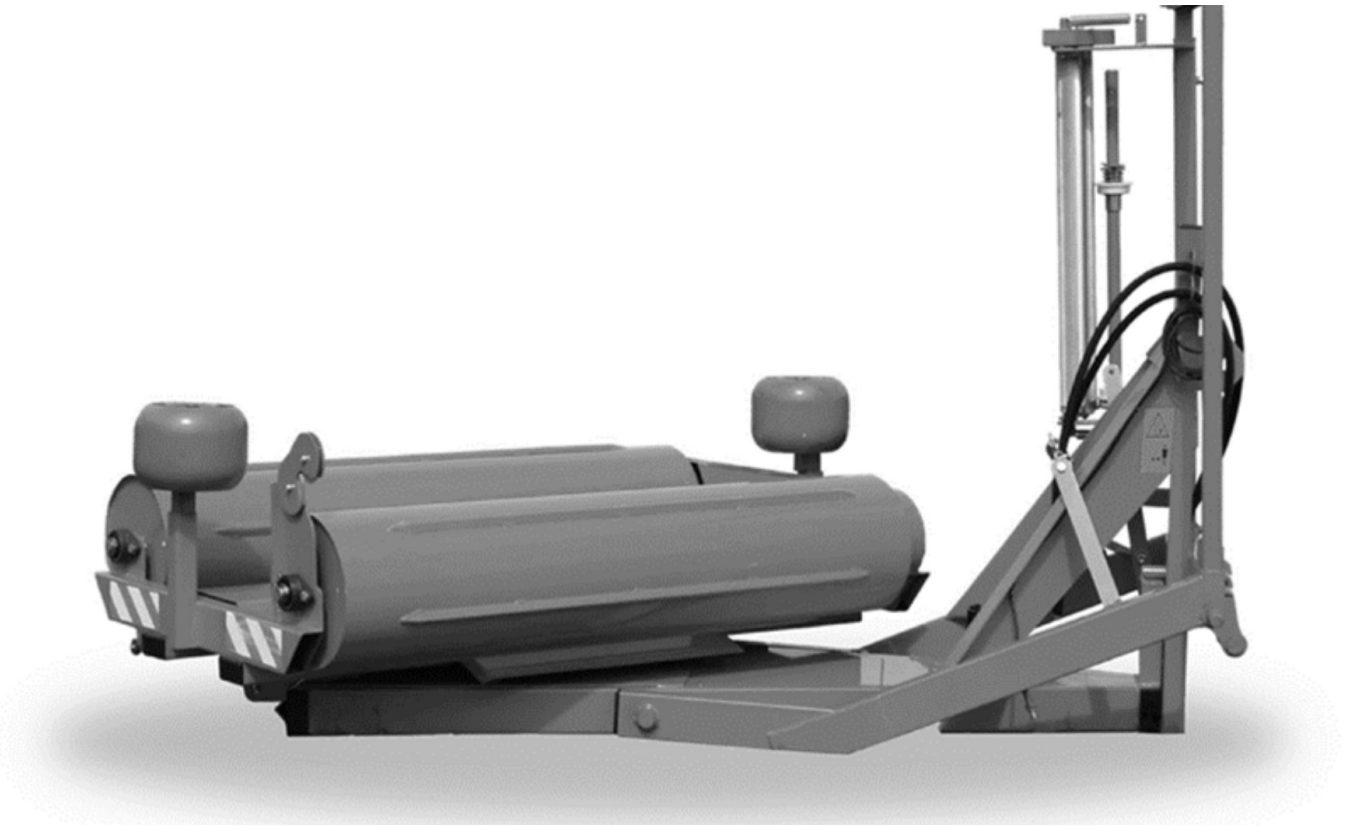
Econo-Wrap

Stationary Bale Wrapper

EW-450A



Operator's Manual

Rev. 01/25

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Introduction

Persons operating the bale wrapper should absolutely consult the instruction manual and should have a knowledge of OCCUPATIONAL SAFETY and HEALTH in the use of agricultural machinery;

The Bale wrapper is shipped with the operating instructions and warranty card in the complete state, any unauthorized or willful changes in the design will cause the loss of it's warranty;

The service and maintenance of the bale wrapper incompatible with this instruction manual releases the manufacturer from liability for consequences resulting from its improper use and causes the warranty to be null and void. The manufacturer reserves the right to make changes in the design of the machine not shown in this manual and it's description and intended use of machine and the basic technical data of this machine.

The bale wrapper, EW-450, is a simple-to-use machine with a hydraulic drive. It's intended use is for the wrapping of individual bales of pre-dried hay from grasses and leguminous fodder plants with stretch film. Plants intended for bales for silage should be mowed in the initial phase of earing. After a dozen or so hours of pre-drying, the hay should be collected using the roll baler in a way that ensures maximum density with the smallest amount of air in the middle of the bale. After the rolling of the bales, they should be wrapped as soon as possible on the bale wrapper. The bales left unwrapped for long periods of time may be caused to resist the putrefactive processes.

Oil Flow/Pressure Parameters:

Minimum

- 10l/min. (2.6 gallons)
- 50 BAR (725 PSI)
- The wrapping table will do 10 RPM at these parameters (of 8.5 RPM 2 120 BAR with the same oil flow).

Maximum

- 70l/min. (18.4 gallons)
- 175 BAR (2500 PSI)
- The wrapping table will do 74 RPM @ BAR (or 70 RPM @ 120 BAR).

Technical & Operational Information

Machine Dimensions

Length	100 inches
Working width	55 inches
Weight of machine	1,091 lbs.

Dimensions of wrapped bales

Diameter	39 inches to 63 inches
Length	Up to 55 inches
Mounting Method	3 Point Hitch
Bale Wrapper Drive	Hydraulic Motor
Type of Oil in the Hydraulic System	Gear Oil
Tractor Engine Revolutions	1500 RPM
Roller Rotations	2 RPM
Bale Loading Device	Loading device with lifting capacity greater than the weight of the bales being wrapped with the ability to lift bale higher than 4'.
Minimum Number of Bale Wraps	2 (double with overlapping)
Total Time for Double Wrapping (with a diameter of 4')	approx. 90 seconds
Total Number of Wraps (for bales with a diameter of 4')	30" film - 18 wraps (20" film - 26 wraps)
Wrapping Counter	Electronic
Type of Wrapping Film	Special polyethylene film, 0.025-0.03mm thick which is stretchable, self-adhesive, with ultra-violet
Film Wrapping	Rotary knives on a fixed bracket, the rotating frame cutting after loading the next bale after the first rotation of the frame.
Unloading Wrapped Bales	By tilting the lower frame (together with the rotating frame and the bale) backwards after unlocking it (by pulling the line) and after partial lifting of the wrapper on the 3-Point Hitch of tractor.
Bale Wrapper Operation	2 people—1 operating wrapper on tractor, 1 loading the bales

Important Safety Information

Safety

It is important that you read the entire manual and to become familiar with this product before you begin using it. This product is designed for certain applications only. The manufacturer cannot be responsible for issues arising from modification. We strongly recommend this product not be modified and /or used for any application other than that for which it is designed. If you have any questions relative to a particular application, DO NOT use the product until you have first contacted us to determine if it can or should be performed on the product.

Read and understand this manual and all safety signs before operating and maintaining. Review the safety instructions and precautions annually.

Safety Signal Words

TAKE NOTE! This safety alert symbol found though out this manual is used to call you attention to instructions involving you personal safety and the safety of others. Failure to follow these instructions can result in injury or death.

This symbol means:
Attention!
Become alert!
Your safety is involved!

Note the use of the signal words, DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

General Safety Guidelines

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

Replace any **DANGER, WARNING, CAUTION** or instruction safety decal that is not readable or is missing. Location of such decals are indicated in this manual. Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this machine until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury of death, use a tractor equipped with a Roll Over Protection System (ROPS). Do not paint over, remove or deface any signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **Don't try it!**

Safety Decal Care

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current safety sign
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a straight pin and smoothed out using the piece of decal backing paper.

Before Operation

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- Assure that all tires are inflated evenly.
- Give the machine a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included with this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the machine until you are sure that the area is clear, especially of children and animals.
- Don’t hurry the learning process or take the machine for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with a Roll Over Protection System (ROPS) and fasten your seat belt prior to starting engine.
- The manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.

