



**1105A TWIN VERTICAL
TRAILER
FEED MIXER**

**ASSEMBLY, OPERATION
AND PARTS MANUAL**

**ROTO-MIX
P.O. box 1724
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Dodge City, Kansas 67801
(620) 225-1142**

SERIAL NUMBER _____

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WARRANTY

ROTO-MIX LLC, warrants to the original purchaser all products manufactured by it to be free from defects in material and workmanship under normal use and service. ROTO-MIX's obligation under this warranty is limited to repairing or replacing, as the company may elect, free of charge and without charge for installation, at the place of business of a dealer or distributor authorized to handle the equipment covered by this warranty or at a ROTO-MIX plant, any parts that prove, in the company's judgment, to be defective in material and workmanship within one (1) year after delivery to the original purchaser, and still owned by the original purchaser.

It is a condition of this warranty that the original purchaser must fill out the warranty card furnished by ROTO-MIX and that it be returned to ROTO-MIX and be recorded in ROTO-MIX's owner file for this warranty to be valid. In the event an owner's card is not on file at the ROTO-MIX office, the warranty period will extend only from date equipment was picked up or delivered from the ROTO-MIX plant.

It is a condition of this warranty that if within the aforesaid period of time, said equipment, product or parts are determined by the original purchaser to be defective as herein provided, then such defective part or parts must be delivered by or through a dealer and/or distributor to ROTO-MIX at its factory with transportation prepaid or warranty shall be of no force or effect and shall be waived by the purchaser. If ROTO-MIX, or its duly authorized representative, shall find that such returned part or parts are defective and such defects, or defect, are included in and covered by said warranty, then such defective part or parts shall promptly be replaced without charge to the purchaser, F.O.B. the ROTO-MIX plant.

This warranty shall not apply to any item, manufactured in whole or in part by ROTO-MIX, which shall have been operated in a manner not recommended by ROTO-MIX nor which shall have been repaired, altered, neglected, tampered with, or used in anyway which in the company's opinion adversely affects its performance.

This warranty shall in no way make ROTO-MIX liable to anyone for personal injuries or damages, loss of time, or expense of any kind either direct or indirect resulting from part failure or defect.

This warranty is subject to acts of God, fire and existing conditions of supply and demand, or production, or ability or inability to deliver, or for any other valid reason beyond the reasonable control of ROTO-MIX, to obtain materials, manufactured replacement parts, or make delivery thereof.

No distributor, dealer, agent, or employee of ROTO-MIX is authorized to extend any other or further express or implied warranty or incur any additional obligation on ROTO-MIX's behalf in connection with the sale of this product.

ROTO-MIX reserves the right to make changes in design, or additions to, or improvements in its equipment without obligation to install such changes, additions, or improvements in equipment previously manufactured.

SCALES WARRANTY & SERVICE POLICY

DIGI-STAR SCALE SYSTEMS

Digi-Star, LLC warrants for a period of one year from date of installation, to correct by repair or replacement, at Digi-Star's option, any defect in material or workmanship in any part of this product. In the event of replacement, Digi-Star's sole obligation shall be to provide replacement products or parts. F.O.B. Fort Atkinson, Wisconsin.

EATON ELECTRONIC SCALES

Eaton scale systems are warranted for two years from the date of manufacture or a minimum of one year from the date of sale, with proof of purchase, to a maximum of 36 months from the date of manufacture. Defective products must be returned to Eaton or an authorized service center, freight prepaid, within warranty period, where components will be repaired or replaced at Eaton's discretion.

TYREL INDICATORS

Tyrel Corporation warrants the indicator to be free from defects in material and workmanship for 12 months from date of delivery. Tyrel Corp. will repair or replace, at their option, at no charge, any indicator found to be defective. F.O.B. Winooski, Vermont.

Defective products must be returned to ROTO-MIX, freight prepaid, within the warranty period. Any deviation from this policy must be approved by the management of ROTO-MIX.

This warranty does not apply to scale systems that have been subject to negligent maintenance, accident, modification, abuse, or natural hazards.

All warranty repair work must be done by an authorized ROTO-MIX technician. Any work done by anyone other than an authorized ROTO-MIX technician shall void the warranty.

In the event it is necessary for field service to be done, ROTO-MIX is not responsible for expenses incurred in field service or travel expenses and labor getting to and from the service point.

All parts returned for warranty work must be identified by customer name, date sold, date failed, model number, and serial number of instrument.

ROTO-MIX is not responsible and will not be liable for personal injuries or damages, loss of time or damage caused to persons or property by reason of the installation of ROTO-MIX products or their mechanical failure.

OPERATOR QUALIFICATIONS

Operation of this mixer/feeder shall be limited to competent and experienced persons. In addition, anyone who will operate or work around a mixer/feeder must use good common sense. In order to be qualified, he or she must also know and meet all other qualifications, such as:

1. Some regulations specify that no one under the age of sixteen (16) may operate power machinery. It is your responsibility to know what these regulations are in your area and/or situation.
2. Current OSHA regulations state in part: At the time of initial assignment and at least annually thereafter, the employer shall instruct **EVERY** employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.
3. Unqualified persons are to **STAY OUT OF THE WORK AREA.**
4. A person who has not read and understood all operating and safety instructions is not qualified to operate the machinery.

FAILURE TO READ THIS MIXER/FEDER MANUAL AND ITS SAFETY INSTRUCTIONS IS A MISUSE OF THE EQUIPMENT.



SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS

-ATTENTION!

-BECOME ALERT!

-YOUR SAFETY IS INVOLVED!

SIGNAL WORDS: Note the use of the signal words **DANGER**, **WARNING**, and **CAUTION** with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in serious injury or death. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, will result in serious injury or death, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or ROTO-MIX, 2205 E. Wyatt Earp, Dodge City, Kansas, 67801. (Telephone) 620-225-1142 (Fax) 620-225-6370

SAFETY FIRST

REMEMBER: The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury or death.



DO NOT ALLOW PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.



NEVER START MACHINE UNTIL ALL GUARDS AND SAFETY SHIELDS ARE IN PLACE.



DO NOT CLEAN, ADJUST OR LUBRICATE THE MACHINE WHILE IT IS IN MOTION.



BEFORE STARTING TRACTOR ENGINE, BE SURE PTO SHIELDS TURN FREELY.



LOOSE OR FLOPPY CLOTHING SHOULD NOT BE WORN BY THE OPERATOR.

OPERATING PRECAUTIONS & INSTRUCTIONS:

- A. Check to see that no obstructions are present in the mixer prior to start up.
- B. Before loading, run the mixer empty and check all operations.
- C. Do not overload the mixer. Maximum load is 27,500LB. Maximum load is determined by weight, not volume.
- D. Be sure all shields are in place before operation.
- E. Use common sense when operating.



EQUIPMENT SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufactures build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals are indicated in this manual.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.

To prevent injury or death, use a tractor equipped with a Roll Over Protective System (ROPS). Do not paint over, remove or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery, in its ability to do a job, or to do so safely, if in question - **DON'T TRY IT.**



LIGHTING AND MARKING

It is the responsibility of the customer to know the lighting and marking requirements of the local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.



KEEP ALL SHIELDS IN PLACE

Do not operate mixer/feeder without safety shields in place.

Rotating parts can crush or dismember causing personal injury or death.

Disconnect PTO driveline before removing shields for adjustment or service.



OPERATE MIXER/FEEDER SAFELY

Rotating parts can entangle or strike people, resulting in personal injury or death.

Never enter a mixer/feeder while in operation.

Operate the mixer/feeder from the operator's seat only.

Do not exceed load capacity of the mixer/feeder. (See loading instructions).

Reduce speed when turning or traveling on rough terrain.

Avoid traveling over loose fill, rocks, ditches or holes.

Keep transmissions in gear when traveling downhill.



KEEP RIDERS OFF MIXER/FEEDER

Keep riders off.

Riders are subject to injury such as being struck by foreign objects and being thrown off. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.





STAY CLEAR OF ROTATING DRIVELINES

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely.

Wear close fitting clothing. Stop the engine and be sure PTO driveline is stopped before making adjustments, connections, or cleaning out PTO driven equipment .



PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16C (60F)



AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury or death.

Avoid the hazard, relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.





PREPARING TRACTOR FOR TRAILER MIXER

POSITIONING DRAWBAR

IMPORTANT: Drive components can be damaged from excessive speed. Do not operate tractor at speeds in excess of recommended PTO rpm .

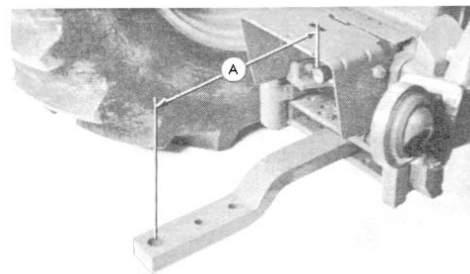
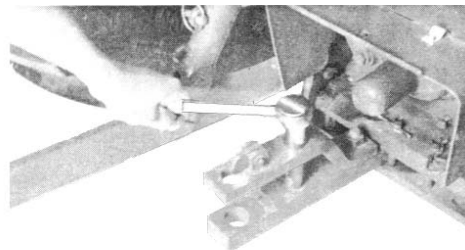
This feed mixer is equipped with a 1000 RPM driveline. Match tractor PTO with the feed mixer driveline.

IMPORTANT: To prevent driveline damage, adjust tractor drawbar to recommended setting. Disengage tractor PTO before turning.

Remove clevis if equipped. Turn offset drawbar down.

Adjust drawbar length:

PTO SPEED	DIMENSION (A)
1000 RPM	16 inches (406 mm)

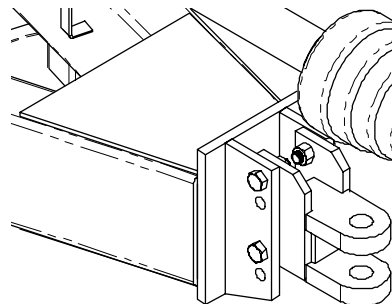


ADJUST TRAILER HITCH CLEVIS

Mixer should be approximately level when attached to tractor.

Adjust clevis by changing hole location on tongue.

Hitch Pin Size — 1" x 7"





SAFETY DECAL CARE

Keep safety decals and signs clean and legible at all times.

Replace safety decals and signs that are missing or have become illegible.

Replaced parts that displayed a safety sign should also display the current sign.

Safety decals or signs are available from your dealer or the ROTO-MIX manufacturing plant.

How to Install Safety Decals:

Be sure that the installation area is clean and dry.

Decide on the exact position before you remove the backing paper.

Remove the smallest portion of the split backing paper.

Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.

Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



IMPORTANT
ALWAYS REDUCE ENGINE SPEED
TO IDLE BEFORE ENGAGING
AND DISENGAGING PTO.
DISENGAGE TRACTOR PTO
BEFORE TURNING.

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REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your dealer or the ROTO-MIX plant.

BEFORE OPERATION:

Carefully study and understand this manual.

Do not wear loose-fitting clothing which may catch in moving parts.

Always wear protective clothing and substantial shoes.

Keep wheel lug nuts or bolts tightened to specified torque.

Assure that agricultural implement tires are inflated evenly.

Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.

Be sure that there are no tools lying on or in the mixer/feeder.

Do not use the unit until you are sure that the area is clear, especially children and animals.

Because it is possible that this mixer/feeder may be used in dry areas or the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.

Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new mixer/feeder.

Practice operation of your mixer/feeder and its attachments. Completely familiarize yourself and other operators with its operation before using.

Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer.

Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the mixer/feeder.



DURING OPERATION:

Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.

NO PASSENGERS ALLOWED - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.

Keep hands and clothing clear of moving parts.

Do not clean, lubricate or adjust your mixer/feeder while it is moving.

Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.

Do not operate near the edge of drop-offs or banks.

