



METAL-FACH



**REPAIR AND MAINTENANCE BOOK
CHAIN BALER
Z587, Z587/1
REVISION I
MAY 2020**

Table of Contents

1	Baler Identification.....	4
2	Baler cleaning.....	5
3	Storage.....	6
4	Dismantling and Disposal.....	6
5	Coupling to a tractor.....	7
5.1	Connecting with the lower tractor transport hitch.....	7
5.1.1	Coupling the baler with the rear PTO shaft.....	8
5.1.2	Hydraulic system installation.....	9
5.1.3	Lighting connection.....	10
5.1.4	Connecting the control system.....	10
5.1.5	Drive disconnection.....	11
6	Removing the accumulated material.....	12
7	Maintenance and adjusting.....	14
7.1	Pick-up wheels adjustment.....	16
7.2	Windrow clamp adjustment.....	16
7.3	Adjusting the drive chain tensioning (every 10 hrs of work).....	17
7.4	Adjusting the automatic tensioners.....	18
7.5	Adjusting the manual tensioners.....	18
7.6	Adjusting the jaw coupling for disconnecting the chain and rod conveyor drive... ..	22
7.7	Pick-up cam adjustment.....	22
7.8	Replacing the locking bolt in the pick-up.....	23
7.9	Replacing the locking bolt in the supplying unit.....	24
7.10	Sharpening the twine unit blade.....	25
7.11	Twine binding unit adjustment.....	26
7.12	Net binding device adjustment.....	27
7.13	Transmission oil exchange (once a year).....	28
7.14	Tyres inspection (every 30 days of work).....	29
8	Lubrication.....	30
8.1	The automatic lubrication system for chains.....	31
8.2	Lubrication of bearings.....	33
9	Electrical system.....	34
10	Hydraulic system.....	35
11	Tightening torque values for bolts.....	37
12	Possible faults.....	38
	NOTES.....	41



The information included in this Repair and Maintenance Book is valid as of the date of its drawing up. The manufacturer reserves its right to make design changes to machines, and due to this, some values or illustrations might not correspond to the actual state of the machine supplied to the user. The manufacturer reserves its right to make design changes without amending this Repair and Maintenance Book.



CAUTION

CAUTION

When repairing and maintaining the machine, use the Repair and Maintenance Book and the Instruction Manual written for this machine model.

1 Baler Identification

The identification data is located on the rating plate located on the front part of the frame. The rating plate shows data used to identify the machine, i.e. a code, serial number, manufacture year and pressure on the hitch.

<p>A METAL-FACH SP. Z O.O.</p> <p>B S1a</p> <p>C e9*167/2013*11026</p> <p>D SUMZ0454FJSSK0001</p> <p>E 2440 kg</p> <p>F A-0: 460 kg</p> <p>G A-1: 2440 kg</p>	 <p>ul. Kresowa 62, 16-100 Sokółka, Poland tel.: +48 (85) 711 98 40-45, fax: +48 (85) 711 90 65</p> <p>Prasa rolująca</p> <p>Typ handlowy Z587/1 Nacisk na zaczep 4,5 kN</p> <p>Wariant 4E2RNSC KJ <input type="text"/></p> <p>Rok produkcji 20xx</p> <p>VIN SUMZ0454FJSSK0001</p>  <p>www.metalfach.com.pl</p>
--	---

Figure 1. Rating plate

Explanation of fields:

- A** – Manufacturer's name;
- B** – Category, Subcategory, and Vehicle-Speed Indicator;
- C** – EU-Type Approval Number;
- D** – VIN;
- E** – Permissible total design weight of the vehicle;
- F** – Vertical load at coupling point;
- G** – Permissible design weight per front axle.

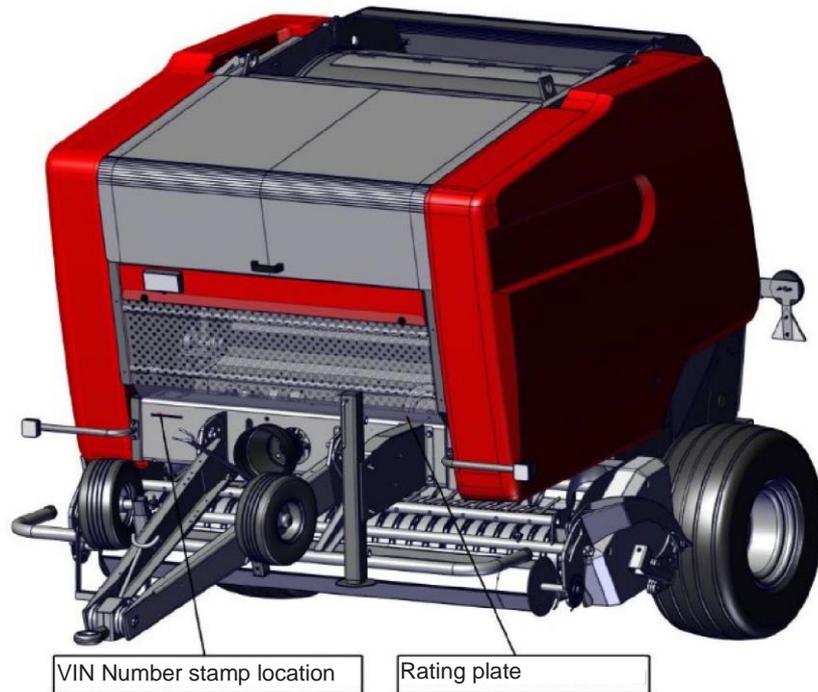


Figure 2. The location of the nameplate and the VIN on the machine

2 Baler cleaning



WARNING

WARNING!

Before you clean the baler, ensure that the baler, PTO drive and tractor engine are all disabled (the ignition key removed). Disconnect the supply, lighting and control panel cords.

After each day of work, remove dust, accumulated harvest residue, etc. using a brush.

We do not recommend cleaning the baler with a high pressure water stream. Directing the stream of water at the hydraulic, electrical and bearing components is forbidden.

Prior to a longer stop, dust the baler and remove the harvest residue by means of compressed air. Directing the stream of compressed air at the hydraulic and electrical components is forbidden.

After water cleaning and prior to a long stop, it is recommended to lubricate all the lubrication points and applying a suitable protective agent on all drive chains.

3 Storage

Store the baler control panel in a dry room protecting the terminals against dirt and humidity using the provided guard covers.

Wind the connection cable and store it in a dry room protecting the terminals against dirt and humidity.

Store the baler on a flat, level and paved surface.

It is recommended to store the machine in a dry area, protected against UV rays and other harmful factors.

Protect the baler stored outside with no roofing with a water proof tarpaulin or film.

After the season is over, clean the baler and check the condition of the protective layers. Repair damaged coating as required.



CAUTION

CAUTION!

Check the condition and legibility of the rating plate. In case it is destroyed report it at the service.

Check the condition and legibility of the pictograms. In the case they are damaged replace them with new ones.

4 Dismantling and Disposal

Dismantling and disposal should be performed by specialised service centres that are familiar with the design and operation of the baler. Only specialised service centres have the full and up-to-date knowledge on the applied materials and risk associated with the hazards of improper storage and transport. The authorized services offer both counselling and performance of the complete services concerning disposal of the machine.

Proper tools and auxiliary equipment (hoist, wheel puller) must be used for dismantling.

Store the used oil in air-tight containers. Take it to a petrol station that collects used oil immediately.

Dismantle the machine. Sort the dismantled parts. Send them to relevant companies that collect such materials.

During dismantling of the baler, use proper protective clothes and protective boots.

5 Coupling to a tractor

Couple the Baler with agricultural tractors with a power output of not lower than 35 kW and a drawbar pull class of 0.9, fitted with the output coupling of the power hydraulics and the 1 3/8" Z6 rear PTO with a rated rotational speed of 540 rpm.

Connect the baler to the tractor lower transport hitch, which enables the transmission of a vertical load of 4.0 kN (for the Z587/1 baler, the load on the hitch is 4.2kN).

5.1 Connecting with the lower tractor transport hitch

Make sure that in the area of baler coupling with the tractor and in the near vicinity there are no bystanders present, children in particular.

Prior to the coupling activity, align the tractor centre line with the machine axis on an even and level ground. Stop the tractor's engine, take the key from the ignition, and engage the tractor's parking brake.

First, unlock the protective chain running through the hitch eye and remove it. Then, set the correct height of the baler hitch by choosing a correct adjustment eye of the hitch, as shown in Fig. 3.

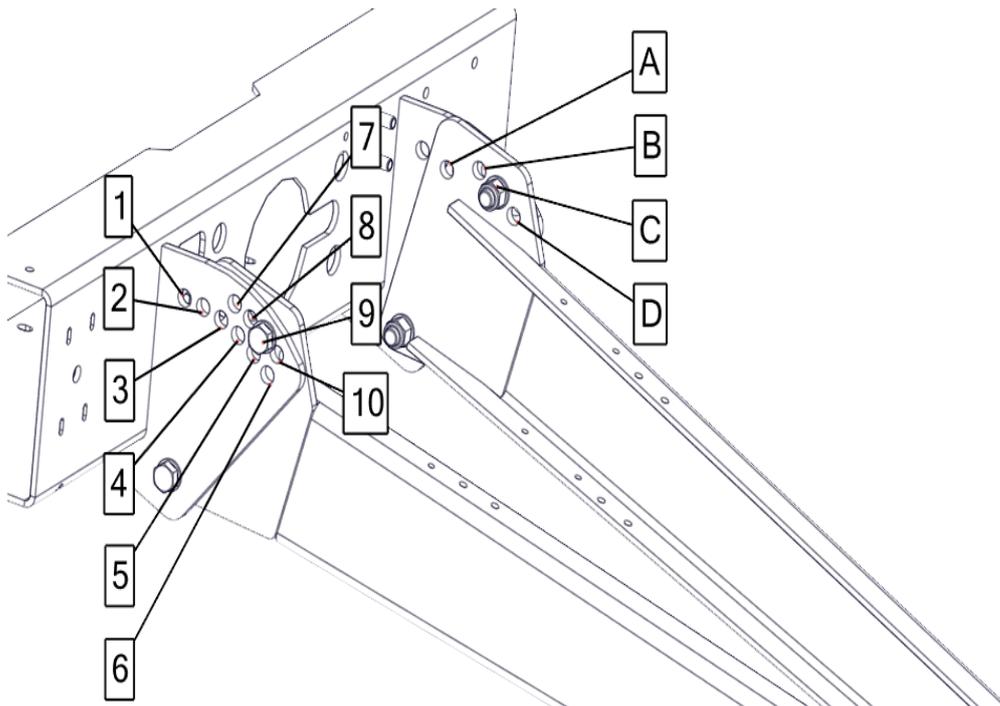


Figure 3. Setting the drawbar height

Couple the drawbar eye with the tractor transport hitch and check the connection for correctness, and the protections for accidental disconnection.

Only tractors with a weight equal to at least the weight of the baler to be coupled are allowed.

Connect the power supply. Check if the working and signalling systems work properly.

The table below gives the height of the drawbar eye against the ground.

Table 1. Height of the drawbar eye against the ground

No. of the drawbar hole No. of the beam hole	A	B	C	D
	Height of the drawbar eye from the ground [cm]			
1	88	-	-	-
2	67	-	-	-
3	47	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	67	89	-
8	-	51	72	93
9	-	34	55	76
10	-	-	39	60

Connect the hydraulic supply system. Check if the power hydraulic systems work correctly, especially opening and closing of the baler cover.

Then, you can continue connecting the devices to the baler:

- Connect the PTO shaft,
- Connect the hydraulic system,
- Connect the lighting,
- Connect the control system.

5.1.1 Coupling the baler with the rear PTO shaft

Before you connect the PTO shaft, check the direction and rotational speed of the PTO shaft.

Stop the tractor's engine, take the key from the ignition, and engage the tractor's parking brake.

Using the PTO shafts with specifications other than those indicated by the manufacturer is forbidden.

The PTO shaft is a CE labelled drive transmission component.

Each shaft comes with an instruction manual. You must read the instruction manual for the PTO shaft, adhere to the safety rules and follow the guidelines contained in the manual.

Install the PTO shaft, delivered with the machine, between the tractor shaft and coupling box in the machine.