During Operation

- Children should not be allowed on the product.
- Clear the area of small children and bystanders before moving the machine.
- If using a towing unit, securely attach machine by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.
- Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when machine is transported.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the machine. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED!** Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key.**
- Be especially observant of the operating area and terrain. Watch for holes, rocks or hidden hazards. Always inspect the area prior to operation.
- **DO NOT** operate near the edge of drop-offs or banks.
- **DO NOT** operate on steep slopes as overturns may result.
- Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

Warning: Never backup with the machine on the ground! This will cause damage to the machine. *Always* lift the machine high enough to clear the ground before backing up.

Highway and Transport Operations

- Adopt safe driving practices.
- Keep the brake pedals latched together at all times. **Never use independent braking with machine in tow as loss of control and/or upset of machine can result.**
- Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed at a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway and marking requirements.
- When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use the amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated at lower than the gross weight at which you are operating.
- Watch for obstructions overhead and to the side while transporting.
- Always operate in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the machine, etc.
- Pick the most level route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working in inclines.

Highway and Transport Operations

- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes, they can be dangerous for equipment operation or movement.
- Allow for machine length when making turns,
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of machine with engine running or attempt to start engine and/or operate machine while standing alongside of machine.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

General Information

Bale wrapping with the film, protects silage from the access of air, light and moisture, creating favorable conditions for fermentation process. After wrapping, you must stack bales in a maximum of two layers in a dry place on level ground. Particular attention should be paid to avoid possible damage to the film. The damaged areas should be repaired in such a way as to ensure the continuity of the layer. After approximately 6 to 8 weeks of storage at ideal temperatures, bales are suitable for the feeding of animals with the feed having reached it's maximum nourishment level.

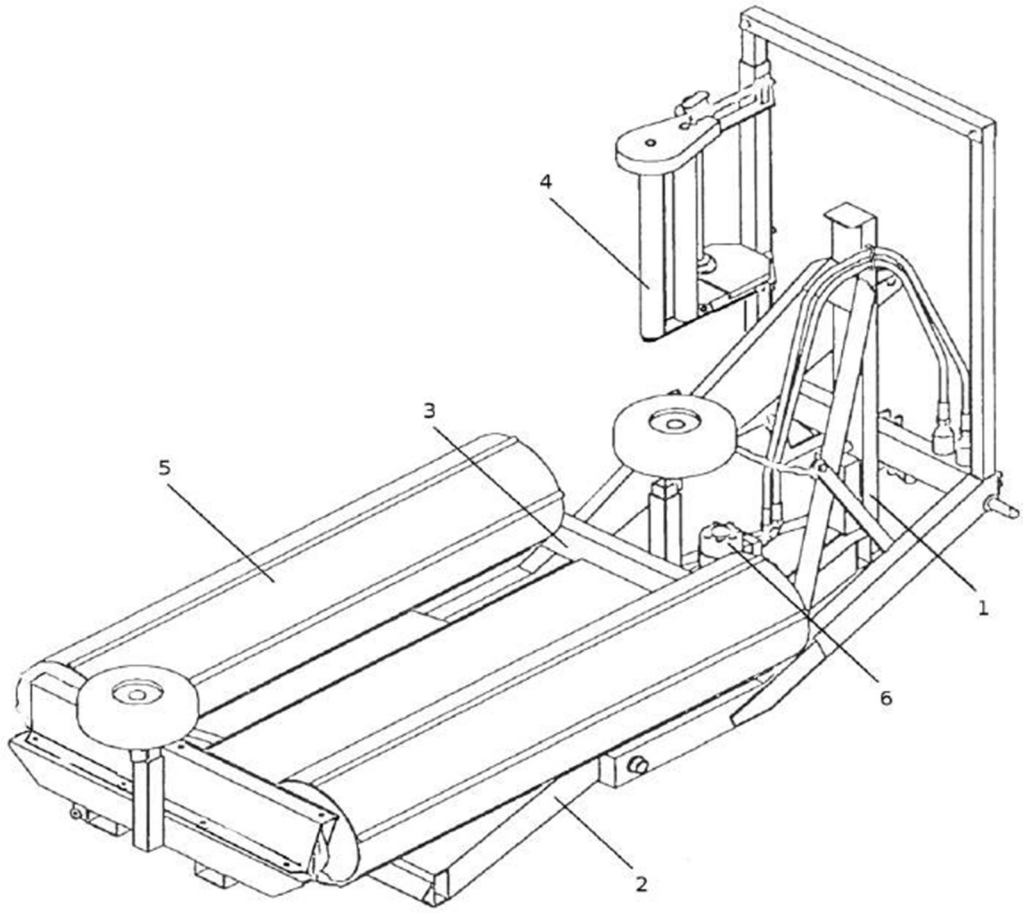


Fig.1 The basic components of the machine:

1. Main frame,
2. Bottom frame,
3. Rotating frame,
4. Film feeder,
5. Rotary drum,
6. Hydraulic engine with overload valve and conductors (conduits)

This bale wrapper is suitable for use with tractors of a 0.9 minimum class and with power more than 30 KW equipped with a set of weights on the front axle. Its design is adapted for it's connection with the Three Point Hitch of the tractor.

The Rotation frame shown as number (3) on the previous page placed on the lower frame shown as number (2) is connected aligned with the main frame shown as number (1) and is suspended on the three point system of tractor. The lower frame together with the rotation frame is secured against deflection by a movable locking pin. Unloading the bales from the bale wrapper is possible after unlocking the pin and after the bale wrapper is raised using the Three Point Hitch of the tractor. It then unloads as the lower frame is tilted and the frame is rotated thus unloading the bales.

The movement of the rotation frame and the rotation drums shown as by the number (5) on the previous page is carried out by the operation of the hydraulic motor, number (6) with overload valve which is operated by the hydraulic pump of tractor. This overload valve provides for smooth starting and stopping of the machine. It also protects the mechanical components of the drive from damage as a result of excessive load. The valve is factory-tuned to the engine and sealed. It should not be adjusted unnecessarily.

The drive from the engine is transmitted via a 5/8" (10B) chain on the chain wheel of rotation frame. This provides for a rotation of the bale along the vertical axis. Next, power is transmitted to the drums welded via a conical toothed gear and two chain transmissions. This provides a rotation of the bale with the appropriate ratio in the horizontal axis, this causes a partial overlapping film layers and tightness of the layer. Roll of film is placed in the feeder (4). The film is stretched through the two tension rolls connected with toothed gear, which ensures tight adhesion of subsequent layers of film.

The transmission ratio is chosen so as to ensure the optimal stretching the film, however, if necessary, stretching can be adjusted by tightening the nut pressure of film. The maximum extension/elongation of the film should not exceed 70% of original length. That is, segment of film with the length of 10 cm after stretching, should not be longer than 17cm. should be applied a polyester film, stretch film, self-adhesive with stabilizer of ultraviolet rays with a thickness of 0.025- 0.03mm and the width of 500 or 750 mm.

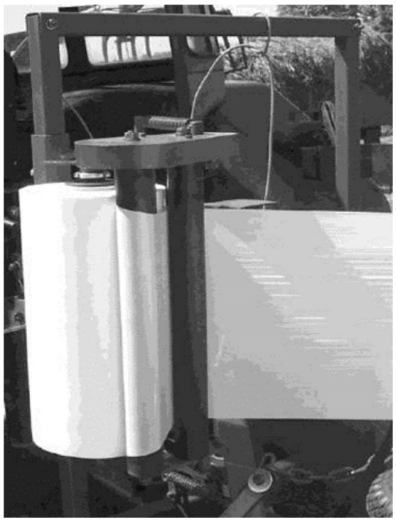


Fig.2 Stretching of the film during operation of the bale wrapper

Principles of safe operation of bale wrapper

Bale wrapper must be operated by adult with driving license to the steering of agricultural tractors, having knowledge of HEALTH and SAFETY at WORK in the use of agricultural equipment;
During installation, adjustment and repairs of bale wrapper, turn off the tractor engine and remove the keys from the ignition, during these steps the bale wrapper should be lowered to the ground and tractor should be stationary;

Before switching on the rotary drive, make sure that switching on the drive does not threaten anyone;
Staying of persons in work zone of bale wrapper and loader is prohibited;

- Before starting work, check the condition of the machine and its completeness;
- Work with machine damaged or without protective covers is prohibited;
- Before starting work, check the condition of the hydraulic hoses/lines. If the hoses/lines are damaged, broken, deformed, do not use the machine. Replace the hoses/lines as needed.
- Transport of bales on bale wrapper when traveling on public roads is prohibited.

