

OPERATOR'S MANUAL

Read carefully before starting the machine

7N200AUS_A



Reel Mixers - Trailer Type



* 7 N 2 0 0 A U S A *

---A1053-70A000001 >

RA 125/130



1. Dear Owner

You have just purchased a KUHN machine. We thank you for the trust in us you are showing by selecting us. Into this equipment have gone years of thought, research and improvement which have led to its design, manufacture and continuous improvement.

This manual, which must be considered an integral part of the machine, contains all the necessary information for you to receive full efficiency from your machine. It also contains all the instructions for safe use of the machine. We therefore recommend that you read it carefully and follow all the instructions to the letter. The machine's proper functioning and service life depends on it, as well as your safety and that of others. This manual must always accompany the machine even in case of resale.

Your KUHN dealer can offer a complete line of genuine KUHN service parts. These parts are manufactured and carefully inspected in the same factory that builds the machine to assure high quality and accurate fitting of any necessary replacements.

■ About improvements

We are continually striving to improve our products. We therefore reserve the right to make improvements or changes when it becomes practical to do so, without incurring any obligations to make changes or additions to the equipment sold previously.

■ Wearing parts

Wearing parts fitted on our machines have been tested in very different situations to optimize their service life. Nevertheless, the service life depends highly on the conditions of use (products to handle, soil, weather conditions, etc...).

■ Designated use of the machine

The RA 125/130 mixer feeder must only be used for work for which it has been designed: mixing of fodder, silage, hay, mixing with sub-products or additives for feeding cattle, and transport and distribution in the feeding areas.

2. Contents

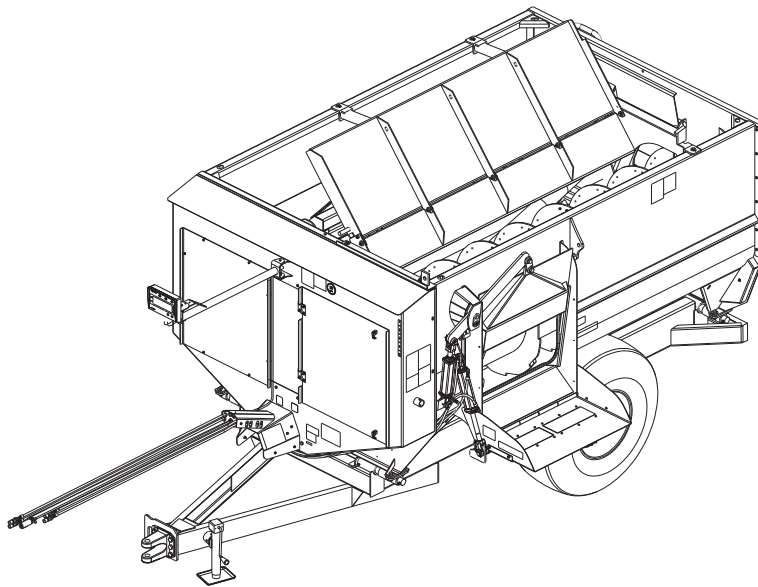
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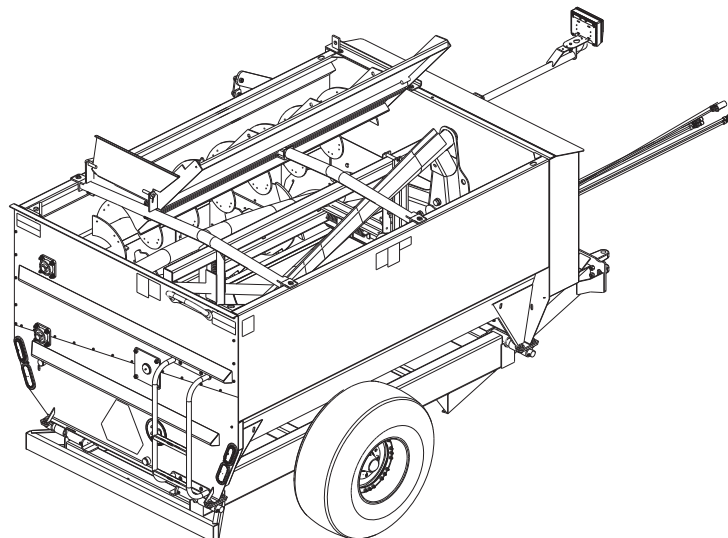
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3. Identification of the machine

3.1 Front view



3.2 Rear view



3.3 Identification of the machine



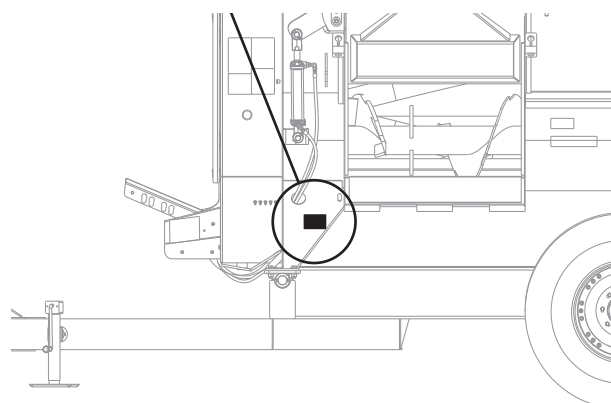
Do not remove the manufacturer, homologation and marking plates attached to the machine.

3.3.1 Location of the plates

Note the serial number of your machine:

- Serial Number:

This information is to be given to the Kuhn authorized dealer for any spare parts order or warranty claim.



3.3.2 Description

■ Model identification plate

1: Manufacturer name and address

3: Brand

4: KUHN logo

5: Description of the machine

7: Model

9a: Machine serial number

9b: Barcode (Machine serial number)

12: Weight empty (Minimum/Maximum)

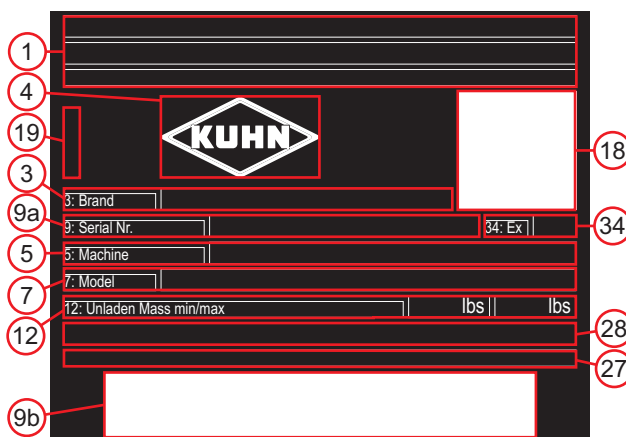
18: Data matrix

19: Plate reference

27: Place of manufacture

28: Manufactured by... for...

34: Special operation



3.4 Optional equipment

Check the boxes corresponding to the equipment fitted on your machine:

- ☐ Standard reel
- ☐ Helix reel
- ☐ Roughage Maxx®
- ☐ Hay Maxx®
- ☐ Slide tray discharge
- ☐ 24" 3-auger discharge
- ☐ 36" 3-auger discharge
- ☐ 36" Chain and slat discharge
- ☐ 48" Chain and slat discharge
- ☐ Stainless steel liners
- ☐ Partial stainless steel liners
- ☐ Bucket guards
- ☐ Transport light kit - Standard
- ☐ Transport light kit - Export
- ☐ Door flow control
- ☐ 6" Riser
- ☐ Electric switching valve
- ☐ Hydraulic cylinder for Hay Maxx
- ☐ Ladder
- ☐ Clevis hitch
- ☐ Spade hitch
- ☐ Safety chain

Contact your Kuhn/Kuhn Knight dealer for scale indicator options and add-ons.

4. Safety

4.1 Description of symbols used in this document

This symbol indicates a potentially hazardous situation that if not avoided, could result in serious bodily injury.



This symbol is used to identify special instructions or procedures which, if not followed strictly, could result in machinery damage.



This symbol is used to communicate technical information of particular interest.



4.2 Safety instructions

■ Introduction

The machine must only be operated, maintained and repaired by qualified persons who are familiar with the machines' operation and understand safety regulations and procedures for preventing accidents.

The operator must follow the safety instructions in this manual and in the warnings posted on the machine. The operator is also obliged to respect current legislation concerning accident prevention, work safety and public traffic circulation.

The intended use of the machine includes following all operation, maintenance and repair recommendations given by the manufacturer, and using only genuine spare parts, equipment and accessories, as recommended by the manufacturer.

The manufacturer is not held liable for any damage resulting from machine applications other than those specified by the manufacturer. Any use other than the designated operation is at the risk and responsibility of the operator.

The manufacturer is not held liable for any damage or accident resulting from machine modifications carried out by the operator himself or by a third party without previous written agreement from the manufacturer.

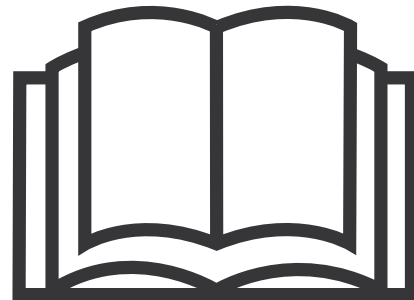
■ Read and follow the safety instructions

Before using the machine, carefully read all the safety instructions in this manual and the warnings placed on the machine. Failure to follow the instructions contained in this manual could result in product or property damage, severe personal injury, or death. All applicable safety procedures, codes and requirements of any federal, provincial, state and local agencies, as well as safe working practices and good judgment, must be used by personnel when assembling, servicing, adjusting or operating this equipment.

Before starting work, the operator must be familiar with all machine controls, handling devices and their functions. It is too late to learn once work has been started!

Never let anyone operate the machine who is not trained to do so.

Should you have any difficulties in understanding any parts of this manual, please contact your KUHN dealer.



■ Safety shutdown procedure

Before adjusting, maintaining or repairing the machine, depressurize hydraulics, turn off the engine, remove ignition key and wait until all moving parts have come to a complete stop.



Operator should not climb on ladder or any part of the mixer when loading, mixing, or discharging material.



Be sure the inside of the mixer is clear of any obstruction before operating

■ **Precautions to take before using the machine**

Do not wear loose clothing which could become caught up in moving parts.

Wear appropriate protective clothing (gloves, shoes, goggles, hearing protection, etc.).

Ensure that all operating controls (ropes, cables, rods, etc) are placed so as they cannot be operated unintentionally and cause damage or injury.

Before operating the machine, check tightness of nuts and bolts, particularly on components that the machine uses to process material (tines, forks, blades, knives, hammers, etc). Retighten if necessary.

Before operating the machine, ensure that all the safety guards are firmly in place and in good condition. Immediately replace any worn or damaged guard.



■ Precautions when driving

Tractor handling, stability, performance and braking efficiency are all affected by weight distribution, trailed or mounted implements, additional ballast and driving conditions. It is therefore of great importance that the operator exercises caution in every given situation.

Do not allow anyone to ride on or in the mixer.

Drive speed must be adapted to ground conditions as well as to roads and paths. Always avoid abrupt changes of direction. Avoid operating the machine when making sharp turns or crossing gullies or ditches.

When working on slopes or inclines, travel uphill or downhill. Keep the tractor/truck transmission in gear when going downhill.

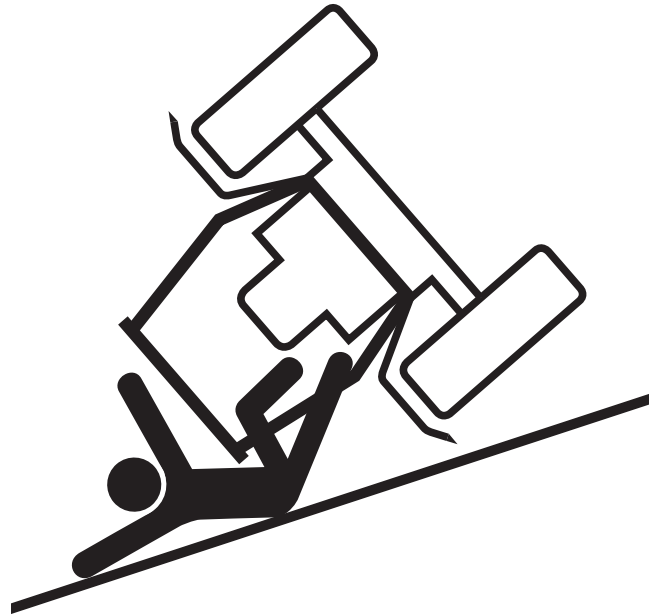
Be particularly cautious when turning corners, paying attention to machine overhang, length, height and weight.

Avoid driving on loose fill, rocks, inclines, ditches, and holes.

Never use a narrow track tractor on very uneven or steeply sloping ground.

Never leave the tractor seat while the machine is operating.

Carrying people or animals on the machine when working or in transport is strictly forbidden.



■ Precautions when driving on public roads

Dimensions

Depending on the dimensions of the machine, contact the relevant authorities to ensure that it can be legally transported on public roads.

If the machine is over the maximum legal size, follow the applicable regulations for special transportation of oversize equipment.

Gross weight and weight per axle

Check that the tractor's authorized gross weight as well as its lift capacity and maximum weight per axle are not exceeded.

The front axle load (1) must never, under any circumstances, be less than 20% of the tractor's unladen weight. If necessary, add ballast weights to the front or to the rear to preserve the steering and braking efficiency.

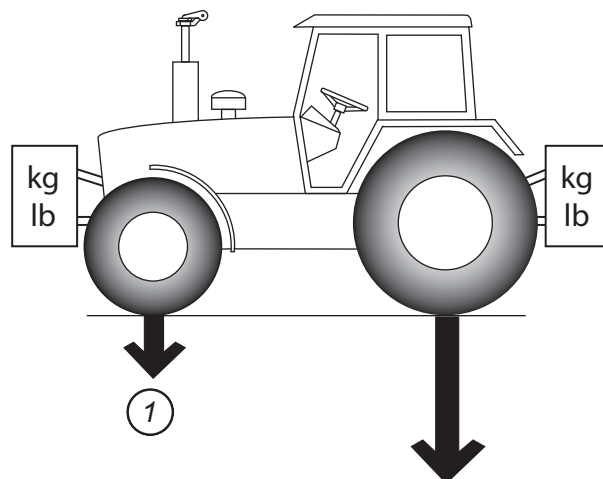
Transport position

Before transporting the machine on public roads, place the machine into its transport position, according to the instructions in this manual.

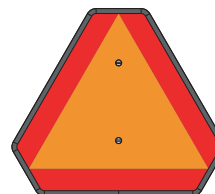
Lights and indicators

Before transporting the machine on public roads, ensure that all legally required lights and indicators are in place.

Make sure that these equipment are clean and in good working order. Replace any missing or broken equipment.



Always obey current regulations for driving on roads.



■ Maximum speed

Always keep to the legal speed limit for driving a tractor-machine assembly on public roads.



The maximum speed for transport of this machine is 20 mph (32 kmh).



■ Precautions when coupling

Before attaching the machine, make sure that it cannot accidentally start moving (chock the wheels) and that the parking stand is in the right position.

The machine must only be attached to the hitch points provided for this purpose.

Do not stand between the machine and the tractor or on the machine without having first applied the tractor parking brake and placed the gearbox in the neutral position.



■ Hydraulic circuit

Caution! The hydraulic circuit is under high pressure. Maximum pressure at work: 3000 PSI/200 bar.

Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.



WARNING! When connecting hydraulic hoses, functions can easily be reversed and cause accidents (for example: lift/lower). To avoid making incorrect connections, mark hydraulic couplers and corresponding hoses with colors.