The method of connecting the shaft with the tractor is shown on the shaft.

Check if in curves (at shaft shortest span), the minimum distance shown in the figure below is not exceeded. **The minimum distance is 4 cm.**

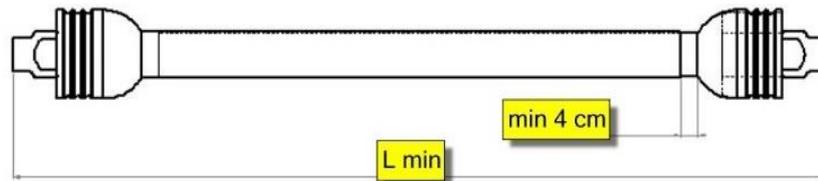


Figure 4. PTO length

Make sure that the shaft length is correct. At the shaft longest span, the shaft tubes must overlap by at least 1/3 of their length.

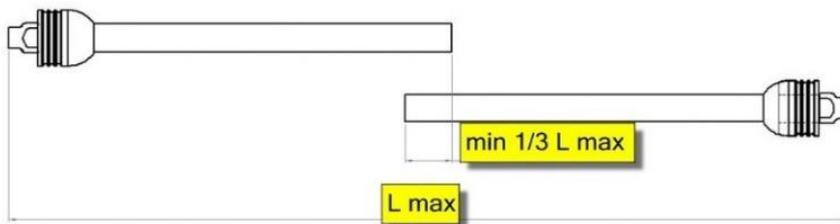


Figure 5. PTO housing length

Make sure that the components protecting the PTO shaft from sliding off are located in their correct positions. Check if the tubes can rotate freely against the shaft and lubricate as required.

Install the chain securing the tubes.

Read the manual of the shaft to find detailed information on the use of the PTO shaft.



WARNING

WARNING!

It is strictly forbidden to operate the PTO shaft with its tube damaged or not in place, or without additional canopy guards on the tractor PTO side and the machine PTO side.

5.1.2 Hydraulic system installation

Connect hydraulic hoses:

- Connect the hose used to lift the pick-up with the cut-off valve to the unidirectional manifold;
- Connect the supply hoses for the chamber to the dual direction manifold.

Connect the hydraulic hoses in pairs to one control section. The pairs of hoses in one hydraulic section are marked with the same colour.

Before lifting the pick-up:

- set the lever of the cut-off valve in the “OPEN” position, and then, lift the pick-up (transport position);
- after you have lifted the lever set it in the “CLOSED” position to lock the system; The pick-up should remain in the upper position.

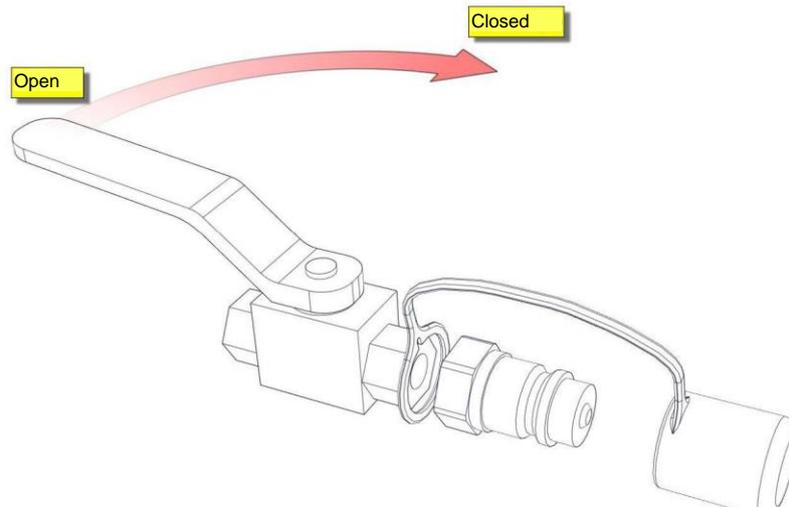


Figure 6. Cut-off valve

Do not move the machine with the lowered pick-up, with the wheels on the ground.

5.1.3 Lighting connection

Connect the lighting system and check if all control lamps and lights work correctly.

Always use proper fuses, do not replace the cords, plugs or sockets with ones that do not match the original ones.

Put the caps for protecting the electrical pins during operation in the tractor cab. After completing the work, re-install the caps on the pins.

5.1.4 Connecting the control system

The baler electrical system requires a power supply of 12 V. Procedure of connecting the control system (Fig. 7):

- Install the control panel “SS” in the tractor cab in such a way that it is visible and accessible for the operator,
- Connect the power supply cord “PZ”,
- Connect the data transmission cable “PS”,
- Check if the control panel “SS” is enabled.

If the cords are connected correctly, the control panel lights up and starts loading data.

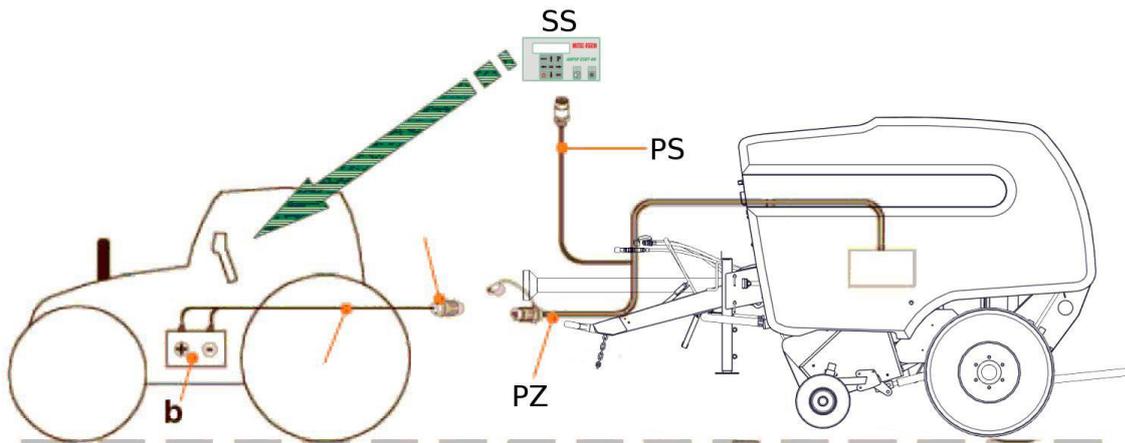


Figure 7. Connecting the control system

5.1.5 Drive disconnection

Make sure that no bystanders, especially children, are present in the baler storage area and immediate vicinity. Procedure:

- Position the baler on its storage place on an even and level ground. Stop the tractor's engine, take the key from the ignition, and engage the tractor's parking brake.
- Disconnect the electrical supply system;
- Disengage the power hydraulics;
- Lower the support foot. Disconnect the drawbar eye from the tractor hitch. Make sure that there is no hazard of accidental machine displacement. Draw the protecting chain through the hitch eye and lock it;
- Disable and dismantle the PTO shaft. Put the dismantled shaft on the support designed to store it. Protect the terminations of PTOff and PTOon with covers;
- Install the hydraulic and electric connection caps.

6 Removing the accumulated material

During the material pick-up, it is possible that it will accumulate on the pick-up and rotor. Clogging is the result of improper adjusting of the speed to the harvest condition and improperly formed windrow.



DANGER

DANGER!

Removing the accumulated material during the machine operation is forbidden.



DANGER

DANGER!

Use special care during the removal of the accumulated material, as the rotor zone is dangerous due to sharp blades.

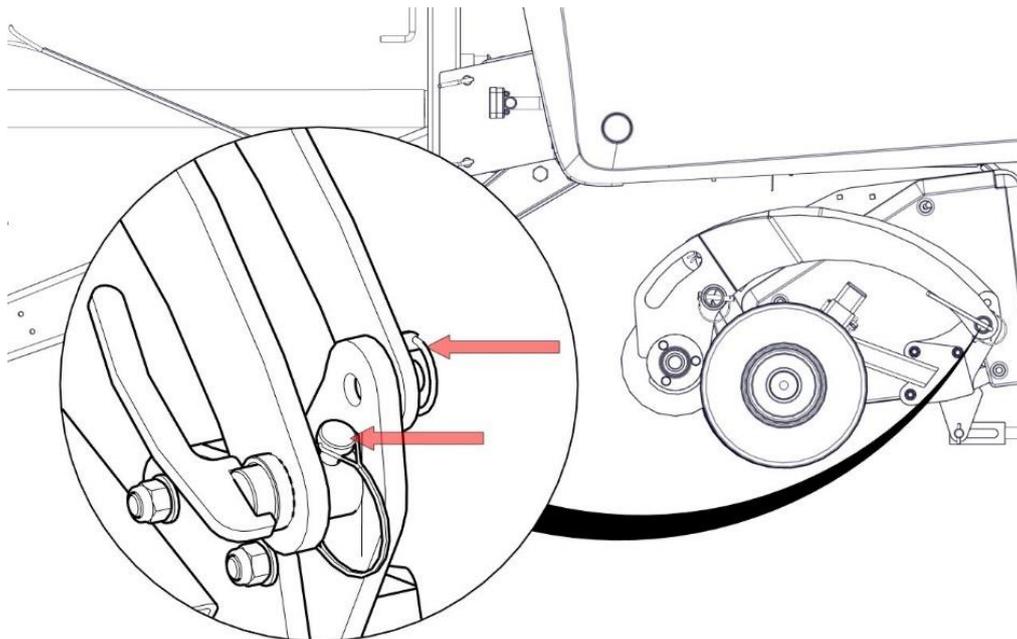


Figure 8. Wide windrow clamp dismantling

Do the following activities to remove the material accumulated:

- Switch off the control panel;
- Stop the tractor, remove the ignition keys and wait until all the moving components of the machine come to a complete stop;
- Remove the clamp of the cut material, located over the pick-up, to remove the material in the front section. To do this, remove the clamp locking pins on both sides, as shown

in Fig. 8 and remove the chains. The figure shows dismantling of the wide windrow clamp. Dismantle the narrow clamp in similar way.

- Manually remove the accumulated material;
- Reinstall the windrow clamp.
- Lift the rear chamber;
- Lock the cylinders by means of protection locks (**Fig. 9 and 10**);
- Remove the material from the inside of the press chamber;
- Remove the locks for securing the cylinders;
- Close the rear chamber.

7 Maintenance and adjusting

If the baler is connected to the tractor, apply the manual brake, disable the engine and remove the ignition key. Remember to switch off the control panel too.

During maintenance work, when the chamber is open, use locks to secure the cylinders.



DANGER

DANGER!

All activities related to maintenance and adjusting must be executed during machine stoppage and when all the moving parts of the machine have stopped.

