

Dry Grain Bagger

R950 model
R1050 model



Operator's Manual
Parts list



CDCQ00166A



WE MEET YOUR PRODUCTION NEEDS

Dry Grain Bagger

R-950 model

R-1050 model

Operator's Manual

This manual

Richiger has endeavored to provide the most accurate and clear information on this equipment. Because of efforts to produce the best equipment possible, upgrades and improvements may precede this or subsequent manuals' updates. Therefore, contents of this manual are based on development in effect at the time of publication and are subject to change without notice.

Important

Before attempting machine operation, read this manual's instructions carefully.

This manual contains information and recommendations that may vary in accordance with user experience, climate, grain type, tractor weight and other variable conditions.

Important information



This is the safety alert symbol. It is used to alert the operator about personal safety and risk factors involved when using this equipment. Always observed and follow these important instructions in order to promote safe operation with good work habits.

Richiger baggers are designed and manufactured for years of dependable service when used for the purpose for which it is intended, and when proper maintenance is carried out.

This operator's manual should be thoroughly studied and understood for safe and efficient use of the machine. Keep it near at hand for consultation and ensure that anyone who uses the machine reads it before he operates it for the first time.

READ THIS MANUAL CAREFULLY. Pay special attention to symbols and safety decals, and their meaning detailed here, that you will find on the bagger and throughout this manual.

NEVER OPERATE THIS EQUIPMENT UNTIL USER FULLY UNDERSTANDS THE COMPLETE CONTENTS OF THIS MANUAL. FOR OWNERS WHO DO NOT OPERATE THIS EQUIPMENT, IT IS THE OWNER'S RESPONSIBILITY THAT THE USER IS PROPERLY INSTRUCTED AND IS FULLY AWARE OF THIS MANUAL' S CONTENTS.

This is important in the safe handling of this equipment and to promote an efficient operation. If there are any questions about sections in this manual, it is important to contact your dealer for clarification.

This machine is guaranteed as stated on the next page. A Warranty Registration Card is to be filled and signed with data pertaining to the machine, the buyer and the seller, and promptly returned to the factory. The card provides a ready reference to help you in securing warranty and in answering questions that you may have at some later date.

The serial number and identification tag is located in the forward section of the frame. Please refer to these numbers when parts or warranty communication is necessary.

PLEASE WRITE DOWN THE INFORMATION ABOUT YOUR MACHINE MODEL, UNIT NUMBER AND SERIAL NUMBER AS INDICATED IN THE REGISTRATION PLATE SO THAT YOU HAVE IT AT HAND IF NEEDED.

MACHINE MODEL:

UNIT N°:

SERIAL N°:

Warranty policy

Warranty terms

Unit: **Grain bagger model R-950 or model R-1050**

Richiger Maquinarias SA, located in Avellaneda 661, (S2322BCM) Sunchales, Province of Santa Fe, Argentina, warrants its products Grain bagger R-950 or Grain Bagger R-1050, whichever applies to the present purchase, from defects in materials and workmanship under normal operating conditions and proper application, in accordance with the specifications for operation as described by the manufacturer, for the period of 12 months from date of delivery to buyer. The buyer of the machine, or the Service Center, representative or dealer of the machine in his representation shall return this certificate to **Richiger Maquinarias SA** within 30 days after delivery of the product for the warranty terms to apply. Repairs performed under guarantee and the related parts replaced are guaranteed until termination of the normal warranty validity period.

Limitations on Warranty

This warranty is expressly in lieu of any other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose.

Buyer's sole and exclusive remedy under this warranty shall be limited to the repair, replacement or exchange of warranted products at our option, F.O.B. our factory, or designated Service Center, representative or dealer. Should one of them grant any warranty greater in scope or time period or labor allowance than that detailed herein, **Richiger Maquinarias SA** shall not be liable beyond the herein stated limitations.

Equipment and accessories not of our manufacture are not covered by this warranty. Any claim with regards to defective aforementioned equipment and accessories shall be submitted by **Richiger Maquinarias SA** to the original manufacturers for analysis and subsequent non-approval or approval of repair, replacement or exchange, at their option. No special, incidental, consequential or other damages or contingent liabilities including, but not limited to, loss of life, personal injury, loss of production, loss due to fire or water damage, loss of business or business income, down time costs and trade or other commercial loss arising out of the failure of product. The term product and products as used in this warranty designates the whole finished unit in its entirety, i.e. the complete assembled machine, and/or all and every individual component, part, equipment and accessory that forms said complete assembled machine. Normal wear and tear associated with use is expressly excluded from this warranty.

No products shall be returned without prior authorization from **Richiger Maquinarias SA**.

Buyers and their agents shall prepay all transportation charges for the return of such products to **Richiger Maquinarias SA** or designated Service Center. There will be no acceptance of any charges for labor and/or parts incidental to the removal and remounting of product repaired or replaced under this warranty.

This warranty does not cover conditions over which **Richiger Maquinarias SA** has no control, including, without limitation, contamination, pressures in excess of recommended maximum, products damaged or subject to accident, abuse or misuse after shipment from factory, products altered and repaired by anyone other than **Richiger Maquinarias SA** factory personnel or dealer or source approved by **Richiger Maquinarias SA** in writing prior to commencement of said work.

The first buyer is responsible for proof of delivery date of product for the purpose of establishing warranty time of validity. Warranty can continue for new user should product be resold by first buyer during valid period of warranty, only if this situation is reported in writing, with enclosed documentation as proof of purchase. Warranty will not be applicable if series number or other identification markers are erased, obliterated or otherwise altered.



Limitations on Warranty

The following are types of failures which are not attributable to defects in materials and/or workmanship and which are not considered by **Richiger Maquinarias SA** as part of the warranty extended hereunder. This listing is by way of example and not intended to be exhaustive:

- 1) Product suffered damages attributable to accident, abuse, neglect or ignorance.
- 2) Product was not used in accordance with manufacturer's recommendations.
- 3) Product did not receive required maintenance.
- 4) Failure ensued after replacement of original parts without express consent of **Richiger Maquinarias SA**, or modifications that in **Richiger Maquinarias SA's** judgement may have affected performance, safety and/or dependability parameters.
- 5) Product was used in a manner or for a purpose for which it was not designed or intended to be used by the manufacturer.
- 6) Incorrect mounting of external gears, pulleys, etc.
- 7) Stripped splines or keyways on drive shafts.
- 8) Damage due to deterioration during periods of storage by the purchaser prior to operation.
- 9) Damage of any kind from erosive or corrosive action of any gases or liquids handled by the machinery.
- 10) Lack of or incorrect type of hydraulic fluid, lubricant, oil and/or grease.
- 11) Contamination of the hydraulic fluid.
- 12) Operating beyond recommended maximum speeds, pressures and temperatures.
- 13) Repairs or disassembly by unauthorized personnel.
- 14) Misalignments of drive shafts, gears, sprockets and power driven elements.
- 15) Damage due to voltage spikes, static discharge, electrical storms, physical abuse, externally controlled device failure and improper fusing.

Buyer inspection and acceptance

Within 8 days after delivery to or receipt of product, buyer (User Customer) shall inform seller (Service Center, representative or dealer) in writing if product is found defective or short in any respect. Failure to so inform seller or any use by buyer of product shall constitute conclusive evidence that seller satisfactorily performed and buyer waives any right to reject product thereafter.

About the Warranty Registration Card

The Warranty Registration Card is to be filled in completely and signed by the buyer, and promptly returned to factory by the buyer or by the Service center, representative or dealer. It certifies delivery and provides a ready reference to help you is securing parts and in answering questions that you may have at a later time.

This card does not put you on a mailing list. Nor is the information on the card made available to anyone else.

We urge the return of this card so that you will receive maximum service benefits.

Cut the Warranty Registration Card on next page along the dotted lines and hand over to the Service Center, representative or dealer who sold and delivered the machine, or mail directly to:

Richiger Maquinarias SA
Avellaneda 661,
S2322BCM Sunchales,
Province of Santa Fe,
Argentina



Machine Description:			
Model #:			
Unit #:			
Date of Purchase:			Date of Delivery: <input type="text"/>
Customer Name:			
Address:			
City:		State:	
Dealer Name:			
Address:			
City:		State:	

The machine detailed above and the Operator's Manual have been received and I understand and have been thoroughly instructed by my dealer about how to operate the machine, Operator's Manual content, equipment care, safe operation & warranty terms, and have personally reviewed the Warranty Policy Terms.

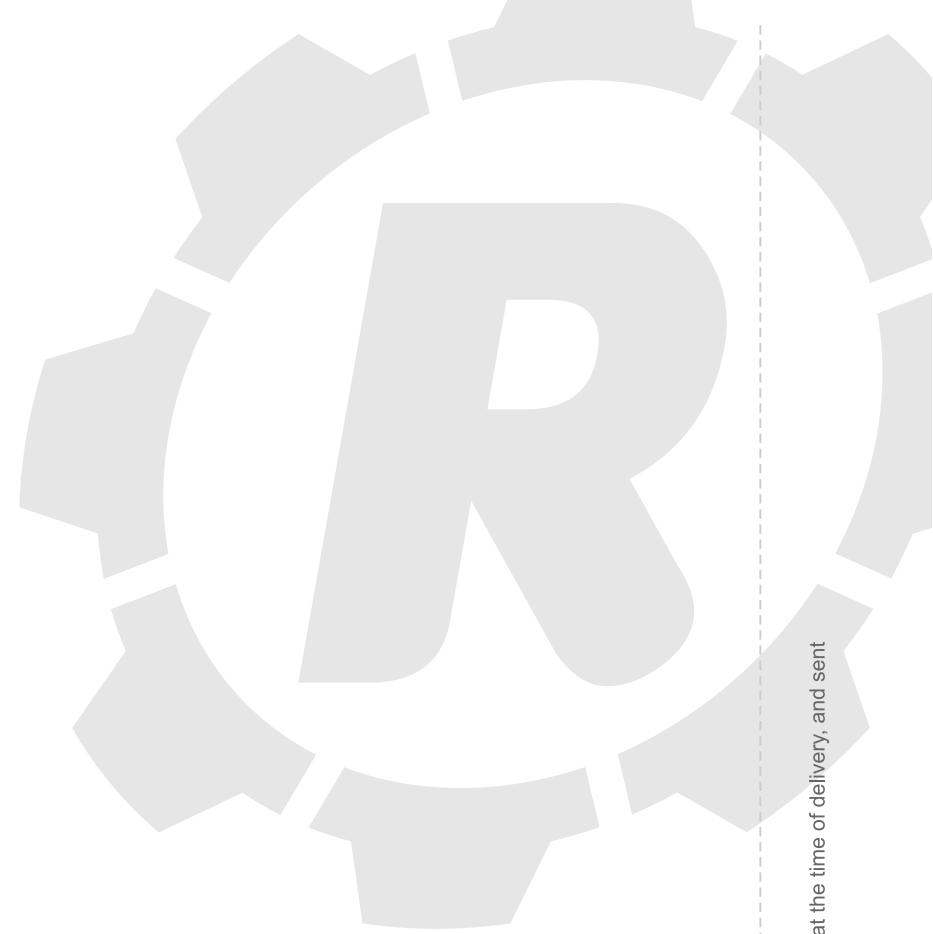
Owner Signature:



Cut-Out Warranty Registration Card

This form must be filled out and signed by the customer at the time of delivery, and sent to factory within 30 days of delivery.





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Richiger Maquinarias SA
Avellaneda 661,
S2322BCM Sunchales,
Province of Santa Fe,
Argentina

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The following Safety Alert Symbols mean **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** They stress an attitude of “Active Safety” and can be found throughout this Operation Manual and on the machine itself. **BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING SAFETY INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.**



DANGER

Indicates one of the most serious potential hazards. Death or serious injury will occur.



WARNING

Indicates a hazard less serious than one indicated by a DANGER decal. Death or serious injury could occur.



CAUTION

Reminds operators of a safety instruction and identifies a hazard less serious than one indicated by a WARNING decal. Minor or moderate injury may occur.



IMPORTANT

Offers reminders or supplementary information.



Mandatory safety shutdown procedure

READ and follow the instructions on all decals.

REMEMBER! It is the owner's responsibility for communicating information on the safe use and proper maintenance of this machine! This includes providing understandable interpretation of these instructions for all machine operators.

BEFORE cleaning, adjusting, lubricating or servicing the unit:

1. Remove the ignition key from the power unit engine.
2. Make sure that all movement of the unit has ceased. **ONLY** when you have taken this precaution can you be sure it is safe to proceed with any hands-on maneuver. Failure to follow the above procedure could lead to death or serious bodily injury.
3. Disconnect the PTO before starting actual work on the machine.

Safety reminders

USER/OPERATOR SAFETY PRACTICES are included in this Operation Manual and are intended to promote **SAFE OPERATION** of the unit.

The safety guidelines presented here are not a substitute for security codes, insurance company constraints or traffic regulations. Make sure your machine is equipped with the elements required in your country for towing or fifth if travel on roads. These guidelines do not preclude the use of good judgment, care, and common sense as may be indicated by the particular job site work conditions.

It is important, in order to avoid accidents involving oneself or others, to be familiar with this machine. The study the location and operation of all controls. Survey the controls in a safe area before actually operating in the field.

It is essential that operators be physically and mentally free of mind altering drugs and chemicals and thoroughly trained in the safe operation of the unit. Such training should be presented completely to all new operators and not condensed for those claiming previous experience.

Some photographs used in this manual may show Doors, Guards, and Shields open or removed for illustration purposes.

BE SURE that all doors, guards, and shields are in their proper operating positions **BEFORE** operating the unit. **NEVER** operate this unit with any guards or shields not in place. Replace any missing or damaged ones.

Keep hands and feet away from all moving parts. Do not wear loose clothing, scarves or pendants that can get caught in moving parts.

NEVER assume that everybody is as safety conscious as you are.



Personal safety

Do not allow minors and any unqualified trained personnel to operate or be near the unit unless properly supervised!

Do not allow anyone to ride on the unit at anytime!

Never leave the unit running unattended! Whenever the bagger if the is working, tractor should not be left unattended so that PTO shaft can be stopped in the event of an unforeseen situation.

Always wear appropriate personal safety gear as called for by the job or working conditions!

Never wear loose clothing while working around moving parts.

Always be aware of pinch point areas on the unit!

Always keep hands, feet, hair and clothing away from moving parts.

Stop and disengage PTO and shut off tractor before doing any adjusting or servicing to unit.

Never step on or over PTO drive-line at any time.

Always use appropriate personal protection equipment (gloves, head and eye protection gear) when doing maintenance work.

Never stand in front of the wheels when disengaging brakes as the bagger can start forward unexpectedly due to rain pressure inside the bag. This sudden movement can imperil anyone in the machine's path.

Decals with safety indications and warnings should be strictly heeded, kept in good condition and replaced if necessary.

Pre-operation and operation safety

Follow a regular maintenance program.

DO NOT pull the unit without having safety chains attached to the tractor.

Do not have anyone stand in front, behind, or along side of the machine when machine is running.

Always use a hitch pin with a retaining clip!

Check wheel bolts regularly and tighten them as required.

Check recommended tire pressures of 50 PSI.

Keep hands, feet, hair and clothing away from moving parts.

Make sure all guards are in place before using the bagger.

Replace any parts which show signs of excessive wear, cracking, or likelihood of failure, with original equipment service parts.

Be familiar with the levers controlling all hydraulically controlled components.

Before loading grain, make sure that the unit does not have any foreign object or material lodged in it that could cause equipment damage or personal injury.

Check that PTO slides freely, is not damaged and is secured properly to tractor and unit. Make sure that there is approximately 1/3 over-lap of engagement.

Never use a tractor that is not recommended for the unit you are using. If you have any questions contact your Richiger dealer.

Keep hands, feet, hair and clothing away from moving parts.

Disconnect hydraulic hoses and drive shaft when performing maintenance chores on the machine.

Make sure there is a fire extinguisher on board the tractor and that the date has not expired.

Do not have anyone stand in front, behind, or along side of the machine when machine is running.

When parking unit, leave it hitched to tractor – the latter with brakes applied – to prevent movement.



Towing safety

Drive with caution when travelling with the bagger on public roads.

Drawbar hitch pin and retaining clip must be properly secured.

Attach safety chains between tractor and bagger for added security on roads.

Verify tire pressures (50 PSI standard for work) and wheel bolts.

The bagger's rear end must be raised as high as possible for best road clearance, i.e. hydraulic cylinder must be completely closed and circuit depressurized.

Hydraulic hoses and hoist remote control cables should be adequately secured in place.

Brakes should be completely released.

The PTO drive shaft should be properly secured in its vertical stow-away position.

The bag supporting cradle should be correctly fastened to the hood with its spring clasps.

The bag supporting tray must be held up securely against the frame by turning and locking the hand winch when the retaining steel cables are taut.

Hydraulic system safety

Do not smoke while working on hydraulic systems!

Never use your hand to search for hydraulic fluid leaks; escaping fluid under pressure can be invisible and can penetrate the skin and cause a serious injury!

USE A SCRAP PIECE OF CARDBOARD TO CHECK FOR LEAKS!

If any fluid is injected into your skin, see a doctor at once! Notify medical staff that there is an injection injury with hydraulic fluid. Injected fluid must be surgically removed by a doctor familiar with this type of injury or gangrene may result!

Do not attempt to loosen or disconnect any hydraulic lines, hoses or fittings without first relieving hydraulic circuit pressure. Also, be careful not to touch any hydraulic components that have been in recent operation because they can be extremely hot!

Always replace hydraulic components with manufacturer recommended replacement parts. Improperly rated components may result in system failure and/or injuries.

Contact your local Richiger dealer to order replacement parts.

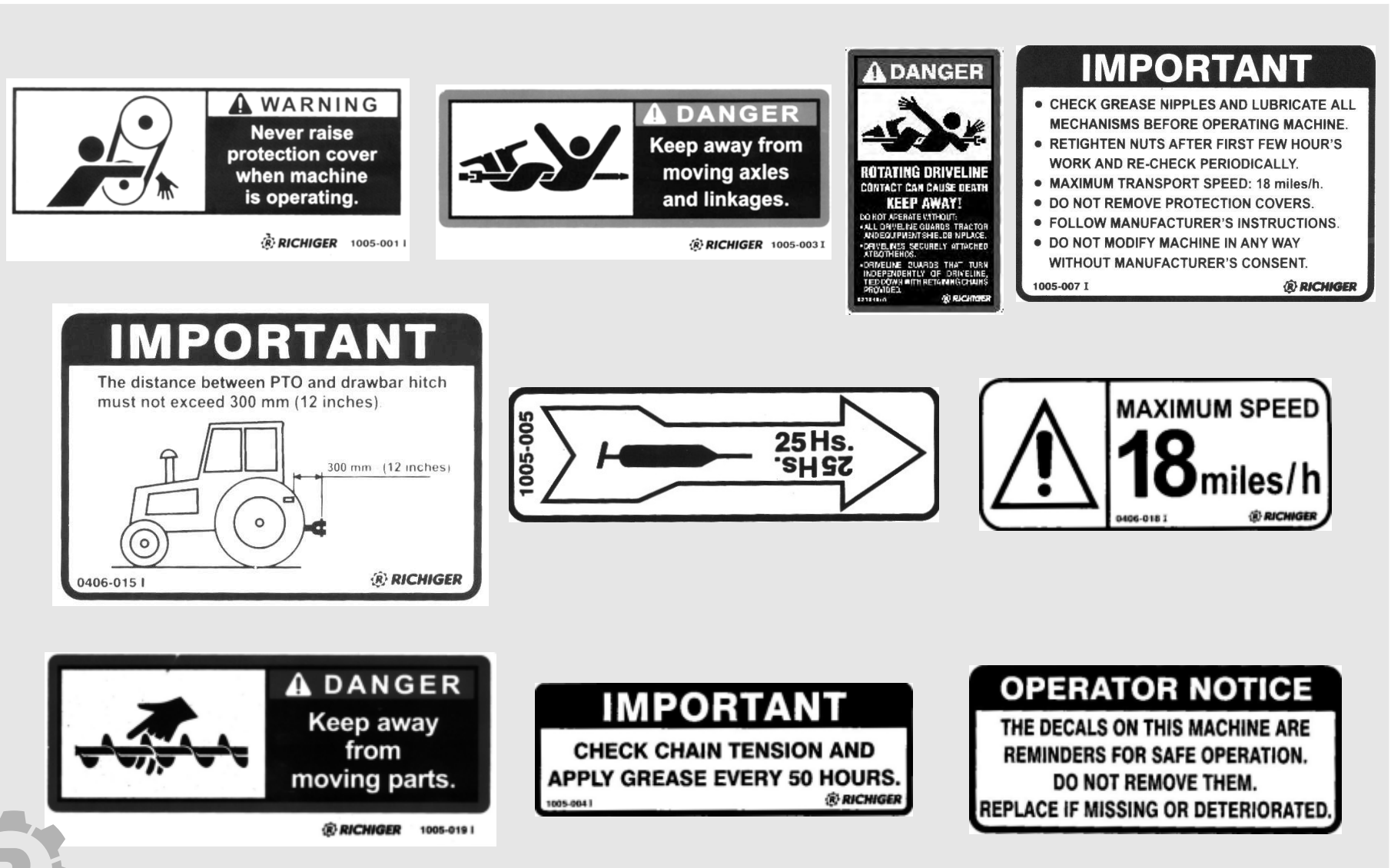
Importance of safety signs

Safety signs or decals provide very important information and instructions designed to alert you to dangers and hazards that can be present during operation of this equipment. However, safety sign instructions must be read, understood and followed to be effective.

