

# **THE ATWOOD SCALE - O - MATIC DOUGH DIVIDER OPERATIONS AND SAFETY MANUAL**

**INCLUDING PARTS CATALOG AND MAINTENANCE INSTRUCTIONS**

MODEL No.     **S302**    

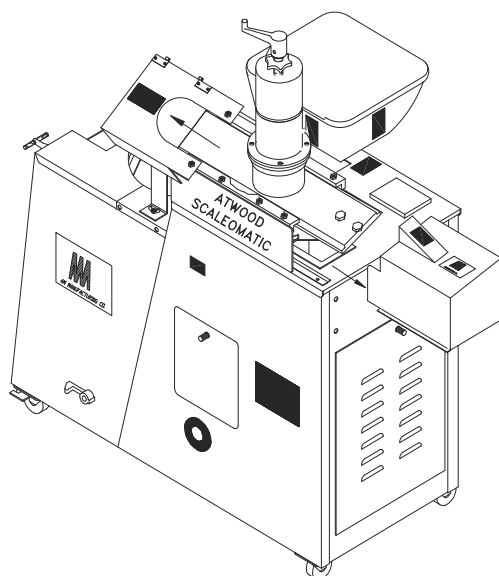
SERIAL No.                     

SHIP DATE:                     



## **CAUTION:**

DO NOT OPERATE, CLEAN OR SERVICE THIS MACHINE BEFORE YOU READ THIS MANUAL, AND ARE FAMILIAR WITH THE SAFETY INSTRUCTIONS IN THIS MANUAL AND THOSE ON THE LABELS ON THE MACHINE. KEEP THIS MANUAL AND OTHER MATERIALS DELIVERED WITH THE MACHINE, ACCESSIBLE TO THE OPERATORS FOR EASY REFERENCE DURING USE.



IF YOU SHOULD HAVE ANY (?)  
QUESTIONS ABOUT GUARDS OR  
PLACEMENT CALL (708) 841-0959  
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**MANUFACTURING COMPANY**

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# **OWNERS RESPONSIBILITY**

**NOTE:**

**THE PARTS AND EQUIPMENT DESCRIBED IN THIS MANUAL MAY BE COVERED BY ONE OR MORE U.S. AND FOREIGN PENDING PATENTS.**



TO MAINTAIN MACHINE AND USER SAFETY, THE RESPONSIBILITY OF THE OWNER IS TO READ AND FOLLOW THESE INSTRUCTIONS AND TO ENSURE THAT ALL OPERATORS UNDERSTAND AND FOLLOW THESE AND OTHER SAFETY INSTRUCTIONS IN THIS MANUAL.

- FOLLOW ALL INSTALLATION INSTRUCTIONS.
- MAKE SURE INSTALLATION CONFORMS TO ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES, RULES AND REGULATIONS SUCH AS STATE AND FEDERAL OSHA REGULATIONS AND ELECTRICAL CODES.
- CAREFULLY CHECK THE UNIT FOR CORRECT INITIAL FUNCTION.
- READ AND FOLLOW THE SAFETY INSTRUCTIONS. KEEP THEM READILY AVAILABLE FOR MACHINE OPERATORS.
- MAKE CERTAIN ALL OPERATORS ARE PROPERLY TRAINED, KNOW HOW TO SAFELY AND CORRECTLY OPERATE THE UNIT AND ARE PROPERLY SUPERVISED.
- ALLOW UNIT OPERATION ONLY WITH ALL PARTS INCLUDING SAFETY EQUIPMENT, IN PLACE AND OPERATING SAFELY.
- CAREFULLY INSPECT THE UNIT ON A REGULAR BASIS AND PERFORM ALL MAINTENANCE AS REQUIRED.
- SERVICE AND MAINTAIN THE UNIT ONLY WITH AUTHORIZED OR APPROVED REPLACEMENT PARTS.
- KEEP ALL INSTRUCTIONS PERMANENTLY WITH THE UNIT ALONG WITH ALL DECALS AND WARNING LABELS ON THE UNIT CLEAN AND VISIBLE.

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## IMPORTANT:

A.M. MANUFACTURING Co. RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN, SPECIFICATIONS OR MANUFACTURING TO IMPROVE THEIR PRODUCTS WITHOUT NOTICE AND WITHOUT OBLIGATION TO CHANGE OR IMPROVE PREVIOUSLY BUILT PRODUCTS INCLUDING MANUALS AND CATALOGS.

ONLY USE FACTORY SUPPLIED REPLACEMENT PARTS TO MAINTAIN MACHINE SAFETY, PERFORMANCE AND SANITARY CONDITIONS. USE OF NON-APPROVED PARTS MAY VOID MANUFACTURERS WARRANTY.

KNOW YOUR UNIT. COMPARE DIAGRAMS IN THIS MANUAL WITH THE UNIT BEFORE STARTING SERVICE, TO OBTAIN MAXIMUM SAFETY AND PERFORMANCE.

TO ORDER REPLACEMENT PARTS:  
TURN TO PAGE **50** OF THIS MANUAL.



## WARNING:

THIS MANUAL CONTAINS CRITICAL SAFETY INSTRUCTIONS. READ AND FOLLOW THEM CAREFULLY. FAILURE TO FOLLOW WARNING AND INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY. THE OWNER IS RESPONSIBLE FOR MAINTAINING THE UNIT, ITS INSTRUCTIONS AND DECALS FOR OPERATION REFERENCE. FOR ADDITIONAL COPIES CONTACT A.M. MANUFACTURING: (800)342-6744.

# OPERATIONS AND SAFETY MANUAL

## INCLUDING PARTS CATALOG

**READ AND FAMILIARIZE YOURSELF WITH THIS MANUAL BEFORE OPERATING THIS MACHINE  
FOLLOW INSTRUCTIONS DURING USE**

## INTRODUCTION

THE SCALE-O-MATIC MODEL – S302 DOUGH DIVIDER IS DESIGNED TO GIVE YOU OPTIMUM TIME AND LABOR SAVING SERVICE WITH A SPEED OF APPROXIMATELY 2000 PIECES PER HOUR. THE S302 CAN ACCURATELY SCALE FROM 1 oz. TO  $32 \pm \frac{1}{4}$  oz. WITH THE PROPER ATTACHMENTS. NEW AND CURRENT EMPLOYEES CAN BE TAUGHT TO OPERATE THIS MACHINE EFFICIENTLY AND SAFELY IN A SHORT PERIOD OF TIME. WE URGE YOU TO STUDY THIS OPERATION AND SAFETY MANUAL FOR FULL BENEFITS....



### CAUTION:

ALL OPERATORS MUST BE FULLY TRAINED AND INSTRUCTED IN SAFETY PROCEDURES BEFORE BEGINNING PRODUCTION.

## SPECIFICATIONS

HOPPER CAPACITY	100 lbs.
PRODUCTION RATE	EXTENDED HOPPER (140 lbs. CAPACITY) 2000 PIECES PER HOUR
HEIGHT	58"
LENGTH	64"
WIDTH	24"
SHIPPING WEIGHT	1000 lbs.
DIVIDER	3 PHASE, 2 H.P. MOTOR ( <b>STANDARD</b> ) SINGLE PHASE, 1½ H.P. MOTOR DOUBLE SHEAVE BELT DRIVE 1 PHASE, 1/4 H.P. MOTOR
SMALL CONVEYOR	3 PHASE, 1 H.P. MOTOR ( <b>STANDARD</b> ) SINGLE PHASE, ¾ H.P. MOTOR
ROUNDER SCREW	
RECIPROCAL MOTION	
MECHANICAL DIVIDER	
AUTOMATIC SPRING PRESSURE, SELF ADJUSTABLE	
EXTRA DIVIDER CUPS AVAILABLE AS OPTIONAL EQUIPMENT.	
NO. 1 DIVIDING CUP 1 TO 2 oz.	
NO. 2 DIVIDING CUP 2 TO 4 oz.	
NO. 3 DIVIDING CUP 4 TO 10 oz	
NO. 5 DIVIDING CUP 10 TO 32 oz	
VOLTAGES:	3 PHASE, 208 - 230 VOLTS ( <b>STANDARD</b> ) 3 PHASE, 380 – 480 VOLTS SINGLE PHASE, 208/220 VOLT (OPTIONAL) VARIABLE SPEED DIVIDER (OPTIONAL)

## INSTALLATION INSTRUCTIONS

### LOCATION:

SELECT LOCATION CAREFULLY. THE AREA SHOULD PROVIDE THE OPERATOR WITH ENOUGH SPACE TO USE THE EQUIPMENT IN A SAFE MANNER. THE FLOOR AREA SELECTED SHOULD BE EASY TO CLEAN AND SHOULD BE FREE OF OIL, GREASE, ETC. AVOID AREAS WHERE BYSTANDERS AND CUSTOMERS MAY BE PRESENT.



### CAUTION:

PROPER UNIT INSTALLATION IS NECESSARY FOR SAFE AND EFFICIENT OPERATION. PROPER INSTALLATION ALSO HELPS PROTECT THE UNIT FROM DAMAGE AND MAKES SERVICE EASIER.

# **SAFETY**

THIS MACHINE IS DESIGNED TO PROVIDE FOR SAFE OPERATION IF NORMAL OPERATING PROCEDURES AND SAFETY MESSAGES LOCATED ON THE MACHINE AND IN THIS MANUAL ARE FOLLOWED.



THIS IS A SAFETY ALERT SYMBOL. YOU WILL FIND IT ON VARIOUS SAFETY LABELS ON THE MACHINE AND IT WILL ALSO APPEAR IN THIS MANUAL WHEREVER SAFETY MESSAGES ARE GIVEN.

GET FAMILIAR WITH SIGNAL WORDS:

## **CAUTION, WARNING & DANGER**

### **CAUTION:**

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO BE USED TO ALERT AGAINST UNSAFE PRACTICES.

### **WARNING:**

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

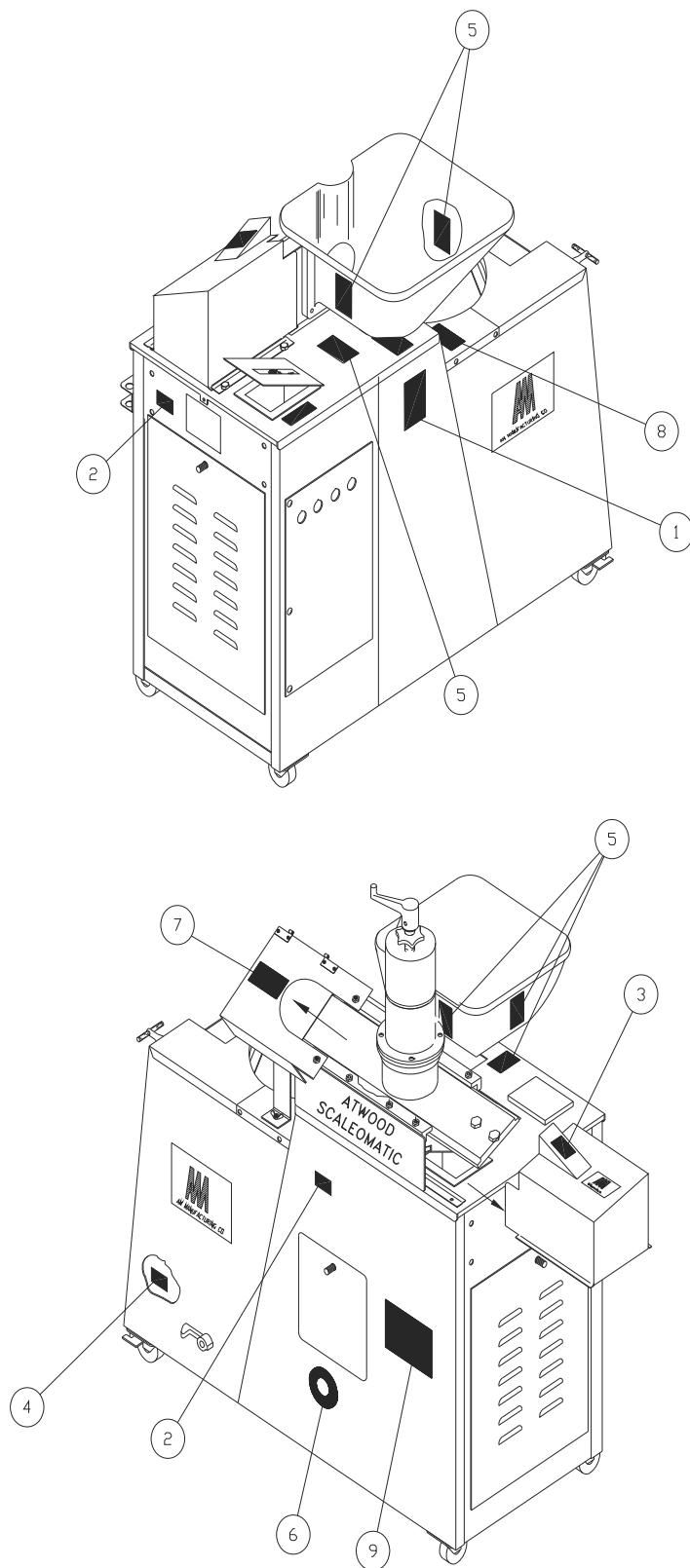
### **DANGER:**

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY. THIS SIGNAL WORD IS TO BE LIMITED TO THE MOST EXTREME SITUATIONS.

### **NOTE:**

A NOTE PROVIDES KEY INFORMATION TO MAKE PROCEDURES EASIER AND CLEARER.

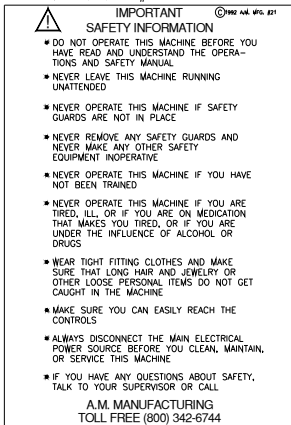
## TYPICAL WARNING LOCATIONS



# WARNING LABELS

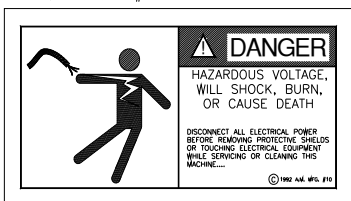
## TYPICALLY FOUND ON THE SCALE-O-MATIC MODEL: S302

PART NO. AM MFG. #21



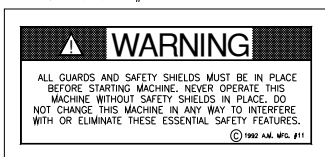
① MAIN FRAME CABINET  
(RIGHT SIDE OF CONTROL PANEL)

PART NO. AM MFG. #10



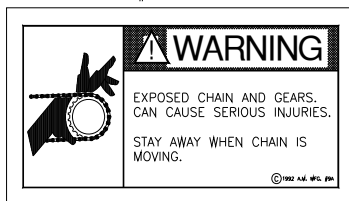
② - REAR PANEL OF DIVIDER CABINET  
- CABINET (PISTON ENTRY SIDE)  
- UNDER OIL RESERVOIR

PART NO. AM MFG. #11



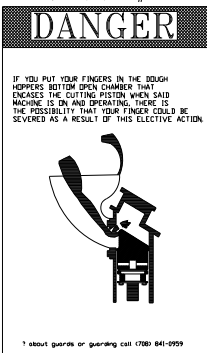
③ - ROCKER ARM COVER  
- IDLER PULLEY GUARD  
- CHAIN GUARD

PART NO. AM MFG. #24



④ - FRONT SIDE HINGED COVER  
- INSIDE FRONT SIDE WALL OF ROUNDER CABINET

PART NO. AM MFG. #27



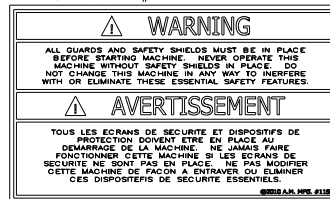
⑤ - ALL (4) SIDES OF DOUGH HOPPER  
- TOP COVER

PART NO. TAG 2025



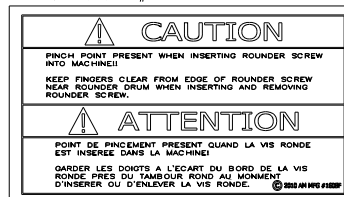
⑥ - LEFT SIDE OF CABINET

PART NO. AM MFG. #11



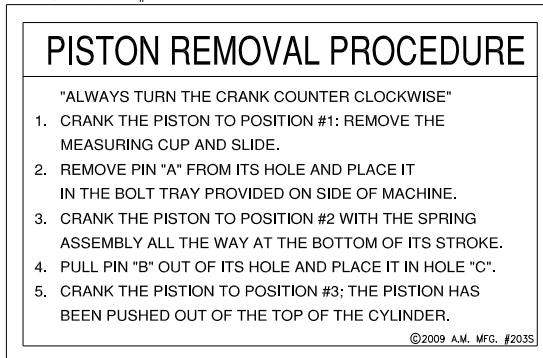
⑦ - TOP OF DIVIDER SLIDE GUARD

PART NO. AM MFG. #160SF



⑧ - TOP OF ROUNDER COVER BACK SIDE

PART NO. AM MFG. #203S



⑨ - LEFT SIDE OF CABINET

### NOTE:

MACHINE DESIGN AND SPECIFICATIONS MAY VARY. ACTUAL LABEL DESIGN AND PLACEMENT SUBJECT TO CHANGE WITHOUT NOTICE AND MAY VARY FROM THIS ILLUSTRATION.



CAUTION:  
IF ANY SAFETY LABELS ARE MISSING, THEY **MUST BE REPLACED!** CONTACT YOUR DEALER OR A.M. MFG. FOR REPLACEMENT.

# SAFETY RULES



## **IMPORTANT:**

READ AND FOLLOW THESE SAFETY RULES. THEY ARE FOR YOUR PROTECTION AND THE PROTECTION OF THOSE WORKING WITH YOU.

- DO NOT OPERATE THIS MACHINE BEFORE YOU READ AND UNDERSTAND THE OPERATIONS AND SAFETY MANUAL.
- FOLLOW ALL INSTRUCTIONS DURING USE OF THIS MACHINE.
- LEAVE ALL GUARDS IN PLACE. INSTALL ALL GUARDS IF THEY WERE REMOVED FOR CLEANING, MAINTENANCE, REPAIR OR OTHER REASONS.
- NEVER OPERATE THE MACHINE IF YOU HAVE NOT BEEN TRAINED TO OPERATE THE MACHINE PROPERLY.
- NEVER OPERATE THE MACHINE IF YOU ARE TIRED, ILL, ON MEDICATION, OR UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.
- WEAR TIGHT FITTING CLOTHES. MAKE SURE THAT LONG HAIR, JEWELRY, OR LOOSE PERSONAL ITEMS ARE SECURED SO THEY CANNOT GET CAUGHT IN THE MACHINE. THIS CAN LEAD TO SERIOUS INJURIES.
- MAKE SURE YOU CAN EASILY REACH ALL CONTROLS. IF NOT, A STABLE AND SAFE ELEVATED PLATFORM OR OTHER WORK-AID MUST BE PROVIDED.
- ALWAYS DISCONNECT THE MAIN ELECTRICAL POWER SOURCE BEFORE CLEANING, IF MAINTENANCE OR SERVICE IS PERFORMED, OR IF THE MACHINE IS OUT OF SERVICE.
- YOU SHOULD REMOVE THE BELTS FROM MACHINE PRIOR TO CLEANING THEM IF THEY ARE EASILY REMOVABLE. THIS WILL PREVENT BACTERIA FROM BUILDING UP ON THE UNDER SIDE OF THE BELT.
- NEVER LEAVE THIS MACHINE RUNNING UNATTENDED.
- GUARDS ARE INTERLOCKED; MACHINE WILL NOT OPERATE WITHOUT GUARDS IN PLACE.

## **IMPORTANT:**

IF YOU HAVE ANY QUESTIONS ABOUT THESE SAFETY RULES, SEE YOUR SUPERVISOR OR CALL A.M. MANUFACTURING Co. TOLL FREE: (800)342-6744



# OPERATING INSTRUCTIONS



## **WARNING:**

UNIT MUST BE PROPERLY OPERATED AND MAINTAINED TO PREVENT MACHINE DAMAGE OR PERSONAL INJURY. REVIEW INSTRUCTIONS WITH ALL EMPLOYEES BEFORE USE.



## **CAUTION:**

BEFORE BEGINNING START - UP, READ ALL INSTRUCTIONS AND FAMILIARIZE YOURSELF WITH THE LOCATIONS OF ALL CONTROLS. KNOW HOW TO SHUT DOWN THE UNIT IMMEDIATELY IN CASE OF TROUBLE. MAKE CERTAIN ALL PERSONNEL NOT INVOLVED IN THE START - UP ARE SAFELY AWAY FROM THE MACHINE BEFORE ANY SYSTEMS ARE STARTED...

## **I. PRELIMINARY START-UP PROCEDURE**

- A. REMOVE PACKING, PACKING SLIPS, DOCUMENTS AND OTHER OBSTRUCTIONS FROM HOPPER.
- B. MAKE SURE MACHINE IS ON A FLAT SURFACE
- C. MOVE MACHINE INTO POSITION & LOCK CASTERS.
- D. PLUG POWER CORD INTO PROPER RECEPTACLE. / PROPER GROUNDING IS NECESSARY TO PREVENT ANY TYPE OF ELECTROSTATIC PHENOMENA.
- E. PUSH DIVIDER START BUTTON.
- F. CHECK ROTATION OF DIVIDER BY LOOKING THROUGH SMALL INSPECTION DOOR. LARGE GEAR SHOULD BE TURNING (C.W.) CLOCK-WISE.
- G. IF THE GEAR IS TURNING IN THE (C.C.W.) COUNTER- CLOCK WISE DIRECTION, CONSULT A PROPERLY TRAINED ELECTRICIAN.
- H. IF ROTATION IS CORRECT, YOU ARE READY TO CONTINUE ON WITH THESE PROCEDURES.
- I. CHECK POWER SUPPLY TO ROUNDER AND DISCHARGE CONVEYOR BY PRESSING THE START BUTTON LABELED "CONVEYOR / ROUNDER" ON THE CONTROL PANEL. THE ROUNDING DRUM SHOULD BE TURNING IN A (C.C.W.) ROTATION, AND THE DISCHARGE CONVEYOR SHOULD BE RUNNING FORWARD, OUT FROM MACHINE.

