



MANUFACTURING
COMPANY

-SINCE 1961-



S251

DOUGH DIVIDER

OPERATIONS & SAFETY MANUAL

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Cautions

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⚠ 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.

NOTE: PICTURES AND DIAGRAMS MAY BE 3D REPRESENTATIONS AND MAY NOT DIRECTLY REPRESENT YOUR MACHINE.

Owners Responsibility



NOTE:

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

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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, AND THAT THEY KNOW HOW TO OPERATE THE UNIT AND ARE PROPERLY SUPERVISED SAFELY AND CORRECTLY.

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.

Table of Contents

<p>Cautions 1</p> <p>Owners Responsibility 2</p> <p>Table of Contents 3</p> <p>Introduction 4</p> <p>Specifications 5</p> <p>Installation Instructions for Location..... 6</p> <p>Safety Rules..... 7</p> <p>Safety Signal Words 8</p> <p>Warning Label Locations 9</p> <p>Warning Labels..... 10</p> <p>Operating Instructions..... 11</p> <p style="padding-left: 20px;">Start-up Procedures 11</p> <p style="padding-left: 20px;">Operation Procedures 11</p> <p style="padding-left: 20px;">Dough Dividing 11</p> <p>General Overview of the S251..... 12</p> <p style="padding-left: 20px;">General Components 12</p> <p style="padding-left: 40px;">Electrical Box & Pushbuttons..... 13</p> <p>General Cleaning Instructions 14</p> <p style="padding-left: 20px;">General Cleaning..... 14</p> <p style="padding-left: 20px;">Divider Cleaning and Disassembly..... 14</p> <p style="padding-left: 40px;">Removing the Piston..... 15</p> <p style="padding-left: 40px;">Reinstalling the Piston 16</p> <p>General Maintenance 17</p> <p style="padding-left: 20px;">Grease Points 18</p> <p style="padding-left: 20px;">Adjusting the Measuring Cup Depth..... 19</p> <p style="padding-left: 20px;">Basic Trouble Shooting Guide..... 20</p> <p style="padding-left: 20px;">AM Manufacturing Service Department Contact Information..... 20</p> <p>Parts Catalogue 21</p>	<p>Hopper Assembly Parts Breakdown 22</p> <p style="padding-left: 20px;">Hopper Assembly Parts List 23</p> <p>Cabinet Assembly Parts Breakdown..... 24</p> <p style="padding-left: 20px;">Divider Slide Guard Parts List 25</p> <p>Main Drive Assembly Parts Breakdown 26</p> <p style="padding-left: 20px;">Main Drive Assembly Parts List..... 27</p> <p>Main Drive Cam Assembly Breakdown..... 28</p> <p style="padding-left: 20px;">Main Drive Cam Parts List..... 28</p> <p>Main Frame Assembly Breakdown 29</p> <p style="padding-left: 20px;">Main Frame Assembly Parts List..... 29</p> <p>Rocker Arm Assembly Breakdown..... 30</p> <p style="padding-left: 20px;">Rocker Arm Assembly Parts List 30</p> <p>Piston and Spring Load Assembly Breakdown 31</p> <p style="padding-left: 20px;">Piston and Spring Load Assembly Parts List 31</p> <p>Divider Slide Parts Breakdown..... 32</p> <p style="padding-left: 20px;">Divider Slide Parts List 33</p> <p>Measuring Cup Assembly Parts Breakdown..... 34</p> <p>Oiling System Parts Breakdown..... 35</p> <p style="padding-left: 20px;">Oiling System Parts List 36</p> <p>Ordering replacement parts..... 37</p>
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Introduction

READ AND FAMILIARIZE YOURSELF WITH THIS MANUAL BEFORE OPERATING THIS MACHINE.

FOLLOW ALL THE INSTRUCTIONS BEFORE USE.

The Scale-O-Matic dough divider, model S251, is designed to give you optimum time and labor-saving service with a speed of approximately 2000 pieces per hour. The S251 can accurately scale from 1 oz. To $32 \pm \frac{1}{4}$ oz depending on the proper attachments. This machine is designed to be paired up to an R900C rounder with conveyor. 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.

IMPORTANT:

AM MANUFACTURING COMPANY 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.

DIAGRAMS AND FIGURES WITHIN THIS MANUAL ARE OFTEN 3D REPRESENTATIONS AND MAY NOT REPRESENT YOUR MACHINE IN IT'S ENTIRETY.

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.

WARNING:

THIS MANUAL CONTAINS CRITICAL SAFETY INSTRUCTIONS. READ AND FOLLOW THEM CAREFULLY. FAILURE TO FOLLOW WARNINGS 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 AM MANUFACTURING: (800) 342-6744

Specifications

All dimensions below are approximate.

LENGTH	4' - 9-5/8"
WIDTH	2' - 10"
HEIGHT	6' - 1-7/8"
HEIGHT (STANDARD HOPPER - LID OPEN)	7' - 1-1/2"

VOLTAGES:

- Consult the Serial Tag on your machine for electrical information.

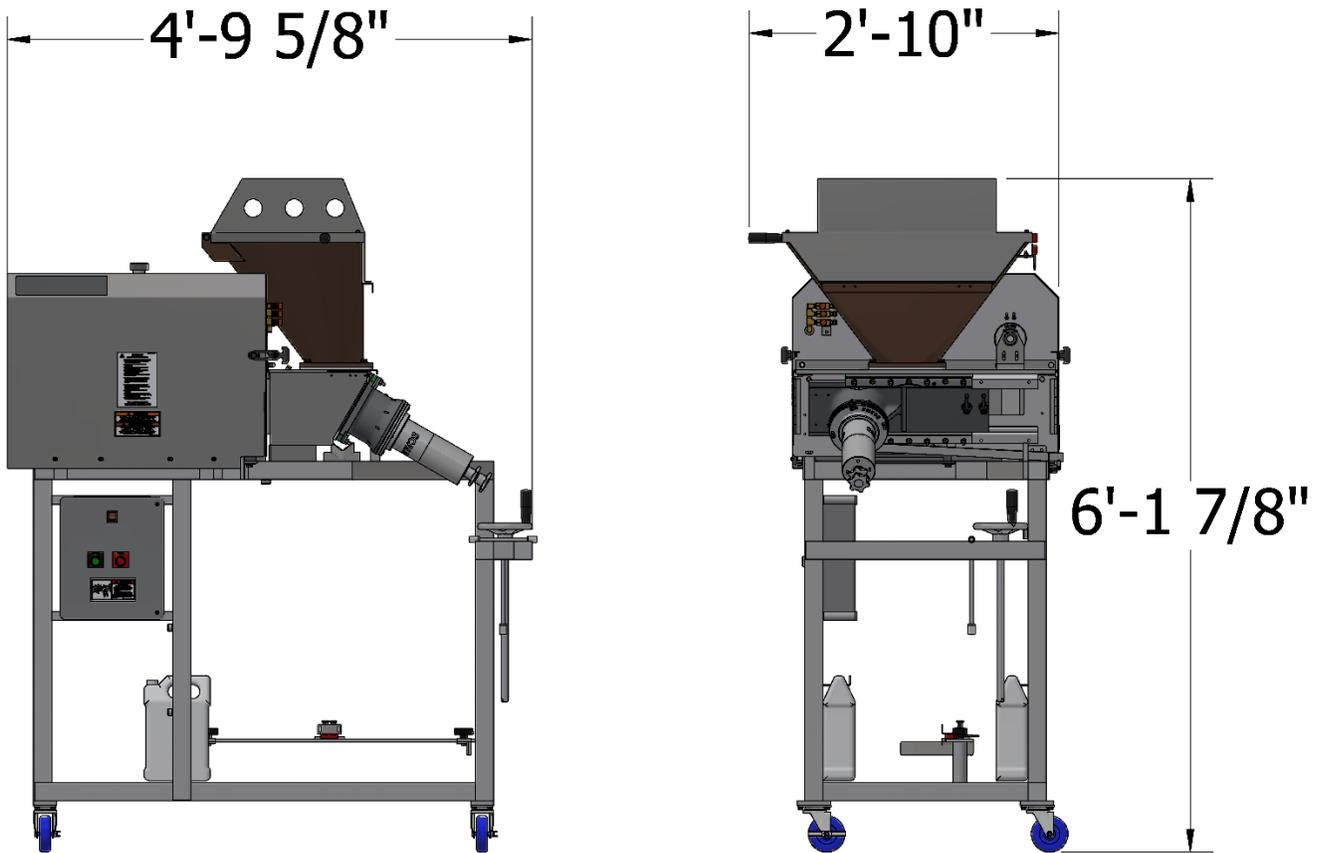


Figure 1: Specifications

Installation Instructions for 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 a flat surface, easy to clean, and should be free of oil, grease, etc.

CAUTION:

PROPER UNIT INSTALLATION IS NECESSARY FOR SAFE AND EFFICIENT OPERATION. PROPER INSTALLATION ALSO HELPS PROTECT THE UNIT FROM DAMAGE AND MAKES SERVICE EASIER. ALL MOVING PARTS, WITH EXCEPTION OF NECESSARY CONVEYING SURFACES, SHOULD BE COVERED AND GUARDED WHEN THE MACHINE IS IN OPERATION.

1. Open the crate and remove all packing materials, packing slips, documents, and other loose materials. Make certain to remove all manuals and schematics from the crate.
2. Move the unit to the desired location.
3. Lock the bottom two locking casters using their levers.
4. Ensure all guards are in their proper position.

Safety Rules



- 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 HAVE READ AND UNDERSTOOD 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 AND TURN THE MACHINE SWITCH TO THE OFF POSITION BEFORE CLEANING, IF MAINTENANCE OR SERVICE IS PERFORMED, OR IF THE MACHINE IS OUT OF SERVICE.
- NEVER LEAVE THIS MACHINE RUNNING UNATTENDED.

IMPORTANT:

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

Safety Signal Words

THIS MACHINE IS DESIGNED TO PROVIDE 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:**
 - 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.

