



OWNER'S MANUAL
WARRANTY CARD
SPARE PARTS CATALOGUE

CONVEYOR DIGGER

Upus

Z656/1 - CONVEYOR DIGGER (62.5cm÷67.5cm)
2-row with 2 conveyors

Z656/2 - CONVEYOR DIGGER (70.0cm÷75.0cm)
2-row with 2 conveyors

Z656/3 - CONVEYOR DIGGER (62.5cm÷67.5cm)
2-row with 1 conveyor

Z656/4 - CONVEYOR DIGGER (70.0cm÷75.0cm)
2-row with 1 conveyor



PRIOR TO STARTING WORK, PLEASE READ THIS
OPERATING INSTRUCTIONS



BOMET®

Spółka z ograniczoną odpowiedzialnością
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DECLARATION OF CONFORMITY for a machine



According to the Ordinance of Minister of Economy of 21 October 2008 (Journal of Laws "Dziennik Ustaw" No 199, item 1228) and European Union Directive 2006/42/WE of 17 May 2006 (Journal Official Journal UE L157 p.24-86)

we declare with full responsibility that the machine:

Machine: **CONVEYOR DIGGER 2-ROW**
Type/model: **Z656/**
Year of production: **201**
Function: Mechanical digging of tubers from ridges

to which this declaration relates, is in conformity with:

the **Ordinance** of Minister of Economy of 21 October 2008 on essential requirements for machines (Journal of Laws "Dziennik Ustaw" No 199, item 1228) and European Union **Directive** 2006/42/WE of 17 May 2006

Person responsible for technical documentation of the machine: Andrzej Sińczuk, ul. B. Joselewicza 2, 07-100 Węgrów

Following harmonized standards have been applied:

PN-EN ISO 12100:2012P
PN-EN ISO 4254-1:2016E

This Declaration of Conformity WE loses its validity if the product is misused or modified without proper authorization.

THE MANUAL CONSTITUTES MACHINE BASIC EQUIPMENT!

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Węgrów,
Place and date of issue

.....
Name and function of the signatory



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WARRANTY CARD

Conveyor digger 2-row **Z656/**

Serial number

Date of production **201**

Inspector signature

Date of sale

Seller signature

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.....
Seller stamp

CAUTION: It is seller's obligation to fill in the warranty card and complaint forms carefully (legibly). Lack of e.g. date of sale or stamp of sales point will put the user at risk of not acknowledging possible complaints. Warranty card with any written corrections or filled in illegibly – is invalid.

Warranty proceedings rules

1. A user is understood as a natural or legal person purchasing an agricultural equipment and a seller – as a corporate unit providing equipment to the user and a manufacturer - as a producer of agricultural equipment.
2. Manufacturer ensures good quality and efficient operation of the digger, to which the warranty card is attached.
3. Any defects or damage of the digger shall be fixed free of charge at the place of the purchaser in the period of **12 months** from the sales date.
4. Any revealed defects or damages shall be reported in person, by post mail or by phone.
5. If during warranty period, a necessity of performing 3 warranty repairs occurs, and the product will still reveal defects disabling its usage according to its intended use, the purchaser is entitled to have the product exchanged into a new, flawless one or refund.
6. If the manufacturer, a seller and a user will not establish another deadline for considering the complaint, exchanging the product or refund should be made within 14 days from the date of reporting it by the user.
7. Warranty repairs do not cover repairs caused by:
 - using the digger inconsistently with the manual and intended use,
 - acts of God or others for which the manufacturer does not take responsibility.These repairs can be made only at the expense of the user, purchaser.
8. The manufacturer can cancel warranty on the product in case of stating:
 - introducing structural changes,
 - occurring any damages caused by acts of God,
 - lack of necessary records or made by one's own any records in the warranty card,
 - using the digger inconsistently with intended use or manual.

Complaint form no 1

Conveyor digger 2-row **Z656/**

Serial number Date of sale

seller's signature and stamp

Complaint protocol number

Complaint form no 2

Conveyor digger 2-row **Z656/**

Serial number Date of sale

seller's signature and stamp

Complaint protocol number

Complaint form no 3

Conveyor digger 2-row **Z656/**

Serial number Date of sale

seller's signature and stamp

Complaint protocol number

After repair I received technically efficient machine
on

.....
user's signature

Notices:

.....
.....
.....

After repair I received technically efficient machine
on

.....
user's signature

Notices:

.....
.....
.....

After repair I received technically efficient machine
on

.....
user's signature

Notices:

.....
.....
.....

IDENTIFICATION

2-ROW CONVEYOR DIGGER

2-row conveyor digger of Z656 series has a rating plate, fitted in the front part of the digger frame. Basic data which serves for identification of the machine: manufacturer's name, machine symbol, serial number, year of production, is put there.

Data placed on the rating plate serves for identification of the digger and ought to correspond to the following data, filled in during the sales.

Symbol **Z656/**

Year of production **201 ..**

Serial number

IT IS ADVISED THAT THE SUPPLIER OF MACHINES, BOTH NEW AND USED ONES, KEEP THE SIGNED BY THE PURCHASER CONFIRMATION OF RECEIPT OF MANUAL ALONG WITH THE MACHINE.



**THE MANUAL CONSTITUTES MACHINE BASIC EQUIPMENT
KEEP THIS INSTRUCTION FOR FUTURE REFERENCE**



CAUTION!

When lending the machine to another person, the manual shall be attached to the machine.



REMEMBER

Before work, check the correct cooperation of the PTO shaft with the tractor. The length of the PTO shaft should be adjusted to the tractor by changing the length of the telescopic tubes, see the manual of the PTO shaft.



CAUTION !

During operation, it is necessary to pay particular attention to loosening of screw connections. Therefore, it is necessary to check and tighten screw connections after stopping the tractor and turning off the tractor engine.

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1. INTRODUCTION

This manual is attached to each machine to make a user acquainted with construction, operation and adjustment of the 2-row conveyor digger. Its aim is also warning about existing or possible threats. The manual also contains information on preparation of the digger for operation and transportation on public roads.

Strict compliance with recommendations included in the content of the manual will ensure long-term and non-failure operation and contribute to reduction of operating costs of the machine. Each section of the manual (according to the contents) presents proper issues in detail. If there is any unclear information for the user, they can obtain exhaustive explanation by writing to the manufacturer's address (the address is on the cover) – you are asked to give: exact address of the purchaser of the machine, machine symbol, serial number, year of production, year and number of issuing the manual.

Terms used in the manual: left side, right side, back and front – refer to the settings of an observer with his face turned according to the direction of the machine drive.

Warranty proceedings regulations and rights resulting from them, are given in the warranty card, attached to each digger.

2. INTENDED USE OF THE DIGGER

2-row conveyor digger of Z656 series is intended to operate exclusively in the agriculture. Using it for other purposes shall be understood as using it against the intended use. Meeting requirements referring to operation of the machine, its maintenance and repairs according to recommendations of the manufacturer and strictly complying with them state the condition of using it according to the intended use.

The machine shall be employed and operated only by people acquainted with its detailed characteristics and procedures in the field of safety. Regulations concerning accident prevention and all the basic regulations in the field of occupational health and safety and also traffic regulations should be always abided by.

Semi-mounted conveyor digger Z656 is a machine mounted on three-point suspension system of the tractor. The digger should co-operate with tractor classes of power exceeding 50 hp equipped with normalized power take-off shaft, suspension system category II or III and front axle standard ballasts for keeping the required controllability factor ($s \geq 0.2$). The machine is equipped with two-sided studs of the lower suspension axle allowing for aggregation of a digger with tractors of suspension category II (stud of diameter of $\text{Ø}28$ mm) or category III (stud of diameter of $\text{Ø}36$ mm). The machine is mainly intended for digging up potatoes from 2 rows but it can also gather other root crops and vegetables. The machine can be employed on light and medium compacted soils, not too stony and at fragmented haulms on plain terrain and slopes up to 8.5° .

Digger submerges in the ridge with a ploughshare taking soil along with potatoes and then the soil is sifted by a sieving conveyor while potatoes are moved backwards. From the sieving belt potato tubers fall at the back of the belt onto the chute grate and are placed in a narrow strip behind the digger. This arrangement of potatoes enables another working passage without damaging the dug out potatoes.

The digger can be employed for gathering root crops e.g. onion, carrots etc.

3. SAFETY PRECAUTIONS AND WARNINGS

3.1. Symbols: meaning and application

In the present manual symbols are used in order to draw the reader's attention and stress certain particularly important aspects requiring discussion.



DANGER

This indicates danger, with a possible serious accident risk. Not obeying recommendations marked with this sign may cause a situation of a serious risk of sustaining an injury by the operator and/or people nearby! ***Obey strictly these recommendations!***



CAUTION

The symbol indicates possibility of damaging the machine or other object and demands to be cautious.

It is important advice which should be paid special attention!



REMEMBER

The symbol indicates advice or notice regarding key functions or useful information concerning proper functioning of the machine.

3.2. Expected use

2-row conveyor digger Z656 has been designed, built and adjusted for digging potatoes from two rows on flat and wavy fields, on all types of soil kept in good culture, stoneless, of humidity enabling proper operation. Operation with a digger can be performed on slopes up to 8.5°. 2-row digger should operate with tractors of power of 50 hp and higher equipped with a standardized power take-off shaft and standard three-point suspension system of category II or III, the machine is equipped with studs of Ø28 mm and Ø36 mm. The tractor should be equipped with front axle standard ballasts for keeping the required controllability factor.



REMEMBER

Regulations concerning the intended use and configurations, provided for this machine are the only ones, which are exclusively allowed. The machine shall not be employed for other purposes than those, which have been provided for it. The regulations given in this manual do not substitute obligation towards present regulations with force of a statute, referring to standards concerning safety and prevention from misadventure, but they summarize them.

3.3. Description of residual risk

Residual risk results from wrong or incorrect behavior of the digger operator. The greatest danger can occur in performing following activities:

- operation of the digger by minors and also people not acquainted with the manual or not having qualifications for driving an agricultural tractor,
- operation of the digger by people with a disease, in a state indicating for using alcohol or narcotic drugs,
- transportation and operation without proper safety measures,
- aggregation of the digger with a tractor if the operator is between the machine and the tractor at the engine working,
- operation when people or animals stay within the range of operation of the assembly tractor + machine,
- maintenance and adjustment at the digger when the tractor engine is working and the machine is not protected against falling down.

When describing residual risk of the digger, the digger is treated as a machine, which since the moment of starting the production, has been designed and manufactured according to the present technique condition.

3.4. Assessment of residual risk

During operation of the digger, threat and residual risk can be limited to the minimum when such recommendations are abided by:

- careful reading the manual,
- prohibition of people staying on the digger during operation and transport,
- prohibition of people staying between the tractor and the digger when the tractor engine is working,
- all adjustment, maintenance and lubrication of the digger shall be performed only at the tractor engine stopped,
- repairs of the digger performed only by people trained in this field,
- operation of the machine by people who have qualifications to drive agricultural tractors and are familiar with the manual of the machine,
- at the machine raised during repair, the machine, if necessary, must be protected against falling down e.g. with a wooden block.
- protection of the digger against children access.

Although **BOMET**[®] company takes responsibility for pattern-designing and construction in order to eliminate danger, certain risk elements during conveyor digger operation are unavoidable.

⚠ 1) Danger of being caught or hurt by the frame edges or sharp edges of the ploughshares and sieving conveyor or chute grate of the digger during aggregation or changing transportation-operation position and inversely.

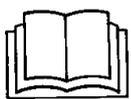
⚠ 2) Danger of wound or abrasion by elements of the machine during performing maintenance or adjustment resulting from improper position of the operator during these activities.

⚠ 3) Danger of turning over the machine during storage or transportation. When stored to keep stability, the digger should be set on the flat ground on the support wheels and ploughshares. The digger shall be aggregated only with tractor classes recommended by the manufacturer.

⚠ 4) Danger of being caught by rotating drive elements. Keep the safe distance when the rotating elements are in motion. The operator and other people should not approach the machine during the operation.

