METAL-FACH

REPAIR & MAINTENANCE MANUAL

BALER

Z562

FEBRUARY 2018

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The information included in the Repair & Maintenance Manual is valid as of the date of issue. The manufacturer reserves its right to make design changes to machines, and due to this fact, 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 changing this Repair & Maintenance Manual.

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. code, serial number, manufacture year, and pressure on the hitch.

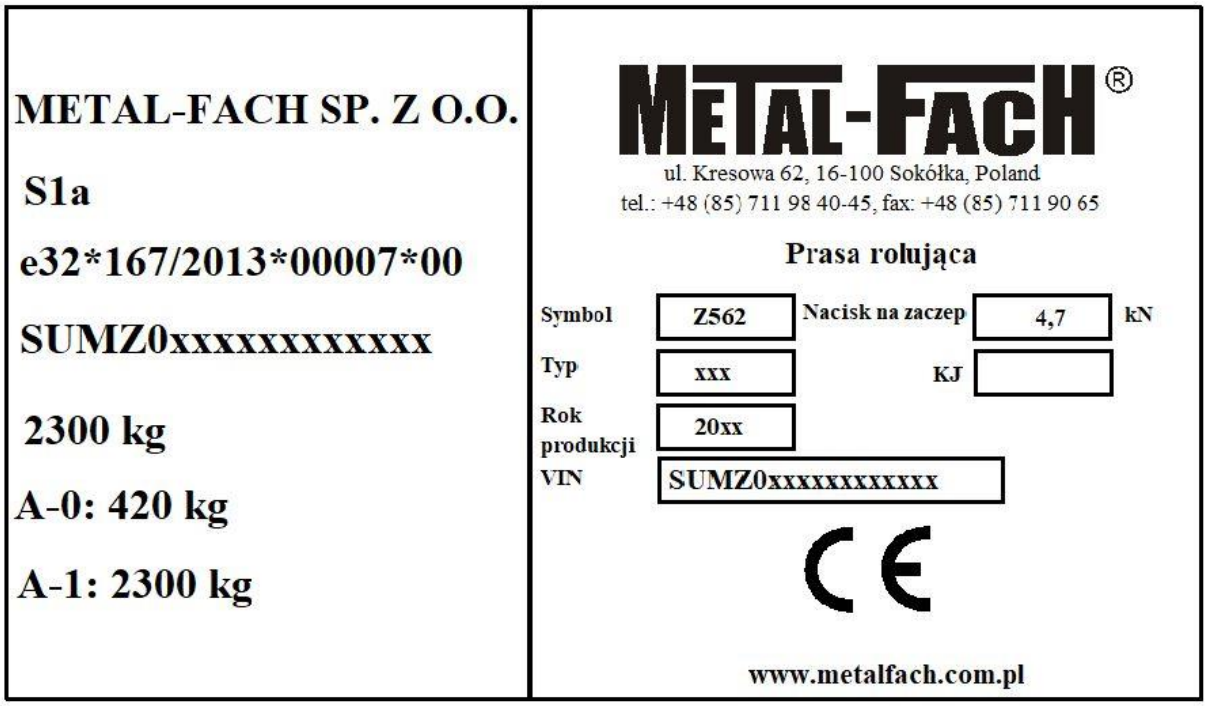

Figure 1 Rating plate

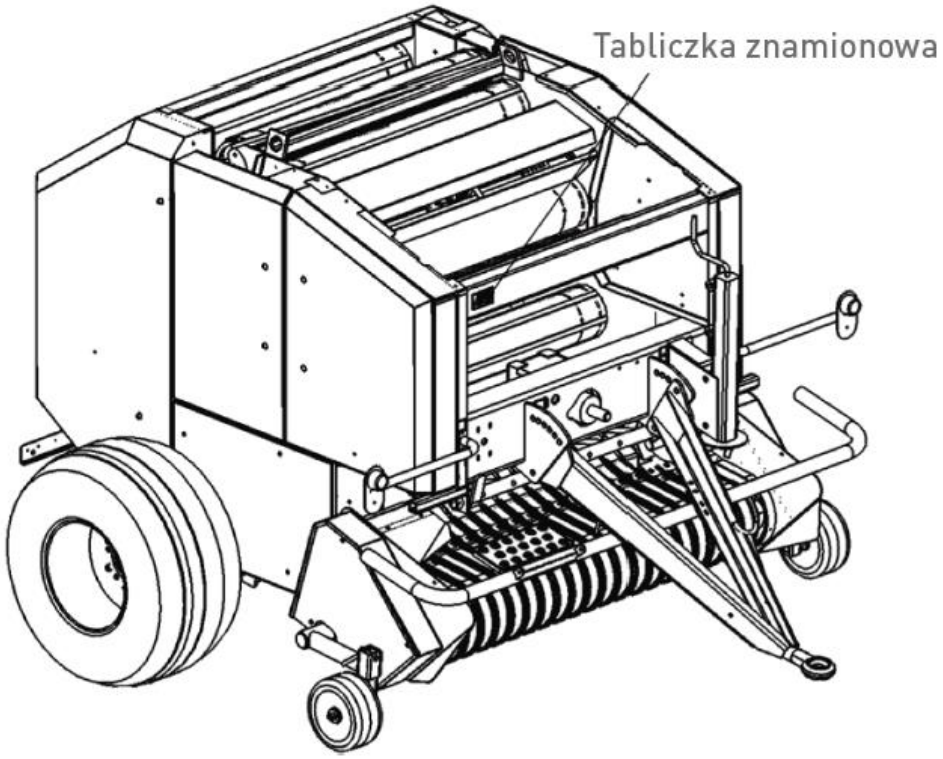

Figure 2 Location of the nameplate on the machine

2. Baler cleaning

OSTRZEŻENIE

WARNING!

Before you clean the baler, ensure that the baler, PTO drive, and tractor engine (if employed), 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 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 longer stop, it is recommended to lubricate all the lubrication points and to apply 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 delivered guarding covers.

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

Store the baler on 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 waterproof canvas or film.

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

UWAGA

ATTENTION!

Check the condition and legibility of the rating plate. If it is damaged or destroyed, report at the services.

Check the condition and legibility of the pictograms. If they are damaged or destroyed, replace them with new ones.

4. Dismantling and Disposal

Disassembly and disposal should be performed by specialised service centres which 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 the risks associated with the hazards of improper storage and transport. The authorised services provide both counselling and the performance of the complete services involving the disposal of the machine.

The proper tools and auxiliary equipment (hoist, wheel puller) must be used for disassembly.

Store any used oil in air-tight containers. Send it immediately to a petrol station which collects used oil.

Disassemble the machine. Sort the disassembled parts. Send them to the appropriate companies which collect such materials.

During the disassembly of the baler, wear the proper protective clothes and protective boots.

5. Attaching the baler to a tractor

Couple the baler to agricultural tractors with a power output of not lower than 35-70 kW, and a drawbar pull-class of 0.9-1.4, fitted with the output coupling to the power hydraulics and to s 6-pin rear PTO with a rated rotational speed of 540 rpm.

Connect the baler to the tractor's lower transport hitch, which enables the transmission of a vertical load of 4.0 kN.

6. Removing accumulated material

While picking up material, it is possible that some will accumulate on the pick-up and rotor or collector. Clogging is the result of improperly adjusting the speed to the harvest condition, and improperly formed windrow.

NIEBIEZPIECZEŃSTWO

DANGER!

Removing accumulated material during the machine's operations is forbidden.

NIEBIEZPIECZEŃSTWO

DANGER!

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

6.1. Removing accumulated material

Do the following to remove the material accumulated on the pick-up

- 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
- Clear the clamp of the cut material lodged over the pick-up and collector, and remove the material in the front section
- Manually remove the accumulated material
- Reinstall the clamp after it has been cleared of the cut material.

