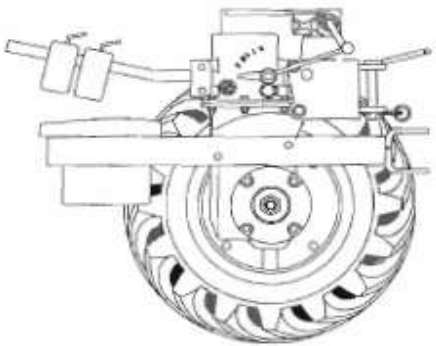
GEARBOX
MODEL DSK – 317/S

GENERAL-PURPOSE GEARBOX FOR SMALL ONE-AXLE TRACTOR

instructions for use



VARI

Contents

WARNING!

The user **is obliged** to get acquainted with these Instructions for use and to follow all instructions for the machine operation so that his/her and other persons' health and property do not suffer any harm. Safety instructions contained in this manual do not describe all situations or conditions that may occur in practical use. Safety factors such as common sense, providence and scrupulousness are not included; it is assumed that all persons authorized for the machine operation or maintenance do possess the intelligence.

The machine can be operated only by persons at good mental and physical health.

For the professional use of the machine the machine owner is obliged to provide for a work safety training and give instructions on the machine control for operators and to keep records on these trainings.

The manufacturer bears no responsibility for damages caused by unauthorized use, improper machine operation and for damages resulting from any machine modifications not authorized by the manufacturer.

I. FOREWORD

Dear customer,

By purchasing this product you have become owner of one constituent from a wide range of machines and implements manufactured as a system of small farming and gardening technology under a trademark

VARI
SYSTEM OF SMALL AGRICULTURAL AND GARDENING TECHNOLOGY

by joint-stock company VARI,a.s. LIBICE nad CIDLINOU Czech Republic.

The system is meant for gardeners, small-scale growers and farmers.

Machines and implements made in this system can easily do all necessary work such as active and passive soil cultivation, pumping of fluids, cutting of stalky plants and grass, removal of snow, sweeping of dirt, and transportation of all materials on one-axle trailers.

Please, read the Instructions for use carefully. If you follow the instructions presented herein, you will have our products performing a reliable work for you for years.

II. TECHNICAL DESCRIPTION

USE: Complete gearbox Model **DSK-317/S** with tow axle and accessories, equipped with a driving unit Model **HONDA PJ-5V/T** or Model **JM B 55 B3 V/T** serves as a small one-axle general-purpose tractor suitable for transport and passive soil cultivation with attachable implements.

Transportation of working implements, machines and loads up to 350 kg (incl. operator) can be made by using a semi-trailer Model ANV-350 U or Model ANV-368.

Attachable implements are connected in an extension body Model **NT-3** (which is to be connected in a trailer hitch **BZN-002**) that can be used for the adjustment of correct position of the implement at work or that can be connected directly in the trailer hitch **BZN-002**).

Gearbox **DSK-317/S** has three forward gears and one reverse gear. Driving unit **PJ-5V/T** or **JM B 55 B3 V/T** can be easily and readily mounted on- and dismounted from the gearbox.

THE USE OF INDIVIDUAL ASSEMBLIES:

Gearbox DSK-317/S: is a basic group of the whole assembly and the individual working implements can be connected in the respective suspensions. The driving unit is installed into a flange in the upper part of the case, and is to be secured by quick-operating clamps and crank on the gearbox case flange.

Tow axle TN-01. 05, 07: is mounted on the power-take-off shaft (PTO-) of the gearbox case. This connection gives rise to a small one-axle tractor which can be used for all below-listed works.

Tow axles differ only in the number of weights used on wheels (see Chapter VIII List of parts).

The connection with one-axle semi-trailers gives an assembly for the transport of materials. The assembly is liable to terms for traffic on public roads specified in Chapter IV Safety regulations.

Suspension Z-1: this suspension mounted on the gearbox serves only for the connection of the semi-trailer.

Trailer hitch BZN-002: consists of a suspension with the weight carrier, weight of 33 kg, weight carrier and two weights of 5 kg each. This trailer hitch serves for the connection of all working implements of the VARI system. Weights are to increase machine weight in order to improve pulling force on the axle and they also serve to balance the machine at work with all adaptors for passive soil cultivation.

