

Identifier:

MIX-N-GO

Revision:

5.2

Effective Date:

1/27/20

Document Catalog Number: **ET-BMX-100/250/450/600**

Author: Robert Leib



MIX-N-GO BMX-100/250/450/600



Eterra, LLC.
A Skid Steer Solutions, Inc. Company
Bellingham, Washington

U S A

www.etterra-usa.com

User Manual

For information and customer support – speak with your dealer or visit our website www.etterra-usa.com

Copyright © 2020 [Skid Steer Solutions, INC. & Eterra LLC.].

All rights reserved.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from [Eterra, LLC.].

All copyright, confidential information, patents, design rights and all other intellectual property rights of whatsoever nature contained herein are and shall remain the sole and exclusive property of Eterra, LLC. The information furnished herein is believed to be accurate and reliable.

However, Eterra, LLC. assumes no responsibility for its use, or for any infringements of patents or other rights of third parties resulting from its use.

The Eterra & Eterra name and logo are trademarks or registered trademarks of Eterra, LLC.

All other trademarks are the property of their respective owners.

Table of Contents

About This Manual	4
1. Introduction.....	5
1.1. Purpose.....	5
1.2. Scope.....	5
1.3. Safety Marking.....	6
1.4. General Safety.....	6
1.5. Operational Safety	7
1.6. Maintenance & Transport Safety	8
2. Operation.....	9
2.1. Introduction.....	9
2.2. Theory of Operation.....	10
2.3. Bucket Delivery And Acceptance.....	11
2.1. Main Operational Components.....	12
2.1. Main Components BMX-100	14
2.2. Main Components BMX-250/450/600	15
2.3. Safety Devices – BMX-250/450/600.....	16
2.4. Maximum Bucket Loading.....	16
2.5. Pre-Operation Checklist.....	17
2.6. Hydraulic Connections	18
2.7. Hose Routing.....	19
2.8. MIX&GO Operation - Initial.....	19
2.9. Loading the Bucket - Manually	20
2.11. Unloading the Bucket.....	21
3. Maintenance & Trouble Shooting.....	25
3.1. Scheduled Maintenance Table.....	25
3.2. MIX&GO Grease Points	27
3.3. Greasing the Chain Drive	28
3.4. Trouble Shooting.....	29
3.1. Parts List – 250 & 450 Series.....	30
3.1. Parts List – 600 Series.....	35
3.1. Parts List – 100 Series.....	40
4. Warranty.....	41

About This Manual

This document is divided into the following chapters:

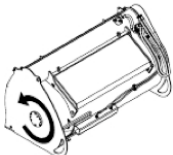
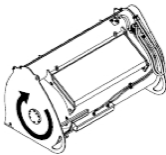
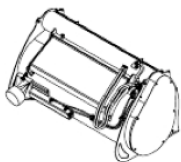
- Chapter 1, “Introduction” – Use this to familiarize your self with the features and safety requirements when using this product.
- Chapter 2, “Operation” - Learn how to operate this Cement Mixer efficiently and safely.
- Chapter 3, “Maintenance and Troubleshooting Guidelines”, explains how to work the Cement Mixer in the safest manner possible.
- Chapter 4, “Warranty” – See what you are covered for and how long. We offer one of the most extensive and hassle free warranties in the business. We know that you depend on this product to make a living and it shows with how easy it is to get replacement parts and technical advice.

Who Should Use It

This guide is intended for users of different degrees of knowledge and experience with equipment.

- Users: This manual provides all of the safety information you will need to operate the Eterra BMX-100 & BMX-250/450 without incident.
- Technicians: All service information and parts diagrams are furnished so that you can inspect and repair your MIX&GO yourself or with the help of a qualified service technician.

Orientation Conventions

Forward Rotation – Clockwise - Mixing	Backward Rotation –Counter Clockwise	Detached Position
 <i>fig. 1</i>	 <i>fig. 2</i>	 <i>fig. 3</i>

1. Introduction

1.1. Purpose

The Eterra BMX-100 & BMX-250/450/600 Cement Mixers are designed to be used with skid steer loaders or excavators of the appropriate weight class. They are intended to be used by operators of all experience levels. To accomplish this feat, a very simple design has been used which is unlike anything else found in the industry. By offering a manual side chute and hydraulic center chute the BMX Series Cement Mixers are the most versatile cement mixers found anywhere. The safety and construction features of the BMX Cement Mixers are second to none.

You must read and understand the theory of operation so that you can operate these Cement Mixers safely and so you can maintain the safety of the operators and bystanders.

This product was designed to be sold online and out of the box ready to operate with the minimal amount of assembly.

This Document:

The sole purpose of this manual is to help you train yourself to be a responsible operator and troubleshooter of the operation of the Eterra MIX&GO so that you can identify safety issues before anything serious can happen. Failure to follow the directives noted in this document may lead to serious injury or death.

1.2. Scope

Please read and understand all safety directives prior to operation and follow the initial start-up procedure before ever powering up the MIX&GO. It is extremely important that the MIX&GO is checked and re-checked prior to each operation and that it is thoroughly cleaned after each use to minimize damage caused by seized parts.

1.3. Safety Marking

Safety Alert Symbols are used throughout this manual and on decals on your Cement Mixer. When you see symbols become alert to safety information and adhere to it to prevent injury or death.

SIGNAL WORDS - There are signal words that are used in conjunction with the safety alert symbol; these signal words have been selected using the following guidelines:

DANGER – An immediate and specific hazard **WILL** result in severe personal injury or death if the proper precautions are not taken.

WARNING – A specific hazard or unsafe practice that could result in severe personal injury or death if proper precautions are not taken.

CAUTION – Unsafe practices which could result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

You, as the owner of an Eterra Cement Mixer are responsible for its safe operation and maintenance. You need to make sure anyone working with, maintaining or working around the Cement Mixer is familiar with the operation and maintenance of the unit. Be alert, know all safety information in this manual and adhere to safety practices at all times.

Remember a safe operator is the key to avoiding most accidents. Most accidents can be avoided by – THINKING SAFETY AND WORKING SAFELY.

1.4. General Safety

- Read, study and understand your Operator's Manual.
- Understand all safety symbols before operating or maintaining the MIX&GO.
- After maintaining or adjusting, make sure all tools and foreign objects are removed.
- Stop Skid Steer, set park brake and remove the key from ignition. Make sure all moving parts have been stopped before dismounting your Skid Steer for any reason.
- Make sure all guards and shields are properly installed and secure.
- NEVER leave the Cement Mixer lifted off the ground and stand under it for any reason.

1.5. Operational Safety

- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting or unplugging.
- Do not allow riders on the Skid Steer during field operation or transport.
- Install and secure all guards and shields before starting and operating.
- Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.
- Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
- Never operate the machine inside a closed building.
- Stop Skid Steer engine, place hydraulic controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.
- NEVER EVER Climb out of your machine with the boom raised. Serious injury or death can occur.
- Ensure that all Skid Steer controls are in neutral before starting.
- Clear the area of all bystanders, especially children, before starting.
- Be careful when working around or maintaining a high-pressure hydraulic system. Wear proper eye and hand protection when searching for a high-pressure leak. Use a piece of wood or cardboard as a backstop when searching for a pin-hole leak in a hose or line.
- Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
- Take care when working on steep ground, particularly when turning, and especially with mounted Cement Mixers.
- Stay away from overhead obstructions and power lines during set-up and operation. Electrocution can occur without direct contact.
- Review all safety instructions annually.

1.6. Maintenance & Transport Safety

- Review the Operator's Manual and all related Maintenance, Operating and SAFETY information annually with all personnel who will be working with, maintaining or operating the Cement Mixer.
- Be careful when working around or maintaining high-pressure hydraulic systems. Wear proper eye and hand protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop when searching for a pin-hole leak in a hose or steel line. Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
- Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are not damaged.
- Seek immediate medical attention if a high-pressure concentrated stream of hydraulic fluid pierces the skin, as a toxic reaction and infection could develop.
- Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
- Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.
- Clear the area of all bystanders, especially children, when carrying out any maintenance or making adjustments on the systems components.
- Lower boom to the ground before servicing, adjusting or repairing the machine.
- When moving on or near roadways, make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic.
- Never transport with the boom arms extended upward. Boom arms should be in the stowed position in towards the Skid Steer when transporting.
- Do not allow riders on any parts of the machine during either field operation or road and highway travel.
- Attach the Cement Mixer to the Skid Steer using the skid mounting plate. Always use warning flashers (hazard) on the Skid Steer when transporting unless prohibited by law.

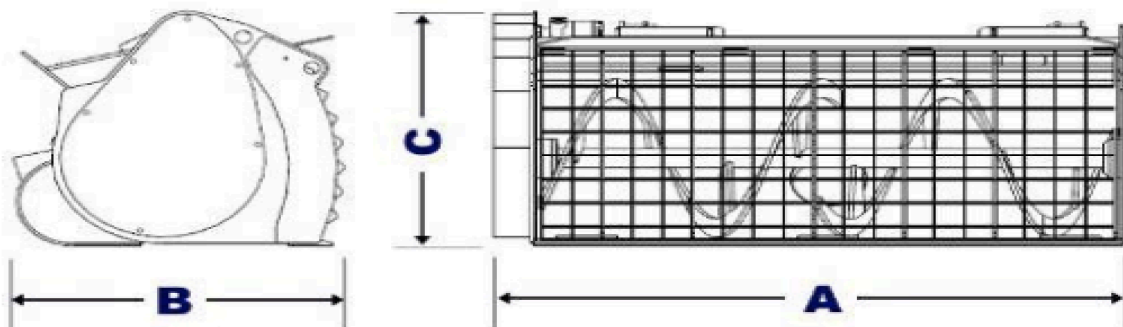
2. Operation

2.1. Introduction

The Skid Steer BMX Cement Mixers were designed to be a highly effective mixing solution. If maintained properly, it will provide the owner with many years of service with no damage to property or people. If not maintained properly, the MIX&GO can easily injure people or property and will not last as long as the design allows. You must visually inspect and test the MIX&GO before and after each use to insure nothing has come loose or is badly worn. The Owner's Manual is designed to help you be a safe and knowledgeable operator of this Cement Mixer.

Please follow the machine-sizing chart below to ensure you do not cause an unbalanced situation with your loader when the bucket is loaded.

MODEL	BMX-100	BMX-250	BMX-450	BMX-600
Weight - Empty	529 lbs.	870 lbs.	947 lbs.	1488 lbs.
Weight - Full	1007 lbs.	2083 lbs.	2888 lbs.	4246 lbs.
Max Flow	15 GPM	21 GPM	21 GPM	21 GPM
Max Pressure	3000 PSI	3500 PSI	3500 PSI	3500 PSI
Dimension A	1260mm/49.5"	1480mm/58.25"	1630mm/64.25"	1900mm/75"
Dimension B	760mm/30"	784mm/31"	890mm/35"	1120mm/44"
Dimension C	580mm/22.75"	696mm/27.5"	810mm/32"	1000mm/39"



2.2. Theory of Operation

The MIX&GO BMX-250/450/600 is a twin door concrete mixing bucket has been designed to prepare concrete, mortar, cement or semi-dry concrete mix. The bucket has been especially designed to be fitted to skid steer loaders and excavators of the appropriate weight rating. The MIX&GO BMX-100 is a single door mixing bucket designed specifically for mini skid steer loaders. To save weight and size, not all features available on the BMX-250/450 are available on the BMX-100.

The mixing shaft rotates around its axis generating a convective movement of the material, which is therefore perfectly mixed due to the special design of the auger flights. Connected through a chain drive, an orbital hydraulic motor transfers motion to the shaft.

The material is constantly pushed toward the left side where it can be discharged through the hydraulically-operated discharge hole at the back of the bucket, or through the lateral discharge hole with manual opening. The mixer comes standard with a welded coupling frame specially designed for skid steer loaders and bracket mounting holes for excavator mounting. Hydraulic power is supplied by the machine's hydraulic circuit. Connections are made through hydraulic quick connectors. All bucket's functions are controlled by means of the controls available on the machine. An additional electric solenoid is provided on the BMX-250/450/600 for control of the center chute. See images below for mixing direction and resting position.

Since the release of the BMX mixers in 2012, customers have reported using them for the following projects.

- Mixing old paint into a solid using a special mix that hardens the paint.
- Stray/Mud houses. Mixing mud with stray to build a stray house.
- Adobe clay mixing.

