D-903
D-903 PLUS

STARTING MANUAL

MAINTENANCE

DOSAGE

SPARE PARTS

Please read and follow this operating manual before putting the machine into operation.

SOLÀ seed drills and fertilizer spreaders are manufactured in a highly specialized environment and our factory has a vast network of satisfied customers.

SOLÀ machines use highly advanced technology and are guaranteed to work without malfunctions in a large variety of conditions. They SOLÀ machines are provided with easy-to-use and efficient devices and perform excellently with only minimum operator maintenance.

This manual will help you use your SOLÀ product with the maximum efficiency.

ISO 9001

BUREAU VERITAS
Certification

Certified quality system

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TABLE OF CONTENTS

TABLE OF CONTENTS

1. INTRODUCTION

It is essential to read and follow the instructions and recommendations in this manual before operating the fertiliser spreader **D-903 or D-903 PLUS.** Careful reading enables maximum operator efficiency, prevents accidents and damage, and increases the fertiliser spreader capacity and life expectancy.

Please ensure that this manual has been read by any person involved in performing **operational tasks**, (including preparation, dealing with mechanical problems and supervising the machine), **maintenance** (inspection and technical assistance) and **transport**.

For your safety, please follow these technical safety instructions as **SOLÁ** will not be responsible for damages caused by not observing the information provided.

In the first chapters you will find the Technical Characteristics and Safety Instructions, as well as some essential sowing concepts. Basic concepts that are required to operate the machine are explained in the Starting and Maintenance sections.

The last part of this manual consists of Dosage Tables, detailed by seed type.

SOLÁ RETAINS THE RIGHT TO MODIFY ILLUSTRATIONS, TECHNICAL DATA AND WEIGHTS INDICATED IN THIS OPERATING MANUAL, IF THESE CHANGES HELP TO IMPROVE THE QUALITY OF THE FERTILISER SPREADERS.

In this operating manual you will find three different symbols relating to safety:

TO WORK MORE EASILY WITH THE FERTILISER SPREADERS.

TO PREVENT DAMAGE TO THE FERTILISER SPREADER AND OPTIONAL EQUIPMENT.

TO PREVENT PHYSICAL INJURY.

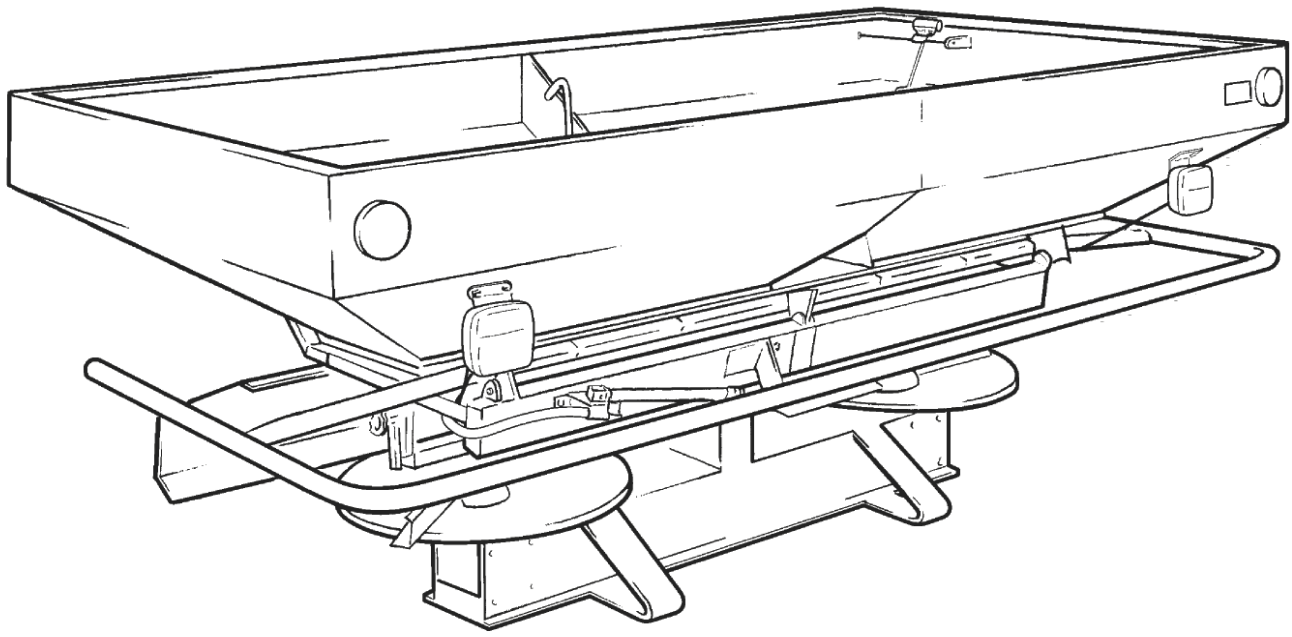
2. TECHNICAL CHARACTERISTICS

MODEL	CAPACITY	WIDTH	LENGTH	HEIGTH	WEIGHT (KG)
D-903/1000	991 l	2.400 mm	1.342 mm	970 mm	302 Kg
D-903/1200	1.191 l	2.400 mm	1.342 mm	1.070 mm	316 Kg
D-903/1500	1.491 l	2.400 mm	1.342 mm	1.140 mm	334 Kg
D-903/2000	1.928 l	2.400 mm	1.342 mm	1.260 mm	347 Kg
D-903/3000	2.600 l	2.400 mm	3.100 mm	1.870 mm	760 Kg

PTO shaft turning speed	540 r/min
Discs turning speed	675 r/min
Spacing between the discs's centers	1.140 mm
Working width D-903	15 a 24 m
Working width D-903 PLUS	30 y 36 m
Adjustment of the working width	By means of spreading vanes and funnel
Spreading vanes per disc in D-903	3
Spreading vanes per disc in D-903 PLUS	

2.1 OVERVIEW

Fig. 1



2.2 STANDARD EQUIPMENT

- Hopper's bases, agitators, discs, funnels and spreading vanes, all of them made of inox steel.
- Non-agressive slow-turning agitator.
- Ability to close the right outlet at the field boundaries and sides.
- Mechanically actuated boundary spreading limiter.
- Easy performance calibration test with both supplied calibration channel and calibration cup.
- Granulometer.
- Position lamps, indicators and brake lights.
- Protective tube at rear and at side to prevent contact with the turning PTO shaft.
- PTO shaft with friction clutch and protection.
- Ability of spreading at medium height (only D-903).
- Three-point linkage of attachment category II.

2.3 OPTIONAL EQUIPMENT

- Hidraulically actuated boundary spreading limiter.
- Conversion kit 24-36 m for D-903.
- Conversion kit 36-24 m for D-903 PLUS.
- Mechanical remote for opening and closing the fertiliser outlets.
- Hopper cover.

3. SAFETY INSTRUCTIONS

3.1 SAFETY SYMBOLS

On the machine you will find the following warning pictograms:

READ THE INSTRUCTIONS CAREFULLY AND OBSERVE THE SAFETY ADVICE GIVEN IN THE OPERATING MANUAL.

DURING THE COUPLING MANOEUVRE, STAY AWAY FROM THE REAR PART OF THE TRACTOR.
RISK OF SERIOUS PHYSICAL INJURY.

DANGER OF INFECTION FROM ESCAPING HYDRAULIC FL UID AT HIGH PRESSURE! THIS CAN INFL ICT SERIOUS INJURIES WITH POTENTIALLY FATAL CONSEQUENCES IF IT PASSES THROUGH THE SKIN AND INTO THE BODY.
KEEP THE HOSE LINES IN GOOD CONDITION.
RISK OF SERIOUS PHYSICAL INJURY.

RISK OF SERIOUS PHYSICAL INJURY.

WHILE MAINTAINING OR REPAIRING THE FERTILISER SPREADER, STOP THE TRACTOR'S ENGINE AND PREVENT IT FROM STARTING. THE IGNITION KEY MUST BE REMOVED.

RISK OF BEING CRUSHED WHEN WORKING UNDER THE MACHINE, PLEASE SECURE THE MACHINE TO PREVENT THIS RISK.
RISK OF SERIOUS PHYSICAL INJURY.

THE DIRECTION AND SPEED THAT THE PTO SHAFT TURNS (ONLY IN MACHINES EQUIPPED WITH MECHANICAL FAN).

DO NOT EXCEED MAXIMUM LOAD.

COUPLING POINT FOR TRANSPORTATION BY CRANE.

3.2 USE ACCORDING TO DESIGN

- Fertiliser spreaders **D-903 & D-903 PLUS** have been designed for normal use in agricultural work, especially for spreading with mineral products.
- If the machine is used in circumstances other than the above, SOLÁ will not be held responsible for any damage caused.
- The user must observe all regulations concerning safety, traffic and hygiene.
- If the machine is modified by the user, the manufacturer's warranty is cancelled.
- **SOLÁ** will not be held responsible for any damage caused.

3.3 GENERAL SAFETY INSTRUCTIONS

BEFORE STARTING THE MACHINE, PLEASE CHECK THE MACHINE IS IN GOOD CONDITION FOR WORK AND IS SAFE FOR ROAD USE.

CHECK THAT VISIBILITY IS CLEAR AROUND THE MACHINE AND THERE IS NO PERSON IN THE WORKING AREA.

IN THOROUGHFARE, PLEASE OBSERVE TRAFFIC SIGNS AND REGULATIONS.

IT IS FORBIDDEN TO RIDE ON THE MACHINE OR CLIMB INTO THE MACHINE WHEN IT IS RUNNING.

BEFORE USING THE MACHINE, THE USER MUST BE FAMILIAR WITH ALL OPERATING ELEMENTS.

PLEASE BE EXTREMELY CAREFUL WHEN COUPLING AND UNCOUPLING THE MACHINE TO THE TRACTOR.

PLEASE CHECK THAT THE PTO SHAFT IS IN GOOD CONDITION AND WELL PROTECTED. PREVENT THE PROTECTIVE TUBE FROM TURNING BY HOLDING BOTH THE TUBE AND CHAIN PROVIDED FOR THIS PURPOSE.

MOUNT THE PTO SHAFT'S TRANSMISSION ONLY WHEN THE TRACTOR'S ENGINE IS OFF.

BEFORE CONNECTING THE PTO SHAFT, BE SURE THAT THE DANGER ZONE SURROUNDING THE MACHINE IS CLEAR.

NEVER LEAVE THE TRACTOR'S DRIVER'S SEAT WHILE THE MACHINE IS IN OPERATION.

DO NOT DEPOSIT EXTERNAL ELEMENTS INSIDE THE HOPPER.

WHEN MANTAINING THE HYDRAULIC SYSTEM OF THE FERTILISER SPREADER, MAKE SURE THAT IT IS DEPRESSURISED AND THE TRACTOR'S ENGINE IS OFF.

PLEASE REGULARLY CHECK THE CONDITION OF THE TUBES AND HOSEPIPES IN THE HYDRAULIC SYSTEM. THESE PARTS AGE NATURALLY AND THEIR LIFE SHOULD NOT SURPASS 6 YEARS. PLEASE REPLACE WHEN NECESSARY.

WHEN RAISING THE FERTILISER SPREADER, THE FRONT AXLE IS UNLOADED. ENSURE THAT THE MACHINE HAS ENOUGH LOAD TO PREVENT IT OVERTURNING. AT THIS TIME YOU MUST ENSURE THAT THE CONDITION OF BOTH THE STEERING AND THE BRAKES IS OPTIMAL.

DURING TRANSIT WITH THE RAISED FERTILISER SPREADER, BLOCK THE LOWERING SWITCH. BEFORE LEAVING THE TRACTOR, LOWER THE FERTILISER SPREADER ONTO THE GROUND AND REMOVE THE TRACTOR'S STARTING KEY.

ALWAYS USE ENOUGH SUPPORTING ELEMENTS WHEN MAINTAINING THE MACHINE IN A RAISED POSITION TO PREVENT THE MACHINE FROM LOWERING OR FALLING.

FILL THE FERTILISER SPREADER WHEN IT IS IN ON THE GROUND, ENSURE THE TRACTOR ENGINE IS OFF AND THE FERTILISER OUTLET OPENINGS ARE CLOSED.

ALWAYS CONNECT GENTLY THE PTO SHAFT'S CLUTCH IN ORDER TO PROTECT THE FERTILISER SPREADER. OTHERWISE THE MACHINE COULD BE SERIOUSLY DAMAGED.

BE CAREFUL WHEN FILLING THE FERTILISER SPREADER AND TAKING INTO A FIELD WHICH IS FAR AWAY. IT IS POSSIBLE THAT THE FERTILISER COMPACTS AT THE BOTTOM OF THE HOPPER AND THE OUTLET OPENINGS ARE OBSTRUCTED. IN THIS CASE IT WILL BE NECESSARY TO COMPLETELY OPEN THE OUTLETS, LET THE PTO SHAFT'S CLUTCH SLOWLY IN AND SPREAD SOME FERTILISER. AFTER THIS OPERATION, PLACE THE ADJUSTING LEVERS IN THE POSITION CORRESPONDING TO THE CHOSEN FLOW AND SPREAD NORMALLY.

NEVER DELIBERATELY CAUSE THE EXIT OF THE FERTILISER FROM THE UPPER PART OF THE HOPPER. THERE IS A SERIOUS RISK OF OBSTRUCTING THE AGITATOR.

AFTER EACH WORKING DAY, THE SPREADING VANES AND THEIR TIGHTING SCREWS SHOULD BE CHECKED. THEY SHOULD BE REPLACED WHEN THEY ARE VISIBLY WORN OUT, SINCE THE WEAR IS CAUSED BY THE CONTACT WITH THE FERTILISER AND IT IS BECOMES WORSE WHEN THE FERTILISER IS MORE ABRASIVE.

CONSEQUENCES OF WORN OUT SPREADING VANES ARE A BAD IRREGULAR SPREADING AND, ESPECIALLY, THE RISK CAUSED BY FRAGMENTS DETACHED FROM THE SPREADING VANES.

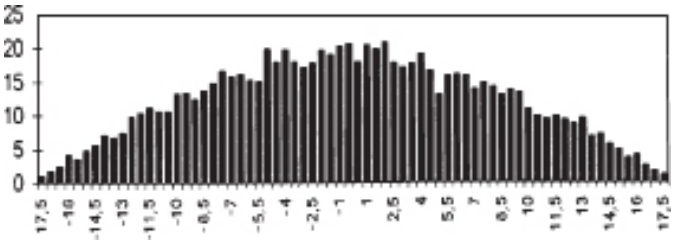
4. ESSENTIAL SPREADING CONCEPTS

4.1 FACTORS TO BE TAKEN INTO ACCOUNT FOR A GOOD SPREADING

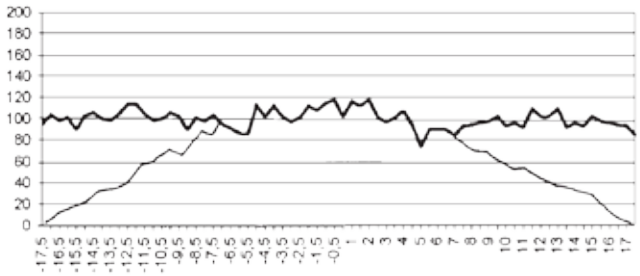
1- **Fertiliser's granulometry:** Reject fertilisers with grains of irregular size or with grains that break easily. This makes uniform spreading diffi cult.
2- **PTO shaft speed:** PTO shaft's speed determines the turning speed of the spreading discs and, consequently, the working width. Speed should be 540 rpm.
3- **Forward speed:** Variations in forward speed modify the amount of fertiliser spread onto the ground.
4- **Hopper's position:** The hopper should stay horizontal since lateral or longitudinal lean modify the fertiliser's distribution onto the ground.
5- **Working height:** The working height should stay constant at 75 cm mesured from the disc to the ground. This height should be checked at the fi eld. It should not be checked when coupling the machine in the warehouse.
6- **Do not fertilise if the weather is windy:** Wind modifi es the spreading direction of the fertiliser grains as well as distribution. The wider the working width, the lower the dose and the more irregular the grain size, result in highly uneven spreading in windy conditions.
7- **Wear and tear of the spreading discs and spreading vanes:** Spreading discs and spreading vanes are essential in the spreading of the fertiliser, and their wear can have great infl uence when spreading the fertiliser onto the ground. Keep them in optimal condition.
8- **Check fertiliser's flow:** Perform a previous calibration test in the warehouse in order to know exactly the amount of fertiliser going to be spread. Dosage is going to be very different when using diff erent kinds of fertiliser, as it depends on factors such as density, moisture content, etc...
9- **Distance between tramlines:** Keeping the distance between tramlines is essential to get optimal spreading. To know this distance, follow the adjusting instructions. To increase the precision, a test at the fi eld could be performed by checking the amount of spread fertiliser using boxes placed on the ground.

4.2 FERTILISER SPREADING

It is well known that the amount of fertiliser spread onto the field directly affects in the output of the harvest.
Nevertheless, what is even more important than the amount of fertiliser is the uniformity in which it is distributed along the terrain. Fertiliser spreaders **D-903 and D-903 PLUS** distribute the fertiliser as shown in the followingdiagram:



To get a uniform distribution, the fertiliser should be spread overlapping the tramlines so the fi nal result is a fl at diagram like the one below:



Uniformity in fertiliser distribution is measured by means of the coefficiency of variation (CV). The CV is calculated using a statistical formula based on the data obtained from the overlapping technique.

Fertiliser's manufacturers agree on the fact that CV is very good if it stays below 10%, it is medium if it stays between 10% and 15%, and it is bad if it exceeds 15%. The last case should be avoided.

5. STARTING

5.1 COUPLING TO THE TRACTOR

The fertiliser spreaders **D-903 and D-903 PLUS** are provided with bolts of category II for their coupling to the tractor's three-point linkage.

To the make the coupling easier, the fertiliser spreader is equipped with two supports which, when lowered to a vertical position (Fig. 2), increase the height of the coupling point.

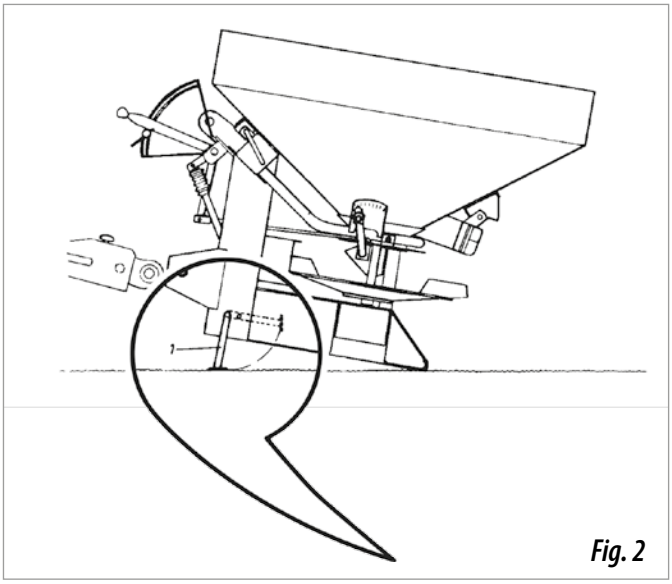
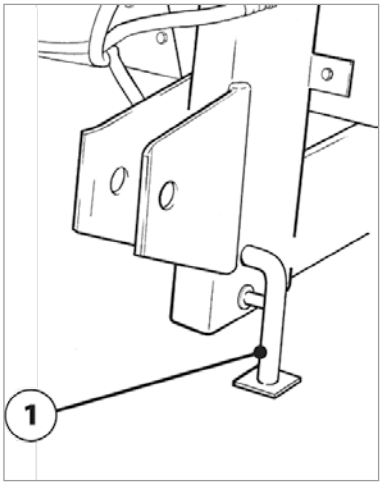


Fig. 2



In working position, the fertiliser spreader should stay horizontally and its disc shoud be at 75 cm from the ground (Fig. 3).

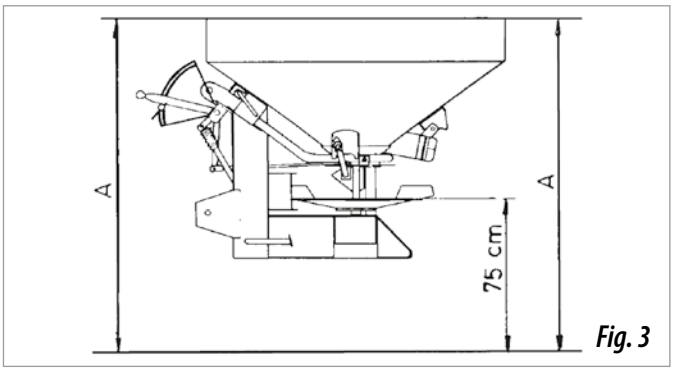


Fig. 3

5.2 PTO SHAFT

PTO shaft's turning speed should be 540 rpm and it is important to keep this constant while working.

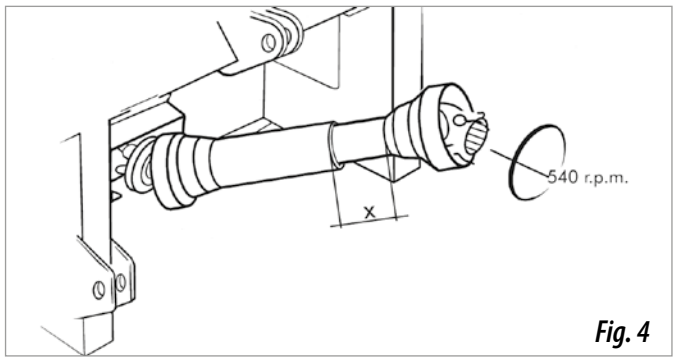


Fig. 4

Once the fertiliser spreader is coupled with the tractor, THE PTO SHAFT SHOULD BE ADAPTED:

1- Dismount and insert one end into the tractor's universal joint shaft and the other end into the fertiliser spreader. Look for the minimal movement length "L" (Fig. 5) by raising and lowering the hydraulic lift.

2- Cut the spare plastic and metal into parts of the same length and remount the PTO shaft.

3- Operate the hydraulic lift and check that the PTO shaft's movement is correct.

4- Secure the PTO shaft using the chain.

