



PRODUCER OF AGRICULTURAL MACHINERY

SUSPENDED ROTARY MOWER Z 175-1

SERVICE MANUAL PARTS LIST



Caution!

This service manual is a part of the mower.
Please keep the manual for future use.

Serial number of the mower

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1. EU DECLARATION OF CONFORMABILITY FOR MACHINES:

We, the company "MESKO-ROL" Sp. z o.o.
26-111 Skarżysko-Kamienna, ul. I.Mościckiego 51, Poland

declare with full responsibility that machine

SUSPENDED ROTARY MOWER Z 175-1

No

which this declaration refers to, complies with requirements of:

- Directive 98/37/EC – Machinery changed with a Directive No. 98/79/EC
- Decree of Minister of Economy of 20.12.2005. (Dz.U. No. 259, pos. 2170 of 28.12.2005.)
- harmonized standards:
 - PN-EN 292-1 - Basic notions, general principles of projecting
 - PN-EN 292-2 - Basic notions, general principles of projecting
 - PN-EN 294 - Safety distances preventing from reaching dangerous areas with upper limbs.
 - PN-EN 745 - Agricultural machinery. Rotary and swingle mowers. Requirements regarding safety.
 - PN-EN 1553 - Agricultural machinery. Agricultural self-propelling, suspended, half-suspended and attached machines. Common requirements regarding safety.
- non-harmonized standards:
 - PN-ISO 11684:1998. Tractors, agricultural and forest machines, motor tools. Safety signs and warning pictograms. General principles.

Skarżysko-Kamienna, 01.07.2008.



Jacek Kowalski
President of Board of "MESKO-ROL"

2. INTRODUCTION

Considering the importance of the information, this service manual constitutes an inseparable part of the mower.

Compliance with all recommendations of this manual will let you optimally exploit the machine. Careful reading will ensure safe and effective work with the mower.

The mower is made according to the safety standards' requirements. Compliance with the warnings and instructions of this manual guarantees the safety of the user.

To use the machine failure-free for many years we recommend usage of only original spare parts produced by "MESKO-ROL" Ltd.

If you have any questions after reading the manual please contact the salesman or Sale&Marketing Department of "MESKO-ROL" Ltd.:

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„MESKO-ROL“ Ltd. constantly tries to improve its products. We reserve ourselves the right to introduce any changes and improvements which we consider necessary. We have no obligation for modernizing already sold machines.

3. APPROPRIATE USE OF THE MACHINE

The mower is assigned only for agricultural works - mowing the grass and low-stem green forage on even fields and meadows. Using this machine for other purpose will be understood as an inappropriate.

Fulfillment of the manufacturer's requirements regarding usage of the mower, servicing and repairs as well as thorough compliance with these requirements is a condition of appropriate usage.

The mower should be used and repaired only by a person who is acquainted with its characteristics and rules of behaving due to safety principles.

Rules relating to accident prevention as well as all basic rules of the safety and occupational medicine, and also the traffic rules should be always complied with.

Changes made by an unauthorized person can relieve the producer from the responsibility for possible harms and damages.

4. SAFETY OF USE



IMPORTANT INFORMATION FOR A USER THE WARNING SYMBOL

This warning symbol points important information referring danger to body or life of people and animals, which is showed in the service manual. If you see the symbol – be aware and read carefully the given information.

4.1. GENERAL SAFETY PRINCIPLES

BE CAREFUL – THOROUGHLY READ THE INSTRUCTIONS IN ORDER NOT TO EXPOSE YOURSELF AND OTHERS TO A DANGER.



REMEMBER to comply with safety principles and keep the precautionary measures referring the mower as well as safety of use.

Every user must completely know all the possible dangers and ways of avoiding the harm or damages.



NEVER let the children or youth under 18 operate the mower.



NEVER let the people unacquainted with maintenance and safety principles operate the mower.



NEVER let the children play on the mower or nearby, even when it is not working or stored.



BEFORE starting the mower make sure that there is no people or animals in a 50 m distance from the mower.

4.2. DETAILED SAFETY PRINCIPLES.



4.2.1. PREPARATION FOR WORK

- **CAREFULLY** read the service manual. Be absolutely sure that you are acquainted with all the safety and mower operating instructions referring the preparation for work, transport and storage of the machine.
If you do not follow the given instructions the producer do not answer for the possible harms or damages.
- **THE USER** should have carefully buttoned up, not too loose clothing to avoid catching by protruding parts or possible driving into rotating parts.
- **FOR DRIVING** the mower use the PTO drive shaft with one-way clutch of the type given in the manual. Protect shields of the PTO shaft against turning according to the PTO shaft service manual.
The PTO shaft must have complete shields.
Do not use PTO shaft that is not working properly or has damaged shields.
- **CONTROL** the condition of the mower, tighten the bolts and check the fastening of all the moving and protecting elements before linking the mower and tractor into a working unit.
- **WHILE CONNECTING AND DISCONNECTING** the mower to and from the tractor be especially careful.
- **VERY CAREFULLY** approach the mower with the tractor to set the fastening points of the three-point suspension system and power take-off – power input shafts in a close position. No person should be between the tractor and the mower at that time.
All the operations of connecting the tractor with the mower should be executed only after you stop the engine, immobilize the tractor with a handbrake and take the ignition key off.
- **ALWAYS** make sure there is no people or animals near the mower, before lifting.
- **DO NOT LEAVE** the mower in lifted position on the tractor's three-point suspension system.
- **BEFORE YOU LEAVE** the tractor **ALWAYS** lower the mower onto the still and flat ground, stop the drive of PTO shaft, stop the engine, take the ignition key off.
- **NEVER USE** the mower without protective shields and aprons. Working without shields or with damaged shields is forbidden because of the danger of throwing stones or other hard objects by rotating drums.
- **START** the mower after setting all elements in working position. Starting the mower in transport position is **FORBIDDEN**.
- **BEFORE** setting the mower in transport position, **ALWAYS** disconnect the PTO shaft from the tractor.
- **NEVER** start the mower in closed rooms due to harmful exhaust gases.

- **ALWAYS** use front weights, when the front axle of the tractor is too lightened.
- **YOU CAN APPROACH** the mower only when the tractor's engine and the mower's drums are totally still.
- **NEVER** operate the mower while being under alcohol, drugs or medicines that can restrain the ability of concentration.



4.2.2. TRANSPORTING

- **REMEMBER** that the mower can be transported on the tractor only when set in the transporting position.
- During the transport on public roads the mower should be equipped with cautionary lighting panels according to obligatory home traffic regulations.



4.2.3. WORKING

- **BEFORE YOU SETTLE** the mower for work, every time stop the engine, take the ignition key off and immobilize the tractor with a handbrake.
- **BE ESPECIALLY CAREFUL** when recharging the mower from transport to working position.
- **CONNECT THE PTO DRIVE SHAFT** to the tractor and machine after setting the mower in working position. Pay close attention to proper fastening the shaft on the splines of tractor's drive.
- **BEFORE YOU START** the machine make sure there is no people or animals in a 50 m distance. The support should be lifted.
- **NEVER START** the mower when it is lifted.
- **WHEN WORKING** pay attention to any alarming vibrations or changes in sounds of working.



4.2.4. DISCONNECTING THE MOWER FROM THE TRACTOR FOR THE STOP AND STORAGE.

- DISCONNECT THE PTO SHAFT only after you put the mower on the ground, stop the engine, immobilize the tractor and take the ignition key off.
- BEFORE YOU DISCONNECT the mower from the tractor lower the support and block it with a pin.
- PLACE the mower for the stop and storage in the room, where other people, children or animals do not enter.
- PROTECT the mower against the reach of children.
- DURING STORAGE ALWAYS put the mower on the support.



4.2.5. TECHNICAL MAINTENANCE

- MAINTAIN the mower during the stop, before connecting it to the tractor. If you have to service it when connected to the tractor, proceed as follows:
 - put the mower on the ground
 - stop the engine, immobilize the tractor with a handbrake, take the ignition key off and disconnect the PTO shaft

After switching off the drive, drums of the mower rotate with inertial reaction for about one minute and you must wait until they stop.

- EVERYDAY CHECK the condition of the bolt connections and tighten the loosed parts if necessary, before you start the work.
- CONTROL THE LEVEL of possible wear or damage of parts, especially knives and knife holders, and replace them if necessary early enough with **original** spare parts offered by the producer of the mower.



4.2.6. SAFETY SIGNS

The warning and information labels are put on the mower in places showed at Fig.1.

Warnings and information are given as pictograms that show clear instructions where to put especial attention to work safely with the mower.

Carefully watch every label and thoroughly check the meaning in this chapter of the service manual.

Keep the labels clear and readable while using the mower.

If any label is damaged, illegible or lost replace it with a new one.

New assemblies and parts which are replaced during repairs should be marked with all necessary labels shown in this manual.

You can purchase new labels at producer or dealer. While ordering, please advise catalogue number of the label (given at Fig.1.)

List of the warning and information labels placed on the mower.



GENERAL WARNINGS. During operating the mower comply with all warnings and safety principles marked with this sign.



CAREFULLY READ the service manual before you start to work with the machine.



STOP THE TRACTOR'S ENGINE and take the ignition key off before any service or repair.



DO NOT TOUCH moving parts of the machine until they are absolutely still.