The following activities are strictly forbidden:

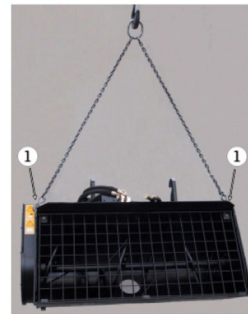
- Mixing of Asphalt.
- Mixing of material with a diameter greater than 1.25".
- Any kind of grinding activity whatsoever.
- Digging, towing, pulling or tearing using the bucket.
- Never put hands inside the bucket or slide tools into bucket while operational.
- Removal of protection grill while operational.

2.3. Bucket Delivery And Acceptance

The buckets are normally banded and wrapped on a pallet. They are wrapped in plastic, cardboard and then more plastic to ensure they are delivered in perfect condition. All shipments are photographed prior to and after wrapping just before shipping. Upon receipt, check the bucket for shipping damage and record any issues on the Waybill prior to releasing the delivery truck. No claims can be made after the driver leaves.

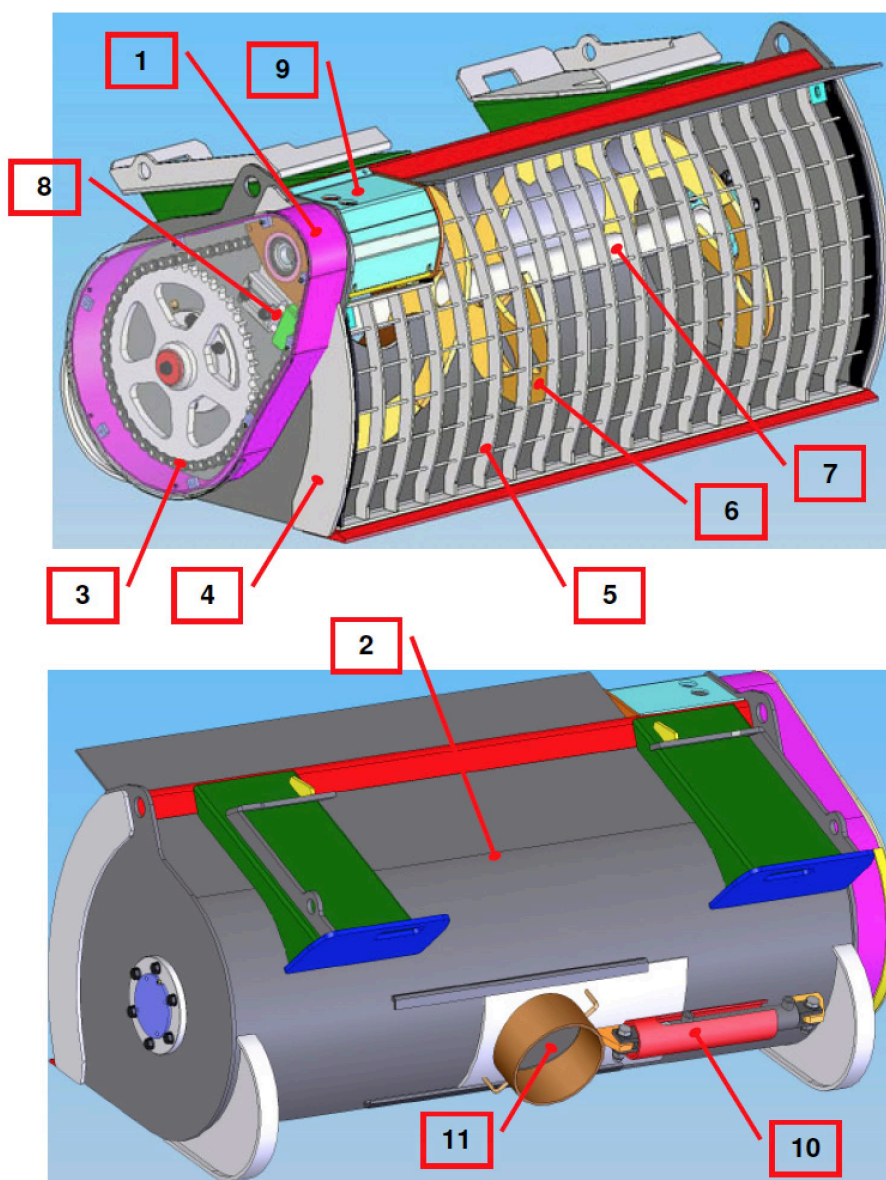
Handle the bucket when delivered on a pallet with pallet forks. Once the packing material has been removed, you can install the bucket onto your loader.

Additionally you can move the bucket using the supplied carrying loops with the proper chain hooks in place.



2.1. Main Operational Components

1 – Chain Case	7 – Auger Shaft
2 – Main Machine Coupling	8 – Chain Tensioner
3 – Drive Chain	9 - Motor
4 – Bucket Body	10 – Hydraulic Chute Actuator
5 – Protection Grill	11 – Bottom Hydraulic Chute
6 – Mixing Auger	12 – Side Chute on Some Models



Important: The standard operational direction is forward. It is all right to reverse the bucket momentarily, but for the best mixing conditions and longevity of the chain tensioner, the forward direction is preferable.

“FORWARD” ROTATION:

Mixing direction



“REVERSE” ROTATION:



“RESTING” POSITION:

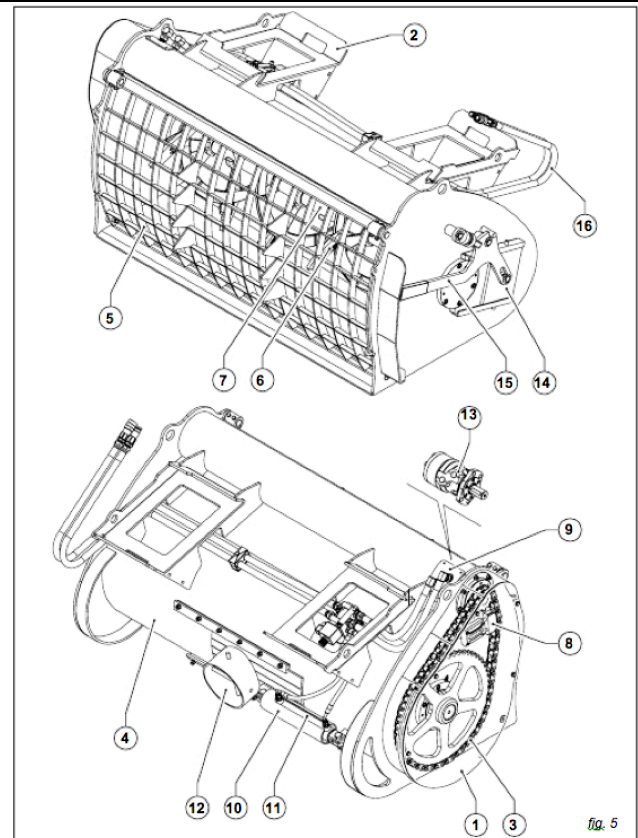


2.1. Main Components BMX-100

1: Side Door 2: Lever 3: Shaft Retainer 4: Washer 5: Screw	
1: Reduction Gear 2: Casing Cover 3: Reduction Gear Mounting Plate 4: Feed Pipe 5: Female Quick Connect 6: Male Quick Connect 7: Bonded Washer 8: Pipe Nipple 9: Drilled Bolt 10: Screw 11: Washer 12: Screw 13: Washer 14: Shaft Reatainer 15: Screw 16: Nut 17: Washer	
1: Bucket Body 2: Mixing Shaft 3: Protective Grid Cover 4: Seal Housing Flange 5: Non-Drive Side Flange 6: Drive Side Flange 7: Nut 8: Dust Seal 9: Roller Bearing 10: Screw 11: Screw 12: Washer 13: Nut 14: Screw 15: Greasing Nipple (Zerk) 16: Screw	

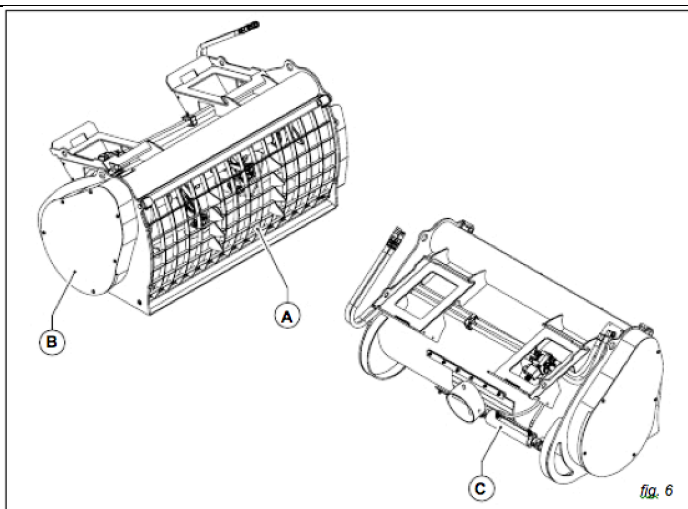
2.2. Main Components BMX-250/450/600

- 1)** Drive chain
- 2)** Attachment coupling frame for skid steer loader
- 3)** Drive chain
- 4)** Bucket body
- 5)** Front grid
- 6)** Mixing auger
- 7)** Auger shaft
- 8)** Chain tensioner
- 9)** Motor guard
- 10)** Discharge hole jack guard
- 11)** Discharge hole opening jack
- 12)** Rear discharge hole
- 13)** Hydraulic motor
- 14)** Lateral discharge hole
- 15)** Lateral discharge hole operating lever



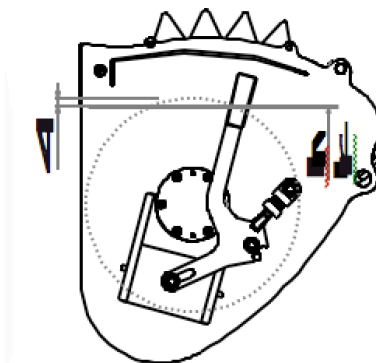
2.3. Safety Devices – BMX-250/450/600

The mixer comes complete with a front grill (Fig A), bolted to the frame, which prevents any contact with the mixing shaft. The drive system, guard (Fig B), bolted to the frame, covers the chain and gears. The handle operating the opening of the discharge hole is protected by the guard (Fig C).



2.4. Maximum Bucket Loading

Visually, it is possible to load the equipment leaving at least 2" of the external paddles uncovered.

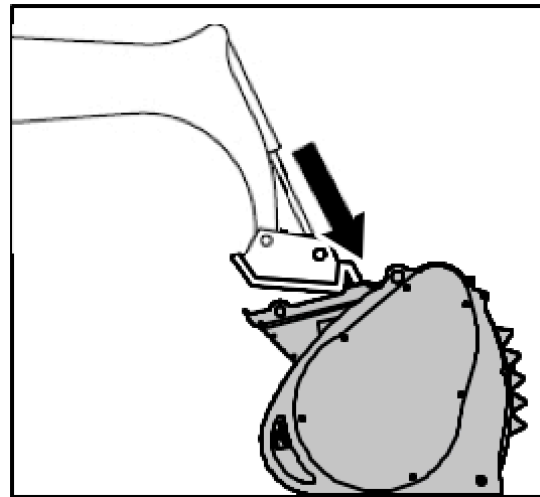


2.5. Pre-Operation Checklist

- The Eterra Cement Mixer is designed to ensure years of trouble free use. A poorly maintained machine is an invitation to expenses and trouble. We recommend that before operation that this checklist be followed to ensure trouble free operation.
- Give the machine a “once-over” for any loose bolts, worn parts, cracked welds, hydraulic leaks, frayed hoses etc. and make necessary repairs. Double check the Cement Mixer coupler as well as mounts to insure nothing has come loose as you risk the Cement Mixer head falling off if not properly inspected.
- Check for excessive wear as well as cracks in the mixing auger. Replace as needed.
- Be sure that there are no tools lying on or in the machine.
- Lubricate the main bearings daily or after each 8 hours of use.
- Clear any dried cement or gravel prior to each use or severe auger damage may occur.
- Make sure all hoses are clear of cuts, abrasions, worn spots and pinch points before operating. Check that hoses do not get caught in the pinch areas of your skid steer boom.
- Check the tire pressure and make sure they are inflated to their recommended pressures. Connect to Skid Steer and check mechanical Skid Steer connection point for wear that could cause MIX&GO to fall off. Repair any damage as needed.