Regularly make visual inspection to check if hydraulic hoses are damaged or worn. In case of normal wear, the hydraulic hoses must be replaced every 5 years. Damaged or worn hoses must immediately be replaced. When replacing the hydraulic hoses, only use hoses with the specification recommended by the manufacturer of the machine.

To locate a leak, use appropriate means. Protect body and hands from liquid under pressure.

Any liquid under pressure (particularly oil from hydraulics) can penetrate the skin and cause severe injury. If injured, see a doctor immediately to prevent danger of infection.

■ Remote controlled components

Crushing and shearing hazard can exist at the level of remotely controlled components, especially those operated by hydraulic or pneumatic energy power. Keep away from these danger zones.

■ PTO shaft

Before attaching or removing a PTO shaft, perform the safety shutdown procedure.

Use only PTO shafts supplied with the machine or recommended by the machine manufacturer.

The protective shield of the tractor PTO stub, the PTO shaft guards and the protective shield of the machine input shaft must always be in place and in good condition.

Make sure that the PTO shaft guards are secured with the safety chains provided, if so equipped.

Immediately replace any worn or damaged guard. A worn guard or an unprotected PTO shaft can cause a serious or even a lethal accident.

Do not wear loose clothing that could be caught in the rotating PTO shaft..

If the primary PTO shaft is equipped with a torque limiter or a free wheel, these must be fitted on the machine side.

Ensure that the PTO shaft is always correctly fitted and locked into place.

Before connecting the PTO shaft, ensure that the PTO speed (rotational frequency) and direction of rotation are in line with the machine manufacturer's recommendations.

Before engaging the PTO drive, make sure that there are no people or animals near the machine. Never engage the PTO drive when the tractor engine is stopped.

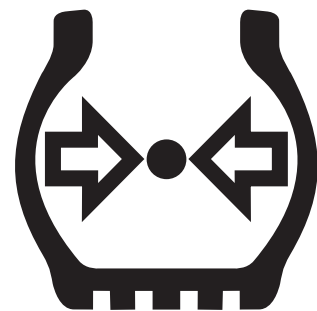
When uncoupling the machine, rest the PTO shaft on the support specially provided, and replace protective shield on the PTO stub of the tractor.

Read and follow the instructions in the operator's manual provided with the PTO shaft.



■ Tires

Regularly check the tire pressure. Refer to "Inspections and adjustments" section for proper wheel nut torque and tire pressure information. Assembly, disassembly and repair of wheels and tires must only be carried out by competent persons who are equipped with the appropriate tools. Before any work is performed on the wheels or tires, ensure that the machine rests on the ground and is perfectly stable so that it cannot move accidentally. Always chock the tires before working on the machine.



■ Precautions for machine use

Stay a safe distance from the machine when it is in use.

Never work in reverse.

If an obstacle is hit, stop the machine and perform the safety shutdown procedure. Check the entire machine for any damage before resuming work.

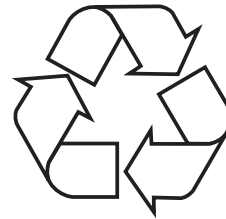
■ Safety decals

Safety warnings are placed in safety decal form on various parts of the machine. They are there to warn you of potential dangers and to tell you how to avoid accidents.

Always keep the safety decals clean and readable, and replace them when they are worn, damaged, missing or illegible.

■ Waste disposal

Respect the environment! Never spill pollutants (oil, grease, filters, etc.) on the ground, never pour them down the drain and never discard them in any other place where they could pollute the environment. Never throw away or burn a tire. Always take waste to specialized recycling or waste disposal centers.



■ Precautions for maintenance and repair work

Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.

Repairs on elements under pressure or tension (springs, pressure accumulators, etc.) must only be carried out by competent persons with regulation equipment.

Wear appropriate protective clothing (gloves, shoes, goggles, hearing protection, etc.).

For your own safety and for correct machine operation, only use original manufacturer parts.

Do not solder, weld or use a blow torch near fluids under pressure or flammable components.

Make sure at least one tire on each side of the machine is chocked properly before performing any maintenance or repairs.

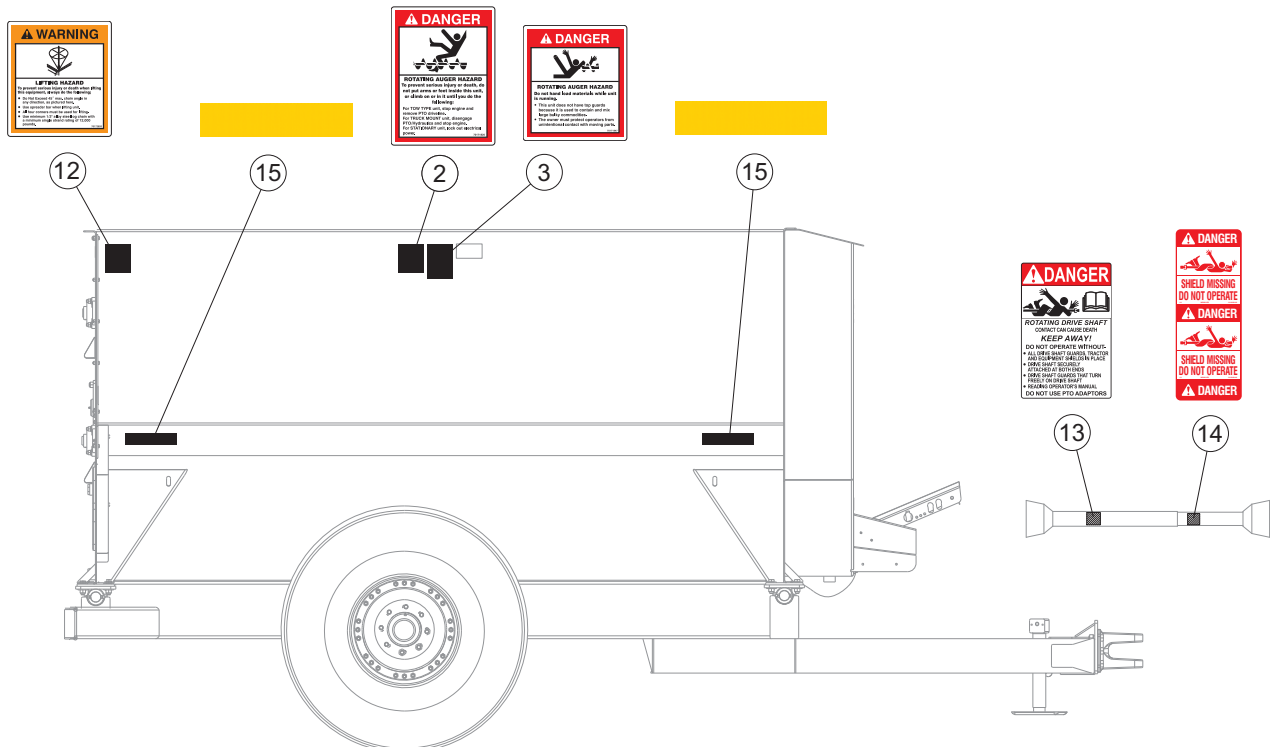
Rest the machine on the ground, release the pressure from the hydraulic circuit and leave the machine to cool down.

Make sure that the parts of the machine that need to be lifted for maintenance or repair work are firmly propped up.

When welding on this unit: DO NOT allow the current to flow through the bearings, roller chains, or scale weigh bars. Before any work is done on the electrical circuit or before any electric welding is carried out on the attached machine, disconnect the machine from the tractor/truck electrical circuit. Also disconnect alternator and battery terminals.

If work must be done inside the mixer put a protective cover over the auger knives to avoid injury. The hopper and flighting may be slippery. Use caution when stepping on or standing inside the machine.





■ Description of safety decals

WARNING Stay clear during operation (1)



DANGER Rotating Auger Hazard (2)



DANGER Rotating Auger Hazard (3)



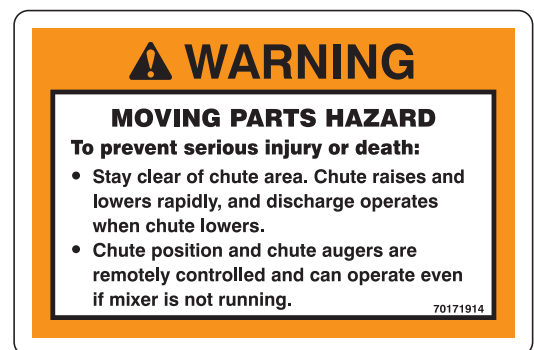
WARNING Rotating parts hazard (4)



WARNING Rotating parts hazard (5)



WARNING Stay clear of chute area (6)



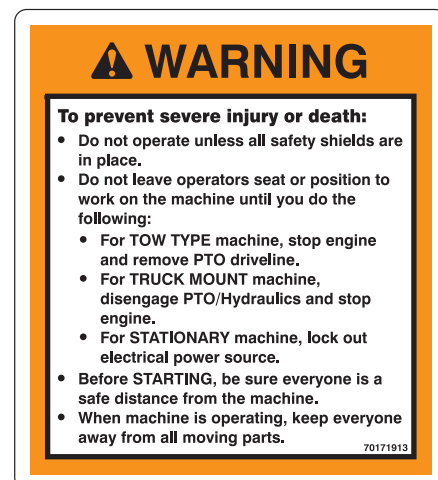
WARNING Stay clear of chute area (7)



WARNING Rotating parts hazard (8)



WARNING Safety shields (9)



WARNING Operating instructions (10)

WARNING



To prevent serious injury or death:

- Read manual and safety labels before operating or maintaining this mixer. If manual is missing, contact your dealer or Kuhn or see our website at www.kuhn.com.
- Before operation, be sure there are no persons or obstructions in, near or over the mixer box or discharge chute.
- Do not hand load materials while mixer is running.
- If loading materials with a loader bucket while mixing, keep bucket away from rotating reel and augers.
- Do not overfill mixer - see Operator's Manual.
- Only trained persons should be allowed to operate this equipment.
- When welding on the machine, disconnect scale indicator leads and ground directly to the part being welded.

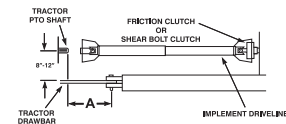
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WARNING PTO safety instructions (11)

WARNING

To prevent serious injury or death when using the PTO, do the following:

- Do not exceed maximum PTO speed.
A 6-spline tractor shaft turns 540 RPM, and a 20 or 21-spline tractor shaft turns 1000 RPM.
- Never make tight turns with the PTO engaged.
- Do not operate when PTO length is longer or shorter than the dimensions shown below and in the Operator's Manual.
- For clutch adjustment instructions, refer to the decal near the clutch and the PTO Setup section in the Operator's Manual.

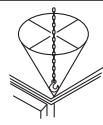


RPM	PTO	Dimension A
540	1 3/8 - 6	13 3/4" ± 3/8"
1000	1 3/8 - 21	15 3/4" ± 3/8"
1000	1 3/4 - 20	19 3/4" ± 3/8"

70173040

WARNING Lifting hazard (12)

WARNING



LIFTING HAZARD

To prevent serious injury or death when lifting this equipment, always do the following:

- Do Not Exceed 45° max. chain angle in any direction, as pictured here.
- Use spreader bar when lifting unit.
- All four corners must be used for lifting.
- Use minimum 1/2" alloy steel log chain with a minimum single strand rating of 12,000 pounds.

70172820

DANGER Rotating driveline (13)



DANGER Shield missing, do not operate (14)



Amber reflector (15)



Red reflector (16)



Flourescent red-orange decal (17)



Slow moving vehicle sign (18)**Speed identification symbol (19)**

Safety decals are placed on this unit for the protection of the operator and any person working on or standing by the unit.

If any safety decals are removed, obstructed, or otherwise illegible, they should be replaced immediately. It is the owner's responsibility to provide information to all operators for safe operation of this machine.

The part numbers for the decals are located in the lower right corner of the decal. Replacement decals may be ordered through your dealer or Kuhn.

Replacing decals:

When replacing decals, be sure the surface is clean and dry. Peel the backing off the decal and apply to the machine. Be sure to wipe with a clean cloth to rub out all air bubbles which will assure a good seal. For best adhesion, decals should be applied when the temperature is above 50°F(10°C).

4.3.1 Alternate language safety decal sets

Safety decal sets are available in alternate languages. Refer to your parts manual and contact your Kuhn Knight dealer for replacement part ordering. Part numbers are as follows:

70177618 - Spanish

70177619 - French

70177620 - Portuguese

70177621 - Japanese

4.4 Road safety equipment and recommendations

The road safety equipment is mounted in the factory or by your authorized Kuhn dealer according to current safety regulations. Always keep to the legal speed limit for driving the machine assembly on public roads. Never tow the machine at a speed exceeding 20 mph (32 kmh).

The rear safety device comprises:

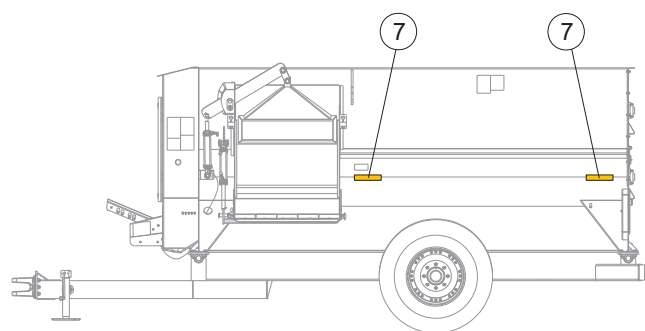
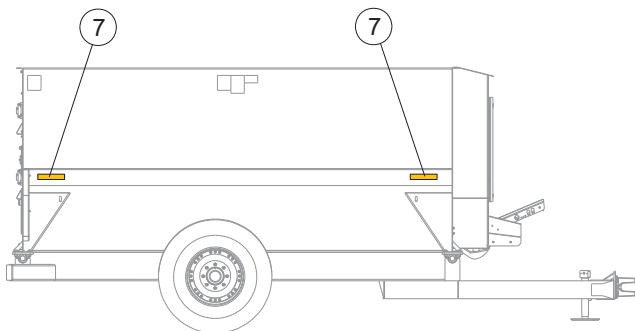
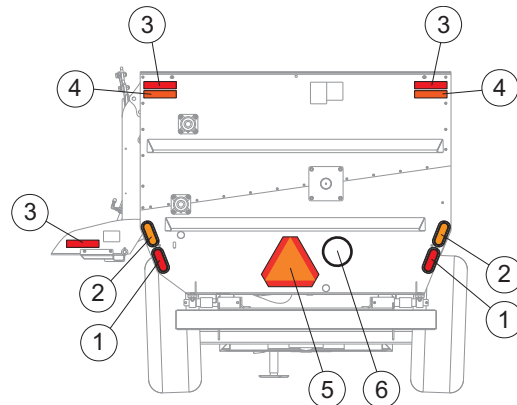
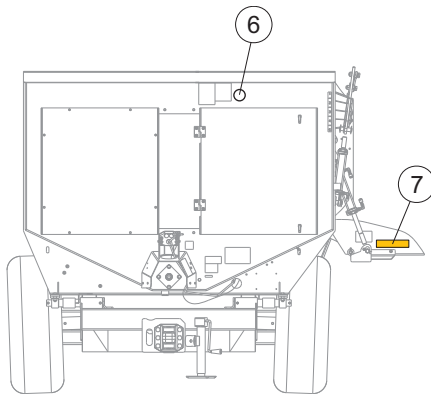
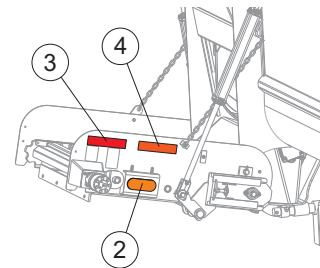
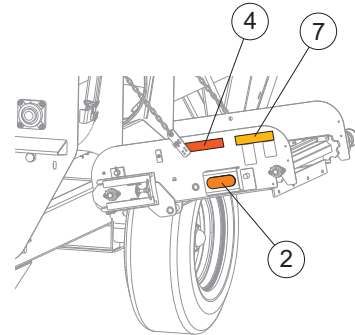
- 2 red lights (1)
- 2 amber lights (2)
- 1 amber light per powered discharge (2)
- 2 red reflectors (3)
- 1 red reflector per discharge (3)
- 2 flourescent red-orange decals (4)
- 1 flourescent red-orange decal per powered discharge (4)
- 1 slow moving vehicle sign (5)
- 1 SIS sign (6)