## **II. OPERATION OF DIVIDER**

- A. FILL THE OIL RESERVOIR WITH LIGHTWEIGHT MINERAL OIL. BE SURE TO CLEAN ANY OIL SPILL AROUND MACHINE. THESE SURFACES BECOME SLIPPERY.
- B. WITH THE SQUIRT BOTTLE SUPPLIED, APPLY A SMALL AMOUNT OF MINERAL OIL TO THE INSIDE SIDES OF THE DOUGH HOPPER. (HOPPER SHOULD BE OILED EVERY TIME YOU PLACE NEW DOUGH IN IT.)
- C. OPEN THE VALVE LOCATED ON THE TOP GIB BAR APPROXIMATELY 1/8 OF A TURN.
- D. REMOVE BACK CABINET DOOR.
- E. OPEN THE CYLINDER VALVE APPROXIMATELY 1/8 OF A TURN. THIS VALVE IS LOCATED ON THE OIL PUMP BEHIND THE REAR DOOR.
- F. REINSTALL THE BACK CABINET DOOR.
- G. FILL THE HOPPER WITH DOUGH. BY LOADING DOUGH @ 20 lbs. PIECES. DO NOT LIFT MORE THAN 20 lbs. PIECES. THIS COULD CAUSE SERIOUS LOWER BACK INJURY.
- H. CLOSE HOPPER COVER AND PULL SPRING PIN AND SET HOPPER PADDLE ON TOP OF DOUGH
- I. PRESS THE "CONVEYOR / ROUNDER" START BUTTON
- J. PRESS DIVIDER BUTTON.



## **CAUTION:**

PISTON WILL MOVE AFTER POWER IS TURNED OFF OR DISCONNECTED.

## **III. DIVIDING THE DOUGH**

- A. DOUGH IS PORTIONED IN THE CUP LOCATED ON THE DIVIDER SLIDE.
- B. TO ADJUST THE WEIGHT, STOP MACHINE.
- C. BY TURNING THE HANDLE IN A COUNTER CLOCKWISE MOTION, THE DOUGH WEIGHT WILL INCREASE. TURNING THE HANDLE IN A CLOCKWISE MOTION DECREASES THE DOUGH WEIGHT.
- D. FIND YOUR DESIRED DOUGH WEIGHT BY WEIGHING THE DOUGH PIECE.
- E. ONCE YOU HAVE ACHIEVED THIS, ADJUST THE LOCKING STAR KNOB (529MS-2D) TO THE TOP OF THE MEASURING CUP TO KEEP SCALING ACCURATE.

# DIVIDER CLEANING PROCEDURES

**THESE PROCEDURES ARE VERY IMPORTANT TO MAINTAIN  
PRODUCT QUALITY AND MACHINE PERFORMANCE.**

ALL A.M. MANUFACTURING MACHINES ARE TESTED WITH DOUGH DURING THE IN-HOUSE RUN-IN AND QUALITY AUDIT PROCEDURE. ALTHOUGH THE MACHINE HAS BEEN CLEANED, SOME EVIDENCE OF DOUGH ON AND IN THE MACHINE MAY BE DETECTED. THIS IS NORMAL. ALL PARTS IN CONTACT WITH DOUGH SHOULD BE WASHED THOROUGHLY AFTER USE, USING A MILD SOAP AND WATER SOLUTION. DISASSEMBLY OF THIS MACHINE FOR CLEANING IS OUTLINED BELOW AND ILLUSTRATED FOR YOUR CONVENIENCE. INSTRUCTIONS IN MANUAL INDICATE THE NEED FOR REGULAR INSPECTIONS & CLEANING TO PREVENT INFESTATION.

## I. DIVIDER

- A. **DANGER: SHUT OFF ALL ELECTRICAL POWER**
- B. REMOVE COVER OVER DRIVE END OF SLIDE
- C. LOOSEN FOUR (4) SOCKET SCREWS AT TOP OF CUP; TWIST AND REMOVE CUP.
- D. REMOVE INSERT. (IF APPLICABLE)
- E. REMOVE TWO (2) END BOLTS AT DRIVE END OF SLIDE.
- F. LOOSEN EIGHT (8) HEX HEAD NUTS AT TOP OF GIB BARS AND GIB DIVIDER SLIDE GUARD, GIB BARS AND SLIDE.
- G. REMOVE PISTON BY – INSERTING CRANK IN PINION GEAR ON SIDE OF CABINET THEN:
  - 1. LOOSEN TWO (2) SCREWS ON THE SIDE OF SPRING ASSEMBLY AND SLIDE TO RIGHT.
  - 2. REMOVE UPPER PIN AND CRANK ASSEMBLY THROUGH ONE (1) ROTATION, THUS SEPARATING THE SHAFT.
  - 3. PUT LOWER PIN IN UPPER HOLE AND ROTATE UNIT UNTIL PISTON COMES OUT OF THE CYLINDER.
  - 4. REMOVE PISTON AND CLEAN.
  - 5. REMOVE SEAL SCRAPER RING AND “O” RING ON FACING OF CYLINDER AND CLEAN.
  - 6. CLEAN ALL DOUGH RESIDUE OFF OF FACING AND INNER CYLINDER. MAKE SURE YOU CLEAN OUT THE OIL HOLE. (CHECK VALVE)
- I. REPLACE PISTON BY:
  - 1. MAKING SURE PISTON IS IN EXTENDED POSITION w/ PIN IN UPPER HOLE.
  - 2. PUT PISTON IN CYLINDER – GUIDING SHAFT INTO THE SPRING ASSEMBLY.
  - 3. TAKE OTHER PIN AND PUT IT THROUGH SPRING ASSEMBLY AND LOWER SHAFT HOLE.
  - 4. ROTATE CRANK UNTIL UPPER PIN IS VISIBLE AND REMOVE.
  - 5. TURN CRANK UNTIL SHAFT COLLAPSES AND TWO (2) UPPER HOLES MEET, INSERT PIN AND PUSH SLIDE OVER AND TIGHTEN ALLEN SCREWS.
  - 6. BE SURE PISTON IS COLLAPSED BY MAKING ONE FULL ROTATION NOTING THAT PISTON DOES NOT COME ABOVE UPPER CYLINDER.
- J. PLACE SLIDE BACK ON TOP OF CYLINDER AND ATTACH CAM ARM SLIDE USING THE TWO (2) BOLTS SUPPLIED TIGHTLY.
- K. PLACE GIB BARS ON CYLINDER AND THEN PLACE DIVIDER SLIDE GUARD ON TOP OF GIB BARS AND TIGHTEN THE (8) HEX NUTS PROVIDED.
- L. REPLACE INSERT AND MEASURING CUP, RE-TIGHTEN FOUR (4) SOCKET HEAD SCREWS.
- M. REMOVE HAND CRANK AFTER ASSEMBLY.



### PRACTICE SAFETY FIRST:

ALWAYS DISCONNECT ELECTRICAL SERVICE WHEN CLEANING OR MAINTAINING THIS MACHINE, THUS AVOIDING CHANCE OF SERIOUS INJURIES. MACHINES ARE NOT DANGEROUS IF COMMON SENSE IS APPLIED AND THE INSTRUCTIONS ARE CAREFULLY FOLLOWED. THINK AND PRACTICE SAFETY FIRST.

# ROUNDER CLEANING PROCEDURES

THESE PROCEDURES ARE VERY IMPORTANT TO MAINTAIN  
PRODUCT QUALITY AND MACHINE PERFORMANCE.

## II. ROUNDER

- A. **DANGER: SHUT OFF ALL ELECTRICAL POWER.**
- B. REMOVE DIVIDER SLIDE GUARD BY LOOSENING (2) HEX HEAD NUTS (ASSUMING THE GUARD IS NOT ALREADY REMOVED)
- C. OPEN AND TILT FRONT OF ROUNDER
- D. LIFT HANDLE ON SMALL INSPECTION DOOR SIDE.
- E. TILT ROUNDER ASSEMBLY FORWARD.
- F. REMOVE FUNNEL (PART NO. R116RA).
- G. REMOVE ROUNDER SCREW (PART NO. R122RA)
  1. **DO NOT** DROP OR SET DOWN ON SCREW STEM (THIS CAN MUSHROOM THE STEM SO THAT THE SCREW WILL NOT RE-ENTER BASE). IT IS RECOMMENDED THAT THE SCREW BE LAID ON ITS SIDE. **BEWARE NOT** TO BUMP THE OUTER EDGE (WHICH IS NICKEL COATED) AS THIS CAN CAUSE FLAKING OF THE NICKEL OR STAND IT UPRIGHT ON THE OPPOSITE SIDE OF THE STEM.
  2. THE SCREW SHOULD BE CLEANED WITH WARM WATER AND A NON-ABRASIVE PAD. REMOVE ALL DRIED DOUGH FROM THE EDGE AND ROUNDING SURFACE WITH A PLASTIC SCRAPER IF NEEDED. DRY COMPLETELY.
  3. **DO NOT** PLACE IN AN AUTOMATIC DISHWASHER
- A. REMOVE DRUM (PART NO. R117RA)
  1. TAKE THE DRUM OUT OF THE MACHINE: **DO NOT** LAY DRUM ON ITS SIDE (THIS CAN CAUSE WARPING OF THE DRUM, WHICH WILL NOT ALLOW THE DRUM AND SCREW TO FIT TOGETHER). IT IS RECOMMENDED THAT THE DRUM BE STOOD ON END.
  2. THE DRUM SHOULD BE CLEANED WITH WARM WATER (WATER TEMP. SHOULD NOT EXCEED 190°F) AND A NON-ABRASIVE PAD (PLASTIC BRISTLE BRUSH RECOMMENDED). REMOVE ALL DRIED DOUGH FROM THE GROOVED AND INNER SURFACE OF THE DRUM. DRY COMPLETELY.
  3. **DO NOT** PLACE IN AN AUTOMATIC DISHWASHER (THIS, TOO, CAN CAUSE WARPING OF THE DRUM WHICH WOULD NOT ALLOW THE DRUM AND SCREW TO FIT TOGETHER).
- A. REMOVE PLASTIC SEAL RING (PART NO. 141RA).
- B. REMOVE EXCESS DOUGH FROM ROUNDER BASE.
- C. REASSEMBLY IS REVERSE OF DISASSEMBLY.
- D. MAKE SURE TO REPLACE PLASTIC SEAL RING.
- E. SLIP THE DRUM OVER THE ROUNDER BASE SO THAT THE DRIVE SLOTS ARE LOCKED OVER THE DRIVE PINS IN THE ROUNDER BASE.
- F. CARE SHOULD BE TAKEN TO SEE THAT THE EXIT RAMP ON THE SCREW IS FACING DISCHARGE END OF MACHINE.
- G. TILT ROUNDER ASSEMBLY BACKWARD AND LOCK IN PLACE.
- H. WIPE EXCESS DOUGH FROM CONVEYOR BELT AND AREA AROUND ROUNDER.

## II. NOTES

ALL PARTS AND AREAS MENTIONED MUST BE CLEANED EVERY DAY.

IF UNABLE TO REMOVE ROUNDER SCREW:

- A. PLUG MACHINE IN, TURN MACHINE ON.
- B. ADD A SMALL AMOUNT OF WARM WATER TO CONTACT AREA BETWEEN SCREW AND DRUM.
- C. AFTER DOUGH SOFTENS, TURN OFF ROUNDER.
- D. UNPLUG MACHINE.
- E. REMOVE ROUNDER SCREW.

**\*\* IF THE SCREW CAN'T BE REMOVED CALL AM MANUFACTURING FOR ASSISTANCE.**



### PRACTICE SAFETY FIRST:

ALWAYS DISCONNECT ELECTRICAL SERVICE WHEN CLEANING OR MAINTAINING THIS MACHINE, THUS AVOIDING CHANCE OF SERIOUS INJURIES. MACHINES ARE NOT DANGEROUS IF COMMON SENSE IS APPLIED AND THE INSTRUCTIONS ARE CAREFULLY FOLLOWED. THINK AND PRACTICE SAFETY FIRST.

## GUIDE TO CLEANING



**DANGER:**  
ALWAYS DISCONNECT ELECTRICAL SERVICE WHEN  
CLEANING, MAINTAINING OR REPAIRING THIS MACHINE...

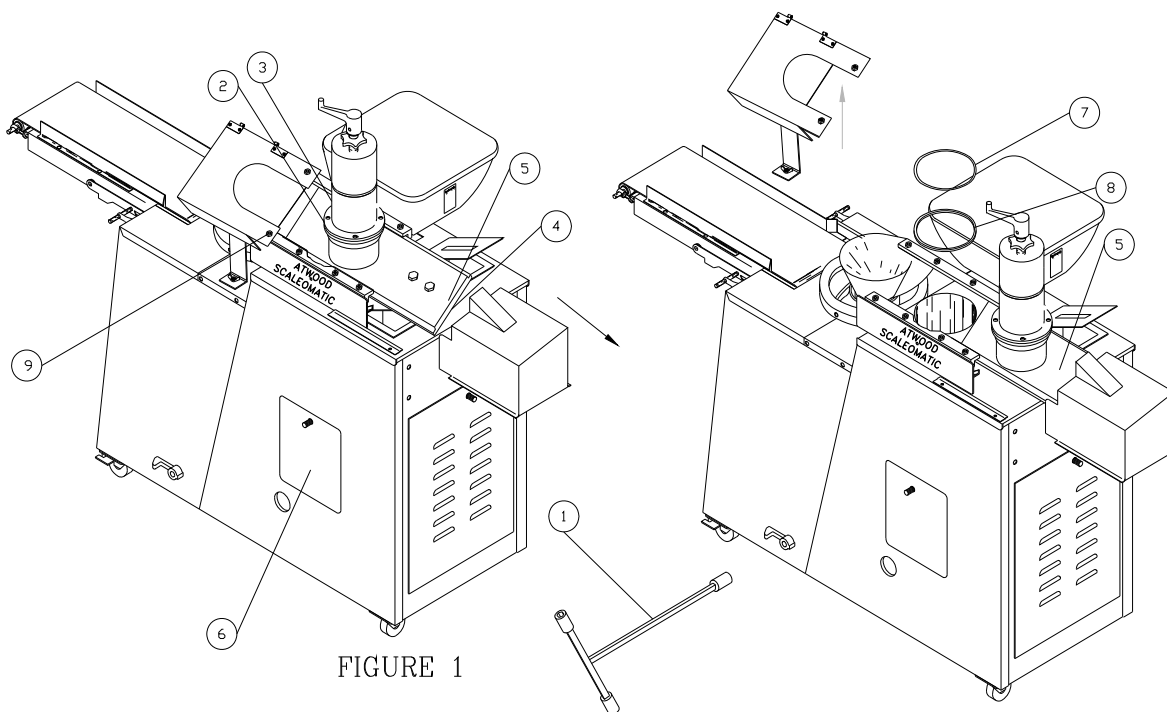


FIGURE 1

FIGURE 2

### STEP 1

USING AN ALLEN WRENCH, LOOSEN SOCKET HEAD SCREWS (2) AND LIFT PULL OUT DIVIDER PLUNGER (MEASURING CUP) (3). WHEN A #1, #2 OR #3 MEASURING CUP IS EMPLOYED ON DIVIDER, THE DIVIDER CYLINDER MUST ALSO BE REMOVED FROM SLIDE FOR CLEANING.

### STEP 2

LOOSEN EIGHT HEX HEAD BOLTS AT TOP OF GIB BARS. USING WRENCH (1) REMOVE TWO HEX HEAD SCREWS (4) AND PUSH DIVIDER SLIDE (5) REARWARD TO EXPOSE CYLINDER OPENING.

### STEP 3

REMOVE CABINET DOOR (6).

### STEP 4

WITH CYLINDER OPENING EXPOSED, REMOVE SEAL SCRAPER RING (7) AND RUBBER "O" RING (8). CLEAN ALL EXPOSED SURFACES INCLUDING "O" RING GROOVE AND DIVIDING SLIDE OF ACCUMULATED DOUGH, OIL, ETC. WIPE EXCESS DOUGH FROM TOP AND INTERIOR OF CYLINDER.

### STEP 5

WIPE EXCESS DOUGH FROM INSIDE OF DOUGH HOPPER.

#### NOTE:

NEVER USE METAL EDGED SCRAPER FOR CLEANING ANY PART. USE OF SUCH TOOLS CAN RESULT IN DAMAGE.

### SCALE - O - MATIC NAME PLATE

THIS PLATE HAS A 2-CHANNEL GROOVE THAT CATCHES EXCESS OIL AND DRAINS INTO DRIP PAN AT THE BOTTOM OF THE MACHINE. THIS PLATE SHOULD BE REMOVED BY LOOSENING AND REMOVING A SMALL ALLEN SCREW IN THE CENTER OF THE PLATE. CLEAN PLATE, AND CHECK PLASTIC DRAIN LINE TO SEE THAT IT IS CLEAN AND FREE OF ANY SEDIMENT SO OIL CAN DRAIN PROPERLY. DRIP PAN AT BOTTOM OF MACHINE SHOULD BE EMPTIED EVERY DAY.

## GUIDE TO CLEANING

### STEP 5

LOOSEN SOCKET SCREWS (9) ENOUGH TO SLIDE PIN LOCK BRACKET (10) EXPOSING LOCK PIN (11). REMOVE PIN (11).

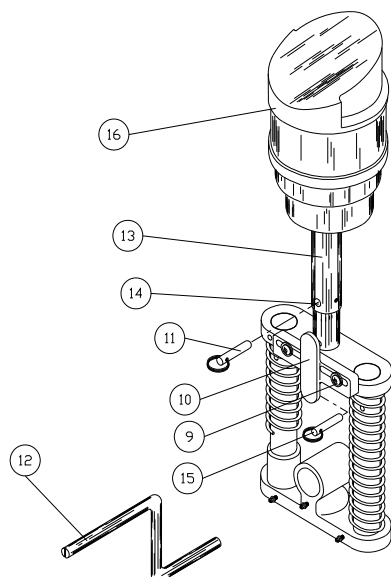
### STEP 6

INSERT CRANK HANDLE (12) THROUGH HOLE IN CABINET AND ENGAGE WITH PINION SHAFT. CRANK ONE COMPLETE TURN COUNTER CLOCK-WISE THUS EXTENDING PISTON ROD UNTIL HOLE (14) IS IN LINE WITH UPPER HOLE IN ROD (13).

### STEP 7

PLACE PIN (11) INTO HOLE (14) TEMPORARILY. NOW REMOVE PIN (15), CONTINUE TO CRANK UNTIL PISTON (16) EMERGES FROM THE TOP OF THE CYLINDER. LIFT OUT CAREFULLY BY HAND. THOROUGHLY CLEAN PISTON AND CYLINDER TO REMOVE ALL ACCUMULATED DOUGH WITH A MILD SOAP AND WASTER SOLUTION. DRY THOROUGHLY AND COAT ALL SURFACES WITH A LIGHT COATING OF DIVIDER OIL. TO REASSEMBLE, REVERSE STEPS 1 THROUGH 7.

WHEN CLEANING OR ADJUSTING PISTON, DO NOT OVER TIGHTEN ADJUSTING NUTS. THIS WILL OVER SPREAD YOUR PLASTIC PISTON RING AND WILL CAUSE EXCESSIVE WEAR. THIS WILL ALSO BE HARD TO PLACE PISTON BACK INTO THE CYLINDER. THIS COULD ALSO RESULT IN THE CUTTING OF YOUR PISTON RING AND DESTROYING IT



IMPORTANT: WHEN RE-ASSEMBLING, DO NOT OVER TIGHTEN ANY OF THE SCREWS, AS THIS TENDS TO STRIP THREADS CAUSING PROBLEMS IN THE FUTURE. BE SURE RING ON PIN (11) OF FIGURE 3 IS SECURELY FASTENED OVER LATCH (10). THIS WILL PREVENT LATCH FROM MOVING, SHOULD THE SOCKET HEAD SCREWS (9) LOOSEN DURING OPERATION.



**DANGER:**

ALWAYS DISCONNECT ELECTRICAL POWER SOURCE WHEN CLEANING, MAINTAINING OR REPAIRING THIS MACHINE....

## REPLACEMENT OF PISTON RING

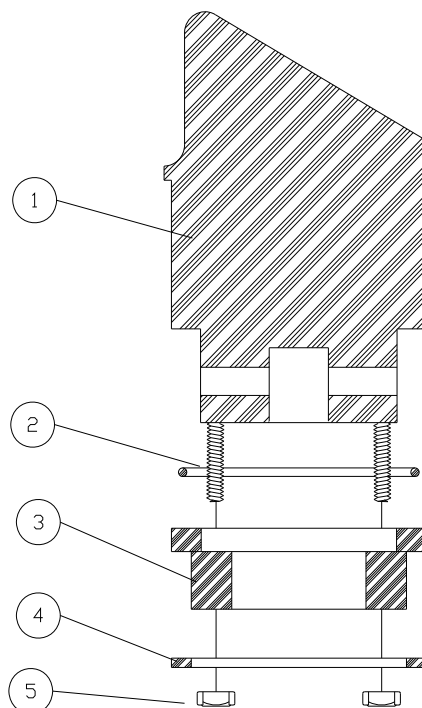


FIGURE 4

TO DISMANTLE PISTON IN FIGURE 4, REMOVE THE SIX HEX NUTS (5), SLIDE SLIP RING (4) DOWN AND OFF, THEN WITH SLIGHT PRESSURE, PUSH PISTON RING (3) OFF PISTON AND REMOVE RUBBER "O" RING (2). WHEN REASSEMBLING THE PISTON, A VERY IMPORTANT STEP IS TO MAKE SURE THE SIX NUTS (6) ARE NOT OVERLY TIGHTENED, MERELY SNUG. AS THE RING WEARS OVER A PERIOD OF TIME, CONTINUE TO SNUG UP THE SIX NUTS. THIS PROCEDURE WILL NOT ONLY PROVIDE LONG LIFE TO THE PISTON RING BUT WILL MAINTAIN FULL VACUUM.

# GUIDE TO CLEANING

## STEP 1

REMOVE DIVIDER SLIDE GUARD USING T-HANDLE PROVIDED TO LOOSEN THE FRONT TWO NUTS ON GIB BARS (1).

TO OPEN FRONT OF ROUNDER, GRASP BOTH T-HANDLES (PART NO. 646CA3) AND TURN BOTH OUTWARD (2). THIS WILL RELEASE THE FRONT OF THE CABINET.

LOCATE THE SWIVEL LOCKING HANDLE (PART NO. R149RA). (3) LIFT THIS HANDLE TO THE UPWARD POSITION WHILE HOLDING THE ROUNDER DRUM FOR STABILITY. NOW TILT THE ROUNDER ASSEMBLY FORWARD (4).

REMOVE FUNNEL (PART SR135RA) (5).  
REMOVE ROUNDER SCREW (SLOWLY) PART NO. R122RA) (6).