MIND THE SPINNING KNIFE. Stay away from the spinning knives while mower is working.



NIEDOPUSZCZALNE JEST UŻYWANIE KOSIARKI:
1) W ODLEGŁOŚCI MNIEJSZEJ NIŻ 50 m OD OSÓB POSTRONNYCH.
2) NA TERENIE KAMIENISTYM LUB TAKIM, NA KTÓRYM WYSTĘPUJĄ PRZESZKODY TRWAŁE.

DO NOT USE THE MOWER:

1. closer than 50 m from people or animals
2. on a stony ground or ground with constant obstacles.



DO NOT STAY within the bend of the unit while tractor's engine is working.



DO NOT STAY OR MAINTAIN THE MOWER WITHIN THE LIFTED MACHINE.

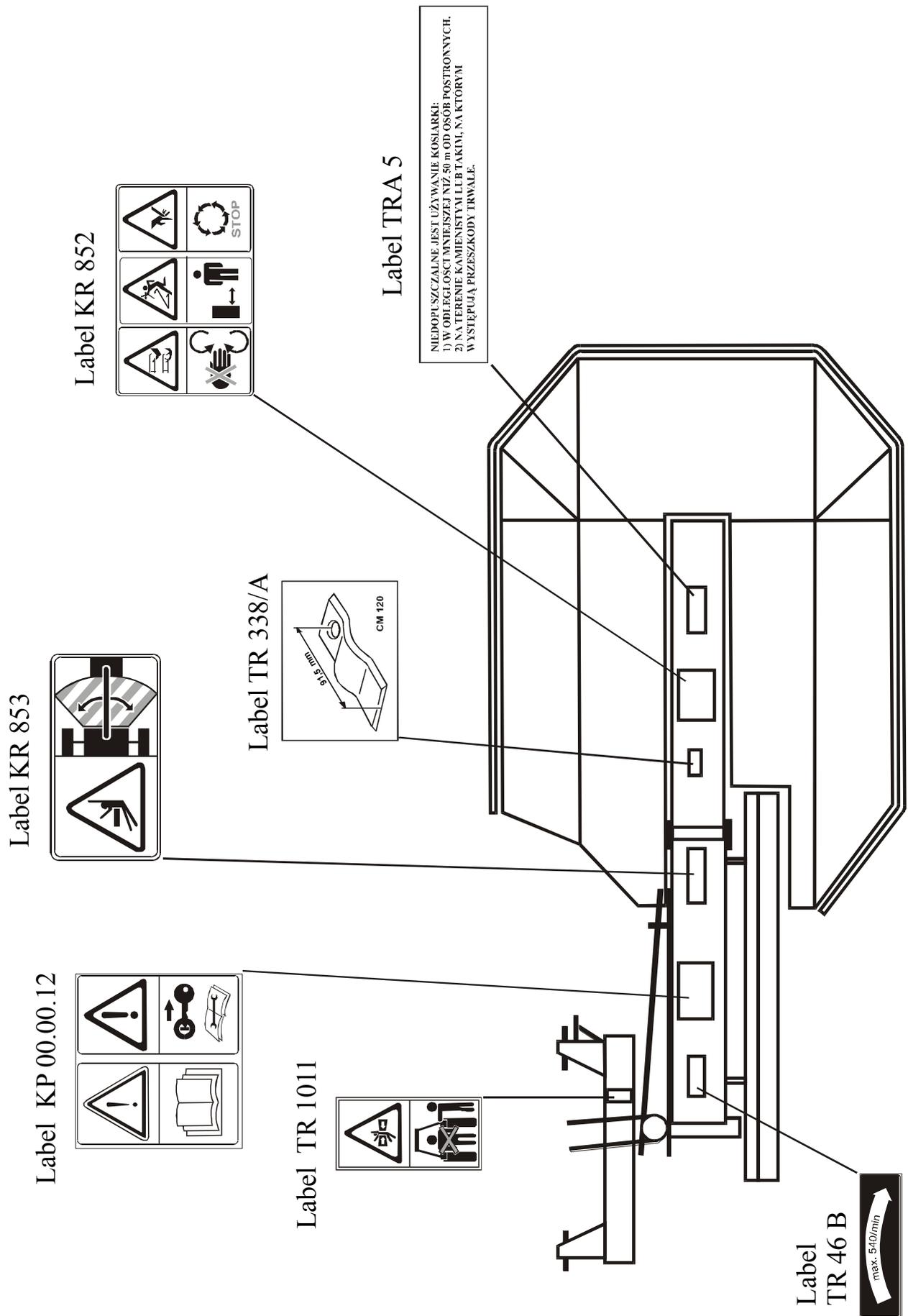


Fig.1. Placing the warning and information labels on the mower.

5. MOWER OPERATING.



You can use and operate the mower after reading carefully the service manual.

5.1. GENERAL CHARACTERISTICS AND DESCRIPTION OF THE MOWER.

The Z 175-1 rotary mower cooperates with an over 23 kW tractor of II category. It is assigned for mowing grass and low-stem green forage on even and sloped up to 12° fields and meadows.

In case of problems with the power take-off shaft please contact with a producer of this particular PTO shaft.

The knife CMA 120 is not under warranty.



WARNING!

For proper work use appropriate type of PTO drive shaft:

Torque – 460 Nm, Lmin. – 560 mm, Lmax – 885 mm.

Producer recommends PTO shafts of SIPMA, Poland – type **45R-502-2-BA-J501**

www.lfmr.pl

The Z 175-1 rotary mower consists of the following main assemblies (Fig.2.):

- three-point frame (1)
- indirect drive (2)
- main drive (3)
- complete housing (4)

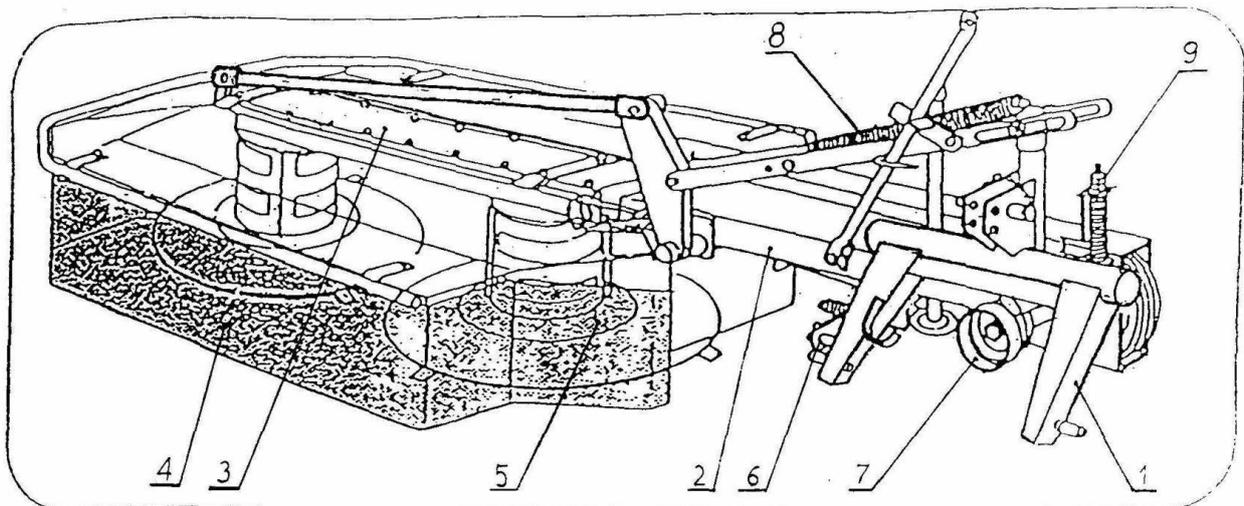


Fig. 2. Z 175-1 suspended rotary mower.

- 1- three-point frame, 2 – indirect drive, 3 – main drive, 4 – complete housing,
5 – drum, 6 – lock, 7 – PTO shaft housing, 8 – spring, 9 – tightening pin.

The mower is supplied partly disassembled. Assemble the machine in accordance with Fig. 12., 13. and 16. of the parts list.

The three-point frame 1. is attended for mounting the mower on tractor.

The power is transmitted to the power take-off shaft through the jointed shaft, belt transmission (indirect drive 2.) to the main drive 3. equipped with two drums 5. Three CMA120 cutting knives are rotationally mounted in each drum and they deviate when they hit an obstacle, e.g. a stone, which protects them from getting damaged. The knives have two cutting edges. When one edge wears out, the cutting tools can be installed in the other drum, which rotates in the opposite direction, thus they preserve dual life.

Each drum has replaceable transport strips preventing grass from getting wrapped in the drum and decreasing the friction and wearing of drums. The drums and cutting knives whirl in opposite direction forming the mowed green fodder into a swath roller.

The tightening pin 9. and indicator enables the tightening of the V-belt assembly.

The mower is equipped with a lock 6. which, in case of hitting an obstacle, reacts causing the machine to move backwards. If that happens you must stop immediately and withdraw a little, so that the lock is automatically locked up again.

In order to assure operational safety the mower is outfitted with housing 4. and aprons fastened to them.

The end of power take-off shaft is protected with a special housing 7.

Spring 8. connecting the lift with the three-point frame decreases the pressure of drums to the base preventing the turf from being devastated and decreasing wearing-out of the drum plates.

