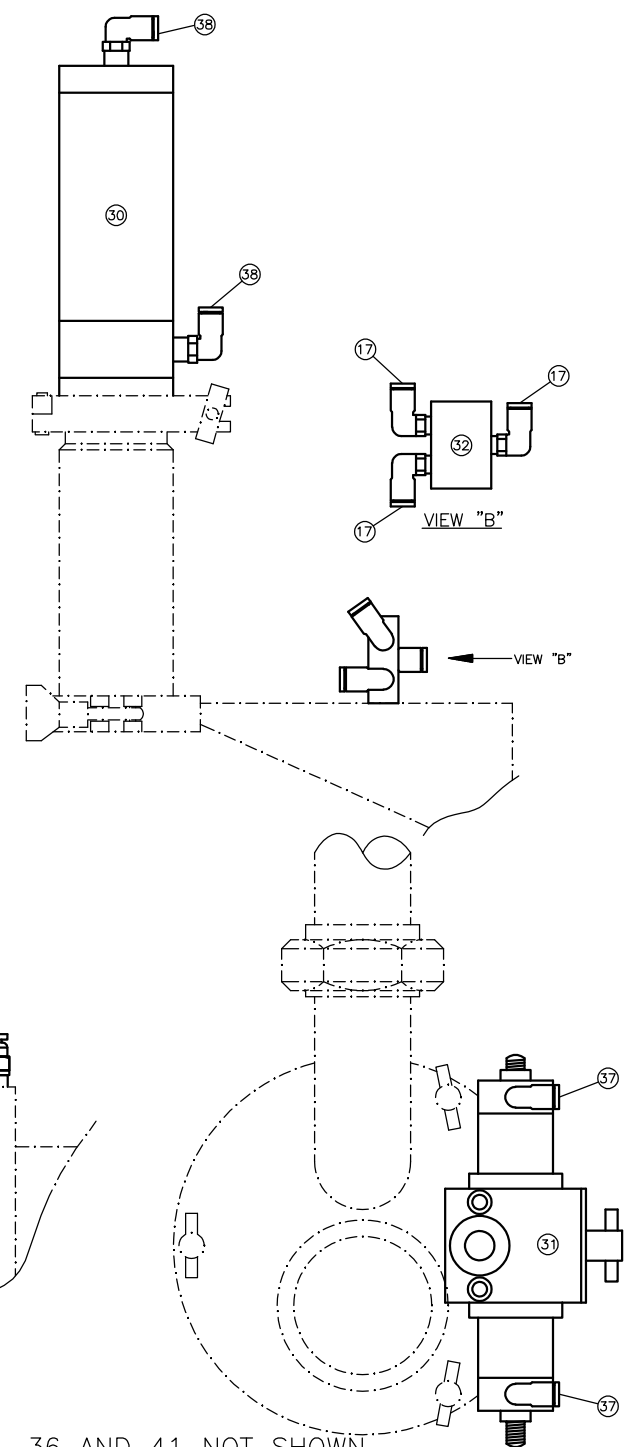
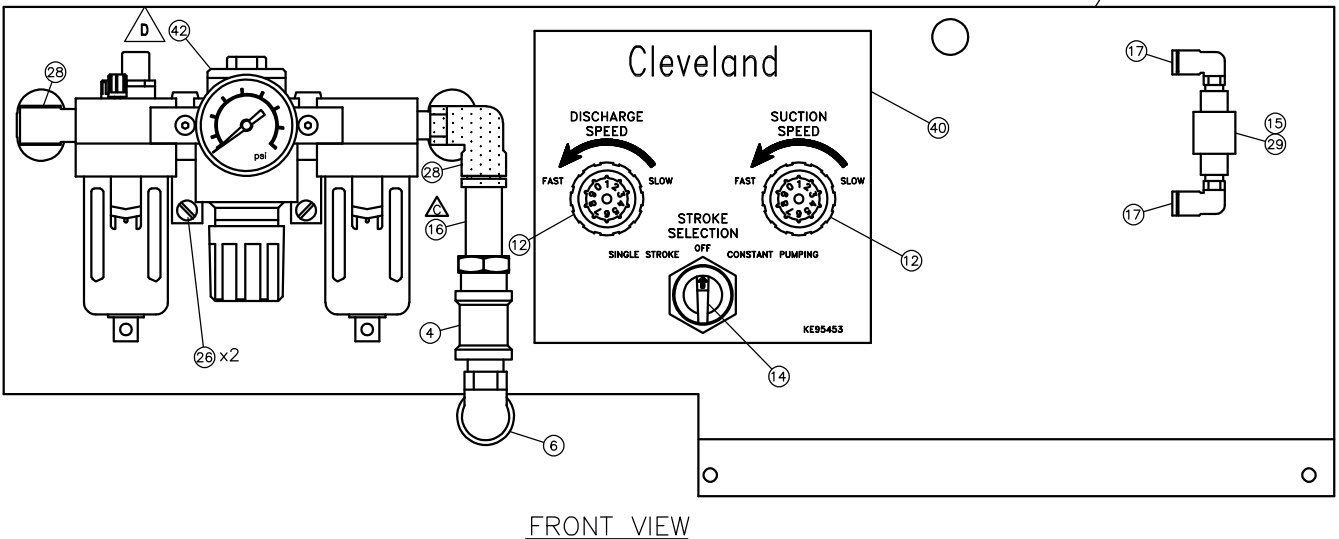
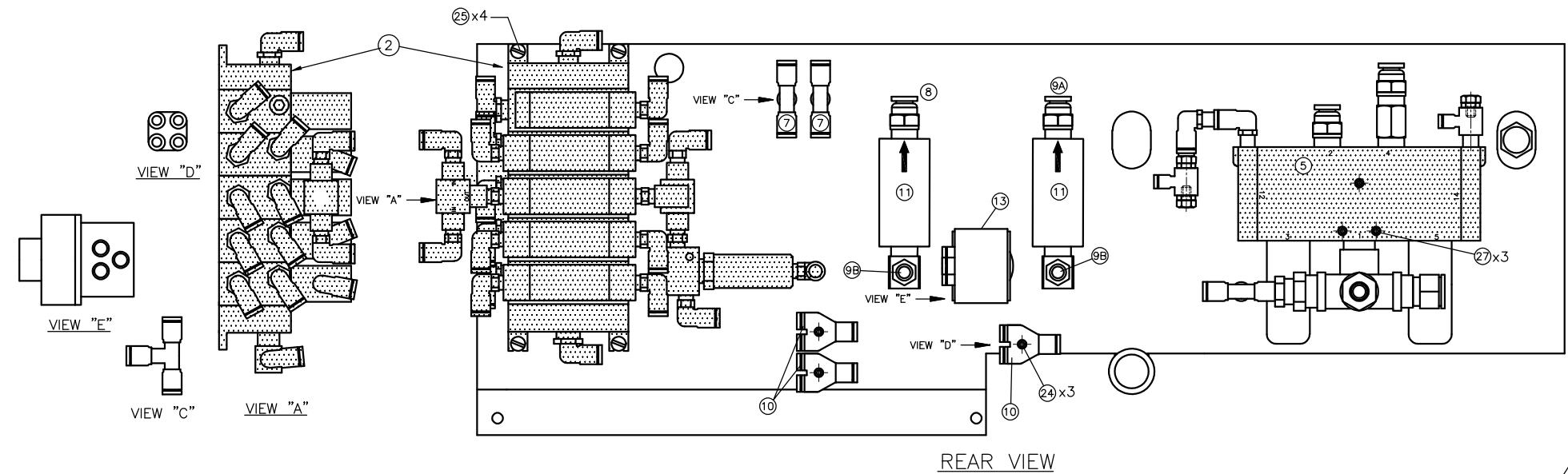
Turn the selector switch to constant pumping cycle. It will then do the following when the start switch is hit:

- Valve No. 2 shifts which in turn shifts valve No. 1 through Pt. 31. This turns on valve No. 3 through Pt. 24 if LV2 is actuated which turns on Group A.
- The pump valve now shifts (Airtec Valve) Pt. 1 and valve No., 4 & 5 shifts Pt. 11 & 12 to actuate Air Cylinder and Rotary Actuator.
- When pump reaches the full stroke it hits LV1. This shifts back Valve No. 3 through Pt. 19 which turns on Group B which shifts pump valve (Airtec Valve) at Pt. 2 and shifts back valve No. 4 & 5 through Pt. 22 and Pt. 23 which actuates the Air Cylinder and Rotary Actuator.
- When the pump completes the first cycle, LV2 is hit again and turns valve No. 1 back on and shifts valve No. 3 again through Pt. 24 and starts another cycle all over again.
- This will continue until the selector switch is turned off which turns off the air to valve No. 2 and stops supplying valve No. 1, which will not turn on valve No. 3 to start another cycle.

PNEUMATIC SCHEMATIC



#	DESCRIPTION	DATE	APPROVED
D	KE01710-6 REMOVED; KE54281 ADDED	08/06/2010	NPOYLOVA



ITEM #	PARTS #	DESCRIPTION	MANUFACTURE #	QTY.
1	KE53042	PNEUMATIC COMPONENTS MOUNTING PLATE		1
2	KE01710-4	5 STATION VALVE MANIFOLD ASSEMBLY		1
3	KE01710-6	3/8 AIR UNIT FRL ASSEMBLY		1
4	KE601383	3-WAY LOCK OUT VALVE	IN530-022-022	1
5	KE01710-5	PUMP VALVE ASSEMBLY		1
6	KE55479	PUSH-IN ELBOW 1/2 X 3/8	IN109-102-022	1
7	KE55475	MALE RUN TEE 3/8 NPT X 1/4 TUBE	-----	2
8	KE601374	1/2" X 1/2" STRAIGHT PUSH-ON HOSE CONNECTOR	INW103-102-023	1
9A	KE601374	1/2" X 1/2" STRAIGHT PUSH-ON HOSE CONNECTOR	INW103-102-023	1
9B	KE601378	ADAPTOR	INW109-102-023	2
10	KE55480	AIR MANIFOLD	PRG 1/4 - 5/32	3
11	KE601379	PUMP CYLINDER FLOW CONTROL	104104-F04	2
12	KE54296	MOUNTING NUTS FOR PUMP CYLINDER FLOW CONTROL	104094	2
13	KE54297-1	SELECTOR VALVE (MAN. - AUTO)	2.304 MB CU	1
14	KE54299-1	SELECTOR KNOB	RM 413N	1
15	KE54288	SHUTTLE VALVE - HUMPHREY PART	S125	1
16	KE603776	3/8 x 2" BRASS NIPPLE	113-C2	1
17	FI05274	PUSH-IN ELBOW, 5/32 X 1/8	IN109-532-020	2
18	KE54301	1/4" URETHANE CLEAR TUBE	UB 1/4-C	*
19	KE54869	3/8" URETHANE CLEAR TUBE	UB 3/8-C	*
20	KE55481	1/2" URETHANE CLEAR TUBE	UB 1/2-C	*
21	KE54342-1	5/32 URETHANE BLACK TUBE	UB 0425-B	*
22	KE54342	5/32 URETHANE CLEAR TUBE	UB 0425-C	*
23	KE54301-1	1/4" URETHANE BLACK TUBE	UB 1/4-B	*
24	FA11058	6-32 x 7/8" LG. MACHINE SCREW		6
25	FA95091	HEX SOCKET SHOULDER SCREW 8-32 X 1 1/4		3
26	FA11145	10-32 x 3/8" LG. MACHINE SCREW		4
27	FA11256	1/4-20 x 1/2" LG. MACHINE SCREW		2
28	KE601396	90 DEGREE ELBOW	116C	2
29	KE601430	HEX NIPPLE 1/8" NPT	122-A	1
42	KE54281	3/8 AIR UNIT FRL	NAC3000-N03-3G	1

