



Murska 1400S2X2 / 2000S2X2

Operator`s Manual



V. 7/08

Machine Nr.

Roller Cassette Nr.

Date of Purchase

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EC DECLARATION OF CONFORMITY FOR MACHINERY

The CE Mark is on the Machine Identification Label

EC Declaration of Conformity for Machinery

(Directive 89/392/EEC, Annex II, sub. A; en)

Manufacturer:
Aimo Kortteen Konepaja Oy
Pohjolantie 2
FI-84100 Ylivieska
Finland

Herewith declares that

Murska 1400 / 2000 S2x2

is in conformity with the provisions of the Machine Directive
(Directive 89/392/EEC), as amended, and with national
implementing legislation.



Aimo Korte
Managing Director

WARRANTY

Warranty

Aimo Kortteen Konepaja Oy warrants its products to be in conformance to written specifications and to be free from defects in workmanship.

The warranty shall not apply to failure or deficiency which has been caused by misuse, neglect, improper assembly, or unauthorised repair or modification.

Rapid wearing may occur in the rollers if not correctly adjusted.
Please pay particular attention to adjusting them correctly.

Other conditions according to
ORGALIME S 92

Thanks to continuous product development the manufacturer can introduce improvements to the machine. This does not mean that a machine produced prior to the date of introduction of such improvement, would be modified by the manufacturer free of charge.

PRODUCT IDENTIFICATION

ID-number

Model

Date of manufacture

Sarjanro	1450190
Manufact Nr	
Malli, Model	MM1400.07.ELE
Pvm, Date	09/07/08
Paino, Weight	0
Jännite, Voltage	
R/Min	
Ottoteho	
Input Power	
Moottorin sarjanro	
Engine Serial Nr	

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CE-marking

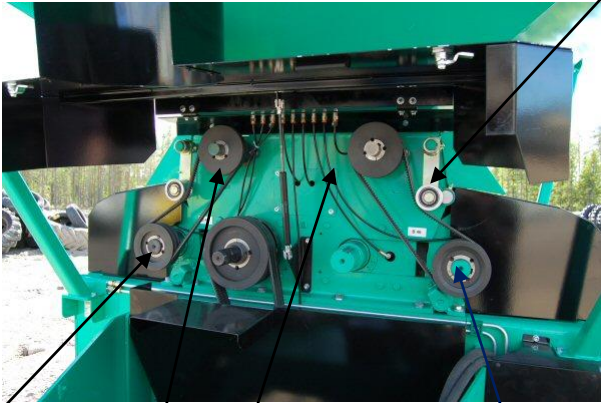


CE -marking

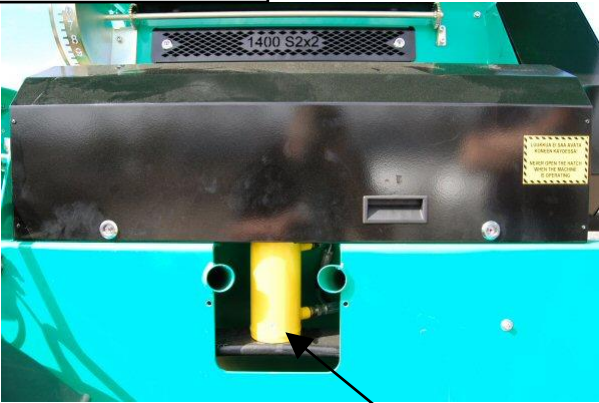


CONTROLS & FEATURES

Feeder belt tensioner



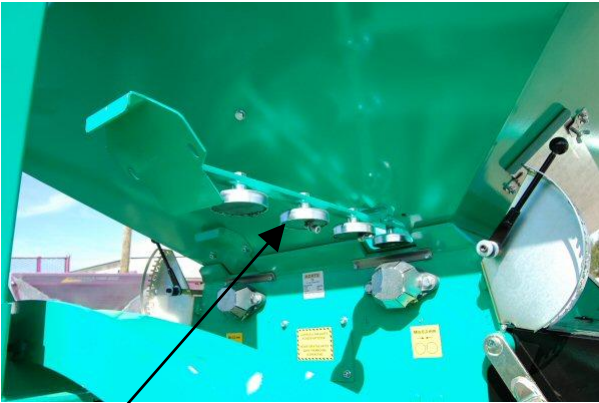
Taper lock drive pulleys (6pcs)
Feeder drive belt



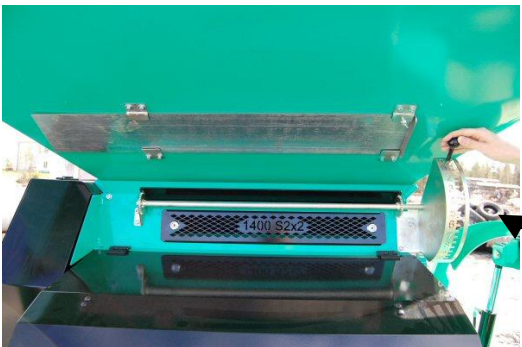
Hydraulic Rams & Springs
for Roller Tensioning



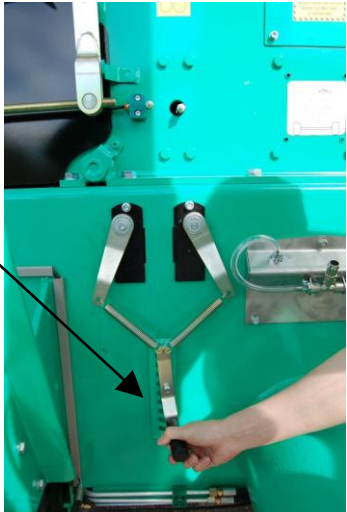
Guard magnets

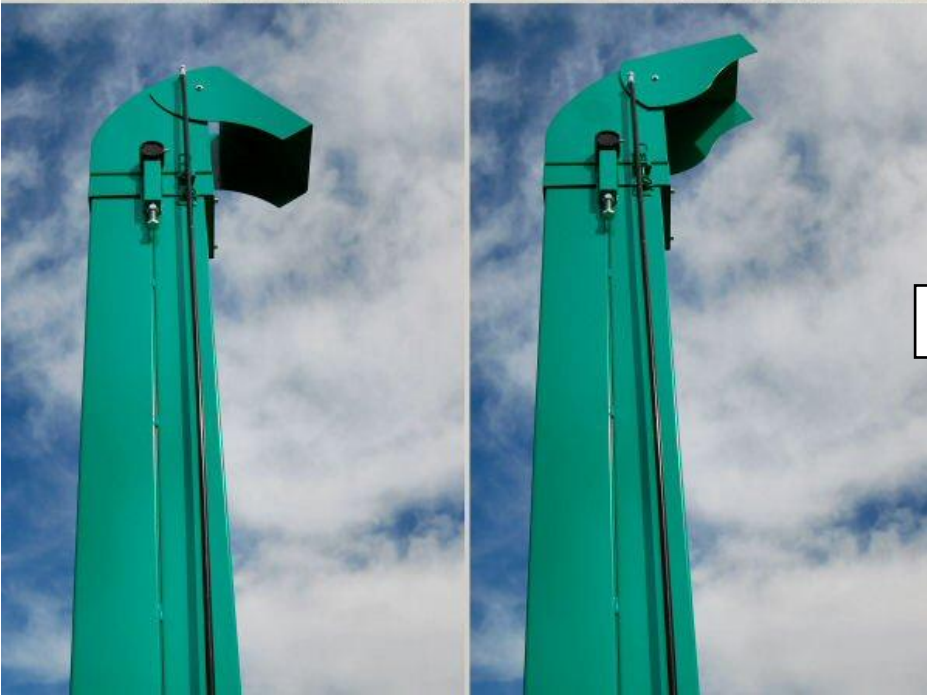


Scraper knives, adjustments



Feeding door controls





Elevator hat adjustment



Tractor brake hose.
Elevator adjusting hose.

Toolbox

Support leg

ACID PUMP PDH-10 (ACCESSORY)



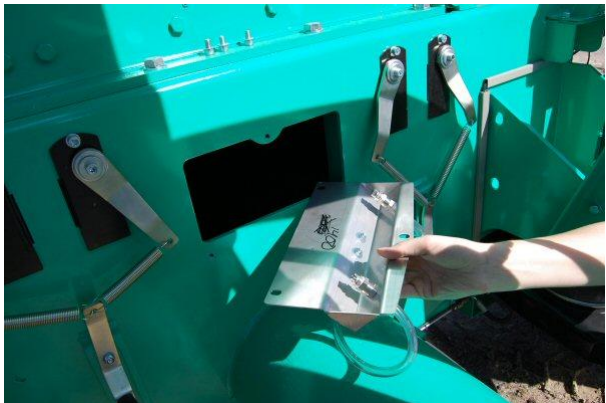
PDH-10 pump-unit

Flow control

Filter



Acid nozzles fitting plate. The minimum 2,5 bar pressure is needed to work properly.



INTRODUCTION

Korte Roller Mill

- model 1400 S2x2
- model 2000 S2x2

Purpose:

The machine can be used for crimping high moisture grains and for rolling dry grains.

Made in Finland, EU.

Technical Data	1400 S2x2	2000 S2x2
Crimping capacity, max.	30 tonnes/h	40 tonnes/h
Power demand	75 kW	95 kW
Hopper capacity	1500 (+ 5000) litres	1500 (+ 5000) litres
Lifting height of elevator	330 cm	330 cm
Length	235 cm	260 cm
Width	235 cm	260 cm
Height without elevator	180 cm	180 cm
Weight	2450 kg	2950 kg
Rotation rate (PTO)	350 - 540 rpm	350 - 540 rpm
Rollers	4 pc	4 pc
Fluted and spring loaded	+	+
Gear drive	+	+
Width	700 mm	1000 mm
Diameter	300 mm	300 mm
Weight	160 kg each	190 kg each
Equipment (supplemental)		
Ensilage applicator device	+	+
Maize rollers	+	+
Elevator extension	1 m and 2 m	1 m and 2 m

GENERAL SAFETY



1. While operating, the machine must be on a solid base.



2. The machine should not be moved when the grain hopper is full or during filling. Ensure before using that the hopper is empty.



3. It is recommended that safety goggles are used while operating the machine.



4. Keep hands, clothing, tools etc. away from the hopper.



5. Do not stand on the PTO shaft or linkage or between the tractor and the machine.



6. Nobody should enter the tractor cabin while operating the machine, especially when making adjustments. Pay attention to children`s appearance!



7. Maintenance and repairs / adjustments should be carried out when the machine is not operating. Tractor engine must be stopped and the PTO shaft out of gear.

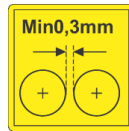


8. If a liquid applicator is used, full protective clothing should be worn in accordance with the additive manufacturer`s safety instructions.

9. A protective mask should be worn under dusty conditions (dry grain rolling).



Read the operator`s manual carefully before using the machine. Follow the operation- and safety-instructions during the crimping.



Do not operate the machine with roller clearance less than 0.3 mm. A smaller clearance makes the rollers wear sooner and may cause damage to the rollers.



Keep your arm far off v-belts and pulleys when the machine is operating!



Look up proper maintenance from the instruction manual.



Do not step onto the bottom auger.



Keep your arms far off gearwheels!



All guards must be placed and properly secured when the machine is operating.



The noise level of the machine when operating can be between 98 and 116 dB. Ear muffs of approved type for noise levels above 100 dB must be worn. Any person who comes close to the machine for a period of hours should also wear similar ear muffs.



Do not reach out or enter the hopper while the machine is operating.



Place for operator`s manual.



Greasing target.



Keep your body far off the universal shaft.

OPERATING INSTRUCTIONS

Recommended Procedures:

Take notice, that the Crimper machine has two pairs of rollers, a pair on each side. All adjusting, maintenance and operating procedures apply for both pairs individually.

1. Check-List

Carry out first before proceeding to any other routines, also once a day when the machine is in daily use, and each time the machine is started after a period of being idle.

2. Roller Adjustment

Proceed to Roller Adjustment after finishing the Check-List. Check Adjustments once a day when the machine in daily use.

3. Starting Up

Proceed to Starting Up after finishing the Check-list and Adjustments.

4. Closing Down

Carry out each time the machine is stopped.

CHECK-LIST

Carry out first before proceeding to any other routines, also once a day when the machine is in daily use, and each time the machine is started after a period of being idle.

1. Check all nuts, bolts and screws for correct tightness. Replace or tighten if required.
2. Turn Elevator to vertical position and check Elevator Chain tension (sideways movement should be possible). Adjust the tension if required. The chain must be adjusted both sides of elevator and ensure that chain stays in middle of the sprocket wheel.



Elevator chain

Elevator hat

Elevator chain tensioner



Elevator



It's recommended to use elevator turned to the right (look the picture above), because of the better flow of grain. If needed to use it to the left, the elevator hat must be turned by hand and watch the feeding of the grain.

3. Check the Feeder Belt tension. Adjust or replace if required.
4. Check Auger / Elevator Belt tension. Adjust or replace if required.
5. Check Force Feeder. Clean and straighten if necessary.
6. Check and clean the protective magnets.
7. Observe the functioning of the hydraulic components.
8. Apply grease to grease nipples.
9. Check and calibrate the liquid applicator for additive output to correspond with the average output of the crimper. The proper dosing is dependent on the preservative used, grain humidity etc.

ROLLER CHECKING AND ADJUSTMENT

Re-adjust the rollers always at the beginning of crimping season. During the season check and correct the roller adjustment at daily basis.