Do not operate on steep slopes as overturn may result.

Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

Pick the levellest possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.

Be extra careful when working on inclines.

Periodically clear the equipment of brush, twigs or other materials to prevent buildup of dry combustible materials.

Maneuver the tractor or towing vehicle at safe speeds.

Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.

Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement. Allow for unit length when making turns.

Do not walk or work under raised components or attachments unless securely positioned and blocked.

Keep all bystanders, pets and livestock clear of the work area.

Operate the towing vehicle from the operator's seat only.

Never stand alongside of the unit with engine running. Never attempt to start engine and/or operate machine while standing alongside of unit.



DURING OPERATION (CONT.)

Never leave running mixer/feeder unattended.

As a precaution, always recheck the hardware on mixer/feeder following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.



FOLLOWING OPERATION:

Following operation, or when unhitching, stop the tractor or towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.

Store the unit in an area away from human activity.

Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.

Do not permit children to play on or around the stored unit.

Make sure parked machine is on a hard, level surface and engage all safety devices.

Wheel chocks may be needed to prevent unit from rolling.



HIGHWAY AND TRANSPORT OPERATIONS:

Adopt safe driving practices:

Keep the brake pedals latched together at all times. **Never use independent braking with machine in tow as loss of control and/or upset of unit can result.**

Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.

Reduce speed prior to turns to avoid the risk of overturning.

Avoid sudden uphill turns on steep slopes.

Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.

Do not drink and drive.



HIGHWAY AND TRANSPORT OPERATIONS (CONT.):

Comply with state and local laws governing highway safety and movement of farm machinery on public roads.

Use approved accessory lighting, flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.

The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.

When driving the tractor and mixer/feeder on the road or highway under 20 MPH (40 KPH) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.

Plan your route to avoid heavy traffic.

Be a safe courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.

Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight at which you are operating.

Watch for obstructions overhead and to the side while transporting.

Always operate mixer/feeder in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the mixer/feeder when making turns, stopping the unit, etc.



PERFORMING MAINTENANCE:

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

Make sure there is plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.

Before working on the mixer/feeder, stop the towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.

Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.

Always use a safety support and block the wheels. Never use a jack to support the machine.



PERFORMING MAINTENANCE (CONT.):

Always use the proper tools or equipment for the job at hand.

Use extreme caution when making adjustments.

Never use your hands to locate hydraulic leaks on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.

When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.

Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene can result. Without immediate treatment, serious infection and reactions can occur.

Replace all shields and guards after servicing and before moving.

After servicing, be sure all tools, parts and service equipment are removed.

Do not allow grease or oil to build up on any step or platform.

Never replace hex bolts with less than grade five (5) bolts unless otherwise specified.

Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. ROTO-MIX will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.

If equipment has been altered in any way from original design, ROTO-MIX does not accept any liability for injury or warranty.

A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this mixer/feeder.

READ THE FOLLOWING BEFORE WELDING ON THIS MIXER

When welding on your mixer/feeder, do not allow the current to flow through the ball bearings or the roller chains. Ground directly to the item being welded.

Always disconnect the scale instrumentation from the weigh bars or load cells and the power source. Be sure the current does not pass through weigh bars or load cells or scale indicator. The alternator should always be disconnected if the mixer/feeder is not disconnected from the towing vehicle.

LOADING INSTRUCTIONS & PRECAUTIONS

- A. Visually inspect mixer before each load.
- B. Do not overload the mixer. Mixer capacity is determined by weight. An overloaded mixer will not mix correctly, and will pull harder, which could damage your tractor. **Maximum weight is 27,500 LB.**
- C. Load hay first with machine running: **TRACTOR ABOVE 1000 RPM**
 - 1. First gear if you are using very tender, very fine stemmed hay that breaks apart very easily. First gear allows maximum staple length.
 - 2. Second gear if your using fine stemmed hay. Staple length when using second gear will be longer than third, but shorter than first.
 - 3. Third gear if you are using normal good quality hay. This is the most common loading gear, for most conditions.
 - 4. Forth gear only with very rough, course hay that needs to be cut shorter to increase palatability.

NOTE: Gear selection can be determined by varying tractor throttle.

Adjust restrictor plates (dogs) to fine tune length of cut. Always start with one dog, preferably the rear, engaged one hole and increase until length of cut is correct. **NOTE:** engaging dogs and excessive amount will cause mix quality to deteriorate.

- D. Add balance of grain and/or commodities, keeping more fragile ingredients toward the end of the loading sequence as possible. For best results, add concentrates or other dry ingredients of small quantity as close to the middle of the loading sequence as possible.
- E. Load silage, green chop and/or other high moisture products.
- F. Load molasses, animal fat, and/or other liquid supplements last.
- G. Allow mixer three to four minutes to complete mixing after last ingredient is added. (**NOTE:** this time will vary, and could be longer under certain conditions.)
- H. View mixing operation only from observation platform of mixer. Never allow more than two people on platform at one time.
- I. For best results, off load mixed feed at as high a **RPM** as possible, and with the door as open as possible. The first half of load may be fed off in either third or fourth gear, according to conditions, but the last half must fed off at high RPM, to ensure even feed flow and clean out.

HAY PREPARATION:

SMALL BALES (60 to 150 lbs., 2 or 3 wire), LARGE SQUARE BALES (3' x 4' x 8' or 4' x 4' x 8') and ROUND BALES.

Remove all twine, wire and/or wrapping and load bale in mixer.

1105A TRANSMISSION SERVICE & OPERATION

ALLISON 643 AUTOMATIC TRANSMISSION:

Oil and internal filter should be changed every 1000 hours or 12 months of operation, whichever comes first. External spin on filter should be changed every 500 hours. Fill transmission with approximately 7 gal. of Transmission Fluid.

Recommended oil for ambient temperatures:

60° F to 110° F 30 WT C-4 Spec.

-10° F to 60° F Dextron II Transmission Fluid

Check transmission oil level weekly with transmission running and tractor engine at 1000

RPM: Cold: Oil level to be 1/4" above ADD.

Warm: (160° To 180°) Oil level to be 1/4" above FULL.

NOTE: Transmission temperature is not to exceed 280° F. Consult dealer or manufacturer if temperature exceeds 280° F.

Never idle engine lower than 1000 RPM with transmission engaged and loaded. This will result in rapid heat build up in the transmission system. **NOTE:** Transmission output shaft must always be rotating with PTO engaged.

TRANSMISSION OPERATION:

The ALLISON 643 is a 4 speed automatic transmission with the reverse blocked. The transmission will start in first gear and up shift as engine speed increases. If engine speed decreases, transmission will down shift accordingly.

Transmission can be locked out of 4th gear with T-Cable Control pulled out. This will prevent erratic down shift and up shift between 3rd and 4th gears for marginal H.P. tractors. This will also help prevent over cutting of hay and mixing of rations.

It is advisable to push the T-Cable in to allow the transmission to shift into 4th gear before discharging to ensure more even discharge flow and clean out.

The ALLISON 643 is equipped with a torque converter lock up. Lock up will occur in third gear and stay in lock up mode in third and fourth gears. The torque converter lock up prevents slippage in the converter thus eliminating excess heat in the transmission.

The automatic transmission used is a rebuilt ALLISON 643 with a modified shift point and a rebuilt torque converter. The ALLISON 643 transmission carries a 2 year standard warranty through Roto-Mix.

LUBRICATION CHART

DISENGAGE PTO & SHUT OFF POWER BEFORE LUBRICATING THE MACHINE.

LOOSE OR FLOPPY CLOTHING SHOULD NOT BE WORN BY THE OPERATOR.

GEARBOX: Grease 20-30 pumps every 400 hours (each gearbox). Located on bottom of gearbox reservoir.

PTO SHAFTS & U-JOINTS: Grease every 10 to 20 hours.

IT IS RECOMMENDED THAT ALL TRUCK HYDRAULIC RESERVOIRS USE AUTOMATIC TRANSMISSION FLUID.

All reservoirs should be changed every 1000 hours or every year, whichever comes first. Approximate volume is 25 gal. All filters should be changed the first 100 hours then every 500 hours or with every fluid change. 10 micron filter elements are recommended. The reservoir should be checked daily for proper fluid level. Visually check daily for any fluid leakage.

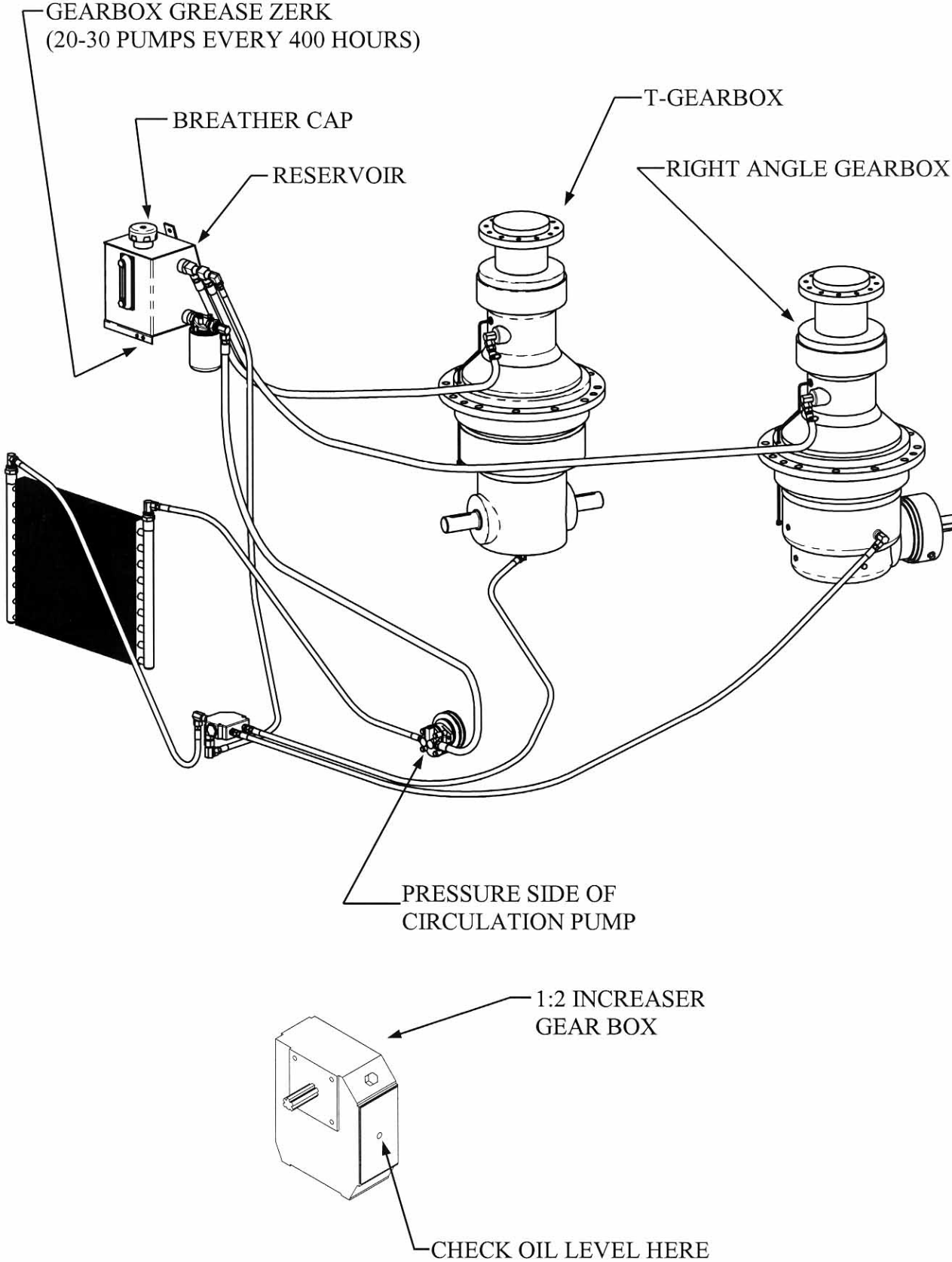
GEARBOXES: After the first 100 hours of operation, drain initial oil, preferably when box is warm. Flush out the gear case with an approved non-flammable, non toxic solvent and refill with oil. Thereafter oil should be changed every 2000 hours or 12 months, whichever comes first. If machine usage is severe or more than 10 loads per day, it is advisable to change the oil every 1000 hours or 6 months. Inspect and wash oil reservoir breather cap as needed. Air dry before reinstalling. Fill each gearbox with approximately 5 1/2 gallon of EP 90 weight Gear Lube.

