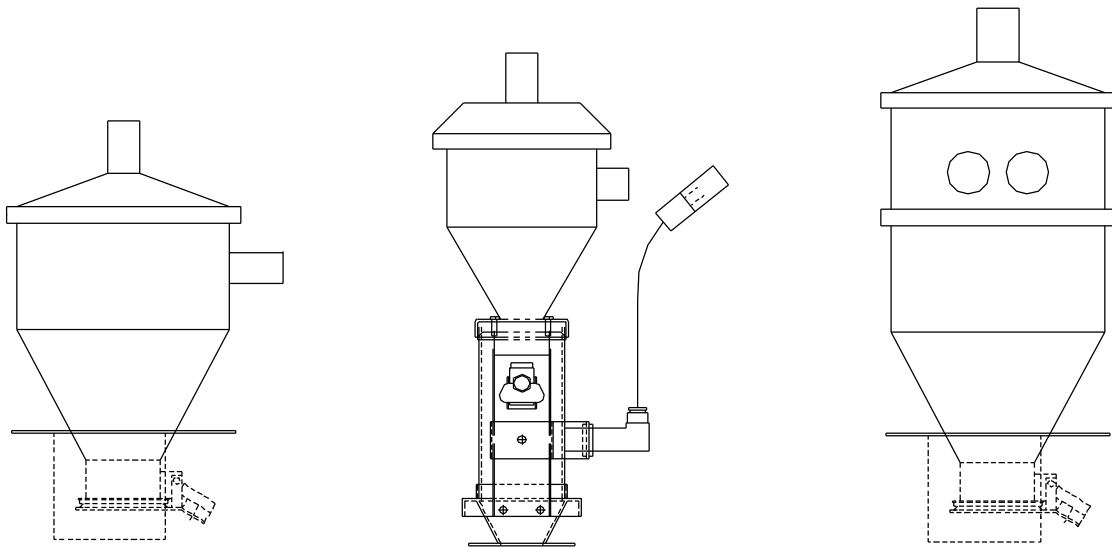


*Thoreson-McCosh Inc.*  
**Vacuum Receivers**



**Instruction Manual**  
**IB200002**

**THORESON-McCOSH INC**  
1885 Thunderbird St. Troy MI. 48084  
Phone 1-248-362-0960  
Fax 1-248-362-5270  
[sales@thoresonmccosh](mailto:sales@thoresonmccosh)

**Thoreson-McCosh Inc**

**FORWARD**

The information contained in this Instruction Manual is provided to you for the maintenance of your Thoreson McCosh equipment.

Also included in this manual are operating instructions, a service parts list, and wiring diagrams. Please file this manual for future use.

For additional information, please contact:

THORESON-McCOSH Inc.  
1885 Thunderbird Street  
Troy, MI 48084  
Phone: (248) 362-0960  
Facsimile: (248) 362-5270  
[sales@thoresonmccosh.com](mailto:sales@thoresonmccosh.com)

**CUSTOMER RECORDS**

Upon receipt of your Thoreson McCosh equipment, it is very important that you complete the table below. The information will be needed to best serve you when you call the Thoreson McCosh Service Department with questions or to order replacement parts. The information is located on the Serial Tag on the unit and inside the door of the control box.

Model Name	_____
Serial No.	_____
Wiring Diagram No.	_____
Insert No.	_____
Program No.	_____
Layout No.	_____

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**SECTION 1: THORESON MCCOSH PRODUCT WARRANTY**

Thoreson-McCosh warrants each product of its manufacture to be free from defects in material and workmanship for a period of 30 months (2-1\2) year from the date of delivery to the original purchaser. Thoreson-McCosh's obligation under this warranty is limited to repairing or replacing any part returned to the Thoreson-McCosh factory with transportation charges prepaid, and which, on examination by Thoreson-McCosh, shall disclose to Thoreson-McCosh's satisfaction to have been defective.

The purchaser must notify Thoreson-McCosh of such defects and promptly deliver the defective part(s) in accordance with Thoreson-McCosh's shipping instructions, delivery prepaid. Parts will be replaced F.O.B. Thoreson-McCosh factory, by Thoreson-McCosh, and will be invoiced to the purchaser with "credit on return of defective part", if the part is returned within fifteen (15) days after shipment of replacement part. Thoreson-McCosh is not liable for installation or cost to install the replacement part or removal of the defective part.

Thoreson-McCosh is not responsible for any failure of its product due to improper use, installation, or operation. Thoreson-McCosh shall not assume any expense or liability for repairs made to any Thoreson-McCosh unit or equipment outside Thoreson-McCosh's own factory unless specifically agreed to in writing by Thoreson-McCosh.

Equipment and accessories furnished by us, but manufactured by others, are guaranteed to the extent of the original manufacturer's guarantee to Thoreson-McCosh, if that guarantee exceeds one (1) year.

It is expressly understood that Thoreson-McCosh is not responsible for damage and/or injury caused to buildings, contents, products, or persons by reason of installation or use of any of our products. Thoreson-McCosh shall not be liable for loss, damage or expenses arising directly or indirectly from, or being consequential or incidental to, the use of its products or from any other cause.

The above warranty supersedes, and is in lieu of all other warranties expressed or implied; and no person, agent, representative or dealer is authorized to give any warranties on behalf of Thoreson-McCosh, not to assume for Thoreson-McCosh any other liability in connection with Thoreson-McCosh products.

## **SECTION 2: VACUUM RECEIVER INSTRUCTIONS**

### **2.1: INTRODUCTION**

The Thoreson-McCosh Vacuum Loading system is designed to efficiently deliver plastic pellets with a minimum of maintenance.