Carry out this adjusting procedure for both pairs of rollers, one side at a time

Roller checking

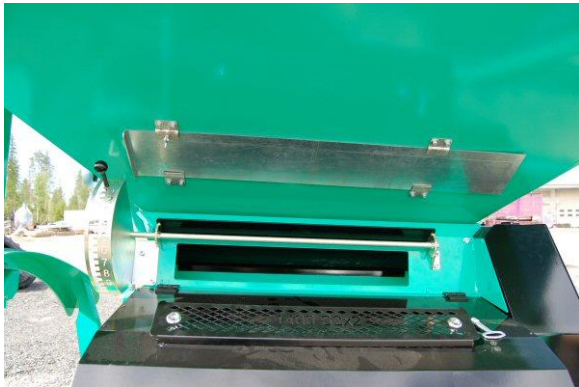
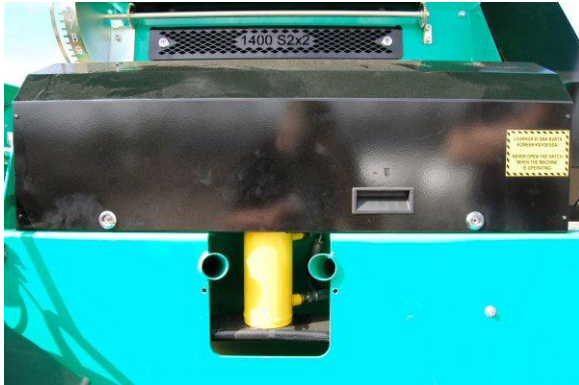
1. Adjust roller clearance to minimum winding the crank (counter clockwise.)



2. Adjust the roller tension spring to the maximum by pumping the hydraulic pump to the maximum pressure.



3. Check the clearance between rollers with feeler gauge (both ends of roller)



If the clearance between rollers is correct and rollers are parallel, adjustment is not needed.

ROLLER ADJUSTMENT

1. Release Locking Nuts and release all pressure on Spacer Bolts, from both end of adjustable rollers.



2. Adjust Roller tension Spring to a reasonable tension by pumping the Hydraulic Hand Pump (half the maximum pressure, see pressure gauge).

Note: when the pressure / tension of hydraulic ram is fully released, the transmission gears at the rollers may not be in touch. Pump up the pressure up carefully and ensure, that the gearwheels gets correctly connected.

3. Wind the Roller Adjusting Crank so that the Roller Adjusting Shaft Arm is pointing straight down.

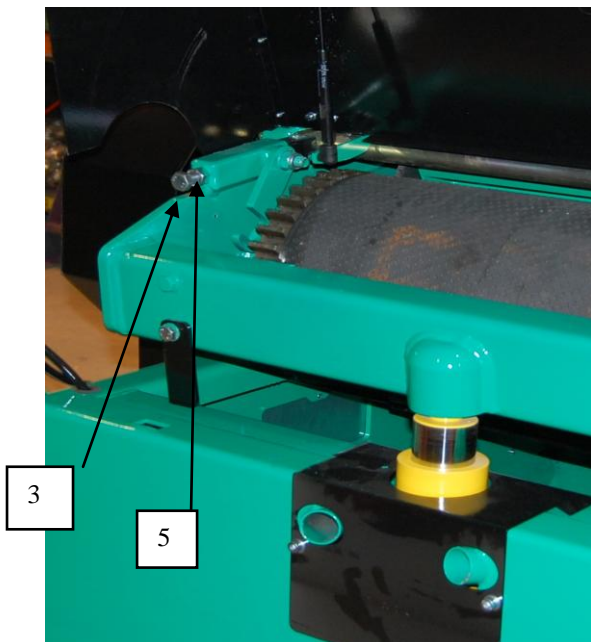


4. Finger tighten Spacer Bolts.
5. Tighten Spacer Bolts 1/2 turn clockwise
6. Adjusts the rollers with feeler gauge from both ends. Ensure that distance between the rollers is same at both ends. Minimum distance is 0,3 mm.
7. Tight the Locking nuts.
8. Carry out this adjusting procedure for both pairs of rollers, one side at a time.
 - If rollers are allowed to touch, excessive wearing will occur which is not covered by the warranty.
 - You may now proceed to the Starting Up routine

Do not operate the machine without all the guards in place and properly secured.

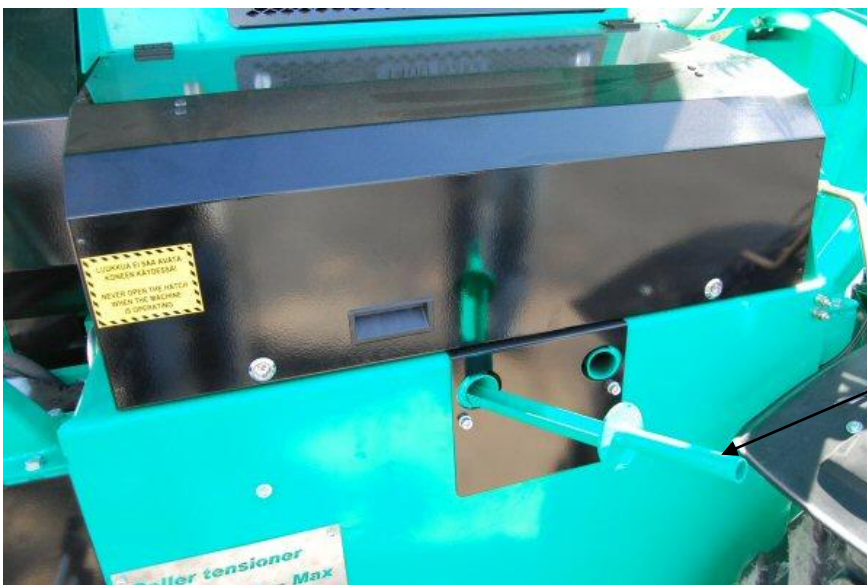


- 1 Roller adjusting crank
- 2 Hydraulic cylinder
- 3 Spacer bolt
- 4 Feeder door control
- 5 Locking nut



ROLLER ADJUSTMENT DURING CRIMPING

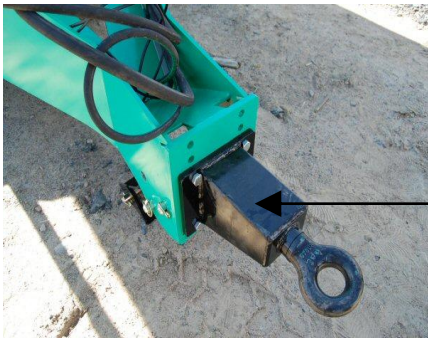
Rollers adjust during crimping from rollers adjusting crank. If the grain is too rough adjust rollers closer to each other by roller adjusting crank (turn counter clockwise) and if the grain is too crushed adjust rollers farther from each other by adjusting crank (turn clockwise)



Sampling shovel

STARTING UP

1. Ensure that the **Check-list** has been carried out.
2. Ensure that the **Roller Adjustment** has been carried out.
3. Ensure that the Machine is horizontal plane.



The towing bar must be adjusted individually for various tractors to keep the machine in horizontal position.

4. Ensure the Additive Applicator is calibrated and ready. Close Feeder Hatches.
5. Fill up the Hopper.
6. Ensure that the distance between the rollers are at least 0,3 mm.
7. Apply maximum tension to the Roller Tensioner Springs by pumping the Hydraulic Hand Pump until the overload valve is operating (K1400 S2X2 about 120 bar, K2000 S2X2 about 140 bar) , first one side, then close the valve in hydraulic pipe and tension the other side spring.
8. Check all Guards are fitted and secured.
9. Engage tractor PTO at 540 rpm.
10. Open Feeder Hatch to provide a uniform flow of grain on the rollers, open first one side, then the other side. As flow increases, tractor revs may require adjustment.
11. Check that the flow of grain is just sufficient to be pressed without a build up of grain on the rollers.
12. If dough balls are produced and the grain is mushy, increase the space between the rollers by turning the Adjusting Crank clockwise.

13. The degree of crimping is also increased by reducing the output (Feeder Hatch).
14. Start the Liquid Applicator when a sample is produced where all grain is crimped and no dough balls are produced (= rollers are in optimal adjustment)
15. Add water if required (ideal moisture content of the grain is about 35-40 %).
16. Increase PTO speed to approximately 500 rpm if required.

It is very important that the rollers do not touch. As a routine procedure, always check the temperature of the rollers immediately they are stationary.

Do not operate the machine without all the guards fitted and properly secured.

CLOSING DOWN

1. Close the Liquid applicator and the Feeder Hatches.
2. Wind the Adjusting Cranks clockwise 3-4 turns to increase the space between (= open) the rollers. Let the machine run until the hopper is empty and the machine is clean of grain.
3. Stop the tractor and disengage PTO drive.
4. Adjust the pressure of the hydraulic rams to half of the working pressure via the Hydraulic hand pump.
5. Check the rollers immediately for uneven or excessive heat.
6. If excessive or uneven heating occurs:
 - Check uneven alignments
 - Clear stones by removing the Roller Adjusting Shaft.
7. Replace bearings if necessary.
8. Clean the crimper of all loose grain and debris.
9. Disengage Scraper Knives. The Scrapers are reached by removing the Access Plate below the drive roller.
10. Clean and straighten the Force Feeder and clean the Elevator.
11. Clean the bottom of the crimper and the Screw Auger thoroughly after use.



FAULT FINDING

1. Grains are too crushed, i.e. have a doughy appearance:

- Rollers are adjusted too close to each other.
- Machine speed is too high.
- ➔ Add the distance between the rollers and reduce the speed so that the grain slides through the rollers and does not stick to the roller surface. The recommended PTO operation speed is 350 - 540 rpm.

The machine is now ready for Start Up Procedure

2. A mixture of whole uncrushed grains and doughy grains:

- Rollers are not parallel to each other.
- ➔ Adjust the rollers so that the distance is the same at both ends.
- ➔ Check tension of leaf springs/hydraulic rams

The machine is now ready for Starting Up

3. Rollers have a doughy appearance and some grains are scattered around:

- Scraper knives under the rollers are incorrectly adjusted or spring not fitted.
- ➔ Clean scraper knives and check they peel the grains off the surface of the rollers evenly. If necessary, adjust the position of the knives. The loadspring should press each knife against the roller.

The machine is now ready for Starting Up

4. The Discharge Auger clogs up:

- Elevator belts are broken or belt tension is loose.
- ➔ Tighten the elevator chain and tighten or replace drive belts.
- ➔ If the grain is too coarse, wind the crank anti-clockwise (taking care that the rollers do not touch) to get the rollers closer to each other; or if the grain is too fine, wind the crank clockwise to get rollers further apart.
- ➔ Check that the flow of feed is not too high.
- ➔ Check cross auger is clean from previous use.
- ➔ Check PTO speed is between 350 - 540 rpm.

The machine is now ready for Starting Up

5. If the tractor stalls or the PTO slips:

- ➔ Close applicator and water.
- ➔ Switch off the power and disconnect PTO.
- ➔ Close grain feeder hatches.
- ➔ Release pressure on hydraulic rams.
- ➔ Remove auger well cover and elevator belt cover to clear blockage.
- ➔ Check and clear the build-up of grain between the rollers and check that no metal or stones are trapped between the rollers or auger, turn rollers backwards by hand to clear obstruction.
- ➔ Check that the flow of feed is not too high.
- ➔ Check tractor speed is correct in relation to flow.

The machine is now ready for Starting Up

6. The flow of grain stops - the Feeder Belt starts to "smoke":

- The force feeder is bound in straw.
- The force feeder is jammed.
- The rollers have stopped turning.
- ➔ Switch off power and disengage PTO.
- ➔ Close applicator and water.
- ➔ Insert the cut-off plate to hopper
- ➔ Remove the straw, stones etc., clean the protective magnets.
- ➔ Manually reversing the rollers sometimes clears the obstruction.
- ➔ Remove the cut-off plate

The machine is now ready for Starting Up

7. Output is reduced:

- PTO speed is not correct
- Stones etc. loose objects on top of rollers
- Straw wrapped round feeder agitators.
- Main drive belt stuck or not adjusted correctly.
- Auger/elevator belt worn or tensioning is too loose.
- ➔ Close grain feeder door.
- ➔ Close applicator and water.
- ➔ Switch off power and disengage PTO.
- ➔ Insert the cut-off plate to hopper
- ➔ Release tension on hydraulic rams and allow roller to fall back to stops and clear obstruction.
- ➔ Open grain feeder doors
- ➔ Remove grain, stones etc. from rollers and feeder agitators.
- ➔ Close feeder door.
- ➔ Remove the cut-off plate. The machine is now ready for Starting Up

DAILY MAINTENANCE

Switch off all power to the machine before any maintenance.

Carry out these checks daily during the season.

Check the Belts

The Auger Belts has pulley tensioner, the Feeder Belts are spring loaded. Replace worn out belts.

Check the Elevator Chain

When the Elevator is in vertical position, the Chain can be checked through the Auger Access Hatch. Sideways movement should be possible on the sprocket.

Too high chain tension will damage the chain tensioner unit.

Check the Hopper Bolts

Check the Hopper Bolts and Nuts every day, in order to avoid the bolts dropping on to the Rollers.

Lubricate the Bearings

When the machine is in constant use, the bearings require a minimum of two strokes of grease gun daily.

Check the Drive Pulleys

Check for tightness of Allen screws and alignment.

Check the Rollers

Alignment should be checked and adjusted if necessary. Also check for any signs of over-heating.

Clean the Auger

Remove Bottom Auger pan-tray to clean at end of day to minimise contamination of feed and to minimise any possible corrosion.

END-OF-SEASON MAINTENANCE

Switch off all power to the machine before any service.

1. Clean the crimper thoroughly with a power hose. Do not aim the jet of water straight on the bearings.
2. Clean and oil the elevator chain, replace worn-out paddles.
3. Apply anti-corrosion protective material on all surfaces to minimise corrosion.
4. If the paintwork is damaged, apply anti-corrosive paint.
5. Check roller surfaces.
6. When not connected to a tractor, the PTO shaft should be supported so that it does not get damaged or foul the protecting guard.
7. The crimper should be kept in a dry place when not in use.
8. For longer bearing life, turn the rollers by hand half a turn once or twice during the winter.
9. If any bearings are dismantled, they should be washed and greased thoroughly before being reinstalled.

HYDRAULIC ELEVATOR ANGLE ADJUSTMENT

The hydraulic movement speed must be adjusted according to the tractor hydraulic pump pressure and oil flow:

The hydraulic pressure valve has two separate adjustments, for both movement directions. First close the adjustment screws, then carefully open the screws and test the movements from the valve. Too fast movements stress the elevator and may damage the elevator.