III. TECHNICAL DATA

GEARBOX DSK-317/S	Unit	Value
Number of gears	-	3 + 1R
PTO-shaft revolutions Gear 1	s^{-1}	29
PTO-shaft revolutions Gear 2	s^{-1}	97.0
PTO-shaft revolutions Gear 3	s^{-1}	127.9
PTO-shaft revolutions Reverse (holds for engine rev. 4 800 min^{-1})	s^{-1}	31.7
Wheel track	mm	480, 610
Tire size	Engl.inch	5.00-12
Tire inflation	kPa	120
Weight:		
- gearbox	kg	27.0
- tow axle TN-01	kg	106.0
- tow axle TN-07	kg	62.0
- tow axle TN-07	kg	86.0
- complete suspension Z-1	kg	2.5
- trailer hitch ZZ	kg	55.7
Gearbox oil filling	litre	1.75
Recommended oil grade	API	GL-4, GL-5
	SAE 90	90 or 80 W-90

TECHNICAL DESCRIPTION OF ASSEMBLY GROUPS:

Gearbox DSK-317/S: The gearbox consists of two castings in which toothed wheels of gears are installed. In the lower case made of cast iron there is a worm shaft and a worm wheel mounted in antifriction bearings. At the end of the worm wheel shaft there are hexagonals onto which the tow axle is to be mounted.

In the upper aluminium case into which the worm shaft is taken there is the gearbox proper. All shafts are seated in antifriction bearings. Countershaft with toothed wheels of Gears 1 to 3 and Reverse is mounted on a pinion gear. The toothed wheel of the gear is displaced on the worm shaft by a shift gate, controlled by gear change lever located in the left part of the gear case. The toothed wheel of reverse gear together with the toothed wheels of permanent transmission gear steering the countershaft are on the layshaft. Clutch disc is installed at the end of the layshaft.

Arrestment of speed gears is ensured by means of a spring-mounted ball that falls into a grooving in the shift gate. In the upper part of case body a flange is formed into which the power unit is to be installed, which is to be secured by two quick-operating clamps and the pin on the console of handlebars is to be secured by tightening the crank. The gearbox is equipped with the drain and pour-in neck to drain and pour-in oil.

Tow axle TN-01, 05: The tow axle consists of two wheels with a freewheel hub, bracket and axial pins for both wheel track breadths of 480 and 610 mm, washer, safety nut and split pin.

The wheel consists of tire with a tire hose 5.00″-12″, mounted on the cast iron disc wheel floating on the hub.

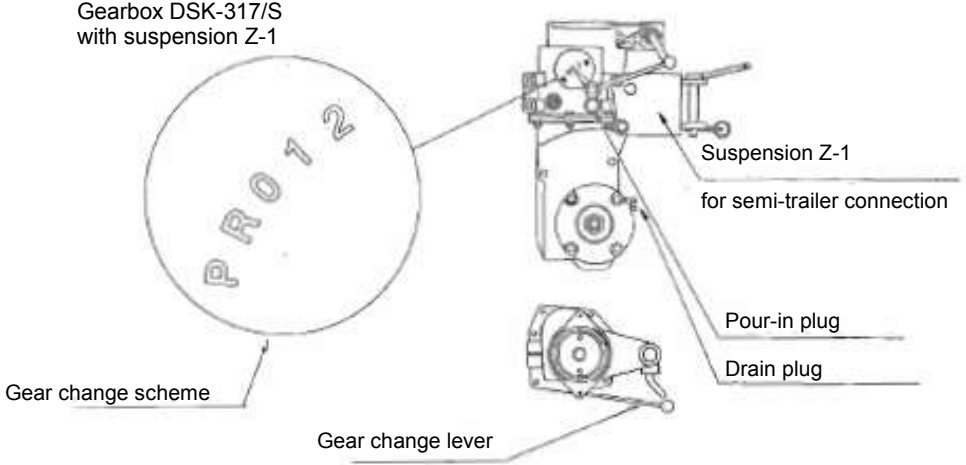
The hub has on the front end notches into which a finger falls, resilient mounted in the disc wheel. The finger is pressed into engagement by spring. On the finger pin a draw bar is hooked, which falls into a grooving in the disc wheel lug and determines the finger position. This solution partly substitutes for the missing differential, enabling an easier machine manoeuvreability. Finger positions are presented in Chapter V. Wheel track breadth can be changed by means of spacers to be installed onto hexagonals on the PTO shaft of the gear case. The axle is to be connected to the gear case by means of axial pins, washer and safety nut which is to be secured with a split pin.