The side device comprises:

- 2 amber reflectors (7) on each machine side

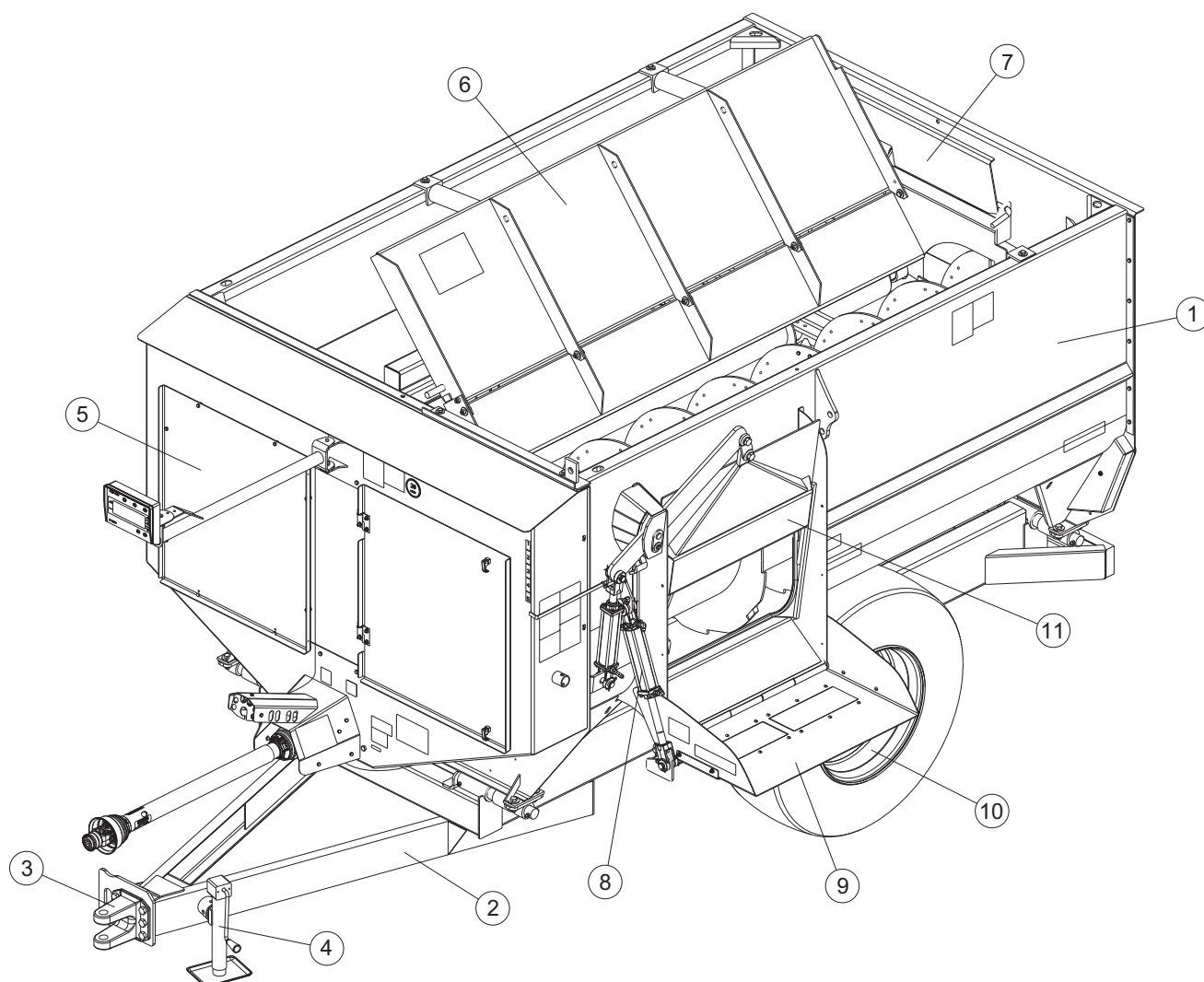
The front safety device comprises:

- 1 SIS sign (6)
- 1 amber light per powered discharge (2)
- 1 amber reflector per discharge (7)
- 1 flourescent red-orange decal per powered discharge (4)



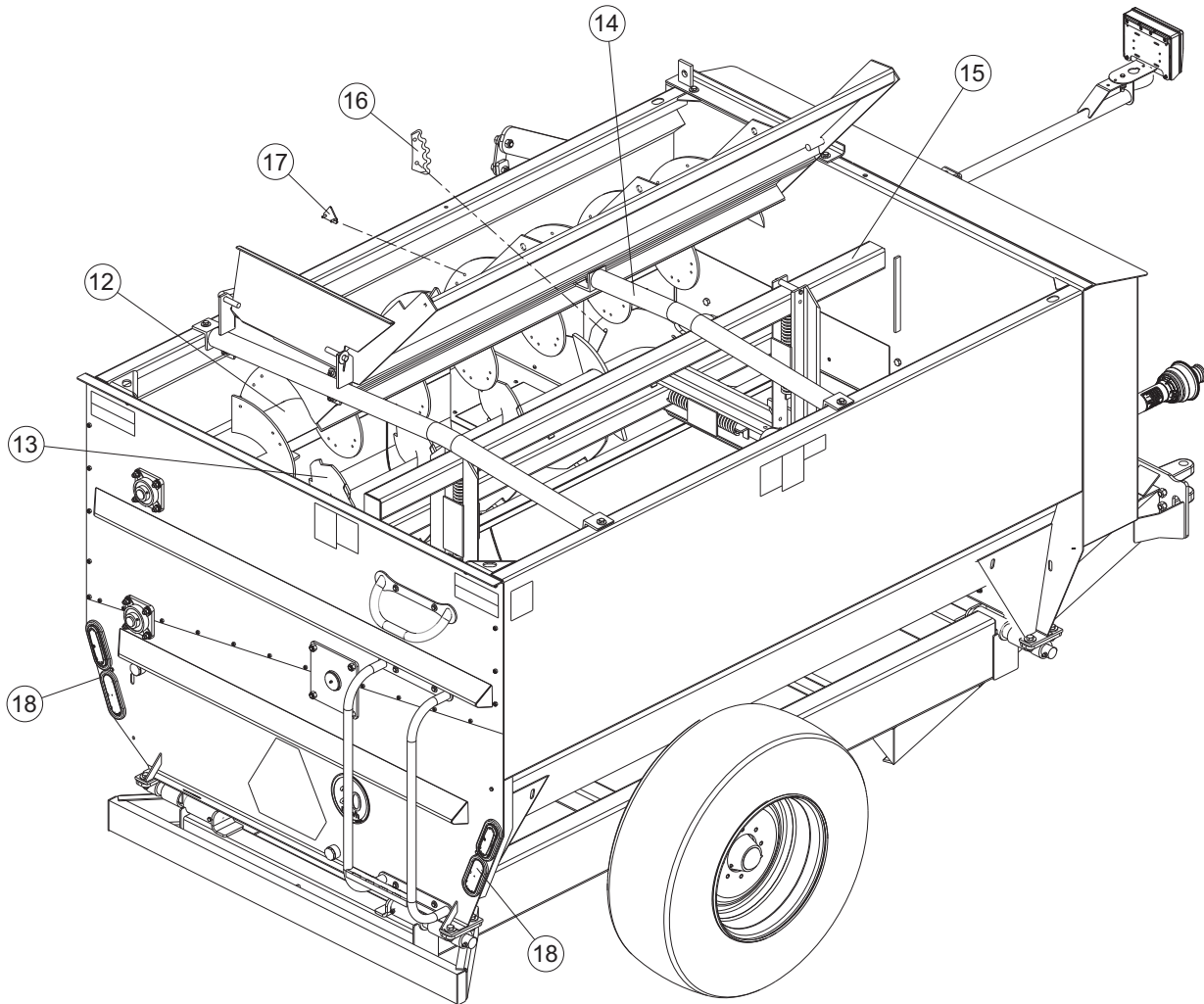
5. Machine specifications

5.1 Description and glossary



- | | |
|---|--------------------------|
| 1 | Body |
| 2 | Tongue |
| 3 | Hitch |
| 4 | Jack |
| 5 | Oil bath |
| 6 | HAY MAXX® SYSTEM hay pan |

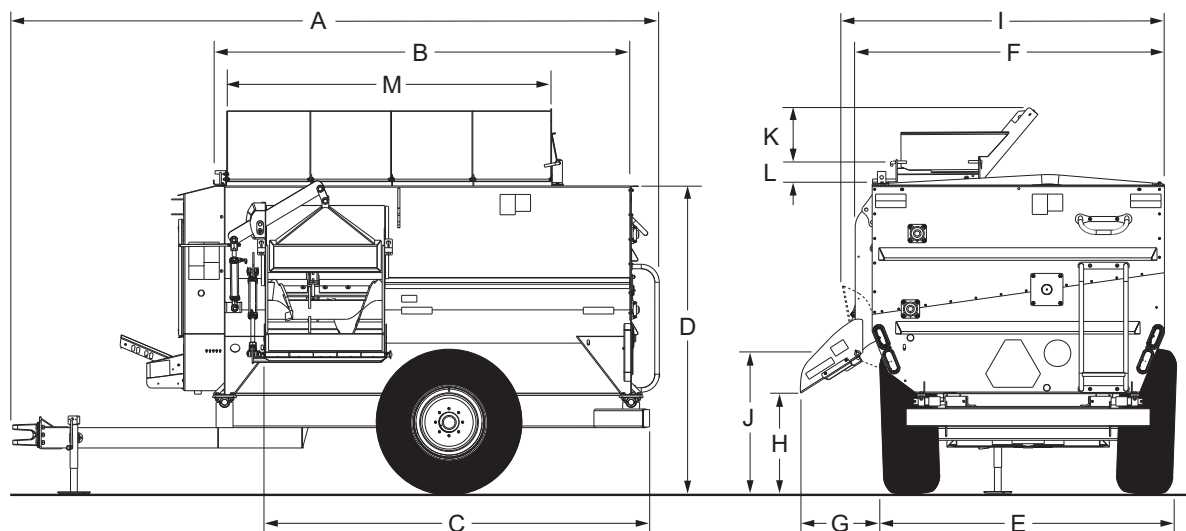
- | | |
|----|---------------------------|
| 7 | HAY MAXX® SYSTEM backstop |
| 8 | Hydraulic cylinder |
| 9 | Slide tray |
| 10 | Wheel and tire |
| 11 | Discharge door |



- 12 Upper auger
- 13 Lower auger
- 14 Bucket guard
- 15 Reel cross/wiper tubes

- 16 Scallop knives
- 17 Upper auger knives
- 18 Transport lights

5.2 Technical specifications



Ref.	Dimensions	RA125	RA130
A	Overall length	188" (478 cm)	212" (539 cm)
B	Mixing chamber length	120" (305 cm)	144" (366 cm)
C	Front discharge to bumper	114" (290 cm)	138" (351 cm)
D	Overall height	88" (224 cm)	88" (224 cm)
E	Tread width	84" (213 cm)	84" (213 cm)
F	Overall width - mixer only	92" (234 cm)	92" (234 cm)
G	Slide tray - maximum reach	25" (64 cm)	25" (64 cm)
	Chain and slat - maximum reach - 3'/4'	46"/58" (117 cm/147 cm)	46"/58" (117 cm/147 cm)
	Three auger - maximum reach - 2'/3'	32"/44" (81 cm/112 cm)	32"/44" (81 cm/112 cm)
H	Slide tray - maximum height	25" (64 cm)	25" (64 cm)
	Chain and slat - maximum height - 3'/4'	50"/58" (127 cm/147 cm)	50"/58" (127 cm/147 cm)
	Three auger - maximum height - 2'/3'	40"/48" (102 cm/122 cm)	40"/48" (102 cm/122 cm)
I	Slide tray - Transport width	94" (239 cm)	94" (239 cm)
	Chain and slat - Transport width - 3'/4'	116"/118" (295 cm/300 cm)	116"/118" (295 cm/300 cm)
	Three auger - Transport width - 2'/3'	116"/118" (295 cm/300 cm)	116"/118" (295 cm/300 cm)
J	Hinge height	37" (94 cm)	37" (94 cm)
	Riser kit option	43" (109 cm)	43" (109 cm)
K	Height - hay pan up	23" (59 cm)	23" (59 cm)
L	Height - hay pan down	8" (20 cm)	8" (20 cm)
M	Length - hay pan	96" (244 cm)	96" (244 cm)



Dimensions	RA125	RA130
Unit weight		
Minimum weight	7380 lbs (3350 kg)	8360 lbs (3790 kg)
Maximum weight	9380 lbs (4255 kg)	10210 lbs (4630 kg)
Maximum net load	7500 lbs (3400 kg)	9000 lbs (7085 kg)
Mixing capacity	250 ft ³ (7.0 m ³)	300 ft ³ (8.5 m ³)
Reel diameter	60" (153 cm)	60" (153 cm)
Reel drive shaft diameter	3 1/2" (9 cm)	3 1/2" (9 cm)
Reel arms	4	4
Reel hopper thickness	5/16"	5/16"
Reel speed RPM	7.83	7.83
Lower auger		
Flighting diameter	18" (46 cm)	18" (46 cm)
Flighting thickness- sectional	3/8"	3/8"
Tube - Outside diameter	5 9/16" (14 cm)	5 9/16" (14 cm)
Drive shaft diameter	2 1/2" (6 cm)	2 1/2" (6 cm)
Upper auger		
Flighting diameter	18" (46 cm)	18" (46 cm)
Flighting thickness	3/8" Helicoid	3/8" Helicoid
Tube - Outside diameter	5 9/16" (14 cm)	5 9/16" (14 cm)
Drive shaft diameter	2 1/2" (6 cm)	2 1/2" (6 cm)
Auger hopper thickness	5/16"	5/16"
Side sheets thickness	10 gauge	10 gauge
End sheets thickness	3/16"	3/16"
Door opening	36" X 20" (91.5 cm X 51 cm)	36"X 20" (91.5 cm X 51 cm)
Oil bath	Front	Front
Chain drive	80-80H-100H	80-80H-100H
Spindle diameter	3" (8 cm)	3" (8 cm)
Hub	8-bolt	8-bolt
Tongue weight - % of gross weight	14%	14%
Tractor PTO power requirements	55 hp (41 kw)	60 hp (45 kw)
Safety tow chain minimum weight capacity	20,000 lbs (9,075 kg)	30,000 lbs (13,610 kg)

5.3 Lights

Colors	Function	SAE Terminal #	ISO Terminal #
White	Ground	1 - See note 1	3
Black	Left running lights	1 - See note 1	7
Yellow	Left turn & hazard	3	1
Red	Stop lights	4 - See note 2	6
Green	Right turn & hazard	5	4
Brown	Right running lights	6	5
Blue	Not used	7	2

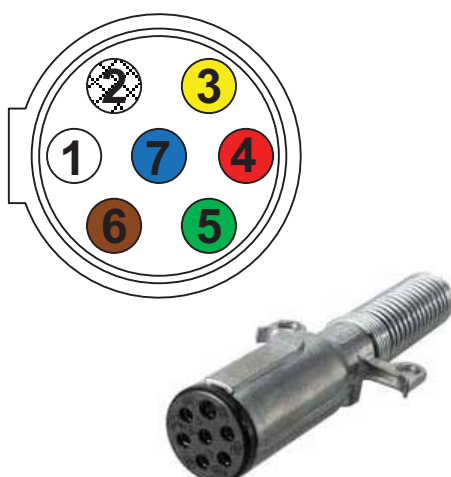
Note 1:

Black and white wires must be connected together on SAE type connectors for proper light operation.