Connection to Skid Steer:

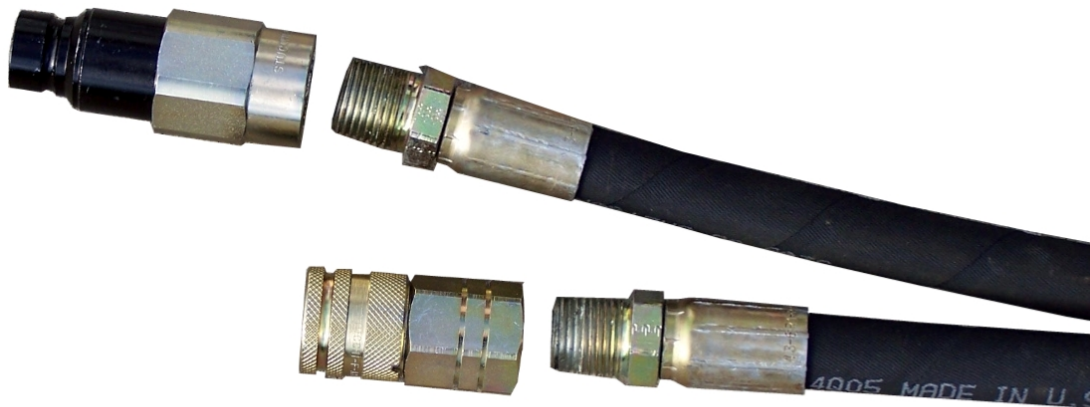
Slowly approach the machine to the coupling plate of the equipment. Hook the top of the machine coupling to the top of the coupling plate. Slowly move the machine forward and at the same time pull the coupling back to fix the bottom of the coupling plate (fig. 14). Stop the machine and remove the ignition key. Lock the coupling between the machine and the equipment by means of the locking device.



- Connect hydraulic lines to skid steer and if equipped, electrical solenoid wire connection.

2.6. Hydraulic Connections

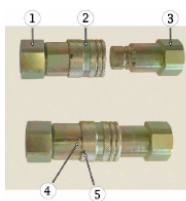
Depending on your order, your MIX&GO may or may not have come with hydraulic quick couplers. The hose ends are furnished with fittings that will screw either directly into the back of the hydraulic couplers or a 90 degree fitting depending on your specific machine requirements. You should check the best hose routing for your machine prior to use and adjust accordingly. The MIX&GO operates in both directions. If your controls do not work in the direction expected, swap the couplers as your machine may have a detent position with a reverse flow to the way your Cement Mixer was tested and shipped. Couplers can be alternated on hose ends easily by the operator. Angled fitting either 45 degree or 90 degree may be used to alter the length and angle of hoses for a more optimal sweep of the hoses.



- Once the couplers are installed, you may connect them to your machine by pushing the male coupler into the female coupler on the Skid Steer and the female coupler of the attachment into the male coupler on the Skid Steer.

Connection to Machine:

For flat faced style connections, engage the male fitting (#3) to the female coupler (#1) on your machine by pushing the male into the female until the snap ring engages. Rotate the ring until it passes the small ball bearing (#2). This will insure the coupler cannot release.



For removal, rotate the locking collar until the notch lines up with the bearing and press the collar back while holding the male fitting. The female will eject the male from the body so be prepared.

2.7. Hose Routing

- It is important that you check and recheck your hose routing each time you connect the attachment to your Skid Steer. Each machine is different so you need to make sure that you have routed the hoses away from any potential pinch points. Check that there are no pinch points around the main skid steer pivot. Average hose lengths are shipped at no-charge with each Cement Mixer. Try to route the hoses towards the front bottom of the mount and away from the back pinch zone.
- It is the customers' responsibility to modify these hose lengths locally as required for your specific machine. Hose lengths can be varied by using or not using a 45 or 90 degree fitting. **There is no warranty either expressed or implied with regards to hose damage due to improper routing or length.**

2.8. MIX&GO Operation - Initial

- After you have connected your hoses to your machine, you will want to start the skid steer, and turn on your auxiliary hydraulics. Run the Cement Mixer up for just a few seconds and turn off the skid steer. Check for leaks at all hose fittings. Tighten as needed and test again.
- Run the machine and familiarize your self with the Cement Mixer and how it handles different types of material. Stop and check for leaks. Check the auger to insure nothing has come loose.
- The bucket (mixing shaft rotation) can only be operated from the machine. Start the engine of the machine and let it run at idle for a few minutes with the hydraulic circuit open so that oil can reach the recommended temperature gradually and any air trapped in the circuit can be expelled. Use the machine controls to operate the mixing auger. On machines equipped with four hydraulic lines, it is possible to operate the mixing shaft rotation and to open/close the discharge hole at the same time. On machines with two hydraulic lines it is only possible to control the mixing shaft rotation and the discharge hole opening/closing alternately.
- Do not wear loose fitting clothing or jewelry. Hearing and eye protection are highly recommended even if you are inside an enclosed cab. Wear heavy gloves whenever you are handling the wheel.
- Before leaving the skid steer, make sure that the hydraulic power has been turned off and the mixer has come to a complete stop. THINK before you walk anywhere near the front of the Cement Mixer if any covers have been removed or damaged.
- If there is any kind of excess vibration, stop using the MIX&GO at once until this has been remedied. Replace damaged parts immediately.
- To prevent tipping or control losses, reduce your speed when making turns or transitioning onto or off of slopes.
- Cement Mixers can be extremely dangerous due to excessive weight. Always carry material in the lowest possible position so that you minimize your tipping potential.
- Never allow children to be near or operate this equipment.

2.9. Loading the Bucket - Manually

Move the bucket near the material to be loaded. Rest the bottom edge of the bucket on the ground and parallel to it. Slowly move forward with the machine and load the material. Once the material has been loaded, move the bucket backward and slightly raise it off the ground. Move the material by rotating the mixing auger some turns "FORWARD". Slowly go to the site where you wish to prepare the mix being careful to keep the bucket as close as possible to the ground. Once the mixing site has been reached, start the mixing auger rotation and proceed as explained in next paragraph.

Operator on the Ground: Pour the proper amount of cement into the bucket. Pour the proper amount of water based on the consistency of the mix you wish to obtain. Pour water gradually into the bucket.

Machine operator: Gradually increase the engine speed up to 75% of the maximum speed being careful that the auger does not exceed 30-32 RPM.



Machine Operator: Operate the control and start rotating the auger "FORWARD" (mixing direction) keeping the engine running at 50% of the maximum speed. Ensure the bucket is not overloaded. For proper mixing, it is advisable to leave at least 2" of the external blades free from inert material.

Especially at the beginning of the mixing phase, the compact material could heap up and come out of the bucket. It may also occur that the auger stops if stones get stuck between the bucket bottom and the mixing paddles. In these cases, stop rotation and reverse the rotation direction for a few turns to level or move the material. Reverse once again the rotation direction ("FORWARD") and ensure that the material is mixed freely. For some types of materials which, for their properties, shall be mixed in the "semi-dry" state, it may be necessary to reverse the rotation direction several times by observing the above precautions.

WARNING - Never reverse the rotation direction abruptly!

Move the hydraulic control to neutral and leave it in this position for a few seconds. This will protect the motor from the simultaneous overpressure in both delivery and return lines and the consequent failure of the oil seals.

WARNING Once the material (concrete) has been mixed, the operator shall move with the machine up to the unloading site keeping the bucket a few inches off the ground to prevent dangerous oscillations.

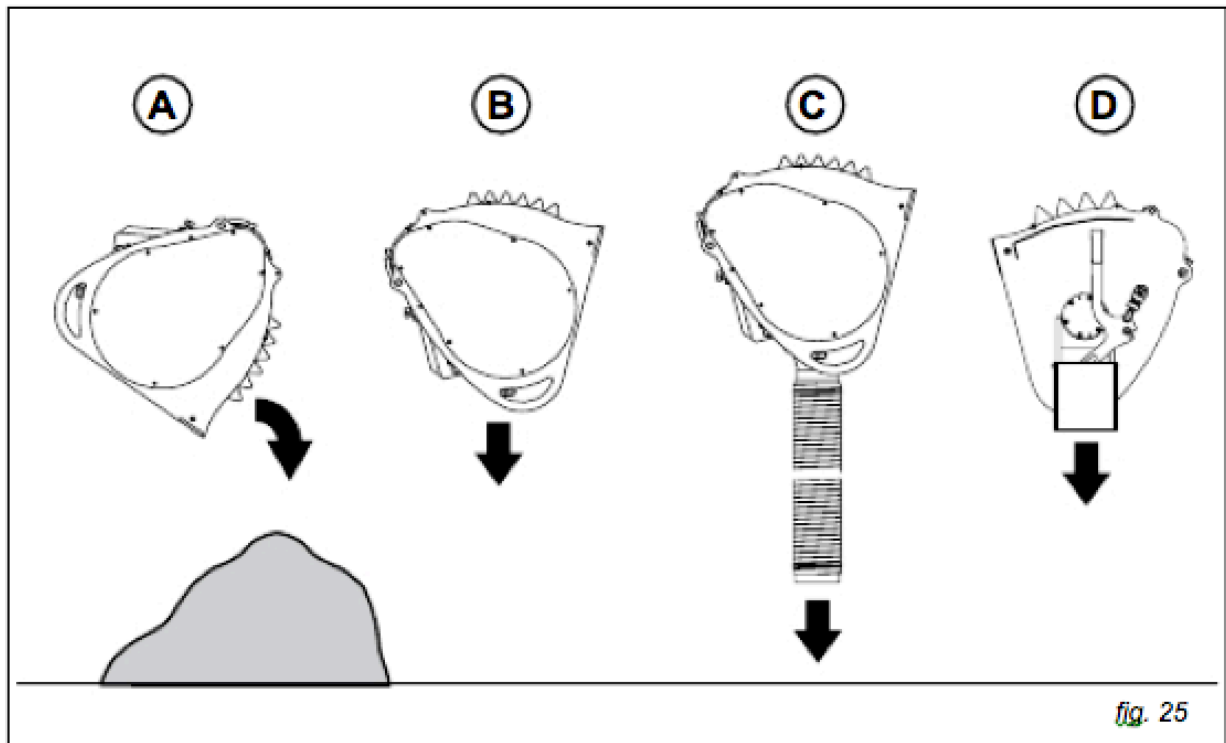
2.11. Unloading the Bucket

DANGER

Always drive with the bucket lowered when it is full with material. If you shall discharge the concrete from the height, stop on a flat ground, engage the parking brake and ensure nobody stands under the bucket.

The mixed material can be discharged (fig. 25)

- A) By dumping the bucket forward.
- B) Through the rear discharge hole without flexible pipe.
- C) Through the rear discharge hole with flexible pipe.
- D) Through the discharge spout of the lateral discharge hole.



Never let the auger rotate “BACKWARD” for more than two turns as this operation pushes the material to the sides of the bucket and result in two critical situations:

- 1) The excessive pressure of the material tends to slightly deform the sides causing the mechanical seals to detach and contaminated material to flow through the bearings.
- 2) The resistance opposite to rotation causes the operating pressure to increase up to the calibration value of the machine pressure relief valve. Such a pressure value can cause serious damages to the orbital motor of the bucket and the breakage of the rotor.

A) Unloading by dumping the bucket

- Roll the bucket forward and allow the material to flow out of the loading mouth. You should run the auger first to be sure the concrete is thoroughly mixed, otherwise the water could have settled to the top and pour out first.

B) Unloading through the rear discharge hole without flexible pipe.

- With the bucket in unloading position (loading mouth facing upwards), operate the discharge hole cylinder by means of the control lever hydraulically connected to the cylinder.
- Start auger rotation to help discharge the material.
- To operate the discharge hole cylinder: press the button in the cab to energize the magnet of the electro-hydraulic switch; operate the bucket hydraulic control to open or close the discharge hole.

IMPORTANT - While operating the lever, hold the button down.

Release the button to de-energize the magnet and restore the forward rotation. This will cause the material to be pushed outwards through the discharge hole.

IMPORTANT - During the cylinder opening/closing phase, the rotation of the mixing shaft stops.

C) Unloading through the rear discharge hole with flexible pipe

DANGER - Before connecting the flexible pipe, make sure the machine is parked in a stable position and no one can operate the controls.