Suspension Z-1: The suspension is welded of two steel plates between which there are lugs forming a fork for the semi-trailer tow bar. A component part of the suspension is also a pin with a safety split pin. The suspension is bolted on the case by means of two bolts with nuts and spring washers.

Trailer hitch BZN-002: is formed by the suspension with the weight carrier and by the weight carrier. The suspension with the weight carrier is welded of two flat arms and a fork for the connection of the extension body.

The open end of the carrier is meant for insertion of 33 kg weight. The weight carrier consists of a steel rod onto which a fork is welded. The carrier is to be mounted on the front part of gear case by means of two bolts with nuts and spring washers. Weights of 5 kg are secured on the rod by tightening crank.

Fig. 1
Gearbox DSK-317/S
with suspension Z-1



IV. SAFETY REGULATIONS

⚠ This international safety symbol indicates important messages concerning safety. On seeing the symbol, be aware of a possible injury threatening to yourself or to other persons and read the attached information carefully.

1. The machine operator must be over 18 years of age and must possess driving licence A, B, T or higher. He/she must get acquainted with these instructions for use and have awareness on general principles of work safety.
2. ⚠ Do not start the engine if it is not connected to a working implement. Do not remove it while in operation. Do not start the engine in enclosed spaces! Pay increased attention when handling the engine after it has been switched off as the exhaust of engine silencer remains hot. Make sure that there are no leakages and spills on engine parts when refuelling. Should they happen to occur, dry out the stained parts or wait until the petrol evaporates.
3. While working with all machines of the system, all other persons and animals must be outside the machine's working space. The operator can continue working only after they have been shown to a safe distance.
4. ⚠ Removal of any protective equipment and casing from the machines is forbidden!
5. ⚠ All working implements must be transported on the semi-trailer. Traffic regulations for assemblies designed for transportation are as follows:
   - Under reduced visibility their operation is prohibited on all public roads.
   - Under unreduced visibility their operation is prohibited on Class I and Class II roads with an exception of their perpendicular crossing. Operation on surface roads of Class III, field, forest and public roads is permitted. According to regulations stipulated in § 34 Article 3 of Decree no. 99/89 Gaz. issued by the Federal Ministry of Interior, the operator is obliged to apply for permit at the police traffic inspectorate which is to define other terms for the operation of the assembly on the surface communications. These will be specified on the back page of Technical Certificate which is attached to the Instructions for use of engine unit. Exceptions holding for assemblies are as follows:
     - § 45, 48 Semi-trailes are not equipped with sidelights and direction signal lights
     - § 44 Driving unit and semi-trailer are not equipped with headlights.

The assemblies are authorized by the Ministry of Transport of Czech Republic under Ref.no. 24 813/93-222.

Maximum allowed speed is 15 km/hr.

6. When working with assemblies with cutting mechanisms, shares and snow ploughs, pay increased attention to safety. Transport of these assemblies on surface roads is prohibited with an exception of their perpendicular crossing.

7. Safe slope accessability of all working machines is 7 degrees.

8. The machines must not be operated in recreational and health-care zones at night from 21.00 to 07.00 o'clock.

9. Prior to starting the operation of any working machine of the system, check the function of the safety engine switch installed on the left handle of driving unit handlebars.

The function of safety ignition switch is depicted in **Fig. 2**.

The safety ignition switch has three functional positions.

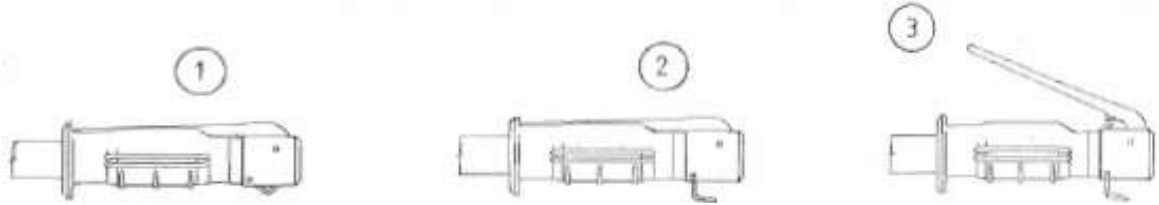
Position 1 is used to start the engine. to adjust engine speed or at a short-term standstill of the machine with the engine in operation.