Note 2:

The red wire should only be attached to the #4 terminal if the #4 terminal on the tractor is confirmed to be a brake light terminal. If the tractor has no brake terminal, the red wire of the implement should be sealed off and not connected to any terminal.

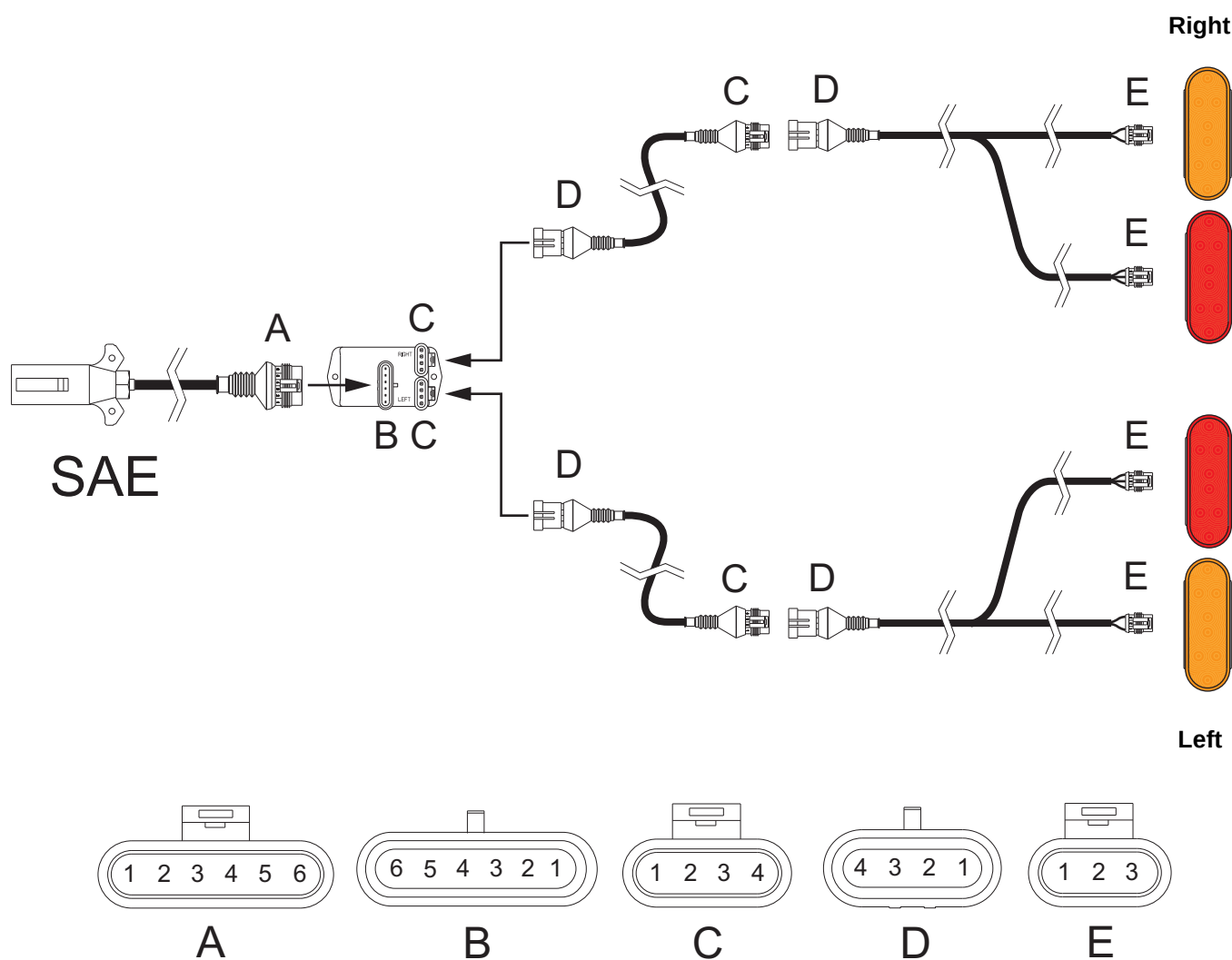
SAE



ISO

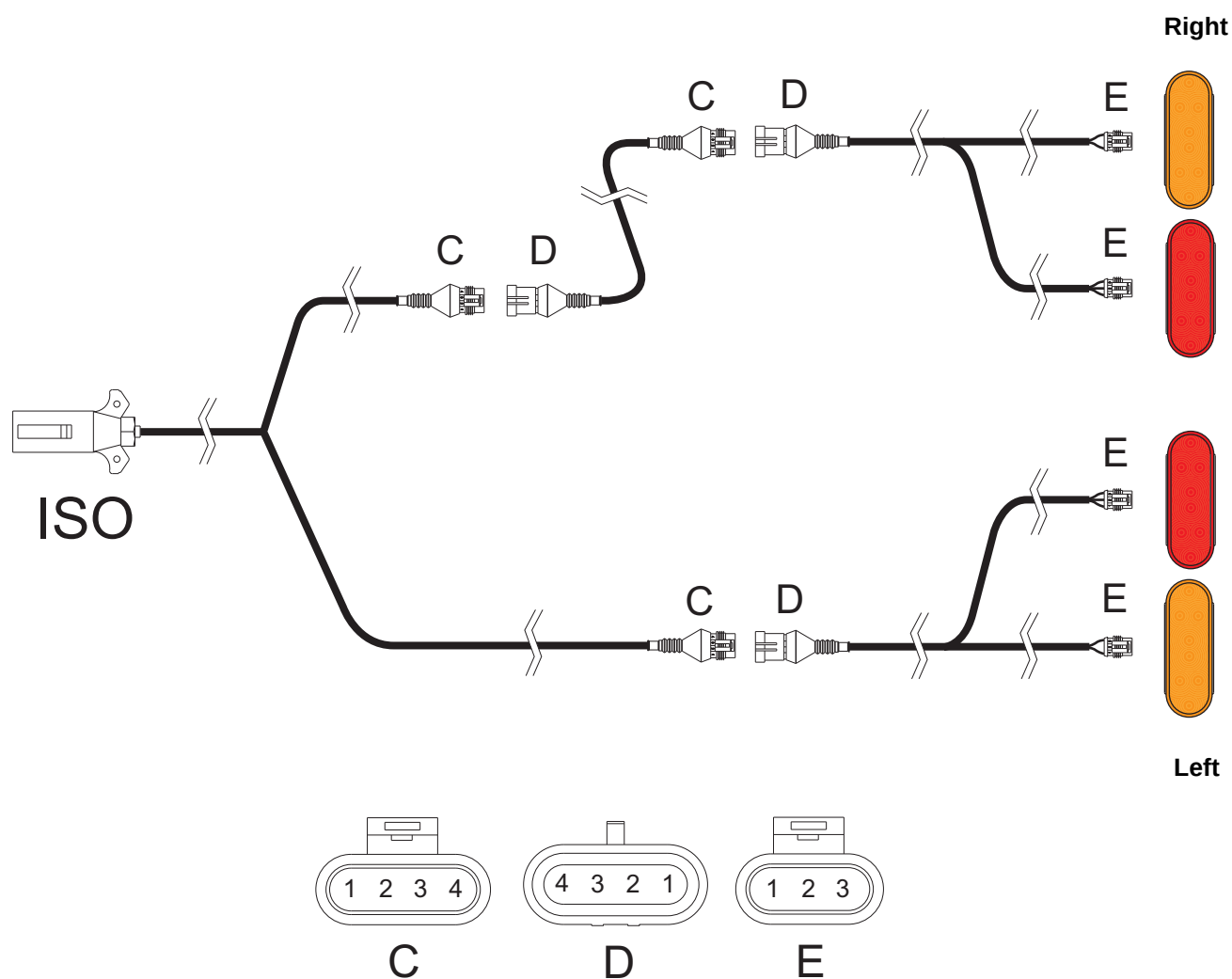


■ Connectors - SAE



Pin #	A connector Wire color	B connector Wire color	C connector Wire color	D connector Wire color	E connector Wire color	
					Red light	Amber light
1	White	White	Yellow/green	Yellow/green	White	White
2	Yellow	Yellow	Brown/black	Brown/black	Brown	None
3	Brown	Brown	Red	Red	Red	Yellow/green
4	Green	Green	White	White		
5	Red	Red				
6	Black	Black				

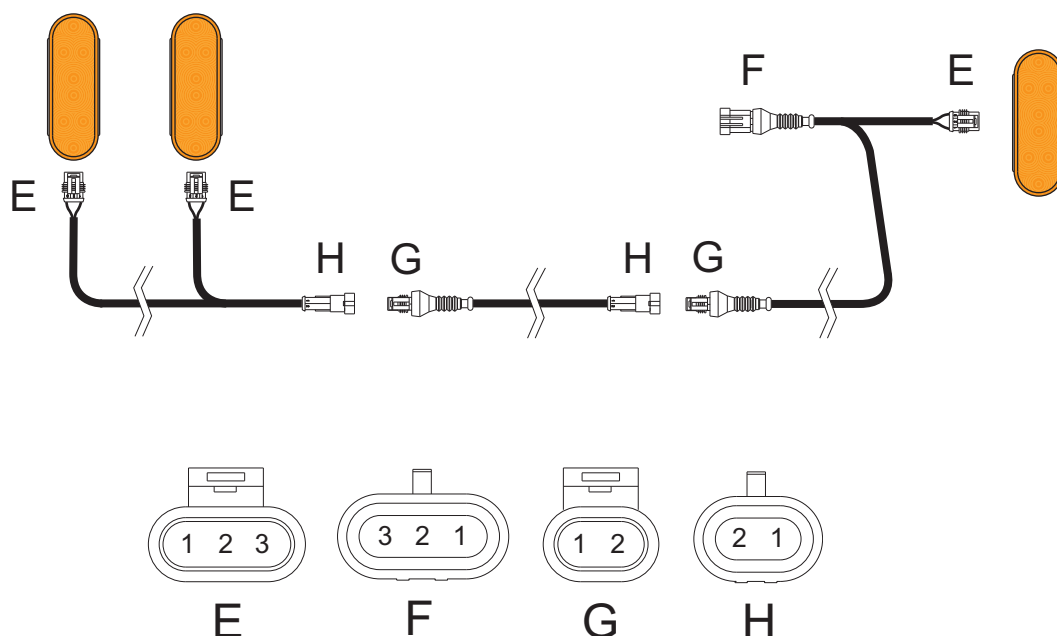
■ Connectors - ISO



Pin #	C connector Wire color	D connector Wire color	E connector Wire color	
			Red light	Amber light
1	Yellow/green	Yellow/green	White	White
2	Brown/black	Brown/black	Brown	None
3	Red	Red	Red	Yellow/green
4	White	White		

■ Connectors - SAE/ISO

Optional equipment - Discharge lights



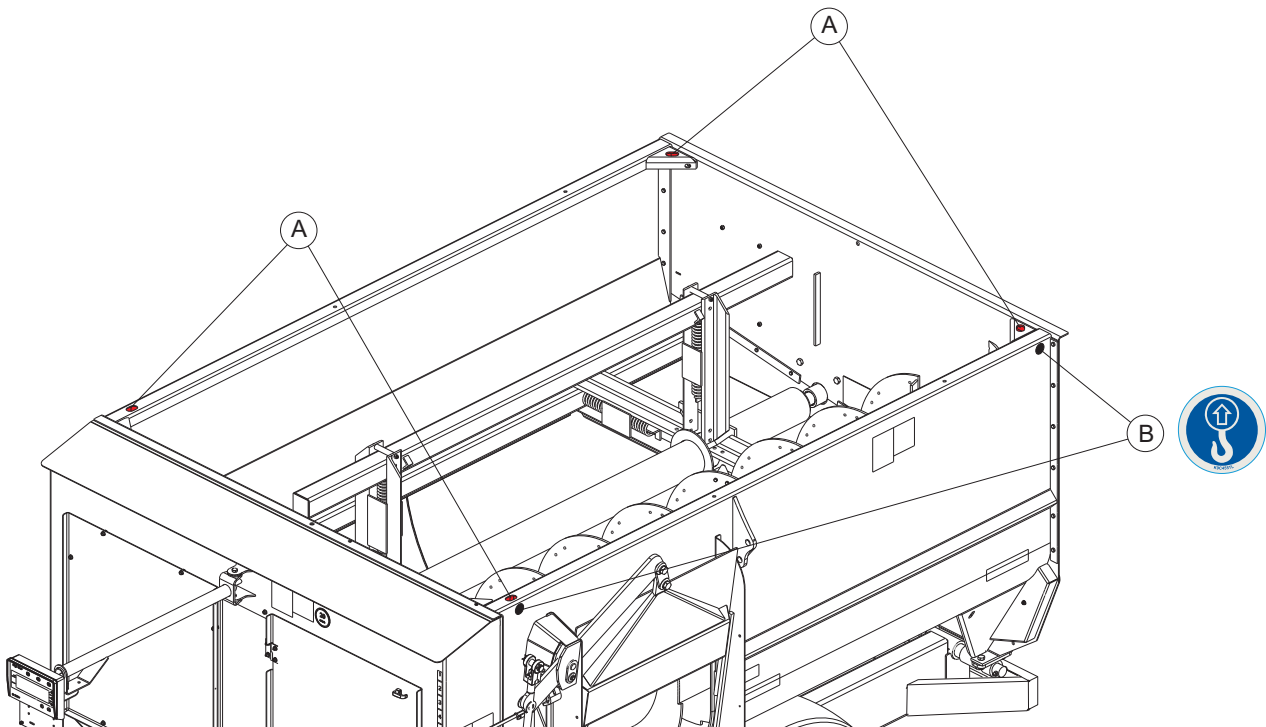
Pin #	E connector Wire color	F connector Wire color	G connector Wire color	H connector Wire color
1	White	White	White	White
2	None	None	Brown/black	Brown/black
3	Yellow/green	Yellow/green		

If a discharge option requires the installation of safety lighting, the illustration above shows the correct routing of harnesses and connectors for proper lighting of the option.

If an option lighting harness is required, it will be inserted in front of the rear amber light on whichever side of the machine the option is installed on.

5.4 Lifting points

4 lifting points are provided on the inside of the mixer tub (A). Lift point locations are identified with a decal on the outside of the tub (B).



If the machine needs to be lifted, follow all instructions below:

- When lifting the unit, make sure the lifting device is connected to all lift points (A).
- Make sure the lifting angle of all points is between 60° and 90° to the horizontal plane. Use spreader bars to achieve the required angle if necessary.
- Always use lifting machinery and rigging rated for the weight of the unit being lifted.
- Make sure machine is empty and clean.