***** ITEMS LISTED BELOW ARE LOOSE PARTS (PNEU-PAK-04-KIT) *****

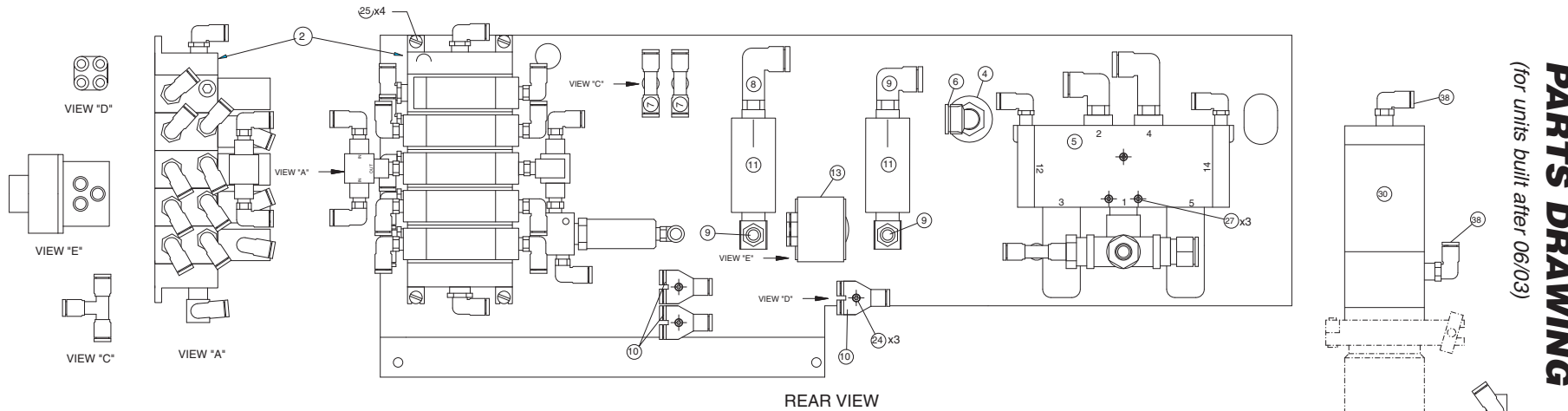
30	KE53270	AIR CYLINDER	4-D-3	1
31	KE53014-1	ROTARY ACTUATOR		1
32	KE54287	START SWITCH	41-P	1
33	KE54286	AIR LIMIT SWITCH WITH ACTUATOR	31-P + 34-C	2
34	KE53366	3/8" BULKHEAD FITTING	1495-C	2
35	FI05262	QUICK DISCONNECT BODY	DC-2103	1
36	FI05262-1	QUICK DISCONNECT PLUG	DCP-2144	1
37	FI05276	1/4 TUBE X 90° X 1/8 NPT ELBOW	6520-04-02	2
38	FI05277	1/4 TUBE X 90° X 1/4 NPT ELBOW	6520-04-04	2
39	KE601381	1/2" TUBE X 3/4" STRAIGHT	6510-08-04	2
40	KE95453	FLOW CONTROL LABEL		1
41	KE601373	STRAIGHT TUBE FITTING 1/2" X 1/2"	1N103-102-022	2
17	FI05274	PUSH-IN ELBOW, 5/32 X 1/8	IN109-532-020	7

NOTE: ITEMS 34, 35, 36 AND 41 NOT SHOWN
 SUPPLIER : D.J. INDUSTRIES
 PACKAGE #: PNEUPAK-04
 * FOR POINT TO POINT AIR TUBE CONNECTIONS SEE DWG# KE01710-3

THIS DESIGN COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF CLEVELAND RANGE LTD. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF CLEVELAND RANGE LTD.		FOR GENERAL TOLERANCES REFER TO PMI-043		CLEVELAND RANGE LTD. 8251 KEELE STREET, CONCORD, ONTARIO, CANADA		TITLE PNEUMATICS PKGE. MFS	
MATERIAL TYPE & GRADE		DO NOT SCALE PRINTED DRAWING		DRAWN BY		DRAWING NO.	
FORM SIZE FINISH		DATE		7/19/2005		SHEET 1 OF 1	
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AIR PACKAGE PARTS DRAWING

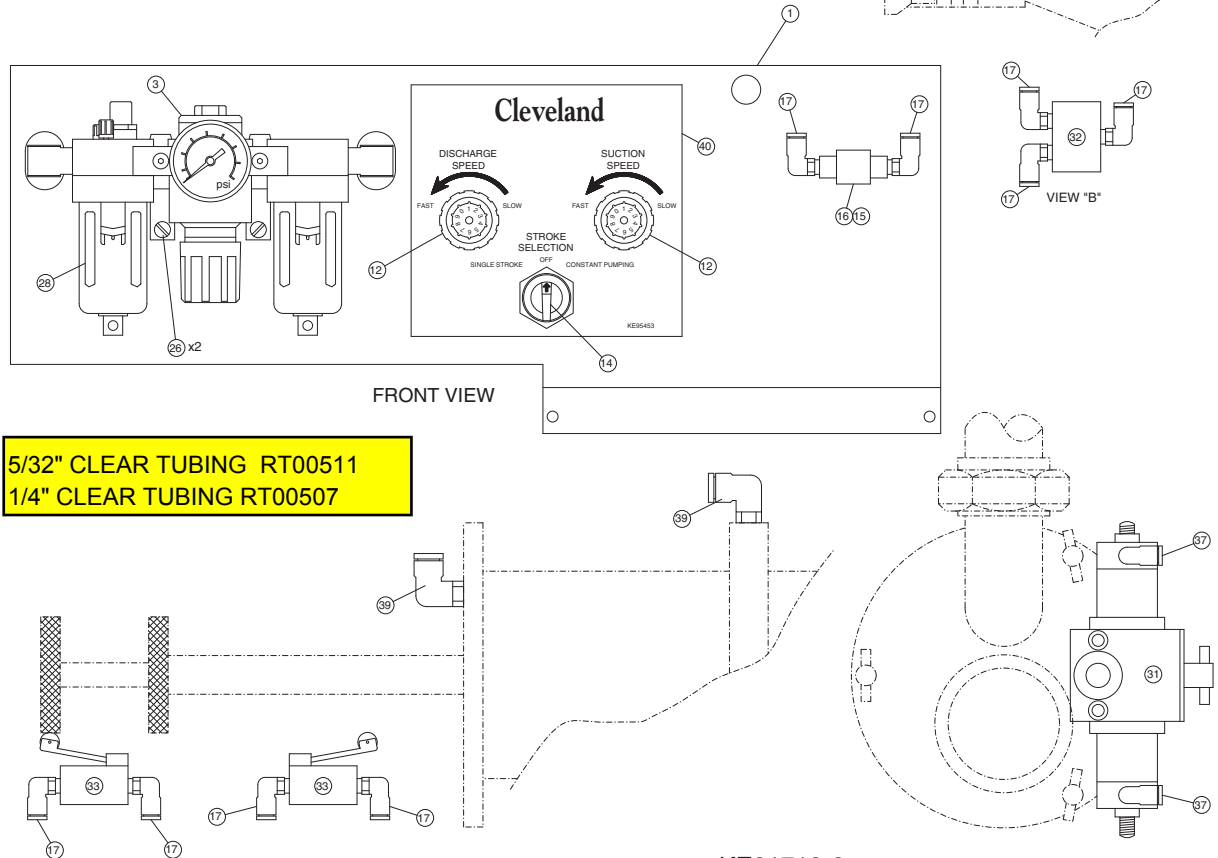
(for units built after 06/03)



