



KNIGHT

REEL AUGGIE

AND

**COMMERCIAL
SDL MIXER**

3000 SERIES

STATIONARY OPERATORS INSTRUCTION MANUAL

For Model Numbers

**3015, 3020, 3025, 3030,
3036, 3042, 3050, 3060,
3070, 3095**

**READ ALL WARNINGS AND INSTRUCTIONS IN THIS MANUAL BEFORE
INSTALLING OR OPERATING THE REEL AUGGIE MIXER !**

Failure to heed this may result in personal injury or death.

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INTRODUCTION

THANK YOU for purchasing a Kuhn Knight Reel Auggie. We appreciate your business. You have purchased one of the best built, most reliable mixers available. We strive to provide you with a rugged, durable unit which is simple to maintain. If you have suggestions for any of our products, please let us know.

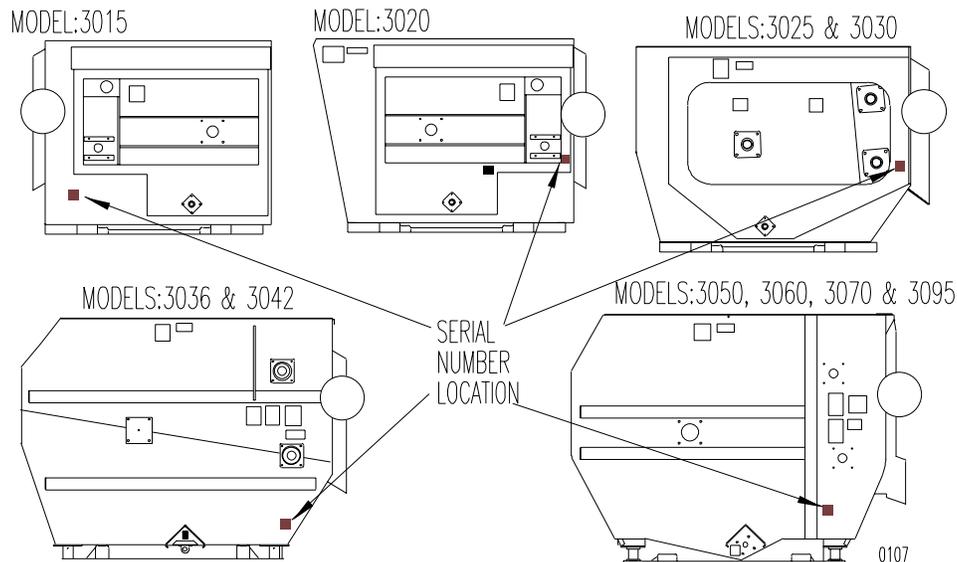
Kuhn Knight INC.

USING THIS MANUAL

This manual should be considered a permanent part of your machine, and should remain with the machine if you sell it.

This manual has been designed to help you become familiar with your unit. A separate service parts listing has been provided for a detailed parts breakdown of the unit. Before you operate your unit, be sure you understand and follow all the safety, operation and lubrication instructions on the following pages in this manual. These have been written for your safety and convenience, and to keep your unit running trouble-free for many years.

MODEL AND SERIAL NUMBER INFORMATION is located on the drive input end panel. This is the number to give service personnel for parts and service questions.



ADDITIONAL MANUALS and safety decals may be obtained through your dealer, or by writing to the address below. Order operators manual # 005810 all models

Order service parts manual # 005815 for 3015

Order service parts manual # 005811 for 3020

Order service parts manual # 005812 for 3025 & 3030

Order service parts manual # 005813 for 3036 & 3042

Order service parts manual # 005814 for 3050, 3060, & 3070

Order service parts manual # 005944 for 3095

Kuhn Knight INC.
1501 West 7th Ave.
Brodhead, WI 53520



UNDERSTAND SAFETY WORDS AND SYMBOLS



THIS SAFETY ALERT SYMBOL is used in this manual whenever personal safety is involved and means ATTENTION! BECOME ALERT! It stresses an attitude of "HEADS UP" for safety. Read and understand all pages in this manual that bear this safety symbol and . . . TAKE TIME TO BE CAREFUL!

The Signal Word or Message areas of all safety decals are color coded to indicate the level of hazard.

CAUTION is used to direct attention to **unsafe practices**, and uses the color **yellow**.

WARNING denotes a **specific potential hazard**, and uses the color yellow or **orange**.

DANGER denotes a **most serious specific potential hazard**, and uses the color **red**.

READ THE OPERATORS MANUAL

Any person who will be operating or maintaining this mixer should first read and understand this manual and all safety warnings on the unit.

This instruction manual should always be available to those responsible for the operation and maintenance of this mixer. It is the owner's responsibility to provide this safety information to his operators and employees.

Any person who does not understand the safety and operation instructions contained in this manual should not be considered qualified to operate this mixer.

FOLLOW SAFETY INSTRUCTIONS

Specialized procedures and instructions are required and must be adhered to when working on this equipment. Failure to follow the instructions contained in this manual could result in severe personal injury, death, and/or product or property damage. All applicable safety procedures such as OSHA requirements, regional and local safety codes and requirements, safe working practices, and good judgement must be used by personnel when operating or maintaining this equipment.



OPERATING SAFETY PRECAUTIONS



When the mixer is in operation it has many moving parts which could cause severe injury or death to persons coming in contact with these parts. To help avoid serious accidents, the following guidelines should always be followed:

1. **BE SURE ALL SAFETY SHIELDS are in place before operating, including driveline shields.**
2. **NEVER PUT ARMS OR FEET INSIDE unit or discharge door opening, nor climb on or in the mixer while it is running. NEVER allow anyone to position themselves over or near the top of the mixer while it is running.** Rotating reel, augers, and sprockets can grab clothing or create pinch points which can cause severe injury or death to the operator or bystanders. Always lock out the power so that the mixer cannot be accidentally turned on while inspecting, servicing, repairing, or cleaning mixer.
3. **NEVER HAND FEED MATERIALS into mixer while it is running.** Rotating reel and augers inside mixer may not be visible from the loading point, and may cut or grab hands, clothing, or material being loaded, causing severe injury. Always stop mixer and lock out the power before hand loading materials.
4. **NEVER ATTEMPT TO RELEASE JAMMED MATERIALS OR CLEAN MATERIALS from any area of the mixer or discharge chute without stopping mixer and locking out the power first.** Moving parts can be hidden by materials, and stopped parts can start unexpectedly, causing severe injury. Always stop mixer and lock out the power before attempting to remove jammed material or to clean. Be aware that the spring loaded reel arms can spring back unexpectedly, causing injury.
5. **DO NOT ALLOW OPERATION of this unit by inexperienced and unqualified people.** Keep all unqualified people away from mixer during operation. Operators of this unit must be alert and use good judgement at all times.
6. **DO NOT wear loose or floppy clothing while operating this unit.** Loose clothing may become entangled in moving machinery.
7. **BE SURE the inside of the mixer is clear of any obstructions and that all shields are in place before operating.** Repair or replace any damaged or missing shielding. Exposed sprockets and chains due to missing shielding can grab hands and clothing and cause severe injury or death.
8. **SHOULD A PROBLEM OCCUR during operation of mixer, always stop mixer and lock out the power before investigating problem.** If mixer power has not been locked out, the mixer may start unexpectedly, causing severe injury or death.
9. **USE CAUTION WHEN WORKING AROUND THE DISCHARGE AREA.** Never reach into discharge area without first locking out power. Moving parts can be hidden by material, and stopped parts can start unexpectedly, causing severe injury.



SAFETY DECALS

SAFETY DECALS ARE PLACED ON THIS UNIT FOR THE PROTECTION OF THE OPERATOR OR ANY PERSON NEAR THE UNIT.

Be Sure everyone who operates the mixer understands all the information, warning, caution and danger decals.

Keep The Decals Clean so they are readable. This applies to all caution, warning, and danger decals.

It is the **OWNER'S RESPONSIBILITY** to provide information for safe operation of this machine.

Replace any damaged or worn decal. Once any part of a decal becomes non-readable, it should be replaced. The part numbers for the decals are located in the lower RH corner of the decal, and listed in this manual on the following pages. Replacement decals may be ordered through your dealer or the address below.

When replacing decals, be sure the surface area is clean and dry, peel the backing off the decal, and apply to the Mixer. Be sure to wipe with a clean cloth to rub out all air bubbles to assure a good seal. For best adhesion decals should be applied in temperatures of 50° (f) or warmer.

Complete sets of decals (including information decals) can be ordered by using the following part numbers:

UNIT	PART NO.
3015	174-633
3020	174-630
3025	174-647
3030	174-650
3036	173-361
3042	173-362
3050	174-636
3060	174-639
3070	174-702
3095	175-013

SAFETY

SAFETY DECALS

Immediately replace all worn or damaged Safety Decals (listed on these pages). Please supply the unit's serial number with the order.

Figure A

WARNING, STAY CLEAR OF POWER DRIVEN PARTS

Part Number 170-849

2 Required: 3015 & 3020 MODELS

2 Required: 3025 & 3030 MODELS

3 Required: 3036 & 3042 MODELS

3 Required: 3050, 3060, 3070 & 3095 MODELS



Figure B

DANGER, ROTATING AUGERS INSIDE

Part Number 171-820

4 Required ALL MODELS

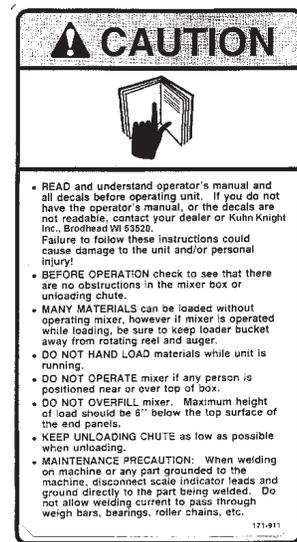


Figure C

SAFETY INSTRUCTIONS

Part Number 171-911

1 Required ALL MODELS



SAFETY

SAFETY DECALS

Immediately replace all worn or damaged Safety Decals (listed on these pages). Please supply the unit's serial number with the order.

Figure D
WARNING, DO NOT OPERATE UNLESS SHIELDS ARE IN PLACE
 Part Number 171-913
 1 Required ALL MODELS



Figure E
WARNING, LIFTING INSTRUCTIONS
 Part Number 172-820
 1 Required ALL MODELS

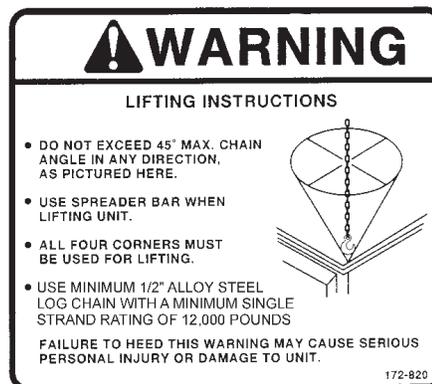


Figure F
DANGER, DO NOT OPERATE, SHIELD MISSING
 Part Number 171-915
 2 Required ALL MODELS





SAFETY

SAFETY DECALS

Immediately replace all worn or damaged Safety Decals (listed on these pages). Please supply the unit's serial number with the order.

