INDEX **EXTRACTOR-LOADER MOD. EA 180**

Warranty Policy and Certificate

Warranty Terms

Unit: Hydromechanical grain extractor-loader
Model: EA 180

Richiger S.A, located in Ruta KM 258, Sunchales, Santa Fe province, Argentina, warrants its product EA 180 Hydromechanical grain unloader-extractor 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 600 hours or 180 days, whichever occurs first, from date of delivery to buyer.-

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, agent or representative. If the agent or representative grants any warranty greater in scope or time period or labor allowance than that detailed herein, Richiger S.A 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 S.A 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 crops, 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 S.A. Buyers and their agents shall prepay all transportation charges for the return of such products to Richiger S.A 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 S.A 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 S.A factory personnel or dealer or source approved by Richiger S.A 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.
The following are types of failures which are not attributable to defects in materials and/or workmanship and which are not considered by Richiger S.A 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 S.A, or modifications that in Richiger S.A'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) Misalignment 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.-

<u>Buyer inspection and acceptance</u>

Within 15 days after delivery to or receipt by buyer of product, buyer shall inform seller 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.-

Technical Specifications

Material to be extracted	All kinds of dry grains (wheat, sorghum, maize, sunflower, soy, rice, etc.)	
Capacity	Up to 180 tons/tour (*)	
Tractor	Minimum power:	75 CV
	PTO revolutions:	540 rpm
Extraction system		Automatic bag holding
		Working height hydraulically controlled
		Bag slasher blade
		Works mechanically and hydraulically
		Adjustable working width: min. 1.5 mt./ max. 3 mt.
Extraction		High clearance discharge auger, mechanical drive, folds for transport.
Power		Cardan shaft w / safeguard shear pins
		Central discharge auger & mechanical sweeper screws
Tires		11 L-15 – 10 ply
	Tire pressure	30 lbs./sq. in.
Total weight		1800 kg.

(*) Work capacity can vary according to grain type, moisture content, available power

Manufacturer reserves right to change specifications at any given moment

Safety Precautions

-Most accidents are caused by human error. Follow all safety procedures.-

-Make sure all people are safely positioned before starting tractor's motor and engaging PTO.-

-Keep extractor-loader clean and sheltered when not in use. This diminishes risk of deterioration and eventual failure.-

-Keep a fire extinguisher handy.-

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

-When towing the machine, drive with the utmost caution on public roads.-

-Keep hands, feet and clothes well away from moving parts.-

-Stop the tractor's motor altogether before attempting a hands-on task on the extractor-loader.-

For the operator

-In order to obtain maximum performance from your grain extractor-loader, we recommend you keep the owner's manual in a handy place for quick consultation. Read manual carefully before attempting grain unloading from bag and pay special attention to operating, adjustment and maintenance instructions.-

-Before transporting the grain extractor, verify that:

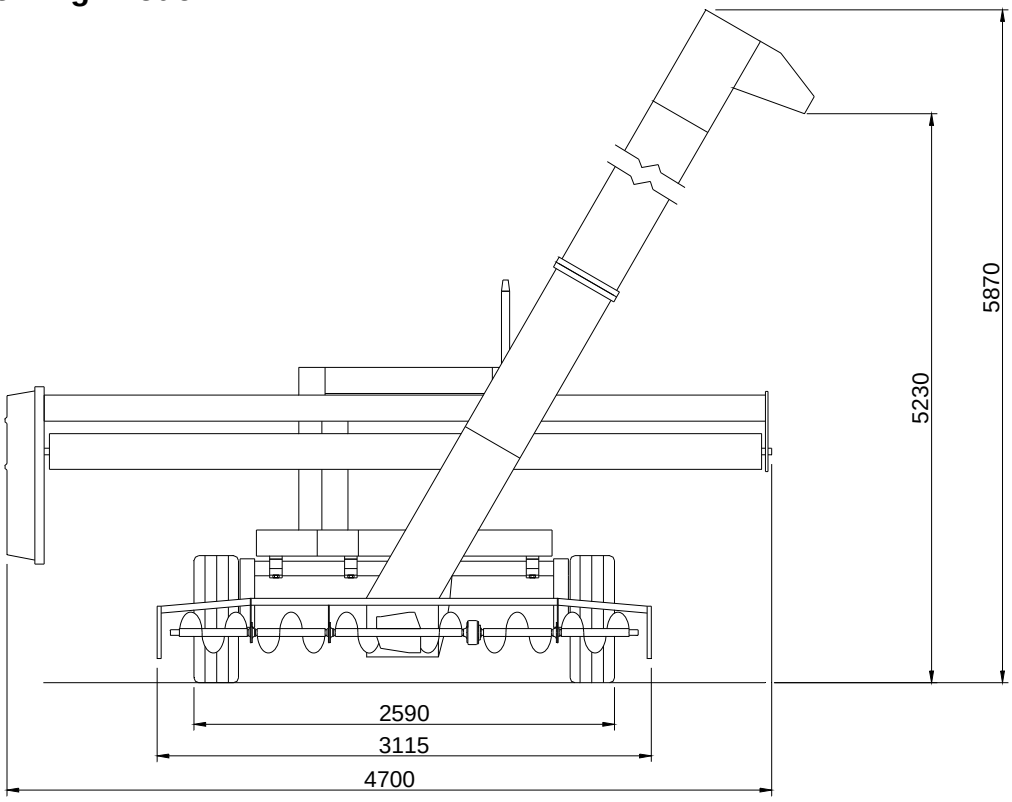
a) The tow bar tie-bolt is properly secured.-

b) Check tire pressure and if wheel bolts are properly tightened.-

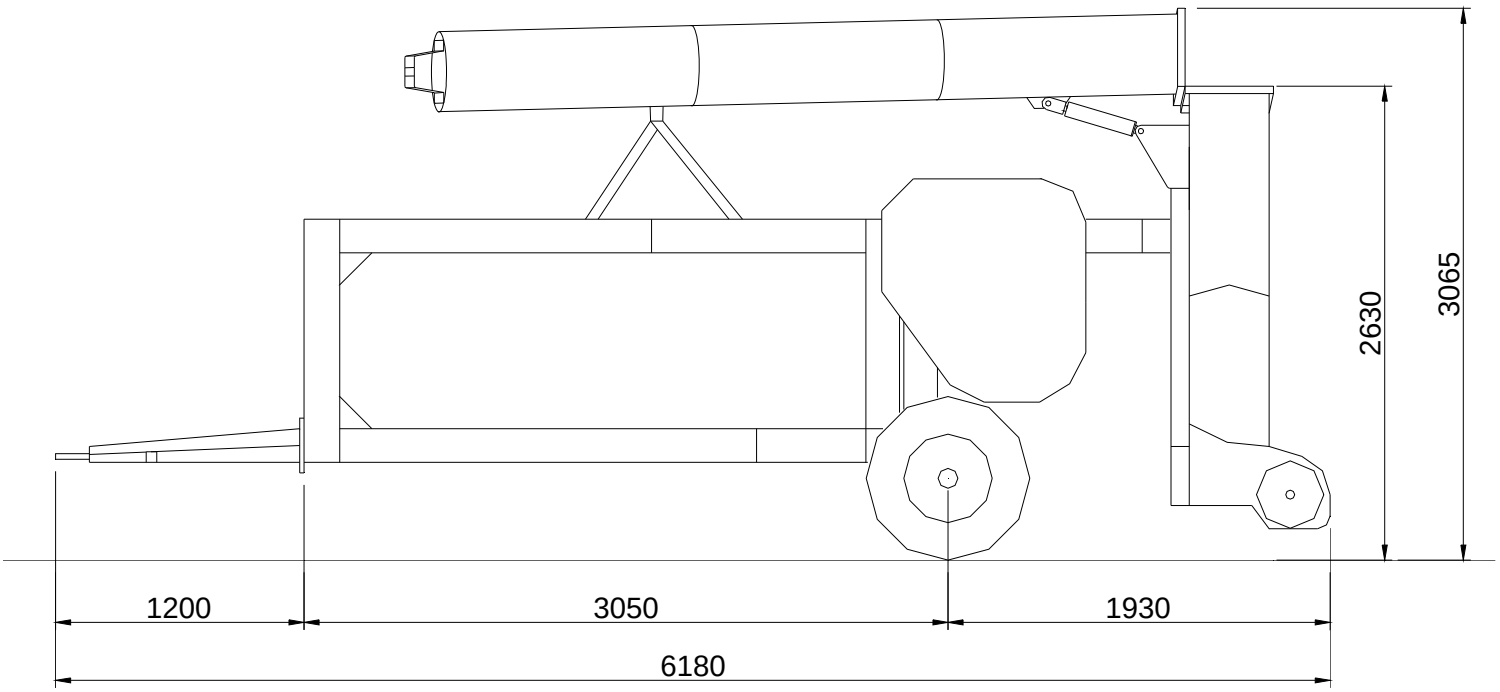
c) Attach safety chains between machine's tow bar and tractor's drawbar for added security on the road.-

Dimensions (in mm.)

Working mode



Transport mode



Operator should grow familiar with unit's controls before attempting actual operation. Keep unit in good working condition. Any modification could cause malfunctioning, a potentially dangerous situation, and/or reduced machine durability.

SWITCHING FROM TRANSPORT TO WORKING MODE

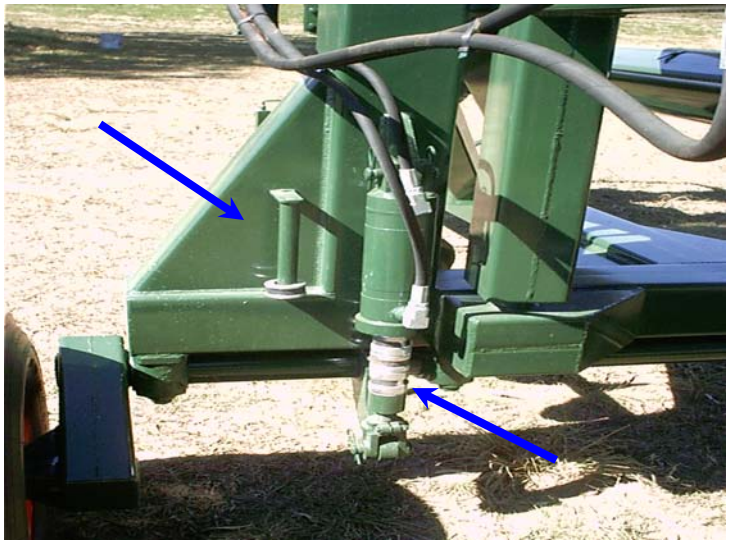
This will only demand a few minutes and switch proceeds as follows:

1) Hitch tractor to extractor-loader, connect hoses to the hydraulic circuit and connect drive shaft to tractor's power take-off.
2) Turn lever of three point flow diversion valve (Fig. 1) to the right (3 o'clock position) Then turn on tractor's hydraulic control to unfold discharge auger. Reversing tractor's hydraulic control lever will fold discharge auger.