Oil flow adjustment valve

Elevator adjusting hose

TOWING BAR ADJUSTMENT

Adjust the height of towing eye so, that the crimper is in horizontal position during crimping. You can also adjust the position by changing the air-pressure in the suspension balls.

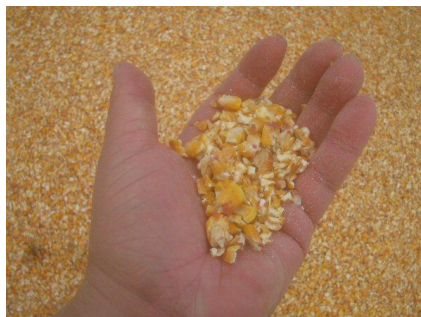


CRIMPING GRADE CHECKING

After adjusting the rollers and checking the output:
check the crimped grain regularly during crimping; crimping grade may vary according the moisture level of grain, size of grain, temperature of rollers, etc.

There is a shovel with the crimper for taking samples of crimped grain from the bottom sump during crimping.

Check also the moisture level of the grain regularly, to ensure correct roller adjustment and crimping ensilage mixture during crimping.

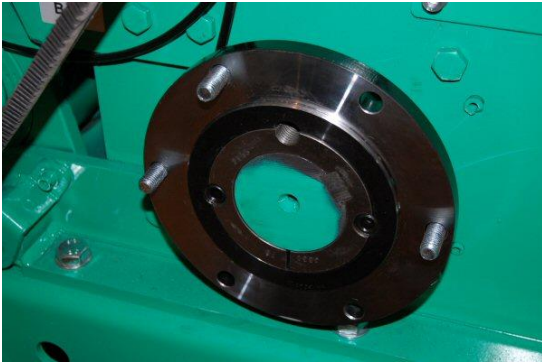


PTO-SHAFTS

There slip-clutch must be installed at the crimpers end.

Korte-model	Power demand	Torsion (540 r/min)	Splined-shaft (at end of roller shaft)	Clutch
K 1400 S2x2	75 kW	1300 Nm	1 3/4" 6-splined	Friction lamell clutch
K 2000 S2x2	95 kW	1800 Nm	1 3/4" 6-splined	Friction lamell clutch

Splined shaft is fixed to drive rollers shaft with taper bushing and bolt fixed flange.



PULLEY ASSEMBLY AND REMOVAL

Pulleys fastened to shaft with a separate taper hub (feeder-shaft pulleys, auger belt pulleys, roller shaft pulleys)

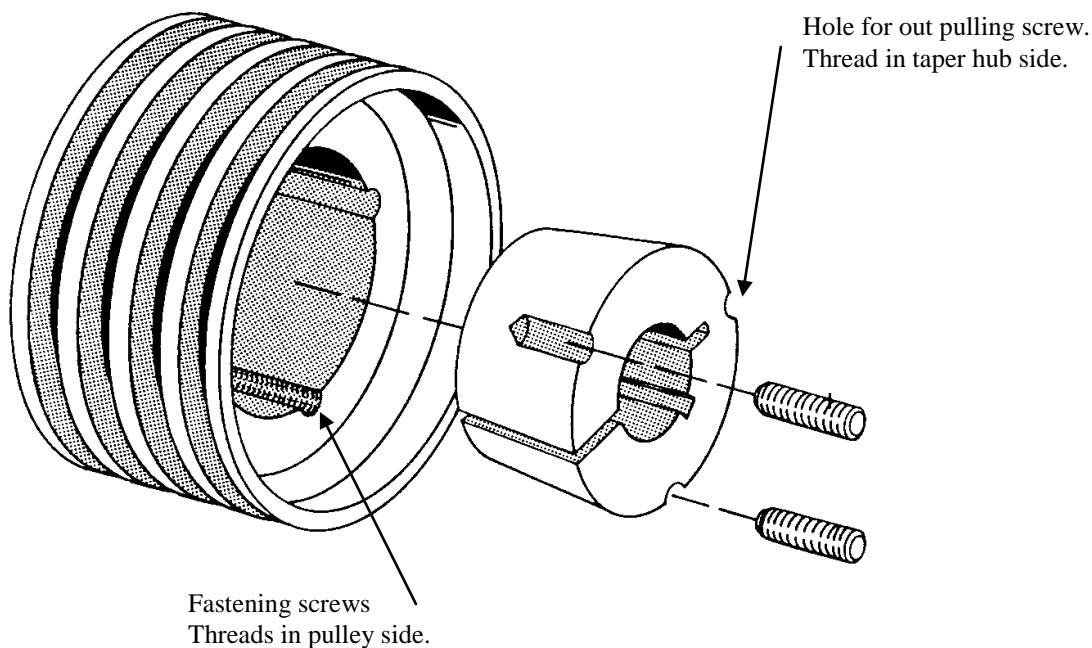
Assembly

1. Clean protective grease from taper hub and pulley nave.
2. Place taper hub inside the pulley nave and align the holes.
3. Oil the fixation screws and screw them in lightly.
Note: Thread for the fixation screws is in the pulley. The threaded hole in taper hub is for removal of the pulley.
4. Clean the shaft. Push the pulley and taper hub on shaft.
Note: When aligning the pulley, the taper hub part will fasten first on to the shaft.
During tensioning the pulley still slides few millimeters.
5. Tighten the screws with proper force.
6. Knock the taper hub gently and check the tension again.
7. Fill the out pull holes with grease (to keep thread clean).

Taper hub	Tightening moment
TL 1610-25, TL 1610-35	19 Nm
TL 2012-25, TL 2012-35, TL 2012-50	31 Nm
TL 2517-65	49 Nm

Removal

1. Open the fastening screws and remove them.
2. Screw one of the screws in the out pull hole (threaded hole in the taper hub).
3. Tension the screw until the taper hub get loose from the pulley nave.
4. Remove pulley and taper hub from shaft.



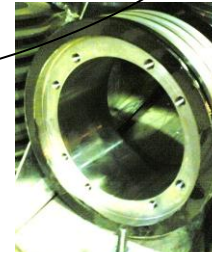
TIGHTENING TORQUE OF BOLTS

Tightening torque of bolts [Nm]

Strenght	8.8	10.9	12.9
M10	49	72	84
M12	85	125	145
M16	210	310	365
M20	425	610	710
M24	730	1050	1220

ATTENTION !!

For fixing Cardan Shaft to Mill, please, use **only 49 Nm** strenght **for Bolts M10 !**
For Bolts 4545 of Super Rollers
->"HD" (for fixing Taper Hub)
 use tightening torque **400 Nm !**



SUSPENSION

Dunlop Airsprings S.A.S. Springride

Crimped Bellows size 12" x 1



Pressure / bar	Max load / Airspring	Total load
4	2500 kg	5000 kg
6	4000 kg	8000 kg
max. 8	-	-

Maximum transport speed of crimper with tractor 40 km/hour

BRAKES, WHEELS

- hydraulic drum brakes (for transporting the crimper with tractor in traffic)
- brakes are connected to tractor's hydraulic brake circuit.
- break in the brakes with low braking pressure; this will balance the brakes
- check also the tyre-pressure regularly (normal 1,5-2 bar)



EXTRA HOPPER

Volume

- 5 m³

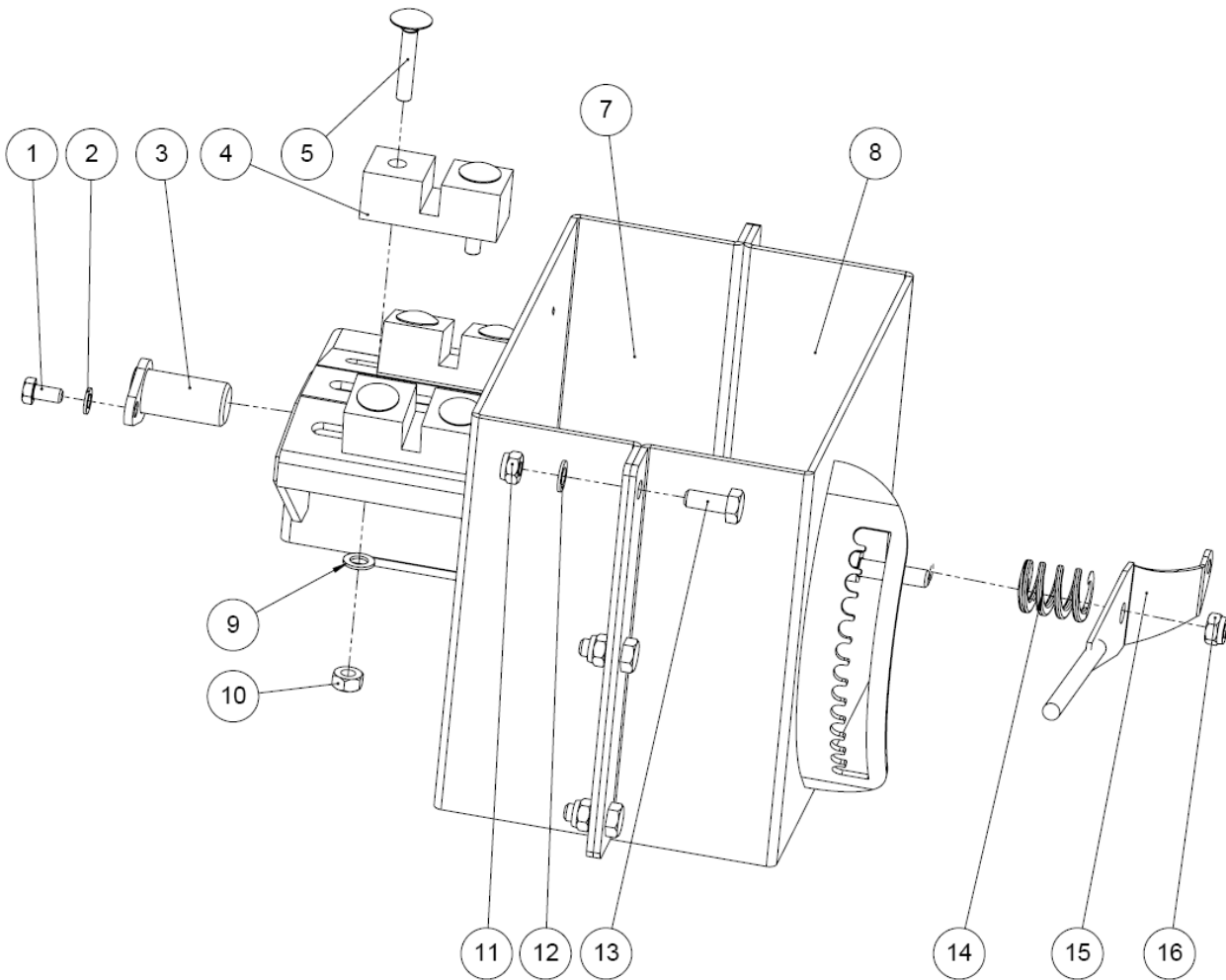
Loading width:

- with wings open 3,0 m

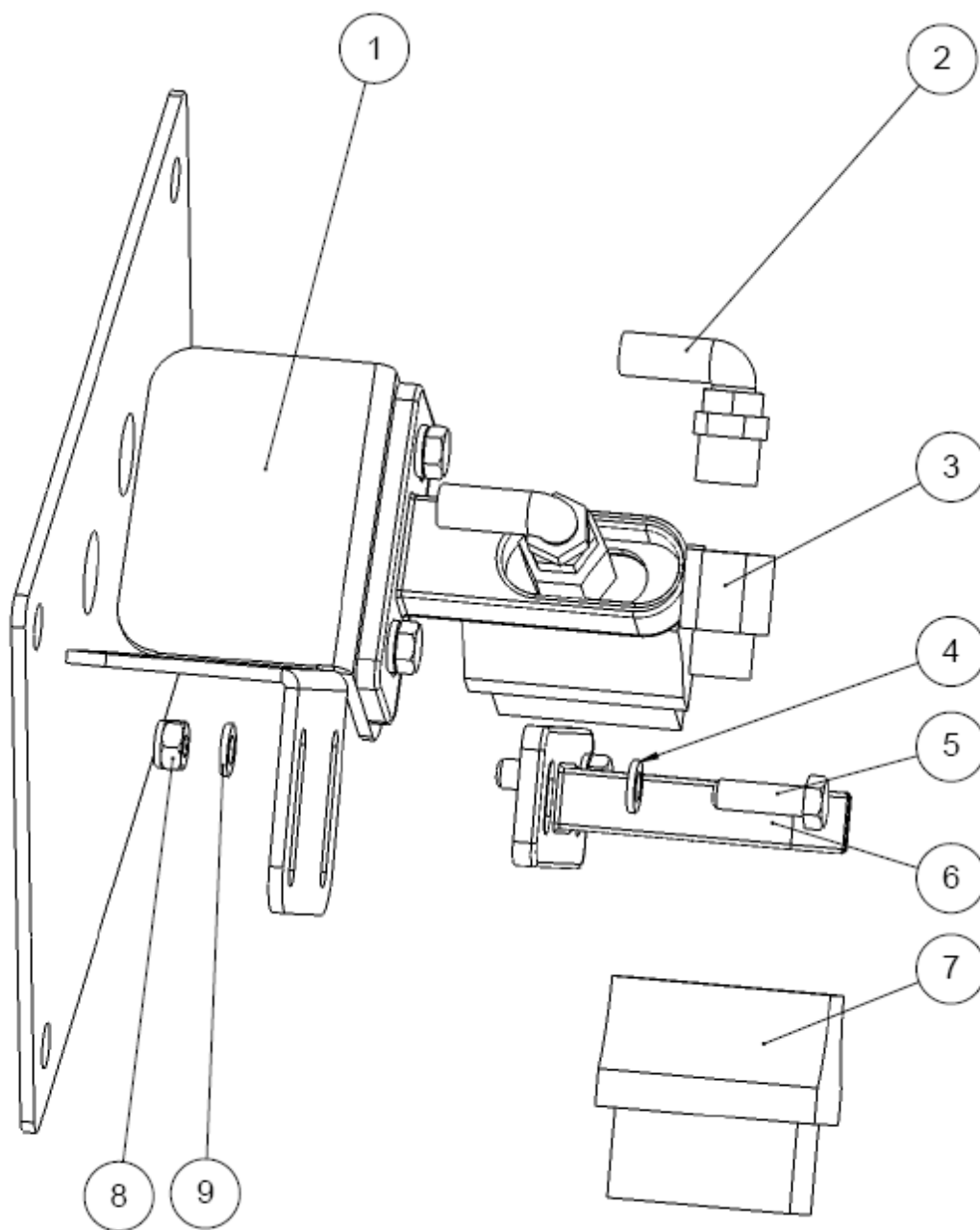
- without wings 2,5 m



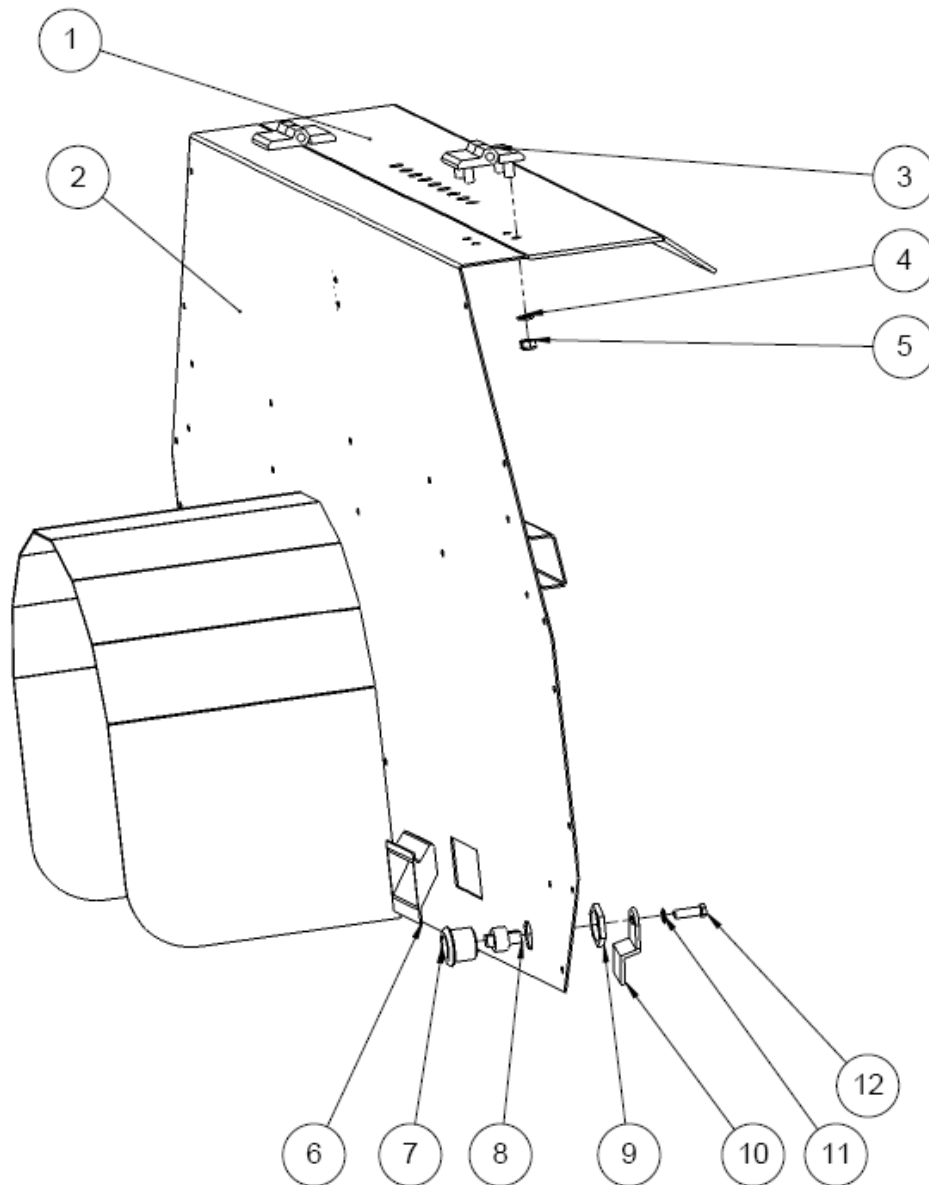
SPARE PART CATALOGUE



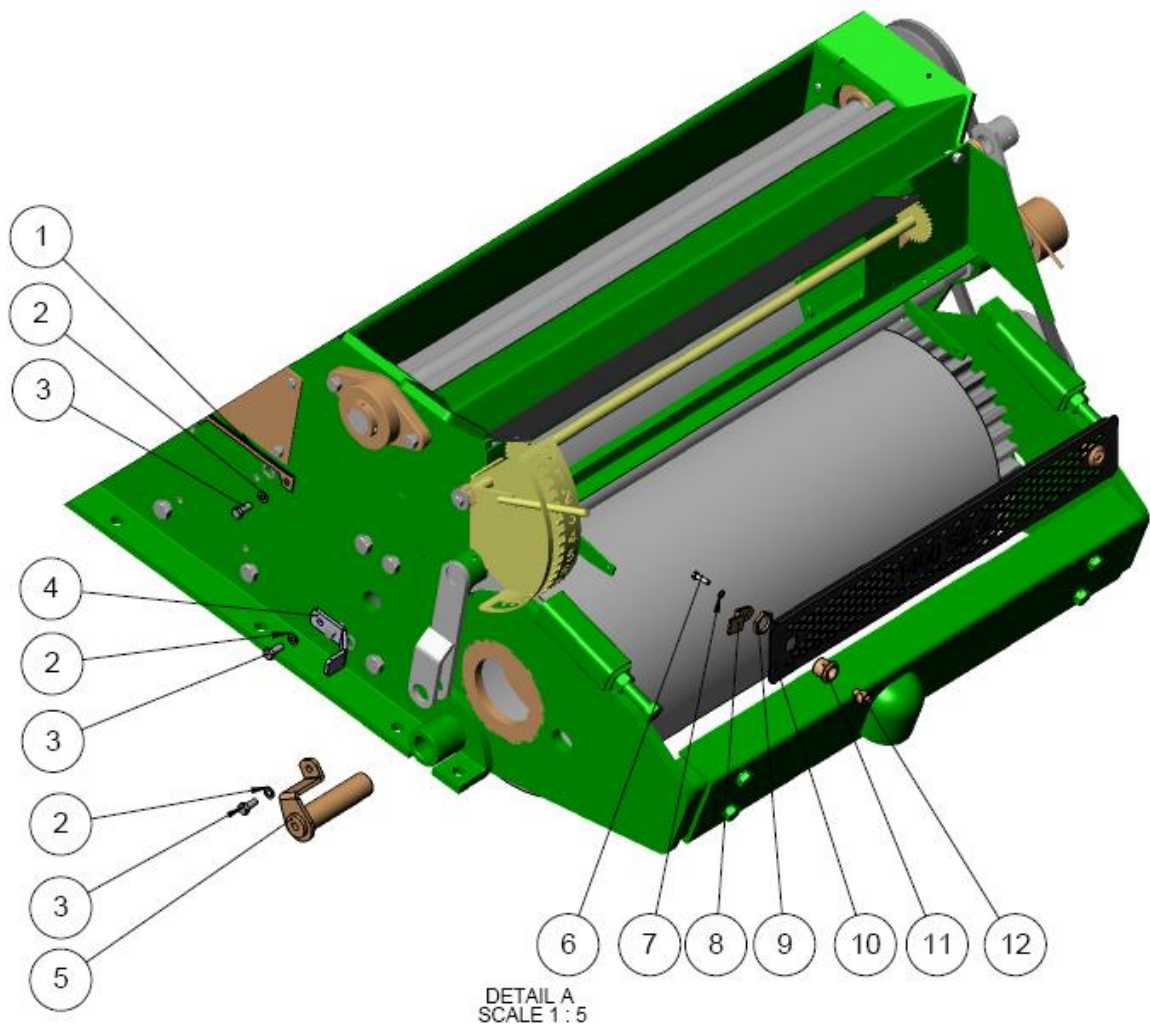
Elevator cylinder bracket AKK-1603			
Ref.	Part	Description	Pcs.
1		Hex screw M8x16	1
2		Washer M8	1
3	AKK-1331	Cylinder shaft	1
4	AKK-1921	Elevator support plate	3
5		Lock screw M10x50	6
7	AKK-1803	Cylinder bracket front part	1
8	AKK-1804	Cylinder bracket back part	1
9		Washer M10	6
10		Hex nut	6
11		Nyloc nut M10	6
12		Washer M10	6
13		Hex screw M10x25	6
14	708385	Spring Ø25/12,5x25	1
15	AKK-1620	Adjustment lever	1
16		Nyloc nut M10	1



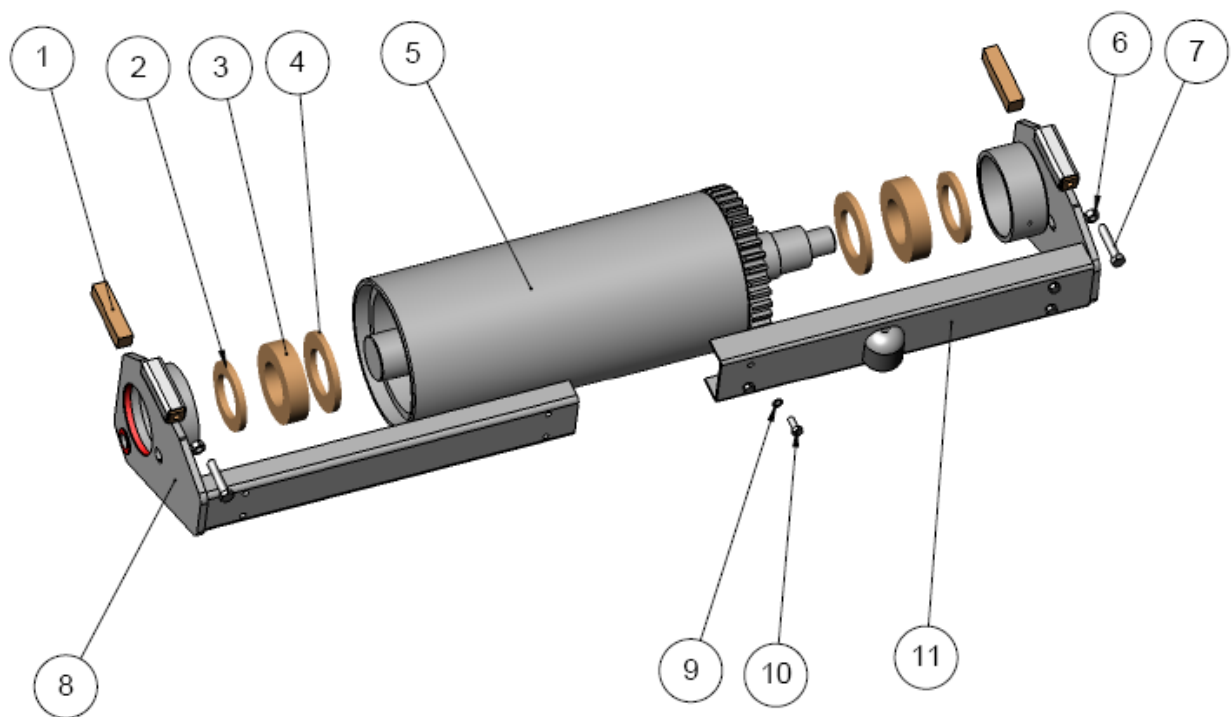
Rollers gearwheel greasing			
Ref.	Part	Description	Pcs.
1	AKK-1797	Greasing brush stand	1
2		Adjustable angle nipple	2
3	609452	Reducer 1/4"-1/8"	2
4		Washer M6	8
5		Hex screw M6x20	4
6		Greasing brush fastener	2
7	709027	Greasing brush A410	2
8		Nyloc nut M6	4