Warning Label Locations

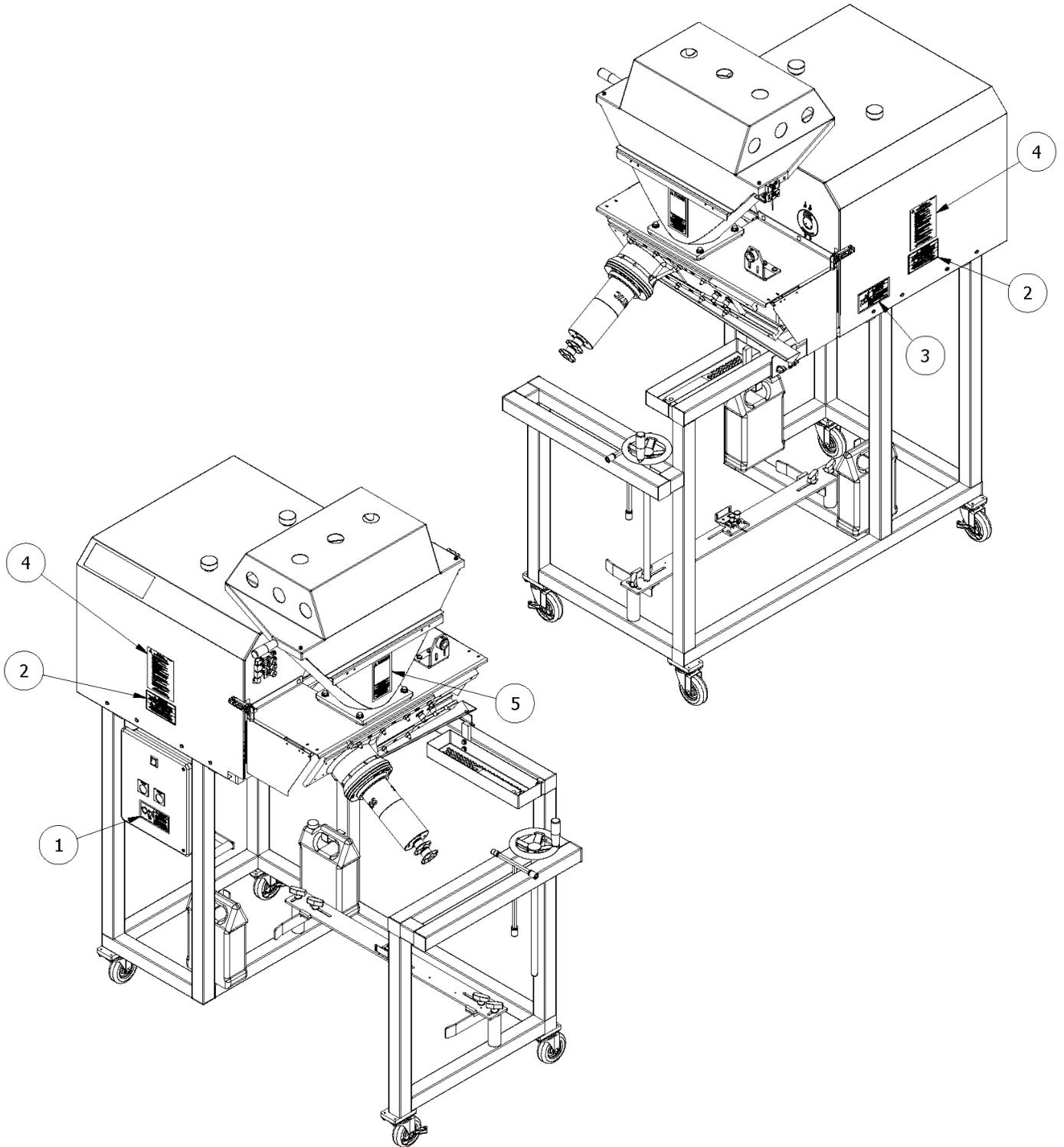


Figure 2: Warning Label Locations

Warning Labels

ITEM#	IMAGE	PART #	DESCRIPTION	LOCATION
1		AMTAG10ASF	VOLTAGE WARNING LABEL	FRONT OF THE ELECTRICAL BOX
2		AMTAG11SF	STICKER, GUARD WARNING LABEL	SIDES OF THE REAR COVER
3		AMTAG24SF	STICKER, CHAIN WARNING LABEL	SIDES OF THE REAR COVER
4		TAG21S	STICKER, SAFETY INFORMATION LABEL	SIDES OF THE REAR COVER
5		TAG27SF	STICKER PISTON WARNING	FRONT OF THE HOPPER

Operating Instructions

WARNING:

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

IMPORTANT:

BEFORE BEGINNING START-UP, READ ALL THE 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.

Start-up Procedures

1. Ensure the machine and its components are clear of packing material, packing slips, documents, and other obstructions.
2. Position the S251 in the desired location and lock the two locking casters with their levers.
3. Ensure the R900 dough rounder is properly pushed into the machine so that the red safety sensor is not tripped.
4. Plug the power cords into the proper outlet.
5. Push the green Divider Start Push-button to turn the machine on.
6. Check the power supply to the rounder by switching the rounder on. The rounding drum should be turning in a counterclockwise rotation, and the discharge conveyor should be running forward, out from machine.

Operation Procedures

1. Fill the oil reservoir with lightweight mineral oil. Make sure to clean any oil spilled around machine. These surfaces become slippery.
2. With the squirt bottle supplied, apply a small amount of mineral oil to the inside sides of the dough hopper. The hopper should be oiled every time you place new dough in it.
3. Open the oil valves near the hopper enough to adequately lubricate the cylinder and gib bars.
4. Fill the hopper with dough by loading with pieces not exceeding 20 pounds. Dough pieces above 20 pounds could cause serious lower back injury.
5. Close the hopper cover.
6. Press the green start button.

Dough Dividing

1. Dough is portioned by the measuring cup, which is bolted to the divider slide.
2. To adjust the weight, stop machine. Turning the measuring cup handle in a counterclockwise motion causes the dough weight to increase. Turning the handle in a clockwise motion decreases the dough weight.
3. Find your desired dough weight by weighing the dough piece.
4. Once you have achieved this, adjust the locking star knob (529MS-2D) to the top of the measuring cup to keep scaling accurate.
5. Note the number position on the star knob stud. This can be referenced in the future when setting back up for the same dough weight.

General Overview of the S251

The S302 machine has various components that are important to familiarize yourself with to effectively operate, maintain, and clean your machine.

General Components

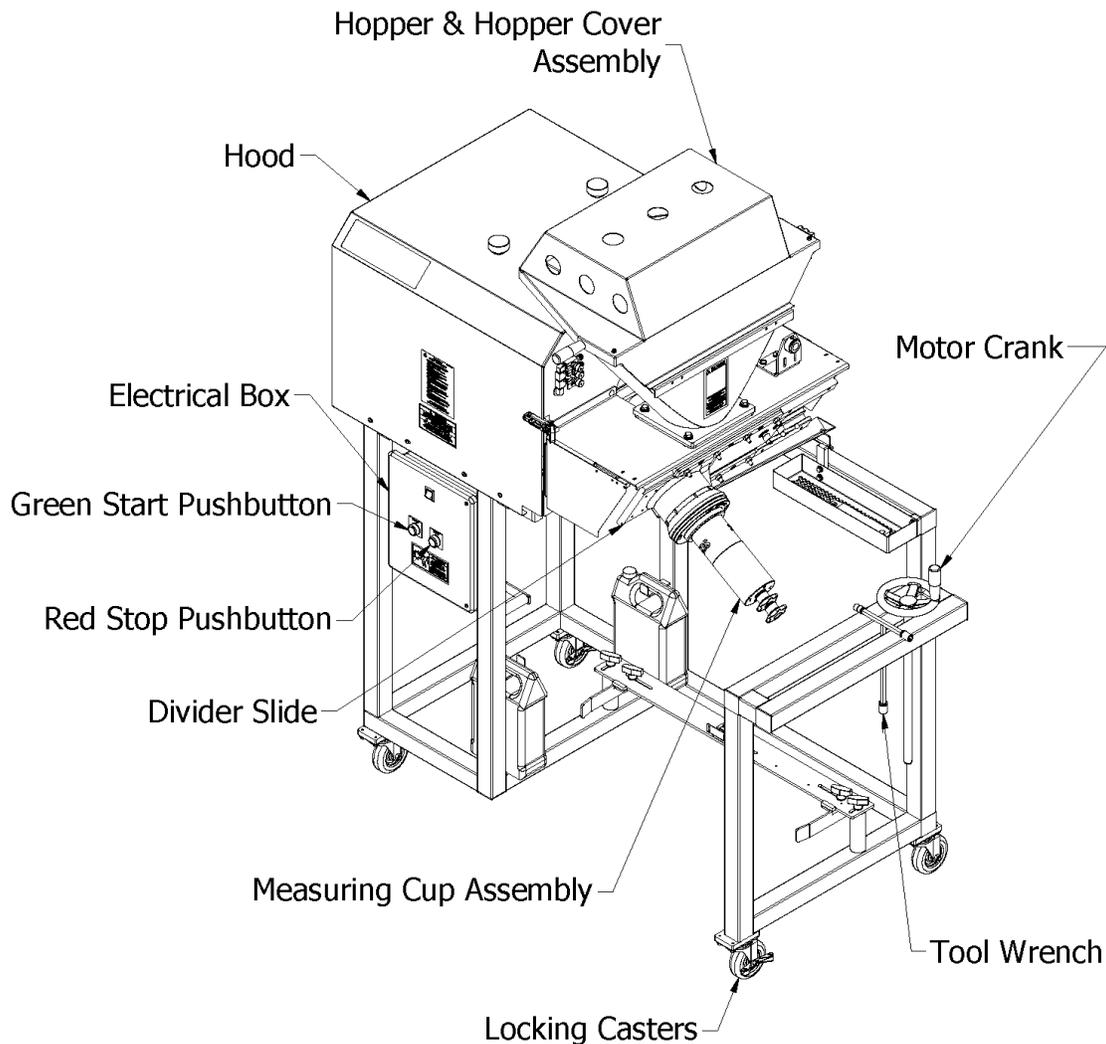


Figure 3: S302 Overview

Divider Slide and Cylinder Assemblies

- The divider slide and cylinder assemblies are the core components of the S251 that allows the machine to scale.
 - These parts are located below the hopper assembly.
- The Divider Cylinder has a metal scraper ring and O-Ring which sits on top where the divider slide rides.
 - These two rings are wearable components that are vital to machine scaling and suction.
- Within the cylinder is the piston assembly. This helps to create suction and push the dough towards the measuring cup.
 - The piston contains a piston cup and O-ring, which is vital to the machine's scaling and suction.

Hopper & Hopper Cover Assembly

- This is the assembly where dough chunks are fed and pushed down towards the cylinder.

Hood

- Covers the main drive area of the S251. Equipped with safety sensors to allow for machine shut off in the event a door or guard is removed during operation.

Tools and Motor Crank

- The S251 comes with various T-handle Allen wrenches, a T shaped socket assembly, and a crank handle.
- The nut box allows for easy storage of nuts and bolts removed during disassembly for cleaning or maintenance.

Measuring Cup

- Allows for adjustment of dough weight.

Locking Casters

- These casters lock in place so the machine cannot roll away.

Electrical Box & Pushbuttons

- The electrical box has two pushbuttons and a red ON/OFF switch.
 - The green push button starts the divider.
 - The red push button stops the divider.

General Cleaning Instructions

⚠ WARNING: Before attempting to clean the S251, make certain that the machine has been properly powered down and the plug has been removed from the power source. Failure to do so could result in serious injury.

All AM Manufacturing machines are tested with dough during the quality audit procedure. Although the machine has been cleaned, some evidence of dough may be detected, this is normal.

All parts in contact with dough should be washed thoroughly after operation with a mild soap and water solution. Disassembly of this machine for cleaning is outlined and illustrated for your convenience.

Cleaning the AM Manufacturing S251 is essential to ensure sanitary conditions and proper machine function. Regular cleaning will extend the life of various components within the machine.

General Cleaning

- Wipe excess dough from the inside of the dough hopper.
 - **NOTE: Never use a metal edges scraper for cleaning any part. These tools can result in damage to coatings and parts.**
- The inside of the divider should be cleaned out occasionally.
 - Remove any buildup around the main drive cam assembly inside the machine.
 - Remove any build up around the bronze shoe ring that sits inside the cam.

Divider Cleaning and Disassembly

1. **Shut off and disconnect all power to the machine.**
2. Break loose the 4 socket screws at the base of the measuring cup on the divider slide. Twist and pull to remove the cup.



Figure 4: Measuring Cup Removal

3. Remove the measuring cup and clean.
4. Remove and clean the measuring cup insert, if the plunger at the bottom of the measuring cup is 5" in diameter, there will be no insert to remove.
5. Loosen the 8 hex head nuts on the gib bars (the bars on the top and bottom of the slide which the divider slide rides against).
6. Remove the gib bar assemblies by lifting them off the cylinder studs. Clean any dough residue from them.
7. Remove the divider slide by sliding it out. Clean thoroughly.

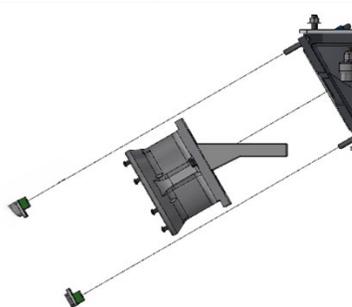


Figure 5: Divider Slide Removal

Removing the Piston

Be sure to gain familiarity with the parts in the diagram below prior to removing the piston for cleaning or maintenance.