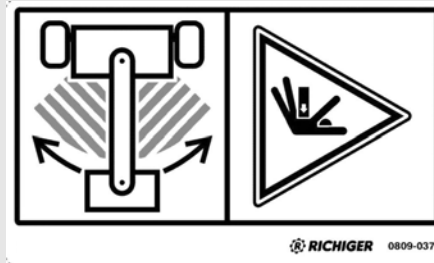
Replacing safety signs

Safety signs or decals must be kept clean and readable. If they become unreadable for any reason, they must be replaced with an identical replacement decal. Safety decals must also be replaced if parts are repaired or replaced with new parts that do not already include the necessary safety decals.

Order replacement decals by part number through your nearest dealer. Part numbers are printed on the lower margin of each decal. Following are reproductions of the decals on the grain carts.



Decals listing



BRAKE RELEASE PROCEDURE

Brakes must be correctly released because grain is compressed inside the bag. If pressure is released suddenly with no restraint it can propel the machine forward and endanger bystanders. **Never leave** a pressurized bag placed on bagger. Follow this sequence with **bagger hitched to tractor** to impede any sudden movement:

- 1) Make sure nobody is in the way.
- 2) Run compression auger to empty bagger hopper.
- 3) Disengage PTO and shut down tractor engine.
- 4) Lock tractor brakes and engage a gear to ensure steadiness.
- 5) Release bagger brakes by turning handles anticlockwise, one at a time. Do not stand in front of the bagger even as the tractor holds it steady.
- 6) Grain pressure may push tractor forward. If there is no forward movement, advance a little with tractor to ensure partial decompression of contents.
- 7) Install jacks at left and right side of bagger. If bag will remain temporarily attached to bagger, disconnect tractor and drive away. Alternatively start bag closing procedure.

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WARNING

Grain pressure in bag can make machine surge forward suddenly if brakes are improperly or accidentally released, endangering people in its path.

Do not release hydraulic brakes once bagger has finished work without following safeguards (read "BRAKE RELEASE PROCEDURE" decal).

Do not release brakes when machine is working.

Do not release brakes with anyone standing in front of machine.

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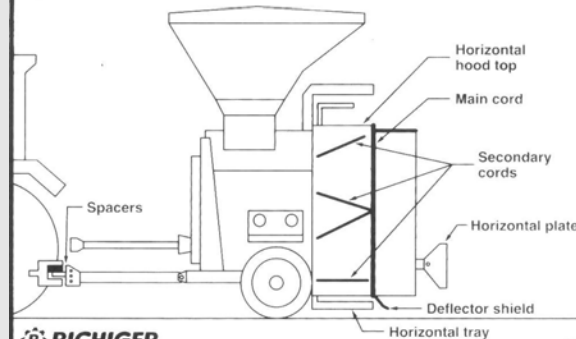
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Instruction decals

SET-UP & OPERATION GUIDELINES

- 1- Check tire pressures of 60 PSI.
- 2- Fit bag to tunnel hood, pull out plastic from outer fold and seal end of bag.
- 3- Lower deflector shield and secure rubber side guards to hood.
- 4- Fasten rope harness: 16 mm main cord and 6 mm secondary cords.
- 5- Tighten bag by rotating tray's movable handles to vertical position.
- 6- The hood top, the auxiliary braking plate and the bag tray should remain in horizontal position throughout operation.
- 7- Use spacer bushings to prevent tongue up & down movement.
- 8- Ensure that tractor brakes are *always* off and that machine advances in a straight line.
- 9- Hydraulic brake procedure.
 - * Stretch values suggested by bag manufacturers should dictate braking pressures.
 - * Initial braking pressure should be around 430 PSI for both wheels
 - * After advancing 2 meters, pressure should be increased to about 1000 PSI. Braking pressure can vary depending on tractor weight and grain condition.

VALUES SUGGESTED ARE MEANT AS GUIDELINES AND CAN BE MODIFIED IN ACCORDANCE WITH OPERATOR EXPERIENCE AND DIFFERING CONDITIONS.



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0611-065 I

BRAKE OPERATION

The bagger has independent disc brakes for each wheel. To regulate:

Turn lever "A" clockwise until gauge "E" indicates desired pressure on caliper "B".

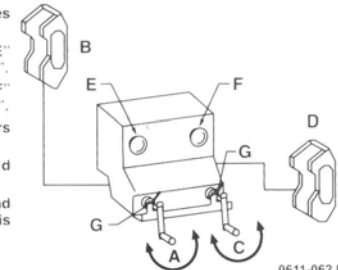
Turn lever "C" clockwise until gauge "F" indicates desired pressure on caliper "D".

To diminish braking pressure, turn levers anti-clockwise.

Locknuts "G" must be tightened whenever levers have been set.

Use only ISO 68 grade hydraulic oil and check that at least half of oil reservoir is full at all times.

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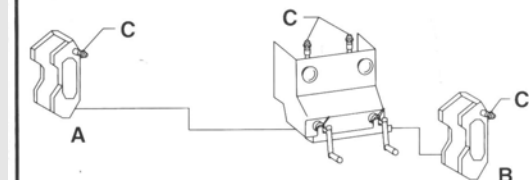


0611-062 I

BLEEDING OF HYDRAULIC CIRCUIT

Air bubbles in the circuit can cause defective braking. Proceed as follows:

- 1) Remove bleed screw "C" of caliper "A" positioned farther away from pump, and turn lever repeatedly until all air is eliminated from circuit. Replace bleed screw.
- 2) Repeat procedure with bleed screw "C" of caliper "B" positioned closer to pump.
- 3) Remove bleed screws "C" located above pressure gauges. Turn levers repeatedly until all air is eliminated from circuit.



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0611-064 I



Purpose

02

Richiger's R-950 and R-1050 baggers are machines designed for one basic purpose: storing all types of dry, clean grain inside bags. Alternatively, products such as fertilizers that run freely and flow in a way similar than grain does can be also be stored in bags. However, they are machines designed for particular and not multiple applications. Caution is recommended and utilization of the machine with materials out of its specific range of use will be considered inappropriate.

This manual also contains information about adequate preparation of the ground, correct layout of bags and other considerations that should be taken into account when using Richiger's dry grain bagger.

General Features

Heavy duty frame

Solid structural frame has been designed to stand up to the toughest working and transport conditions for many years of trouble-free operation.



Braking system

The disc brake system acts independently on each wheel. Hub and disc are cast as a single integrated piece to obtain a simpler, sturdier unit. Left and right wheel braking circuits are monitored with individual pressure gauges and once pressure is set, valves maintain it constant. This precise control of braking action contributes to the overall efficiency of the bagging operation.



Supplementary brake

The braking action is supplemented by an auxiliary passive shield that acts within the grain mass, creating resistance to advance to achieve better compaction and bag volume.



Compression auger

The screws are mounted on self-aligning, shielded bearings that are adjustable both horizontally and vertically. They are located in topmost position inside the tunnel to achieve better filling of the bag, and horizontal layout ensures minimum breakage of grain



Drive shaft transmission

Transmission works through chain driven reduction gears for positive non-slip action. It works with a PTO standard speed of 540 RPM, reduced to half that speed at the compression auger to prevent grain damage. Excessive auger speed could also generate centrifugal forces that slow down the bagging process.



Drawbar

Heavy duty drawbar built of structural steel tubing allows hydraulic and mechanical height regulation.



Supporting rail

The hoist assembly slides on a supporting rail and is controlled from the ground so the operator does not risk accidentally falling from the machine.



Electric hoist

It is driven by the tractor's 12V battery and allows the operator to raise the bag via remote control without physical exertion.



Grain hopper

Ample length and width allow the loading of grain with less grain cart maneuvering



Tunnel

Tunnel shape is optimized to form a tall bag that will hold more bushels of grain. Standard 9 ft. and 10 ft. bags of up to 330 ft. in length are used in Richiger's R-950 and R-1050 models respectively.



This operator's manual has been prepared with the latest information available. Read it through before using the bagger. The terms "left" and "right" when mentioned in the manual in relation to the machine are used from the operator's point of view, seated in the tractor facing forward. All information used in the manual was updated at the time of printing, but changes carried out in factory could show some differences between pictures, illustrations and data depicted here and the actual product. The manufacturer reserves the right to modify the models described in this user's manual without prior notice.



WARNING

Some of the pictures in this manual show the machine with protective covers and shields removed in order to show a feature more clearly. Do not operate the bagger if any of the protective covers is missing.

Serial number and operator's manual

Serial number and machine model is important information pertaining to your machine. This information is required when ordering spare parts. The identifying tag is located on the front, lower left section of the machine.



The canister with the manual is located inside the pillar on the left



Technical Specifications

04

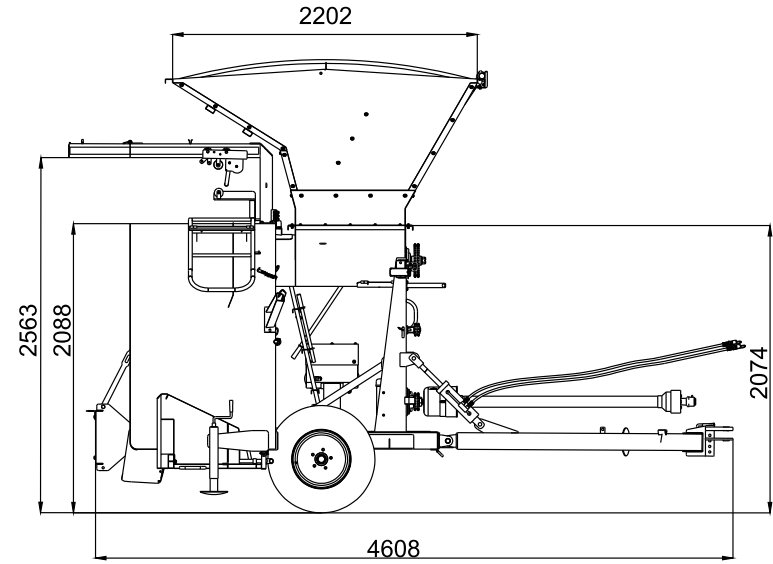
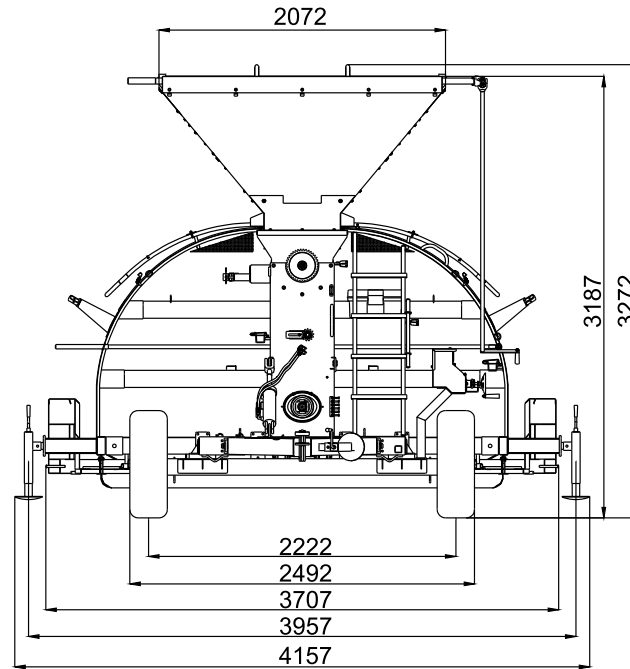
R950

R1050

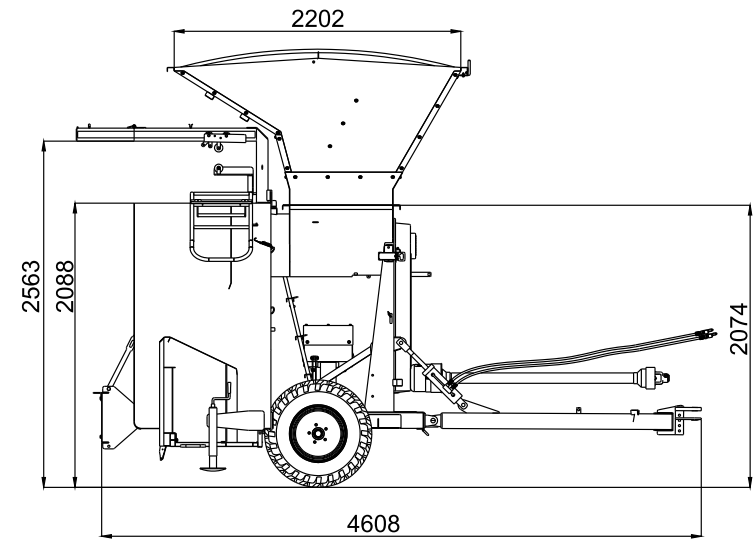
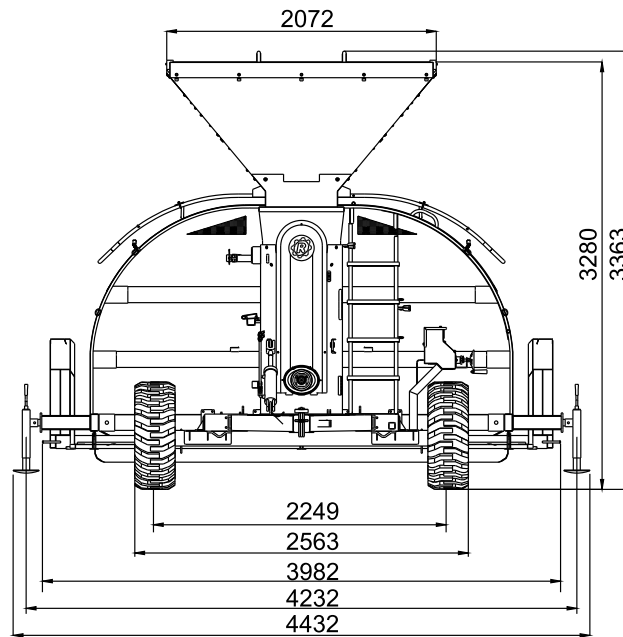
tunnel	Flattened bell shape for 9 ft bags up to 330 ft. in length	Flattened bell shape for 10 ft bags up to 330 ft. in length
Bag setup	Bag cradle is raised with a 12 V. electric hoist that slides along a supporting rail. Operator works safely from the ground.	
Materials suitable for bagging	All kinds of dry grains and pelletized materials such as fertilizers and stock feed.	
Transport system	Can be towed or loaded on a trailer for long distances.	
Height adjustment	By means of a hydraulic cylinder.	
Tongue	Folds for easy transport on truck or trailer.	
Tractor requirements	45 HP with 540 rpm PTO	80 HP with 540 rpm PTO
Drive shaft	Level PTO to gearbox angle	
Braking system	Disc brakes integrated with wheel hubs. Individual brake circuits for each wheel	
Compression screw	340 mm screw for 11,500 bu/h (290 tons/hour)	460 mm screw for 23,000 bu/hr (580 tons/hour)
Bag fastening system	Rope harness	
Tires	BKT SKD 10-16.5 NHS 10 Ply	BKT SKD 12-16.5 NHS 10 Ply
Tire pressure	50 PSI	50 PSI
Weight	1,420 kilograms	1,650 kilograms

05

R950



R1050



**General indications
before actual work**

06

Tractor

The tractor used with the R-950 bagger should have no less than 45 HP.
The tractor used with the R-1050 bagger should have no less than 80 HP.
Hydraulic circuit can be either open loop or closed loop.

The PTO drive shaft should not exceed a 360 millimeter (14") length, measured from end of PTO stub shaft to drawbar hitch pin (Fig. 1) This is to ensure adequate torque transference between the two sections of the drive shaft.

A 12V electric hoist is used to raise and place bag in position on the tunnel hood, so the tractor's battery should provide that voltage.

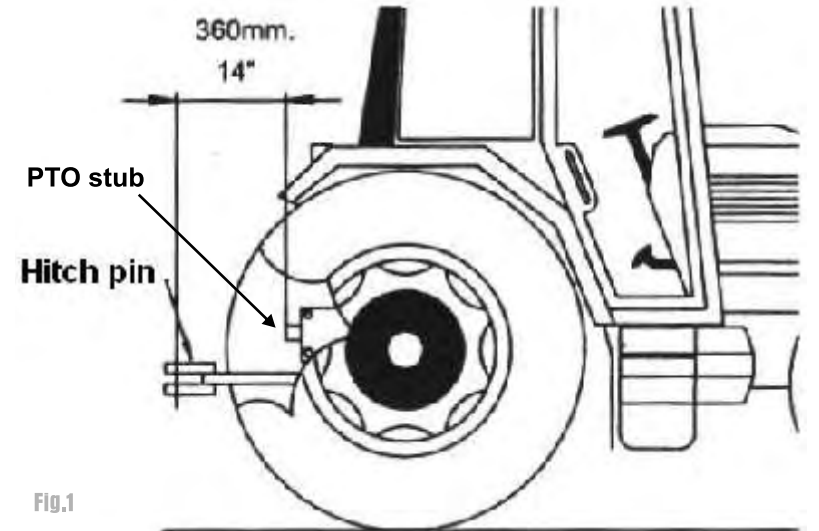


Fig.1

Hitch pin "A" should be 30 to 32 mm. (1 3/16" to 1 1/4") in diameter and have its corresponding retaining clip "B" (Fig. 2). A spacer should be placed between hitch tongue and drawbar to prevent vertical rocking motion.

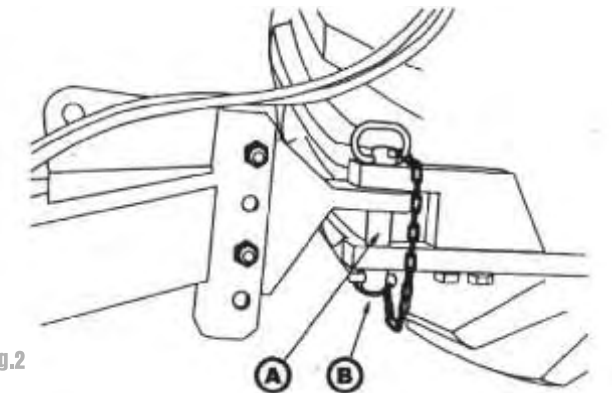


Fig.2



The hydraulic cylinder is used to set the machine's inclination angle and working height. Hoses connect to tractor hydraulic system through 1/2" NPT quick couplings (Fig. 3, "A").