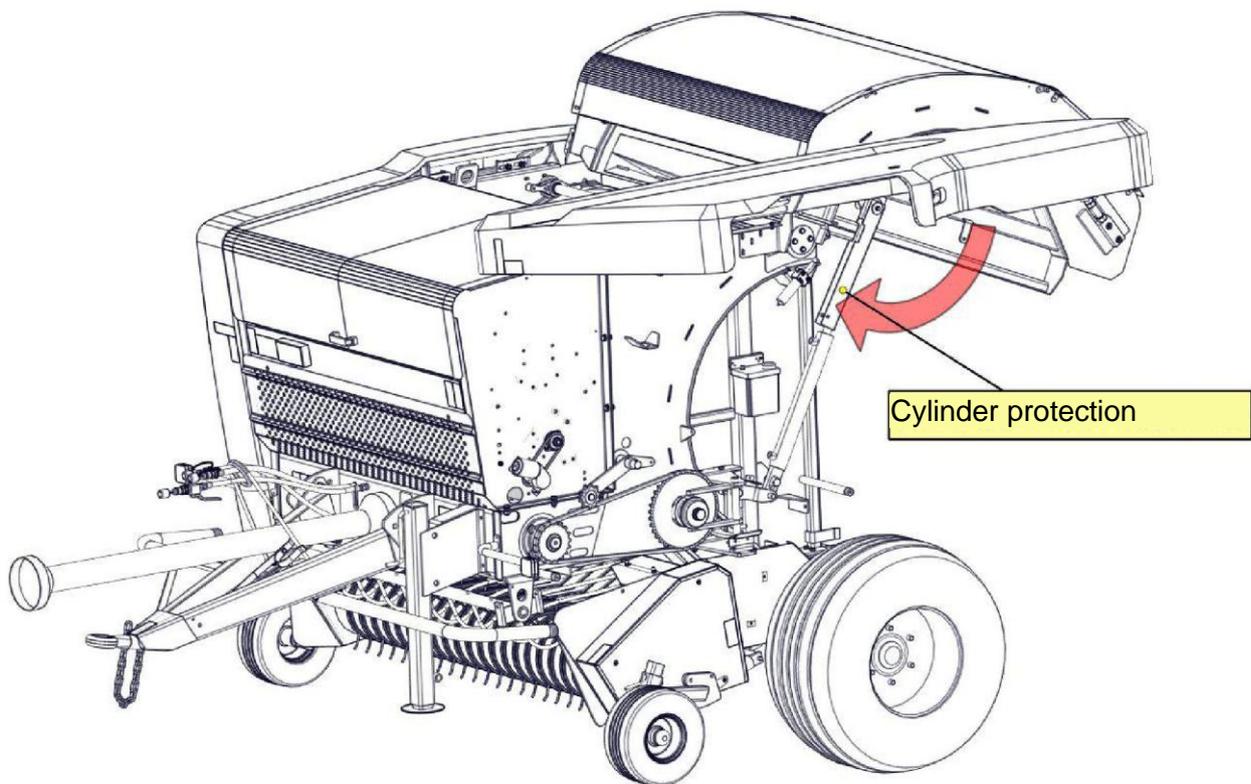


Figure 9. Locks for securing the cylinders

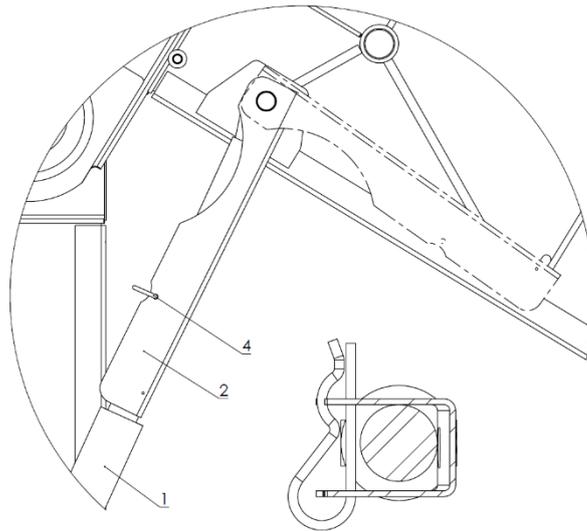


Figure 10. Locks for securing the cylinders

Secure the lifted baler cover in its upper position, as shown in Fig. 10. On both sides of the baler, use clamps (2) fixed to the upper pins of the hydraulic cylinders (1) to secure them. Move the clamps (2) fully upwards so, that they embrace the stretched cylinder rods. Lock them with locking pins (4) against unauthorised cover closing. Unlock the clamps of the cover after completing the planned activities.



CAUTION

CAUTION!
Use original spare parts only.

Original spare parts by Metal Fach are made to match the specific needs of the devices produced by Metal Fach.

Parts from other manufacturers are not inspected or approved by Metal Fach. To avoid risk, use the original spare parts by Metal Fach only.

7.1 Pick-up wheels adjustment

The working position of the pick-up can be adjusted. To do so, follow the procedure below:

- Set the proper height of the pick-up operation by changing the support wheel setting,
- Use a cotter pin to lock the setting.



The manufacturer recommends setting the tines of the pick-up at the height of 2-3 cm above the surface.

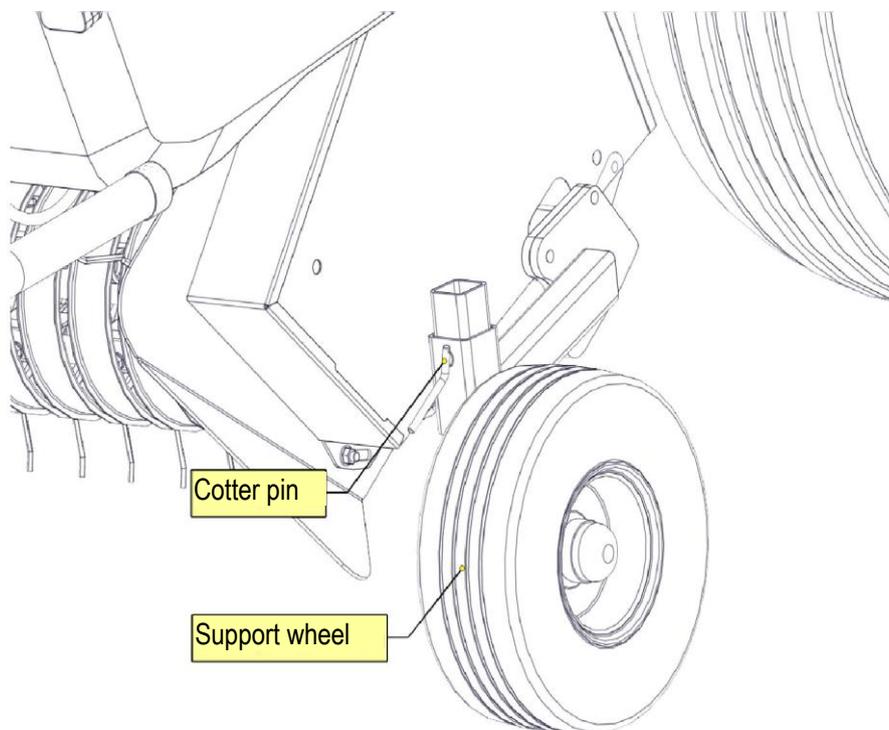


Figure 11. Adjusting working height of the pick-up

7.2 Windrow clamp adjustment

The height of roller clamp position should suit the thickness of the windrow. When the windrow size is large, raise the windrow roller clamp, and for small windrow sizes, lower it.

The procedure of adjusting the roller clamp height:

- Disable the PTOff and tractor engine, remove the ignition key;
- Disconnect the chain (1);
- Holding the roller clamp at a required height, fix the right chain link at the place indicated with the arrow on the left- and right-hand side of the baler;

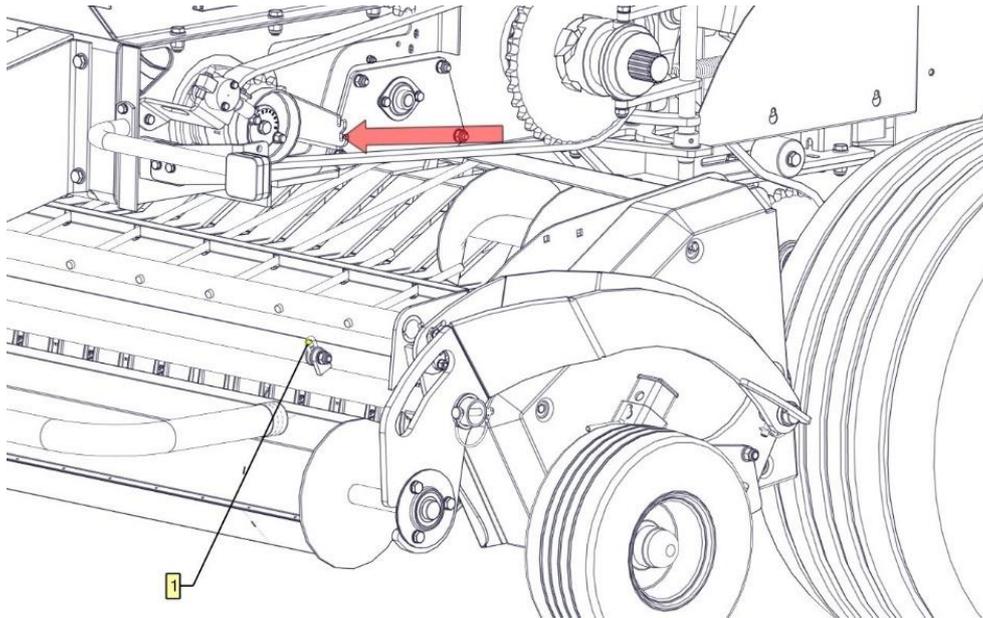


Figure 12. Windrow clamp adjustment

7.3 Adjusting the drive chain tensioning (every 10 hrs of work)

Check the chain tension and the functioning of automatic tensioners, if present, at regular intervals.

The tension value of the chain “F” must be within 3-5 mm. It can also be determined using the following formula:

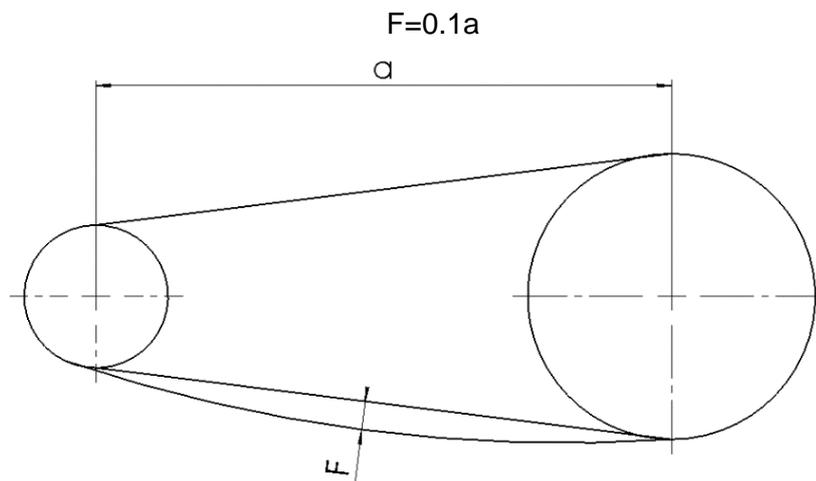


Figure 13. Chain tension

7.4 Adjusting the automatic tensioners

The machine chains are tensioned automatically by spring tensioners. Check the chain tension at regular intervals and adjust as required.

The procedure of checking and adjusting the chain tension (**Fig. 14**):

- Open the left-hand side guard;
- Adjust the chain tension using the nut (**Fig. 14**);
- Close the left-hand side guard.

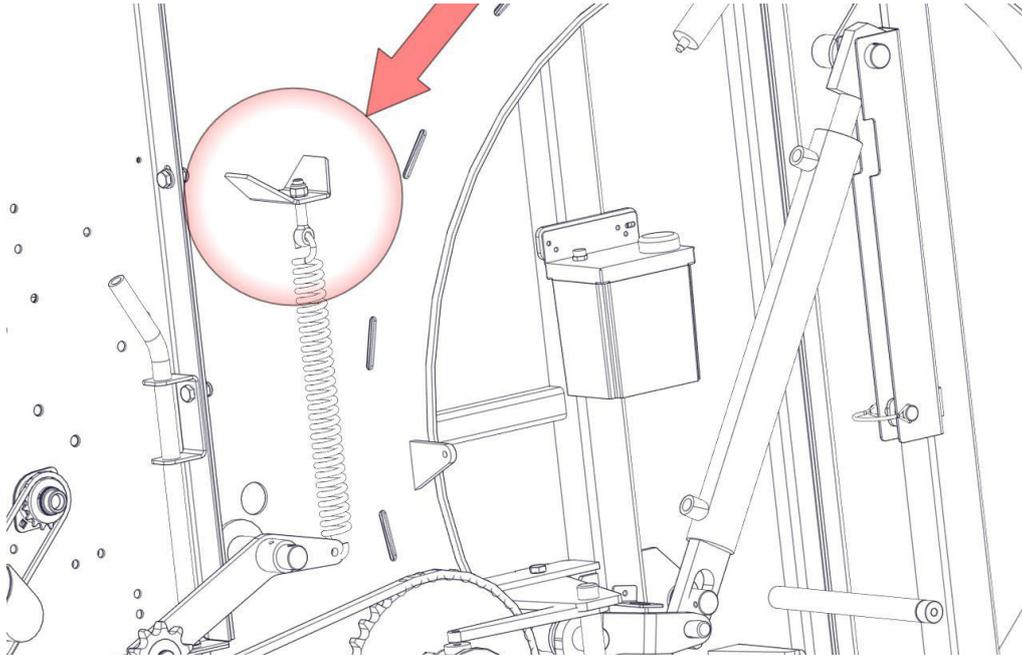


Figure 14. Adjusting the automatic chain tensioners

7.5 Adjusting the manual tensioners

Most of the pin chains in the machine requires the manual adjustment of tension. Check the tension at regular intervals and adjust as required.