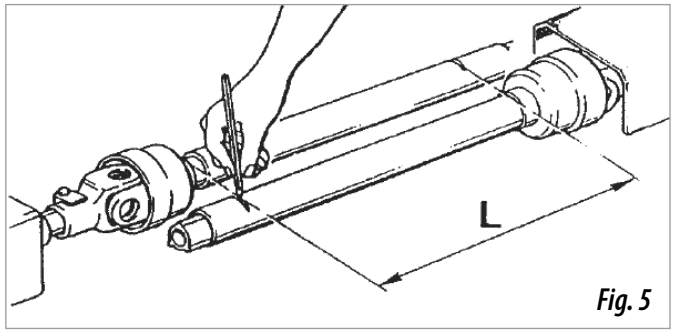


Fig. 5

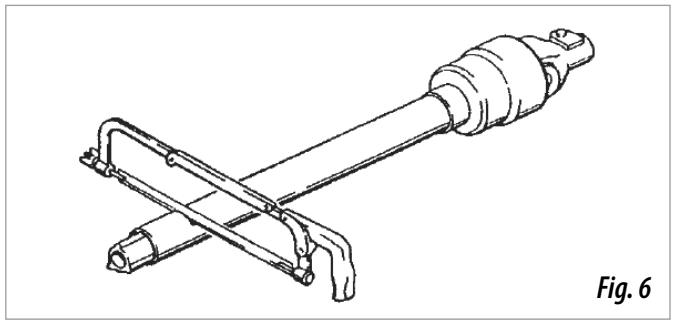


Fig. 6

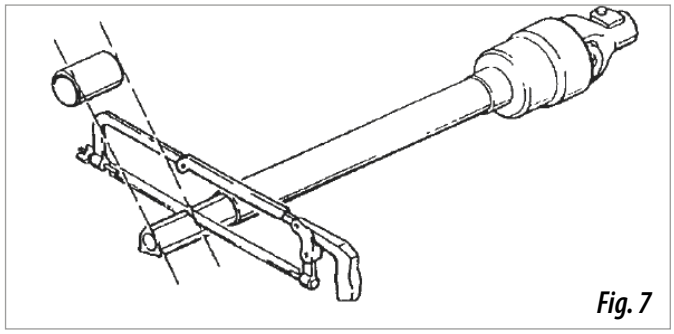


Fig. 7

WHEN OPERATING THE PTO SHAFT CHECK THAT THE ENGINE IS OFF. ALWAYS WORK WITH THE PTO SHAFT PROTECTED AND IN GOOD CONDITION. PREVENT THE PTO SHAFT'S TUBE FROM TURNING BY SECURING IT WITH THE CHAIN PROVIDED.

WHEN LOWERING THE FERTILISER SPREADER TO THE GROUND, UNPLUG THE TRACTOR'S UNIVERSAL JOINT SHAFT SO THAT THE PTO SHAFT DOES NOT HAVE AN EXCESSIVE INCLINATION (MAX. 35º).

WHEN HOLDING THE TRACTOR UNIVERSAL JOINT SHAFT'S CLUTCH IN, PERFORM IT GENTLY. STARTING SUDDENLY COULD SERIOUSLY DAMAGE THE FERTILISER SPREADERS.

5.3 COUPLING THE TRAILED FERTILISER SPREADER TO THE TRACTOR

Fertiliser spreaders D-903 and D-903 PLUS Trailed are equipped with a type of coupling (axle-swivelling ring) which can be easily adjusted to different heights.

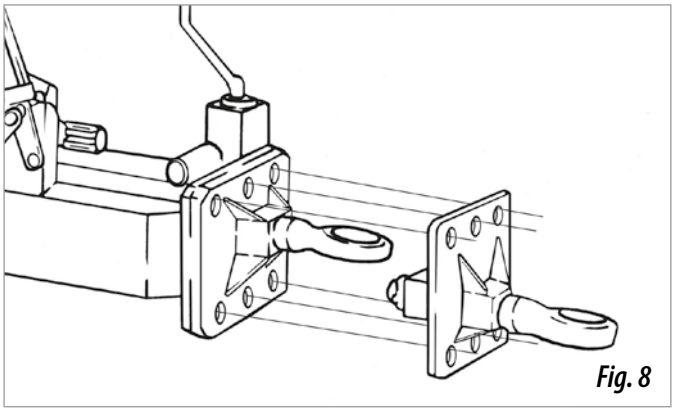


Fig. 8

Once coupled to the tractor, the fertiliser spreader should stay horizontal. To make it easier, the height of the coupling ring can be adjusted in two different positions.

To switch between heights, simply invert the ring's position. In some cases it is possible that none of the two positions is the correct one to level the fertiliser spreader horizontally. If this is the case, the platina which holds the ring in the right position should be soldered and correctly secured.

Check that the ends of the PTO shaft's telescopic axle (Fig. 9) do not touch when the fertiliser spreader is raised to its working position. Cut these ends, if necessary, leaving a section long enough to ensure a connection of at least 15 cm with the shaft fully extended.

BEFORE CONNECT THE PTO SHAFT CHECK THE MINIMUM MEASURE

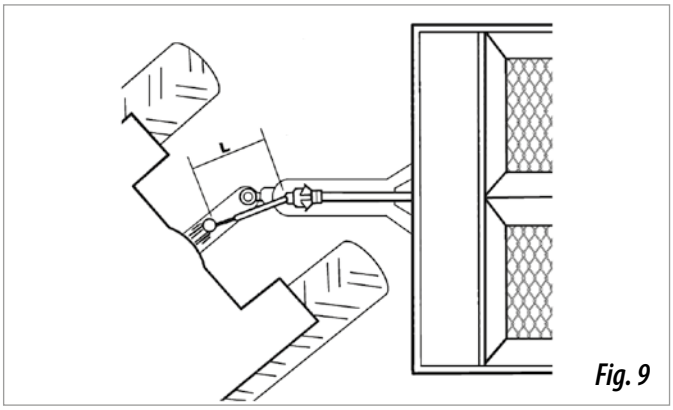


Fig. 9

Mount the PTO shaft with the clutch on the fertiliser spreader side. Mounting on the trailed fertiliser spreader.

5.4 HYDRAULIC CONNECTIONS OF THE BOUNDARY SPREADING LIMITER IN FERTILISER SPREADERS D-903 & D-903PLUS

STARTING:

The plugs in the pilot-operated non-return valve should be connected to the same double-acting connection. From now on, we will name it Connection No. 1. The third plug should be connected to a different connection which will be named Connection No. 2 from now on.
Connection No. 1 determines the working mode, unfolding or folding the boundary spreading limiter.
Connection No. 2 is in charge of opening the fertiliser outlets. When the limiter is unfolded, only the left outlet (in the driving direction) can be opened or closed. On the other hand, when the limiter is folded, both outlets can be opened or closed.

THESE TWO PLUGS ARE USED TO ADJUST THE OPENING AND CLOSING OF THE BOUNDARY SPREADING LIMITER

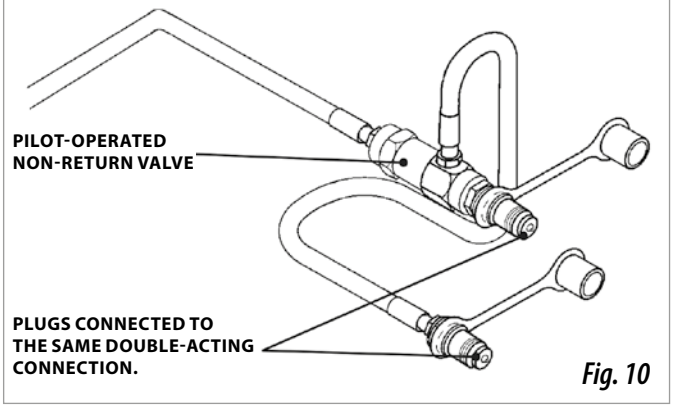


Fig. 10

THEREFORE:

For normal spreading at the center of the fi eld, we should work only with Connection No. 2, making previously sure that the limiter is folded.
For boundary spreading at fi eld edges, fi rst of all the limiter should be unfolded using Connection No. 1 and next, keeping always the fi eld edge at the right side at about 3 metres from fertiliser spreader's centre, the left outlet in the drive direction can be opened and closed using Connection No. 2.

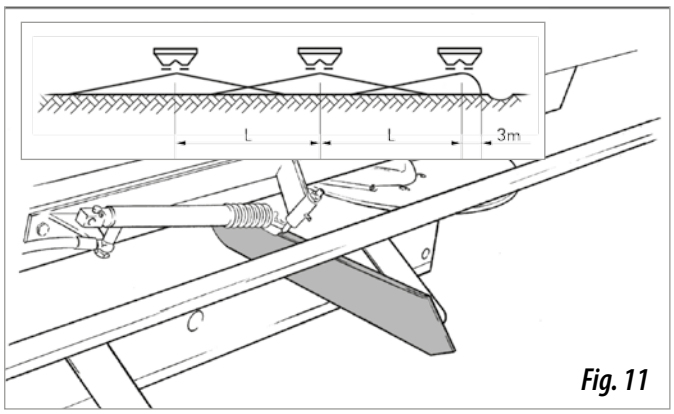


Fig. 11

CONNECTIONS IN TRACTORS SHOW OFTEN LEAKS DUE TO INTERNAL WEAR. FOR THIS REASON, DURING TRANSIT OR IN WORK BREAKS IT IS BETTER KEEPING THE LIMITER FOLDED AND THE THIRD PLUG'S TAP CLOSED TO PREVENT THE FERTILISER OUTLETS FROM OPENING.

BE SURE THERE IS NOBODY CLOSE TO THE MACHINE WHEN OPERATING THE HYDRAULIC CONTROLS OR WHEN THE MACHINE IS WORKING.

6. COMMON ADJUSTMENTS IN FERTILISER SPREADERS D-903 & D-903 PLUS

6.1 SUMMARISED METHOD FOR ADJUSTING

The essential workflow steps to adjust the fertiliser spreader are as follows:

1. Knowing the kind of fertiliser, its granulometry, its density, its state (fragments or whole), etc..., to be able to compare it to a similar one found in the tables of chapter 12 of this manual.
2. Knowing the spreading dose in Kg/Ha to be spread, established depending on the kind of both crop, earth and fertiliser.
3. Choosing a working width.
4. Checking the corresponding dosage table and search the desired flow in the squares of Kg/Ha column which depend on the forward speed. Adjust the spreading vanes and the dosing slider as indicated in the table.

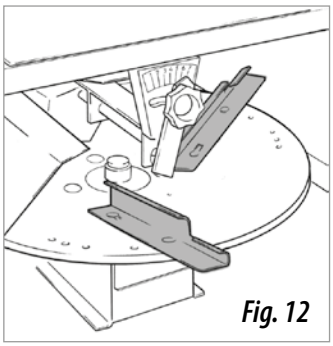


Fig. 12

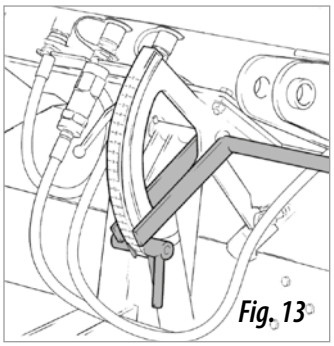


Fig. 13

5. Perform a calibration test to check that the dosage is correct.

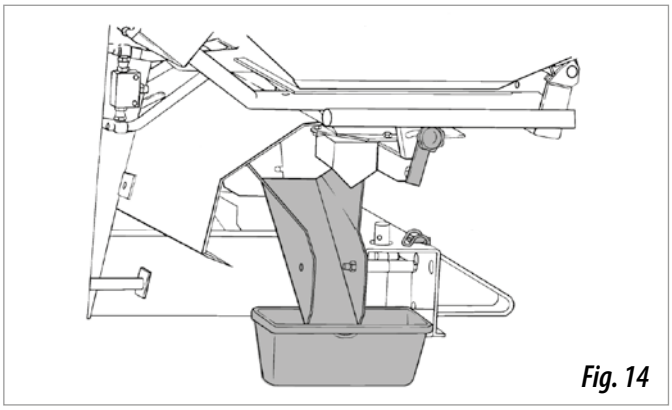


Fig. 14

6. Spread a well kwown and small field to be able to check the instructions explained in the previous points.

6.2 KNOWLEDGE OF THE PHYSICAL CHARACTERISTICS OF THE FERTILISER

Using the same fertiliser spreader adjustments for different fertilisers is not a good way of working, since the spreading of the fertiliser will differ greatly if the fertiliser's physical characteristics are different. Therefore, for each type of fertiliser, a different adjustment needs to be set in the machine.
Physical characteristics which define a particular type of fertiliser are, basically, density and granulometry.

DENSITY:
It is the weight per unit volume. It is measured in Kg/dm3. It can differ depending on the moisture content of the fertiliser.
Density of the fertiliser to be used should be compared to the densities found in the dosage tables in chapter 12 of this manual.

GRANULOMETRY:
It shows the ratio between the different grain sizes found in the fertiliser. The granulometry of each fertiliser can be found in the dosage tables. In them, the grain diameter is presented in four groups:

Ø 4,75 % of grains which diameter exceed 4,75 mm
Ø 3,3 % of grains with diameters from 3,3 mm up to 4,75 mm
Ø 2 % of grains with diameters from 2 mm up to 3 mm
Ø <2 % of grains which diameter is smaller than 2 mm

By convention, the group to which more than 50% of the fertiliser grains belong, determines the type of fertiliser.
A fertiliser is considered accepable when 90% of its granulometric sizes can be found in a maximum of three contiguous groups.
To check the fertiliser granulometry, there is a special box with sieves. Thus the fertiliser to be spread can be compared to the ones in the dosage tables in a very easy way.

KNOWLEDGE OF THE PHYSICAL CHARACTERISTICS OF THE FERTILISER:
Fertiliser showing excessive moisture content and dust do not flow correctly and they form vertical walls inside the hopper instead of sliding. Additionally, grains with high moisture content are fragile,

break more easily and their fragments will not reach the same distance than dry and whole grains and therefore the distribution will be worse. For this reason, using this kind offertiliser needs to be avoided.

6.3 FLOW ADJUSTMENT

In order to adjust the flow, the fertiliser characteristics needs to be determined as indicated in point 6.2 of this manual. Once this is done, the dosage tables need to be consulted to find the most similar fertiliser to the one which is going to be used.

For a chosen dose and working width, search in the tables the square corresponding to this dose (Kg/Ha) in the column that matches the right working width and forward speed.

Once the square corresponding to the chosen dose is located, follow the same row towards the left until the end of the table, where the position of the adjusting lever is indicated. The stop for the lever needs to be placed in that number in the graduated sector.

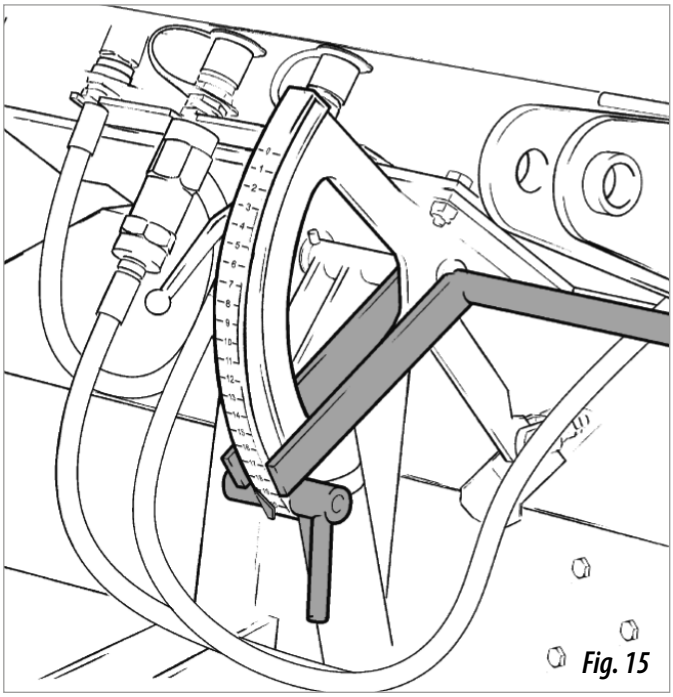


Fig. 15

7. ADJUSTING THE WORKING WIDTH FOR FERTILISER SPREADER D-903 (UP TO 24 M)

The working width in the fertiliser spreader D-903 can be adjusted by means of the position of the spreading vanes. The optimal working width depends on the kind of fertiliser to be used as well as the dose to be spread.
The next table shows the approximate values for the working widths that provide a coefficient of variation (CV) lower than 10 – good – or 15 – mediumfor three kinds of fertiliser and different doses to be spread. It is recommended to spread at the working widths of the column whose CV is lower (than 10% in order to get optimal results).

FERTILISER	FLOW (KG/MIN)	DOSE TO BE SPREAD A 8 KG/HA (KG/HA)	WORKING WIDTHS C.V. LOWER THAN 10% (MTS)	WORKING WIDTHS C.V. LOWER THAN 15%(MTS)
NAC	50 100 265	from 150 to 300 from 300 to 600 from 800 to 1.600	24-21-18-15 24-21-18-15 24-21-18-15	
NPK	50 100 265	from 150 to 300 from 300 to 600 from 800 to 1.600	24-21-18-15 24-21-18-15 18-15	24-21
UREA	37 75 199	from 150 to 300 from 300 to 600 from 800 to 1.600	18-9-15 18-12-9 18-12-9	12 15 15

Once the optimal working width is determined, the spreading vanes need to be placed at the position indicated in the dosage tables. Note that, for the same working width but using different doses, the spreading vanes are in different positions.

Position of each spreading vane is indicated by means of a letter (A-B-C) and a number (1-2-3).

Letters A, B and C indicate the position of the fixing screw in the hole of each spreading vane's.

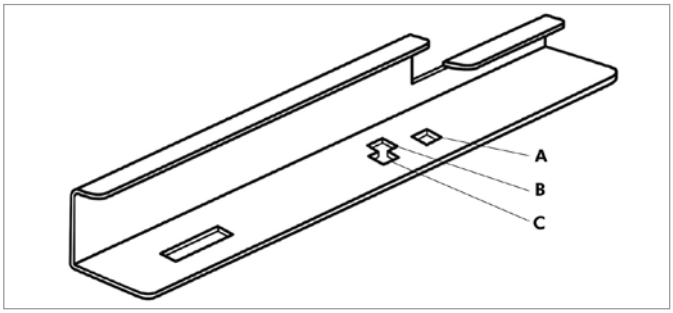


Fig. 16 Left spreading vane view (it should be assembled in the left side disc in the drive direction).

Numbers 1,2 and 3 indicate the position of the spreading vane on the discs's holes.

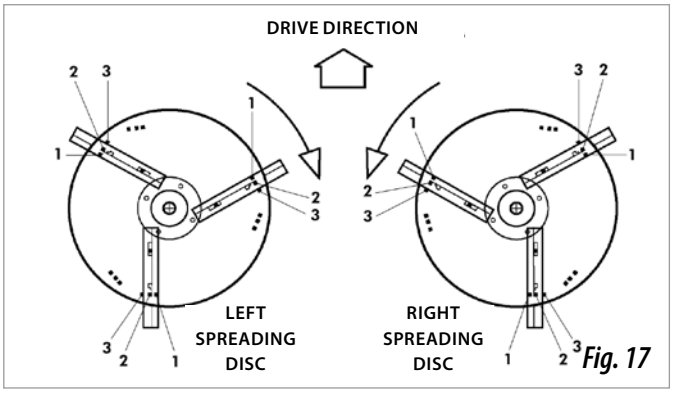


Fig. 17

7.1 INTERPRETATION OF THE TABLES WHICH ADJUST THE WORKING WIDTH OF THE FERTILISER SPREADER D-903

In order to explain how to use the tables which adjust the dosage and the working width, an example is going to be shown.

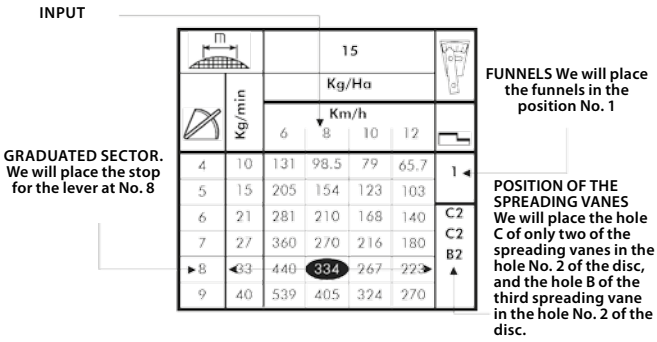
Let's suppose that we want to spread about 330 Kg/Ha of NAC 27% working at 8 Km/h of forward speed and working at 15 metres between tramlines.

First of all, we need to consult the table corresponding to NAC 27% or, if we are using a different fertiliser with no specific table, we need to chose the table of the fertiliser most similar in granulometry and density.

Once the correct table has been determined, we need to consult the column corresponding to 15 metres and, inside this one, we need to find the 8 km/h column. We will follow the column downwards until we find the closest value to 330 Hg/Ha. In this case it turns out to be 334 Kg/Ha.

At the left of this dosing value, in the column corresponding to the graduated sector's lever position, we are going to find the position for the lever.

At the right of the dosing value we will find the position for the funnels and the position of the spreading vanes on the discs.



The doses that can be found in the tables are approximative, they can differ in fertilisers of the same type due to moisture, granulometry, density, etc.

To know exactly the needed dose (in Kg/Ha) of the fertiliser we are going to use, for a determined position of the lever in the graduated sector, it is recommended to perform calibration tests with the calibration channel which is supplied with the machine, following the instructions detailed in this manual.

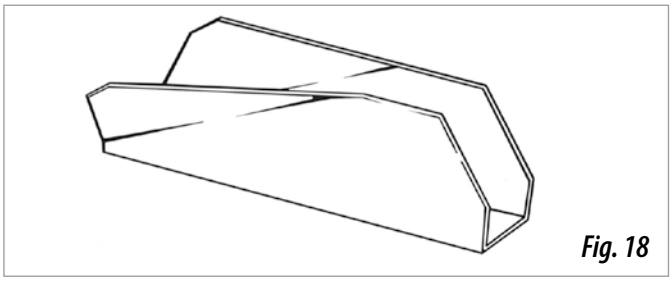


Fig. 18

8. INTERPRETATION OF THE TABLES WHICH ADJUST THE WORKING WIDTH OF THE FERTILISER SPREADER D-903 PLUS

The fertiliser spreader D-903 PLUS allows working widths of 30 and 36 metres with fertilisers of the right physical characteristics.

For a chosen fertiliser dose (Kg/Ha), the machine can be adjusted in any of the two working widths by means of the dosage tables. They show the positions for the spreading vanes and their extensions, the funnels and the flow regulator.