REMOVE DRUM (PART NO. R117RA) (7).  
REMOVE PLASTIC SEAL RING (PART NO. R141RA) (8).  
CLEAN THE FOUR (4) PARTS WITH WARM SOAPY WATER. DO NOT USE ANY HARD ABRASIVE CLEANING MATERIALS.

REMOVE EXCESS DOUGH FROM ROUNDER BASE INSIDE OF MACHINE.

REASSEMBLE IN REVERSE OF DISASSEMBLY. MAKE SURE TO REPLACE PLASTIC SEAL RING FIRST, SLIP THE DRUM OVER THE ROUNDER BASE SO THAT THE DRIVE SLOTS ARE LOCKED OVER THE DRIVE PINS IN THE ROUNDER BASE.

CARE SHOULD BE TAKEN TO SEE THAT THE EXIT RAMP ON THE SCREW IS FACING THE DISCHARGE END OF THE MACHINE.

### NOTE:

WHEN CLEANING THE ROUNDER DRUM,  
THE WATER TEMPERATURE  
**MUST NOT EXCEED 190°**

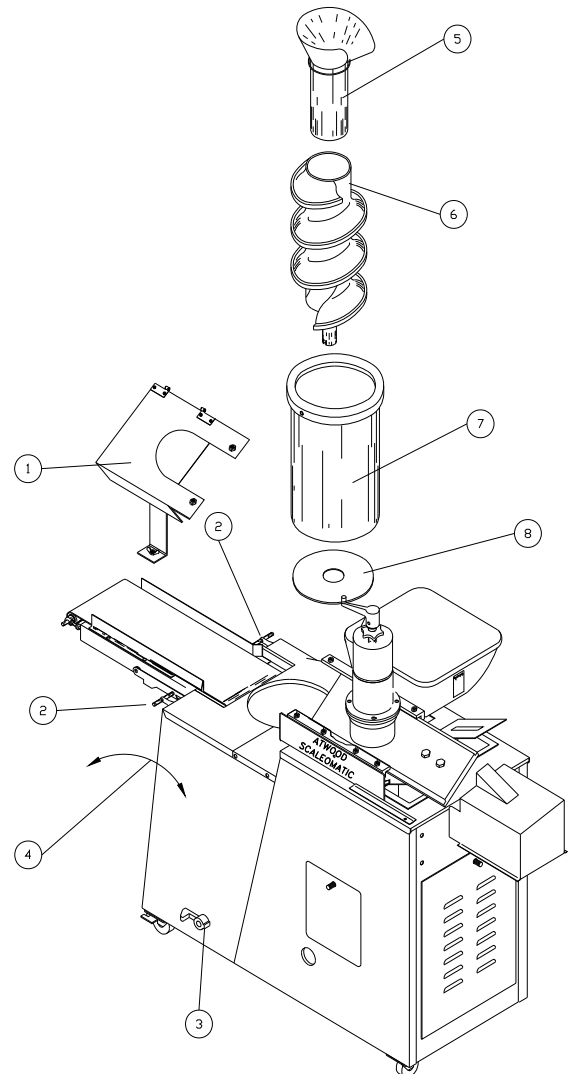


FIGURE 5

## GUIDE TO GENERAL MAINTENANCE

**READ AND FOLLOW MAINTENANCE INSTRUCTIONS** TO HELP KEEP THE UNIT IN GOOD OPERATING CONDITION. REFER TO OTHER MATERIALS RECEIVED WITH THE UNIT AND TO SERVICE BULLETINS FROM THE MANUFACTURER FOR ADDITIONAL INSTRUCTIONS FOR PROPER MAINTENANCE AND SERVICE. REGULAR INSPECTIONS AND PROPER MAINTENANCE ARE ESSENTIAL TO HELP PREVENT ACCIDENTS AND INJURIES.



**PRACTICE SAFETY FIRST:**

ALWAYS DISCONNECT ELECTRICAL SERVICE WHEN CLEANING OR MAINTAINING THIS MACHINE, THUS AVOIDING CHANCE OF SERIOUS INJURIES. MACHINES ARE NOT DANGEROUS IF COMMON SENSE IS APPLIED AND THE INSTRUCTIONS ARE CAREFULLY FOLLOWED. THINK AND PRACTICE SAFETY FIRST...



**WARNING:**

BEFORE MAKING ANY INSPECTION, ADJUSTMENT OR REPAIR, BE CERTAIN POWER SOURCE IS DISCONNECTED AND ALL MOVING PARTS ARE BLOCKED OUT TO PREVENT INJURY. WEAR PROTECTIVE CLOTHING.

- A. ALL WORKING SURFACES SHOULD BE CLEANED REGULARLY.
- B. THE TABLE TOP AND OTHER WORKING SURFACES SHOULD BE CLEANED REGULARLY.
- C. MAKE SURE THAT ALL FASTENERS ARE TIGHTENED SECURELY.
- D. MAKE CERTAIN THAT ALL GUARDS AND COVERS ARE IN PLACE.
- E. CHECK FOR WORN, DAMAGED OR MISSING PARTS INCLUDING BELTS, SAFETY GUARDS AND PROTECTIVE COVERS.
- F. ON A DAILY BASIS, INSPECT THE UNIT AND CHECK TO BE CERTAIN THAT ALL SYSTEMS ARE OPERATING NORMALLY. DETAILED INSPECTION AND TESTING PROCEDURES ARE SPECIFIED FOR VARIOUS COMPONENTS AT REGULAR INTERVALS. SET UP A CHART AND ASSIGN RESPONSIBILITY FOR THESE ITEMS.

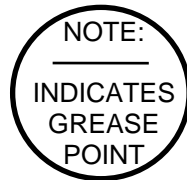


**CAUTION:**

REPLACE ANY DAMAGED OR MISSING SAFETY LABELS. THEY ARE AVAILABLE FROM THE MANUFACTURER.

MAINTENANCE FOR THE SCALE-O-MATIC S302 ALWAYS BEGINS WITH KEEPING THE MACHINE CLEAN. PROPER CLEANING PROCEDURES CAN BE FOUND ON PAGES 8-12 OF THIS MANUAL. STANDARD LONG TERM MAINTENANCE CONSISTS OF LUBRICATING MAIN WEAR POINTS OF THE MACHINE WITH AN ALL-PURPOSE SYNTHETIC BASE GREASE. A GREASE GUN WITH A FLEXIBLE HOSE IS NEEDED.

ALL RECOMMENDATIONS FOR MAINTENANCE, BASED ON A 7 DAY, 8 HOUR PER DAY WORK SCHEDULE.



THERE ARE (5) GREASE FITTINGS LOCATED ON THE ROCKER ARM AND DIVIDER FRAME, (FIG. 1). THESE FITTINGS SHOULD BE LUBRICATED BI-WEEKLY FOR OPTIMUM BEARING LIFE.

FOLLOW NORMAL CLEANING AND MAINTENANCE PROCEDURES OUTLINED IN THIS MANUAL. FOR FURTHER ASSISTANCE CONTACT THE A.M. MFG. SERVICE DEPARTMENT AT (800) 342-6744...

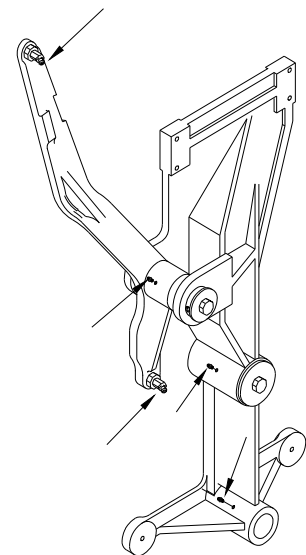


FIGURE 1

## GUIDE TO GENERAL MAINTENANCE



### DANGER:

ALWAYS DISCONNECT ELECTRICAL SERVICE WHEN CLEANING, MAINTAINING OR REPAIRING THIS MACHINE...

THE PISTON AND SPRING LOAD ASSEMBLY HAVE A TOTAL OF (4) GREASE FITTINGS, (FIG. 2). THREE (3) OF THESE FITTINGS ARE FOUND ON THE LOWER CASTING OF THE SPRING LOAD. APPLY A SMALL AMOUNT OF GREASE TO THESE FITTINGS ONCE A WEEK. THE SAME PROCEDURE SHOULD BE FOLLOWED FOR THE GREASE FITTING UNDER THE PISTON, (FIG. 4). THIS FITTING IS LOCATED ON THE TOP OF THE OUTSIDE CONNECTING ROD, (PART NO. 322PY).

### NOTE:

THIS FITTING CAN ONLY BE REACHED WITH A FLEXIBLE HOSE GREASE GUN OR BY REMOVING THE PISTON.

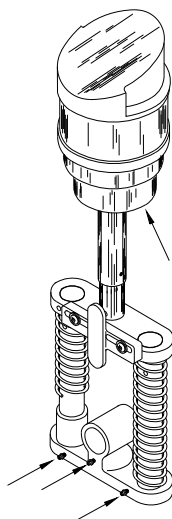


FIGURE 2

YOU MAY FIND UPON INSPECTION OF THE PISTON THAT THE DOUGH HAS SEEPED INTO THE CUP. THIS IS A NORMAL OCCURRENCE AFTER MODERATE PRODUCTION. TO KEEP THE RUBBER "O" RING FROM PREMATURELY DETERIORATING, STRETCHING OR BREAKING, INSPECT AND CLEAN EVERY (4) WEEKS IN THE FOLLOWING MANNER, (FIG. 3). DISASSEMBLE THE PISTON BY REMOVING THE HEX NUTS ON THE BASE OF THE PISTON ASSEMBLY. REMOVE THE STEEL WASHER (PART NO. 302PY) AND PLASTIC PISTON RING (PART NO. 323PY). CAREFULLY CLEAN EXCESS DOUGH FROM THE PISTON AND "O" RING. REASSEMBLE THE PISTON BEING CAREFUL NOT TO OVERTIGHTEN THE PISTON RING.

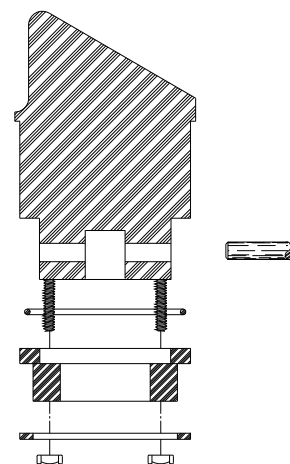
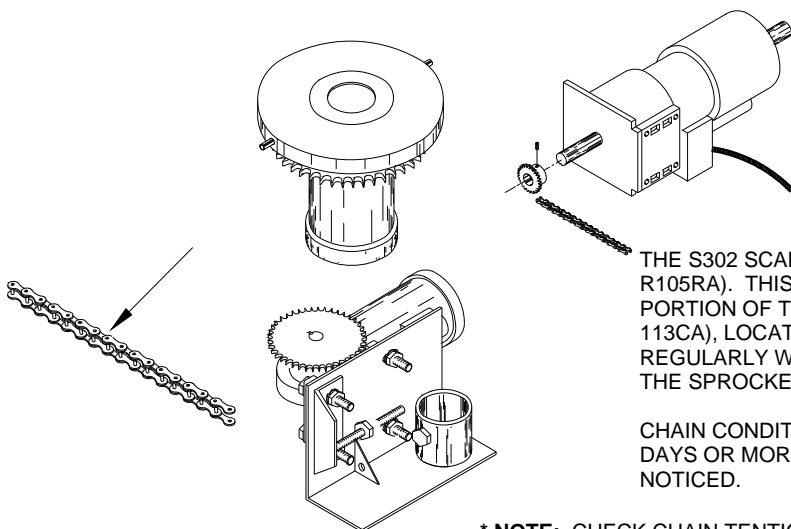


FIGURE 3



THE S302 SCALE-O-MATIC HAS A SINGLE DRIVE CHAIN (PART NO. R105RA). THIS PART IS LOCATED AT THE BASE OF THE ROUNDER PORTION OF THE CABINET. ALSO THE CONVEYOR CHAIN (PART NO. 113CA), LOCATED BY THE CONVEYOR MOTOR MUST BE OILED REGULARLY WITH A LIGHT WEIGHT MACHINE OIL TO PROLONG LIFE OF THE SPROCKETS, AS WELL AS THE CHAIN.

CHAIN CONDITION AND TENSION SHOULD BE CHECKED EVERY 60 DAYS OR MORE FREQUENTLY IF EXCESS NOISE OR VIBRATION IS NOTICED.

**\* NOTE:** CHECK CHAIN TENSION WITH CONVEYOR IN DOWNWARD POSITION.

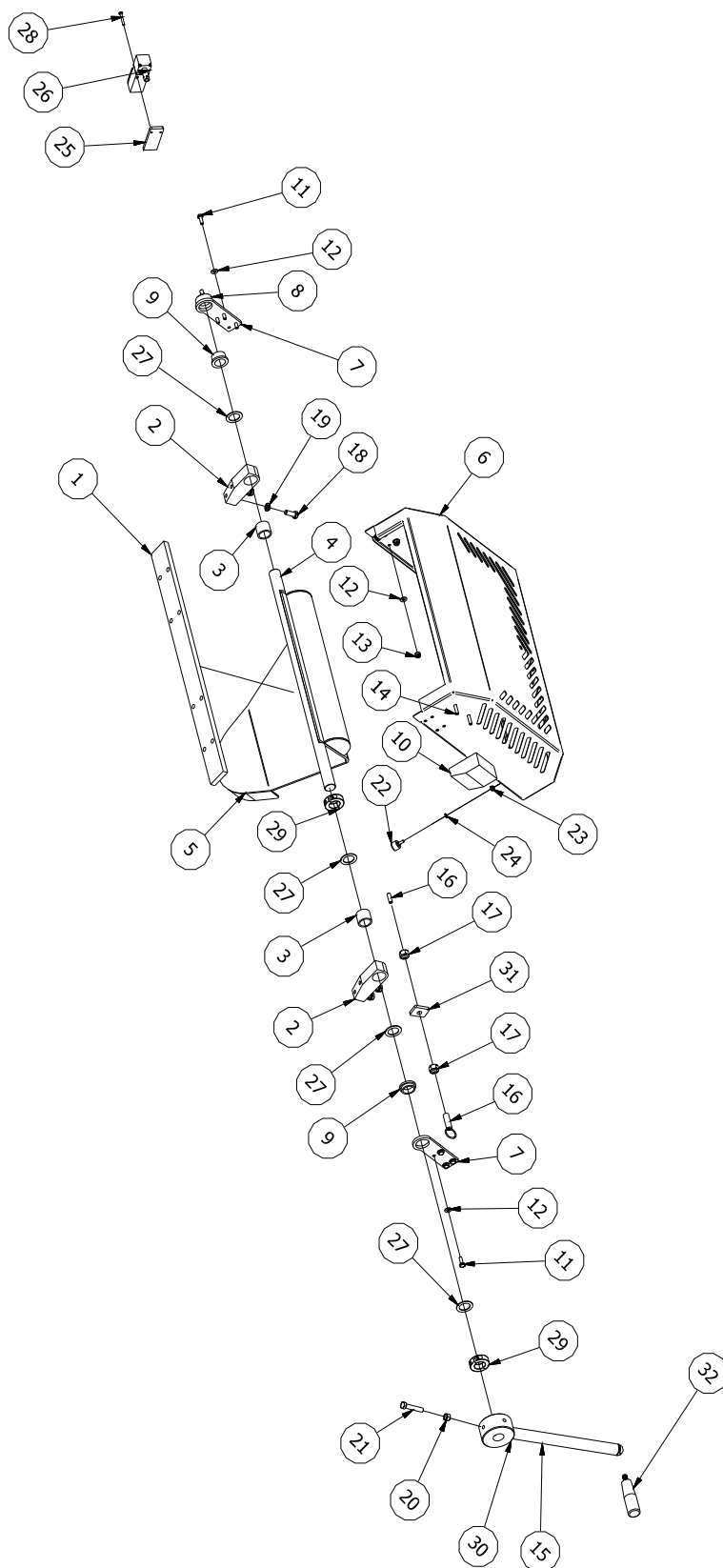
FOLLOWING NORMAL CLEANING AND MAINTENANCE PROCEDURES OUTLINED IN THIS MANUAL. FOR FURTHER ASSISTANCE CONTACT THE A.M. MFG. SERVICE DEPARTMENT AT (800) 342-6744...

**NOTE:** THESE INSTRUCTIONS WILL HELP YOU SERVICE THE UNIT. INSTRUCTIONS ARE FOR A PERSON WITH SOME MECHANICAL ABILITY AND TRAINING. NO ATTEMPT HAS BEEN MADE TO DESCRIBE ALL BASIC STEPS, FOR EXAMPLE, HOW TO LOOSEN OR TIGHTEN FASTENERS. ALSO, BASIC PROCEDURES LIKE HOW TO CYCLE SYSTEMS AND CHECK OPERATION OF THE EQUIPMENT ARE NOT DESCRIBED SINCE THEY ARE KNOWN TO ANYONE WHO DOES MECHANICAL AND SERVICE WORK. DO NOT ATTEMPT TO PERFORM WORK BEYOND YOUR ABILITY OR AT WHICH YOU HAVE NO EXPERIENCE. IF YOU NEED ASSISTANCE, CALL AN AUTHORIZED SERVICE CENTER OR CONTACT A.M. MANUFACTURING AT (800) 342-6744.



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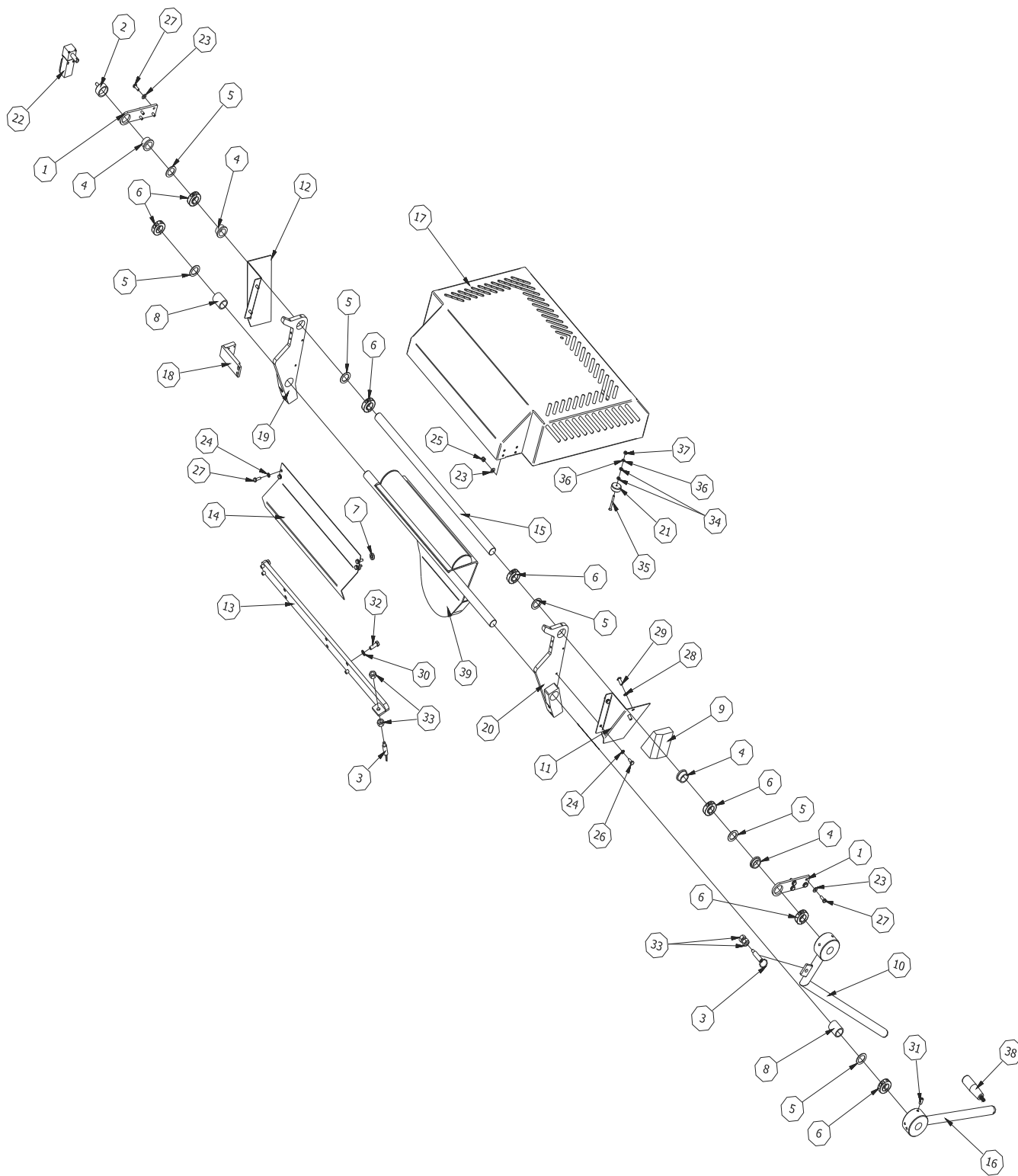
## HOPPER COVER (STANDARD)



## HOPPER COVER (STANDARD)

ITEM	PART NUMBER	DESCRIPTION	QTY
1	17832	SAFETY COVER MOUNTING BAR	1
2	17828	SAFETY COVER HINGE BASE	2
3	20614	OIL IMPREGNATED SLEEVE BUSHING (1.002 ID X 1.253 OD X 1" LONG)	2
4	17890	SAFETY COVER PIVOT SHAFT (PURCHASE AS ASSEMBLY W/ 17827)	1
5	17827	DOUGH FEED PLATE ASSEMBLY (PURCHASE AS ASSEMBLY W/ 17890)	1
6	17834	HOPPER SAFETY COVER	1
7	17842	HOPPER SAFETY COVER HINGE PLATES	2
8	17888	SAFETY COVER SAFETY SWITCH ADAPTER (PUCHASED AS ASSEMBLY W/ 17842)	1
9	20453	OIL IMPREGNATED FLANGE BUSHING (1.002 ID X 1.253 OD X 3/4" LONG)	2
10	19475	SAFETY COVER PIVOT LOCK BLOCK	1
11	F0403HHCS	HEX HEAD CAP SCREW 1/4-20 X 3/4"	8
12	F0400FW	FLAT WASHER, 1/4"	16
13	F0400NLN	NUT, NYLOCK 1/4"	8
14	F0404SB	BUTTON HEAD, SOCKET 1/4-20 X 1" LG	2
15	17824	SAFETY COVER DOUGH HANDLE ASSY.	1
16	20432	SPRING PLUNGER w/ PULL RING	1
17	F0800NC	NUT COURSE, 1/2-13 NORMAL	2
18	F0604HHCS	HEX HEAD CAP SCREW 3/8-16 X 1"	4
19	F0600LW	LOCK WASHER 3/8"	4
20	F0600NC	NUT COURSE, 3/8	1
21	F0608HHCS	HEX HEAD CAP SCREW 3/8-16 X 2" LG	1
22	11832	BUMPER, THREADED STUD W/HEX SHOULDER	2
23	F9900NLN	NYLOCK NUT, #10-32	2
24	F9900FW	FLAT WASHER, # 10	2
25	19220	SAFETY SWITCH MOUNT PLATE	1
26	EL-1320	SAFETY SWITCH - ROTARY HINGE - 2NC	1
27	20615	NYLON WASHER (1.003" I.D. X 1-1/2" O.D. X 1/16" THICK)	4
28	F9705PHS	Pan Head, Slotted, 8-32 UNC x 1-1/4	2
29	20616	1" S.S. SPLIT SHAFT COLLAR (2 PIECE)	2
30	17825	SAFETY COVER HANDLE HUB	1
31	19476	SNAP PIN MOUNTING TAB	1
32	11467	Easy-Turn Revolving Handle 3/8"-16 Thrd Stud, 1.10" Dia, 3.54" LG	1