When working on uneven ground (max. decrease of pressure to the base) and with lighter tractors on steep slopes a spring should be fixed in the down hole (best steerability of the tractor is then achieved).

5.2. PREPARATION FOR TRANSPORT AND TRANSPORTING



CAUTION !

When charging to the working or transport position do not get between the tractor and the cutting unit, setting the mower in working or transport position should be done closely to the ground! When charging the mower to transport position, first, with utmost severity, disconnect the jointed shaft from the tractor.

Before disconnecting the mower from the tractor, place the mower on a support 4. and rest the jointed shaft on the yoke 5. (Fig. 3.)

5.2.1. LINKING THE MOWER AND THE TRACTOR INTO A WORKING UNIT

- Set up the three-point frame in a transport position – the transport rod 1. should be placed on mandrel 2. of the three-point frame and secured with a pin 3. (Fig. 3.).
- Connect the three-point frame 1. of the mower with the three-point suspension system of the tractor in accordance with the manual of the tractor.
- Lift the support 4., set it on the high position and block with a pin.

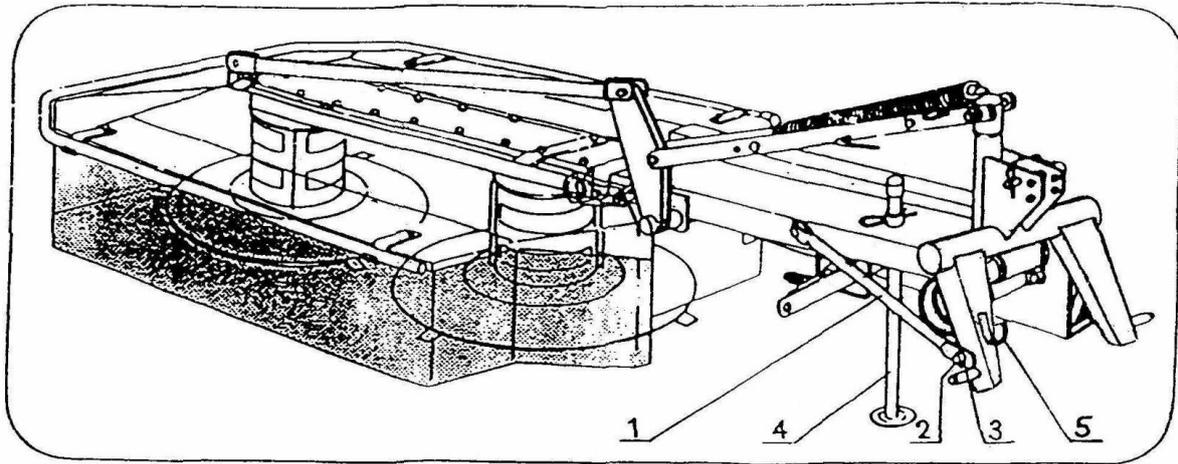


Fig. 3. Linking of the mower and the tractor into a working unit.

1 – transport rod, 2 – mandrel, 3 – pin, 4 – support, 5 – yoke.

5.2.2. ASSEMBLING A PTO DRIVE SHAFT

For driving the mower use the PTO drive shaft of the type given in the manual.



CAUTION!

Always use shields of the PTO shaft and tractor's drive shaft. Shields of PTO shaft must be protected against turning according to the PTO shaft service manual.

5.2.3. TRANSPORTING THE MOWER MOUNTED ON A TRACTOR.



CAUTION!

During the transport on public roads the mower should be equipped with cautionary lighting panels according to obligatory home traffic regulations.

For driving to the workplace, disconnect the jointed shaft of the mower from the PTO shaft of the tractor and rest it on the yoke 1. During transport the mower should be raised on a hydraulic lift with the cutting tool turned backwards for safety.

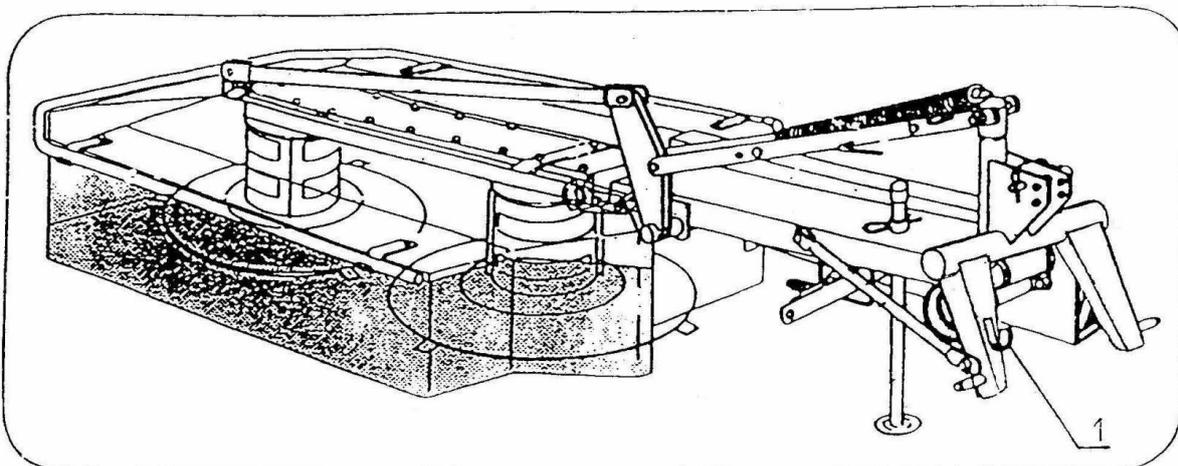


Fig. 4. Mower in transport position.

1 – yoke.

5.3. SETTING THE MOWER IN WORK POSITION



CAUTION !

Before releasing the transport rod from the mandrel, position the mower and tractor horizontally; if necessary, secure the mower against unintended departing.

- Lower the mower to the ground, release the transport rod 1., mount the PTO shaft on the yoke 9. and lock the transport rod in the upper position.
- Set up mower in the work position, fasten lock 4. on mandrel 2. and secure with pin 3.
- Connect the PTO drive shaft with the tractor.
- Set up the length of the upper pull rod in such a way that the drums in the work position are parallel to the base or slightly sloped forward. In order to avoid fodder lost due to dual cutting, never slope the machine backwards. Set up the bottom balance lever of the tractor in such a way that the mower is positioned as shown in Fig. 6.

NOTICE:

Depending on the length of the upper pull rod of the tractor, the front as well as rear holes of the three-point frame can be made use of.

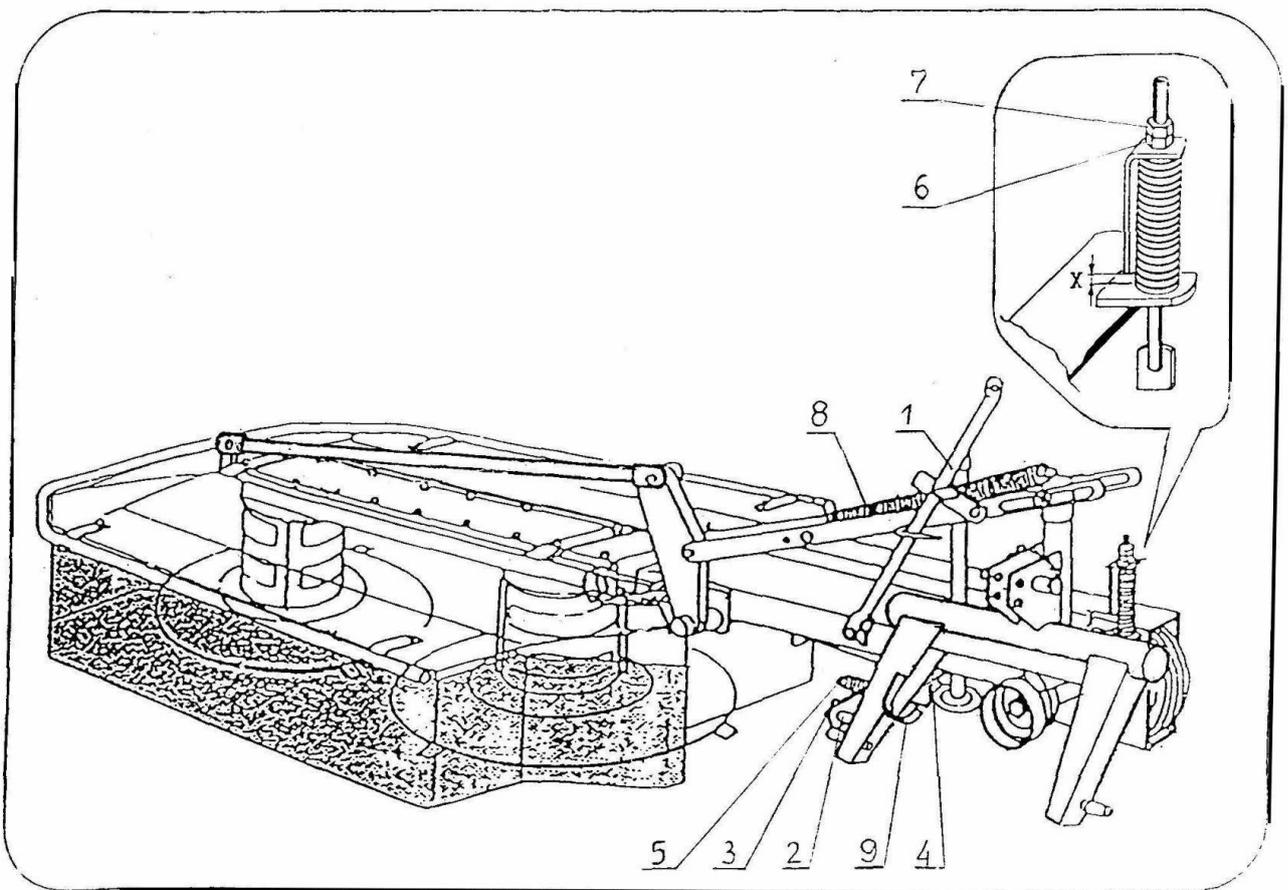


Fig. 5. Mower in work position.