DANGER - The discharge pipe shall be connected by a second operator who shall keep at a safe distance and start connection only once the machine has been parked and the parking brake or other parking device has been engaged. To install the discharge pipe, obey the following instructions:

Machine Operator: Raise the bucket 4 feet above the ground with the mouth parallel to the ground.

Stop the engine and ensure no one can operate the machine controls.

Operator on the ground: If the load is suspended, place two supports to the sides of the bucket or install the flexible pipe with the bucket resting on some supports on the ground.

Connect the 2 hooks at the top of the pipe to the special pins located on the equipment, near the discharge hole.

DANGER - Do not stand under the bucket while securing the pipe and while discharging the mix. D) Unloading through the discharge spout of the lateral discharge hole

DANGER - Before connecting the spout, make sure the machine is parked in a stable position and no one can operate the controls.

DANGER - The discharge spout shall be connected by a second operator who shall keep at a safe distance and start connection only once the machine has been parked and the parking brake or other parking device has been engaged. To install the discharge spout, obey the following instructions:

Machine operator: Raise the bucket 4 feet above the ground. Stop the engine and ensure no one can operate the machine controls.

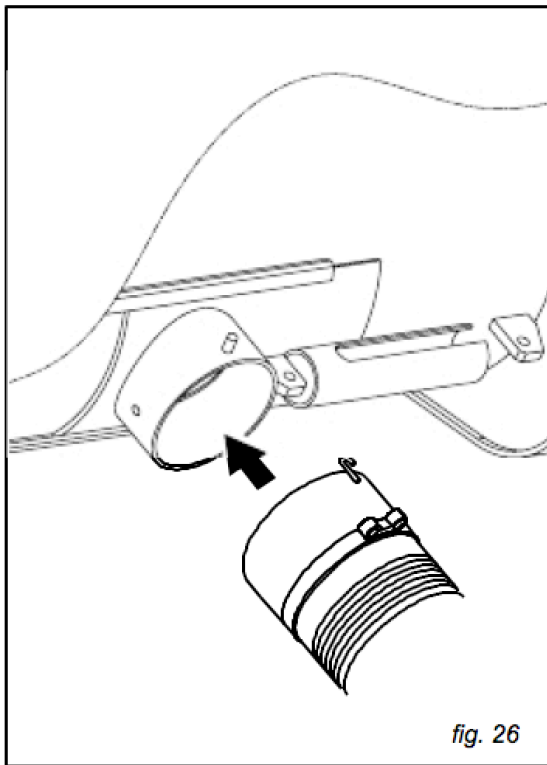
Operator on the ground:

If the load is suspended, place two supports to the sides of the bucket or install the spout with the bucket resting on some supports on the ground.

Connect the hooks to the sides of spout A to the special pins on the bucket body, near the lateral discharge hole. Operate the special handle B to open and close the discharge gate.

DANGER:

Do not stand under the bucket while securing the discharge spout and while discharging the mix.



(Fig 26) Unloading through the discharge spout of the lateral discharge hole

DANGER:

Before connecting the spout, make sure the machine is parked in a stable position and no one can operate the controls.

DANGER:

The discharge spout shall be connected by a second operator who shall keep at a safe distance and start connection only once the machine has been parked and the parking brake or other parking device has been engaged. To install the discharge spout, obey the following instructions:

Machine Operator:

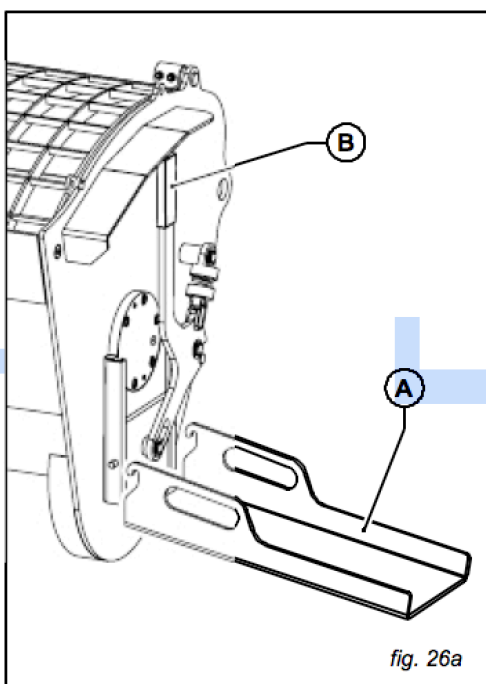
- Raise the bucket 4 feet above the ground.
- Stop the engine and ensure no one can operate the machine controls.

Operator on the ground:

If the load is suspended, place two supports to the sides of the bucket or install the spout with the bucket resting on some supports on the ground. Connect the hooks to the sides of spout A to the special pins on the bucket body, near the lateral discharge hole.

Side Chute Operation:

Operate the handle (#B) to open and close the discharge gate. When the bucket is new, the thickness of paint can sometimes interfere with the gate operation. Do not hit the gate or the lever with a hammer. This will only make things worse when the paint is rubbed off from normal operation. Loosen lever retaining bolts and scrape off paint around the gate and the lever. Slowly tighten while you operate the lever and the gate should work perfectly.



3. Maintenance & Trouble Shooting

3.1. Scheduled Maintenance Table

	Operation	See par.	Personnel charged of maintenance
Every 2 hours	Bearing lubrication		Operator
Every 8 hours	Lubrication		Operator
Every 8 hours	Equipment cleaning		Operator
Every 8 hours	Flexible hoses inspection		Operator
Every 8 hours	Discharge pipe clamps inspection		Operator
Every 200 hours	General structure inspection		Operator
Every 200 hours	Bolt tightness inspection		Operator
Every 200 hours	Chain greasing		Operator

Important Note about Greasing: The main bearing grease Zerk located in each end of the bucket is used to apply grease pressure to the main seals. It is not for lubricating the bearings. The bearings are sealed and permanently greased. Because of this, you only need to apply enough grease to the seal to maintain sealing pressure to protect the main seals of the bearings from cement intrusion. In this case over-greasing can actually be detrimental to the mixer.

If you use this mixer for 4 hours per day for 5 days per week, 2 pumps of grease is all that is necessary to maintain sealing pressure. If you use this mixer for 8 hours per day for 5 days per week, 4 pumps is all that is required. If you use too much grease, the excess will be pushed into the internal chamber of the mixer or into the mixing chamber, which can damage your batch.

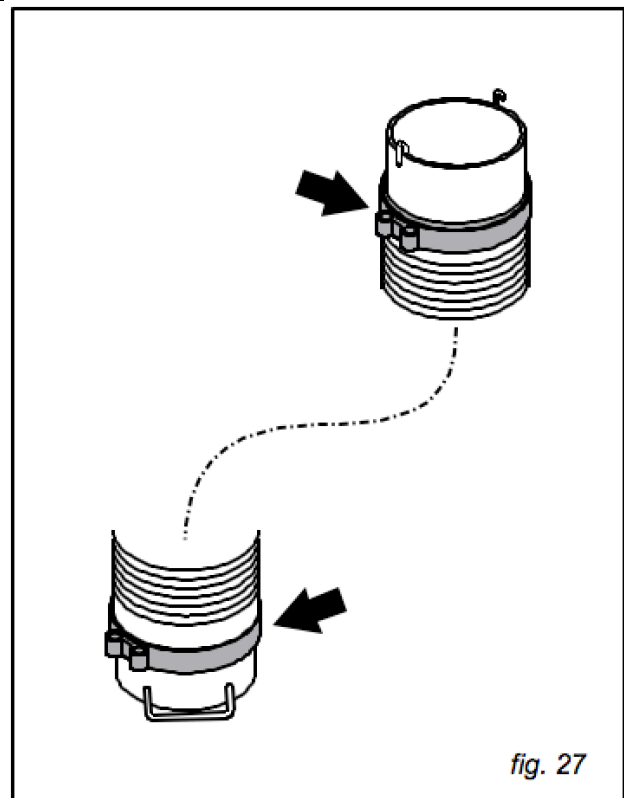
Be careful with high speed, high pressure grease guns as they can apply too much grease, too fast and damage the seals.

Checking the discharge pipe clamps

At each use check the condition of the discharge pipe clamps shown in figure 27.

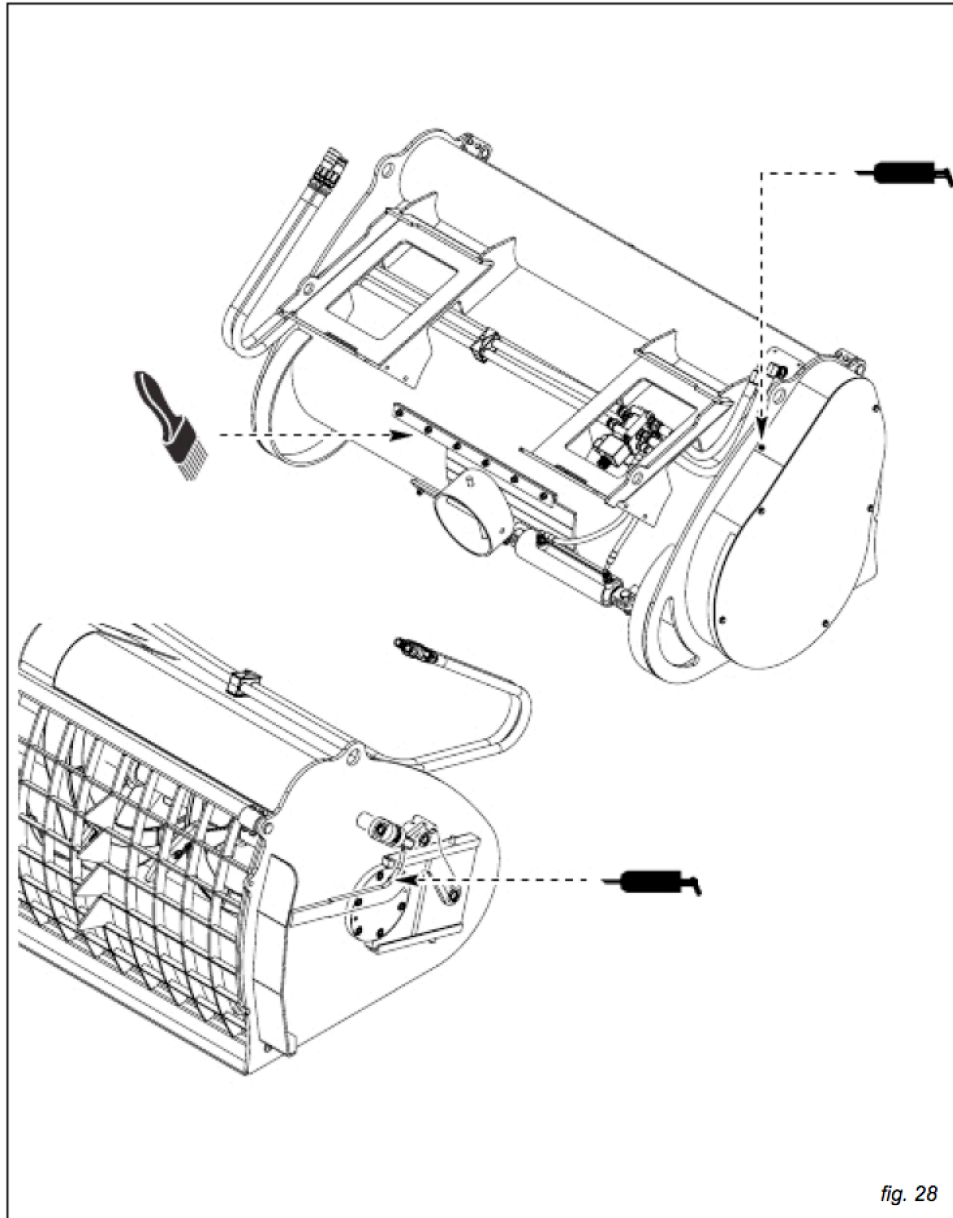
Checking bolt tightness

Check the tightening of all bolts.
Retighten any loose connection using approved spanners in good condition.
Never use your hands for this operation.



Wash the equipment after each use being careful to remove material deposits, especially near the bearings of the mixing shaft, the hydraulic and electrical connections. It is advisable to spray diesel or fuel oil inside the bucket to prevent material from adhering to the walls. Clean the equipment with a jet of water at pressure.