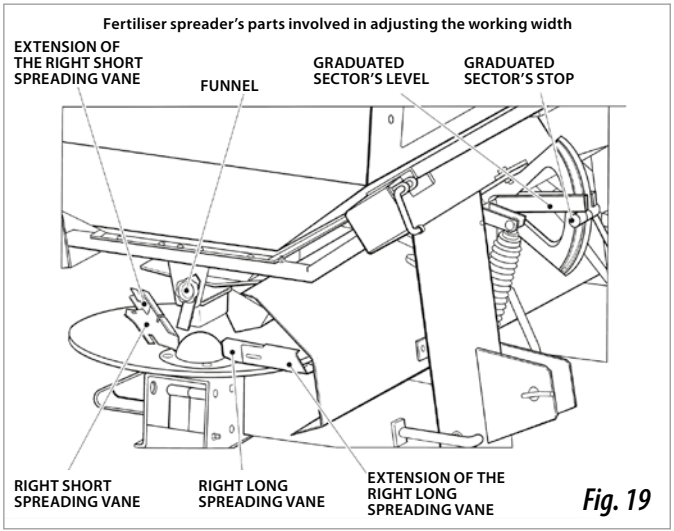


Fig. 19

Due to the trapezoidal shape of the spread, it is very important to keep the distance between tramlines to correctly spread the fertiliser along the field.

We are going to use an example in order to explain how to use the tables to adjust the dose and the machine's working width.

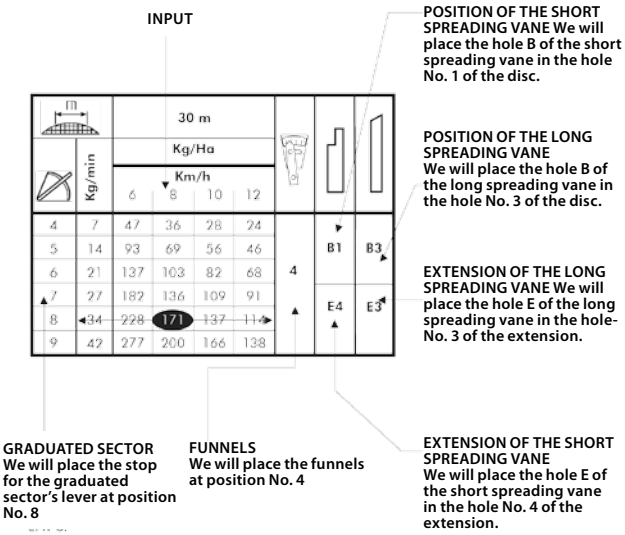
Let's supose we want to spread about 170 Kg/Ha of NPK 10-10-15, working at 8 Km/h and 30 metres between tramlines.

First of all, we need to consult the table corresponding to NKP 10-10-15 or, if we are using a different fertiliser with no specific table, we need to chose the table of the fertiliser most similar in granulometry and density.

Once the correct table has been determined, we need to consult the column corresponding to 30 metres and, inside this one, we need to find the 8 km/h column. We will follow the column downwards until we find the closest value to 170 Hg/Ha. In this case it turns out to be 171 Kg/Ha.

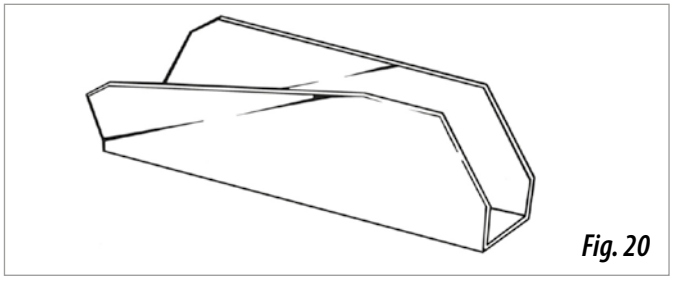
On the left hand side of this dosing value, in the column corresponding to the graduated sector's lever position, we are going to find the position for the lever.

On the right of the dosing value we will find the position for the funnels as well as the position and extensions of the short spreading vane and the long spreading vane (in this order). This positions are the same for both discs.

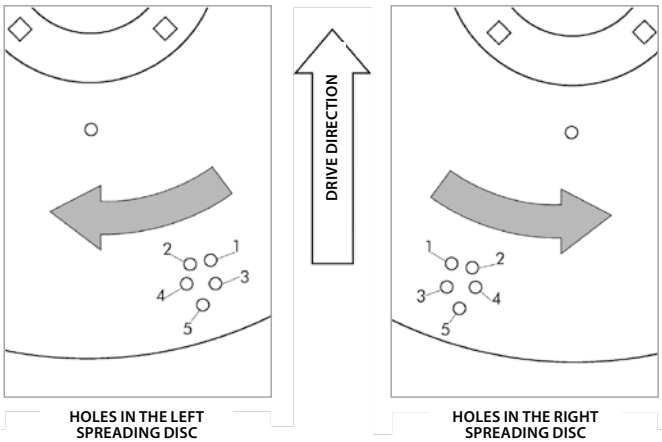


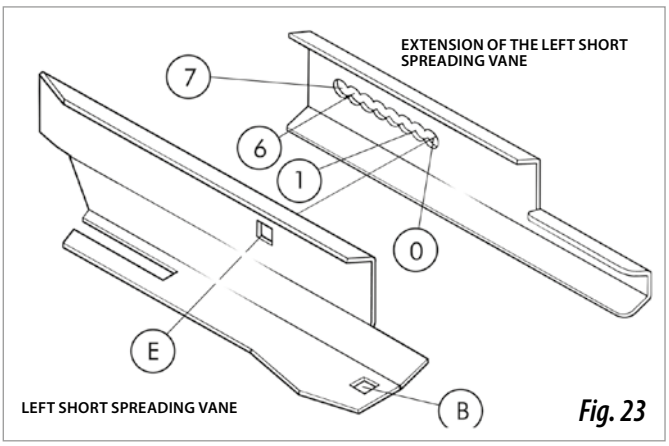
The doses that can be found in the tables are approximative, they can differ in fertilisers of the same type due to moisture, granulometry, density, etc.

To know exactly the dose needed (in Kg/Ha) of the fertiliser we are going to use, for a determined position of the lever in the graduated sector, it is recommended to perform calibration tests with the calibration channel which is supplied with the machine, following the instructions detailed in this manual.

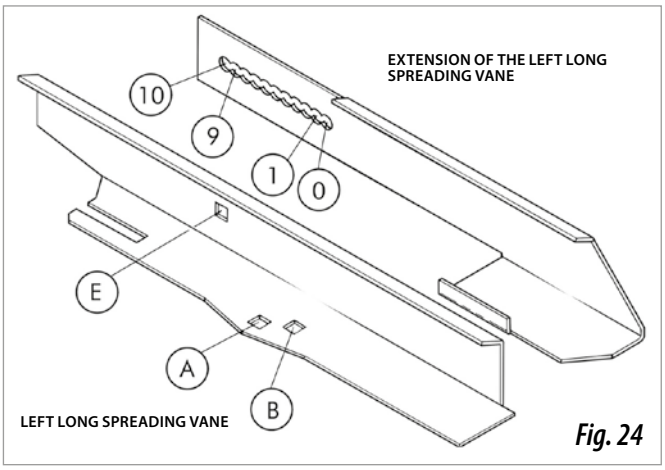


NAMES OF THE DIFFERENT HOLES IN SPREADING DISCS AND SPREADING VANES IN THE FERTILISER SPREADER **D-903 PLUS**





HOLES IN THE LEFT SHORT SPREADING VANE
(THE RIGHT ONE HAS THE SAME NAMES)



HOLES IN THE LEFT LONG SPREADING VANE
(THE RIGHT ONE HAS THE SAME NAMES)

9. CALIBRATION TEST

In order to know the fertiliser flow to be spread by the fertiliser spreader, the amount of fertiliser that comes out from one of the outlet opening in one minute needs to be measured. Using the result of this measurement, the amount in Kg/Ha to be spread will depend only on the forward speed and the space between tramlines.

Fertiliser spreaders **D-903 and D-903 PLUS** allow calibration tests to be performed in the following way:

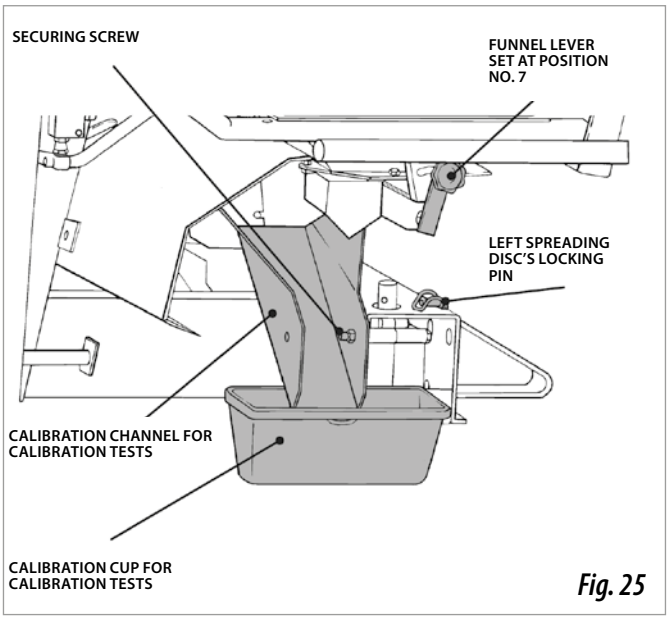


Fig. 25

1. Remove the left spreading disc (in the drive direction) by freeing the ring pin (1, Fig. 26) which is at the lower part. Remove the left spreading disc (in the drive direction) by freeing the ring pin (1, Fig. 25) which is at the lower part.

2. Place the funnel's position indicator (2, Fig. 27) in No. 7 and place the calibration channel as indicated in the upper figure.

3. Fill the left side of the hopper with fertiliser.

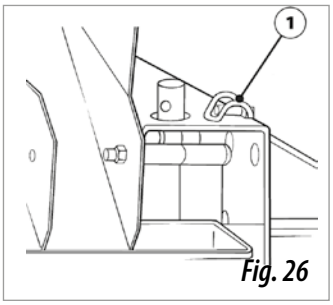


Fig. 26

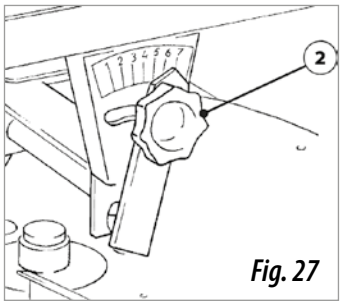


Fig. 27

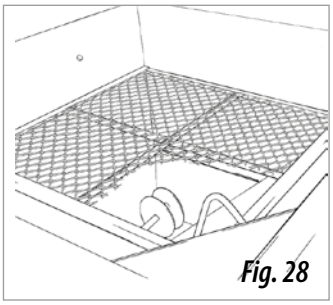


Fig. 28

4. Place the calibration cup under the calibration channel.

5. Place the stop of graduated sector's lever at the desired position.

6. Start the machine at 540 rpm and open the outlet for a minute (take as a guidance the doses shown in the tables, because one minute in position No. 12 will allow about 50 Kg of a fertiliser to come out, with an specific weight around 1 Kg/L).

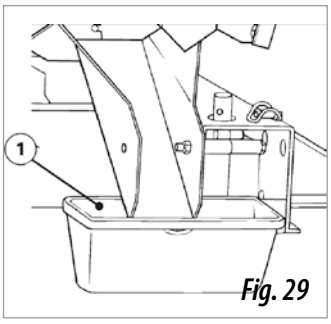


Fig. 29

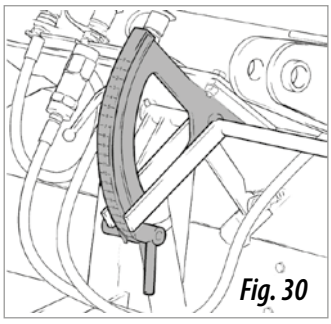


Fig. 30

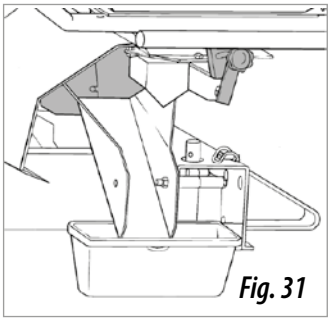


Fig. 31

7. WeighT the fertiliser that is in the calibration cup (so to directly obtain the value of the flow in Kg/min). To know the dose in Kg/Ha, apply the following formula:

$$\text{DOSE (kg/ha)} = \frac{\text{1200 x FLOW (kg/min)}}{\text{SPEED (km/h) x WORKING WIDTH (m)}}$$

If the flow rate is very high, reduce the time during which the outlet is opened to ½ min or to ¼ min, taking then into account that the dose will need to be multiplied by 2 or 4 respectively.

10. BOUNDARY AND SIDE SPREADING

10.1 BOUNDARY SPREADING BY REDUCING THE FERTILISER'S FLOW IN MODEL D-903

TO PREVENT ACCIDENTS, WHEN OPERATING THE FUNNEL IN THE TURNING DISCS ZONE, IT IS ESSENTIAL THAT THE ENGINE IN THE TRACTOR IS OFF.

When starting to work at half of the working width, it is necessary to work with both spreading discs together but the funnel's lever (P) needs to be in position 7. Thus, the side in which the funnel's position has been changed, will have its fertilizer's spreading reduced to half the working width.

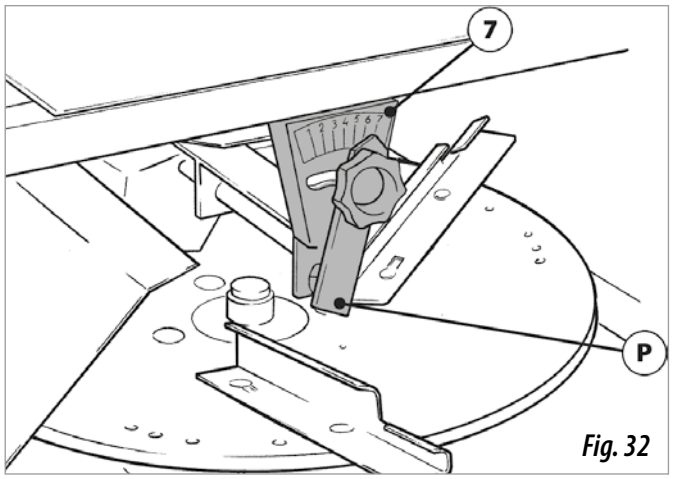
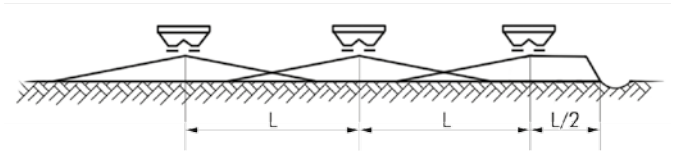


Fig. 32



SPREADING OF THE FERTILIZER AT HALF THE WORKING WIDTH

10.2 HIDRAULIC CONNECTIONS OF THE BOUNDARY SPREADING LIMITER IN FERTILISER SPREADERS D-903 & D-903 PLUS

THESE TWO PLUGS ARE USED TO ADJUST THE OPENING AND CLOSING OF THE LIMITER

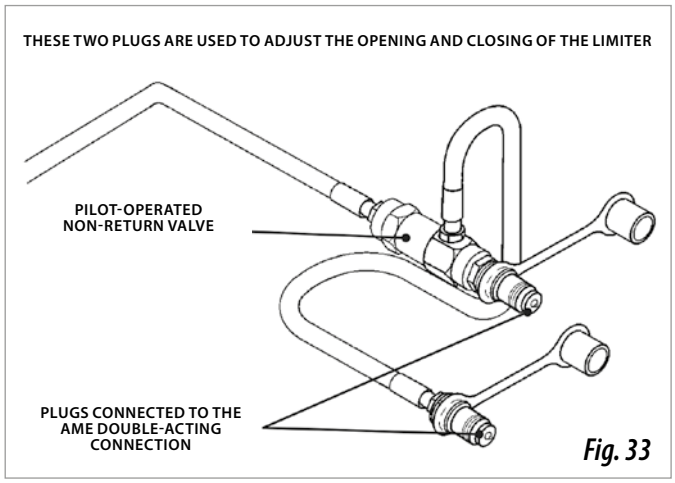


Fig. 33

STARTING:

The plugs in the pilot-operated non-return valve should be connected to the same double-acting connection. From now on, we will name it Connection No. 1. The third plug should be connected to a different connection, let's name it Connection No. 2.

Connection No. 1 determines the working mode, unfolding or folding the boundary spreading limiter.

Connection No. 2 is in charge of opening the fertiliser outlets. When the limiter is unfolded, only the left outlet (in the driving direction) can be opened or closed. On the other hand, when the limiter is folded, both outlets can be opened or closed.

THEREFORE:

For a normal spreading at the center of the field, we should work only with Connection No. 2, making previously sure that the limiter is folded.

For spreading at field edges, first of all the limiter should be unfolded using Connection No. 1 and next, keeping always the field edge at the right side at about 3 metres from the fertiliser spreader's centre, the left outlet in the drive direction can be opened and closed using Connection No. 2.

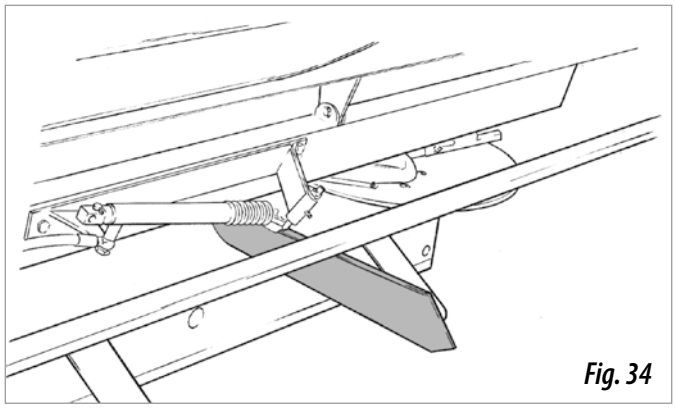
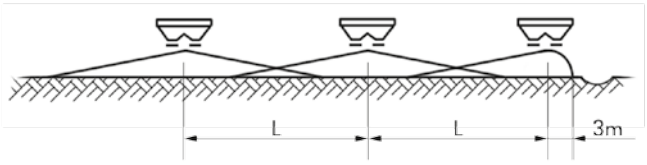


Fig. 34



11. MANTENANCE

11.1 LUBRICATION

PTO's shaft and the boundary spreading limiter need to be greased daily.

After using the fertiliser spreader, it is recommended to wash it using hosepipes.

In order to make the washing easier, raise the hopper unlocking the locking hooks which fix it on each side of the chassis.

The gear box uses grease type NLGI 00. Periodically check the grease level by removing the filling cap and refill if necessary.

Do not fold down the hopper with the 1000 L hopper extension being assembled, since the fertiliser spreader would overturn.

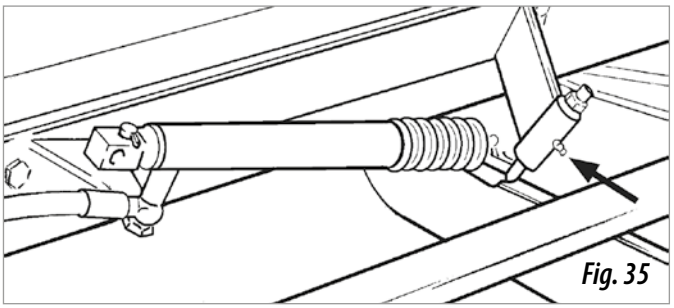


Fig. 35

The trailers for fertiliser spreaders D-903 and D-903 PLUS are equipped with two balloon wheels type 12,5/80-15/3, providing good suspension and stabilization.
Recommended tyre pressure is 7 Kg/cm^2.

11.2 SCREWS

All the screws used in the fertiliser spreader are size 8.8.

AFTER WORKING FOR SOME HOURS, ALL SCREWS SHOULD BE CHECKED AND TIGHTENED.

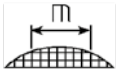
12. DOSAGE TABLES

THE DOSAGE TABLES INDICATE THE SPREAD DOSES IN KG/HA FOR EACH KIND OF FERTILISER, DEPENDING ON THE WORKING WIDTH AND THE FORWARD SPEED.

THE INDICATED QUANTITIES ARE APPROXIMATIVE, SINCE THE PREDICTED FLOW CAN DIFFER DUE TO THE VARIETY OF GRANULOMETRY, DENSITY, MOISTURE, ETC.

FOR FERTILISERS NON SPECIFIED IN THE TABLES, USE THE ONE WHICH IS MOST SIMILAR IN GRANULOMETRY AND DENSITY.

12.1 SYMBOLS USED IN THE TABLES FOR D-903



WORKING WIDTH OR SPACING BETWEEN TRAMLINES.

POSITION OF THE ADJUSTING LEVER.

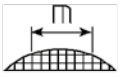
kg/min — FLOW OF ONE OUTLET, IN KG/MIN.

km/h — FORWARD SPEED IN KM/H.

POSITION OF THE SPREADING VANES ON THE DISC.

POSITION OF THE FUNNEL.

12.2 SYMBOLS USED IN THE TABLES FOR D-903 PLUS



WORKING WIDTH OR SPACING BETWEEN TRAMLINES.

POSITION OF THE ADJUSTING LEVER.

kg/min FLOW OF ONE OUTLET, IN KG/MIN.

km/h FORWARD SPEED IN KM/H.

POSITION OF THE FUNNEL.

B1 SHORT SPREADING VANE'S HOLE ON DISC'S HOLE.
E4 EXTENSION OF THE SHORT SPREADING VANE.

A4 LONG SPREADING VANE'S HOLE ON DISC'S HOLE.
E9 EXTENSION OF THE SPREADING VANE.