REAR VIEW

ITEM #	PARTS #	DESCRIPTION	MANUFACTURE #	QTY.
1	KE53042	PNEUMATIC COMPONENTS MOUNTING PLATE		1
2	KE01710-4	5 STATION VALVE MANIFOLD ASSEMBLY		1
3	KE01710-6	3/8 AIR UNIT FRL ASSEMBLY		1
4	KE54345	3-WAY LOCK OUT VALVE	0669-10-18MF	1
5	KE01710-5	PUMP VALVE ASSEMBLY		1
6	KE55479	PUSH-IN ELBOW 1/2 X 3/8	IN109-102-022	2
7	KE55475	MALE RUN TEE 3/8 NPT X 1/4 TUBE	-----	2
8	KE55474	PUSH-IN LONG ELBOW 3/8 X 3/8	IN109E-308-022	1
9	KE55473	PUSH-IN ELBOW 3/8 X 3/8	IN109-308-022	3
10	KE55480	AIR MANIFOLD	PRG 1/4 - 5/32	3
11	KE54295	PUMP CYLINDER FLOW CONTROL	104104-F03	2
12	KE54296	MOUNTING NUTS FOR PUMP CYLINDER FLOW CONTROL	104094	2
13	KE54297	SELECTOR VALVE (MAN. - AUTO)	2.304 MB CU	1
14	KE54299	SELECTOR KNOB	RM 413N	1
15	KE54288	SHUTTLE VALVE	31P+341AR	1
16	FI05271-2	1/8 BRASS HEX. NIPPLE	113-C2	1
17	FI05274	PUSH-IN ELBOW, 5/32 X 1/8	IN109-532-020	9
18	KE54301	1/4" URETHANE CLEAR TUBE	UB 1/4-C	*
19	KE54869	3/8" URETHANE CLEAR TUBE	UB 3/8-C	*
20	KE55481	1/2" URETHANE CLEAR TUBE	UB 1/2-C	*
21	KE54342-1	5/32 URETHANE BLACK TUBE	UB 0425-B	*
22	KE54342	3/32 URETHANE CLEAR TUBE	UB 0425-C	*
23	KE54301-1	1/4" URETHANE BLACK TUBE	UB 1/4-B	*
24	FA11058	6-32 X 7/8" LG. MACHINE SCREW		6
25	FA95991	HEX SOCKET SHOULDER SCREW 8-32 X 1 1/4		3
26	FA11145	10-32 X 3/8" LG. MACHINE SCREW		4
27	FA11256	1/4-20 X 1/2" LG. MACHINE SCREW		2
28	SE50426	ELEMENT FOR FILTER		4
----- ITEMS LISTED BELOW ARE LOOSE PARTS (PNEU-PAK-04-KIT) -----				
30	KE53270	AIR CYLINDER	4-D-3	1
31	KE53014-1	ROTARY ACTUATOR		1
32	KE54287	START SWITCH	41-P	1
33	KE54286	AIR LIMIT SWITCH WITH ACTUATOR	31-P + 34-C	2
34	KE53366	3/8" BULKHEAD FITTING	1495-C	2
35	FI05262	QUICK DISCONNECT BODY	DC-2103	1
36	FI05262-1	QUICK DISCONNECT PLUG	DCP-2144	1
37	FI05276	1/4 TUBE X 90° X 1/8 NPT ELBOW	6520-04-02	2
38	FI05277	1/4 TUBE X 90° X 1/4 NPT ELBOW	6520-04-04	2
39	FI05278	3/8 TUBE X 90° X 1/8 NPT ELBOW	6520-06-04	2
40	KE95453	FLOW CONTROL LABEL		1