PROCEDURE FOR FILLING GEARBOX: Remove pressure side oil line from circulation pump and attach to oil supply pump. Pressure oil in gear box until oil starts to show in bottom of sight gauge on oil reservoir. Reconnect oil line to circulation pump. Fill reservoir to center of sight gauge, run unit and add oil up to center of sight gauge if needed. Check daily, oil level must always be visible in sight gauge. **Note: Do not fill gearbox through oil reservoir.**

1:2 INCREASER GEARBOX: After the first 100 hours of operation, drain initial oil, preferably when box is warm. Flush out the gear case with an approved non-flammable, non toxic solvent and refill with oil. Thereafter oil should be changed every 2000 hours or 12 months, whichever comes first. Fill the gear box to sight plug with approximately 7 pints of, **NOTE: (Synthetic Gear Lube 75W-90).**

RECOMMENDATION: It is advisable to check the oil level of gearboxes at least once a month. If more than 10% of the total oil capacity has to be added, check for oil leaks.

1105A OIL CHANGE DIAGRAM



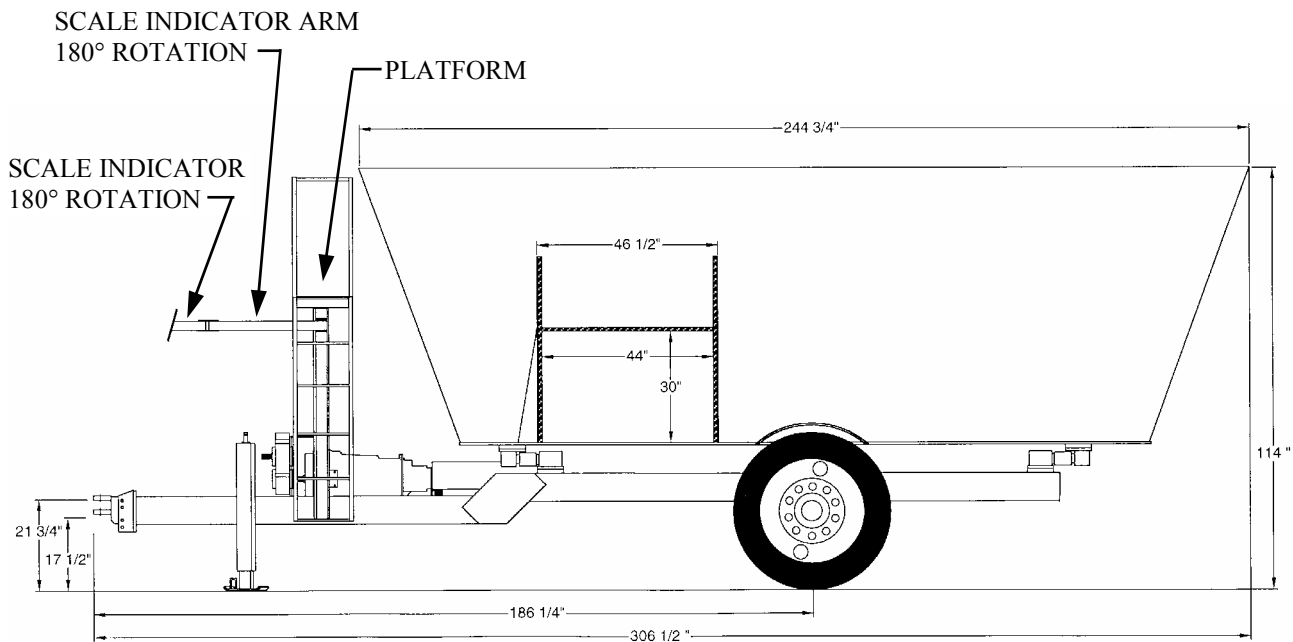
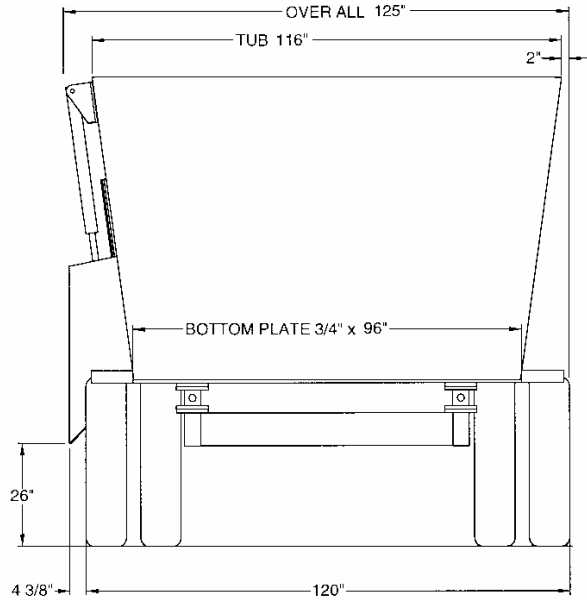
1105A TRAILER DIMENSIONS

HEIGHT DIMENSIONS BASED
ON A 42" O.D. TIRE 11R x 22.5"

WEIGHT (NO EXTENSIONS) - 17,100 LB.

TRANSMISSION – ALLISON MT643
PTO –1000 RPM = 38 AUGER REVOLUTIONS

MAXIMUM LOAD BY WEIGHT: 27,500 LBS



All Dimensions & Specifications are Approximate and Subject to Change Without Notice.

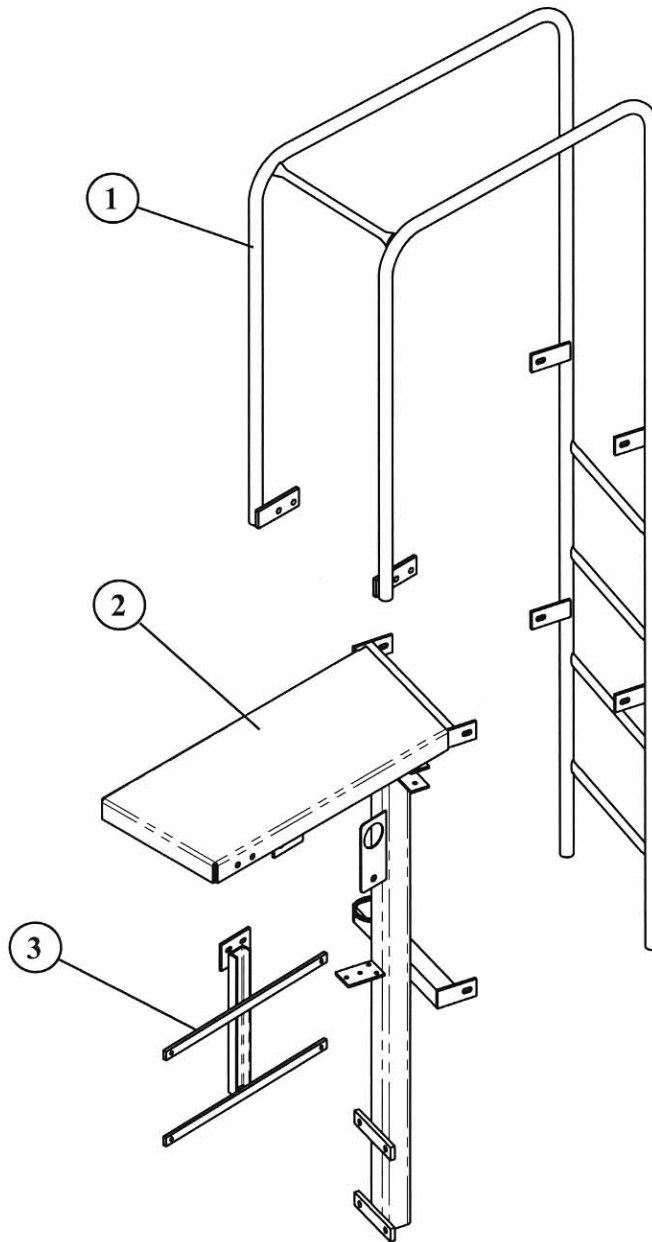
1105A TWIN VERTICAL FEATURES & SPECIFICATIONS

WEIGHT, Trailer Model (lbs)	17,100 LB
WEIGHT, 8" END-CAP EXTENSIONS	150 LB
OVERALL LENGTH, Including Trailer.....	306 1/2"
OVERALL WIDTH.....	125"
TRANSPORT WIDTH, Door Parts Removed	120"
HEIGHT ON TRAILER, 11R x 22.5" Tires	114"
TRANSMISSION MAKE/MODEL	ALLISON MT643
TRANSMISSION SPEEDS.....	4
TRACTOR PTO SPEED	1,000
MINIMUM HORSEPOWER REQUIRED	110
RECOMMENDED HORSEPOWER	140-150
MIXING CAPACITY, cu. ft.	1,100
MIXING CAPACITY, Bushels.....	880
MAXIMUM LBS., With Heavy Ration	27,500
TIRES - SIZE.....	11R x 22.5"
TIRES, O.D.....	42"
TORQUE CONVERTER EQUIPPED	YES
DISCHARGE MAGNETS	2 @ 5 1/2" x 22"
SCREW SPEEDS @ RATED ENGINE RPM	12 TO 38
LOADING HEIGHT WITH EXTENSIONS	114"
LOADING HEIGHT WITHOUT EXTENSIONS	114"