### **2.2 METHOD OF OPERATION**

The operation of the vacuum loading system is quite simple. The positive displacement air pump creates a "vacuum effect" when the pump is driven. This vacuum results in air flow through the vacuum hose, creating a reduced pressure in the vacuum receiver, which causes the discharge valve on the material outlet of the receiver to close, causing a further reduction in pressure within the receiver. The reduced pressure within the receiver results in air flow through the pick-up tube or material take-off, then through the material delivery tube and into the vacuum receiver. The high velocity of this air flow results in material pickup, and the consequent delivery of a mixture of material and air into the receiver. Once this mixture is delivered to the receiver, the material and air must be separated, and the air pumped out of the receiver to maintain the reduced pressure necessary for conveying. A filter screen in the receiver accomplishes the separation of the air from the material.

If a purging valve is included part of the system, the valve, when activated, will shut off the material flow, and open a second port that only allows air flow. This is designed to move all material in the material delivery tube to be deposited in the receiver. The purging valve is typically located between the material take-off and the material delivery tube. Ratio valves work similarly, except the second port would allow material from a second source to be loaded. Ratio valves can be mounted anywhere, including being an integral part of the receiver.

### **2.3: QUICK START**

1. Remove receivers from cartons.
2. Mount receivers on machines and hoppers.
3. Mount T-valves above receivers.
4. Mount all external ratio and purge valves.
5. Connect vacuum and material lines (see plant layout if applicable).
6. Connect compressed air to system.
7. Wire the loading system, running all inputs and outputs back to the central loading system control panel (see wiring diagram).

## **2.4 INSTALLATION AND SETUP**

The loading system will perform best when the material and vacuum lines are hooked up in the most direct manner possible with a minimum of bends. Care should be taken to insure that all the couplings are tight in order to minimize air leakage.

The vacuum receiver should be mounted on the lid of the machine hopper over a circular hole and secured to the lid of the machine hopper by bolting through the mounting holes in the receiver flange.

The vacuum line is to be connected from the top of the receiver to the central vacuum line or the inlet on the filter housing. The material line is to be connected from the inlet on the side of the receiver to a central material line or a material pick-up tube. The Sequencing (Tee) valves require compressed air to operate. If a ratio receiver or a purging valve is being used, a source of compressed air is required in order to operate the solenoid. The pressure of the air should be regulated between 60 psi and 90 psi in order to obtain maximum valve operation durability. This regulated air supply should be connected directly to the solenoid valve.

## **SECTION 3: MAINTENANCE**

### **3.1: FILTER MAINTENANCE**

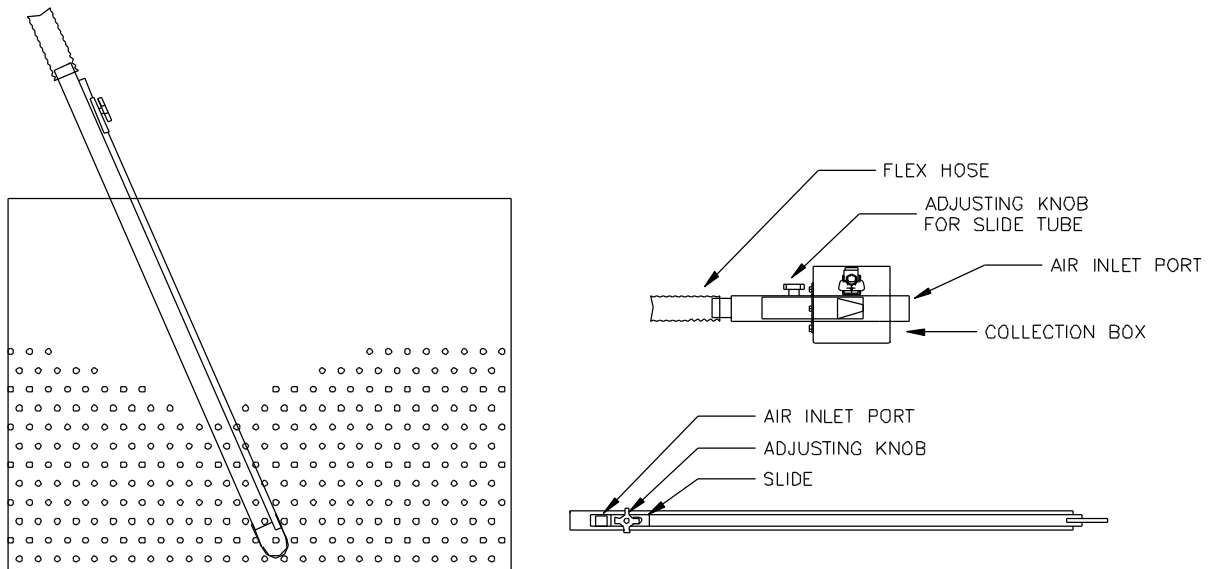
- It is recommended that filters be checked periodically for material residue accumulation, and cleaned before the loader's performance is reduced.
- Inspect and clean the filter screen in the receiver hopper at least once a month (more often if dusty materials are being conveyed).
- If a central filter is being used, inspect the filters in the unit at least once a month.
- Inspect the filter on the pump weekly. These are cartridge type filter elements and may be cleaned with compressed air several times before a new element must be installed. When filter material becomes worn, a new filter should be installed. Replacement filters are available from Thoreson-McCosh Inc.

## SECTION 4: MATERIAL PICK-UP TUBE/ TAKE-OFF

The material pick-up tube/vacuum take-off has an adjustable slide to regulate the material conveying air. The material is aerated at the bottom of the tube so that various densities of materials can be handled with one pick-up tube/vacuum take off.

The pick-up tube should be positioned at or near the bottom of the container. The loading rate should have a continuous noise of material passing through the conveying pipe as long as the loader is in operation.

If slugging occurs, the slide is incorrectly adjusted. To correct the problem, adjust the slide to let more air pass through the air inlet port.



## **SECTION 5: PROXIMITY SWITCH INSTRUCTIONS**

### **5.1: MOUNTING INSTRUCTIONS**

This 30mm threaded unit is easy to mount with the two flat nuts provided. Or, use the optional accessories. When mounting using the threaded section/jam nuts, be sure to mount the unit well back of the center of the threaded area, towards rear, leaving side clearance to other objects/metal presence on the front half of the switch.