⚠ 5) Danger of ejection of stones by the sieving conveyor during operation. Keep particular caution and safe distance during the operation of the machine. The operator and other people should not approach the machine during the operation.

3.5 Regulations for occupational health and safety



CAUTION

In order to avoid threats, before starting operation of the digger, please read the present manual and follow these rules concerning threats and safety measures:

3.5.1. General regulations

- Apart from this manual, one shall also follow traffic regulations and occupational safety and health regulations.
- Warnings (pictograms) placed on the digger give advice concerning safety of the user and other people, and avoiding accidents.
- When driving on public roads, it is obligatory to follow regulations included in Highway Code.

- It is recommended to cooperate with a tractor equipped with a cabin or a protective frame.
- Before each using the machine, it is necessary to check if all elements of the digger are in a good condition. Damage incurred shall be fixed without delay and possible deficiencies filled up.
- Avoid staying within the range of the working digger.
- Before leaving the tractor cabin and before each activity made at the digger, stop the tractor engine, remove the key from the ignition switch.
- The digger shall be stored in a dry room, on the tough and flat ground. During lowering the digger onto the ground, keep particular caution. Danger of injury!!!

3.5.2. Aggregation of a machine

- Keep particular caution during connecting the digger with a tractor and during disconnection.
- It is forbidden to stay between the digger and a tractor during any activities performed with a hydraulic system lever.
- While aggregating the digger with a tractor, it is forbidden to stay between the machine and the tractor at the tractor engine working.
- During performing any maintenance at the digger, it is necessary to stop the engine, remove the key from the ignition switch and pull the handbrake.
- Pivots of the digger suspension system shall be secured only with the use of typical protection in the form of cotter pins.
- The digger shall be aggregated only with recommended tractor classes equipped with front axle standard ballasts.
- The digger can be operated by a person with qualifications allowing for using agricultural tractors.
- During aggregation, keep the minimum load of the tractor front.



CAUTION

Operation with a tractor of another class than recommended by the manufacturer may cause threat of stability loss in operation or in stoppage. Front axle load cannot be less than 20% of the tractor's weight.

3.5.3. Operation of the machine

- A digger can be operated by a person with qualifications allowing for using agricultural tractors and acquainted with the manual.
- It is not allowed for other people not acquainted with the manual to operate the digger.
- It is not allowed for children and people after drinking alcohol to operate the digger.
- The digger shall be raised onto the tractor suspension system easily, without jerks or vibrations.
- **Operation with the digger without shields is strictly forbidden.**
- Work with a digger on slopes with gradient exceeding 8.5° is not allowed.
- At each getting off the tractor by the operator, leave the digger in the lowered position.
- Use only PTO shafts with complete shields and CE marking for the digger drive.
- Removing clogs can be performed after lowering the machine onto the ground and turning off the PTO shaft and engine of the tractor and the key removed from the ignition switch.
- When removing clogs, if necessary, use special tools and secure the raised digger against falling down with a support e.g. wood block.
- It is not allowed to use tractor reverse gear during work, when the machine is in the working position.
- All maintenance (lubrication, repairs, cleaning etc.) shall be performed with the digger lowered onto the ground, the tractor PTO shaft and engine stopped, key taken out from the ignition switch and handbrake pulled.

- People operating agricultural equipment should be equipped with working clothes and footwear, and personal protection measures appropriate for existing threats.

3.5.4. Transportation of the machine

- Transportation of a digger by means of transport from the manufacturer to a sales person or a client is described in the section 'Transportation on public roads' in detail. One shall remember safety rules during the loading and proper fixing of the digger on a car trailer. Hooks for ropes or chains are marked with pictograms.
- The digger transported on the tractor three-point suspension system on public roads must be equipped with portable light and warning devices and a triangular sign for low-speed vehicles, fixed in special handles at the back of the digger frame, see details in section 'Transportation on public roads'.
- It is forbidden to transport any people or items on the digger frame or sieving belts.
- Due to overlapping of a machine and a fixed connection with the tractor, keep caution especially at returns during operation and turnings during transportation.
- Keep extreme caution while making a turn of a tractor with a mounted digger, both during transportation and also while making returns in the field, especially when there are any people or items nearby.
- Driving speed of the tractor with the digger during transportation cannot exceed:
 - when driving on hardened roads with flat surface – 15 km/h,
 - when driving on field ways – 10 km/h.

3.5.5. Storage of the machine

- Disconnecting the machine from the tractor can take place only after the PTO shaft turned off and the tractor engine stopped, key removed and the handbrake pulled.
- The digger shall be stored in a dry room, on the tough and flat ground. During lowering the digger onto the ground, keep particular caution - danger of being injured or crushed!!!
- During storage the digger should be leant firmly on ploughshares and support wheels.
- The digger should be stored in places where there is no possibility of accidental injury of people or animals, on the flat ground, preferably under a roof.
- The conveyor digger shall be stored in a clean condition.



Threat!

Pay attention to sharp endings - danger of being hurt, keep caution during operations around the digger.

3.5.6. Other recommendations

- The digger shall not be employed for other purposes than those, which have been given in the manual.



CAUTION

Not following these rules may cause threat to the operator and other people and also may cause damage to the digger. Any damage resulting from not following these rules is the only responsibility of the user.

3.6. Standard conformity

The machine has been designed and made in accordance with standards concerning safety in the machine industry, valid on the day of marketing the mounted digger. Particularly, following legal acts and standards have been taken into account:

- 2006/42/WE - Directive on machinery safety introduced by the Ordinance of Minister of Economy on 21 October 2008 (Journal of Laws 'Dziennik Ustaw' no 199, item 1228).
- PN-EN ISO 12100:2012P - Machinery. Safety. General principles for design. Risk assessment and risk reduction.

- PN-EN ISO 4254-1:2016P – Agricultural machinery. Safety. Part 1: General requirements.
- PN-ISO 730:2009E – Wheeled agricultural tractors. Rear three-point suspension system. Categories 1, 2, 3 and 4. (orig)
- PN-R-02001-01:1993 - Tractors and machinery for agriculture and forestry. Technical means for ensuring safety. General Provisions
- PN-ISO 2332:1998P – Tractors and agricultural machinery. Mounting machinery on a three-point suspension system. Free space zone.
- PN-ISO 3600:1998P – Tractors, agricultural and forest machinery, mototools. Manual. Contents and form.
- PN-ISO 11684:1998P – Tractors, agricultural and forest machinery, mototools. Safety and warning signs. General principles.

3.7. Manufacturer's responsibility and guarantee

In relation to the machine described in this manual, **BOMET®** company does not acknowledge any civil responsibility towards:

- improper or inconsistent with the manufacturer's recommendations using the machine,
- using the machine in a way breaking domestic law concerning safety and preventing from unfortunate accidents,
- non-compliance or improper following regulations cited in this manual,
- making unauthorized changes in the machine,
- using the machine by unqualified staff,
- using spare parts that are not original.

As long as the purchaser wants to make use of warranty, he should strictly follow recommendations and regulations given in the manual. In particular:

- he should work only in the given ranges of the machine operation,
- he should always perform unchangeable and thorough maintenance,
- only operators with proper abilities and qualifications shall be allowed to use the machine,
- he should use only original spare parts recommended by the manufacturer.

3.8. Noise and vibrations

During the operation of a conveyor digger for the operator there is no threat caused by noise contributing to the loss of hearing because the workplace of the operator is in the tractor cabin. Measurement of the sound pressure level has been conducted at the machine stoppage, according to the appendix B of the standard PN-EN ISO 4254-1:2013-08E, at nominal rotations of the tractor engine equaled 80 dB (A).

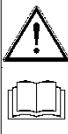
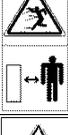
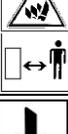
There is no threat caused by vibrations when working with a digger because the operator's workplace is located in the tractor cabin where the seat is amortized and properly ergonomically shaped.

3.9. Safety signs and captions

2-row conveyor digger Z656 is equipped with all devices that ensure safe work. Where it is not possible to secure dangerous places entirely due to the proper operation of the digger, there are warning signs – pictograms which indicate for possibility of danger and present manners of avoiding it.

In table 1 pictograms placed on the machine and their meaning have been specified. Safety pictograms should be protected against being lost and against loss of legibility. Lost or illegible signs and captions should be exchanged with new ones. It is required that new assemblies employed during repair were marked with all safety signs predicted by the manufacturer. If you want to buy pictograms, write to the manufacturer's address or send information to the e-mail address and give the sign number (according to the table 1), version and year of issuing this manual.

Table 1. Safety signs and captions

No.	Pictogram	Meaning	Location
1	2	3	4
1.	(Rating plate)	Rating plate	At the front on the left side
2.		Caution. Before operating the machine, read the manual.	At the front, on the rack of the suspension system
3.		Caution. Before operation turn off the engine and remove the key from the ignition switch.	At the front, on the rack of the suspension system
4.		Do not stay near the lift rods, while controlling the lift.	At the front, on the rack of the suspension system
5.		Danger of hurting a leg. Keep the safe distance from ploughshare sharp endings.	On the frame of the digger
6.		Caution. Do not touch the machine elements before all units are stopped.	On the frame of the digger
7.		Danger of hand injury. Keep the safe distance from ploughshare sharp endings.	On the frame of the digger
8.		Danger of crushing hands. Do not reach crushing area if the elements can be in motion.	On the digger frame at rocker levers
9.		Caution . Danger of thrown items such as stones. Keep the safe distance from the machine.	On the frame of the digger
10.		Caution. Danger of lower limb injuries with sharp coulters. Do not approach the machine and keep a safe distance.	On the frame of the digger
11.		Marking places of loading hooks.	On the frame of the digger
12.		Marking lubrication points	On the frame of the digger
13.		Symbol of permissible transport speed	At the back, on the drive shaft shield
14.		Information on rotational speed of the power take-off shaft and rotation direction.	On the power input connection shield
15.		Company logo	On the frame of the digger

4. USAGE REGULATIONS

4.1. General information

Conveyor digger Z656 is manufactured as 2-row machine mounted on tractor three-point suspension system. 2-row conveyor digger is adjusted to work on terrain slopes not exceeding 8.5° and can cooperate with tractors of power over 50 hp equipped with a standardized power take-off shaft (see technical characteristics – table 4) and wheel standard ballasts.

4.2. Construction and operation of the machine

Semi-mounted 2-row conveyor digger (figure 1) is an agricultural machine of compact and simple construction, reliable and user-friendly.