- **Only rotate the crank handle (Figure 6) counterclockwise.**

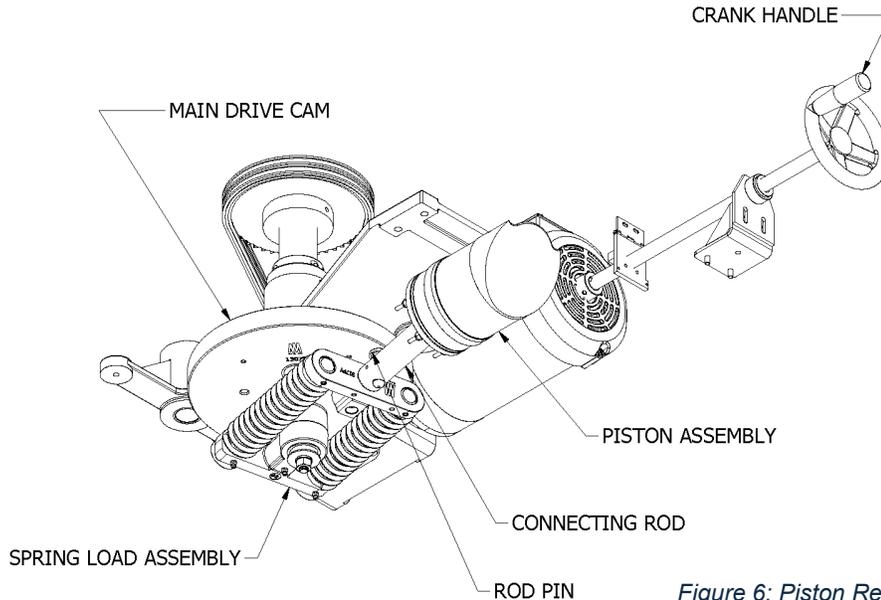


Figure 6: Piston Removal

1. Start by inserting the crank handle (Figure 6), into the motor crank hole to the right of the hopper.
2. Rotate the motor crank **COUNTERCLOCKWISE ONLY** until Pin B is sitting between the end of the cylinder and outside of the cam, as shown in (Figure 6) below.
3. Using the pin removal tool included with the machine, pull Pin A from Hole A. (Figure 7).

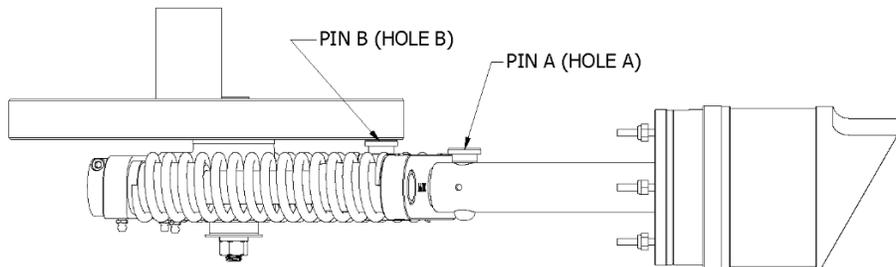


Figure 7: Pin Locations

4. Continue to crank **COUNTERCLOCKWISE ONLY** until the connecting rods extend, the spring load is in its rearmost position, and Pin Hole C (Figure 8) is revealed.
5. Place Pin A into Hole C. (Figure 8)
6. Continue cranking **COUNTERCLOCKWISE ONLY** until Pin B can be removed from the machine.
7. Continue rotating the crank **COUNTERCLOCKWISE ONLY** until the piston emerges completely and can be removed from the machine.

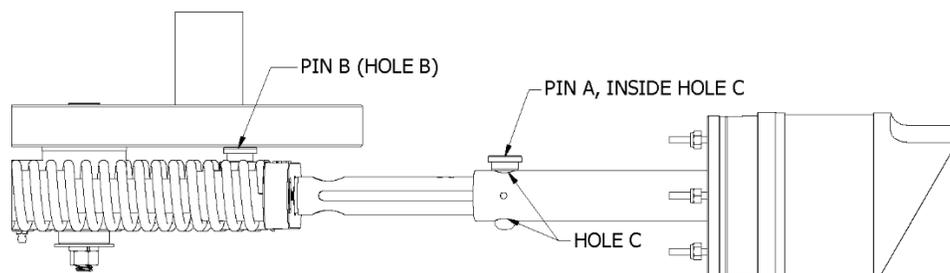


Figure 8: Hole C Location

NOTE: The above steps are only to be done after following the steps on the previous page.

The steps above highlight the procedure to remove the piston for cleaning and maintenance.

- Ensure that any excess dough is removed from face of the cylinder and that the scraper ring and O-ring that were removed in Step 7 (Figure 6 above) have been cleaned.
- Ensure that any dough residue has been cleaned from the inside and outside of the dough cylinder.
 - Make sure to clean out the hole where the oil valve feeds inside the cylinder.
- Clean all surfaces around the piston from dough.

Reinstalling the Piston

1. Replace the piston.
 - a. Ensure the piston is in an extended position with the pin in the upper hole.
 - b. Put the piston into the cylinder, guiding the shaft into the spring assembly.
⚠ WARNING: ENSURE THAT THE PISTONS ANGLED FACE IS FACING YOU, PUTTING THE PISTON IN BACKWARDS WILL DAMAGE IT WHEN THE MACHINE IS IN OPERATION.
 - c. Take the other pin and put it in the lower hole through the spring assembly.
 - d. Rotate the crank until the upper pin is visible and remove it.
 - e. Turn the crank until the shaft collapses and the two upper holes meet, then insert the pin.
 - f. Push the “plus sign” shaped pin lock slide over and tighten the 2 socket head bolts.
 - g. **Verify that the piston collapses by making one full rotation with the crank and note that the piston does not come above the upper cylinder. If the piston is backwards, it could be destroyed during operation.**
2. Place the divider slide back on top and bolt the cam arm slide back to the divider slide.
3. Reinstall the Gib Bars with the 8 hex nuts.
4. Reinsert the measuring cup and cup insert (if applicable). Turn the cup and tighten the 4 bolts to lock in place.
⚠ WARNING: Failure to reinstall the insert on measuring cups where it is required will result in damage.
5. Remove the hand crank.

General Maintenance

Read and follow the maintenance instructions below to keep the unit in good operating condition. Regular inspections and maintenance are essential to help prevent accidents and injuries.

⚠ WARNING: Before attempting maintenance on the S251, make certain that the machine has been properly powered down and the plug has been removed from the power source. Failure to do so could result in shock or injury.

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.

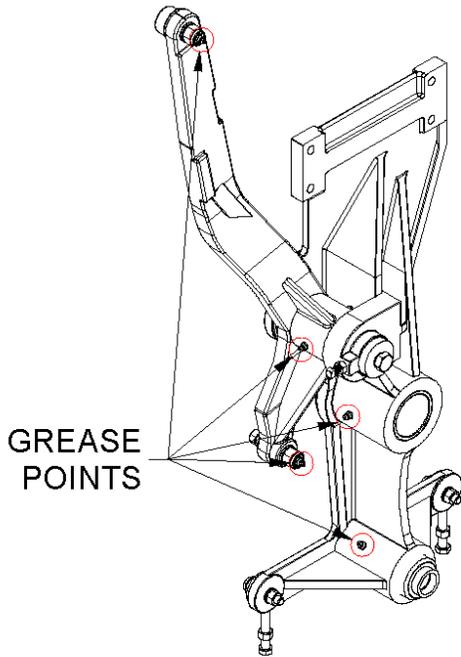
- All working surfaces should be cleaned regularly.
- The cabinet and other working surfaces should be cleaned regularly.
- Make sure that all fasteners are tightened securely.
- Make certain that all guards and covers are in place.
- Check for worn, damaged or missing parts including belts, safety guards, and protective covers.
- Inspect the unit and check to be certain that all systems are operating normally daily.

⚠ CAUTION: Replace any damaged or missing safety labels. These are available from the manufacturer.

Maintenance for the Scale-O-Matic S302 always begins with keeping the machine clean. Proper cleaning procedures start on pages 14 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.

Grease Points

There are various grease points around the machine that should be regularly lubricated on a bi-weekly basis for optimum bearing life. The grease points are shown in the following figures.



There are 5 grease fittings located on the rocker arm and divider frame:

- 1 on the cam roller at the top of the rocker arm.
- 1 on the cam shoe bolt at the bottom of the rocker arm.
- 3 total on the bronze bearing locations on the rocker arm and main frame.

The piston and spring load assembly, pictured on the right, have a total of 4 grease fittings.

- Three 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 at the top of the figure on the right.
 - This fitting will require a flexible hose grease gun or removal of the piston to access.

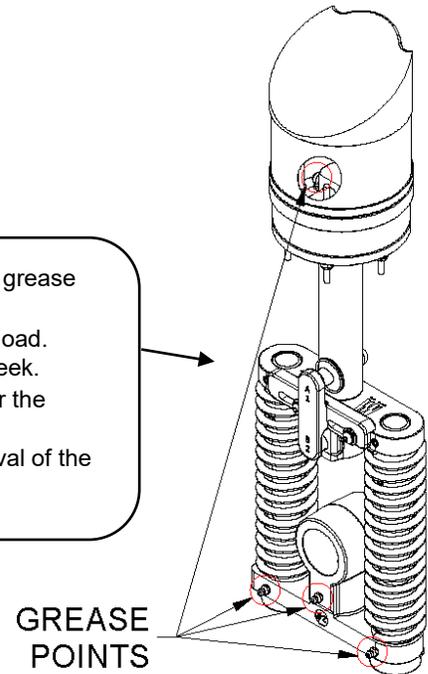


Figure 9: Grease Points

Adjusting the Measuring Cup Depth

Following any disassembly of the Measuring Cup assembly, the measuring cup must be properly set. Setting the measuring cup means adjusting the distance of the bottom of the plunger base. Setting the Measuring Cup allows for the Cup and the Divider Slide to slide freely. **The depth of the measuring cup will need to be adjusted any time the cup is disassembled, or a component is replaced.**

⚠ CAUTION: Failure to properly set the Measuring Cup will result in damaged components!

The instructions below are assuming the cup is already partially disassembled.

To adjust the depth of the plunger on the Measuring Cup Assembly:

1. Set the measuring cup components on a flat surface.
2. Remove the divider slide and place it on a flat surface with the other components.
3. Loosen the $\frac{3}{4}$ " long socket head bolt from the slot nut on the measuring cup.
4. Place the measuring cup on the divider slide.
5. Turn the slot nut to the right to bring the plunger base up, or to the left to bring it down.
6. Feel beneath the divider slide and adjust until there is about a $\frac{1}{16}$ th inch space from the bottom of the slide to the bottom of the plunger base inside the slide.
 - The gap allows it to avoid wear or damage when the slide is traveling.
7. After the slot nut is adjusted to where there is adequate depth, reinstall the $\frac{3}{4}$ " long socket head bolt.
 - Apply blue thread locker to the bolt and tighten down all the way so the slot nut can lock onto the thread.
8. Reassemble the Measuring Cup Assembly.