Before connecting hoses to tractor: stop tractor engine and depressurize hydraulic circuit by moving control lever in both directions. Remove female plugs (Fig. 3, "B") and wipe clean coupling ends before connecting.

Before disconnecting hoses from tractor: stop tractor engine and depressurize hydraulic circuit by moving control lever in both directions. Pull out quick connect couplings and cover ends with plugs.

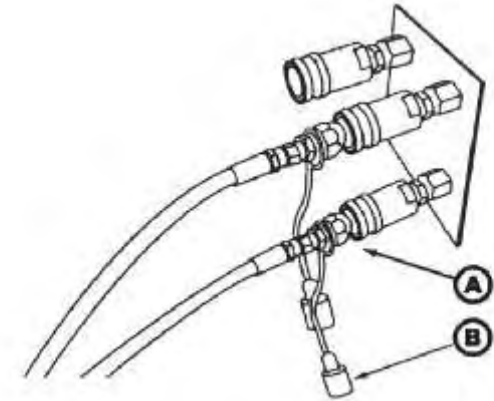


Fig.3



CAUTION

After connecting the hoses, check that they are not left so short that the bagger cannot maneuver without pulling at them, nor too long that there is risk of them snagging a machine part.

The correct bagger position when working is approximately horizontal, i.e. neither front nor rear of the machine pointing downward. Since the weight of the incoming grain will tend to push down the rear end, as he gains experience the operator can learn to compensate this effect by slightly tilting the machine to the front with the hydraulic cylinder. However, any hydraulic movement has to be done before the bag begins to be filled with grain because afterward the mass of grain in the tunnel makes the machine virtually unmovable. Using the cylinder at that stage could cause mechanical malfunction or damage.

PTO drive shaft

Make sure that the correct extremity (i.e., the square bar) of the drive shaft is connected to the tractor's PTO. This is clearly indicated on the shaft itself.

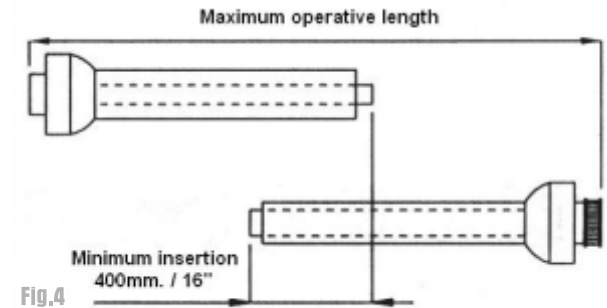


CAUTION

The PTO drive shaft demands that the operator be attentive and use maximum caution around it. Make sure that protection shields installed on tractor and shaft do not interfere with each other or with normal shaft movement during work. Verify there is no excessive angle disparity between connection points: drive shaft should be as horizontal as possible.

Check maximum and minimum lengths of shaft when open and closed. Read following instructions to adjust length:

- Disassemble shaft into its male and female component halves.
- With bagger hitched to tractor and square bar telescoping section (male half) connected to PTO, place round tube section (female half) alongside and verify that there are at least 400 mm. (16") of square bar that will insert (Fig. 4).
- This maximum allowable length should not be exceeded because torsion effort could damage the shaft, or even worse, the sections could come loose.
- Also check that drive shaft is not left so short that adjoining sections could make contact.
- Apply grease to sliding parts.
- When connecting yokes to tractor and bagger, ensure that they lock properly.
- The protection shields have chains attached to their ends so that they can be secured and be prevented from rotating simultaneously with drive shaft. Check that they turn freely before chaining them down.



DANGER

A drive shaft connected to a live PTO that comes loose at the bagger's end will flail around uncontrollably, posing a mortal danger to operator and bystanders, and can badly damage equipment at the very least. To avoid this possibility ensure that:

- a) Enough length of square shaft is inserted in adjoining female section
- b) Quick release yokes are securely locked to splined stubs on tractor and bagger
- c) Regular maintenance is carried out and U-joints are replaced if necessary

Choosing and preparing the ground

It is important, as a first step in achieving good conservation of stored grain, to plan ahead and make preparations taking into account the following guidelines:

- Ground should be compact, so that tires of tractor and machine have a good grip.
- Ground should be elevated, not subject to flooding, and with no trees.
- Ground should be flat with no potholes, puddles or mud that can cause erratic braking action.
- Ground should be free of weeds and stubble that can damage the bag and kept that way by using herbicides.
- If the ground has a slight slope it is better to operate with tractor climbing the slope as this will favor better compaction of grain at lower end of the bag.
- Ground should be level across the width of the bag because this ensures an even distribution of grain to both left and right sides. Gradient plus gravity can result in excessive bag stretch on one side due to disproportionate weight distribution.
- If possible, the area in use should be fenced in if there is a presence of animals that could damage the bags.
- The area should be kept free of rodents and burrowers.
- The ideal orientation for bags is North/South because of more uniform exposure to solar radiation as the day advances.



IMPORTANT

Before laying down the bags, it is important to decide surface distribution of bags and corridors.

Width of passageways between bags is important because it must permit circulation of self unloading carts, trucks, tractors and grain extraction equipment. The actual surface taken up by each bag depends on factors such as type of grain being bagged, degree of bag stretch and temperature. A bag done in cool weather will tend to flatten and sag at the sides to some extent when temperatures soar.

As a reference value, a minimum of 5 meters (app. 17 ft.) separation distance between rows of bags is recommended (Figs. 5).



Fig. 5

As previously mentioned, the best orientation for bags is the North/South axis because both sides of the bag get exposed to similar amounts of solar radiation during the day.

With an East/West orientation there will be a tendency for heat to build up more readily on the exposed side of the bag. This effect is more conspicuous in locations that are farther away from the equator; in the Northern hemisphere sun will shine on the flank of bag facing South, and in hot summer days this could cause overstretching and even fissure of plastic film (Figs. 5b).

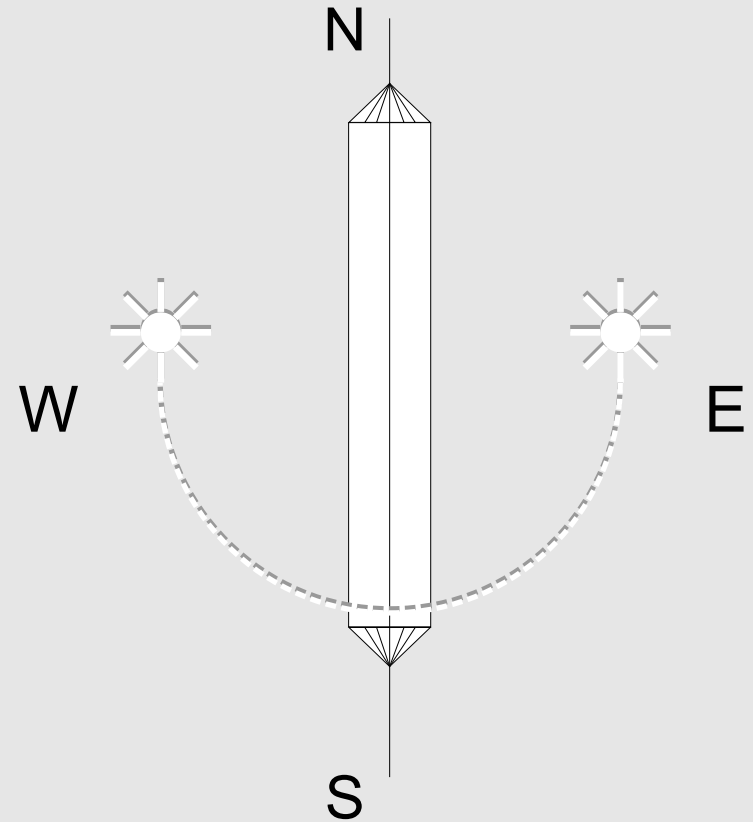


Fig. 5b



Work sequence

Setting up the bagger

1

Bagger is shown being towed by truck (Figs. 6 & 7). This should always be done with hydraulic cylinder completely closed as this raises the rear section and gives maximum road clearance.



Fig. 6



Fig. 7

2

A screw jack is stored in horizontal position at the back of the machine, in the lower tunnel section (Fig. 8). Fit upright in square socket and turn handle to prop up the rear end (Fig. 9).



Fig. 8



Fig. 9

3

Remove second screw jack from drawbar and place upright in socket (Figs. 10 & 11). Give handle a few turns to prop up the front of the machine, remove hitch pin and unhitch from towing vehicle.



Fig. 10



Fig. 11

4

Move tractor in and hitch to bagger. If necessary introduce a spacer bushing between drawbar and tongue to avoid vertical rocking motion (Figs. 12 & 13).



Fig. 12



Fig. 13

5

Unbolt and remove drive shaft from its vertical storage position on bagger. Connect square bar section to tractor's PTO stub and round tube section to bagger's splined stub. Make sure both ends are locked fast as a loose, flailing shaft poses mortal danger. Check that drive shaft plastic shields turn freely and secure the chains at both ends to fixed points on the machine (Figs. 14, 15 & 16).



Fig. 14



Fig. 15



Fig. 16



6

Connect cylinder hoses to tractor's hydraulic system (Fig. 17)



Fig. 17

7

The R-950 and R-1050 baggers are equipped with two supporting brackets stowed on the machine (Fig. 18). The lock pins are pulled out to detach the brackets (Fig. 19).



Fig. 18



Fig. 19

8

The brackets are then inserted in the rectangular slots at both sides of the tunnel, in horizontal position (Fig. 20). Push the brackets into the slots up to the point where the lock pins can be inserted and secured with retaining clips (Fig. 21).



Fig. 20



Fig. 21

9

Now that bagger is attached to tractor, remove the two screw jacks that prop up front (drawbar) and rear (tunnel) sections of the bagger (Fig. 22) and place them on the outer square sockets of the support brackets, one on the left and the other on the right side of the machine. In order not to interfere with machine movement, they should be placed horizontally (Fig. 23), as the bagger has to be repositioned hydraulically and must be able to shift.



Fig. 22



Fig. 23

10

A hand winch is used to control bag tray inclination. In Fig. 24 the worker can be seen operating the lock with his left hand in order to turn the handle either clockwise or anticlockwise. When transporting the machine, the tray is held fast against the tunnel by tensioning the support wire (Fig. 25).



Fig. 24



Fig. 25



11

The following steps should be taken before installing the bag. The tray support wire should be loosened until the tray rests on the ground (Fig. 26). The anchor plate that supplements wheel brake action should be left in its non-operative position, folded against the tunnel back partition (Fig. 27).



Fig. 26



Fig. 27



CAUTION

There is no need for the operator to climb on the machine - and risk a fall - at any time when installing the bag. The following instructions show how the whole procedure is carried out with operator standing on the ground.

12

Before mounting the bag, make sure the hinged bag deflector plate that runs along the tunnel bottom is locked in its uppermost horizontal position. This facilitates bag placement on the tray (Fig. 28). At the tray's rear are located two rotating handles, one on each side, which at a later point are used for tensioning the plastic sheet. Presently they should lay flat upon the tray (Fig. 29).



Fig. 28



Fig. 29

13

Connect the hoist's main cable crocodile clips to the 12 V battery terminals or to the tractor's 12 V electrical outlet (Fig. 30). The remote control power cable is plugged into the female socket attached to the bagger (Fig. 31).



14

The bag supporting cradle, which is held in place with spring clasps on each side (Fig. 32) and a central pin (Fig. 33), is detached from the hood. At this point, the hoist cable's shackle should be hooked to the bag cradle.



15

A three meter long pole is stowed in the bagger, held by pins (Fig. 34). The ring end of the pole is now passed through a pin welded to the front of the winch supporting rail – which is folded back for transport – in order to extend it horizontally for work (Fig. 35).



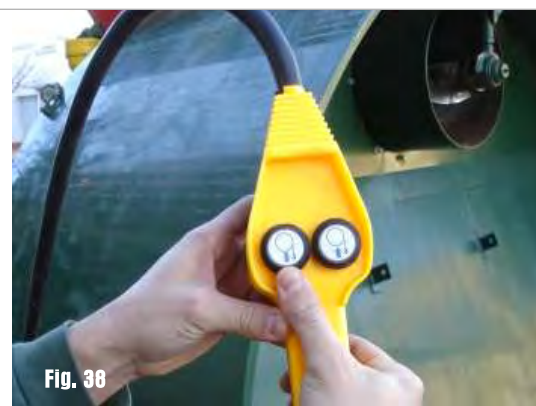
16

With the same end of the pole, the winch (mounted on a cart or trolley that runs along the rail) is hooked (Fig. 36) and pulled to the front with cradle attached (Fig. 37).



17

Using the remote control, the cradle is lowered to the ground (Figs. 38 & 39).



11

The vehicle with the bag should back up against the bagger tunnel and the box containing it lowered to the ground (Fig. 40). The box indicates correct orientation of bag. The box is opened and the bag extended full length on the ground. Notice that the lower half of bag should lie next to the tunnel, while the upper half should lie slightly to the rear, as seen in Fig. 41. Also notice the bag's folds are still tied with straps to prevent them from unfolding, to be untied at a later stage.



Fig. 40



Fig. 41

12

The cradle can now be lowered onto the bag's lower half (Fig. 42). The cradle is not rigid but has two hinges that lets it adopt a flattened shape instead of its normal, more rounded shape atop the hood. This makes it easy for a single operator to place the upper half of the bag over the cradle, since the lifting motion is limited to a few inches off the ground (Fig. 43).



Fig. 42



Fig. 43



IMPORTANT:

The bag should be grasped from its inner part when being placed on the cradle, with white layer facing outside and black layer facing inside. Check that the bag is correctly oriented by tugging at the top white layer; it must unfold outward, away from tractor and machine.



13

Before hoisting the bag, make sure that the hydraulic cylinder is lowered as shown in Fig. 44. This will in turn raise the bagger rear section (Fig. 45), allowing gravity to aid the operator in pushing back the bag for final placement over the tunnel, as will be seen in the next step.



Fig. 44

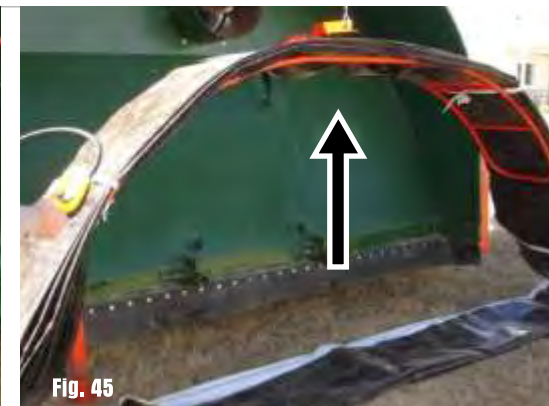


Fig. 45

14

When at mid-height, stop hoisting and check that the stretch control marks printed on the plastic are positioned correctly at the sides of the bag (Fig. 46). This will later permit inspection of the bag area subject to higher stretching forces. Continue raising the cradle until it clears the hood by a few centimeters and, using the metal pole, push winch cart, cradle and bag to the back of the hood until they touch the hopper base (Fig. 47).



Fig. 46



Fig. 47

15

Simultaneously with pushing the cradle back, the plastic folds are arranged in an ordered manner around the tunnel (Fig. 48) and over the tray (Fig. 49). Once the tray and bag are in their final position, operate the hydraulic cylinder to set the bagger back to horizontal working position.



Fig. 48



Fig. 49

16

At the hinges or pivot points the cradle is supported by brackets that create a gap above the tunnel (Fig. 50). This extra clearance allows more of the plastic to be gathered at the top, so that the bag floor remains taut and crease-free as plastic folds are pushed out by the grain (Fig. 51). Spring clasps and central pin should now be used to reattach the cradle to the hood.



Fig. 50



Fig. 51

17

Use the hand winch to lift the bag tray up from the ground (see Fig. 26) and lock it in place once the tray is in horizontal position (Fig. 52 shows tray in position indicated without bag installed for better viewing).



Fig. 52

18

Rotate the curved handles that lie flat on the tray to vertical position (Fig. 53 shows one of the handles in vertical position without bag installed for better viewing) so that the bag folds are tensioned. With the longer bags it may not be possible to perform this action because the folds are numerous at initiation. The handles can be turned at a later stage of the filling operation, once a certain length of bag has been laid and there are fewer folds on the tray. Check that the trapdoor located under the compression auger tube is closed (Fig. 54). It is opened to allow seepage of rainwater that may collect, but at work it must remain shut.



Fig. 53



Fig. 54

19

In the tunnel, if the anchor plate is positioned in its horizontal, transport position (Fig. 55), set it to vertical work position (Fig. 56 shows the anchor in its vertical work position without bag installed for better viewing).



20

Lower the deflector plate, which was previously secured horizontally while the bag was being fitted (Fig. 57), to its vertical work position (Fig. 58 shows the deflector plate in vertical position without bag installed for better viewing). Lock it in work position with the pins and clips provided.



21

Taking hold of the outermost fold, pull out plastic sheet from all around tunnel and tray to a uniform length of about 3 meters, being careful not to disarray the folds (Fig. 59). With each fold about 50 centimeters wide, this will require pulling away 6 or 7 folds. The operator should then enter the tunnel through the bag and check that the folds have remained well stacked on the tray (Fig. 60).



Fig. 59



Fig. 60

The bag should remain orderly and tidy, both the folds on the tunnel hood and the length of plastic pulled outward. Smoothen the plastic sheet and lay the end of the bag completely flat on the ground (Figs. 61 & 62).



Fig. 61



Fig. 62



22

The ends of the plastic sheet should be wrapped a few times around a 1" or 2" x 4" board approximately 4 meters in length or longer (Fig. 63). A second board of the same length is nailed onto the first, and this accomplishes initial closure prior to beginning work (Fig. 64). Nails should be placed a distance of about 30 centimeters from one another. It is important that the nail heads be hammered flush with the wood to prevent them from ripping the plastic, which could allow water entrance. The boards are turned round several times and tucked under the bag. Alternatively the bag can be sealed with plastic strips supplied by the bag manufacturer that are positioned in place and crimped with a special tool, but this method rarely achieves the mechanical resistance and reliability provided by nailing wooden boards together. See more details in the section "Closure of bag" further ahead.



Fig. 63



Fig. 64



IMPORTANT

The main cord must encircle the hood in front of, but not over the folds and the cradle that holds them. The cord is tightened in front of the cradle to hold the folds at the back of the hood and ensure that they slide out one at a time as they are pulled out.



IMPORTANT

It is crucial that the heads of the nails used to tack the boards together are flush with the wood surface and that the length of the nails be calculated accurately enough that their points can penetrate the third board but not go through the other side. Otherwise they will puncture the plastic when the boards are turned round and not form a water-resistant seal.

A rope harness is used to keep the bag in position during the filling operation. Beginning from either the left or the right side of the machine, the main cord is first secured to one of the two cleats welded to the sides of the tray (Fig. 65). The free end of the cord is then passed from **bottom to top** through the 1" diameter hole located close to the lateral edge of the tray (there is a symmetrical hole on the opposite side of the tray). The cord is then passed to the other side of the bagger over the tunnel hood (Fig. 66), then threaded through the second tray hole from **top to bottom** (Fig. 67) and finally tied firmly to the adjoining cleat. The cord should be fastened sufficiently tight because this prevents backflow of grain that can work its way past the rope and into the folds. Three secondary cords are used to prevent the main cord from being pulled out with the plastic folds. They are passed behind the main cord (Fig. 68). Two cords go on the sides and the third goes on the upper part of the hood, attached by hooks to rings especially welded to the tunnel for that purpose.





IMPORTANT

For optimum brake performance, set tire pressure to 50 PSI. The ground under the bag should be firm and level, without holes, mud or obstacles.

Braking pressure determines the degree of stretch experienced by the bag. Bag manufacturer recommendations should be followed to avoid overstretch and its associated problems.