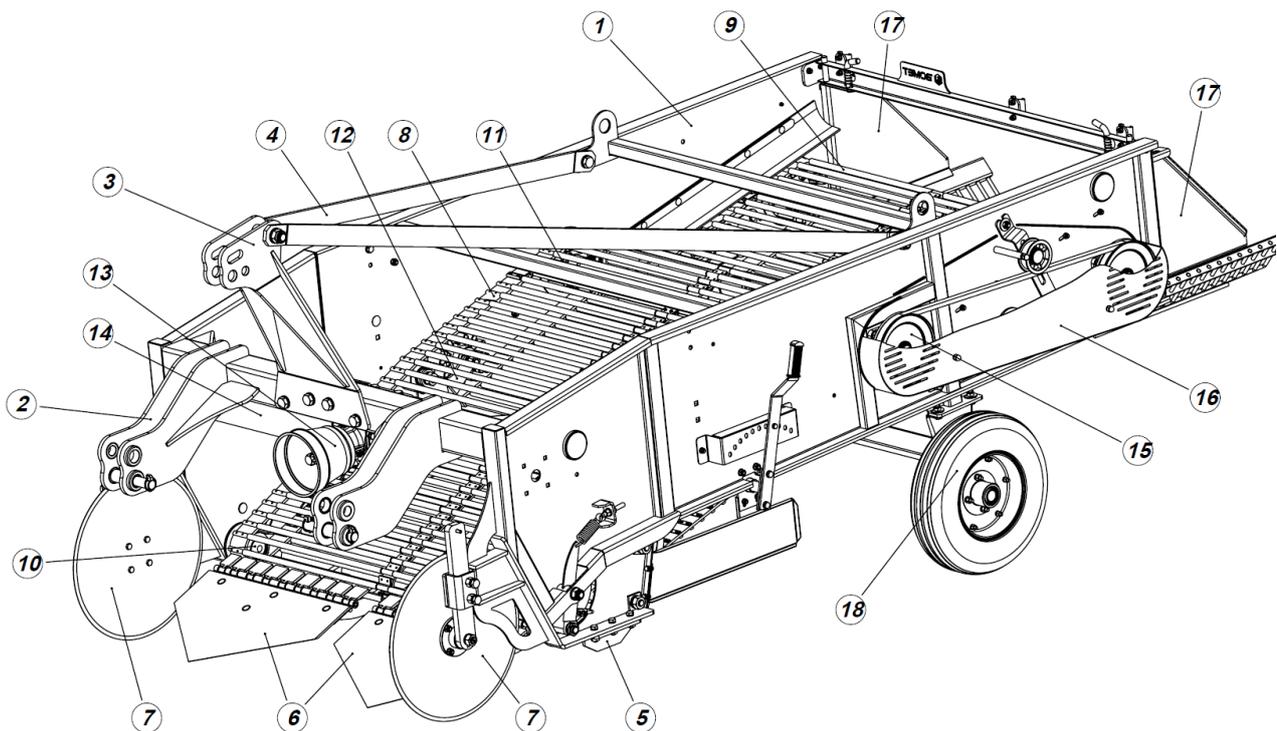


Figure 1. 2-row conveyor digger: 1 - frame, 2 - three-point suspension system lower brackets, 3 - three-point suspension system rack, 4 - stay, 5 - ploughshare holder, 6 - ploughshare, 7 - disc coulters, 8 - front sieving conveyor, 9 - rear sieving conveyor, 10 - tension roller, 11 - drive roller, 12 - shakers, 13 - angle gear, 14 - intermediate shaft, 15 - belt transmission, 16 - transmission metal shield, 17 - chute grate, 18 - axle with road wheels

The basic component of the machine is a welded frame (1), which consists of two side walls and a front spreader beam on which the three-point suspension system is installed. The lower suspension brackets with suspension studs (2) for II (Ø28mm) and III suspension category (Ø36mm) are welded to the spreader beam. A suspension system rack (3) is screwed at the center of the spreader beam and stiffened with stays (4).

A two-piece ploughshare (6) is attached to the front of the digger on a special bracket (5). On the sides of the ploughshares there are disc coulters (7), cutting off excessive ridges and lichen residues. There are two sieving conveyors behind the ploughshares. Just behind the ploughshares there is a front rod sieve (8). The front sieving conveyor consists of rods mounted on the fabric rubber belts with the center belt, while the rear sieve (9) is without the center belt. The sieving conveyor rods are in a rubber coating to reduce damage to the dug out tubers. In the front part the conveyors are supported on two tension rollers (10) while in the rear part there are toothed drive rollers (11). There is a shaker (12) in the center of the

front conveyor.

The drive is transferred to the sieving conveyors via the PTO shaft from the tractor power take-off shaft to the angle gear (13), through the intermediate shaft (14) to the right and left belt transmission (15). Belt transmissions are protected against being touched with metal shields (16). At the rear of the frame there are two chute grates (17) mounted, which put the dug out tubers in a longitudinal strip behind the digger to enable another passage without damaging the dug out potatoes.

An axle with road wheels (18) is mounted in the center of the digger under the rear sieving conveyor. At the back of the digger frame there are also brackets for installing portable warning devices and a triangular sign for low-speed vehicles.

2-row diggers are also available with one sieving conveyor. The construction of such diggers is similar to diggers with 2 conveyors, with the difference that the front conveyor is the main and the only sieving conveyor.

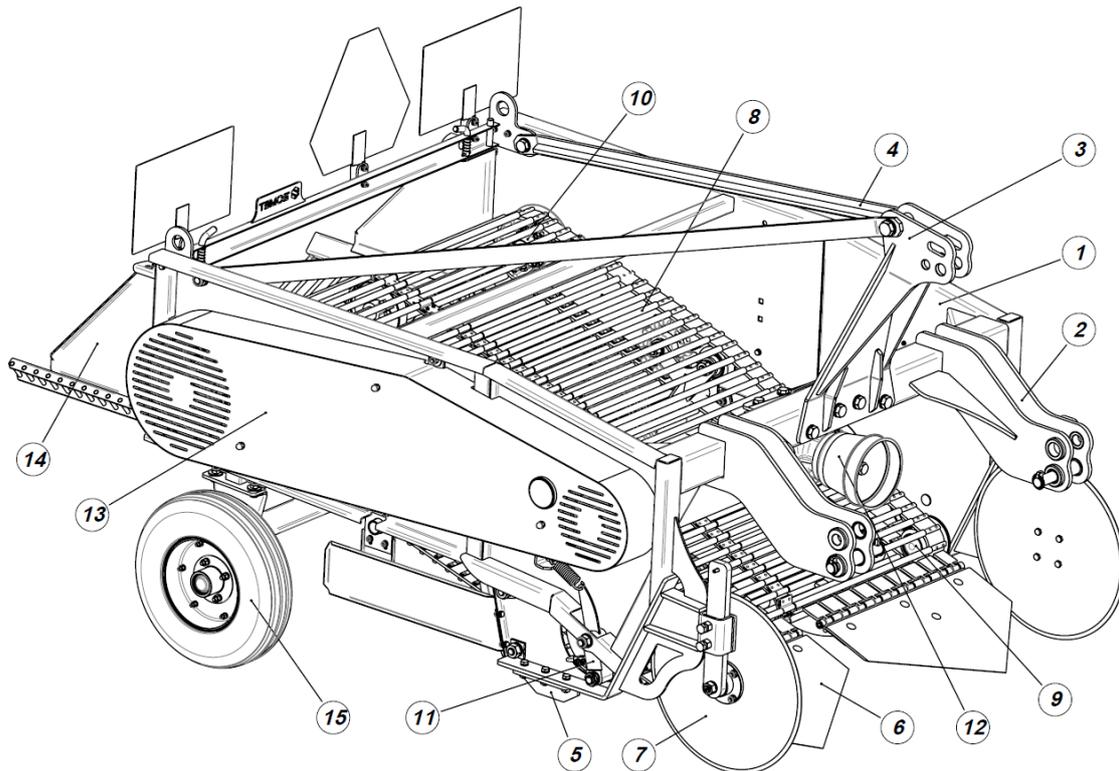


Figure 2. 2-row conveyor digger with 1 conveyor: 1 - frame, 2 - three-point suspension system lower brackets, 3 - three-point suspension system rack, 4 - stay, 5 - plowshare holder, 6 - plowshare, 7 - disc coulters, 8 - front sieving conveyor, 9 - tension roller, 10 - drive roller, 11 - shakers, 12 - angle gear, 13 - belt transmission with shield, 14 - chute grate, 15 - axle with road wheels

4.3. Equipment and fittings

The manufacturer delivers the digger for sale assembled. The manual with a spare parts catalogue and a warranty card are delivered along with the machine by the manufacturer. Basic equipment of the machine **does not involve** PTO shaft, portable light and warning devices and a triangular sign for low-speed vehicles which are available at agricultural equipment storehouses.



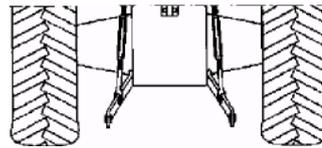
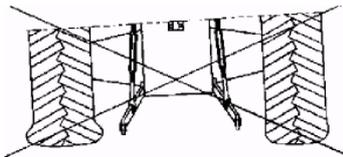
REMEMBER

Manual with a spare parts catalogue comprise basic equipment of the digger.

Each user of a digger shall have light and warning signs, in working order, and a triangular sign for low-speed vehicles (sign description is available in the section 'Transportation'). Not having them during transportation may result in an accident. For damage incurred during an accident the user of the machine is responsible.

4.4. Preparing the tractor for operation

Preparation of a tractor to cooperation with a digger consists in checking its general efficiency in accordance with the tractor manual (pay particular attention to the proper operation of the suspension system). In addition, it is necessary to uninstall from the tractor elements disabling mounting the machine or disabling its operation. It is mandatory to aggregate the digger with recommended tractor classes equipped with standard ballasts of front axle and rear wheels in accordance with data given in the technical characteristics of the tractor. Air pressure, particularly in rear tires of the tractor should be equal in both wheels and in accordance with the tractor's manual!



Before suspension of the machine, lower rods of the tractor's suspension system shall be set in lower position at the same height (distance between joints and the ground is minimum 200 mm). Rods set at the equal height from the ground facilitate mounting the digger on the tractor.

4.5. Preparing the digger to work



CAUTION

It is forbidden for the operator to stay between the tractor and the machine at the tractor engine running.

Preparation of a digger to season operation and after storage period (e.g. after winter) consists in checking its technical condition and most of all durability of connections of working elements with the frame. In case of stating damage or worn elements it is necessary to exchange them into new or regenerated ones. Otherwise, it can lead to reduction of the machine work quality.

Before each starting operation of the digger, it is necessary to:

- check screw connections, in case of backlash tighten the nuts, (pay particular attention to screws of bearing brackets or setting gear wheels),
- check firmness of pivot connections,
- check the condition of the ploughshares,
- check the condition of the sieving conveyors,
- check the condition of the bearings on which the tensioners, shakers and belt conveyor drive are mounted,
- check the condition of welds on the frame and other welded elements of the machine,
- lubricate the digger in accordance with recommendations (see section "Lubrication instruction").



CAUTION

All maintenance in the digger shall be performed before installing it on the tractor.

4.6. Mounting the digger on the tractor

When connecting the digger to the tractor, perform following activities:

- disassemble a tool latch bar from lower rods of the tractor three-point suspension system,
- drive to the machine frame close enough with the tractor,
- **turn off the tractor engine, remove the key from the ignition switch and pull handbrake,**
- raise the lower rods of the tractor so that the ends of the rods enter the lower hook forks,
- when the rods are in the forks, insert the digger studs and then secure the studs with standard cotter pins,

- using a pivot, link the upper connector of the tractor with the digger frame rack and secure with a typical cotter pin,
- tighten gently chains of lower rods of the tractor, keeping the symmetry between the digger suspension and the tractor,
- connect the digger with the tractor power take-off shaft through the PTO shaft, secure the PTO shaft shields against the rotation by locking the chains,
- install portable light and warning signs and a triangular sign for low-speed vehicles.



CAUTION

It is forbidden to connect the machine to a tractor when the tractor engine is running. It is forbidden to use other elements to secure the tool suspension system than recommended by the manufacturer.



CAUTION

Pay particular attention when aggregating the digger, do not keep place between the digger and the tractor.

Disconnecting the conveyor digger from the tractor is performed in reverse order, it is necessary to leave the machine on the flat ground.

4.7. Adjustment and setting of the digger

Conveyor digger proper operation of good quality is dependent on proper leveling of the digger and adjustment of immersion and the working angle of the ploughshare as well as the proper adjustment of the front sieving conveyor shaking. Before starting operation it is necessary to check the correctness of settings on a short distance and correct them if need be.

Transversal leveling is performed with the right hook of the tractor suspension system. After performing adjustment, the frame of the digger, visible from the back, after gaining full operation depth should be set horizontally.

Adjustment of ploughing angle is performed by extending or shortening the central connector. At the same time, when adjusting the angle, the ploughshare immersion is adjusted. By shortening the connector we increase the working depth and the angle of entering the topper into the soil while by extending the connector, the angle and depth are decreased. It is necessary to remember that when changing the operating angle of the ploughshare, the ploughing depth is also changed, so the ploughshare working optimum must be found. It is necessary to pay attention to the central connector length so that there is space for the sifted soil under the sieving conveyor. Level of immersion should be such so that all potatoes were dug with no damages but also so that the topper did not take excessive amount of soil. Excess of soil on the conveyors causes difficulties in sifting away potatoes.

Adjustment of the conveyor tension is performed by changing the tension of the spring (1) on the side of the digger. The tension adjustment is conducted with an adjustment screw (2). It is important that the spring tension is the same on both sides of the digger.