Fig. 1

3) Turn lever of diversion valve down (6 o'clock position), and turn on tractor's hydraulics to lift up extractor-loader. Then adjust to proper working height. To set fixed position working height clearance, a set of three clamp-on stops of varying widths for different combinations are provided for the hydraulic cylinder (they lock around the cylinder rod) to adapt to different terrain conditions (Fig. 2).
4) Third position of flow diversion valve is to the left (9 o'clock position) and will not be used yet at this stage. By setting in this position and using tractor's hydraulics we rotate bag take-up roller.
5) Fourth position is neutral and effects no action (12 o'clock position).

Fig. 2

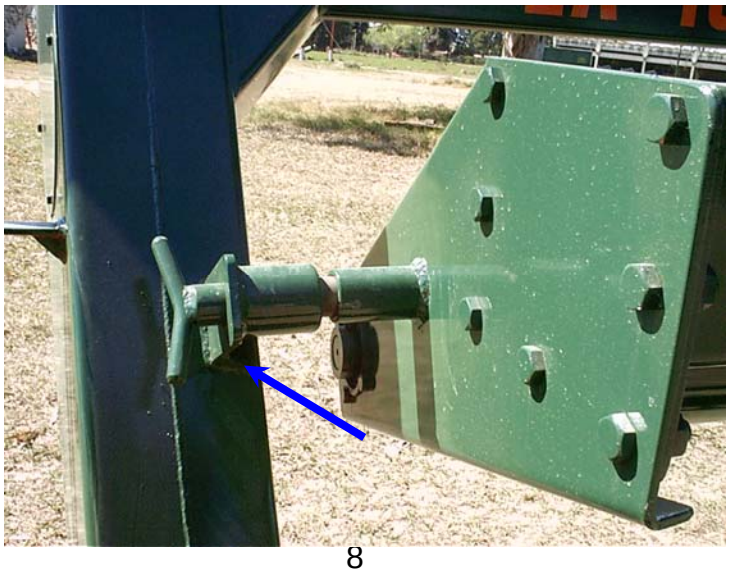


6) Remove tie-bolt from positioning arm shown in photo, swing it upwards to clear chasis frame and secure with chain provided to that end (Fig. 3).

Fig. 3

7) Unlock tie-bolt that holds roller assembly in place for transport alongside machine (Fig. 4).

Fig. 4



8) Roller can then be swiveled from its transport position alongside machine to transverse working position (Fig. 5).

Fig. 5

9) Lower positioning arm once again so that male plug and female socket coincide and reinsert tie-bolt & pin (Fig. 6).

Fig. 6

10) Remove sweeping screw extensions from their transport position and insert into main sweeping screws, taking care not to mix left and right hand threads (Figs. 7-8-9).

Fig. 7

Fig. 8

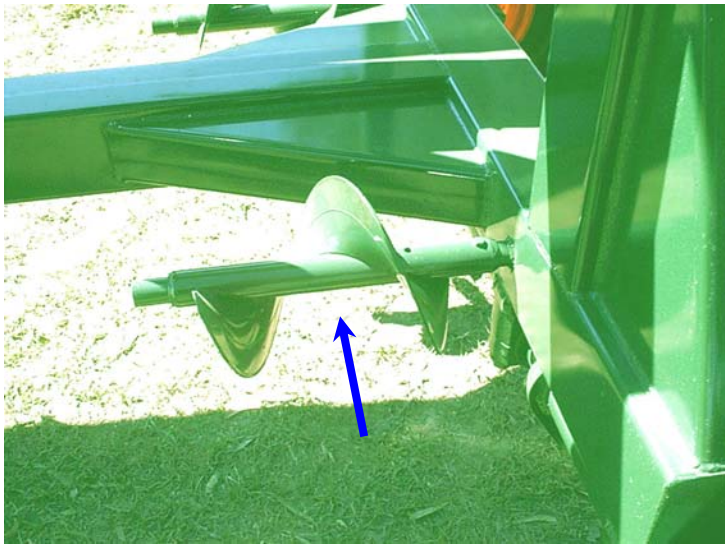
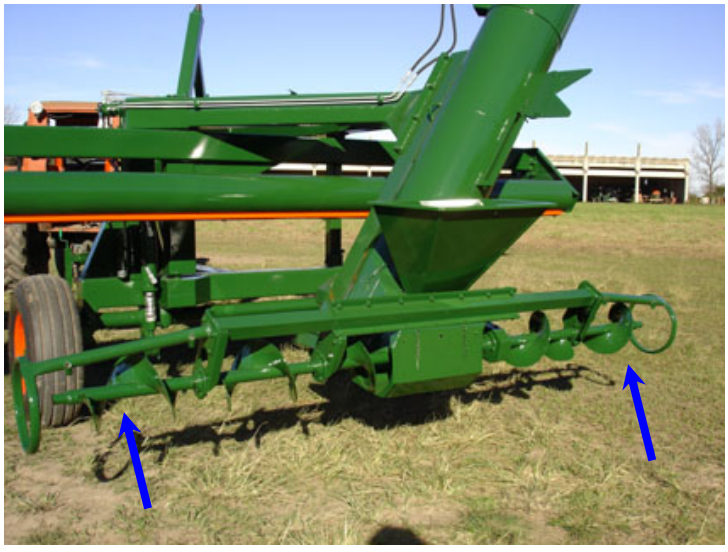


Fig.9



11) The axles of these sweeping screws possess 2 thru-holes for attaching the extensions. Normally one should go for the shortest length, but if very wide diameter bags (more than 3.8 mt.) are used, the outer holes should be used to mount extensions so as not to lose grain which might remain at the sides of the bag, and be lost as the bag is gradually rolled in and folded.

Attaching the bag

1) Open the bag's end. On the top uppermost part cut a longitudinal slit, i.e. along the bag's length, from the leading edge of the plastic backwards. Make it about 1.5 mt. long, and spread open the resultant flaps to the side.

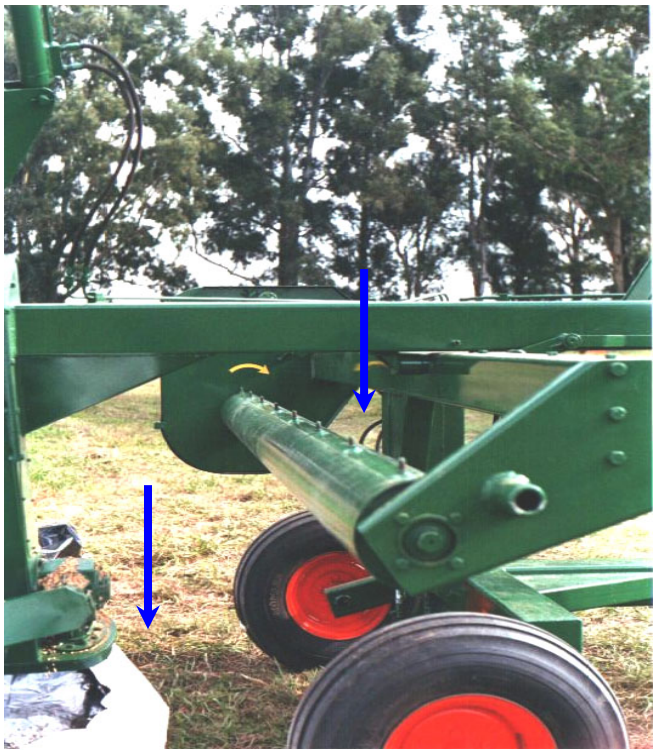
IMPORTANT: DO NOT PROLONG THE SLIT UP TO THE POINT WHERE THE GRAIN IS EXERTING PRESSURE AND KEEPING THE PLASTIC TAUT, BECAUSE THIS MAY CAUSE A RIP ALONG THE WHOLE LENGTH OF THE BAG, SPLITTING IT OPEN.

2) Remove dowel pin from cutter blade located on discharge tube. This blade slashes the bag as it is rolled in (Fig. 10).
3) Pull tractor/extractor-loader unit back in reverse as straight and dead center as possible, until the transmission case located at the base of the discharge auger surpasses the grain. Be careful that the wheels do not tread on any part of the bag. To that end, it is convenient to fold or tuck the plastic out of the way (Fig. 11).

Fig.10

4) Make the bag take-up roller rotate by means of the tractor's hydraulic control and the flow diversion valve in its 9 o'clock position as explained previously until the bag retaining U-bar is positioned at the top. Remove the nuts that hold the U-bar and place the latter momentarily on the wheels. Holding studs on roller will be pointing upwards (Fig. 11)

Fig. 11



5) Lift up the bottom part of the bag bringing it up to the roller. Press the plastic sheet on to each stud till it punctures and is held in place.
6) Once the bottom of the bag has been secured in this manner, proceed in the same way with the top part of the bag, starting from the end studs towards the center.
7) Put U-bar back again in place and tighten nuts (Figs. 12-13).

Fig. 12

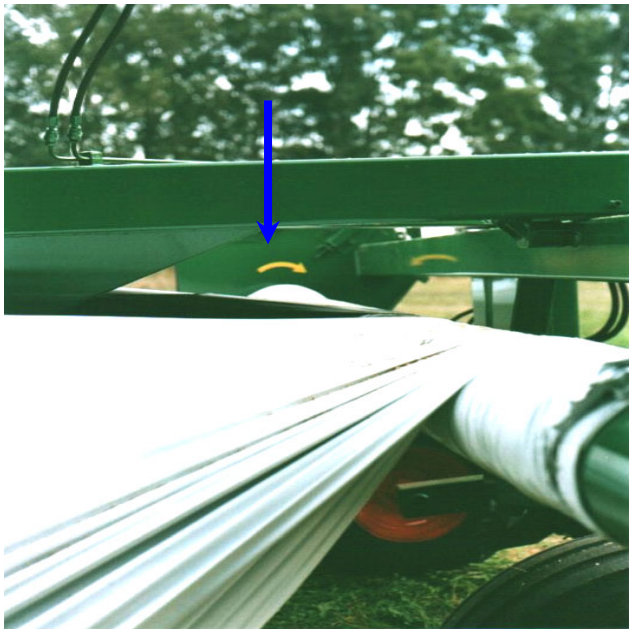
Fig. 13

<u>IMPORTANT</u>: WHEN THE TOP PART OF THE BAG IS ATTACHED TO THE ROLLER IT MUST BE MADE TO HOLD SOME SLACK. THIS IS SO THE ROLLER TUGS MORE ON THE BOTTOM PART OF THE BAG WHICH BRINGS IN THE GRAIN.

Grain extraction procedure

The machine is now ready to begin unloading grain. First, rotate the cylinder one quarter turn using hydraulic controls, making sure it rotates in the right direction, as indicated by arrows painted on the side panels (Fig. 14).