Figure G

DANGER, DO NOT HAND LOAD

Part Number 171-947

4 Required ALL MODELS



Figure H

BEWARE WHILE LOADING WITH A BUCKET LOADER

Part Number 171-948

1 Required ALL MODELS

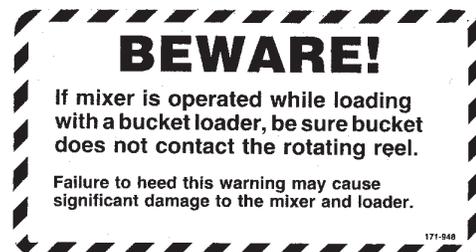


Figure I

DANGER, KEEP AWAY, ROTATING DRIVE LINE

Part Number 172-786

1 Required: 3036 & 3042 MODELS

1 Required: 3050, 3060, 3070 & 3095 MODELS



Figure J

DANGER, DO NOT OPERATE SHIELD MISSING

Part Number 173-078

1 Required: 3036 & 3042 MODELS

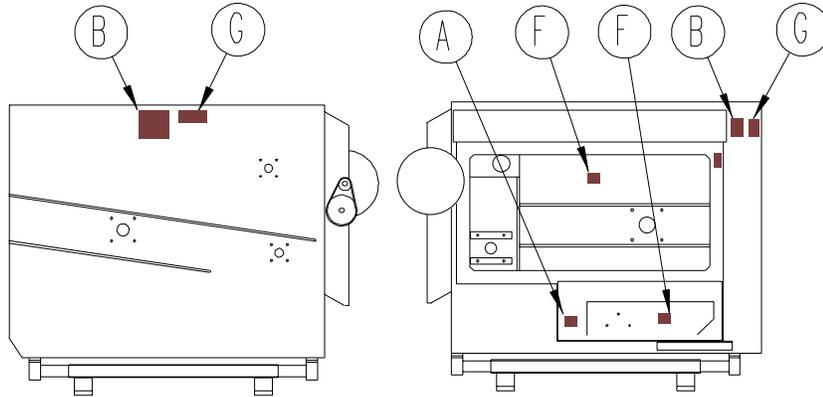
1 Required: 3050, 3060, 3070 & 3095 MODELS





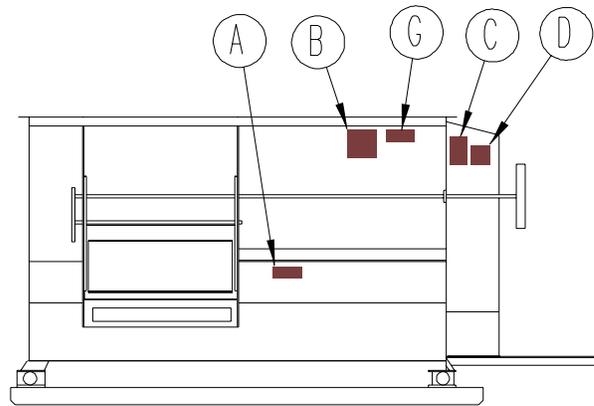
SAFETY

SAFETY DECAL PLACEMENT ILLUSTRATIONS MODEL 3015

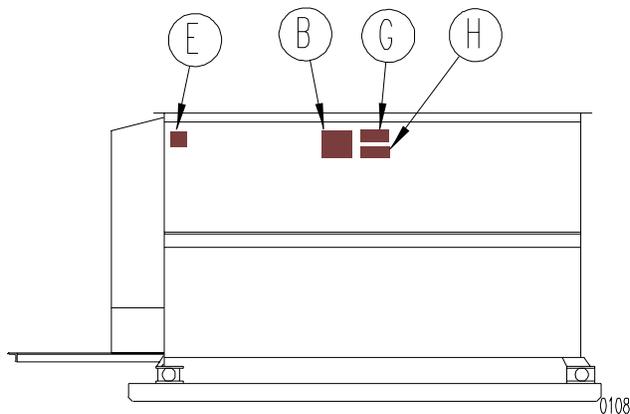


FRONT VIEW

REAR VIEW



LEFT SIDE VIEW

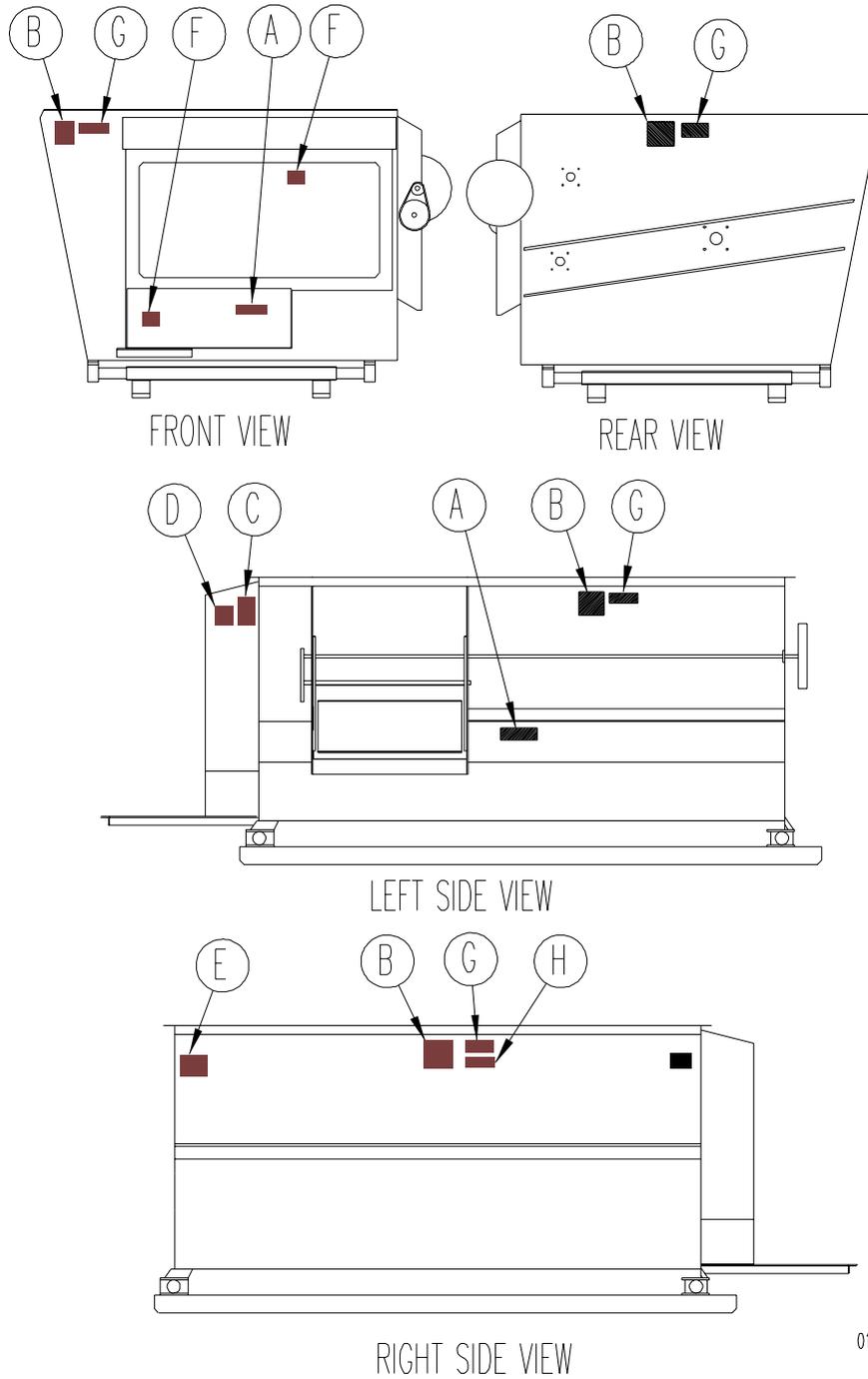


RIGHT SIDE VIEW

Shields removed for illustrative purposes



SAFETY DECAL PLACEMENT ILLUSTRATIONS MODEL 3020

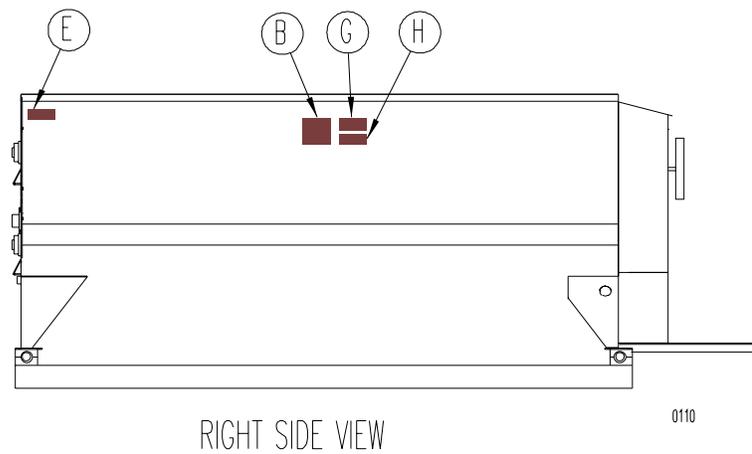
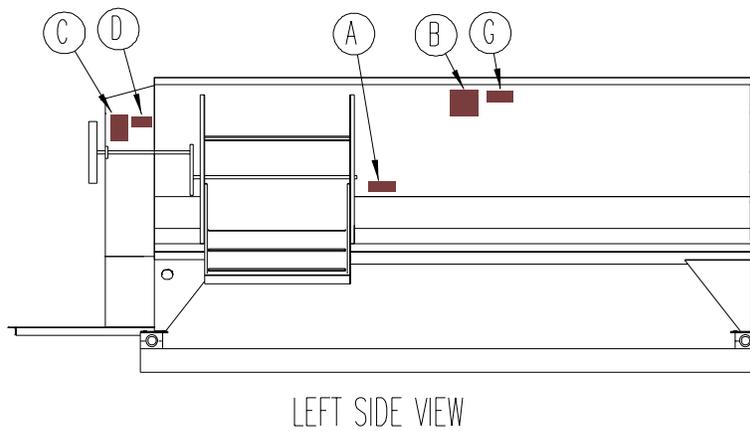
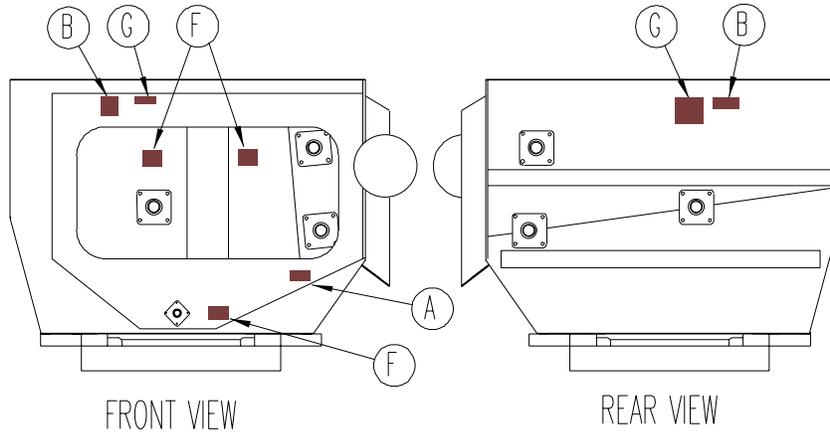