REPAIR PARTS TABLE OF CONTENTS

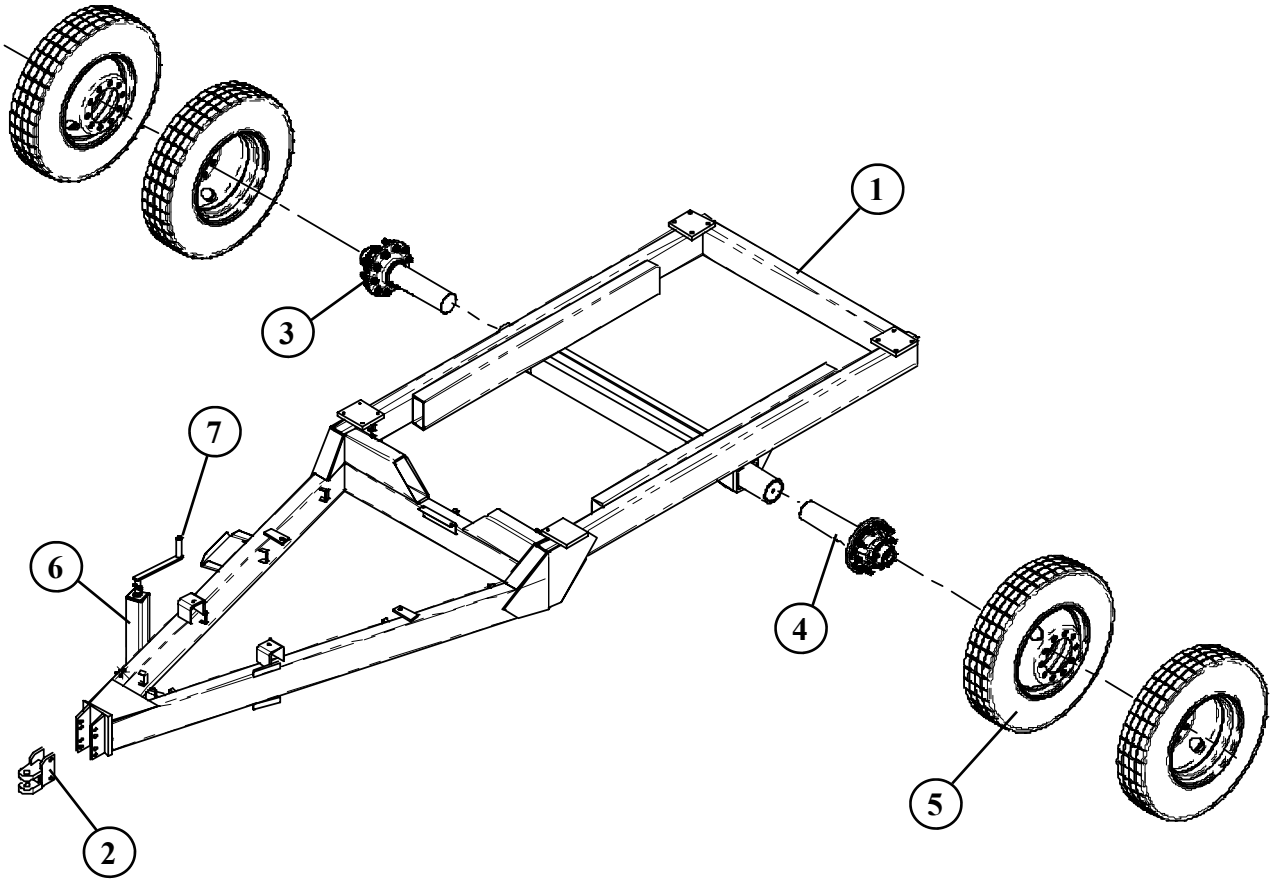
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1105A PLATFORM ASSEMBLY



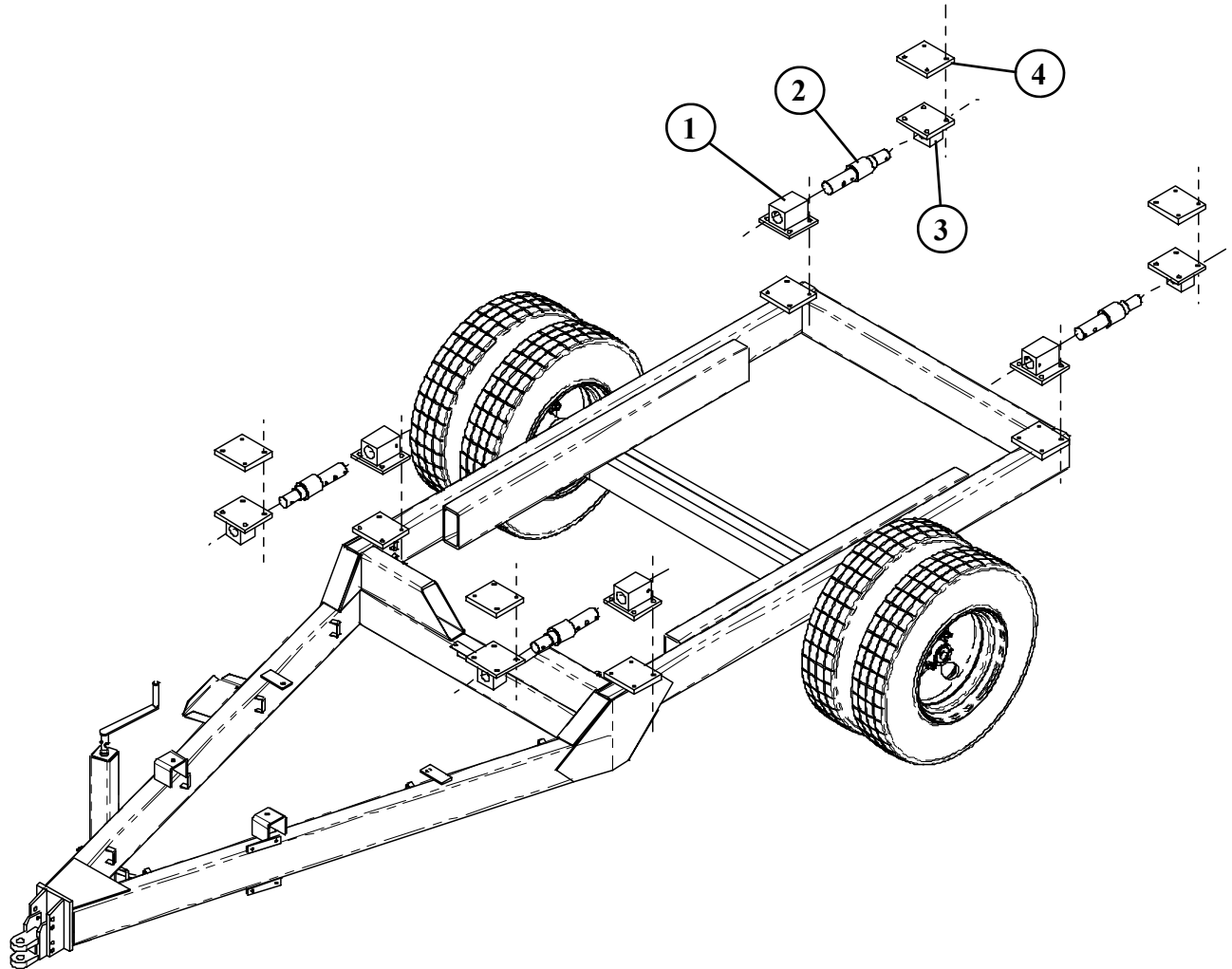
REF. NO	PART NO.	DESCRIPTION	QTY.
1	860295	LADDER & RAILING W.A.	1
2	860280	PLATFORM-TUBE W.A.	1
3	860208	COOLER HANGER W.A.	1

1105A TRAILER ASSEMBLY



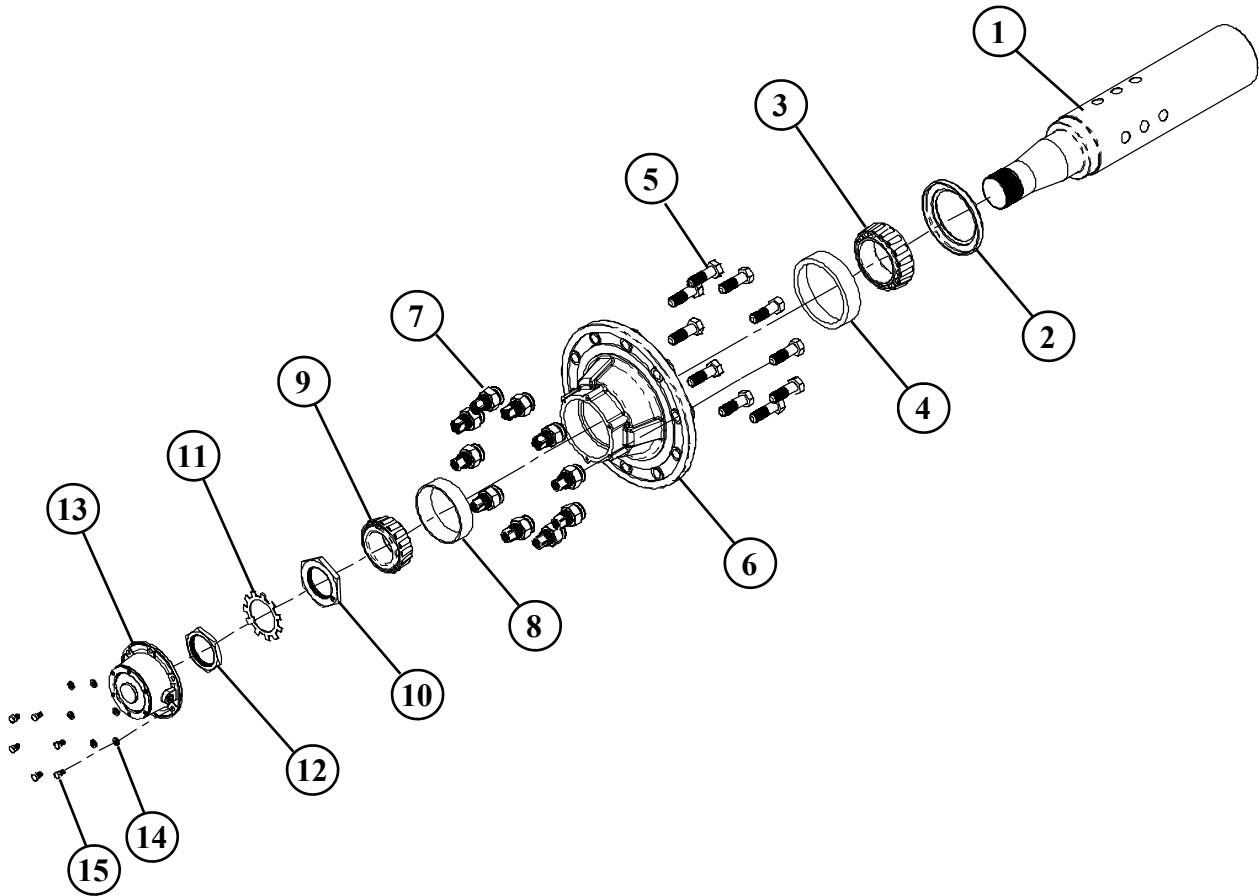
REF. NO	PART NO.	DESCRIPTION	QTY.
1	860289	1105A VERTICAL TRAILER.....	1
2	872094	TRAILER CLEVIS	1
3	750110	20,000# - RIGHT HAND 10 BOLT HUB KIT.....	1
4	750111	20,000# - LEFT HAND 10 BOLT HUB KIT.....	1
5	760106	11R x 22.5" M&S TIRE & WHEEL ASSY	4
6	374001	DROP LEG JACK 9 TON THURSTON.....	1
7	781051	JACK HANDLE ASSY THURSTON.....	1