Never stand under the unit while it is being lifted.

6. Putting into service



Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.

6.1 Coupling and uncoupling



The minimum tractor weight should be no less than 2/3 of mixer gross weight.

6.1.1 Tractor PTO horsepower requirements

PTO horsepower requirements are based on most normal dairy or beef rations. See Tractor PTO HP Requirements in the Technical Specification section for specific machine requirements. Horsepower requirements shown may vary depending on the ration and the materials being mixed. The PTO horsepower requirements shown may not reflect adequate tractor size for towing the machine. Refer to tractor weight requirements for these recommendations and safety section for additional tractor and towing requirements

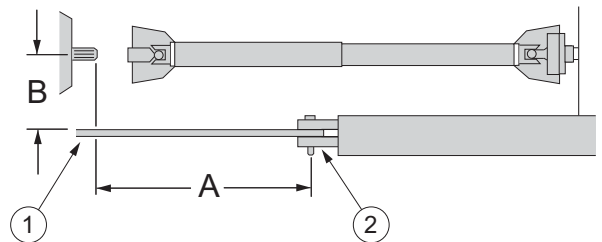
6.1.2 Tractor weight requirements

Calculate the minimum tractor weight by using the following Gross Weight (GW) formula.

Model	Empty unit weight + Load weight = Gross weight	Tractor weight up to 20 mph (32km/h)
RA125	9380 lbs + _____ lbs = _____ lbs	2/3 of Gross weight = Tractor weight
	4255 kg + _____ kg = _____ kg	
RA130	10210 lbs + _____ lbs = _____ lbs	2/3 of Gross weight = Tractor weight
	4630 kg + _____ kg = _____ kg	

6.1.3 Drawbar attachment system

Adjust tractor drawbar (1) and/or the mixer clevis hitch (2) so that the mixer is approximately level. The top of the drawbar should be 8" - 12" (20cm - 30cm) below the tractor PTO shaft (B). Adjust the drawbar horizontally so that the hitch pin hole is behind the tractor PTO as specified and the drawbar is centered and locked in place.



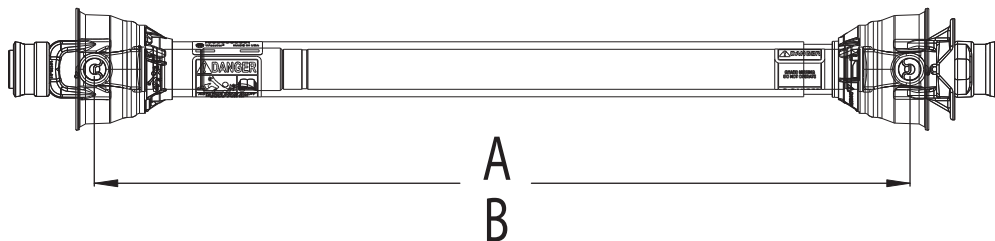
Kuhn North America, Inc. does not recommend or authorize PTO adapters.

RPM	PTO	Dimension A
540	1.38 - 6	13 3/4" $\pm$ 3/8" (35cm $\pm$ 1cm)

Hitch pins

A hitch pin with a minimum of 1" diameter with a retainer pin is recommended for RA125/RA130 mixers.

6.1.4 PTO minimum and maximum operating dimensions



Model Number	PTO description	A = Compressed	B = Extended
RA125/130	1 3/8"-6 splines	40-3/4" (1035mm)	65-1/2" (1664mm)



6.1.5 Hydraulic system

Dual hydraulic outlets are required for operating the door and either the slide tray or the power chute. If your tractor has only a single set of ports, then the selector valve should be ordered.

Three sets of hydraulic tractor outlets are required for machines equipped with a slide tray or power discharge, door hydraulics, and HAY MAXX® system hydraulics. If you have only two sets of hydraulic outlets, a selector valve option is required.

On units with power chute option, the chute hoses may be difficult to connect due to the chute weight on the lift cylinder. Lift weight off chute cylinder to connect hoses.

Tractor hydraulic system requirements are 6 GPM at 1500 PSI (22.7Lpm at 103 bar) when a slide tray is used and 10 GPM at 1500 PSI (37.9Lpm at 103 bar) when a power discharge is used.

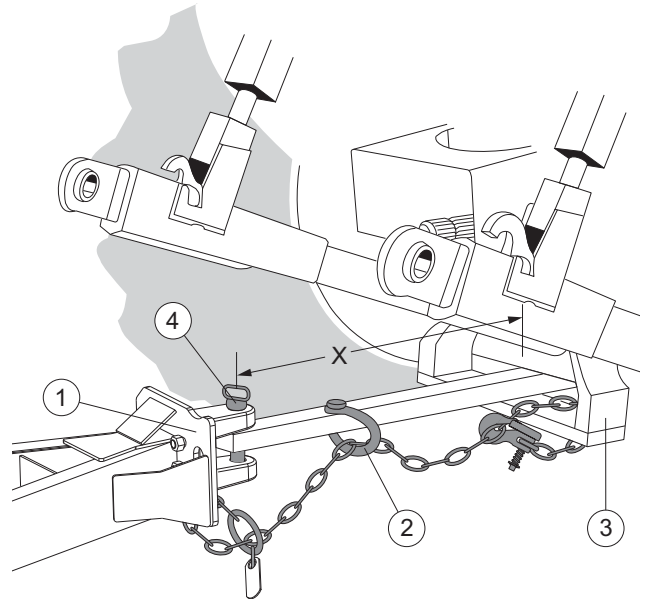
6.1.6 Safety lighting

The lighting system provided is intended for being transported by an agricultural tractor. Make sure that these equipment are clean and in good working order. When attaching to a towing vehicle other than a tractor always check lighting for proper operation as wiring may vary.

6.1.7 Attaching the safety tow chain

Pass the end link through the attachment plate (1) on the side of the tongue, then pass the hook through the end link. The hook end should then be pulled forward through the intermediate support (2) (if required) on the towing machine's drawbar, and around the towing machine's attaching point (3), hooking back to the safety tow chain itself.

If distance (X) from the towing machine's attaching point to the draw pin is more than 9" (23 cm), an intermediate support (2) capable of withstanding one half the required chain capacity is required. When in use the safety tow chain should have no more slack than necessary to permit proper articulation of the implement.



Do not use the intermediate support as the attaching point.

The safety tow chain should be stored to prevent damage from weather or improper use when not in use with the machine. Check chain condition and replace it with a new one if necessary.



The safety tow chain must be replaced if any one link is broken, stretched, or otherwise damaged or deformed.



Safety chains are sold separately. Contact your Kuhn dealer to purchase a safety chain for your specific machine.

6.1.8 Uncoupling the machine



Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.



Always park the machine on hard level ground and block the tires.

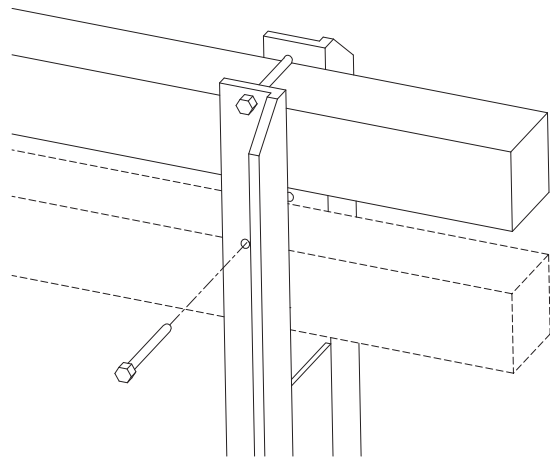
6.2 Mixer setup

6.2.1 Upper auger knives

The upper auger knives may be removed if the mixer is not intended for use with long stemmed materials such as long stem hay. Commercial Reel models ordered with the Grain Series package do not include knives unless a Hay Maxx system was installed.

6.2.2 Reel cross/wiper tubes (Standard reel)

The cross/wiper tubes have two settings that can be changed depending on the material being mixed. The tubes are installed at the factory in the outer position but the tubes can be moved to the inner position for rations containing high amounts of hay. To change to the inner position, compress the tube into the spring and move the capture bolt into the inner holes. Repeat for all of the tubes without wipers. Do not move the tubes with wipers.



The spring loaded reel arms can spring back unexpectedly causing injury.

6.2.3 Shear bolt

The PTO driveline has a shear bolt assembly for overload protection. If the PTO spins free during operation, the bolt has sheared. Replace the sheared bolt with a new one of the same diameter, length, and grade.



Using a bolt of different specifications than recommended may cause damage to the machine or improper operation.

Model	Shear bolt size	PTO RPM
RA125	1/4" x 2" Grade 5	540
RA130	1/4" x 2" Grade 5	540

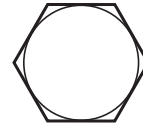


If the PTO is equipped with a shear bolt assembly, the shear bolt end of the PTO must always be installed towards the machine.

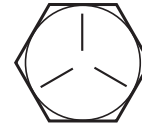


It is important to have the PTO shaft completely secured on the output shaft with the lock collar fully engaged.

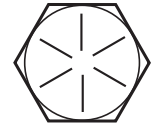
BOLT GRADE IDENTIFICATION



GRADE
2



GRADE
5



GRADE
8

6.2.4 Hay Maxx® System

The HAY MAXX® SYSTEM is shipped in the folded position. If the hydraulic option is not used, the top section of the hay pan should be moved into the raised position and bolted with the hardware provided. If the hydraulic option is used, adjust the clevis on the 10 inch cylinder so that the cylinder is completely extended when the pan is fully upright.



The hopper floor may be slippery and parts inside the mixer may move when stepped on. Put a protective cover over the auger knives to avoid injury.



Be prepared to handle the unbalanced weight of the hay pan as it is moved into position.



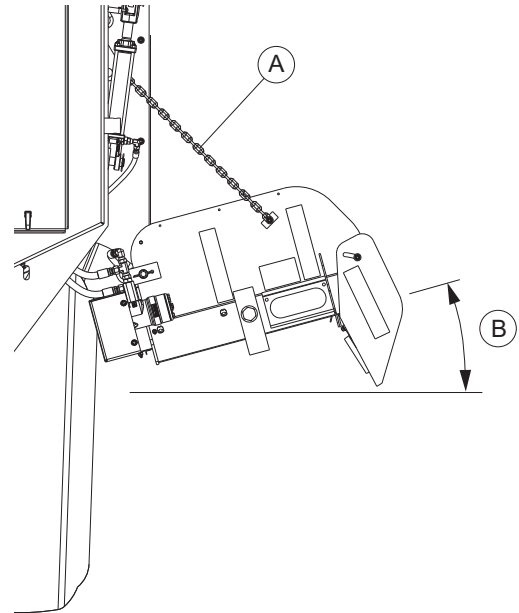
If the HAY MAXX® SYSTEM is being added to an existing unit, additional knives (and backers, where necessary) should be bolted onto the upper auger using the existing holes.

6.2.5 Power chute adjustment

The height of the power discharge can be adjusted by changing the length of the chains (A) evenly on both sides. The appropriate angle may vary with different materials, but the maximum angle (B) should be no more than 35°. The unloading height should be set at the lowest height possible for best performance.

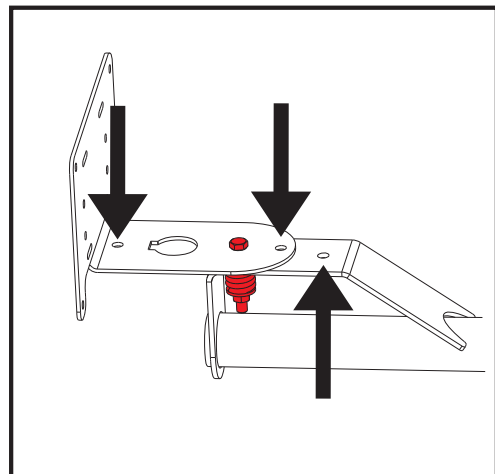
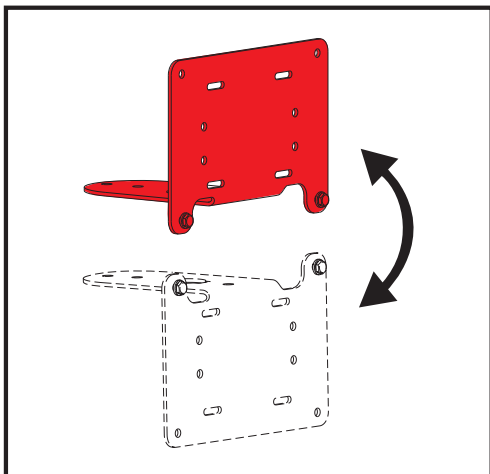
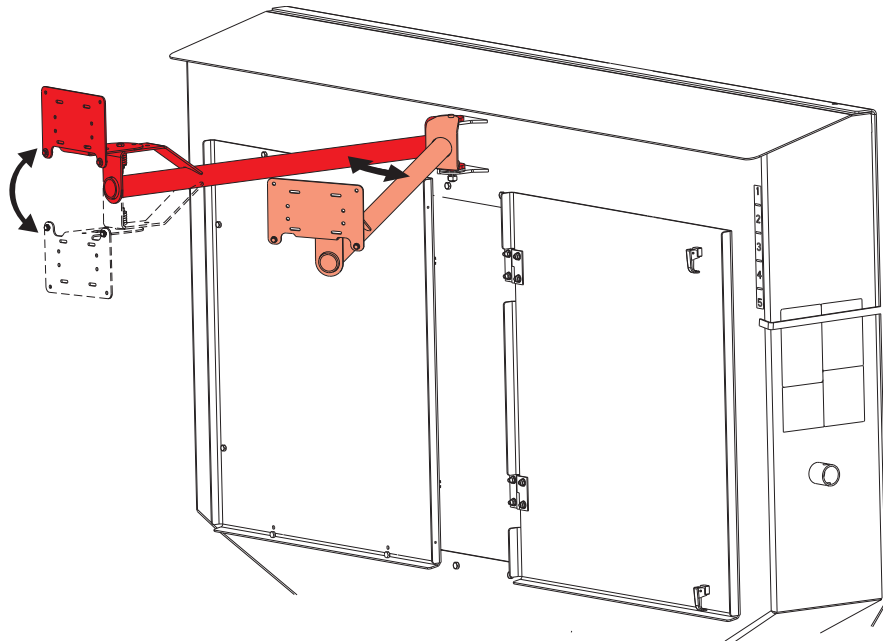
6.2.6 Tip-off adjustment

The tip-off on the auger discharge can be adjusted for correct magnet and discharge angle. To adjust the tip-off, loosen the outer bolts, adjust the spout to the correct angle, and retighten the bolts.



6.2.7 Scale arm positioning

The scale arm and scale mounting bracket may be repositioned to provide optimal viewing for the operator. There are several bolt holes on the mounting brackets that can be used for different configurations. The mounting bracket can also be turned upside down to position the scale at a lower height. See figure below.



6.3 Test run the mixer

1. Check the mixer for proper assembly, adjustment, and lubrication. Check the machine for proper oil supply. If unit is equipped with a discharge chute, oil the roller chains and check to be sure all bolts and set screws are tight.
2. Do not operate until shields are in place.
3. Check for and remove any foreign objects in the mixing chamber and discharge opening.
4. Verify 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.
 - Make sure the mixer is empty, then start the mixer.
 - Run the mixer for at least five minutes at rated PTO RPM.
 - Raise and lower the door several times.
 - Operate the chute, slide tray, and HAY MAXX® pan several times.
 - Perform safety shutdown procedure.
 - Check the drive components to be sure they are not abnormally hot.