1

Set initial brake pressure to 30 PSI (see next section: “Adjusting the brakes”) on both wheels. Shift tractor gears to neutral, engage PTO and increase RPM progressively. As soon as the PTO starts turning the self unloading grain wagon, positioned to the right of the bagger, can begin delivering grain. Depending on the tons of material per minute being processed by the bagger, the PTO can be operated at somewhat less than maximum speed of 540 RPM, as operator gains familiarity with continued use.

2

When approximately two meters of bag have been filled, braking action should be reinforced.

Increase the pressure to about 100 PSI. This is not to be taken as an absolute value, as several variables come into play such as tractor weight, type of grain and terrain conditions. The more force applied to the brakes, the heavier the load applied by the compression auger to the incoming grain and the higher the pressure of grain packed inside the bag. The wheels of the bagger must grip the ground and turn, not slide. If this happens, brake pressure should be diminished to the point where proper wheel traction is restored, even if grain gets less packed inside the bag. Bag manufacturers print stretch mark indicators at regular intervals along the length of the bag that are measured with a ruler to establish actual degree of distension (Fig. 69). This monitoring provides the feedback necessary to adjust the brakes and stay within safe pressure limits. Should it be necessary to increase or decrease braking action it should be done by small increments to avoid a sudden discontinuity of grain pressure within the bag.



Fig. 69

3

Check periodically that the tractor is progressing in a straight line. Since it is being pushed forward by the advancing bag it may tend to veer to some degree, and if this happens the steering wheel should be corrected. The object is to achieve a bag that is as straight as possible because this will simplify extraction of grain at a later date.

1

Braking procedure is carried out for each wheel individually, starting in any order. Brakes should only be used for work or when transporting the machine on a trailer.

2

The wheel brakes are regulated from commands located on the left section of the machine. The operator can adjust brake pressure safely from the side, away from the machine's path.

The command unit houses the hydraulic brake pumps. Externally, two disc-shaped handles - one per wheel - are turned clockwise to increase brake pressure and anti-clockwise to reduce it. The handles' threaded shafts have wing locknuts which should be tightened each time brake pressures are set in order to prevent shifts. Manometers located above the handles indicate pressures applied to the respective disc brakes (Fig. 70). The hydraulic calipers act upon the discs, which are integral with the wheel hubs as units cast in a single piece (Fig. 71).





DANGER

Never allow personnel or occasional bystanders to stand in front of the tractor or between tractor and bagger during work. People positioned in the path of machine or tractor is not required at any stage of the bagging procedure.

Never execute bagging operation with tractor brakes on. If inadvertently this happens, pressure will mount inside the bag as grain keeps coming in but the machine is unable to advance. If the situation is not corrected, the bag will burst open and spill its contents, so it is imperative to release the tractor brakes.

But there is potential danger should this corrective action be performed hastily. If the brakes are released all of a sudden, the tractor can spring forward several feet in an uncontrolled manner, impelled by grain pressure in the bag.

This will seriously imperil the life of any bystander standing in the way.

If it is noticed that the bag is not advancing while grain is coming in, engine or PTO should be turned off first, so time is gained to evaluate the situation before taking corrective action.

If the problem lies with the brakes, then these should be released progressively to allow the tractor to advance in a controlled manner instead of darting forward abruptly. When the tractor stops, its inertia spent, the bag's contents have decompressed sufficiently for the operation to resume normally.



DANGER

Never execute bagging operation with tractor brakes on or gearbox engaged. If accidentally tractor brakes are left on while work is underway, tremendous pressure will gather inside the bag as grain keeps coming in but the bag doesn't unfold. As a consequence it could burst open and spill contents. But there is also an element of personal danger: if the tractor brakes are released suddenly or gearbox disengaged without due precaution, it could cause the tractor, impelled by the pressure in the bag, to spring forward several feet in an uncontrolled manner and imperil bystanders standing in the way. If it is noticed that the bag is not advancing, engine or PTO should be immediately turned off and the cause investigated. If it originates in tractor brakes or gearbox, tractor should be eased gently forward with brakes applied to decompress bag contents before resuming operation.

Finishing the bag

1

Bags generally have special markings printed at the sides indicating that there is little plastic left and the operation should conclude, or alternatively few folds are seen to remain on the hood. Since the standard fold measures 50 centimeters, counting the folds on the hood will give an accurate idea of how much plastic is left. Either because all the plastic has been used, or because the harvest has ended, or because labor is interrupted due to rain, or the bagger is to be towed to some other location, the bag must be detached from the machine and sealed. When for any of these reasons it is decided to finish the bag, delivery of grain should stop and the compression auger continue to turn for a few seconds until there is no grain left inside hopper or auger tube.

Brake release procedure

2

The first step when finishing the bag is the release of the bagger's brakes. Bag contents are compressed when operation finishes, reason for which brakes must be released correctly or the bagger can be propelled forward and endanger the operator. For this reason one must not stand directly in front of the bagger when performing this procedure. Never leave a bag filled with grain under pressure attached to the bagger, especially when the tractor is driven away and the bagger stands by itself.

3

To liberate pressure from the bag, follow this sequence with bagger hitched to tractor:

- a) Run compression auger to empty hopper and auger.
- b) Ensure there are no bystanders in the tractor's path.
- c) Disengage PTO and shut down tractor engine.
- d) Lock tractor brakes or engage a gear to ensure steadiness.
- e) Release brakes by turning the brake handles anticlockwise, one at a time. As an extra precaution, don't stand in front of the bagger even though the tractor holds the machine firmly.
- f) Climb on tractor and release tractor brakes/put gearbox in neutral. Grain pressure may push tractor forward. Advance a little with tractor to ensure decompression of bag contents, especially if tractor did not move when its brakes were released.



WARNING

Bags with contents under pressure should not be left attached to the bagger because of risk to operator and bystanders if hydraulic brakes are accidentally released. Never stand directly in front of the bagger when releasing the brakes in case decompression of grain propels the machine forward. *Always* operate brake controls from the bagger's left side standing well away from the path of wheels.



If bag will be left attached to bagger

4

If the intention is to leave the bag momentarily attached to the bagger and take the tractor away (e.g., to reinitiate work the next day), it is important to follow the procedure detailed in point 3 of “Brake release procedure” above for reason of safety. Once the bag contents have been decompressed as detailed there, remove jacks from the horizontal position and reinsert them in the square sockets of the supporting brackets at both sides of the machine (Figs. 72 & 73). Unhitch the tractor, disconnect hydraulic hoses and PTO shaft, and drive the tractor away. Whenever the bagger is left standing on its own, the screw jacks must be fitted so that the bagger stands firm and does not sway rearward from the weight of the grain.



Fig. 72



Fig. 73

If bag will be closed

5

In most cases closure will be done immediately upon finishing loading, at which point the bag has been filled either partly or entirely. If only part of the bag was filled, tractor and bagger are driven forward some two or three meters, which will leave that length of empty bag trailing behind the bagger (Fig. 74). The bag is then cut with a sharp blade around its whole circumference, following the line of the hood (Fig. 75).

The length of bag that wasn't used remains folded on the hood, ready to be employed with the next batch of grain to be stored. The two or three meters of empty bag are used for closing it. If the entire bag is being filled remember to leave 5 or 6 folds of plastic on the hood, so that when the tractor advances they are released for the purpose of closing the bag.



Fig. 74



Fig. 75

Closure of bag (When finished loading grain or whenever bag is opened to unload part of its contents)

If plastic closure strips with crimping tool are used, first flatten the end of the bag from top to bottom to expel the air, then seal the bag with the strip, turn it around a number of times to tighten the plastic and finally tuck it underneath the bag (Fig. 76) Old tires can be placed on top of the sloping end to help keep plastic in place. A deficient closure is to be avoided at all costs because it could either burst open and spill contents, or allow entry of water.

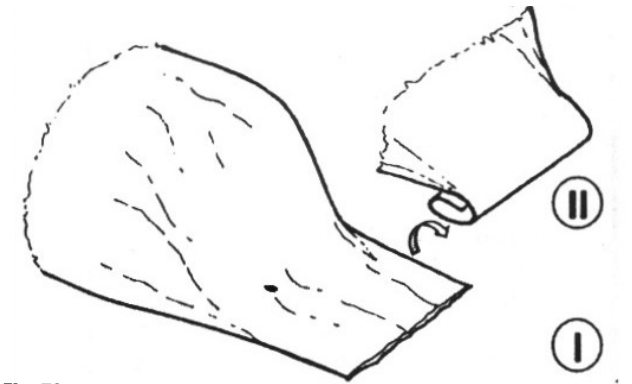


Fig. 76

Wooden boards are considered a good and safe alternative to plastic strips. Use 1"x 2" or thicker/wider boards (up to 2"x 4") that are approximately four meters long (Fig. 77). This shows the procedure using three boards instead of the usual two. Place the plastic around a board and turn it round a few times till the sheet is tightly wrapped. This board is then sandwiched between two additional boards and all three are nailed or screwed together with a 30 or 40 cm separation between nails. The boards are rolled inward to wrap some more plastic and are then tucked under the bag. The boards can be recovered later and used repeatedly. It is important that the nails penetrate the two or the three boards used to seal the bag, but it is equally critical that their points do not come through the last board because they will then puncture the plastic when the boards are rolled. This makes it necessary to determine nail length in accordance with the boards used. One important advantage of using boards over plastic strips is that the bag end attains its maximum width. When the bag is later emptied, the wide and square breach allows the unloading machine to advance to the end of the bag and so reduce the amount of grain that must be unloaded by hand.

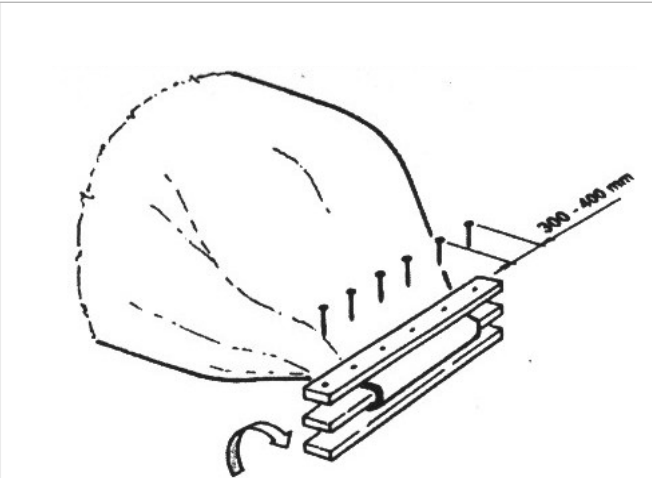


Fig. 77



IMPORTANT

It is very important when using wooden boards that the plastic sheet be wrapped several times and as tightly as possible around the boards in order to ensure a good, water-resistant seal. It is also important to tuck the boards as securely and as far under the bag as possible to prevent the possibility of the plastic unwrapping. It should be remembered that the bag will probably come in contact with water from rain or snow at some point, and if water does enter the bag then wicker action could spread the moisture farther inside the bag.

Towing the bagger away

Before driving away, completely close the cylinder to get maximum road clearance. If desired, the plastic sheet remaining on the hood can be removed and repacked once again, care being taken that the folds are not disarrayed by tying them with straps or string as in the original presentation.

General considerations about grain conservation

08

Bag stretching limits

- Dry grains in plastic bags mimic the behavior of liquids or molasses due to their tendency to “flow” in containment.
- Since they do not stick together or form clusters, they spread out to the sides of the bag, subjecting the plastic to stress and causing the typical flattened shape observed in bags.
- Round-shaped grain that is clean and dry and has a high specific weight will have an increased propensity to flow. If a particular braking force is used when bagging grain with some or all of these characteristics, deformation or flattening of the bag will be more manifest than if the same braking force is used to bag grain that clings together and doesn't flow well.
- An important consideration is the time of day when work is done because bag stretching behavior changes with ambient temperature. In summer, the bag will stretch more under the sun at noon or in the afternoon than early in the morning.
- Because of these reasons, it is strongly recommended that bag manufacturer stretching limits not be exceeded. Although if stretched beyond normal parameters the bag will most probably hold its own without difficulty, a safety margin must be allowed for. As a standard rule, a 10% increase in length when stretched can be taken as a maximum value not to go beyond.

Moisture levels

In general, the moisture levels that are considered adequate for storage in bags are similar to the levels considered safe for standard silo bins. Keeping grain with higher levels of moisture in bags may cause losses of commercial quality, quantity, nutritional value, and other factors associated with high humidity, risk increasing proportionally to time spent in storage as happens with conventional methods

Risk in relation to grain moisture

Grain	Risk related to grain humidity		
	Low (1)	Medium low	Medium high
Soy, Corn, Wheat (2)	Up to 14%	14 - 16%	Greater than 16%
Sunflower	Up to 11%	11 - 14%	Greater than 14%

Risk in relation to storage time

Grain/Moisture content	Risk related to storage time		
	Low (1)	Medium low	Medium high
Soy,corn,wheat 14%-Sunflower 11%	6 months	12 months	18 months
Soy,corn,wheat 14-16%-Sunflower 11-14%	2 months	6 months	12 months
Soy,corn,wheat over 16%-Sunflower over 14%	1 month	2 months	3 months

(1) For seed grain these values must be lowered by 1 – 2 %

(2) It is not recommended that wheat be stored with a moisture level of more than 14%

Nevertheless, anaerobic conditions inside the bag permit the storage of high moisture grain for short periods of time with less risk than if stored in bins. When high moisture grain is again exposed to air once extracted from the bag, aerobic organisms begin multiplying in great numbers and material can suffer rapid degradation, reason for which grain should be dried as soon as possible after removal from bag and before being traded.

How long will a bag last?

This is an important consideration and should be checked with your bag provider. Sun and high temperatures can break down plastic given enough time, reason for which the outer layer of a bag is white to absorb less infrared radiation and it also contains additives to protect against UVR and delay the degradation process. In consequence, how much a bag can last depends to a great degree on geographic latitude and time of the year in which it is used. As a rule of thumb, and even though bags have far surpassed this span of time with contents in good condition, it is recommended that bags not remain exposed for more than one summer.



Periodic controls

Success in bagging grain is closely related to adequate supervision performed during time of storage. It is important to carry out controls almost daily. Every possible precaution should be taken to maintain integrity of the plastic cover and to repair it if necessary. It should be born in mind that that relatively small tears can cause localized yet important losses through aerobic degradation. In different areas causal agents may vary but most can be prevented or controlled.

Sampling

It is important to periodically take samples in order to control the evolution of stored material. A probe can be used or alternatively two strips of adhesive tape can be taped vertically, superimposed on one another in a section of bag that is relatively under-stretched, and a short slit cut open with a sharp blade for a sample to be extracted. The slit is then patched up with tape provided by bag manufacturer or third parties.

**Rodents
& wild animals**

While filling bags, care should be taken not to spill grain on the ground that can act as an attractant. Frequent checking, preferably daily, is advisable. Holes should be sealed with thick tape as soon as detected. To discourage entrance to the storage area, it should be kept free of weeds and tall vegetation. Should there be a problem with bigger animals such as deer, electric fences could help.

Hailstorms

If one occurs, bags should be immediately checked for damage sustained. If damage is slight, it can be repaired with appropriate sealing tape. If damage is considerable, the only solution might be repacking the grain in bags once more. The more the bag is stretched, the more potential for harm a hailstorm has

Fire

Winter crop stubble poses the most risk in this department. If storage area borders a stubble field and conditions warrant it, it might be convenient to make a few passes with a disk harrow to minimize risk.

Storing

- Remove and repack the remainder of the plastic bag left on the tunnel, using lengths of string to tie the folds so they do not fall into disarray.
- Wash unit thoroughly (do not direct water under pressure at the bearings).
- Lubricate entire machine after washing.
- Check nuts and bolts and tighten if necessary.
- See if decals are in good condition and replace if necessary.
- Relieve pressure of hydraulic and brake circuits.
- Repair or change damaged or worn parts. Use original spares.
- Repaint spots where paint has worn down.
- Keep the machine under shelter in clean and dry surroundings.

After storage

Before the new season:

- Clean dirt and debris that may have accumulated on machine.
- Lubricate as indicated in this manual.
- Check tire pressures.
- Verify that hydraulic and brake circuits are in good order.
- Confirm that machine movements are smooth and there are no rattling sounds.



Before initial operation it is convenient to carry out a lube check up that will also help the operator become familiar with the lubrication points (Fig.78).

- Clean grease fittings and grease pump every time you apply grease.
- Replace any grease fitting that is missing or damaged.
- Apply neither too much nor too little grease.
- Disconnect PTO while working.

Lubrication chart

Lube spot	Section	Description	Grease fittings (Quantity)	Lubricant	Lube frequency (hours)
1	Drive shaft	U-joints/yokes	2	Grease	8
2		Telescopic sections	Apply with brush		16
3		Covers	-		16
4	Transmission	Chain & idler sprocket	1	Grease	50
5	Brakes	Brake bushings	4	Grease	50
6	Wheels	Housings	-	Grease	100
7	Auger	Rear bearing block	1	Grease	50
8	Frame	Screw jacks	2	Grease	50
9	Brakes	Brake pump	-	Oil	100 ⁽¹⁾

(1) every 100 Hs of use check oil level.

Grease: Lithium EP grease.

Oil: ISO grade 68 hydraulic oil.

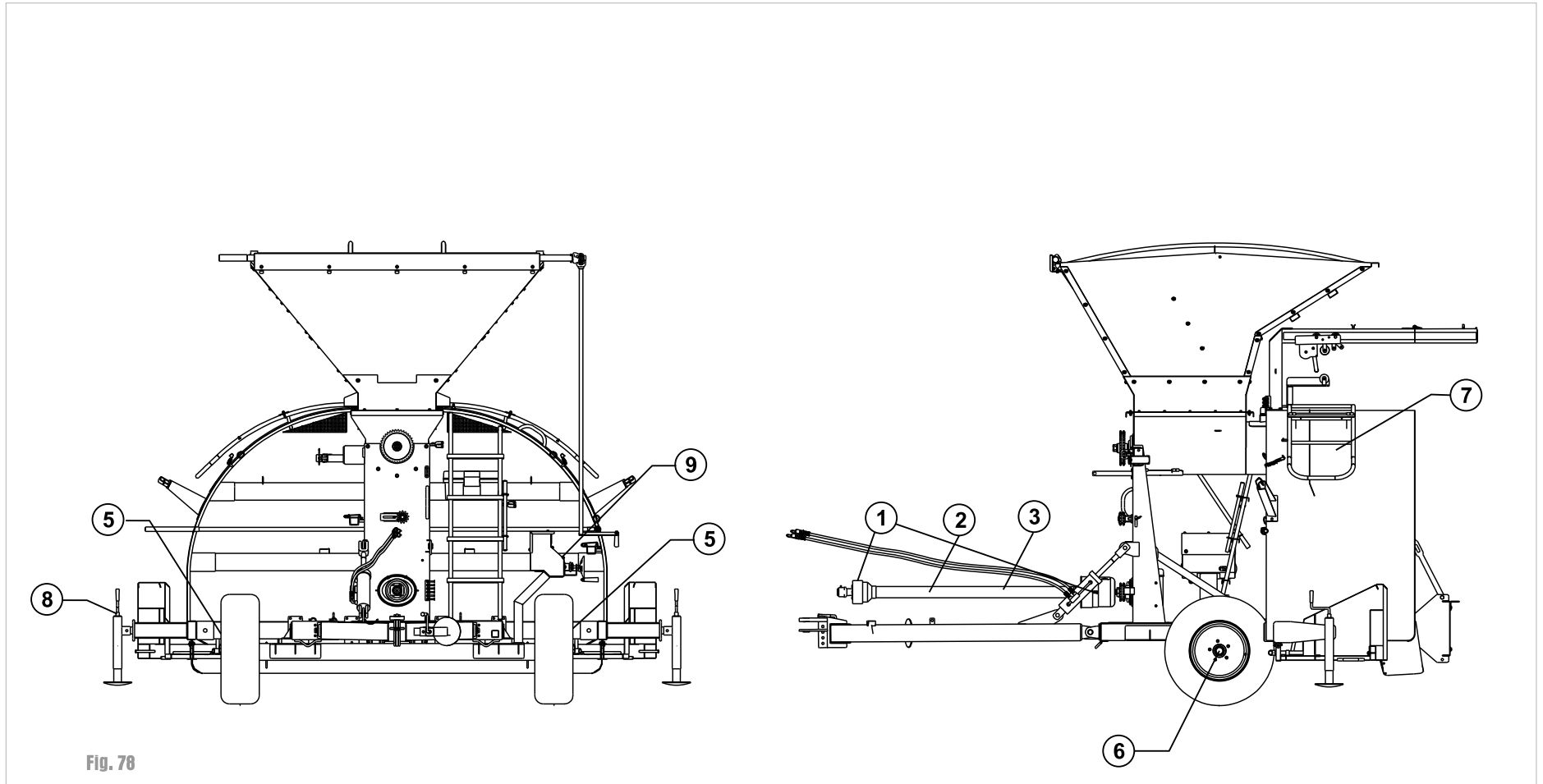



Fig. 78

 **IMPORTANT**

Used oil and lubricants should be disposed of in accordance with local laws and regulations. Contact an authorized distributor to inquire about correct disposal procedure.