- 1 – transport rod, 2 – mandrel, 3 – pin, 4 – lock, 5 – securing nut, 6 – nut,
7 – doubling nut, 8 – spring, 9 – yoke.

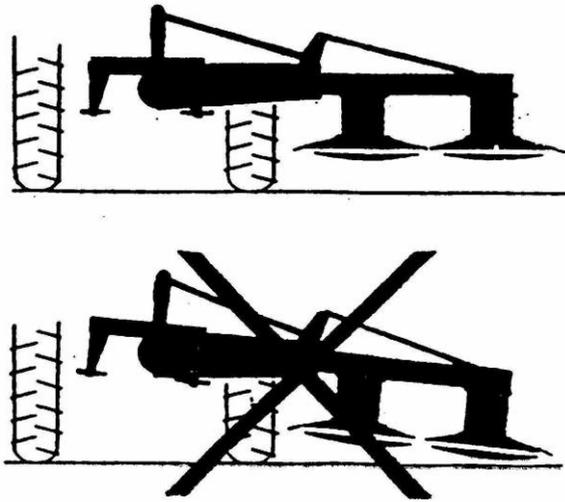


Fig. 6. Correct setting of the mower.



CAUTIONS !

- Start the mower only when set in working position.
- Before working with the machine read the service manual carefully.
- It is inadmissible to lift the mower on a hydraulic lift with power feed on and rotating drums.
- Never use the mower without shields and aprons. Operating the mower without shields or with damaged shields is inadmissible due to danger of thrown out hard objects.
- Before switching on the PTO shaft secure the jointed shaft shields against turning.
- It is inadmissible to use the mower at a distance smaller than 50 m from strangers and on stony ground or ground with constant obstacles. Handle with care especially near roads and roadways.
- In no instance should the speed of PTO shaft be increased above 540 rpm.
- In case of excessive unloading of the front axle of the tractor, use front wheel weights in order to load additionally .
- When running on steep slopes the mower should be on the higher side of the slope.
- Running the mower at high speeds of drums requires taking watchful attention to all kind of unbalance causing vibration which can result in serious damage of the mower. If increased vibration or a changed noise of operating mower is noticed, stop working immediately. Continue the work with the machine only after you find and remove the cause.
- Conduct operations on the mower only after placing the mower on the ground, turning off the PTO shaft, stopping the engine and immobilizing the tractor with a handbrake or placing the wedges under the tractor's wheels.
- Do not start the engine or try to operate the mower indoors due to harmful exhaust gases.

5.4. MOWING.

- Slowly switch on the mower drive until achieving a full number of revolutions before the mowing starts, that is 540 rpm
- Match driving speed to the ground conditions and type of mowed material; avoid uneven and stony ground.
- When mowing on uneven ground or in cooperation with lighter tractors on steep slopes suspend the spring (pos. 8. Fig.5.) to down hole.

5.5. PREPARATION FOR THE STOP AND DISCONNECTING THE MOWER FROM THE TRACTOR.

To disconnect the mower from the tractor proceed as follows:

- Set the mower in the transport position.
- Set up the support 4 (Fig. 3.) in position for the stop.
- Disconnect the PTO shaft from the tractor and put it on the yoke 5.
- Disconnect the tractor's three-point suspension system from the mower.

6. TECHNICAL MAINTENANCE



CAUTION !

- Regularly control the condition of the knife-holder pins. When the pin wears out halfway absolutely replace the knife-holders (Fig.7.).
- When replacing the knives, notice should be taken to the correct mounting; they should rotate freely on the pins.
- Always fasten the knife-holders with original bolts M12x25-8.8 and nuts P M12-8-A, tighten them with a torque 85 Nm.

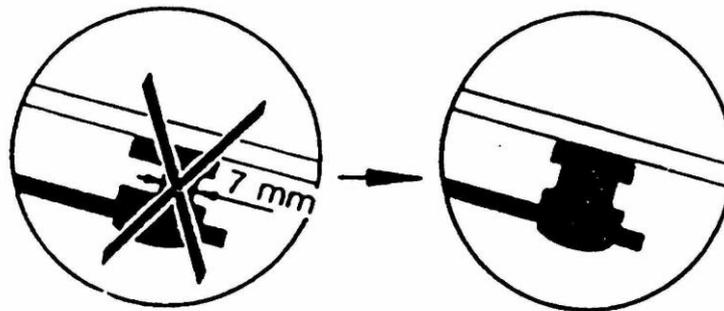


Fig. 7. Minimal thickness of the knife-holder pin.

- The condition of drums should be regularly checked. If the drum plates show cavities caused by cutting tools or if they are overworn, proceed as follows:
 - unscrew three bolts 7. which are screwed in at the bottom of sliding plate (Fig. 15.)
 - disassemble the sliding plate
 - fasten the knife-holders 1. (Fig. 9.) in another place to let the cutting tool adhere to an unworn surface.
- Immediately replace damaged or worn drums.

6.1. ROUTINE TECHNICAL MAINTENANCE

- Regularly check the condition of knives. Each drum should be equipped with three new or uniformly worn CMA 120 knives. A suitable wrench is provided for replacing the knives (Fig. 8.). Correctly settled knife should easily spin on the knife-holder pin. Fig. 8. shows how to replace the cutting knives.
- Systematically check the condition of transport strips. If they are worn to such a degree that the drum can untimely wear out, replace strips with new ones.
- During the season check the functioning of the lock every day (pos. 4. Fig. 5.). If the mechanism functions while mowing, even though no obstacle has been struck, this means that the force of the spring is too small and it should be tightened better with a securing nut (pos. 5. Fig. 5.).
- **During the first few hours of work carefully watch the behaviour of V-belts, after 0,5 – 4 hours of work under full load – tighten belts. The ‘x’ clearance (Fig. 5) should be approximately 1 mm. This clearance is adjusted with nuts 6. and 7. Proceeding like this the initial stretch is considered. After next 24 hours of work check the indicator again and tighten belts if necessary. Maximum ‘x’ clearance cannot exceed 3 mm. Next inspections can be done even after few hundred hours of work.**
Notice: If the V-belts are stressed more than the indicator is showing, a damage to ball bearings can be caused in result of overloading.
- After a few working hours of a new or repaired machine check if all the bolts and nuts are properly tightened, especially the bolts tightening the lift. Repeat the checking in regular intervals.
- If the gasket between the shield and main frame (for example after repairing the machine) needs to be replaced, use only original gaskets. Stick them on exactly in place of the old one. Bolts that connect shield with main frame should be tighten with torque 48 Nm.

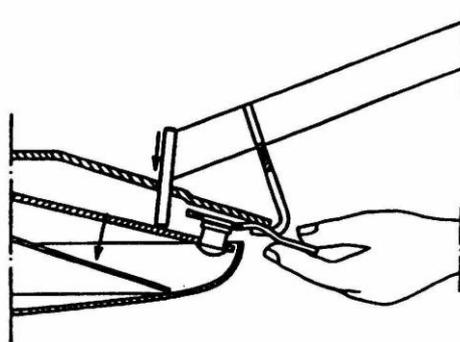


Fig. 8. Method of replacing the knives.

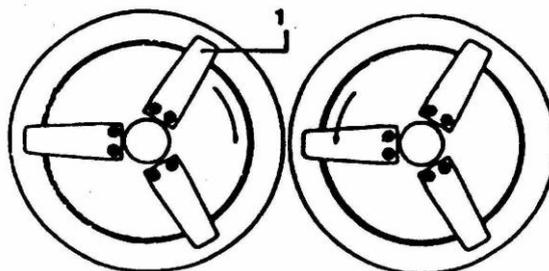


Fig. 9. Position of knife-holders.

1 – knife-holder.

6.2. LUBRICATION.

- During the operational use the mower should be lubricated every day (the lubricating points are shown in Fig.10.)
- The main frame filled with grease “Liten EPX 00” ORLEN OIL doesn’t require checking. If a repair has been conducted, the amount of lubricant should be refilled! The lubricant should level up to the bottom part of the horizontal shaft (5,5 kg).