Adjusting the pick-up chain tension (left-hand side)

The procedure of adjusting the pick-up chain tension (left-hand side):

- Loosen the bolts and remove the side guard from the left side of the pick-up.
- Loosen the bolt (1) and adjust the chain tension by gently hitting the tensioner with a hammer to move it downwards.
- After you obtain a proper chain tension, re-tighten the bolt (1).
- Then, loosen the bolt (2) and turn the eccentric tensioner to adjust the tension of the other chain.
- After you obtain a proper chain tension, re-tighten the bolt (2).
- Replace the guard and secure it with the screws.

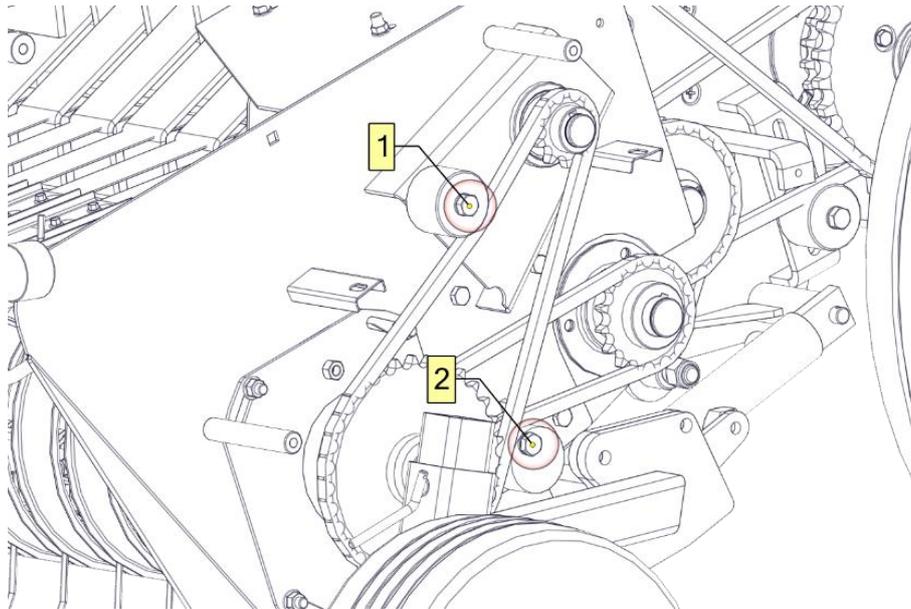


Figure 15. Adjusting the tension of the pick-up chains

To tension the right-hand side pick-up chain, follow the steps for the left-hand side one in a similar manner.

Adjusting the chain tension on the left-hand side of the baler

The steps of adjusting the chain tension on the left-hand side of the baler:

- Remove the lower guard on the left-hand side of the baler;
- Loosen the bolt (1) or (2), depending on a chain to tension;
- Adjust the chain tension by gently hitting the tensioner with a hammer to move it downwards;
- After you obtain a proper chain tension, re-tighten the bolt;
- Replace the guard and secure it with the screws.

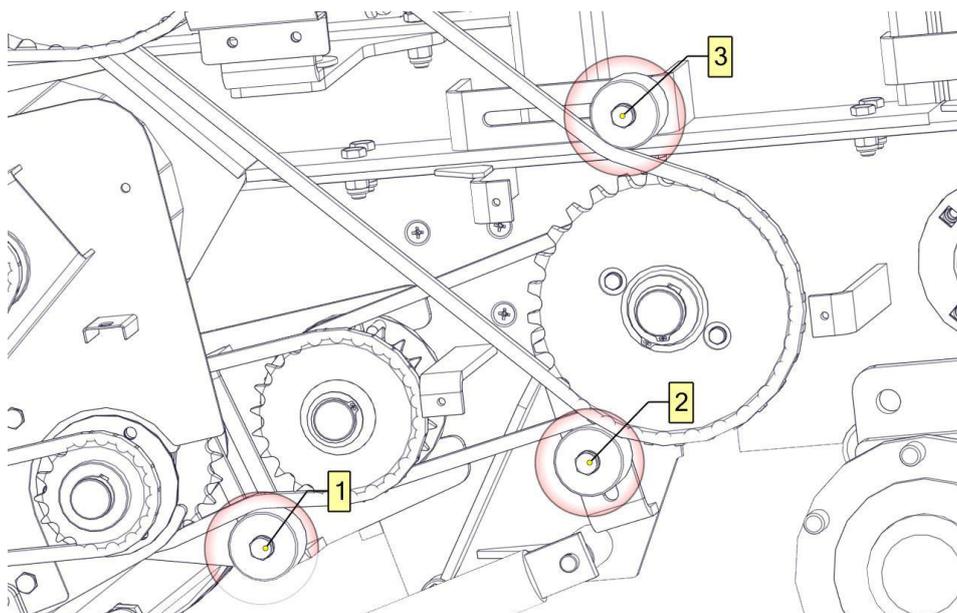


Figure 16. Adjusting the chain tension on the left-hand side of the baler

Adjusting the chain tension on the right-hand side of the baler

The steps for adjusting the chain tension on the right-hand side of the baler (**Fig. 17**):

- Remove the lower guard on the right-hand side of the baler;
- Loosen the bolt 1;
- Adjust the chain tension by gently hitting the tensioner with a hammer to move it downwards;
- After you obtain a proper chain tension, re-tighten the bolt;
- Replace the guard and secure it with the screws.

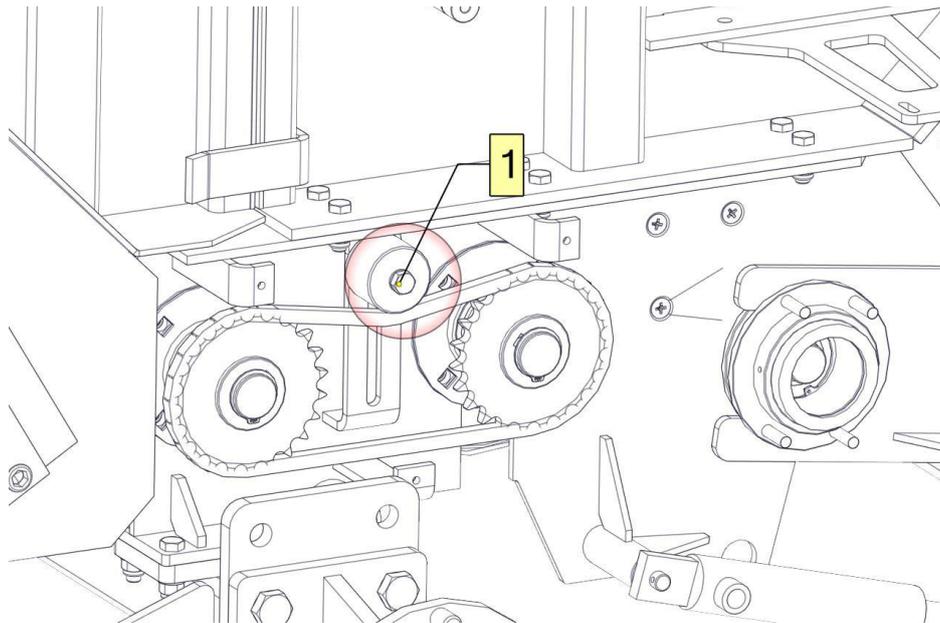


Figure 17. Adjusting the chain tension on the right-hand side of the baler

Adjusting the tension of the chain and rod conveyor set of the Z587 baler



CAUTION

CAUTION!

Adjust the springs that tension the chain of the main conveyor on both sides of the baler.

The degree of spring tension must be equal on both left- and right-hand sides.

The procedure of adjusting the tension of the chain and rod conveyor set:

- Open the left- or right-hand side guard;
- Loosen the jam nut for the nut (1);
- Use the nut (1) to adjust the chain tension. Length "A" (between a lower washer and a bracket) should be 225 mm (**Fig. 18**);
- After you obtain a proper tension, re-tighten the nut 1.

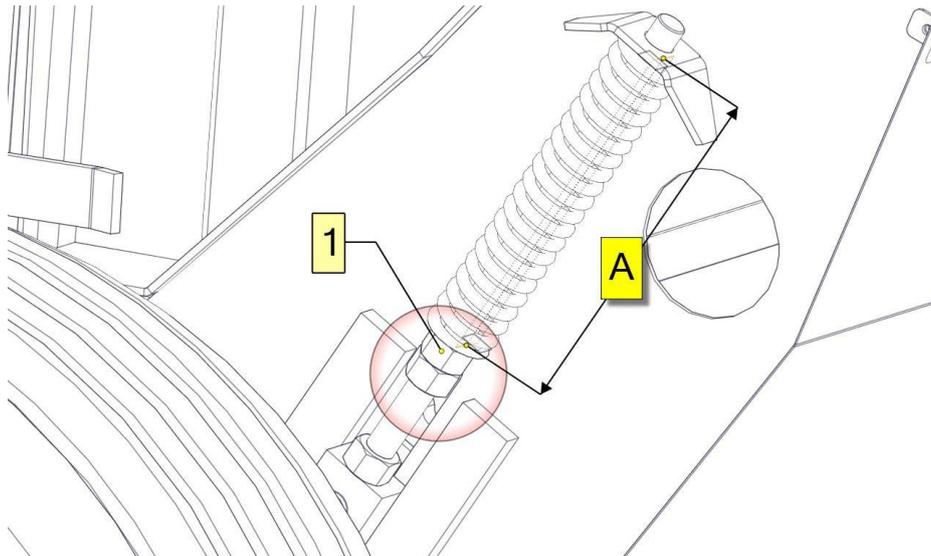


Figure 18. Adjusting the tension of the chain and rod conveyor set of the Z587 baler

Adjusting the tension of the chain and rod conveyor set of the Z587/1 baler



CAUTION

CAUTION!

Adjust the springs that tension the chain of the main conveyor on both sides of the baler.

The degree of spring tension must be equal on both left- and right-hand sides.

Adjust the tension of the chain and rod conveyor set by loosening the jam nut 3 and then tightening or loosening the nut 2. After you obtain the required tension, re-tighten the jam nut 3.

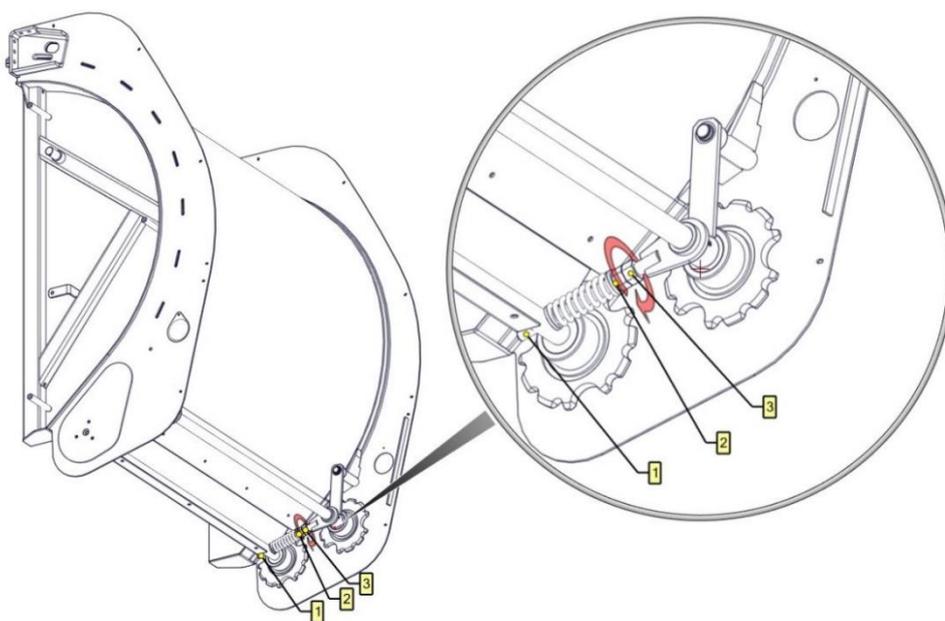


Figure 19. Adjusting the tension of the chain and rod conveyor set of the Z587/1 baler

7.6 Adjusting the jaw coupling for disconnecting the chain and rod conveyor drive

Check on a routine basis and adjust, if required, the setting of the jaw coupling to provide play of 5 mm between the faces of the tines (when the coupling is off) (**Fig. 20**).