It is important, in order to avoid accidents that affect oneself and others, to be familiar with the operation of agricultural machinery.

Therefore, please follow these guidelines:

1. Allow only people with a working knowledge of the machine, controls and safety rules to operate it.
2. Verify that all safety and instructional decals are in place and in good condition. If they're not, replace them.
3. For machinery that uses the PTO:



- a) Confirm that all protective shields are in place and do not interfere with moving parts. Drive shaft shields should be secured with chains to prevent them from turning.
 - b) Follow instructions regarding minimum coupling lengths for drive shaft sections. Disconnection during operation can have dire consequences.
 - c) Check correct PTO rpm's indicated for your machine, either 540 or 1,000.
4. Do not tow agricultural machinery with automotive vehicles at high speeds on public roads. They are mostly designed to be towed by tractors on country roads at low speeds of not more than 15 mph.
 5. Make sure the total width of machinery you are towing on public roads does not exceed what is legally permitted. Use signaling lights or banners, or travel with a signaling companion vehicle.
 6. Do not allow people on machines, either working or in transport.
 7. Check that all nuts and bolts are properly tightened.
 8. Follow maintenance indications detailed in user's manual.
 9. Do not attempt to revise or repair anything if there are moving parts or tractor's engine is running.
 10. Hands, feet, hair and loose clothing are especially at risk of being snagged by moving shafts and driveline components. Operator should use adequate shoes and tight fitting clothes, and avoid using rings, watches, chains or other types of jewelry. He should also wear head, eye and ear protection if necessary.
 11. In all machines equipped with hydraulic circuits used for elevation or rotation, do not perform maintenance work without ensuring that:
 - a) Engine is off.
 - b) Nobody has ignition keys to inadvertently turn engine on.
 - c) Safety stops are in place
 - d) There are supporting stands between machine and ground.
 12. Ensure that operator is familiar with fire hazard procedures and proficient with a fire extinguisher.

Following all safety routines involves a high degree of responsibility. Be responsible to yourself and others.

Hand signals have been developed to provide a uniform means of communication between workers on the ground and equipment operators. They are especially useful when noise, distance, or language barriers make voice communication difficult.

There are eleven recognized hand signals found in ASAE Standard S351. They are illustrated here in figures.

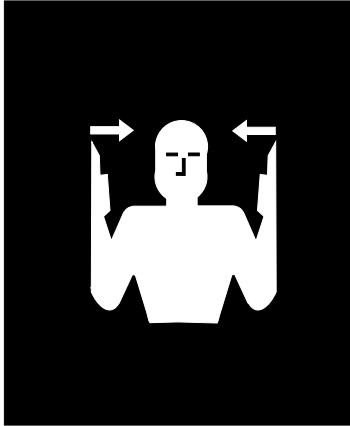


Fig. 1 THIS FAR TO GO.
Put hands in front of face, palms facing each other. Move hands together or farther apart to indicate how far to go.

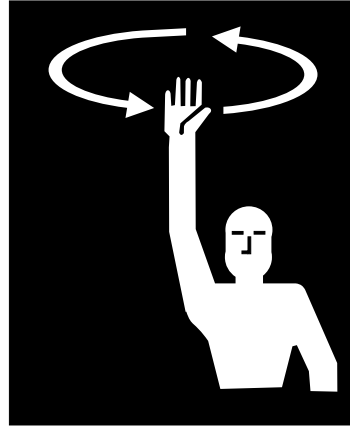


Fig. 2 COME TO ME.
(May mean “Come help me” in an emergency). Raise arm straight up palm to the front and move arm around in a large circle.



Fig. 3 MOVE TOWARD ME FOLLOW ME.
Look toward person or vehicle you want moved. Hold one hand in front of you, palm facing you, and move your forearm back and forth.

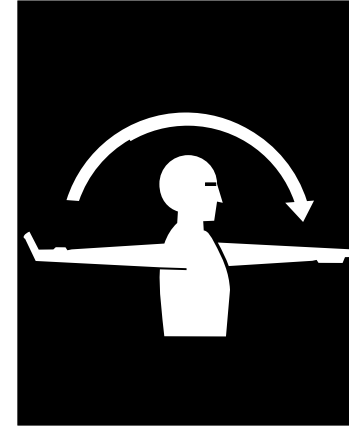


Fig. 4 MOVE OUT TAKE OFF.
Face desired direction of movement. Extend arm straight out behind you, then swing it overhead and forward until it's straight out in front of you.



Fig. 5 STOP.
Raise arm straight up, palm to the front.



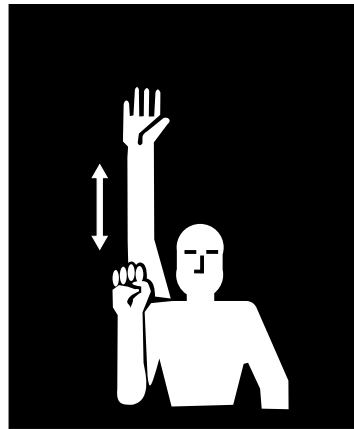


Fig. 6 SPEED IT UP.
Clenching your fist, bend your arm so your hand is at shoulder level. Thrust arm rapidly straight up and down several times.

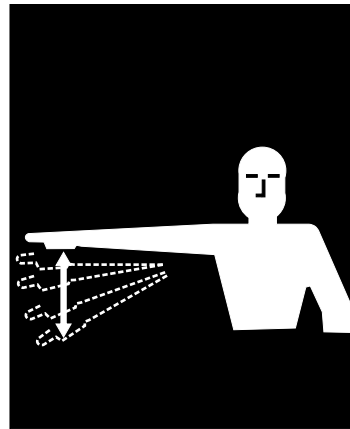


Fig. 7 SLOW IT DOWN.
Extend arm straight out to the side palm down. Keeping arm straight, move it up and down several times.

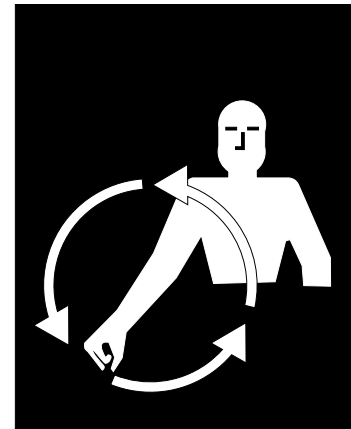


Fig. 8 START THE ENGINE.
Move arm in a circle at waist level as though you were cranking an engine.

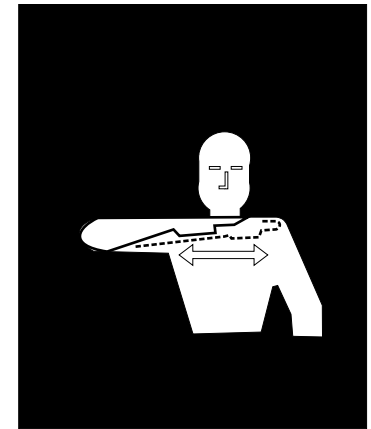


Fig. 9 STOP THE ENGINE.
Move your right arm across your neck from left to right in a "throat-cutting" motion.

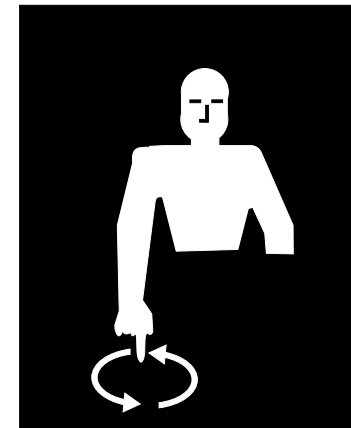


Fig. 10 LOWER EQUIPMENT.
Point toward the ground with the forefinger of one hand while moving the hand in a circle.

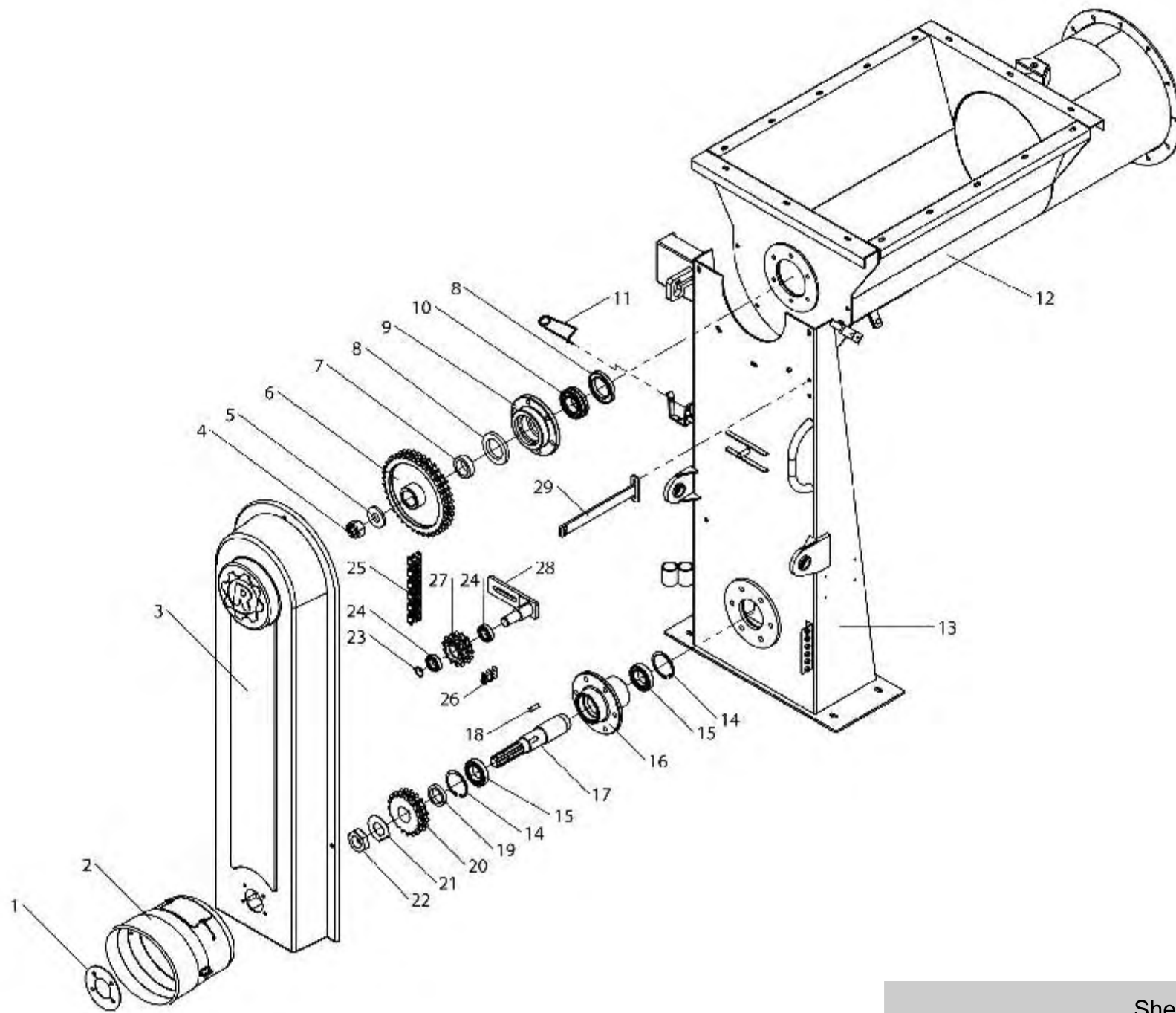


Fig. 11 RAISE EQUIPMENT.
Point upward with forefinger, while making a circle at head level with your hand.



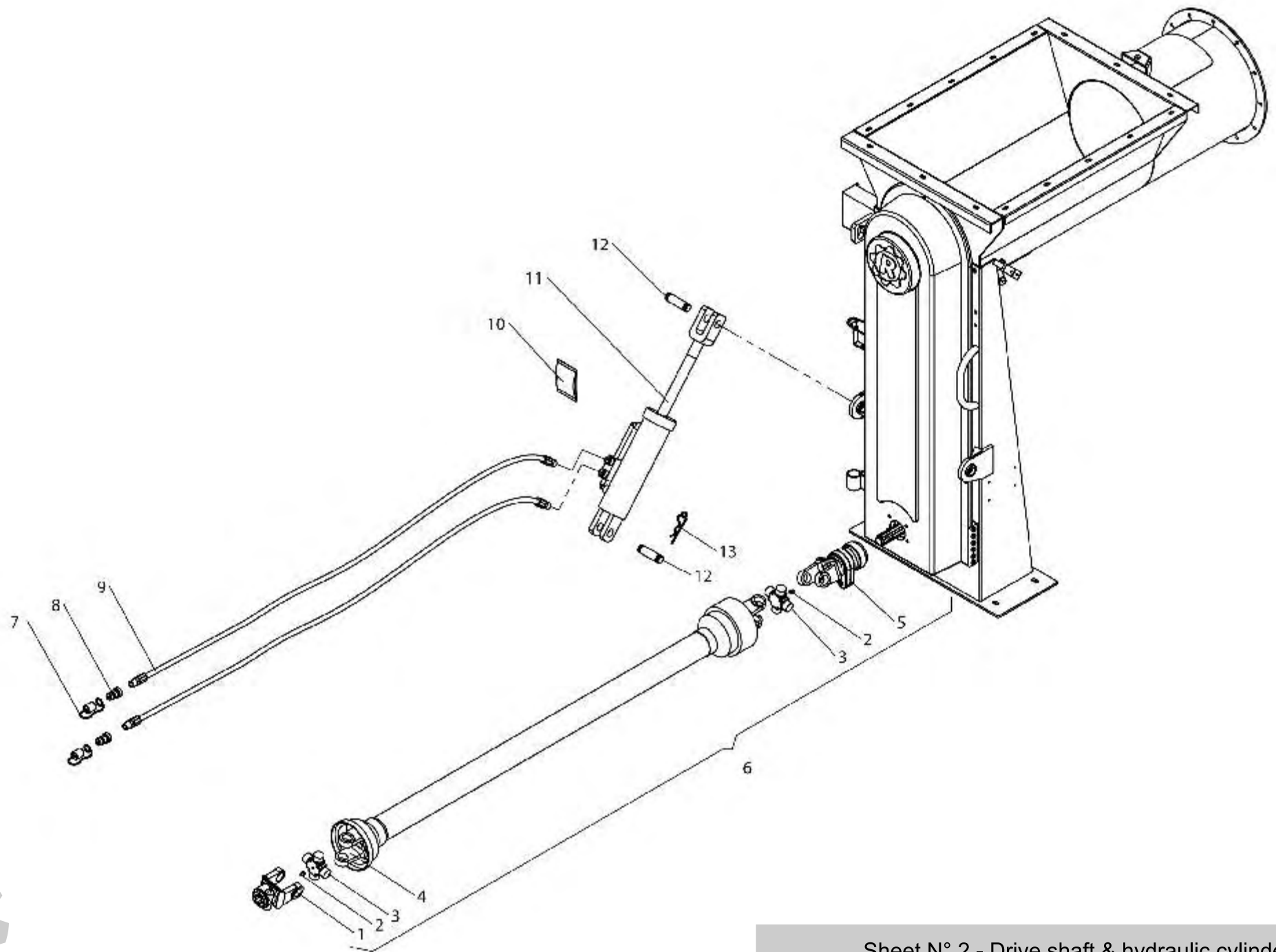
WE MEET YOUR PRODUCTION NEEDS

Parts list



R950 - Sheet N° 1 - Driveline			
N°	Description	Code	Quant.
1	Retaining washer	CDBQ00036	1
2	Stub shield	MCBA01044	1
3	Chain cover	CDBR00047	1
4	Castle nut 1" NF	MCTU10005	1
5	Flat washer	CDAA42013	1
6	Double sprocket 38 teeth (f/ASA 60 chain)	CDBE00024	1
7	Spacer	CDBE00025	1
8	Oil seal	MCRE00032	2
9	Bearing housing f/brg 22209	CDBE00018	1
10	Bearing 22209	MCRO05003	1
11	Spring pin	MCCH02002	1
12	Flanged housing, compression screw	CDCQ50029	1
13	Support plate, drive assembly	CDCR500015	1
14	Snap ring	MCSE00009	2
15	Bearing 6009 2RS	MCRO00001	2
16	Bearing housing f/brg 6009	CDBV00025	1
17	Drive shaft, splined	CDBQ00127	1
18	Square key 10x10 mm	CDBR00085	1
19	Spacer bushing	CDBO00014	1
20	Double sprocket 19 teeth (f/ASA 60 chain)	CDBO00013	1
21	Washer, drive shaft	CDAI00006	1
22	Hex nut, drive shaft	CDAI00007	1
23	Snap ring	MCSE01006	1
24	Bearing 6005 2RS	MCRO00002	2
25	Double roller chain ASA 60/2	CDBR00087	1
26	Connecting link, roller chain ASA 60/2	MCCA01025	1
27	Double sprocket 13 teeth	CDBR00014	1
28	Chain tensioner	CDCQ50014	1
29	Bracket	CDCQ50025	1