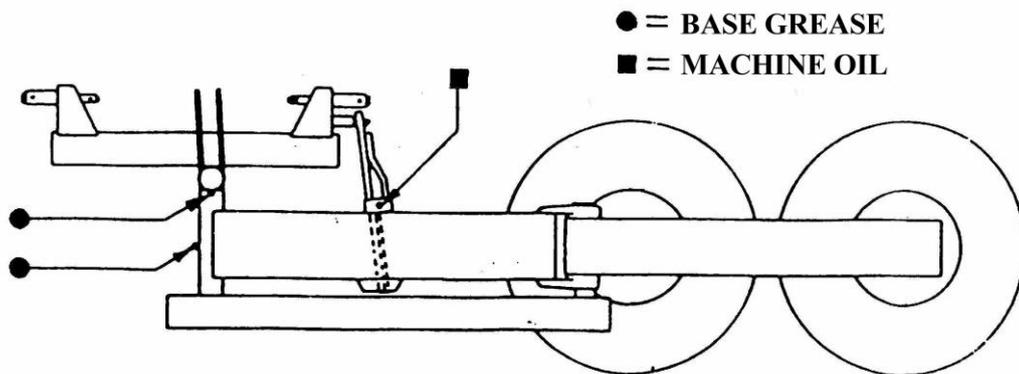


Fig. 10. Lubricating points.

6.3. MAINTENANCE AND STORAGE

- Every time after finished work clean the machine of plant remains and dirt and check the connection of parts and assemblies.
- When the season is over, clean the mower and carry out a technical survey. If any defects are found, remove them. If paint has come off in some places, they should be cleaned of rust and repainted. Cover unpainted parts with a thin layer of grease e.g. STP, vaseline. It is recommended to store the mower indoors to secure it from moisture and precipitation.

7. TECHNICAL DATA

- working width.....	1650 mm
- transporting width.....	1450 mm
- transporting length.....	2900 mm
- height.....	1150 mm
- cutting height.....	40 mm
- number of drums.....	2
- number of knives	6
- PTO shaft	540 rpm
- weight.....	380 kg
- power required	24 kW
- tractor	II Cat.

NOTES

PARTS LIST

When ordering parts, please advise the name and number of the part and the year of production of the mower.

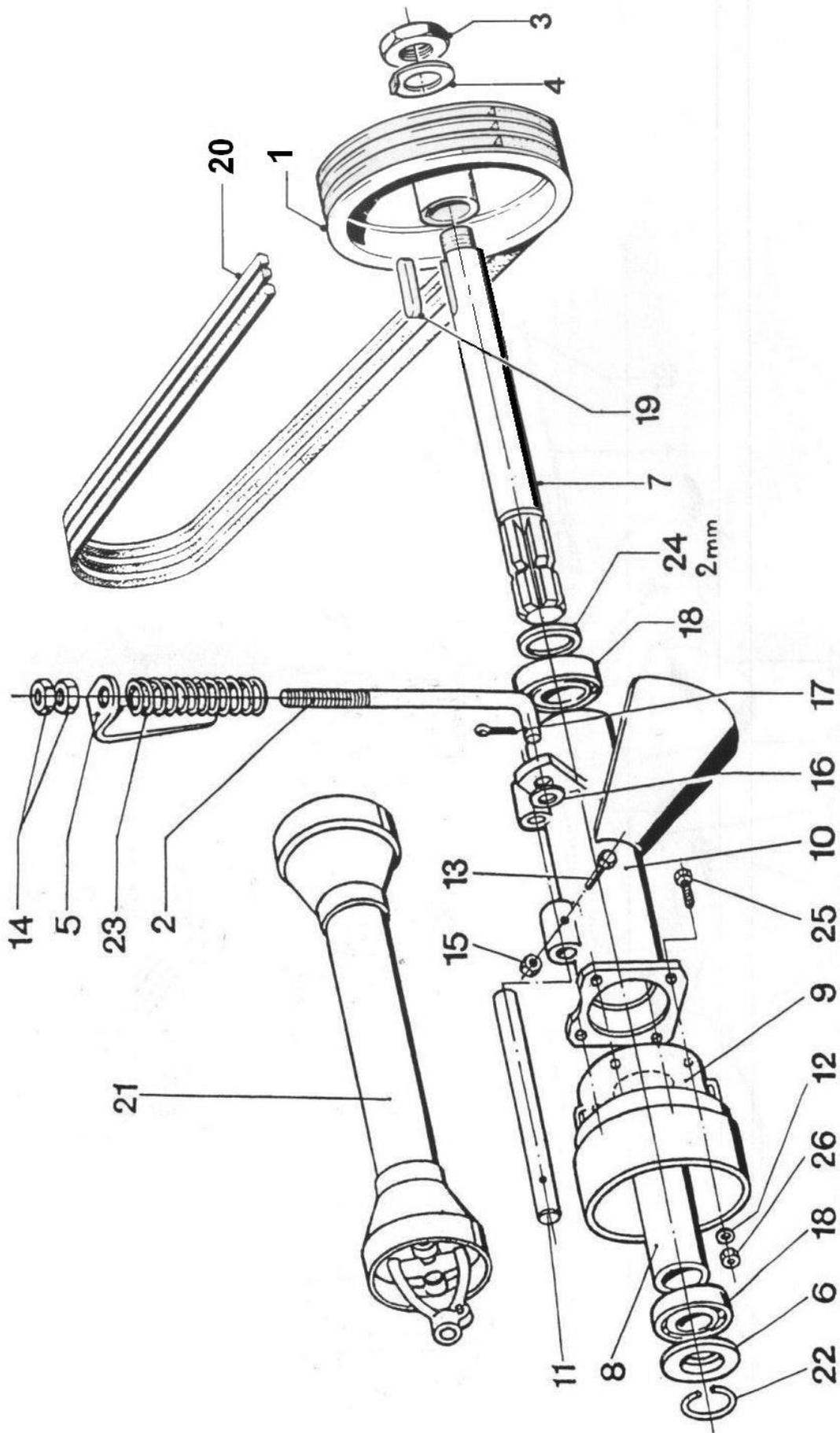


Fig. 11. COMPLETE MAIN DRIVE

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Complete pulley	KR 680	1	
2	Tightening pin	MTA 145V	1	
3	Nut M30x1,5 H=12	MT 174V	1	
4	Lock-washer	MT 301V	1	
5	Indicator	MT 362	1	
6	Plate	MT 365V	1	
7	Driving shaft	MTA 366	1	
8	Distance sleeve	MTA 367	1	
9	Housing	NP 0381	1	Bondioli & Pavesi
10	Bearing casing	MTA 0375	1	
11	Mandrel	MT 376V	1	
12	Round washer 8,5-Fe/Zn9cC	NP 0291	4	
13	Bolt M6x55-8.8-B-Fe/Zn8cC	ND 1106V	1	
14	Nut M16-8-B-Fe/Zn8cC	ND 2006V	2	
15	Nut P M6-8-A-Fe/ZN8cC	ND 2092V	1	
16	Washer ZM K15-Fe/Zn9cC	ND 3109V	1	
17	Cotter pin S-Zn 4x32	ND 4006V	1	
18	Ball bearing 6207-2RS	ND 5027	2	
19	Parallel key AB 8x7x45	ND 7003/A	1	
20	Set of V-belts SPB 2800	NP 0454	1	
21	Jointed PTO drive shaft with one-way clutch	45R-502-2-BA-J501	1	SIPMA
22	Spring ring	PZ 72V	1	
23	Spring	PZ 327	1	
24	Washer 2,0x35,2x43	TH 79(20)	1	
25	Bolt M8x16-8.8-B-Fe/Zn8cC	ND 1063V	4	
26	Nut P M8-8-A-Fe/Zn8cC	ND 2091V	4	