Fig. 14



Make sure that the bag is running through the cutter blade located on the front part of the discharge auger tube.
Engage tractor's Power take-off with motor idling, and then accelerate so power shaft reaches a speed 540 rpm's. The tractor must remain with gears and brakes disengaged since it will be forced to move by the bag's weight acting as an anchor as it is pulled in and folded by the roller. It will only be necessary to slightly correct steering in order to keep tractor moving in a straight line.
A few moments after commencing operation, it will be necessary to check the advance speed of the machine, which at this stage depends on how fast the roller is turning. This is controlled by turning the knob of the variable flow valve (Fig. 15). To determine if setting is adequate, first check that the grain level remains below the maximum height of the roller. This can be verified visually by observing the gap that remains between the discharge auger and the roller. If this gap grows closer, grain is accumulating that cannot be unloaded at the same rate it is coming in, so operating speed must be lowered by closing knob. If gap increases, more grain must be supplied by opening knob.

Fig. 15

When stopping operation, always stop roller first and then stop PTO.

Detaching bag from roller

To remove bag from roller, counter rotate roller via tractor's hydraulic controls in order to slacken bag. Then open hinged cover of gear case and remove both retaining bolts from the biggest gear (Fig. 16).

Fig. 16

Put the tractor in low gear and have it advance slowly, being careful that the bag does not snag on some part of the machine. To avoid this, it is better to have the two bag layers pass beneath the sweeper screws.

Bag completion

Once the sweeping screws come in contact with the bag and rip it, stop the operation, remove bag from roller, attach hopper in place on base of discharge auger and finish loading manually with shovels, buckets, etc. (Fig. 17).

Fig. 17

If much grain is left behind, it is possible to make a sweep with the machine, proceeding as follows:
Open the bag up wide, remove clamp-on stops from hydraulic cylinder, connect machine's cardan shaft to tractor's PTO, lower machine as much as hydraulic cylinder will allow, and slowly back tractor in reverse gear. Repeating this maneuver, several times if necessary, volume to be loaded by hand can be considerably reduced.

<u>IMPORTANT</u>: PLASTIC SHEET LITTER IS AN EYESORE AND POTENTIALLY DAMAGING TO THE ENVIRONMENT. ENQUIRE ABOUT RECYCLING ALTERNATIVES FROM YOUR PLASTIC BAG PROVIDER OR LOCAL ENVIRONMENTAL AGENCY.

Shear Pins

The cardan shaft that attaches to the tractor's PTO has two shear pins mounted on flanges to protect transmission components from heavy overload. Should they have to be replaced, use soft steel SAE 1010 pins. Never use hardened steel pins (Fig. 18).

Fig. 18

There is another shear pin located on the sweeper's transmission case drive shaft. Also use a SAE 1010 soft steel replacement if necessary (Fig. 19).

Fig. 19

Maintenance

<u>IMPORTANT</u>: NEVER PERFORM MAINTENANCE OR LUBRICATION TASKS WHEN THERE ARE MOVING PARTS. ALWAYS STOP TRACTOR'S MOTOR AND REMOVE IGNITION KEY

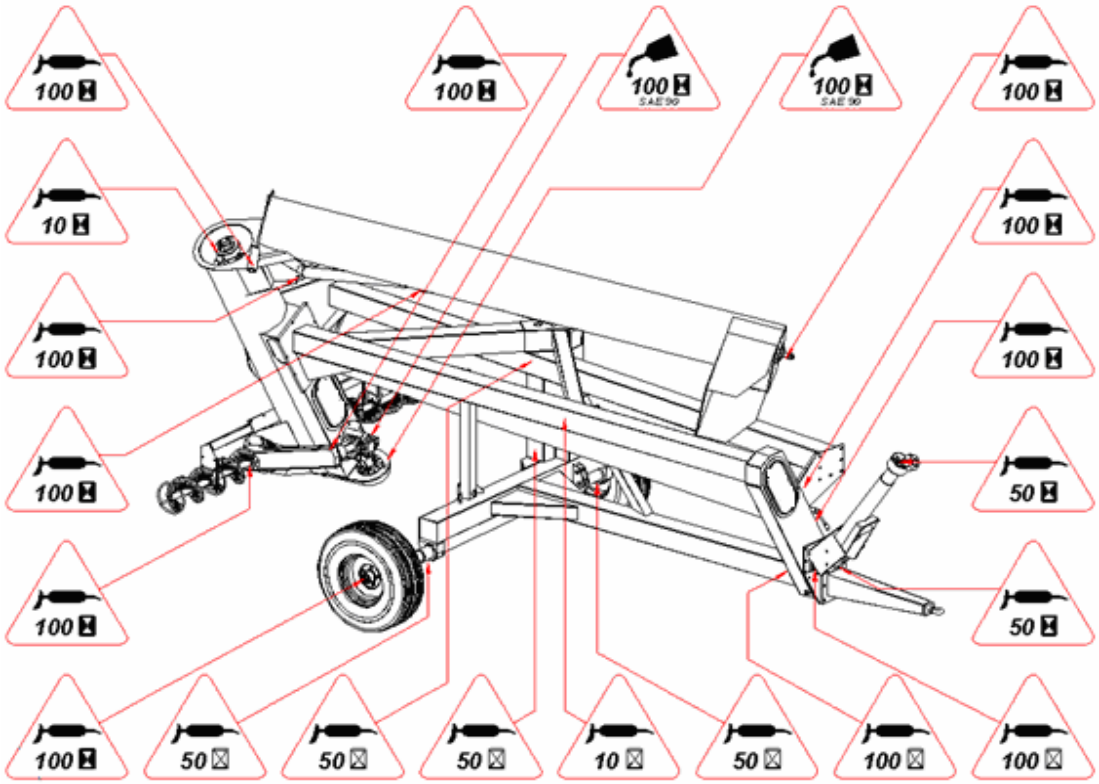
To check chain free play, remove covers located on front part of chasis frame and discharge auger tube, and adjust idler sprockets if needed.

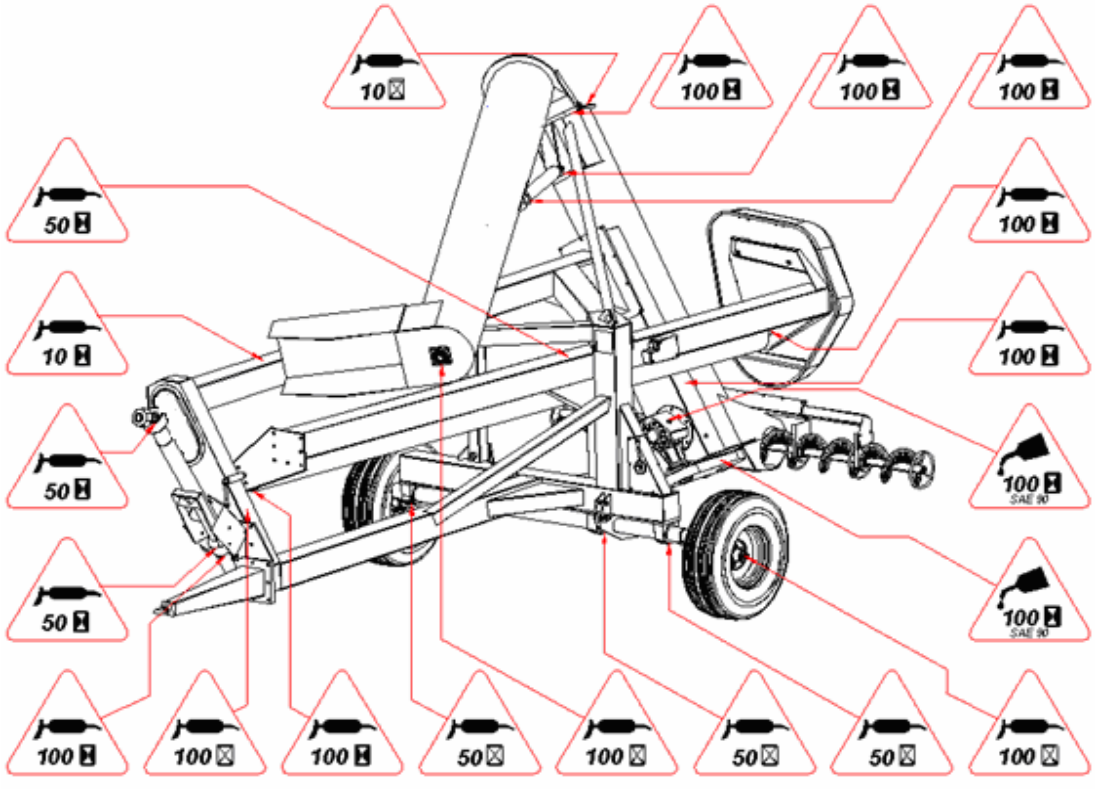
LUBRICANTS

Auger screw transmission case and lower chain of discharge auger:
Use 85W-140 premium heavy duty gear fluid.

Bearings and chains:
Use heavy duty lithium grease.

Lubrication diagram





USEFUL HINTS

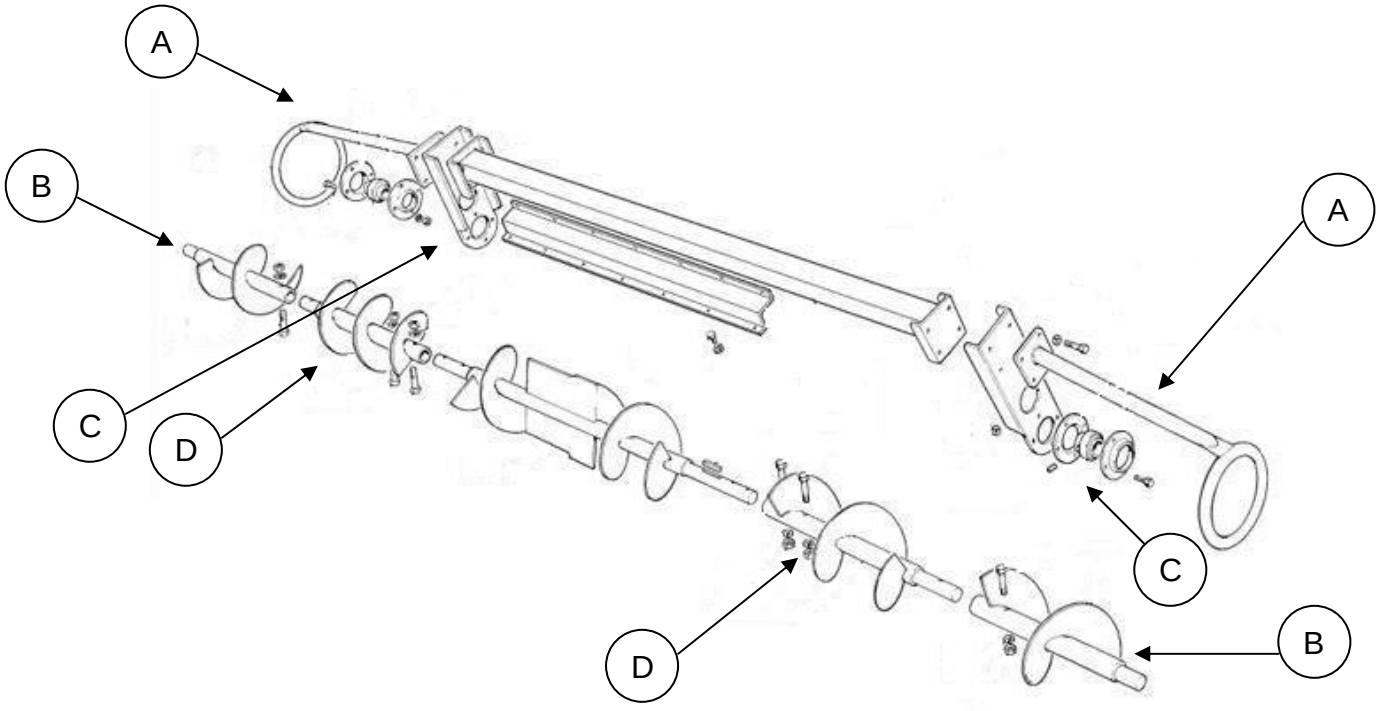
It is possible to encounter some problems when unloading bags.
For example, wrinkles and creases that do not straighten out. In such cases, the machine should be pulled up before the sweeper screws make contact with these creases, or they might snag on them and rip the bag. After the screws surpass the problem spot, the machine should be lowered again to working height and work resumed.
If necessary, unhitch the tractor with the bag still attached, pull machine up, stop tractor's motor, then lower machine again so that it stands on the grain. This last action is to ensure that the drawbar does not stay pointing upwards, thus making it difficult to hitch up again.