In Position **1** of the safety ignition switch shift always to neutral on the gearbox or disengage the clutch of travel wheels and the drive of working implements.

Position 2 is used for machine operation. During the machine operation, the wire dog has to be at all times released!

Position 3 is used to switch off the engine in critical situations or to switch off the engine at the end of work.

Fig. 2



10. Driving across easily inflammable materials such as hay or straw should be prevented.

11. All kinds of machine repair, adjustment and lubrication should be made with the machine at standstill.

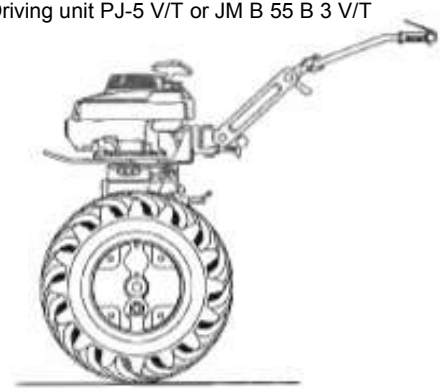
12. Pay increased attention when backing with the assembly of small one-axle tractor and trail implements that are to be connected in the rear suspension. When starting the machine back a tilting might occur if the machine is incorrectly steered by the operator. Driving on reverse gear, make sure that a sufficient manoeuvring space is behind you. Count with a certain inertia of the assembly after reducing engine speed to idle run. Driving on reverse gear, use the safety ignition switch BVA-96 in Position 2 in order to be able to instantly stop the machine by switching off engine in the case of any critical situation!

13. When starting the engine, shift to neutral on the gearbox!

V. INSTRUCTIONS FOR USE

Gearbox **DSK-317/S** is used as a basic assembly group for the small one-axle tractor (Fig. 3).

Fig. 3
GENERAL-PURPOSE SMALL ONE-AXLE TRACTOR
Gearbox DSK-317/S
Tow axle TN-01, TN-05 or TN-07
Driving unit PJ-5 V/T or JM B 55 B 3 V/T



ASSEMBLING THE SMALL ONE-AXLE TRACTOR (Fig. 4)
Adhere to the following two main principles:

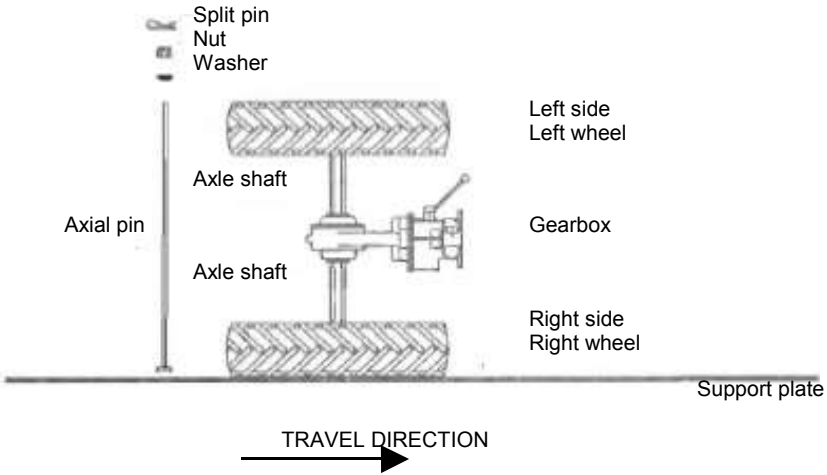
1. Head of axial pin must be always on the right hand side of the gearbox (viewed from the operator's site).
2. V-tread on the tire must be in travel direction.

Assembly procedure:
Put the axial pin for the respective axle track width into the hole in the right wheel hub. Put the wheel on a firm and clean support plate so that the axial pin points upwards. Then install the axle shaft according to the required wheel track width, and slide on the gearbox so that the gear change lever is at the top. Install the second axle shaft, the left wheel and turn the assembly so that the machine stands on the wheels.