6.2. Removing accumulated material from the rotor

To remove the material accumulated on the rotor

- Stop the tractor, remove the ignition keys, and wait until all the moving components of the machine come to a complete stop
- Check the screw locks on the rotor
- Clear the clamp of the cut material lodged over the pick-up, and remove the material in the front section
- Manually remove the accumulated material
- Reinstall the clamp after it has been cleared of the cut material.

7. Maintenance and adjustments

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

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

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DANGER!

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

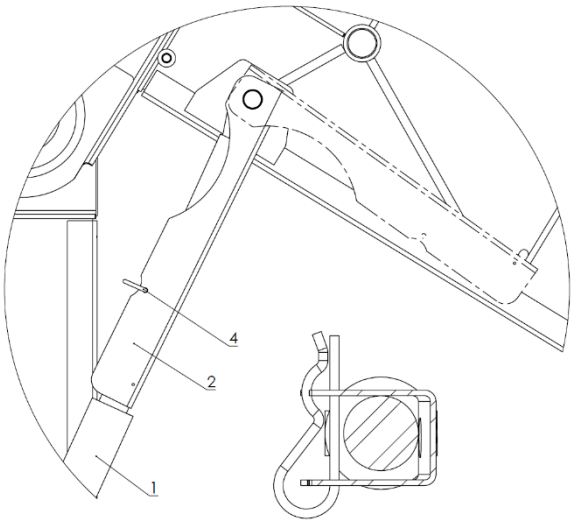


Figure 3 Locks for securing the cylinders

Secure the lifted baler cover in its upper position, as shown in Fig. 3. On both sides of the baler, use the 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 the locking pins (4) against unauthorised cover closing. Unlock the clamps in the cover after completing the planned activities.

ATTENTION!

Use original spare parts only.

UWAGA

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 original spare parts by Metal Fach only.

Table 3. Tightening torque values for bolts

Bolt-tightening torques - metrical bolts in Nm							
Size ∅ mm	**Pitch mm**	**Bolt version - strength classes**					**Wheel nuts, wheel bolts**
		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	

7.1. Pick-up wheels adjustment

The working position of the pick-up can be adjusted - procedure

- 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 a height of 2-3 cm over surface.

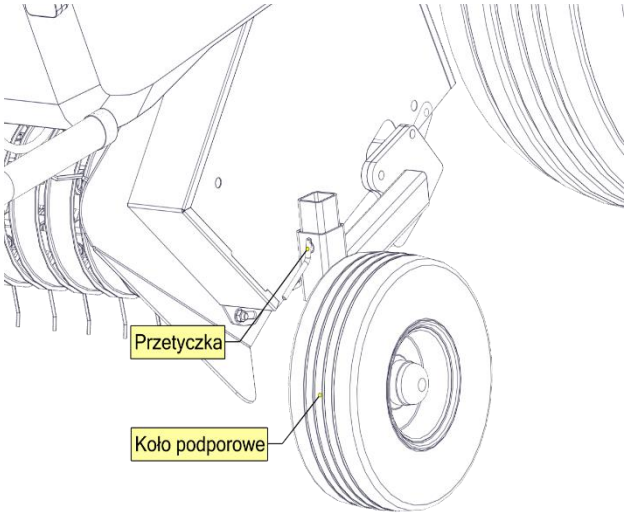
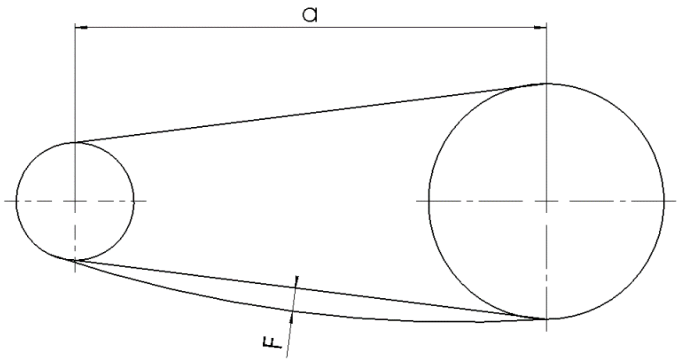


Figure 4 Adjusting the working height of the pick-up

7.2. Adjusting the drive-chain tensioning (every 10 hrs of work)

Check the chain tension 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



F=0.1a

Figure 5 Chain tension

The drive-unit diagram is shown in figure 6. The chains used for the drive are marked with items 1, 2 and 3. Carry out the adjustment of the chain tension with the tensioners (4) or adjusting bolts with a spring (5), respectively.

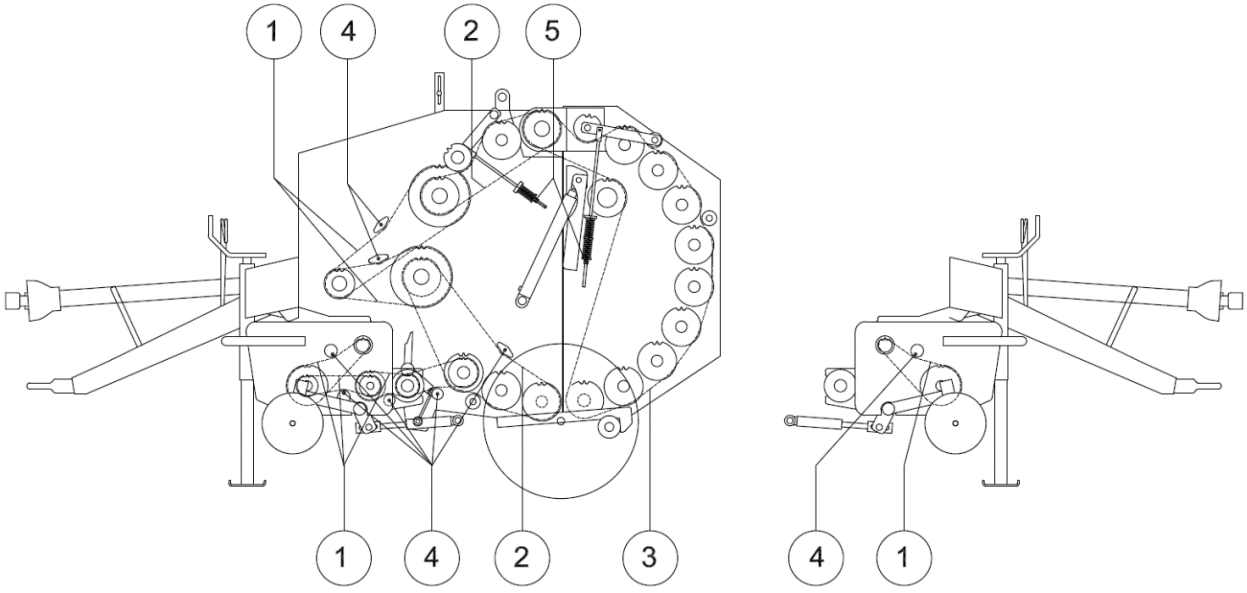


Figure 6 Drive unit

7.2.1 Adjusting the pick-up-chain tension of the baler with a feeding roller

Pay special attention to the pick-up chain tension of the baler with a feeding roller. Using the tensioner, maintain as high pick-up drive chain tension as possible.