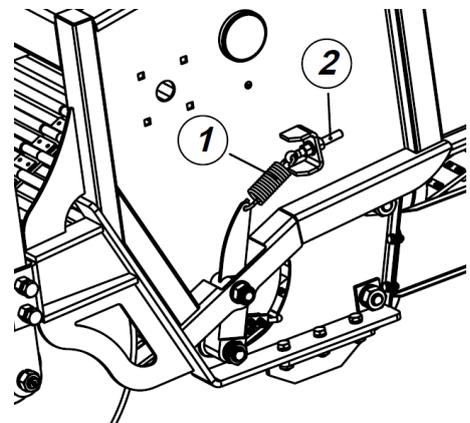


Fig. 2. Adjusting the conveyor tension

Adjustment of coulter immersion, depending on the soil conditions the coulter working depth is changed. On light soils coulters can work deeper, while on heavy compacted soils they can work in shallow conditions. It is important that during work the coulters rotate and cut off the lichen residues. In the digger coulter adjustment is performed after loosening the clamping screws (1) and then the coulter arm (2) in the guide (3) is lowered or raised. It is necessary to remember that the coulters on both sides of the ploughshare must be adjusted the same.

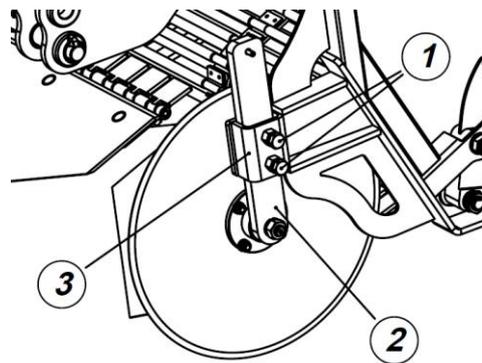


Fig. 3. Adjustment of disc coulter

Adjustment of the soil sifting intensity, depending on the soil conditions the shaking intensity of the front conveyor can be adjusted. Changing the shaking intensity is achieved by setting the elliptical shaker correctly. Shaker adjustment lever (1) is located on the left side of the digger. Keep in mind that if the soil is compacted and damp, the conveyor must be shaken stronger. On light soils, it is necessary to work with the digger when the shaker is turned off.

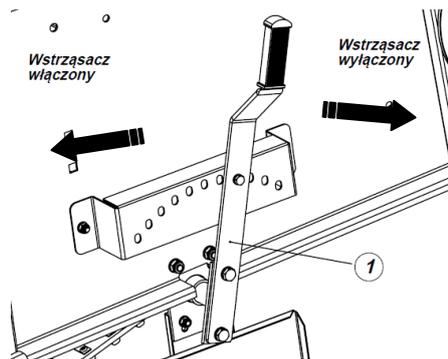


Fig. 4. Adjusting the sifting intensity

Tension adjustment of V-Belts is conducted with the use of tensioners (1) under metal shields (2). V-belt tension (3) is correct if under the hand pressure with force of about 3-4 kg applied in the middle of the belt length, it is deflected by approx. 15 - 20 mm.

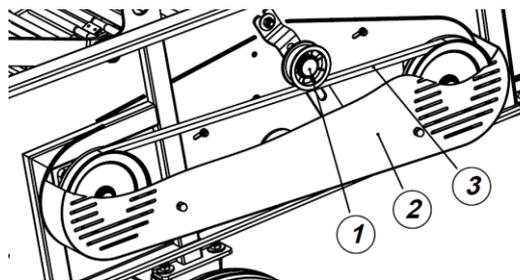


Fig. 5. Adjusting the sifting intensity

WARNING
 It is forbidden to perform adjustment of the digger at the tractor engine working. It is forbidden for the operator to stay between the tractor and the digger at the tractor engine running.

REMEMBER
 When changing the operating angle of the ploughshare, the digging depth is also changed. Increasing the digging depth results in an increased amount of soil on conveyors.

4.8. Operation with the digger

CAUTION
 Operation with the digger without shields is strictly forbidden. It is recommended to use a PTO shaft marked with CE marking.

The best effects of the operation with a digger shall be gained if the field is initially cleaned out of haulms and when it is not too stony or weedy. It is necessary to remember that the best soil sifting is gained at soil medium moisture. After performing the adjustment according to the point 4.7 the operator can start the work. Upon arrival at the field, drive into the ridges and lower the digger. Check the correctness and length of PTO shaft, then move chute grates into the working position. Pre-adjust the

upper connector so that the three-point suspension system rack is vertical, which will result in the initial setting of the ploughshare working angle and depth. At the first passage the shaker should be turned off; if after driving a few meters it can be noticed that the soil is not sifted, the shaker should be turned on. During this passage it also must be checked if all potato tubers are dug out and not damaged, if so - the ploughshare working depth is set correctly.



IMPORTANT

The best effects are gained on light and medium compacted soils that are not too stony or weedy and at cut haulms.

The digger is equipped with two chute grates which must be in a spread out position so that potatoes falling off the conveyor do not roll over to the ruts in which the tractor and the digger will drive during the next passage. When working on concise soils with a large amount of haulms and weeds, it is recommended to remove one chute grate.

The field shall be divided into patches, optionally up to 30 ridges and dug driving around. When driving into a ridge it is necessary to lower down the digger into the working position and at the end of the ridge the machine shall be raised to the transportation position with the use of a hydraulic lift and the power take-off shaft shall be turned off. Keep the machine in a straight line during operation.

Selection of working speed and power take-off shaft rotations depends on soil conditions, its moisture and type as well as amount of lichen. According to the rules of digger work full soil sifting should only occur on the rear sieve. Earlier soil sifting will result in increased potato tuber damage.

For light soils, well sifted, use higher driving speed than on compacted soils. For easily sifted soils, lower power take-off shaft speed, thus lower speed of the sieving conveyors should also be used.



WARNING

All clogging made during work of the digger requiring interference in the operation, shall be removed after stopping the tractor, lowering the digger onto the ground or support, turning off the tractor engine and pulling the handbrake.

In case of clogging the machine and when elements were not cleaned automatically, it is necessary to stop the tractor, turn off the tractor engine and then manually or with the use of special tools remove the accumulated contamination. If the digger must be raised for removing the contamination, it is necessary to put a support supporting against its falling down (e.g. a wood block). During operation and especially in the first period of using, it is necessary to pay particular attention to backlash of screw connections. Therefore, it is necessary to check and tighten screw connections after stopping the tractor and turning off the tractor engine.



CAUTION

Returns shall be performed easily with the front lifted and the power take-off shaft drive turned off, with no use of the tractor independent brake. It is necessary to keep extreme caution if there are people or items in the range of the digger operation.



CAUTION

It is not allowed to use tractor reverse gear during work, when the machine is in the working position. The digger shall be raised easily, without jerks or vibrations.



CAUTION

It is inadmissible to leave the digger on the slope or other terrain slope without securing it against automatic rolling down.

5. TECHNICAL OPERATION

To ensure a lasting and reliable operation of the digger, condition of screw connections should be checked and tightened in case of loosening. After work, the digger

should be cleaned thoroughly. Worn or damaged working parts of the digger should be exchanged following these recommendations:

- all worn elements of the digger shall be exchanged in the proper time,
- for exchange only original parts ensuring good quality shall be used, it comprises one of conditions of keeping warranty validity.

5.1. Instruction on maintenance of a digger

Each time, after work, clean the digger out of soil and other contamination, especially clean thoroughly sieving conveyors and ploughshare out of haulm residues and soil. Then review the connection of parts and units. Technical operation of the digger consists in checking the state of toppler ploughshare, sieving conveyors, belt transmissions, shakers and also checking the state of screw and pivot connections and the state of welds. All loose screw connections shall be tightened. Pivots and studs of the digger suspension system should not be lubricated but kept in a clean and dry condition. Warning signs and a triangular sign for low-speed vehicles shall be kept clean.



CAUTION

All maintenance shall be performed after the digger lowered onto the ground and the engine stopped using personal protection measures (e.g. gloves).

5.2. After-seasonal maintenance of the digger

After season, the digger shall be cleaned thoroughly out of contamination and washed. Worn or damaged working parts shall be exchanged and all loose screw connections tightened. Loss occurred in paint coat should be cleaned and filled by covering with a fresh layer of protective paint and then the digger shall be greased in accordance with the lubrication instruction (see point 5.6).

5.3. Storage of the digger

Digger should be kept under a roof on the flat, solid ground. In case of lack of a roofed place, it is possible to keep the machine outside. After disconnecting the digger from the tractor, the machine should be leant on the ploughshare at the front and support wheels at the back.



CAUTION

The digger should be kept in a place posing no threat to people and surrounding.

During long-term storage of the machine outside, preservation of working elements shall be repeated in case of the preservative layer rinsed. **Light and warning signs and a triangular sign for low-speed vehicles should be uninstalled and placed in a room, to be protected from being damaged.**

5.4. Working parts exchange

During operation of the conveyor digger, working parts i.e. toppler ploughshares are subject to wear and tear. It is necessary to keep the ploughshares in a good technical condition, without any deformations and properly sharp. In order to exchange a working element, the digger mounted on the tractor shall be raised into the transportation position. The machine shall be secured against falling by putting a strong enough support excluding its falling over under the frame. After setting the support, lower the digger until it is leant on it, stop the tractor engine, remove the key from the ignition switch, pull the handbrake, and secure one of the rear wheels of the tractor with wedges against moving. Before exchange of the working elements, stability of the assembly: tractor – digger shall be checked.



CAUTION

Disassembly and assembly of worn elements shall be performed on the tough and flat ground after lowering the digger onto the ground or supports.

Exchange of topper ploughshares

- the digger frame should be lent on a support, so that the ploughshare was over the ground,
- untwist the screws fastening the ploughshare to the frame,
- uninstall worn ploughshares,
- install new ploughshares,
- tighten screws fastening ploughshares.

Replacement of the sieving conveyor (front and rear)

- the digger frame should be leant on the support to enable easy access to the conveyor,
- loosen the sieving conveyor tensioner bolts,
- set the belt so that the connecting rod is at the bottom of the belt (from the bottom) where the rod connecting the front and rear conveyors can be freely removed,
- uninstall the sieving conveyor.

Replacement of the rod in the sieving conveyor

- after removing the conveyor from the digger (see previous section),
- grind the rivet link and perform riveting,
- remove the broken rod,
- by riveting, mount a new rod of the same diameter,
- mount the belt in the digger, install a rod clipping the conveyor,
- tension the sieving conveyor.

Replacement of the drive wheel of the sieving conveyor

- after disconnecting the sieving conveyor, the drive wheel can be replaced,
- untwist the screw setting the position of the wheel hub on the shaft,
- move the wheel towards the center of the digger,
- untwist the nuts fastening the wheel to the hub and remove the drive wheel,
- mount a new wheel and fasten the nuts,
- move the wheel to the previous position and tighten with the clamping screw,
- finally, a sieving conveyor must be installed.



CAUTION

During exchange of working elements, it is necessary to use proper tools and protective gloves. During exchange of working elements it is necessary to use a spare parts catalogue where assembly of digger parts is presented in the scheme.



REMEMBER

Working elements are not subject to warranty in case of wear or damage that is not the fault of the manufacturer.

5.5. Lubrication instruction

Basic maintenance activities cover keeping lubrication periods and using proper types of grease. Before lubrication all the points of lubrication shall be cleaned out of contamination. Grease the digger according to table 2, the lubrication points are marked with the appropriate pictograms.

Table 2. Digger lubrication place

No.	Lubrication place	Frequency of lubrication	Grease type
1	Drive axle bearings	every 40 hours	LT-43 grease
2	Transmission - check	every 40 hours	gear oil SAE 85W90
3	Support wheel hubs	every 40 hours	LT-43 grease
4	PTO shaft	every 40 hours	LT-43 grease

5.6. Detection and removal of inefficiencies

During operation, following failure can occur, which may affect unfavorably the digger operation quality, raise the application cost and also lead to damage both to the digger and the tractor.