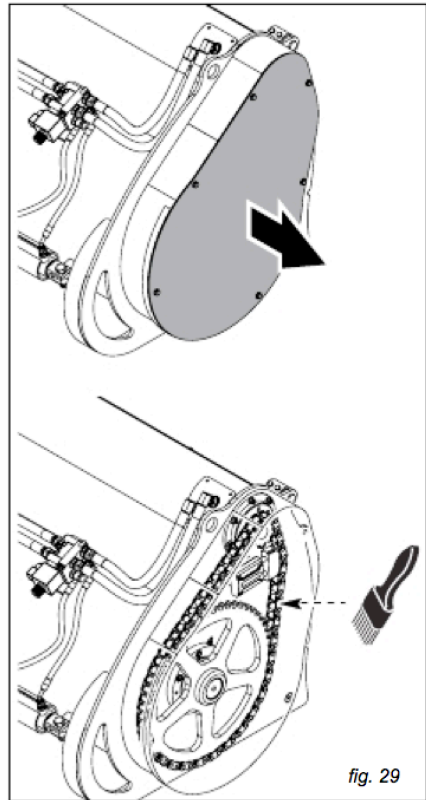
3.2. MIX&GO Grease Points



3.3. Greasing the Chain Drive

Grease the drive chain every 200 operating hours according to the following instructions:

- Loosen the bolts and remove the drive chain.
- Brush the chain with grease covering its entire length.



3.4. Trouble Shooting

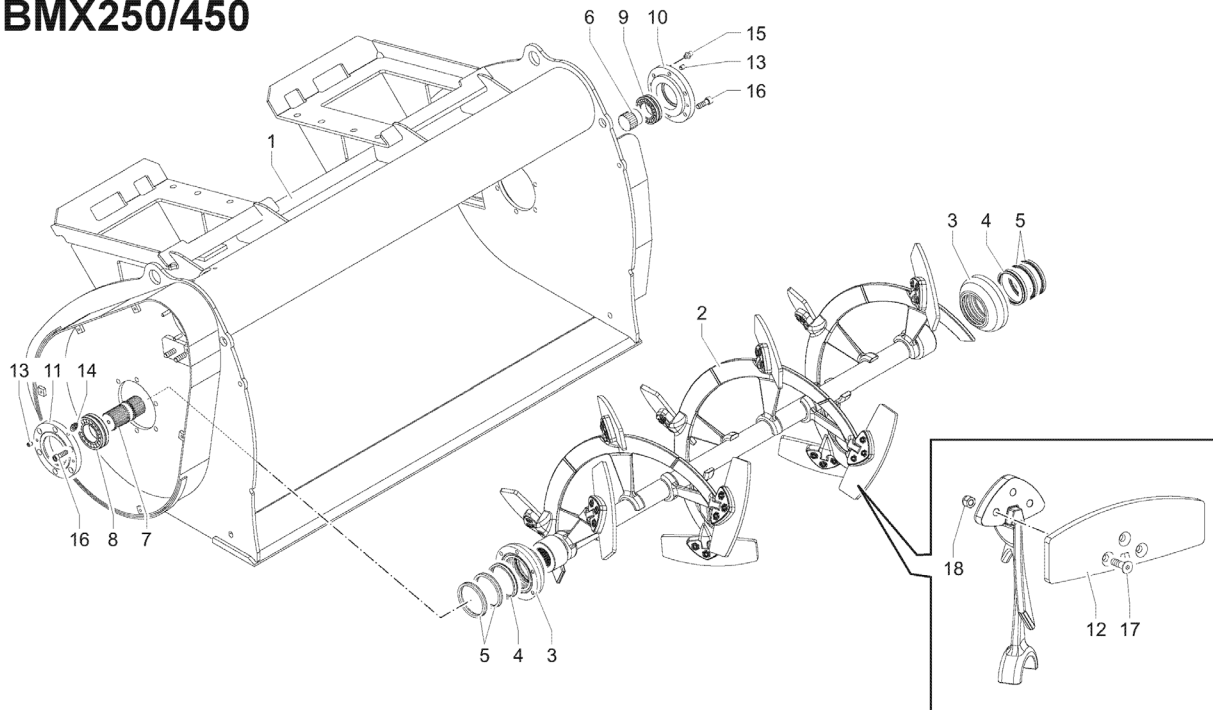
Problem	Cause	Solution	
Bearings cannot be greased	Copper pipe disconnected from the greaser	Connect the pipe to the greaser	O
	Greasing holes clogged	Address to an authorized workshop	A
Oil leak around transmission sump	Motor oil seals broken	Address to an authorized workshop	A
Oil leak outside	Loose fittings	Tighten fittings	O
	Hoses damaged	Replace hoses	P
	Fittings damaged	Replace fittings	P
	Motor oil seals leak	Address to an authorized workshop	A
The hydraulic grill does not open	Rotation pins seized	Clean and grease the pins	P
	Cylinder stop valve stuck	Check the valve	P
	Magnets not energized	Check the electrical system	P
	Wrong hydraulic connection	Verify connection	O

Key:

- For the solutions marked with letter A, address to an qualified shop.
- For the solutions marked with letter P, the repairs must be carried by qualified personnel
- For the solutions marked with letter O, the repairs can be carried by the operator

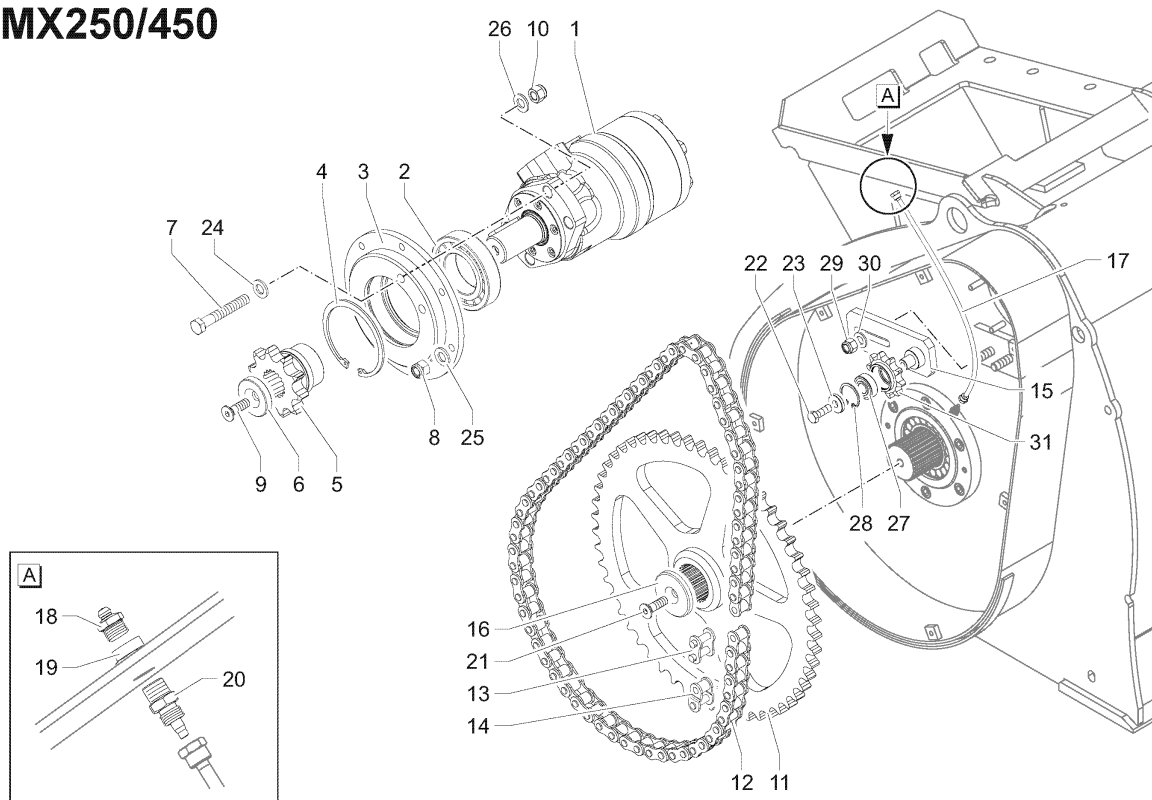
3.1. Parts List – 250 & 450 Series

BMX250/450

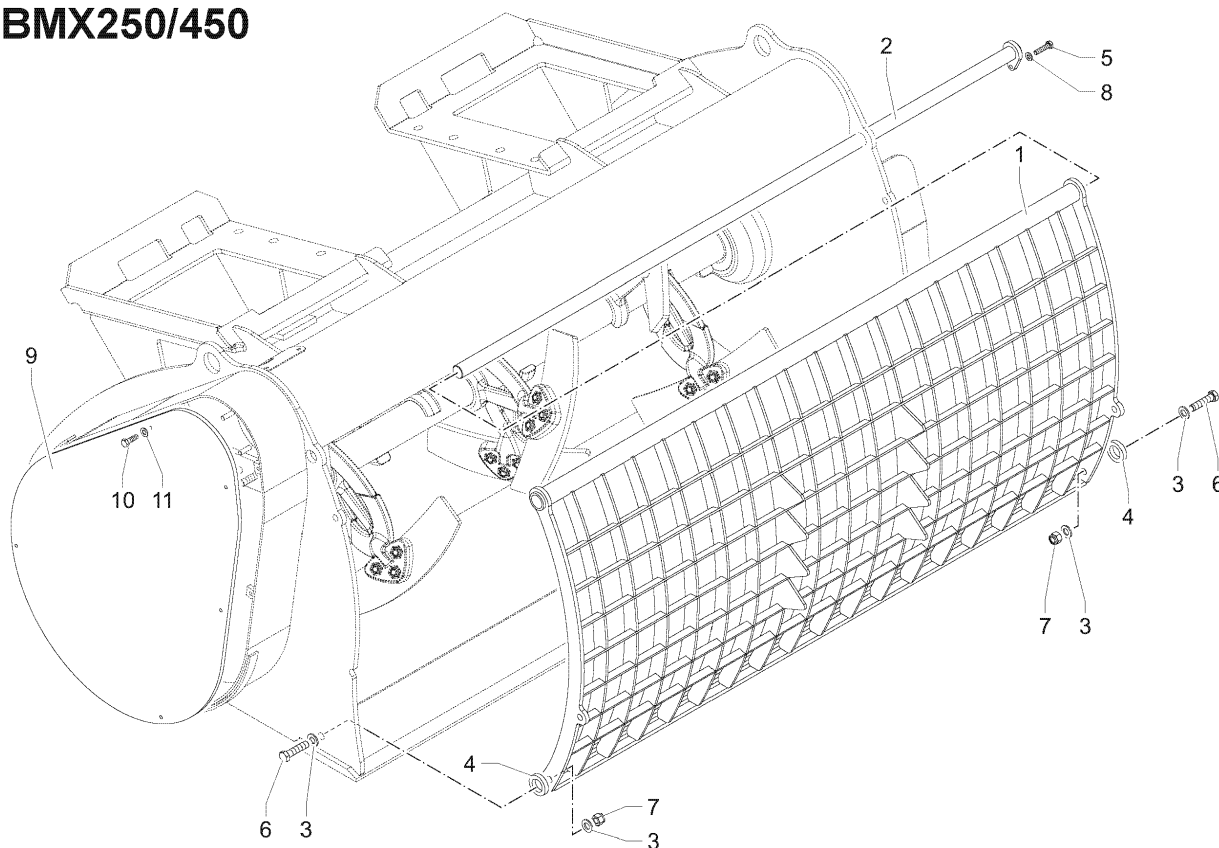


Ref.	Part Number	Qty	Description
1	n/a	1	BUCKET BODY
2	5025.005	1	MIXING SHAFT
2	5040.005	1	MIXING SHAFT
3	5000.416	2	SEAL HOUSING FLANGE
4	5000.426	2	HALLITE DUST SEAL
5	5000.425	4	LIP SEAL (100X115X12)
6	5000.411	1	END CAP (55X50)
7	5000.412	1	END CAP, MOTOR SIDE
8	0700.107	1	ROLLER BEARING
9	0001.120	1	ROLLER BEARING
10	5000.418	1	NON-DRIVE-SIDE FLANGE
11	5000.417	1	DRIVE-SIDE FLANGE
12	5002.013	9 (250)-11(450)	WEARPROOF PAD
12	5002.014	1	WEARPROOF PAD
12	5002.021	1	WEARPROOF PAD
13	9007.169	4	DOWEL M10X20
14	9000.034	1	RUBBER HOSE FITTING
15	0001.119	1	GREASING NIPPLE M6
16	9007.200	12	ALLEN BOLT M12X40
17	9007.061	33	HEX HEAD SCREW M10x45 WITH WASHER
18	9007.058	33	SELF-LOCKING NUT M10