If sensing product through a non-metallic container, mount the switch flush to the hopper/side sight glass, etc. so that no air gap exists where possible.

### **SECTION 5.2: SENSITIVITY SETTING**

As received, the Proximity Switch is set for maximum permissible detection range of 15mm (.6") based on a water target. The maximum range can be safely *reduced* by the built in sensitivity adjust. Do not use it to extend the range beyond the spec or non-stability will result.

**Step 1:** Mount the switch in the actual application and establish the worst case conditions that can cause a false "ON" signal. (For example, if sensing a material level through a sight glass, fill the glass and then reduce the level so moisture and residue clings to the inside of the glass.) If the LED is on, turn the pot CCW until it just goes off. If the LED is off turn the pot CW until it turns on, then back off just enough to make it go off.

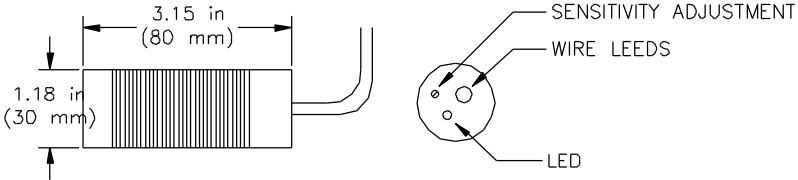
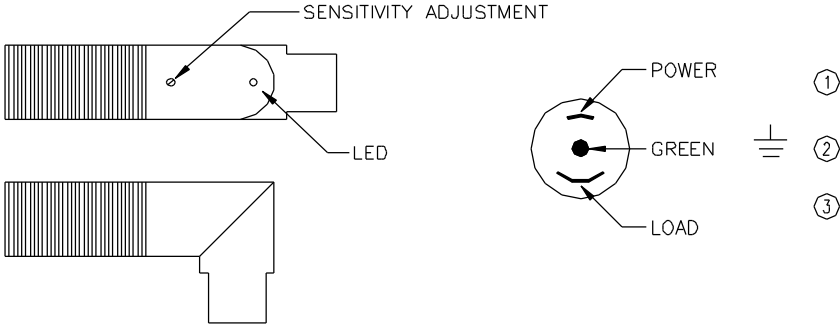
**Step 2:** Bring the target into position. (In the example, bring the material level above the switch.) The LED should now be on. Turn the pot CCW and count the number of turns until it goes off.

**Step 3:** Turn the pot CW for  $\frac{1}{2}$  the number of the turns from Step 2. (In the example, if it took 4 turns to go from on to off, rotate the pot 2 turns CW.) The switch is now set in the midpoint of sensitivity range for maximum stability.

**Note:** If you have trouble during Step 2 (for example, when sensing lightweight materials) consult the factory for proper sensitivity adjustment.



**PROXIMITY SWITCH**

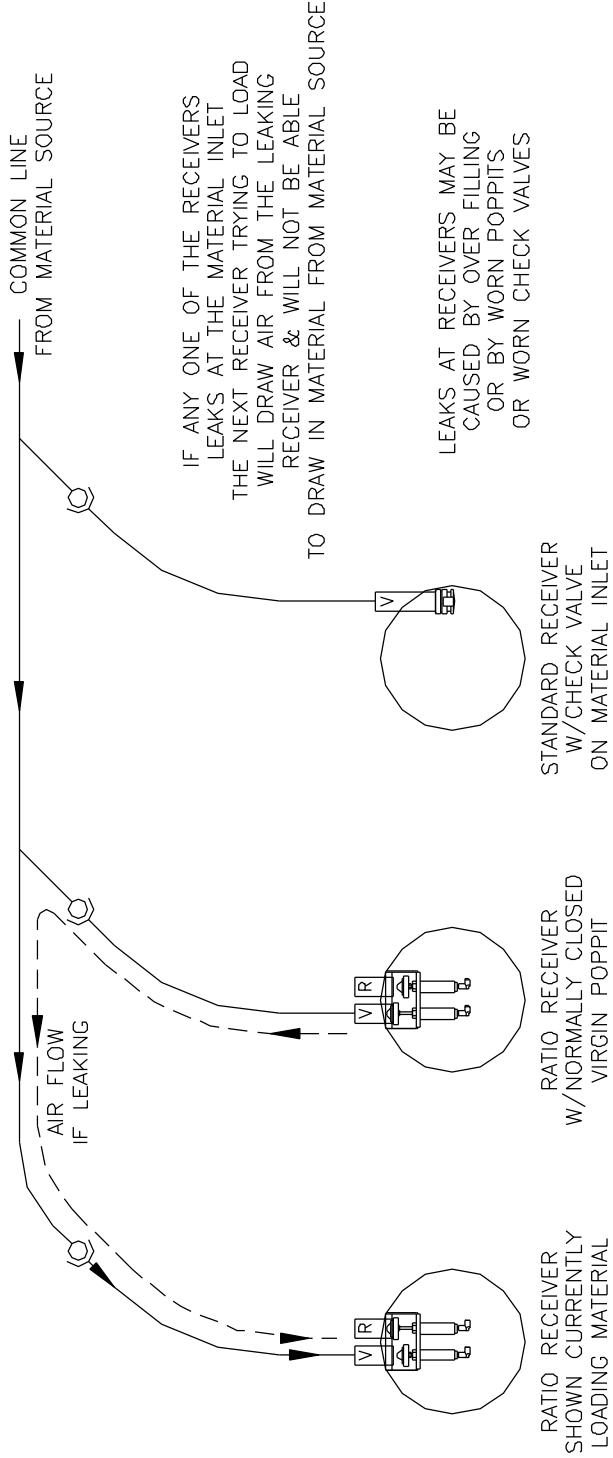


ALWAYS MINIMIZE THE AIR GAP AS MUCH AS POSSIBLE WHEN MOUNTING.