NOTE: ITEMS # 34, 35 AND 36 NOT SHOWN

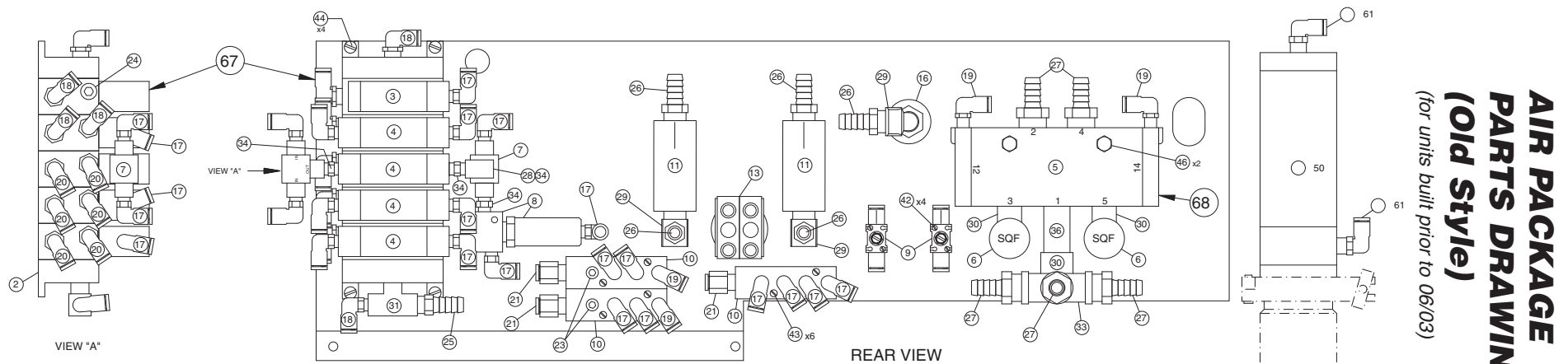


FRONT VIEW

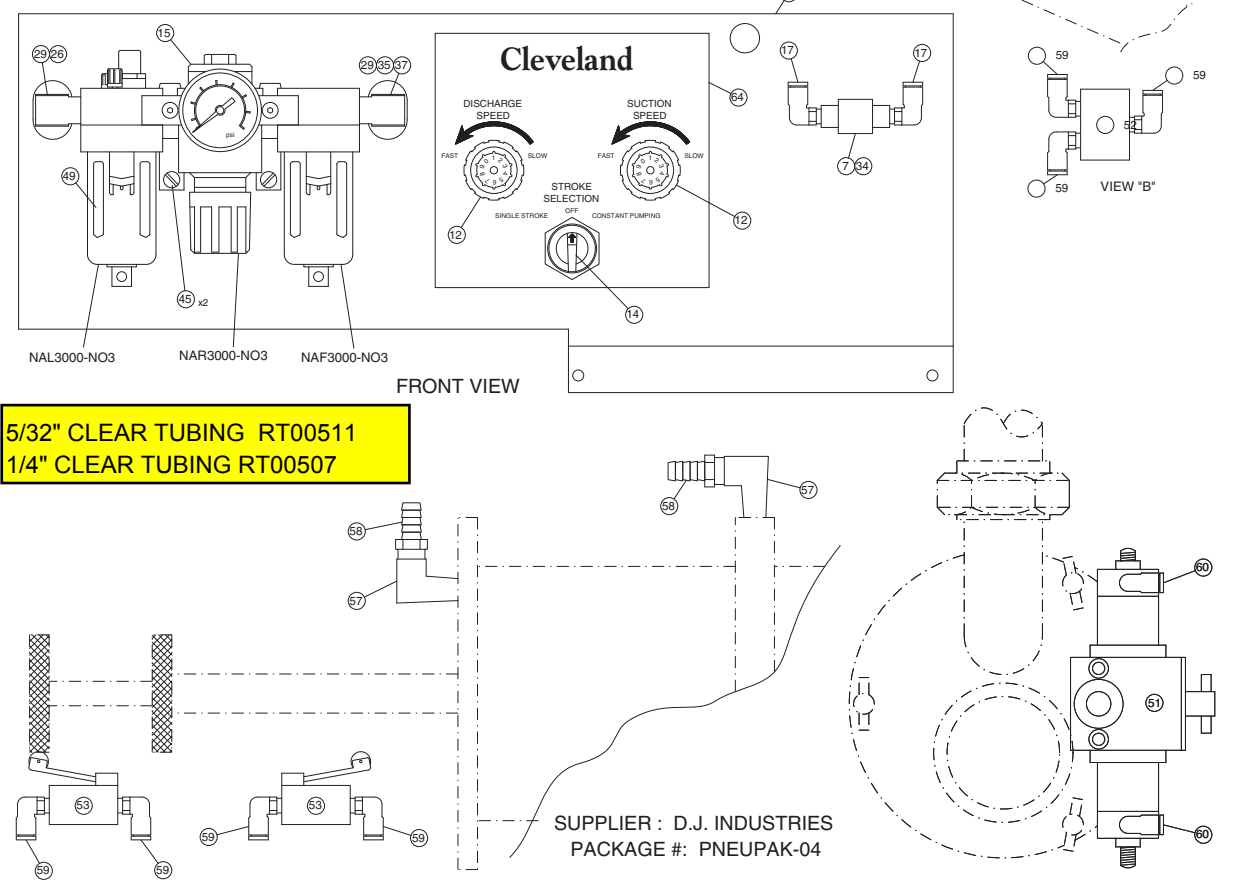
KE01710-2

AIR PACKAGE PARTS DRAWING (Old Style)

(for units built prior to 06/03)