	<p>REMEMBER! Work with an inefficient, improperly adjusted machine may lead to serious threats to the operator and other people. Inefficiencies and damages noticed shall be removed without delay.</p>
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Table 3. Table of inefficiency reasons and methods of removal

Symptoms	Reason	Method of removal
Tractor front tends to rise upwards	Too little load on the front. IMPORTANT: Tractor front axle load cannot be less than 0.2 of the tractor's weight.	Check if the tractor class is consistent with the manual recommendations. If not – change the tractor. If so – check and if need be add the proper number of front axle ballasts.
Dug out potatoes are damaged	The digger operates too shallow	Increase the depth of the digger operation, adjusting the central connector.
Digger will not submerge	Damaged or worn ploughshares	Check and exchange ploughshares
	Ploughshares set too high	Check and adjust the operation depth
	Improper longitudinal leveling	Check and level the digger, adjust with the central connector
Not all soil is sifted away	Wrong set or damaged conveyor shaker	Check and if need be adjust or replace with a new shaker
Transversal rocking of the digger	Improperly adjusted side rod pullers	Check and perform adjustment

6. TRANSPORTATION ON PUBLIC ROADS

6.1. Digger transportation by means of transport

Diggers can be transported from the manufacturer to the sales person or client by trailers or means of transport. Diggers are transported assembled and ready for operation. Diggers are loaded onto car trailers with lifting devices after installing lines or chains in places marked with pictograms by the manufacturer. The diggers should be secured still on means of transport, the transporting person is responsible for proper securing.

	<p>CAUTION When loading the digger on means of transport, lines or chains shall be installed in places marked by the manufacturer with pictograms.</p>
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6.2. Transportation of the digger on the tractor three-point suspension system

Digger is adjusted for transportation on public roads on the tractor three-point suspension system and the digger road wheels. When transporting the digger on the tractor three-point suspension system on public roads, the digger should be equipped with portable light and warning devices having the combination lamps at the back (side red, brake, turning and red reflective ones) and with a triangular sign for low-speed vehicles. Portable light devices are connected with the tractor wiring with the use of a connecting cable ended with a 7-pole plug. Moreover, the tractor, on which the digger is mounted, should fulfill conditions of admitting it to motion on public roads in accordance with Highway Code.

	<p>CAUTION ! It is forbidden to move on public roads without the proper marking (Ordinance of Minister of Infrastructure of 31 December 2002 Journal of Laws No 32/2003 item 262 with later amendments). Digger transported on a tractor suspension system, on public roads must be obligatory equipped with portable light and warning devices (if need be) and a triangular sign for low-speed vehicles installed in special handles on the machine.</p>
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**CAUTION!**

When turning, pay attention to “overlapping” of the machine. It is strictly forbidden to transport any people or items on the digger.

7. DISASSEMBLY AND TOTALLING

**CAUTION**

All maintenance connected with disassembly and totaling of the digger shall be performed on the tough flat ground, after lowering the digger onto the ground or support, using proper personal protection measures (e.g. gloves, glasses).

In case of occurring permanent damage to the frame or other bearing elements causing deterioration of functionality and danger of using safety, disassembly and totaling of the digger shall be performed. Disassembly of the machine should be performed by people, previously acquainted with its construction, equipped with protective gloves and other personal protection measures. These activities shall be performed after setting the machine on the flat and tough ground.

**CAUTION**

Before starting to disassembly, the digger shall be disconnected from the tractor.

Disassembly should be performed according to the tables included in the spare parts catalogue, preventing from crushing with untwisted parts. It is necessary to keep all precautions using protective gloves and efficient tools. All fixings are made of normalized elements adjusted to metric keys. For key movement there are free spaces ensuring unconstrained untwisting and tightening up nuts and screws predicted. In case of screws of yoke fastening the working sections to the frame, use bent box spanners.

Due to a number of digger parts exceeding 20 kg (support frame, three-point suspension system rack), during disassembly use lifting devices. During disassembly or totaling, parts should be grouped according to the material type. Uninstalled elements should be grouped and passed to points collecting metals.

**CAUTION**

Lifting devices used during disassembly can be operated only by a person properly authorized and qualified.

8. TECHNICAL CHARACTERISTICS

Technical data of mounted 2-row conveyor digger is listed in table 4.

Table. 4. Technical characteristics of 2-row conveyor digger

No.	Specification	Unit of measure	Manufacturer data			
			Z656/1	Z656/2	Z656/3	Z656/4
1.	Symbol	-	Z656/1	Z656/2	Z656/3	Z656/4
2.	Type of the digger	-	mounted			
3.	Working width	-	2-row			
4.	Discharge of potatoes	-	backwards			
5.	Dug row spacing	mm	625 - 675	700 - 750	625 - 675	700 - 750
6.	Maximum working depth	mm	200			
7.	Machine weight	kg	800	860	650	690
8.	Overall dimensions in working position					
	- transport / working length	mm	3050 / 3510		2190 / 2690	
	- width	mm	1650	1850	1650	1850
	- height	mm	1530		1530	
9.	Support wheels					
	- wheel spacing	mm	1500	1700	1500	1700
	- wheel diameter	mm	470			
	- wheel width	mm	120			
10.	Sieving conveyor					
	- number of conveyors	pc/ pcs	2		1	
	- type	-	rod, on fabric and rubber belts smooth			
	- width	mm	1300	1500	1300	1500
	- rod pitch	mm	45			
	- connecting rod	pc/ pcs	1			
11.	Power demand (min.)	kW/hp	37 / 50	40 / 55	37 / 50	40 / 55
12.	Working speed	km/h	5			
13.	PTO shaft - min. moment *	Nm	300			
14.	PTO shaft - length min / max*	mm	L _{min} - 510, L _{max} - 790			
15.	Speed of PTO shaft	rpm	540			
16.	Efficiency	ha/h	up to 0,4	up to 0,5	up to 0,4	up to 0,5

* - the digger is not equipped with the PTO shaft. Use only shafts with CE marking.

Measurements of geometric dimensions and weights are given in the technical characteristic to an accuracy of 1%.

NOTES

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SPARE PARTS CATALOGUE

How to use the catalogue.

Spare parts catalogue includes other assemblies of the 2-row conveyor digger, marked with proper numbers.

The catalogue should be used as follows:

- determine the proper assembly the exchanged part belongs to according to the tables,
- find the needed part on the assembly table following the reference number from the assembly drawing.

Spare parts can be purchased at the tool manufacturer, by writing to his address or by calling; then you are supposed to specify:

- the exact address of the orderer,
- digger symbol,
- digger serial number,
- year of production,
- manual issue number,
- the exact name of parts or assembly,
- catalogue symbol (KTM), spare part number or standard,
- number of pieces,
- payment terms.

All standard parts can be purchased in the public sale.

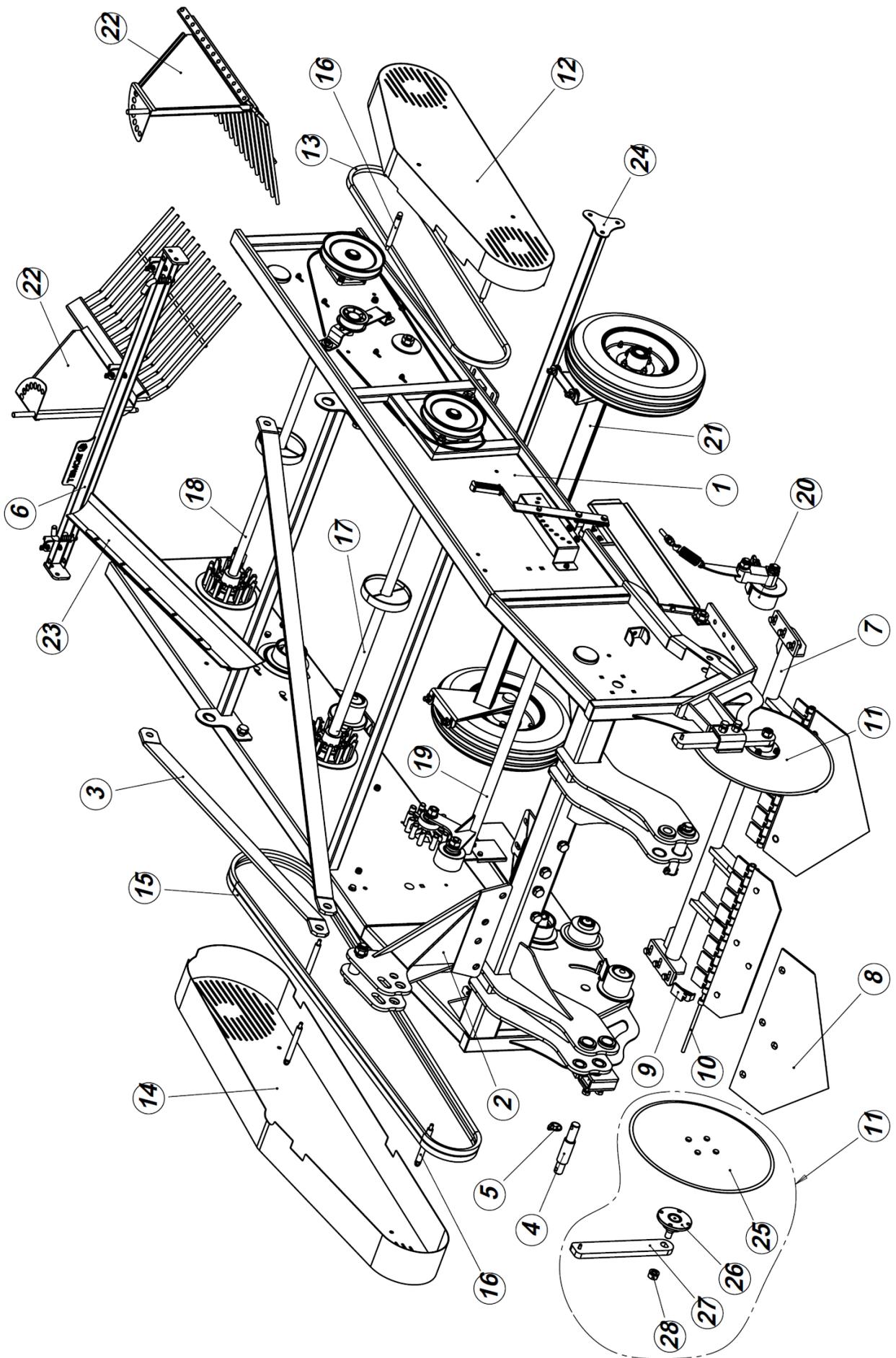


Table 1. 2-row conveyor digger with 2 conveyors - frame

Pos. on Fig.	Part name	KTM symbol	Number of items	
		or standard number	Z656/1	Z656/2
1.	Frame welded A type	6561-01-01	1	-
	Rama welded B type	6562-01-01	-	1
2.	Three-point suspension system turret welded	6561-01-02	1	1
3.	Stay A type	6561-01-03	2	-
	Stay B type	6562-01-03	-	2
4.	Double-sided stud cat. II and III	6561-01-04	2	2
5.	Agricultural pin with a ring 8x50	6561-01-05	2	2
6.	Rear bracket welded A type	6561-01-06	1	-
	Rear bracket welded B type	6562-01-06	-	1
7.	Ploughshare mounting bracket welded A type	6561-01-07	1	-
	Ploughshare mounting bracket welded B type	6562-01-07	-	1
8.	Ploughshare L and R A* type	6561-01-08	1+1	-
	Ploughshare L and R B* type	6562-01-08	-	1+1
9.	Ploughshare finger	6561-01-09	18	22
10.	Ploughshare finger rod A type	6561-01-10	2	-
	Ploughshare finger rod B type	6562-01-10	-	2
11.	Disc coulter set (3-0-0-0)	6561-01-11	2	2
12.	Belt transmission shield L welded	6561-01-12	1	1
13.	V belt of the belt transmission L (C2360)	6561-01-13	1	1
14.	Belt transmission shield R welded	6561-01-14	1	1
15.	V belt of the belt transmission R (C3550)	6561-01-15	2	2
16.	Metal shield spacer set	6561-01-16	6	6
17.	Conveyor drive shaft I set 5-0-0-0)	6561-01-17	1	1
18.	Conveyor drive shaft II set (4-0-0-0)	6561-01-18	1	1
19.	Conveyor shaker I set (2-0-0-0)	6561-01-19	1	1
20.	Conveyor tensioner I set (8-0-0-0)	6561-01-20	2	2
21.	Digger drive unit set	6561-01-21	1	1
22.	Chute grate R and L welded	6561-01-22	1+1	1+1
23.	Rubber inner shield of the conveyor II	6561-01-23	2	2
24.	Spreader cross bar welded A type	6561-01-24	1	-
	Spreader cross bar welded B type	6562-01-24	-	1
25.	Coulter plate Ø500	6561-01-25	2	2
26.	Disc coulter hub set (3-1-0-0)	6561-01-26	2	2
27.	Disc coulter arm	6561-01-27	2	2
28.	Nut M20	PN-EN ISO 4033:2013	2	2
29.	Bottom cover R and L welded	6561-01-29	1+1	1+1
30.	Additional rod rubber set type A	6561-01-30	1	-
	Additional rod rubber set type B	6562-01-30	-	1