## HOPPER COVER (EXTENDED HOPPER)

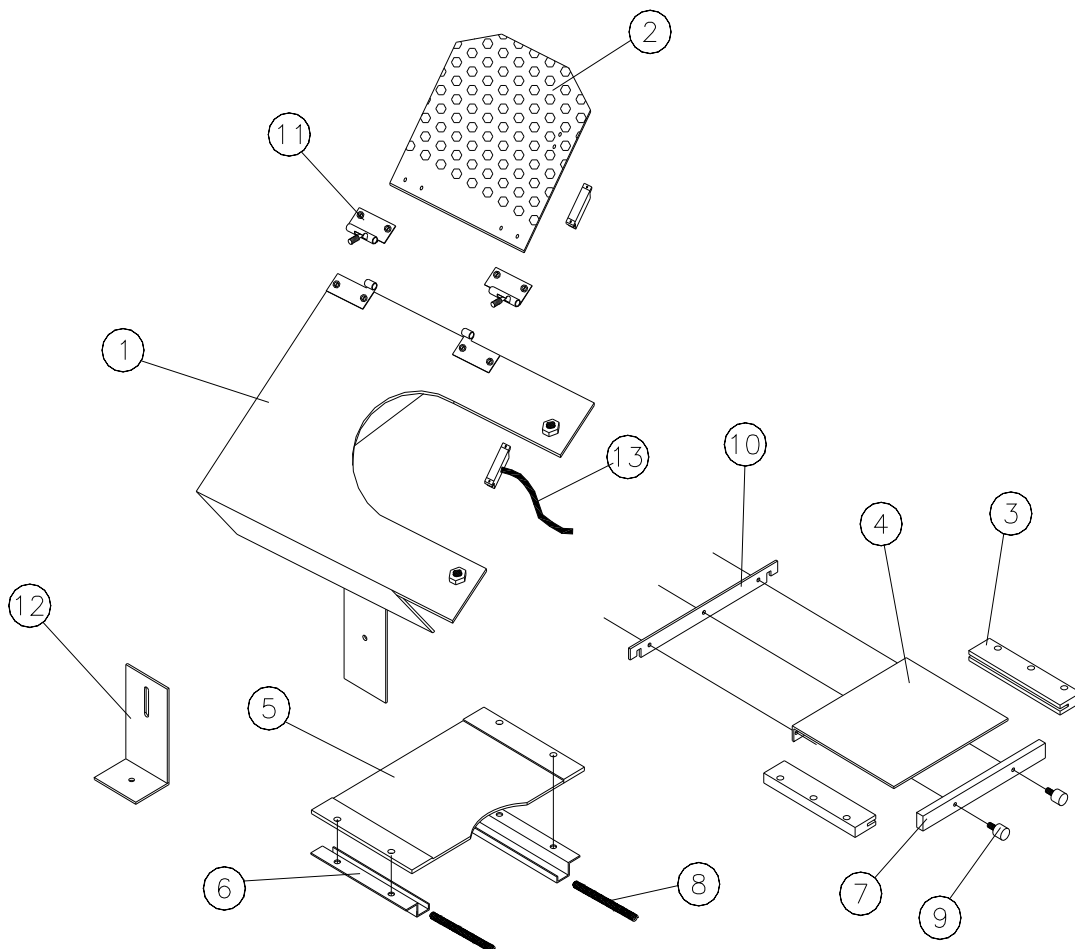


## HOPPER COVER (EXTENDED HOPPER)

ITEM	PART NO	DESCRIPTION	QTY
1	17842	HOPPER SAFETY COVER HINGE PLATES	2
2	17888	SAFETY COVER SAFETY SWITCH ADAPTER	1
3*	20432	SPRING PLUNGER w/ PULL RING	2
4	20453	OIL IMPREGNATED FLANGE BUSHING (1.002 ID X 1.253 OD X 3/4" LONG)	4
5	20615	NYLON WASHER (1.003" I.D. X 1-1/2" O.D. X 1/16" THICK)	6
6	20616	1" S.S. SPLIT SHAFT COLLAR (2 PIECE)	7
7	20645	SPACER (3/4" O.D. X 1/4" LONG w/ 9/32 THRU HOLE)	2
8	20649	OIL IMPREGNATED SLEEVE BUSHING (1.002 ID X 1.253 OD X 1.5" LONG)	2
9	20650	SPRING PIN LOCK BLOCK	1
10	20651	SAFETY COVER HANDLE ASSEMBLY	1
11	20657	HOPPER GUARD (LEFT SIDE)	1
12	20658	HOPPER GUARD (RIGHT SIDE)	1
13	20660	SAFETY COVER MOUNTING BAR ASSEMBLY	1
14	20661	HOPPER BACK GUARD	1
15	20662	SAFETY COVER PIVOT SHAFT	1
16	20663	SAFETY COVER DOUGH HANDLE ASSY.	1
17	20665	EXTENDED HOPPER SAFETY COVER	1
18	20666	INTERLOCK SWITCH MOUNT BRACKET ASSEMBLY	1
19	20669	SAFETY COVER HINGE BAR (RIGHT SIDE)	1
20	20670	SAFETY COVER HINGE BAR (LEFT SIDE)	1
21	20671	HOPPER COVER BUMPER	2
22	EL-1320	SAFETY SWITCH - ROTARY HINGE - 2NC	1
23	F0400FW	FLAT WASHER, 1/4"	16
24	F0400LW	LOCK WASHER, 1/4"	8
25	F0400NLN	NUT, NYLOCK 1/4"	8
26	F0402.5HHCS	HEX HEAD CAP SCREW 1/4-20 X 5/8"	4
27	F0403HHCS	HEX HEAD CAP SCREW 1/4-20 X 3/4"	12
28	F0500LW	LOCK WASHER, 5/16"	2
29	F0503SB	SOCKET BUTTON HEAD, 5/16-18 X 3/4" LG	2
30	F0600LW	LOCK WASHER 3/8"	4
31	F0603SS	3/8-16 S.S. SET SCREW 3/4" LONG	2
32	F0604HHCS	HEX HEAD CAP SCREW 3/8-16 X 1"	4
33*	F0800NC	NUT COURSE, 1/2-13 NORMAL	4
34	F9800NC	NUT COURSE, #10-24	4
35	F9808FSH	10-24 X 2" LONG FLAT SOCK HEAD SCREW	2
36	F9900FW	FLAT WASHER, # 10	2
37	F9900NLN	NYLOCK NUT, #10-32	2
38	11467	Easy-Turn Revolving Handle 3/8"-16 Thrd Stud, 1.10" Dia, 3.54" LG	1
39	20810	DOUGH FEED PLATE & SHAFT ASSEMBLY	1

\* ITEMS 3 & 33 ARE SOLD AS A UNIT. SHOWN APART FOR CLARTY

# DIVIDER SLIDE GUARD



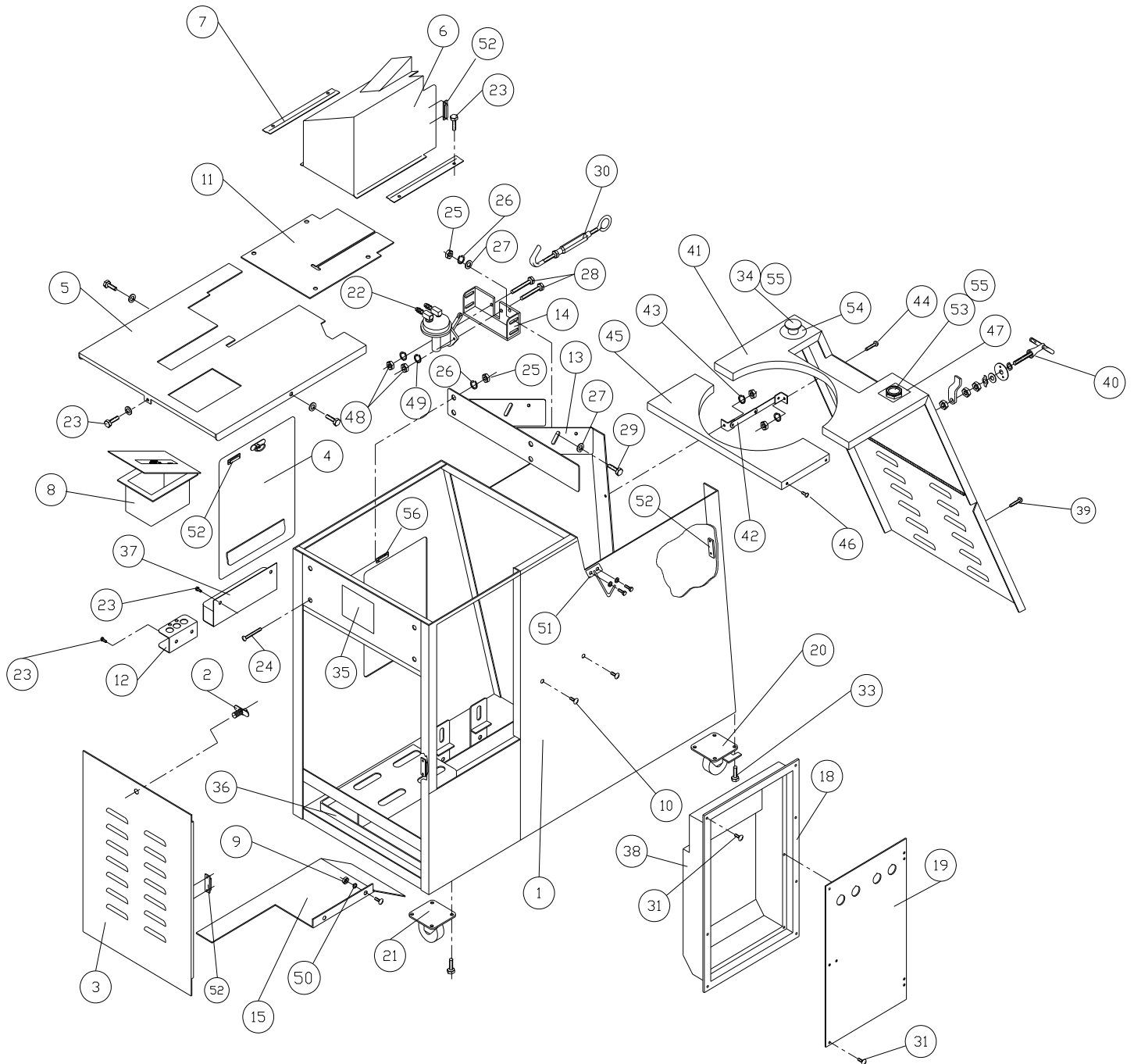
ITEM	PART NO	DESCRIPTION	QTY
1	11828	GUARD CAGE	1
2	11827	GUARD CAGE DOOR	1
3	11824	GUARD SLIDE TRACK	2
4	11823	GUARD SLIDE (SOLD WITH 11829)	1
5	11826	GUARD SLIDE SPACER	1
6	11825	SPRING RETAINER	2
7	11829	GUARD SLIDE BLOCK (SOLD WITH 11823)	1
8	11830	SPRINGS	2
9	11832	BUMPERS	2
10	12114	GUARD SLIDE ADAPTER	1
11	11831	HINGES	2
12	11877	GUARD BRACE #2	1
13	EL-1308	SAFETY SWITCH – CODED SENSOR / ACTUATOR	1 SET
14	F0400FW	FLAT WASHER	7
15	F0400LW	LOCK WASHER	7
16	F0400LN	LOCK NUT w/ NYLON INSERT	6
17	F0400VN	WING NUT	1
18	F9626PH	6-62 PAN HEAD SCREW	8

## NOTE:

GUARD CAN BE PURCHASED AS A COMPLETE UNIT. **PART #: 11836**

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# CABINET ASSEMBLY





# CABINET ASSEMBLY

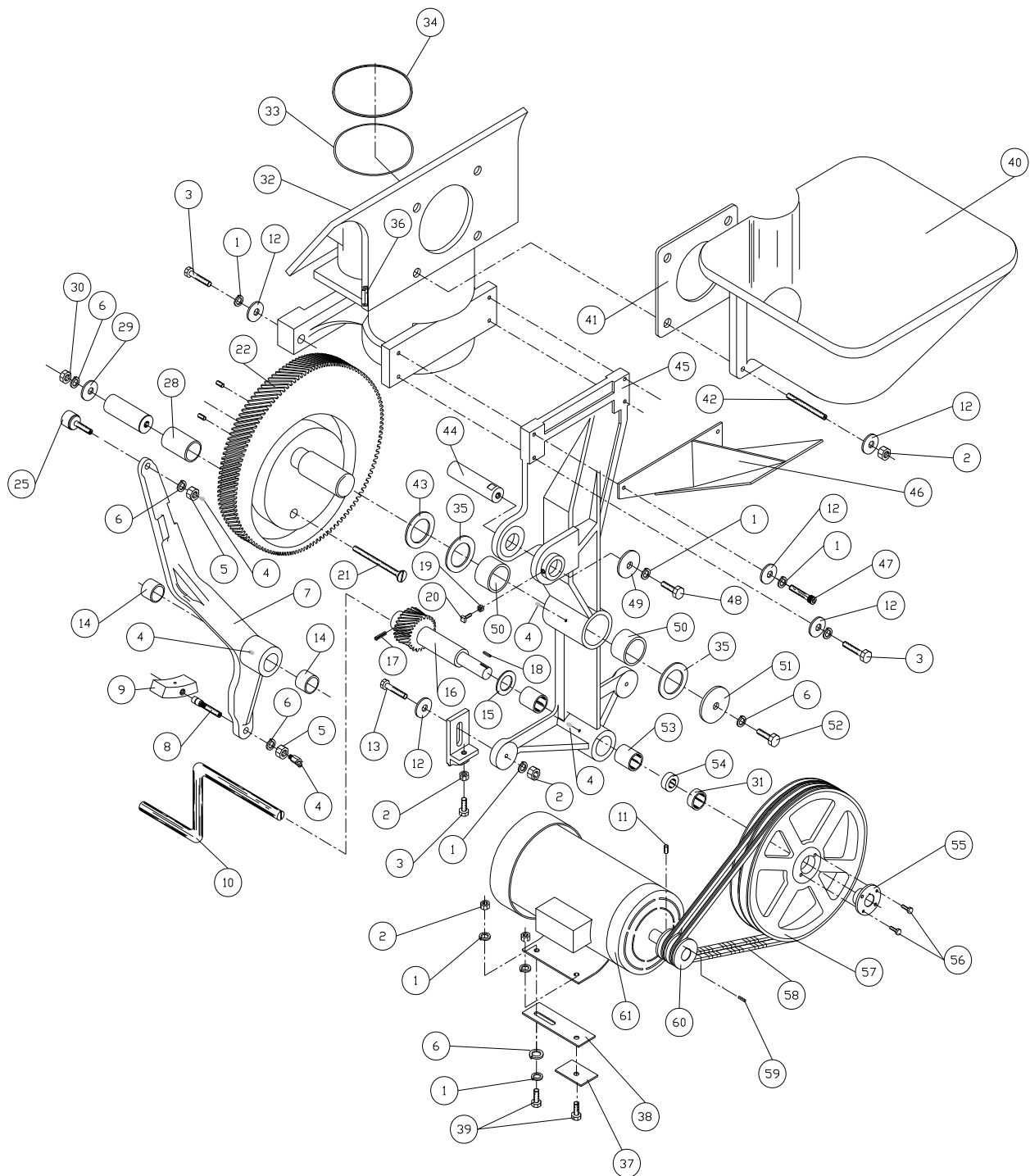
ITEM	PART NO	DESCRIPTION	QTY
1	11934	CABINET	1
2	646CA1	DOOR LOCK LATCH w/2 POP RIVETS	2
3	CA602A	615CA REAR DOOR (INSPECTION) w/646CA1 HARDWARE	1
4	11810	11810 FRONT DOOR PISTON DRIVE w/646CA1 HARDWARE	1
5	602CA	TOP COVER	1
6	641CA	ROCKER ARM SAFETY COVER	1
7	640CA	ROCKER ARM COVER TRACK	2
8	604CA	OIL BOX AND COVER ASSEMBLY INCLUDES: 1 – 604CA-1 OIL BOX COVER 1 – 604CA-2 OIL BOX 1 – 7130S STAINER w/ INSERT – FILTER ADAPTER 1 – AM TAG #OM DIVIDER OIL TAG	1
9	F0400NC	NUT	2
10	F0402TH	BOLT	2
11	641CA1	ROCKER ARM COVER GASKET	1
12	638CA	TOOL HOLDER	1
13	605CA1	PUMP BRACKET (LARGE)	1
14	605CA2	PUMP BRACKET (SMALL)	1
15	643CD	"V" BELT GUARD	1
16	F9700NF	NUT	6
17			
18	617CA6	ELECTRICAL ENCLOSURE	1
19	SS116	ELECTRICAL COVER PANEL	1
20	621CA1	SWIVEL CASTER (LOCKING)	2
21	621CA2	SWIVEL CASTER	4
22	7000S	OIL PUMP ASSEMBLY INCLUDES: 1 - 1440S BEARING 1 – F0403SH SOCKET HEAD CAP SCREW 1 – F0400LN LOCK NUT	1
23	F0402HH	BOLT	11
24	F0503CB	BOLT	4
25	F0500NC	NUT	6
26	F0500LW	LOCK WASHER	6
27	F0500FW	FLAT WASHER	8
28	F0606HH	BOLT	2
29	F0504HH	BOLT	4
30	654CA	TURN BUCKLE	1
31	F9901PH	SCREW	14
32	F9900LW	LOCK WASHER	2
33	F0404ST	BOLT	16
34	SS185	STOP BUTTON	1
35	19904	ELECTRICAL PLATE	1
36	19905	OIL PAN (FOR DOUGH)	1
37	11866	NUT BOX	1
38	617CA5	ELECTRICAL ENCLOSURE	1
39	F9902PHS	SCREW	6
40	646CA3	DOOR LOCK "T" HANDLE ASSEMBLY	2
41	652CA	ROUNDER COVER – FRONT HINGED	1
42	666CA	FRONT COVER HINGE	1
43	F0400LW	LOCK WASHER	10
44	F0402TH	BOLT	1
45	651CA	ROUNDER COVER BACK SIDE	1
46	F9902RH	SCREW	4
47	SS126	CYCLE STOP NAME PLATE	1
48	F0600NC	NUT	2
49	F0600LW	LOCK WASHER	2
50	F0400LW	LOCK WASHER	2
51	12059	SAFETY GUARD HOOK	1
52	EL-1308	SAFETY SWITCH – CODED SWITCH / ACTUATOR	4 SETS
53	EL-0409	PUSHBUTTON w/ RED BUTTON COVER	1
54	20451	EMERGENCY STOP NAMEPLATE	1
55	400038	N.C. CONTACT BLOCK	3



**IMPORTANT:**  
**KNOW YOUR UNIT. COMPARE DIAGRAMS IN THIS MANUAL WITH THE UNIT BEFORE STARTING SERVICE TO OBTAIN MAXIMUM SAFETY AND PERFORMANCE.**

**NOTE:**  
GUARDS ARE INTERLOCKED, MACHINE WILL NOT OPERATE WITHOUT GUARDS IN PLACE.

# CYLINDER AND DRIVE ASSEMBLY



# CYLINDER AND DRIVE ASSEMBLY

ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	F0600LW	LOCKWASHER	13	39	F0505HH	BOLT	4
2	F0600HN	NUT	12	40	445CD	DOUGH HOPPER	1
3	F0608HH	BOLT	2	41	449CD	HOPPER GASKET	1
4	3038-B	GREASE FITTING	5	42	FF0607SD	STUD	4
5	F0800NF	NUT	2	43	411CD	SPACER WASHER	1
6	F0800LW	LOCKWASHER	4	44	412CD	CAM ARM PIN	1
7	AS0110CD	ROCKER ARM COMPLETE INCLUDES: 1 - 412CD CAM ARM PIN 2 - 422CD BEARINGS 1 - 427CD CAM ROLLER w/ WASHER, NUT AND GREASE FITTING 1 - 448CD CAM TRACK SHOE 1 - 452CD SHOE BOLT w/ WASHER, NUT AND GREASE FITTING	1	45	S0109CD	MAIN DRIVE FRAME INCLUDES: 2 - 437CD PINION SHAFT BEARING 2 - 440CD MAIN FRAM BEARING (NEEDLE BEARING) 2 - 3038-B GREASE FITTING	1
8	A452CD	SHOE BOLT ASSEMBLY	1	46	462CD	MOTOR MOUNT	1
9	448CD	CAM TRACK SHOE	1	47	F0609SH	BOLT	1
10	426CD	HAND CRANK	1	48	F0604HH	BOLT	1
11	F0501SS	SET SCREW	1	49	442CD	WASHER, 1-3/4 x 3/8	1
12	F0600FW	FLAT WASHER	12	50	440CD	MAIN FRAME BEARING (SEE NOTES BEFORE ORDERING)	2
13	F0607HH	BOLT	2	51	439CD	WASHER 3 x 9/16	2
14	422CD	ROCKER ARM BEARING	2	52	F0804HH	BOLT	1
15	416CD	WASHER SPACER	1	53	437CD	PINION SHAFT BEARINGS	2
16	415CDH 415CD	DRIVE SHAFT & PINION - HELIX / CURVED TEETH (NEW MACHINES) INCLUDES: 1 - F0404KY KEY 1 - F0305RP ROLL PIN DRIVE SHAFT & PINION STRAIGHT TEETH(OLD MACHINES)	1	54	465CD	BEARING	1
17	F0305RP	ROLL PIN	1	55	436CD	HUB-PULLEY w/KEY	1
18	F0404KY	KEY w/ 415CD (NOT SOLD ALONE)	1	56	F0404HH	BOLT	2
19	F0500NC	NUT	1	57	435CD2 435CDA 435CDV	DRIVE PULLEY (SINGLE GROOVE) DRIVE PULLEY (DOUBLE GROOVE) DRIVE PULLEY (BARIABLE GROOVE)	1
20	F0506SQ	BOLT	1	58	434CD-V 434CD49 434CD56	"V" BELT (VARIALBE) "V" BELT (49") "V" BELT (56")	1
21	F0819FH	BOLT	1	59	F0304Y	KEY 3/16"	1
22	S0113CD	MAIN DRIVE GEAR INCLUDES: 1 - SCREW 1 - 406CD SHAFT YOKE PIN 1 - NUT 1 - SPRING 1 - 409CD SHAFT 1 - CRANK PIN SCREW 1 - LOCK WASHER 1 - FLAT WASHER 1 - 312PY BEARING	1	60	458CD 458CDD 458CDV	MOTOR PULLEY (SINGLE GROOVE) MOTOR PULLEY (DOUBLE GROOVE) MOTOR PULLEY (VARIABLE)	1
25	427CD	CAM ROLLER	1	61	SS263 SS265 SS264 15265	ELECTRIC MOTOR (SINGLE PHASE) ELECTRIC MOTOR (3 PHASE) ELECTRIC MOTOR (VARIALBE) ELECTRIC MOTOR (380Vac / 50Hz)	1
26	F0603SS	SET SCREW	2				
28	312PY	DRIVE BEARING	1				
29	459CD	WASHER	1				
30	F0800NC	NUT	1				
31	464CD	SPACER	1				
32	AS0107CD	CYLINDER INCLUDES: 1 - 708S CHECK VALVE 8 - F0500CN NUTS 8 - F0508SD STUDS	1				
33	402CD	CYLINDER SLIDE "O" RING	1				
34	401CD	SEAL SCRAPER RING	1				
35	440CDS	OIL SEAL (RETAINERS)	2				
36	EL-1308	SAFETT SWITCH	1				
37	644CA	MOTOR SPACER	2				
38	643CA	MOTOR MOUNT ASSEMBLY	2				