When loading bales one should pay special attention on permissible load capacity of loading equipment. Exceeding the load capacity may cause damage to machine and accident.

- Avoid serious injury from injection of pressurized hydraulic fluid.
- Always relieve pressure before performing service or maintenance on any hydraulic components. Refer to tractor and implement
- Operator's Manuals.
- Do not use hands to search for leaks. Use cardboard or similar material.

Safety decals

The machine is marked in order to inform the user of the dangers and risks that may occur during the work. Safety decals and information plates should be maintained in readable condition. In the event of the damage or loss, lack of plate should be supplemented by a new plate, which can be purchased from the manufacturer of the machine.

Fig.3 Safety stickers and information plates – explanation:

1.During maintenance and repairs, turn off the tractor engine and remove the ignition key,

2,3. Before starting to work with the machine, please familiarize yourself with user manual.

4,5,7. Moving components, keep a minimum distance of 2m.

6. Chain transmission, please take special care .

9. Direction of rotation of the rotating frame,

10. Permissible speed when driving on public roads,

11. Warning plate in white and red stripes

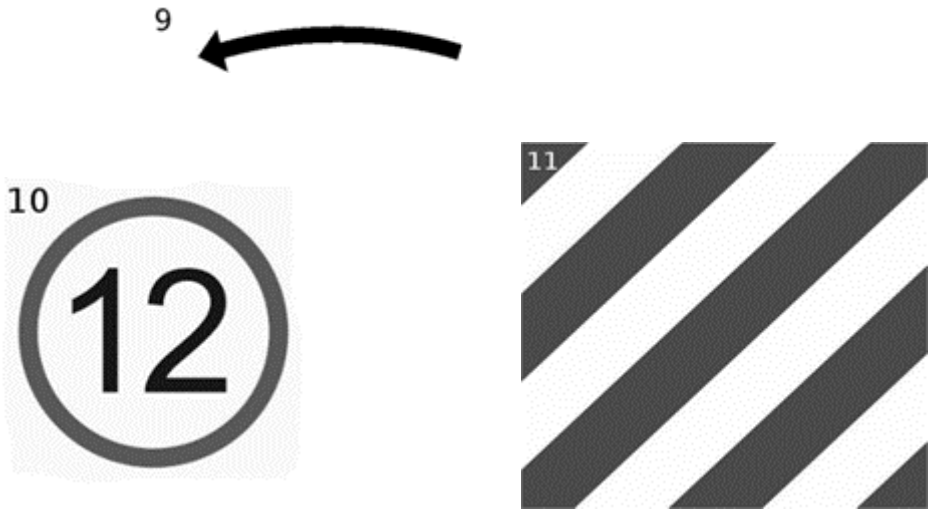


Fig.4 Safety tags and information plates:

9. Direction of rotation of the rotating frame
10. Permissible speed when driving on public roads
11. Warning plate in white and red stripes

Fig.5 Identification plate - pattern

Operating Instructions

Transport and Loading

Bale wrapper is suitable for transporting on Three Point Hitch of tractor. During transport on public roads, please observe the following principles:

Hydraulic hoses should be connected to a hydraulic pump.

- Hydraulic system of bale wrappershould be filled with oil, therefore longitudinal rotating frame set in the transport position, will be secured against rotation;
- Locking pin of the lower frame should be inserted in order to block it against deflection;
- Warning plate in white and red stripes with the red warning light and triangular plate must be mounted in a visible way;
- To secure the suspension pins one should use only original and functional cotters. The use of substitute protections such as bolts, wires etc. is prohibited;
- Transporting bales on the bale wrapper when travelling on public roads is prohibited.
- Before loading of bale wrapper on transport of lorries, one should mount the machine on a wooden pallet and take precautions against displacement.

Fig.6 Bale after the end of the wrapping

Attaching to the tractor

Correct assembly of bale wrapper with the tractor should be made according to the following principles:

- Reverse the tractor close to the 3 point linkage of the machine, Connect the machine with 3 point linkage of tractor and adjust the top link,
- Secure the connections with pins and original cotters of tractor equipment; Connect the quick release couplings of hydraulic hoses of tractor with hydraulic sockets,
- Wrap counter sensor cable must be connected with counter, the counter put in a prominent position in the tractor cab;

Before work

Before starting wrapping, you should check the operation of the machine:

- Raising on 3 point linkage of tractor;
- Smoothness and direction of rotation of rotating frame and drums (rotations of the frame - to the left / counter clockwise);
- Operation of the interlocking, tilting the lower frame and the condition of the chain. A chain attached to the brackets of main frame limits the range of tilting while unloading the wrapped bale. After lowering of bale wrapper and return of the lower frame to horizontal position, locking pin when extended secures the frame of unwanted tilting;
- During operation the wrapper, the pin must lock tilt of the lower frame;
- Extension of film as a result of tension, should not be more than 70% i.e. the length of the unstretched film of 10 cm should increase to not more as 17 cm and width for the film of 750 mm should not be smaller than 600 mm and for film of 500, not smaller than 400 .

Attention!

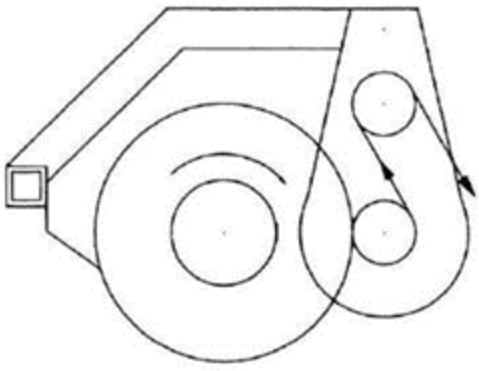
Before starting the machine, please take particular care. Lower frame tilt must be locked with locking pin.

Film installation

To set up the foil feeder, fold the bracket with aluminum rollers.

After removing the clamping nut, install the foil feeder shaft so that it is seated on the lower clamping ring and then lock it from above with the clamping ring and clamping nut. Tighten the bracket with the aluminum shafts, check if they are properly pressed against the foil.

In the event of non-parallelism at the contact point of the foil roll and the aluminum shaft, the position of the shaft should be adjusted by bending the rod on the mounting plate. According to the diagram, pull the foil through the aluminum shafts so that the end of the foil can be grabbed.



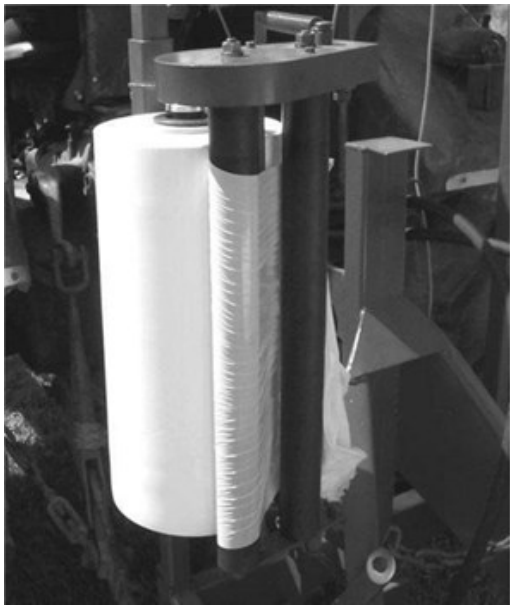


Fig.7 Foil installing diagram / Correctly installed foil.

Loading, wrapping and unloading bales

To Loading bales on the wrapper should be carried out by using vehicle with lifting capacity over 1000kg with lifting range over 1m. Bale wrapping should be done in the place of their storage, this will prevent bales foil from any damage during transport. Before starting work, the turntable should be positioned in pararell position to the tractor. This setup will provide the best access to the machine during loading and operation during wrapping. Both tractor and wrapper should be positioned on level ground and bottom frame lock pin should be in its working position. Bale should be positioned in the middle of rotating shafts in approximately even distance from side wheels. End of the foil should be attached to the bale in the furthest possible spot from the foil feeder.