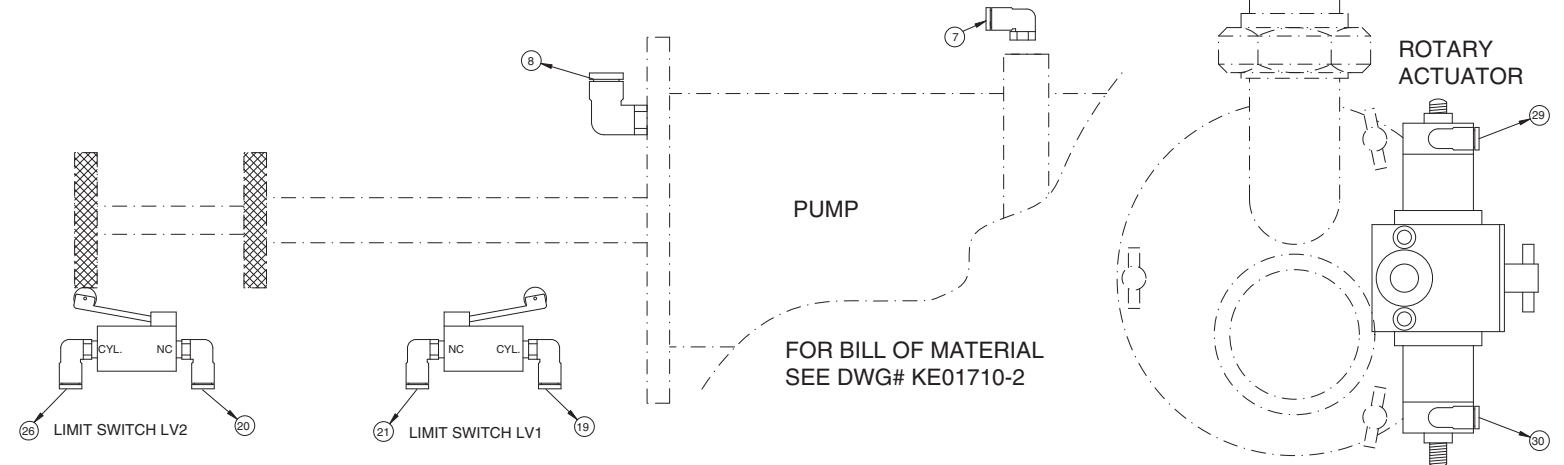
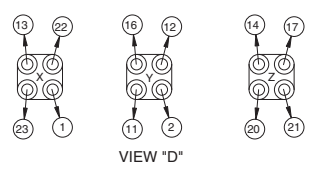
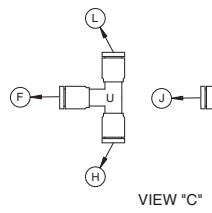
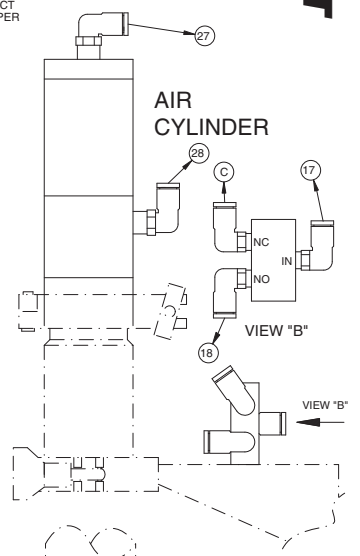
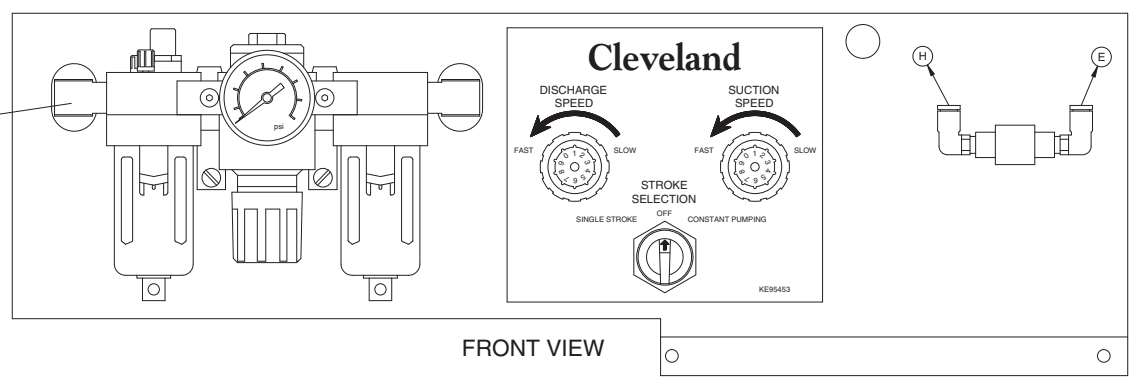
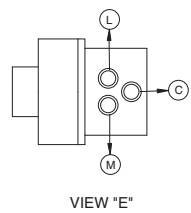
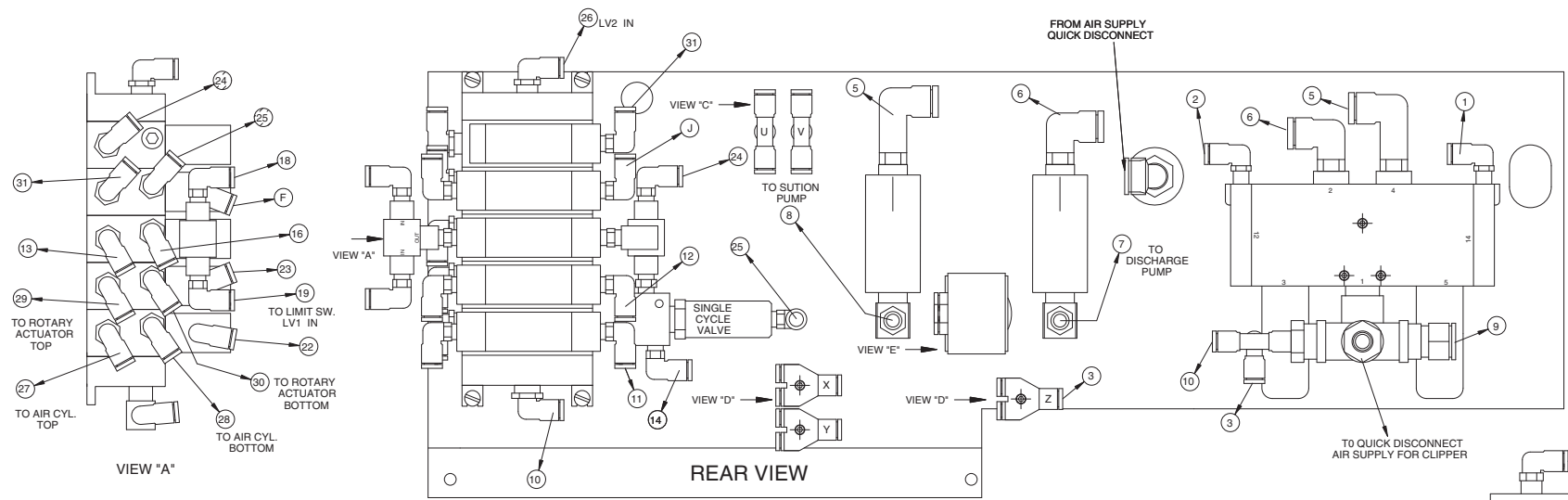
ITEM #	PARTS #	DESCRIPTION	MANUFACTURE #	QTY.
1	KE53042	PNEUMATIC COMPONENTS MOUNTING PLATE		1
2	KE54343	5 STATION VALVE MANIFOLD	H240-M5A-HCR017-1	1
3	KE54289	VALVE #1 (CONTROL VALVE)	HA-240-4A	1
4	KE54290	VALVE #2,3,4,5 (SELECTOR1, SELECTOR2, FLAPPER, NOZZLE)	HA-240-4A2	4
5	KE54291	VALVE #6 (PUMP VALVE)	P125-20	1
6	KE54346	MUFFLER	SCF-4	2
7	KE54398	SHUTTLE VALVE	S-125	3
8	KE54292	ONE SHOT VALVE	31-P + 341-AR	1
9	KE54344	IN LINE PILOT FLOW CONTROL	7770-56-00	2
10	KE54293	AIR MANIFOLD	3305-11-14	3
11	KE54295	PUMP CYLINDER FLOW CONTROL	FO-3	2
12	KE54296	MOUNTING NUTS FOR PUMP CYLINDER FLOW CONTROL	104094	2
13	KE54297	SELECTOR VALVE (MAN. - AUTO)	59065	1
14	KE54299	3 POSITION ACTUATOR FOR SELECTOR VALVE	59066-16	1
15	KE54281	3/8" F.R.L. C/W GAUGE	NAC-3000-NO3-G	1
16	KE54345	3 WAY SPOOL VALVE	0669-10-18-MF	1
17	FI05274	5/32" TUBE TO 1/8" NPT MALE PUSH-IN FITTING (ELBOW)	3109-04-11	22
18	FI05275	5/32" TUBE TO 1/4" NPT MALE PUSH-IN FITTING (ELBOW)	3109-04-14	7
19	FI05276	1/4" TUBE TO 1/8" NPT MALE PUSH-IN FITTING (ELBOW)	3109-56-11	4
20	FI05277	1/4" TUBE TO 1/4" NPT MALE PUSH-IN FITTING (ELBOW)	3109-56-14	6
21	FI05279	5/32" TUBE TO 1/4" NPT MALE PUSH-IN FITTING (STRAIGHT)	3175-04-13	3
22	FI05280	5/32 x 5/32 x 5/32 TUBE PUSH-IN FITTING (TEE)	3104-04-00	3
23	KE53359	1/8" BRASS HEX PLUG	118-A	2
24	KE53360	1/4" HEX SETSCREW	118-B	1
25	KE53363	3/8" I.D. HOSE BARB TO 1/4" MALE NPT. BRASS COUPLER	125-6B	1
26	FI05219	3/8" I.D. HOSE BARB TO 3/8" MALE NPT. BRASS COUPLER	125-6C	6
27	FI05267	3/8" I.D. HOSE BARB TO 1/2" MALE NPT. BRASS COUPLER	125-6D	5
28	KE53351	1/8" EXTRUDED 90° BRASS ELBOW	100-A	1
29	FI05030	3/8" EXTRUDED 90° BRASS STREET ELBOW	116-C	5