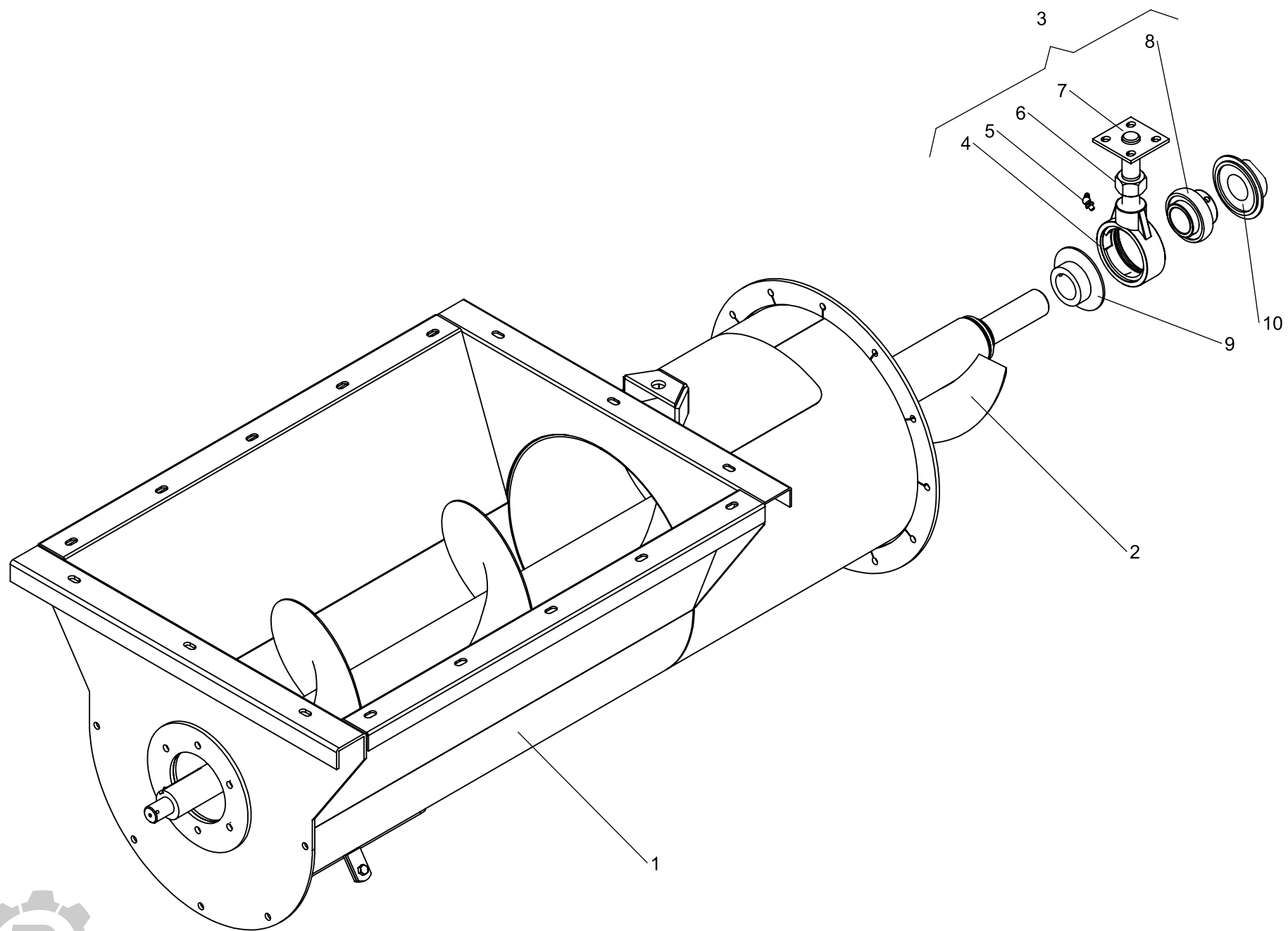
R1050 - Sheet N° 1 - Driveline			
N°	Description	Code	Quant.
1	Retaining washer	CDBQ00036	1
2	Stub shield	MCBA01044	1
3	Chain cover	CDBR00047	1
4	Castle nut 1" NF	MCTU10005	1
5	Flat washer	CDAA42013	1
6	Double sprocket 38 teeth (f/ASA 60 chain)	CDBE00024	1
7	Spacer	CDBR00058	1
8	Oil seal	MCRE00043	2
9	Bearing housing f/brg 22210	CDBR00071	1
10	Bearing 22210	MCRO05002	1
11	Spring pin	MCCH02002	1
12	Flanged housing, compression screw	CDCR500016	1
13	Support plate, drive assembly	CDCR500015	1
14	Snap ring	MCSE00010	2
15	Bearing 6210 2RS	MCRO00027	2
16	Bearing housing f/brg 6210	CDBR00070	1
17	Drive shaft, splined	CDBR00068	1
18	Square key 10x10 mm	CDBR00085	1
19	Spacer bushing	CDBR00069	1
20	Double sprocket 19 teeth (f/ASA 60 chain)	CDBO00013	1
21	Washer, drive shaft	CDAI00006	1
22	Hex nut, drive shaft	CDAI00007	1
23	Snap ring	MCSE01006	1
24	Bearing 6005 2RS	MCRO00002	2
25	Double roller chain ASA 60/2	CDBR00087	1
26	Connecting link, roller chain ASA 60/2	MCCA01025	1
27	Double sprocket 13 teeth	CDBR00014	1
28	Chain tensioner	CDCR50026	1
29	Bracket	CDCQ50025	1



Sheet N° 2 - Drive shaft & hydraulic cylinder

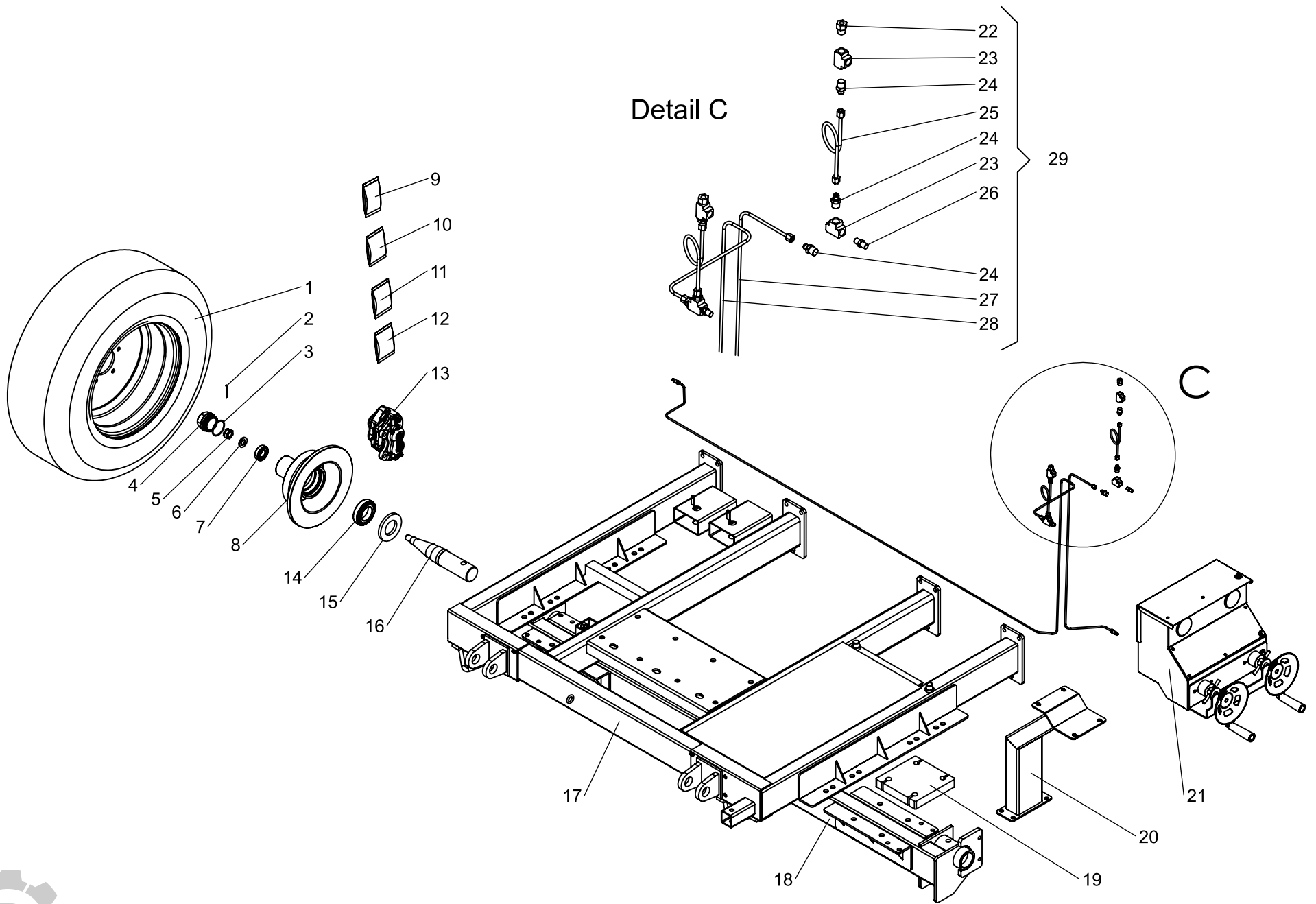
R950 - Sheet N° 2 - Drive shaft & hydraulic cylinder			
N°	Description	Code	Quant.
1	Splined yoke	MCBA01007	1
2	Grease fitting, 45° angle SAE 1/4"	MCAL01001	2
3	U-joint 92 mm x 30.2 mm cap dia.	MCBA01017	2
4	Drive shaft w/welded yokes x 1400 mm	MCBA01049	1
5	Power limiting yoke	MCBA01037	1
6	Main drive shaft assembly	MCBA00024	1
7	Plastic plug	MCHI07027	2
8	Quick disconnect coupling PNH 1/2" NPT	MCHI07055	2
9	Hydraulic hose 1/4" SAE 100R2 x 2900 mm	MCHI04026	2
10	Fitting 3"	MCHI00017	1
11	Hydraulic cylinder 3" x 8" w/safety valve	MCHI02022	1
12	Pin 1" x 90 mm	MCHI07100	2
13	R-clip 4,5 x 90 mm	MCCH05002	4

R1050 - Sheet N° 2 - Drive shaft & hydraulic cylinder			
N°	Description	Code	Quant.
1	Splined yoke	MCBA01007	1
2	Grease fitting, 45° angle SAE 1/4"	MCAL01001	2
3	U-joint 92 mm x 30.2 mm cap dia.	MCBA01017	2
4	Drive shaft w/welded yokes x 1400 mm	MCBA01049	1
5	Power limiting yoke	MCBA01037	1
6	Main drive shaft assembly	MCBA00024	1
7	Plastic plug	MCHI07027	2
8	Quick disconnect coupling PNH 1/2" NPT	MCHI07055	2
9	Hydraulic hose 1/4" SAE 100R2 x 2900 mm	MCHI04026	2
10	Fitting 3"	MCHI00017	1
11	Hydraulic cylinder 3" x 8" w/safety valve	MCHI02022	1
12	Pin 1" x 90 mm	MCHI07100	2
13	R-clip 4,5 x 90 mm	MCCH05002	4

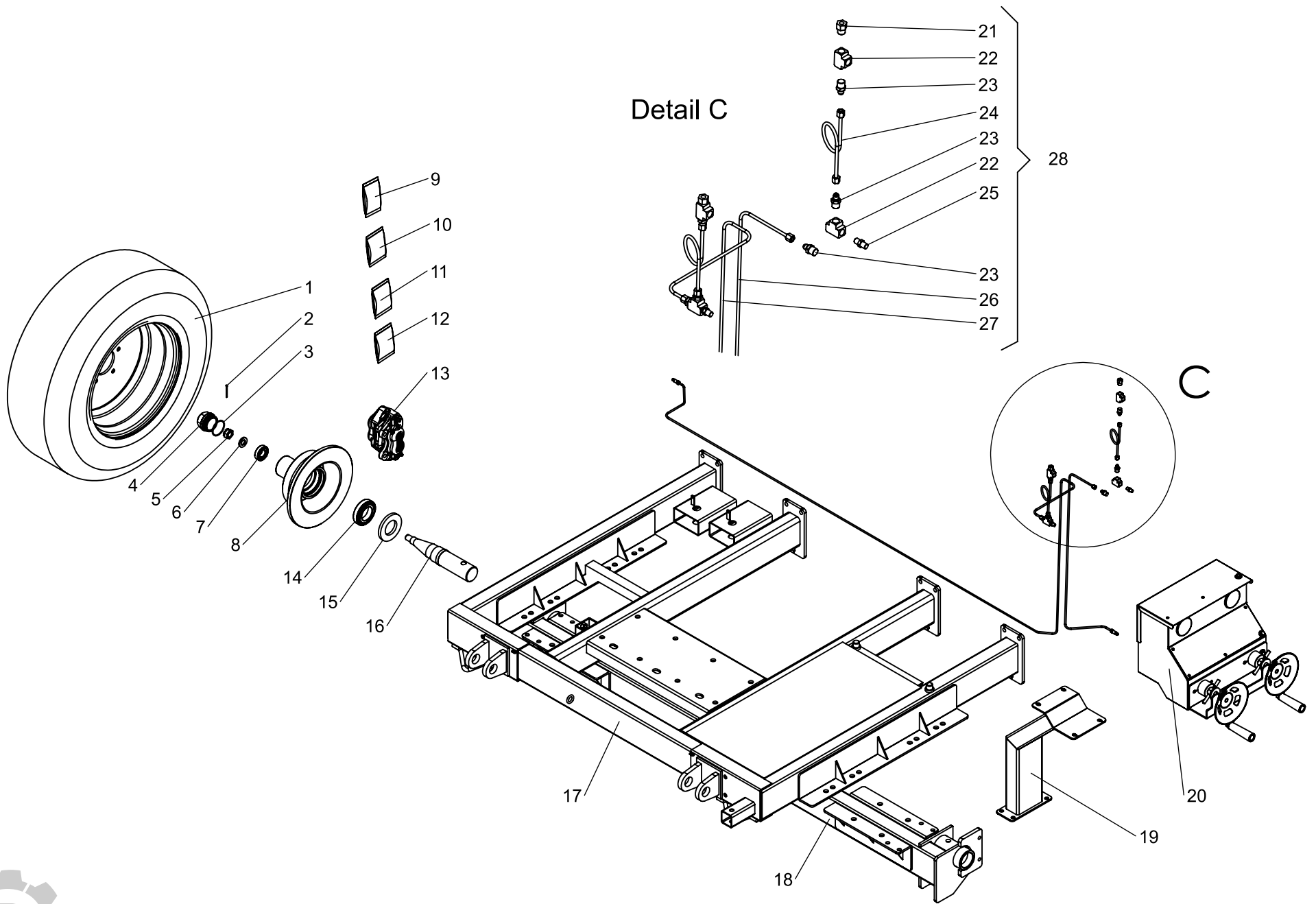


R950 - Sheet N° 3 - Compression screw			
N°	Description	Code	Quant.
1	Flanged housing, compression screw	CDCQ50029	1
2	Compression screw	CDCQ50020	1
3	Support bracket assembly	CDBZ50041	1
4	Bearing housing f/UC208	CDAA51036	1
5	Grease fitting, 45° angle SAE 1/4"	MCAL01001	1
6	Hex nut gr. 5 BWS 1"	MCTU00010	1
7	Support plate	CDBZ50013	1
8	Bearing UC208	MCRO12010	1
9	Dust cover f/UC208, front	CDBZ00028	1
10	Dust cover f/UC208, back	CDCQ50069	1

R1050 - Sheet N° 3 - Compression screw			
N°	Description	Code	Quant.
1	Flanged housing, compression screw	CDCR500016	1
2	Compression screw	CDCR50020	1
3	Support bracket assembly	CDCM50056	1
4	Bearing housing f/UC210	CDCJ00086	1
5	Grease fitting, 45° angle SAE 1/4"	MCAL01001	1
6	Hex nut gr. 5 BWS 1 1/4"	MCTU12014	1
7	Support plate	CDCM50058	1
8	Bearing UC210	MCRO12012	1
9	Dust cover f/UC210, front	CDCM00009	1
10	Dust cover f/UC210, back	CDCR50023	1

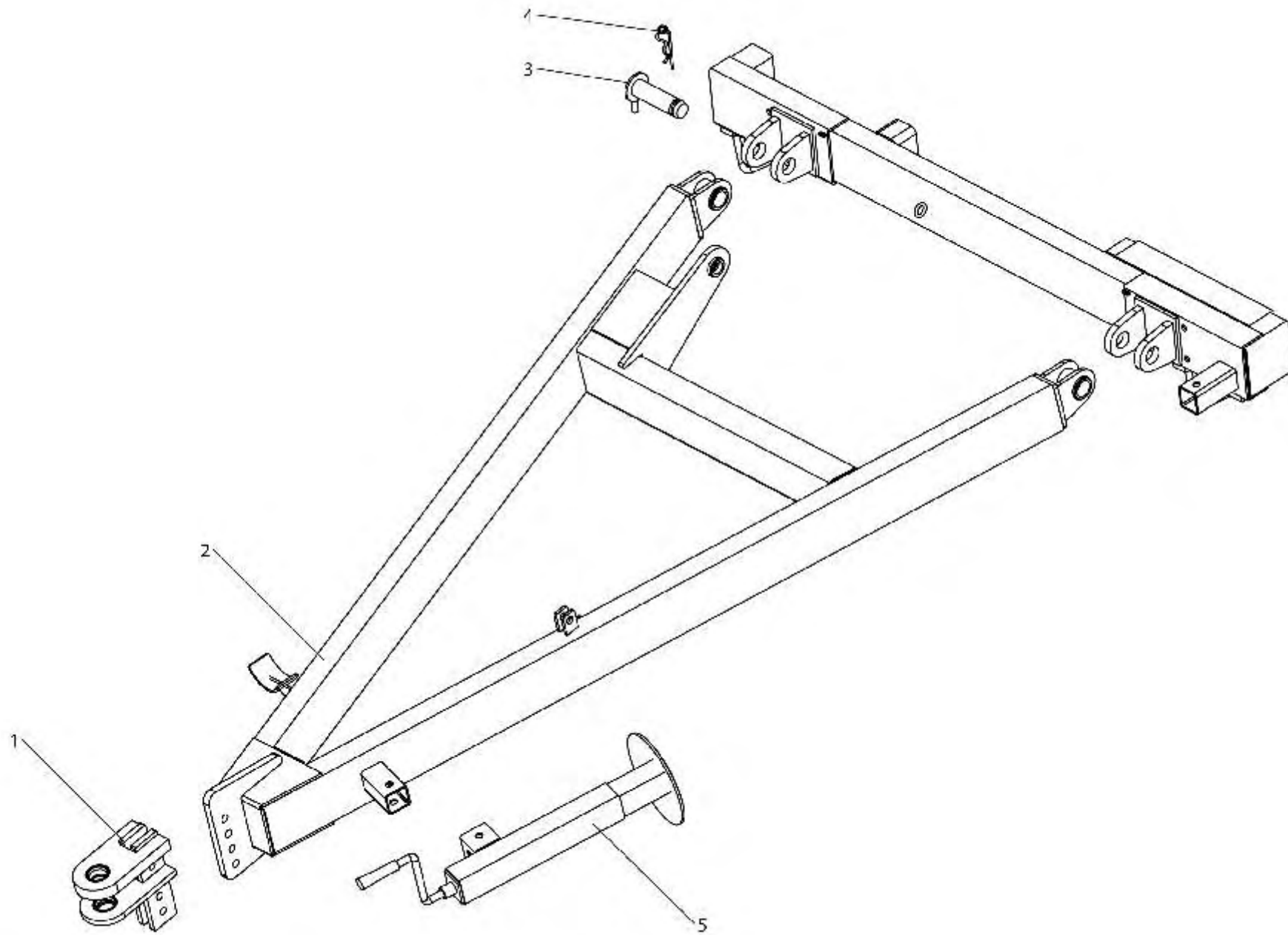


R950 - Sheet N° 4 - Framework, wheels and brakes			
N°	Description	Code	Quant.
1	Wheel assembly w/ 10-16,5/10 ply tire	MCLL50001	2
2	Split pin	MCCH01017	2
3	O'ring	MCRE01019	2
4	Hub cap	CDBE00026	2
5	Castle nut NF 3/4"	MCTU10003	2
6	Flat washer	CDAA42020	2
7	Bearing 30205	MCRO06003	2
8	Hub & brake disc unit	CDCQ00066	2
9	Repair kit brake caliper, rubber parts	MCHI00019	2
10	Repair kit brake caliper, metal parts	MCHI00020	2
11	Brake pad set	MCHI00015	2
12	Brake piston set	MCHI00016	2
13	Brake caliper	MCHI08001	2
14	Bearing 30210	MCRO06008	2
15	Oil seal	MCRE00041	2
16	Spindle, wheel	CDBR00090	2
17	Front framework	CDCQ50009	1
18	Wheel axle	CDCQ50008	1
19	Spacer	CDCQ00100	2
20	Support column, brake pump	CDCQ50018	1
21	Brake pump assembly	CDCQ50051	1
22	Connector 1/4" male NPT x 3/8" female UNF	MCHI07084	2
23	Connector Tee all openings 1/4" NPT	MCHI07082	4
24	Connector 3/16" male UNF x 1/4" male JIC NPT	MCHI07080	6
25	Bundy tube 3/16" SAE 100R2 AT x 305 mm, JIC 3/16" UNF nut at both ends	MCHI05017	2
26	Connector 1/4" male NPT x 1/8" male NPT	MCHI07081	2
27	Bundy tube 3/16" SAE 100R 2AT x 930 mm, JIC 3/16" UNF bolt, 3/8"swivel UNF	MCHI05018	1
28	Bundy tube 3/16" SAE 100R2 AT x 3025 mm, JIC 3/16" UNF bolt, 3/8"swivel UNF	MCHI05019	1
29	Hydraulic brake circuit assembly	MCHI00018	1