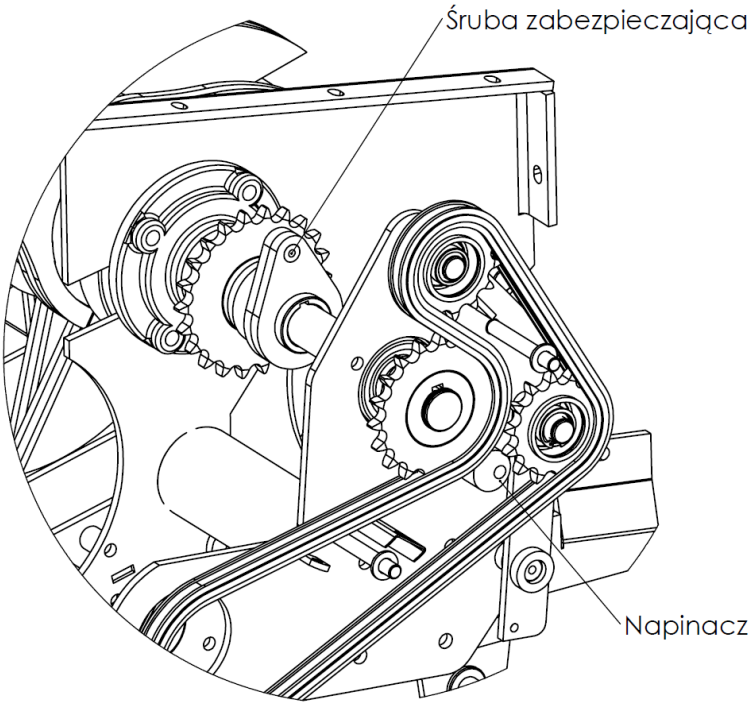


Figure 7 The drive chain of the pick-up

7.3. Pick-up cam adjustment

Depending on the type of collected material and the working conditions, adjust the cam so that it does not pull the material - procedure

- Loosen the bolts and remove the guard from the left side of the pick-up
- Loosen the 4 nuts which hold the cam

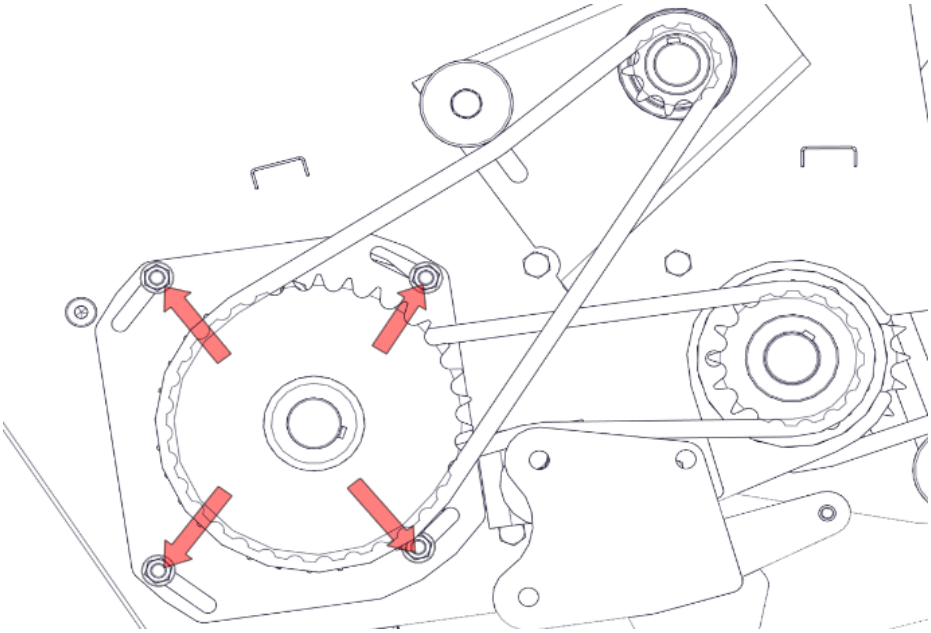


Figure 8 Pick-up cam adjustment

Adjust the cam position; turn it to move the pick-up tine closer to or further from the transmission device. Rotate the cam

- In direction “A” – to move the pick-up tine further from the pick-up unit,
- In direction “B” – to move the pick-up tine closer to the pick-up unit.

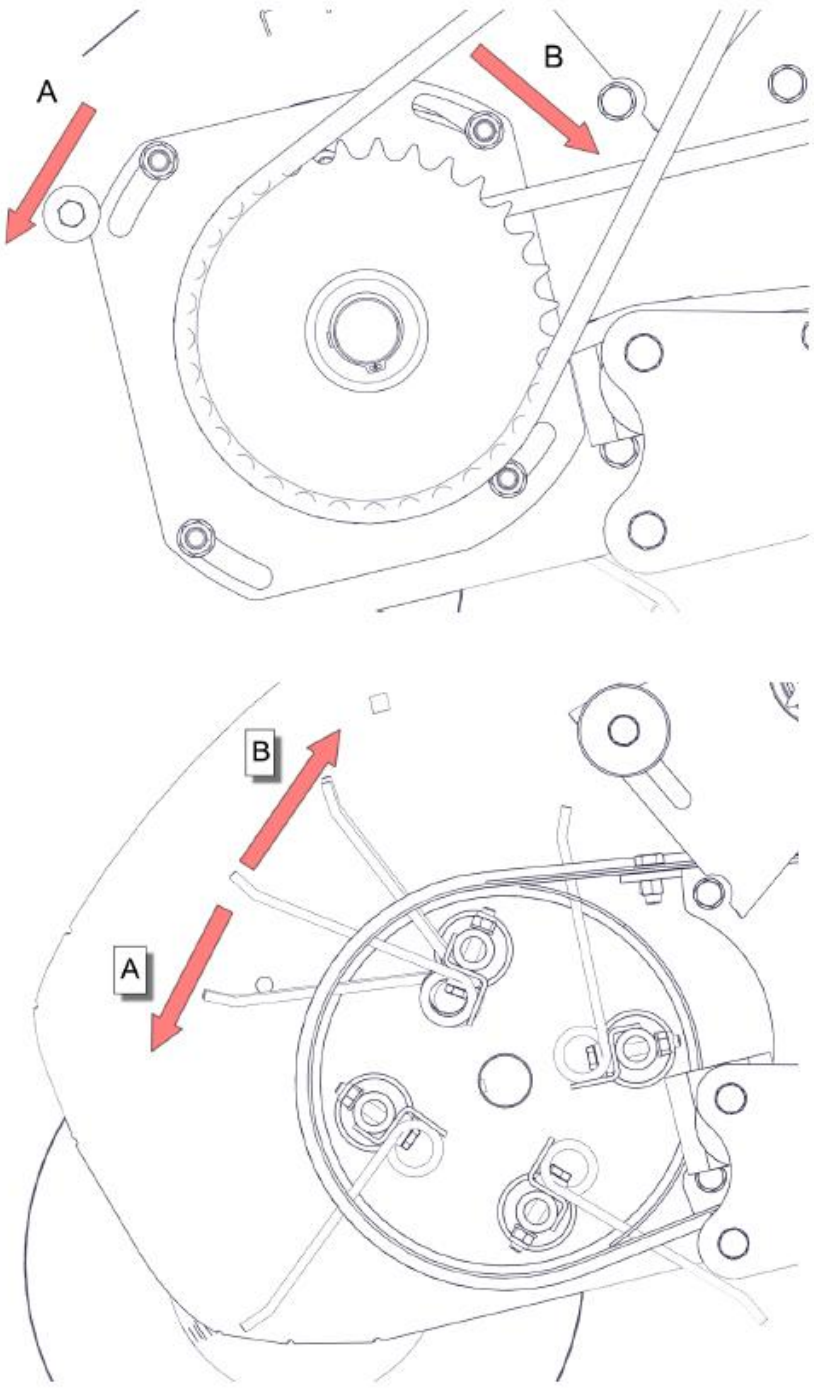


Figure 9 Pick-up cam adjustment

7.4. Replacing the locking bolt in the pick-up

The locking bolt shown in Fig. 10 is an overload protection for the pick-up unit. Damaging the locking bolt stops the drive transmission to the pick-up and supply worms. If the locking bolts have caused a break in the pick-up fuse, replace them with a bolts of the same specification.