Fig.8 Bail wrapping

Fig.9 Wrapped bales in place of storage

After making sure that the drive start up does not endanger the surroundings, operator can start wrapping by starting the hydraulic drive from the tractor's cab. When wrapping, the tractor engine must maintain approximately 1500 rpm. Bale wrapping should finish after 24 (film 500 mm) or after 16 (film 750 mm) rotations of the turntable (after about 1 minute of the wrapping). Fully wrapped the bale should have two layers offilm, what provides a fully leak-proof protection before the access of air and water. After wrapping, one should stop the machine at the time when rotating frame with drums is in perpendicular position to the axle of the tractor and the direction of travel. After unlocking the locking pin and lifting of bale wrapper on Three Point Hitch of tractor, will occur the tilting of the lower frame and self-acting unloading the bale. Do not cut off the film prior to loading. For the purpose of loading the next bale, one should lower of bale wrapper and lock the lower frame with the locking pin. The drums must be set in the position as for first loading.

Usage

During operation of bale wrapper, operator should pay special attention to the technical condition and drive chains tension. When starting to wrap a new bale and after wrapping approx. ten bales, check the drive chains tension, in particular the drive chain of the turntable. To carry out the adjustment of the drive chain of the turntable, remove the gear cover and loosen the four M12 nuts (1) of the hydraulic motor base. After loosening the counter nut (2) Tighten the chain tension bolt (3) so that the deflection in the middle of the longest segment of chain had about 20 mm.

After the adjustment and inspection of the technical condition, grease the chain with drive chains grease.

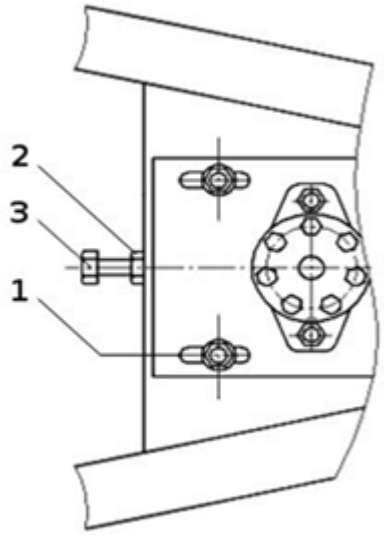


Fig.10 Turntable chain tension adjustment

1. Hydraulic motor base nuts
2. Counter nut
3. Chain tension bolt

Overload valve adjustment

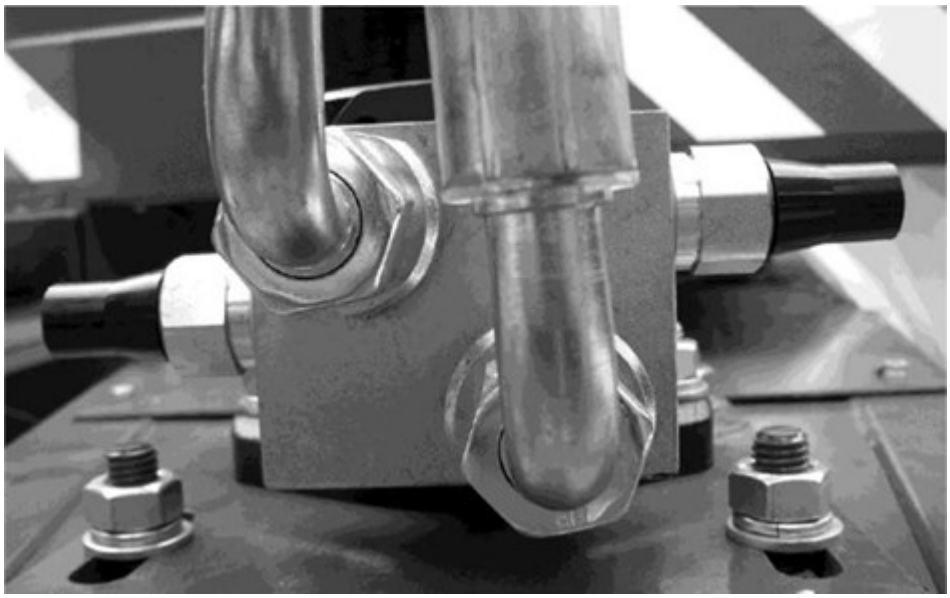


Fig.11 View of the overload valve

If during operation we determine no smoothness of operation, machine jerking, one should carry out the adjustment of the overload valve. When adjusting hydraulic hoses must be connected to the installation of the tractor.

Adjustment is carried out by means of the adjusting Bolt marked with the symbol50 located on the left side of the valve. After removing/unBolting the plastic cover, loosen the counter nut. After unlocking the bolt by unBolting it, we increase the smoothness of machine operation. After each half turn of bolt, tighten up the counter nut and check the effect of adjustment.

Attention!

Do not adjust the valve unnecessarily. When adjusting, please take specialcare during each starting/ run of the machine.

Film width adjustment

The machine is intended to wrap bales with two widths of film: 500mm (20”) and 750mm (30”).
To adjust the machine to wrap another width of film, follow these steps:

Adjust the height of the pressure of upper film by changing the height of the locking pin.

Change the position of the chains driving the rotating drums - respectively for the 500mm film on z -34 gears/toothed wheels and for 750mm film on z23 gears/toothed wheels. The length of the chains should be changed using the appropriate half-chain link.

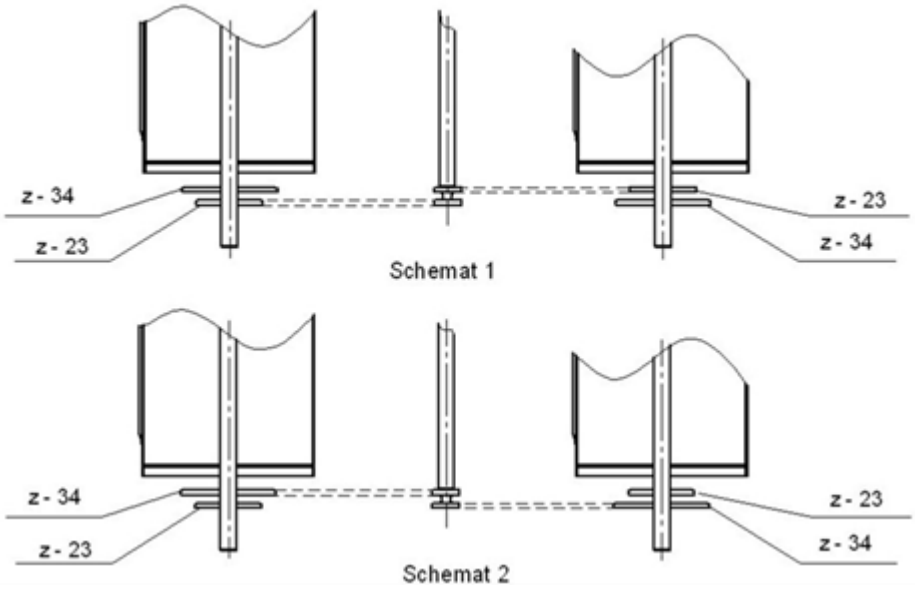


Fig.12 Diagram 1 - position of the chains for the 30”

Diagram 2 - position of the chains for the film 20”

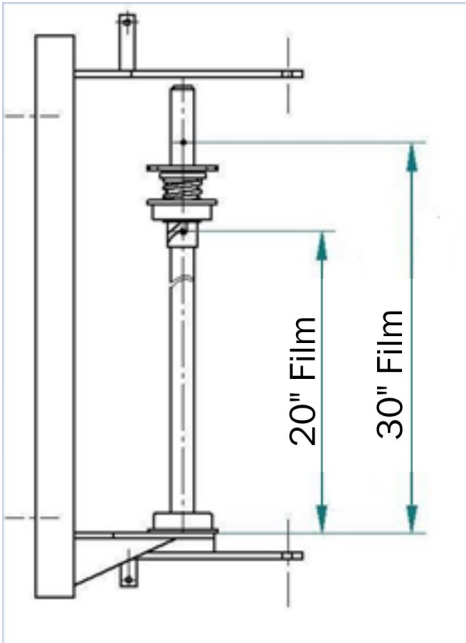


Fig.13 The height of the pressure position for the two foil types.