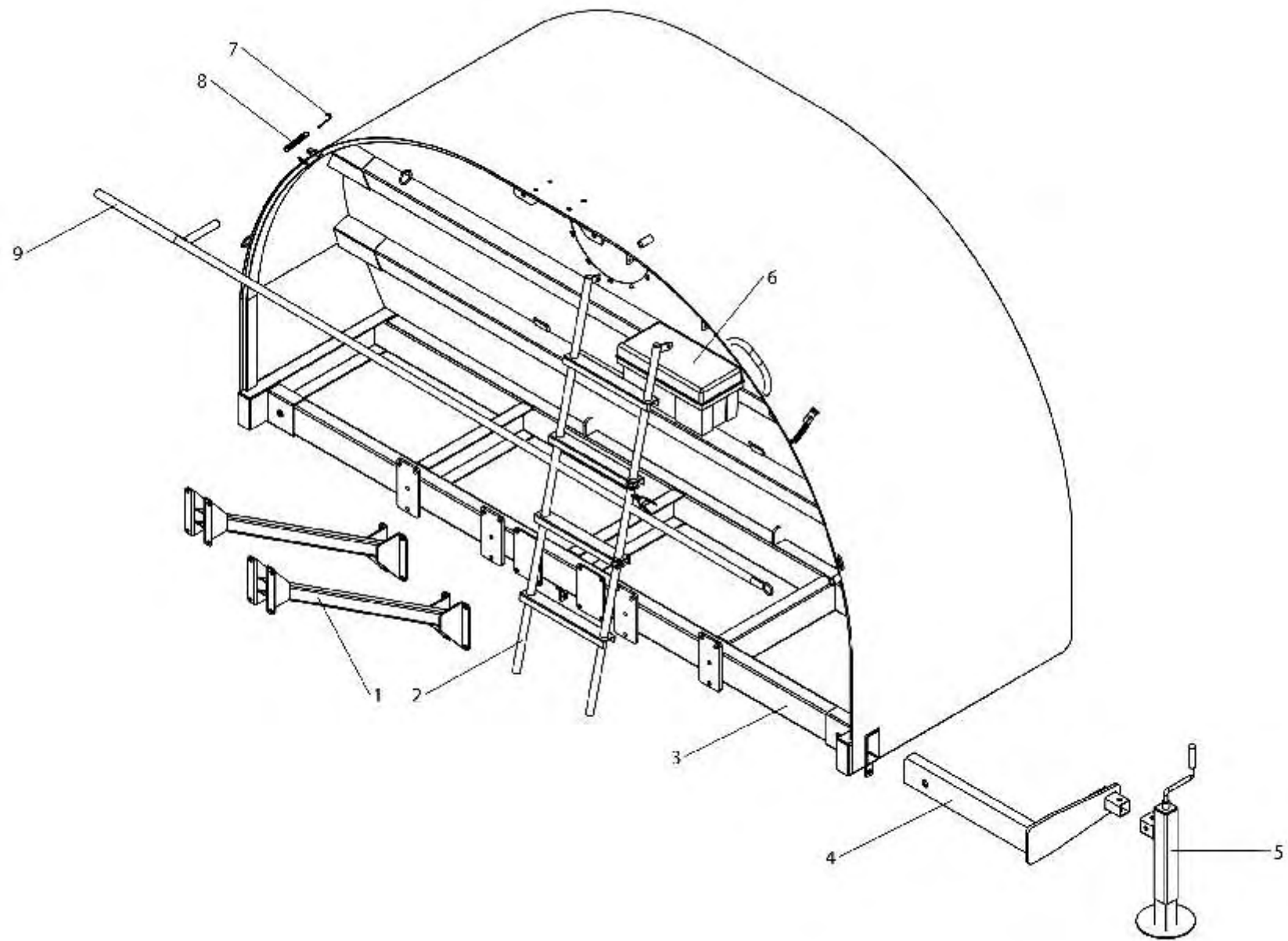
R1050 - Sheet N° 4 - Framework, wheels and brakes

N°	Description	Code	Quant.
1	Wheel assembly w/ 12-16,5/10 ply tire	MCLL50002	2
2	Split pin	MCCH01017	2
3	O'ring	MCRE01019	2
4	Hub cap	CDBE00026	2
5	Castle nut NF 3/4"	MCTU10003	2
6	Flat washer	CDAA42020	2
7	Bearing 30205	MCRO06003	2
8	Hub & brake disc unit	CDCQ00066	2
9	Repair kit brake caliper, rubber parts	MCHI00019	2
10	Repair kit brake caliper, metal parts	MCHI00020	2
11	Brake pad set	MCHI00015	2
12	Brake piston set	MCHI00016	2
13	Brake caliper	MCHI08001	2
14	Bearing 30210	MCRO06008	2
15	Oil seal	MCRE00041	2
16	Spindle, wheel	CDBR00090	2
17	Front framework	CDCQ50009	1
18	Wheel axle	CDCQ50008	1
19	Support column, brake pump	CDCQ50018	1
20	Brake pump assembly	CDCQ50051	1
21	Connector 1/4" male NPT x 3/8" female UNF	MCHI07084	2
22	Connector Tee all openings 1/4" NPT	MCHI07082	4
23	Connector 3/16" male UNF x 1/4" male JIC NPT	MCHI07080	6
24	Bundy tube 3/16" SAE 100R2 AT x 305 mm, JIC 3/16" UNF nut at both ends	MCHI05017	2
25	Connector 1/4" male NPT x 1/8" male NPT	MCHI07081	2
26	Bundy tube 3/16" SAE 100R 2AT x 930 mm, JIC 3/16" UNF bolt, 3/8" swivel UNF	MCHI05018	1
27	Bundy tube 3/16" SAE 100R2 AT x 3025 mm, JIC 3/16" UNF bolt, 3/8" swivel UNF	MCHI05019	1
28	Hydraulic brake circuit assembly	MCHI00018	1



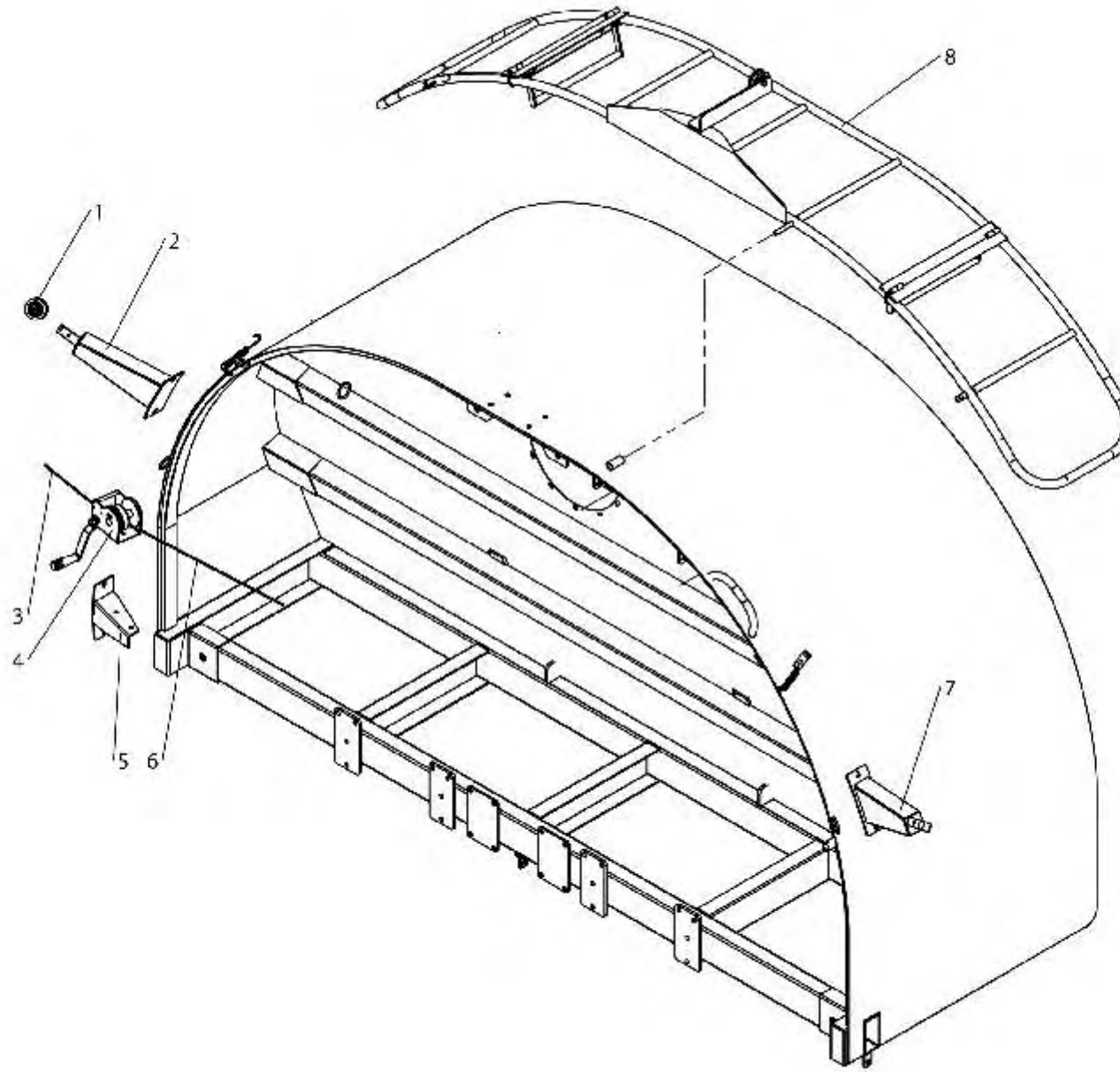
R950 - Sheet N° 5 - Drawbar			
N°	Description	Code	Quant.
1	Clevis hitch	CDBR50009	1
2	Drawbar	CDCQ50036	1
3	Pivot pin, drawbar	CDBQ50004	2
4	R-clip	MCCH00008	2
5	Screw jack	CDAA52001	1

R1050 - Sheet N° 5 - Drawbar			
N°	Description	Code	Quant.
1	Clevis hitch	CDBR50009	1
2	Drawbar	CDCQ50036	1
3	Pivot pin, drawbar	CDBQ50004	2
4	R-clip	MCCH00008	2
5	Screw jack	CDAA52001	1



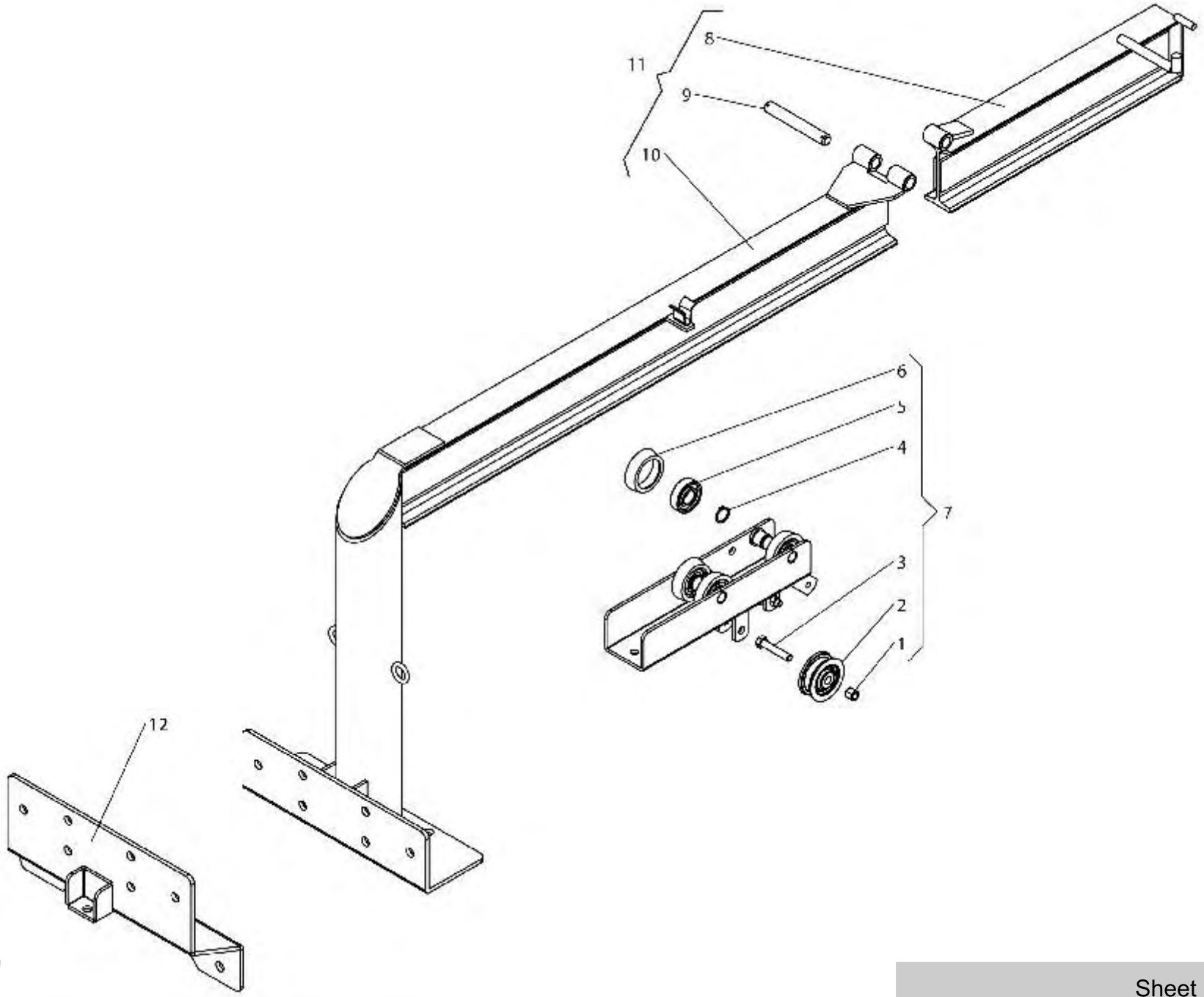
R950 - Sheet N° 6 - Tunnel			
N°	Description	Code	Quant.
1	Support bracket, compression screw	CDCQ50019	2
2	Ladder	CDCQ50037	1
3	Tunnel assembly	CDCR50002	1
4	Removable support prop (left or right)	CDBQ50010	2
5	Screw jack	CDAA52001	1
6	Tool box	MCPL00014	1
7	Cradle catch	CDBQ00076	2
8	Extension spring	MCRS00002	2
9	Winch pole	CDCQ50026	1

R1050 - Sheet N° 6 - Tunnel			
N°	Description	Code	Quant.
1	Support bracket, compression screw	CDCQ50019	2
2	Ladder	CDCQ50037	1
3	Tunnel assembly	CDCR50002	1
4	Removable support prop (left or right)	CDBQ50010	2
5	Screw jack	CDAA52001	1
6	Tool box	MCPL00014	1
7	Cradle catch	CDBQ00076	2
8	Extension spring	MCRS00002	2
9	Winch pole	CDCQ50026	1



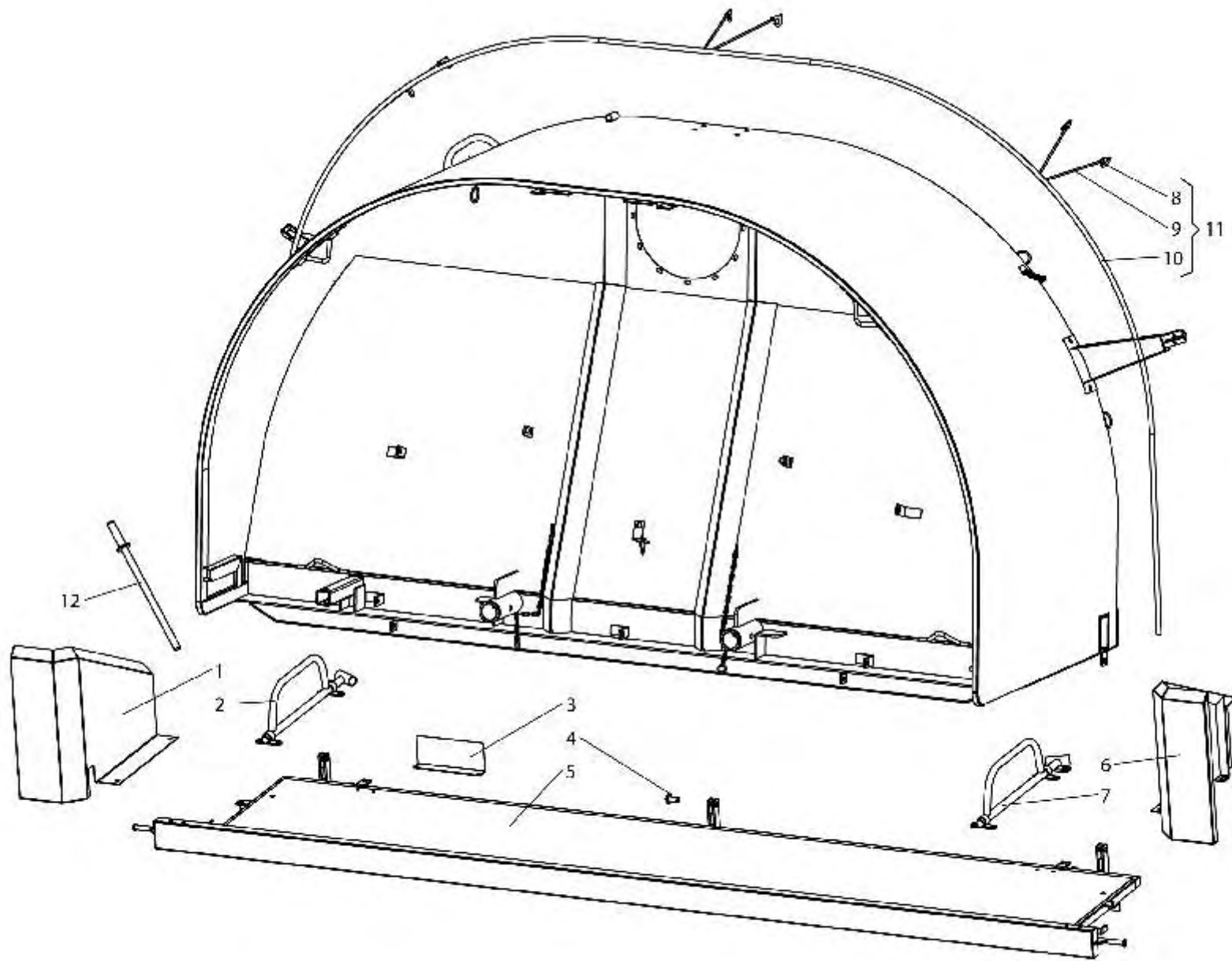
R950 - Sheet N° 7 - Bag cradle			
N°	Description	Code	Quant.
1	Pulley	CDAA48003	2
2	Support arm, right side pulley	CDBQ50008	1
3	Steel cable x 2330 mm	CDCQ00029	1
4	Hand winch, tray	CDBR50014	1
5	Support bucket, hand winch	CDBQ50023	1
6	Steel cable x 4550 mm	CDCQ00028	1
7	Support arm, left side pulley	CDBQ50009	1
8	Bag cradle	CDCQ50040	1