CONVERSION TO 5' AND 6' BAGS

The EA 180 extractor-loader is assembled at the factory for use with 9' bags, but can also be used to unload from 5' and 6' bags.

Conversion to 6' bags:

1. Remove sweeper protector ring "A"
2. Detach outer extension sweeper screws "B"
3. Remove support bracket w/bearing "C"
4. Detach intermediate extension sweeper screws "D" and reattach outer screws "B" in their place.



Conversion to 5’ bags:

1. Remove sweeper protector ring “A”
2. Detach outer extension sweeper screws “B”
3. Remove support bracket w/bearing “C”
4. Detach intermediate extension sweeper screws “D”
5. Remove horizontal bracket bar “E”
6. Install additional extension screws provided by factory if requested.

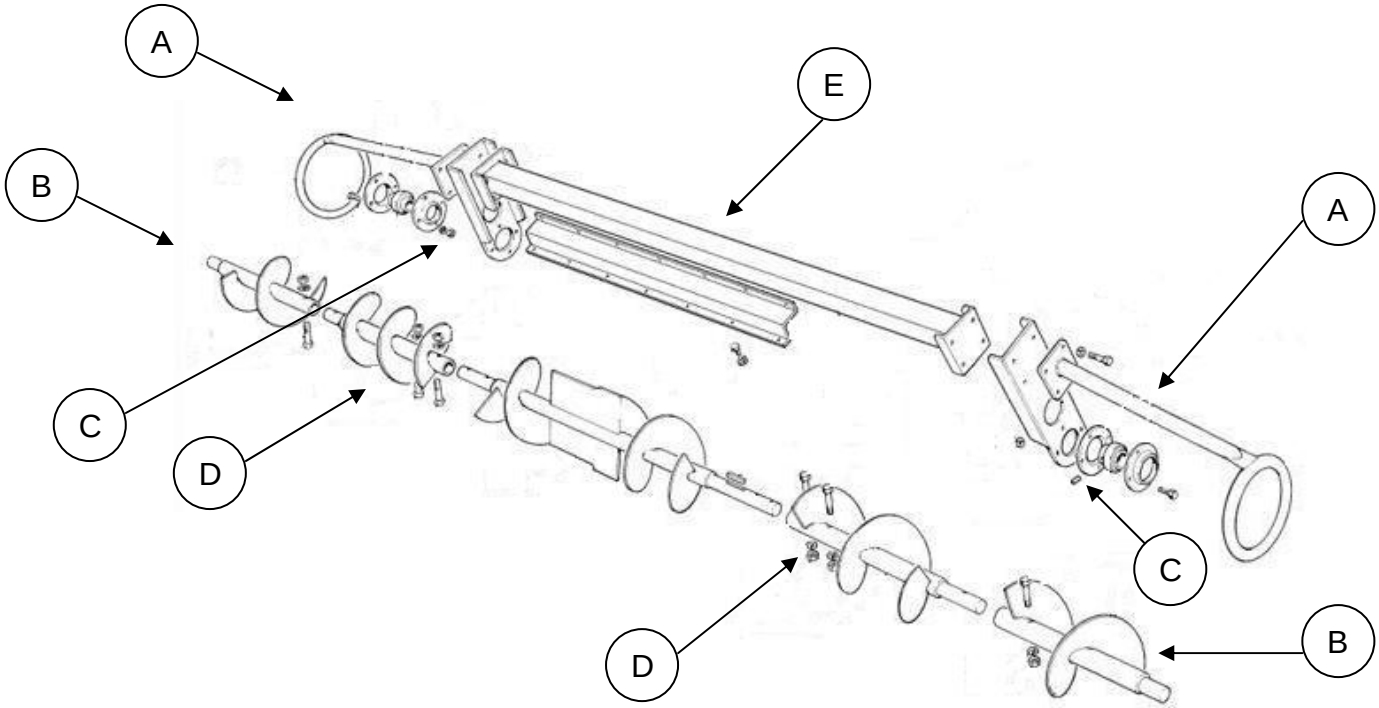
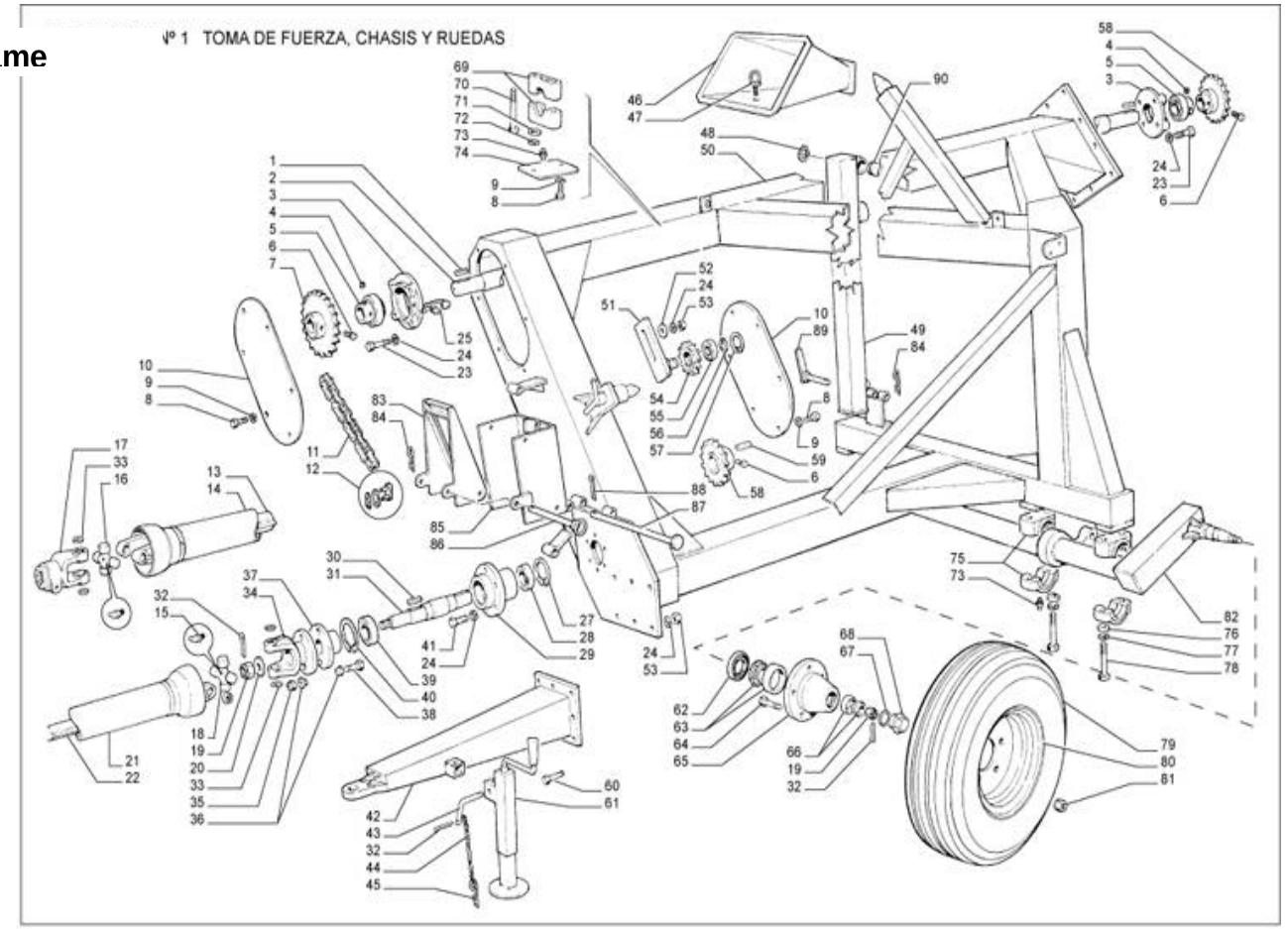