0109

Shields removed for illustrative purposes



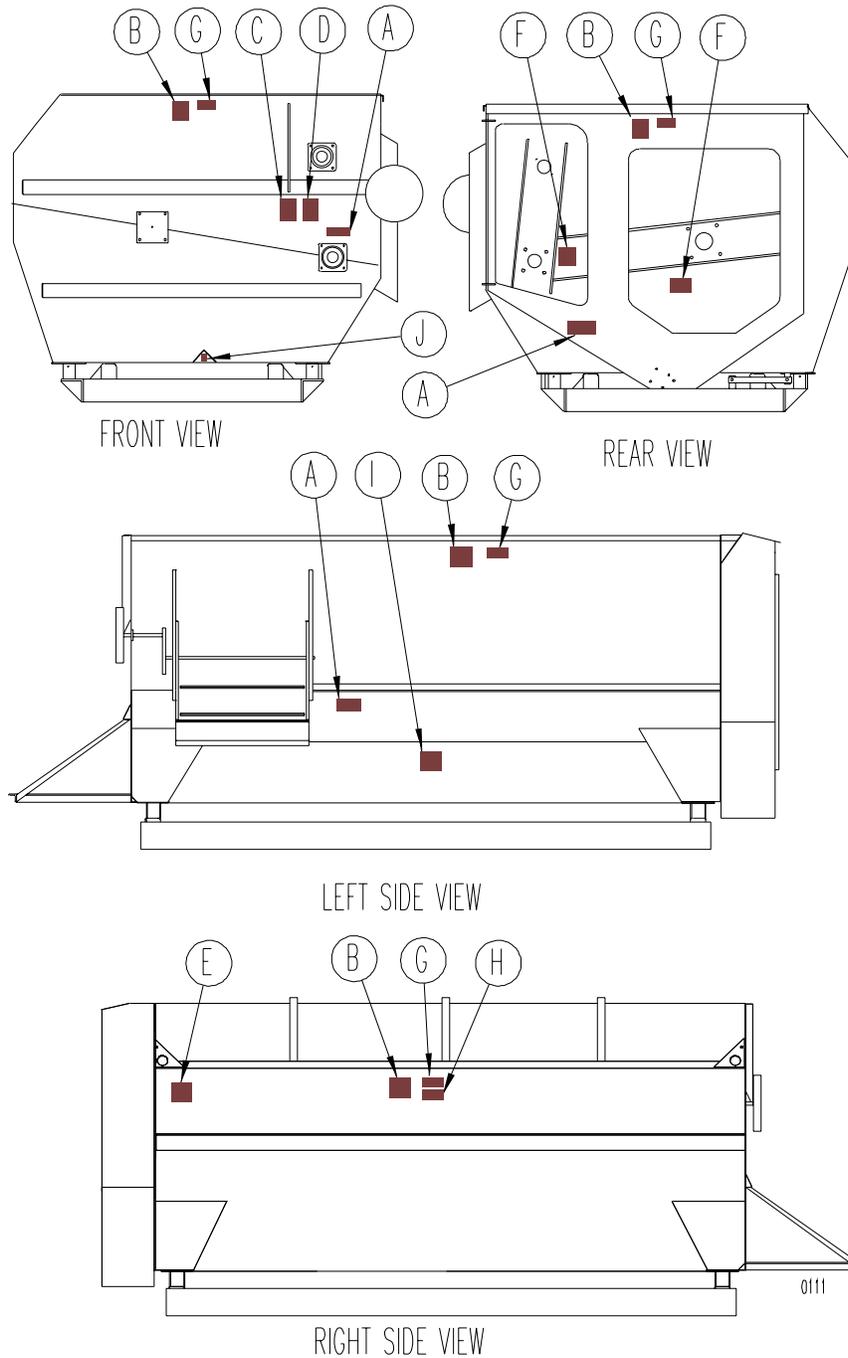
SAFETY DECAL PLACEMENT ILLUSTRATIONS MODELS 3025 & 3030



Shields removed for illustrative purposes

SAFETY

SAFETY DECAL PLACEMENT ILLUSTRATIONS MODELS 3036 & 3042

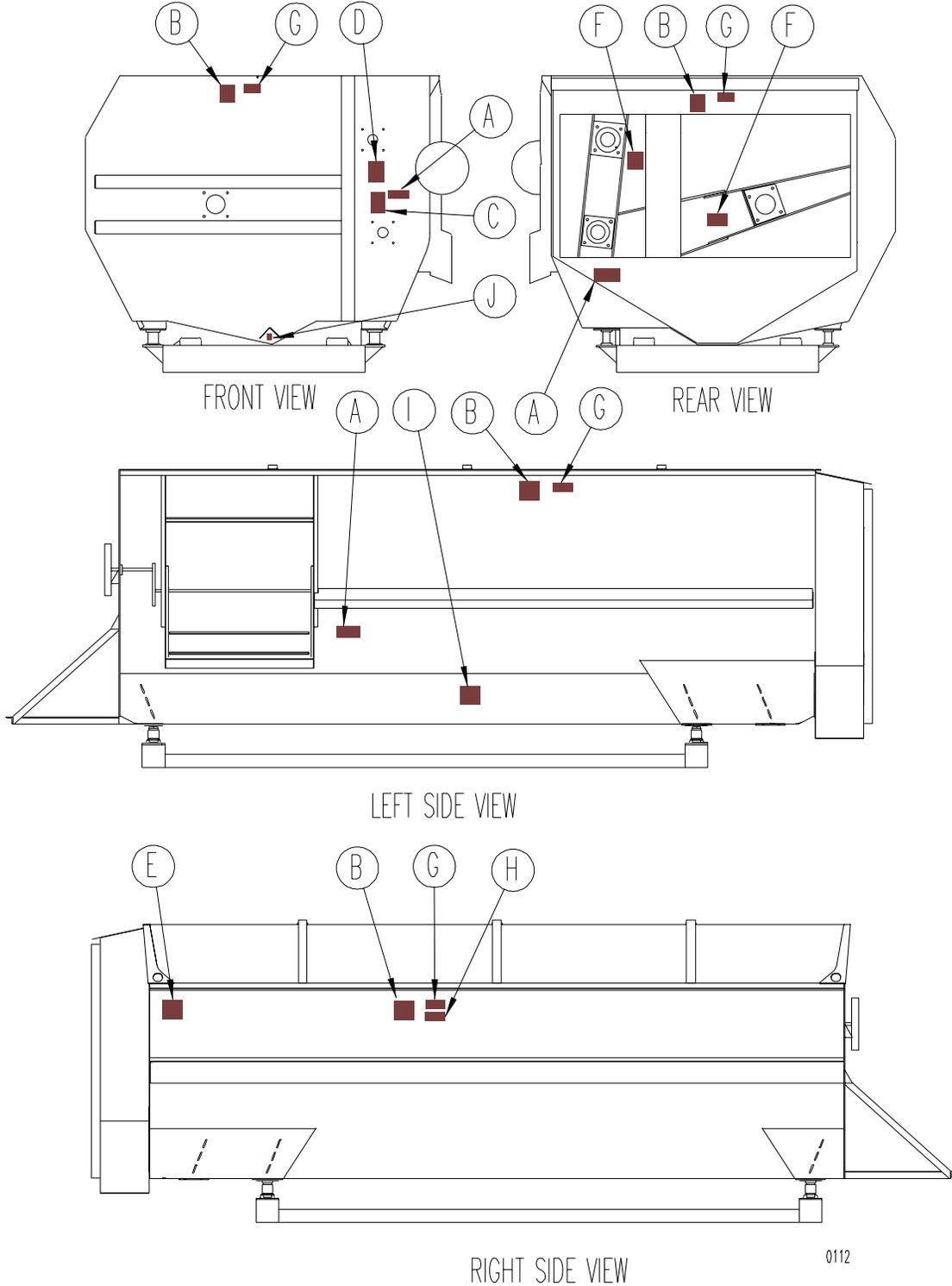


Shields removed for illustrative purposes



SAFETY DECAL PLACEMENT ILLUSTRATIONS

MODELS 3050, 3060, 3070 & 3095



0112

Shields removed for illustrative purposes



MIXER SETUP



IMPORTANT! READ BEFORE OPERATING MIXER.
IT IS THE RESPONSIBILITY OF THE OWNER TO MAKE SURE THE MIXER IS SET UP PROPERLY. THE FOLLOWING RECOMMENDATIONS SHOULD BE HELPFUL

INSTALLATION TIPS

1. Be sure there is adequate clearance around the mixer for maintenance, repair and loading the mixer.
2. If the electronic weighing system is used, be sure that the weigh bars are kept clean and dry also items such as loading conveyors are not attached to or leaning on the mixer. Refer to scale manual for more specific information.
3. Mixer should be mounted on a structure of adequate strength to support a fully loaded mixer. Machine must be level and stable at the desired height. Weigh bar mounts should be fastened to this structure.
4. Manual door opener for the 3015 & 3020 can be mounted at either the front or the rear of the mixer. The following instructions will help To modify the door opener for operation from the opposite end:
 - a. Remove latch and mounting bolt and install to opposite end of mixer in corresponding hole.
 - b. Remove door wheel assembly.
 - c. With door in fully closed position, cut door wheel shaft to proper length, drill mount hole, slide into position and replace bolt.
5. The , 3025, 3030, 3036, 3042, 3050, 3060, & 3070 manual door opener is in a fixed position on the drive end of the mixer.
6. An optional remote electric door actuator is also available for all models. The remote door actuator is standard on the 3095.

ELECTRIC MOTOR RECOMMENDATIONS

Following is a listing of suggested motor and frame sizes. Ratings are based on “normal dairy feed rations”. Heavier rations such as feedmill use, heavy/sticky beef rations, or industrial use, contact factory. A smaller motor may be adequate for easy-mixing materials, and a larger motor may be required for difficult materials*. Wiring and overload protection should be sized according to the motor size installed. The motor mount will fit the recommended motor size. Other motor sizes may require additional holes to be drilled in mount or a different mount. Dual motor mount, frame and shield are standard on 3025, 3030, 3036 & 3042 models. All models are designed to be used with a motor operating at 1725-1750 RPM.

MODEL	3015	3020	3025	3030	3036
*HORSEPOWER	7.5 - 10	10	10	10 - 15	15 - 20
MOTOR FRAME SIZE	213T 215T	215T 254T	254T 256T	254T 256T	256T 284T
STANDARD MOTOR BUSHING	1-3/8"	1-3/8"	1-5/8"	1-5/8"	1-5/8"
OPTIONAL MOTOR BUSHING	1-1/8"	1-5/8"	1-3/8"	1-3/8"	1-7/8"
MODEL	3042	3050	3060	3070	3095
*HORSEPOWER	15 - 25	50	60	75	100
MOTOR FRAME SIZE	284T 286T	326T	364T	365T	N/A
STANDARD MOTOR BUSHING	1-7/8"	2-1/8"	2-3/8"	2-3/8"	2-7/8"
OPTIONAL MOTOR BUSHING	2-1/8"	2-1/8"	2-3/8"	2-3/8"	

MIXER SETUP



IMPORTANT! READ BEFORE OPERATING MIXER.
IT IS THE RESPONSIBILITY OF THE OWNER TO MAKE SURE THE MIXER IS SET UP PROPERLY. THE FOLLOWING RECOMMENDATIONS SHOULD BE HELPFUL

SAFETY SHIELDING

Be sure all shielding is in place and functioning properly. Replace all damaged or missing shielding immediately see parts pages for replacement shielding part numbers.