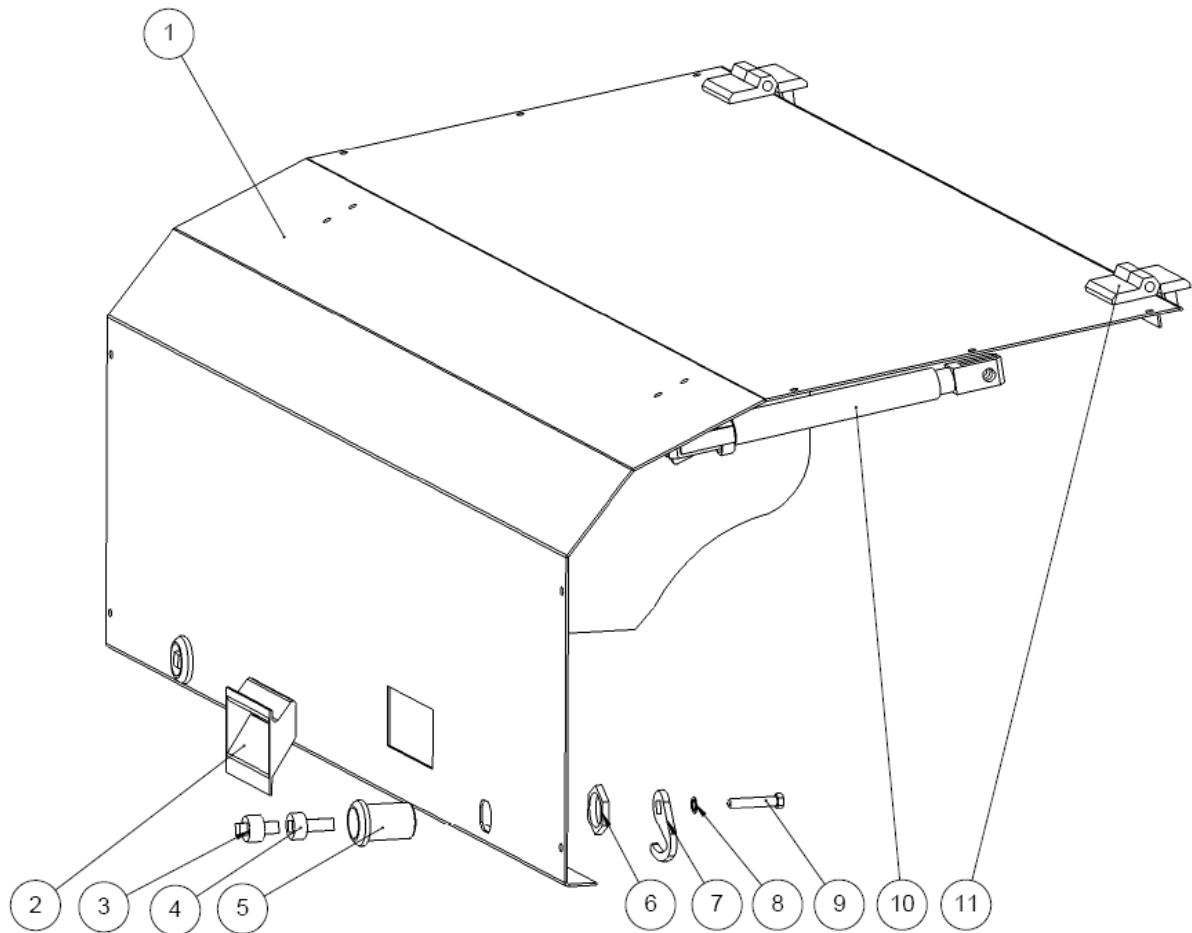
Belt quard plate, top AKK-1241			
Ref.	Part	Description	Pcs.
1	AKK-1239	Fastening plate	1
2		Belt quard plate, top	1
3	7011729	Guard hinge 218-9102	2
4		Washer M6	4
5		Nyloc nut M6	4
6	7011715	Handle 213-0703,03	1
7	704891	Locking housing 211301	2
8	704893	Locking square 221311	2
9		Nut	2
10	7011373	Bolt 232117	2
11		Locking washer M5	2
12		Hex screw M5x20	2



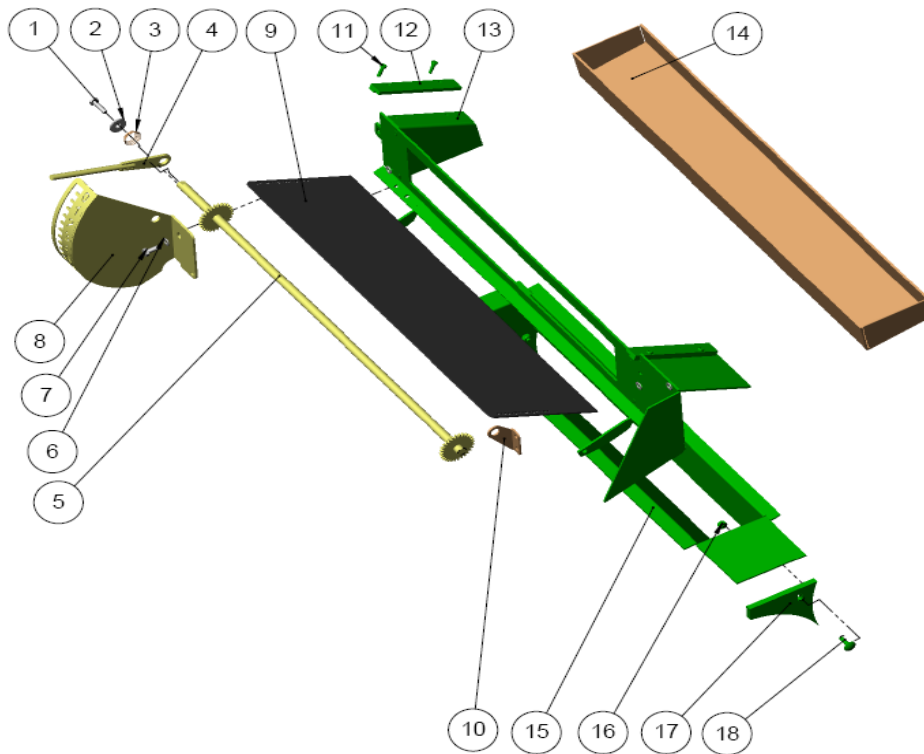
Parts of roller cassette			
Ref.	Part	Description	Pcs.
1	AKK-1738	Cover plate	2
2		Washer M8	12
3		Hex screw M8x16	12
4	AKK-1734	Stopper	2
5	AKK-1408	Hinge pin	4
6		Hex screw M5x20	2
7		Locking washer M5	2
8	7011373	Bolt 232117	2
9		Nut	2
10	AKK-1469	Checking window 1400S2x2	2
	AKK-1749	Checking window 2000S2x2	2
11	704891	Locking housing 211301	2
12	704893	Locking square 221311	2



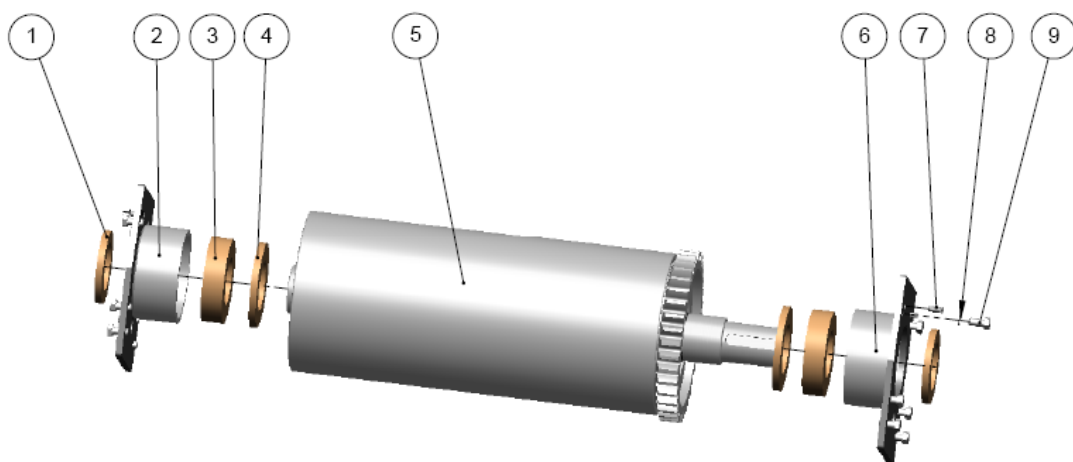
Adjustable roller			
Ref.	Part	Description	Pcs.
1	AKK-1125	Square bar	2
2	6111383	Sealing 90x140x13	2
3	201684	Bearing 22218 W33	2
4	6111785	Sealing 95x160x13	2
5		Roller 1400S2x2 (Adj.)	2
6	603908	Nut M16	2
7		Hex screw M16x80	2
8	AKK-1344	Adj. roller bearing housing back, right	1
	AKK-1800	Adj. roller bearing housing back, left	1
9		Washer M 12	4
10		Hex screw M12x30	4
11	AKK-1343	Adj. roller bearing housing front, right	1
	AKK-1799	Adj. roller bearing housing front, left	1



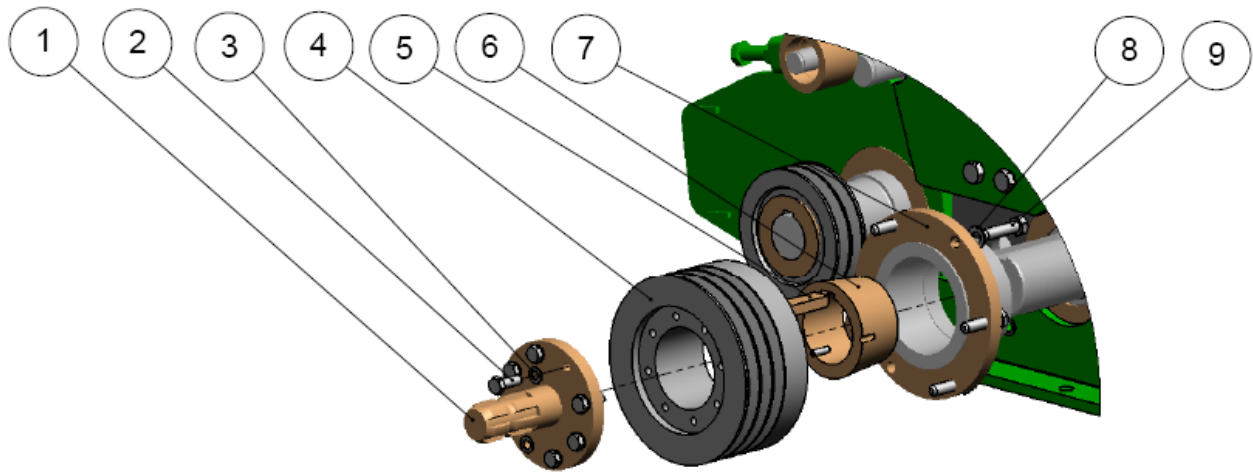
Roller guard			
Ref.	Part	Description	Pcs.
1	AKK-1232	Adj. Roller guard, left 1400S2x2	1
	AKK-1772	Adj. Roller guard, left 2000S2x2	1
	AKK-1264	Adj. Roller guard, right. 1400S2x2	1
	AKK-1774	Adj. Roller guard, right 2000S2x2	1
2	7011715	Handle 213-0703,03	1
3	704893	Locking square 221311	2
4	7011769	Locking square extension 271103	2
5	7011768	Locking housing C=30 211320	2
6		Nut	2
7	7011770	Bolt, right 232180-1	1
	7011852	Bolt, left. 232180-2	1
8		Locking washer M5	2
9		Hex screw M5x20	2
10	7011568	Spring 131-90 200N	2



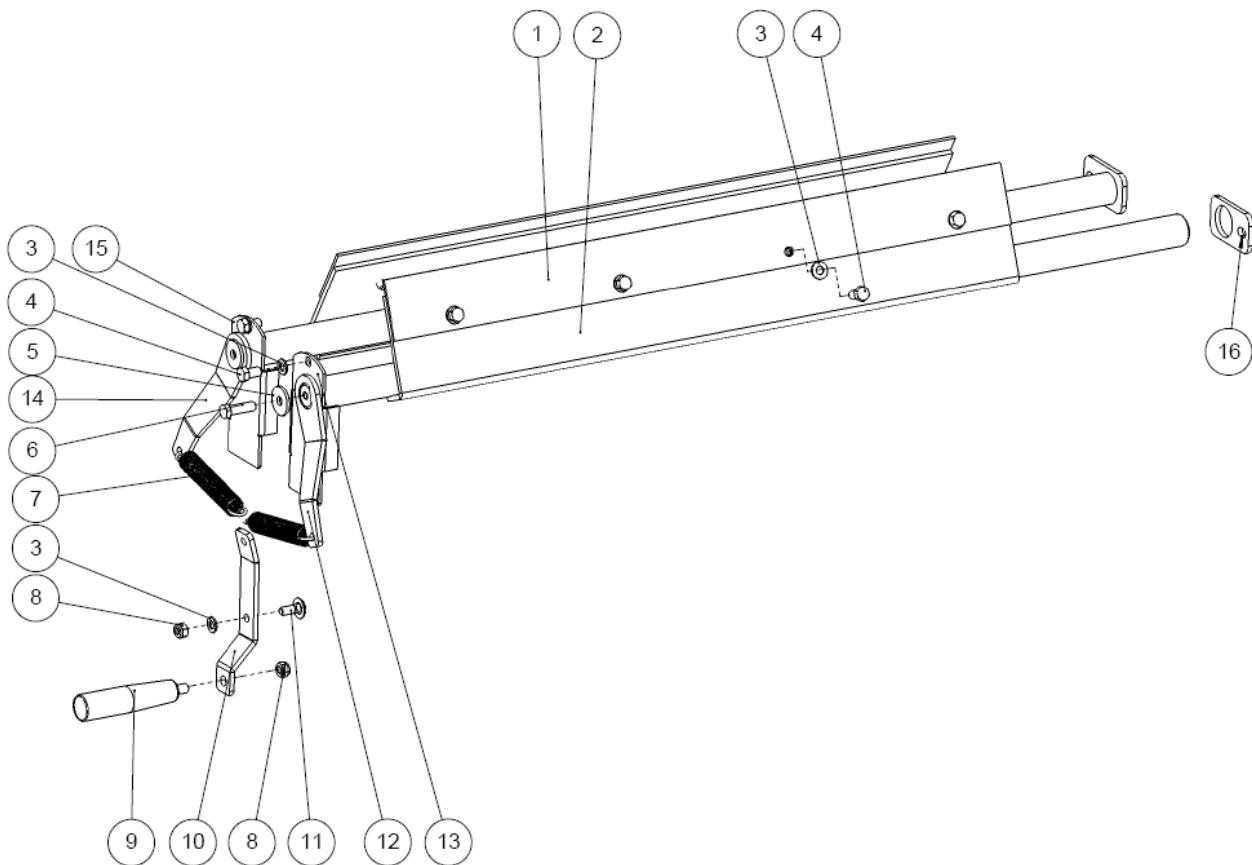
Feeder-door machinery			
Ref.	Part	Description	Pcs.
1		Hex screw M8x30	1
2		Washer M8	1
3	7011932	Cone spring	1
4	AKK-1678	Feed controller handle	1
5	AKK-1407	Feeder-door axle 1400S2x2	2
	AKK-1744	Feeder-door axle 2000S2x2	2
6		Washer M8	4
7		Hex screw M8x20	4
8	AKK-1591	Scale, left	1
	AKK-1592	Scale, right	1
9	AKK-1530	Feeder-door 1400S2x2	2
	AKK-1746	Feeder-door 2000S2x2	2
10	AKK-1405	Bracket, left	1
	AKK-1814	Bracket, right	1
11		Allen screw M6x20	4
12	AKK-1531	Controller	2
13	AKK-1334	Magnets and stone trap frame, left 1400S2x2	1
	AKK-1742	Magnets and stone trap frame, left 2000S2x2	1
	AKK-1335	Magnets and stone trap frame, right 1400S2x2	1
	AKK-1743	Magnets and stone trap frame, right 2000S2x2	1
14	AKK-1686	Magnets and stone trap 1400S2x2	2
	AKK-1747	Magnets and stone trap 2000S2x2	2
15	AKK-1337	Grain controller, left	1
	AKK-1336	Grain controller, right	1
16		Nyloc nut M8	2
17	MP2587	Plastic wedge	2
18		Lock screw M8x25	2