NOTES:

- The diagram shown is for a 5" diameter plunger base, which does not use a divider cylinder insert.
- For measuring cups 1-1/2" (Part # AMS1), 2" (Part # AMS2), and 3-1/4" (Part # AMS3):
 - Adjust the plunger to be flush with the bottom of the divider cylinder insert (Figure 10) that sits inside the divider slide.
 - **The divider cylinder insert must be placed into the divider slide before operation.**

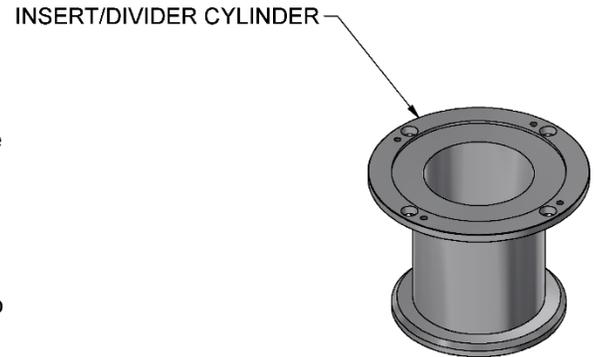


Figure 10: Insert/Divider Cylinder

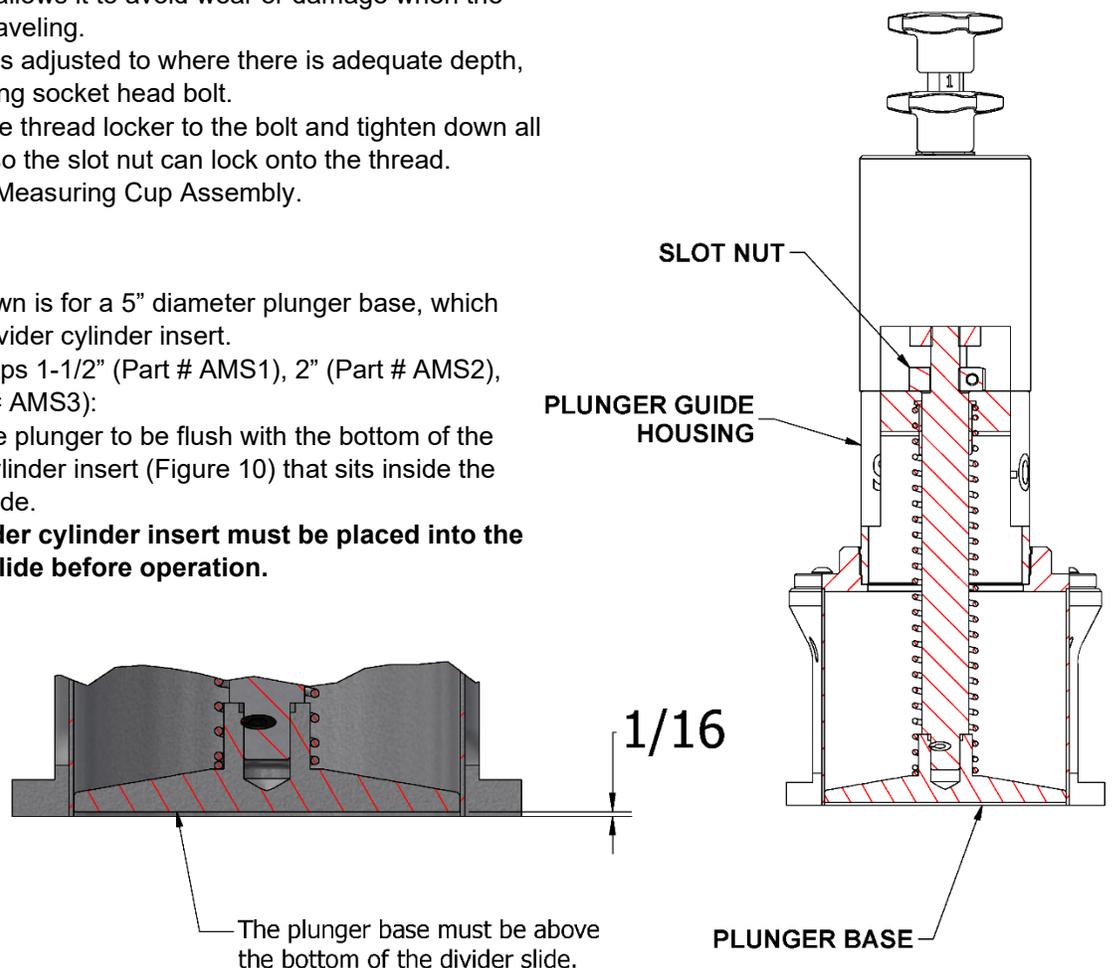


Figure 11: Measuring Cup Depth

Basic Trouble Shooting Guide

Issue	Probable Cause	Solution
Loss of suction.	Wear within the scaling area of the divider.	Replace the Cylinder Scraper Ring, Cylinder O-Ring, Piston Cup, Piston O-Ring. If problem persists, contact manufacturer. *See notes below*
Noise from the back of the machine.	Bearing wear, motor/gearbox issues.	Remove the chain and run the machine. If noise persists, inspect the motor and gearbox. If noise stops, inspect the bearings within the rounder base and replace if necessary.
Machine Not Powering On.	Main Power to machine, safety circuit.	Check the safety circuit on all guards. Open the panel, check for power light on safety relay. If light is off, check the fuses.
Motor does not run.	Bad circuit breakers, bad motor.	Check the circuit breakers. Replace motor if necessary.

Note: The following items may cause suction problems after excessive wear or incorrect adjustment.

- The Cylinder Scraper Ring, Cylinder O-Ring, Piston Cup, Piston O-Ring.
- The wear strips and components that make up the gib bars that sit on the divider slide. These are held on by the eight cylinder studs.
- The measuring cup plunger.

AM Manufacturing Service Department Contact Information

Monday through Friday, 7AM to 3:30PM (CST)

Phone: [219-472-6417](tel:219-472-6417)

Monday through Friday, 3:30PM to 7AM (CST)

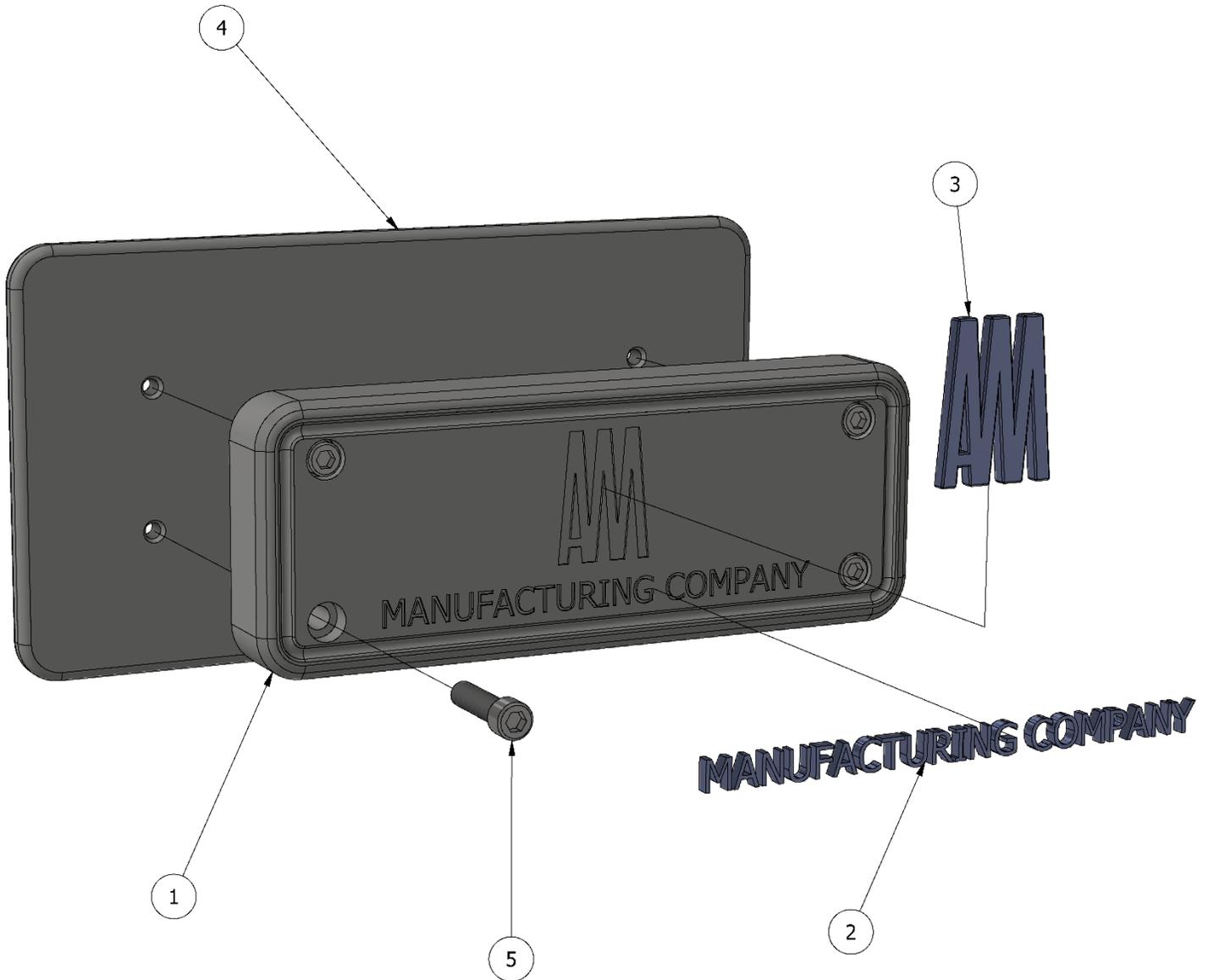
and Saturday or Sunday

Phone: [708-328-3400](tel:708-328-3400)

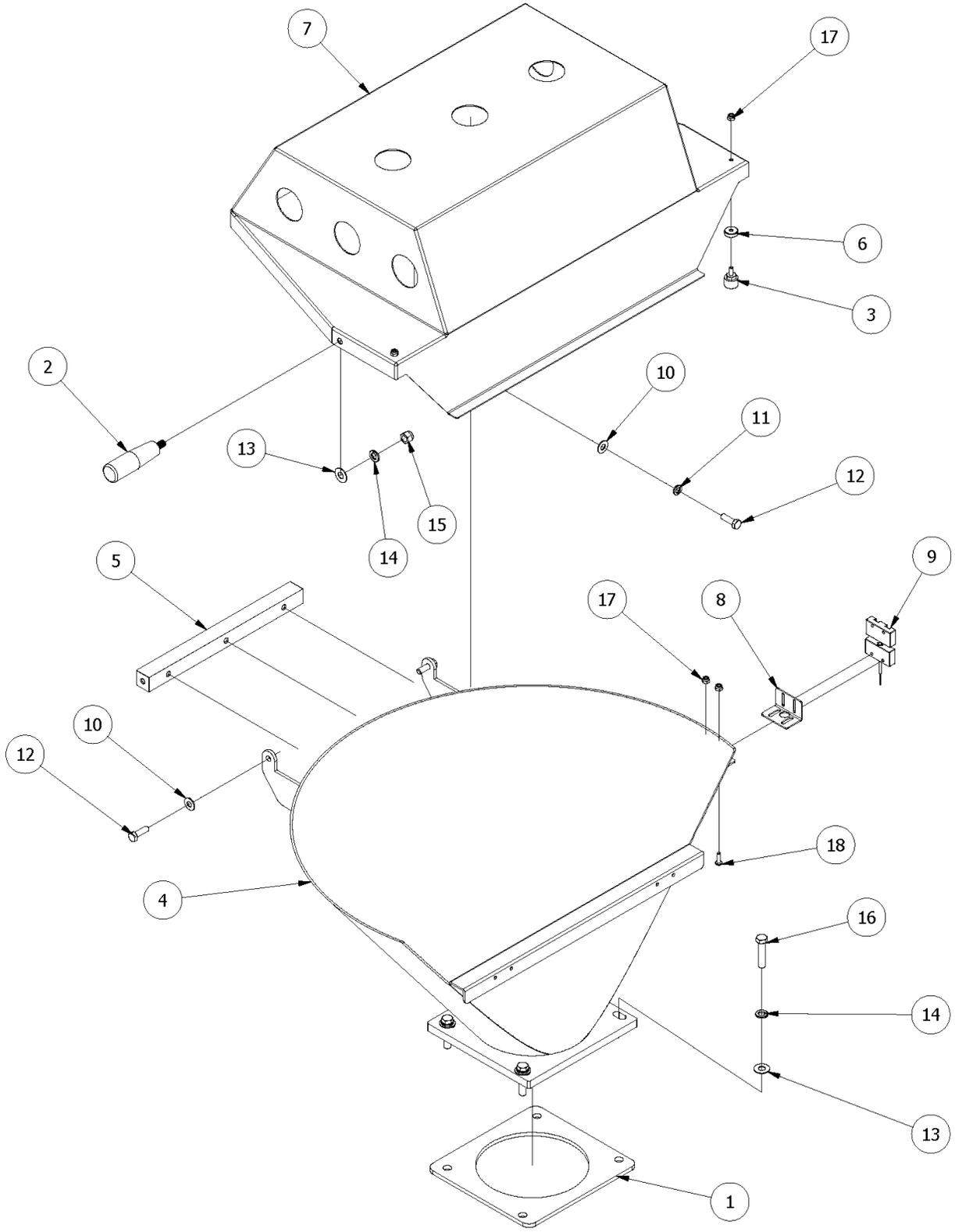
support@ammfg.com

Parts Catalogue

The following section of this manual contains parts breakdowns with their corresponding parts lists. Each ballooned item corresponds to the item number on the parts list either below or following the parts breakdown.