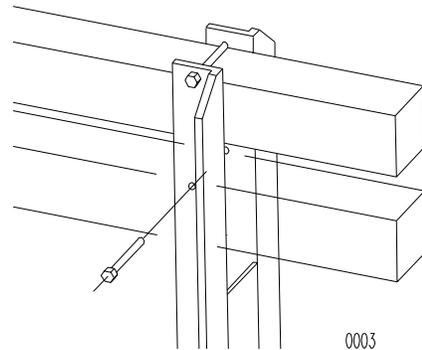
BE AWARE that your installation may require additional safety shielding and/or warnings. Because each installation is different, Kuhn Knight Inc. cannot design standard shielding for all conceivable situations without limiting the use of the mixer. The top of the mixer and the door opening are the two areas that should be given particular attention in regard to safety. The top of the mixer has a grid type safety shield to help prevent a person from falling into the mixer. However, because there are many different feeds and ways of loading them, the top openings must be large enough to avoid obstructing the loading operation. Likewise, the door opening area must be unobstructed to allow the discharge of feed. Kuhn Knight Inc. warns operators with decals on the mixer and specific instructions in this manual to stay clear of these areas during operation. If safety decals are blocked from view due to the installation, then additional decals should be ordered and placed so they are readable. If your particular installation is such that a person may inadvertently put an arm or leg in these areas during operation, then additional safety shielding must be installed to prevent such an occurrence. Additional shielding of the motor and drive belt area may also be necessary depending on exact installation.

AUGER KNIVES

The upper and lower auger knives are installed to help handle long materials such as long stem hay. If you do not intend to handle this type of material, the knives can be removed.

REEL CROSS TUBES

The Cross Tubes have two settings which can be utilized depending on the material being mixed. The Tubes are factory set in the outer position. In general, the inner setting is used for a high hay ration. To change to the inner position, compress and secure the tube into the spring, and relocate the capture bolt to the inner holes. The wiper tubes should not be moved. Repeat for all Tubes.

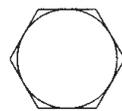


DRIVELINE OVERLOAD SHEARBOLT

MODELS: 3036, 3042, 3050, 3060, 3070, 3095 ONLY

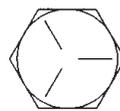
The driveline has a shearbolt assembly for overload protection. This shear bolt type overload protection needs very little maintenance. If the motor free spins during operation, the shear bolt has broken. Replace the sheared bolt with a new one of the same diameter, length and grade. Any bolt of different specifications than listed below will prevent the shearbolt assembly from operating properly and can cause damage to the mixer.

MODEL	SHEAR BOLT SIZE
3036	1/4" X 2" GRADE 5
3042	1/4" X 2" GRADE 5
3050	1/4" X 2" GRADE 5
3060	1/4" X 2" GRADE 5
3070	5/16" X 2" GRADE 5
3095	5/16" X 2" GRADE 5



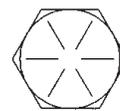
GRADE

2



GRADE

5



GRADE

8

BOLT HEAD GRADE MARKING



MIXER SETUP



IMPORTANT! READ BEFORE OPERATING MIXER.
IT IS THE RESPONSIBILITY OF THE OWNER TO MAKE SURE THE MIXER IS SET
UP PROPERLY. THE FOLLOWING RECOMMENDATIONS SHOULD BE HELPFUL

MIXER RUN-IN

1. Check for proper assembly, adjustment, and lubrication. Check to see that there is adequate oil in the oil bath, check to be sure all bolts and set screws are tight and the drive belts are at the proper tension. Review Operating Safety Precautions and Lubrication Instructions before operating the mixer.
2. Be sure all shields are properly in place.
3. Check for and remove any foreign objects in the mixer hopper and discharge opening.
4. Check to see that drain plugs are installed and that the door is closed.
5. Be sure no one is inside the mixer.
6. Test run the mixer.
 - a. Make sure mixer is empty, then start the mixer.
 - b. Run for at least five minutes.
 - c. Raise and lower the door several times.
 - d. Turn off mixer and lock out power.
 - e. Check the mixer drive components to be sure they are not abnormally hot. Refer to Inspection and Adjustment section for proper alignment and tension settings.

If any of these items are not running as indicated, immediately repair or contact your service representative. Always refer to Operating Safety Precautions before operating or servicing the mixer.

MIXER OPERATION



Always refer to Operating Safety Precautions and Safety Decal sections of this manual before operating this mixer.

OPERATION GENERAL

The Reel Auggie was designed for blending dairy and beef rations. Most commonly used ingredients, including limited amounts of dry stem hay, can be mixed quickly and uniformly in this mixer. If you have questions regarding your dairy feed ration or have other applications, please consult Kuhn Knight Inc. The Reel Auggie's mixing performance can vary according to the differences in materials, loading sequence and unloading methods. Some general guidelines should be understood before operating the Reel Auggie.

When you see this Hay Maxx logo  that means there are special and specific Hay Maxx operation instructions.

The HAY MAXX System is designed to start processing hay before it enters the mixing chamber. This is an efficient way to add long stem hay to the ration. The hay pan holds the hay in position, while the auger begins to process the hay with the aid of hard edge knives and shear angles. The hay pan, with backstop, aggressive auger knives, and shear angles, work in combination to tear hay apart faster for more even mixing.



SAFETY

When the mixer is in operation it has many moving parts which could cause severe injury or death to persons coming in contact with these parts. To help avoid serious accidents, the following precautions should always be followed:



DANGER: NEVER HAND FEED MATERIALS into mixer while it is running, always stop mixer and lock out power before hand loading materials. Rotating reel and augers inside mixer may not be visible from the loading point, and may cut or grab hands, clothing, or material being loaded, causing severe injury.



DANGER: NEVER PUT ARMS OR FEET INSIDE unit, or climb on or in the mixer while it is running. Never allow anyone to position themselves over or near the top of the mixer while it is running. Rotating reel and augers can grab clothing or create pinch points which can cause severe injury or death to the operator or bystanders. Always stop mixer and lock out power so that the mixer cannot be accidentally turned on while inspecting, servicing, repairing, or cleaning mixer.



DANGER: NEVER ATTEMPT TO RELEASE JAMMED MATERIALS OR CLEAN MATERIALS from any area of the mixer or discharge chute without stopping mixer and locking out the power first. Moving parts can be hidden by materials, and stopped parts can start unexpectedly, causing severe injury. Always stop mixer and lock out power before attempting to remove jammed material or clean. Be aware that the spring-loaded reel arms can spring back unexpectedly, causing injury.



DANGER: DO NOT ALLOW OPERATION of this unit by inexperienced and unqualified people. Keep all unqualified people away from mixer during operation. Operators of this unit must be alert and use good judgement at all times.

MIXING TIME

The Reel Auggie can mix an average load in 3 to 4 minutes. Because of this short mixing time, there is normally no reason to run the mixer during loading except to level the materials or to break up hay.



WITH HAY MAXX OPTION: If the hay goes through too fast, you may want to put more material in the mixer before loading the hay or adjust the position of the Hay Maxx to allow more processing (see mixer operation, Hay Maxx adjustments).

MIXER OPERATION



Always refer to Operating Safety Precautions and Safety Decal sections of this manual before operating this mixer.

MATERIALS NOT REQUIRING PROCESSING

Many different kinds of materials can be mixed with the Reel Auggie, but each type has its own unique characteristics. **The following feed materials can be efficiently mixed in the Reel Auggie without being processed first :**

SMALL SQUARE HAY BALES- Dry alfalfa hay can be mixed in rations up to 15%-20% by weight. Always use cured dry hay, Tough hay can cause wrapping, binding and damage to mixer, adversely effect the mixing performance. The following are some examples that contribute to tough hay conditions: High moisture content, High grass content, High density bales, Outdoor storage, Use of hay preservatives and Excessive stem length. For better hay processing in rations with a higher percentage of hay mixing may be improved by pulling the non-wiper cross tubes to the inner setting, (see mixer setup section "reel cross tubes") this will allow the reel to more aggressively charge the lower auger with hay.

FORAGES- Chopped hay, corn silage, and finely chopped crop residue can be mixed in the Reel Auggie. Wet and heavy forages added in large volumes may require more power to mix.

GRAINS- Ground, rolled, and whole cereal grains, minerals, and concentrates, are all very easily mixed, and can improve the mixing performance of the other materials.

LIQUIDS- Supplements and liquid fat can be blended in the Reel Auggie. Some operators prefer adding liquids into the empty mixer, and others add liquids on top of grains or roughage. Sticky liquids such as molasses tend to increase the power requirements.

MATERIALS REQUIRING PROCESSING

The following feed materials cannot be efficiently mixed in the Reel Auggie unless they have been broken apart or processed:

-ALL LONG AND UNCURED GRASSES

-ROUND BALED, LARGE SQUARE BALED, OR STACKED FEEDS

The HAY MAXX SYSTEM option should be used to assist in tearing apart long stem hay.

HAY PREPARATION

Always use cured dry hay. Tough hay can cause wrapping, binding and damage to mixer and can adversely effect the mixing performance. The following are some examples that contribute to tough hay conditions: High moisture content, High grass content, High density bales, Outdoor storage, Use of hay preservatives and Excessive stem length.



Preparing small square bales- remove twine or wires while on the ground. Put bales into loader bucket lengthwise so that they will fall onto the HAY MAXX uniformly, then add to the HAY MAXX.



Preparing large square bales (3' x 3' x 8'), (3' x 4' x 8'), (4' x 4' x 8')- remove twine while on the ground. Put slabs of the bale into the loader bucket (10"-12" total thickness suggested maximum size). The hay should lay flat against the hay pan to properly feed into the HAY MAXX system.



Round bales- remove the twine and break apart with loader, round bale slicer, round bale unroller or other round bale processing equipment and load separated portions of hay into the HAY MAXX SYSTEM.

MIXER OPERATION



Always refer to Operating Safety Precautions and Safety Decal sections of this manual before operating this mixer.

LIMITATIONS

Do not load hay without other dry commodities in the mixer first to act as a carrier or “lubricant”.

Do not overload hay content, Kuhn Knight Inc. recommends up to 15% -20% of unprocessed hay by weight in the load. Exceeding this percentage could potentially damage mixer and cause premature wear on driveline components. Kuhn Knight Inc. will not be responsible for damage caused by overloading, wet hay or foreign objects.

WARNING

Do not use tough hay (20%-60% moisture) Always use cured, dry hay. Wet hay, foreign objects or overloading may cause binding and damage to the mixer.