Illustration Nbr. 1 drive shaft & frame



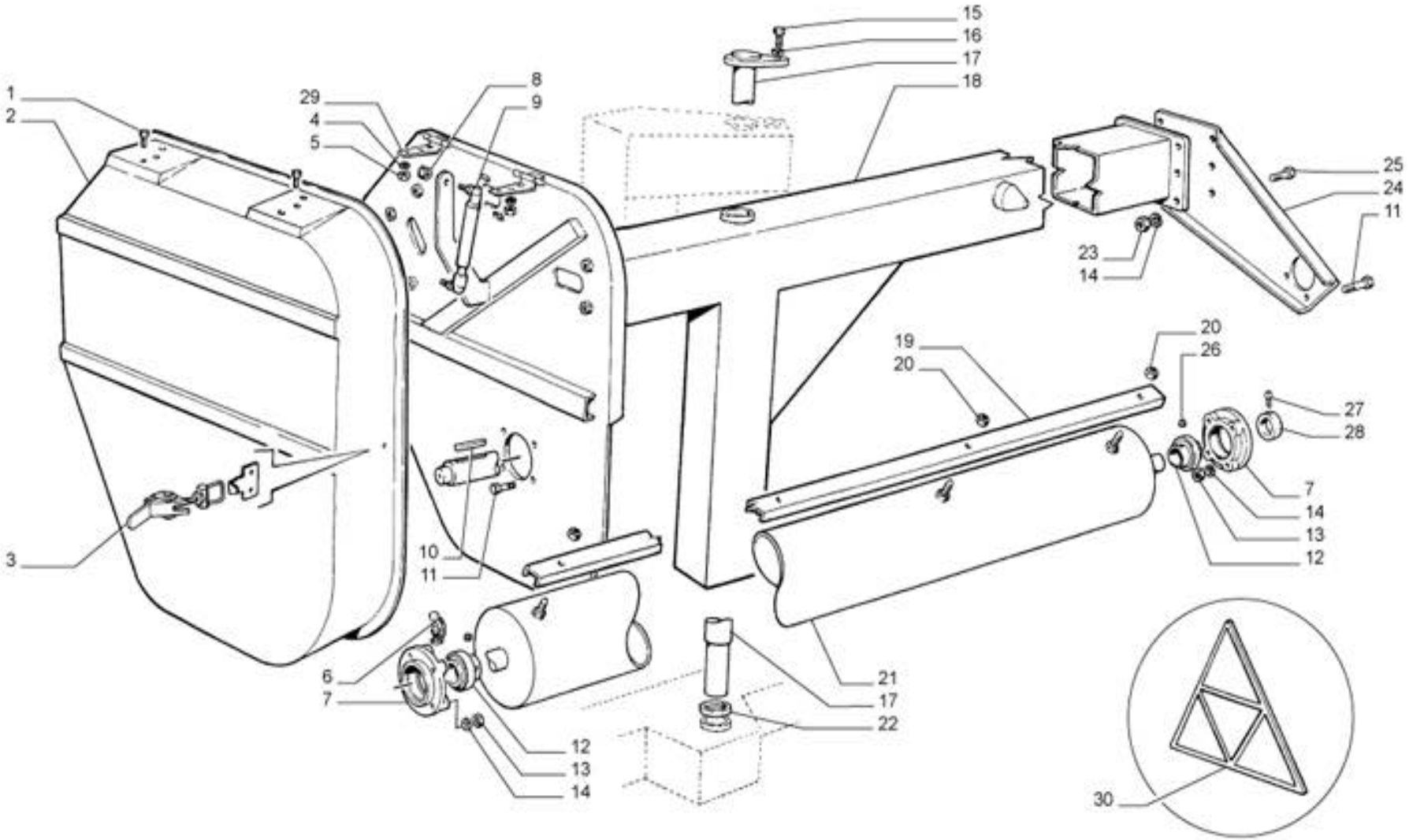
PTO drive shaft & frame

Nº	DESCRIPTION	CODE NBR.
1	Square key 10 x 40 (mm.)	MP3202
2	Driven axle w/ end stubs	EX-18026C
3	Flange block FC 208	MP0244
4	Stud bolt 5/16 x 3/8 (in.) NF	MP1413
5	Self-aligning bearing UC 208	MP0235
6	Stud bolt 3/8 x ¾ (in.) NF	MP1417
7	Sprocket 22 tooth f/ASA 80-1 chain	EX-18024
8	Hex. bolt BSW 1/4 x 1/2 (in.)	MP1900
9	Lock washer 1/4"	MP1500
10	Bolt-on inspection plate	EX-18085B
11	Roller chain ASA 80-1 x 2330 mm. lg.	MP1203
12	Connecting link, roller chain ASA 80-1	MP1263
13	PTO input shaft w/ yoke x 800 mm. lg.	MP0571
14	Plastic outer guard, drive shaft	MP0538
15	Grease nipple, angled 45 deg. SAE 1/4”	MP1456
16	U-joint K-518	MP0544
17	Splined yoke x 35 mm.	MP0520
18	U-joint K-518	MP0544
19	Castle nut 3/4" NF	MP1320
20	Flat washer 3/16” x 20 mm.	M-2026
21	Plastic inner guard, drive shaft	MP0536
22	Implement transmission input shaft w/ yoke x 800 mm. lg.	MP0567
23	Hex. bolt BSW 1/2 x 2 (in.)	MP1973
24	Lock washer 1/2"	MP1504
25	Grease nipple, straight SAE 1/4"	MP1452
26	Hairpin cotter 4 x 75 (mm.)	MP1075
27	Snap ring 75l	MP0846
28	Ball bearing 6009 RS	MP0124
29	Driving axle housing	EX9-223
30	Square key 10 x 45 (mm.)	MP3202
31	Driving axle	EX-18020
32	Split pin 3 x 40 (mm.)	MP1018
33	Snap ring CF-604	MP0545
34	Shear yoke K-518	MP0524
35	Lock nut 5/16" NF	MP1379
36	Shear bushing, drive shaft	A-818-83
37	Shear hub	A-815-83

38	Hex. bolt BSW 5/16 x 1 ½ (in.)	MP1920
39	Ball bearing 6009 RS	MP0124
40	Snap ring 75I	MP0846
41	Hex. bolt BSW 1/2 x 1 ¾ (in.)	MP1972
42	Drawbar, single lip hitch	EX-18086
43	Locking pin, screw jack	EGH96-004
44	Chain, locking pin	EGH96-004
45	Hairpin cotter 2.5 x 50 mm.	MP1070
46	Bin	EX-18034
47	Wing bolt 3/8 x 3/4 (in.)	EGH96-236
48	Snap ring 35A	MP0812
49	Supporting pillar, roller assy.	EX-18010
50	Main beam 160 x 160 (mm.)	
51	Chain tightener arm, tightener assy.	EX-18081
52	Flat washer 1/2"	MP1519
53	Hex. nut BSW 1/2"	MP1305
54	Sprocket 22 tooth f/ASA 80-1 chain, tightener assy.	EX-18023
55	Ball bearing 6205 RS	MP0151
56	Snap ring 25A	MP0807
57	Snap ring 52I	MP0841
58	Sprocket 17 tooth f/ASA 80 chain	EX-18021
59	Square key 10 x 60 (mm.)	MP3202
60	Hex. bolt SAE Gr.5 1/2 x 1 1/2 (in.)	MP2133
61	Screw-type jack	MP3084
62	Oil seal 48 x 82 x 8 (mm.)	MP2935
63	Roller bearing 30208	MP0196
64	Hex. bolt SAE Gr.5 1/2 x 1 1/2 (in.)	MP2133
65	Wheel hub	EX-18009
66	Roller bearing 30205	MP0193
67	O-Ring 52.07 x 57.31 x 2.62 (mm.)	MP2975
68	Wheel cap	EGH96-001R
69	Plastic bearing block	MP3015
70	Hex. bolt BSW 3/8 x 5 (in.)	MP1950
71	Flat washer 3/8”	MP1517
72	Lock washer 3/8”	MP1502
73	Grease nipple, straight GAS 1/8”	MP1451
74	Bolt-on cover plate	EX-18085B
75	Bearing caps, Wheel axle	EX-18013A
76	Washer 40 x 20 x 9.5 (mm.)	EX-18013B

77	Lock washer ¾”	MP1507
78	Hex. bolt SAE Gr.5 3/4 x 5 (in.)	MP 2157
79	Tire 11L-15 10 ply	MP1849
80	Tire rim 15” dia.	MP1821
81	Taper nut SAE 1/2"	MP1361
82	Main wheel axle	EX-18012C
83	Cover guard, lower drive assy.	EX-18070C
84	Hairpin cotter 2.5 x 50 (mm.)	MP1070
85	Cover guard, upper drive assy.	EX-18070D
86	Lock pin, cover guard drive assy.	EX-18070A
87	Hinge pin, cover guard drive assy.	EX-18070B
88	Split pin 2.5 x 30 (mm.)	MP1008
89	Lock pin, roller support pillar	EX-18010A
90	Pivot pin, roller support pillar	EX-18019

Illustration Nbr. 2 TAKE-UP ROLLER



Nº	DESCRIPTION	CODE NBR.
1	Hex. bolt BSW 1/4 x 3/4 (in.)	MP1902
2	Hinged cover	MP3542
3	Chrome-plated latch	MP3707
4	Lock washer 1/4"	MP1500
5	Hex. nut BSW Gr.5 1/4"	MP1330
6	Grease nipple, straight SAE 1/4"	MP1452
7	Flange block FC 208	MP0244
8	Lock nut 5/16” NF	MP1379
9	Gas charged shock absorber	MP2847
10	Square key 10 x 55 (mm.)	MP3202
11	Hex. bolt BSW 1/2 x 1 ¾ (in.)	MP1972
12	Self-aligning bearing UC 208	MP0235
13	Hex. nut BSW 1/2"	MP1305
14	Lock washer 1/2"	MP1504
15	Hex. bolt BSW 3/8 x 1 (in.)	MP1937
16	Lock washer 3/8”	MP1502
17	Pivot pin, roller assy.	EX-18078
18	Support beam, roller assy.	
19	U-bar bag holder	EX9-210
20	Hex. nut BSW Gr.5 1/2"	MP1334
21	Roller w/ end stubs	EX-18089
22	Washer, pivot pin	EX-18016
23	Hex. nut BSW 5/8”	MP1307
24	Mounting bracket, roller	EX-18089A
25	Hex. bolt BSW 5/8 x 1 1/2 (in.)	MP1998
26	Stud bolt 5/16 x 3/8 (in.) NF	MP1413
27	Stud bolt 3/8 x 3/4 (in.)	MP1417
28	Retaining bushing, roller assy.	EX-18089B
29	T-hinge	MP3715
30	Reflective warning triangle	MP3077