Maintenance and storage of the machine

Bale wrapper should be storage in roofed areas to protect it from adverse weather conditions.

Before each longer standstill, one should:

- clean the bale wrapper, paint coats should be patched and eliminate the the corrosion;
- protect rubber elements from sunlight (e.g. Retaining wheels, feeder, hydraulic hoses)
- remove the induction sensor and store in a dry location.

Before the winter inspection of the machine should be carried out, worn parts should be replaced and moving parts must be lubricated LT 43 grease, in particular:

- drive chains of the rotational frame and rotational drums;
- bevel gears;
- connecting pins of frame;
- lock pin of lower frame;
- chain tensioning bolt .

Spare parts catalogue

To order spare parts, you must provide:

- Full name
- serial number
- year of manufacture of the machine;
- using the catalog, the exact name of part,
- the drawing number or standard number
- The quantity of the ordered part.

Torque Specifications

Torque Specifications for Common Bolt Sizes

Inches

Bolt Head Identification

Bolt size (inches)	Thread pitch	Grade 2 N.m	Grade 2 ft-lb	Grade 5 N.m	Grade 5 ft-lb	Grade 8 N.m	Grade 8 ft-lb
1/4"	20	7	5	11	8	16	12
1/4"	28	8	6	13	10	19	14
5/16"	18	15	11	24	17	33	25
5/16"	24	17	13	26	19	37	27
3/8"	16	27	20	42	31	59	44
3/8"	24	31	23	47	35	67	49
7/16"	14	43	32	67	49	95	70
7/16"	20	48	36	75	55	106	78
1/2"	13	66	48	102	75	144	106
1/2"	20	75	55	115	85	163	120
9/16"	12	95	70	147	109	208	154
9/16"	18	106	79	164	121	232	171
5/8"	11	132	97	203	150	287	212
5/8"	18	149	110	230	170	325	240
3/4"	10	233	172	361	266	509	376
3/4"	16	261	192	403	297	569	420
7/8"	9	226	167	582	430	822	606
7/8"	14	249	184	642	473	906	668
1"	8	339	250	873	644	1232	909
1"	12	371	273	955	704	1348	995
1-1/8"	7	480	354	1077	794	1746	1288
1-1/8"	12	539	397	1208	891	1958	1445
1-1/4"	7	677	500	1519	1120	2463	1817
1-1/4"	12	750	553	1682	1241	2728	2012
1-3/8"	6	888	655	1992	1469	3230	2382
1-3/8"	12	1011	746	2268	1673	3677	2712
1-1/2"	6	1179	869	2643	1949	4286	3161
1-1/2"	12	1326	978	2974	2194	4823	3557

Metric

Bolt Head Identification

Bolt size (metric)	Thread pitch	Class 5.8 N.m	Class 5.8 ft-lb	Class 8.8 N.m	Class 8.8 ft-lb	Class 10.9 N.m	Class 10.9 ft-lb
M5	0.08	4	3	6	4	9	7
M6	1	6	4	10	7	15	11
M8	1.25	16	12	25	18	36	27
M8	1	17	13	26	19	38	28
M10	1.5	31	23	48	35	71	52
M10	1.25	33	24	51	38	75	55
M10	1	35	26	53	39	78	58
M12	1.75	54	40	84	62	123	91
M12	1.5	56	41	87	64	128	94
M12	1.25	59	44	90	66	133	98
M14	2	84	62	133	98	195	144
M14	1.5	94	69	142	105	209	154
M16	2	131	97	206	152	302	223
M16	1.5	141	104	218	161	320	236
M18	2.5	181	133	295	218	421	310
M18	2	196	145	311	229	443	327
M18	1.5	203	150	327	241	465	343
M20	2.5	256	189	415	306	592	437
M20	1.5	288	212	454	335	646	476
M22	2.5	344	254	567	418	807	595
M22	1.5	381	281	613	452	873	644
M24	3	444	327	714	526	1017	750
M24	2	488	360	769	567	1095	808
M27	3	656	484	1050	774	1496	1103
M27	2	719	530	1119	825	1594	1176
M30	3.5	906	668	1420	1047	2033	1499
M30	2	1000	738	1600	1180	2250	1659
M36	4	1534	1131	2482	1830	3535	2607

Notes:

This chart is an approximate estimate of torque values.

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual.

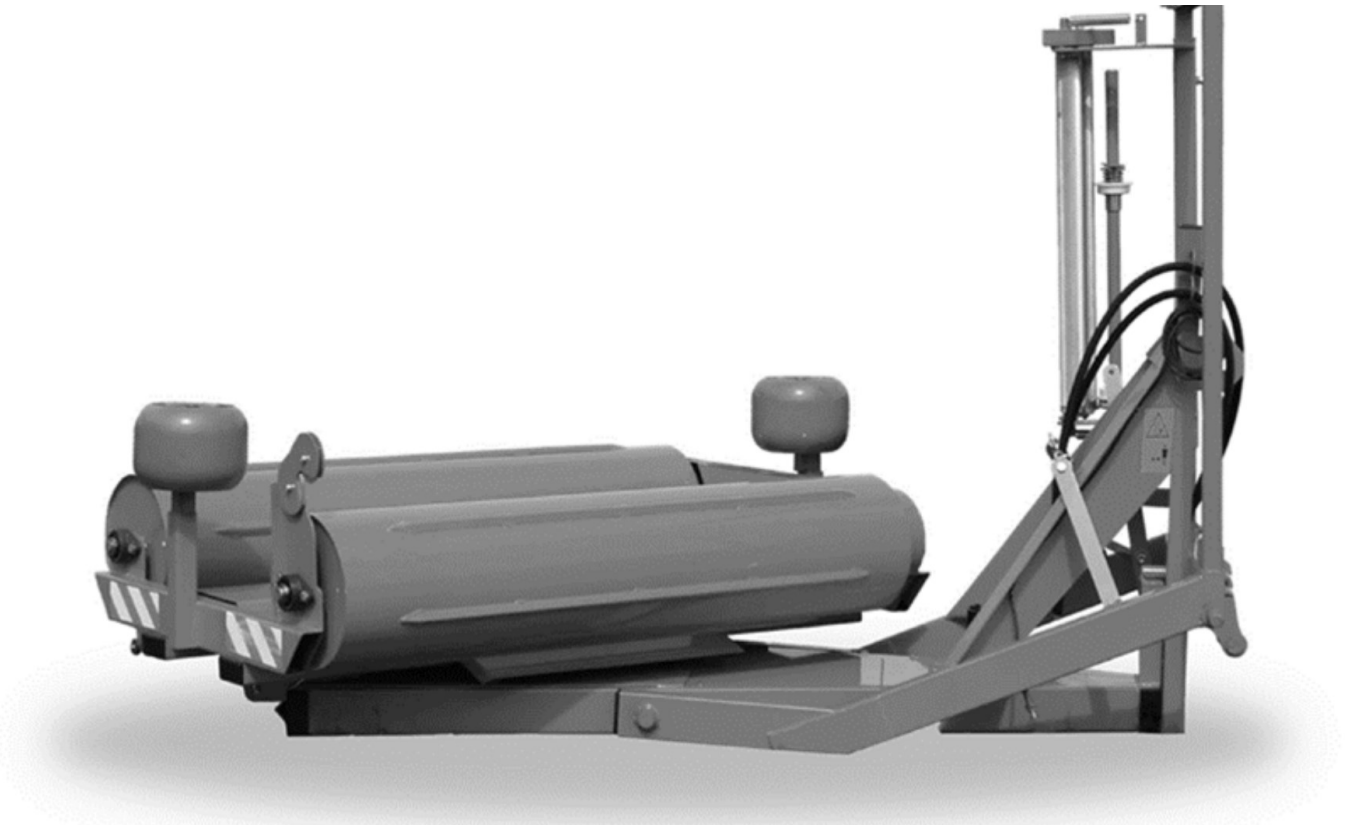
Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for Metric hardware.

Make sure that fastener threads are clean and that you properly start thread engagement.