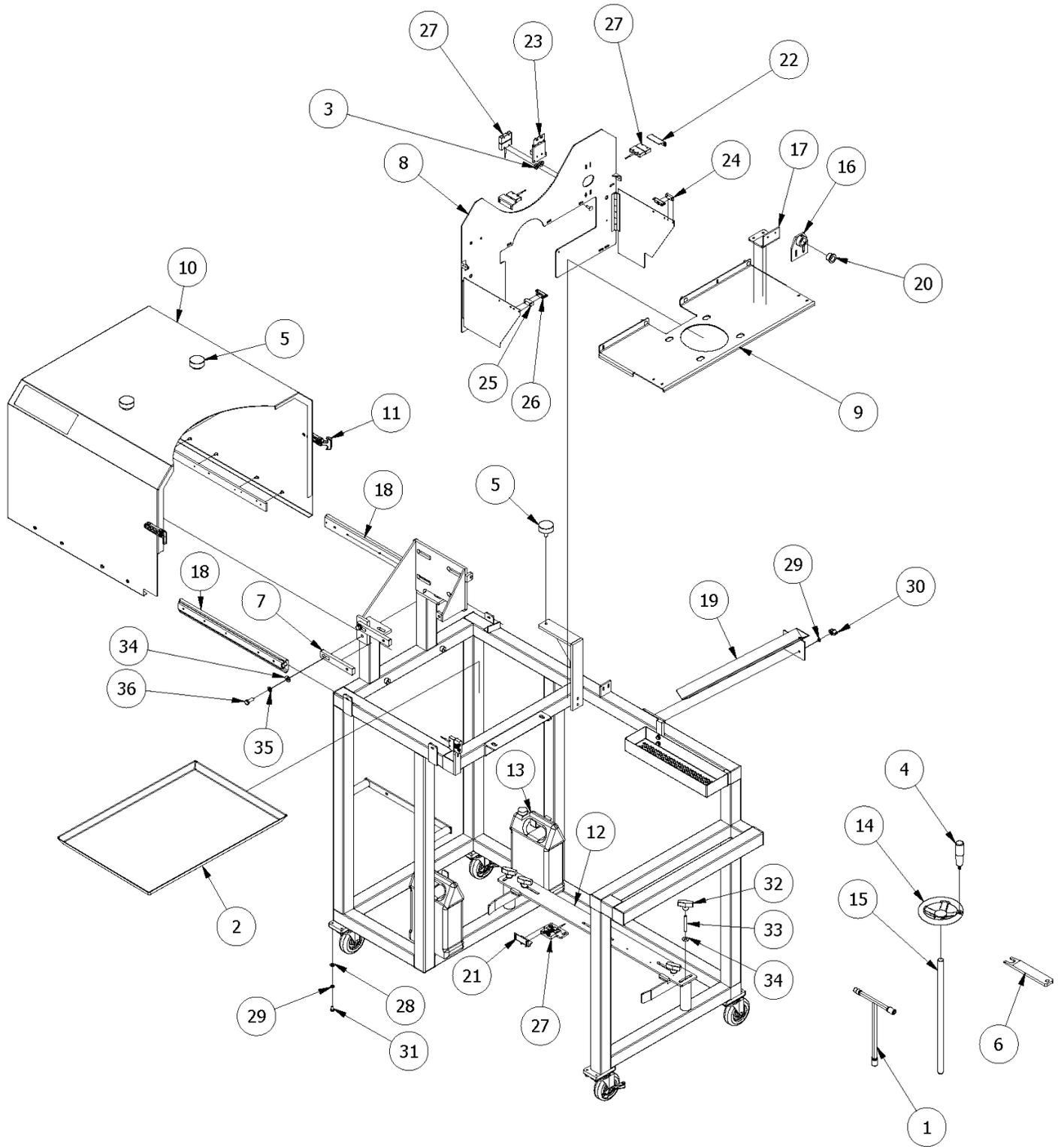
Hopper Assembly Parts Breakdown



Hopper Assembly Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	449CD	HOPPER GASKET	1
2	11467	Easy-Turn Revolving Handle 3/8"-16	1
3	11832	BUMPER, THREADED STUD W/HEX SHOULDE	2
4	12709	S-251 HOPPER ASSEMBLY	1
5	13205-1	HOPPER COVER HINGE MOUNT BLOCK	1
6	26063	SO - 3/4ODX1/4LGX10-32 D&T THRU, SS	2
7	26064	S251 HOPPER COVER	1
8	28165	S251 SENSOR ADJUSTABLE MOUNT	1
9	EL-1308	SAFETY SWITCH	2
10	F0500FW	FLAT WASHER, 5/16"	5
11	F0500LW	LOCK WASHER, 5/16"	3
12	F0504HHCS	HEX HEAD CAP SCREW 5/16-18 X 1" LG.	5
13	F0600FW	FLAT WASHER 3/8"	5
14	F0600LW	LOCK WASHER 3/8"	5
15	F0600NLN	NUT-NYLOCK 3/8"	1
16	F0607HHCS	HEX HEAD CAP SCREW 3/8-16 X 1-3/4"	4
17	F9900NLN	NYLOCK NUT, #10-32	4
18	F9902.5PHS	PAN HEAD, SLOTTED, 10-32 UNF x 0.625	2

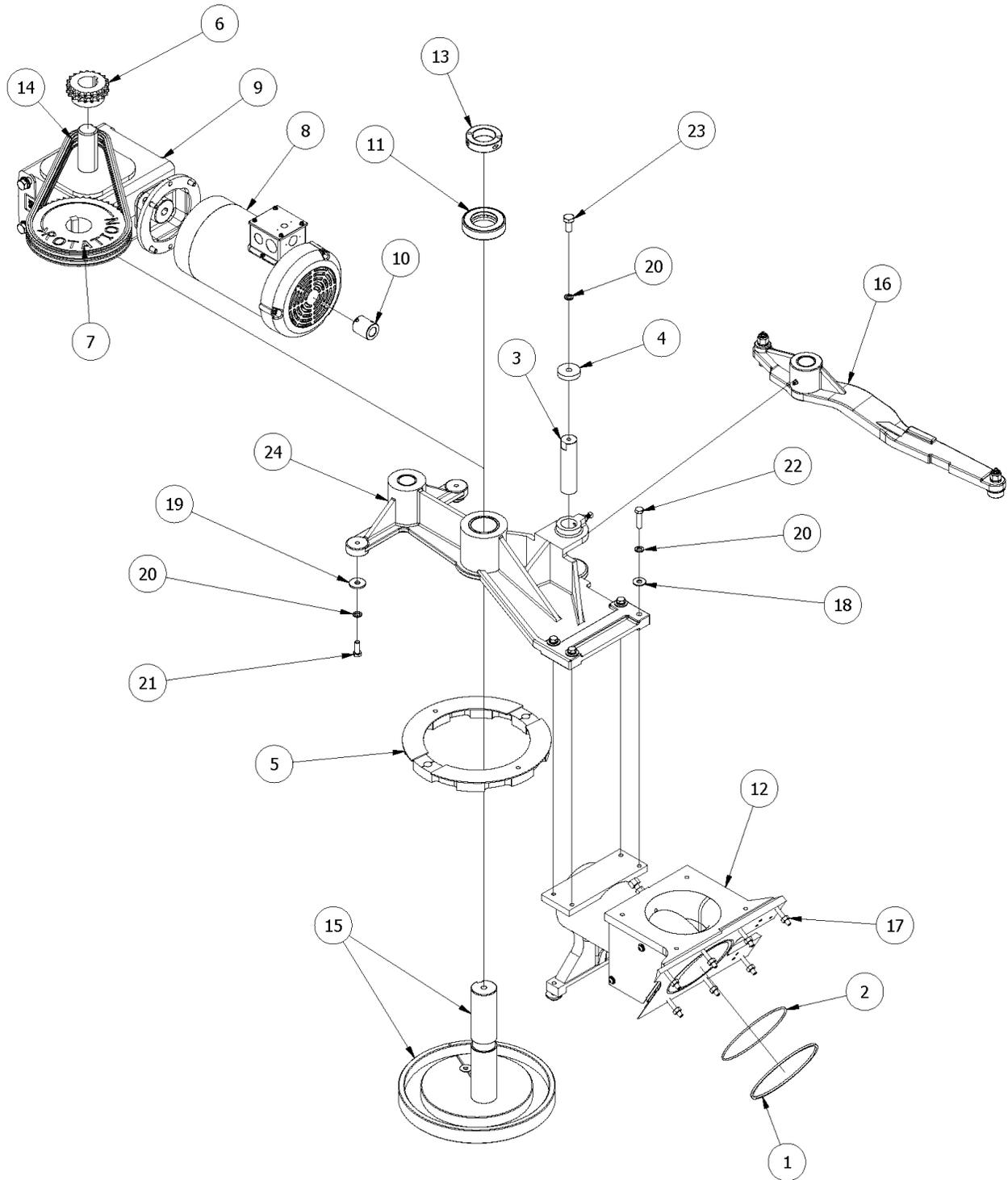
Cabinet Assembly Parts Breakdown



Divider Slide Guard Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	542MSW	"T" HANDLE ASSEMBLY	1
2	1990S	OIL PAN/CRUMB TRAY	1
3	11115	SPACER - 3/4 ODX 1/4 LGX 9/32 ID,SS	2
4	11467	Easy-Turn Revolving Handle 3/8"-16	1
5	11665	VIBRATION ISOLATING MOUNT	3
6	13096	CONNECTING ROD PIN REMOVAL TOOL	1
7	13097	OIL PUMP MOUNTING BRACKET	2
8	13104	BULKHEAD PANEL WITH DOORS	1
9	13105	ROCKER ARM TOP COVER	1
10	13127	MAIN SLIDING COVER	1
11	13176	RUBBER DRAW LATCH W/NYLON STRIKES	2
12	13202	ROUNDER LOCATING BRIDGE	1
13	13222	BOTTLE, 1 GAL WHITE PLASTIC	2
14	13858	MOTOR CRANK HANDLE	1
15	13860	MOTOR CRANK SHAFT	1
16	13989	CRANK HANDLE GUIDE BRACKET ASSY	1
17	13990	CRANK HANDLE GUIDE BRKT ASSY	1
18	14244	DRAWER SLIDE w/ LOCK-OUT POSITION	1
19	14563	OIL CATCH PAN ASSEMBLY	1
20	15554	BUSHING-FLANGED-3/4"IDX1"ODX3/4"LG	1
21	22319	SAFETY SWITCH ACTUATOR MOUNT PLATE	2
22	22321	FRONT ACESS DOOR SAFETY SWITCH ACTUATOR MOUNT BRACKET - LEFT SIDE	1
23	34744	CRANK DROP GUARD ASSEMBLY	1
24	34751	DOOR LATCH SPACER BLOCK	1
25	34751-RS	DOOR LATCH SPACER BLOCK-RS	1
26	34752	MULTIDIRECT. DOOR GRAB LATCH	2
27	EL-1308	SAFETY SWITCH	7
28	F0400FW	FLAT WASHER, 1/4"	22
29	F0400LW	LOCK WASHER, 1/4"	22
30	F0400PWN	1/4 PLASTIC WING NUT	2
31	F0402HHCS	HEX HEAD CAP SCREW, 1/4-20X1/2" LG.	18
32	F0500PWN	PLASTIC WING NUT (5/16-18)	4
33	F0510SD	5/16-18 X 2-1/2 STUD	2
34	F0600FW	FLAT WASHER 3/8"	6
35	F0600LW	LOCK WASHER 3/8"	2
36	F0604HHCS	HEX HEAD CAP SCREW 3/8-16 X 1"	2