Do not overload HAY MAXX SYSTEM with too much hay. This can cause bridging over the auger. If this occurs never attempt to release jammed materials or clean out materials from the Hay Maxx area without stopping mixer and locking out power so that the mixer cannot be accidentally turned on.

LOADING AND MIXING

Prior to loading check mixer for foreign objects and be sure door is fully closed.

1) LOAD COMMODITIES

Adding ingredients like corn, soybean meal, cottonseed, etc. will act as a carrier or “lubricant” if hay is included in the ration.

Fill mixer between 1/3-1/2 full by volume in commodities and forage before adding the hay to the ration. This will allow enough room for hay to expand and bring feed level up so the top auger can assist in processing.

2) A) LOAD HAY (without hay maxx)

With the mixer running, proceed loading the small square bale pieces or tub ground hay into the mixer. Do not exceed 15% -20% of unprocessed hay by weight. Grains, proteins and minerals should be added at the beginning of the load. Free-flowing slippery materials also act as a lubricant for the bulky feeds to be added later. The hay can be loaded after the previously added grains. Grains help to move the hay into the augers. It often helps to have the mixer running while adding the hay and to load the hay on the auger side.

B) LOAD HAY

With the mixer running proceed to load the hay on the hay pan. Load the slabs toward the front end of the hay pan, so the hay is not resting against the rear backstop. For best results, do not overload the hay pan and Allow time to process the hay in the HAY MAXX SYSTEM before adding more. Repeat until proper percentage of hay for ration is met (not to exceed 15%-20% hay by weight).

3) FINISH LOADING DRY FEEDS

Finish loading any other ingredients to complete the ration in order of least binding ingredient to most binding example: dry commodities first, corn silage second, haylage last.

4) FINISH LOADING WET FEEDS

Any other wet feeds may be added at this time.

5) ADD WATER

If ration includes water, add it last. Adding water at the beginning will cause the hay to bind.

NOTE: Do Not overload mixer! Overloading causes excessive horsepower requirements, increased strain on driveline and poor mixer performance.

MIXER OPERATION



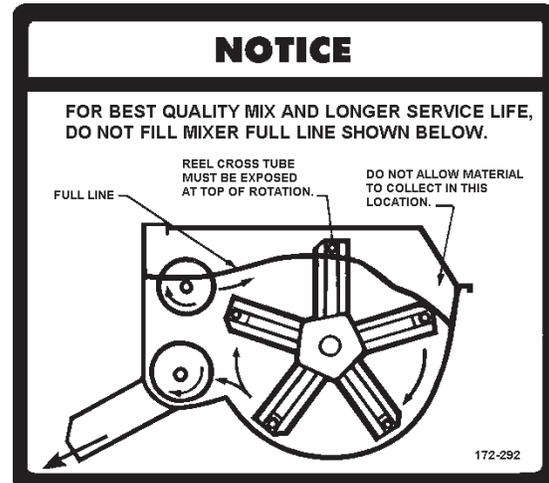
Always refer to Operating Safety Precautions and Safety Decal sections of this manual before operating this mixer.

FILL LEVEL

Do not overload mixer! Overloading causes excessive horsepower requirements, increased strain on mixer driveline and poor mixer performance.

The design of the Reel Auggie requires that there be adequate space to allow the feed to move in and around the Reel chamber. If the Reel is completely covered, it cannot efficiently mix the materials. The Reel Cross Tubes should always be visible at the top of their rotation to allow this mixing space.

Do not exceed full line as shown in diagram.



UNLOADING

After the ration has been thoroughly mixed, open the mixer door to begin unloading. The discharge door opening determines the flow of feed from the mixer. The door must be opened far enough to prevent separation of materials. To stop the flow of feed, close the door, then shut off the mixer.

OPTIONS:

ELECTRIC DOOR CONTROL-

This option allows the discharge door to be operated from a location away from the mixer, or when installation location requires remote door operation.

ELECTRONIC SCALE -

Allows accurate ration weight while loading, also scale indicator can be located away from mixer if a more convenient location is preferred.

Refer to the manufactures operator manual for your specific scale option operation and maintenance.

HAY MAXX SYSTEM -

A bolt in option designed for the user who wants to add long stem hay more effectively to the ration. The Hay Maxx handles small and large square bales, broken-up round bales, frozen bunker silage and other bulky materials without over processing the

INSPECTION & ADJUSTMENTS



ALWAYS STOP MIXER AND LOCK OUT POWER BEFORE SERVICING, REPAIRING, OR CLEANING. IF WORK MUST BE PERFORMED INSIDE THE MIXER, STOP MIXER AND LOCK OUT POWER AND PUT A PROTECTIVE COVER OVER THE AUGER KNIVES TO AVOID INJURY. THE HOPPER FLOOR MAY BE SLIPPERY, AND THE REEL AND AUGERS WILL SPIN WHEN STEPPED ON. USE CAUTION WHEN STEPPING OR STANDING INSIDE THE UNIT. USE SAFE SHOP PROCEDURES AND EXERCISE CAUTION WHEN WORKING ON THIS MIXER!

INSPECT AND ADJUST:

Roller Chain Tighteners so they will apply sufficient spring tension to keep roller chains running smoothly (As a general rule the thickness of a nickel should fit between the spring coils). The chain will form grooves in the tightener blocks. These grooves help to keep the chains in proper alignment, and the blocks need not be turned unless the roller portion of the chain has worn into the block.

Roller Chains for wear, proper alignment and tension. Adjust or replace if necessary. Roller chain connector links which pass over polyethylene tightener blocks must have the legs of the cotter pins trailing to the direction of rotation.

Safety Decals for readability. If any safety decals are removed, obstructed, or otherwise not understandable, they should be replaced immediately. Keep all decals clean - see Safety Decal section for more information.

Safety Shielding to be sure all shielding is in place and functioning properly. Replace all damaged or missing shielding immediately - see parts pages for more information.

Bolts and Set Screws after a few hours of use and each month thereafter. Tighten if necessary.

Reel Cross Tubes so that they slide in freely when compressed against the spring (*spring pockets may need occasional cleaning*). This sliding action helps prevent jamming and overloading of the driveline.

Reel Wiper Tubes have plastic wiper strips which help material clean out of the reel hopper. If the strips become bent back, they can be unbolted and turned around to improve clean out.

Upper Auger Knives can be turned over for use of a new cutting edge and should be periodically sharpened, or replaced if they are no longer sufficiently breaking up material.

Lower auger knives can be rotated several times before sharpening or replacement is required.

Motor fan guard must be kept clean to allow sufficient air flow for proper motor cooling.

Drive belts must be checked for wear and hardness. Old belts will be brittle or hard and must be replaced. Pulley misalignment often causes belt wear and this alignment should be checked when replacing any worn belt. Inspect pulleys for wear or damage both on the grooves and on the shaft diameter, clean and dry thoroughly before reassembly. Tighten belts to a tension that will allow the belt to deflect 1/2" when a 10lb. force is applied in the middle of the belt span. Belts should be kept clean, dry and oil free.

IMPORTANT: WHEN WELDING ON THIS UNIT: Do Not allow the current to flow through the bearings, roller chains, or scale weigh bars. Ground directly to the item being welded. ALWAYS disconnect weigh bar cords from scale indicator before welding.

INSPECTION & ADJUSTMENTS



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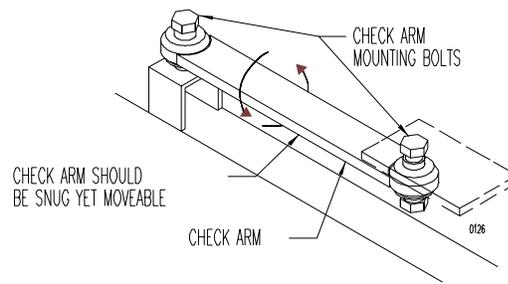
INSPECTION & ADJUSTMENTS:

Electronic Scale (optional)

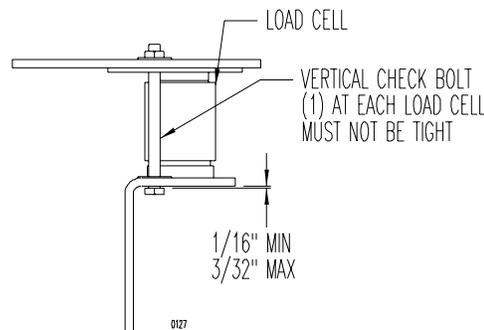
Scale Indicator: Refer to the electronic scale operators manual for adjustment information. The operator's manual for the Electronic Scales should be kept with this manual. Additional scale manuals may be obtained through Kuhn Knight Inc.

Load cells and weigh bars should be kept clean, dry & lubricated to insure dependability.

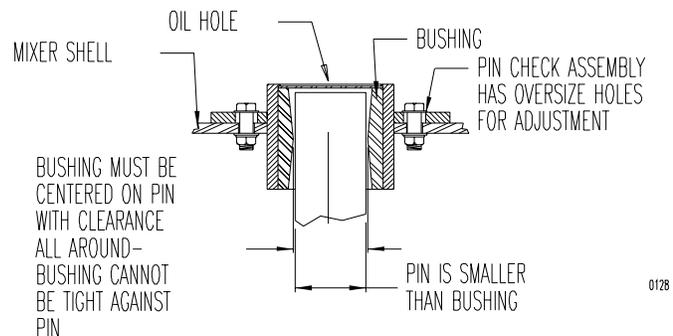
Check arm assembly must be free to slightly rotate by hand when mixer is on level ground (see diagram), with mounting bolts tight.



Vertical check bolts must not be tight (and should be free to rotate by hand) and need not less than 1/16" and no more than 3/32" free play when properly adjusted on level ground.



PIN CHECK BEARING should be centered on the pin when mixer is on level ground. Adjustment can be made by loosening the mounting bolts, centering pin check assembly on the pin and tightening the mounting bolts. If bushing cannot be centered load cells may require adjustment.



Normal scale activity:

Some warm up scale drift may occur after the scale is turned on but should zero balance within 10-15 minutes. Scale may zero shift over night due to temperature changes. Weight may change slightly due to terrain changes when mixer is moved.