FERTILISER NPK 10-10-15 (AZF)
DENSITY 1,020 kg/dm³
GRANULOMETRY
Ø 4,75 = 25%
Ø 3,3 = 65%
Ø 2 = 10%
Ø <2 = 0%

D-903 TABLE 1

m	Kg/min	15 Kg/Ha Km/h 6	8	10	12		18 Kg/Ha Km/h 6	8	10	12		21 Kg/Ha Km/h 6	8	10	12		24 Kg/Ha Km/h 6	8	10	12	
4	7	94.5	70.9	57	47.2	2	78.7	59	47.2	39.4	2	67.5	50.6	40.5	33.7	2	59	44	35	29.5	2
5	14	185	139	111	92.5		154	116	92.5	77.1		132	99.1	79.3	66.1		116	86.7	69.4	57.8	
6	21	274	205	164	137	C1 C2 C2	228	171	137	114	C1 C2 C2	196	147	117	97.8	C1 C2 C2	171	128	103	85.5	C1 C2 C2
7	27	363	273	218	182		303	227	182	151		260	195	156	130		227	170	136	114	
8	34	456	342	274	228		380	285	228	190		326	244	196	163		285	214	171	143	
9	42	554	415	332	277		462	346	277	231		396	297	237	198		346	260	208	173	
10	49	658	494	395	329	3	548	411	329	274	3	470	353	282	235	3	411	308	247	206	3
11	58	769	577	462	385		641	481	385	321		550	412	330	275		481	361	289	240	
12	67	889	667	533	444	C1 C1 C2	741	555	444	370	C1 C1 C2	635	476	381	317	C1 C1 C2	555	417	333	278	C1 C1 C2
13	76	1016	762	610	508		847	635	508	423		726	544	435	363		635	476	381	317	
14	86	1151	863	691	576		959	719	576	480		822	617	493	411		719	540	432	360	
15	97	1293	970	776	647		1078	808	647	539		924	693	554	462		808	606	485	404	
16	108	1441	1081	865	721	4	1201	901	721	600	4	1029	772	618	515	4	901	676	540	450	4
17	120	1594	1195	956	797		1328	996	797	664		1138	854	683	569		996	747	598	498	
18	131	1749	1311	1049	874	C1	1457	1093	874	729	C1	1249	937	749	625	C1	1093	820	656	546	C1
19	143	1904	1428	1142	952	C1	1587	1190	952	793	C1	1360	1020	816	680	C1	1190	892	714	595	C1
20	154	2056	1542	1234	1028	C1	1714	1285	1028	857	C1	1469	1102	881	734	C1	1285	964	771	643	C1

FERTILISER NKP 10-10-15 (AZF)
DENSITY 1,020 kg/dm³
GRANULOMETRY
Ø 4,75 = 25%
Ø 3,3 = 65%
Ø 2 = 10%
Ø <2 = 0%

D-903 PLUS TABLE 1

m	Kg/min	30 m Kg/Ha Km/h 6	8	10	12				36 m Kg/Ha Km/h 6	8	10	12			
4	7	47.2	35.4	28	23.6	4	B1	B3	39.4	29.5	23.6	19.7	4	B1	A4
5	14	92.5	69.4	55.5	46.2				77.1	57.8	46.2	38.5			
6	21	137	103	82.1	68.4				114	85.5	68.4	57			
7	27	182	136	109	90.9		E4	E3	151	114	90.9	75.7		E4	E9
8	34	228	171	137	114				190	143	114	95			
9	42	277	208	166	138				231	173	138	115			
10	49	329	247	197	165	4	B1	B3	274	206	165	137	4	B1	B3
11	58	385	289	231	192				321	240	192	160			
12	67	444	333	267	222				370	278	222	185			
13	76	508	381	305	254		E4	E4	423	317	254	212		E4	E10
14	86	576	432	345	288				480	360	288	240			
15	97	647	485	388	323				539	404	323	269			
16	108	721	540	432	360	5	B1	B3	600	450	360	300	5	B1	B5
17	120	797	598	478	398				664	498	398	332			
18	131	874	656	525	437				729	546	437	364			
19	143	952	714	571	476		E7	E6	793	595	476	397		E6	E10
20	154	1028	771	617	514				857	643	514	428			

CALIBRATION TEST

NITRATO AMÓNIACO CÁLCIO 27%

FERTILISER DENSITY 1,035 kg/dm³

GRANULOMETRY

Ø 4,75 = 5%
Ø 3,3 = 58%
Ø 2 = 37%
Ø <2 = 0%

D-903 TABLE 2

m	15					18					21					24				
	Kg/Ha					Kg/Ha					Kg/Ha					Kg/Ha				
Kg/min	Km/h					Km/h					Km/h					Km/h				
	6	8	10	12		6	8	10	12		6	8	10	12		6	8	10	12	
4	10	131	98.5	79	65.7	1	109	82.1	65.7	54.7	1	93.8	70.4	56.3	46.9	1	82	62	49	41	1
5	15	205	154	123	103		171	128	103	85.6		147	110	88	73.3		128	96.3	77	64.2	
6	21	281	210	168	140	C2	234	175	140	117	C2	200	150	120	100	C2	175	132	105	87.7	C2
7	27	360	270	216	180	C2	300	225	180	150	C2	257	193	154	129	C2	225	169	135	112	C2
8	33	446	334	267	223	B2	371	279	223	186	B2	318	239	191	159	B2	279	209	167	139	C2
9	40	539	405	324	270		449	337	270	225		385	289	231	193		337	253	202	169	
10	48	642	482	385	321	1	535	401	321	268	1	459	344	275	229	1	401	301	241	201	1
11	57	755	566	453	377		629	472	377	315		539	404	324	270		472	354	283	236	
12	66	877	658	526	439	B2	731	548	439	365	B2	627	470	376	313	B2	548	411	329	274	B2
13	76	1009	756	605	504	B2	840	630	504	420	B2	720	540	432	360	B2	630	473	378	315	B2
14	86	1148	861	689	574	B2	957	717	574	478	B2	820	615	492	410	B2	717	538	430	359	B2
15	97	1294	970	776	647		1078	809	647	539		924	693	554	462		809	606	485	404	
16	108	1443	1082	866	722	1	1203	902	722	601	1	1031	773	619	515	1	902	677	541	451	1
17	120	1594	1196	956	797		1328	996	797	664		1139	854	683	569		996	747	598	498	
18	131	1743	1307	1046	871	B1	1452	1089	871	726	C1	1245	934	747	622	C1	1089	817	653	545	C1
19	141	1885	1414	1131	942	B1	1571	1178	942	785	C1	1346	1010	808	673	C1	1178	884	707	589	C1
20	151	2017	1512	1210	1008	B1	1680	1260	1008	840	B2	1440	1080	864	720	C1	1260	945	756	630	C1

NITRATO AMÓNIACO CAL. 27%

FERTILISER DENSITY 1,035 kg/dm³

GRANULOMETRY

Ø 4,75 = 5%
Ø 3,3 = 58%
Ø 2 = 37%
Ø <2 = 0%

D-903 PLUS TABLE 2

m	30 m							36 m						
	Kg/Ha							Kg/Ha						
Kg/min	Km/h							Km/h						
	6	8	10	12				6	8	10	12			
4	10	65.7	49.3	39	32.8				54.7	41	32.8	27.4			
5	15	103	77	61.6	51.3	3	B1	B3	85.6	64.2	51.3	42.8	3	B1	A4
6	21	140	105	84.2	70.2				117	87.7	70.2	58.5			
7	27	180	135	108	90		E5	E5	150	112	90	75		E7	E10
8	33	223	167	134	111				186	139	111	92.8			
9	40	270	202	162	135				225	169	135	112			
10	48	321	241	193	161				268	201	161	134			
11	57	377	283	226	189	3	B1	B3	315	236	189	157	2	B1	B3
12	66	439	329	263	219				365	274	219	183			
13	76	504	378	303	252		E6	E5	420	315	252	210		E5	E10
14	86	574	430	344	287				478	359	287	239			
15	97	647	485	388	323				539	404	323	270			
16	108	722	541	433	361				601	451	361	301			
17	120	797	598	478	399	5	B5	B3	664	498	399	332	3	B1	B5
18	131	871	653	523	436				726	545	436	363			
19	141	942	707	565	471		E7	E5	785	589	471	393		E7	E10
20	151	1008	756	605	504				840	630	504	420			

UREA 46% N PERLADA

FERTILISER DENSITY 0,750 kg/dm³

GRANULOMETRY

Ø 4,75 = 0%
Ø 3,3 = 10%
Ø 2 = 87%
Ø <2 = 3%

D-903 TABLE 3

m	9					12					15					18				
	Kg/Ha					Kg/Ha					Kg/Ha					Kg/Ha				
Kg/min	Km/h					Km/h					Km/h					Km/h				
	6	8	10	12		6	8	10	12		6	8	10	12		6	8	10	12	
4	8	179	134	108	89.6	1	134	101	80.7	67.2	1	108	80.7	64.5	53.8	1	90	67	54	44.8	1
5	13	300	225	180	150		225	169	135	112		180	135	108	89.9		150	112	89.9	74.9	
6	19	417	313	250	209	C3	313	235	188	156	C3	250	188	150	125	C3	209	156	125	104	C3
7	24	537	403	322	269	C2	403	302	242	201	C2	322	242	193	161	C2	269	201	161	134	C2
8	30	663	497	398	332	C2	497	373	298	249	C2	398	298	239	199	C2	332	249	199	166	C2
9	36	799	599	479	399	3	599	449	359	299	3	479	359	287	240	3	399	299	240	200	3
10	43	945	709	567	472	C3	709	531	425	354	C3	567	425	340	283	C3	472	354	283	236	C3
11	50	1103	827	662	552	C2	827	621	496	414	C2	662	496	397	331	C2	552	414	331	276	C2
12	57	1274	955	764	637	C2	955	717	573	478	C2	764	573	459	382	C2	637	478	382	318	C2
13	66	1456	1092	873	728	1	1092	819	655	546	3	873	655	524	437	4	728	546	437	364	4
14	74	1647	1235	988	823	C2	1235	926	741	618	C3	988	741	593	494	C2	823	618	494	412	C2
15	83	1844	1383	1107	922	C1	1383	1037	830	692	C2	1107	830	664	553	C2	922	692	553	461	C2
16	92	2044	1533	1227	1022	C1	1533	1150	920	767	C2	1227	920	736	613	B2	1022	767	613	511	B2
17	101	2243	1682	1346	1121	1	1682	1261	1009	841	1	1346	1009	807	673	1	1121	841	673	561	1
18	109	2433	1825	1460	1216	C1	1825	1368	1095	912	C1	1460	1095	876	730	C1	1216	912	730	608	C1
19	117	2608	1956	1565	1304	C1	1956	1467	1174	978	C1	1565	1174	939	782	C1	1304	978	782	652	C1
20	124	2761	2071	1657	1381	B1	2071	1553	1243	1036	B1	1657	1243	994	828	B1	1381	1036	828	690	B1

FERTILISER UREA 46% N PERLADA
DENSITY 0,750 kg/dm³
GRANULOMETRY Ø 4,75 = 0%; Ø 3,3 = 10%; Ø 2 = 87%; Ø <2 = 3%

D-903 PLUS — TABLE 3

m	Kg/min	21 m Kg/Ha Km/h 6	8	10	12				24 m Kg/Ha Km/h 6	8	10	12			
4	8	76.8	57.6	46	38.4	2	B1	B3	67.2	50.4	40.3	33.6	2	B1	B3
5	13	128	96.3	77	64.2				112	84.3	67.4	56.2			
6	19	179	134	107	89.4				156	117	93.9	78.2			
7	24	230	173	138	115		E6	E6	201	151	121	101		E5	E5
8	30	284	213	171	142				249	187	149	124			
9	36	342	257	205	171				299	225	180	150			
10	43	405	304	243	202	2	B1	B1	354	266	213	177	2	B1	B3
11	50	473	355	284	236				414	310	248	207			
12	57	546	409	328	273				478	358	287	239			
13	66	624	468	374	312		E6	E7	546	409	328	273		E7	E5
14	74	706	529	423	353				618	463	371	309			
15	83	790	593	474	395				692	519	415	346			
16	92	876	657	526	438	2	B1	B3	767	575	460	383	4	B5	B3
17	101	961	721	577	481				841	631	505	420			
18	109	1043	782	626	521				912	684	547	456			
19	117	1118	838	671	559		E7	E4	978	734	587	489		E5	E5
20	124	1183	888	710	592				1036	777	621	518			

FERTILISER UREA 46% N
DENSITY 0,800 kg/dm³
GRANULOMETRY Ø 4,75 = 0%; Ø 3,3 = 3%; Ø 2 = 39%; Ø <2 = 58%

D-903 — TABLE 4

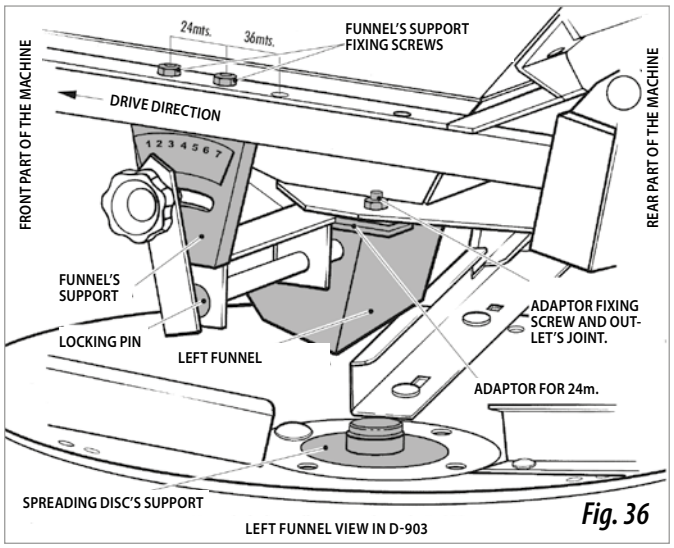
m	Kg/min	9 Kg/Ha Km/h 6	8	10	12		12 Kg/Ha Km/h 6	8	10	12		15 Kg/Ha Km/h 6	8	10	12		18 Kg/Ha Km/h 6	8	10	12	
4	10	211	159	127	106	1	159	119	95.2	79.3	1	127	95.2	76.1	63.4	1	106	79	63	52.9	1
5	16	346	259	207	173	C3	259	194	155	130	C3	207	155	124	104	C3	173	130	104	86.4	C3
6	22	482	362	289	241	C2	362	271	217	181	C2	289	217	174	145	C2	241	181	145	121	C2
7	28	627	470	376	313	C2	470	352	282	235	C2	376	282	226	188	C2	313	235	188	157	C2
8	35	781	586	469	390		586	439	351	293		469	351	281	234		390	293	234	195	
9	43	948	711	569	474	1	711	533	426	355	1	569	426	341	284	1	474	355	284	237	1
10	51	1128	846	677	564	C3	846	635	508	423	C3	677	508	406	339	C3	564	423	339	282	C3
11	60	1323	992	794	662	C2	992	744	595	496	C2	794	595	476	397	C2	662	496	397	331	C2
12	69	1531	1148	919	766	C2	1148	861	689	574	C2	919	689	551	459	C2	766	574	459	383	C2
13	79	1751	1313	1051	876	3	1313	985	788	657	3	1051	788	630	525	3	876	657	525	438	3
14	89	1980	1485	1188	990	C3	1485	1114	891	742	C3	1188	891	713	594	C3	990	742	594	495	C3
15	100	2214	1661	1329	1107	C2	1661	1246	996	830	C2	1329	996	797	664	C2	1107	830	664	554	C2
16	110	2449	1837	1470	1225	C2	1837	1378	1102	919	C2	1470	1102	882	735	C2	1225	919	735	612	C2
17	121	2680	2010	1608	1340	1	2010	1507	1206	1005	3	1608	1206	965	804	3	1340	1005	804	670	1
18	130	2899	2174	1739	1450	C2	2174	1631	1305	1087	C2	1739	1305	1044	870	C2	1450	1087	870	725	C2
19	139	3099	2325	1860	1550	B2	2325	1743	1395	1162	C1	1860	1395	1116	930	C1	1550	1162	930	775	C2
20	147	3272	2454	1963	1636	B2	2454	1841	1473	1227	C1	1963	1473	1178	982	C1	1636	1227	982	818	C2

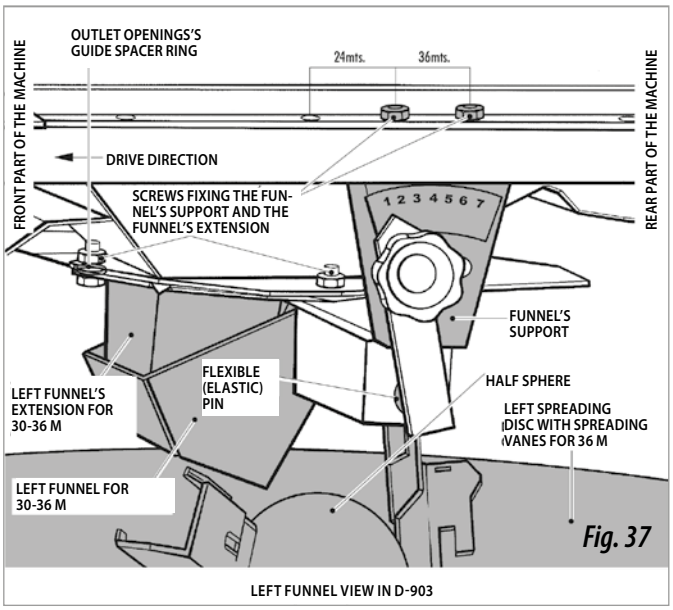
FERTILISER UREA 46% N
DENSITY 0,800 kg/dm³
GRANULOMETRY Ø 4,75 = 0%; Ø 3,3 = 3%; Ø 2 = 39%; Ø <2 = 58%

D-903 PLUS — TABLE 4

m	Kg/min	21 m Kg/Ha Km/h 6	8	10	12				24 m Kg/Ha Km/h 6	8	10	12			
4	10	90.6	68	54	45.3	1	B1	A4	79.3	59.5	47.6	39.7	1	B1	A4
5	16	148	111	88.8	74				130	97.2	77.7	64.8			
6	22	207	155	124	103				181	136	109	90.5			
7	28	269	201	161	134		E6	E9	235	176	141	117		E7	E10
8	35	335	251	201	167				293	220	176	146			
9	43	406	305	244	203				355	267	213	178			
10	51	484	363	290	242	2	B3	A4	423	317	254	212	2	B1	A4
11	60	567	425	340	284				496	372	298	248			
12	69	656	492	394	328				574	431	345	287			
13	79	750	563	450	375		E6	E9	657	493	394	328		E7	E10
14	89	849	636	509	424				742	557	445	371			
15	100	949	712	569	474				830	623	498	415			
16	110	1050	787	630	525	2	B3	A4	919	689	551	459	2	B3	A4
17	121	1149	861	689	574				1005	754	603	502			
18	130	1242	932	745	621				1087	815	652	544			
19	139	1328	996	797	664		E6	E9	1162	872	697	581		E7	E10
20	147	1402	1052	841	701				1227	920	736	614			

13. ASSEMBLING THE CONVERSION KIT FROM 24M TO 30-36 M IN MODEL D-903





THE KIT CONTAINS:

1 RIGHT CENTRIFUGAL DISC WITH ASSEMBLED SHORT AND LONG SPREADING VANES.
1 LEFT CENTRIFUGAL DISC WITH ASSEMBLED SHORT AND LONG SPREADING VANES.
1 RIGHT FUNNEL.
1 LEFT FUNNEL.
1 EXTENSION FOR THE RIGHT FUNNEL.
1 EXTENSION FOR THE LEFT FUNNEL.
2 OUTLET OPENINGS' GUIDE SPACER RINGS.
2 HALF SPHERES FOR DISC'S SUPPORT.
2 M-8 X 20 INOX SCREWS WITH SELF-LOCKING NUTS.

THE FOLLOWING TOOLS ARE REQUIRED:

2 OPEN-ENDED SPANNERS, NOMINAL SIZE 12-13
1 OPEN-ENDED SPANNER, NOMINAL SIZE 16-17
1 CYLINDRICAL DRIFT PUNCH, 4 MM DIAMETER AND A HAMMER
1 VICE.

The D-903 fertiliser spreader can work at 30-36 m working width if some elements of the machine are replaced with those supplied in the 24-30 m and 36 m conversion kit.

With the spreader empty, loosen the screws that fix the funnel support and the adapter fastening screw (Fig. 36).

First of all remove both the funnel adaptor and the adaptor for 24 m, and then free the locking pin in order to remove the 24 m funnel and replace it with the 30-36 m one that matches its orientation (at the end of its shaft, funnels have a D (Right) or a I (Left) inscribed, meaning Right or Left orientation).

Next, put away the adaptor for 24 metres since it is not required in the 30-36m machine.

Remove the spreading disc using the four M-10 round head screws that fix it to its support, place the half sphere on the spreading disc's support and, then, the disc with spreading vanes for 30-36 metres of the same orientation. Next, fix the disc back using the four round-head screws.

Place the funnel's extension under the outlet opening and then place the outlet opening guide's spacer ring (Fig. 37) as well as the M-8 x 20 screw of the front part along with its self-locking nut.

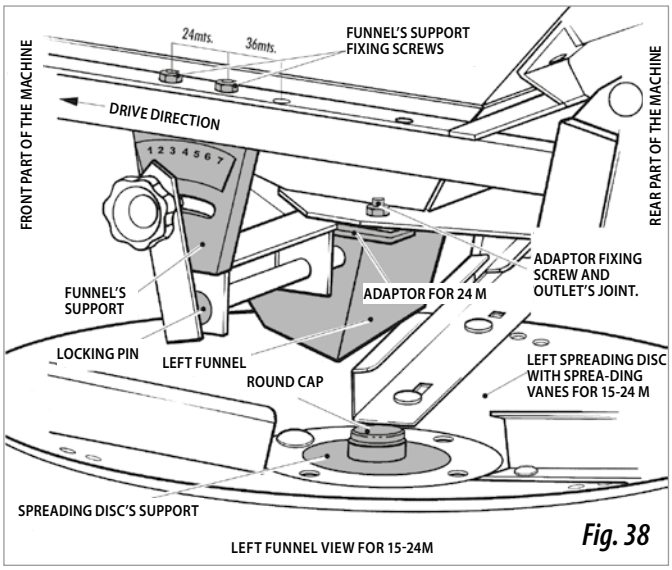
The funnel's support with the funnel for 30-36 metres must be placed in the two rearmost holes which correspond, as shown in the figure (fig. 2) to the 36 metres position. The foremost holes (in which the funnel's support was previously placed) are used to work with the funnel for 24 m.

Once the funnel's support is placed under the sheet of the funnel's extension, the M-8 screw needs to be screwed from below upwards passing first through the funnel's support, the funnel's extension, the outlet and, finally, the hopper's bottom sheet. Firstly the nut needs to be screwed until the end of the thread and, then unscrewed slowly until the trapdoor can be opened and closed (this screw works as a joint).