BMX250/450

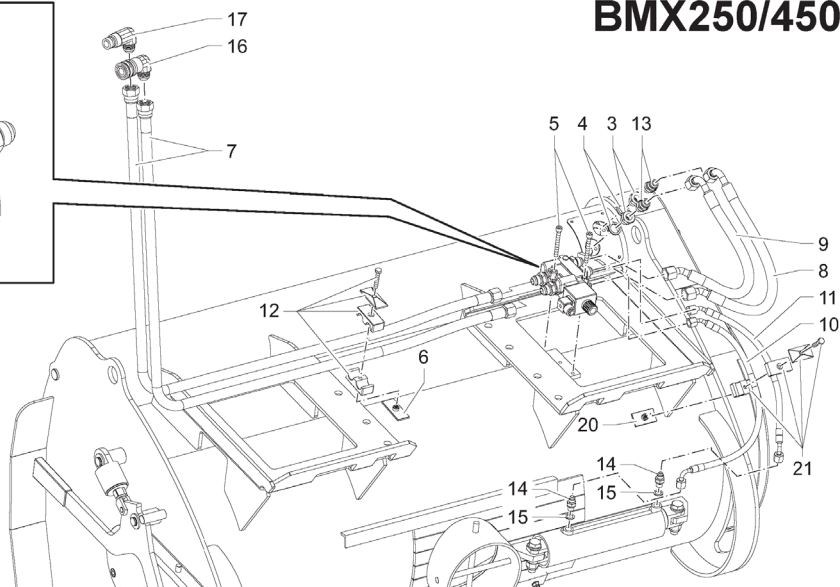
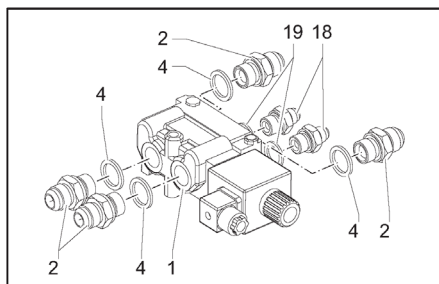


Ref.	Part Number	Qty	Description
1	0001.355	1	HYDRAULIC MOTOR BM 250
1	6000.175	1	HYDRAULIC MOTOR BM 450
2	0001.366	1	ROLLER BEARING
3	5000.419	1	MOTOR PLATE
4	0001.107	1	RETAINING RING I 85
5	5000.432	1	1" SPROCKET Z10
6	5002.034	1	SPROCKET RETAINER
7	9007.144	4	DOWEL M12x60
8	0155.082	8	SELF-LOCKING NUT M12 WITH WASHE
9	9007.056	1	HEX HEAD SCREW M 8x25 WITH WASHER
10	0155.082	4	SELF-LOCKING NUT M12 WITH WASHER
11	5002.053	1	1" GEAR Z54
12	6000.033	1	1" CHAIN, 36 EXTERNAL LINKS
13	0001.104	1	1" JOINING LINK
14	n/a	1	1" SPLIT LINK
15	6000.040	1	SPRING CHAIN TENSIONER
16	0001.065	1	GEAR RETAINER
17	0001.202	1	PVC HOSE WITH CLAMPS
18	0001.116	1	GREASING NIPPLE M 1/8
19	9004.037	1	
20	n/a	1	M-M FITTING FOR PVC HOSE
21	9007.069	1	HEX HEAD SCREW M 12x35 WITH WASHER
22	9007.143	2	HEX HEAD SCREW 10x25
23	0155.084	2	FLAT WASHER M12
24	0155.084	4	FLAT WASHER M12
25	0155.084	8	FLAT WASHER M12
26	0155.084	4	FLAT WASHER M12

BMX250/450


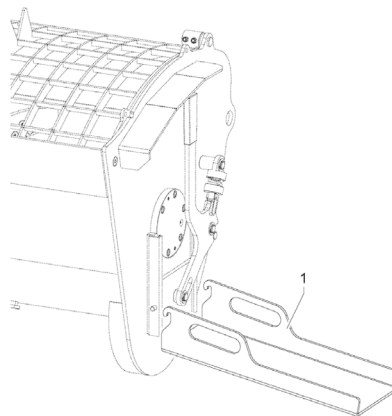
Ref.	Part Number	Qty	Description
1	5025.174 (250)	1	PROTECTIVE GRID BM 250
1	5040.174 (450)	1	PROTECTIVE GRID BM 450
2	5025.319 (250)	1	PIN
2	5040.319 (450)		PIN
3	0155.084	4	FLAT WASHER
4	n/a	2	FLAT WASHER
5	n/a	4	HEX HEAD SCREW
6	9007.062	2	HEX HEAD SCREW M12X50
7	0155.084	2	SELF-LOCKING NUT M 12
8	n/a	4	FLAT WASHER
9	5002.103	1	CASING COVER
10	9007.085	6	HEX HEAD SCREW M8x30
11	9007.105	6	FLAT WASHER M8

BMX250/450

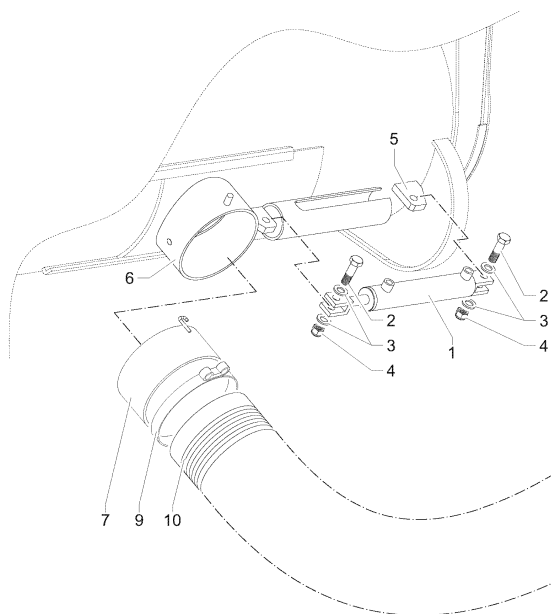


Ref.	Part Number	Qty	Description
1	9007.164	1	SIX-WAY SELECTOR SWITCH
2	9000.026	4	1/2" BSP - 7/8" JIC PIPE NIPPLE
3	9000.017	2	JOINT M 1/2" - F 3/8" BSP
4	9003.008	6	BONDED WASHER 1/2
5	9007.072	2	ALLEN SCREW M8x65
6-12	9005.004	1	DOUBLE COLLAR BASE FOR 1/2" PIPE
7	9006.064	2	FEEDING PIPE
8	9006.066(BM250)	1	FRONT MOTOR PIPE
8	9006.117(BM450)	1	FRONT MOTOR PIPE
9	9006.065(BM250)	1	REAR MOTOR PIPE
9	9006.116(BM450)	1	REAR MOTOR PIPE
10	9006.068(BM250)	1	REAR DISCHARGE PIPE
10	9006.119(BM450)	1	REAR DISCHARGE PIPE
11	9006.067(BM250)	1	REAR DISCHARGE PIPE
11	9006.118(BM450)	1	REAR DISCHARGE PIPE
6-12	9005.004	1	DOUBLE COLLAR FOR 1/2" PIPE
13	9000.029	2	M 3/8" BSP - F 916" JIC PIPE NIPPLE
14	9000.027	2	1/4" BSP - 916" JIC PIPE NIPPLE
15	9003.110	2	1/4" COPPER WASHER
16	9004.034	1	FEMALE QUICK CONNECTOR
17	9004.033	1	MALE QUICK CONNECTOR
18	9000.029	2	M 3/8" BSP - F 916" JIC PIPE NIPPLE
19	9003.007	2	BONDED WASHER
20-21	9005.002	1	DOUBLE COLLAR BASE FOR 1/4" PIPE
20-21	9005.002	1	DOUBLE COLLAR FOR 1/4" PIPE

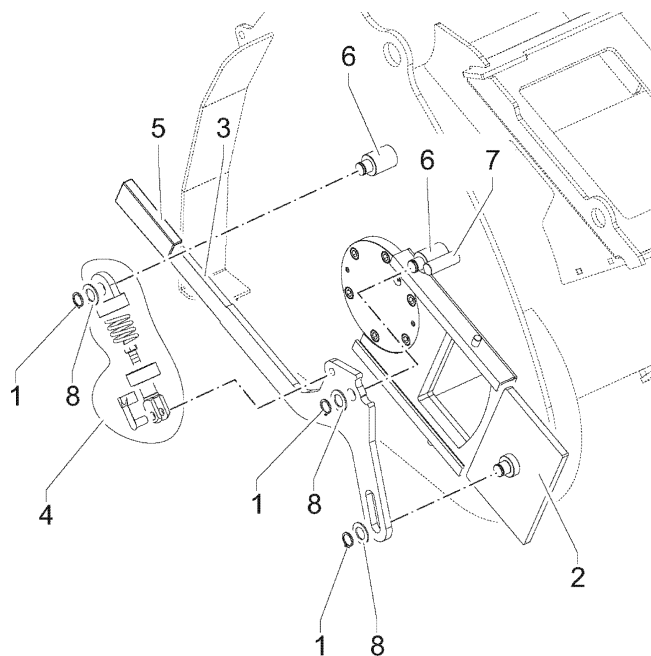
Ref.	Part Number	Qty	Description
1	5026.028	1	DISCHARGE SPOUT



BMX250/450

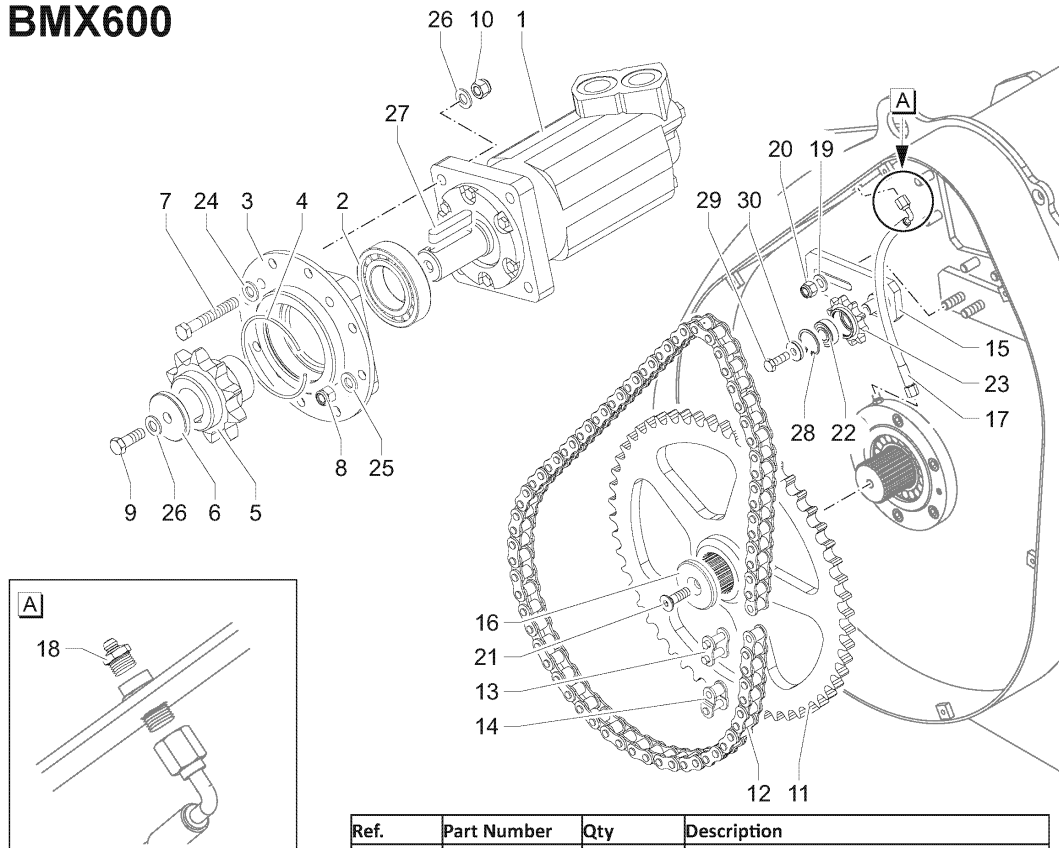


Ref.	Part Number	Qty	Description
1	0000.114	1	HYDRAULIC CYLINDER
2	9007.078	2	BOLT m16x55
3	9007.065	4	WASHER M16
4	9007.073	2	SELF-LOCKING NUT M16
5	0000.264	1	HYDRAULIC CYLINDER RETAINER
6	5026.046	1	DISCHARGE GATE
7	0001.254	1	PIPE CONNECTING SIDE
8	0001.256	1	PIPE SIDE WITH HANDLE
9	0000.129	2	COLLAR
10	0000.126	1	PIPE
11	0000.125	1	