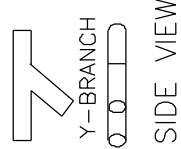
TO ADJUST THE SENSITIVITY:  
TURN ADJUSTMENT SCREW CLOCKWISE TO INCREASE.  
TURN COUNTER CLOCKWISE TO DECREASE.

SK95028 A

TOP VIEW



NOTE:  
 WHEN INSTALLING Y-BRANCHES  
 90, OR 45 DEGREE PLUMBING  
 INSTALL PLUMBING IN HORIZONTAL  
 POSITION AS SHOWN



SYM.	AM'T	DESCRIPTION	PART NO.
REVISION			
REF. DRAWING OF POSSIBLE PROBLEMS WITH COMMON LINE SYSTEMS			
<b>THORESON McCOSH</b> 1885 THUNDERBIRD ST. TROY, MICHIGAN			
SCALE	DATE	DR. BY	DRAWING NO.
1/16=1	3/95	KH	SK95028A

## STANDARD PARTS LIST FOR LOADING SYSTEM & RECEIVERS

MODEL NUMBER	VACUUM FILTER	SNUBBER FILTER	RECEIVER FILTER	LID SEAL	DOOR SEAL	FINES FILTER	LID CLAMPS
MARK 3	404662	404661		409401			
MARK 4	404662	404661		409401			
MARK 5	404662	404661		409401			
MARK 7	404662	404661		409401			
MARK 7XP	404662	404661		409401			
MARK 10	405897	404365		409401			
7" DIA RECEIVER			413001	412257	412265		411402
10" DIA RECEIVER			407095	409402	413091		405824
15" DIA RECEIVER			409002	409401	413091		407409
RB-1 FILTER BAG CARTRIDGE	408433 414173			409402	413091	407402	
RB-4 FILTER BAG CARTRIDGE	407009 414173			409401	413091	407402	
RB-6 FILTER BAG CARTRIDGE	405895			409401	413091	407402	
CB-1 FILTER BAG CARTRIDGE	408433 414173			409402	413091	407402	
CB-4 FILTER BAG CARTRIDGE	407009 414173			409401	413091	407402	
CB-6 FILTER BAG CARTRIDGE	405895			409401	413091	407402	

# Thoreson-McCosh Inc

**MSDS**

**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



Mallinckrodt  
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 703-527-3887

**NOTE:** CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

## MERCURY

MSDS NUMBER: M1599 --- **EFFECTIVE DATE: 07/09/2001**

### 1. PRODUCT IDENTIFICATION

**Synonyms:** Quicksilver; hydrargyrum; Liquid Silver

**CAS No.:** 7439-97-6

**Molecular Weight:** 200.59

**Chemical Formula:** Hg

**Product Codes:**

J.T. Baker: 2564, 2567, 2569, 2572

Mallinckrodt: 1278, 1280, 1288

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent
Hazardous		
-----	-----	-----
-----		
Mercury	7439-97-6	90 - 100%
Yes		

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

-----  
**DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM.**

# Thoreson-McCosh Inc

## MAY CAUSE ALLERGIC SKIN REACTION.

**J.T. Baker SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

-----  
-----  
Health Rating: 4 - Extreme (Poison)  
Flammability Rating: 0 - None  
Reactivity Rating: 1 - Slight  
Contact Rating: 3 - Severe (Life)  
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD;  
PROPER GLOVES  
Storage Color Code: Blue (Health)  
-----  
-----

### Potential Health Effects

-----

#### **Inhalation:**

Mercury vapor is highly toxic via this route. Causes severe respiratory tract damage. Symptoms include sore throat, coughing, pain, tightness in chest, breathing difficulties, shortness of breath, headache, muscle weakness, anorexia, gastrointestinal disturbance, ringing in the ear, liver changes, fever, bronchitis and pneumonitis. Can be absorbed through inhalation with symptoms similar to ingestion.

#### **Ingestion:**

May cause burning of the mouth and pharynx, abdominal pain, vomiting, corrosive ulceration, bloody diarrhea. May be followed by a rapid and weak pulse, shallow breathing, paleness, exhaustion, tremors and collapse. Delayed death may occur from renal failure. Gastrointestinal uptake of mercury is less than 5% but its ability to penetrate tissues presents some hazard. Initial symptoms may be thirst, possible abdominal discomfort.

#### **Skin Contact:**

Causes irritation and burns to skin. Symptoms include redness and pain. May cause skin allergy and sensitization. Can be absorbed through the skin with symptoms to parallel ingestion.

#### **Eye Contact:**

Causes irritation and burns to eyes. Symptoms include redness, pain, blurred vision; may cause serious and permanent eye damage.

**Chronic Exposure:**

Chronic exposure through any route can produce central nervous system damage. May cause muscle tremors, personality and behavior changes, memory loss, metallic taste, loosening of the teeth, digestive disorders, skin rashes, brain damage and kidney damage. Can cause skin allergies and accumulate in the body. Repeated skin contact can cause the skin to turn gray in color. A suspected reproductive hazard; may damage the developing fetus and decrease fertility in males and females.

**Aggravation of Pre-existing Conditions:**

Persons with nervous disorders, or impaired kidney or respiratory function, or a history of allergies or a known sensitization to mercury may be more susceptible to the effects of the substance.

---

#### **4. FIRST AID MEASURES**

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

---

#### **5. FIRE FIGHTING MEASURES**

**Fire:**

Not considered to be a fire hazard.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire. Do not allow water runoff to enter sewers or waterways.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Undergoes hazardous reactions in the presence of heat and sparks or ignition. Smoke may contain toxic mercury or mercuric oxide. Smoke may contain toxic mercury or mercuric oxide.