## NOTE:

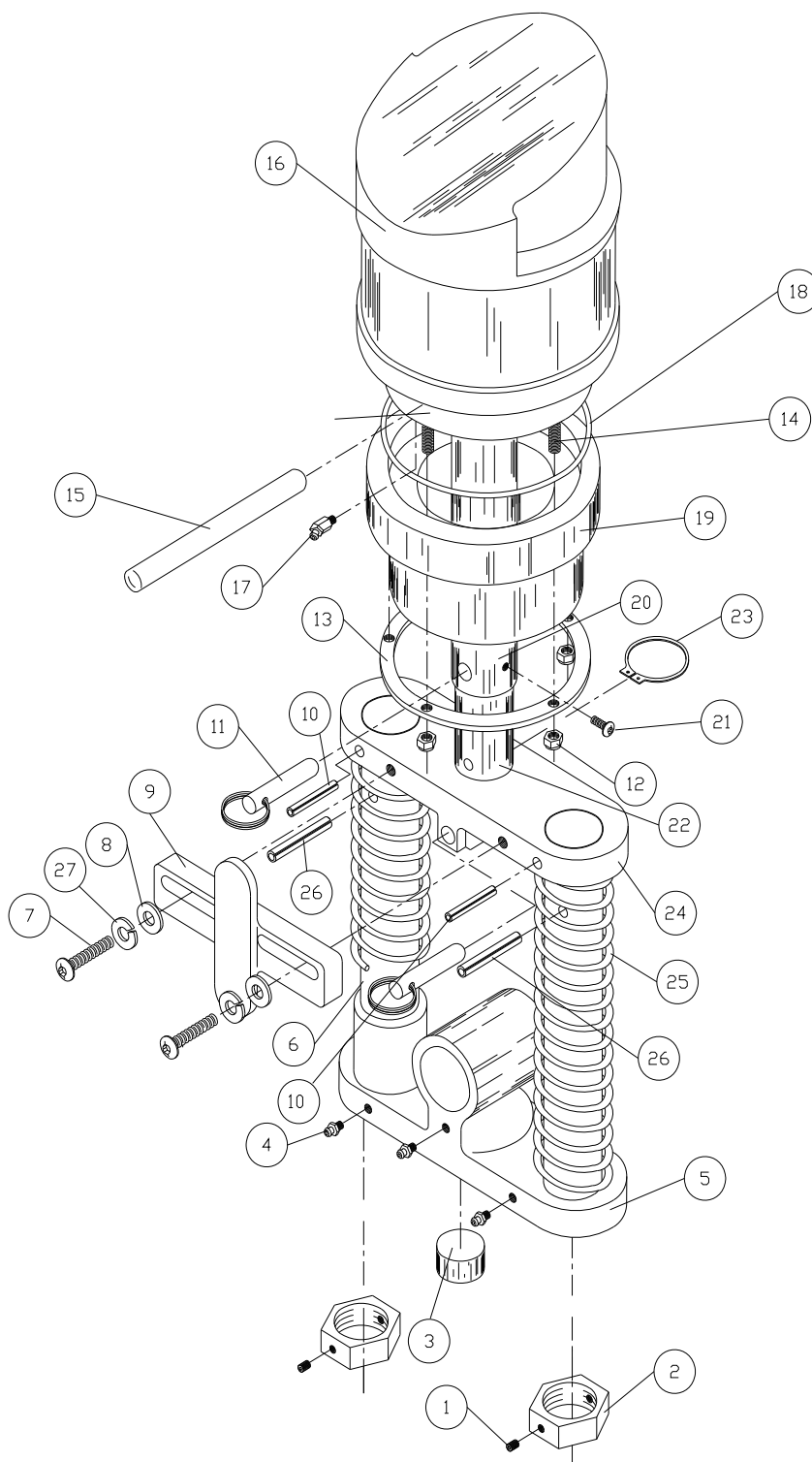
REPLACEMENT PART NO'S FOR ITEM NO. (50):

IF YOUR MACHINE SERIAL # HAS A LETTER IN IT ORDER:  
440CD1 = 2-3/8" O.D.

IF YOUR MACHINE SERIAL # DOES NOT HAVE A LETTER IN IT ORDER:  
440CD2 = 2-1/4" O.D.

OPTIONAL EQUIPMENT FOR PART NO. (445CD)  
PART NO. (445CDE) EXTENDED HOPPER

# PISTON - CONNECTING ROD & SPRING ASSEMBLY



# PISTON - CONNECTING ROD & SPRING ASSEMBLY

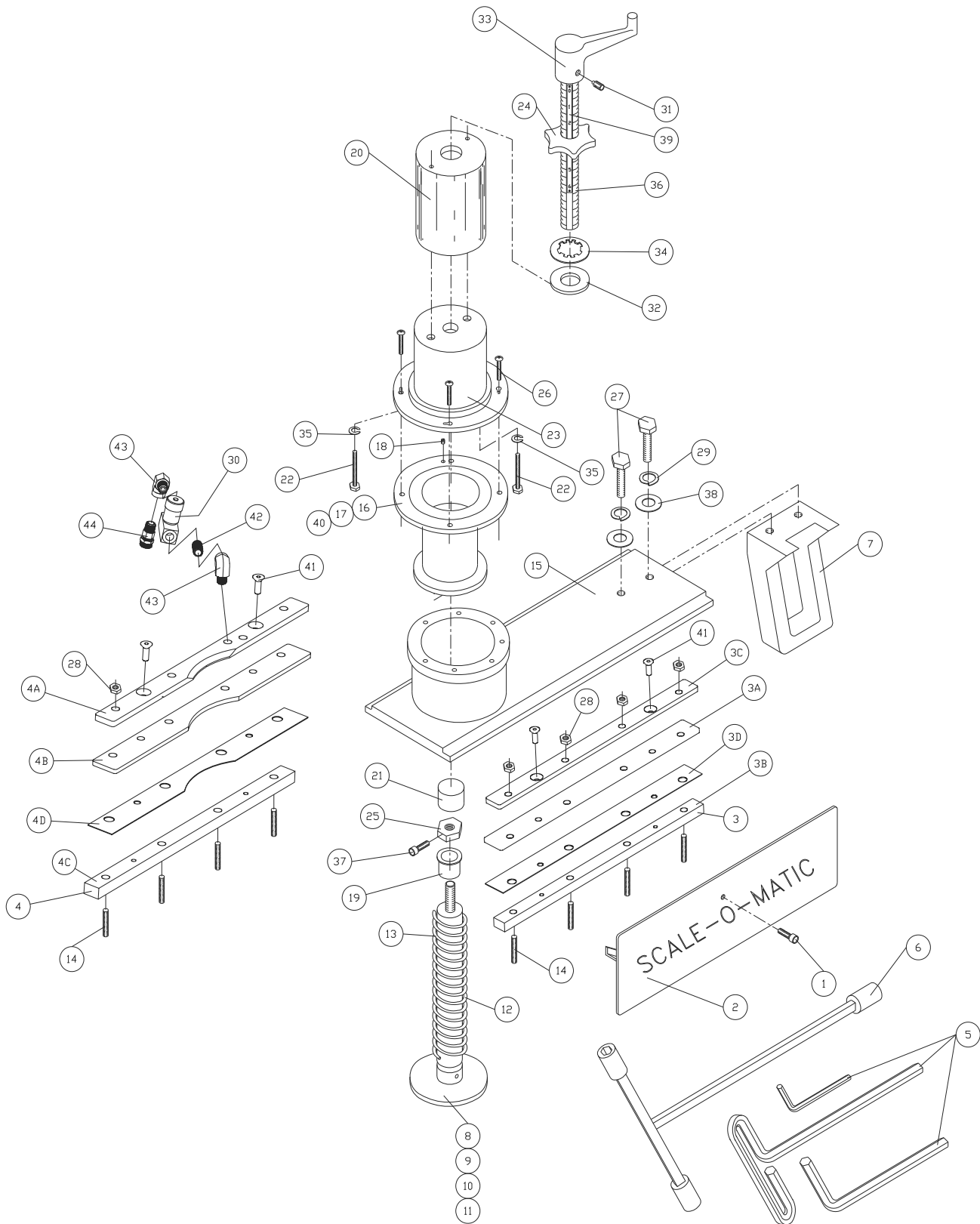
ITEM	PART NO	DESCRIPTION	QTY
1	F0401SS	SET SCREW	2
2	315PY	SPRING LOCK NUT	2
3	313PY	EXPANSION PLUG	1
4	3038-B	GREASE FITTING	3
5	310PY	LOWER CASTING & BUSHING ASSEMBLY INCLUDES: 3 - 3038-B GREASE FITTINGS 1 - 313PY EXPANSION PLUG	1
6	309PY	SPRING GUIDE BARS (NOT SOLD SEPARATELY) SOLD w/ B317PY ONLY	2
7	F0404SB	BOLT	2
8	F0400FW	FLAT WASHER	2
9	306PY	LOCK CONNECTING PIN	1
10	F0408RP	ROLL PIN ¼ DIA. X 2.0" LG.	2
11	304PY	CONNECTING ROD PIN	2
12	F0400LN	LOCK NUT	6
13	302PY	PISTON RING WASHER	1
14	F0416HS	HANGER SCREW	6
15	301PY	WRIST PIN	1
16	300PYA  OR 300PY1	PLASTIC PISTON ASSEMBLY INCLUDES: 6 - F0400LN LOCK NUTS 1 - 301PY WRIST PIN 1 - 302PY PISTON RING WASHER 1 - 323PY PISTON RING / CUP ONLY 1 - 324PY O RING PLATIC PISTON ( <b>ONLY</b> )	1      1
17	3053-B	GREASE FITTING	1
18	324PY	PISTON 'O' RING	1
19	323PY	PISTON RING / CUP ONLY	1
20	322PY	OUTSIDE CONNECTING ROD	1
21	F0401SB	SOCKET BUTTON HEAD SCREW	1
22	319PY	INSIDE CONNECTING ROD	1
23	318PY	TRU ARC RETAINER WASHER	1
24	317PY	UPPER SPRING CASTING ASSEMBLY INCLUDES: 2 - F0406RP SPRING PINS 2 - 309PY SPRING GUIDE BARS 2 - F0408RP SPRING PINS	1
25	316PY	COMPRESSION SPRING	2
26	F0406RP	ROLL PIN ¼ DIA. X 2.0" LG.	2
27	F0406LW	LOCK WASHER	2

## ASSEMBLY PART #'S

A504PY      CONNECTING ROD ASSEMBLY  
INCLUDES:  
  
1 - 318PY    TRU ARC RETAINER WASHER  
1 - 319PY    INSIDE CONNECTING ROD  
1 - 322PY    OUTSIDE CONNECTIONG ROD  
1 - F0401SB   SOCKET BUTTON HEAD SCREW

A503AY      SPRING LOAD ASSEMBLY  
2 - 306PY    LOCK CONNECTING PIN  
3 - 3038-B   GREASE FITTING  
1 - 310PY    LOWER CASTING & BUSHING  
1 - 313PY    EXPANSION PLUG  
2 - 316PY    COMPRESSION SPRING  
1 - 317PY    UPPER SPRING CASTING ASSEMBLY  
2 - 315PY    SPRING LOCK NUT  
HARDWARE

## MEASURING CUP & DIVIDER SLIDE



# MEASURING CUP & DIVIDER SLIDE

ITEM	PART NO	DESCRIPTION	QTY	ITEM	PART NO	DESCRIPTION	QTY
1	F0404SH	SOCKET HEAD BOLT	1	12	516MSL	PLUNGER SPRING (LIGHT) FOR 1" & 2" PLUNGER	1
2	518MS	NAME PLATE & OIL RETURN	1	13	516MSH	PLUNGER SPRING (HEAVY) FOR 3" & 5" PLUNGER	1
3	21641	GIB BAR (LOWER) INCLUDES: 3A. 506MS-B (PLASTIC INSERT) 3B. 507MS (SPACER BAR) 3C. 520MS (GIB BAR, LOWER) 3D. 521MS-B (WEAR STRIP, LOWER)	1	14	F0508SD	STUD	8
4	21640	GIB BAR (UPPER) INCLUDES: 4A. 505MS (GIB BAR, TOP) 4B. 506MS-T (PLASTIC INSERT) 4C. 507MS (SPACER BAR) 4D. 521MS-T (WEAR STRIP, TOP) 1 - 724OS 90° STREET ELBOW	1	15	511MS	DIVIDER SLIDE	1
5	530MSW	WRENCHES 1/8", 1/16" AND 5/32" T-HANDLE	1 SET	16	509MSS	DIVIDER CYLINDER 2"	1
6	542MSW	T WRENCH	1	17	510MS	DIVIDER CYLINDER 3"	1
7	517MS 517MS/H	CAM ARM SLIDE w/ F0607HH SCREWS CAM ARM SLIDE w/ F0605HH HEAVY SCREWS	1 UNIT	18	F0401SS	SET SCREW	4
8	513MS-1  513MS-1S	1" PLUNGER INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 1" PLUNGER w/ SPRING INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 1 - 516MSL PLUNGER SPRING (LIGHT)	1 UNIT	19	539MSP	PLASTIC BUSHING	1
9	513MS-2  513MS-2S	2" PLUNGER INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 2" PLUNGER w/ SPRING INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 1 - 516MSL PLUNGER SPRING (LIGHT)	1 UNIT	20	529MS-2	STOP COVER	1
10	513MS-3  513MS-3S	3" PLUNGER INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 3" PLUNGER w/ SPRING INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 1 - 516MSH PLUNGER SPRING (HEAVY)	1 UNIT	21	529MS-2E	PLASTIC STOP PLUG	1
11	513MS-5  513MS-5S	5" PLUNGER INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 5" PLUNGER w/ SPRING INCLUDES: 1 - F0304RP ROLL PIN 1 - 515MS PLUNGER SHAFT 1 - 516MSH PLUNGER SPRING (HEAVY)	1 UNIT	22	F0416HH	BOLT	2
				23	503MS	PLUNGER GUIDE HOUSING	1
				24	529MS-2D	STAR KNOB	1
				25	531MS	SLOTTED HEX NUT	2
				26	F0404SB	SOCKET HEAD BOLT	4
				27	F0607HH	HEX HEAD BOLT	2
				28	F0500HNC	HEX NUT	8
				29	F0600LW	LOCK WASHER	2
				30	724OS	STREET ELBOW 90°	1
				31	F0502SSDP	SET SCREW w/ FULL DOG POINT	1
				32	F1200WF	WASHER	1
				33	529MS-2F-A	ADJUSTABLE HANDLE	1
				34	F1200RW	RETAINING WASHER	1
				35	531MS	SLOTTED HEX NUT	1
				36	529MS-2C	STOP COVER	1
				37	F0403SH	SOCKET HEAD BOLT ¾" LONG	1
				38	F0600HFW	FLAT WASHER	2
				39	AM TAG #60	MESURING CUP SCALE	1
				40	512MS	DIVIDER CYLINDER 1"	1
				41	F0403FSH	FLAT SOCKE HEAD BOLT	4
				42	7370S	PIPE COUPLING	1
				43	724OS	STREET ELBOW, 90DEG	2
				44	7220S	MALE CONNECTOR - HOSE	1

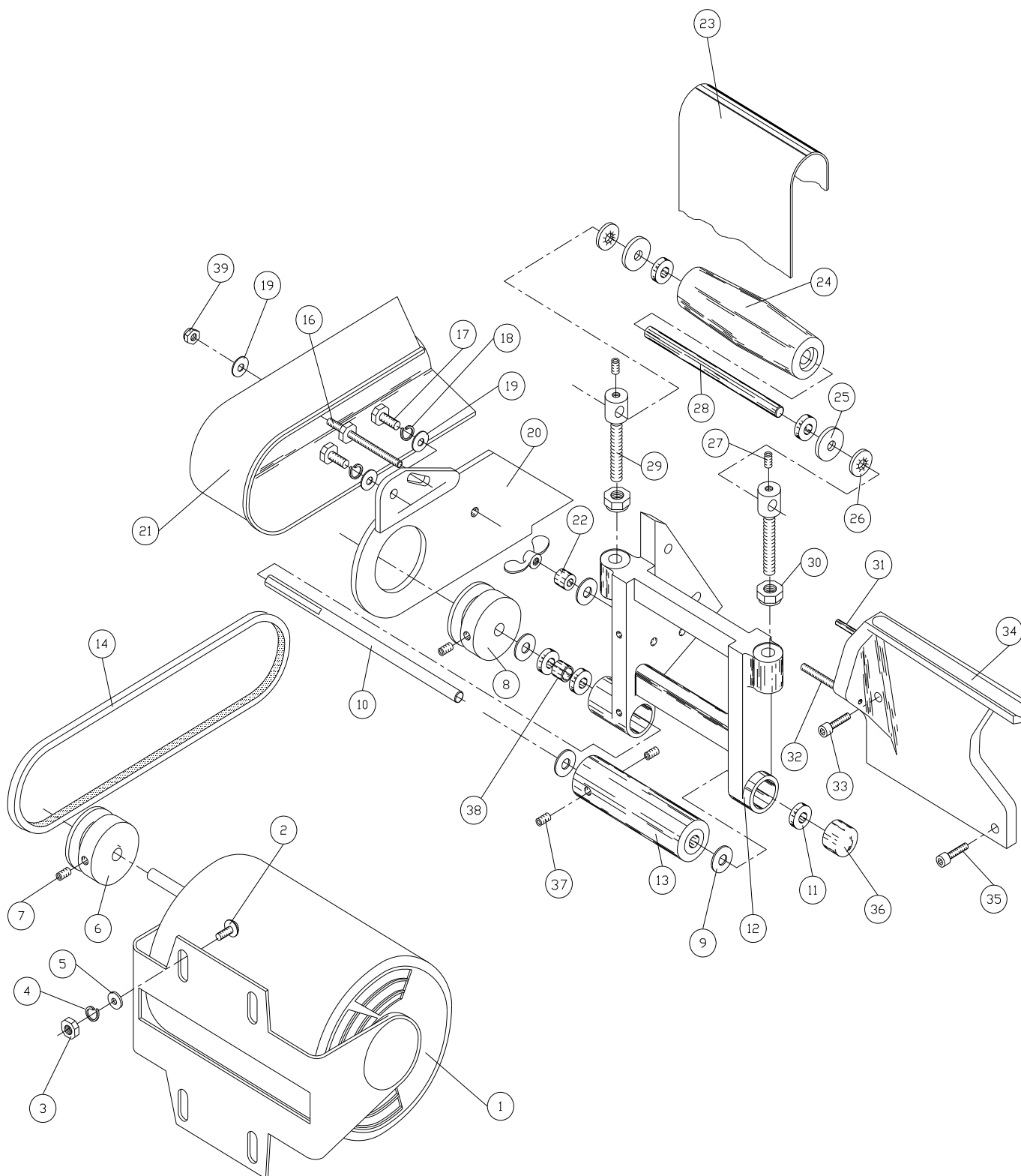
## INDIVIDUAL MEASURING CUP ASSEMBLIES

AMS1 - FOR 1oz. TO 2oz. PIECES  
AMS2 - FOR 2oz. TO 4oz. PIECES  
AMS3 - FOR 4oz. TO 10 oz. PIECES  
AMS5 - FOR 10oz. TO 32oz. PIECES

## NOTE:

PART NO. A501MS (COMPLETE STOP COVER ASSEMBLY AVAILABLE TO REPLACE OLD STYLE STOP COVERS).