* L - left / R - right

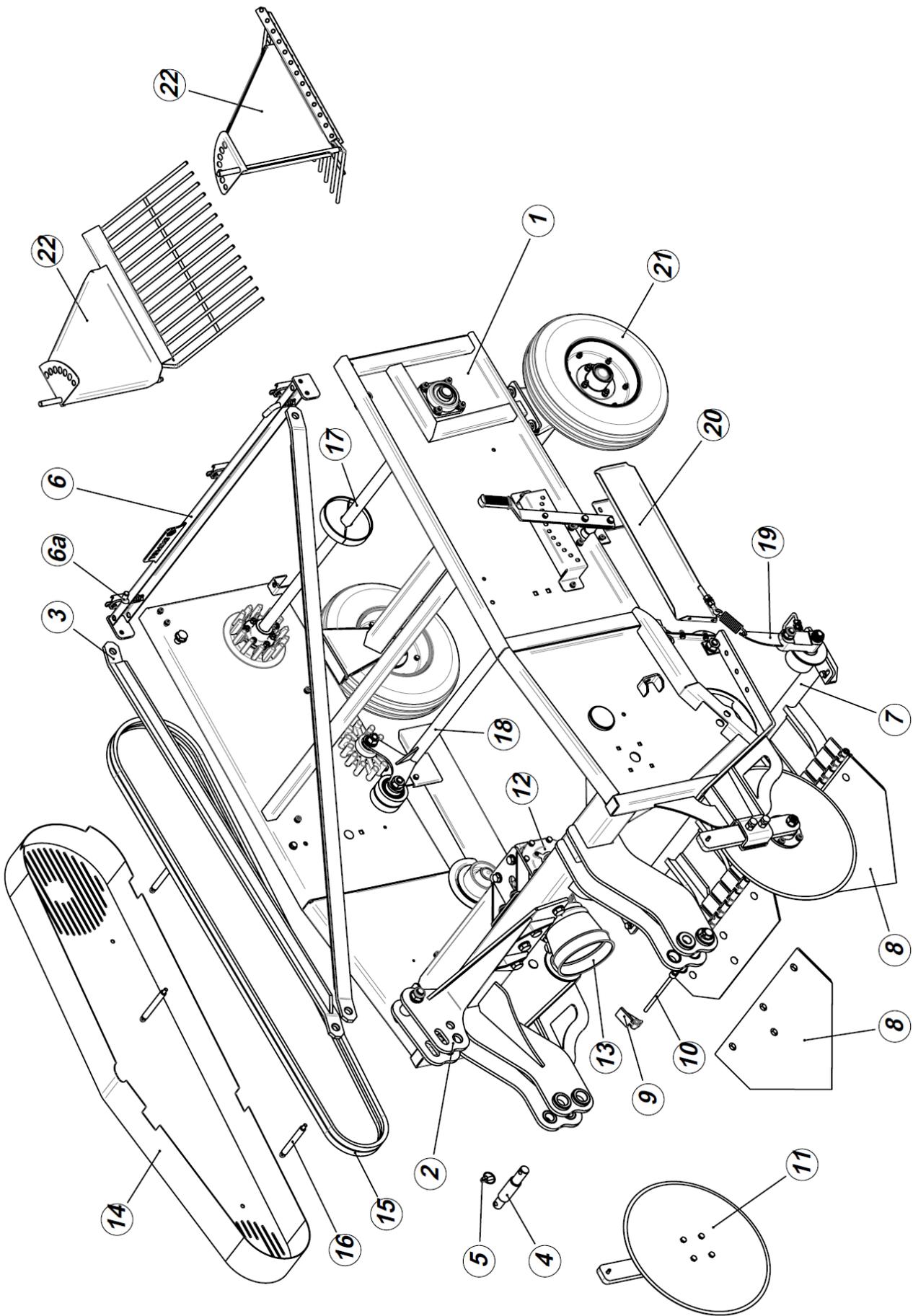


Table 1B. 2-row conveyor digger with 1 conveyor - frame

Poz na rys.	Nazwa części	Symbol KTM	Liczba sztuk	
		lub numer normy	Z656/3	Z656/4
1.	Frame welded C type	6563-01-01	1	-
	Rama welded D type	6564-01-01	-	1
2.	Three-point suspension system turret welded	6561-01-02	1	1
3.	Stay C type	6563-01-03	1	-
	Stay D type	6564-01-03	-	1
4.	Double-sided stud cat. II and III	6561-01-04	2	2
5.	Agricultural pin with a ring 8x50	6561-01-05	2	2
6.	Rear bracket welded A type	6561-01-06	1	-
	Rear bracket welded B type	6562-01-06	-	1
6a	Ploughshare mounting bracket welded A type	6562-01-06a	2	2
7.	Ploughshare mounting bracket welded B type	6561-01-07	1	-
	Ploughshare L and R A* type	6562-01-07	-	1
8.	Ploughshare L and R B* type	6561-01-08	1+1	-
	Ploughshare finger	6562-01-08	-	1+1
9.	Ploughshare finger rod A type	6561-01-09	18	22
10.	Ploughshare finger rod B type	6561-01-10	2	-
	Disc coulter set	6562-01-10	-	2
11.	Krój talerzowy kpl. (3-0-0-0)	6561-01-11	2	2
12.	Main transmission set	6561-02-03	1	1
13.	Plastic shield of the power input connection	B&P	1	1
14.	Belt transmission shield R welded	6561-01-14	1	1
15.	V belt of the belt transmission R	6561-01-15	2	2
16.	Metal shield spacer set	6561-01-16	6	6
17.	Conveyor drive shaft I set 5-0-0-0)	6561-01-17	1	1
18.	Conveyor shaker I set (2-0-0-0)	6561-01-19	1	1
19.	Conveyor tensioner I set (8-0-0-0)	6561-01-20	2	2
20.	Oslona dolna P i L spaw.	6561-01-29	1+1	1+1
21.	Digger drive unit set	6561-01-21	1	1
22.	Chute grate R and L welded	6561-01-22	1+1	1+1

* L - left / R - right

Table 2. 2-row conveyor digger with 2 conveyors - drive set

Pos. on Fig.	Part name	KTM symbol	Number of items	
		or standard number	Z656/1	Z656/2
1.	Front sieving conveyor A type (10-0-0-0)	6561-02-01	1	-
	Front sieving conveyor B type (10'-0-0-0)	6562-02-01	-	1
2.	Rear sieving conveyor A type (11-0-0-0)	6561-02-02	1	-
	Rear sieving conveyor B type (11'-0-0-0)	6562-02-02	-	1
3.	Main transmission set MB21.08	6561-02-03	1	1
4.	V belt of the belt transmission R (C3550)	6561-01-15	2	2
5.	Conveyor drive I set (5-0-0-0)	6561-01-17	1	1
6.	Tensioner of the front sieving conveyor set (8-0-0-0)	6561-02-06	1	1
7.	Front sieving conveyor shaker set 2-0-0-0)	6561-02-07	1	1
8.	Sieve roller I set (0-4-0-0)	6561-02-08	2	2
9.	Conveyor reverse roller II set (0-6-0-0)	6561-02-09	2	2
10.	Sieve roller II set (0-5-0-0)	6561-02-10	4	4
11.	Belt transmission tensioner bracket R	6561-02-11	1	1
12.	Belt transmission tensioner roller R (7-1-0-0)	6561-02-12	1	1
13.	Conveyor drive shaft II set (4-0-0-0)	6561-01-18	1	1
14.	V belt of the belt transmission L (C2360)	6561-01-13	1	1
15.	Belt transmission tensioner bracket L	6561-02-15	1	1
16.	Belt transmission tensioner roller L (6-1-0-0)	6561-02-16	1	1

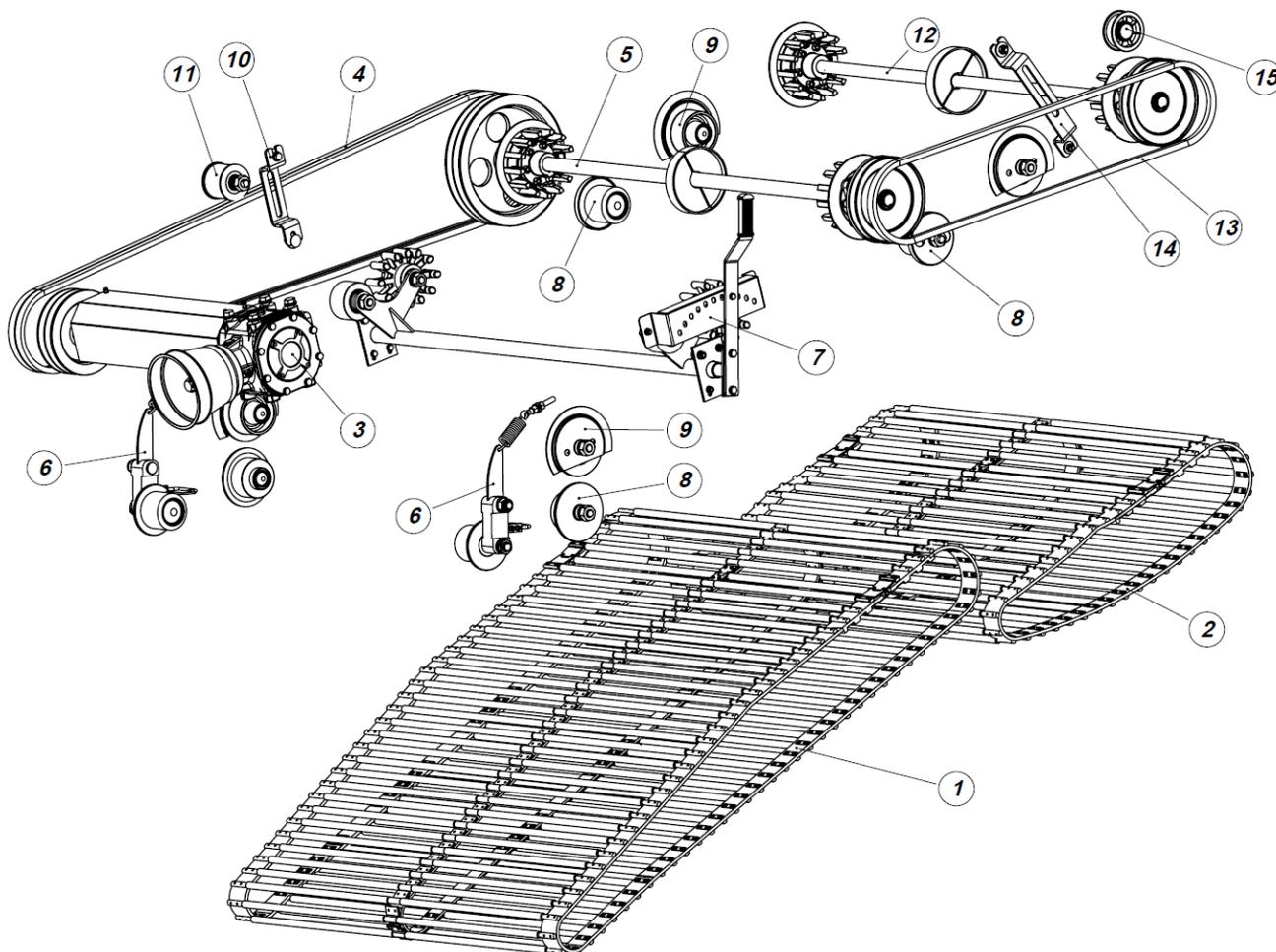


Table 2A. 2-row conveyor digger with 1 conveyor - drive set

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items	
			Z656/3	Z656/4
1.	Front sieving conveyor A type (10-0-0-0)	6561-02-01	1	-
	Front sieving conveyor B type (10'-0-0-0)	6562-02-01	-	1
2.	Main transmission set MB21.08	6561-02-03	1	1
3.	Main drive shield	6561-03-01	1	1
4.	V belt of the belt transmission R (C3550)	6561-01-15	2	2
5.	Conveyor drive shaft I set (5-0-0-0)	6561-01-17	1	1
6.	Conveyor tensioner I set (8-0-0-0)	6561-01-20	1	1
7.	Conveyor shaker I set (2-0-0-0)	6561-01-19	1	1
8.	Sieve roller I set (0-4-0-0)	6561-02-08	2	2
9.	Sieve roller II set (0-5-0-0)	6561-02-10	-	-
10.	Belt transmission tensioner bracket R	6561-02-11	1	1
11.	Belt transmission tensioner roller R (7-1-0-0)	6561-02-12	1	1