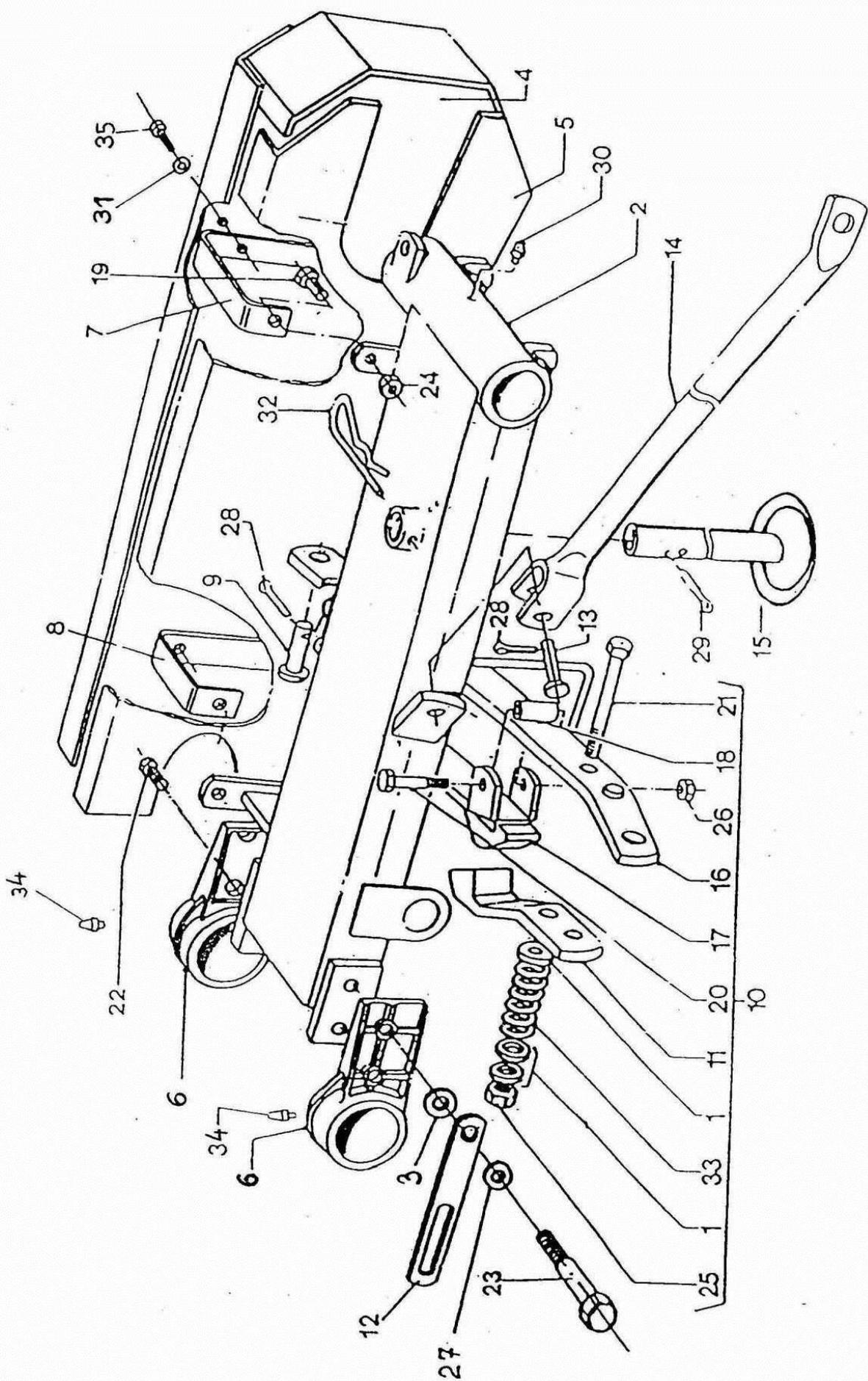


Fig. 12. COMPLETE INTERMEDIATE FRAME

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Washer	BP 431V	3	
2	Intermediate frame	GT 03	1	
3	Sleeve	GT 92V	1	
4	Complete shield	KR 075	1	
5	Shield	KR 76	1	
6	Hinge	LD 40	2	
7	Holder	KR 77	1	
8	Holder	KR 79	1	
9	Mandrel 16h11x65x58	MT 97V	1	
10	Complete lock	MT 00122	1	
11	Lock	MT 0123	1	
12	Flat bar	ST 13	1	
13	Mandrel	MT 166V	1	
14	Transport rod	MT 0168	1	
15	Support	MTA 0175	1	
16	Complete support	MT 0485	1	
17	Complete support.	MT 0486	1	
18	Distance sleeve	MT 487V	1	
19	Bolt M10x30-8.8-B-Fe/Zn8cC	ND 1009V	4	
20	Bolt M8x70-8.8-B-Fe/Zn8cC	ND 1123V	1	
21	Bolt M12x200-8.8-B-Fe/Zn8cC	ND 1303V	1	
22	Bolt M16x35-8.8-B-Fe/Zn8cC	ND 1438V	3	
23	Bolt M16x60-10.9-B-Fe/Zn8cC	ND 1439V	1	
24	Nut P M10-8-A-Fe/Zn8cC	ND 2084V	4	
25	Nut P M12-8-A-Fe/Zn8cC	ND 2085V	1	
26	Nut P M8-8-A-Fe/Zn8cC	ND 2091V	1	
27	Washer K 17-Fe/Zn9cC	ND 3001V	1	
28	Cotter pin S-Zn 4x32	ND 4006V	2	
29	Cotter pin S-Zn 8x50	ND 4066V	1	
30	Grease nipple M6	ND 9004V	1	
31	Round washer 10,5-Fe/Zn8cC	NP 0297V	4	
32	Stopper	PZ 50V	1	
33	Spring	PZ 327	1	
34	Grease nipple M8x1x180	ND 9813V	4	
35	Bolt M10x20-8.8-B-Fe/Zn8cC	NP 0236V	4	

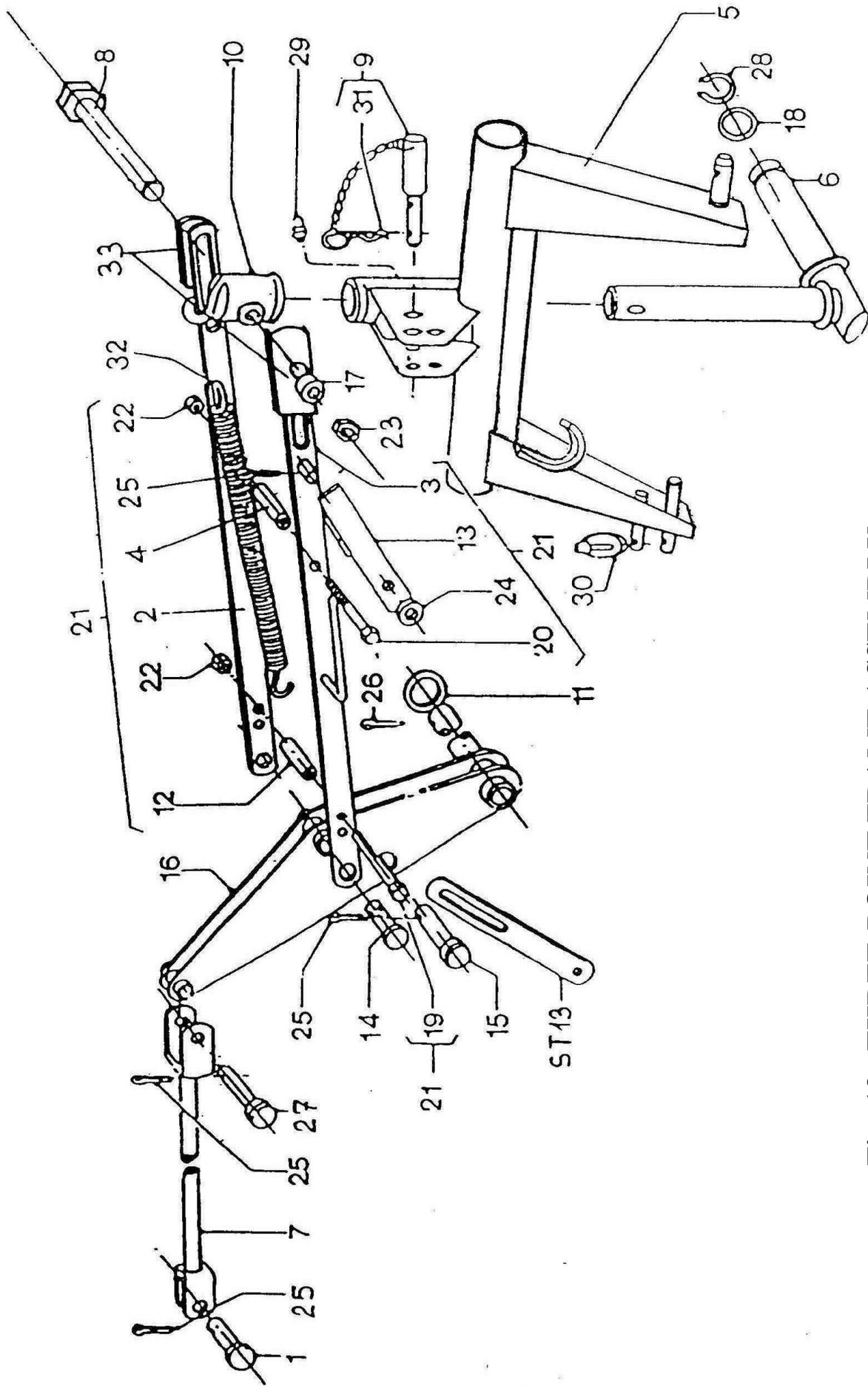


Fig. 13. THREE-POINT FRAME ASSEMBLY

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Pin	MT 90V	1	
2	Flat bar	GT 30	1	
3	Complete flat bar	KR 0450	1	
4	Distance sleeve	GT 45	1	
5	Three-point frame	KR 0220	1	
6	Hinged assembly	GT 0212	1	
7	Complete rod	KR 0420	1	
8	Complete pin	GT 0245V	1	
9	Complete mandrel	HK 0028V	1	
10	Cap	MT 14	1	
11	Washer	MT 84V	1	
12	Distance sleeve	MT 85V	1	
13	Swinging clamp	MT 089	1	
14	Bolt M16x90-8.8-B-Fe/Zn8cC	ND 1244V	1	
15	Pin	MT 100V	1	
16	Complete lever	MT 0118	1	
17	Sleeve	MT 138V	1	
18	Washer 3x60,5x76	MT 141V	1	
19	Bolt M10x90-8.8-B-Fe/Zn8cC	ND 1184V	1	
20	Bolt M10x80-8.8-B-Fe/Zn8cC	ND 1003V	1	
21	Lever assembly	KR 00450	1	
22	Nut P M10-8-A-Fe/Zn8cC	ND 2084V	2	
23	Nut P M16-8-A-Fe/Zn8cC	ND 2090V	1	
24	Washer K 17-Fe/Zn9cC	ND 3001V	1	
25	Cotter pin S-Zn 4x32	ND 4006V	4	
26	Cotter pin S-Zn 5x60	ND 4009V	1	
27	Mandrel 16h11x65x58	MT 97V	1	
28	Mounting ring Z60	ND 8002V	1	
29	Grease nipple M6	ND 9004V	1	
30	Pin A 11x45-Fe/Zn12cC	ND 9031V	1	
31	Plug	PZ 25V	1	
32	Spring	PZ 51	1	
33	Plate	GT 317	2	