# SMALL TAKE-OFF CONVEYOR

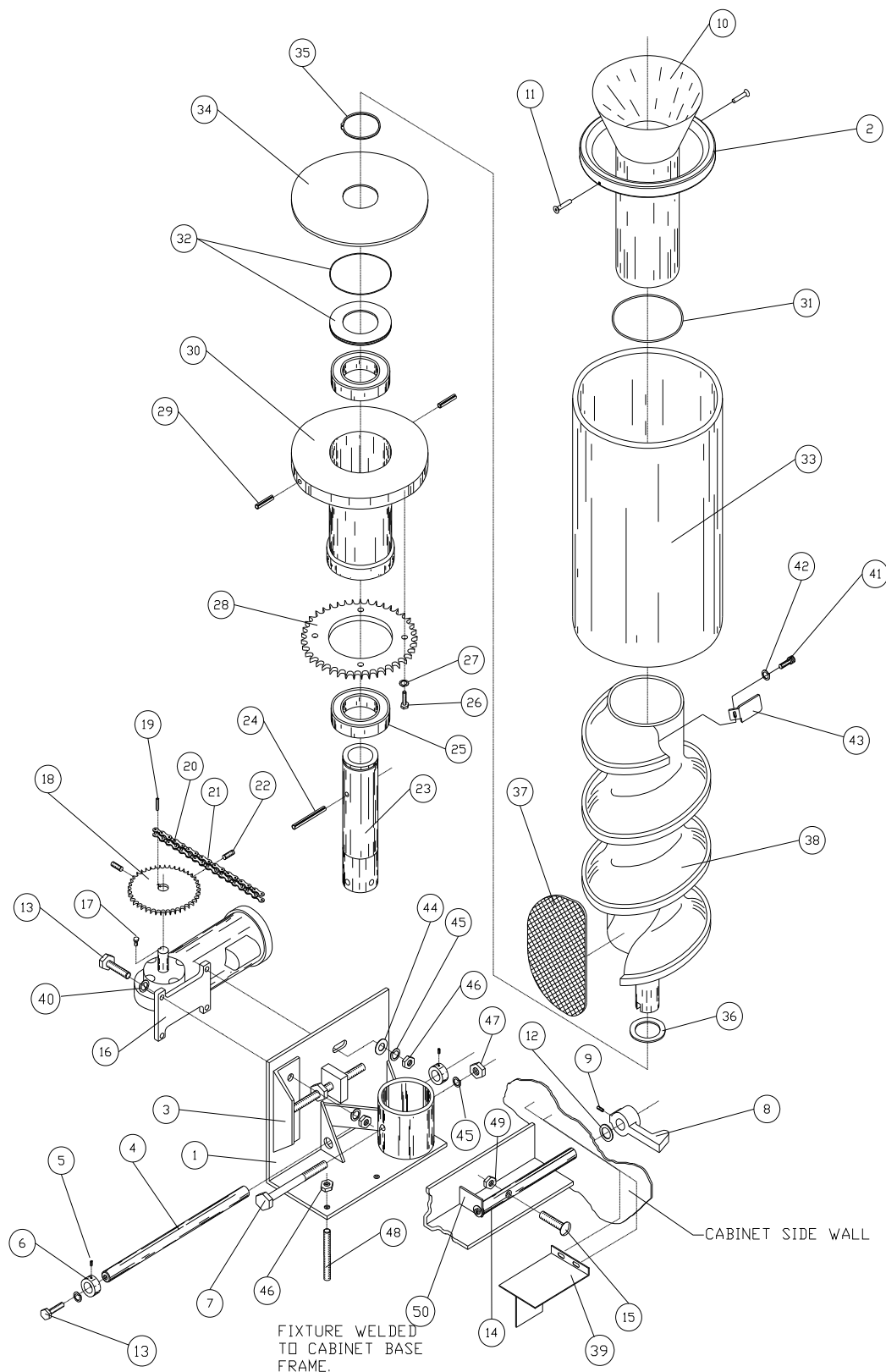




## SMALL TAKE-UP CONVEYOR

ITEM	PART NO	DESCRIPTION	QTY
1	SS266	¼ H.P. MOTOR(208-240Vac / 60Hz) (STANDARD MACHINE)	1
	15264	INCLUDES: PIG TAIL FOR MOTOR 1/3 H.P. MOTOR (380Vac / 50HZ) INCLUDES: PIG TAIL FOR MOTOR	
2	F0503CB	BOLT	4
3	F0500NC	NUT	4
4	F0500LW	LOCK WASHER	4
5	F0500FW	FLAT WASHER	4
6	638SC	MOTOR PULLEY	1
7	F0401SS	SET SCREW	4
8	616SC	SMALL BELT PULLEY (3/8")	1
9	F0800WF	FIBER WASHER	3
10	618SC	DRIVE SHAFT (3/8")	1
11	603SCA	BALL BEARING (3/8")	5
12	620SC	CONVEYOR BRACKET (NOT SOLD SEPARATELY, SEE SC601A)	1
	A620SC	CONVEYOR BARCKET ASSEMBLY DOES NOT INCLUDE PART #: 621SC	1
13	619SC	LOWER ROLLER ASSEMBLY w/ SET SCREWS	1
14	609SCB	"V" BELT (28")	1
15	F0400WN	WING NUT	2
16	F0412SD	STUD	1
	F0400NC	NUT	1
17	F0426HH	BOLT	2
18	F0400LW	LOCK WASHER	2
19	F0400FW	FLAT WASHER	3
20	610SC	COVER SUPPORT	1
21	608SC	COVER-BELT	1
22	642SC	SPACER	1
23	605SC	SMALL CONVEYOR BELT	1
24	A604SC	TOP ROLLER 93/8" w/ SHAFT & TWO (2) BEARINGS	1
25	F0400NW	NYLON WASHER	2
26	F0400RW	RETAINING WASHER	2
27	F0401SS	SET SCREW	1
28	602SC	ROLLER SHAFT (3/8")	1
29	600SC	SUPPORT ROLLER	2
30	F0600LN	NUT	2
31	F0405RP	ROL PIN	1
32	F0406SD	STUD	1
33	F0404SH	BOLT	1
34	621SC	CONVEYOR SUPPORT BRACKET	1
35	F0403SH	BOLT	1
36	627SC	CAP - BEARING	1
37	F0503SS	SET SCREW	2
38	617SC	SPACER	1
39	F0400NLN	NYLOCKNUT	1

# ROUNDER ASSEMBLY



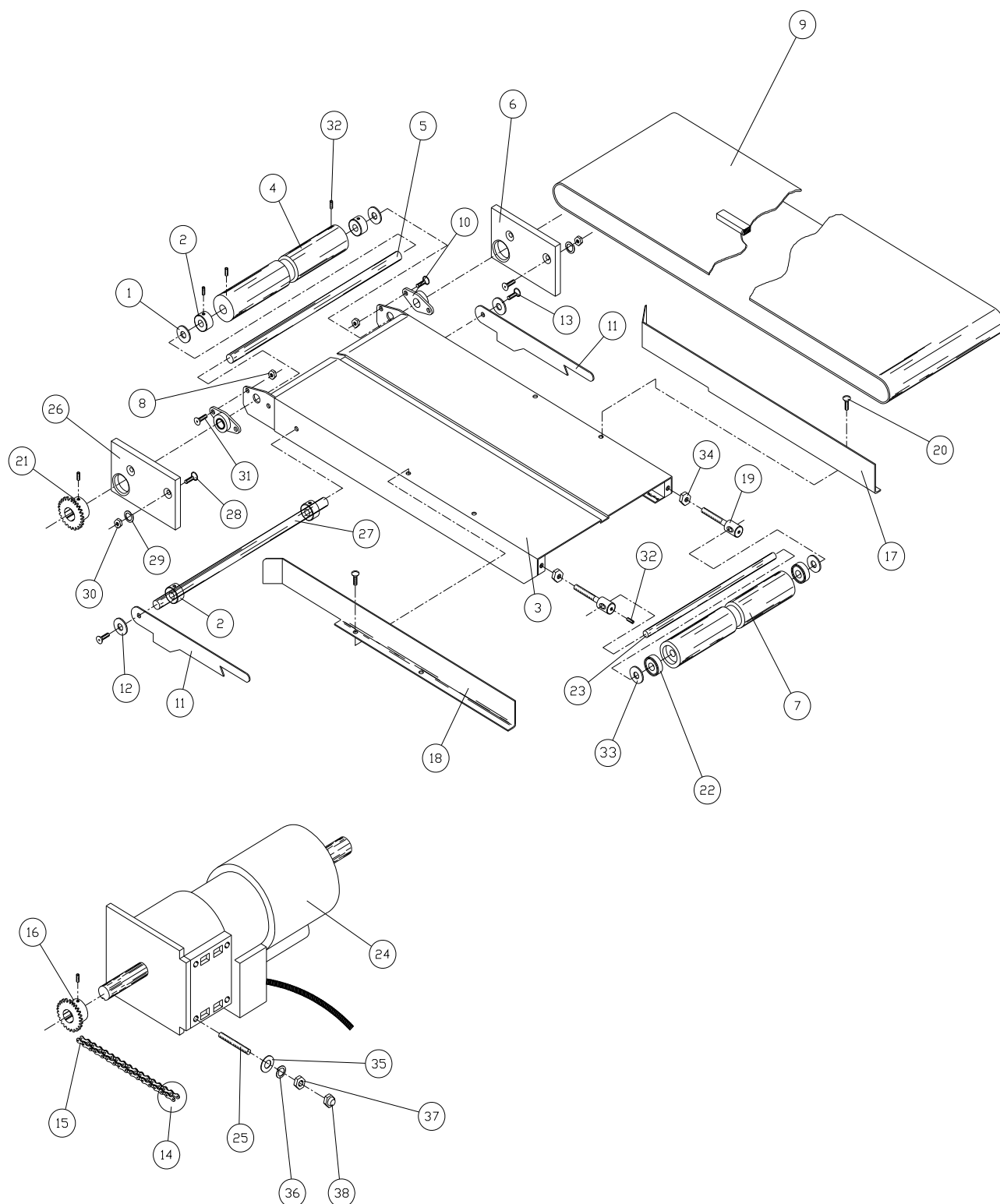
## ROUNDER ASSEMBLY

ITEM	PART NO	DESCRIPTION	QTY
1	SR139RA	PIVOT BASE	1
2	R115RA	RING	1
3	R144RA	MOTOR ADJUSTING BRACKET	1
4	R146RA	SWIVEL SHAFT	1
5	F0501SS	SET SCREW	2
6	R147RA	COLLAR ¾" I.D.	2
7	F0618HH	BOLT	1
8	R149RA	SWIVEL LOCKING HANDLE	1
9	F0602SS	SET SCREW w/ DOG POINT	1
10	SR135RA	FUNNEL (TEFLON COATED)	1
11	F0404FSH	SCREW	2
12	F0800NW	FIBER WASHER	1
13	F0606HH	BOLT	5
14	R148RA	SWIVEL LOCKING ASSEMBLY (1 – SHAFT, 2 – F0600FW, 1 – F0607SS, 1 – F0600LN)	1
15	F0608CB	CARRIAGE BOLT w/ SLOTTED END	1
16	SS255 SS256 14028	GEAR MOTOR ¾ H.P. (SINGLE PHASE) (STANDARD MACHINE) GEAR MOTOR 1 H.P. (THREE PHASE) MOTOR 1H.P. (380Vac / 50Hz) – GEARBOX SOLD SEPARATELY – SEE #52	1
17	133RA	BREATHER	1
18	R103RA	SPROCKET (27T)	1
19	F0404KY	KEY (1/4")	1
20	R105RA	DRIVE TRAIN (#50 UNPLATED) (31 LINKS)	1
21	R106RA	CONNECTING LINK (#50 UNPLATED)	1
22	F0525CPSS	SET SCREW 5/16-18 x 3/8" LONG	2
23	R108RA-S	SPINDLE	1
24	F0612RP	3/8" x 3" LONG ROLL PIN	1
25	R135RA	BEARING	2
26	F0504HH	BOLT	4
27	F0500LW	LOCK WASHER	4
28	R109RA	SPROCKET (45T)	1
29	R107RA	DRIVE PIN (3/8" DIA. X 1-3/4" LONG)	2
30	R108RA-B	ROUNDER BASE	1
31	R143RA	"O" RING	1
32	R134RA	PLASTIC INSERT w/ "O" RING	1
33	R117RA	DRUM	1
34	R141RA	PLASTIC SEAL RING	1
35	R145RA	SNAP RING	1
36	R142RA	RUBBER WASHER	1
37	R124RA-F	FACING (OBSOLETE ON NEW MACHINES AS OF 5/1/02)	1
38	R122RA	ROUNDER SCREW	1
39	SR141RA	PIVOT BASE GUARD ASSEMBLY	2
40	F0600LW	LOCK WASHER	1
41	F0403SH	SOCKET HEAD BOLT	1
42	F0400FW	FLAT WASHER	1
43	R121RA	EXIT RAMP	1
44	F0600FW	FLAT WASHER	5
45	F0600LW	LOCK WASHER	5
46	F0600NC	NUT	6
47	F0800NC	NUT	4
48	F0607SD	STUD	2
49	F0600LN	LOCK NUT	1
50	R150RA	FOOT PEDAL POST	1
51	F0600LW	LOCKWASHER	4
52	12081	GEARBOX (380Vac / 50Hz) MACHINES ONLY	1

**NOTE:**

THE ROUNDER SCREW IS SUBJECT TO ABUSE. CARE MUST BE TAKEN IN HANDLING WHEN NOT IN USE WITH MACHINE. LAY ROUNDER SCREW DOWN FLAT ON THE GROUND CAREFULLY.

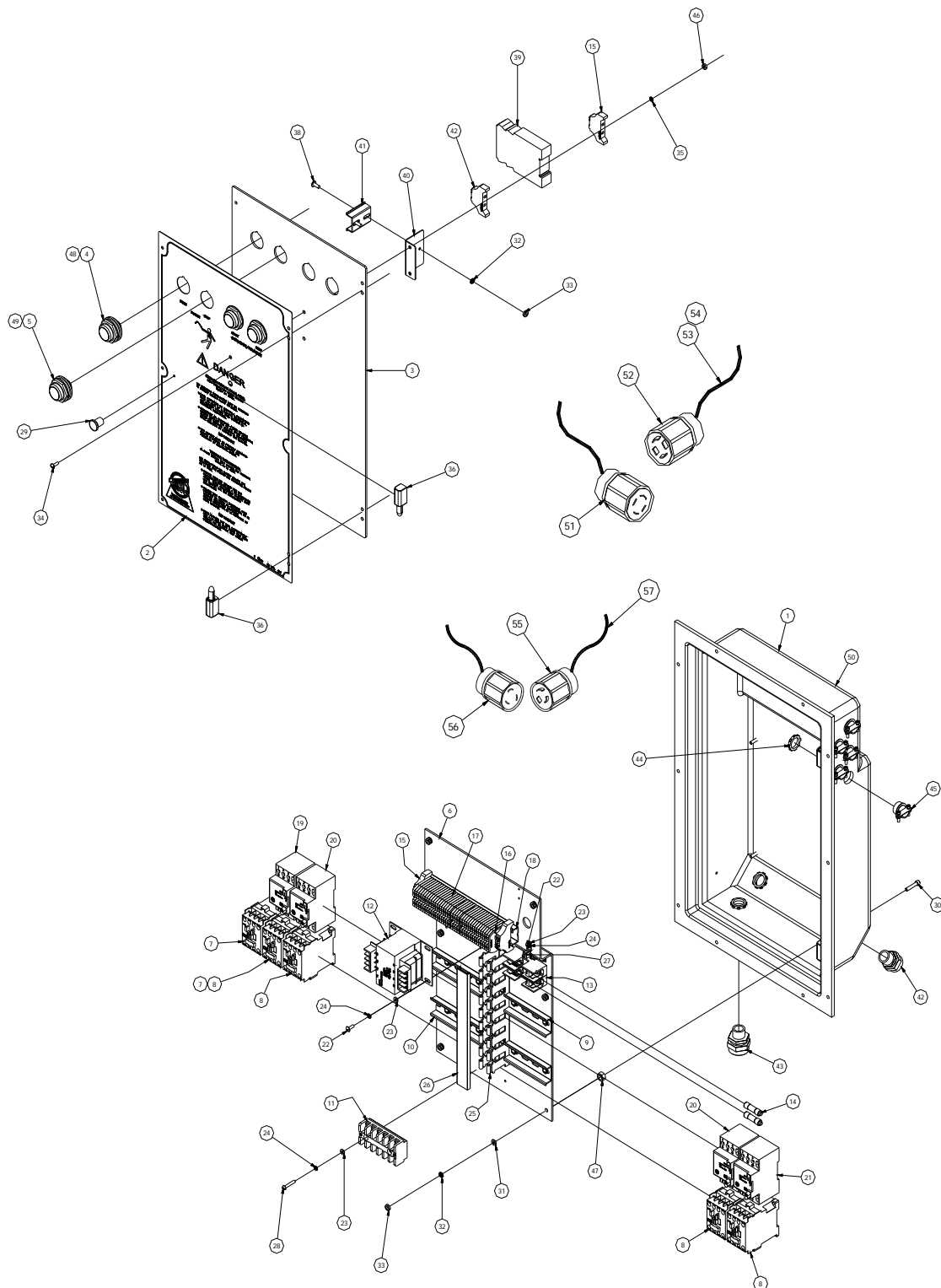
# CONVEYOR ASSEMBLY (STANDARD)



# CONVEYOR ASSEMBLY

ITEM	PART NO	DESCRIPTION	QTY
1	F0800NW	NYLON WASHER	2
2	119CA	½" LOCKING COLLAR	2
3	118CA	CONVEYOR FRAME	1
4	101CA	DRIVE ROLLER	1
5	115CA	DRIVE ROLLER SHAFT	1
6	11960	SIDE CONVEYOR MOUNTING BRACKET (LEFT)	1
7	A109CA	IDLER ROLLER ASSEMBLY INCLUDES: 1 - 109CA IDLER ROLLER 2 - 603SCA BALL BEARING	1
8	F0400LN	¼-20 LOCK NUT	4
9	104CA	CONVEYOR BELT	1
10	102CA	SELF-ALIGNING BRONZE FLANGE BEARING	2
11	105CA	CONVEYOR ELEVATOR	2
12	F0400FW	¼-20 FLAT WASHER	2
13	F0402HH	¼-20 X ½ HEX HEAD	2
14	114CA	NO. 35 CONNECTING LINK UNIT	1
15	113CA	CHAIN NO. 35 AT 16 LINKS	1
16	112CA	MOTOR SPROCKET	1
17	106CAL	CONVEYOR GUIDE (LEFT)	1
18	106CAR	CONVEYOR GUIDE (RIGHT)	1
19	A600SC	ROLLER SUPPORT ASSEMBLY	2
20	F9702RH	8-32 ROUND HEAD SCREW	4
21	116CA	ROLLER SPROCKET	1
22	603SCA	BALL BEARING	2
23	108CA	IDLER ROLLER SHAFT	1
24	SS252	CONVEYOR MOTOR	1
25	F0504SD	SOCKET HEAD STUD	4
26	11959	SIDE CONVEYOR MOUNTING BRACKET (RIGHT)	1
27	11958	CONVEYOR ELEVATOR SHAFT	1
28	F0406SFH	¼-20 X 1.5 SOCKET FLAT HEAD	4
29	F0400LW	¼" LOCK WASHER	4
30	F0400NC	¼-20 COURSE NUT	4
31	F0402FSH	¼-20 X ½ FLAT SOCKET HEAD	4
32	F0401SS	SET SCREW	4
33	F0600NW	NYLON WASHER	2
34	F0500LN	5/16 LOCK NUT	8
35	F0500FW	5/16 FLAT WASHER	2
36	F0500LW	5/16 LOCKWASHER	4
37	F0500NC	5/16 COURSE NUT	4
38	F0500NC	5/16 - 18 CAP NUT	4

# ELECTRICAL CONTROL PANEL COMPONENTS



# ELECTRICAL CONTROL PANEL PARTS LIST

ITEM	PART NO	DESCRIPTION	QTY
1	617CA6	ELECTRICAL ENCLOSURE	1
2	TAG #37	ELECTRICAL ENCLOSURE DOOR LABEL	1
3	11423	ELECTRICAL ENCLOSURE PANEL	1
4	SS184	START BUTTON, GREEN	2
5	EL-0409	PUSH BUTTON, RED	2
6	SS268	ELECTRICAL SUB PANEL	1
*7	EL-0935	IEC MOTOR CONTACTOR (16 AMP)	1
8	EL-0853	IEC MOTOR CONTACTOR (9 AMP)	4
9	EL-0975	DIN RAIL - 4" LONG	2
10	EL-0975	DIN RAIL - 5-7/8" LONG	2
11	SS143	6 POINT TERMINAL BLOCK	1
12	SS176	100VA TRANSFORMER	1
13	SS142	FUSE HOLDER	2
14	SS134	2 AMP FUSE (CLASS CC)	2
15	EL-0396	TERMINAL BLOCK END ANCHOR	2
16	EL-0397	END BARRIER (GRAY)	3
17	EL-0395	TERMINAL BLOCK (TYPE MA2.5/5)	36
18	EL-0975	DIN RAIL - 8.5" LONG	1
19	EL-0856	MANUAL MOTOR STARTER (6.3 - 10 AMPS)	1
20	EL-0854	MANUAL MOTOR STARTER (2.5 - 4.0 AMPS)	2
21	EL-0859	MANUAL MOTOR STARTER (0.63 - 1.0 AMPS)	1
22	F9702TH	8-32 X 1/2" LONG TRUSS HEAD	22
23	F9700FW	FLAT WASHER #8	22
24	F9700LW	LOCK WASHER #8	22
25	SS181	WIRE DUCT - 1 X 2 X 9" LONG	1
26	SS182	WIRE DUCT COVER - 1" WIDE (9" LONG)	1
27	EL-1371	GROUNDING SCRULUGS	2
28	F9704RH	SCREW (ROUND HEAD) 8-32 UNCX1	2
29	EL-0414	KNOB	1
30	F09904SH	SOCKET HEAD CAP SCREW (10-32 X 1" LONG)	6
31	F9900FW	FLAT WASHER, # 10	6
32	F9900LW	LOCK WASHER, #10	8
33	F9900MSN	10-32 MACHINE SCREW NUT	8
34	F9702TH	8-32 X 1/2" LONG TRUSS HEAD	3
35	F9700LW	LOCK WASHER #8	3
36	1209	HINGE	2
37	F9901TH	10-32 X 1/4" LONG TRUSS HEAD	4
38	F9902TH	10-32 X 1/2" LONG TRUSS HEAD	6
39	EL-1307	GUARDMASTER SAFETY RELAY	1
40	20452	SAFETY RELAY MOUNT BRACKET	1
41	EL-0975	DIN RAIL - 1-3/4" LONG	1

**\* SECOND PART USED SINGLE PHASE MACHINES**

**NOTE:**

GUARDS ARE INTERLOCKED, MACHINE WILL NOT OPERATE WITHOUT GUARDS IN PLACE.

**NOTE:**

ELECTRICAL PARTS STANDARD ON ALL MACHINES UNLESS SPECIFIED.