To perform the adjustment, turn bolt 1 located near the lever activating the jaw coupling on the right-hand side of the baler.

Perform the adjustment at the pressure in the hydraulic system of at least 40 bar.

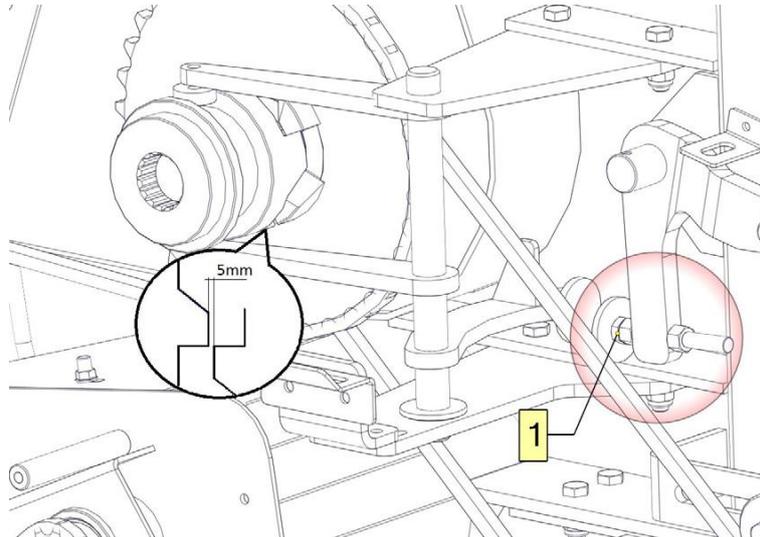


Figure 20. Adjusting the jaw coupling

7.7 Pick-up cam adjustment

Depending on the type of collected material and working conditions, adjust the cam so that it does not pull the material. To do so, follow the procedure below:

- Loosen the bolts and remove the guard from the left side of the pick-up;
- Loosen 4 nuts that hold the cam (**Fig. 21**);

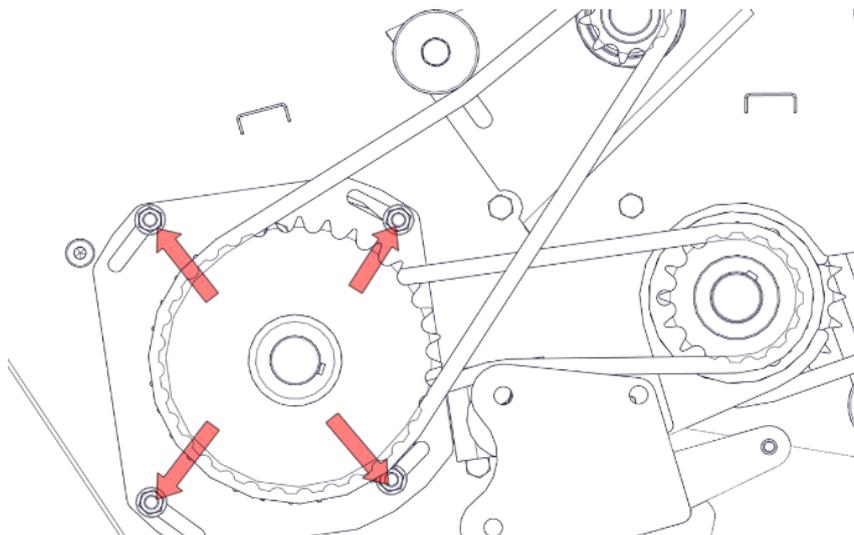


Figure 21. Pick-up cam adjustment

- Adjust the cam position; turn it to move the pick-up tine closer to or farther from the transmission device. Rotate the cam (**Fig. 22**):
 - In direction “A” – to move the pick-up tine farther from the pick-up unit,
 - In direction “B” – to move the pick-up tine closer to the pick-up unit.

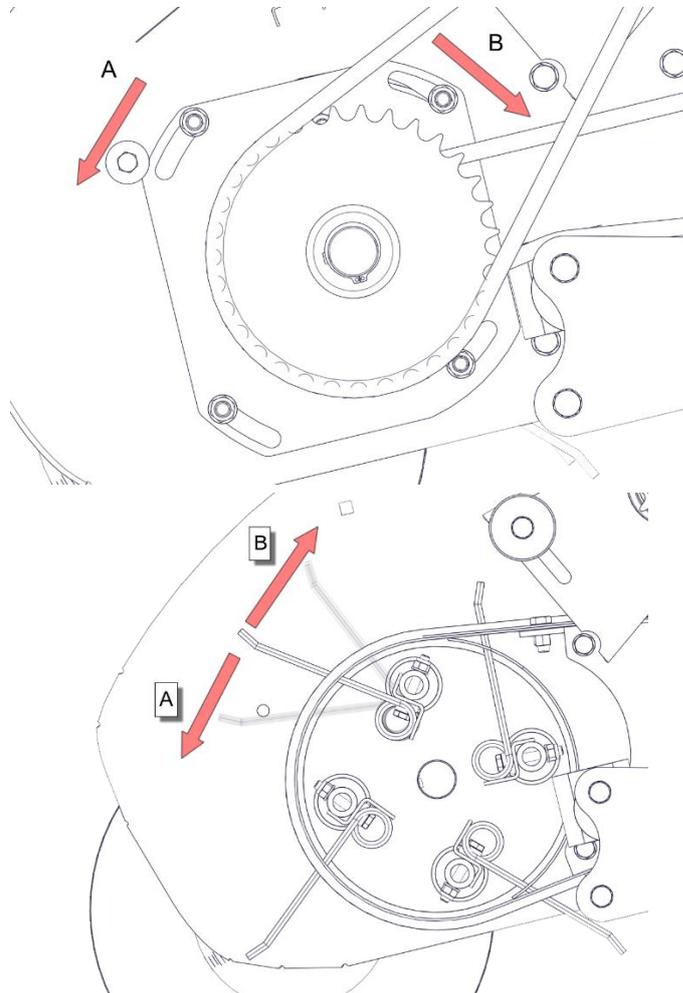


Figure 22. Pick-up cam adjustment

7.8 Replacing the locking bolt in the pick-up



CAUTION

CAUTION!

Only use manufacturer's bolts for repairing the overload protections. Using improper bolts as locking bolts increases the risk of damaging the machine.

**DANGER****DANGER!**

Carry out the repairs when the engine is disabled, the ignition key removed and the machine protected from unauthorised movement.

The locking bolt shown in Fig. 23 is an overload protection of the pick-up unit. Damaging the locking bolt stops the drive transmission to the pick-up and supply worms. If the locking bolt is cut in the pick-up protective device, replace it with a bolt of the same specification: Allen head bolt M6 x 40-10.9 PN-EN ISO 4762 (without zinc plate, with partial thread). To do so, follow the procedure below:

- Remove the guard on the left-hand side of the baler;
- Remove the cut locking bolt and make sure no parts of the damaged bolt are between the drive components;
- Turn the worm feeder to set the holes of the protective device, insert a new locking bolt, tighten it and fit the safety guard;

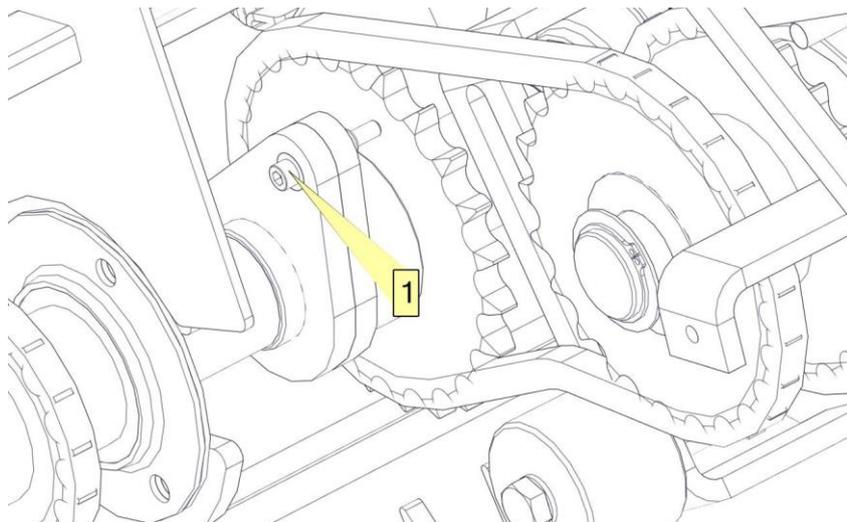


Figure 23. Replacing the locking bolt

7.9 Replacing the locking bolt in the supplying unit

**DANGER****DANGER!**

Carry out the repairs when the engine is disabled, the ignition key removed and the machine protected from unauthorised movement.

If the locking bolt is cut in the rolling rollers protective device, replace it with a bolt of the same specification: M8 x 35-8.8 bolt, PN-EN ISO 4018:2011. Procedure (Fig. 24):

- Unscrew the left lower chain gear guard;
- Remove the cut locking bolt and make sure no parts of the damaged bolt are in the drive;
- Turn the rolling roller manually, set the holes of the protective device in such a position to be able to insert a new locking bolt and tighten it;
- Install the protective guard.

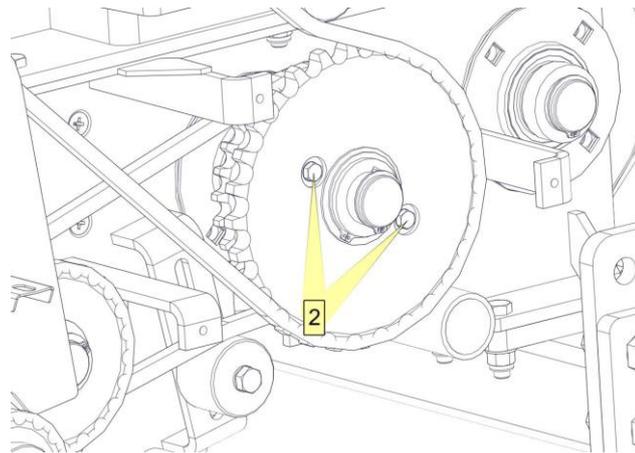


Figure 24. Replacing the locking bolt in the rolling roller protective device

7.10 Sharpening the twine unit blade



DANGER

DANGER!

Switch off the engine and remove the key from the ignition before you start sharpening the blade of the twine unit.

Sharpen the twine cutting blade after rolling 1000 bales and before each season of work. Sharpen the blade also when the twine is not cut off. The blade angle should be 30° (Fig. 25).

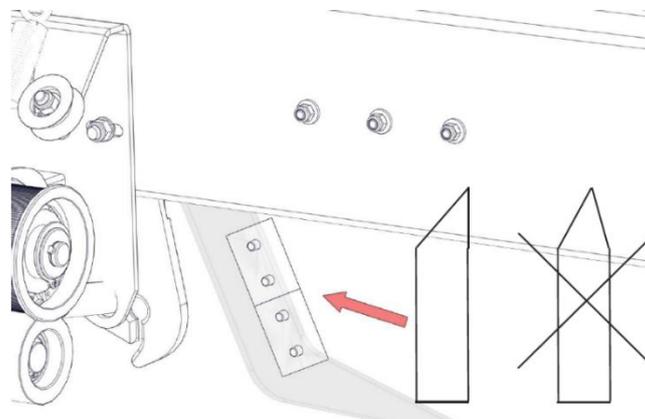


Figure 25. Sharpening the blade

7.11 Twine binding unit adjustment

Adjust the twine bale twine binding width by means of two locking (retaining) components, which are located outside of the machine. Setting the limit stops towards the centre of the baler results in the binding of the middle part of a bale. The largest extending of the stops results in the bending of the maximum length of a bale.