Econo-Wrap

Stationary Bale Wrapper

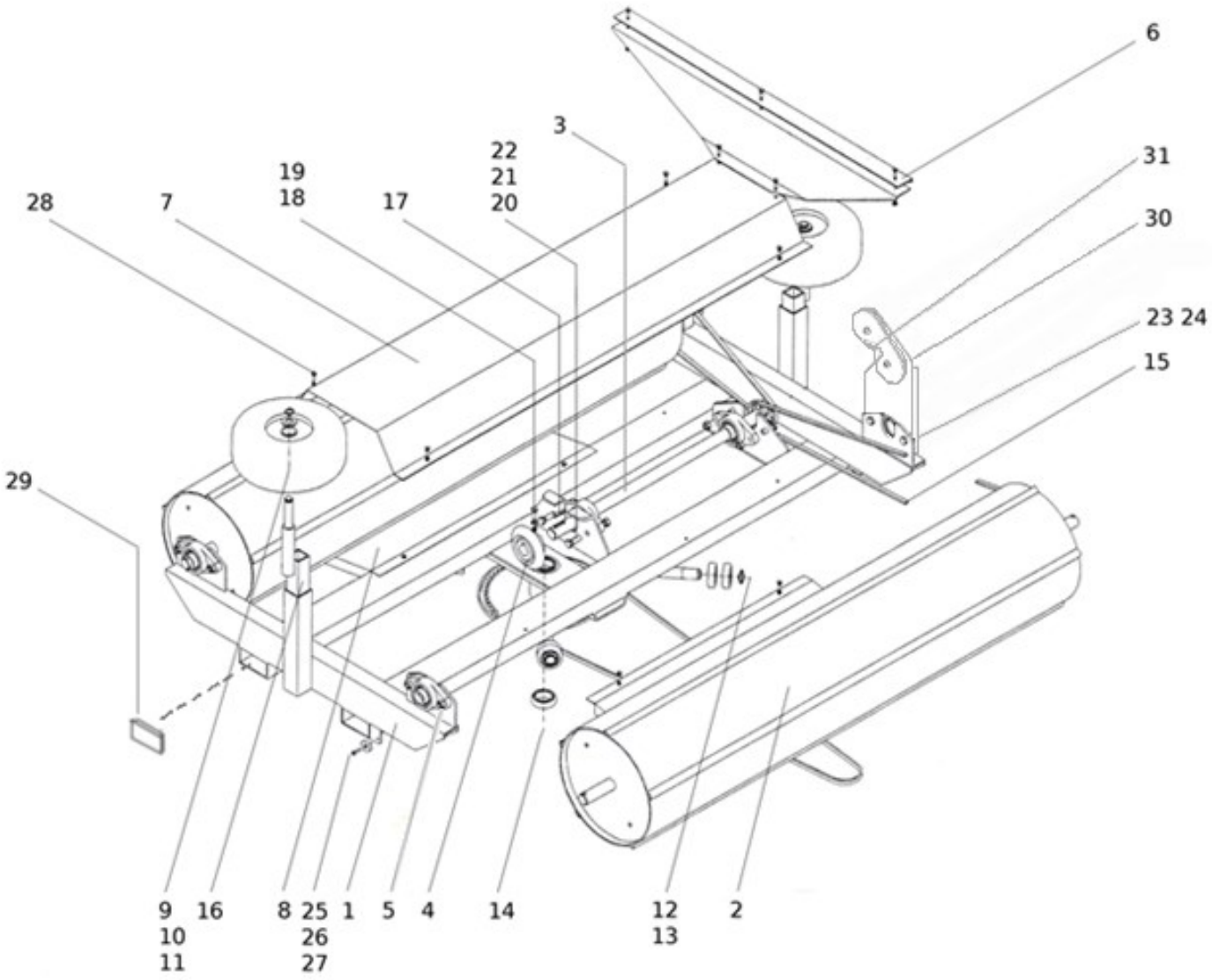
EW-450A



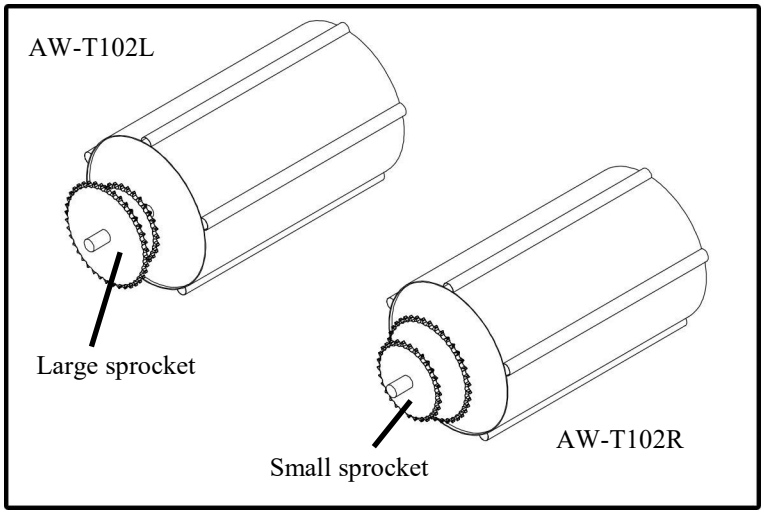
Parts Manual

Rev. 01/25

EW-450A
Turntable



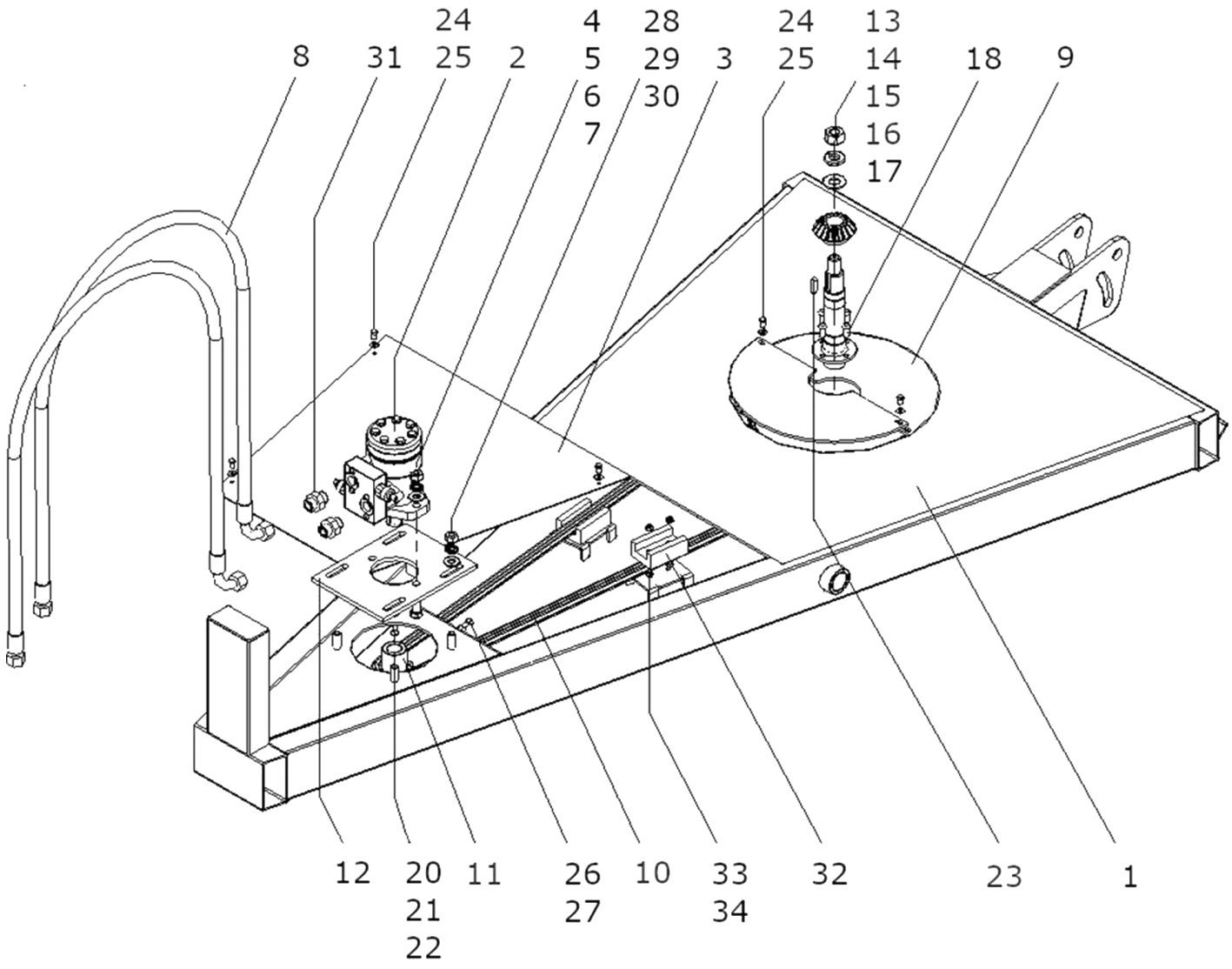
Note: The rollers can be identified by standing at the sprocket end of the roller. If the larger sprocket is facing the operator, it is the LH roller assembly, AW-T102L. If the smaller sprocket is facing the operator, it is the RH roller, AW-T102R.