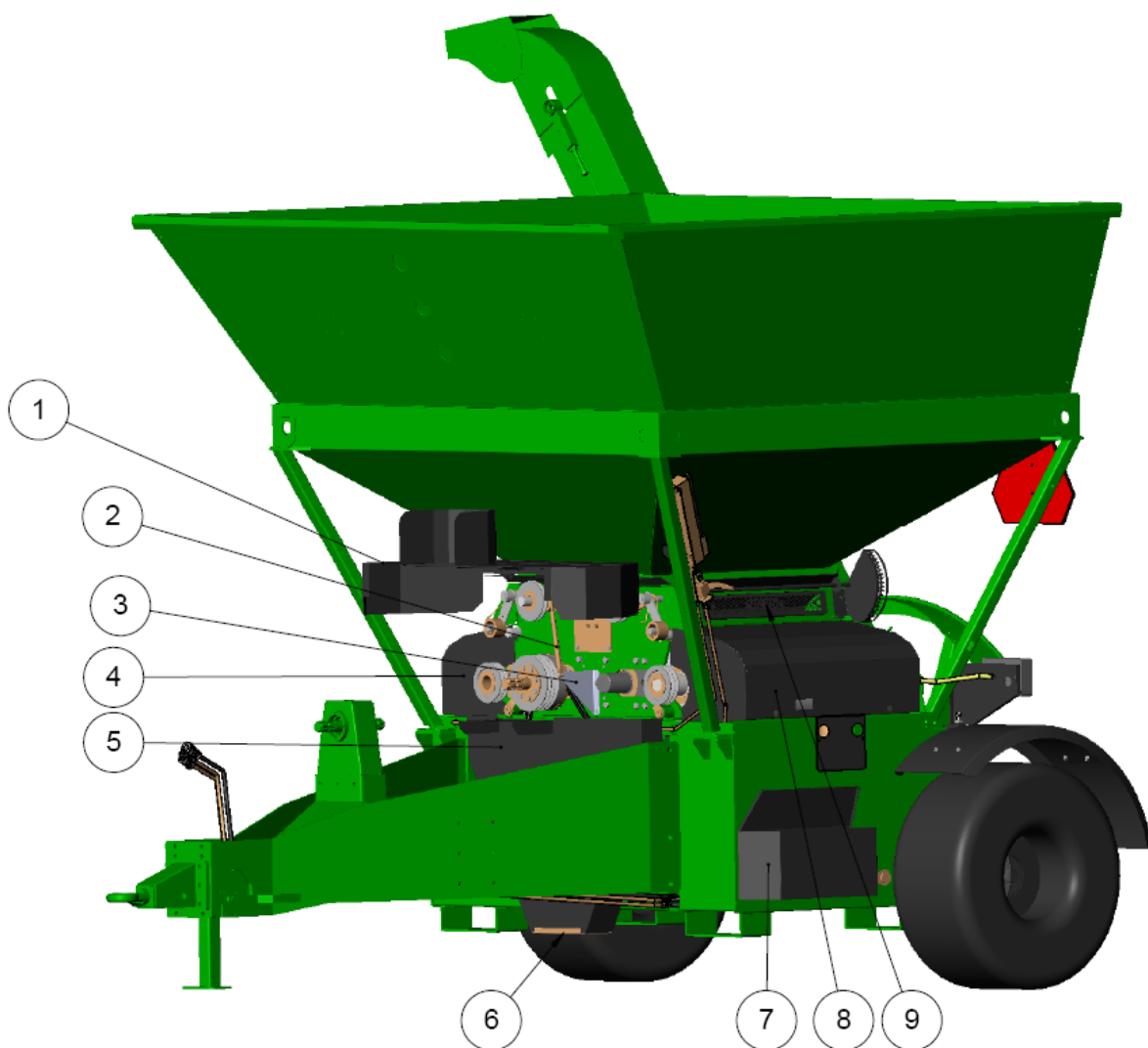
Fixed roller			
Ref.	Part	Description	Pcs.
1	6111383	Sealing 90x140x13	2
2	MP6114	Bearing housing (fixed roller), right	1
3	101684	Bearing 22218 W33	2
4	206111785	Sealing 95x160x13	2
5		Fixed roller	2
6	MP11544	Bearing housing (fixed roller), left	1
7		Spring pin 10x24	8
13		Washer M12	12
16		Hex screw M12x50 10,9	12



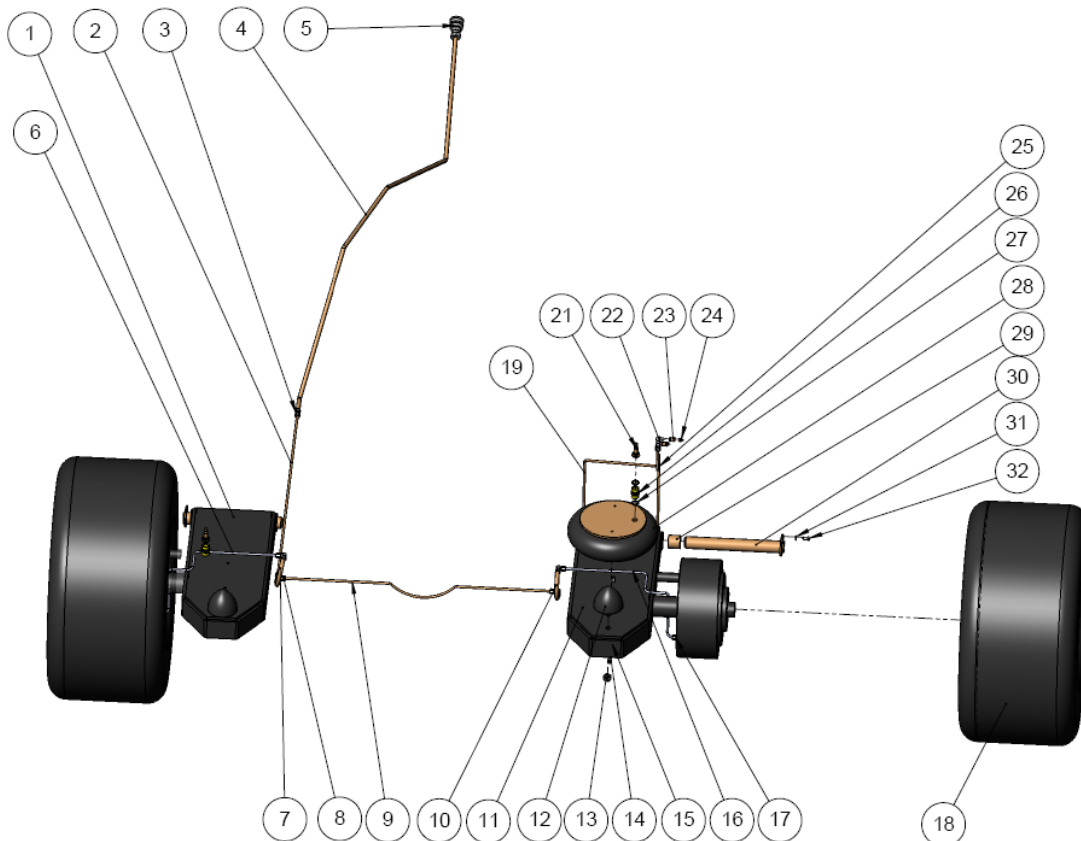
Splined shaft fastening (Elevator version)			
Ref.	Part	Description	Pcs.
1	AKK-1974	Splined shaft 1 ¾	1
2		Hex screw M10x30	8
3		Washer M10	8
4	AKK-1901	Three-furrow spline pulley	1
5	1011563	Spline steel 20x12	1
6	11402	Taper hub 3030-70	1
7	AKK-1236	Fastening taper hub	1
8		Washer M12	6
9		Hex screw M12x50	6



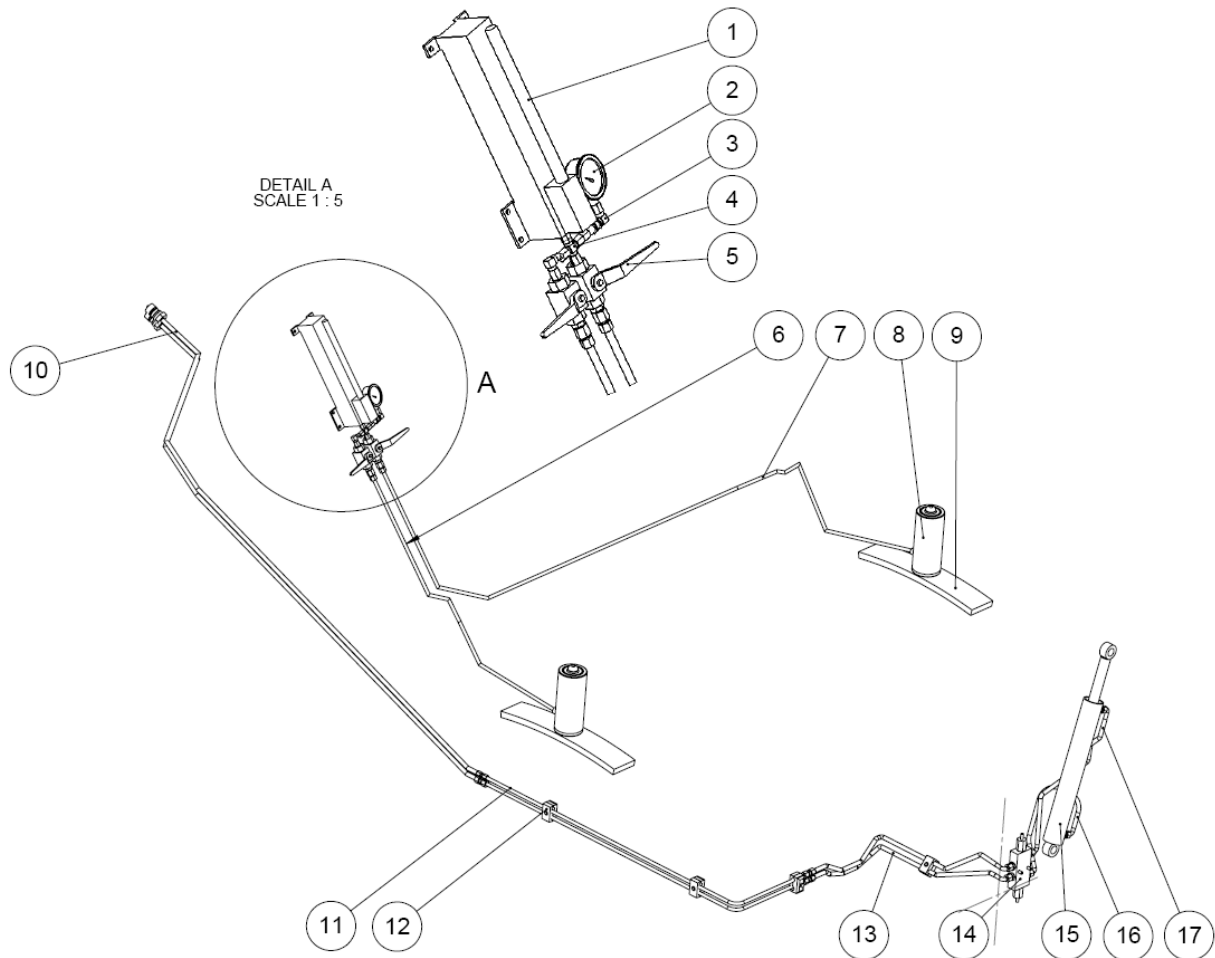
Scrapers			
Ref.	Part	Description	Pcs.
1	AKK-1203	Scraper knife blade 1400S2x2	4
	AKK-1770	Scraper knife blade 2000S2x2	4
2	AKK-1298	Scraper knife frame, right 1400S2x2	2
	AKK-1766	Scraper knife frame, right 2000S2x2	2
	AKK-1297	Scraper knife frame, left 1400S2x2	2
	AKK-1767	Scraper knife frame, left 1400S2x2	2
3		Washer M8	11
4		Hex screw M8x16	8
5		Washer M8	2
6		Hex screw M8x30	2
7	7011727	Spring 1,75x16,51x114,3	2
8		Nyloc nut M8	1
9	24972	Handle Elessa I601	1
10	AKK-1300	Handle	1
11		Lock screw M8x20	1
12	AKK-1387	Crank	1
13	AKK-1302	Fastening plate, right	1
14	AKK-1585	Crank	1
15	AKK-1301	Fastening plate, left	1
16	AKK-1682	Adjusting brick	4