1105A TRAILER SCALE FRAME ASSEMBLY



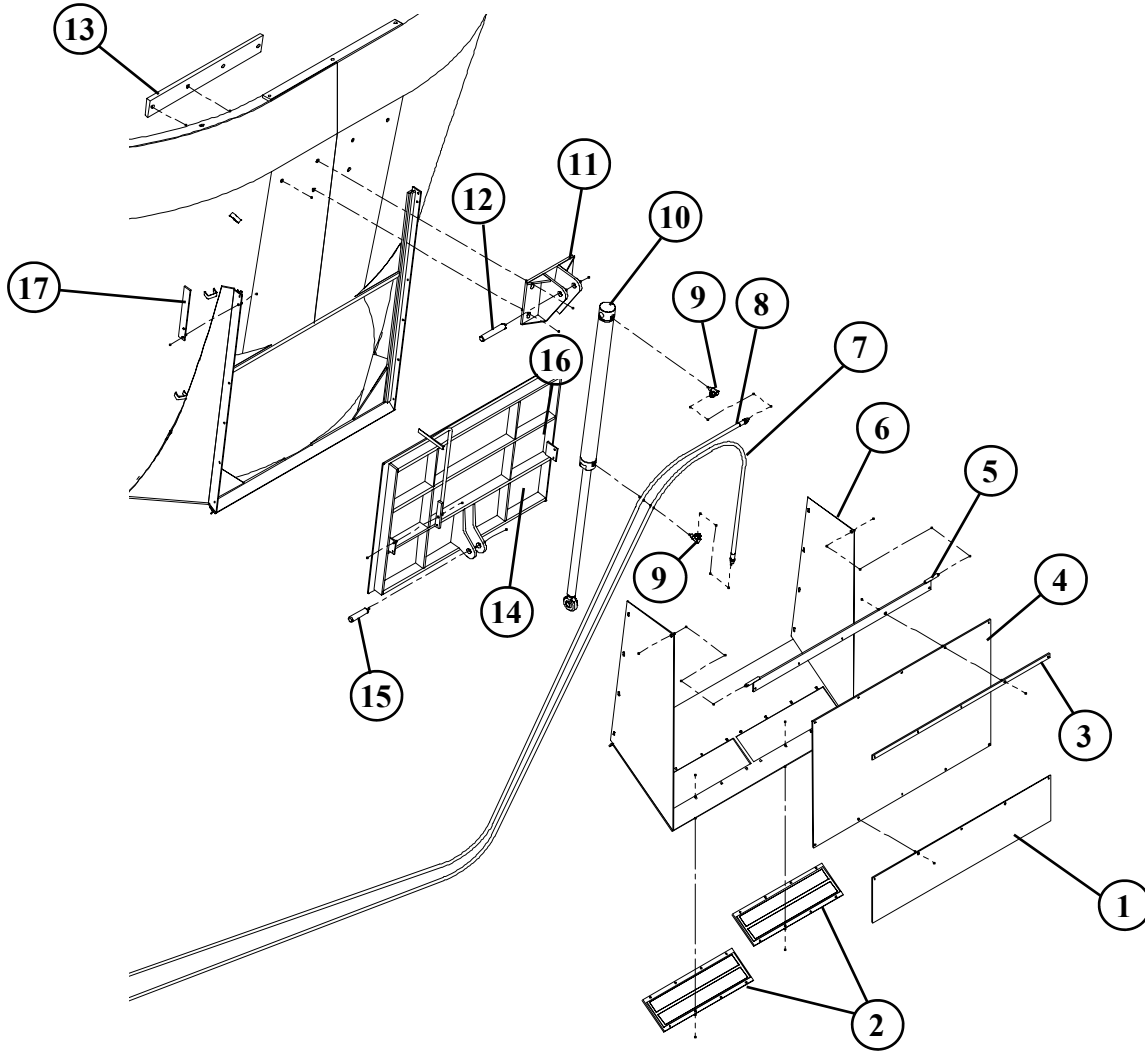
REF. NO	PART NO.	DESCRIPTION	QTY.
1	860055	2 1/2" BAR BLOCK.....	4
2	450824	WEIGH BAR 2 1/2" 1/2 OF 1%.....	4
3	860054	2 1/2" BAR END BLOCK.....	4
4	160016	SCALE PAD 7 1/8" x 7 7/8".....	4

1105A TRAILER SPINDLE & HUB ASSEMBLY



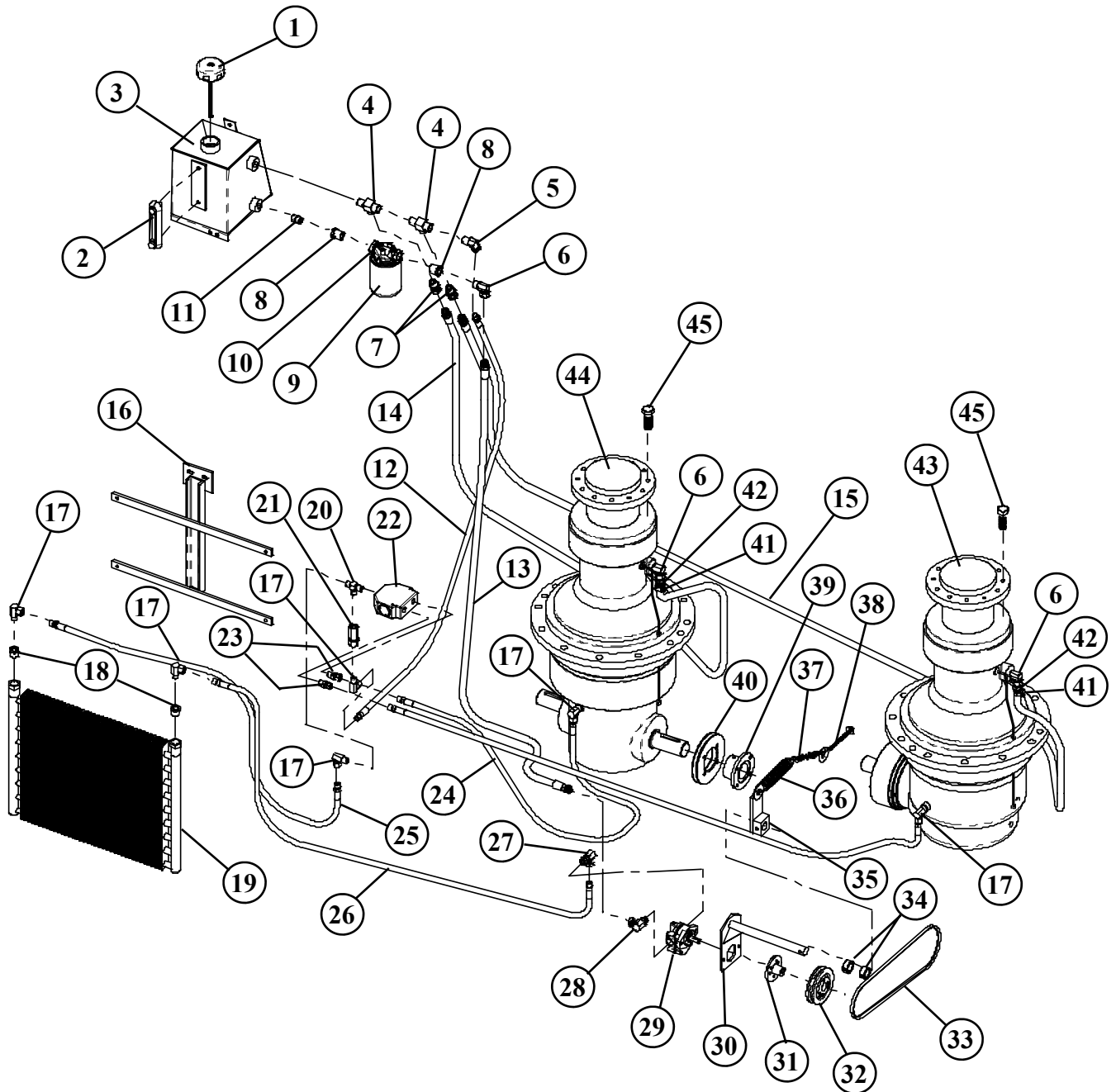
REF. NO	PART NO.	DESCRIPTION	QTY.
1	184614	20,000# SPINDLE	2
2	372304	SEAL 4 3/8" BORE, STEMCO #372-7097	4
3	342213	INNER BEARING 3.543" BORE, HM218248.....	4
4	342215	INNER BEARING RACE 5.787"OD, HM218210.....	4
5	407724	3/4" x 2 9/16" STUD BOLT, RIGHT HAND	20
	407725	3/4" x 2 9/16" STUD BOLT, LEFT HAND.....	20
6	372212	10 BOLT HUB, 20,000#.....	4
7	400111	LEFT HAND INNER THIMBLE & OUTER LUG NUT.....	10
	400112	RIGHT HAND INNER THIMBLE & OUTER LUG NUT.....	10
8	342216	OUTSIDE BEARING RACE 4 13/16" OD, HM212011	4
9	342214	OUTSIDE BEARING 2 5/8" OD, HM212049.....	4
10	400034	INNER NUT, 3/8" THICK x 2 5/8" ID.....	4
11	402904	WASHER, 1/4" THICK x 2 41/64" ID	4
12	400033	OUTER NUT, 3/8" THICK x 2 5/8" ID.....	4
13	372309	DUST CAP, 20,000# HUB, STEMCO 343-4009	4
14	402005	WASHER, 5/16" MED, LOCK.....	24
15	405625	HHCS 5/16" x 1/2", #5 PLATED.....	24

1105A TRAILER SIDE DISCHARGE DOOR ASSEMBLY



REF. NO	PART NO.	DESCRIPTION	QTY.
1	160992	BELT DISCHARGE PLATE 10" x 45 1/2".....	1
2	375005	MAGNET AM 2200 ARCO PLATE	2
3	160861	BELT HINGE CLAMP 45 1/2"	1
4	160862	BELT SKIRT 28" x 45 1/2"	1
5	860258	BELT HINGE W. A.	1
6	860294	MAGNET SKIRT BOTTOM W. A.	1
7	781364	HYDRAULIC HOSE ASSY 3/8" x 348", 3/8"MP x 1/2"MP	1
8	781363	HYDRAULIC HOSE ASSY 3/8" x 312", 3/8"MP x 1/2"MP	1
9	368030	ADAPTER, 9/16" MOR x 3/8" FP, 90° SWIVEL	2
10	760049	DISCHARGE DOOR CYLINDER ASSY	1
11	860203	HYD CYLINDER BRACKET W. A.	1
12	160619	CYLINDER PIN 5 7/8"	1
13	160710	SUPPORT BAR 29"	1
14	860257	DISCHARGE DOOR W. A.	1
15	160620	CYLINDER PIN 4 1/4"	1
16	860218	DOOR MARKER W. A.	1
17	160759	DOOR MARKER PLATE 12"	1