EW-450A
Turntable

Item	Part #	Description	Qty.
1	AW-T101	Welded frame	1
2	AW-T102L	Welded drum LH	1
	AW-T102R	Welded drum RH	1
3	AW-T103	Driving shaft	1
4	AW-T104	Bevel gear large	1
5	AW-T105	206 Bearing unit set	6
6	AW-T106	Gear guard I set	2
7	AW-T107	Gear guard II	1
8	AW-T108	Slide bearings cover	2
9	AW-T109	Metal wheel set	2
10	FW21	Round washer 21 Fe-galv.	2
11	SRE-20	M20 Snap ring - external	2
12	B63052RS	Bearing 6305 2RS	8
13	SRE-25	M25 Snap ring - external	4
14	B60072RS	Bearing 6007 2RS	2
15	AW-T115	Chain 10B	2
16	AW-T116	Wheel axle welded	2
17	EP311-0003	Key 8 x 7 x 40	1
18	BM0812525	Bolt M08-1.25x25 C8.8	1
19	LNM08125	M08-1.25 Z	2
20	NM1217535	Bolt M12-1.75x35 C5.8 Z	12
21	FW13	Flat washer M13 Fe-Zn	12
22	LNM12175	Nut M12-1.75 Z	12
23	BM0812530	Bolt M08-1.25x30 C5.8	1
24	LNM08175	Nut locking M08-1.25 Z	1
25	BM061016	Bolt HH M06-1.0x16 C5.8 Z	1
26	AW-T126	Magnet - speed sensor	1
27	NM0610	Nut M6-1.0 Z	15
28	STB4819	Tap screw 4.8x19 self-drilling	15
29	AW-T129	Plastic cap	4
30	EWT009	Knife assembly	1
31	274-031-269	Knife	2

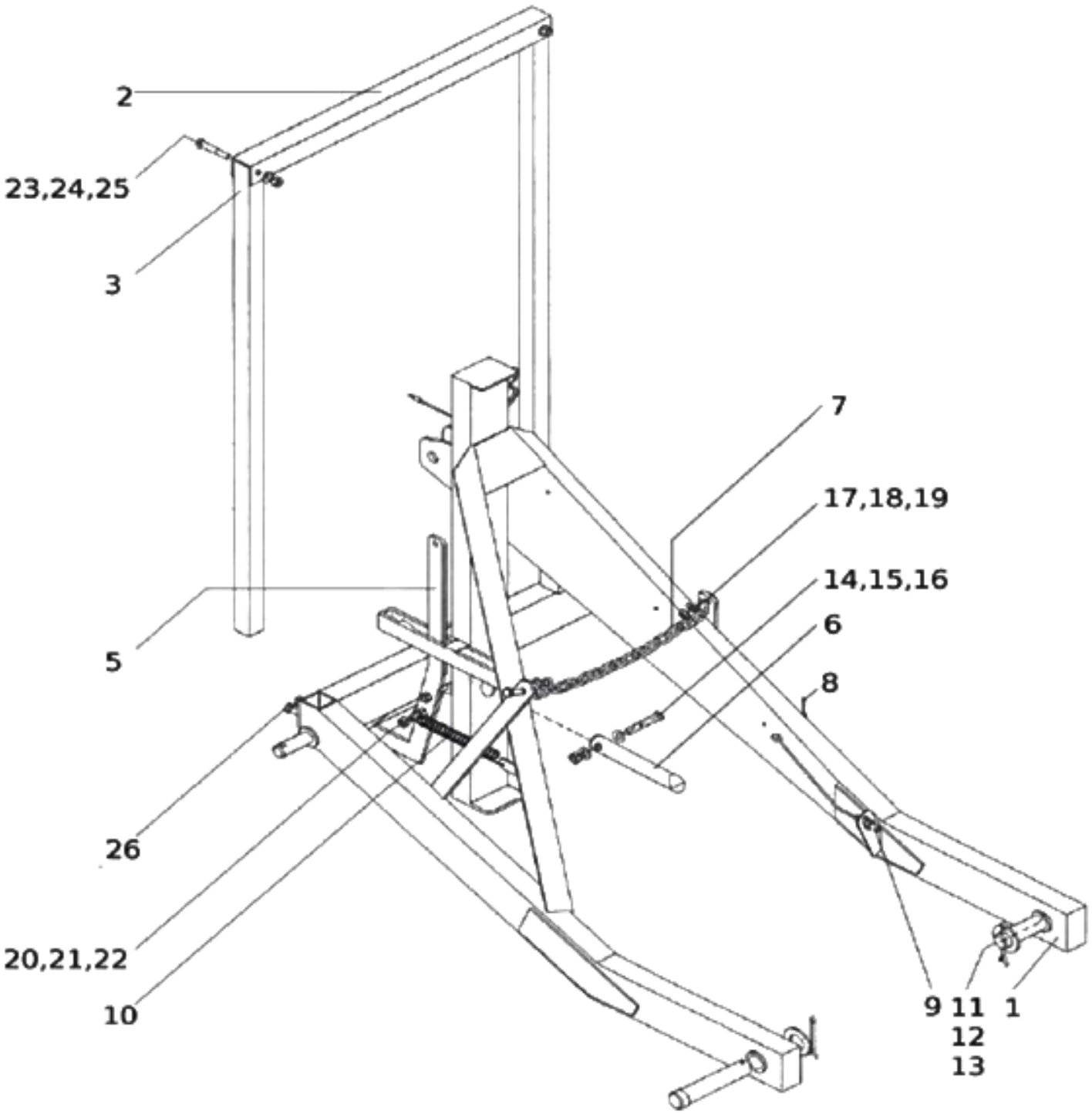
EW-450A
Lower Frame



EW-450A
Lower Frame

Item	Part #	Description	Qty.
1	AW-T201A	Lower frame new style	1
2	AW-T202	Hydraulic engine	1
3	AW-T204	Frame cover (lid)	1
4	LNM12175	Locking nut M 12-1.75 Z	2
5	LW12	Lock washer M12	2
6	FW12	M12 Flat Washer Zn	2
7	BM1217545	Bolt M12 x 1.75 x 45 5.8 Zn	2
8	AW-T206	Hydraulic Hoses	2
9	AW-T209	Gear cover	1
10	AW-T210	Chain 10B	1
11	AW-T211	Chain Wheel z-12	1
12	AW-T205	Motor base	1
13	LNM2025	M20 Locking Nut	1
14	LW20	M20 Lock Washer	1
15	FW20	M20 Flat Washer	1
16	AW-T213	Bevel Gear z-17	1
17	AW-T417	Replaceable main shaft	2
18	SSM0812525	Socket Screw M8 x 1.25 x 25 5.8	4
19			
20	BM0812530	Bolt M8 x 1.25 x 30 8.8 Zn	1
21	LW08	Lock washer M8	1
22	FW08	Flat washer M8	1
23	EP311-0008	Key 8x7x30	2
24	BM061016	Bolt M6 x 1.0 x 16 5.8 Zn	6
25	LW06	Lock washer M6	6
26	LNM12175	Locking nut M12-1.75 Z	2
27	BM12175100	Bolt M12 x 1.75 x 100 5.8	1
28	LNM12175	Locking nut M12-1.75 Z	4
29	LW12	Lock washer M12	4
30	FW12	Flat washer M12	4
31	AW-T418	M22/ ½” Hydraulic fitting	2
32	AW-T218	Chain guide	2
33	AW-T419	M6x20 5.8 Conical head bolt	4
34	NM06	Nut M6-1.0	4