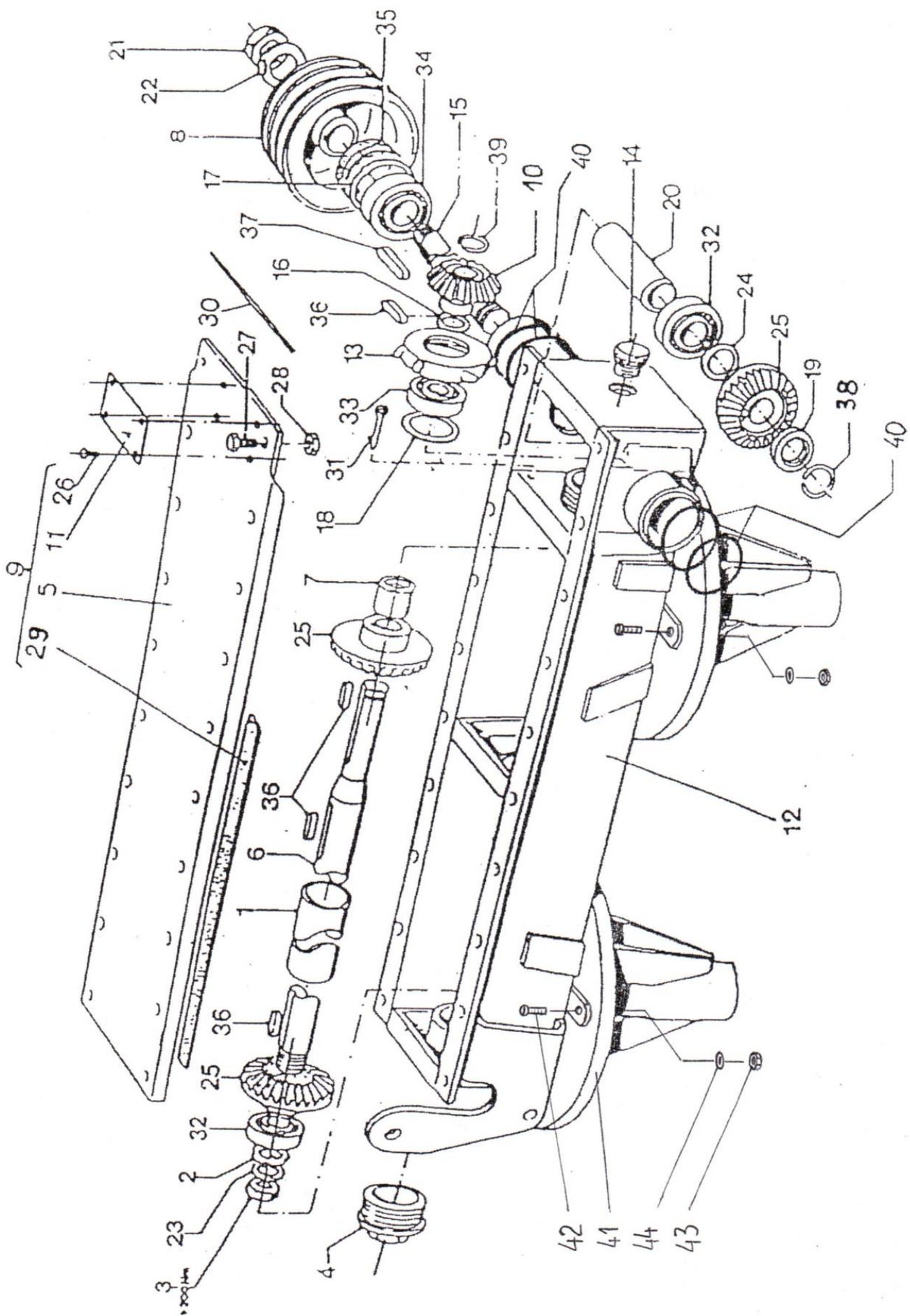


Fig. 14. COMPLETE MAIN FRAME

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Distance sleeve	CH 17	1	
2	Washer	KR 16	1	
3	Nut M30x1,5	CH 180V	1	
4	Plug	CM46	1	
5	Cover	KR 20	1	
6	Shaft	GT 98	1	
7	Distance sleeve	GT 99	1	
8	Pulley	KR 670	1	
9	Complete cover	KR 0020	1	
10	Bevel gear	TC 94	1	
11	Rating plate	KR 33	1	
12	Main frame	KR 0100	1	
13	Nut	MT 5	1	
14	Plug	MT 28	1	
15	Driving shaft	MT 45	1	
16	Set of distance washers	MT 0062	-	
17	Washer 1,0x50x61,8	MT 63(10)	1	
18	Set of distance washers	MT 0063	-	
19	Ring	MT 165	1	
20	Distance sleeve	MT 170	1	
21	Nut M30x1,5 H=12	MT 174V	1	
22	Lock-washer	MT 301V	1	
23	Washer 1,0x30,2x38	MT 310(10)	1	
24	Set of distance washers	MT 00310	-	
25	Bevel gear	MT 337	3	
26	Rivet 2x8 Al. B	ND 9305/A	4	
27	Bolt M10x20-8.8-B-Fe/Zn8cC	NP. 0236V	15	
28	Nut P M10-8-A-Fe/Zn8cC	ND 2084V	15	
29	Sealing tape 20x4	ND 9905	1	
30	Steel wire 1,2 gca-II-Na	NP 0155	1	
31	Cotter pin S-Zn 5x32	ND 4007V	1	
32	Ball bearing 6206	ND 5004	2	
33	Ball bearing 6305	ND 5008	1	
34	Two-row ball bearing 4206	ND 5029	1	
35	Packing-ring A 45x62x7	ND 6015	1	
36	Key A 8x7x35	ND 7002	4	
37	Key A 8x7x55	ND 7004	1	
38	Spring ring	PZ 58V	1	
39	Spring ring	PZ 48V	1	
40	Packing-ring A 68x4	ND 6304	4	
41	Shield	GT 246	1	
42	Bolt M8x20-8.8-A-Fe/Zn8cC	ND 1064V	4	
43	Nut P M8-8-A-Fe/Zn8cC	ND 2091V	4	
44	Washer 2x8,4x25-Fe/Zn8cC	ND 3030V	4	