30	FI05282	1/2" EXTRUDED 90° BRASS STREET ELBOW	116-D	3
31	FI05270	1/4" EXTRUDED MALE BRASS TEE	106-B	1
33	FI05214	1/2" FORGED BRASS CROSS	102-D	1
34	FI05271-2	1/8" BRASS HEX NIPPLE	122-A	5
35	FI05271	3/8" BRASS HEX NIPPLE	122-C	1
36	FI05095-3	1/2" NPT x 2" LG. BRASS NIPPLE	113-DX-1 1/2	1
37	FI05234-1	3/8" BRASS HEX COUPLING	103-C	1
38	KE54342	5/8" POLYURATHANE TUBE (CLEAR)	1098-U-54-00-CL	AS REQUIRED
39	KE54341	1/4" POLYURATHANE TUBE (CLEAR)	1099-U-56-00-CL	AS REQUIRED
40	SK079110-1	3/8" CLEAR BRAID AIR HOSE	3150-3/8"	AS REQUIRED
41	FI05220-1	HOSE CLAMP	MAH-4	10
42	FA11020	4-40 x 3/4" LG. MACHINE SCREW		4
43	FA11058	6-32 x 7/8" LG. MACHINE SCREW		6
44	FA11145	10-32 x 3/8" LG. MACHINE SCREW		4
45	FA11256	1/4-20 x 1/2" LG. MACHINE SCREW		2
46	FA11263	1/4-20 x 1 3/4" LG. HEX HEAD BOLT		2
47	KE54342-1	5/32" POLYURATHANE TUBE (BLACK)	1098-U-54-00-BLK	AS REQUIRED
48	KE54301-1	1/4" POLYURATHANE TUBE (BLACK)	1098-U-56-00-BLK	AS REQUIRED
49	SE50426	ELEMENT FOR FILTER		4
***** ITEMS LISTED BELOW ARE LOOSE PARTS (PNEU-PAK-04-KIT) *****				
50	KE01712	AIR CYLINDER	4D-3	1
51	KE53014-1	ROTARY ACTUATOR	PT-098-090-A1	1
52	KE54287	START SWITCH	41-P	1
53	KE54286	AIR LIMIT SWITCH WITH ACTUATOR	31-P + 34-C	2
54	KE53366	3/8" BULKHEAD FITTING	1495-C	2
55	FI05262	QUICK DISCONNECT BODY	DC-2103	1
56	FI05262-1	QUICK DISCONNECT PLUG	DCP-2144	1
57	FI05281	REDUCING STREET ELBOW	116-CB	2
58	FI05219	3/8" I.D. HOSE BARB TO 3/8" MALE NPT. BRASS COUPLER	125-6C	4
59	FI05274	5/32" TUBE TO 1/8" MALE NPT PUSH-IN FITTING FOR LIMIT SW.	3109-04-11	7
60	FI05276	1/4" TUBE TO 1/8" MALE NPT PUSH-IN FITTING FOR FLAPPER CYL.	6520-04-02	2
61	FI05277	1/4" TUBE TO 1/4" MALE NPT PUSH-IN FITTING FOR NOZZLE CYL.	6520-04-04	2
62				
63	FI05220-1	HOSE CLAMP	MAH-4	8
64	KE95453	FLOW CONTROL LABEL		1
66				
67	SE00090	CONTROL VALVE ASSEMBLY (FOR SERVICE PURPOSE ONLY)		1
68	SE00091	PUMP VALVE ASSEMBLY (FOR SERVICE PURPOSE ONLY)		1