These operations need to be performed in both sides of the machine. Check that the funnels are correctly assembled and they do not show contact to the disc's spreading vanes at any position when the spreading disc turns.

Before starting to work, the machine needs to be adjusted as shown in the tables for 30-36 metres.

14. ASSEMBLING THE CONVERSION KIT FROM 30-36 M TO 24 M IN MODEL D-903 PLUS



THE KIT CONTAINS:

1 RIGHT CENTRIFUGAL DISC WITH THREE ASSEMBLED RIGHT SPREADING VANES.
1 LEFT CENTRIFUGAL DISC WITH THREE ASSEMBLED LEFT SPREADING VANES.
1 RIGHT FUNNEL (INSCRIBED WITH A D IN THE SHAFT'S END)
1 LEFT FUNNEL (INSCRIBED WITH A L IN THE SHAFT'S END)
2 ADAPTORS FOR 24 METRES.
2 M-8 X 25 INOX SCREWS WITH SELF-LOCKING NUTS.
2 ROUND CAPS FOR THE SPREADING DISC'S SUPPORT.

THE FOLLOWING TOOLS ARE REQUIRED:

2 OPEN-ENDED SPANNERS OF NOMINAL SIZE 12-13
1 OPEN-ENDED SPANNER OF NOMINAL SIZE 16-17
1 CYLINDRIC DRIFT PUNCH OF 4 MM DIAMETER AND A HAMMER
1 VICE (IF POSSIBLE)

Fertiliser spreader **D-903** provides the possibility of work at 15-24 m of working width by replacing some elements of the machine with the ones supplied in the conversion kit from 30-36 m to 24 m. The fertiliser spreader must be empty to perform this operation. First of all, unscrew the 4 screws that fix the funnel's support and the funnel's extension (Fig. 38).

First of all, remove the funnel's extension, the guide spacer ring (not required when working at 15-24 m) and the funnel's support along with the funnel (Fig. 38).

Next, free the locking pin of the funnel in order to replace it with the one for 24 m that matches the same orientation.

Remove the disc using the four M-10 round head screws that fix it to the spreading disc's support and remove the half sphere since it is not required in the machine of 15-24 m (Fig. 38).

Before placing the disc of 15-24 m that matches the same orientation, place the end-piece / cap on the spreading disc's support (Fig. 39).

Next, place the disc with the three spreading vanes and fix the disc back using the four M-10 round head screws (Fig. 39).

Fix the funnel's support using the two screws from the exterior part in the position corresponding to 24 m, as shown in figure 39.

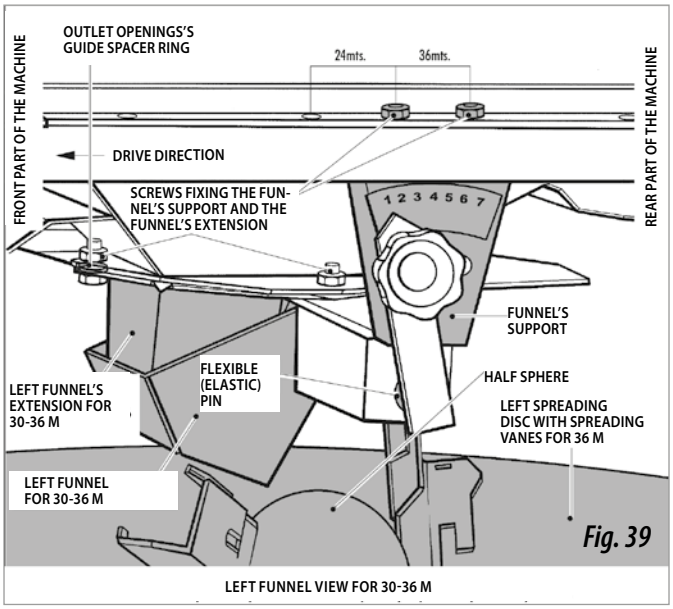
Place the adaptor for 24 m under the funnel's support with the pin upwards and inside the support's hole which is now free.

Next, the M-8x25 inox screw needs to be screwed from below upwards so that fixes the adaptor, operates as a joint for the fertiliser's outlet opening and goes through the hopper's bottom sheet, as is shown in the centre of figure 39.

Then, the self-locking nut needs to be firstly tightened until the end of the thread and, then loosened slowly until the outlet opening can be opened and closed.

These operations need to be performed in both sides of the machine. Check that the funnels are correctly assembled and they do not show contact to the disc's spreading vanes at any position when the disc turns manually.

Before starting to work, the machine needs to be adjusted as shown in the tables for 15-24 metres.



15. SPARE PARTS

The terms **RIGHT, LEFT, FRONT and REAR** refer to the machine in its drive direction, as shown in the figure below.

When guidance describes parts that have a matching pair (symetrical handles, wheels etc) only one will be demonstrated in the drawings shown. Please search for the distinguishing reference in the spare parts list.

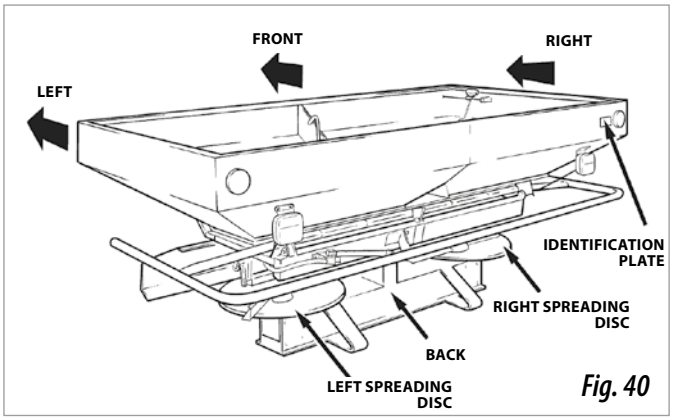


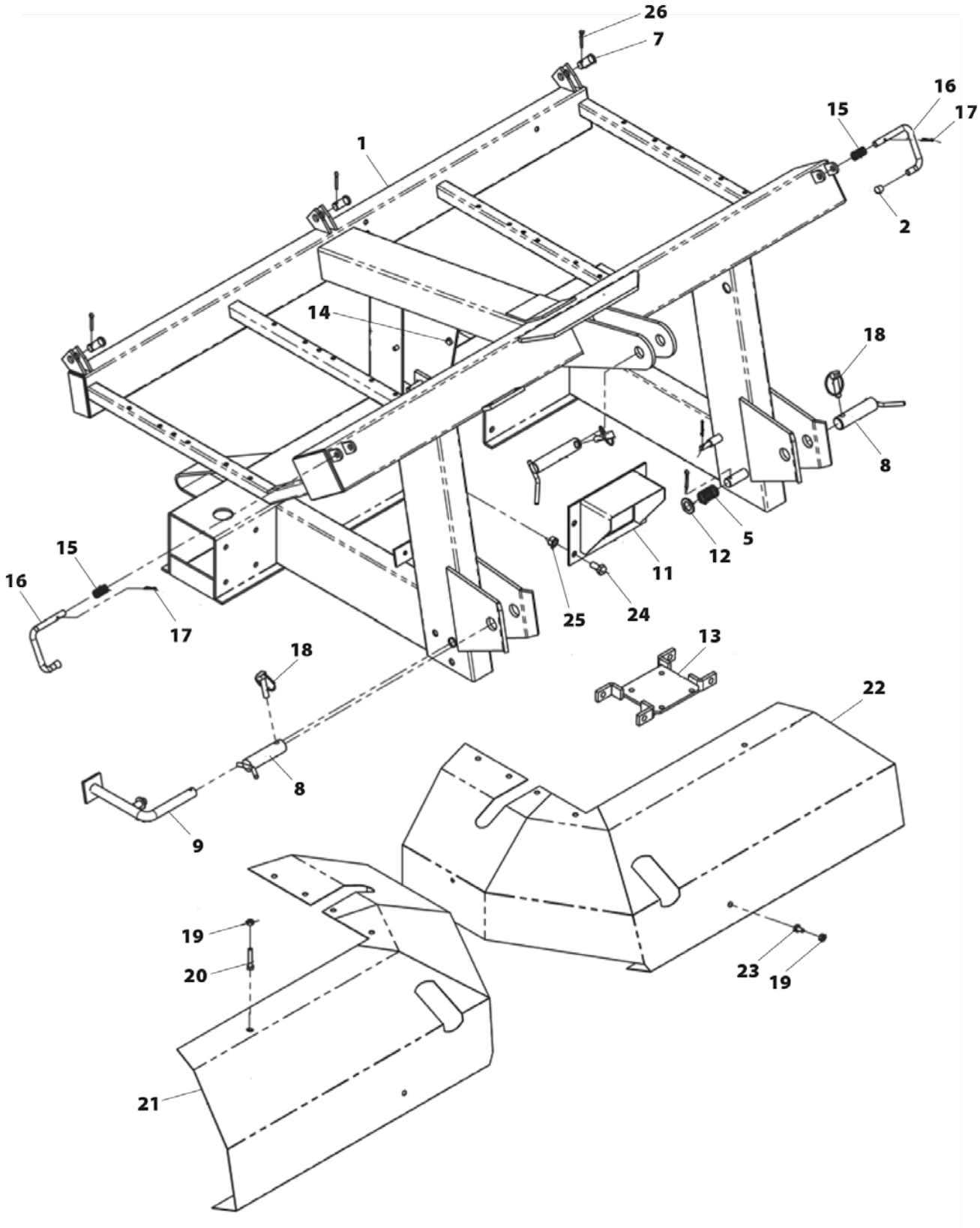
Fig. 40

WHEN ORDERING SPARE PARTS TO SOLÁ, PLEASE INDICATE NUMBER AND TYPE OF THE MACHINE AS SHOWN IN THE IDENTIFICATION PLATE WHICH CAN BE FOUND AT THE RIGHT REAR PART THE HOPPER.

AS A GENERAL RULE, DO NOT WORK UNDER THE MACHINE WHEN IT IS RAISED. IF SUCH A WORK IS REQUIRED, ALWAYS SECURE THE MACHINE PROPERLY TO PREVENT IT FROM COLLAPSING AS A PRESSURE LOSS IN THE TRACTOR CAN OCCUR.

15.1 CHASSIS D-903 : D-903 PLUS

Nº	REFERENCE	DESCRIPTION
1	PS-015107	CHASIS ABONADORA D-903 (PUNTEAR)
1	PS-015108	CHASIS ABONADORA D-903 (SOLDAR)
2	CN-817000	CONTERA PARA VARILLA DE Ø 12
3	B03-143	BULON CILINDRO MANDO HD.
4	94 3,2X20 BI	PASADOR ALETAS DIN 94 M 3,2X20 BICROMATADO
5	ML-015101	MUELLE DEL PIE
6	94 5X32 BI	PASADOR ALETAS DIN 94 M 5X32 BICROMATADO
7	BU-080206	BULON Ø 16X37 ESTAMPADO
8	PS-015100	BULON ENGANCHE ABONADORAS
9	PS-2105/D	PIE DESCANSO DER.
9	PS-2105/I	PIE DESCANSO IZQ.
10	PS-010101	BULON DEL TRIPODE
11	PS-045127	PROTECTOR TOMA DE FUERZA AB. D-5/R
12	125 20 BI	ARANDELA PLANA DIN 125 M 20 BICROMATADA
13	PS-015112	SUJECIÓN CAJA CENTRAL
14	933 8X20	TORNILLO DIN 933 M 8x20
15	ML-015100	MUELLE GATILLO SUJECION TOLVA
16	EE-025102	GATILLO SUJECION TOLVA
17	94 3,5X28 BI	PASADOR ALETAS DIN 94 M 3,5X28 BICROMATADO
18	FE-610008	PASADOR DE ANILLA BICROM.
19	985 8 I	TUERCA DIN 985 M 8 INOX.
20	931 8X45 I	TORNILLO DIN 931 M 8X45 INOX.
21	PX-045152/D	PROTECTOR INOX. DISCO DER.
22	PX-045152/I	PROTECTOR INOX. DISCO IZQ.
23	933 8X15 I	TORNILLO DIN 933 M 8X15 INOX.
24	933 12X20 8.8 B	TONILLO DIN 933 M 12X20 8.8 BICROMATADO
24	933 12X30 8.8 B	TORNILLO DIN 933 M 12X30 8.8 BICROMATADO
25	934 12 BI	TUERCA DIN 934 M 12 BICROMATADO
26	94 5X25 BI	PASADOR ALETAS DIN 94 M 5X25 BICROMATADO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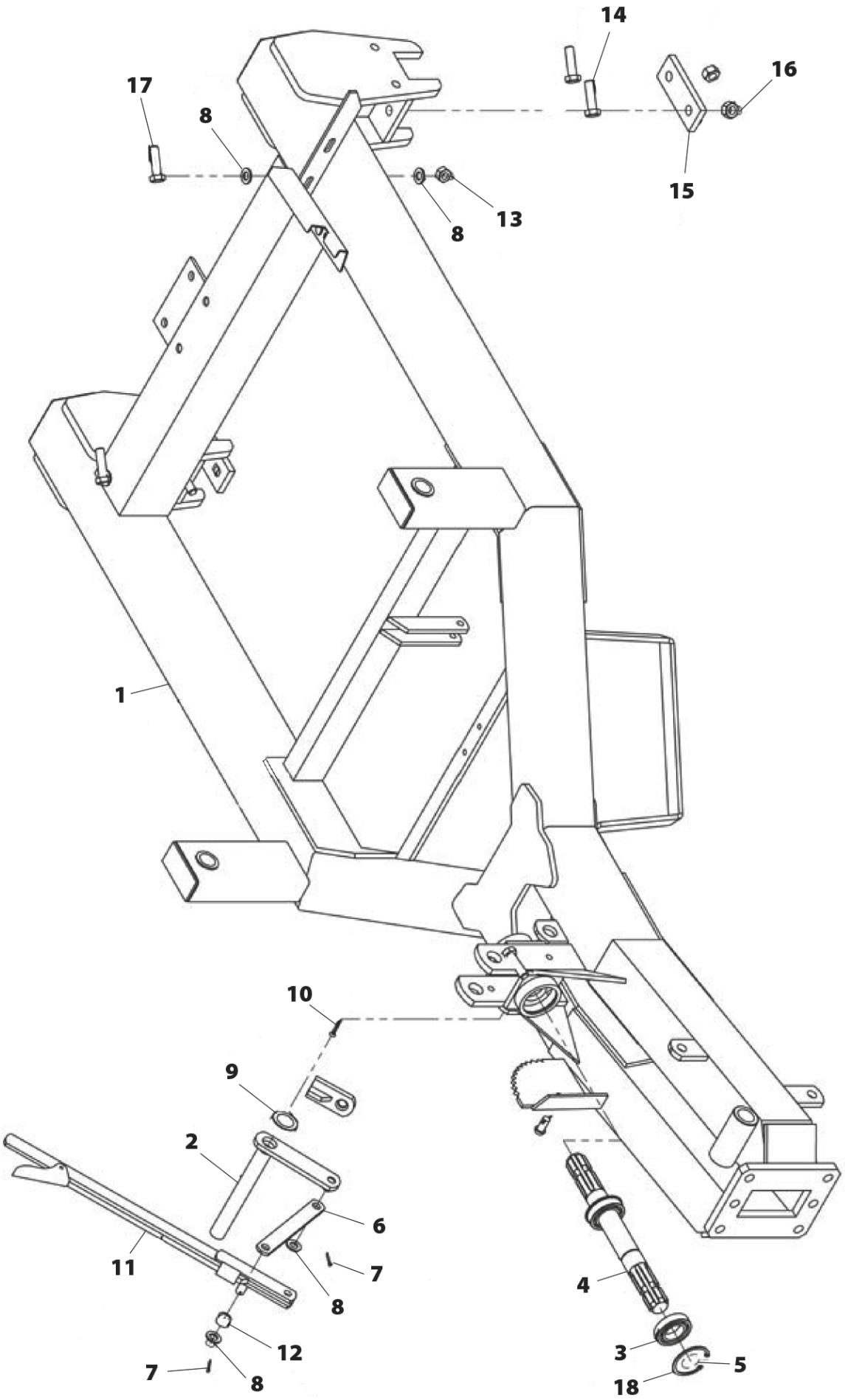
15.2 FRONTAL FRAME D-903/3000 : D-903 PLUS/3000

Nº	REFERENCE	DESCRIPTION
1	PS-014100	CHASIS REMOLQUE AB. D-903/3000
2	PS-2181	EXCENTRICA LARGA FRENO
3	FE-600024	RODAMIENTO 6007 2RS
4	ME-044100	EJE UNIÓN TRANSMISIÓN CARDAN
5	471 35	ANILLO SAEGER DIN 471M 35
6	B01-39	BIELA LARGA FRENO EST.
7	94 3.5x20 BI	PASADOR ALETAS DIN 94 3.5X20 BICROMATADO
8	125 14 BI	ARANDELA DIN 125 M 14 BICROMATADA
9	125 24 BI	ARANDELA DIN 125 M 24 BICROMATADA
10	94 5x36 BI	PASADOR ALETAS DIN 94 M 5X36 BICROMATADO
11	PP-71	PALANCA FRENO ESTACIONAMIENTO
12	A01-16	ANILLO TOPE BRAZO RASTRILLO
13	985 14	TUERCA DIN 985 M 14 BICROMATADA
14	931 16X110	TORNILLO DIN 931 M 16X110 BICROMATADO
15	P03-230	PLETINA BRIDA SUJECIÓN CHASIS A EJE
16	985 16	TUERCA DIN 985 M 16 BICROMATADA
17	931 14X130	TORNILLO DIN 931 M 14X130 BICROMATADO
18	472 62	ANILLO SAEGER DIN 472M 62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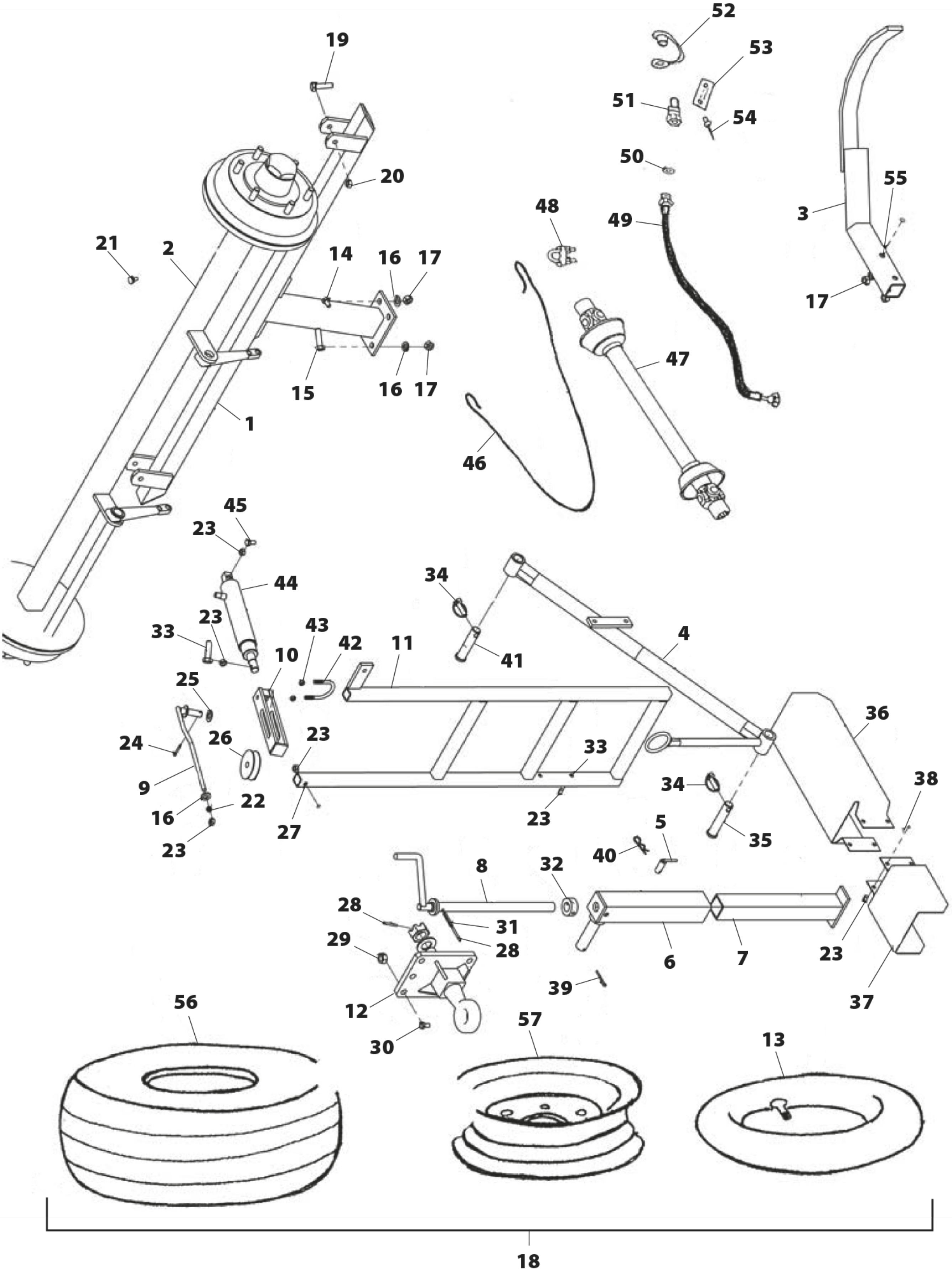
15.3 FRONTAL FRAME COMPL. D-903/3000 : D-903 PLUS/3000