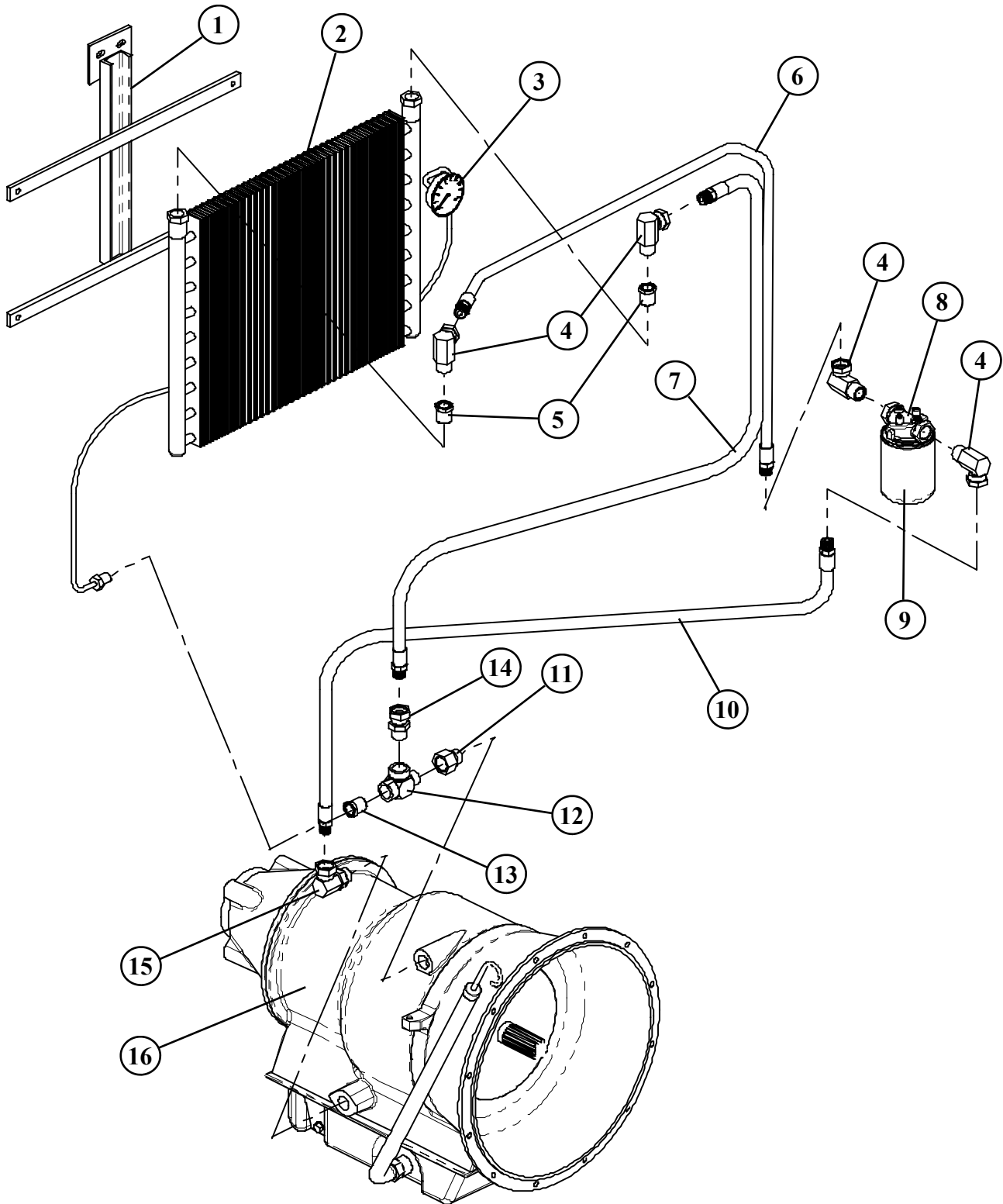
1105A GEARBOX HYDRAULIC SYSTEM



1105A GEARBOX HYDRAULIC SYSTEM

REF. NO	PART NO.	DESCRIPTION	QTY.
1	362549	TANK BREATHER NBF-2016 8" DIP STICK.....	1
2	362555	5" SIGHT GUAGE	1
3	860064	GEAR BOX RESERVOIR W.A.....	1
4	368608	ADAPTER TEE, 1/2"MP x (2) 1/2"FP	7
5	368028	ADAPTER, 1/2"MP x 3/8"FP, 90° SWIVEL.....	1
6	368031	ADAPTER, 1/2"MP x 1/2"FP, 90° SWIVEL.....	3
7	368111	ADAPTER, STRAIGHT 1/2"MP x 1/2"FP, SWIVEL.....	2
8	310818	BUSHING 3/4"MP x 1/2"FP	2
9	362440	FILTER ELEMENT, 3/4", AE-10	1
10	362403	FILTER HEAD, 3/4"	1
11	368642	HEX NIPPLE, 1/2"MP x 1/2"MP.....	1
12	781067	HYD. HOSE ASSY. 3/8" x 60", 3/8"MP x 3/8"MP.....	1
13	781368	HYD. HOSE ASSY. 1/2" x 73", 1/2"MP x 1/2" MP.....	1
14	781387	HYD. HOSE ASSY. 1/2" x 87", (1) 3/4"MP.....	1
15	781386	HYD. HOSE ASSY. 1/2" x 174", (1) 1/2"MP.....	1
16	860208	COOLER HANGER W.A.....	1
17	368020	ADAPTER, 3/8"MP x 3/8"FP, 90° SWIVEL.....	6
18	368612	BUSHING, 3/4"MP x 3/8"FP, STEEL	2
19	362578	HYD. OIL COOLER, HAYDEN 1290.....	1
20	368604	ADAPTER, TEE 3/8"FP x (2) 3/8"MP.....	1
21	362231	CHECK VALVE, 3/8"FP x 3/8"FP, 25 PSI	1
22	362289	FLOW DIVIDER VALVE, PRINCE HYD.....	1
23	368110	ADAPTER, 3/8"MP x 3/8"FP, STRAIGHT, SWIVEL.....	2
24	781317	HYD. HOSE ASSY. 3/8" x 48", 3/8"MP x 3/8"MP.....	1
25	781075	HYD. HOSE ASSY. 3/8" x 180", 3/8"MP x 3/8"MP.....	1
26	781307	HYD. HOSE ASSY. 3/8" x 154", 3/8"MP x 3/8"MP.....	1
27	368047	ADAPTER, 7/8"MOR x 1/2"FP, 90° SWIVEL.....	1
28	368040	ADAPTER, 3/4"MOR x 3/8"FP, 90° SWIVEL.....	1
29	362010	PUMP, PARKER d05AA1A C C W.....	1
30	872138	PUMP SWING ARM W.A.	1
31	336009	BUSHING, SDS 1/2" QD	1
32	324046	BELT SHEAVE, 1B x 4.6 SDS	1
33	325033	V-BELT, AX-33.....	1
34	412416	SET COLLAR, PLT'D 1"	2
35	860301	CIRCULATION PUMP LEVER ARM W.A.	1
36	410008	SPRING-PULL, 1 1/4" x 5 1/4" x .188".....	1
37	185562	CHAIN, 2/0 x 22 1/2	1
38	410851	EYE BOLT 3/8" x 6" x 3/4" x 7 1/2" x 4".....	1
39	338414	COMP FLANGE 1350 48mm x 14mm Key x 4.5mm DEEP.....	1
40	160852	DRIVE FLANGE PULLEY, 1350, 6 1/4"	1
41	412360	CLAMP, 1-1/4 RUBBER HOSE	2
42	367088	HOSE STEM, 1/2" x 1/2"MP	2
43	344124	GEAROX, RPRC3250/MN/52.4/48x	1
44	344125	GEARBOX, RPR2255/MNFR/RA55/9.....	1
45	407811	HHCS 20mm x 60mm - 10.9 METRIC	24

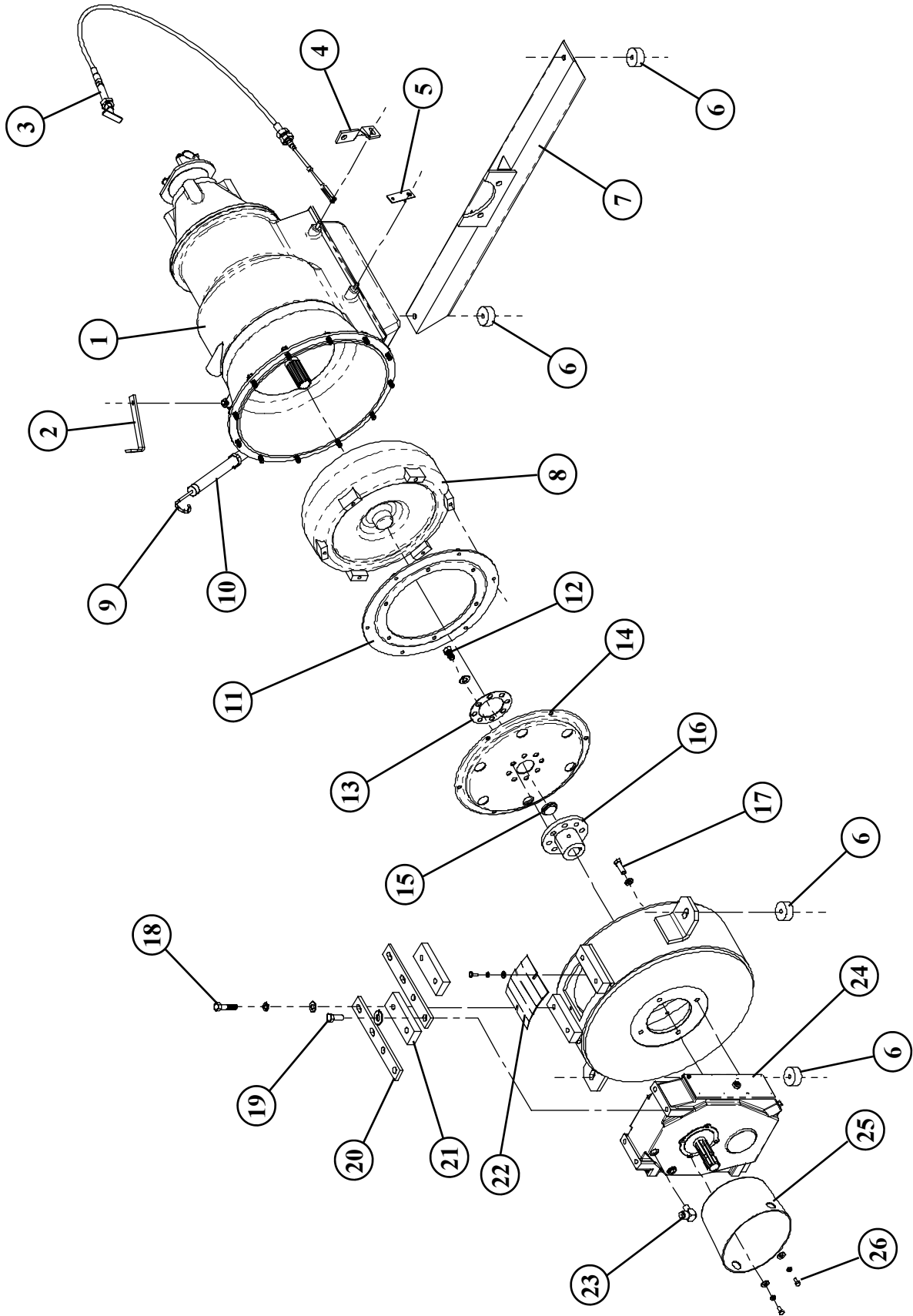
1105A TRANSMISSION COOLER ASSEMBLY



1105A TRANSMISSION COOLER ASSEMBLY

REF. NO	PART NO.	DESCRIPTION	QTY.
1	680208	COOLER HANGER W.A.	1
2	362576	TRANSMISSION COOLER, HAYDEN 1292	1
3	352560	OIL TEMPERATURE GAUGE, 82410-60"	1
4	368042	ADAPTER, 3/4"MP x 3/4"FP, 90° SWIVEL	4
5	368670	BRASS REDUCER, 1"MP x 3/4"FP	2
6	781347	HYD. HOSE ASSY. 3/4" x 48", 3/4"MP x 3/4"MP	1
7	781349	HYD. HOSE ASSY. 3/4" x 60", 3/4"MP x 3/4MP	1
8	362403	FILTER HEAD 3/4"	1
9	362440	FILTER ELEMENT, AE-10.	1
10	781348	HYD. HOSE ASSY. 3/4" x 35", 3/4"MP x 3/4"MP	1
11	368127	ADAPTER, 1 1/16" MOR x 3/4"FP, STRAIGHT	1
12	368616	ADAPTER, 3/4"MP x (2)3/4"FP, TEE	1
13	310818	BUSHING, 3/4"MP x 1/2"FP.	1
14	368117	ADAPTER, 3/4"MP x 3/4"FP, STRAIGHT SWIVEL	1
15	368057	ADAPTER, 1 1/16" MOR x 3/4"FP, 90° SWIVEL	1
16	344127	MT 643 REBUILT TRANSMISSION	1