If any of these items are not running as indicated, immediately repair or contact your service representative. Always refer to the safety instructions before operating or servicing the machine.



Do not allow operation of this unit by inexperienced or unqualified people.

7. Instructions for transport

7.1 Conformity with the road regulations



Before driving the machine on public roads, ensure that the machine complies with current highway code regulations.



Follow all safety precautions when transporting a machine. Failure to do so could result in loss of control and severe injury or death.

- Check that the braking and lighting systems are in good condition.
- Be sure that the tractor has adequate weight and brakes to tow and stop the loaded mixer.

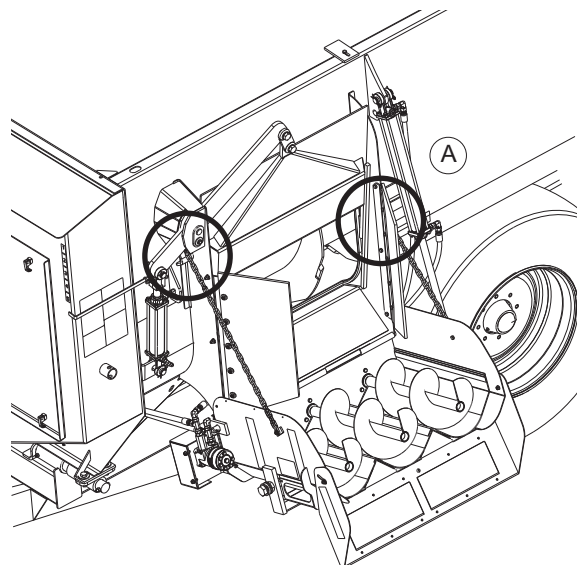
7.2 Transport position



Before transporting the machine on public roads, place the machine into its transport position, according to the instructions in this manual.

To put the machine in transport position, first close all feed doors.

When transporting the mixer, keep the chute or slide tray in the upright position. When transporting the machine on public roadways, the power chute must be locked in place using the chains provided (A).



8. Instructions for work

General

The reel mixer is designed for blending dairy and beef rations. Most commonly used ingredients, including limited amounts of dry hay, can be mixed quickly and uniformly in this mixer. The machine's performance can vary greatly according to the difference in material, loading sequence, mixing speed and unloading methods. The following guidelines should be understood before operating the machine. If you have questions regarding feed rations or other applications, please contact your dealer or Kuhn North America.



Failure to follow the instructions contained in this manual could result in product or property damage, severe personal injury, or death.

Limitations

Keep in mind the overall size of the mixer to allow clearance through doorways. Check that the HAY MAXX® system is lowered or the power chute is raised, if necessary, to fit through doorways.



Do not force hay into auger with loader or any other device.



On models with the HAY MAXX® option, the area over the auger does not have bucket guards. Avoid contact between the loader bucket and the auger to prevent damage to the knives and the auger.



Do not overload the HAY MAXX® SYSTEM with too much hay. This can cause the hay to bridge above the auger. Always perform the safety shutdown procedure before cleaning or attempting to remove jammed materials. Then remove the jammed materials.



Do not lower the HAY MAXX® SYSTEM pan to force hay into the top auger. This will cause damage to the HAY MAXX® SYSTEM and the auger.

■ Mixing time

The RA125/130 can mix an average load in 3-4 minutes. There is normally no reason to run the mixer during loading except to help level the materials or to break up the hay. However, the mixer should be run at low RPM during loading if the main ingredient is a coarse, heavy silage to prevent damage to the mixer and to improve mixing efficiency.



With the HAY MAXX® option: if the hay goes through too fast, you could put more commodities in the mixer before loading the hay. Adjust the position of the hay pan to allow more processing.

■ Mixing speed

Normal mixing speed is 3/4 to rated PTO speed. Time available, thoroughness of the mix, and ingredients are factors that must be considered when deciding on when and how fast to operate the mixer.



Always operate at or below rated PTO speed, but DO NOT EXCEED THE RATED PTO SPEED. If the mixer is operated faster than the rated PTO speed the strain on the drive train and mixer is greatly increased.

■ Initial run-in

A new machine will need an initial run-in period to polish the augers and mixer sides to achieve correct material movement inside the mixer. Until the unit is polished inside the user may experience material spillage, dead spots, or increased power requirements. The load size may need to be reduced until the unit is polished inside.

8.1 Machine use



Do not load hay without other dry commodities in the mixer first to lubricate the mixture.



Do not overload hay content. 15%-20% of unprocessed hay by weight is recommended for each load. Exceeding this percentage can decrease mixing performance or could potentially damage the mixer and cause premature wear on drive components. Kuhn North America will not be responsible for damage caused by overloading, wet hay, or foreign objects.



Do not use tough hay. (20%-60% moisture) Always use cured dry hay. Tough hay can cause wrapping, binding, and damage to the mixer. Kuhn North America will not be responsible for damage caused by overloading, wet hay, or foreign objects.

8.1.1 Material

■ Materials not requiring processing before loading

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

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

Liquids - Supplements and liquid fats can be added to the mixer while it is empty or on top of grains or roughage. Sticky liquids like molasses tend to increase horsepower requirements.

■ Materials requiring processing before loading

The following materials will need some preparation or processing before being mixed:

- Small square bales
- Large square bales
- Round bales
- All long and uncured grasses
- Stacked feeds

Dry alfalfa hay can be mixed in rations up to 15%-20% by weight by using the HAY MAXX® SYSTEM.

Standard reel

Mixing may be improved by moving the reel cross tubes without wipers to the inner setting for rations with a higher percentage of hay (see mixer setup section "reel cross tubes".) This will allow the reel to more aggressively charge the lower auger with hay.

■ Preparing bales for the HAY MAXX® SYSTEM

- Small square bales

Remove binding material from the bale while it is on the ground. Put bales into loader bucket lengthwise so that they will fall onto the Hay Maxx® System or, if the hay is dry cured alfalfa, load directly into the auger side of the mixer equipped with Roughage Maxx® option.



- Large square bales

(3'x3'x8'), (3'x4'x8'), (4'x4'x8') - Remove binding material from the bale while it is on the ground. Put slabs of 10"-12" (26cm - 31cm) thickness maximum into the loader bucket. The slabs should lay flat against the HAY MAXX® system pan to feed properly into the auger.

- Round bales

Remove binding material from the bale while it is on the ground. Break the bale apart with the loader, a round bale slicer, round bale unroller, or other processing equipment and then load portions into the HAY MAXX® system.



■ Processing long and uncured grasses and stacked feed

- Long and uncured grasses should be pre-processed in a tub grinder or a vertical mixer.
- Break stacked feed material apart with the loader or pre-process in a tub grinder.



Always use cured dry hay. Bales with high moisture content, high grass content, high density, outdoor storage, hay preservatives added, or excessive stem length can affect the performance of the mixer. Tough hay can cause wrapping, binding, and damage to the mixer.

8.1.2 Loading



Before loading, check the mixer for foreign objects and check that the door is fully closed.

1. Load commodities

Corn, soybean meal, cottonseed and similar ingredients will lubricate the mixing of the ration if hay is included. If there are few commodities in the ration, substituting silage or haylage is preferred. Fill mixer approximately 1/3 to 1/2 full by volume of commodities before adding hay. This will allow enough room for hay to expand and raise the feed level so that the top auger can assist in processing.

2. Loading hay

Loading processed hay:

Load the small square bale pieces or tub ground hay into the mixer running at 3/4 to full PTO speed. Do not exceed 15%-20% of hay by weight.

The hay can be loaded after the commodities that were loaded in step 1. The grains help to move the hay into the augers. It helps to load the hay on the auger side of the mixer with the mixer running.

Loading unprocessed hay with the HAY MAXX® SYSTEM:

Load hay onto the HAY MAXX® pan with the pan in the up position and the mixer running at 3/4 to full PTO speed. Load the hay slabs toward the front end so that they are not resting against the rear backstop of the hay pan.

For best results, do not overload the HAY MAXX® SYSTEM and allow time for the HAY MAXX® SYSTEM to process the hay before adding more. Repeat until proper percentage of hay ration is met (Do not exceed 15%-20% of hay by weight).



Hay processing time may be reduced with the ROUGHAGE MAXX® option due to the aggressive knives. Hay particle length may also be reduced much faster. Adjust the processing time accordingly to avoid overprocessing.

3. Finish loading chopped forages

Finish loading the rest of the ingredients in order of the least binding ingredient to most the binding.

Example: dry commodities first, corn silage second, and haylage last.

4. Finish loading wet commodities

Any other wet feeds may be added at this time.

5. Add water

Add water last. Adding water at the beginning causes the hay to bind.



Do not overload. Overloading increases horsepower requirements, increases strain on the driveline, and decreases mixer performance.

8.1.3 Fill level

The design of these reel mixers 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.

8.1.4 Unloading

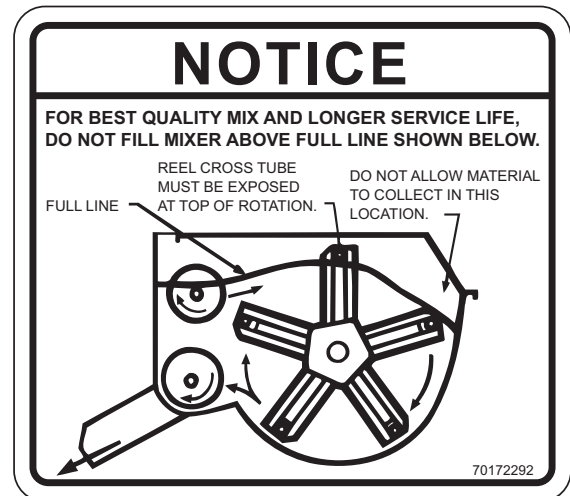
After thorough mixing, open the mixer door to begin unloading. If equipped with a power chute, it must be running before the mixer door can be opened. The door opening and mixer speed determine the flow rate of the feed from the mixer.



If the door is not opened far enough, the hay will bind up in the opening and the finer material only will be dispensed. The door must be opened far enough to prevent separation of materials. Optional door flow control plates are available to help prevent this problem.

To stop the flow of feed, close the door, turn off the power chute (if equipped,) and then shut off the mixer.

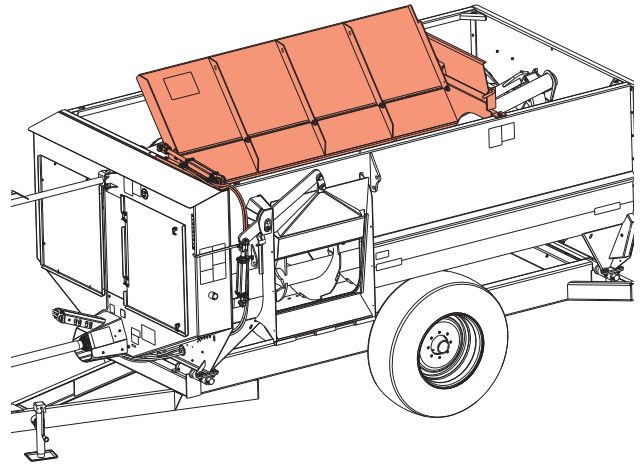
The chute and tray heights are adjusted with hydraulic cylinders, but the chain stops provided on power chutes should be adjusted so that the chute clears all bunks, obstacles, etc.



9. Optional equipment

9.1 HAY MAXX® SYSTEM

The HAY MAXX® system is a bolt on option that is designed to add long stem hay to the ration more effectively. This option can handle small and large square bales, broken-up round bales, frozen bunker silage, and other bulky materials without overprocessing them.



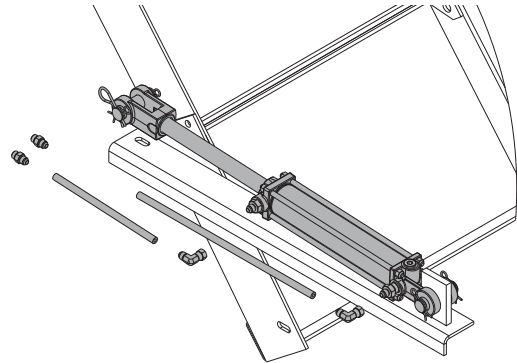
9.2 ROUGHAGE MAXX® SYSTEM

The ROUGHAGE MAXX® option is a set of bolt on scallop knives that enhance the hay processing performance of the reel mixer. This option is designed to allow the lower auger to more effectively cut long stem hay with or without the HAY MAXX®.



9.3 10" hydraulic cylinder for the HAY MAXX® SYSTEM

This hydraulic cylinder option can be attached to the HAY MAXX® to raise and lower it remotely. The fittings, hoses, and spool valve are included.



9.4 Power discharge

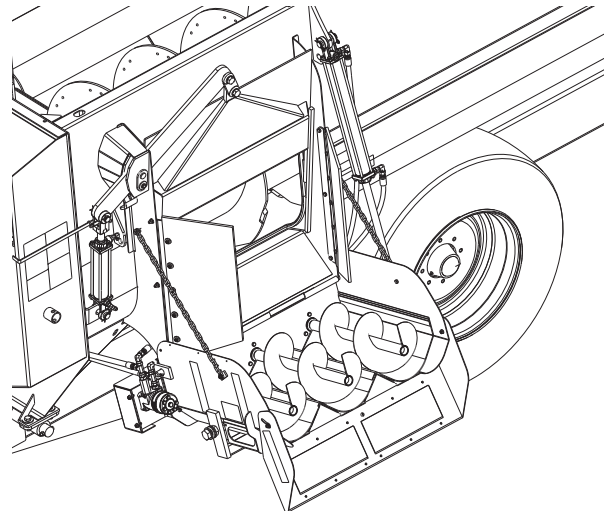
24" 3-auger discharge

36" 3-auger discharge

36" Chain and slat discharge

48" Chain and slat discharge

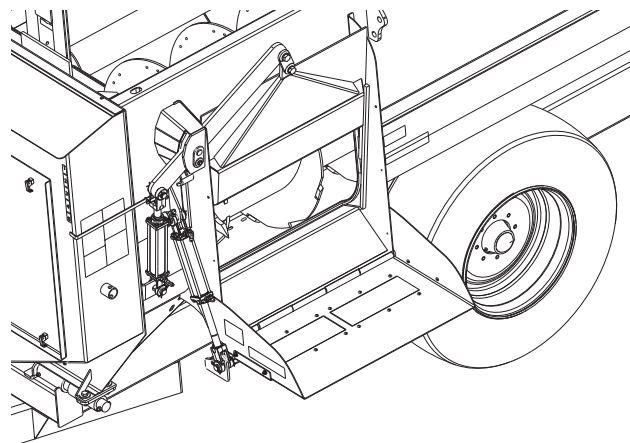
The power discharge is used for delivering feed to an area higher than the door height. One valve controls the door and the other valve controls the discharge functions. When the flow is reversed, the discharge raises and a check valve prevents the discharge from turning backwards.



Always start the power chute augers before opening the door to prevent overloading the chute.

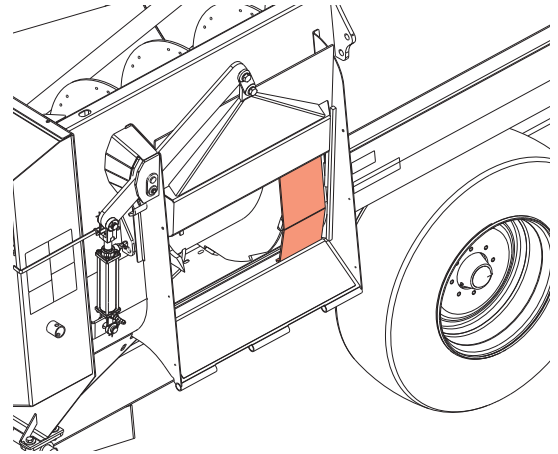
9.5 Slide tray

The slide tray helps direct feed when being discharged.