INSPECTION & ADJUSTMENTS



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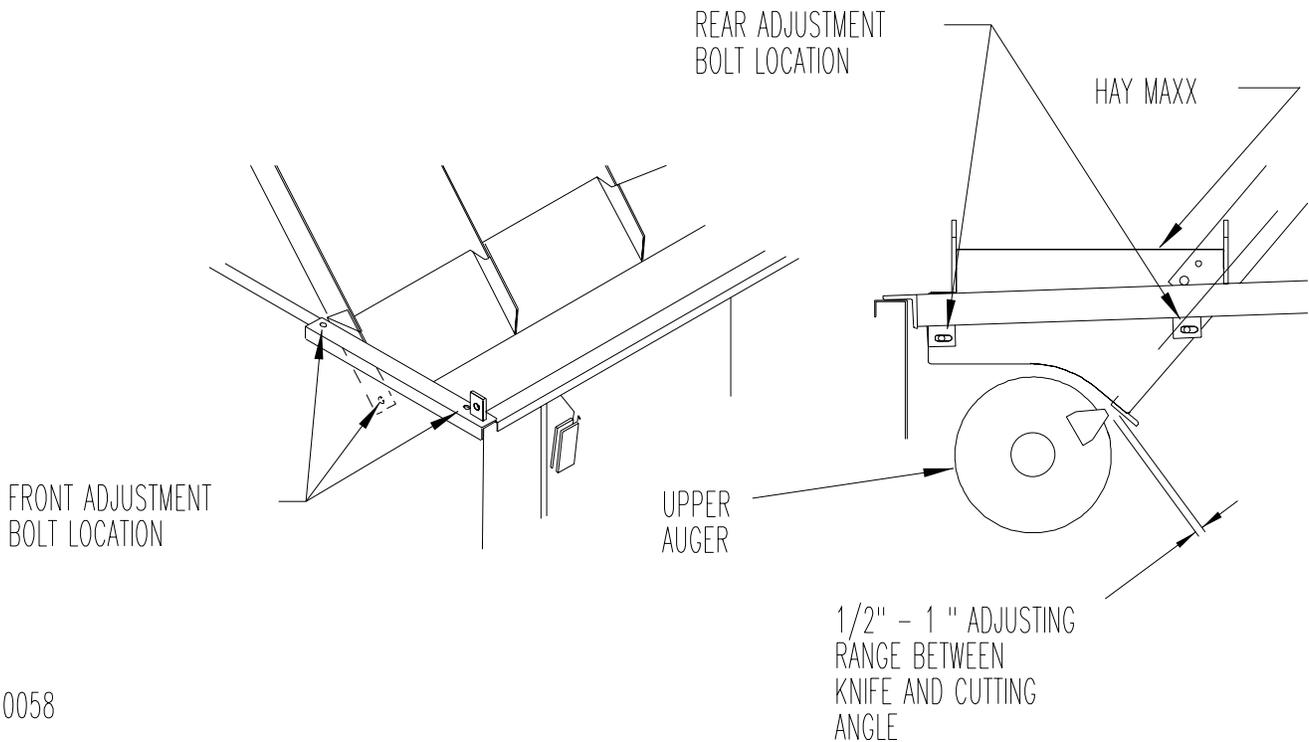
HAY MAXX SYSTEM adjustments

Basic HAY MAXX SYSTEM must be bolted in the fully extended upright position if not equipped with optional hydraulic cylinder.

HAY MAXX SYSTEM equipped with optional hydraulic cylinder can be adjusted with the clevis on the cylinder so that when the cylinder is fully extended the pan is in the upright position and when the cylinder is retracted the pan is completely down.

Adjusting the knife to pan tolerance may be necessary for different types of feedstuff. As hay may vary in quality, moisture and material, each of these can affect how it goes through the HAY MAXX system. The pan can be adjusted to up to 1" from the knife for a more aggressive faster take through and will greatly increase the power required to operate. The factory setting is at 1/2" - 5/8" and should never be adjusted to less than 1/2" apart or greater than 1". Field testing shows that 1/2" - 5/8" is best for most materials.

To adjust: loosen bolts, 3 in front & 2 at rear at the locations shown, make adjustment then securely tighten all five bolts.



0058

LUBRICATION



ALWAYS STOP MIXER AND DISCONNECT POWER BEFORE SERVICING, REPAIRING, OR CLEANING. USE SAFE SHOP PROCEDURES AND EXERCISE CAUTION WHEN WORKING ON THIS MIXER!

It is extremely important that the following lubrication guide be followed:

For lubricating bearings, use a good quality multipurpose grease. Replace all damaged or missing grease zerks immediately. Always clean zerks before using grease gun. Pump the grease in slowly until a slight bead forms around the bearing seals. Once a month check lines and connections on grease banks for leaks.

Before operating a new mixer, the roller chains should be liberally lubricated and then the unit operated under a no-load condition. This break-in period will allow the roller chains to be thoroughly lubricated and thus minimize heat-up during operation.

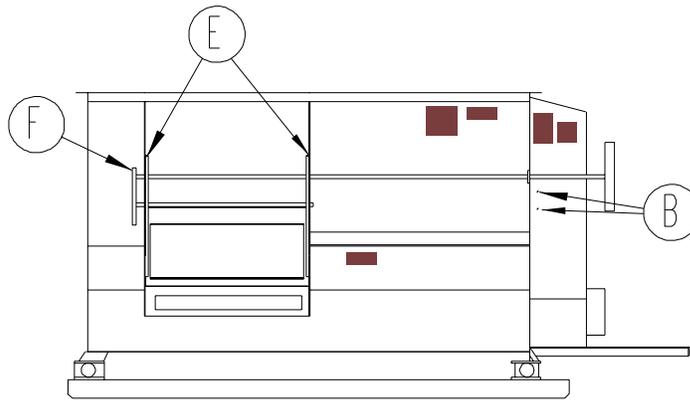
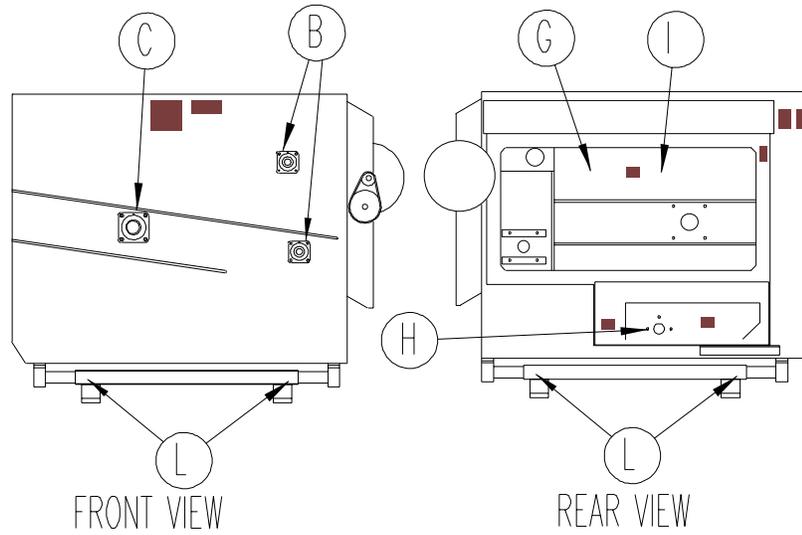
The large drive enclosure is designed to be used as an oil bath; fill front enclosure until the oil level reaches the plug labeled "oil level" on the enclosure.

LOCATION	DESCRIPTION	INTERVAL	LUBRICANT
A	INPUT SHAFT BEARINGS	8-10 HOURS	GREASE
B	AUGER BEARINGS (QTY 4 ALL MODELS)	8-10 HOURS	GREASE
C	REEL BEARINGS (QTY 2 ALL MODELS)	8-10 HOURS	GREASE
D	JACKSHAFT BEARINGS (3050,3060,3070,3095 ONLY)	8-10 HOURS	GREASE
E	DOOR GUIDES	8-10 HOURS	GREASE
F	DOOR LINKAGES	8-10 HOURS	GREASE
G	ROLLER CHAIN TIGHTENER PIVOTS	YEARLY	OIL, 30WT
H	ROLLER CHAIN (WITH 30WT OIL BATH) CHECK OIL LEVEL PLUG	8-10 HOURS	OIL, 30WT
I	ROLLER CHAIN (WITH 30WT OIL BATH)	6 MONTHS	CHANGE OIL, USE 30WT MOTOR OIL
J	SCALE CHECK ARMS (3050,3060,3070,3095 ONLY)	8-10 HOURS	OIL, 30WT
K	TOP OF PIN CHECK BEARING (3036,3042 ONLY)	8-10 HOURS	OIL, 30WT
L	WEIGH BARS (3015, 3020,3025,3030 ONLY)	YEARLY	GREASE
	LUBRICATION FOR OPTIONS		
M	12 VOLT HYDROPACK	8-10 HOURS	DEXTRON ATF

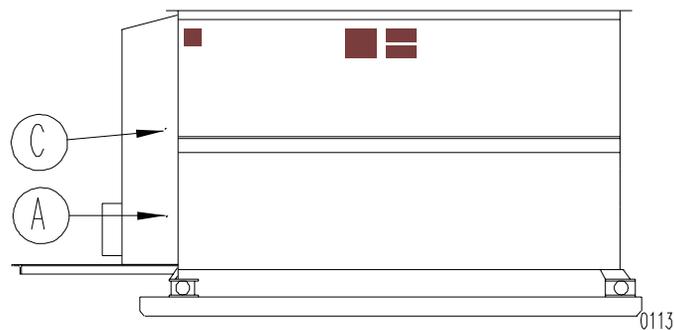
*** shields removed for illustrative purposes