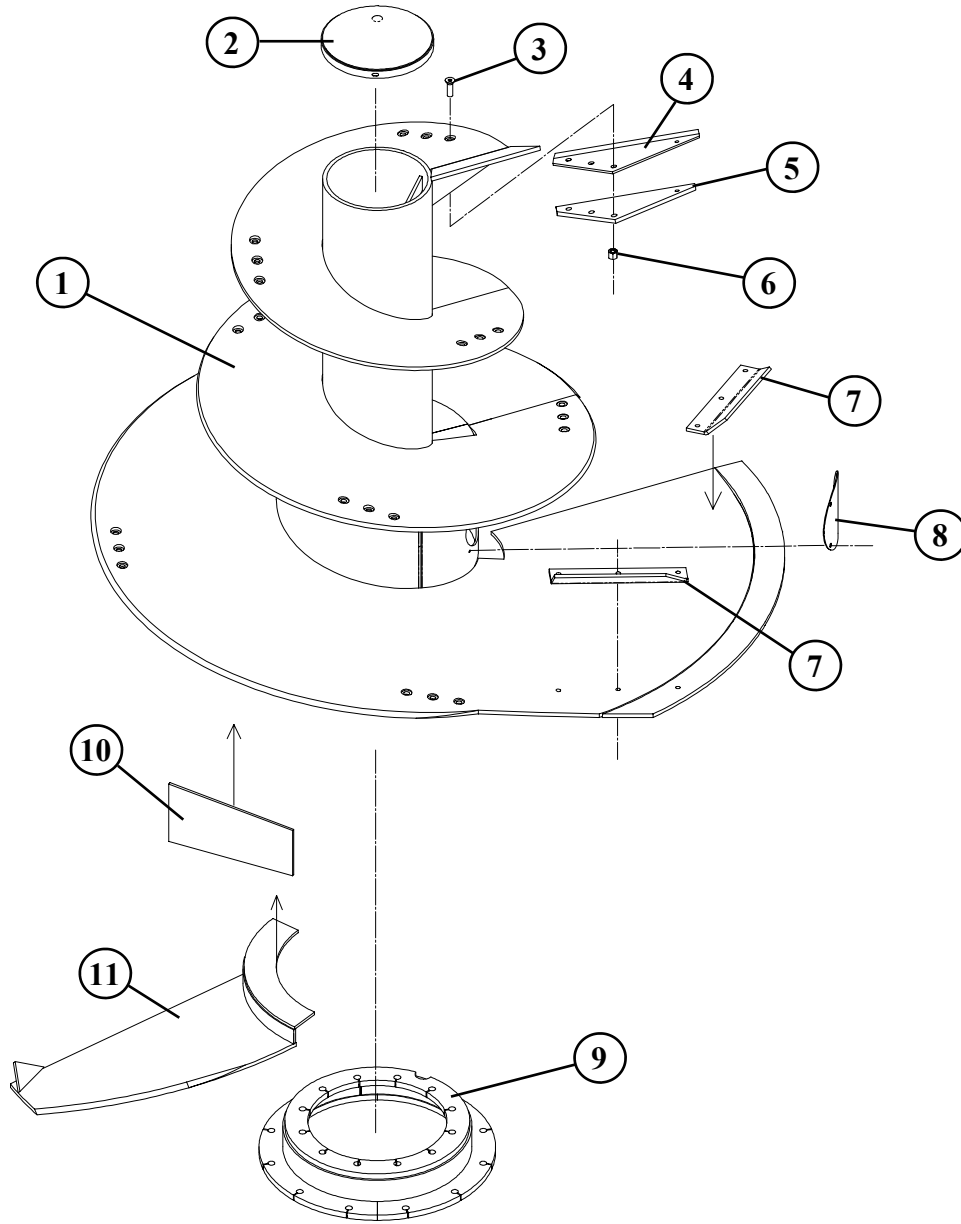
1105A TRANSMISSION ASSEMBLY



1105A TRANSMISSION ASSEMBLY

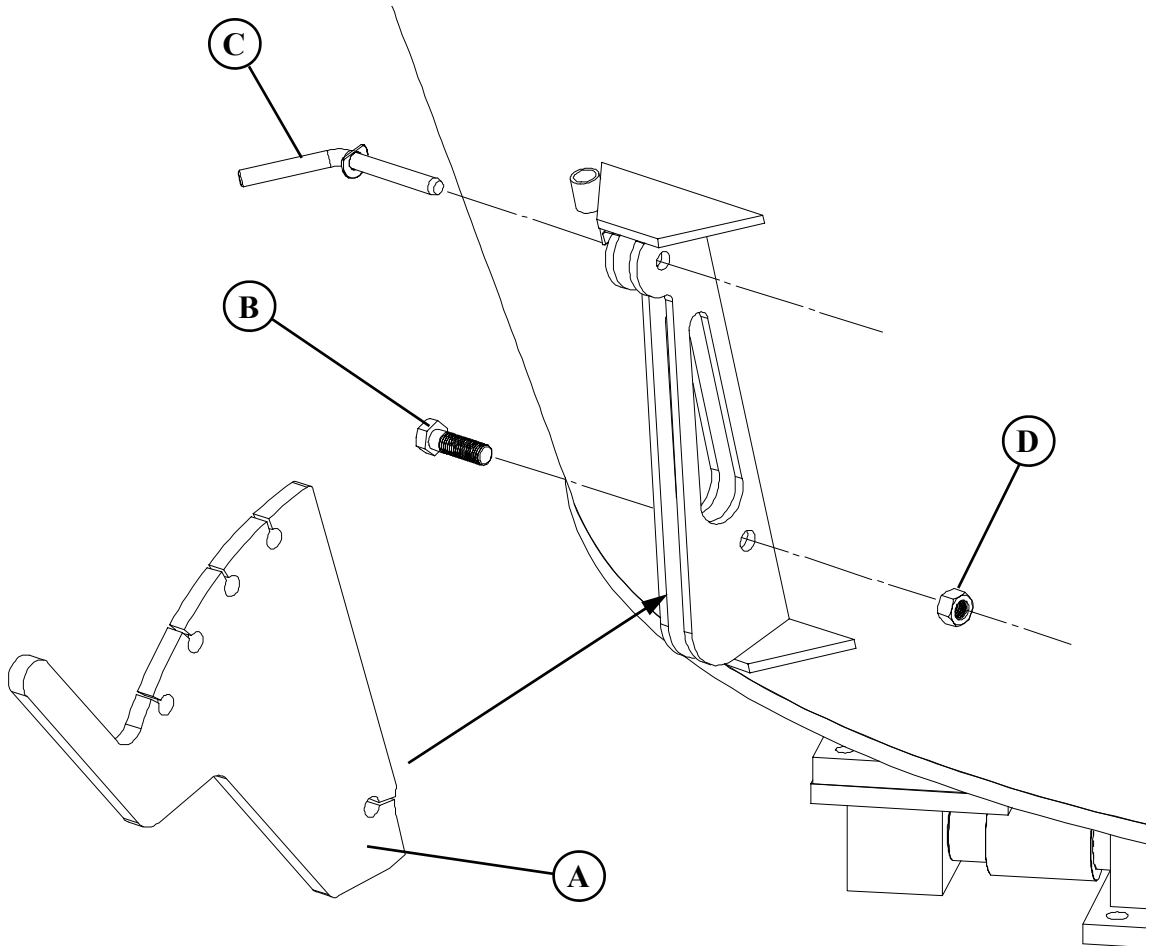
1105A TRANSMISSION ASSEMBLY			
REF. NO	PART NO.	DESCRIPTION	QTY.
1	344127	MT 643 REBUILT TRANSMISSION	1
2	160278	DIPSTICK BRACE	1
3	370305	6' T-LOCK CABLE WITH 1/4" CLEVIS	1
4	160290	SHIFTER CABLE BRACKET 2 1/2"	1
5	344112	TRANSMISSION SHIFT LEVER—D2T2-7A257A	1
6	351990	TRANSMISSION MOUNT GROMMET 2-2123	4
7	860297	643 TAIL SUPPORT W.A.	1
8	344129	643 TORQUE CONVERTER	1
9	344104	TRANSMISSION DIP STICK D2727A020A	1
10	344105	TRANSMISSION DIP STICK TUBE D2727A228A	1
11	344108	643 ADAPTOR RING	1
12	405725	HHCS 9/16" -12 x 1"	8
13	344103	TRANSMISSION SUPPORT RING	1
14	344101	TRANSMISSION FLEX PLATE	1
15	160989	TRANSMISSION CONVERTER SPACER	1
16	860092	CONVERTER PLATE W.A.	1
17	407808	HHCS 12mm x 35mm PRP CLS 8.8	4
18	405706	HHCS 1/2" -13 x 2 1/4" GRD 5	4
19	407807	HHCS 14mm x 35mm PRP CLS 8.8	4
20	160261	GEARBOX BRACKET 1"	2
21	161009	HOUSING SPACER BAR 5 3/4"	2
22	160264	HOUSING COVER 5 1/2" x 5 1/2"	1
23	368603	ADAPTER, 3/8"MP x 3/8"/FP, 90°	1
24	344004	GEARBOX 1:2 R&R GP AP202, 1 3/8" output, 35mm input	1
25	338485	DRIVELINE BELL GUARD 043668	1
26	407804	HHCS 8mm x 16mm PRP CLS 8.8	2

1105A AUGER ASSEMBLY



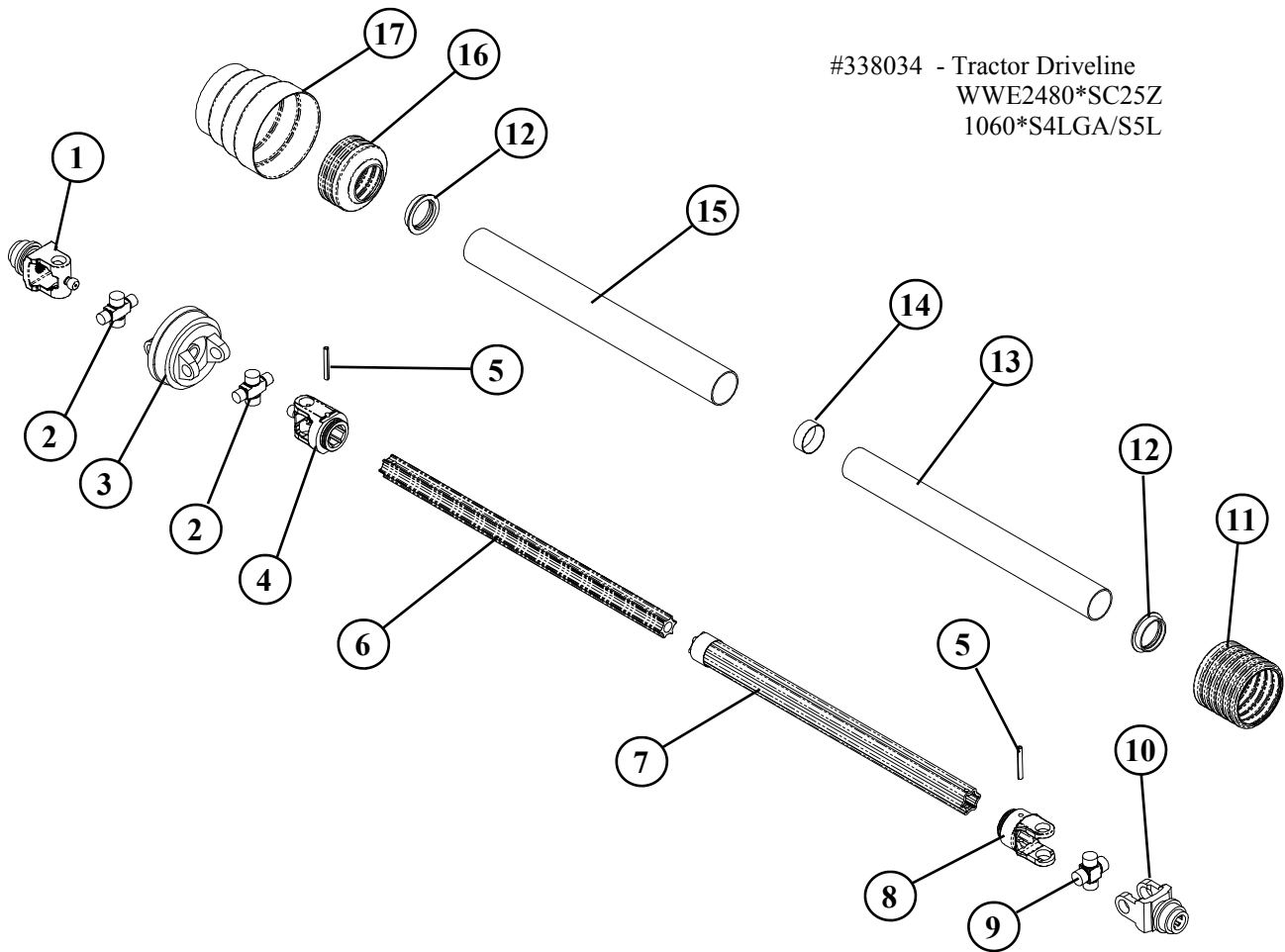
REF. NO	PART NO.	DESCRIPTION	QTY.
1	860274	1105 AUGER W.A.....	1
2	860276	AUGER TUBE CAP W.A.....	1
3	407564	SOCKET FLAT HEAD CS 5/8"-11 x 2 1/2"	27
4	385007	KNIFE.....	9
5	160076	KNIFE BACKUP.....	9
6	401110	NUT 5/8"-11 HEX NYLOCK.....	27
7	160761	VERTICLAL AUGER KICKER.....	2
8	160559	AUGER SKIRT COVER.....	1
9	860270	GEARBOX FLANGE W.A.....	1
10	160997	WING GUSSET	1
11	860303	AUGER WING KICKER W.A.....	1