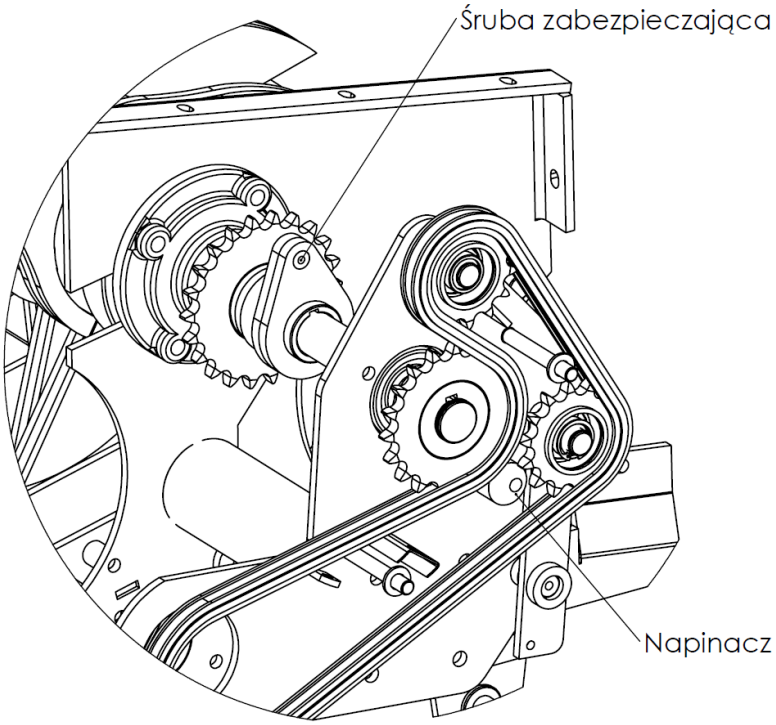


Figure 10 Replacing the locking bolt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ATTENTION!

Use only the manufacturer's bolts for repairing the overload protections. Using incorrect locking bolts increases the risk of damaging the machine.


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DANGER!

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

7.5. Replacing the locking bolt in the supplying unit


NIEBIEZPIECZEŃSTWO

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

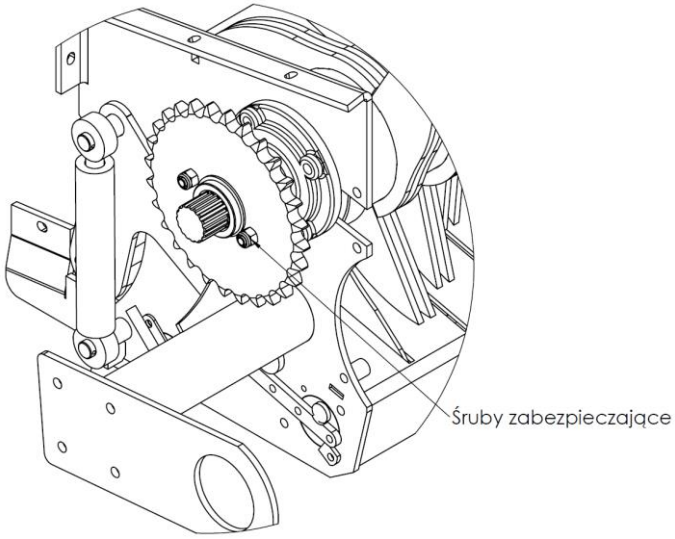


Figure 11 Feeding-roller protection - for balers with a feeding roller

In balers with a feeding roller, two bolts are used as the overload protection. Damaging the locking bolts stops the drive transmission to the feeding roller, pick-up and supply worms.

If the locking bolts have caused a break in the feeding roller (optional accessory), replace them with bolts of the same specification.

7.6. Adjusting the degree of compaction

DANGER!

Switch off the engine and remove the key from the ignition before adjusting the degree of compaction.

Depending on the type of material to be picked up, adjust the bale-compaction level. Adjust the degree of compaction with the lever and cord device (Fig. 12).

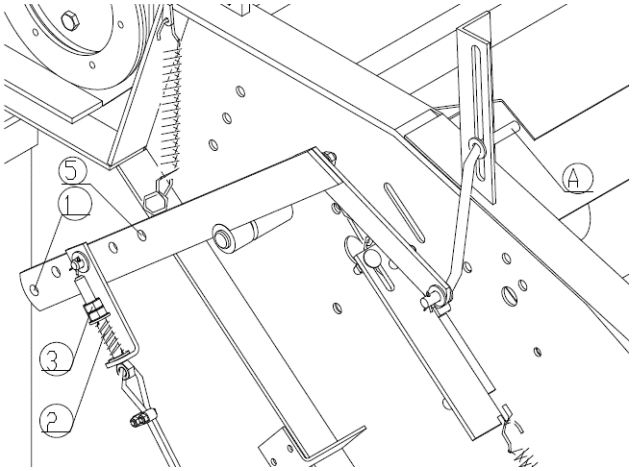


Figure 12 Adjusting the degree of compaction

Depending on the type of material to be picked up, adjust the bale-compaction level with a lever (5). The highest bale density is obtained when the cord is fixed in hole No. 1, and conversely, the lowest compaction degree is obtained when the cord is in hole No. 5. Adjust the compaction degree further adjusting the length of the bolt (2) by means of the nuts (3). Loosen the nut to increase the compaction degree, and tighten the nut to decrease the bale-compaction level. Adjust the nut when, for example, the compaction in hole No. 1 is too high, and in hole No. 2 too low.

The bale-compaction degree must also be adjusted using the tensioning lever as shown in Fig. 13. For silage pick-up, set length A of the tensioning lever within the range 55 –65 mm. For straw pick-up, set the length A of the tensioning lever within the range 65 – 75 mm.

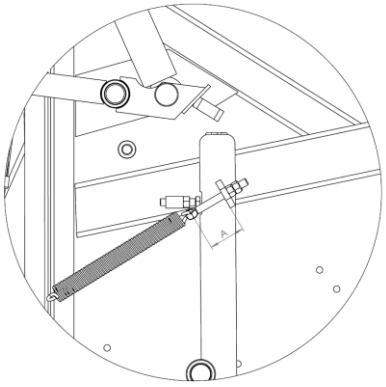


Figure 13 Adjusting the degree of compaction

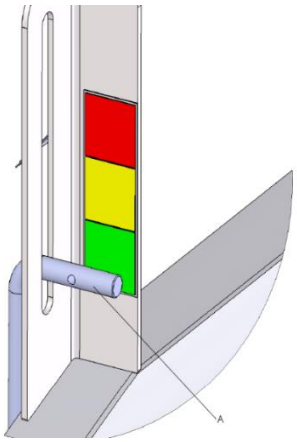


Figure 14 The scale of degree of compaction

To assess the compaction degree, use the scale (Fig. 14) located on the baler. If the bar is over the red field, the maximum compaction degree is reached, and any further swathe pick-up must be stopped.

7.7. Twine-binding-device adjustment

Adjust the width of the bale-twine binding with the limit stops located on both sides of the twine feeder. Setting the limit stops towards the centre of the baler results in the binding

of the middle part of the bale. The longest extension of the stops results in the bending of the maximum bale length. Change the binding density by changing the twine path on wheel B.

The binding density rises along with the rise of the wheel B diameter (Fig. 15). The highest binding density is achieved by running the twine with the wheel with the greatest diameter.