LUBRICATION

LUBRICATION LOCATION ILLUSTRATIONS MODEL: 3015



LEFT SIDE VIEW

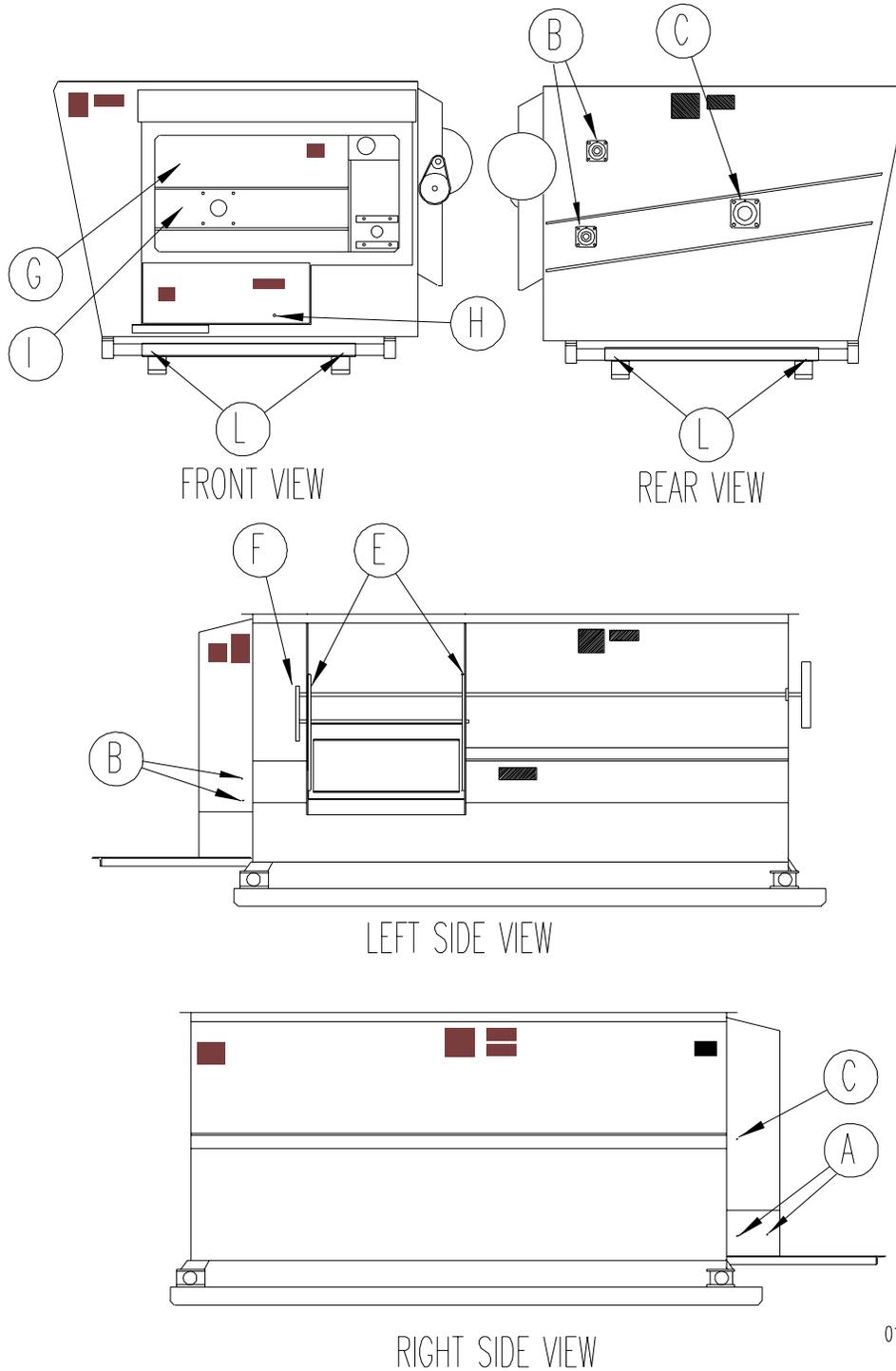


RIGHT SIDE VIEW

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LUBRICATION

LUBRICATION LOCATION ILLUSTRATIONS MODEL: 3020

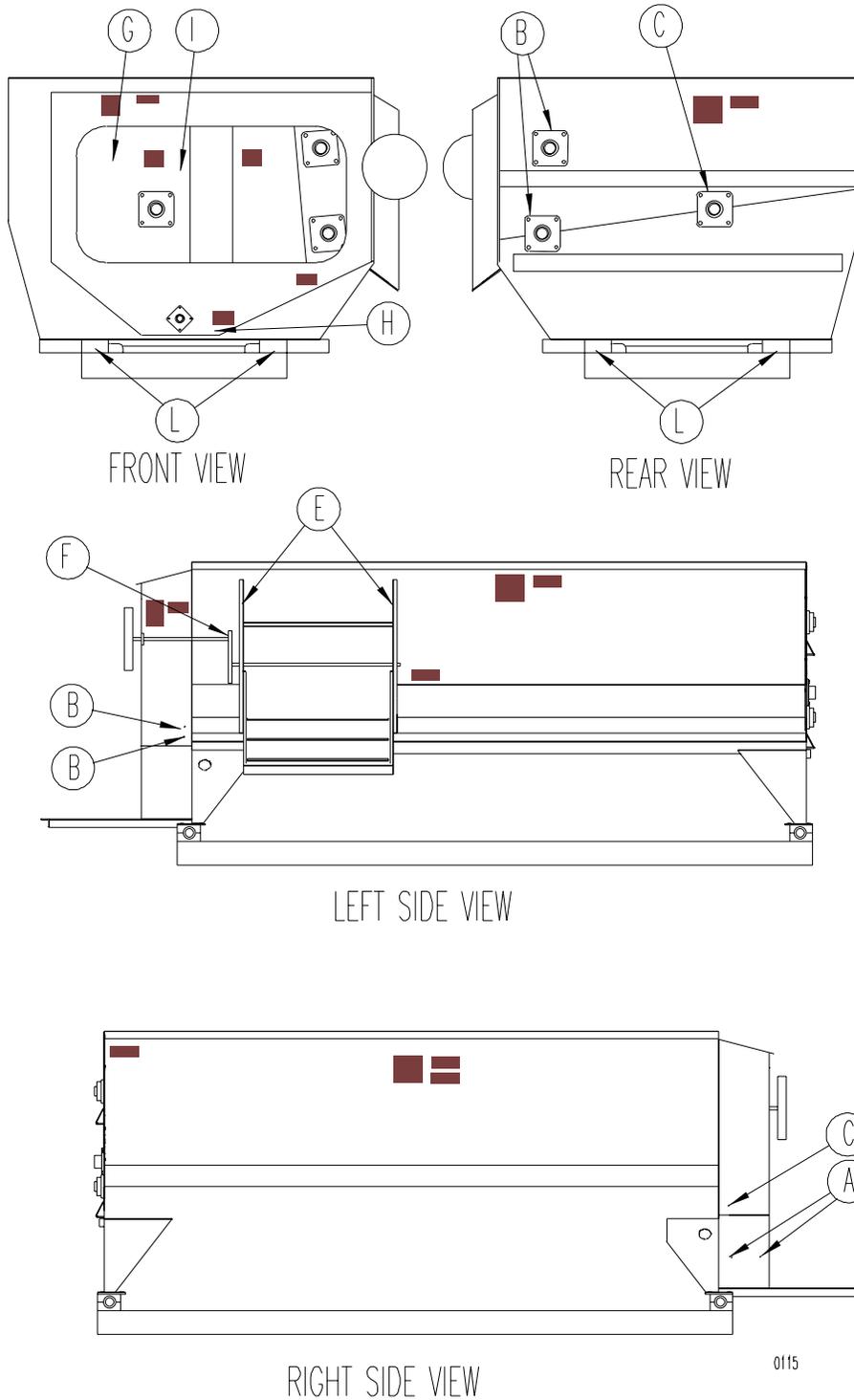


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LUBRICATION

LUBRICATION LOCATION ILLUSTRATIONS MODELS: 3025 & 3030

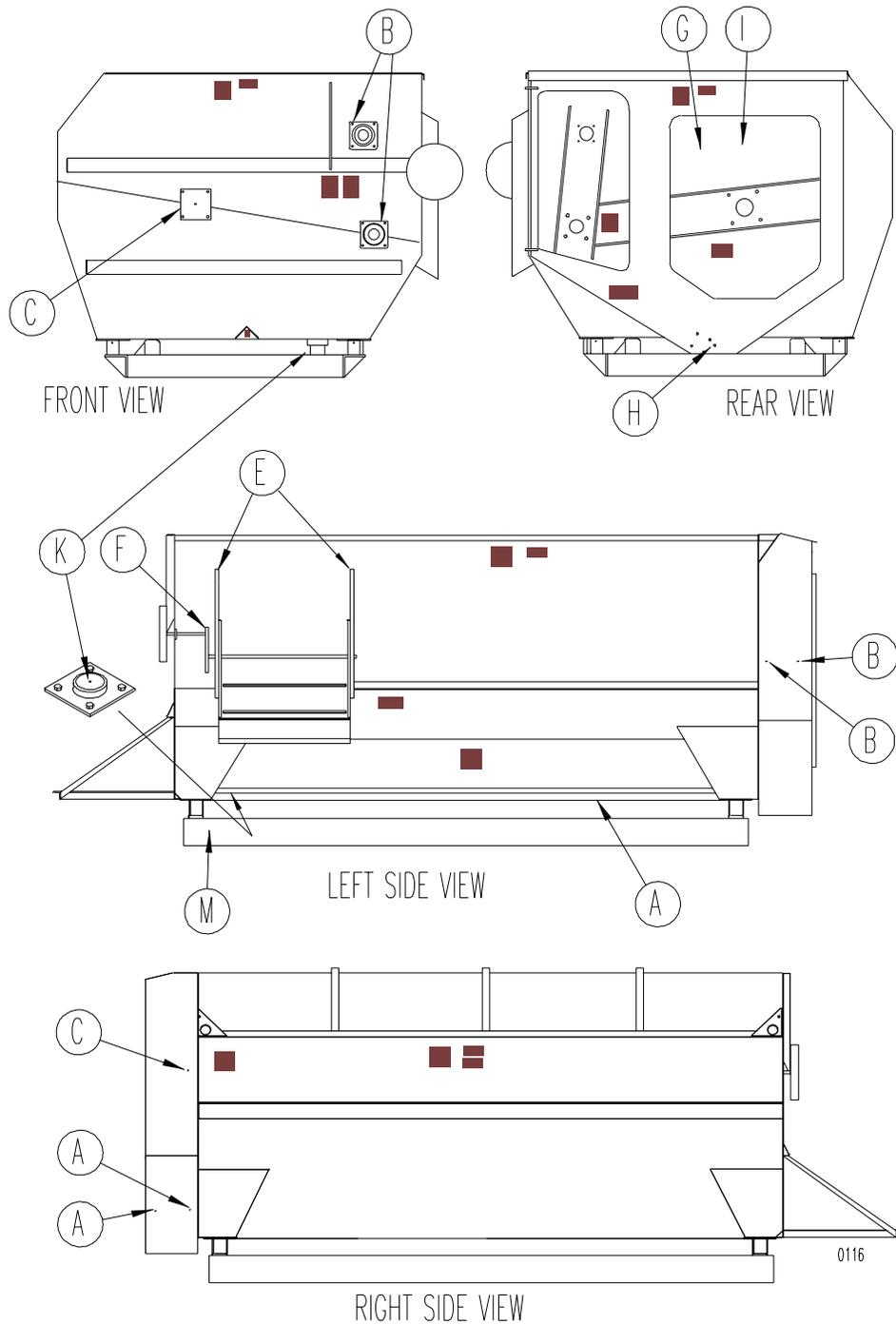


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*** shields removed for illustrative purposes