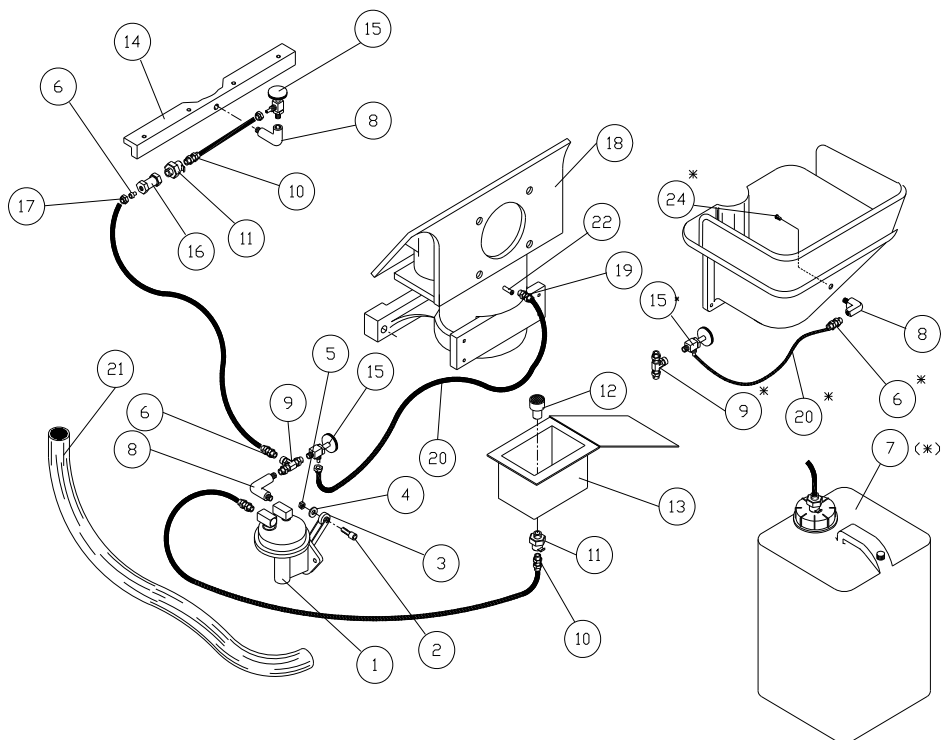
# ELECTRICAL CONTROL PANEL PARTS LIST CONTINUED

ITEM	PART NO	DESCRIPTION	QTY
43	SS276	1/2" CORD GRIP (.625 - .75)	1
44	SS101	1/2" CONDUIT FITTING LOCKNUT	7
45	SS100	3/8 CORD GRIP FITTING	5
46	F9700NC	NUT, COURSE 8-32 HEX	2
47	F0500NC	NUT COURSE, 5/16-18	6
48	400039	N.O. CONTACT BLOCK	2
49	400038	N.C. CONTACT BLOCK	2
50	SS103	90 DEGREE FITTING (ON BACK OF BOX - NOT SHOWN)	1
51	SS160	ROUNDER MOTOR CONNECTOR	1
	SS156	ROUNDER MOTOR CONNECTOR (208-230Vac SINGLE PHASE MACHINES ONLY)	
	SS162	ROUNDER MTOOR CONNECTOR (380-480Vac THREE PHASE MACHINES ONLY)	
52	SS159	MAIN POWER AND ROUNDER MOTOR PLUG	2
	SS155	MAIN POWER AND ROUNDER MOTOR PLUG (208-230Vac SINGLE PHASE MACHINES ONLY)	
	SS161	MAIN POWER AND ROUNDER MOTOR PLUG (380-480Vac THREE PHASE MACHINES ONLY)	
53	SS223	12/4 MAIN POWER CORD	12'
	SS222	12/3 MAIN POWER CORD (208-230Vac SINGLE PHASE MACHINES ONLY)	
54	SS225	16/4 ROUNDER MOTOR CORD	64"
	SS220	14/3 ROUNDER MTOOR CORD (203/230Vac SINGLE PHASE MACHINES ONLY)	
55	SS153	CONVEYOR MOTOR PLUG	2
56	SS154	CONVEYOR MOTOR CONNECTOR	2
57	SS221	16/3 CONVEYOR MOTOR CORD	8' 1/4"
*58	SS135	FUSE (5 AMP)(380-480Vac THREE PHASE MACHINES ONLY	2
*59	EL-0226	TRANSFORMER (380-480Vac THREE PHASE MACHINES ONLY	1
*60	EL-0972	VARIABLE FREQUENCY DRIVE (208-230Vac SINGLE PHASE MACHINES ONLY)	1
*61	EL0924	VARIABLE FREQUENCY DRIVE (208-230Vac THREE PHASE MACHINES ONLY)	1
*62	EL-0888	VARIABLE FREQUENCY DRIVE (380-480Vac THREE PHASE MACHINES ONLY)	1
*63	EL-0925	VARIABLE FREQUENCY DRIVE CONVERSION KIT (CONDUIT PLATE)	1

\* NOT STANDARD PARTS



# OILING SYSTEM



ITEM	PART NO	DESCRIPTION	QTY
1	716OS	OIL PUMP	1
2	F0403SH	BOLT	1
3	714OS	PUMP ROLLER BEARING	1
4	F0400LW	LOCK WASHER	1
5	F0400LN	HEX LOCK NUT	1
6	722OS	MALE CONNECTOR	3
**7	732OSA	EXTERNAL OIL TANK	1
8	724OS	STREET ELBOW 90°	2
9	725OS	STREET "T"	1
10	726OS	QUICK CONNECT, MALE	2
11	727OS	QUICK CONNECT, FEMALE	3
12	713OS	STRAINER W/ INSERT - FILTER ADAPTER	1
13	604CA	OIL BOX	1
14	S507MS/B	GIB BAR	1
15	14393	VALVE	2
16	103-B-OZ	BRASS COUPLING	1
17	709OS	PLASTIC FERRULES	10
18	S0107CD	CYLINDER	1
19	708OS	MALE CHECK VALVE	1
20	710OS	1/4" OIL SYSTEM TUBING 12 FT.	12 FT. / * 2 FT.
21	711OS	1/2" OIL DRAIN TUBING 4 FT.	4 FT.
22	721OS	BRACKETS (PAIR)	1
23	741OS	PLUG	1
24	728OS	BRASS INSERT	1
25	F0400FW	STAINLESS STEEL FLAT WASHER	1

\* INDICATES PARTS  
AVAILABLE WITH PART  
NO. 445CDE EXTENDED  
HOPPER (ONLY)

**\*\*NOTE:**  
OPTIONAL EQUIPMENT

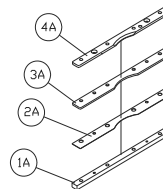
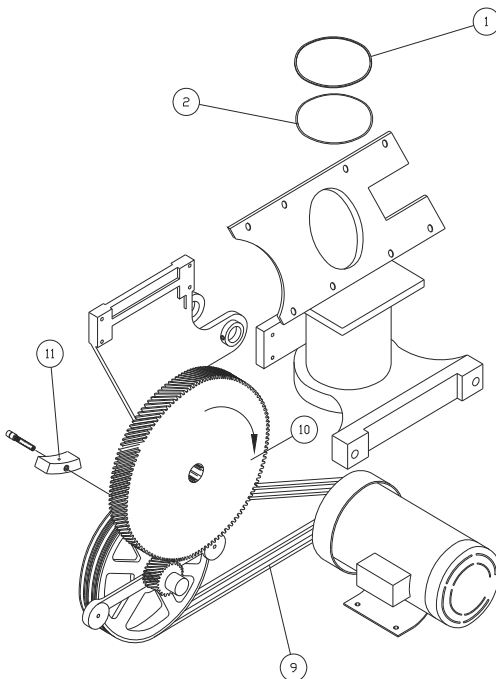
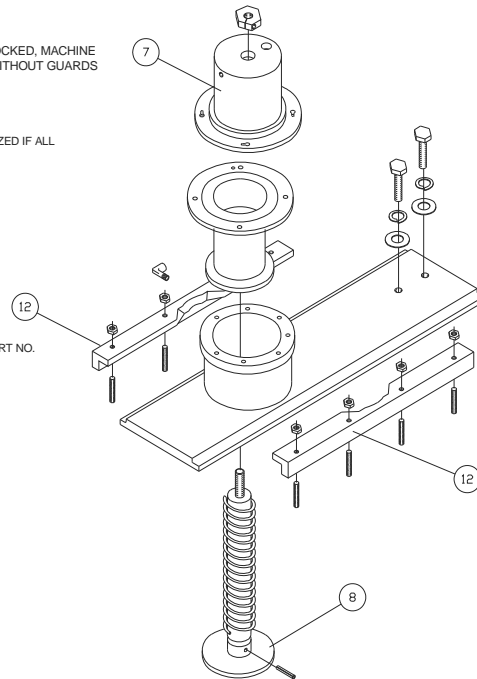
# TROUBLESHOOTING

**DANGER:**  
ALWAYS DISCONNECT ELECTRICAL POWER SOURCE  
WHEN MAINTAINING OR REPAIRING THIS MACHINE...

**NOTE:**  
GUARDS ARE INTERLOCKED, MACHINE  
WILL NOT OPERATE WITHOUT GUARDS  
IN PLACE.

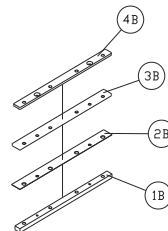
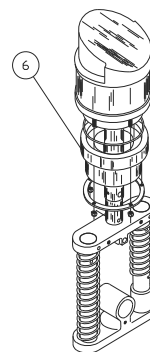
THE OPERATION OF THE SCALE - O - MATIC DEPENDS ON VACUUM. FOR TOP PERFORMANCE, THEREFORE CAN ONLY BE REALIZED IF ALL SEAL POINTS ARE IN PROPER ADJUSTMENT. THE FOLLOWING PLACES FOR POSSIBLE LOSS OF VACUUM ARE TO BE CHECKED:

1. PART NO. S0113CD GEAR  
MAKE SURE MACHINE IS RUNNING IN THE RIGHT DIRECTION. SEE ARROW ON GEAR.  
GEAR MUST TURN CLOCKWISE.
2. PART NO. 402CD NEOPRENE "O" RING
3. PART NO. 506MS-SLIDE PRESSURE STRIPS-POLYETHYLENE  
CHECK FOR LOSS OF COMPRESSIBILITY.
4. PART NO. 521MS SLIDE WEAR STRIP-NYLON  
CHECK FOR WEAR.
5. PART NO. 504MS GIB SCREWS  
CHECK FOR SNUGNESS
6. PART NO. 323PY PISTON RING  
CHECK FOR WEAR-REPLACE IF WORN OR SCORED.
7. PART NO. 503MS MEASURING CUP PLUNGER ROD GUIDE CHECK FOR WEAR AND SMOOTHNESS OF OPERATION. IF WORN PART NO. 513MS WILL BIND OR STICK.
8. PART NO. 513MS PLUNGER  
CHECK FOR CIRCUMFERENCE WEAR, REPLACE IF DOUGHS BY-PASS INTO SPRING SECTION.
9. PART NO. 434CD V-BELT DRIVE  
KEEP BELT TIGHT TO AVOID SLIPPAGE.
10. PART NO. 401CD SEAL SCRAPER RING  
CHECK FOR WEAR AND FOR STRAIGHTNESS.
11. PART NO. S0113CD GEAR  
CLEAN CAM TRACK OCCASIONALLY. OBSERVE IF PART NO. 448CD (CAM TRACK SHOE) IS WORN, ALSO CHECK FOR WEAR ON GEAR CAM TRACK.
12. PART NO. 21640 / 21641 BRONZE GIB BAR  
CHECK GIB BARS FOR WEAR AND EXCESSIVE PLAY BETWEEN DIVIDER SLIDE.



## ASSEMBLY INSTRUCTIONS:

- 1A. INSERT SPACER BAR OVER GIB BAR BOLTS FIRST. (507MS)
- 2A. PLACE WEAR STRIP LINER (1/32" X 13" LG.) OVER SPACER BAR. (521MS-T)
- 3A. PLACE PLASTIC WEAR STRIP (1/4" X 13" LG.) OVER LINER. (506MS-T)
- 4A. NOW PLACE TOP GIB BAR OVER PLASTIC WEAR STRIP AND SECURE WITH HEX BOLTS. (505MS)



## ASSEMBLY INSTRUCTIONS:

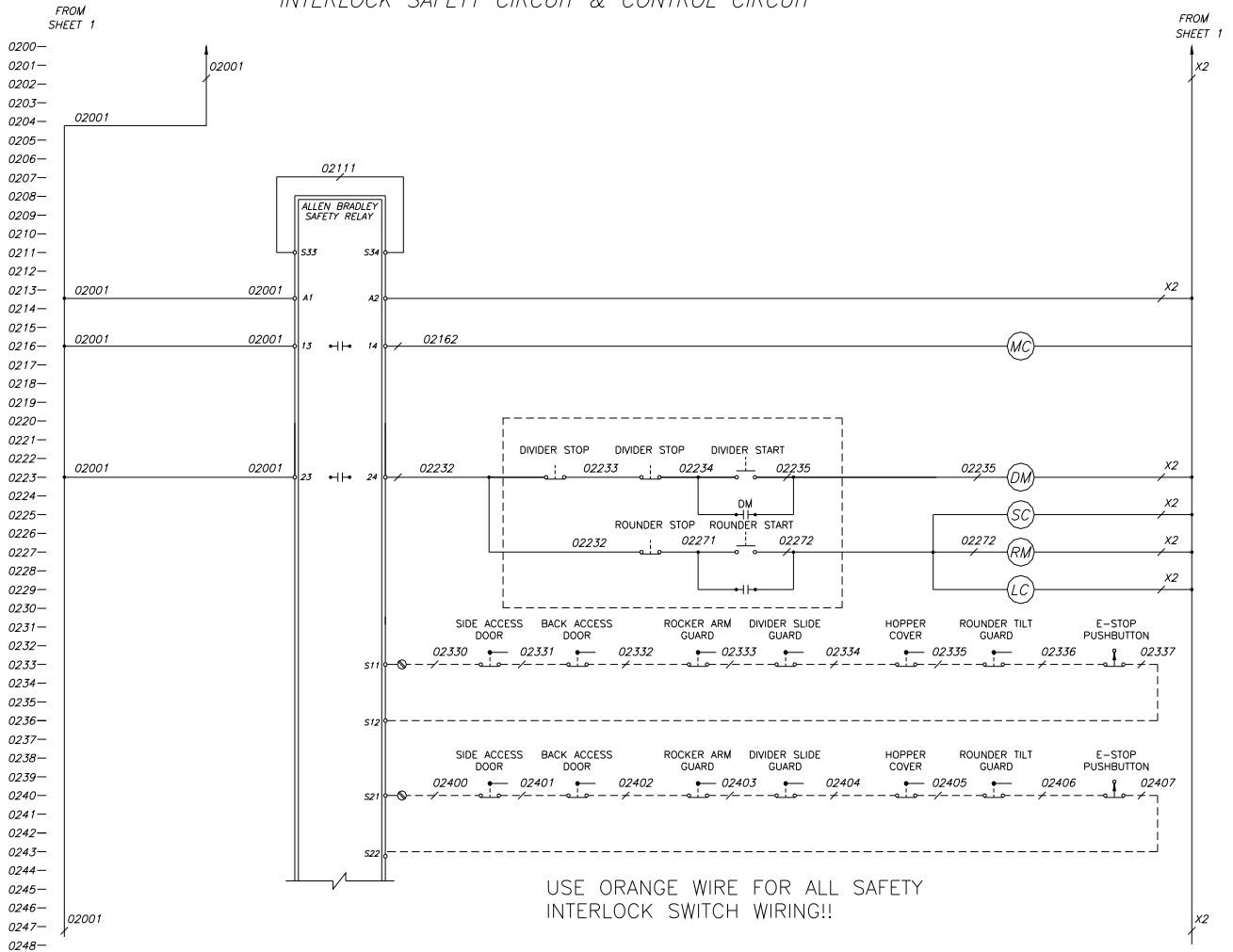
- 1B. INSERT SPACER BAR OVER GIB BAR BOLTS FIRST. (507MS)
- 2B. PLACE WEAR STRIP LINER (1/32" X 13" LG.) OVER SPACER BAR. (521MS-B)
- 3B. PLACE PLASTIC WEAR STRIP (1/4" X 13" LG.) OVER LINER. (506MS-B)
- 4B. NOW PLACE TOP GIB BAR OVER PLASTIC WEAR STRIP AND SECURE WITH HEX BOLTS. (520MS)

# ELECTRICAL (SCHEMATIC) CONTROL SAFETY CIRCUIT & CONTROL CIRCUIT

— SHEET 2 —

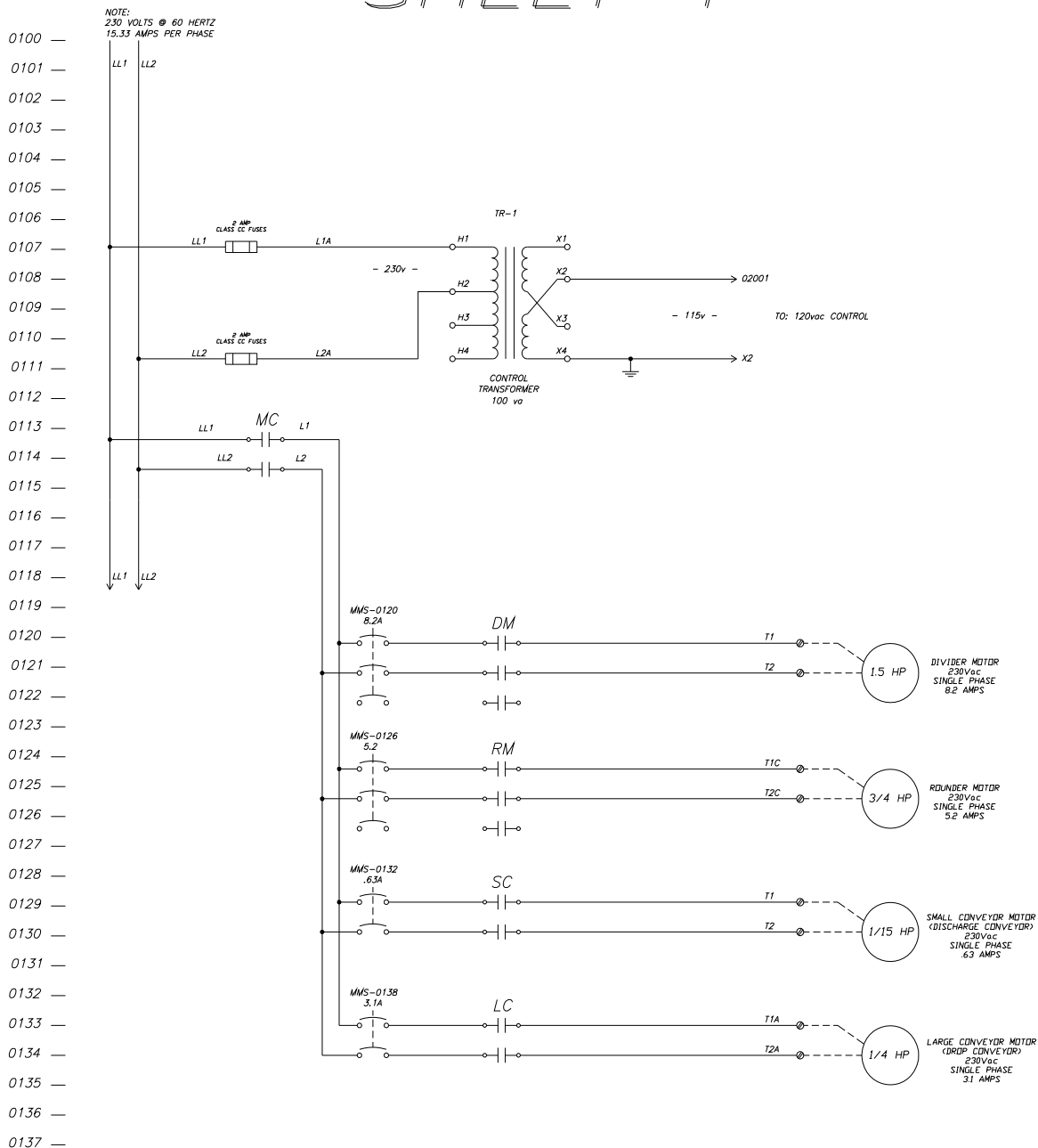
AB SAFETY RELAY

"INTERLOCK SAFETY CIRCUIT & CONTROL CIRCUIT"