1105A TRAILER RESTRICTOR PLATE ASSEMBLY



REF. NO	PART NO.	DESCRIPTION	QTY.
1	660058	VERTICAL KNIFE KIT (INCLUDES A,B,C,D).....	1
A	860047	VERTICAL KNIFE	2
B	405781	3/4"-10 x 2 1/2" HHCS #5 PLTD.....	2
C	860044	LOCK PIN W.A.....	2
D	400912	3/4"-10 HEX CENTER LOCKNUT	2

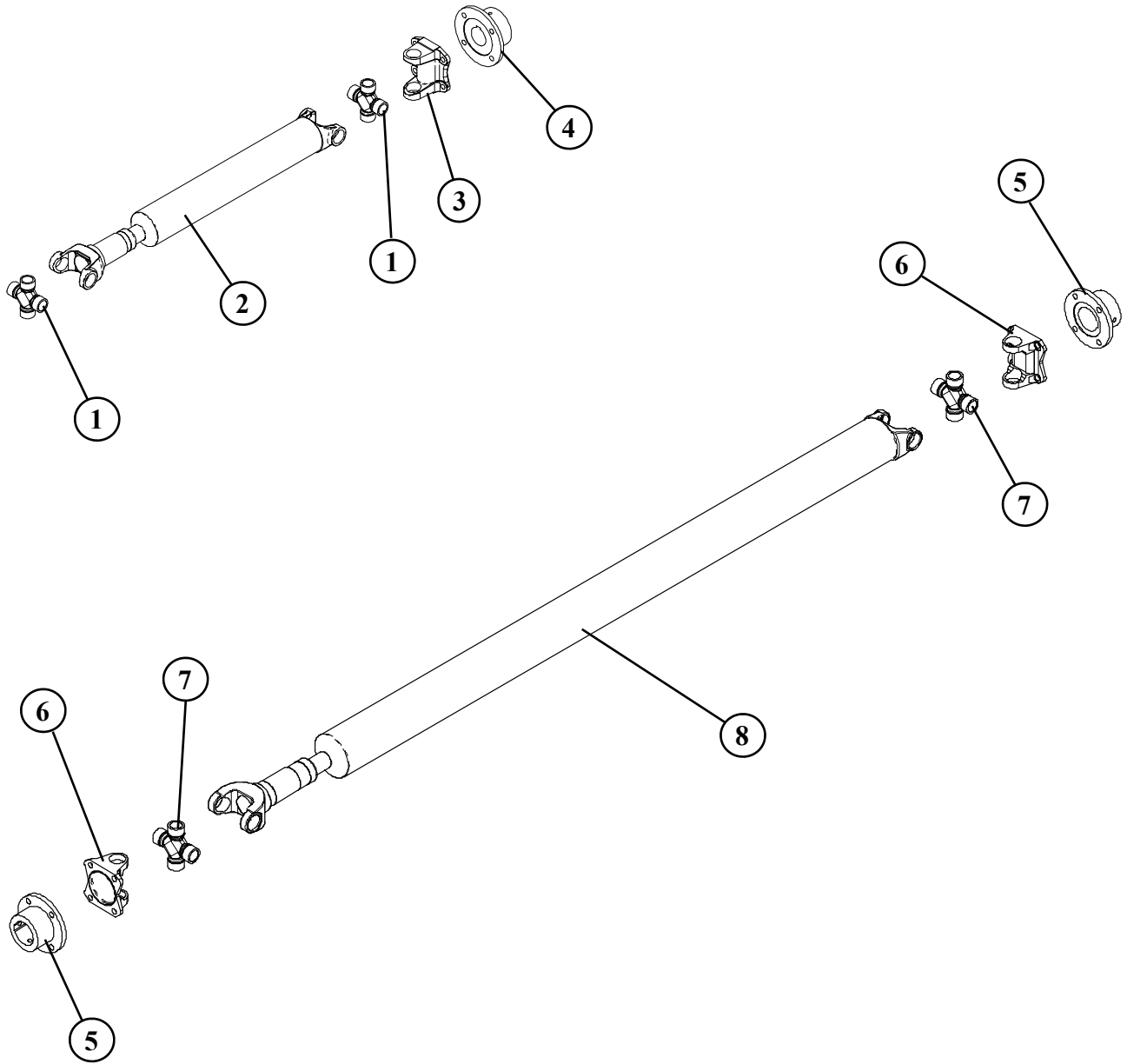
1105A TRAILER TO TRACTOR DRIVELINE



#338034 - Tractor Driveline
WWE2480*SC25Z
1060*S4LGA/S5L

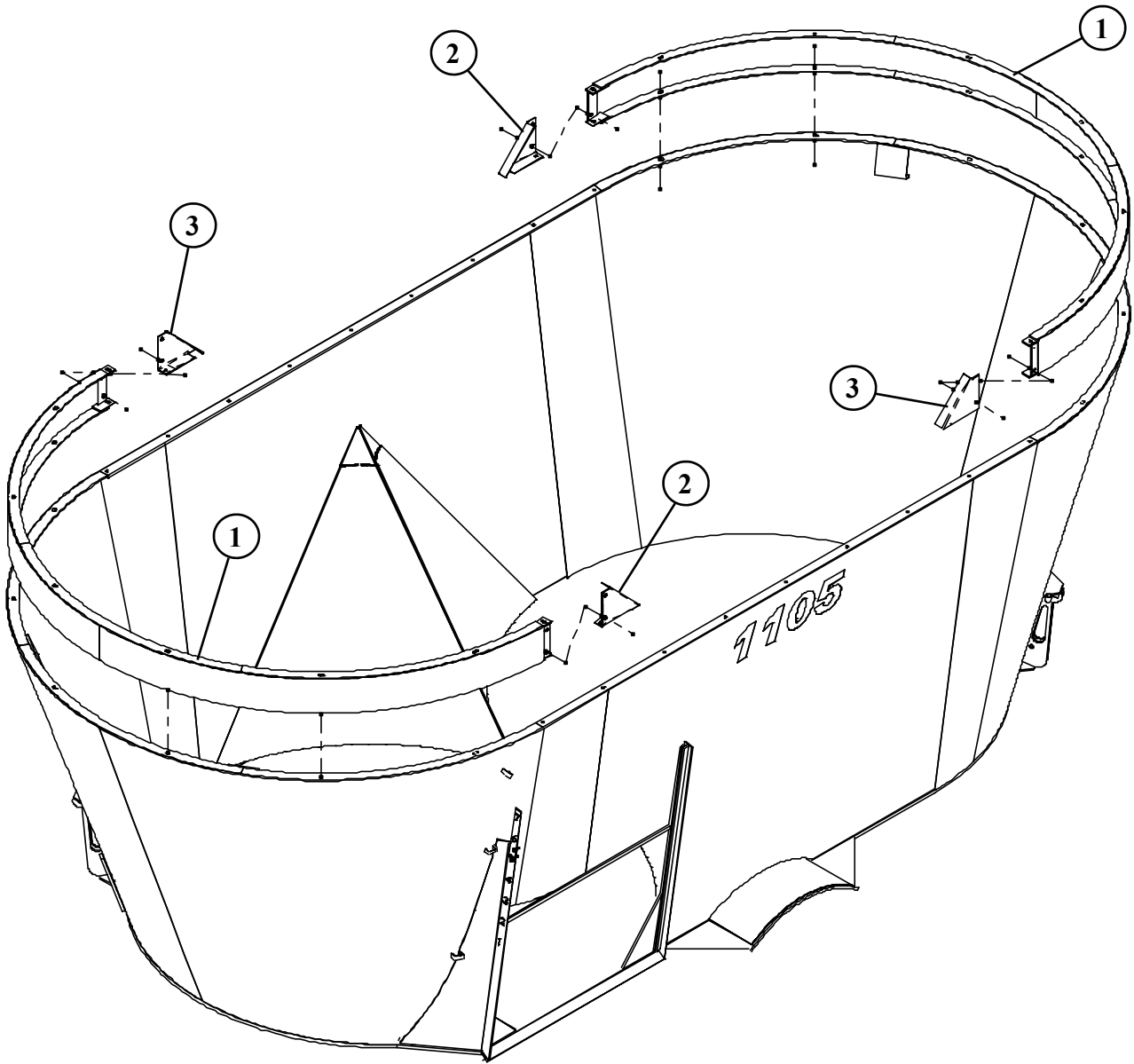
REF. NO	PART NO.	DESCRIPTION	QTY.
1	338483	YOKE, 1 3/8"-21 SPLINE, 1000 RPM, W-2400 CVC, 380883	1
2	338470	CVC CROSS & BEARING KIT, W-2400, 342221	2
3	338469	YOKE, DOUBLE CVC, W-2400, 365722	1
4	338563	YOKE, STAR INBOARD, PRS4-SC25, W2480, 161287	1
5	338473	ROLL PIN, #10 METRIC	2
6	338542	INNER PROFILE S4LGA, 102336	1
7	338543	OUTTER PROFILE & SLEEVE W.A., 393351	1
8	338562	YOKE, INBOARD, W2400, PRS5-SC25, 356906	1
9	338443	CROSS & BEARING KIT, W-2400, 312410	1
10	338507	YOKE, 1 3/8"-6 SPLINE AS, WWE-2480, 380907	1
11	338486	CVC SHEILD CONE, 6 RIB, W-2400, 365366	2
12	338489	BEARING RING SC 25, W-2400, 087276	1
13	338509	INNER SHIELD TUBE ROUND, WWE-2480, 383868	1
14	338503	CVC SUPPORT BEARING, W-2400, 355155	1
15	338556	OUTER SHEILD TUBE OVAL, 338753	1
16	338502	CVC SHEILD CONE, 3 RIB, W-2400, 160012	1
17	338501	CV CONE & BEARING ASSEMBLY, W-2400, 386164	1

1105A GEARBOX DRIVELINES



REF. NO	PART NO.	DESCRIPTION	QTY.
1	338437	CROSS KIT, SPICER 1480 5-188X.....	2
2	338017	DRIVE LINE 1480, 32 1/2" C-C (INCLUDES (2) #1).....	1
3	338434	FLANGE YOKE, 1480, 3-2-479	1
4	338433	COMPRESSION FLANGE, 1480, 48mm x 14mm KEY	1
5	338414	COMPRESSION FLANGE, 1350, 48mm x 14mm KEY	2
6	338429	FLANGE YOKE, SPICER 1350, 3-2-119.....	2
7	338436	CROSS KIT, SPICER 1350 5-17X.....	2
8	338018	DRIVE LINE 1350, 67 1/2" C-C (INCLUDES (2) #7).....	1

1105A 8" EXTENSION



REF. NO	PART NO.	DESCRIPTION	QTY.
1	860285	8" END EXTENSION W.A.	2
2	160974	LEFT CORNER END EXTENSION	2
3	160975	RIGHT CORNER END EXTENSION	2