9.6 Door flow control plate

This option is an 4" or 8" wide bolt on plate that will make the door opening more "tall and narrow" to help prevent the hay from clogging in the opening .



9.7 Riser kit

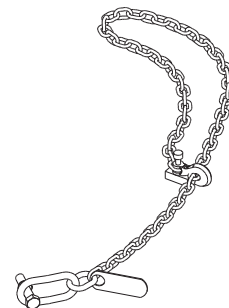
Raises the mixer to allow the use of a slide tray with taller feed bunks.

9.8 Electric switching valve

This plugs directly into existing hydraulic ports and creates two switchable circuits. By flipping the electric remote, the operator can select either set of hoses. Once activated, the operator uses the existing hydraulic lever to control remote functions.

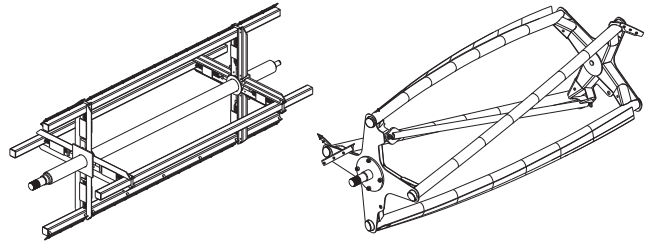
9.9 Safety chain

The safety chain is intended to keep the machine under control in the event of a loss or failure of the hitch pin. A safety chain must be used when transporting the machine on public roadways.



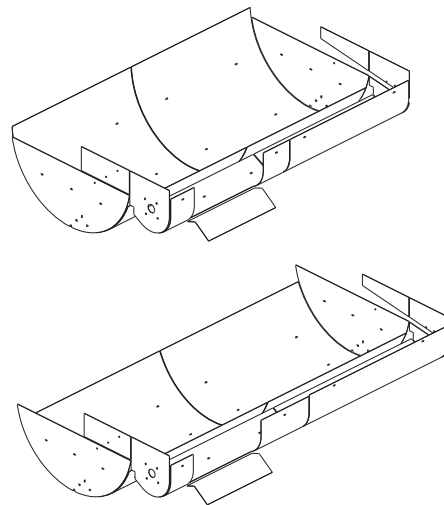
9.10 Reels

Standard reel
Helix reel

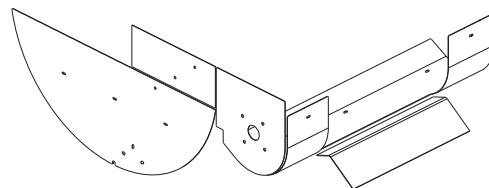


9.11 Stainless steel liners

Stainless steel liners can be installed when mixing coarse materials to extend the life of the mixing chamber.

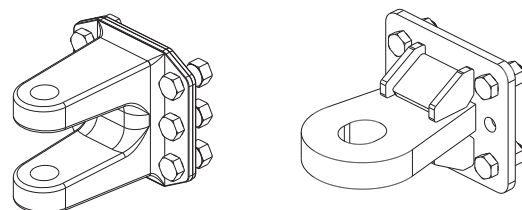


9.12 Partial stainless steel liners



9.13 Hitches

Clevis hitch
Spade hitch



10. Inspections and adjustments



Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.

10.1 General inspection information

■ Safety decals

Always keep the safety decals clean and legible, and replace them when they are worn, damaged, missing or illegible.

■ Inspect safety shielding

Be sure all shielding is in place and functioning properly. Replace any damaged or missing safety shields.

■ Trailer hitch

Inspect trailer hitch for proper location, alignment and tightness of attaching bolts. If the hitch becomes excessively worn, the hitch assembly should be unbolted and turned over or replaced as necessary. Frequently check the hitch attaching bolts for tightness and verify that the hitch is secure. Worn or damaged parts, particularly bolts, should be replaced BEFORE they fail.

■ Roller chains

Check for wear, proper alignment and tension, and adjust or replace if necessary. Roller chain connector links must have the legs of the cotter pins or the legs of the retaining clip facing the trailing end.

■ Roller chain tighteners

As a general rule, the distance between the coils of the tightener spring should be 1/16" (1.5mm). Adjust so they will apply sufficient spring tension to keep roller chains running smoothly. The chain will form grooves in the tightener blocks that help keep the chains in alignment. Only rotate the block if the roller portion of the chain has worn into the block.

■ Bolts and set screws

Inspect and adjust bolts and set screws after a few hours of use and each month thereafter.

■ Reel cross tubes (Standard reel)

The reel cross tubes should slide freely when compressed against the spring. The spring pockets may need occasional cleaning. This sliding action helps prevent jamming and avoids overloading of the drive system.

■ Reel wiper tubes

If the plastic strips on the wiper tubes get bent backward, they can be unbolted and turned over or replaced to improve cleanout.

■ Knives

Upper auger knives - Sharpen, turn or replace the knives if they are no longer sufficiently breaking up the material.

Scallop knives - replace when worn.

Small lower fighting knives - Weld in new knives when replacement is necessary.

HAY MAXX® SYSTEM hay pan

The hay pan with optional hydraulic control should pivot freely. Check that the pivot bolts are tight and the bushings are not overly worn.

■ Discharge chute augers

Adjust the shims behind the auger bearings to keep them from rubbing against the chute body. Check the chute liners for wear. Replace if necessary.

■ Wheels and tires

Wheel nut torque:

- 8 bolt hub with 8 grade 8 hex nut, torque to 170 ft lbs.



Wheel nuts should be checked after the first few loads and re-torqued if necessary. Torque should be checked on a monthly basis.

Inspect and adjust tires for wear and inflation level. Inflate tires to pressure(s) indicated below.

Inflation pressure:

Tire size	Maximum pressure
385 65R - 22.5 recap truck	65 PSI (4.42 bar)



When inflating tires use a clip-on chuck and extension hose long enough to allow you to stand to one side and not in front of the tire.

10.2 Scale system



When welding on this unit: DO NOT allow the current to flow through the bearings, roller chains, or scale weigh bars

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

■ Scale indicator

Refer to the electronic scale operators manual for adjustment information. The scale's manual should be kept with this manual

■ Normal scale activity

The scale may drift when it is turned on, but it should zero balance after 10-15 minutes. The scale may zero shift over night due to temperature changes. The weight may change slightly due to terrain changes when the mixer is moved

10.3 HAY MAXX® system

Without optional hydraulic cylinder.

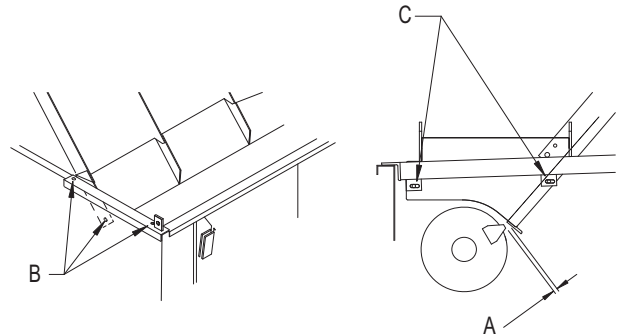
The HAY MAXX® must be extended fully upright and bolted into position.

With optional hydraulic cylinder

The HAY MAXX® should be adjusted with the clevis on the cylinder so that when the cylinder is fully extended the pan is in the upright position. Likewise, when the cylinder is fully retracted the pan lies completely flat.

Adjusting the knife to pan tolerance

The tolerance (A) may need to be changed for reasons such as hay moisture and quality or type of material. Do not adjust tolerance to less than 1/2" or more than 1". Loosen the 3 front bolts (B) and 2 rear bolts (C), make adjustment, then tighten all bolts.



10.4 Drive enclosure

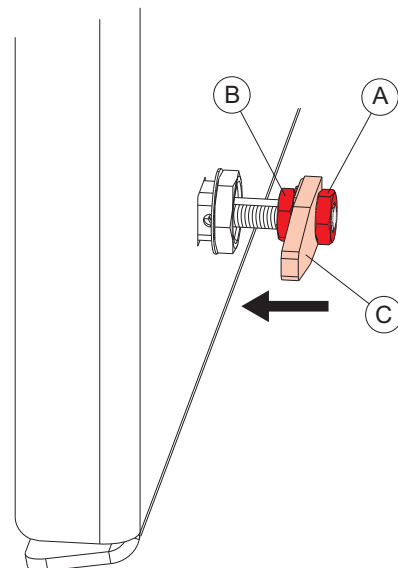
Adjusting enclosure door seal

The enclosure door can be adjusted if it is not sealing properly or if the handles are loose.

To adjust the latch tension, loosen jam nut (A) and turn adjustment nut (B) until latch pawl (C) is in the appropriate position.

Once the latch is repositioned, retighten the jam nut.

Adjust both latches as necessary.



11. Maintenance and storage



Before adjusting, maintaining or repairing the machine, perform the safety shutdown procedure.

11.1 Greasing and oil change



Examine all zerk fittings and clean if necessary. Lubricate with multi-purpose grease NLGI grade 2 or synthetic equivalent. If grease does not flow freely, examine the zerk and pathway for blockage and clean or replace.

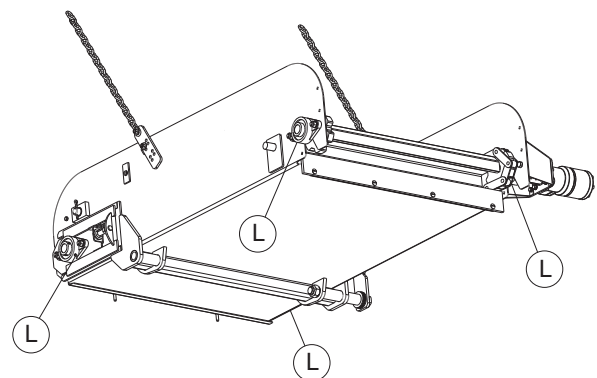
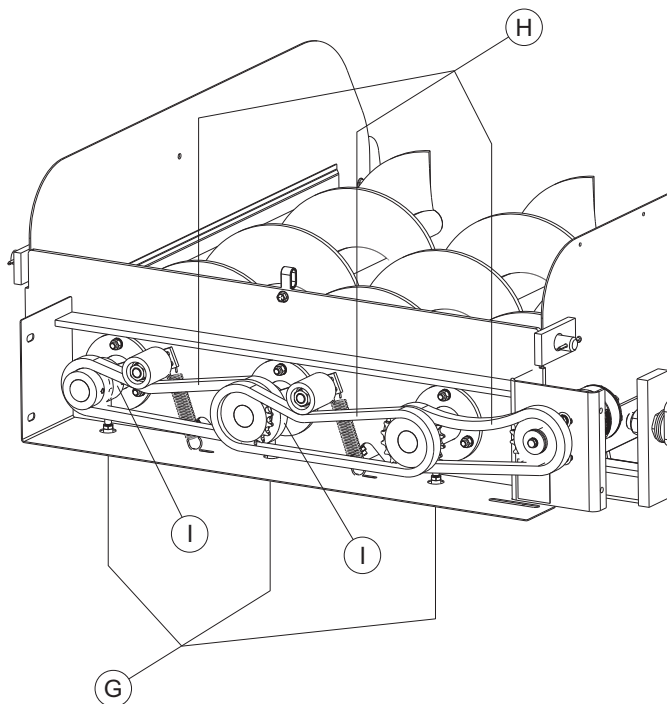


Before operating a new mixer, the roller chains should be liberally lubricated and then the unit operated under a no-load condition to allow thorough lubrication and minimize heat from operation.

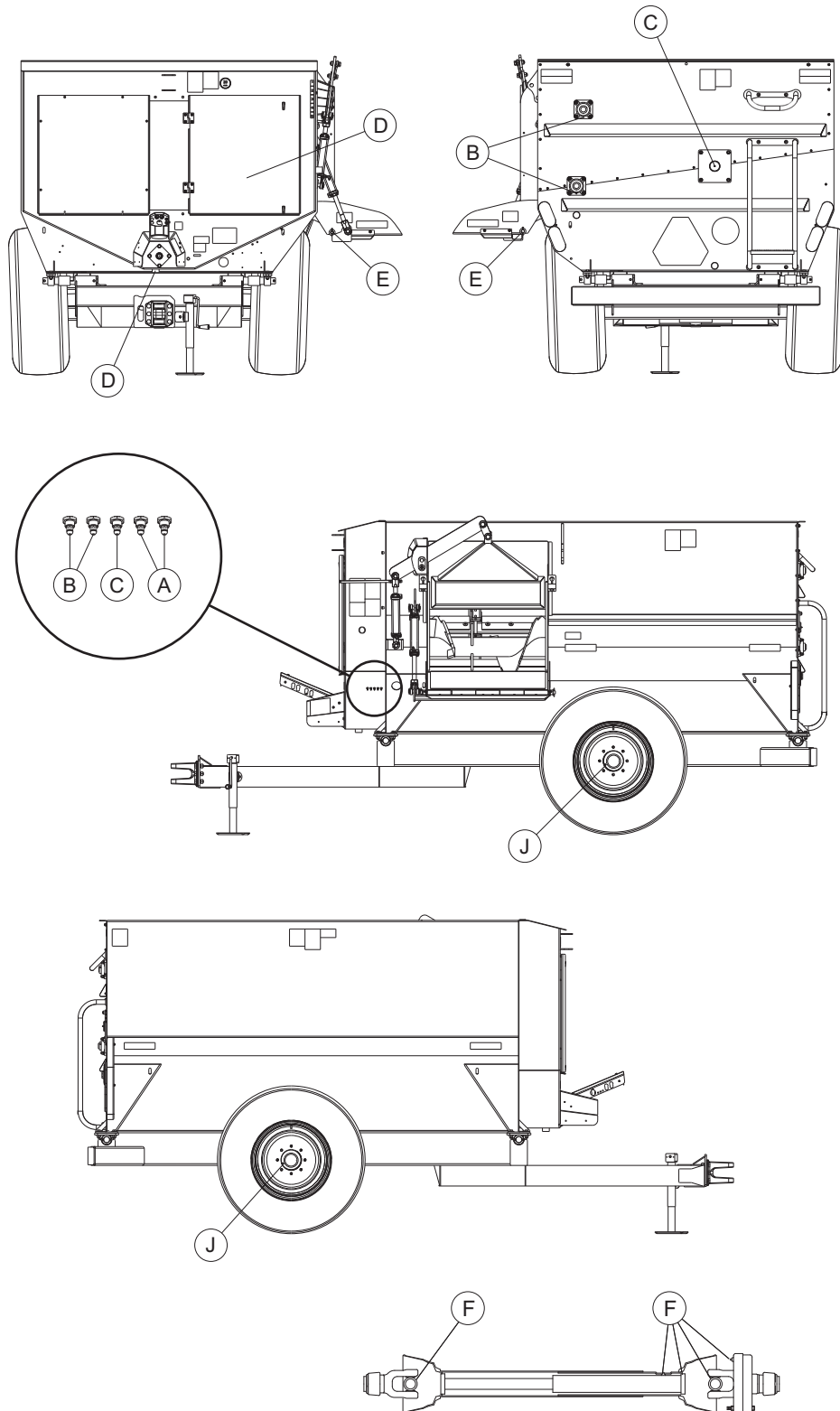
The large drive enclosure is designed to be used as an oil bath. Fill until the oil level reaches the plug labeled "oil level" on the enclosure.