R1050 - Sheet N° 7 - Bag cradle			
N°	Description	Code	Quant.
1	Pulley	CDAA48003	2
2	Support arm, right side pulley	CDBQ50008	1
3	Steel cable x 2330 mm	CDCQ00029	1
4	Hand winch, tray	CDBR50014	1
5	Support bucket, hand winch	CDBQ50023	1
6	Steel cable x 4850 mm	CDCR00044	1
7	Support arm, left side pulley	CDBQ50009	1
8	Bag cradle	CDCR50009	1



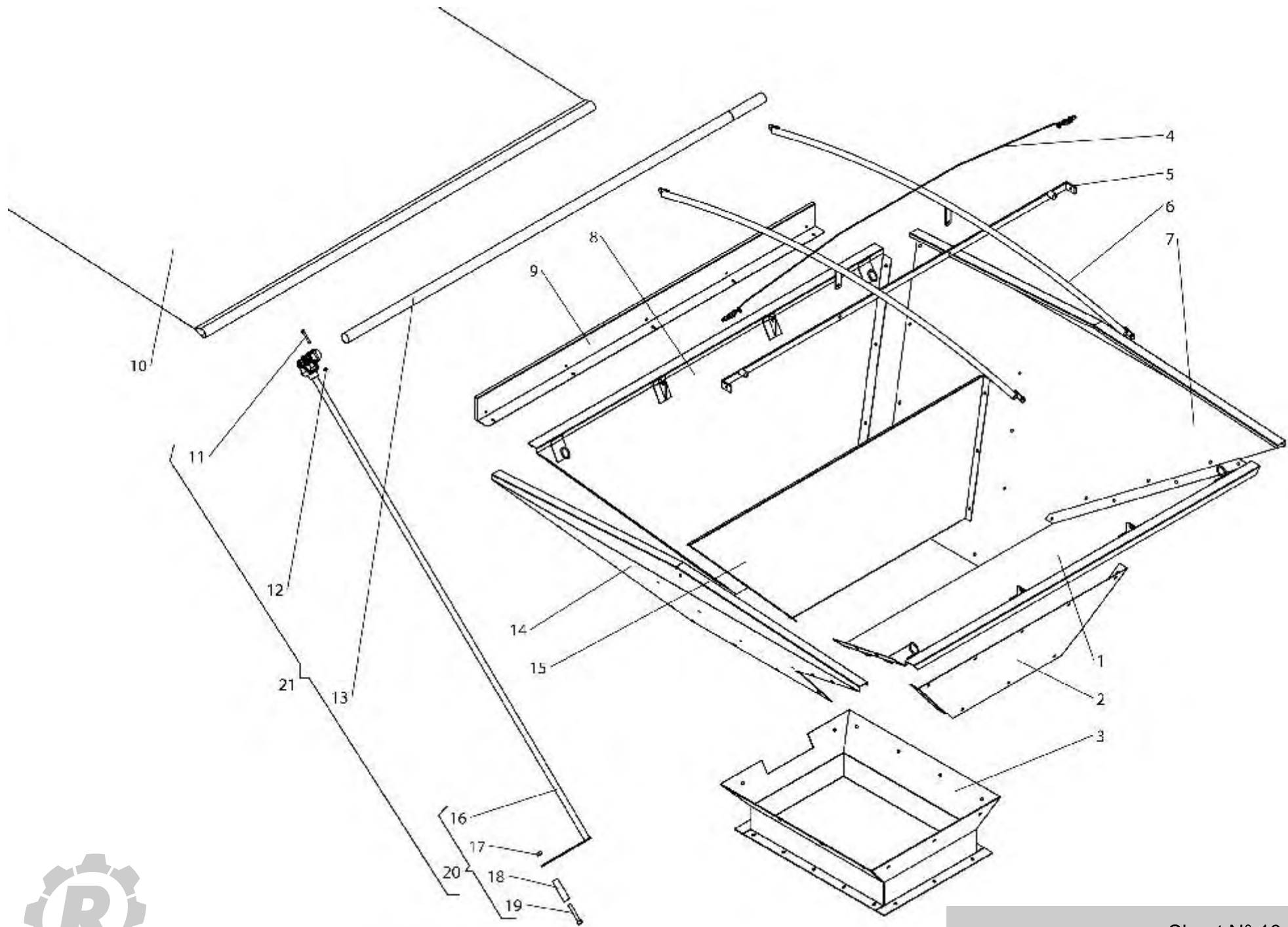
R950 - Sheet N° 8 - Bag hoist			
N°	Description	Code	Quant.
1	Hex locknut BWS 3/8"	MCTU06001	1
2	Pulley	CDAA48003	1
3	Hex bolt gr. 5 BWS 3/8" x 2"	MCBU00012	1
4	Snap ring	MCSE01004	4
5	Bearing 6204 2RS	MCRO00015	4
6	Wheel, winch cart	CDCQ00108	4
7	Winch cart assembly	CDCQ50039	1
8	Rail, folding section	CDCQ50022	1
9	Hinge pin	CDBQ00072	1
10	Rail, fixed section	CDCQ50021	1
11	Rail	CDCQ50070	1
12	Support bracket, rail	CDCQ50023	1

R1050 - Sheet N° 8 - Bag hoist			
N°	Description	Code	Quant.
1	Hex locknut BWS 3/8"	MCTU06001	1
2	Pulley	CDAA48003	1
3	Hex bolt gr. 5 BWS 3/8" x 2"	MCBU00012	1
4	Snap ring	MCSE01004	4
5	Bearing 6204 2RS	MCRO00015	4
6	Wheel, winch cart	CDCQ00108	4
7	Winch cart assembly	CDCQ50039	1
8	Rail, folding section	CDCQ50022	1
9	Hinge pin	CDBQ00072	1
10	Rail, fixed section	CDCQ50021	1
11	Rail	CDCQ50070	1
12	Support bracket, rail	CDCQ50023	1



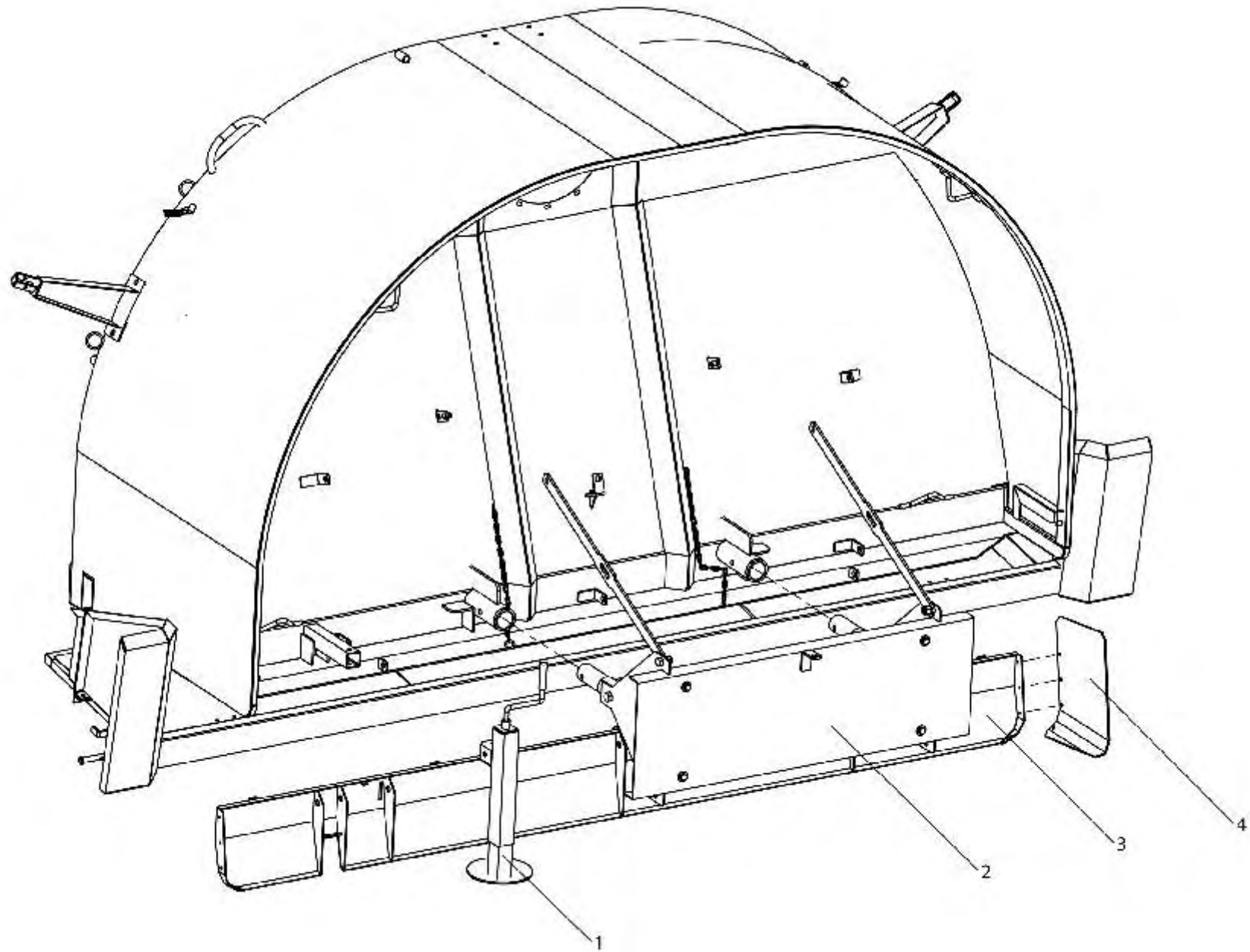
R950 - Sheet N° 9 - Bag tray			
N°	Description	Code	Quant.
1	Side shield, left	CDBQ50015	1
2	Tensioning handle, left	CDCQ50044	1
3	Wheel plate	CDBR00088	2
4	Pivot pin, tray	CDBQ50005	5
5	Tray	CDCR50019	1
6	Side shield, right	CDBQ50016	1
7	Tensioning handle, right	CDCQ50045	1
8	Plastic hook	MCES00003	6
9	Polypropylene rope 6 x 2000 mm	CDBQ00129	3
10	Polypropylene rope 16 x 8000 mm	CDBQ00128	1
11	Rope harness	CDCQ50065	1
12	Lever, tensioning handle	CDCQ50063	1

R1050 - Sheet N° 9 - Bag tray			
N°	Description	Code	Quant.
1	Side shield, left	CDBR50011	1
2	Tensioning handle, left	CDCQ50044	1
3	Wheel plate	CDBR00088	2
4	Pivot pin, tray	CDBQ50005	5
5	Tray	CDCR50019	1
6	Side shield, right	CDBR50012	1
7	Tensioning handle, right	CDCQ50045	1
8	Plastic hook	MCES00003	6
9	Polypropylene rope 6 x 2000 mm	CDBQ00129	3
10	Polypropylene rope 16 x 8000 mm	CDBQ00128	1
11	Rope harness	CDCQ50065	1
12	Lever, tensioning handle	CDCQ50063	1



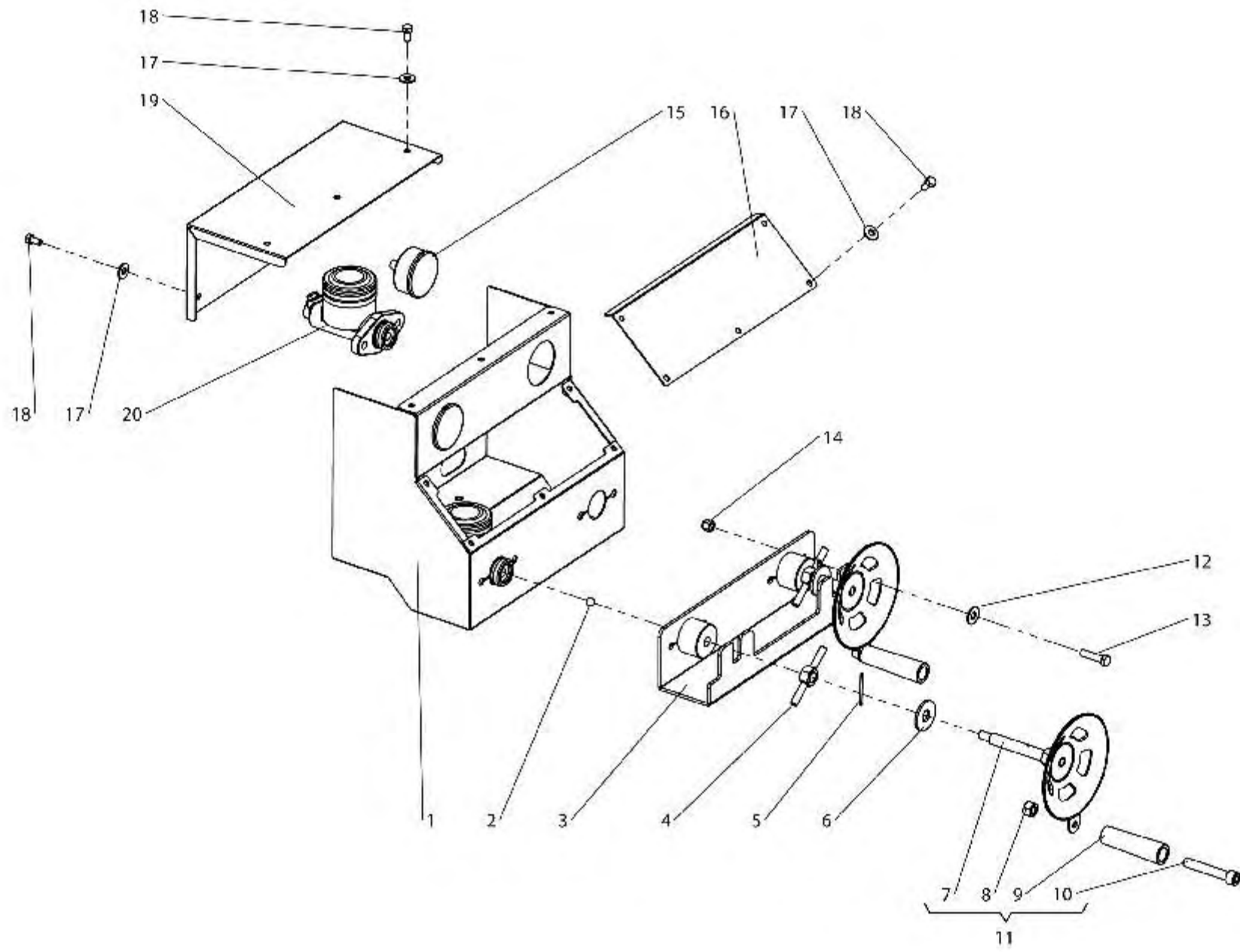
R950 - Sheet N° 10 - Hopper			
N°	Description	Code	Quant.
1	Upper rear panel	CDCQ50033	1
2	Lower rear panel	CDCQ00082	1
3	Hopper base	CDCQ50030	1
4	Hopper cable	CDCQ50067	1
5	Brace	CDCQ50068	1
6	Tarp truss	CDCQ50031	4
7	Left panel	CDCQ00080	1
8	Front panel	CDCQ50034	1
9	Tarp bracket	CDCQ00102	1
10	Tarp 2650 x 2250 mm	CDCQ00128	1
11	Hex bolt gr. 5 BWS 5/16" x 2 1/4"	MCBU00060	1
12	Hex locknut BWS 5/16"	MCTU06002	1
13	Tarp pickup spool	CDCQ50049	1
14	Right panel	CDCQ00079	1
15	Divider	CDCQ50046	1
16	Handle, tarp spool	CDCM50034	1
17	Hex nut BWS 1/2"	MCTU00005	1
18	Handgrip	MCPL00009	1
19	Socket head screw 1/2" x 3 1/4"	MCTO00063	1
20	Tarp handle assembly	CDCM50059	1
21	Tarp handle and spool assembly	CDCQ50050	1

R1050 - Sheet N° 10 - Hopper			
N°	Description	Code	Quant.
1	Upper rear panel	CDCQ50033	1
2	Lower rear panel	CDCQ00082	1
3	Hopper base	CDCQ50030	1
4	Hopper cable	CDCQ50067	1
5	Brace	CDCQ50068	1
6	Tarp truss	CDCQ50031	4
7	Left panel	CDCQ00080	1
8	Front panel	CDCQ50034	1
9	Tarp bracket	CDCQ00102	1
10	Tarp 2650 x 2250 mm	CDCQ00128	1
11	Hex bolt gr. 5 BWS 5/16" x 2 1/4"	MCBU00060	1
12	Hex locknut BWS 5/16"	MCTU06002	1
13	Tarp pickup spool	CDCQ50049	1
14	Right panel	CDCQ00079	1
15	Divider	CDCQ50046	1
16	Handle, tarp spool	CDCM50034	1
17	Hex nut BWS 1/2"	MCTU00005	1
18	Handgrip	MCPL00009	1
19	Socket head screw 1/2" x 3 1/4"	MCTO00063	1
20	Tarp handle assembly	CDCM50059	1
21	Tarp handle and spool assembly	CDCQ50050	1



R950 - Sheet N° 11 - Anchor & deflector plate			
N°	Description	Code	Quant.
1	Screw jack	CDAA52001	1
2	Anchor assembly	CDCR50018	1
3	Deflector plate	CDCQ50027	1
4	Rubber shield	CDCQ00072	2

R1050 - Sheet N° 11 - Anchor & deflector plate			
N°	Description	Code	Quant.
1	Screw jack	CDAA52001	1
2	Anchor assembly	CDCR50018	1
3	Deflector plate	CDCR50008	1
4	Rubber shield	CDCQ00072	2



R950 - Sheet N° 12 - Brake circuit			
N°	Description	Code	Quant.
1	Housing, brake pumps	CDCQ50054	1
2	Steel ball 7/16" dia.	MCRO13001	2
3	Commands bracket	CDCQ50055	1
4	Locknut	CDCQ50056	2
5	Split pin	MCCH01017	2
6	Flat washer	MCAR00009	2
7	Wheel and shaft	CDCQ50052	2
8	Hex nut BWS 1/2"	MCTU00005	2
9	Handgrip	MCPL00009	2
10	Socket head screw 1/2" x 3 1/4"	MCTO00063	2
11	Command wheel assembly	CDCQ50053	2
12	Flat washer	MCAR00005	4
13	Hex bolt gr. 5 BWS 3/8" x 1 1/2"	MCBU00009	4
14	Hex locknut BWS 3/8"	MCTU06001	4
15	Pressure gauge	MCHI07077	2
16	Front cover	CDCQ00140	1
17	Flat washer	MCAR00004	10
18	Hex bolt gr. 5 BWS 5/16" x 5/8"	MCBU00045	10
19	Rear & top cover	CDCQ00139	1
20	Hydraulic oil operated brake pump	MCHI03003	2

R1050 - Sheet N° 12 - Brake circuit			
N°	Description	Code	Quant.
1	Housing, brake pumps	CDCQ50054	1
2	Steel ball 7/16" dia.	MCRO13001	2
3	Commands bracket	CDCQ50055	1
4	Locknut	CDCQ50056	2
5	Split pin	MCCH01017	2
6	Flat washer	MCAR00009	2
7	Wheel and shaft	CDCQ50052	2
8	Hex nut BWS 1/2"	MCTU00005	2
9	Handgrip	MCPL00009	2
10	Socket head screw 1/2" x 3 1/4"	MCTO00063	2
11	Command wheel assembly	CDCQ50053	2
12	Flat washer	MCAR00005	4
13	Hex bolt gr. 5 BWS 3/8" x 1 1/2"	MCBU00009	4
14	Hex locknut BWS 3/8"	MCTU06001	4
15	Pressure gauge	MCHI07077	2
16	Front cover	CDCQ00140	1
17	Flat washer	MCAR00004	10
18	Hex bolt gr. 5 BWS 5/16" x 5/8"	MCBU00045	10
19	Rear & top cover	CDCQ00139	1
20	Hydraulic oil operated brake pump	MCHI03003	2

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