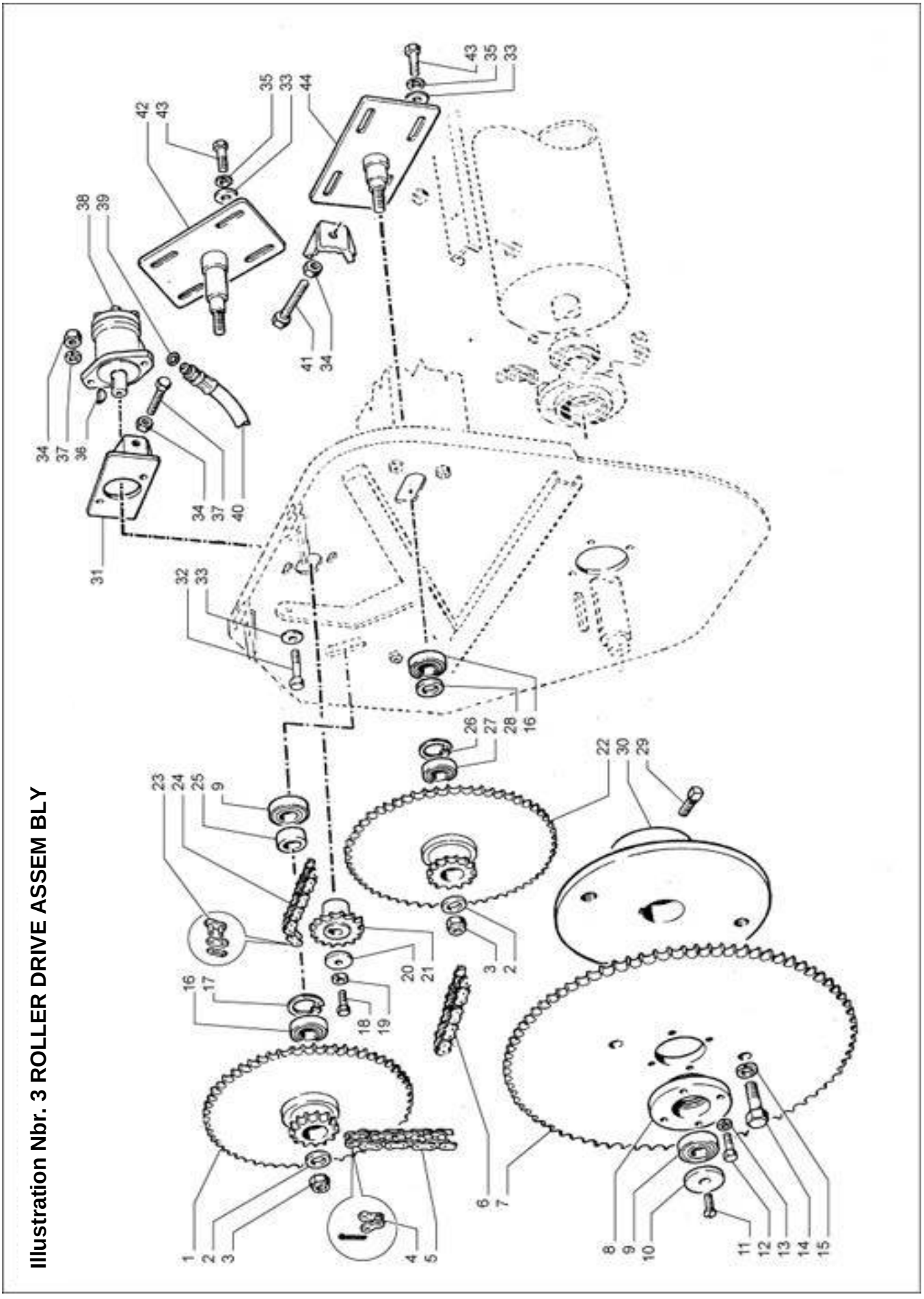


Illustration Nbr. 3 ROLLER DRIVE ASSEM BLY

ROLLER DRIVE ASSEMBLY

Nº	DESCRIPTION	CODE NBR.
1	Double sprocket, 70 (5/8”)-13 (3/4”) tooth	EX-18083S
2	Flat washer 32 x 16 (mm.) x 5/8”	EX-18083
3	Lock nut 5/8” NF	MP1385
4	Connecting link, roller chain ASA 60-1	MP1262
5	Roller chain ASA 60-1 x 2280 mm. lg.	MP1202
6	Roller chain ASA 50-1 x 1580 mm. lg.	MP 1201
7	Sprocket 95 tooth	MP4310
8	Flange block, sprocket	EX9-216
9	Ball bearing 6206 2RS	MP0153
10	Flat washer 12 x 45 (mm.) x 3/16”	EGH96-003
11	Hex. bolt BSW Gr.5 3/8 x 1 (in.)	MP2046
12	Hex. bolt BSW Gr.5 3/8 x 1 (in.)	MP2046
13	Lock washer 3/8”	MP1502
14	Hex. bolt BSW Gr.5 5/8 x 1 ¼ (in.)	MP2074
15	Lock washer 5/8”	MP1506
16	Ball bearing 6205 2RS	MP0151
17	Snap ring 52l	MP0841
18	Hex. bolt BSW 1/4 x 3/4 (in.)	MP1902
19	Lock washer 1/4"	MP1500
20	Flat washer 7 x 40 (mm.) x 3/16”	EX-18028A
21	Sprocket 15 tooth, hydraulic motor	EGH97-621
22	Double sprocket, 70 (5/8”)-13 (5/8”) tooth	EX-18083P
23	Connecting link, roller chain ASA 50-1	MP1261
24	Roller chain ASA 50-1 x 1290 mm. lg.	MP1201
25	Spacer 25.3 x 28.6 x 3 (mm.)	EX9-213B
26	Snap ring 47l	MP0810
27	Ball bearing 6204 2RS	MP0149
28	Spacer 20.5 x 24.3 x 3 (mm.)	EX9-213A
29	Stud bolt 1/2 x 1 ½ (in.)	MP1434
30	Hub, 95 tooth sprocket	EX9-217
31	Mounting plate, hydraulic motor	EX-18028
32	Hex. bolt BSW 1/2 x 1 ¾ (in.)	MP1972
33	Flat washer 1/2"	MP1519
34	Hex. nut BSW 1/2"	MP1305
35	Lock washer 1/2"	MP1504
36	Woodruff key 25 x 11 (in.) x 1/4"	
37	Hex. bolt BSW 1/2 x 2 (in.) full thread	MP1973

38	Hydraulic motor	MP3295
39	O-Ring, hydraulic hose	
40	Hydraulic hose 3/4" 2 ply steel wire	MP3239
41	Hex. bolt BSW 1/2" x 80 mm.	MP1978
42	Spindle, 70 (5/8”)-13 (3/4”) tooth sprocket	EX-18084S
43	Hex. bolt BSW 1/2 x 1 (in.)	MP1969
44	Spindle, 70 (5/8”)-13 (5/8”) tooth sprocket	EX-18084P