---

## **6. ACCIDENTAL RELEASE MEASURES**

Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from vapor. Spills: Pick up and place in a suitable container for reclamation or disposal in a method that does not generate misting. Sprinkle area with sulfur or calcium polysulfide to suppress mercury. Do not flush to sewer. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

J. T. Baker CINNASORB(R) and RESISORB(R) are recommended for spills of this product.

---

## **7. HANDLING AND STORAGE**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Do not use or store on porous work surfaces (wood, unsealed concrete, etc.). Follow strict hygiene practices. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

---

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Airborne Exposure Limits:**

- OSHA Acceptable Ceiling Concentration:  
mercury and mercury compounds: 0.1 mg/m<sup>3</sup> (TWA), skin
- ACGIH Threshold Limit Value (TLV):  
inorganic and metallic mercury, as Hg: 0.025 mg/m<sup>3</sup> (TWA) skin,  
A4 Not classifiable as a human carcinogen.

- ACGIH Biological Exposure Indices:  
total inorganic mercury in urine (preshift): 35 ug/g creatinine;  
total inorganic mercury in blood (end of shift): 15 ug/l.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a half-face respirator with a mercury vapor or chlorine gas cartridge may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with a mercury vapor or chlorine gas cartridge may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**

Silver-white, heavy, mobile, liquid metal.

**Odor:**

Odorless.

**Solubility:**

Insoluble in water.

**Density:**

13.55

**pH:**

No information found.



**% Volatiles by volume @ 21C (70F):**

100

**Boiling Point:**

356.7C (675F)

**Melting Point:**

-38.87C (-38F)

**Vapor Density (Air=1):**

7.0

**Vapor Pressure (mm Hg):**

0.0018 @ 25C (77F)

**Evaporation Rate (BuAc=1):**

4

---

## 10. STABILITY AND REACTIVITY

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

At high temperatures, vaporizes to form extremely toxic fumes.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Acetylenes, ammonia, ethylene oxide, chlorine dioxide, azides, metal oxides, methyl silane, lithium, rubidium, oxygen, strong oxidants, metal carbonyls.

**Conditions to Avoid:**

Heat, flames, ignition sources, metal surfaces and incompatibles.

---

## 11. TOXICOLOGICAL INFORMATION

**Toxicological Data:**

Investigated as a tumorigen, mutagen, reproductive effector.

**Reproductive Toxicity:**

All forms of mercury can cross the placenta to the fetus, but most of what is known has been learned from experimental animals. See Chronic Health Hazards.

**Carcinogenicity:**

EPA / IRIS classification: Group D1 - Not classifiable as a human carcinogen.

-----\Cancer Lists\-----

---NTP Carcinogen---

# Thoreson-McCosh Inc

Ingredient Category	Known	Anticipated	IARC
----- ----- Mercury (7439-97-6)	----- ----- No	----- ----- No	----- ----- 3

## 12. ECOLOGICAL INFORMATION

### Environmental Fate:

This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. This material is expected to significantly bioaccumulate.

### Environmental Toxicity:

This material is expected to be toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l.

## 13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. TRANSPORT INFORMATION

### Domestic (Land, D.O.T.)

-----  
**Proper Shipping Name:** RQ, MERCURY

**Hazard Class:** 8

**UN/NA:** UN2809

Packing Group: III

**Information reported for product/size:** 2.5KG

### International (Water, I.M.O.)

-----  
**Proper Shipping Name:** MERCURY

**Hazard Class:** 8

**UN/NA:** UN2809

Packing Group: III

**Information reported for product/size:** 2.5KG

**Thoreson-McCosh Inc**

**International (Air, I.C.A.O.)**

-----  
**Proper Shipping Name:** MERCURY  
**Hazard Class:** 8  
**UN/NA:** UN2809  
**Packing Group:** III  
**Information reported for product/size:** 2.5KG

**15. REGULATORY INFORMATION**

-----\Chemical Inventory Status - Part 1\-----  
 -----  
 Ingredient TSCA EC Japan  
 Australia  
 -----  
 -----  
 Mercury (7439-97-6) Yes Yes No  
 Yes

-----\Chemical Inventory Status - Part 2\-----  
 -----  
 Ingredient Korea --Canada-- DSL NDSL  
 Phil.  
 -----  
 -----  
 Mercury (7439-97-6) Yes Yes No  
 Yes

-----\Federal, State & International Regulations - Part 1\-----  
 -----  
 313----- -SARA 302- -----SARA  
 Ingredient RQ TPQ List  
 Chemical Catg.  
 -----  
 -----  
 Mercury (7439-97-6) No No Yes  
 No

-----\Federal, State & International Regulations - Part 2\-----  
 -----  
 TSCA- -RCRA- -  
 Ingredient CERCLA 261.33 8(d)  
 -----  
 -----  
 Mercury (7439-97-6) 1 U151 No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

# Thoreson-McCosh Inc

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No  
Reactivity: No (Pure / Liquid)

## WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

**Australian Hazchem Code: 2Z**

**Poison Schedule: S7**

## WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

## 16. OTHER INFORMATION

**NFPA Ratings:** Health: **3** Flammability: **0** Reactivity: **0**

### Label Hazard Warning:

DANGER! CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. MAY BE FATAL IF SWALLOWED OR INHALED. HARMFUL IF ABSORBED THROUGH SKIN. AFFECTS THE KIDNEYS AND CENTRAL NERVOUS SYSTEM. MAY CAUSE ALLERGIC SKIN REACTION.

### Label Precautions:

Do not get in eyes, on skin, or on clothing.  
Do not breathe vapor.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.

### Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.

### Product Use:

Laboratory Reagent.

### Revision Information:

No changes.