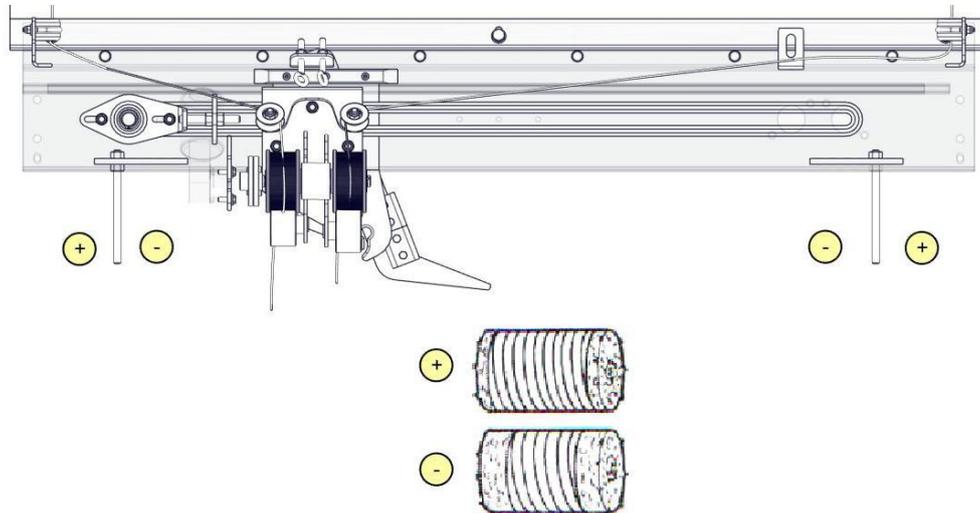


Figure 26. Binding width adjustment

Adjust the bale twine binding in steps with the use of a two-step belt wheel “P” (**Fig. 26**):

- To obtain less dense twine binding, wind the twine on “degree 1” of the belt wheel “P”;
- To obtain less dense twine binding, wind the twine on “degree 2” of the belt wheel “P”;

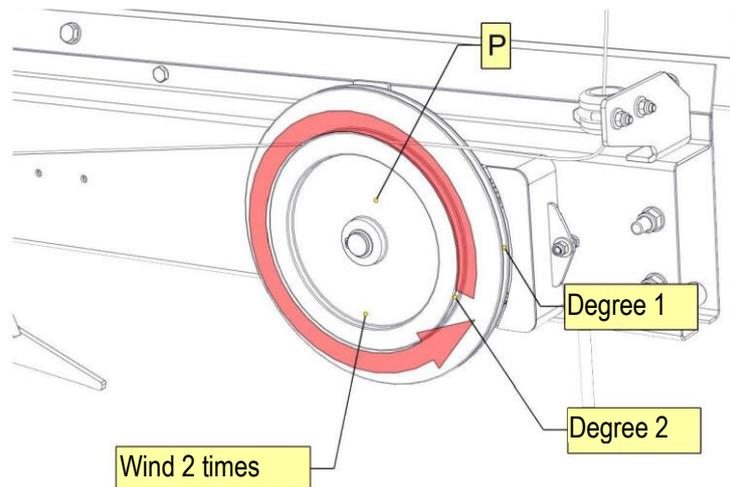


Figure 27. Twine bale binding density adjustment

7.12 Net binding device adjustment

The net roll may not unwind freely. It should be withheld lightly. The degree of the force keeping it back is controlled by a spring, the tension of which is adjusted with the component “T” by fixing it in one of the holes.

If the reel is held too much, the rollers that guide the net are not capable of unwinding it.

To adjust the number of bale net binding turns, open the right-hand side guard and select the hole corresponding to the required number of the binding turns. You can also adjust the pressure of the guide rollers. Use the spring tensioners “M” located to the sides for this purpose.

If the reciprocal pressure between the rollers is excessive, the net will show a tendency to pull towards the middle of the bale, which will prevent the bale being bound across its whole width.

If the pressure between the two rollers is not sufficient, the rollers will not be capable of unwinding the net. Transmission oil exchange (once a year)

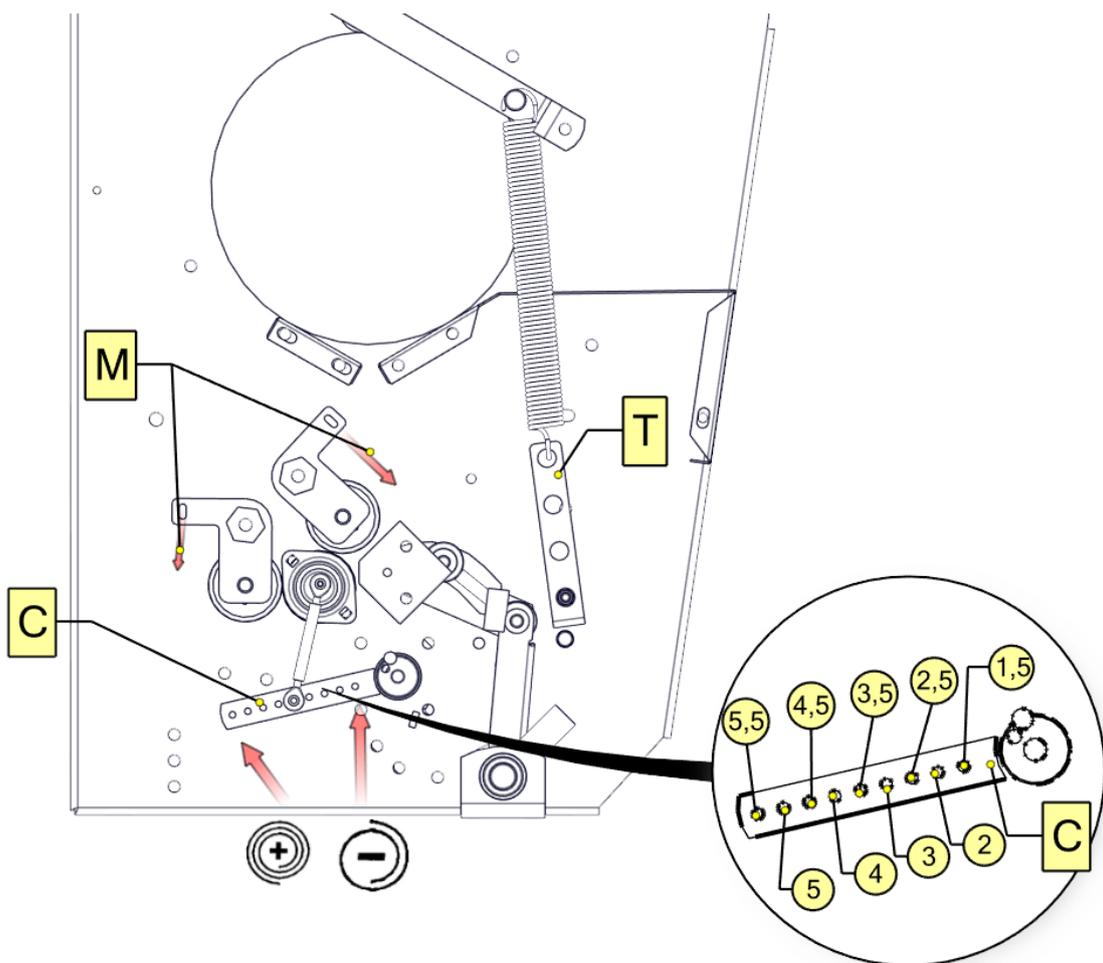


Figure 28. Net binding device adjustment

7.13 Transmission oil exchange (once a year)



The oil in the transmission box should be exchanged after the first 50 hours of operation and then in the beginning of each season.



CAUTION

CAUTION!

Do not overfill the gearbox with oil. It may result in overheating or oil leakage. The oil should be exchanged while it is still warm (e.g. immediately after using the machine).

Oil draining:

- Prepare a container for used oil;
- Unscrew and remove the plug located on the bottom of the transmission box; you can access it through the hole in the bottom part of the front bar, over the pick-up;
- Drain oil to the previously prepared container;
- After emptying the box, replace the cap.

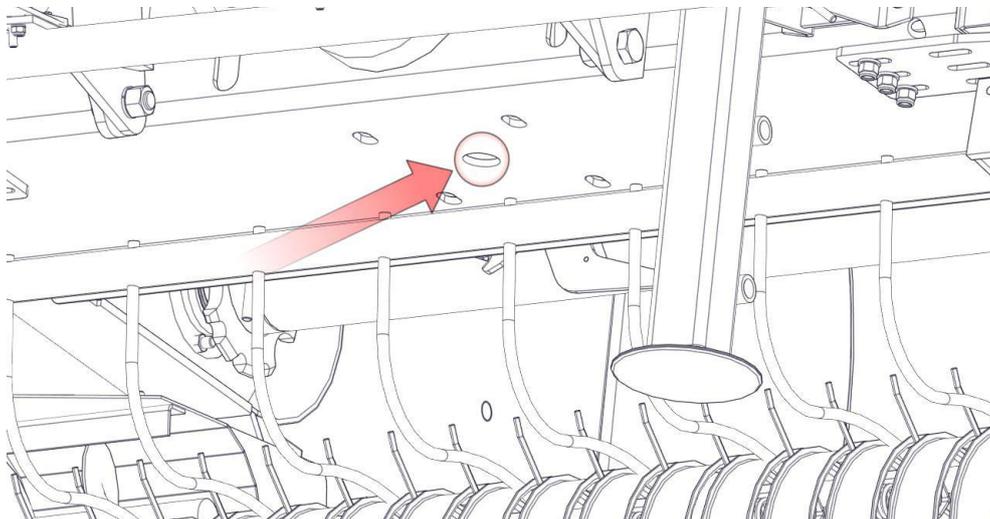


Figure 29. Drain cap



Important: Use the transmission oil type 80W90.

Refilling oil (required oil quantity in the box is 3 l):

- Unscrew and remove the cap in the top section of the transmission box;
- Replenish the oil;
- After refilling oil, clean and replace the cap.

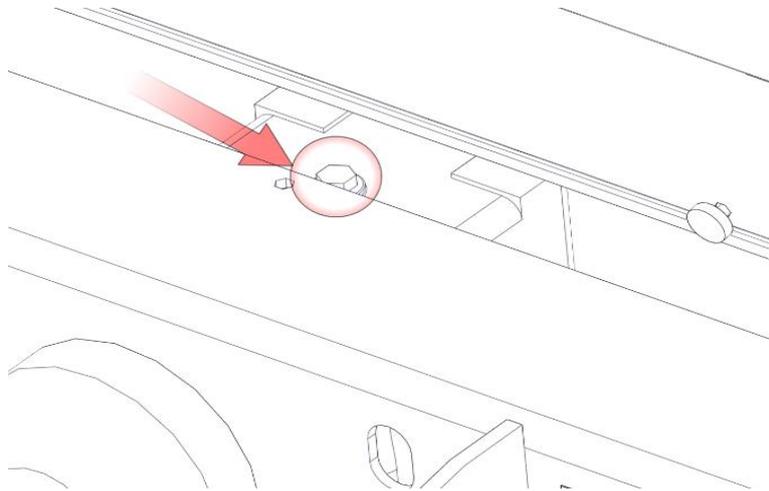


Figure 30. Oil level in the gearbox

7.14 Tyres inspection (every 30 days of work)



CAUTION

CAUTION!

Important: Wheel and tyre repairs may be performed only by skilled staff using sufficient equipment.

Schedule regular checks of the tyre pressure and ensure it is suitable for a respective tyre.



CAUTION

CAUTION!

Important: Check the tightening of the wheel bolts regularly. The tightening torque should be in accordance with the table in **Section 11**.

8 Lubrication



CAUTION

CAUTION!

All the items listed below must be lubricated at the beginning and at the end of each season.

Lubricate the drive chains with transmission oil after each 5 hours of baler use or after baling 50 bales. Lubricate the places marked with a pictogram (Fig. 31) each time you use the baler.

If no automatic chain lubrication system is present, carry out this activity manually by using special greases for chain maintenance and lubrication.