# ELECTRICAL (SCHEMATIC) SINGLE PHASE / 208 - 230 VOLT

— SHEET 1 —

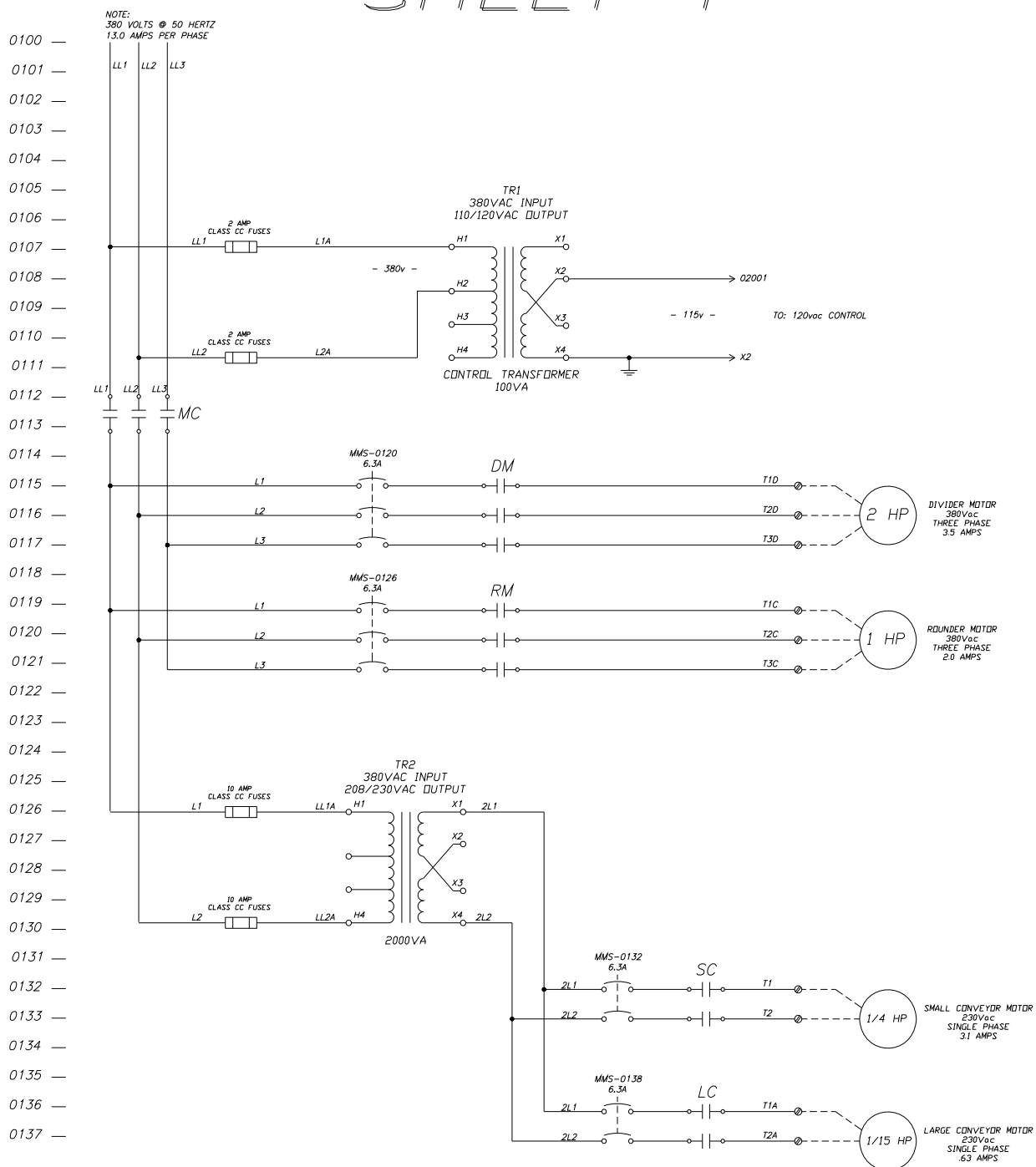


— SHEET 1 —



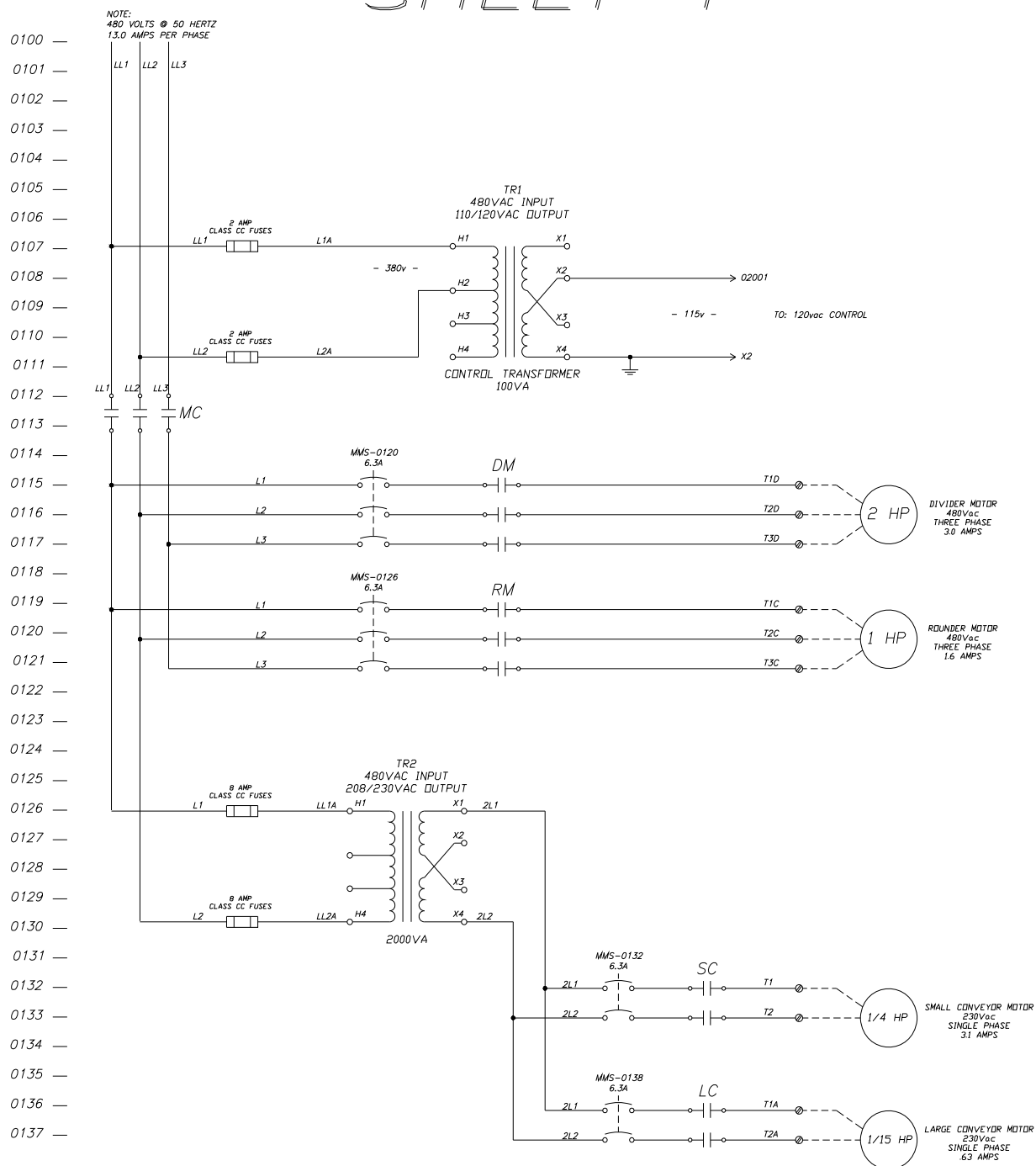
# ELECTRICAL (SCHEMATIC) THREE PHASE / 380 VOLT

— SHEET 1 —



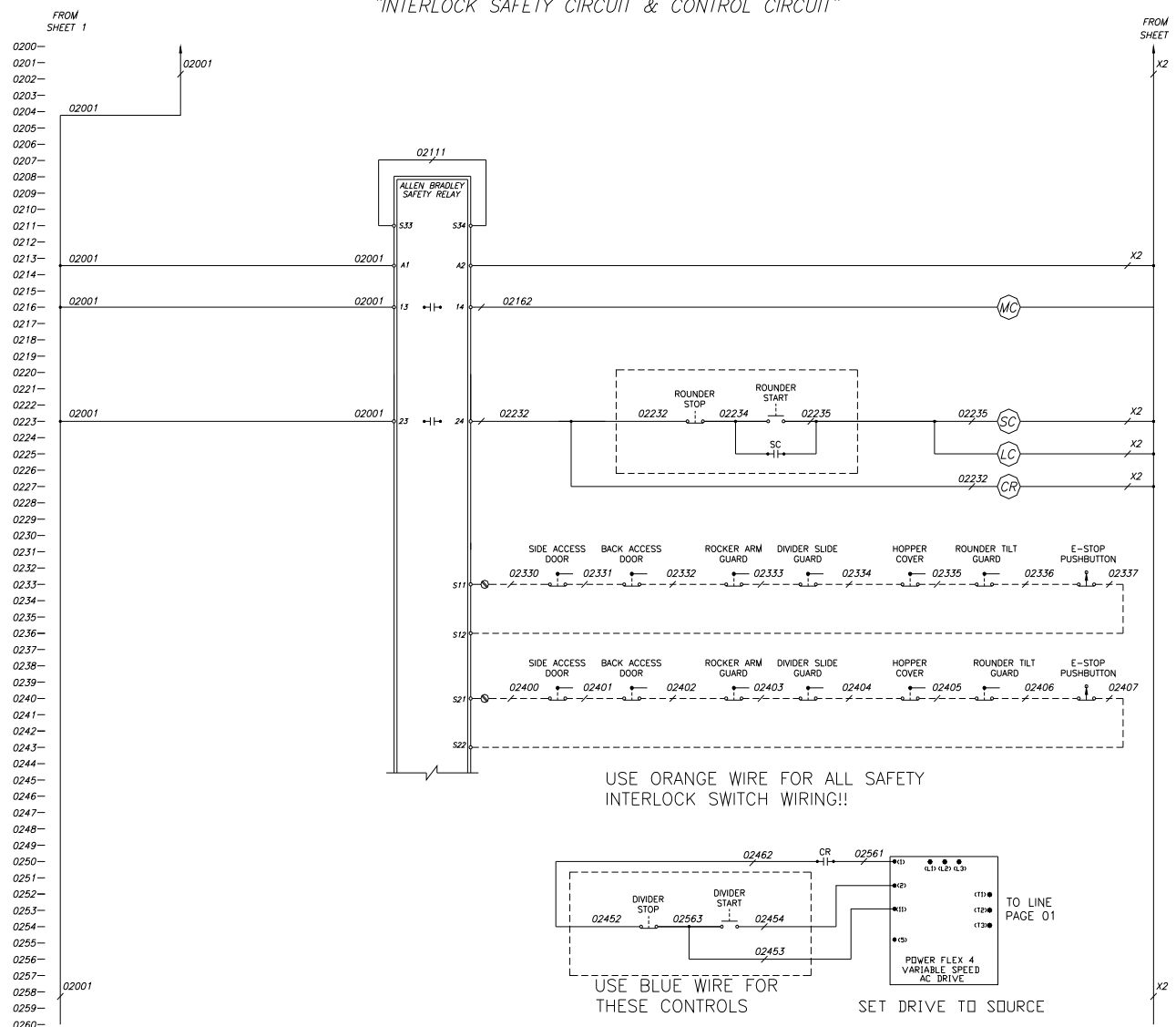
# ELECTRICAL (SCHEMATIC) THREE PHASE / 480 VOLT

— SHEET 1 —



— SHEET 2 —

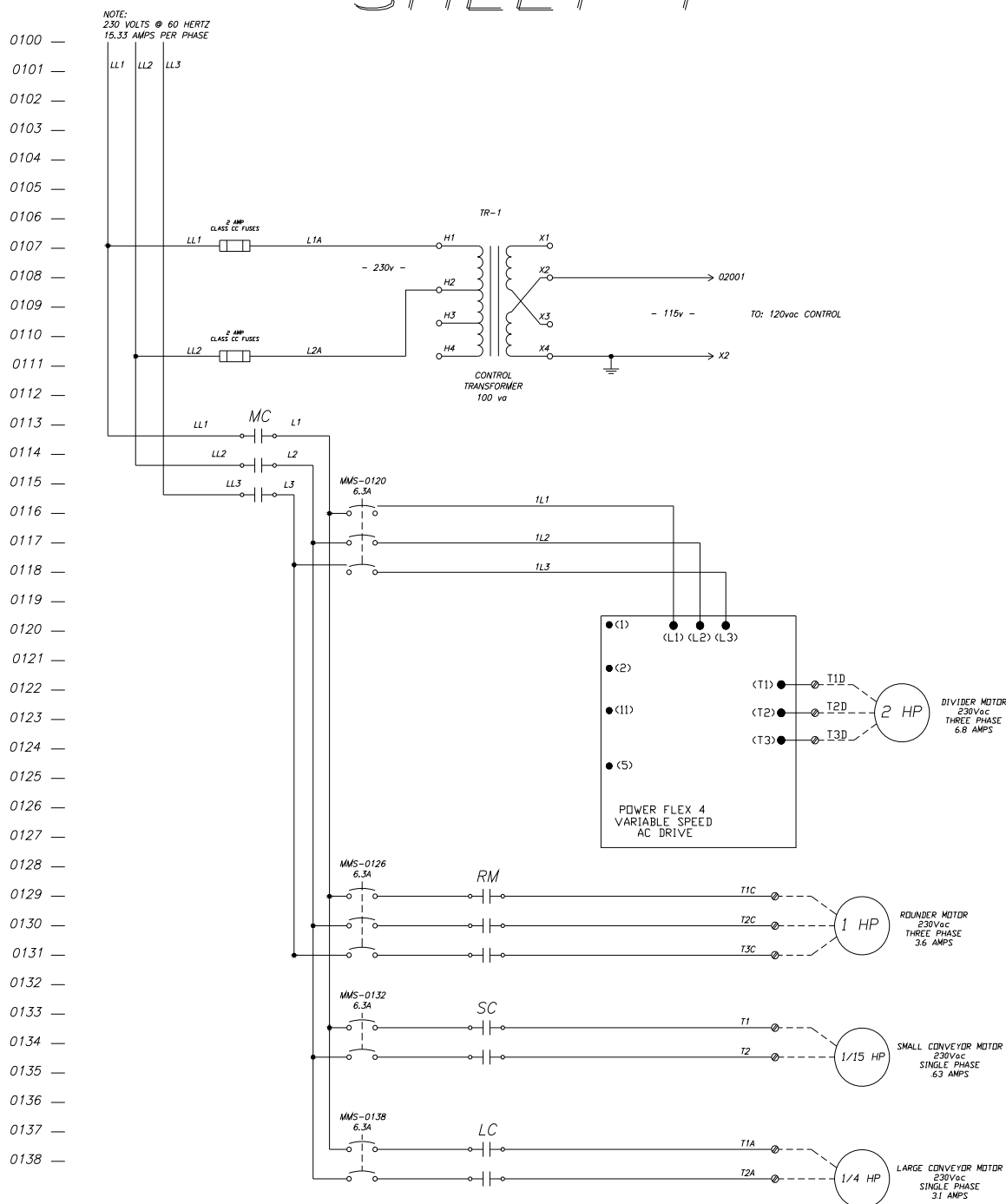
*"INTERLOCK SAFETY CIRCUIT & CONTROL CIRCUIT"*





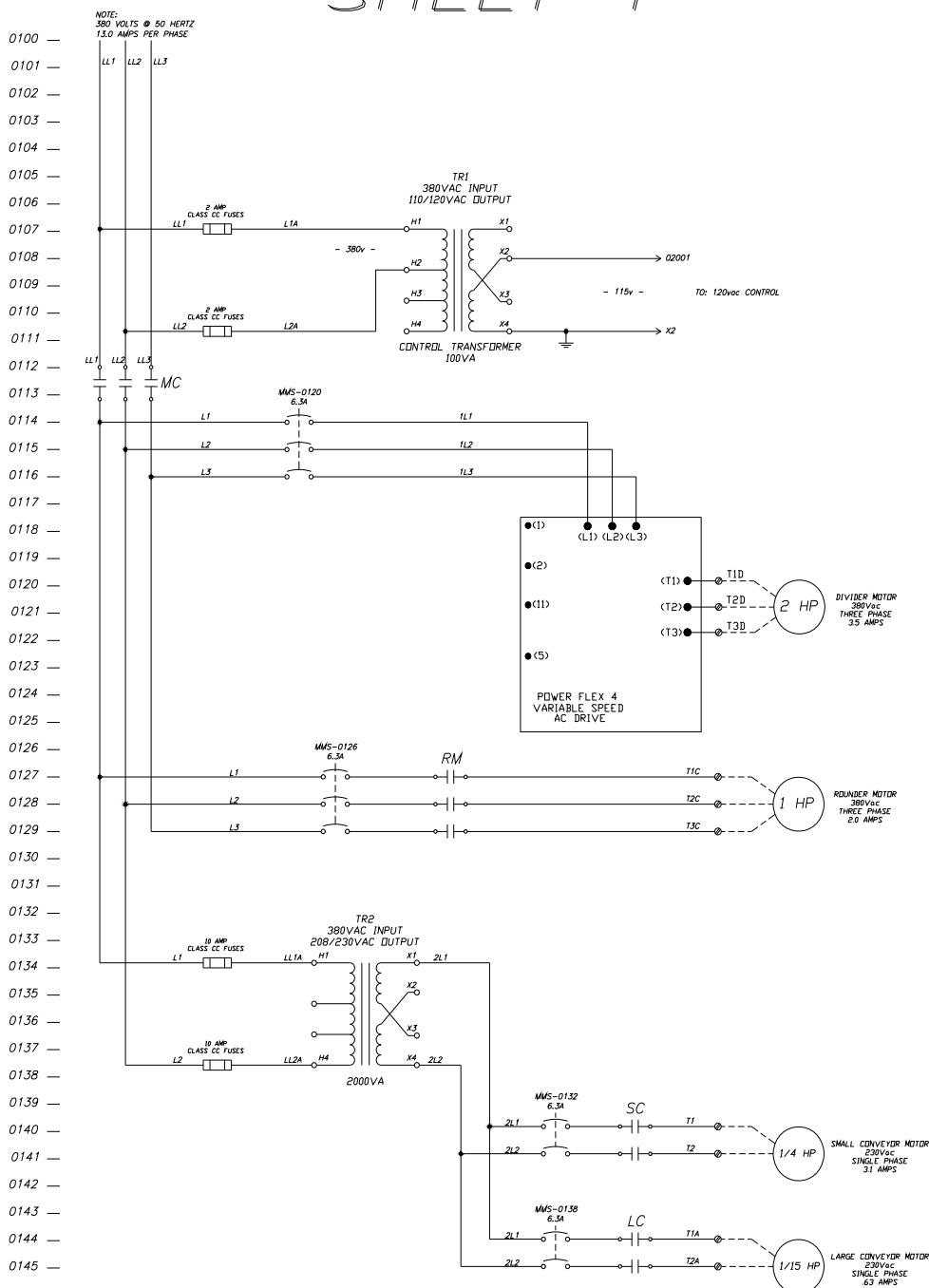
# ELECTRICAL (SCHEMATIC) THREE PHASE / 208-230 VOLT VARIABLE SPEED MACHINES

— SHEET 1 —



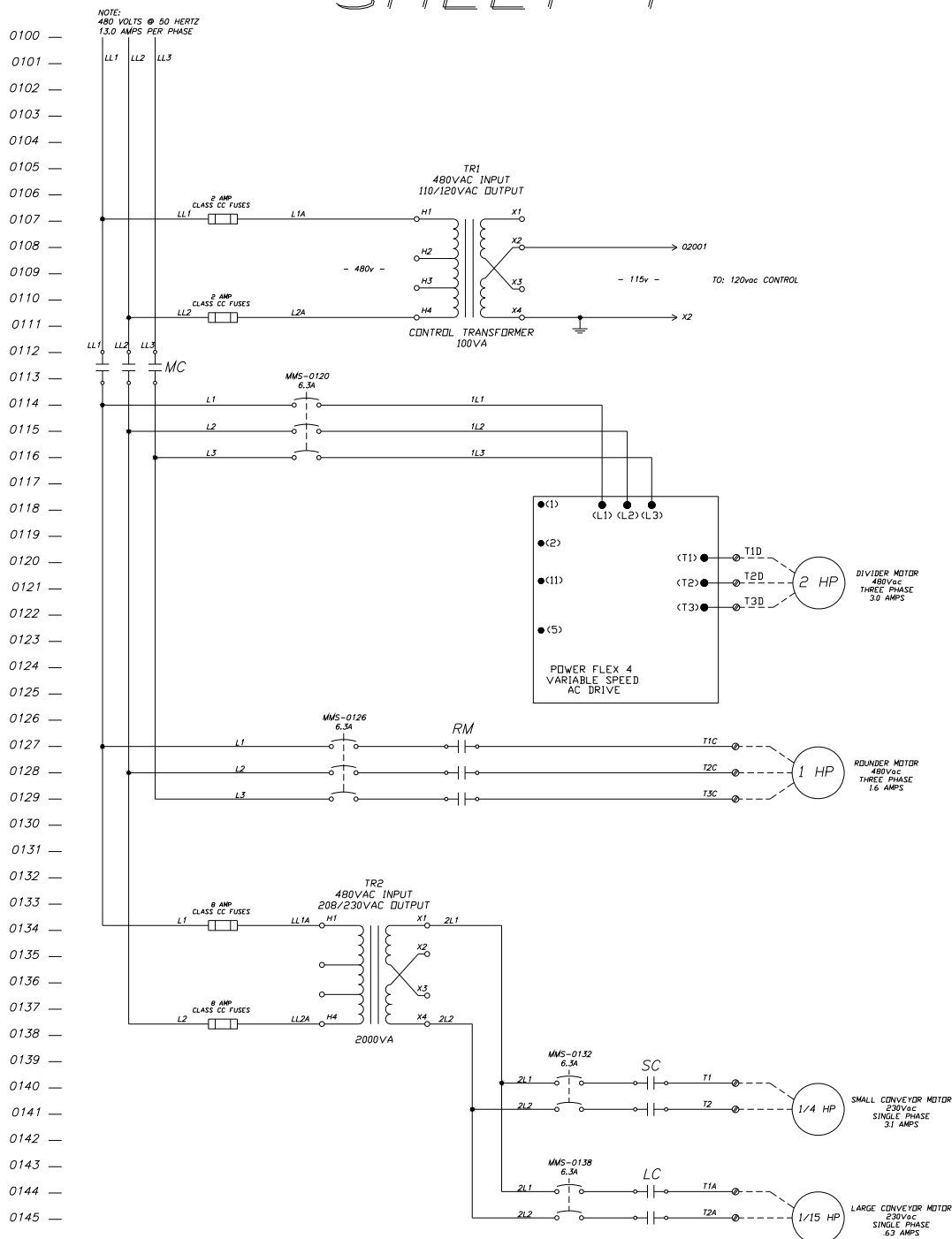
# ELECTRICAL (SCHEMATIC) THREE PHASE / 380 VOLT VARIABLE SPEED MACHINES

— SHEET 1 —



# ELECTRICAL (SCHEMATIC) THREE PHASE / 480 VOLT VARIABLE SPEED MACHINES

— SHEET 1 —



# **ORDERING REPLACEMENT PARTS**

**IMPORTANT:**

**ONLY USE FACTORY SUPPLIED REPLACEMENT PARTS TO MAINTAIN MACHINE SAFETY, PERFORMANCE AND SANITARY CONDITIONS.**

**USE OF NON-APPROVED PARTS MAY VOID MANUFACTURERS WARRANTY.**

**TO ORDER REPLACEMENT PARTS ALWAYS:**

- 1) CHECK THE MACHINE TOP IDENTIFY MISSING, DAMAGED OR NON-FUNCTIONAL PARTS INCLUDING GUARDS, WARNING LABELS AND INSTRUCTIONS.
- 2) COMPARE THE LIST WITH THE PARTS DIAGRAMS SUPPLIED.
- 3) RECORD THE COMPLETE MODEL AND SERIAL NUMBER OF THE UNIT.
- 4) CALL A.M. MANUFACTURING (800) 342-6744 AND PROVIDE ALL INFORMATION NOTED ABOVE TO EXPEDITE ORDER PROCESSING AND HELP REDUCE SHIPPING COST.
- 5) PROVIDE COMPLETE DETAILS FOR (SHIP TO) AND (BILL TO) INFORMATION. TO ASSIST PROMPT DELIVERY, SPECIFY TYPE OF CARRIER PREFERRED IN SHIPMENT.
- 6) MOST MAJOR CREDIT CARDS ACCEPTED.

[illegible]