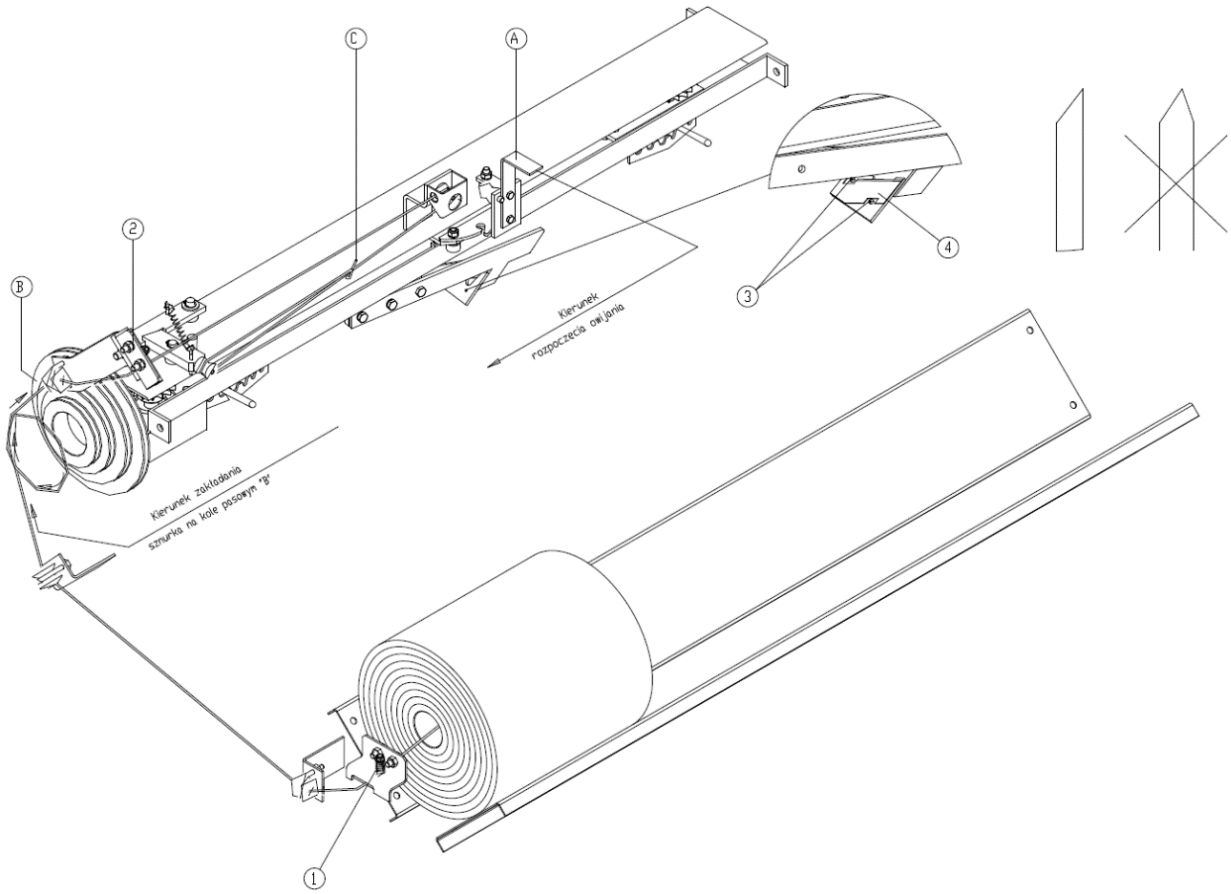


Figure 15 The twine path

ATTENTION!

Clean the inside of the twine feeder after each finished work session.

Clean the inside of the twine feeder at the place shown in Fig. 15 by removing dust and blowing it with low-pressure air after lifting the twine-feeder cover. Direct the dirt towards the outlet.

7.7.2 Sharpening the twine blades

You can sharpen the blade as shown in Fig. 15. To dismantle the twine-cutting blade, loosen the bolts (3). After sharpening, secure the blade with the bolts (3).

7.8. Net-binding-device adjustment

You can set the length of the bale binding with the adjusting screw (Fig. 16). Tighten the adjusting screw to move the measurement blade (13) further from the belt wheel (12), and decrease the binding length, as shown in Fig. 17. Determine the number of binding turns according to the harvest condition. The manufacturer's recommended number of binding turns is 1.5 to 2.5 bale turns.

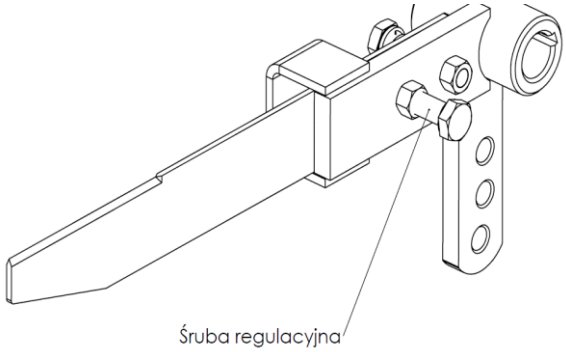


Figure 16 Location of the measurement blade

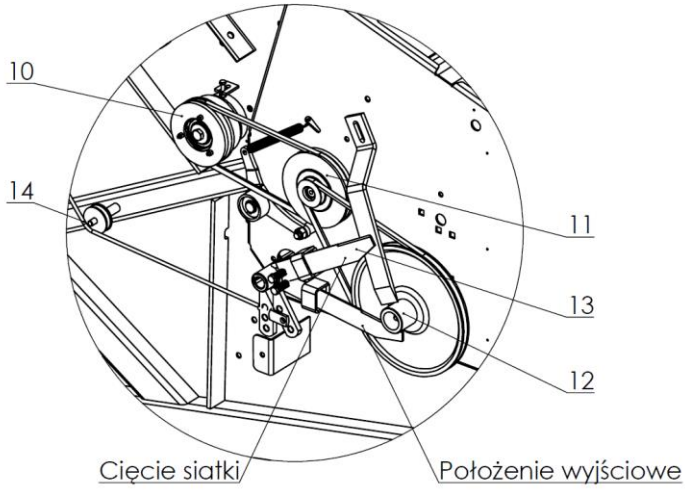


Figure 17 Adjusting the bind counter - the adjusting screw

The measurement blade (13) location in the baler is shown in Fig. 17. The measurement blade, controlled by a revolving motion after slipping from the hub thread of the belt-wheel casing (12), makes the blade impact the counter knife and cut off the binding net.

7.9. Adjusting the cover-stop valve

Next to the hydraulic coupling (1), there is a throttle/ non-return valve (2) enabling the adjustment of the hatch closing action. The adjustment must be carried out as follows.

- Lift the hatch
- Loosen the locking nut 3, turn the valve 2

- Try to close the hatch
- If the falling rate of the flap is adequate, block the valve (2) with nut (3); if the falling rate is inadequate, readjust the valve (2)
- After the adjustment is finished, check if the hatch lock works correctly.

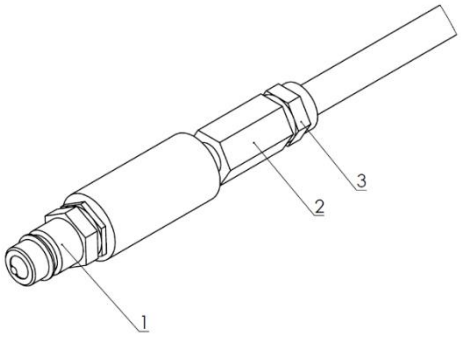


Figure 18 Cover-stop-valve

WARNING!

During the cover-stop-valve adjustment, follow H&S guidelines. Use the cover-stop valve only to adjust the speed of the cover closing.