Nº	REFERENCE	DESCRIPTION
1	PR-014101	SOPORTE TRASERO TOLVA
2	PS-074100	EJE REMOLQUE ABONADORA D-903/3000
3	PS-074101	RASCADOR AB. D-903/3000
4	PS-014103	TIRANTE TRIPODE
5	PS-015202	BULÓN DESCANSO PIE
6	PS-2179	TUBO EXTERIOR PIE
7	PS-2155	TUBO INTERIOR PIE
8	PS-015201	HUSILLO PIE
9	PS-2180	VARILLA TENSORA FRENO
10	PS-2151	CORREDERA POLEA FRENO
11	PS-074102	ESCALERA AB. D-903/3000
12	PS-2150	ENGANCHE
13	PL-045201	CAMARA PARA 12,5-80-15,3
14	933 14X40 8.8 B	TORNILLO DIN 933 M 14X40 8.8 BICROMATADO
15	931 14X130 8.8 B	TORNILLO DIN 931 M 14X130 8.8 BICROMATADO
16	125 14 BI	ARANDELA DIN 125 M 14 BICROMATADA
17	985 14	TUERCA AUTOBLOCANTE DIN 985 M 14 BICROMATADA
18	CO-045200	RUEDA COMPLETA 12,5-80-15,3 14 PR
19	931 12X90 8.8 B	TORNILLO DIN 931 M 12X90 8.8 BICROMATADO
20	985 12	TUERCA AUTOBLOCANTE DIN 985 M 12 BICROMATADA
21	CN-817022	TAPÓN OBTURACIÓN P/AGUJERO Ø10.5X3
22	125 10 BI	ARANDELA DIN 125 M 10 BICROMATADA
23	985 10	TUERCA AUTOBLOCANTE DIN 985 M 10 BICROMATADA
24	94 5x25 BI	PASADOR ALETAS DIN 94 M 5X25 BICROMATADO
25	125 16 BI	ARANDELA DIN 125 M 16 BICROMATADA
26	P03-36	POLEA CABLE FRENO
27	931 10X45 I	TORNILLO DIN 931 M 10X45 INOX
28	1481 5x50 BI	PASADOR ELÁSTICO DIN 1481 BICROMATADO
29	985 16	TUERCA AUTOBLOCANTE DIN 985 M 16 BICROMATADA
30	933 16X50 8.8 B	TORNILLO DIN 933 M 16X50 8.8 BICROMATADO

Nº	REFERENCE	DESCRIPTION
31	1481 8x50 BI	PASADOR ELÁSTICO DIN 1481 BICROMATADO
32	T06-35	TOPE HUSILLO PIE
33	931 10x55 8.8 B	TORNILLO DIN 931 M 10X55 8.8 BICROMATADO
34	FE-610008	PASADOR DE ANILLA . Ø 11 BICROMATADO
35	B03-197	BULÓN Ø 25 X 100
36	PX-044101	PROTECTOR LARGO T.D.F.
37	PX-044100	PROTECTOR T.D.F.
38	931 10X115 8.8B	TORNILLO DIN 931 M 10X115 8.8 BICROMATADO
39	94 5x40 BI	PASADOR ALETAS DIN 94 M 5X40 BICROMATADO
40	FE-610004	PASADOR "R" BICROMATADO
41	B03-198	BULÓN Ø 25 X 93
42	B10-21	BRIDA SUJECION CILINDRO
43	985 8	TUERCA AUTOBLOCANTE DIN 985 M 8 BICROMATADA
44	CO-045101	CILINDRO S.E.MANDO HIDRÁULICO
45	933 10X50 8.8 B	TORNILLO DIN 933 M 10X50 8.8 BICROMATADO
46	VA-075201	CABLE FRENO
47	FE-608015	TRANS.CARDAN L=1000 2002/1000/KH/19.1/19.1
48	FE-650012	PRENSACABLES ESTAMPADO
49	HI-700029	TUBO R2AT 1/4" L=2,5 M TL 1/4"-M 1/2"
50	HI-705002	ARANDELA METALBUNA 1/2" GAS
51	HI-701000	ENCHUFE RAPIDO 1/2""FASTER"
52	HI-707001	TAPÓN ENCHUFE RAPIDO
53	AD-075201	PLACA IDENTIFICACION ABONADORAS ARRASTRADAS
54	FE-602001	REMACHE ALUMINIO
55	931 14X90 BI	TORNILLO DIN 931 M 14X90 8.8 BICROMATADO
56	PL-045200	NEUMÁTICO12,5.80-15,3 SIN CAMARA
57	CO-045201	RUEDA METÁLICA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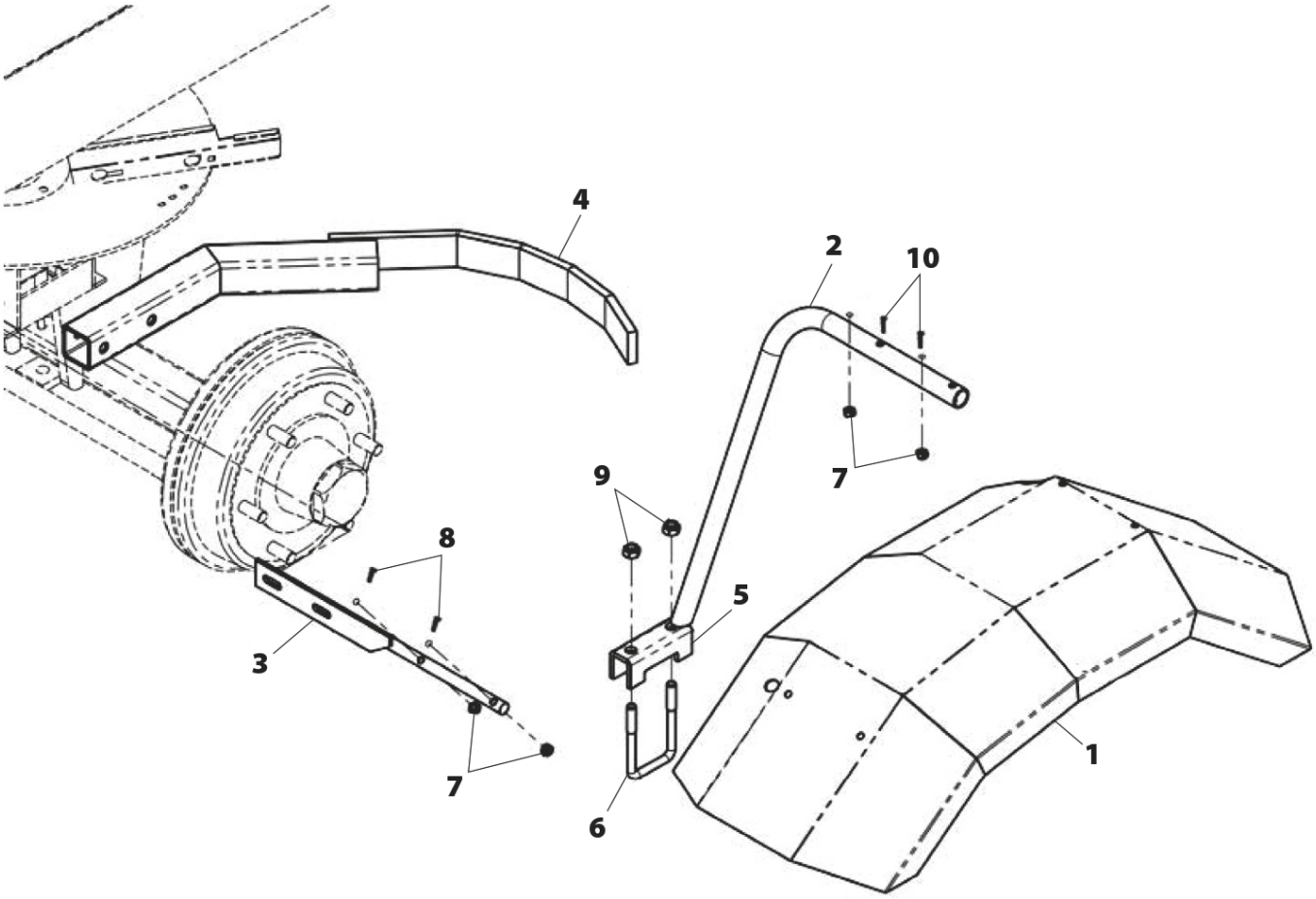
15.4 FERTILIZER FENDERS D-903/3000

Nº	REFERENCE	DESCRIPTION
1	PS-074105/D	CHAPA GUARDABARROS DER. AB. D-903/3000
1	PS-074105/I	CHAPA GUARDABARROS IZQ. AB. D-903/3000
2	PS-074103/D	SOPORTE TRASERO GUARDABARROS DER.
2	PS-074103/I	SOPORTE TRASERO GUARDABARROS IZQ.
3	PS-074104/D	SOPORTE DEL. DER. GUARDABARROS
3	PS-074104/I	SOPORTE DEL. IZQ. GUARDABARROS
4	PS-074101	RASCADOR ABONADORA D-903/3000
5	PX-062105	BRIDA TUBO 60
6	EE-053111	BRIDA TUBO 60 M12x108 EUROPA 2000 N/XS
7	985 8 B	TUERCA DIN 985 M-8 BICROMATADA
8	931 8X30 8.8 B	TORNILLO DIN 931 M-8X30 8.8 BICROMATADO
9	985 12 B	TUERCA DIN 985 M-12 BICROMATADO
10	931 8X40 8.8 B	TORNILLO DIN 931 M-8X40 8.8 BICROMATADO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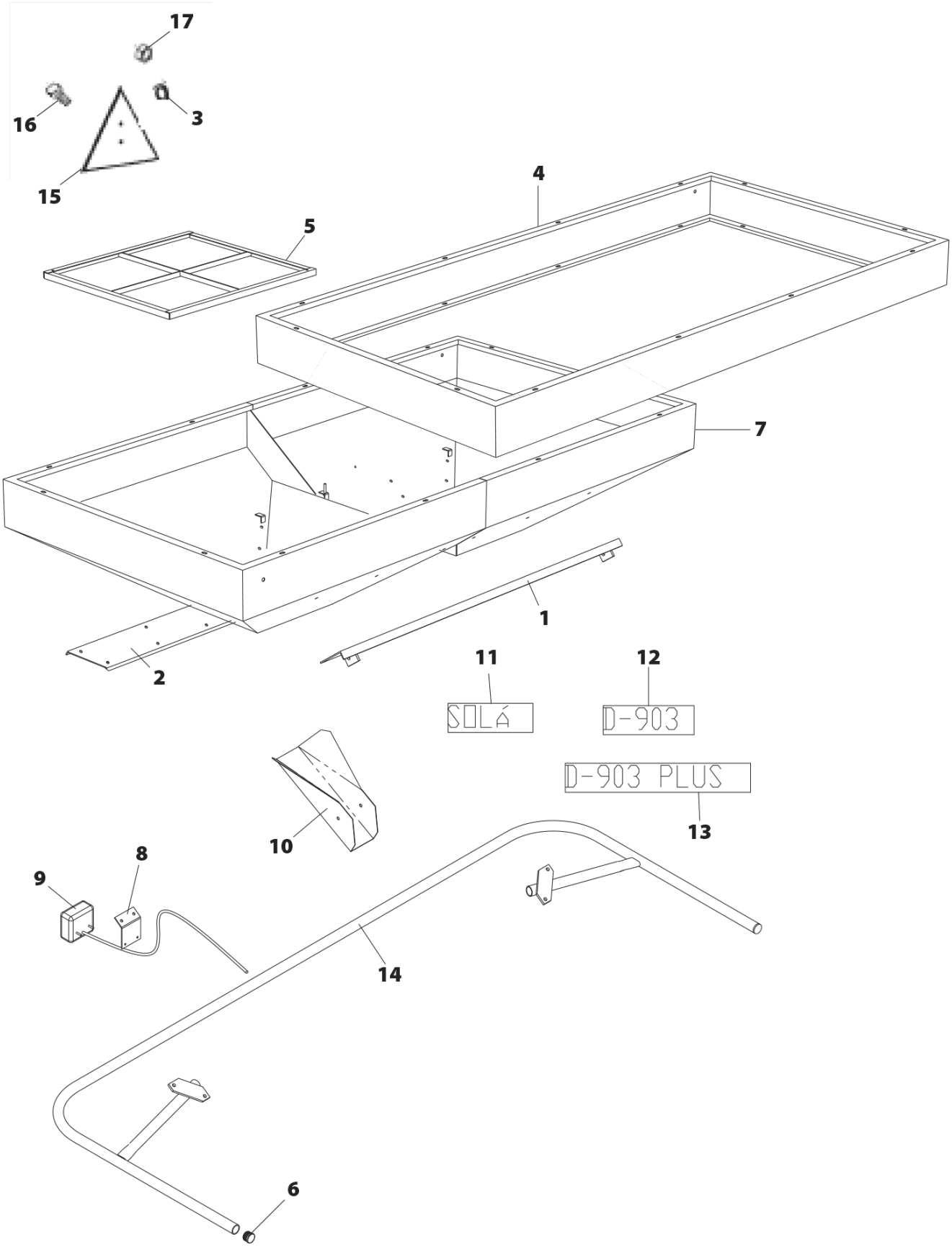
15.5 FERTILIZER HOPPER D-903 Y D-903 PLUS

Nº	REFERENCE	DESCRIPTION
1	PS-2109	ÁNGULO DESCANSO TOLVA
2	PS-2108	«U» ARTICULACIÓN TOLVA
3	127 5 BI	DIN 127 M 5 BI
4	RE-025101	ALZA 200 L ABONADORA D-5 CON TORNILLERIA
4	RE-025102	ALZA 500 L ABONADORA D-5 CON TORNILLERIA
4	VA-075100	ALZA DE 1000L. COMPLETA
5	PS-035106	CRIBA INCLINADA
6	CN-817002	CONTERA REDONDA PARA TUBO Ø 32x2
7	PS-025100	TOLVA ABONADORA
8	PX-105100	PLETINA PORTALUCES
9	CN-818009	LUCES D-903
10	PX-045136	CANAL PARA PRUEBAS DE CAUDAL
11	AD-070228	ADHESIVO SOLA 455X77 455X77 MM
12	AD-075111	ADHESIVO D-903
13	AD-075112	ADHESIVO D-903 PLUS
14	PS-075102	PROTECCIÓN ABONADORA D-903 ; D-903 PLUS
15	CN-818019	CATADIÓPTRICO REFRECTANTE ROJO TRIANGULAR
16	7985 5X15 BI	TORNILLO DIN 7985 M 5X15 BICROMATADO
17	934 5 BI	TUERCA DIN 934 M 5 BICROMATADA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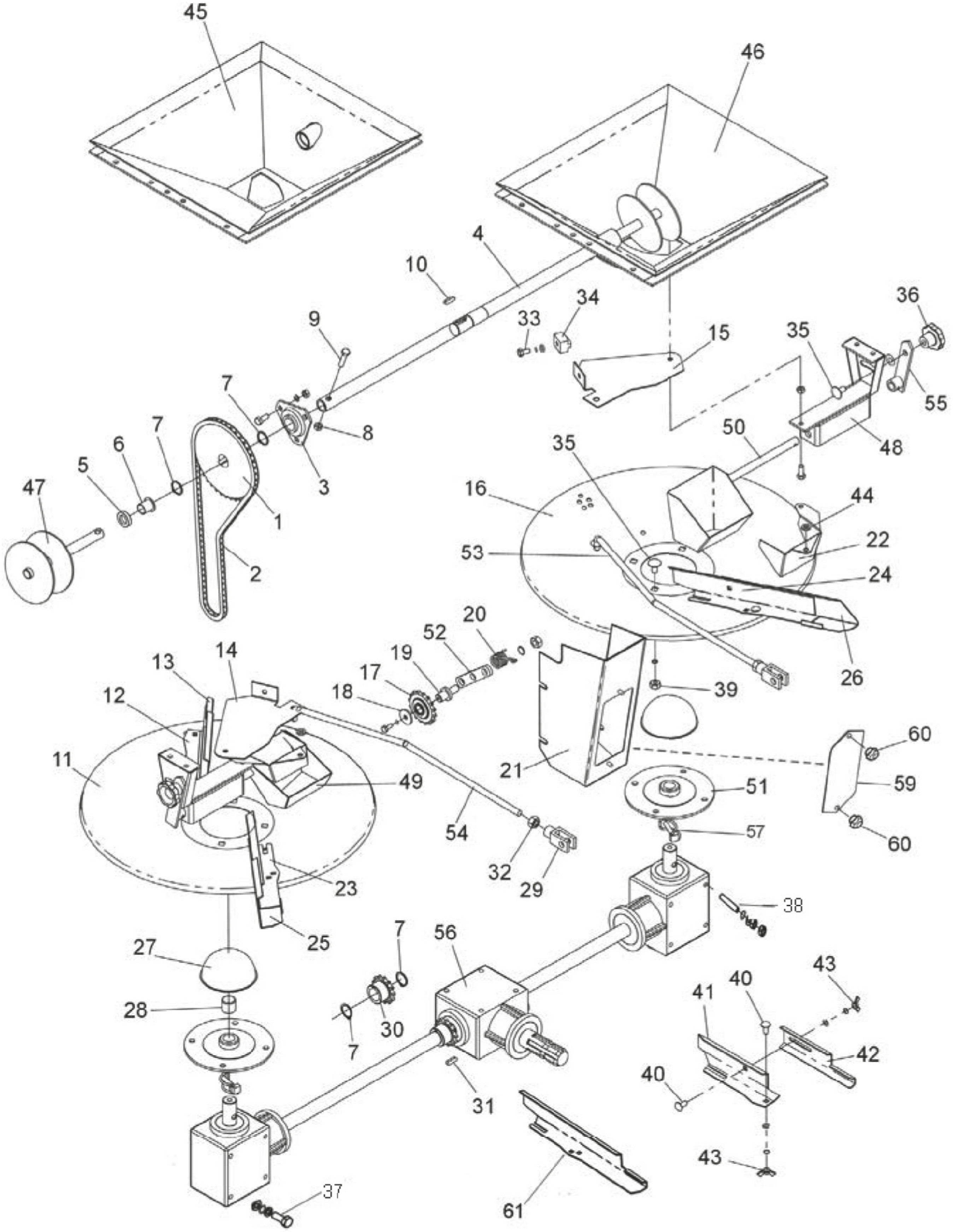
15.6 REGULATION, DISTRIBUTION AND TRANSMITION D-903 PLUS

Nº	REFERENCE	DESCRIPTION
1	ME-045145	PIÑÓN ½»39Z TRANS. AGITADOR
2	FE-605028	CADENA ½» TRANS. AGITADOR
3	FE-600029	RODAMIENTO 1025 C/SOPORTE
4	ME-045146	EJE TRANS. AGITADOR (BICROM.)
5	FE-601013	RETEN DOBLE LABIO Ø18X30X7
6	FE-600030	CASQUILLO FRICCIÓN 18X20X22 C/VAL.
7	471 25	ANILLO SAEGER P/EJE DIN 471 Ø25
8	985 8 I	TUERCA DIN 985 M8 INOX
9	933 8X35 I	TORNILLO DIN 933 M8X35 INOX
10	6885-A 8X7X28	CHAVETA DIN 6885 FORMA A 8X7X28
11	TA-045114/D	DISCO CENTRIFUGO DER.
12	PX-045138/D	PALA CORTA DER.
13	PX-045139/D	EXTENSIÓN PALA CORTA DER.
14	PX-045110/D	TRAMPILLA CONTR. SAL. ABONO DER.
15	PX-045110/I	TRAMPILLA CONTR. SAL. ABONO IZQ.
16	TA-045114/I	DISCO CENTRIFUGO IZQ.
17	FE-609009	RUEDA TENSORA 16Z -½»
18	EE-030200	ARANDELA Ø 30X8.5X3 Zn
19	BU-040500	BULÓN ROSCADO DEL PIÑÓN DESVIADOR
20	ML-041100	MUELLE TENSOR CADENA TRANS.
21	PX-015112	PROTECTOR CADENA TRANSMISIÓN
22	PX-045145/I	SUPLEMENTO BOQUILLA IZQ.
23	PX-045141/D	PALA LARGA DER.
24	PX-045141/I	PALA LARGA IZQ.
25	PX-045142/D	EXTENSIÓN PALA LARGA DER.
26	PX-045142/I	EXTENSIÓN PALA LARGA IZQ.
27	EE-045144	MEDIA ESFERA CENTRAL DISCO
28	PL-045107	COJINETE 25/28/30 NYLON
29	FE-610001	HORQUILLA CON BULÓN M-12
30	ME-045147	PIÑÓN ½»13Z TRANS. AGITADOR