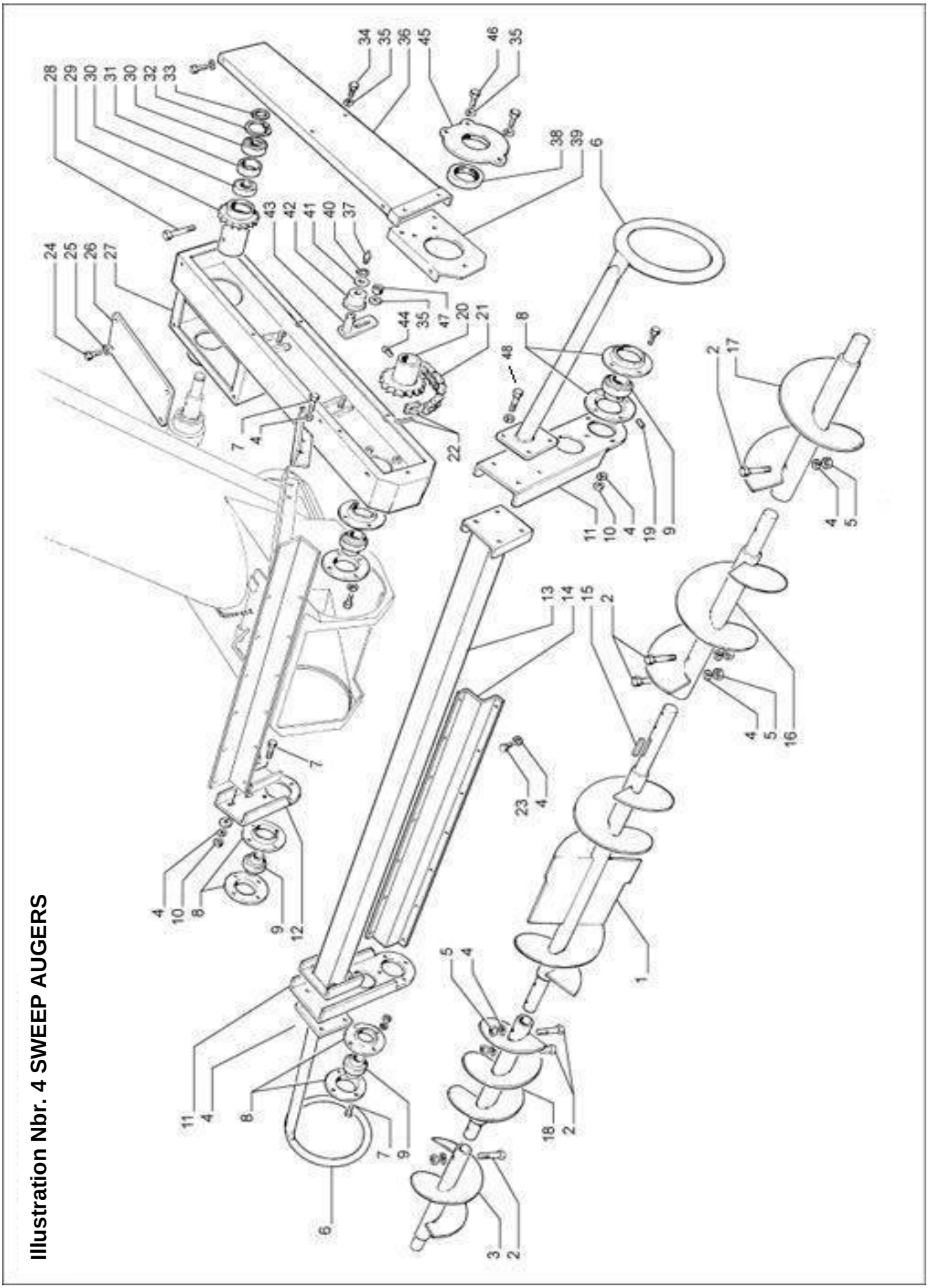


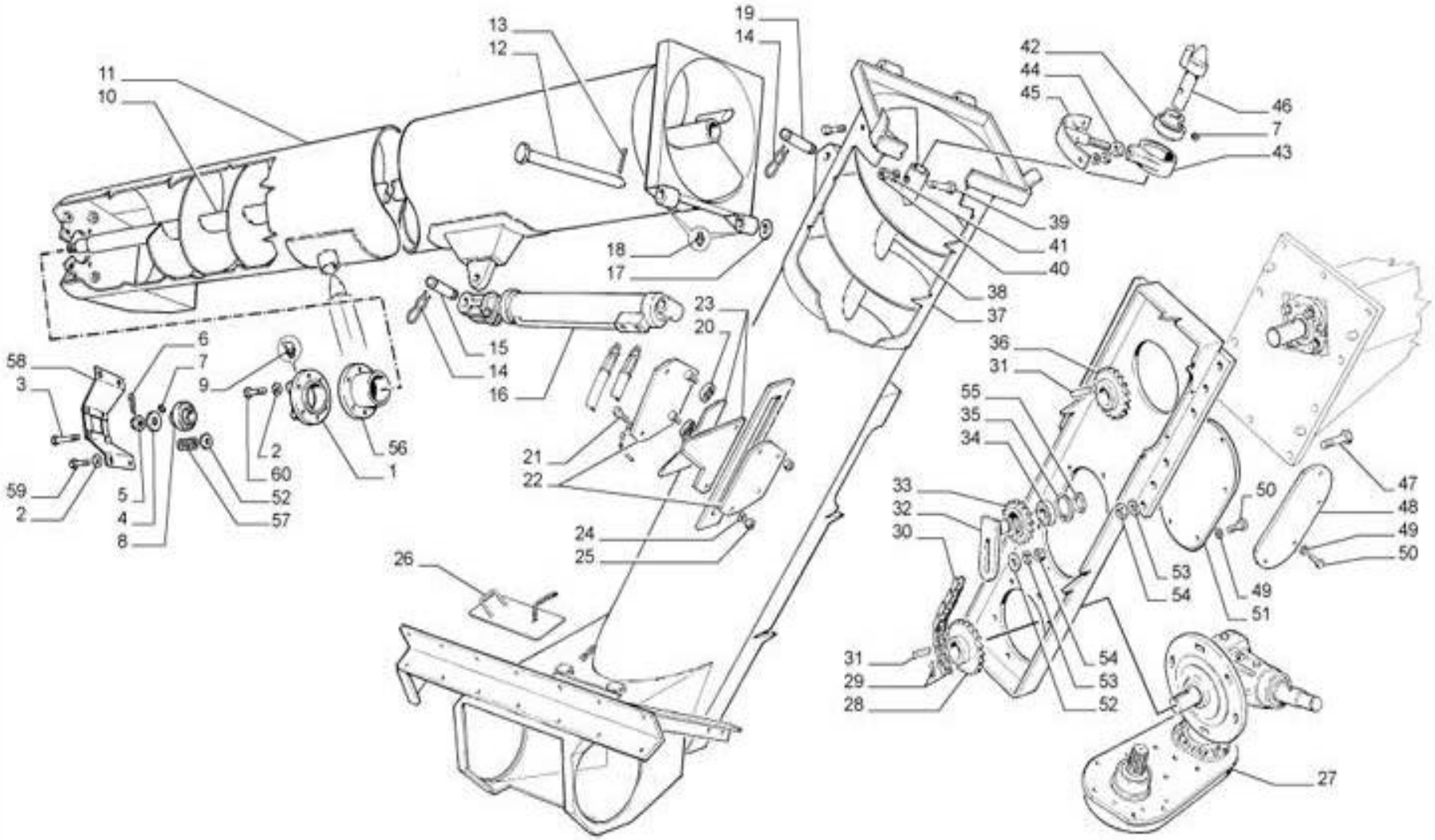
Illustration Nbr. 4 SWEEP AUGERS

SWEEP AUGERS

Nº	DESCRIPTION	CODE NBR.
1	Main sweep auger	EX-18058C
2	Hex. bolt BSW 3/8 x 2 ½ (in.)	MP1943
3	External sweep auger, left side	EX-18060I
4	Lock screw 3/8”	MP1502
5	Nut BSW 3/8”	MP1303
6	Guard, sweep auger	EX-18035
7	Hex. bolt BSW Gr.5 3/8 x 3/4 (in.)	MP2044
8	Flange housing PF 207	MP0324
9	Self-aligning bearing UC 207 2L	MP0246
10	Nut BSW Gr.5 3/8”	MP1332
11	Mounting bracket, sweep auger bearing (long)	EX-18002A
12	Mounting bracket, sweep auger bearing (short)	EX-18002B
13	Square section bracket bar, sweep augers	EX-18072A
14	Removable cover, bracket bar	EX-18072
15	Square key 8 x 55 (mm.)	MP3201
16	Intermediate sweep auger, right side	EX-18059D
17	External sweep auger, right side	EX-18060D
18	Intermediate sweep auger, left side	EX-18059I
19	Stud bolt 5/16 x 3/8 (in.) NF	MP1413
20	Driving sprocket, 14 tooth x 3/4"	EX-18085
21	Roller Chain ASA 60-1 x 1630 mm. lg.	MP1202
22	Connecting link, roller chain ASA 60-1	MP1262
23	Hex. bolt BSW 3/8 x 1 (in.)	MP1937
24	Hex. bolt BSW 1/4 x 1/2 (in.)	MP1900
25	Lock washer 1/4"	MP1500
26	Bolt-on inspection plate, sweeper driving sprocket	EX-18085C
27	Enclosure, sweeper driving sprocket	EX-18087A
28	Hex. bolt BSW 3/8 x 2 ¾ (in.)	MP1944
29	Driving sprocket, 16 tooth x 3/4"	EX-18084
30	Ball bearing 6205 1RS	MP0151
31	Spacer bushing, sweeper driving 14 tooth sprocket	EX-18057
32	Snap ring 47I	MP0810
33	Snap ring 25A	MP0807
34	Hex. bolt BSW 5/16 x 1/2 (in.)	MP1914
35	Lock washer 5/16”	MP1501
36	Chain cover, sweeper drive assy.	EX-18004A
37	Grease nipple, straight SAE 1/4"	MP1452

38	Oil seal 58 x 75 x 10 (mm.)	MP2936
39	Chain cover, tip sweeper drive assy	EX-18004B
40	Snap ring 13A	MP0802
41	Flat washer 1/2"	MP1519
42	Plastic bushing, tightener arm.	MP0410
43	Chain tightener arm, sweeper drive	EX-18037
44	Stud bolt 3/8 x ¾ (in.)	MP1417
45	Flange bracket, oil seal	EX-18069
46	Hex. Bolt BSW 5/16 x 3/4 (in.)	MP1916
47	Nut BSW 5/16”	MP1302
48	Hex bolt BSW Gr.5 3/8 x 1 (in.)	MP2046

Illustration Nbr. 5 UNLOADING AUGERS



UNLOADING AUGERS

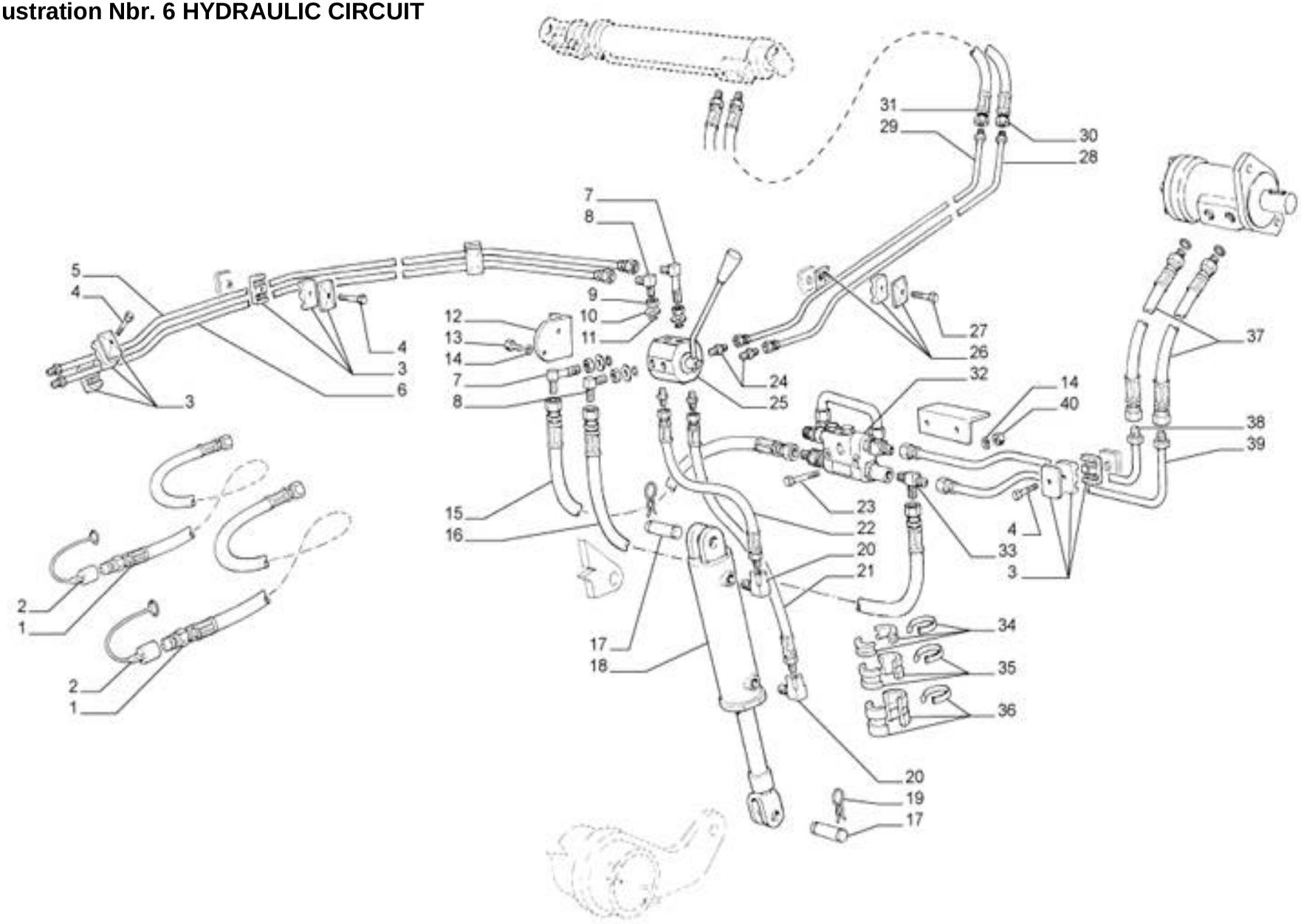
Nº	DESCRIPTION	CODE NBR.
1	Flange block FC 207	MP0300
2	Lock washer 3/8”	MP1502
3	Hex. Bolt BSW 1/2 x 6 (in.)-40 mm. thread-	MP1984
4	Washer 20 x 38 (mm.) x 3/16”	M-2026
5	Castle nut UNF 3/4"	MP1320
6	Split pin 3 x 45 (mm.)	MP1019
7	Stud bolt 5/16 x 3/8 (in.) NF	MP1413
8	Self-aligning bearing UC 207 3L	MP0247
9	Grease nipple, angled 45 deg. SAE 1/4"	MP1456
10	Unloading auger w/ end stubs, upper section	EX-18048
11	Tube, unloading auger upper section	EX-18031
12	Hinge pin, auger tube	EX-18043
13	Split pin 4 x 60 (mm.)	MP1041
14	Hairpin clip 4.5 x 90 (mm.)	MP1094
15	Clevis pin, hydraulic cylinder	MP3385
16	Hydraulic cylinder 1 ¼ x 2 ½ (in.) x 500 mm.	MP3399
17	Washer 30 x 50 (mm.) x 3/16”	EX-18043A
18	Grease nipple, straight 1/8” GAS	MP1451
19	Clevis pin, hydraulic cylinder	MP3386
20	Ball bearing 6200 2RS	MP0141
21	Hex. Bolt SAE Gr.5 5/16 x 1 (in.)	MP2110
22	Blade holder	EX-18032C (1)
		EX-18032B (2)
23	Cutter blade	EX-18032A
24	Lock washer 5/16”	MP1501
25	Lock nut 5/16” NF	MP1379
26	Cover, bin	EX-18034E
27	Gear case, unloading & sweep auger drive assy.	MP3704
28	Sprocket 22 tooth	EX-18024
29	Connecting link, Roller chain ASA 80-1	MP1263
30	Roller chain ASA 80-1 x 2700 mm. lg.	MP1203
31	Square key 10 x 50 (mm.)	MP3202
32	Chain tightener arm	EX-18082
33	Sprocket 12 tooth, tightener assy.	EX-18023
34	Ball bearing 6205 1RS	MP0151
35	Snap ring 52l	MP0841
36	Sprocket 17 tooth	EX-18021