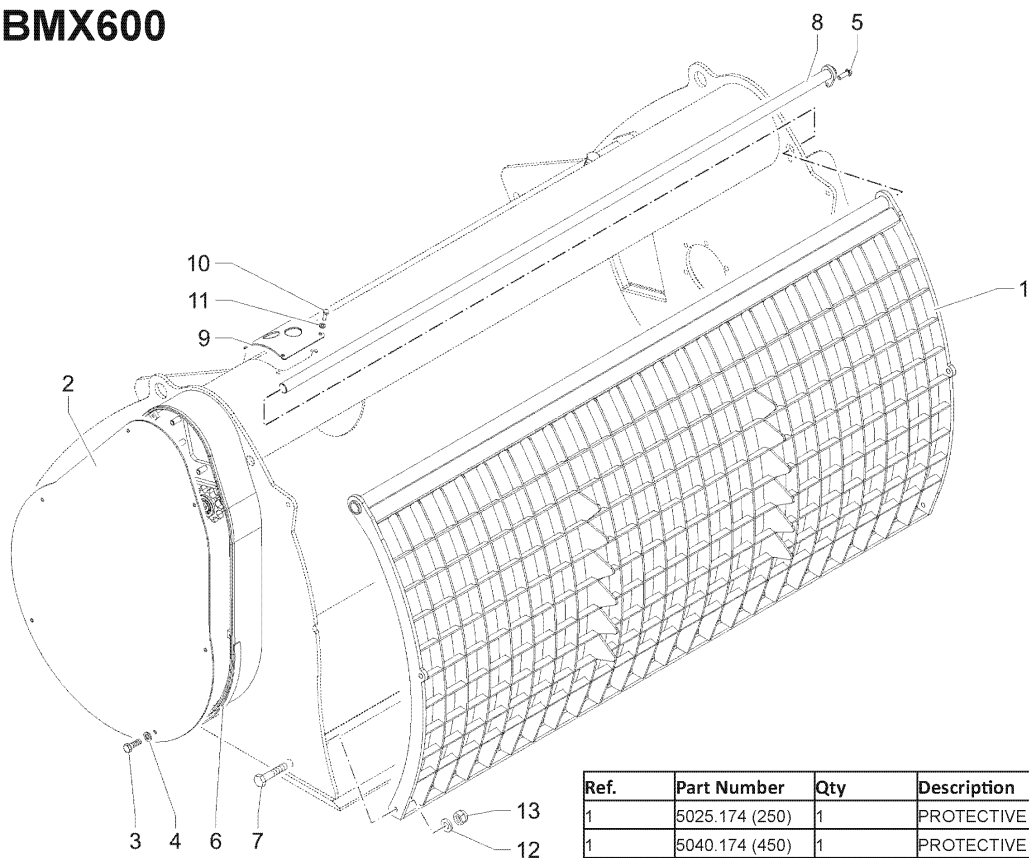
Ref.	Part Number	Qty	Description
1	9007.081	3	BOLT M8x20
2	5026.021	1	SIDE DOOR ASSEMBLY
3	5026.027Z	1	OPENING LEVER (THICKN. 12 mm)
4	5026.022	1	SPRING UNIT
5	5026.039	1	PVC HANDLE
6	5026.036	2	PIN
7	5026.038	1	RETAINER
8	9007.103	3	WASHER

BMX600

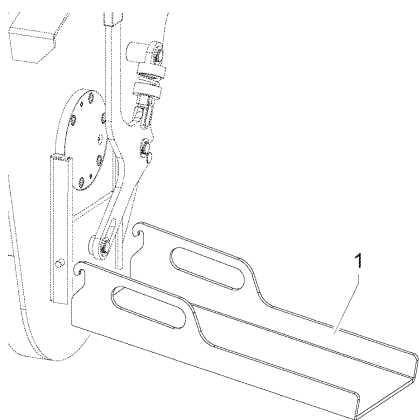


Ref.	Part Number	Qty	Description
1	0001.355	1	HYDRAULIC MOTOR BM 250
1	6000.175	1	HYDRAULIC MOTOR BM 450
2	0001.366	1	ROLLER BEARING
3	5000.419	1	MOTOR PLATE
4	0001.107	1	RETAINING RING I 85
5	5000.432	1	1" SPROCKET Z10
6	5002.034	1	SPROCKET RETAINER
7	9007.144	4	DOWEL M12x60
8	0155.082	8	SELF-LOCKING NUT M12 WITH WASHE
9	9007.056	1	HEX HEAD SCREW M 8x25 WITH WASHER
10	0155.082	4	SELF-LOCKING NUT M12 WITH WASHER
11	5002.053	1	1" GEAR Z54
12	6000.033	1	1" CHAIN, 36 EXTERNAL LINKS
13	0001.104	1	1" JOINING LINK
14	n/a	1	1" SPLIT LINK
15	6000.040	1	SPRING CHAIN TENSIONER
16	0001.065	1	GEAR RETAINER
17	0001.202	1	PVC HOSE WITH CLAMPS
18	0001.116	1	GREASING NIPPLE M 1/8
19	9004.037	1	
20	n/a	1	M-M FITTING FOR PVC HOSE
21	9007.069	1	HEX HEAD SCREW M 12x35 WITH WASHER
22	9007.143	2	HEX HEAD SCREW 10X25
23	0155.084	2	FLAT WASHER M12
24	0155.084	4	FLAT WASHER M12
25	0155.084	8	FLAT WASHER M12
26	0155.084	4	FLAT WASHER M12

BMX600

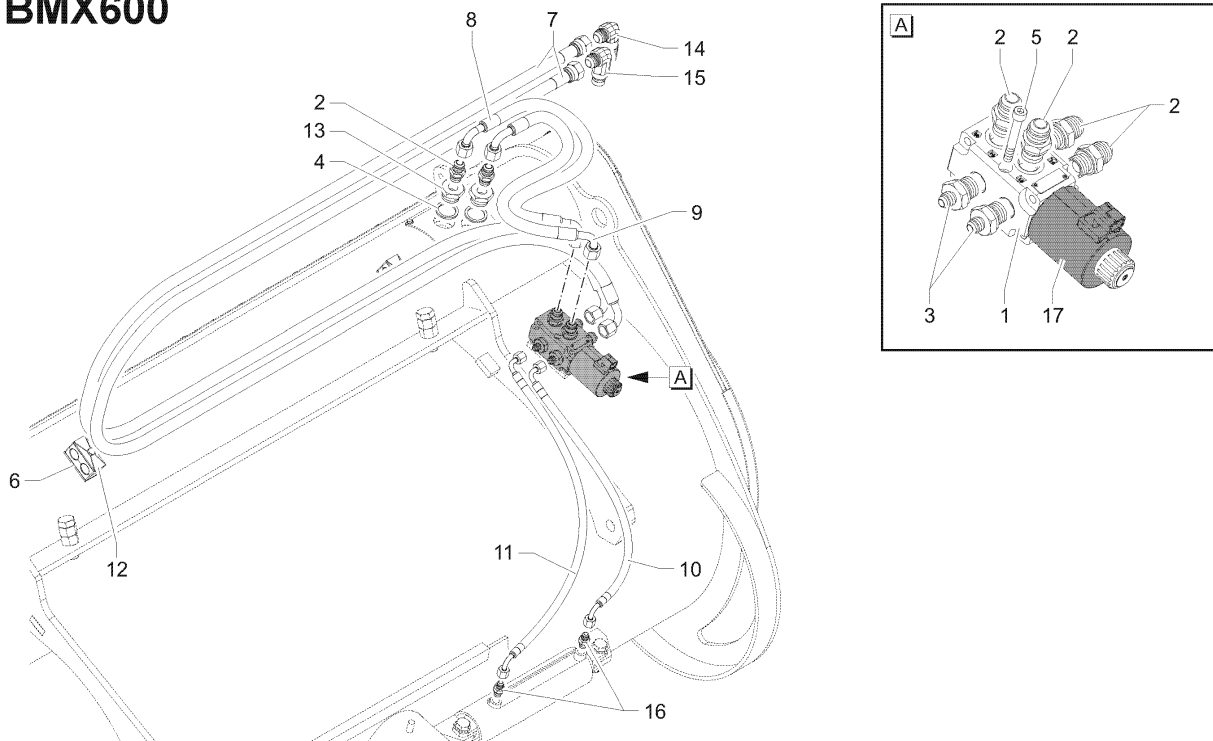


Ref.	Part Number	Qty	Description
1	5025.174 (250)	1	PROTECTIVE GRID BM 250
1	5040.174 (450)	1	PROTECTIVE GRID BM 450
2	5025.319 (250)	1	PIN
2	5040.319 (450)		PIN
3	0155.084	4	FLAT WASHER
4	n/a	2	FLAT WASHER
5	n/a	4	HEX HEAD SCREW
6	9007.062	2	HEX HEAD SCREW M12X50
7	0155.084	2	SELF-LOCKING NUT M 12
8	n/a	4	FLAT WASHER
9	5002.103	1	CASING COVER
10	9007.085	6	HEX HEAD SCREW M8x30
11	9007.105	6	FLAT WASHER M8



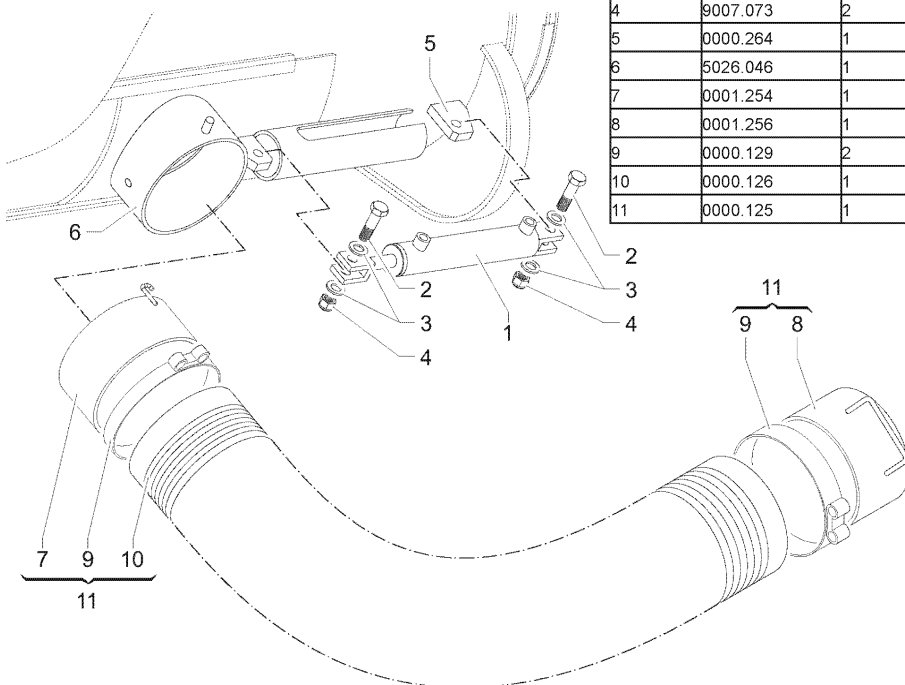
Ref.	Part Number	Qty	Description
1	5051.028	1	Discharge spout