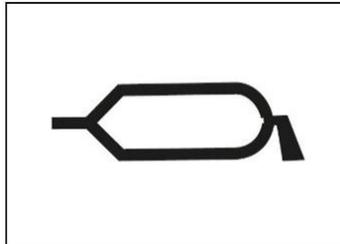
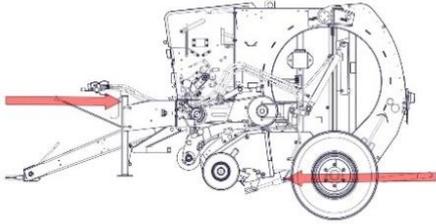
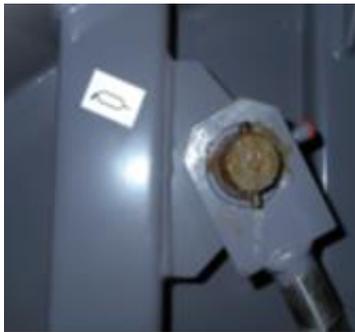
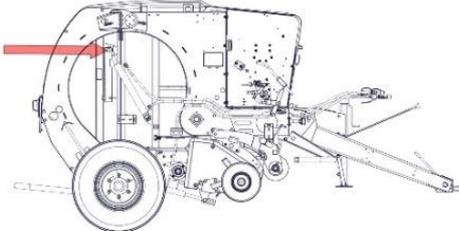


Figure 31. Marking of the main baler lubrication places

Table 2. Lubrication points

Lubrication points	Location on the baler	Lubrication points
		
	<p>Po prawej i lewej stronie</p> 	



DANGER

DANGER!

Carry out the chain lubrication when the tractor engine is disabled, the ignition key is removed and the parking brake applied.

Lubricating the chain of the net binding unit

The chain of the net unit is not lubricated by the central lubrication system, so it must be lubricated manually. To perform the lubrication, open the left-hand side guard and lubricate the chain of the net binding unit (**Fig. 32**).



Figure 32. Lubricating the net chain

8.1 The automatic lubrication system for chains

The Z587 and Z587/1 balers can be fitted with the integrated main drive chain lubrication system. The standard equipment of the machine allows the user to install the central lubrication system on a later date. The installation is to be performed by the authorised service centre of the user.

The system is composed of a mechanical pump, oil tank with a volume of 3 l, manifolds and dosing ends terminated with brushes feeding oil to the main lubrication points, providing uniform distribution of oil on the chain surface.

The pump (P) provides a stepless adjustment of the amount of oil. To adjust the amount of oil, loosen the nuts (N) on the cam (K) and turn a part of the cam so that the arrow (W) indicates the required number from 1 to 8, where 1 means the lowest oil amount, and 8 the highest.

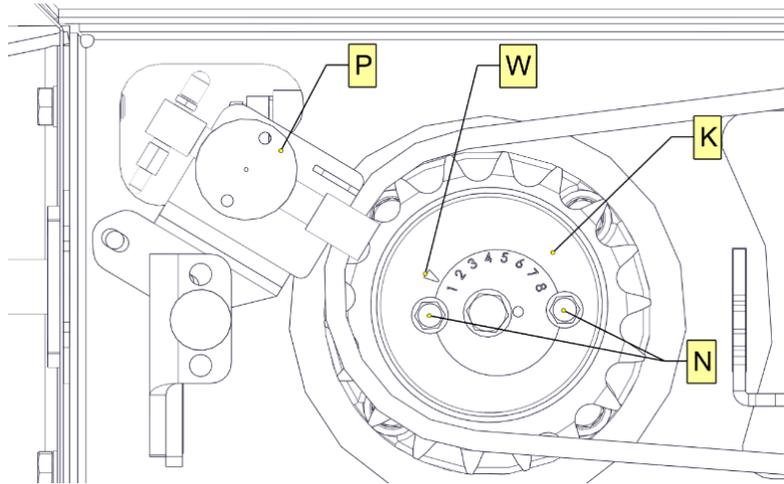


Figure 33. Adjusting the oil amount in the automatic lubrication system



CAUTION

CAUTION!

Using the mechanical pump without oil is prohibited. Operating the “dry” mechanical pump risks damaging it.



Always use clean oils. Simple mineral oils should be used.

Recommended oils:

- SAE30 – for low temperature operation,
- SAE90 – for operation in hot environments.

Tank

Carry out routine checks and refill the oil in the tank of the automatic chain lubrication system. To do so, follow the procedure below:

- Open the left-hand side protective guard:
- Unscrew the cap, refill oil and re-tighten the cap.

The tank volume is 3 litres.

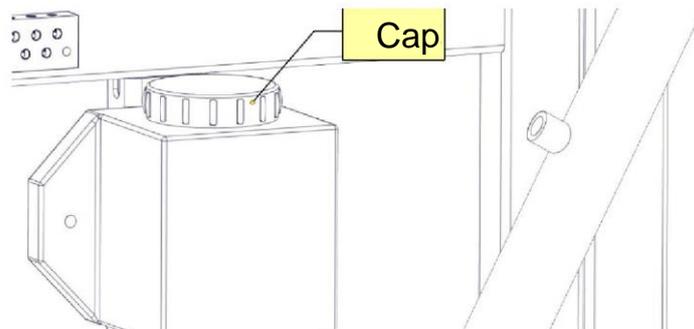


Figure 34. Oil tank of the automatic chain lubrication system

Filter replacement (once a year)

The filter is in the oil tank. It is recommended to replace it once a year. Procedure:

- Open the left-hand side guard:
- Drain the tank,
- Open the automatic lubrication oil tank,
- Replace the filter,
- Refill oil in the tank,
- Close the oil tank,
- Close the cover.

8.2 Lubrication of bearings

The Z587 and Z587/1 balers are fitted with the integrated bearing lubrication system. On the left-hand side of the machine, there is a strip “R”, in which there are grease nipples “S”, through which you can lubricate the bearings located on the left-hand side of the baler (**Fig. 35**). In the likewise manner, there is a strip on the right-hand side that enables lubrication of the bearings located on the right-hand side of the machine (**Fig. 36**).

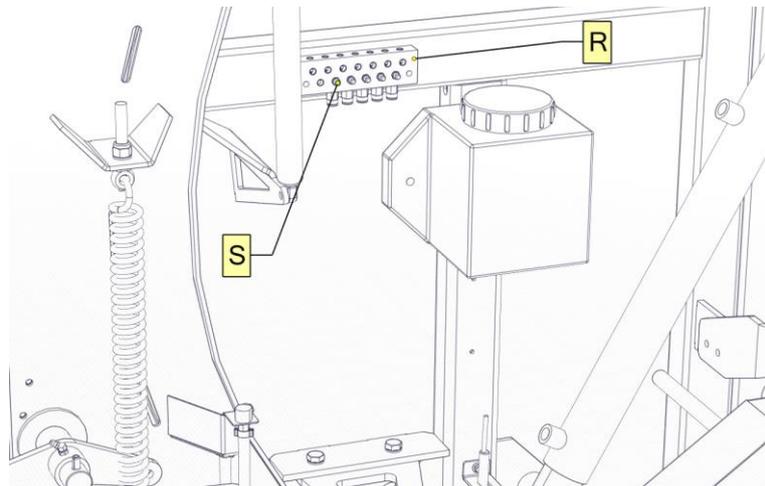


Figure 35. The bearing central lubrication system on the left-hand side of the baler

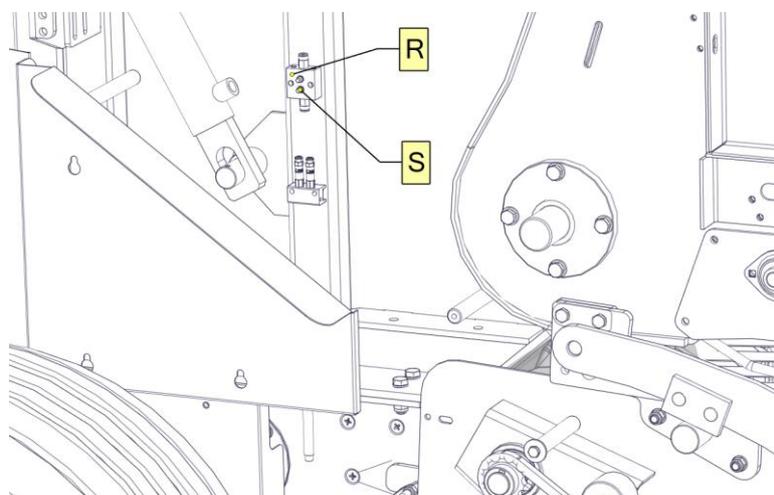


Figure 36. The bearing central lubrication system on the right-hand side of the baler

9 Electrical system.

The baling press electrical system is supplied from the electrical system of the tractor. Connect the baler to the tractor electrical system circuit by means of the 7-pin connection cord, as shown in **Fig. 37**.

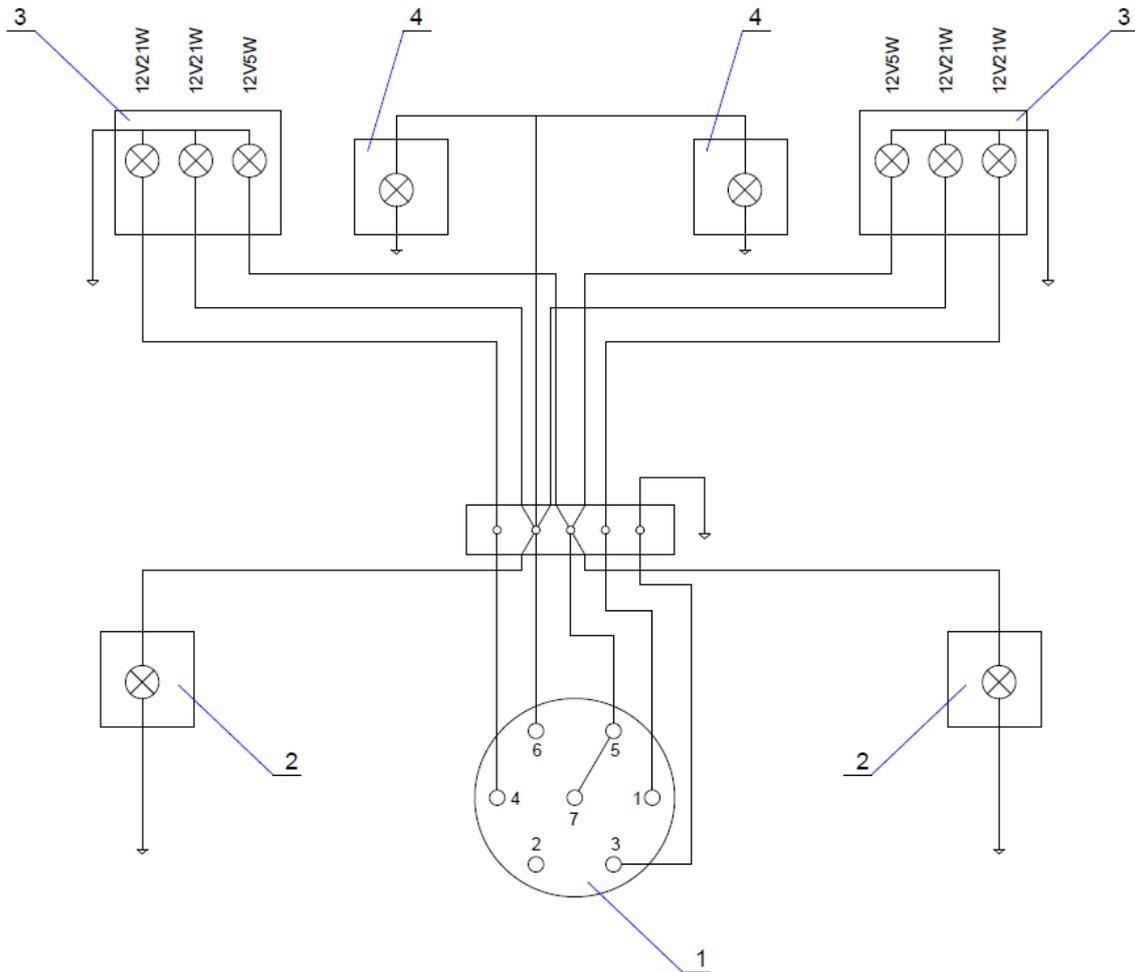


Figure 37. Electrical wiring diagram (1 – connection plug, 2 – head light, 3 – tail light, 4 – licence plate light)

10 Hydraulic system



WARNING

WARNING!

Ensure full working order of the hydraulic system. The oil that works under high pressure heats up to the temperature that pose a threat for health.



CAUTION

CAUTION!