7.10. Lock adjustment

To adjust the lock (Chapter 19), loosen the jam nut (2). Use the adjusting nut (1) to set the length A, which is from 0 mm to 2 mm. Tighten the jam nut (2). Loosen the jam nut of the adjustment screw (3) located on the right-hand side of the baler. Use the adjusting screw (3) to set the length B, which is from 2 mm to 5 mm. Check whether the adjusted lock works properly. Turn on the hydraulic system by feeding oil to the cylinders which open the rear hatch, until the starting moment of its opening. At that moment, stop feeding the oil, leave the tractor cab and make sure that the opening hatch will not cause a collision between the hook (4) and a the bushing (5). If such a collision is found, close the hatch and repeat the adjustment to remove it.

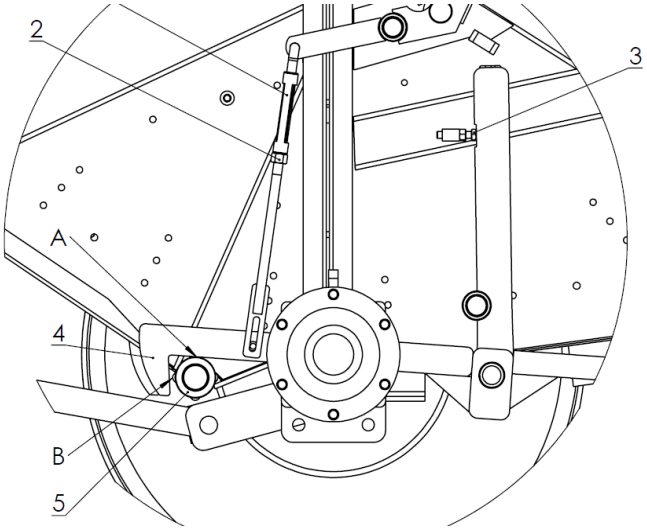


Figure 19 Lock adjustment

ATTENTION!

Improper lock setting and unsecured adjustment screw (1) can cause damage to the baler.

7.11. Sharpening the blades

It is necessary to sharpen the blades after some time of use in the baler fitted with the feeder roller and cutting blades (optional accessory). Assess the condition of the blades after lifting them and setting them in the working position. For this purpose, couple the baler with the tractor and extend the blades with the use of the tractor's hydraulic-system control lever, Stop the tractor engine, take off the key from the ignition, and engage the tractor's auxiliary brake. Assess the blades' condition. Blunt blades must be sharpened.

The manufacturer recommends having the cutter blades sharpened by a specialist.

You can sharpen the blades yourself, if you use special care. Before you start sharpening the blades, couple the baler with the tractor and retract the blades with the use of the tractor's hydraulic-system control lever. Detach the baler from the tractor. Secure the baler wheels with chocks. Loosen the locking screw and lower the lock lever (Fig. 20).

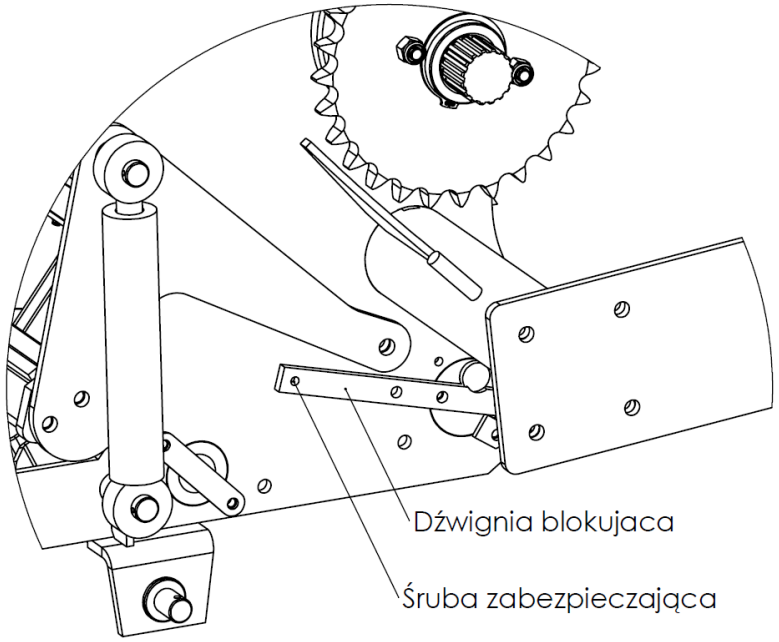


Figure 20 Blade lock

NIEBIEZPIECZEŃSTWO	DANGER! Take particular care when removing, sharpening, and replacing the blades. Risk of injury.
UWAGA	ATTENTION! Sharpen the blades at their flat side. Sharpening the blades at the “furrowed” side.

Install the sharpened blades assisted by a trained help. Set the locking lever in the home position and tighten the locking screw fully. Connect the baler to the tractor and check the functioning of the cutter blades.

7.12. Transmission-oil change (once a year)

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

UWAGA

ATTENTION!

Do not overfill the gearbox with oil. It can result in overheating or oil leakage. The oil should be changed while it is still warm (e.g. immediately after the machine-oil draining

Draining the oil:

- Prepare a container for the 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 the oil into a previously prepared container
- After emptying the box, replace the plug.
- Refill the 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 the oil, clean and replace the plug.

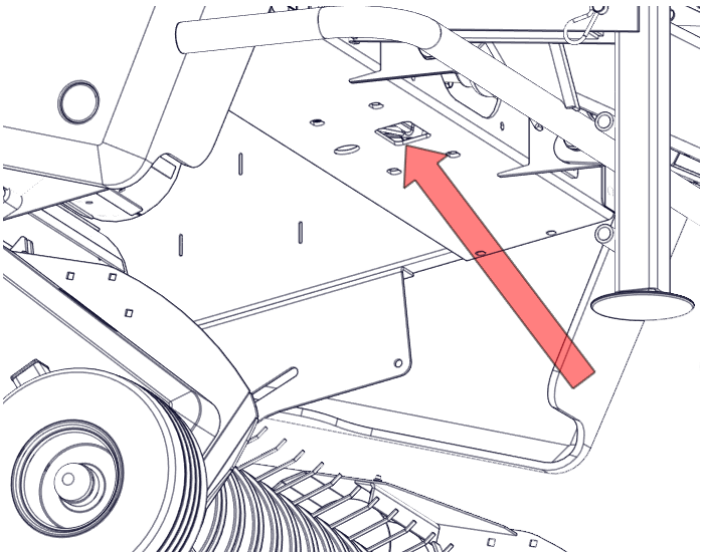


Figure 21 Drain plug

Important. Use transmission-oil type 80W90

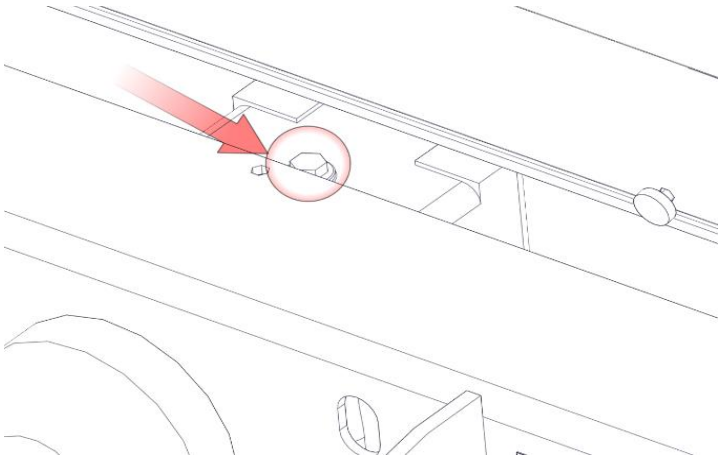


Figure 22 Oil level in the gearbox

7.13. Tyre inspection (every 30 days of work)

ATTENTION!

Important. Wheel and tyre repairs may be performed only by skilled staff using the correct equipment.

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

ATTENTION!

Important Check the tightening of the wheel bolts regularly.The tightening torque should be in accordance with Table 3.