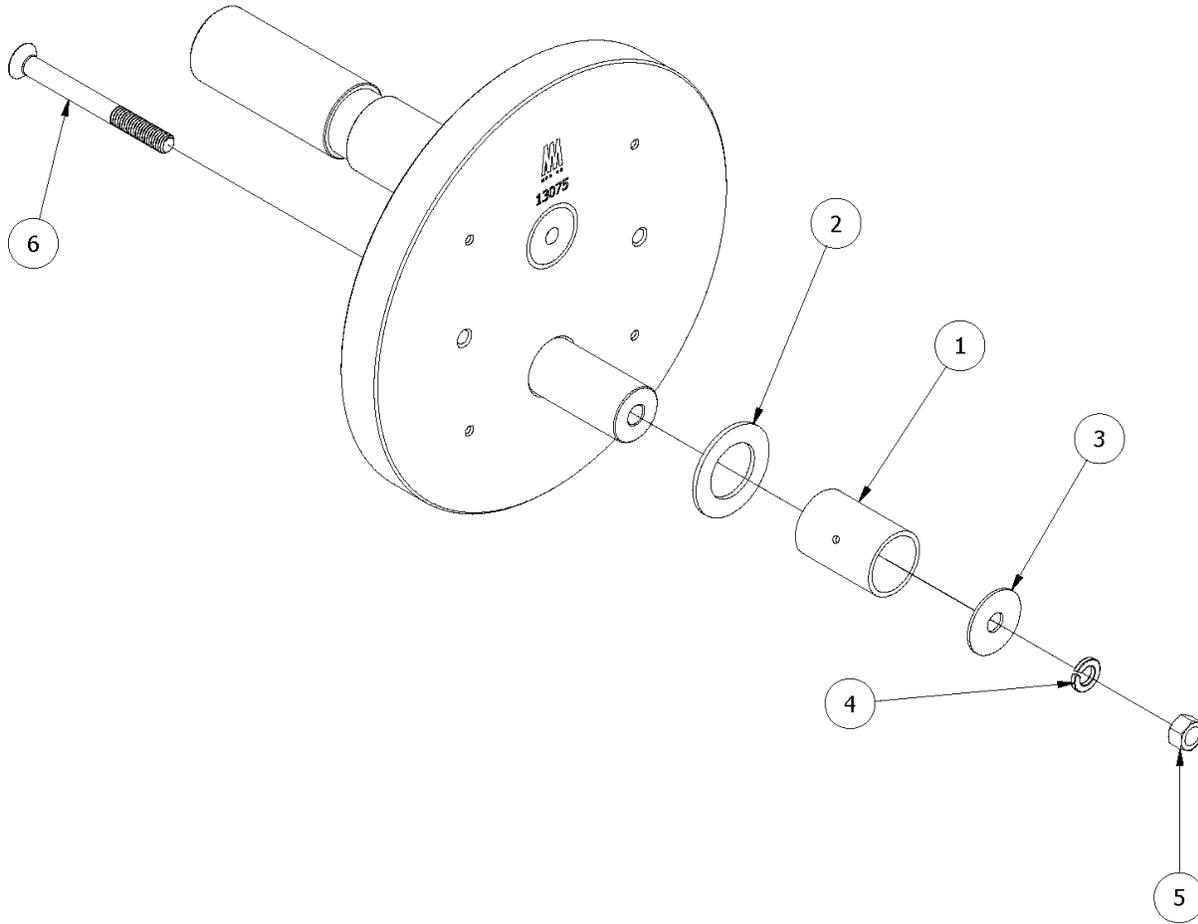
Main Drive Assembly Parts Breakdown



Main Drive Assembly Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	401CD	SCRAPER RING	1
2	402CD	CYLINDER SLIDE "O" RING	1
3	412CD	CAM ARM PIN	1
4	442CD	WASHER, STEEL, 1-3/4 X 3/8	1
5	448CDA	SHOE RING	1
6	13076	40B19X1-1/2 BORE W/ STD. 3/8KWY	1
7	13077	SPROCKET, D40B48X2 1/2" KEY, CAM TRK	1
8	13078	2HP MOTOR, <u>230/460V/3PH/1750</u> RPM	1
	OR EL-2087	2HP MOTOR, <u>115/230V/1PH/1800</u> RPM (1PH. MACHINES)	
9	13079	GEAR REDUCER,20-1 RATIO #30	1
10	13151	MANUAL JOG WHEEL MOUNTING HUB	1
11	13179	THRUST FALL BEARING	1
12	13227	S251 CYLINDER ASSEMBLY	1
13	13278	SHAFT COLLAR-2 PC SPLIT, 1-3/4", SS	1
14	15106	DRIVE CHAIN (S251/S301)	1
15	A13075	MAIN DRIVE CAM TRACK ASSEMBLY	1
16	AS0110CD	ROCKER ARM ASSY	1
17	F0500HNC	5/16" HEX NUT, HVY DUTY SS	7
18	F0600FW- Large	FLAT WASHER 3/8" (LARGE)	4
19	F0600FW- THICK	FLAT WASHER 3/8" (1/8"THK)	4
20	F0600LW	LOCK WASHER 3/8"	9
21	F0604HHCS	HEX HEAD CAP SCREW 3/8-16 X 1"	4
22	F0606HHCS	HEX HEAD CAP SCREW 3/8-16 X 1-1/2"	4
23	F0804HHCS	HEX HEAD CAP SCREW 1/2-13 X 1"	1
24	S0109CD	MAIN DRIVE FRAME ASSEMBLY	1

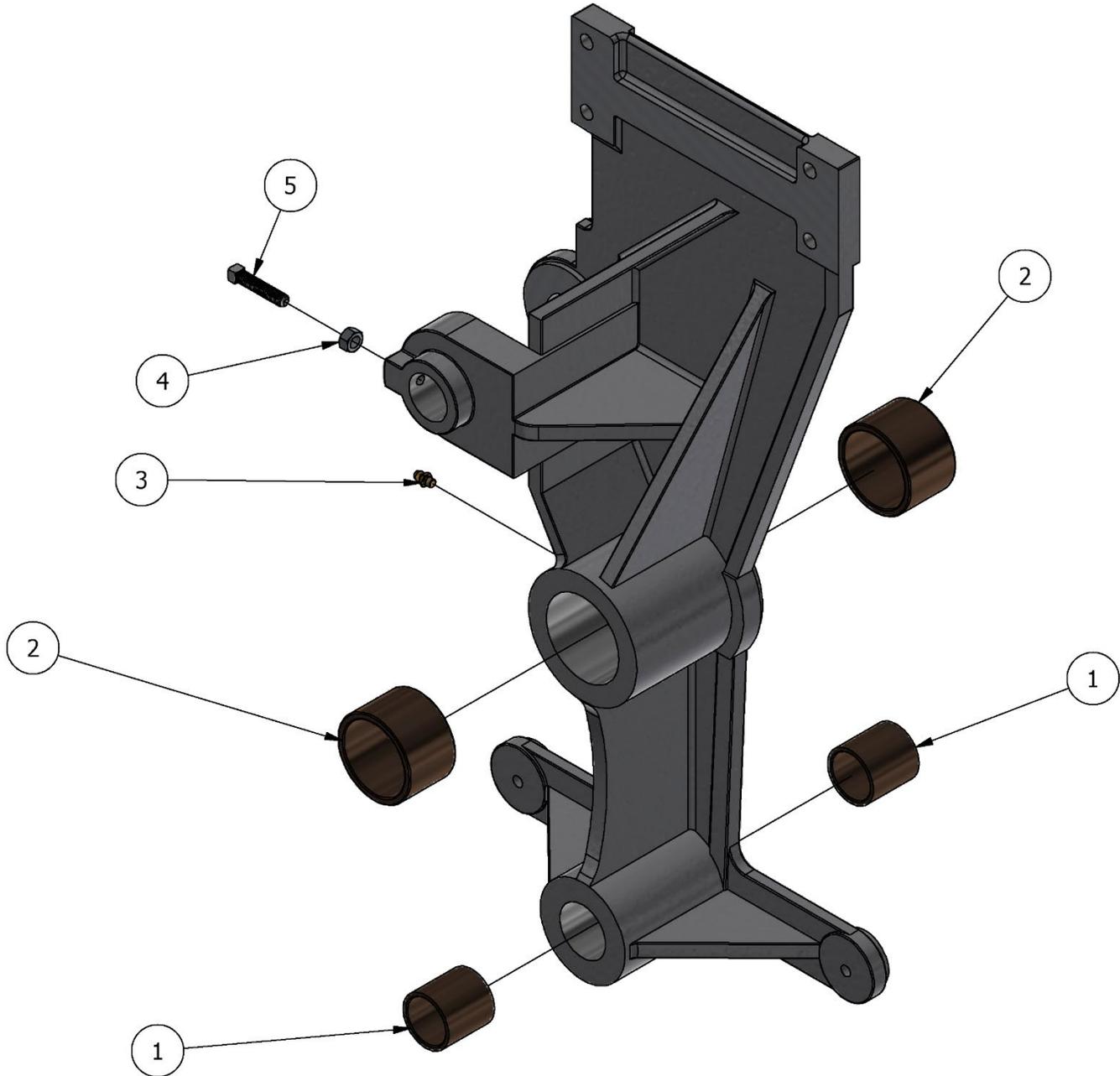
Main Drive Cam Assembly Breakdown



Main Drive Cam Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	312PY	DRIVE BEARING	1
2	413CD	SPACER WASHER- 1-1/2" ID (BRONZE)	1
3	459CD	WASHER - STEEL, 1 -3/4 OD X 1/2 ID	1
4	F0800LW	LOCK WASHER 1/2"	1
5	F0800NC	NUT COURSE, 1/2-13	1
6	F0820FSH-GR8	FLAT SOCKET HEAD, 1/2-13 X 5" L, ZINC STL	1