### Disclaimer:

\*\*\*\*\*

**Thoreson-McCosh Inc**

\*\*\*\*\*

**Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**

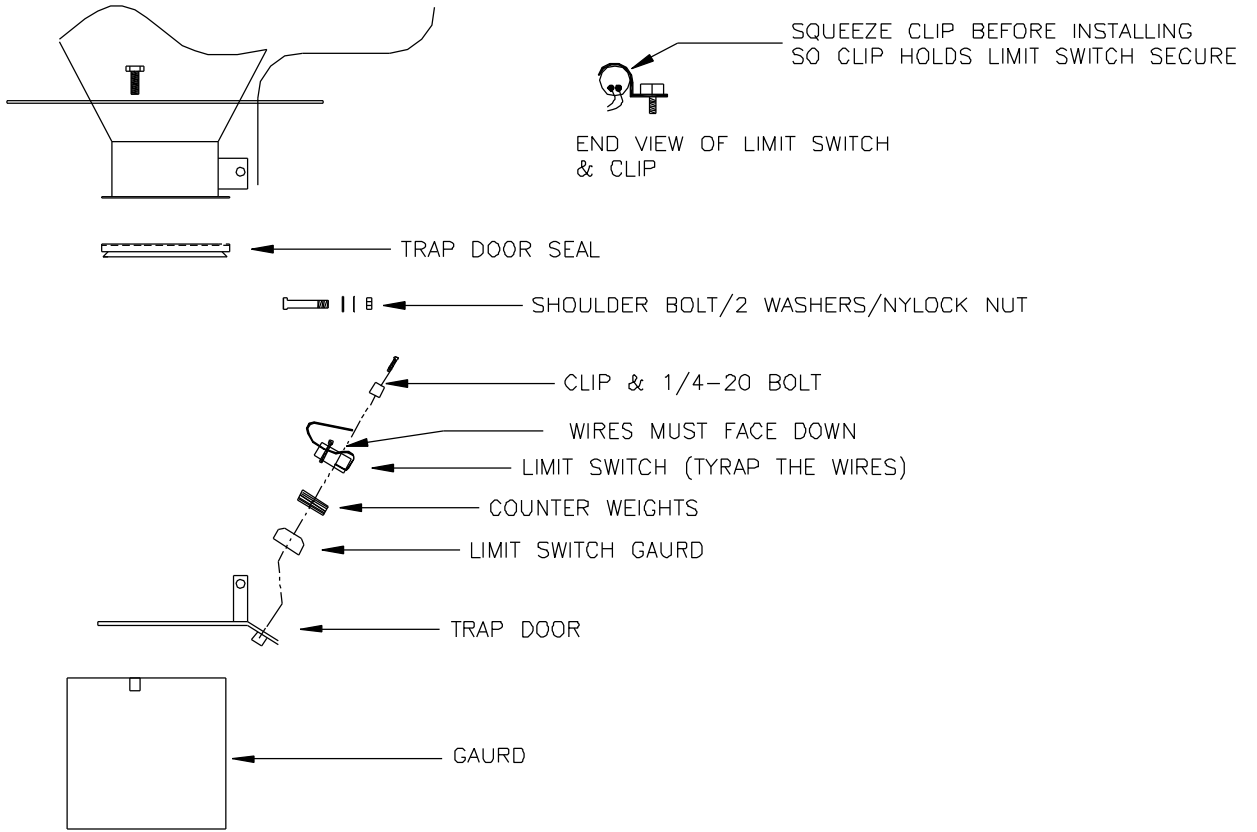
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**Prepared by:** Strategic Services Division  
Phone Number: (314) 539-1600 (U.S.A.)