8. Lubrication

ATTENTION!

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 the baling of 50 bales. Lubricate the places marked with a pictogram (Fig. 23) before each time you use the baler.

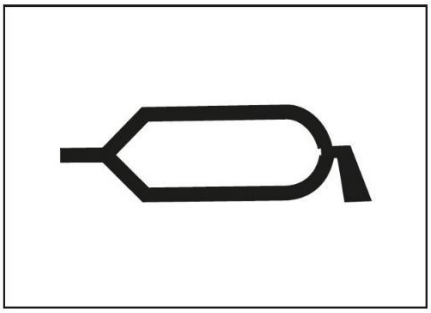


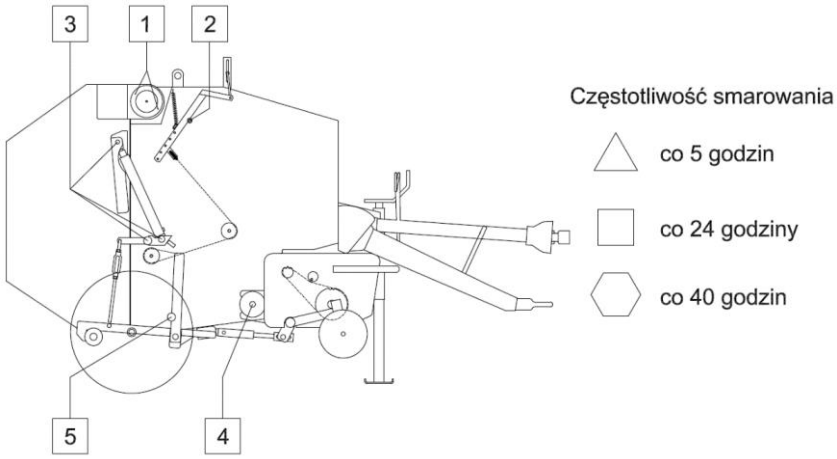
Figure 23 The marking of the main baler-lubrication places

NIEBIEZPIECZEŃSTWO

DANGER!

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

Figure 24 Lubrication points (right side)



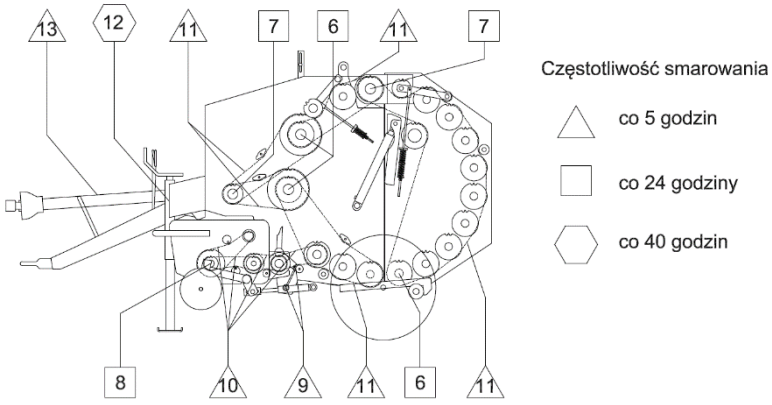


Figure 25 Lubrication points (left side)

8.1. Pick-up lubrication

The figure below shows the pick-up lubrication points.

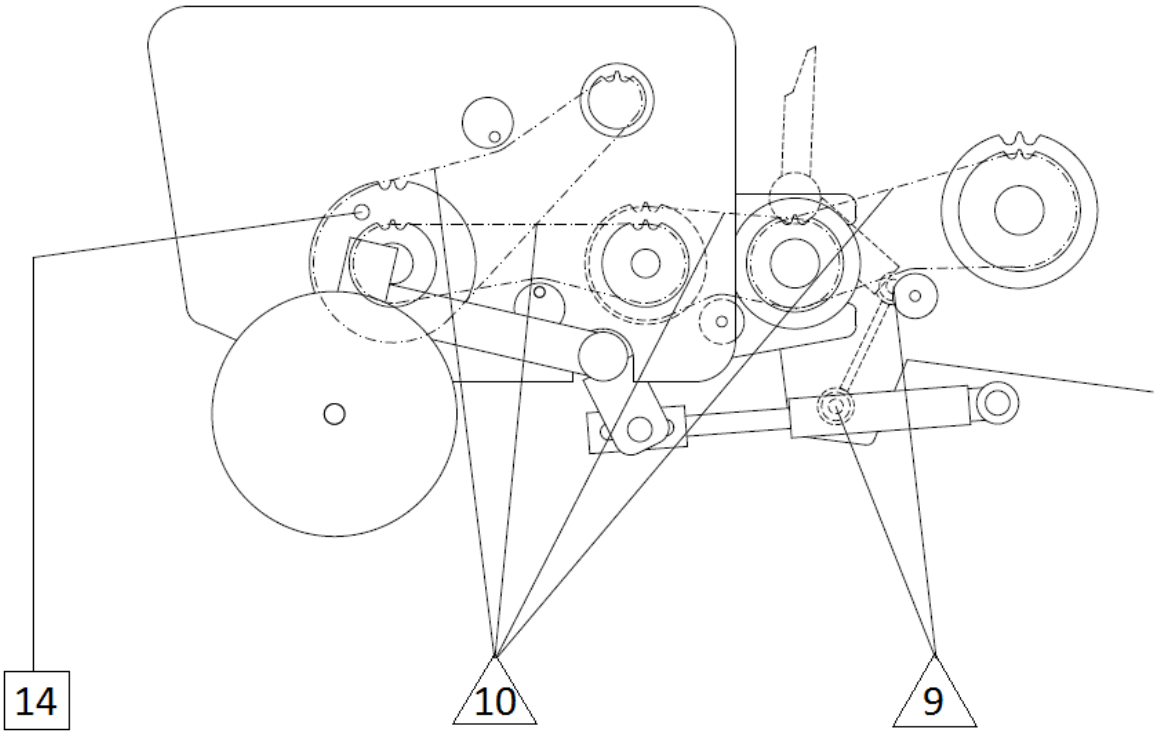


Figure 26 Points of lubrication - the pick-up

To lubricate the pick-up rollers (Fig. 26) you must loosen three screws (1) to remove the cover (2). Next, remove the locking bolt (3) and screw in a grease nipple in its place (4). Apply the lubricate on the pick-up rollers. Remove the nipple and replace the locking bolt (3)

Repeat the procedure for the three remaining pick-up rollers.