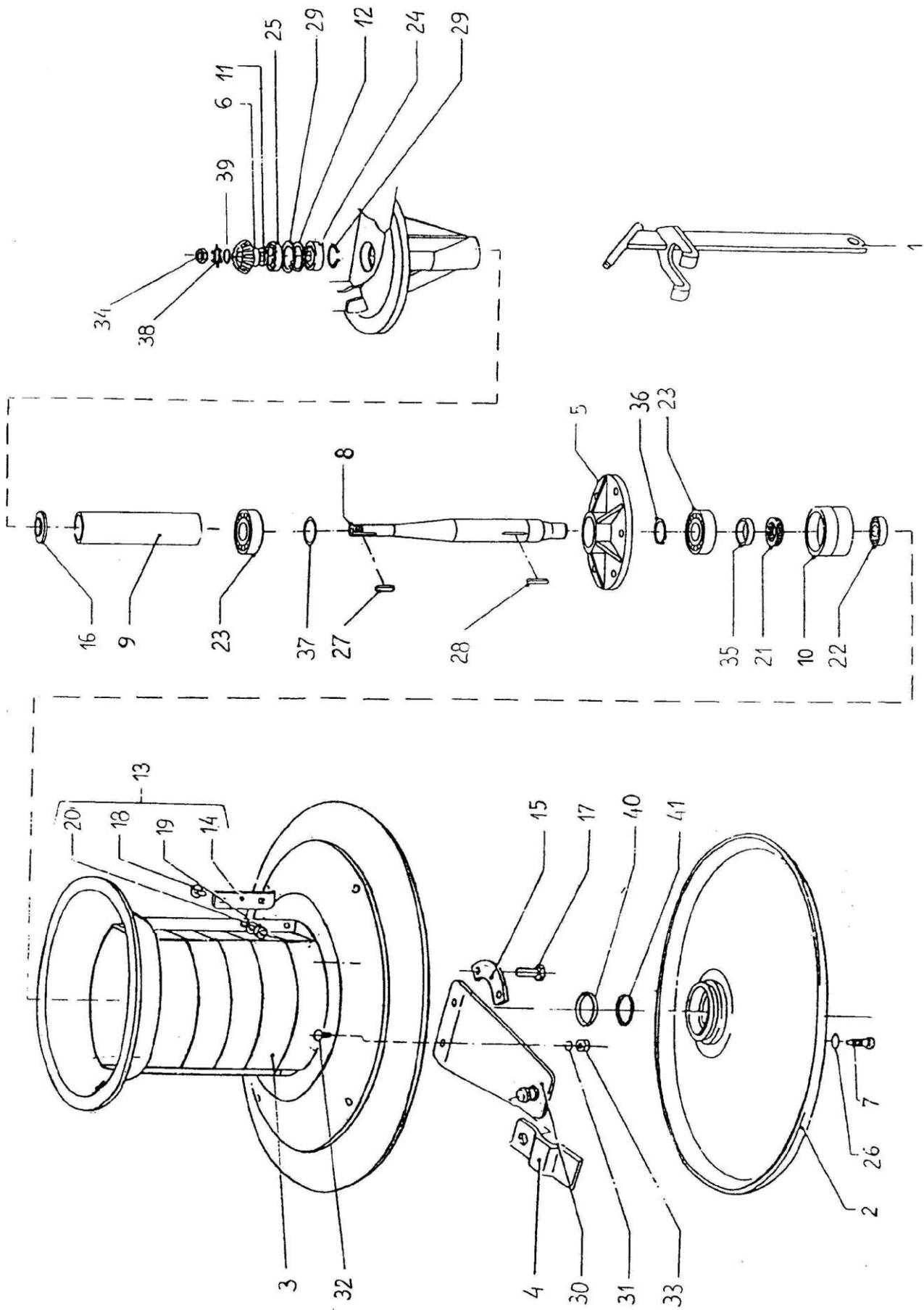


Fig. 15. DRUMS ASSEMBLY

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Cutting knife spanner	CM 059	1	
2	Sliding plate	KR 0700	2	
3	Complete drum	KR 060	2	
4	Cutting knife	CMA 120	6+6	
5	Drum hub	KR 063	2	
6	Bevel gear	GT 64	2	
7	Lock screw	GT 71V	6	
8	Vertical roller	KR 500	2	
9	Distance sleeve	GT 84	2	
10	Hub	GT 331	2	
11	Set of distance washers	MT 0062	-	
12	Set of distance washers	MT 0063	-	
13	Complete transport strip	MT 0071	4	
14	Transport strip	MT 71V	4	
15	Washer	KR 660	6	
16	Ring	GT 83	2	
17	Bolt M12x25-8.8-B-Fe/Zn8cC	ND 1072V	12	
18	Bolt M6x16-8.8-B-Fe/Zn8cC	ND 1013V	8	
19	Nut M6-8-B-Fe/Zn8cC	ND 2003V	8	
20	Washer 6-Fe/Zn9Cc	ND 3101V	8	
21	Ball bearing 51109 CX22	ND 5034	2	
22	Ball bearing 6208-2RS CX22	ND 5093	2	
23	Ball bearing 6210-2RS C3	ND 5035	4	
24	Ball bearing 6305-2RS	ND 5009	2	
25	Packing-ring A 40x62x10	ND 6002	2	
26	Parking-ring 50,08x2,62	ND 6025	6	
27	Parallel key A 8x7x30	ND 7001	2	
28	Parallel key A 8x7x55	ND 7004	2	
29	Spring mounting ring W 62	ND 8003	4	
30	Complete knife holder	KR 065	6	
31	Washer 12-Fe/Zn9cC	ND 3105V	12	
32	Bolt P M12x25-8.8-Fe/Zn8cC	NP 0302V	12	
33	Nut P M12-8-A-Fe/Zn8cC	ND 2085V	12	
34	Nut M25x1,5	MT 179R	2	
35	Distance ring	GT 103	2	
36	Spring mounting ring Z 50x2	ND 8011	2	
37	Distance washer	TH 78(20)	2	
38	Toothed washer	MT 34V	2	
39	Washer 1,5x25,2x33	MT 62(15)	2	
40	Washer	AH 00132	2	
41	Spring mounting ring Z 40x2,5	ND 8089	2	

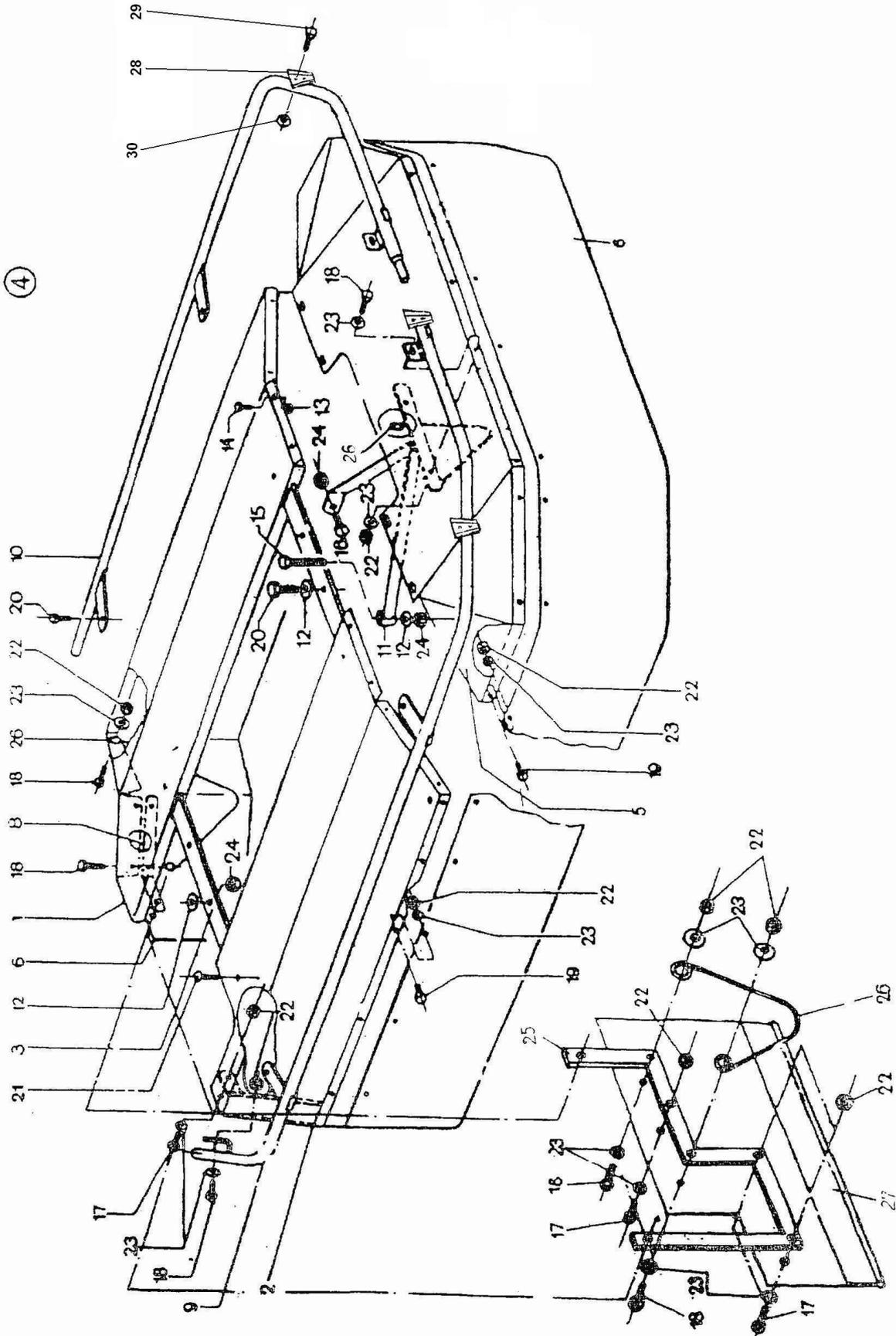


Fig. 16. COMPLETE HOUSING

Ord. №	Name of part or assembly	Plant part number	Number of pcs	Notes
1	Front shield	KR 9	1	
2	Back shield	KR 90	1	
3	Bracket	KR 92	2	
4	Complete shield	KR 009	-	
5	Side shield	KR 91	1	
6	Apron	KR 930	1	
7	Complete side apron	KR 0094	1	
8	Corner	KR 95	2	
9	Complete back bow	KR 0960-1	1	
10	Complete front bow	KR 0970-1	1	
11	Complete bracket	KR 099	1	
12	Round washer 10,5-Fe/Zn9cC	NP 0297V	5	
13	Nut M6-8-Fe/Zn8cC	NP 0308V	8	
14	Bolt N-F M6x12-8.8-Fe/Zn8cC	NP 0307V	8	
15	Bolt M10x50-8.8-B-Fe/Zn8cC	NP 0306V	1	
16	Bolt M10x30-8.8-B-Fe/Zn8cC	ND 1009V	1	
17	Bolt M6x16-8.8-B-Fe/Zn8cC	NP 0305V	7	
18	Bolt M6x30-8.8-B-Fe/Zn8cC	ND 1019V	7	
19	Bolt M6x12-8.8-B-Fe/Zn8cC	ND 1171V	21	
20	Bolt M10x40-8.8-B-Fe/Zn8cC	ND 1099V	8	
21	Bolt P M10x30-8.8-Fe/Zn8cC	NP 0304V	4	
22	Nut P M6-8-A-Fe/Zn8cC	ND 2092V	35	
23	Round washer 6,5-Fe/Zn9cC	NP 0309V	40	
24	Nut P M10-8-A-Fe/Zn8cC	ND 2084V	14	
25	Bracket	KR 094	1	
26	Bow	PZ 101V	3	
27	Side apron	KR 940	1	
28	Holder	NP 0318	3	
29	Bolt M8x20-8.8-B-Fe/Zn8cC	ND 1064V	6	
30	Nut M8-8-B-Fe/Zn8cC	ND 2091V	6	

NOTES