5/32" CLEAR TUBING RT00511
1/4" CLEAR TUBING RT00507

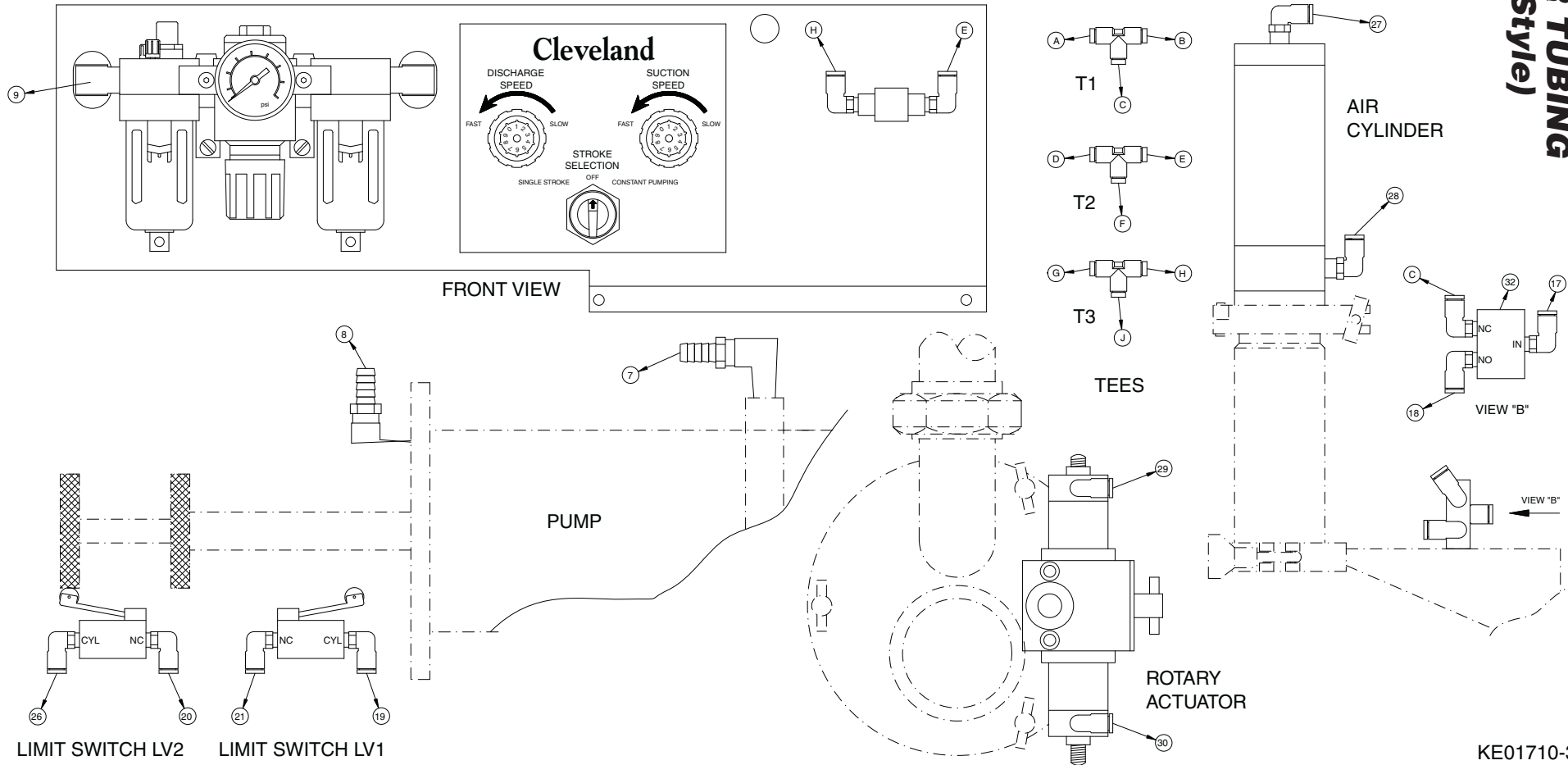
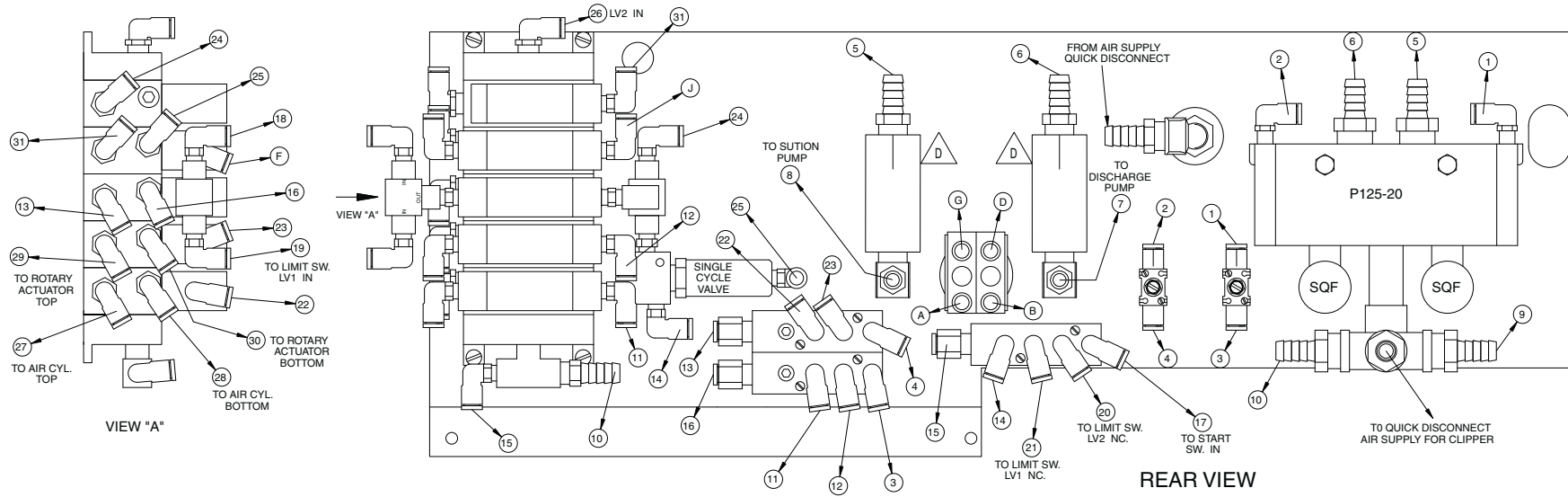
KE01710-4

**POINT TO POINT
AIR TUBING
CONNECTIONS**
(for units built after 06/03)



FOR BILL OF MATERIAL
SEE DWG# KE01710-2

POINT TO POINT AIR TUBING CONNECTIONS (Old Style)
 (for units built after 06/03)



SPARE PARTS LIST

ITEM ON.	DESCRIPTION	QTY. DOMESTIC	QTY. OVERSEAS
<u>Consumables</u>			
KE54810-3	Gasket, 3", Food Hose	10	50
KE54810-2	Gasket, 2", Piping Assembly	10	50
KE53056	Spring, Pump Head	2	10
KE54167	Food Grade Grease	1	10
FA05002-24	"O" Ring, Flapper Valve	5	20
FA05002-3	"O" Ring, Upper Plunger Seal	10	50
FA05002-2	"O" Ring, Pump Head	10	50
FA05002-7	"O" Ring, Lower Plunger Seal	10	50
FA05002-26	"O" Ring, Product Piston Head	10	50
<u>Spare Parts</u>			
FA05002-6	"O" Ring, Rear Seal	1	2
FA05002-1	"O" Ring, Front Seal	1	2
KE01302	Lug Nut	1	2
KE54278	Removable Panel Stop	1	2
KE53266	Spring, Label Dispenser	1	2
KE53014-1	Rotary Actuator	---	1
KE01712	Air Cylinder, Discharge Head	---	1
KE01518	Hose for Clipper	---	1
KE01750	Hose for MFS to Kettle	---	1
KE54286	Air Limit Switch	---	1
KE54295	Air Flow Control	---	1
KE01710-4	Control Valve Assembly	---	1
KE01710-5	Pump Valve Assembly	---	1

OPTIONAL STRAINER PARTS

<u>Consumables</u>			
FA05002-28	End Assembly	5	10
3167-BO	"O" Ring	5	10
3099-BO	Gasket, 4", Sani-Clamp	5	10
KE52154-1	Gasket, 2", Sani-Clamp	5	10
<u>Spare Parts</u>			
5461-67	Pin	1	2
FI05144-1	Sani-Clamp, 2"	1	2
3525-48	Sani-Clamp, 4"	1	2

OPTIONAL THERMO ASSURANCE PACKAGE PARTS

<u>Consumables</u>			
FA05002-28	"O" Ring	5	20
<u>Spare Parts</u>			
KE53206	RTD Sensor	1	1
KE53200	Bulb	1	2
KE53203	Clipper Lockout Valve	---	1