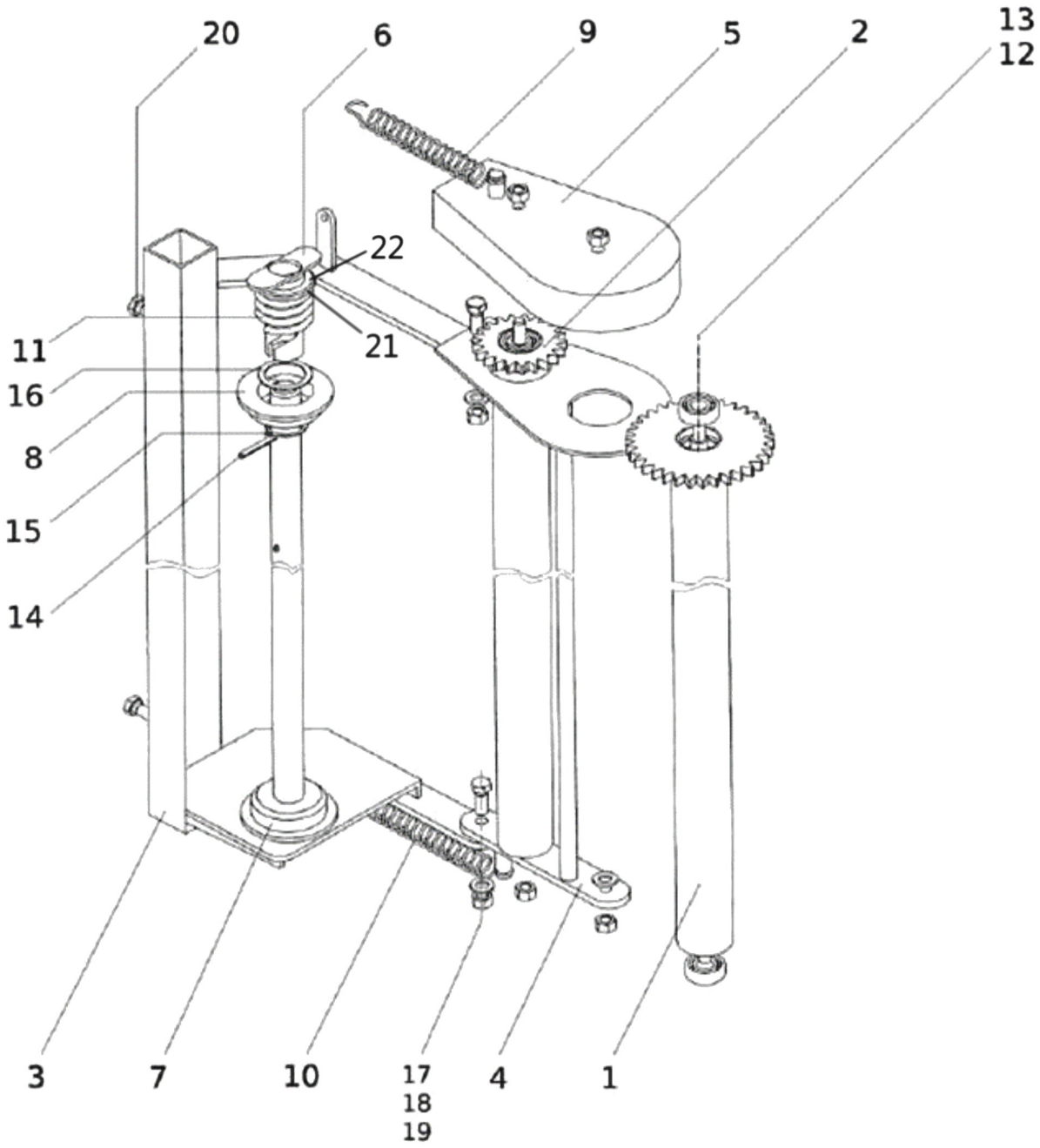
EW-450A
Main Frame



EW-450A
Main Frame

Item	Part #	Description	Qty.
1	AW-T301	Main frame	1
2	AW-T302	Lateral Coupler/Connecting Link	1
3	AW-T303	Feeder Arm	1
4			
5	AW-T305	Locking Lever	1
6	AW-T306	Locking Pin	1
7	AW-T307	Agricultural Chain	1
8	CP2.5x25	2,5x25 Galv. Cotter pin	3
9	AW-T309	Sensor and counter cable	1
10	AW-T310	Spring	1
11	AW-T311	Frame Pin	1
12	FW37	M37 Flat Washer Zn	2
13	CP6.3x71	6,3x71 Galv. Cotter pin	2
14	BM1217570	Bolt M12 x 1.75 x 70 5.8 Zn	1
15	FW13	Flat washer M13	2
16	LNM12175	Locking Nut M12 x 1.75 Zn	1
17	BM12175350	Bolt M12 x 1.75 x 35 5.8 Zn	2
18	FW13	Flat washer M13	2
19	LNM12175	Locking Nut M12 x 1.75 Zn	2
20	BM1217545	Bolt M12 x 1.75 x 45 5.8 Zn	2
21	FW13	Flat washer M13	2
22	LNM12175	Locking Nut M12 x 1.75 Zn	2
23	BM1217570	Bolt M12 x 1.75 x 70 5.8 Zn	2
24	BM1217530	Bolt M12 x 1.75 x 30 5.8 Zn	2
25	FW13	Flat washer M13	2
26	BM1217525	Bolt M12 x 1.75 x 25 5.8 Zn	4

EW-450A
Film Feeder



EW-450A
Film Feeder

Item	Part #	Description	Qty.
1	AW-T401	Aluminum shaft with gear z=34	1
2	AW-T402	Aluminum shaft with gear z=21	1
3	AW-T403	Fixed foil feeder frame	1
4	AW-T404	Movable foil feeder frame	1
5	AW-T405	Gear guard	1
6	AW-T406	Lock nut set	1
7	AW-T407	Clamp ring lower	1
8	AW-T408	Clamp ring upper	1
9	AW-T409	Pressure spring upper	1
10	AW-T410	Pressure spring lower	1
11	AW-T411	Lock nut spring	1
12	AW-T412	Rubber shaft axle	2
13	B60042RS	6004 2RS Bearing	4
14	AW-T414	Spring pin	1
15	AW-T415	Spring washer Z-38	1
16	AW-T416	Special lock washer	1
17	BM1217530	M12x30 5.8 Galv. Bolt	2
18	FW12	Ø13 Galv. Round washer	6
19	LNM12175	M12 Galv. Nut	6
20	BM1217535	M12x35 5.8 Galv. Bolt	2
21	AWT007	Upper washer 41x51x2	1
22	AWT008	Spanner nut 40-1.15	1

Warranty

LIMITED WARRANTY

Belco Resources Equipment warrants to the original purchaser of any new piece of machinery from Belco Resources Equipment, purchased from an authorized Belco Resources Equipment dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use, ninety (90) days for commercial use from date of retail sale. Warranty for rental purposes is thirty (30) days. The obligation of Belco Resources Equipment to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Belco Resources Equipment dealer during regular working hours. Belco Resources Equipment reserves the right to inspect any equipment or parts, which are claimed to have been defective in material or workmanship.

This limited warranty does not apply to and excludes wear items such as shear pins, tires, tubes knives, blades or other wear items. Oil or grease is not covered by this warranty.

All obligations of Belco Resources Equipment under this limited warranty shall be terminated if:

Proper service is not performed on the machine.
The machine is modified or altered in any way.
The machine is being used or has been used for purposes other than those for which the machine was intended.

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Belco Resources Equipment obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Belco Resources Equipment; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery.

REGISTRATION

The online Warranty Registration must be completed in order to qualify for coverage on this Limited Warranty. Visit br-equipment.com, click on "Warranty Registration" and completely fill out the form to register the new piece of equipment.

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