Nº	REFERENCE	DESCRIPTION
31	6885-A 6X6X25	CHAVETA DIN 6885 FORMA A 6X6X25
32	934 12 BI	TUERCA DIN 934 M-12 BICROM.
33	933 8X15 8.8 B	TORNILLO DIN 933 M-8X15 8.8 BICROM.
34	PL-040204	TENSOR CADENA
35	EE-045143	TORNILLO DIN 603 C/C INOX.
36	PL-045103	VOLANTE CON TUERCA M-10
37	933 10X30 8.8B	TORNILLO DIN 931 M 10X30 8.8 BICROM.
38	913 10X60 B	TORNILLO DIN 931 M 10X60 BICROM.
39	934 10 I	TUERCA DIN 934 M-10 INOX
40	603 8X20 I	TORNILLO DIN 603 C/C INOX
41	PX-045138/I	PALA CORTA IZQ.
42	PX-045139/I	EXTENSIÓN PALA CORTA IZQ
43	315 8 I	TUERCA DIN 315 INOX.
44	ME-045301	ANILLO SEPARADOR GUÍA TRAMP.
45	PS-045119/D	FONDO TOLVA DER. AB. D-903
46	PS-045119/I	FONDO TOLVA IZQ. AB. D-903
47	PS-045126	AGITADOR ABONADORA D-903
48	PS-045130	SOPORTE BOQUILLA D-903
49	PS-045132/D	BOQUILLA DERECHA
50	PS-045132/I	BOQUILLA IZQUIERDA
51	ME-045135	DISCO PORTAPL. AB. D-5 (MECANIZAR)
51	MO-045104	DISCO PORTAPL. CON CASQUILLOS
52	PS-045129	BRAZO TENSOR CADENA
53	PS-045134/I	VARILLA IZQ. MANDO TRAMPILLA
54	PS-045134/D	VARILLA DER. MANDO TRAMPILL
55	PS-045131	PALANCA DE LA BOQUILLA
56	CO-045104	GRUPO TRIPLE ABONADORA D-903
57	MO-045111	PASADOR DESCONEXIÓN AGITADOR
58	MO-045116/D/I	PLATO CENTRIF. D/I 36 m.C/ PALAS
59	PX-015119	TAPA INSPECCIÓN CADENA AGIT.
60	PL-073100	VOLANTE CON TUERCA M-6
61	PX-045140/I	PALA FIJA IZQUIERDA
61	PX-045150/D	PALA FIJA DERECHA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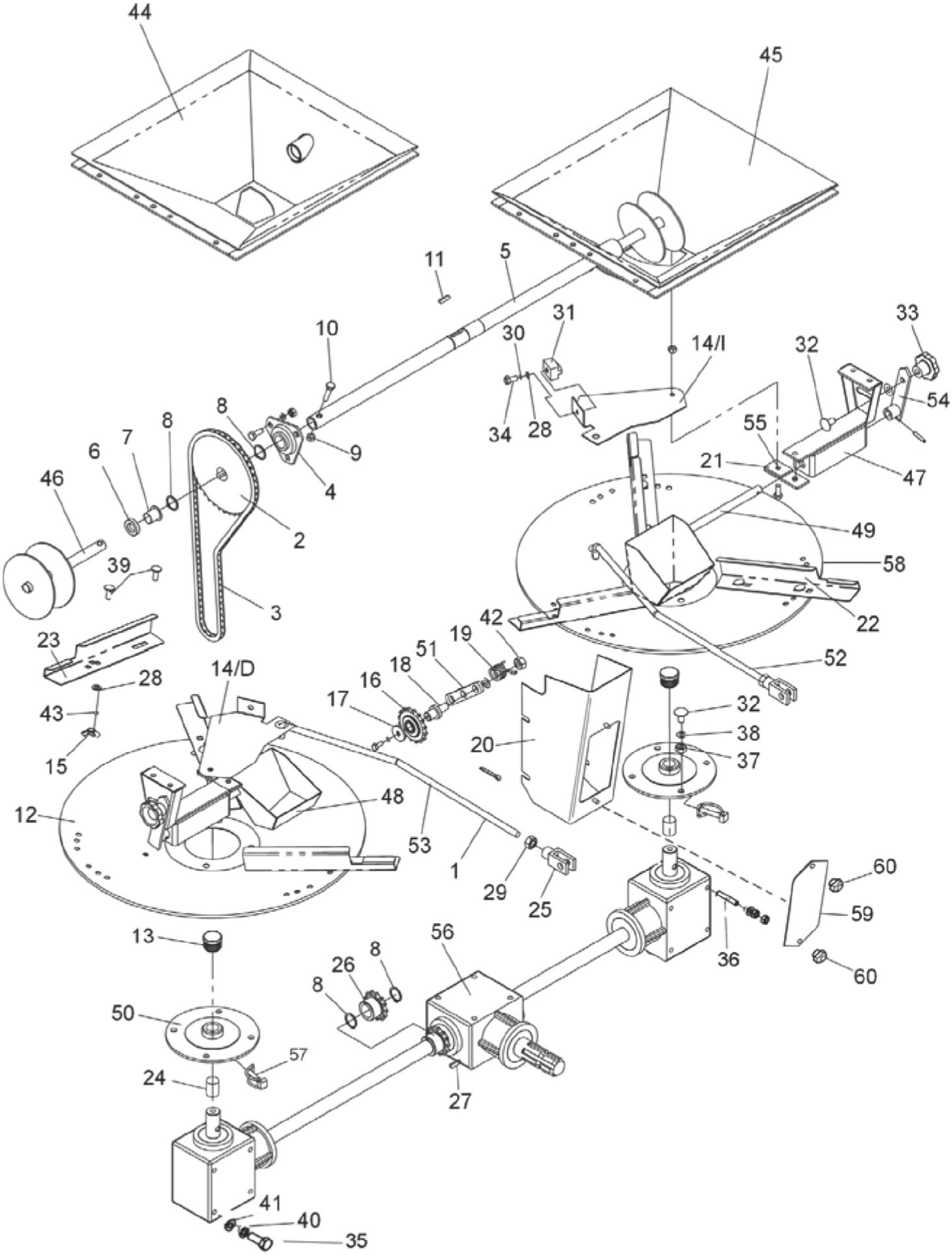
15.7 REGULATION, DISTR. AND TRANS. D-903 Y D-903/3000

Nº	REFERENCE	DESCRIPTION
1	EE-045152/D	VARILLA DER.CIERRE TRAMPILLA
2	ME-045145	PIÑON ½»39Z TRANS. AGITADOR
3	FE-605028	CADENA ½» TRANS. AGITADOR
4	FE-600029	RODAMIENTO 1025 C/SOPORTE
5	ME-045146	EJE TRANS. AGITADOR (BICROM.)
6	FE-601013	RETEN DOBLE LABIO Ø18X30X7
7	FE-600030	CASQUILLO FRICCION 18X20X22 C/VAL.
8	471 25	ANILLO SAEGER P/EJE DIN 471 Ø25
9	985 8 I	TUERCA DIN 985 M8 INOX
10	933 8X35 I	TORNILLO DIN 933 M8X35 INOX
11	6885-A 8X7X28	CHAVETA DIN 6885 FORMA A 8X7X28
12	EE-045138	DISCO CENTRÍFUGO
13	CN-817002	CONTERA REDONDA PARA TUBO Ø 32x2
14	PX-045110/I	TRAMPILLA CONTR. SAL. ABONO IZQ.
14	PX-045110/D	TRAMPILLA CONTR. SAL. ABONO DER.
15	315 8 I	TUERCA DIN 315 INOX.
16	FE-609009	RUEDA TENSORA 16Z -½»
17	EE-030200	ARANDELA Ø 30X8.5X3 Zn
18	BU-040500	BULÓN ROSCADO DEL PIÑÓN DESVIADOR
19	ML-041100	MUELLE TENSOR CADENA TRANS.
20	PX-015112	PROTECTOR CADENA TRANSMISIÓN
21	EE-045153	PLETINA CORTA ADAPTADOR 24 m.
22	EE-045162/I	PALA CENTRÍFUGA /I
23	EE-045162/D	PALA CENTRÍFUGA /D
24	PL-045107	COJINETE 25/28/30 NYLON
25	FE-610001	HORQUILLA CON BULÓN M-12
26	ME-045147	PIÑÓN ½»13Z TRANS. AGITADOR
27	6885-A 6X6X25	CHAVETA DIN 6885 FORMA A 6X6X25
28	125 8 I	ARANDELA DIN 125 Ø8 INOX.
29	934 12 BI	TUERCA DIN 934 M-12 BICROM.

Nº	REFERENCE	DESCRIPTION
30	7980 8 I	ARANDELA GROWER DIN 7980 8 INOX
31	PL-040204	TENSOR CADENA
32	EE-045143	TORNILLO DIN 603 C/C INOX
33	PL-045103	VOLANTE CON TUERCA M-10
34	933 8X15 I	TORNILLO DIN 933 M-8X15 INOX
35	933 10X30 8.8 B	TORNILLO DIN 931 M 10X30 8.8 BICROM.
36	913 10X60 B	TORNILLO DIN 931 M 10X60 BICROM.
37	934 10 I	TUERCA DIN 934 M-10 INOX
38	7980 10 I	ARANDELA GROWER DIN 7980 INOX
39	603 8X20 I C/C	TORNILLO DIN 603 C/C INOX
40	934 10 BI	TUERCA DIN 934 M-10 INOX
41	7980 10 BI	ARANDELA GROWER DIN 7980 BIC.
42	934 12 BI	TURCA DIN 934 M-12 BICROM.
43	7980 8 I	ARANDELA GROWER DIN 7980 Ø8 INOX
44	PS-045119/D	FONDO TOLVA DER. AB. D-5/R
45	PS-045119/I	FONDO TOLVA IZQ. AB. D-5/R
46	PS-045126	AGITADOR ABONADORA D-5/R
47	PS-045130	SOPORTE BOQUILLA D-5/R
48	PS-2118/D	BOQUILLA SALIDA ABONO /D
49	PS-2118/I	BOQUILLA SALIDA ABONO /I
50	ME-045135	DISCO PORTAPL. AB. D-5 (MECANIZAR)
51	MO-045113	DISCO PORTAPL. CON CASQ.Y CONT.
51	PS-045129	BRAZO TENSOR CADENA
52	PS-045134/I	VARILLA IZQ. MANDO TRAMPILLA
53	PS-045134/D	VARILLA DER. MANDO TRAMPILLA
54	PS-045131	PALANCA DE LA BOQUILLA
55	PS-045136	ADAPTADOR PARA 24 m.
56	CO-045104	GRUPO TRIPLE ABONADORA D-903
57	MO-045111	PASADOR DESCONEXIÓN AGITADOR
58	MO-2107/D/I	PLATO CENTRIFUGO CON PALAS D/I 24 m.
59	PX-015119	TAPA INSPECCIÓN CADENA AGIT.
60	PL-073100	VOLANTE CON TUERCA M-6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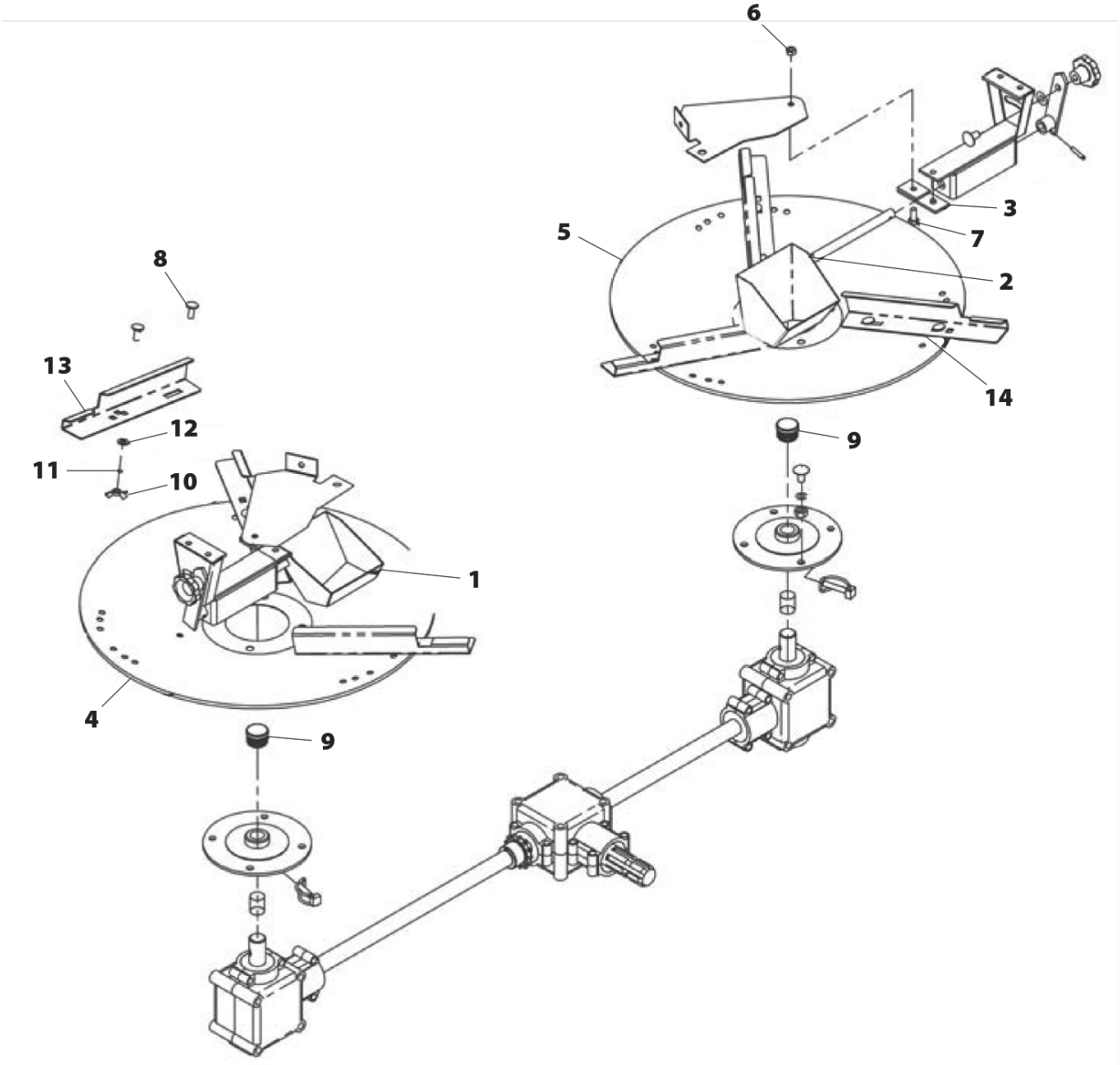
15.8 CONVERSION KIT 36 TO 24 METERS

Nº	REFERENCE	DESCRIPTION
1	PS-2118/D	BOQUILLA SALIDA ABONO /D
2	PS-2118/I	BOQUILLA SALIDA ABONO /I
3	PS-045136	ADFAPTADOR 24 MTS.
4	MO-2107/D	PLATO CENTRIFUGO CON PALAS D. 24 m.
5	MO-2107/I	PLATO CENTRIFUGO CON PALAS I. 24 m.
6	985 8 I	TUERCA DIN 985 INOX
7	933 8X25 I	TORNILLO DIN 933 M8X25 INOX
8	603 8X20 I C/C	TORNILLO DIN 603 C/C INOX.
9	CN-817002	CONTERA REDONDA PARA TUBO Ø 32x2
10	315 8 I	TUERCA DIN 315 INOX.
11	7980 8 I	ARANDELA GROWER DIN 7980 Ø8 INOX
12	125 8 I	ARANDELA DIN 125 Ø8 INOX.
13	EE-045162/D	PALA CENTRÍFUGA /D
14	EE-045162/I	PALA CENTRÍFUGA /I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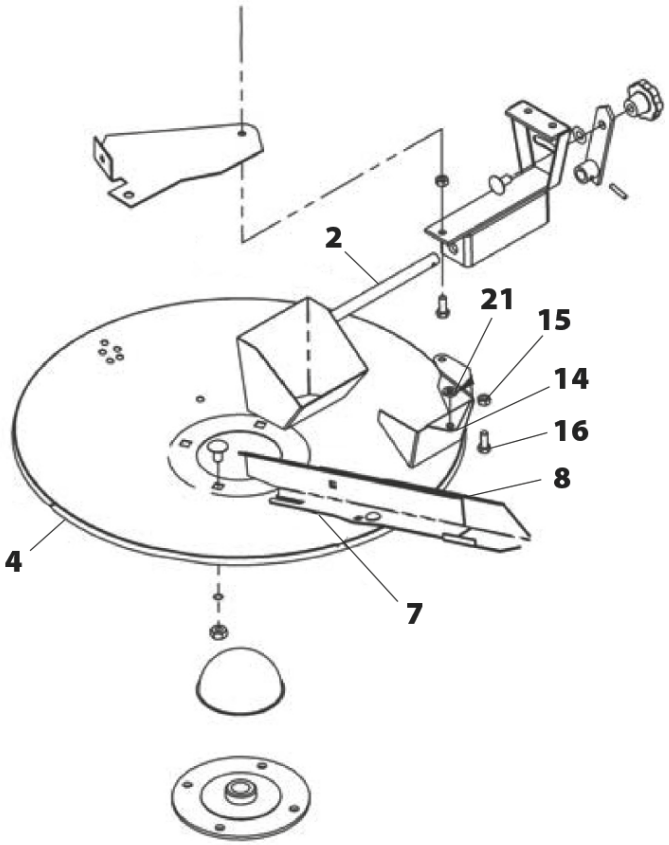
15.9 CONVERSION KIT 24 TO 36 METERS

Nº	REFERENCE	DESCRIPTION
1	PS-045132/D	BOQUILLA DERECHA
2	PS-045132/I	BOQUILLA IZQUIERDA
3	MO-045116/D	PLATO CENTRIF. D. 36 m.C/ PALAS
4	MO-045116/I	PLATO CENTRIF. D. 36 m.C/ PALAS
5	PX-045141/D	PALA LARGA DER.
6	PX-045142/D	EXTENSIÓN PALA LARGA DER.
7	PX-045141/I	PALA LARGA IZQ.
8	PX-045142/I	EXTENSIÓN PALA LARGA IZQ.
9	PX-045138/I	PALA CORTA IZQ.
10	PX-045139/I	EXTENSIÓN PALA CORTA IZQ
11	PX-045138/D	PALA CORTA DER.
12	PX-045139/D	EXTENSIÓN PALA CORTA DER.
13	EE-045144	MEDIA ESFERA CENTRAL DISCO
14	PX-045145/I	SUPLEMENTO BOQUILLA IZQ.
15	985 8 I	TUERCA DIN 985 M8 INOX
16	933 8X20 I	TORNILLO DIN 933 M8X20 INOX
17	603 8X20 I C/C	TORNILLO DIN 603 C/C INOX.
18	125 8 I	ARANDELA DIN 125 Ø8 INOX.
19	7980 8 I	ARANDELA GROWER DIN 7980 Ø8 INOX
20	315 8 I	TUERCA DIN 315 INOX.
21	ME-045301	ANILLO SEPARADOR GUÍA TRAMP.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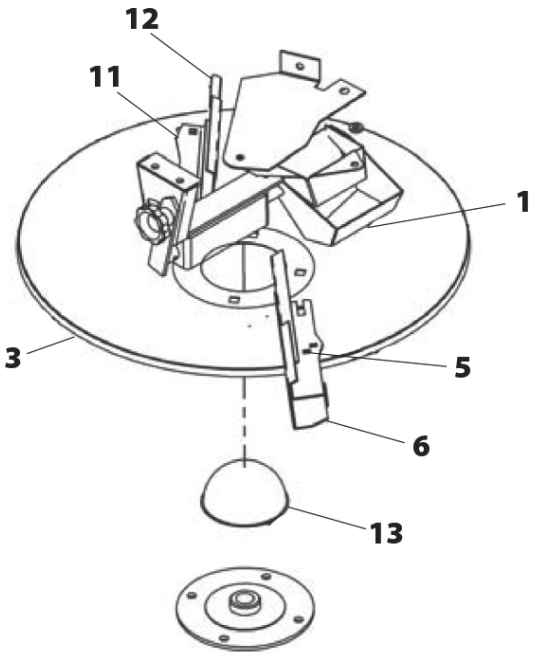
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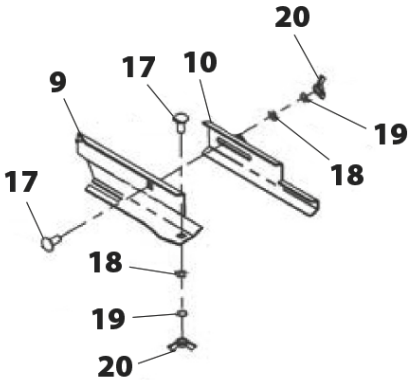
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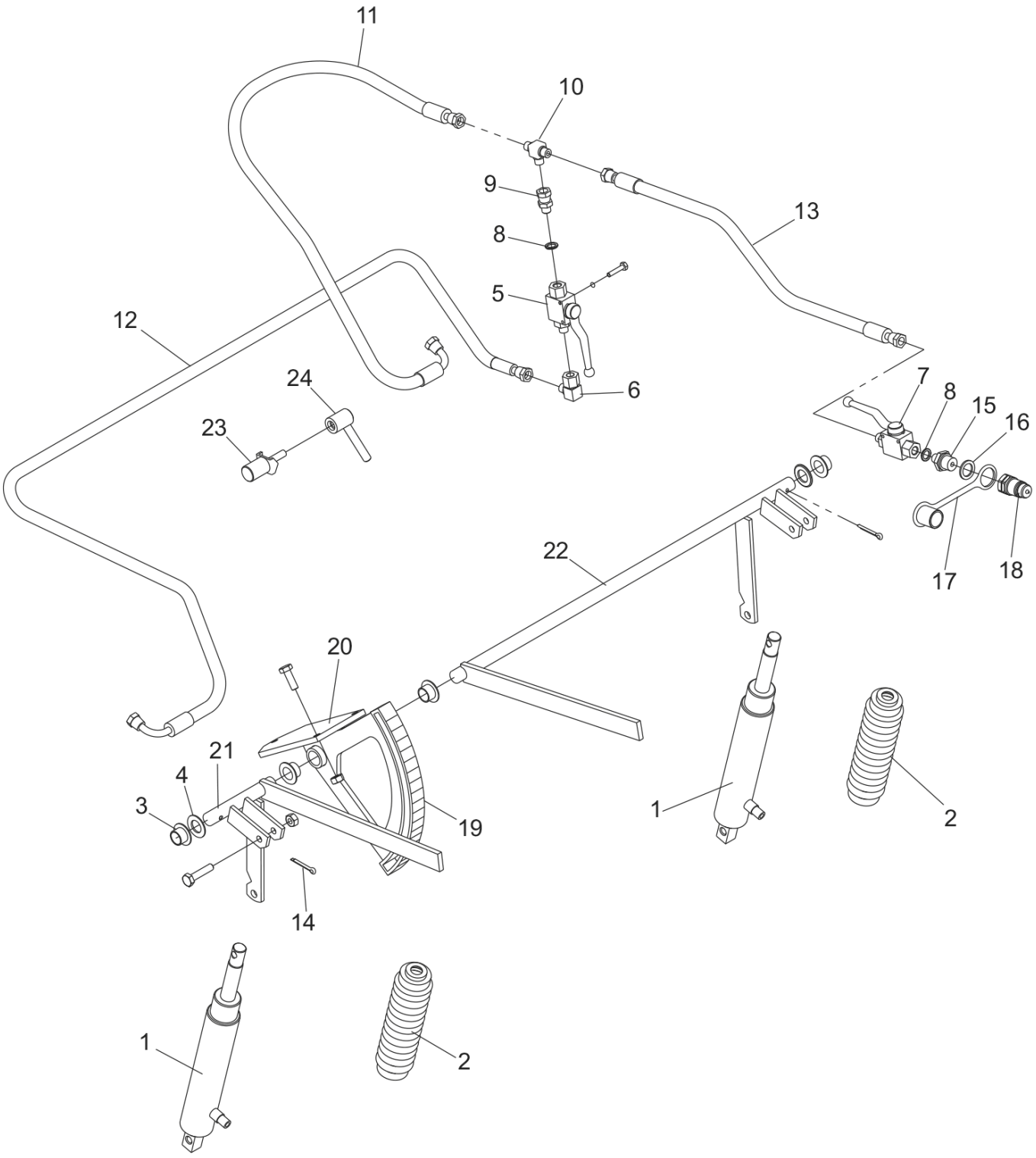
15.10 HYDRAULIC CONTROL FERTILIZER D-903 Y D-903 PLUS