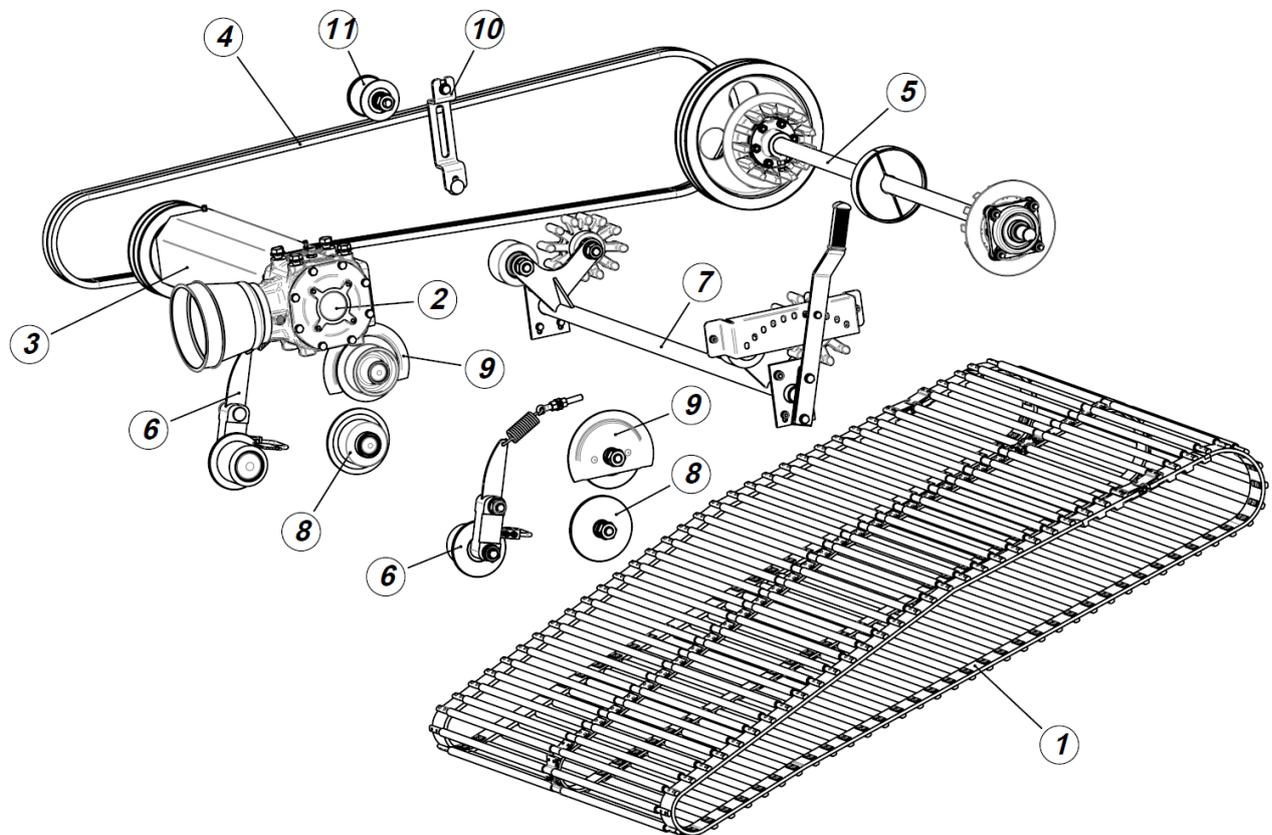


Table 3. 2-row conveyor digger - main transmission set

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items	
			Z656/1	Z656/2
1.	Main drive shield	6561-03-01	1	1
2.	Pulley 2xC-200	6561-03-02	1	1
3.	Main drive intermediate shaft A type	6561-03-03	1	-
	Main drive intermediate shaft B type	6562-03-03	-	1
4.	MB21.08 transmission	6561-03-04	1	1
5.	Clutch assembly	6561-03-05	1	1
6.	Plastic shield of the power take-off shaft	B&P	1	1
7.	Snap ring Z30	SKF	1	1
8.	Parallel key A8x7x50	PN-70/M-85005	2	2
9.	UCF206 bearing bracket (<i>chamfered holes</i>)	SKF	1	1
10.	Parallel key A8x7x40	PN-70/M-85005	1	1
11.	Screw M8x25-8.8	PN-EN ISO 4017:2014	4	4
12.	Spring washer L8.2	DIN-127B	4	4
13.	Spacer washer 30x42x1.5	DIN-998	10	10
14.	Screw M16x30-8.8	PN-EN ISO 4017:2014	4	4
15.	Nord-Lock 16SP washer	6561-02-15	4	4
16.	M10x35 carriage bolt	DIN-603	4	4
17.	Washer 10	PN-EN ISO 7089:2004	4	4
18.	Nut M10	PN-EN ISO 4032:2013	4	4

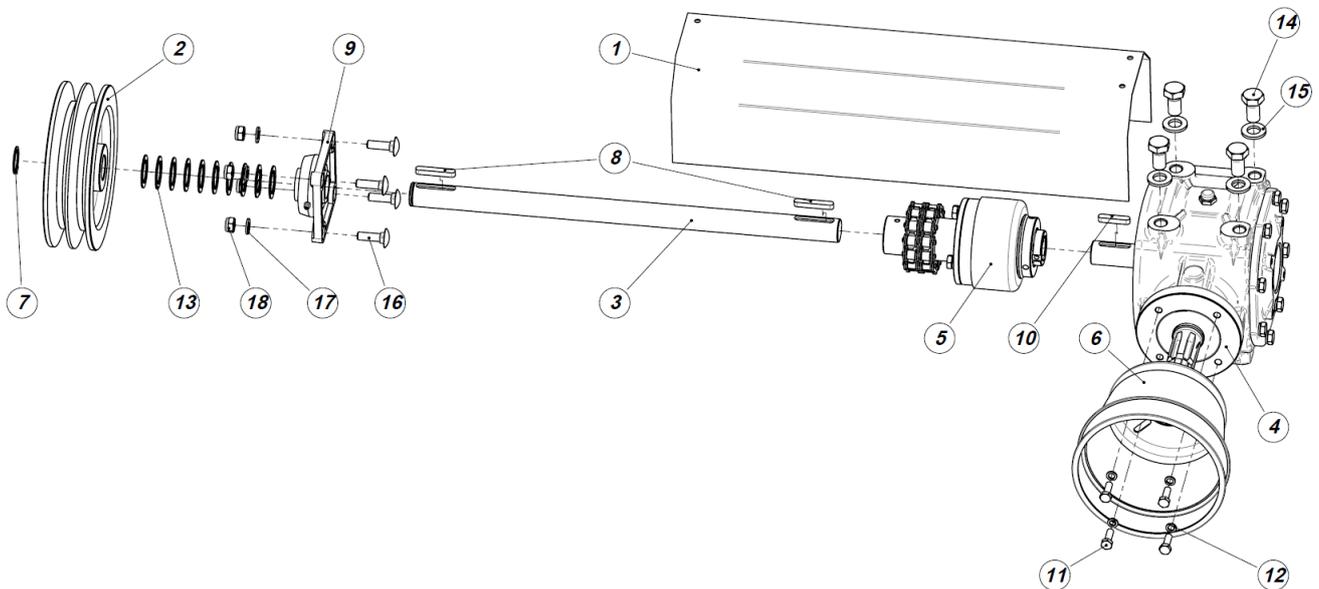


Table 4. 2-row conveyor digger - drive shaft I set

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items			
			Z656/1	Z656/2	Z656/3	Z656/4
1.	Shaft drive wheel I set	6561-04-01	2	2	2	2
2.	Shaft disc I set	6561-04-02	1+1	1+1	1+1	1+1
3.	Conveyor drive shaft I A type	6561-04-03	1	-	-	-
	Conveyor drive shaft I B type	6562-04-03	-	1	-	-
	Conveyor drive shaft I A type min	6563-04-03	-	-	1	-
	Conveyor drive shaft I B type min	6564-04-03	-	-	-	1
4.	Pulley 2xC-315 (5-0-0-2)	6561-04-04	1	1	1	1
5.	Pulley C-200 (5-0-0-3)	6561-04-05	1	1	-	-
6.	Parallel key A8x7x32	PN-70/M-85005	1	1	1	1
7.	Parallel key A8x7x63	PN-70/M-85005	1	1	1	1
8.	Parallel key A10x8x63	PN-70/M-85005	2	2	2	2
9.	Spacer washer 30x42x1.5	DIN-998	3	3	2	2
10.	Snap ring Z30	SKF	2	2	1	1
11.	UCF207 bearing bracket (<i>chamfered holes</i>)	SKF	2	2	2	2
12.	M12x40 castle screw	DIN-603	8	8	8	8
13.	Washer 12	PN-EN ISO 7089:2004	8	8	8	8
14.	M12 nut	PN-EN ISO 4032:2013	8	8	8	8
15.	Cast iron drive wheel (5-1-0-1)	6561-04-15	2	2	2	2
16.	Roller hub Ø35 (5-1-0-1)	6561-04-16	2	2	2	2
17.	Screw M10x30-8.8	PN-EN ISO 4017:2014	7	7	7	7
18.	Spring washer L10,2	DIN-127B	6	6	6	6
19.	Nut M10	PN-EN ISO 4032:2013	7	7	7	7