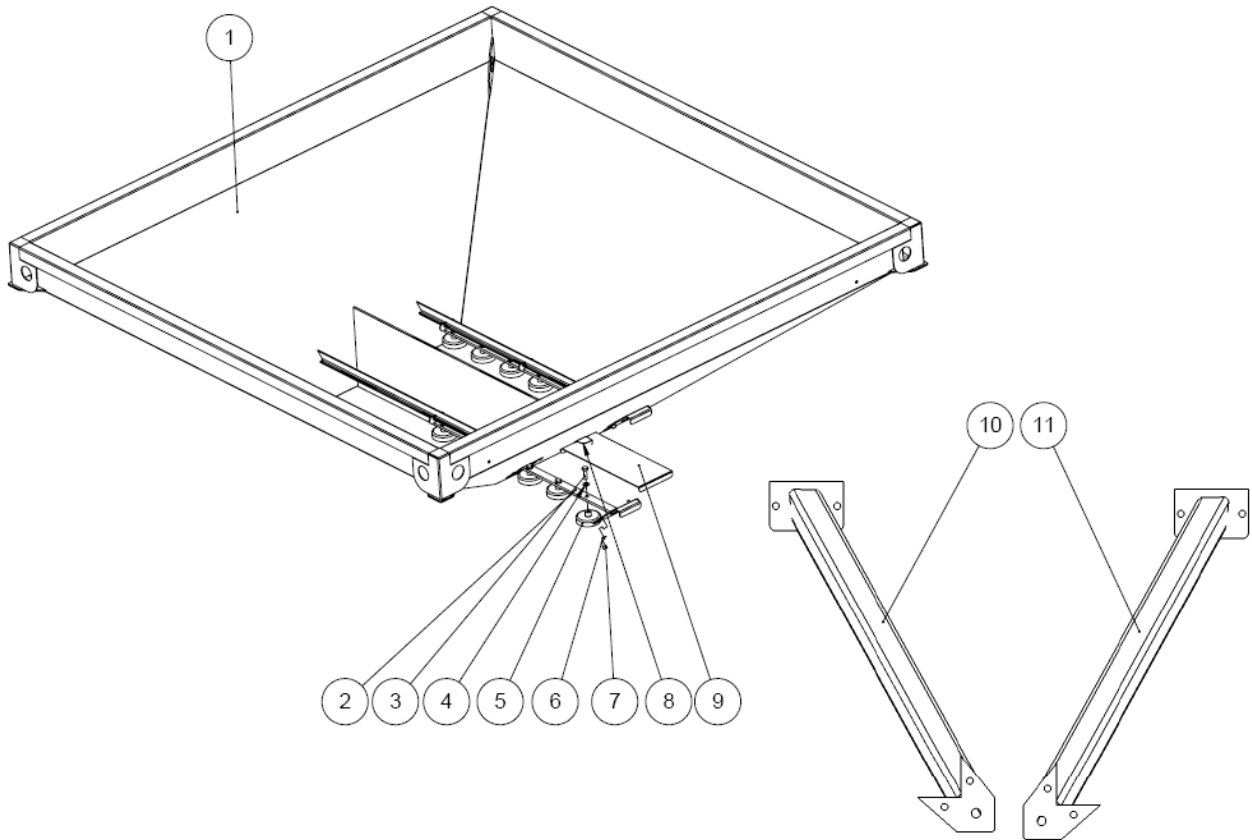
Quards			
Ref.	Part	Description	Pcs.
1	AKK-1241	Belt quard plate, top	1
2	11771	Spring 201,5-150 300N	1
3	AKK-1710	Bracket	1
4	AKK-1232	Adj. Roller quard, left 1400S2x2	1
	AKK-1772	Adj. Roller quard, left 2000S2x2	1
5	AKK-1260	Belt quard plate, bottom	1
6	AKK-1631	Bottom fastener	1
7		Toolbox	1
8	AKK-1264	Adj. Roller quard, right 1400S2x2	1
	AKK-1774	Adj. Roller quard, right 2000S2x2	1
9	AKK-1469	Checking window 1400S2x2	2
	AKK-1749	Checking window 2000S2x2	2



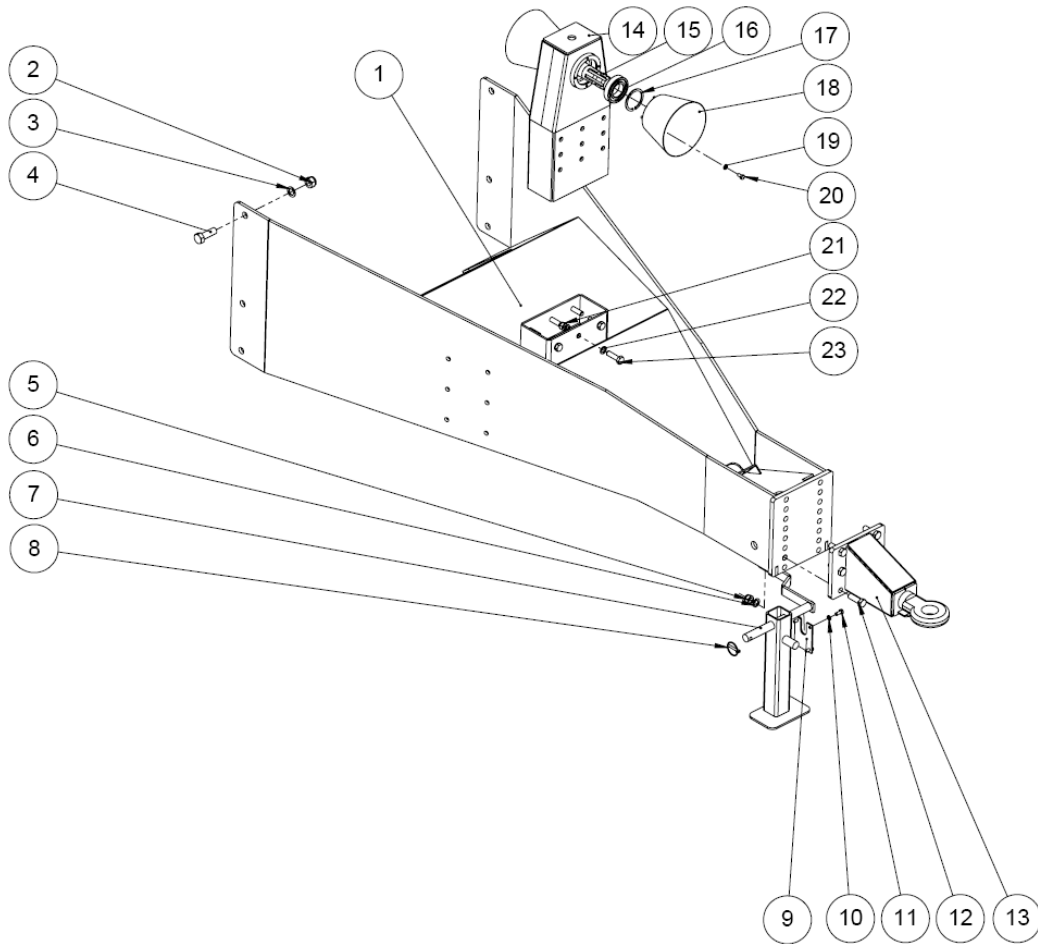
Rear axle with brakes			
Ref.	Part	Description	Pcs.
1	AKK-1574	Bottom arm, left	1
2	AKK-1807	Brake tube into frame Ø6mm 1400S2x2	1
		Brake tube into frame Ø6mm 1400S2x2	1
3		Straight connector EL-6	1
4	MP11831	Brake hose l=3400 with 1/4" brake connector	1
5		Brake connector	1
6	AKK-1808	Brake tube, left	1
7	MP11918	Brake hose, left	1
8		T-pipe joint QL 6	1
9	AKK-1810	Brake tube, back	1
10	MP11917	Brake hose, right	1
11	AKK-1584	Bottom arm, right	1
12	7011707	Cone push 100x80 M16	2
13		Nyloc nut M16	2
14		Hex screw M8x30	4
15		Washer M8	4
16	AKK-1809	Brake tube, right	1
17		Tube 1/4" Ø6mm	2
18	TM8933	Tyre 400/60-15.5 14pr TRAC	2
19		Grease tube into bottom arm	4
21		Valve cotter	2
22		Angle nipple	4
23		Socket	4
24		Grease nipple	4
26	AKK-1805	Valve frame	2
27		Usit sealing 3/4"	4
28	5011640	Pneumatic suspension ball 12" x 1	2
29	2011400	Bearing BRM-80 Ø40/44 l=40mm	4
30	AKK-1582	Axle	2
31		Washer M8	2
32		Hex screw M8x16	2



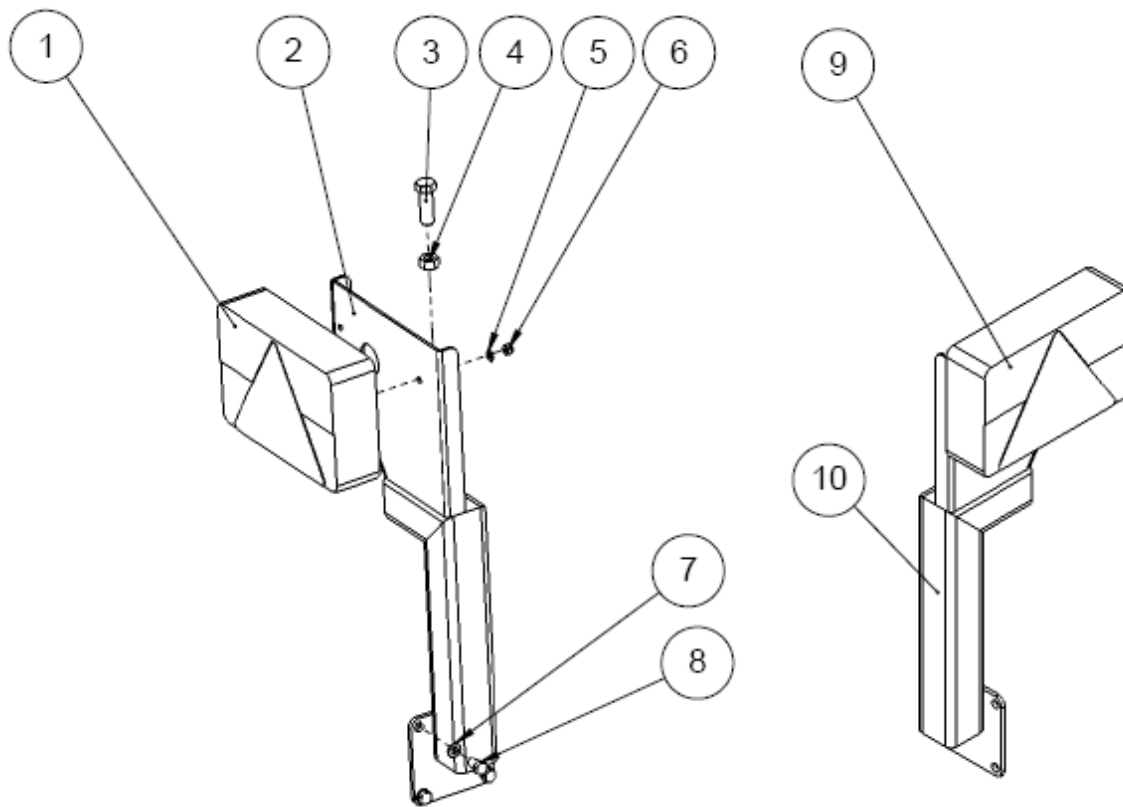
Hydraulics			
Ref.	Part	Description	Pcs.
1	509706	Hydraulic hand pump	1
2		Pressure indicator	1
3		Angle nipple	2
4		Connector	1
5		Tap	2
6	509843	Hose composition 1/4" l=890mm	1
7	509844	Hose composition 1/4" l=2590mm	1
8	509720	Hydraulic cylinder Ø60/63x89mm	2
9	MP7478	Leaf spring 90x20x465mm	2
10	MP11829	Hose composition 3/8"	1
11	AKK-1726	Hydraulic tube Ø10mm 1400S2x2	2
		Hydraulic tube Ø10mm 2000S2x2	2
12			
13	MP11826	Hose composition 1/4"	2
14	5011853	Valve	1
15	11762	Hydraulic cylinder 50/30 400	1
16	11914	Hose composition 1/4" 300mm	1
17	11916	Hose composition 1/4" 800mm	1