11.1.1 Frequency chart

Greasing and oil change points		Frequency
A	Input shaft bearings (Quantity 2)	8 hours - Grease
B	Auger bearings (Quantity 4)	8 hours - Grease
C	Reel bearings (Quantity 2)	8 hours - Grease
D	Roller chain with oil bath / Oil drain plug	Check before each use - Oil (30wt) Change oil annually or if contaminated
E	Discharge pivots	40 hours - Oil (30wt)
F	PTO implement driveline joints and slide, Driveline shields	8-10 hours - Grease, 3 months - Grease
G	Auger bearings (optional auger chute)	8 hours - Grease
H	Roller chain (optional auger chute)	8 hours - Oil (30wt)
I	Roller chain tightener pivots (optional auger chute)	8 hours - Oil (30wt)
J	Wheel bearings	Grease after 80 hours, Repack bearings annually
L	Chain and slat bearings	8 hours - Grease



11.1.2 Greasing and oil change points



11.2 Lifting the helix reel



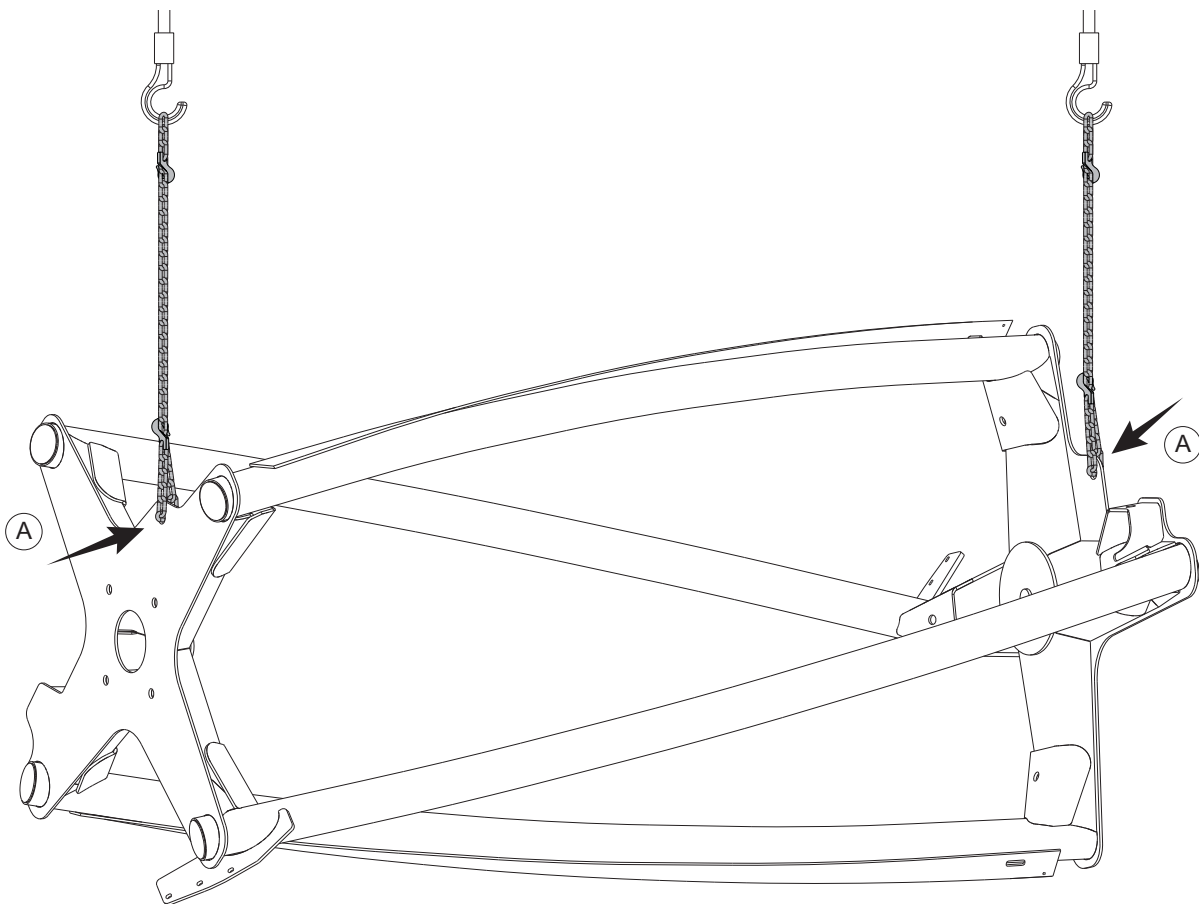
The helix reel must be lifted at the specified lifting points to prevent damage to the machine and/or the helix reel. Failure to do so could result in loss of control and severe injury or death.

If the helix reel needs to be removed or replaced, use the holes at the front and rear of the reel (A) to attach the lift chains to.

■ **Minimum lift capacity:**

RA 125 = 1150 lbs (525 kg)

RA 130 = 1450 lbs (660 kg)





11.3 Cold weather precautions

Rain and snow can accumulate in mixer if stored outside. Remove drain plugs on hopper ends to allow unit to drain completely and replace drain plugs before next use. Check hopper for snow or ice buildup before operating unit.

The PTO shield requires extra grease to prevent freezing. Inspect PTO shield for freezing in cold weather.

12. Troubleshooting

Problem	Cause	Solution
Poor mixing performance		
Bent reel cross/wiper tubes		
Excessive power requirement	Mixer is overloaded	Reduce load size. Feed must be able to tumble from the reel cross pipes.
Shear bolt fails		
Hay wrapping on augers		
	Hay is loaded on the reel side of the mixer	Load hay on the auger side to avoid jamming hay between the cross/wiper tubes and the side of the mixer during loading.
	Hay portions are too big	Break up the bales before loading.
	Mixer is running too slow	Run the mixer at full rated PTO speed when mixing hay to allow the knives to cut more effectively.
	Hay is not fully cured	Fresh hay does not tear apart easily. Allow hay to cure longer before mixing.
	The knives mounted on the augers are not sharp	Sharpen or replace the knives.
	The hay is too long	Round baled, stacked, and some grassy types of hay must be processed before loading into mixer.
	Hay percentage is too high	Lower the hay percentage or change the loading sequence. Run the mixer at full rated PTO speed when mixing hay to allow the knives to cut more effectively.
	Foreign object in mixer	Check for and remove any foreign objects in the mixing chamber and discharge opening.
	Improper loading sequence	See "Instructions for work" section for loading sequence.
	Too much forage loaded before starting mixer	Forage piled above reel can get wedged against the side when started.



Problem	Cause	Solution
The input shaft turns, but the reel and augers do not	The shear bolt on the PTO has sheared.	Replace the sheared bolt with a new one of the same diameter, length, and grade.
	Broken chain	Make sure the mixer is not overloaded. Replace chain. Inspect the bearings, bearing mounts, and shafts for any damage.
The seal is leaking on the upper auger	The bolts came loose on the seal retainer.	Retighten if necessary or replace the bolts.
	The seal is damaged	Replace seal
The seal is leaking on input shaft	The oil bath is overfilled	Be sure that the oil bath is filled to the "oil level" plug on the drive enclosure.
	The seal is damaged	Replace seal
The feed is separating as it is discharged	Door is open less than half way	See "unloading" in the instructions for work section.
Oil leaking around edges of oil bath	Check shield and foam gasket for looseness or damage	Tighten the fasteners that hold the shield in place and/or adjust latches. Replace gasket if necessary.
Hydraulics operate improperly	The components are sticking or binding	Check for contamination in the hydraulic oil, hydraulic oil level, and worn or bent parts
	Flow rate/pressure too low	For slide tray: A minimum flow rate of 6 gpm (22.7 Lpm) at 1500 PSI (103.4 bar) is required. For power discharge: A minimum flow rate of 10 gpm (37.9 Lpm) at 1500 PSI (103.4 bar) is required.
	Oil is leaking past the seals on the cylinders or valves	Install seal kits to repair worn seals.
Scale incorrectly indicates weights that are very heavy or very light	Improper hydraulic plumbing	Compare to service parts illustration.
	Improper calibration	Calibrate the scale. Refer to the scale operator's manual to calibrate the scale.
	Damaged cable on one or more weigh bars, or faulty weigh bars	Inspect cables or weigh bars and repair or replace as necessary.



13. Limited Warranty

LIMITED WARRANTY FOR KUHN NORTH AMERICA AGRICULTURAL EQUIPMENT

The limited warranty described below is provided by Kuhn North America, Inc. ("KUHN") to the original retail purchaser ("Purchaser") of new Agricultural Equipment manufactured by KUHN and purchased from authorized KUHN dealers ("Equipment").

LIMITED WARRANTY: KUHN warrants that Equipment will be free from defect in material or workmanship under normal use and service during the warranty period. KUHN's sole obligation under this limited warranty, and Purchaser's exclusive remedy, is to repair or replace, at KUHN's election, without charge and at the place of business of a dealer authorized to handle KUHN Equipment, any Equipment or portion of the Equipment which KUHN determines to be defective.

LIMITED WARRANTY PERIOD: For the Equipment, the warranty period is twelve (12) months beginning on the date of delivery by an authorized KUHN dealer to Purchaser.

REPLACEMENT SERVICE PARTS: Replacement service parts are subject to the following special warranty terms (but are otherwise subject to all limitations, exclusions and restrictions in this limited warranty):

Service Part	Special Warranty Terms
Replacement Service Parts	90 days from date of sale or balance of Equipment warranty period if longer ¹
Rake / Tedder rotor gearboxes GMD / FC replacement cutterbars	12 months from date of sale ¹
¹ For all service parts sold after the applicable Equipment warranty period, KUHN will not reimburse Purchaser for expenses incurred in repairing or replacing defective service parts including, without limitation, labor expenses.	

EXTENDED WARRANTY CONDITIONS: In addition to the limited warranty period, the following extended warranty terms are offered on certain components (but are otherwise subject to all limitations, exclusions and restrictions in this limited warranty):

Equipment	Extended Warranty Terms of Equipment Components
Scales (when purchased as part of original unit)	Balance of scale manufacturer's warranty (36 mo. from date of scale manufacturer's date of manufacture)
ProSpread (excluding PSC, PXL models ¹) and EasySpread Box Spreaders	10 years – Side and front panel rust-through and floor breakage ²
ProPush Spreaders	10 years – Side and floor panel breakage ²
ProTwin Slinger Spreaders	7 years – tank rust-through ²
Vertical Maxx Mixer	Planetary gear box ² , two-speed splitter gear box ² , and CVT gearbox ² 1st year 100%, 2nd year 75%, 3rd year 50%, 4th year 25%, 5th year 10%
1. ProSpread Commercial Spreaders (PSC, PXL) have only the standard 12-month limited warranty on side and front panel rust-through and floor breakage.	
2. Parts only after the conclusion of the 12-month limited warranty.	

PURCHASER'S RESPONSIBILITY: It is Purchaser's responsibility to perform the recommended maintenance at the intervals outlined in KUHN's Equipment's Operator's Manual (the "Operator's Manual"). Purchaser will be responsible for any service call and/or transportation of Equipment to and from an authorized dealer's place of business. Prior to using or permitting use of the Equipment, Purchaser shall determine the suitability of the Equipment for the intended use, and Purchaser assumes all risk and liability whatsoever in connection therewith.

SECURING WARRANTY SERVICE: To secure warranty service, Purchaser must (1) report the Equipment defect to an authorized KUHN dealer and request warranty service within the applicable warranty period; (2) present evidence of the warranty start date with valid proof of purchase; and (3) make the Equipment available to the authorized KUHN dealer within a reasonable time for repair.

SOLE WARRANTY/LIMITATIONS OF LIABILITY: THIS LIMITED WARRANTY IS KUHN'S SOLE WARRANTY FOR THE EQUIPMENT AND IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. KUHN DISCLAIMS AND EXCLUDES ALL OTHER EXPRESS WARRANTIES, AND DISCLAIMS AND EXCLUDES ALL WARRANTIES IMPLIED BY LAW INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT AND FITNESS FOR PARTICULAR PURPOSE. KUHN SHALL NOT BE LIABLE FOR ANY OTHER OBLIGATIONS OR LIABILITIES. KUHN SHALL NOT BE LIABLE FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES. IN NO EVENT SHALL KUHN'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY PURCHASER FOR THE EQUIPMENT. NO PERSON IS AUTHORIZED TO MAKE ANY WARRANTY OR ASSUME FOR KUHN ANY LIABILITY NOT STRICTLY IN ACCORDANCE WITH THIS LIMITED WARRANTY. THE REMEDY DESCRIBED IN THIS LIMITED WARRANTY IS PURCHASER'S EXCLUSIVE REMEDY AND IS IN LIEU OF ANY OTHER REMEDY OTHERWISE AVAILABLE AT LAW OR BY CONTRACT.



WHAT IS NOT WARRANTED OR COVERED: This limited warranty does not apply to, and KUHN offers NO WARRANTY and is not responsible for: (1) component parts not manufactured by KUHN including, but not limited to, wheels, tires, tubes, PTO shafts, clutches or hydraulic cylinders; (2) any Equipment or Equipment part which, in the judgment of KUHN, has been altered or tampered with in any way, has been subjected to misuse, abuse, abnormal use, neglect, accident, environmental or natural elements, improper storage, has been used for an application not designed for or pre-authorized by KUHN in writing, has had the serial numbers altered, effaced or removed, or has been scrapped, junked or totaled; (3) depreciation or normal wear and tear; (4) lack of reasonable and proper maintenance and failure to follow the Operator's Manual's recommendations and instructions; (5) normal maintenance parts (including, but not limited to, shear pins, friction clutches, hammers, lubricants, belts, blades, knives, tines, shares and filters) and maintenance servicing (including, but not limited to, maintenance checks, adjustments, shimming); (6) rental of replacement equipment during warranty repairs, damage to a power unit (including, but not limited to, a tractor or truck), loss of earnings due to Equipment down time, or damage to Equipment while in transit to or from a KUHN facility or authorized KUHN dealer; (7) defects due in part or in whole from specifications, instructions, designs or drawings provided by or for Purchaser; (8) any expenses incurred by Purchasers in repairing or replacing defective parts on their own or through parties not authorized by KUHN, except for those incurred with KUHN's prior written permission.

WARRANTY PERIOD FOR CERTAIN USES/OTHER MANUFACTURERS' WARRANTIES: (1) All warranty periods identified herein, including any twelve (12) month warranty, are reduced by one half (1/2) of the duration if Equipment is used in a non-agricultural commercial use or used as a rental unit. (2) KUHN will pass on any third-party manufacturer's warranties to Purchaser if reasonably practicable, but KUHN does not guarantee a third-party manufacturer will comply with the terms of its warranty.

EQUIPMENT CHANGES AND IMPROVEMENTS: KUHN is continually striving to improve its products, and therefore reserves the right to make improvements or changes without incurring any obligations to make improvements or changes to the Equipment previously manufactured or sold.

GENERAL PROVISIONS: (1) Any assistance KUHN provides to or procures for Purchaser outside the terms, limitations or exclusions of this warranty will not constitute a waiver of such terms, limitations or exclusions, or extend or revive the warranty. (2) Any action by Purchaser for breach of this limited warranty must be commenced within one year after the breach occurs. (3) Any oral or written description of the Equipment is for the purpose of identifying Equipment and shall not be construed as an express or implied warranty. (4) Whenever possible, each provision of this limited warranty shall be interpreted in such manner as to be effective and valid under applicable law, but if any portion is deemed invalid or unenforceable, the remaining portions shall still be enforceable.



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