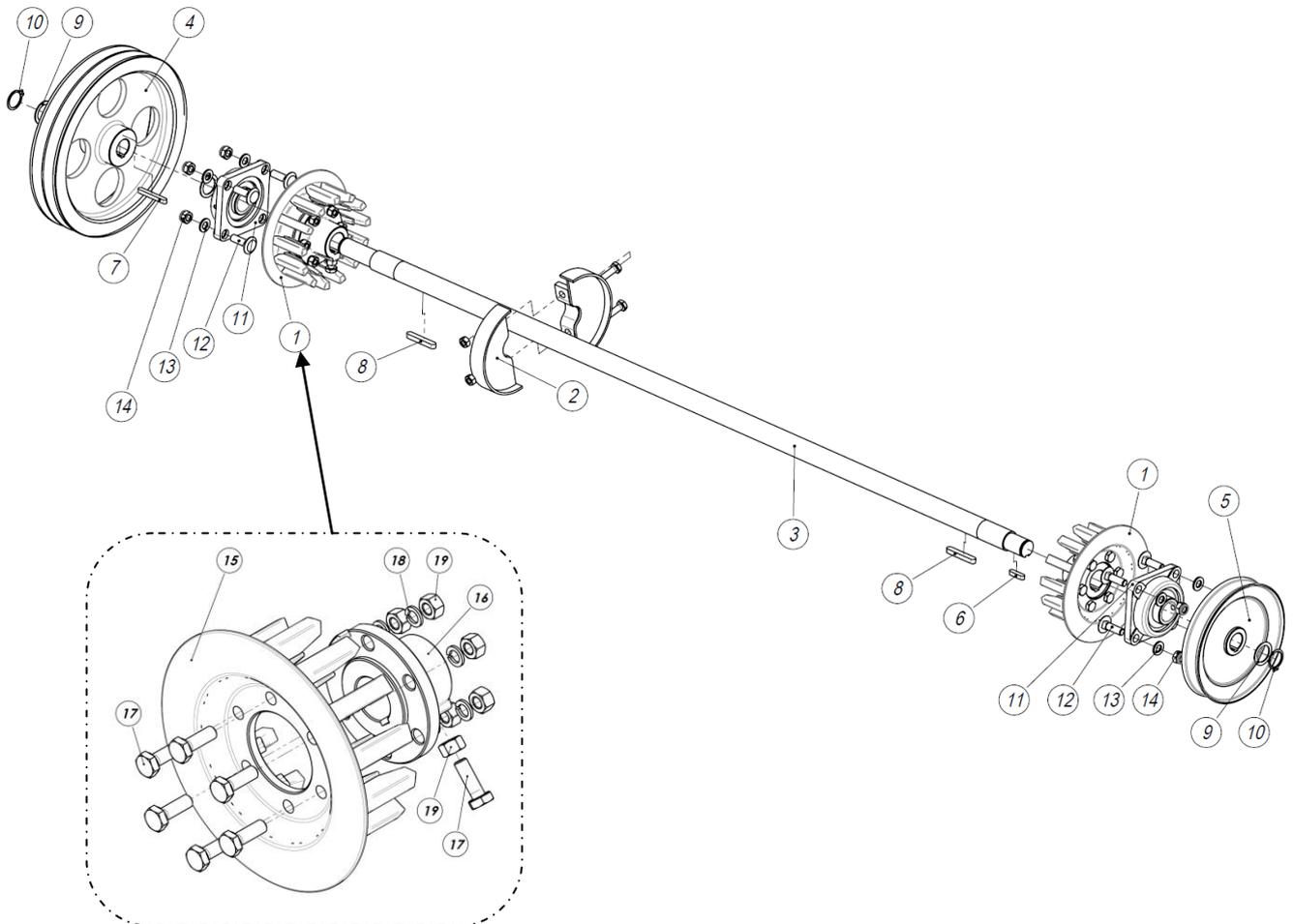


Table 5. 2-row conveyor digger - lower tensioner set*.

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items	
			Z656/1	Z656/2
1.	Lower tensioner arm welded	6561-05-01	1	1
2.	Lower tensioner scraper welded	6561-05-02	1	1
3.	Lower tensioner axle	6561-05-03	1	1
4.	Tensioner roller set	6561-05-04	1	1
5.	Tensioner spring	6561-05-05	1	1
6.	Washer 20	PN-EN ISO 7089:2004	1	1
7.	Nut M20	PN-EN ISO 4032:2013	1	1
8.	Screw M6x25-8.8	PN-EN ISO 4017:2014	2	2
9.	Washer 6	PN-EN ISO 7089:2004	4	4
10.	Spring washer L6.1	DIN-127B	2	2
11.	Nut M6	PN-EN ISO 4032:2013	2	2
12.	Eye bolt M12x100-8.8	DIN-444B	1	1
13.	M12 nut	PN-EN ISO 4032:2013	2	2
14.	Washer 12	PN-EN ISO 7089:2004	2	2

* - in the digger there is a Right and Left lower tensioner (the description in the table applies to Left only)

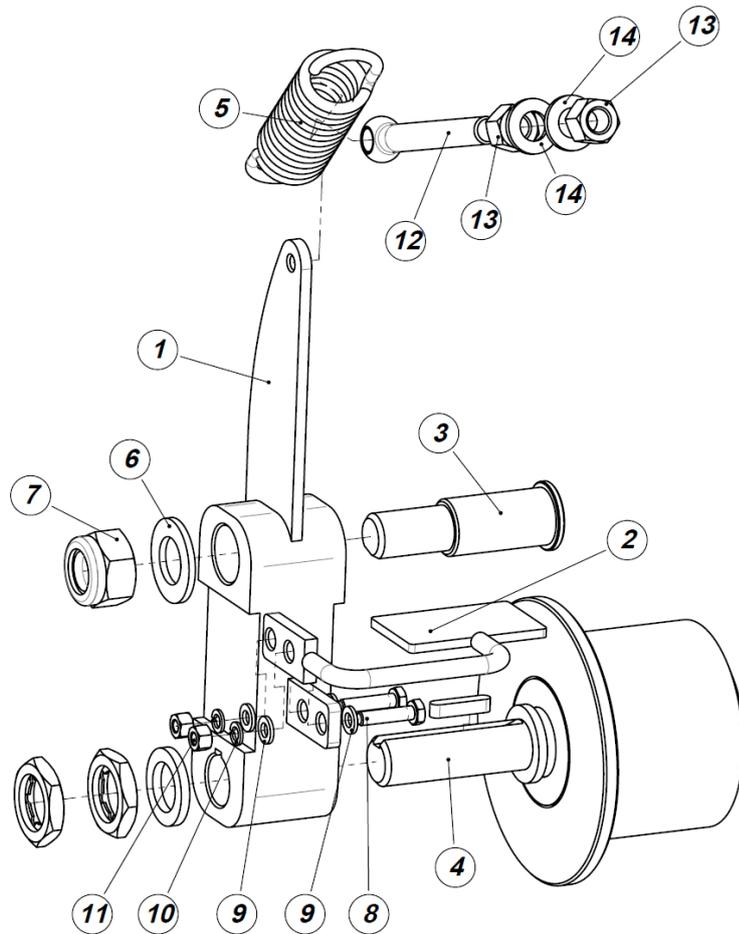


Table 6. 2-row conveyor digger - shaker set

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items	
			Z656/1	Z656/2
1.	Shaker bracket axle welded A type	6561-06-01	1	-
	Shaker bracket axle welded B type	6562-06-01	-	1
2.	Mounting the shaker bracket axle welded	6561-06-02	1	1
3.	Elliptical shaker set	6561-06-03	2	2
4.	Shaker leading roller set	6561-06-04	2	2
5.	Shaker adjustment lever welded	6561-06-05	1	1
6.	Rubber handle	6561-06-06	1	1
7.	Spring pin 6x40-A	PN-EN ISO 8752:2009	1	1
8.	Screw M8x30-8.8	PN-EN ISO 4017:2014	1	1
9.	Washer 8	PN-EN ISO 7089:2004	2	2
10.	Nut M8	PN-EN ISO 4032:2013	1	1
11.	Screw M10x30-8.8	PN-EN ISO 4017:2014	2	2
12.	Washer 10	PN-EN ISO 7089:2004	12	12
13.	Nut M8	PN-EN ISO 4032:2013	6	6
14.	Screw M10x25-8.8	PN-EN ISO 4017:2014	4	4
15.	Shaker lever base welded	6561-06-15	1	1

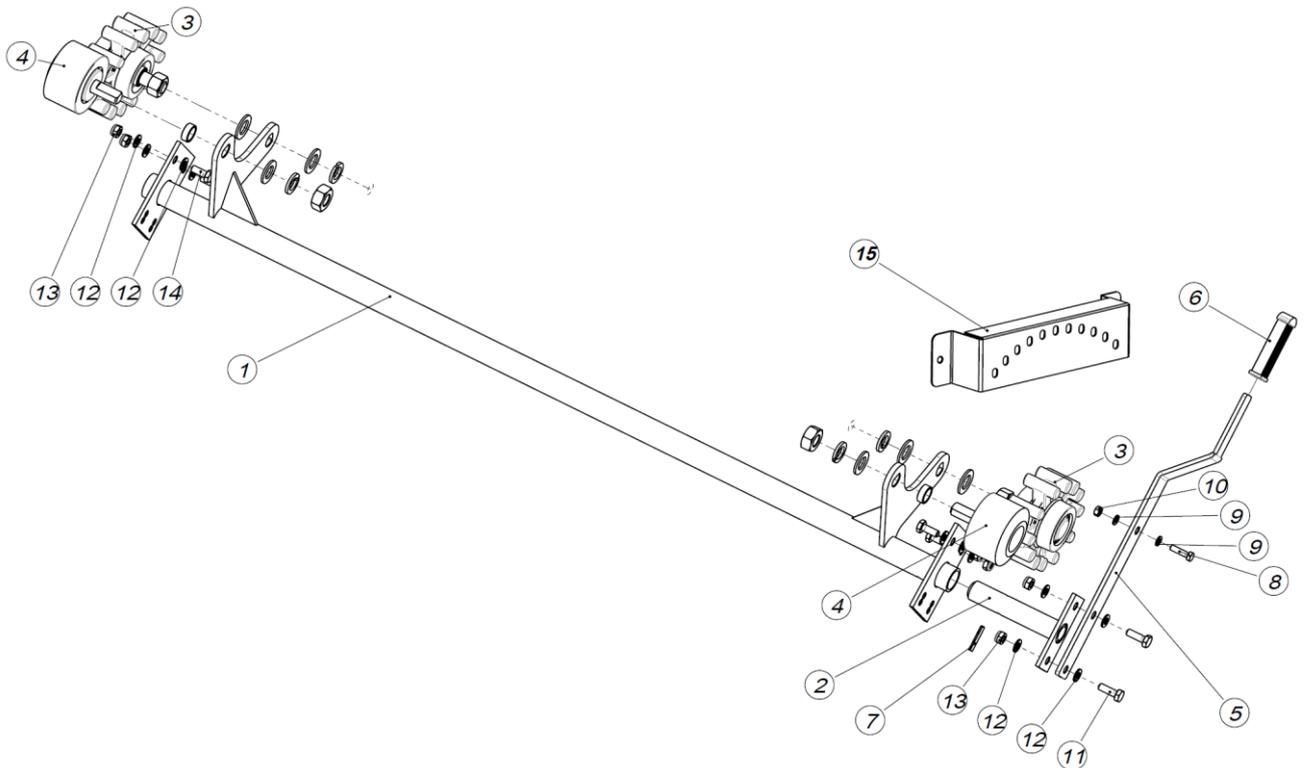


Table 7. 2-row conveyor digger - drive shaft II set

Pos. on Fig.	Part name	KTM symbol or standard number	Number of items	
			Z656/1	Z656/2
1.	Shaft drive wheel II set	6561-07-01	2	-
	Shaker bracket axle welded B type	6562-07-01	-	2
2.	Shaft disc II set	6561-07-02	1	1
3.	Conveyor drive shaft II A type	6561-07-03	1	-
	Conveyor drive shaft II B type	6562-07-03	-	1
4.	Pulley C-200 (5-0-0-3)	6561-04-05	1	1
5.	Parallel key A8x7x32	PN-70/M-85005	1	1
6.	Parallel key A8x7x63	PN-70/M-85005	2	2
7.	Spacer washer 30x42x1.5	DIN-998	9	9
8.	Snap ring Z30	SKF	1	1
9.	UCF206 bearing bracket (<i>chamfered holes</i>)	SKF	2	2
10.	M10x30 castle screw	DIN-603	8	8
11.	Washer 10	PN-EN ISO 7089:2004	8	8
12.	Nut M10	PN-EN ISO 4032:2013	8	8
13.	Cast iron drive wheel (5-1-0-1)	6561-04-15	2	2
14.	Roller hub Ø30 (4-1-0-2)	6561-07-14	2	2
15.	Screw M10x30-8.8	PN-EN ISO 4017:2014	7	7
16.	Spring washer L10.2	DIN-127B	6	6
17.	Nut M10	PN-EN ISO 4032:2013	7	7