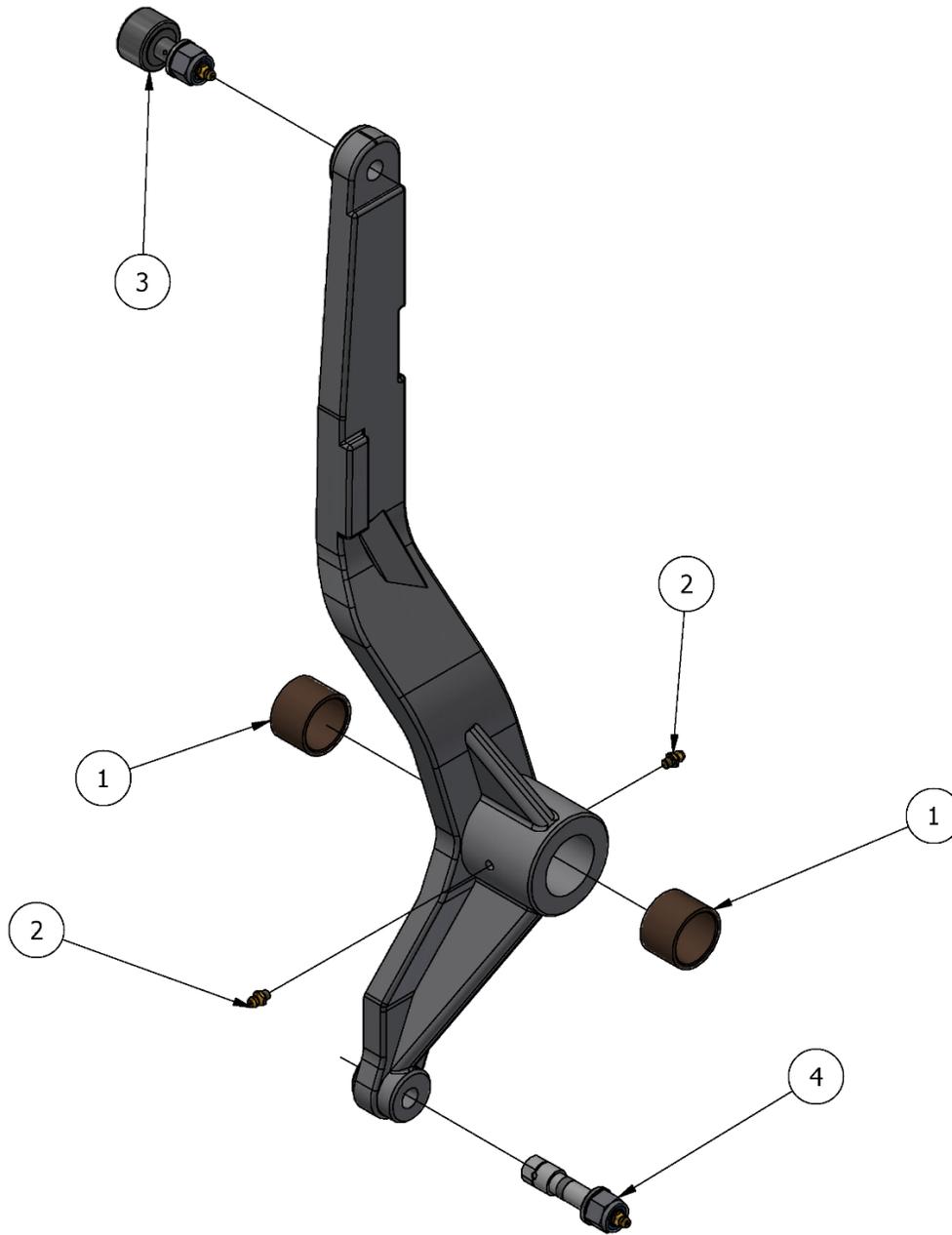
Main Frame Assembly Breakdown



Main Frame Assembly Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	437CD	PINION SHAFT BEARING	2
2	440CD1	MAIN FRAME BEARING-BRONZE, 2-3/8	2
3	3038-B	1/4-28 UNF STRAIGHT GREASE FITTING	2
4	F0500NC	NUT COURSE, 5/16-18	1
5	F0506SQ	5/16 X 1-1/2" SQUARE BOLT	1

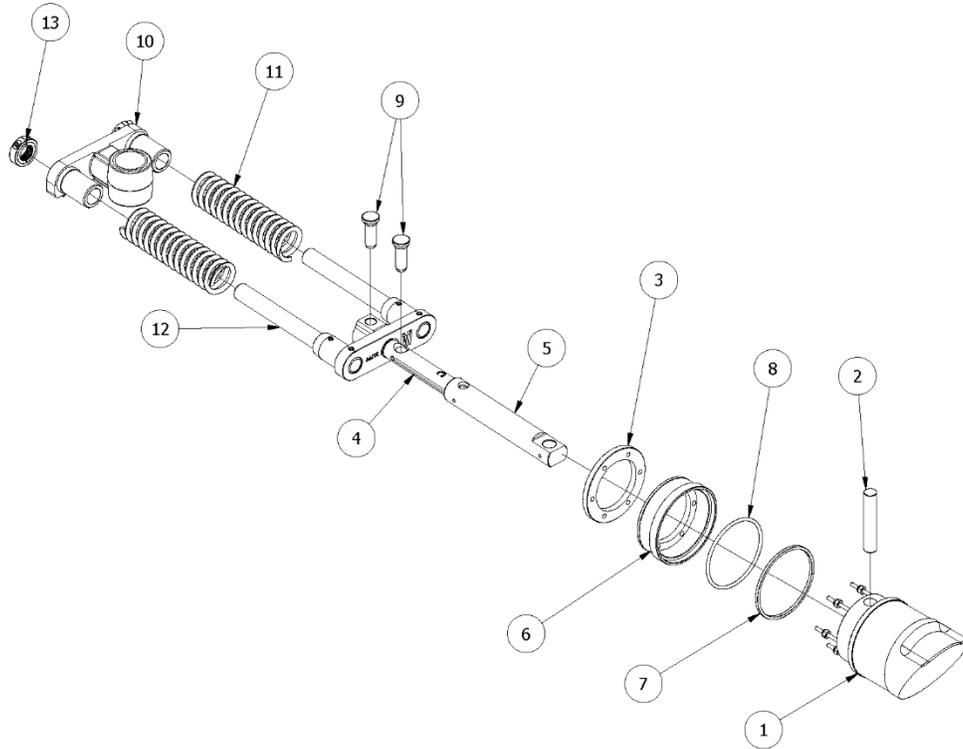
Rocker Arm Assembly Breakdown



Rocker Arm Assembly Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	422CD	ROCKER ARM BEARING	2
2	3038-B	1/4-28 UNF STRAIGHT GREASE FITTING	2
3	A427CD	CAM ROLLER ASSEMBLY	1
4	A452CD	SHOE BOLT ASSEMBLY	1

Piston and Spring Load Assembly Breakdown



Piston and Spring Load Assembly Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	300PY1	PISTON ONLY W/STUDS & NUTS	1
2	301PY	WRIST PIN	1
3	302PY	PISTON RING BACKUP WASHER	1
4	319PY	CONNECTING ROD - LOWER	1
5	322PY	CONNECTING ROD - UPPER	1
6	323PY-1	PISTON CUP *SEE NOTES*	1
7	323PY-2	PISTON CUP RING *SEE NOTES*	1
8	324PY	O-RING (PISTON) 4-1/8"ID X 4-1/2"OD	1
9	13094	CONNECTING ROD PIN FOR S251/S301	2
10	310PY	LOWER SPRING LOAD CAST ASSEMBLY	1
11	316PY	COMPRESSION SPRING, 10" LONG FREE L	2
12	317PY	UPPER SPRING LOAD	1
13	33799	1"-14 THRD'D SHAFT COLLAR, BLK OXIDE	2

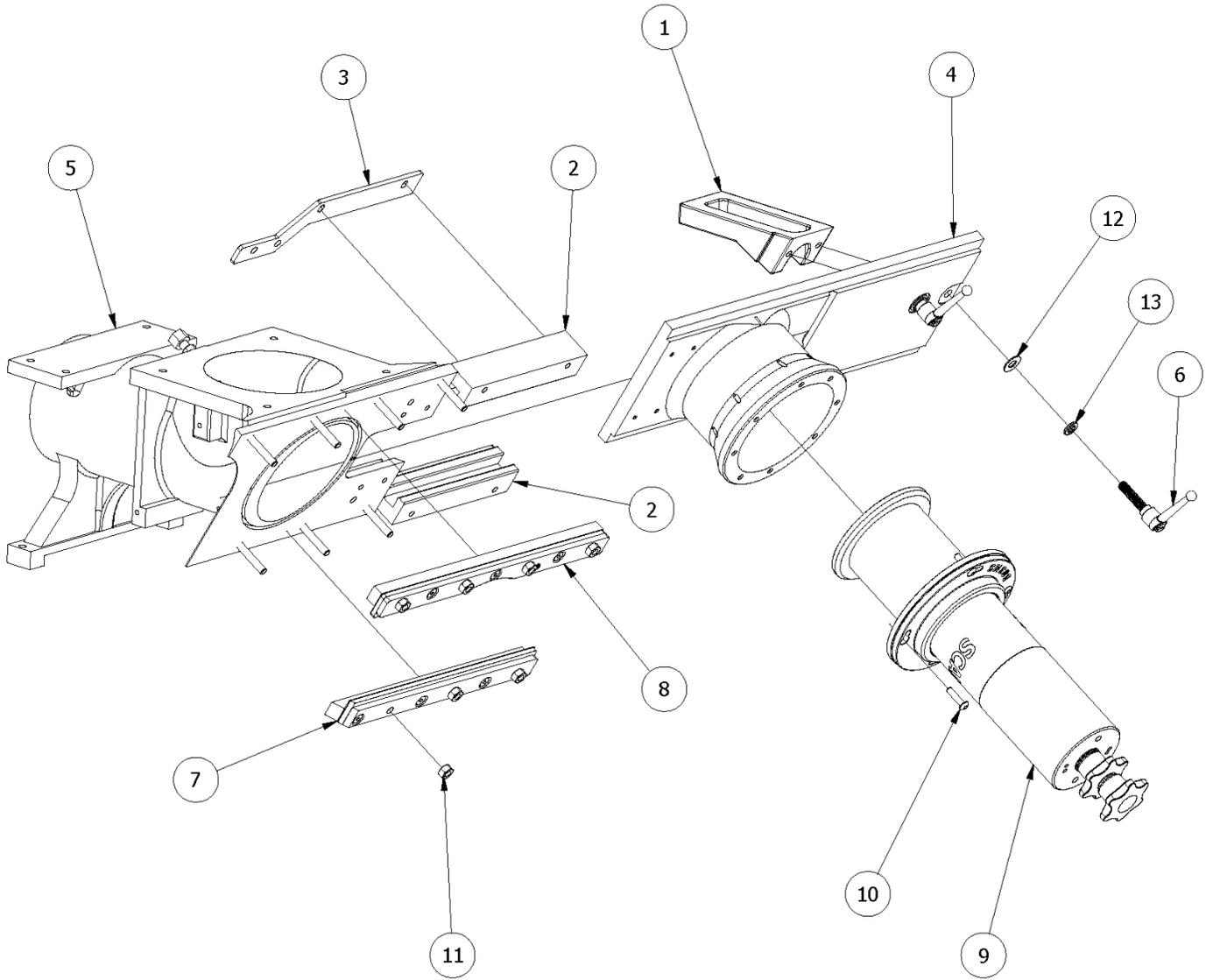
Notes:

- The spring load parts, item numbers 10, 11, 12, and 13, can be ordered as assembly part number: A503PY.

If ordering a piston cup and piston O-ring:

- Use part number 323PY-1 if there is a groove around the outside cylinder.
- If there is no groove, use part number 323PY, 323PY-2 will not be needed.