Nº	REFERENCE	DESCRIPTION
1	CO-045101	CILINDRO S.E. MANDO HIDRÁULICO
2	PL-045101	MUELLE PROTECTOR CILINDRO
3	PL-050207	CASQUILLO ARTICULACIÓN BRAZO
4	125 20 BI	ARANDELA PLANA DIN 125 BICROM.
5	TA-045115	VÁLVULA 1/4" DOS VÍAS PARA ATORNILLAR
6	HI-704003	RACOR CODO M1/4-TL-1/4
7	HI-706009	VÁLVULA 1/4"-MF1/4"IZQ.-HF1/4"DER.
8	HI-705001	ARANDELA METALBUNA 1/4" GAS
9	HI-704000	RACOR M1/4"-HG1/4"
10	HI-703004	RACOR T MF1/4-MF1/4-MF1/4
11	HI-700046	TUBO R2 AT 1/4";TL1/4";CODO 90°TL1/4"
12	HI-700045	TUBO R2 AT 1/4";TL1/4";CODO 90°TL1/4"
13	HI-700066	TUBO R2 AT 1/4";TL1/4";TL1/4"
13	HI-700081	TUBO R2AT 1/4" L=3,5M TL1/4"-TL1/4"
14	94 5X40 BI	PASADOR ALETAS DIN 94 BI
15	HI-704008	RACOR M1/2"- M1/4"
16	HI-705002	ARANDELA METALBUNA 1/2" GAS
17	HI-707001	TAPÓN ENCHUFE RÁPIDO
18	HI-701000	ENCHUFE RÁPIDO 1/2" «FASTER»
19	AD-045100	ADHESIVO GRADUADOR O-20
20	PS-045128	GRADUADOR CON SOPORTE MANDO HID.
21	PS-045133/D	PALANCA DER. MANDO HID.
22	PS-045133/I	PALANCA IZQ. MANDO HID.
23	PS-045110	TOPE PALANCA DERECHA
24	PS-045407	MANIVELA TOPE PALANCA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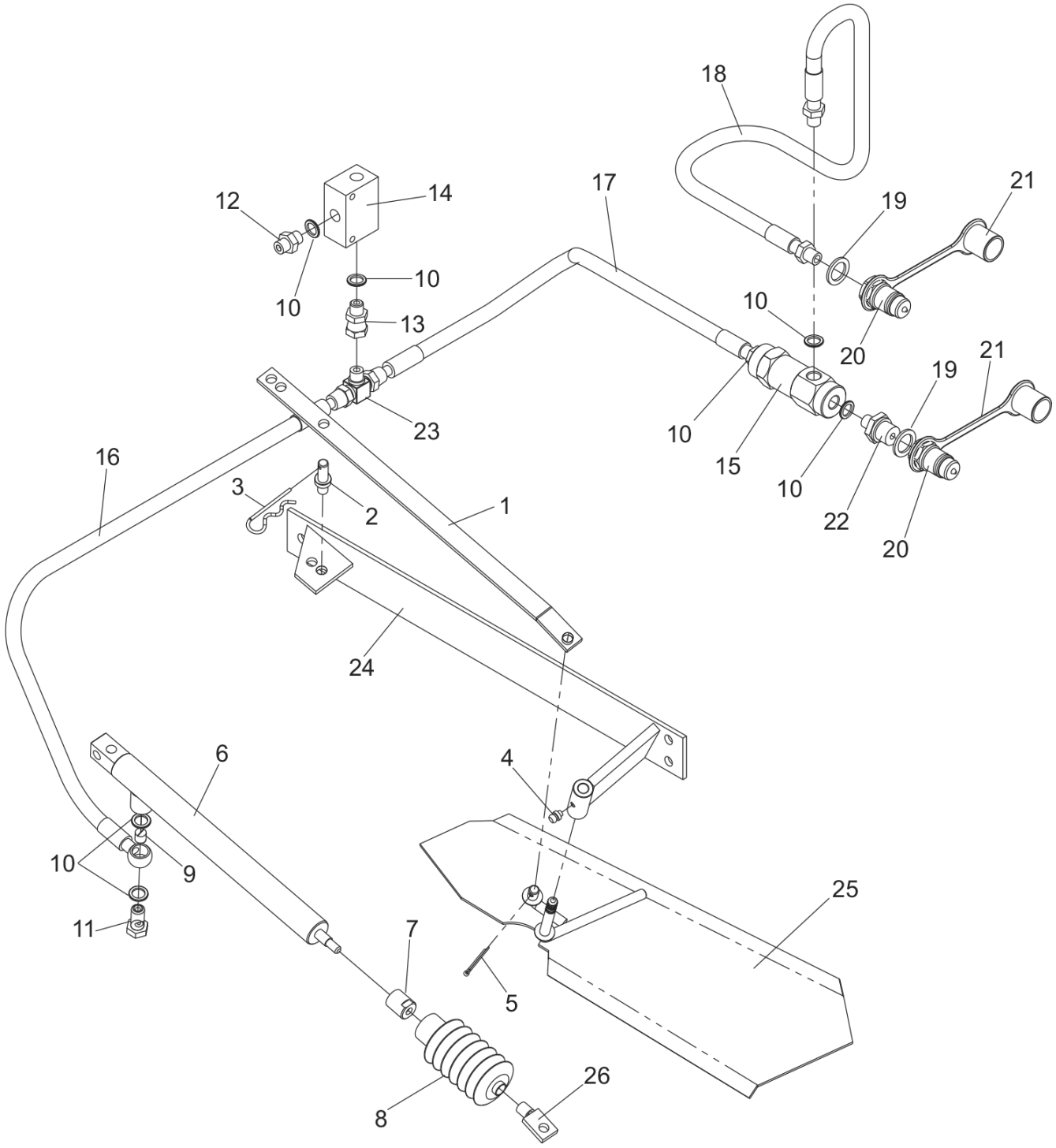
15.11 SHORT LIMITER (MECH.L/HYDRAULIC) D-903 Y D-903 PLUS

Nº	REFERENCE	DESCRIPTION
1	PX-045148	BIELA LIMITADOR ORILLAS
2	BU-100204	BULÓN ROSCADO DEL CILINDRO
3	FE-610002	PASADOR «R» DE 3 MM.
4	FE-603001	ENGRASADOR RECTO M-6
5	94 3.5X28 BI	PASADOR ALETAS DIN 90 BICROM.
6	CO-100201	CILINDRO DEL VARIADOR
7	ME-045153	CONTRATUERCA TOPE CILIND. LIMITADOR HIDR.
7	ME-045154	CONTRATUERCA TOPE CILIND. LIMITADOR HIDR. PLUS
8	PL-045104	FUELLE PROTECTOR CILINDRO LIMITADOR
9	ME-100210	ESTRANGULADOR CILINDRO TRAZADORES
10	HI-705001	ARANDELA METALBUNA 1/4"GAS
11	ME-100212	TORNILLO SIMPLE 1/4" GAS CON ENTALLA
12	HI-704010	RACOR M-1/4 M-1/4
13	HI-704000	RACOR UNIÓN MF1/4-HG1/4
14	HI-706005	VÁLVULA SELECTORA 1/4"VFC -NC
15	HI-706012	VÁLVULA ANTIRRETORNO PIL. S.EF. 1/4"
16	HI-700044	TUBO R2-AT 1/4 L=1.22M.E1/4-TL1/4
17	HI-700074	TUBO R2-AT 1/4 L=1.3M.TL1/4-M1/4
18	HI-700075	TUBO R2-AT 1/4 L=0.5M. M1/4-M1/2
19	HI-705002	ARANDELA METALBUNA 1/2"
20	HI-701000	ENCHUFE RÁPIDO 1/2"
21	HI-707001	TAPÓN ENCHUFE RÁPIDO
22	HI-704008	RACOR UNIÓN MF1/4"-MF1/2"
23	HI-703004	RACOR T MF1/4-MF1/4-MF1/4
24	PS-045137	SOPORTE LIMITADOR ORILLAS
25	PS-045138	PANTALLA LIMITADORA DE ORILLAS
26	PS-045139	ART. CABEZA CILINDRO LIMITADOR
26	EO-105104	LIMITADOR HIDRÁULICO PARA ORILLAS D-903
26	EO-105105	LIMITADOR HIDRÁULICO PARA ORILLAS D-903 PLUS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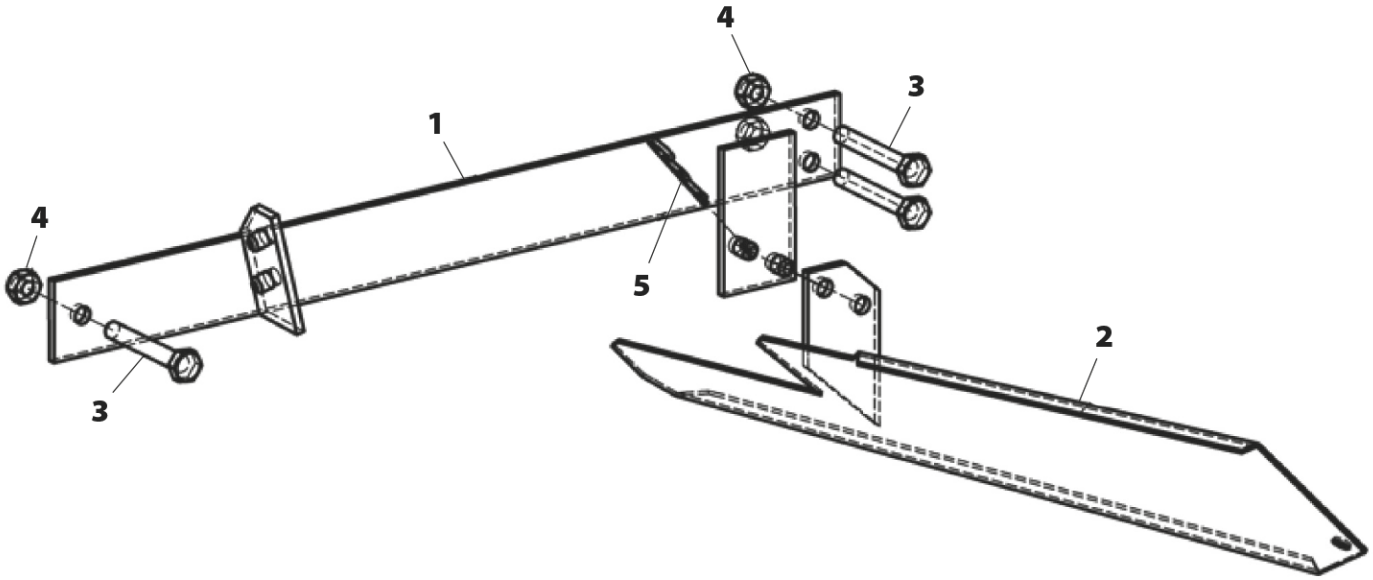
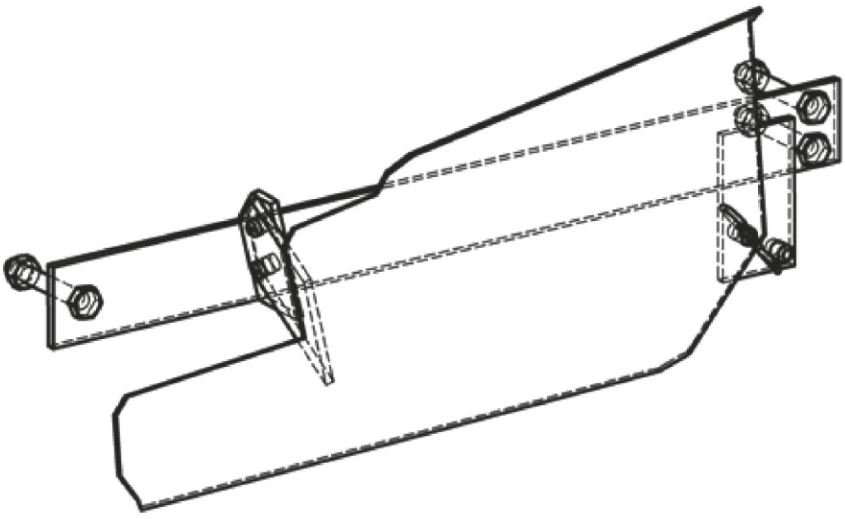
15.12 SHORT LIMITER D-903/3000; D-903 PLUS/3000

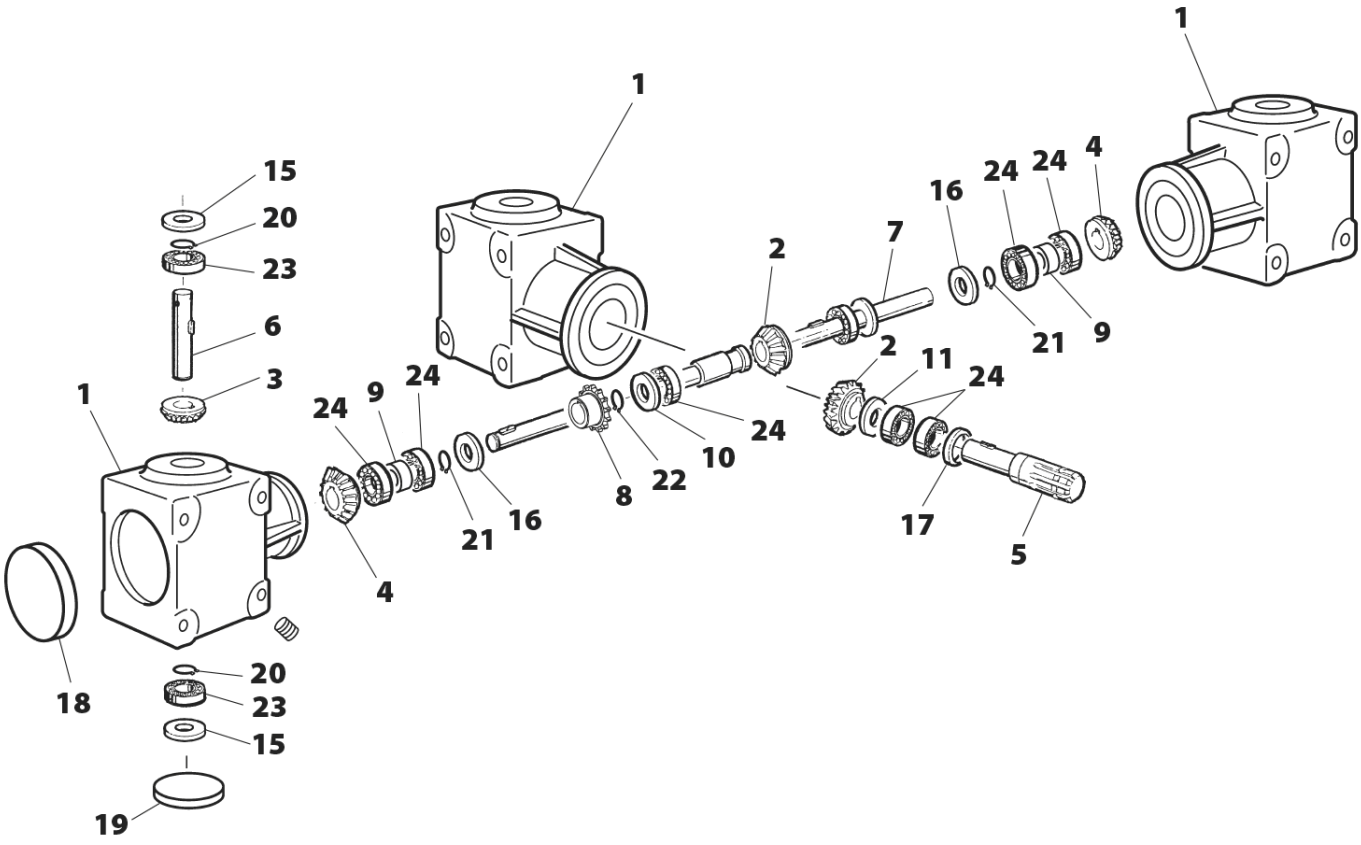
Nº	REFERENCE	DESCRIPTION
1	PS-044101	SOPORTE PANTALLA LIMIT. AB. D-903/3000
2	PS-044100	PANTALLA LIMITADORA AB. D-903/3000
3	931 10x70 8.8 B	TORNILLO DIN 931 M10X70 8.8 BICROM.
4	985 10 BI	TUERCA DIN 985 M10 BICROM.
5	FE-610002	CLIP R DE 3 BICROM.





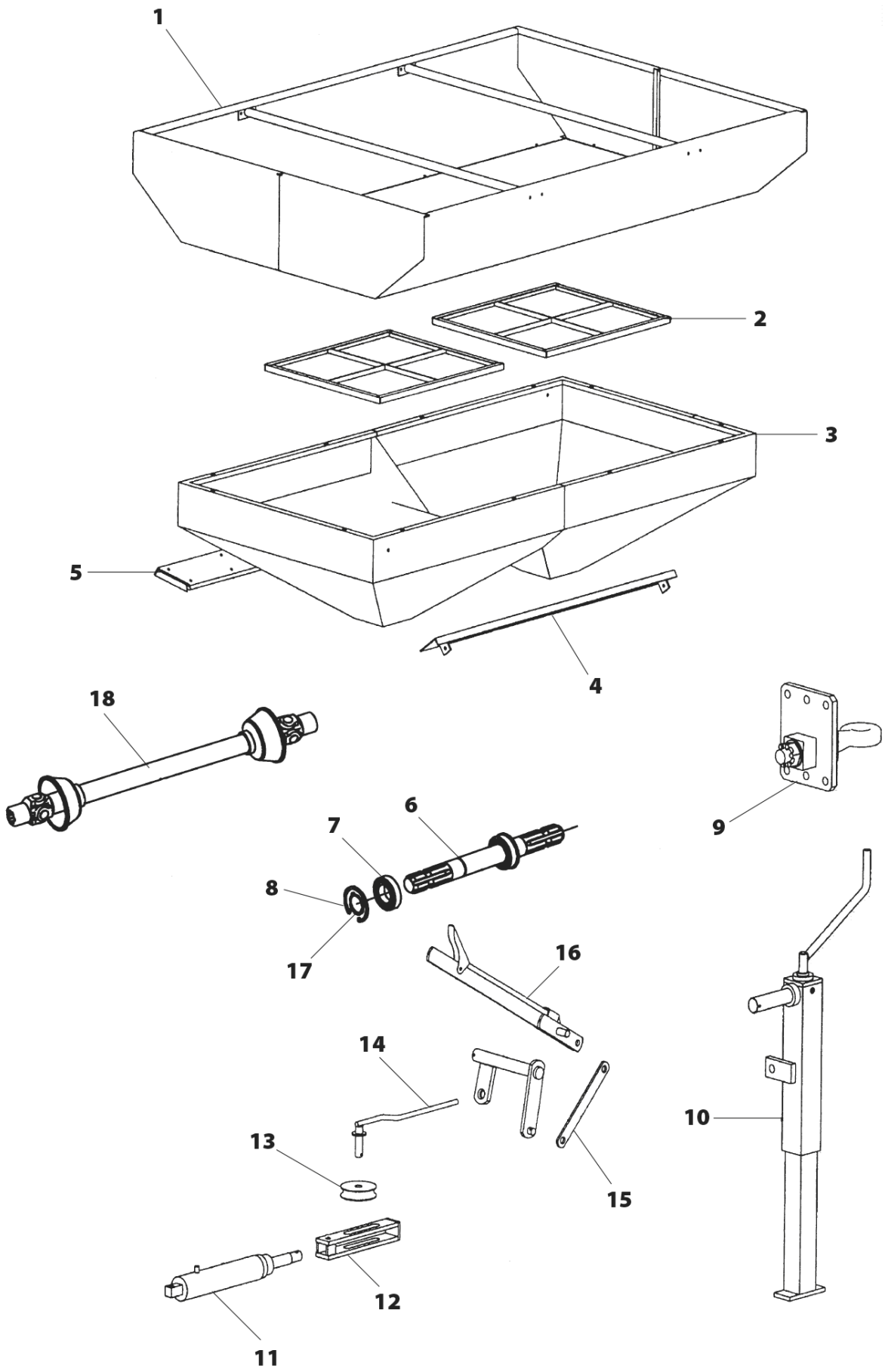
15.13 TRANSMITION

Nº	REFERENCE	DESCRIPTION
1	ME-045155	CARCASA AB.903
2	ME-045163	PIÑON Z-18 AB.903
3	ME-045167	PIÑON Z-16 AB.903
4	ME-045168	PIÑON Z-20 AB.903
5	ME-045156	EJE ENTRADA AB.903
6	ME-045157	EJE SALIDA AB.903
7	ME-045164	EJE TRANSVERSAL
8	ME-045147	PIÑON 1/2"X5/16"13Z TRANS.
9	ME-045158	CASQUILLO MEDIANO
10	ME-045166	CASQUILLO 32-26X75
11	ME-045170	ARANDELA 36-26X3
12	HI-707009	TAPÓN 3/8" GAS
13	6885 8X7X20	CHAVETA 6885 DE 8X7X20
14	6885 6X6X25	CHAVETA 6885 DE 6X6X25
15	FE-601038	RETEN 25X52X7
16	FE-601039	RETEN 25X62X10
17	FE-601040	RETEN 35X62X10
18	FE-660005	TAPA-RCA 80X10 AB.903
19	FE-660006	TAPA-RCA 52X7
20	472 52	ANILLO SAEGER 472 52
21	472 62	ANILLO SAEGER 472 62
22	471 25	ANILLO SAEGER 471 25
23	FE-600097	RODAMIENTO 6205
24	FE-600096	RODAMIENTO 6305



15.14 FERTILIZER D-903/3000

Nº	REFERENCE	DESCRIPTION
1	RE-025200	ALZA ABONADORA D-5/3000
2	PS-035106	CRIBA ALTA AB. D-903 FAB. ESPECIFICA
3	PS-2146	TOLVA ABONADORA 903/3000
4	PS-024100	ÁNGULO DESCANSO TOLVA REFORZADO
5	PS-2147	<U> ARTICULACIÓN TOLVA REFORZADA
6	ME-044100	EJE UNIÓN TRANSMISIÓN D-903
7	FE-600024	RODAMIENTO 6007 2RS
8	472 62	ANILLO SAEGER DIN 472 Ø62
9	PS-2150	ENGANCHE ABONADORA D-5/3000
10	MO-015200	PIÉ ABONADORA D-5/3000, COMPLETO
11	CO-045101	CILINDRO SE MANDO PALANCAS
12	PS-2151	CORREDERA POLEA FRENO
13	ME-095200	POLEA CABLE FRENO
14	PS-2180	VARILLA TENSORA FRENO
15	EE-045202	BIELA LARGA FRENO
16	PP-71	PALANCA FRENO ESTACIONAMIENTO AB D-5/3000
17	471 35	ANILLO SAEGER DIN 471 Ø35
18	FE-608015	TRANSMISIÓN CARDÁN L=1000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11. NOTES

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DATE	NOTES

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