Ensure the oil purity in the tractor power hydraulic system. The purity of oil must be compliant with condition 20/18/15 of ISO 4406-1996.



CAUTION

CAUTION!

Worn or defective hoses of the power hydraulics must be replaced with new ones.



CAUTION

CAUTION!

For replacements it is recommended to use original spare parts that will assure maintaining the baler in full efficiency for a long time.

The baling press hydraulic system is supplied from the hydraulic system of the tractor. Connect the opening/closing unit of the rear cover to the tractor power hydraulic system by means of a connection line supplying the chamber opening cylinders, as shown in **Fig. 38**. On the line, there is a valve that maintains suitable pressure during bale formation.

Connect the lifting/lowering unit of the pick-up to the tractor power hydraulic system by means of a connection line supplying the chamber lifting cylinders, as shown in **Fig. 39**.

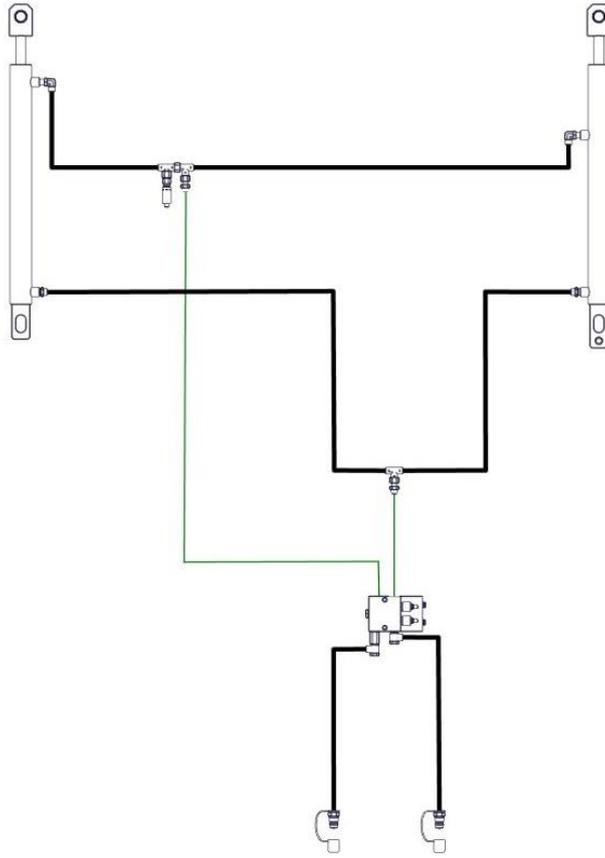


Figure 38. Diagram of the hydraulic system – rear chamber

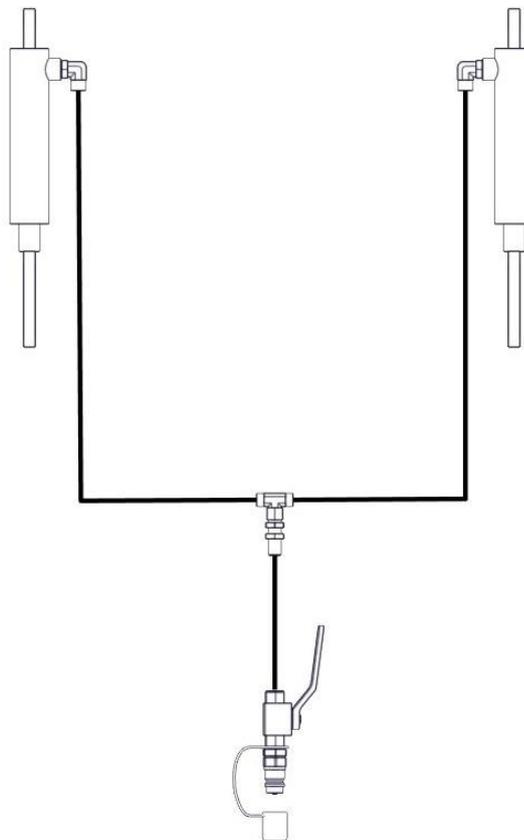


Figure 39. Diagram of the hydraulic system – pick-up

11 Tightening torque values for bolts

Table 3. Tightening torque values for bolts

Bolt-tightening torques – metric bolts in Nm							
Size Ø mm	Pitch mm	Bolt version – strength classes					Wheel nuts, wheel screws
		4.8	5.8	8.8	10.9	12.9	
3	0.50	0.9	1.1	1.8	2.6	3.0	
4	0.70	1.6	2.0	3.1	4.5	5.3	
5	0.80	3.2	4.0	6.1	8.9	10.4	
6	1.00	5.5	6.8	10.4	15.3	17.9	
7	1.00	9.3	11.5	17.2	25	30	
8	1.25	13.6	16.8	25	37	44	
8	1.00	14.5	18	27	40	47	
10	1.50	26.6	33	50	73	86	45
10	1.25	28	35	53	78	91	
12	1.75	46	56	86	127	148	
12	1.50						80
12	1.25	50	62	95	139	163	
14	2.00	73	90	137	201	235	
14	1.50	79	96	150	220	257	140
16	2.00	113	141	214	314	369	
16	1.50	121	150	229	336	393	220
18	2.50	157	194	306	435	509	
18	1.50	178	220	345	491	575	300
20	2.50	222	275	432	615	719	
20	1.50	248	307	482	687	804	400
22	2.50	305	376	502	843	987	
22	2.00						450
22	1.50	337	416	654	932	1090	500
24	3.00	383	474	744	1080	1240	
24	2.00	420	519	814	1160	1360	
24	1.50						550
27	3.00	568	703	100	1570	1840	
27	2.00	615	760	1200	1700	1990	
30	3.50	772	995	1500	2130	2500	
30	2.00	850	1060	1670	2370	2380	

12 Possible faults

Table 4. Possible faults

Pick-up

Problem	Possible cause	Solution
The pick-up unit performs the working movement, and the chain and rod conveyor does not.	Chamber not closed.	Close the rear chamber.
	The adjuster of the declutching unit requires adjustment.	Adjust the bolt of the jaw coupling lever (Section 7.6).
No lifting or lowering action of the pick-up unit.	The swivel joint supporting the pick-up unit not lubricated.	Lubricate the component fixing the pick-up.
Clogging the inlet of the chamber.	Too large and/or irregular windrows or too high working speed.	Form the windrows of the right size and/or work with lower pick-up speed.
	Excessive picking up the windrow on one of the sides of the pick-up.	Drive the baler equally from one side to the other.
	Too low rotational speed (rpm).	Work with a rotational speed of 540 rpm.
Pick-up tines tear the material.	Too high rotational speed of the pick-up compared to the working speed.	Increase the working speed.
		Decrease the PTOff rpm
The pick-up tines leave out parts of the windrow.	Too low rotational speed of the pick-up compared to the working speed.	Decrease the working speed.
		Increase the PTOff rpm.
The pick-up does not collect all the windrow.	Too large windrow width.	Form a new, narrower windrow.
The pick-up does not collect windrow from a level ground.	The pick-up set too high.	Lower the pick-up position.
		Set the pick-up wheels correctly.
The pick-up lets the material pass and stops.	The protection component is defective.	Halve the volume of the windrow.
		Adjust the wheel position to lift the pick-up.
		Remove the accumulated plant material and replace the protective component.
Insufficient windrow pick-up.	The pick-up tines were lost or damaged.	Replace the tines.

Forming bales

Problem	Possible cause	Solution
Excessive noise.	Loose or not lubricated chains.	Lubricate the chains or adjust their tension.
A bale is formed incorrectly or has a conical shape.	Picking up the windrow mainly on one side of the pick-up.	Drive the baler equally from one side to the other.
Rods of the rod and chain conveyor get bent.	Value of bale compaction pressure too high.	Do not exceed the compaction pressure of 170 bar.
The chain skips the teeth of the toothed wheels.	Worn out toothed wheels or chain.	Replace the toothed wheels or chain.
	Loose chain.	Tension the loose chains.

Twine binding

Problem	Possible cause	Solution
Twine drops on one side of the bale.	Side limit stops for twine are too far.	Set the limit stops closer to the middle of the baler.
Twine does not remain on the bale.	Binding started without the material on the pick-up.	Always start binding with some of the material on the pick-up.
	Too tight setting for the twine holding assembly.	Loosen the clamp of the twine holding assembly.
The twine is pulled by a bale, but the carriage guiding the twine does not move.	The twine slips on the belt wheel that transmits drive.	Oil the mechanical components of the carriage drive assembly.
		Increase the number of binding turns of the twine around the belt wheel.
Twines are not cut off.	Blade worn out.	Reverse the sides of the twine cutting blades or replace them.
		Increase the twine pressure.

Net binding

Problem	Possible cause	Solution
Net is not distributed well on a bale.	Too large mesh of the net.	Use standard net.
	Incorrect path of net flow.	Check if the net is installed correctly.
	Reel brake function incorrect.	Adjust the side spring tensioners.
	Excessive or insufficient pressure between the rollers.	Adjust the side spring tensioners.

PTO shaft

Problem	Possible cause	Solution
Defective locking bolt.	Bale weight too high.	Reduce bale weight.

Hydraulic system

Problem	Possible cause	Solution
Rear cover will not close.	Closing of the rear cover blocked by a bale.	Remove the bale.
	The hydraulic hose disconnected from the tractor.	Check the connection and connect the hoses if necessary.
Hydraulic system does not work.	No power supply to the hydraulic outputs.	Enable the hydraulic outputs from the tractor.
	The hydraulic hoses are not connected correctly to the external sockets of the tractor hydraulic circuit.	Check and, if necessary, carefully seal the quick fit coupling of the external sockets of the tractor hydraulic circuit.
	Insufficient oil supply.	Check and, if necessary, refill oil in the relevant tank of the tractor hydraulic system.
	The pump worn out or damaged (low pressure).	Repair or replace the hydraulic pump.
	Dirt inside the hydraulic circuit.	Blow and, if needed, clean the hydraulic filters.
	Oil leakage in cylinders.	Replace the sealing in the cylinders.
	Oil leaks from the hydraulic system.	Check the hoses of the hydraulic circuit and seal connections, if necessary.

Control panel

Problem	Possible cause	Solution
Message "Binding error" and acoustic signal.	No binding material (net, twine).	Replenish the twine or net cartridges.
	The bale did not grip the twine/net.	Always start binding with some of the material on the pick-up.
	The sensor distance to the bolt adjusted incorrectly.	Set the sensor 2-3 mm from the bolt.
Despite the closed chamber, the panel displays "Open chamber".	The sensor distance to the lever adjusted incorrectly.	The sensor should be 2-3 mm from the lever.
Message "STOP, baler damage risk" and acoustic signal.	Value of bale compaction pressure too high.	Do not exceed the compaction pressure of 170 bar.

NOTES

A series of horizontal dotted lines for taking notes, spanning the width of the page.



Metal-Fach Sp. z o.o. is constantly improving its products and adjusting its package to the needs of its customers, so it reserves the right to make changes to its product range without notice. Therefore, before making your purchase decision, please contact an authorised dealer or sales representative of Metal-Fach Sp. z o.o. Metal-Fach Sp. z o.o. will not accept any complaints regarding the data and pictures contained in the catalogue, as the presented range of products does not constitute an offer within the meaning of the provisions of the Civil Code.

The pictures do not necessarily show standard accessories.

Original spare parts are available from authorised dealers, both in Poland and abroad, and also at the Metal-Fach retail outlet.

TECHNICAL SERVICE

16-100 Sokółka, ul. Kresowa 62
phone: +48 85 711 07 80; fax: +48 85 711 07 93
serwis@metalfach.com.pl

SALES

16-100 Sokółka, ul. Kresowa 62
phone: +48 85 711 07 78; fax: +48 85 711 07 89
handel@metalfach.com.pl

SPARE PARTS WHOLESALE STORE

16-100 Sokółka, ul. Kresowa 62

Wholesale:

phone: +48 85 711 07 80; fax: +48 85 711 07 93
serwis@metalfach.com.pl

Retail

phone: +48 85 711 07 80; fax: +48 85 711 07 93
serwis@metalfach.com.pl

YOU CAN FIND UPDATED INFORMATION ABOUT OUR PRODUCTS ON WWW.METALFACH.COM.PL