BMX600

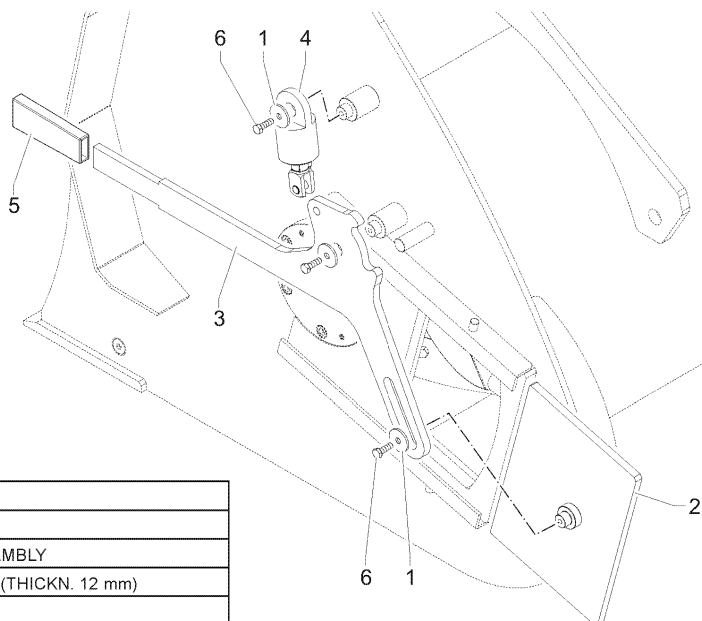


Ref.	Part Number	Qty	Description
1	9007.164	1	SIX-WAY SELECTOR SWITCH
2	9000.026	4	1/2" BSP - 7/8" JIC PIPE NIPPLE
3	9000.017	2	JOINT M 1/2" - F 3/8" BSP
4	9003.008	6	BONDED WASHER 1/2
5	9007.072	2	ALLEN SCREW M8x65
6-12	9005.004	1	DOUBLE COLLAR BASE FOR 1/2" PIPE
7	9006.064	2	FEEDING PIPE
8	9006.066(BM250)	1	FRONT MOTOR PIPE
8	9006.117(BM450)	1	FRONT MOTOR PIPE
9	9006.065(BM250)	1	REAR MOTOR PIPE
9	9006.116(BM450)	1	REAR MOTOR PIPE
10	9006.068(BM250)	1	REAR DISCHARGE PIPE
10	9006.119(BM450)	1	REAR DISCHARGE PIPE
11	9006.067(BM250)	1	REAR DISCHARGE PIPE
11	9006.118(BM450)	1	REAR DISCHARGE PIPE
6-12	9005.004	1	DOUBLE COLLAR FOR 1/2" PIPE
13	9000.029	2	M 3/8" BSP - F 916" JIC PIPE NIPPLE
14	9000.027	2	1/4" BSP - 916" JIC PIPE NIPPLE
15	9003.110	2	1/4" COPPER WASHER
16	9004.034	1	FEMALE QUICK CONNECTOR
17	9004.033	1	MALE QUICK CONNECTOR
18	9000.029	2	M 3/8" BSP - F 916" JIC PIPE NIPPLE
19	9003.007	2	BONDED WASHER
20-21	9005.002	1	DOUBLE COLLAR BASE FOR 1/4" PIPE
20-21	9005.002	1	DOUBLE COLLAR FOR 1/4" PIPE

BMX600



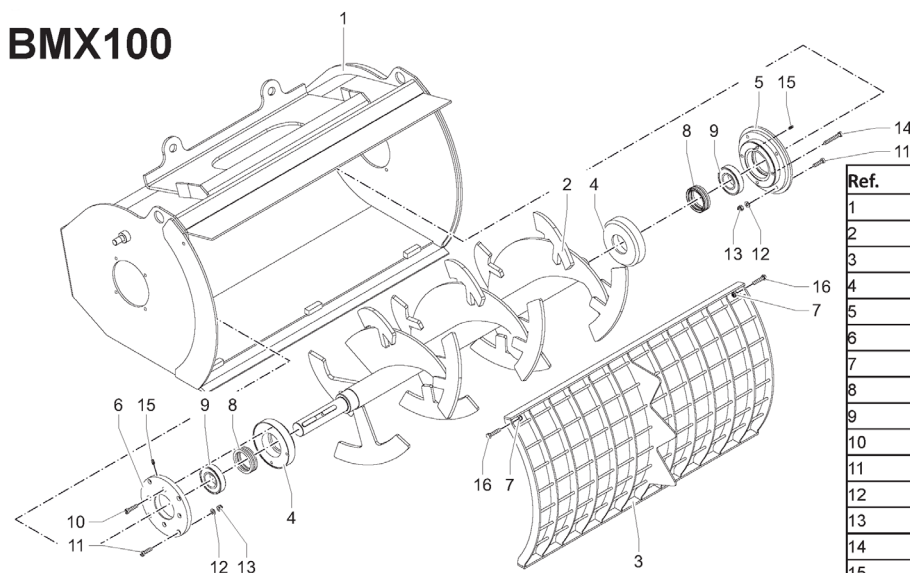
Ref.	Part Number	Qty	Description
1	0000.114	1	HYDRAULIC CYLINDER
2	9007.078	2	BOLT m16x55
3	9007.065	4	WASHER M16
4	9007.073	2	SELF-LOCKING NUT M16
5	0000.264	1	HYDRAULIC CYLINDER RETAINER
6	5026.046	1	DISCHARGE GATE
7	0001.254	1	PIPE CONNECTING SIDE
8	0001.256	1	PIPE SIDE WITH HANDLE
9	0000.129	2	COLLAR
10	0000.126	1	PIPE
11	0000.125	1	



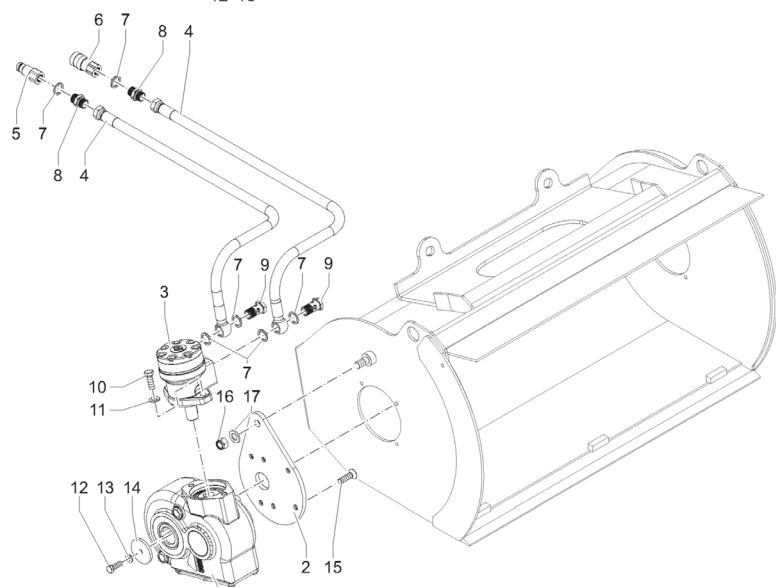
Ref.	Part Number	Qty	Description
1	9007.081	3	BOLT M8x20
2	5026.021	1	SIDE DOOR ASSEMBLY
3	5026.027Z	1	OPENING LEVER (THICKN. 12 mm)
4	5026.022	1	SPRING UNIT
5	5026.039	1	PVC HANDLE
6	5026.036	2	PIN
7	5026.038	1	RETAINER
8	9007.103	3	WASHER

3.1. Parts List – 100 Series

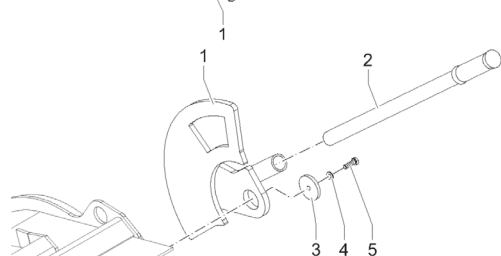
BMX100



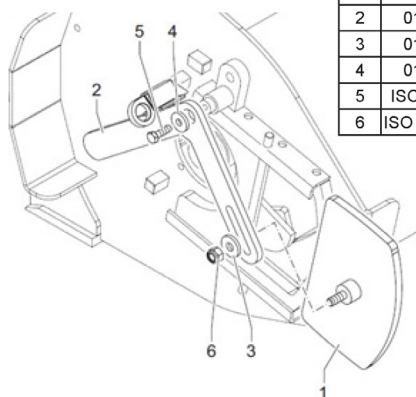
Ref.	Qty	Description
1	1	Bucket Body
2	1	Mixing Shaft
3	1	Protective Grid
4	2	Seal Housing Flange
5	1	Non-drive Side Flange
6	1	Drive Side Flange
7	2	Nut
8	2	Dust Seal
9	2	Roller Bearing
10	4	Screw
11	8	Screw
12	8	Washer
13	8	Nut
14	4	Screw
15	1	Grease Nipple
16	2	Screw



Ref.	Qty	Description
1	1	Reduction Gear
2	1	Casing Cover
3	1	Reduction Gear Mounting Plate
4	2	Feeding Pipe
5	1	Female Quick Connector
6	1	Male Quick Connector
7	6	Bonded Washer
8	2	Pipe Nipple
9	2	Drilled Bolt
10	2	Screw
11	2	Washer
12	1	Screw
13	1	Washer
14	1	Shaft Retainer
15	6	Screw
16	1	Nut
17	1	Washer



Ref.	Qty	Description
1	1	Side Door
2	1	Lever
3	1	Shaft Retainer
4	1	Washer
5	1	Screw



Ref.	Code	Qty	Description
1	0100.141	1	SIDE DOOR
2	0100.180	1	LEVER
3	0100.134	1	SHAFT RETAINER
4	0100.135	1	WASHER
5	ISO4017 M8	1	HEX SCREW M8X25
6	ISO 7040 M10	1	TORQUE NUT M10

4. Warranty

Skid Steer Solutions, Inc and Eterra, LLC. - Limited Product Warranty

If you find physical defects in the materials or the workmanship used in making the product described in this document, Eterra, LLC. will repair, or at its option, replace, the product at no charge to you, provided you return it (freight prepaid, with proof of your purchase from the original reseller) during the 1 Year period after the date of your original purchase of the product.

RMA Replacement Product Warranty

If you find physical defects in the materials or the workmanship used in the refurbishment of an RMA product replacement, we will repair, or at our option replace, the product at no charge to you for a period of 90-days from the date the RMA was created, or until the end of your original warranty period (whichever is greater).

Refurbished Product Warranty

If you find physical defects in the materials or the workmanship used in a product sold as a refurbished unit, we will repair, or at our option replace, the product at no charge to you for a period of 90-days from the date of purchase.

SKID STEER SOLUTIONS AND ETERRA WARRANTS THAT THE EQUIPMENT DELIVERED BY SELLER WILL BE OF THE KIND AND QUALITY DESCRIBED IN THE ORDER OR CONTRACT AND WILL BE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIAL. SHOULD ANY FAILURE TO CONFORM WITH THIS WARRANTY OCCUR, AND THE BUYER HAVING GIVEN WRITTEN NOTICE TO SELLER WITHIN 180 DAYS FROM THE DATE OF SHIPPING, SELLER SHALL CORRECT SUCH NONCONFORMITY AT ITS OPTION BY EITHER REPAIRING THE DEFECTIVE PART OR PARTS OR MAKING AVAILABLE F.O.B. AT SELLERS LOCATION A REPAIR OR REPLACEMENT PART.

THIS WARRANTY IS IN LIEU OF ALL WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE OR ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. CORRECTION AND NONCONFORMITIES IN THE MANNER AND FOR THE PERIOD OF TIME PROVIDED ABOVE, SHALL CONSTITUTE FULFILLMENT OF ALL LIABILITIES OF SELLER TO BUYER, WHETHER BASED ON CONTRACT, NEGLIGENCE OR OTHERWISE RESPECT TO OR ARISING OUT OF SUCH GOODS.

NEITHER PARTY SHALL BE LIABLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. THE REMEDY SET FORTH IN THIS INSTRUMENT ARE EXCLUSIVE, AND THE LIABILITY OF SELLER WITH RESPECT TO ANY CONTRACT OR SALE OF ANYTHING DONE IN CONNECTION WITH THE SAME, WHETHER IN CONTRACT, IN TORT, UNDER WARRANTY, OR OTHERWISE, SHALL NOT EXCEED THE PRICE OF THE GOODS OR PART UPON WHICH SUCH LIABILITY IS ALLEGEDLY BASED

All exclusions and limitations of this warranty are made only to the extent permitted by applicable law and shall be of no effect to the extent in conflict with the express requirements of applicable law.