LUBRICATION

LUBRICATION LOCATION ILLUSTRATIONS MODELS: 3036 & 3042

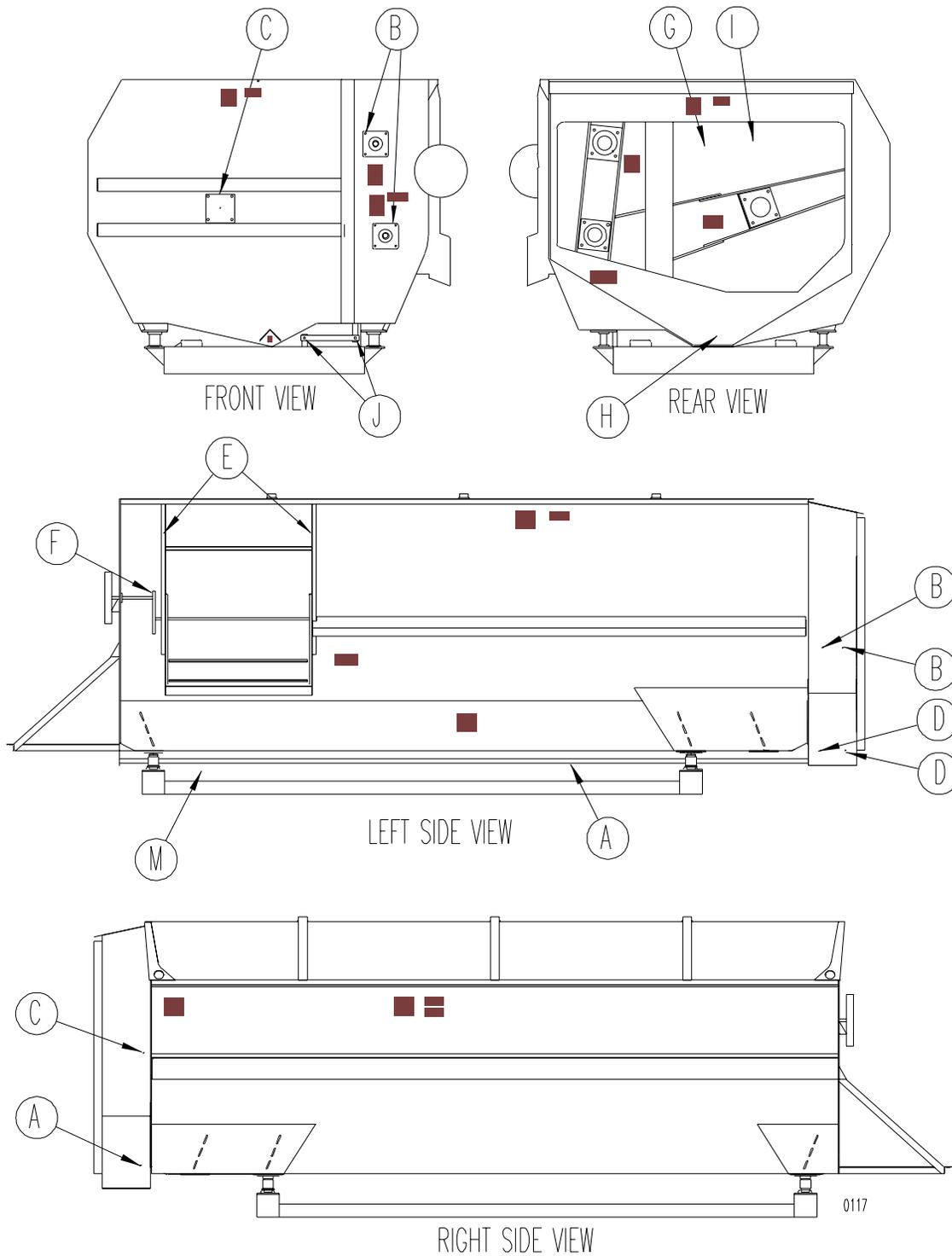


*** shields removed for illustrative purposes

LUBRICATION

LUBRICATION LOCATION ILLUSTRATIONS

MODELS: 3050, 3060, 3070 & 3095



*** shields removed for illustrative purposes

TROUBLE SHOOTING

This section is a condensed chart to help you if unsatisfactory operation occurs.

To: use this chart : 1) Identify the problem (in bold) that best applies to you situation.
2) Find the "CAUSE" that seems most likely.
3) Perform the recommended "SOLUTION".

If you are unable to determine and correct the trouble, consult your authorized dealer

PROBLEM:

**POOR MIXING PERFORMANCE, HAY IS WRAPPING ON AUGERS
CROSS PIPES ON THE REEL ASSEMBLY ARE BENT,
BELTS SLIPPING, SHEARBOLT FAILS,
EXCESSIVE POWER REQUIREMENTS WHEN RUNNING MIXER**

CAUSE	SOLUTION
<u>MIXER IS OVERLOADED</u>	Reduce load size, feed must be able to tumble from the reel cross pipes. If reel is over full, mixing action will be greatly reduced. Feed must not pile up between the reel and the side of the mixer. This causes a buildup of pressure, increases the power requirements of the mixer, and can cause pipes to bend.
<u>HAY IS LOADED ON THE REEL SIDE OF THE MIXER</u>	Load hay on the auger side of the mixer. This keeps hay from being caught between the reel pipes and side of mixer during initial loading.
<u>BIG CHUNKS OF HAY</u>	Break up bales before loading.
<u>CROSS PIPES SET IN THE OUTER POSITION</u>	Move reel cross pipes to the inner setting by compressing the springs and adding bolts and lock nuts in the reel arms. Do not move wiper arms in. See Mixer Setup section.
<u>HAY IS NOT FULLY CURED</u>	Freshly baled hay tends to be green and does not tear apart easily. Allow hay to dry or cure longer before using in the mixer.
<u>AUGER KNIVES ARE NOT SHARP</u>	Sharpen or replace knives when they become dull.
<u>HAY IS TOO LONG</u>	Round baled and stacked hay cannot be used in the mixer unless it has been processed first. Some grassy types of hay must also be processed before it can be used. (See Mixer Operation section for more information)
<u>HAY PERCENTAGE IS TOO HIGH</u>	Mix a lower percentage of hay or change loading sequence. When mixing the hay, run the mixer at full rated PTO speed. See Mixer Operation section.
<u>FOREIGN OBJECT IN MIXER</u>	Inspect mixer and remove object.
<u>IMPROPER LOADING SEQUENCE</u>	See Mixer Operation for recommended loading sequence.
<u>TOO MUCH FORAGE LOADED BEFORE MIXER IS STARTED</u>	If forage is piled above reel, they may be wedged against the side when started up.

TROUBLE SHOOTING

<u>PROBLEM: MOTOR RUNS, BUT REEL AND AUGERS DO NOT TURN</u>	
CAUSE	SOLUTION
<p><u>SHEAR BOLT ON PTO DRIVELINE HAS SHEARED</u></p> <p><u>BELTS ARE SLIPPING</u></p> <p><u>BROKEN CHAIN</u></p>	<p>Replace with Same Grade and size shear bolt. Do not use any bolt other than a Gr 5 see PTO driveline setup for more information. If problem persists, call Kuhn Knight Inc. Service Dept.</p> <p>Adjust or replace belts as outlined in "INSPECTION AND ADJUSTMENT" section. If problem persists, call Kuhn Knight Inc. Service Dept.</p> <p>Make sure that mixer is not overloaded. Replace broken chain. A spliced chain will not be as strong as a new chain and may break in another place. Be sure to inspect bearings, bearing mounts, and shafts for any damage caused by excessive pressure</p>
<u>PROBLEM: SEAL LEAKING ON UPPER AUGER</u>	
CAUSE	SOLUTION
<p><u>BOLTS MAY HAVE WORKED LOOSE ON SEAL RETAINER</u></p> <p><u>SEAL IS DAMAGED</u></p>	<p>Tighten or replace bolts</p> <p>Replace Seal</p>
<u>PROBLEM: SEAL LEAKING ON INPUT SHAFT</u>	
CAUSE	SOLUTION
<p><u>OIL BATH IS OVERFILLED</u></p> <p><u>SEAL IS DAMAGED</u></p>	<p>The oil level in the sealed drive compartment should be maintained at the "oil level" plug on the drive compartment housing. This allows the oil to be thrown onto all the other chains inside the drive compartment.</p> <p>Replace Seal</p>
<u>PROBLEM: EXCESSIVE CHAIN NOISE</u>	
CAUSE	SOLUTION
<p><u>MISALIGNED SPROCKETS</u></p> <p><u>WORN SPROCKET AND OR CHAIN</u></p>	<p>Check sprockets for worn edges of teeth. Use a straight edge to verify the alignment of the sprockets.</p> <p>Inspect sprockets and chains. Replace if excessively worn.</p>
<u>PROBLEM: FEED IS SEPARATING AS IT DISCHARGES FROM THE MIXER DOOR</u>	
CAUSE	SOLUTION
<p><u>DOOR IS OPEN LESS THAN HALF WAY</u></p>	<p>Hay mixed in the load will separate from the grain if the discharge door is not open at least half way. Additional flow control plates may be required.</p>

TROUBLE SHOOTING

<u>PROBLEM: OIL LEAKING AROUND THE EDGES OF THE OIL BATH</u>	
CAUSE	SOLUTION
<u>INSPECT SHIELD FOR LOOSENESS</u>	Carefully tighten wing nuts or adjust locking fasteners that hold shield in place, hand tighten only. Check for foreign material between the foam gasket and shield.
<u>DAMAGED OR LOOSE GASKET MATERIAL AROUND ENCLOSURE SHIELD</u>	Remove shield and check gasket material for proper adhesion to the mating panel of mixer. If gasket adhesive has come loose from front panel, replace gasket.
<u>PROBLEM: HYDRAULIC DOOR SYSTEM OPERATES ERRATICALLY</u>	
CAUSE	SOLUTION
<u>COMPONENTS STICKING OR BINDING</u>	Check for hydraulic oil contamination, dirt, or gummy deposits. If dirt is found, search and repair the source. Check for worn or bent parts. Check oil level in hydraulic system.
<u>INADEQUATE FLOW OR PRESSURE FROM HYDRAULIC SYSTEM.</u>	Check fluid and fill to proper level.
<u>OIL IS LEAKING PAST SEALS IN CYLINDERS OR VALVES</u>	Install seal kits to repair worn seals. See parts listing for part numbers.
<u>PROBLEM: SCALE HANGS UP, LOAD CELL ONLY</u>	
CAUSE	SOLUTION
<u>LOAD CELL NOT VERTICAL</u>	Load cell should be vertical, if not first inspect check arm assembly and or pin check assembly. Second adjust by loosening top load cell mount in a no load condition, adjust load cell to a vertical position and tighten fasteners.
<u>PIN CHECK OUT OF ADJUSTMENT</u>	Remove pin check assembly, test scale, if scale operates properly clean or repair pin check assembly. Also see "INSPECTIONS AND ADJUSTMENTS SECTION"
<u>SWING ARM NOT LUBRICATED</u>	lubricate check arm (should rotate on sockets without great effort). Also see "INSPECTIONS AND ADJUSTMENTS SECTION"
<u>PROBLEM: SCALE WEIGHS VERY HEAVY OR VERY LIGHT, WEIGH BAR ONLY</u>	
CAUSE	SOLUTION
<u>IMPROPER CALIBRATION</u>	CALIBRATE SCALE refer to scale operators manual for information
<u>DAMAGED CABLE ON ONE OR MORE LOAD CELLS</u>	Inspect cables and repair or replace as necessary.

SPECIFICATIONS

MODEL	3015	3020	3025	3030
Mixing Capacity				
Cubic Feet	147	216	250	300
Bushels	118	174	200	240
Approximate Weight (Empty lbs.)	2,850	4,890	6,489	7,021
Overall Dimensions				
O.A. Length, inches	113"	159"	160"	213"
O.A. Width	87"	95"	97"	97"
O.A. Height, inches	64"	64"	69"	69"
Reel Diameter	52"	52"	60"	60"
Lower Auger Diameter	16"	16"	18"	18"
Upper Auger Diameter	14"	14"	18"	18"

MODEL	3036	3042	3050	3060	3070	3095
Mixing Capacity						
Cubic Feet	360	420	500	600	700	950
Bushels	288	340	415	490	562	763
Approximate Weight (Empty lbs.)	8,480	8,800	11,788	13,599	17,295	20,500
Overall Dimensions						
O.A. Length, inches	181"	205"	224"	254"	284"	307"
O.A. Width (with magnet tray)	105"	105"	114"	114"	114"	125"
O.A. Height, inches	83"	83"	84"	84"	84"	95"
Reel Diameter	68"	68"	70"	70"	70"	84"
Lower Auger Diameter	20"	20"	24"	24"	24"	28"
Upper Auger Diameter	20"	20"	22"	22"	24"	28"