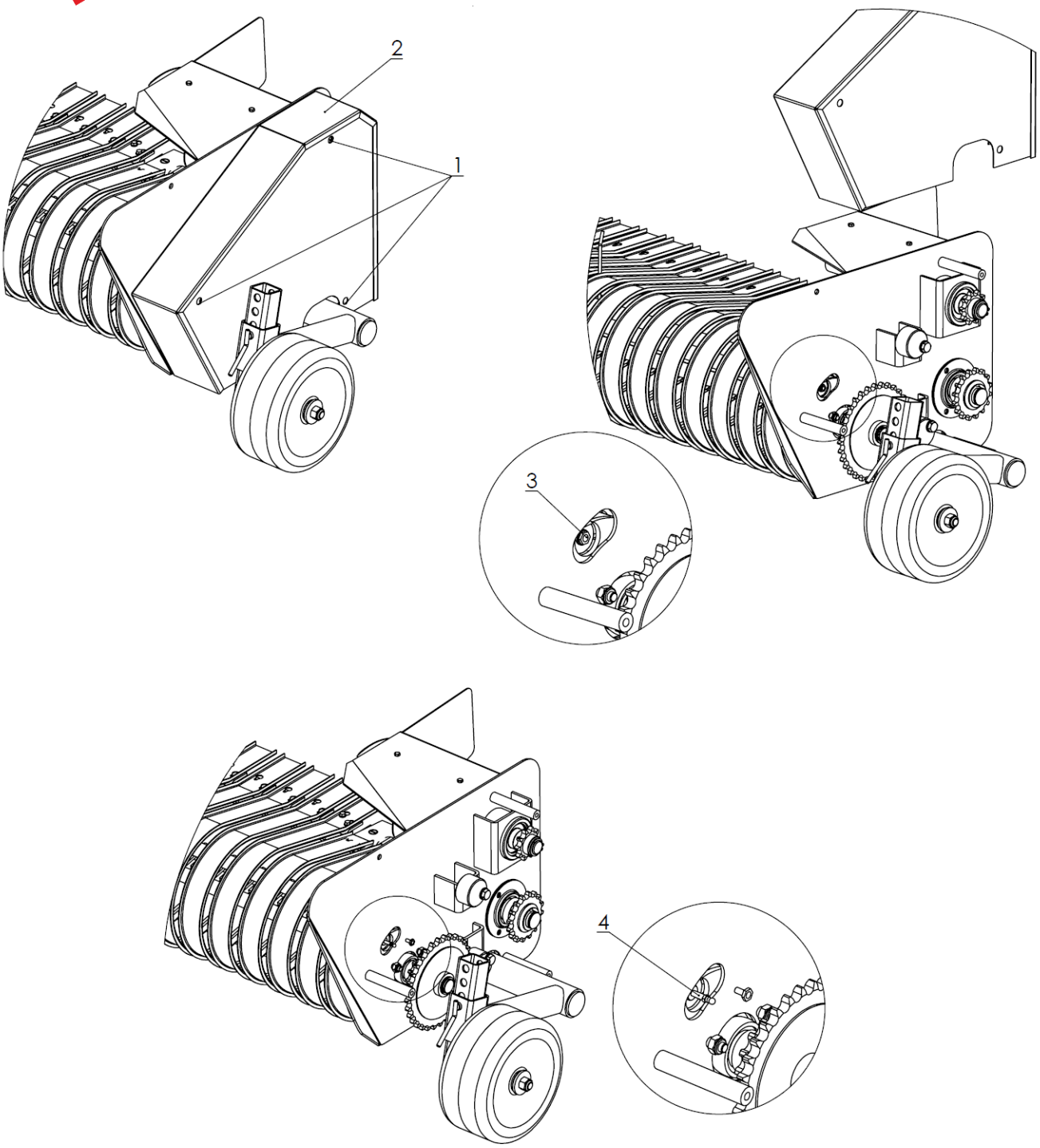


Figure 27 Points of lubrication - the pick-up rollers

Lubricate the pick-up rollers with grease after each 24 hours of baler use, or after baling 250 bales.

8.2. The automatic lubrication system for chains

The Z562 baler can be fitted with the integrated lubrication system for main-drive chains. The standard equipment of the machine allows the user to install the central lubrication system at 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, an oil tank with a volume of 3 l, manifolds and dosing ends terminated with brushes which feed oil to the main lubrication points, providing uniform the distribution of oil on the chain surface.

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

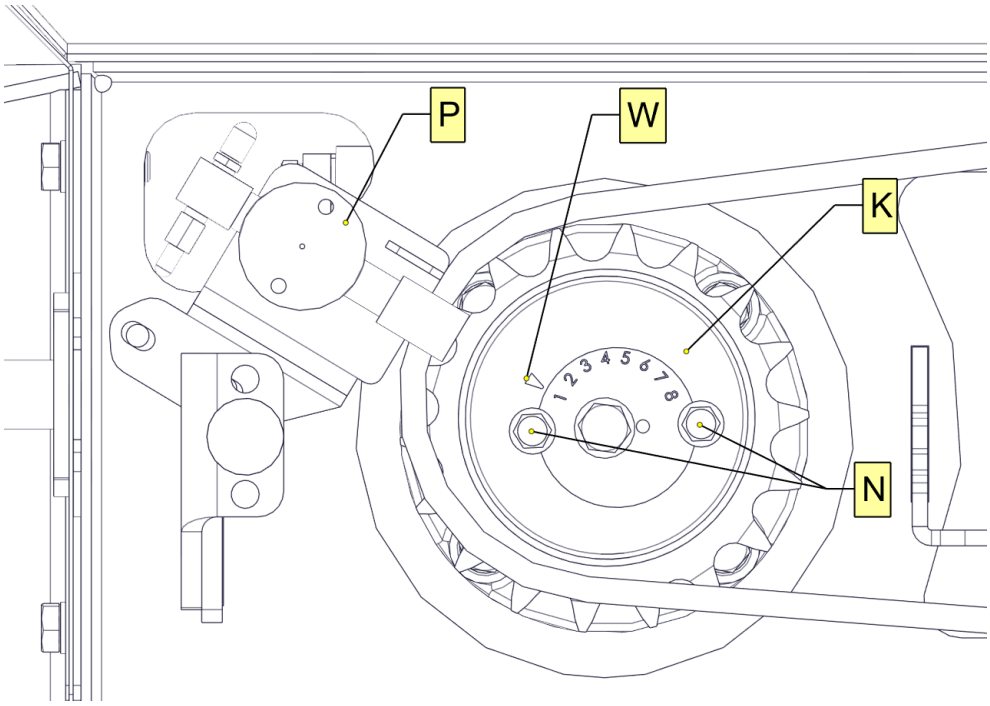


Figure 28 Adjusting the oil dose in the automatic lubrication system

ATTENTION!

Using the mechanical pump without oil is prohibited. Operating a “dry” mechanical pump is a risk of damage.

Tank

Carry out routine checks and refill the oil in the tank of the automatic chain-lubrication system. Procedure

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

The tank volume is 3 litres.

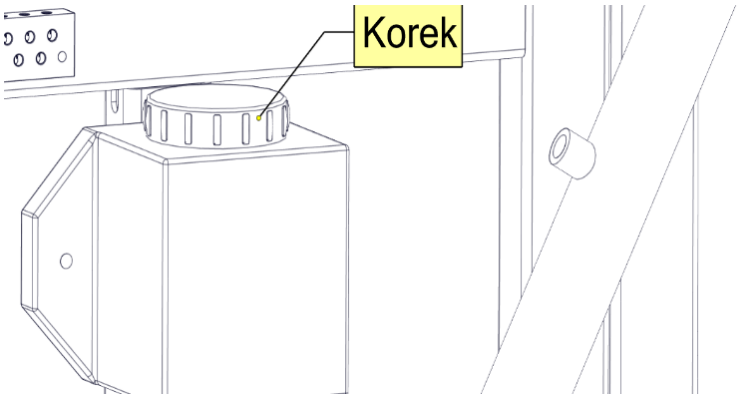


Figure 29 The oil tank of the automatic chain-lubrication system

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.

8.3. Lubricating the bearings

The Z562 baler can be fitted with an integrated lubrication system for the bearings. The strips (1) with grease nipples (2) allow the lubrication of the machine bearings. The strips are located on the left- and right-hand sides of the baler.

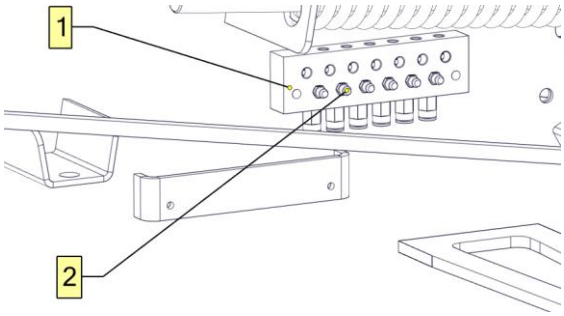


Figure 30 The central bearing-lubrication strip

NOTES

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