Divider Slide Parts Breakdown



Divider Slide Parts List

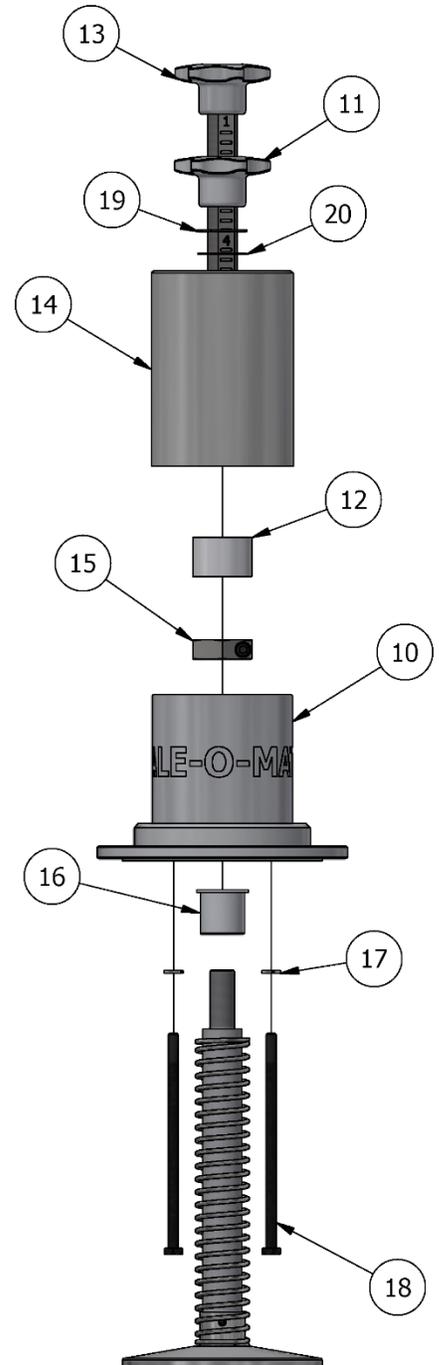
ITEM	PART NO	DESCRIPTION	QTY
1	517MS-M	CAM SLIDE ARM	1
2	13081	GIB BAR CLEANING POSITION SUPPORT BLOCK	2
3	13103	PLASTIC GIB BAR SUPPORT BRACKETS	2
4	13225	DIVIDER SLIDE	1
5	13227	S251 CYLINDER ASSEMBLY	1
6	13239	HANDLE, ADJ. 3/8-16X1.57 THRD'D STUD	2
7	24193	GIB BAR LOWER	1
8	34719	UPPER GIB BAR ASSEMBLY, 251/S301	1
9	*SEE NEXT PAGE*	MEASURING CUP ASSEMBLY	1
10	F0404SB	BUTTON HEAD, SOCKET 1/4-20 X 1" LG	4
11	F0500HNC	5/16" HEX NUT, HVY DUTY SS	7
12	F0600FW	FLAT WASHER 3/8"	2
13	F0600LW	LOCK WASHER 3/8"	2

Measuring Cup Notes:

The measuring cup assemblies scale dough within certain weight ranges. The weight ranges on these measuring cups are determined by the plungers on the bottom. For the three smaller measuring cups, these plungers require an insert to fit in the divider slide.

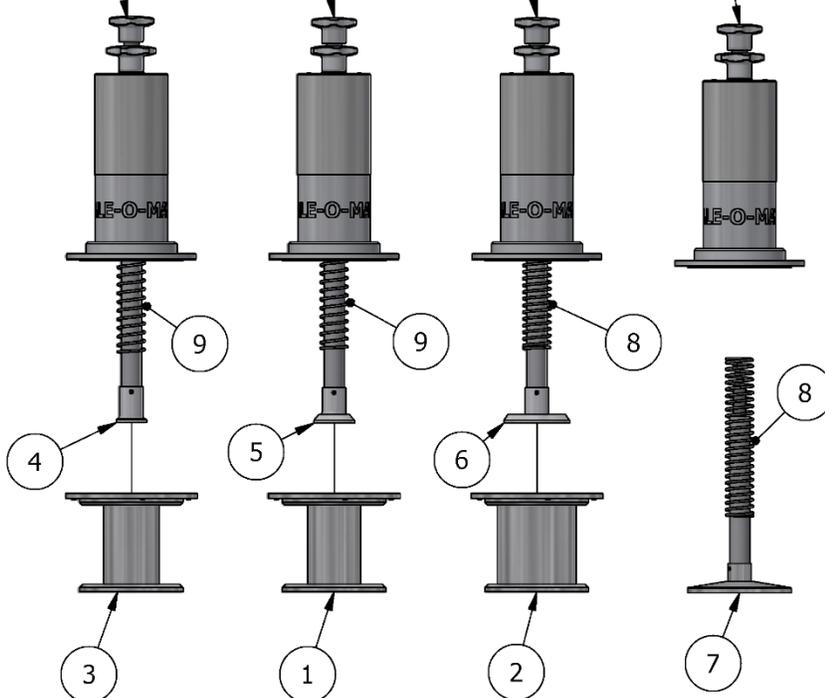
Measuring Cup Assembly Parts Breakdown

ITEM	PART NO	DESCRIPTION	QTY
1	509MS	2" INSERT, DIVIDER CYLINDER	1
2	510MS	3-1/4" INSERT, DIVIDER CYLINDER	1
3	512MS	1-1/2" INSERT, DIVIDER CYLINDER	1
4	513MS-1	1 1/2" PLUNGER & SHAFT ASSEMBLY	1
5	513MS-2	2" PLUNGER & SHAFT ASSEMBLY	1
6	513MS-3	3" PLUNGER & SHAFT ASSEMBLY	1
7	513MS-5	5" PLUNGER & SHAFT ASSEMBLY	1
8	516MSH	COMPRESSION SPRING (HEAVY)	2
9	516MSL	COMPRESSION SPRING (LIGHT)	2
10	503MS	PLUNGER GUIDE HOUSING	1
11	529MS-2D	STAR KNOB 3/4-16 THUR HOLE	1
12	529MS-2E	PLASTIC STOP PLUG	1
13	529MS-2F	ADJUSTING HANDLE & STUD ASSEMBLY	1
14	529MS-2-M	PLUNGER GUIDE EXTENSION HOUSING	1
15	531MS	NUT, SLOTTED 5/8-18	1
16	539MS-P	PLASTIC BUSHING	1
17	F0400LW	LOCK WASHER, 1/4"	2
18	F0422HHCS	HEX HEAD CAP SCREW 1/4-20 X 5-1/2"	2
19	F1200RW	3/4" RETAINING WASHER	1
20	F1200WF	FIBER WASHER (3/4" I.D X 1-1/4" O.D.)	1

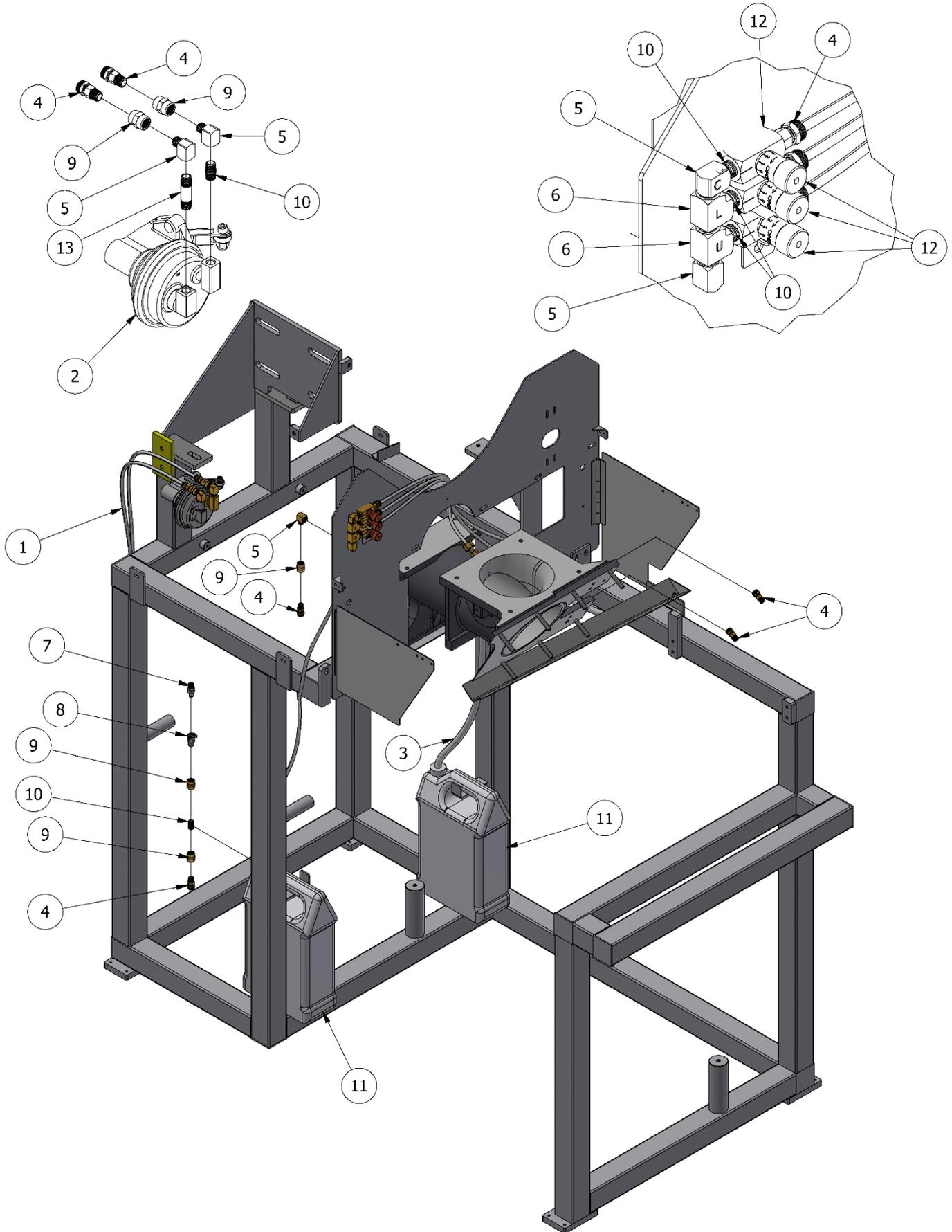


Individual Measuring Cup Assembly Part Numbers and Dough Weight Ranges:

- PN: AMS1
1-2 OZ
- PN: AMS2
2-4 OZ
- PN: AMS3
4-10 OZ
- PN: AMS5
10-32 OZ



Oiling System Parts Breakdown



Oiling System Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	7100S	OIL LINES	16
2	7000S	OIL PUMP ASSEMBLY	1
3	7110S	OIL LINES	4.5
4	7220S	MALE CONNECTOR- HOSE	9
5	7240S	90 STREET ELBOW - BRASS	5
6	7250S	STREET T 1/8" BRASS	2
7	7260S	MALE QUICK CONNECT	1
8	7270S	FEMALE QUICK CONNECT	1
9	7310S	1/8 BRASS COUPLING	5
10	7370S	NIPPLE 1/8 X CLOSE SCH 40 SST304	5
11	13222	BOTTLE, 1 GAL WHITE PLASTIC	2
12	14393	OIL VALVE - NEEDLE	3
13	17664	1/8" NPT NIPPLE X 1-1/2" LG. SS	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 manufacturer's warranty.

TO ORDER REPLACEMENT PARTS ALWAYS:

1. Check the machine to 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 (219) 472-7273 and provide all the information noted above to expedite order processing and help reduce shipping costs.
5. Provide complete details for (ship to) and (bill to) information. To assist prompt delivery, specify the type of carrier speed for shipment.

AM Manufacturing accepts Visa, Mastercard, and American Express.