37	Tube, unloading auger lower section	EX-18030
38	Unloading auger w/ end stubs, lower section	EX-18047
39	Hex. bolt BSW Gr.5 5/8 x 3 1/4 (in.)	MP2082
40	Hex. nut BSW Gr.5 5/8”	MP1336
41	Lock washer 5/8”	MP1506
42	Self-aligning bearing UC 208 3L	MP0235
43	Suspended bearing block w/ BSW 1” thread, f/ UC 208	MP0346
44	Hex. nut BSW 1”	MP1310
45	Hanger bracket, auger bearing block	EX-18065
46	Coupling, auger lower section	EX9-104
47	Hex. bolt BSW 1/2 x 1 ½ (in.)	MP1971
48	Bolt-on side view inspection plate, sweeper drive assy.	EX-18085A
49	Lock washer 1/4"	MP1500
50	Hex. bolt BSW 1/4 x 1/2 (in.)	MP1900
51	Bolt-on back view inspection plate, sweeper drive assy.	EX-18085B
52	Flat washer 1/2"	MP1519
53	Lock washer 1/2"	MP1504
54	Hex. nut BSW 1/2"	MP1305
55	Snap ring 25A	MP0807
56	Slide flange, auger end stub	EX-18090
57	Compression spring 2.5 x 25 x 120 (mm.)	MP2837
58	Bracket, slide flange	EX-18031A
59	Hex. bolt BSW 3/8 x 7/8 (in.)	MP1936
60	Hex. bolt BSW 3/8 x 1 (in.)	MP1937

(1) For 9 ft. dia. bags

(2) For 5 ft. & 6 ft. dia. bags

Illustration Nbr. 6 HYDRAULIC CIRCUIT



HYDRAULIC CIRCUIT

Nº	DESCRIPTION	CODE NBR.
1	Hydraulic hose 1/2" SAE 100R2-AT x 2500 mm. lg.	MP3270
2	Plastic cap	MP3360
3	Polypropilene duplex tube clamp 3/8”	MP3381
4	Bulón c/exag W 5/16" x 1 1/2" Hex. bolt BSW 5/16 x 1 ½ (in.)	MP1920
5	Hydraulic tube 5/8” x 3260 mm. lg.	MP3271
6	Hydraulic tube 5/8” x 3240 mm. lg.	MP3272
7	90º long elbow 7/8” male JIC x 3/4" male O-Ring (L-948-8-6)	MP3387
8	90º elbow 7/8” male JIC x 3/4" male O-Ring (948-8-6)	MP3388
9	Jam nut 7/8 (*)	MP3255
10	Aluminum washer 7/8 (*)	MP3255
11	O-Ring (*)	MP3255
12	Mounting plate, diverter valve	
13	Hex. Bolt BSW 5/16 x 3/4 (in.)	MP1916
14	Lock washer 5/16”	MP1501
15	Hydraulic hose 1/2" SAE 100R2-AT x 1180 mm. lg.	MP3256
16	Hydraulic hose 1/2" SAE 100R2-AT x 1470 mm. lg.	MP3257
17	Clevis pin dia. 25 mm. x lg. 100 mm., hyd. cil.	MP3383
18	Hydraulic cylinder 1 1/4 x 3 x 8 (in.)	MP3250
19	Hairpin clip 4.5 x 90 (mm.)	MP1094
20	90º elbow 1/2" male NPT x 1/2" female BSP (911-81-8)	MP3389
21	Hydraulic hose 1/4" SAE 100R2-AT x 1140 mm. lg.	MP3264
22	Hydraulic hose 1/4" SAE 100R2-AT x 810 mm. lg.	MP3263
23	Hex. Bolt BSW 5/16 x 2 1/2 (in.)	MP1924
24	Connector 9/16” male JIC x 1/4" male NPT (741-4-4)	MP3390
25	Diverter valve, 3-way	MP3398
26	Polypropilene duplex tube clamp 3/8”	MP3380
27	Hex. bolt BSW 1/4 x 1 1/2 (in.)	MP1906
28	Hydraulic tube 5/8” x 1740 mm. lg.	MP3275
29	Hydraulic tube 5/8” x 1805 mm. lg.	MP3276
30	Hydraulic hose 1/4" SAE 100R2-AT x 1000 mm. lg.	MP3265
31	Hydraulic hose 1/4" SAE 100R2-AT x 1000 mm. lg.	MP3265
32	Variable flow valve w/knob	MP3291
33	Branch tee(*)	MP3255
34	Clamp-on stop 32 mm. dia., short	MP3382
35	Clamp-on stop 32 mm. dia., medium	MP3382
36	Clamp-on stop 32 mm. dia., long	MP3382
37	Hydraulic hose 1/2" SAE 100R2-AT x 500 mm. lg.	MP3239

38	Hydraulic tube 5/8” x 910 mm. lg	MP3280
39	Hydraulic tube 5/8” x 1010 mm. lg.	MP3286
40	Hex. nut BSW 5/16”	MP1302
	(*): Hydraulic components kit	MP3255

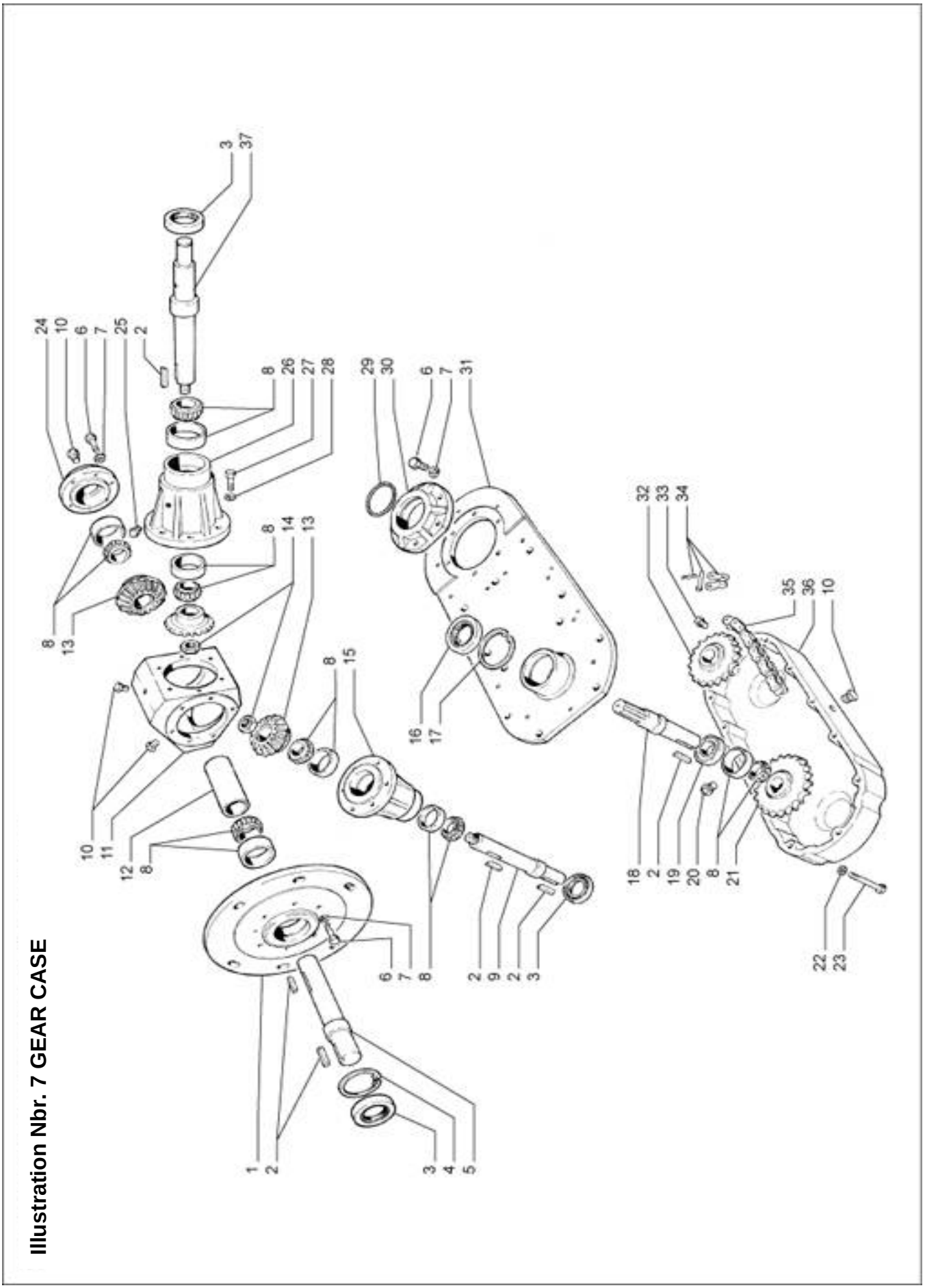


Illustration Nbr. 7 GEAR CASE

GEAR CASE

Nº	DESCRIPTION	CODE NBR.
1	Flange	EX-18091
2	Square key 5 x 10 (mm.)	MP3202
3	Oil seal 5367	MP2938
4	Snap ring 80l	MP0822
5	Drive shaft	EX-18092A
6	Hex. Bolt BSW 3/8 x 1 ¼ (in.)	MP1938
7	Lock washer 3/8”	MP1502
8	Taper roller bearing 30208	MP0196
9	Short shaft dia. 40 mm.	EX-18092B
10	Threaded plug 3/8” GAS	MP3717
11	Housing	EX-18093A
12	Spacer	EX-18094
13	Conical gear 21 tooth	EX-18099A
14	Hex. nut BSW 1 1/8”	MP1311
15	Shaft housing	EX-18095A
16	Oil seal 6645	MP2939
17	Snap ring 80l	MP0822
18	Splined shaft	EX-18092D
19	Ball bearing 6208 1RS	MP0157
20	Threaded plug 3/8” GAS	MP3717
21	Pinion gear 18 tooth	EX-18099B
22	Lock washer 5/16”	MP1501
23	Hex. Bolt BSW Gr.5 5/16 x 3 (in.)	MP2059
24	Cap, gear case housing	EX-18096
25	Breather plug 1/8” GAS	MP3716
26	Housing, shaft (breather)	EX-18095B
27	Hex. Bolt BSW 5/16 x 1 1/4 (in.)	MP1919
28	Lock washer 5/16”	MP1501
29	O-Ring Nº 2-239	MP2976
30	Flange bearing housing	EX-18097
31	Cover,housing	EX-18098
32	Pinion gear 18 tooth	EX-18099B
33	Threaded plug 1/4" GAS	MP3718
34	Connecting link, roller chain ASA 80-1	MP1263
35	Roller chain ASA 80-1 x 1200 mm. lg.	MP1203
36	Housing	EX-18093B
37	Long shaft 40 mm. dia.	EX-18092C