# Thoreson-McCosh Inc

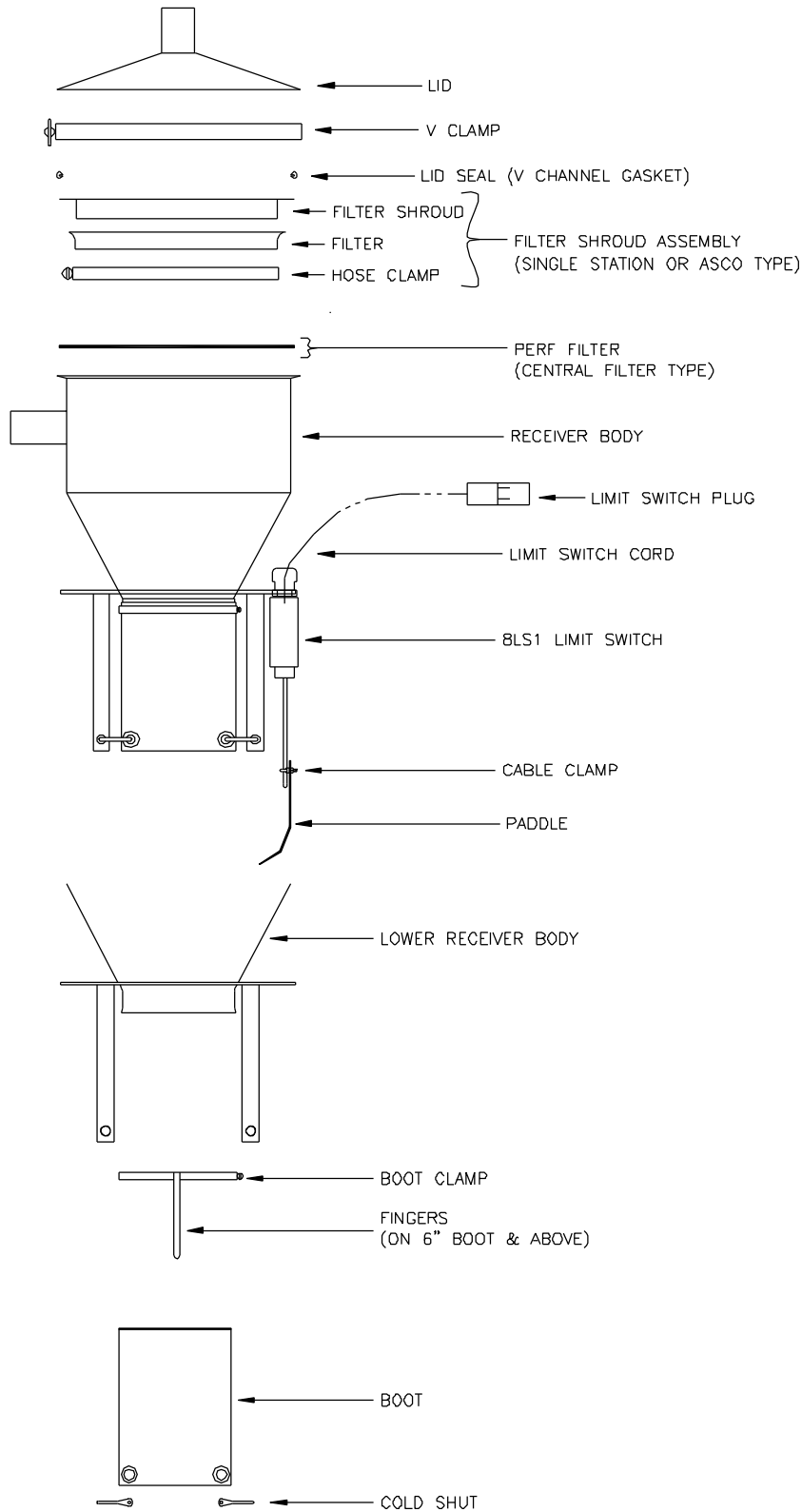
## TRAP DOOR STYLE



## TRAP DOOR INSTRUCTIONS

# Thoreson-McCosh Inc

## BOOT STYLE



# Thoreson-McCosh Inc

SYM	AMT	PART NO.	DESCRIPTION
21	1	413155-A	ST STL DUMP CONE
20	1	404956	10-32 NUT
19	1	413772	10-32 NYLOCK NUT
18	1	404588	2" HOSE CLAMP
17	1	412108	SILICON RUBBER SEAL W/FLAP CUT OFF
17	1	411690	NEOPRENE RUBBER SEAL W/FLAP CUT OFF
16	1	414196	ELBOW 1/4" HOSE TO 10-32 THREAD
15	2	413590-A	GASKET FOR CONICAL DUMP ASM. PLATE
14	1	413589-A	CONICAL DUMP ASM. PLATE
13	1	SEE DETAIL	CONICAL DUMP ASM.
12	1	413924	AIR CYLINDER (HUMPREY 8-DP-2)
11	1	413079	JAM NUT 7/16-20
10	1	404193	1/2" STRAIN RELIEF
9	1	411589	CONNECTOR FOR 110V SOLENOID VALVE
8	1	411410	110V SOLENOID VALVE
8	1	411511	24V SOLENOID VALVE
7	1	404239	SPEED CONTROL MUFFLER
6	1	MP200205A	SOLENOID MOUNTING BRKT & GUARD
5	1	410909	MINI CONNECTOR-1/8" NPT MALE THRD
4	1	410908	MINI COUPLER-1/8" NPT FEMALE THRD
3	5	408002	ELBOW 1/4" HOSE TO 1/8" NPT
2	4	413833	TEFLON TUBING 1/4" OD (CUT TO SUIT)
1	2	414195	UNION 1/4" HOSE TO 1/4" HOSE

**CONICAL DUMP VALVE ASM.**  
FOR  
ML-1 & 2 LOADERS &  
MV-1 & 2 RECEIVERS

THORESON McCOSH  
1885 THUNDERBIRD TROY, MICH.

AS98022

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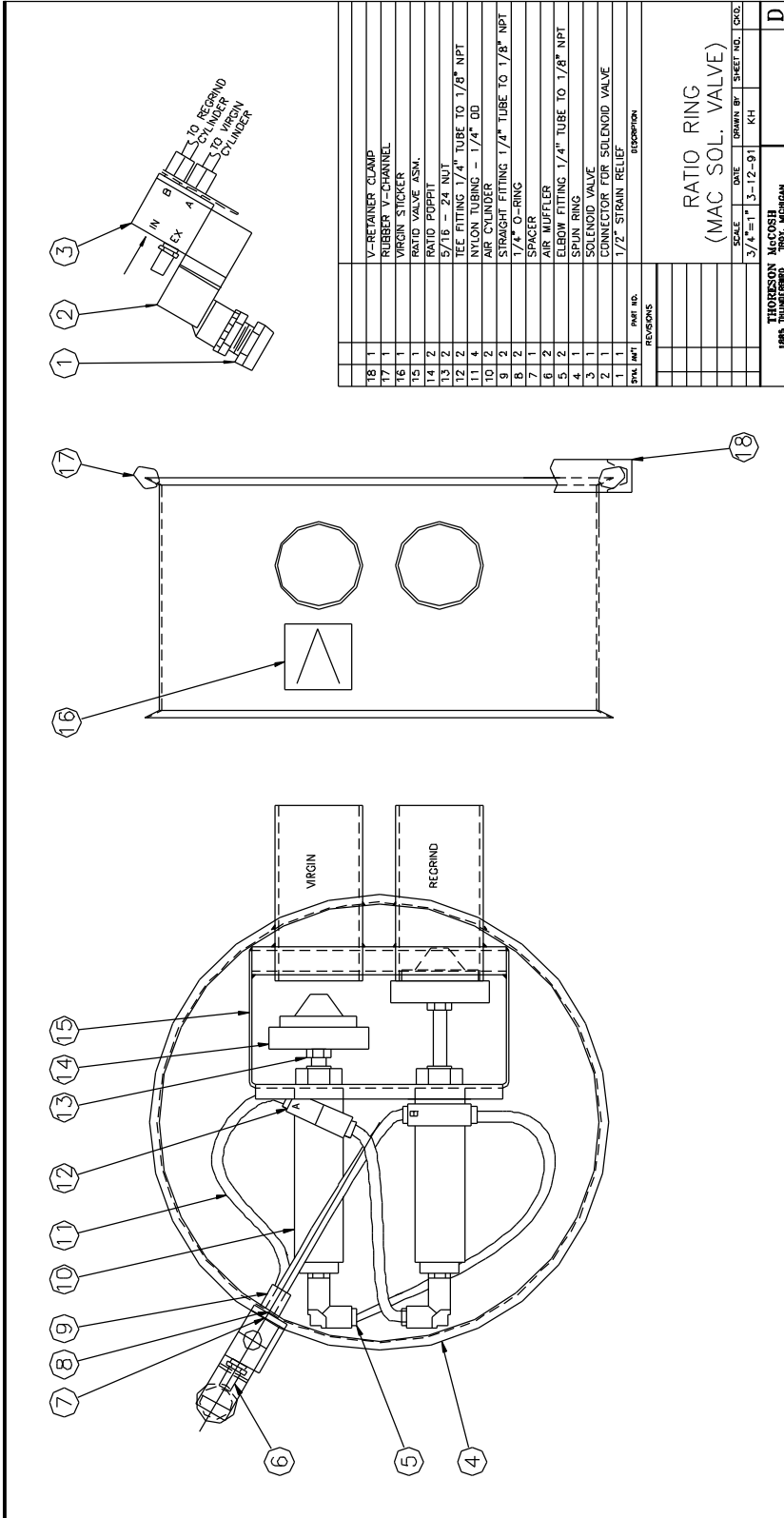
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DATE: 1/04  
DRAWN BY: KH  
SHEET NO.:  
CKD:

REVISIONS

REV	DESCRIPTION	DATE
1	ISSUED FOR PRODUCTION	
2	ISSUED FOR PRODUCTION	



# Thoreson-McCosh Inc



QTY	PART NO.	DESCRIPTION
18	1	V-RETAINER CLAMP
17	1	RUBBER V-CHANNEL
16	1	VIRGIN STICKER
15	1	RATIO VALVE ASM.
14	2	RATIO POPPET
13	2	5/16 - 24 NUT
12	2	TEE FITTING 1/4" TUBE TO 1/8" NPT
11	4	NYLON TUBING - 1/4" OD
10	2	AIR CYLINDER
9	2	STRAIGHT FITTING 1/4" TUBE TO 1/8" NPT
8	2	1/4" O-RING
7	1	SPACER
6	2	AIR MUFFLER
5	2	ELBOW FITTING 1/4" TUBE TO 1/8" NPT
4	1	SPUN RING
3	1	SOLENOID VALVE
2	1	CONNECTOR FOR SOLENOID VALVE
1	1	1/2" STRAIN RELIEF
TOTAL		

## RATIO RING (MAC SOL. VALVE)

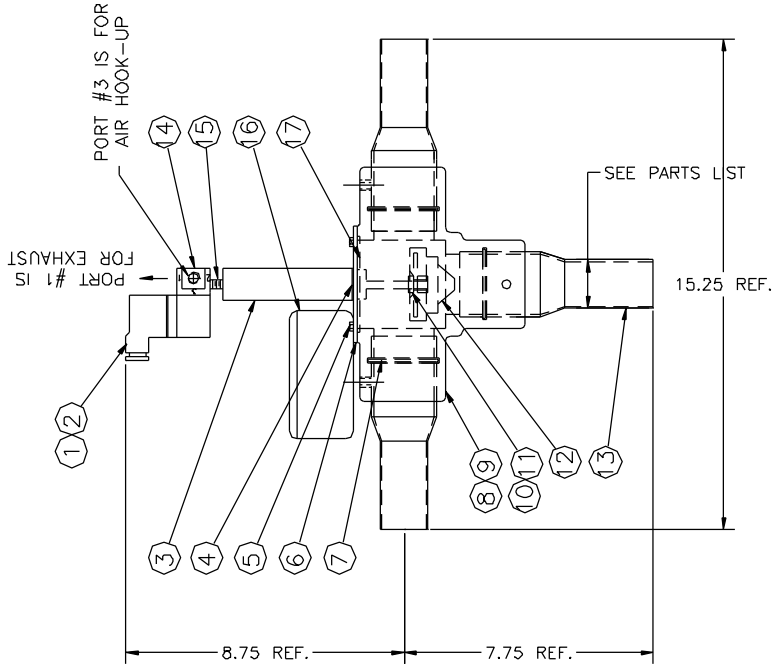
SCALE	DATE	DRAWN BY	SHEET NO.	QTY.
3/4"=1"	3-12-91	KH		

THORESON-MCCOSH  
1885 THUNDERBOLT  
ROYAL, MICHIGAN

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# Thoreson-McCosh Inc



17	1	405985	3" O.D. O-RING
16	1	SKBBD19-B	INSTALLATION PACKAGE FOR RATIO REC.
16	1	SKBBD18-B	INSTALLATION PACKAGE FOR STAN REC.
15	1	407512	1/8" NPT CLOSE NIPPLE
14	1	411409	SOLENOID VALVE (24 VOLT)
14	1	411408	SOLENOID VALVE (110 VOLT)
13	3	409626-A	1.50" O.D. TO 2.00" O.D. ADAPTOR TUBE
13	3	404869	2.00" O.D. TUBE X 6" LONG
13	3	411522-A	2.1875" O.D. TO 2.00" O.D. ADAPTOR TUBE
13	3	412650-A	2.50" O.D. TO 2.00" O.D. ADAPTOR TUBE
12	1	301955-A	2" POPPET
11	1	407954	LOCK TIGHT 271-31
10	1	407809	5/16"-24 LOCK NUT
9	1	407809	VALVE CASTING
8	9	410221	5/16 x 3/8 LG. SET SCREW-CUP POINT
7	3	406658	2" O-RING
6	1	405563-A	VALVE PLATE
5	4	404926	1/4"-20 x 1/2" LG. BOLT
4	1	405599	GASKET
3	1	405879	AIR CYLINDER
2	1	410890	1/2" STRAIN RELIEF
1	1	411589	FABCO 1/2" CONDUIT CONNECTOR
SYN. PART    PART NO.    DESCRIPTION			
REVISIONS			
T-VALVE ASM. 1.50", 2.00", 2.18" OR 2.50" O.D.			
SCALE	DATE	DRAWN BY	SHEET NO. O.C.D.
HALF	1/15/94	KH	
THORESON-McCOSH 1485 THUNDERBOLT TROY, MICHIGAN			C