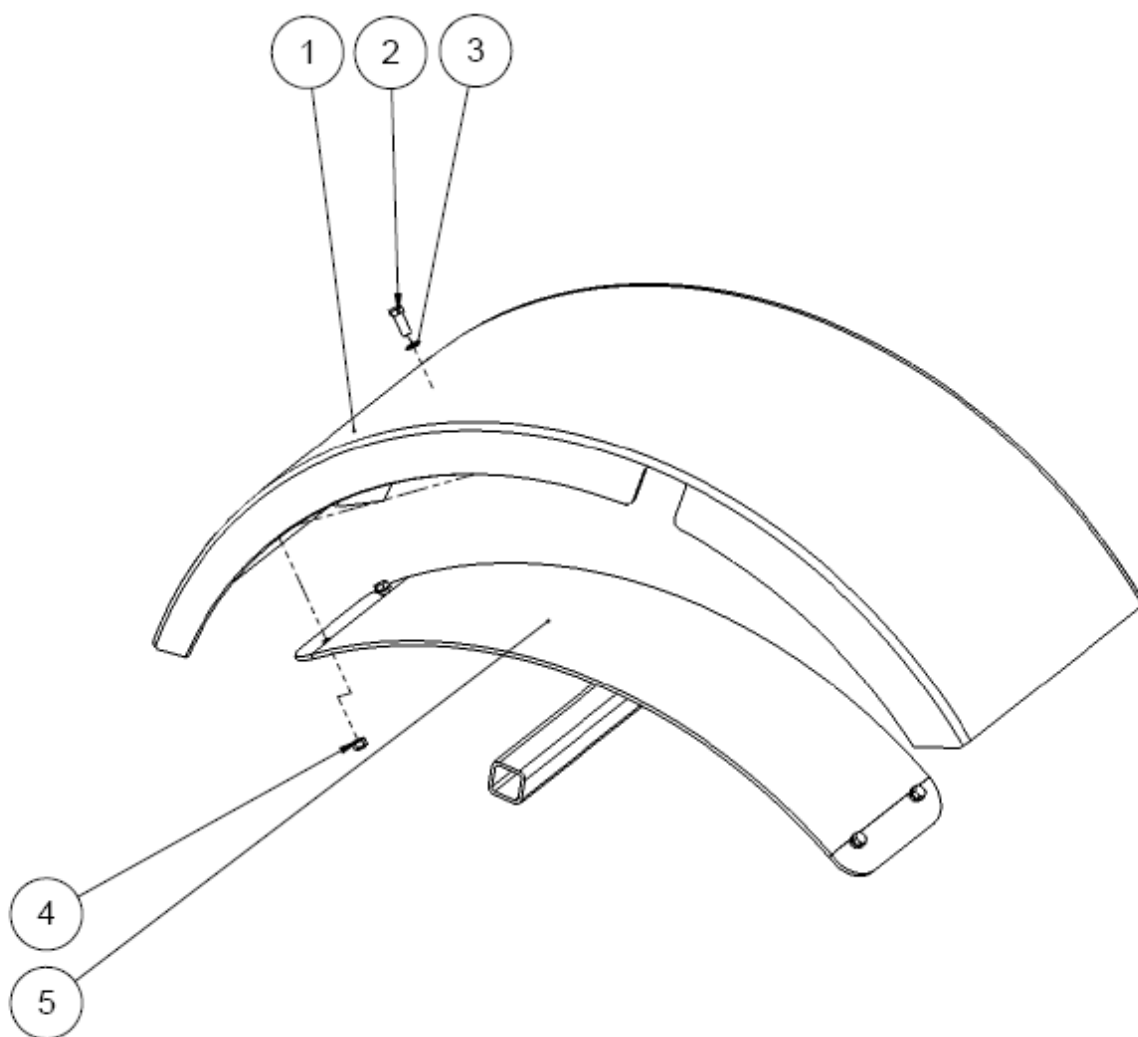
Hopper			
Ref.	Part	Description	Pcs.
1	AKK-1248	Hopper 1400S2x2	1
	AKK-1750	Hopper 2000S2x2	1
2	AKK-1396	Magnet set 1400S2x2	2
	AKK-1757	Magnet set 2000S2x2	2
3		Hex screw M10x35	12 or 16
4		Washer M10	12 or 16
5	701828	Magnet Ø80	12 or 16
6		Washer M8	5
7		Allen screw M8x16	5
8	AKK-1771	Holder	1
9	AKK-1397	Closing trap 1400S2x2	2
	AKK-1759	Closing trap 2000S2x2	2
10	AKK-1376	Corner tube, right 1400S2x2	2
	AKK-1763	Corner tube, right 2000S2x2	2
11	AKK-1375	Corner tube, left 1400S2x2	2
	AKK-1762	Corner tube, left 2000S2x2	2



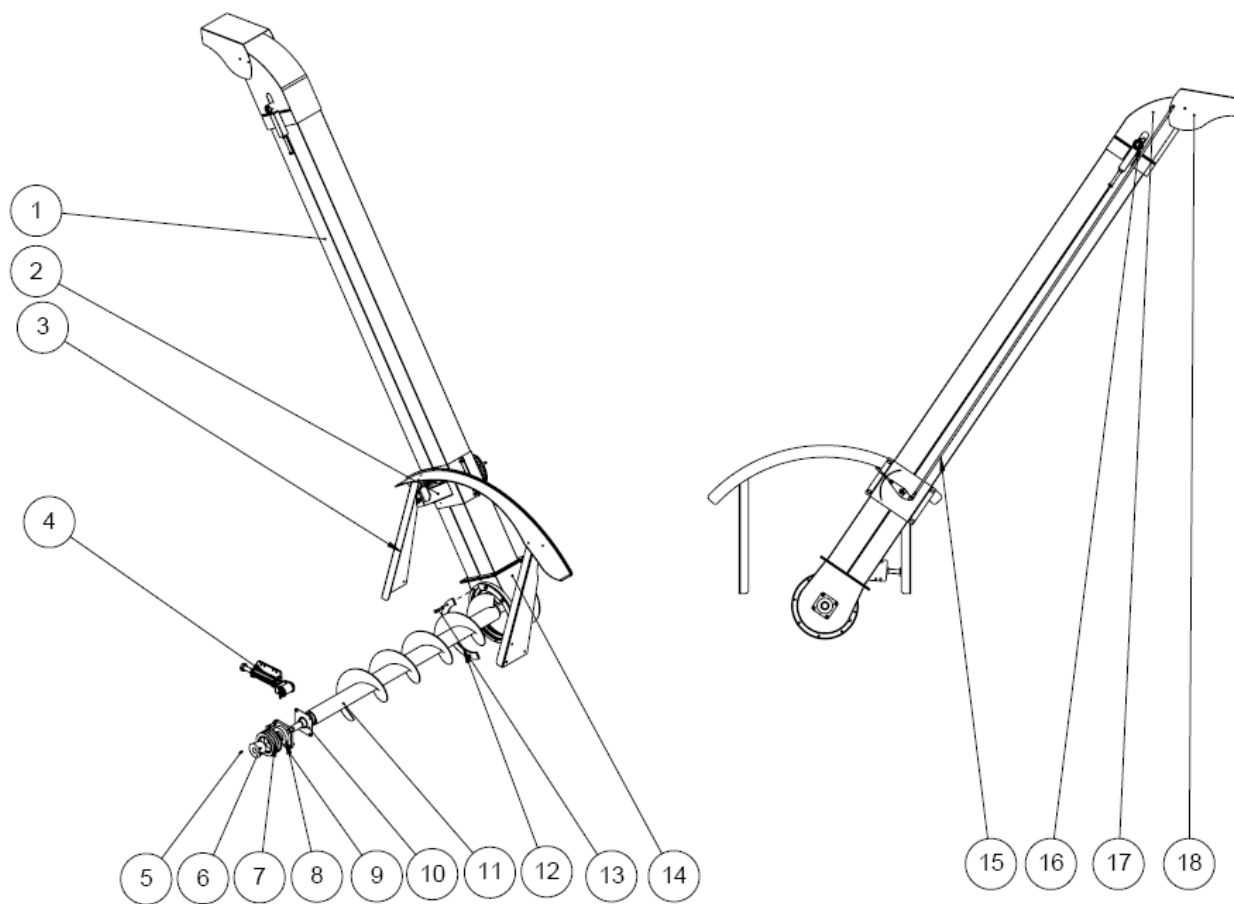
Ref.	Part	Description	Pcs.
		Pull shaft	
1	AKK-1541	Pull shaft	1
2		Nyloc nut M20	6
3		Washer M20	6
4		Hex screw M20x60	6
5		Nyloc nut M16	6
6		Washer M16	6
7	AKK-2412	Support leg	1
8		Ring pin	1
9	AKK-2335	Hinge plate into support leg	1
10		Washer M8	4
11		Hex screw M8x20	4
12		Hex screw M16x50	6
13	AKK-1525	Hitch	1
14	AKK-2038	Universal shaft bearing	1
15	MP5950	Double-sided splined shaft 1 3/4	1
16	208326	Bearing 6209 85x45x19	2
17	609820	Interior holder i 80	2
18		Splined shaft shelter	2
19		Washer M8	8
20		Hex screw M8x16	8
21		Nyloc nut M14	6
22		Washer M14	6
23		Hex screw M14x50	6



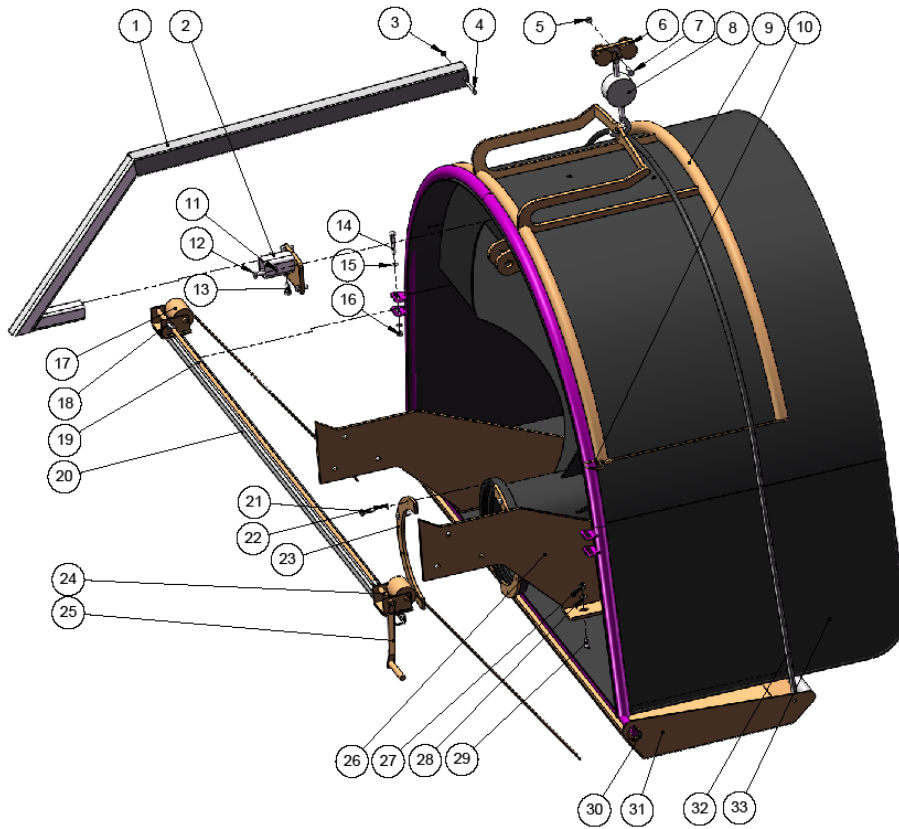
Fender stand and lights			
Ref.	Part	Description	Pcs.
1	11228	Tail light set	1
2	AKK-1324	Fender stand, left	1
3		Hex screw M12x40	2
4		Nut M12	2
5		Washer M6	4
6		Nyloc nut M6	4
7		Washer M8	8
8		Hex screw M8x16	8
9	11228	Tail light set	1
10	AKK-1802	Fender stand, right	1



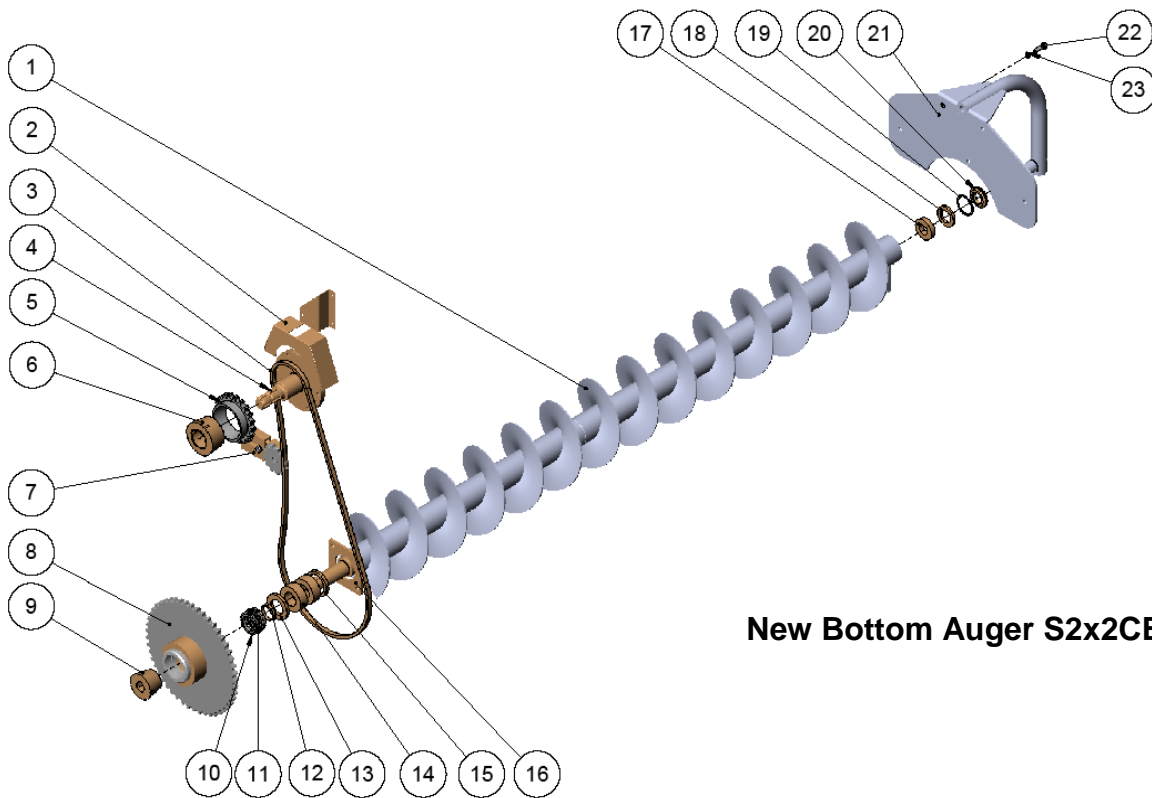
Fender			
Ref.	Part	Description	Pcs.
1	8690	Fender curve, left	1
	8691	Fender curve, right	1
2		Hex screw M8x20	8
3		Washer M8	8
4		Nyloc nut M8	8
5	AKK-1816	Fender frame, left	1
6	AKK-1817	Fender frame, right	1



Elevator and bottom auger			
Ref.	Part	Description	Pcs.
1	MP4475	Elevator tube	1
2	AKK-1603	Cylinder bracket	1
3	AKK-1611	Elevator curve	1
4	MP7689	Bottom auger belt clamp	1
5		Screw M8x20	2
6	251676	Taper hub 2012 / 35	1
7	251661	Pulley SPB 140-3 / 2012	1
8	209242	Bearing UCF 210	1
9		Hex screw M14x40	4
10	MP9558	Bottom Auger Bearing Sealing	1
11	MP9462	Bottom auger M1400S2x2	1
	MP9460	Bottom auger M2000S2x2	1
12	AKK-1182	Flange	2
13		Hex screw M10x40	8
14	AKK-1170	Bottom	1
15	AKK-1672	Adjusting rod	1
16	11570	Elevator chain tensioner	1
17	4257	Elevator hat	1
18	11562	Hat vizor	1



Parts of packing tunnel



New Bottom Auger S2x2CB



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