⚠ In the wider wheel track (610 mm) the longer axle shaft must be always at the gearbox!
Mount the washer with the hexagonal, screw in the safety nut and tighten the entire tow axle with the axial pin.

⚠ Make sure that the hexagonal surfaces on the axial pin head, washers on the PTO-shaft of the gearbox and axle shafts fall into hexagonal holes in counterpieces. This is the only way how to ensure a perfect connection of the tow axle with the gearbox. All connection surfaces must be clean!

Fig. 4
Assembling small one-axle tractor



Axial pin must be properly tightened! If not so, the hexagonal surfaces on the gearbox PTO-shaft, in the axle shafts and in wheel hubs might get squeezed.

⚠ Maximum tightening torque is **75 Nm**.

After the tightening, secure the nut with a safety split pin.

For the connection of attachable implements of the VARI system (apart from semi-trailers) it is necessary to use the trailer hitch **BZN-002**. It is connected to the gearbox case by means of two bolts, nuts and spring washers. The trailer hitch is mounted on the gearbox case so that the suspension fork is on the rear side of the gearbox case beneath the upper suspension (see Fig. 5).

On the side-boards of the trailer hitch there are several holes.

This design makes it possible to mount the trailer hitch on the gearbox case in two positions so that the trailer hitch fork can be at a smaller or larger distance from the axle axis. For most works it is advised that the trailer hitch is mounted on the gearbox case so that the suspension fork is nearer to the axle axis.

This makes the steering of the assembly easier.

One-axle semi-trailers are connected by means of the upper suspension **Z-1** on the gearbox case. The connection is made by sliding the semi-trailer tow bar into the suspension fork and by putting the peg into the suspension. The peg is to be secured by safety split pin.

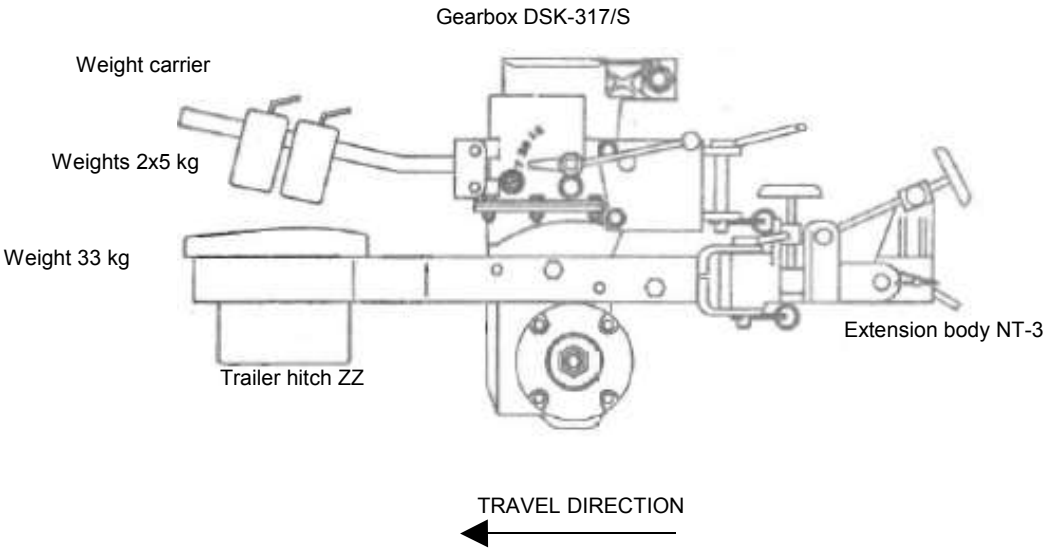
Connecting the driving unit:

Driving unit Model **HONDA PJ-5 V/T** or Model **JM B 55 B3 V/T** is a power source for driving the small one-axle tractor.

It is to be connected to the gearbox case by means of two quick-operating clamps and by a tightening crank which secures the pin on the handlebars bracket.

In the lower part of the driving unit a cylindrical flange is formed for a centrifugal clutch. This flange is to be mounted into a flange with the clutch disc, formed in the upper part of the gear case. The pin on the handlebars bracket falls into the case hole.

Fig. 5
Gearbox DSK-317 with trailer hitch BZN-002 and extension body NT-3.

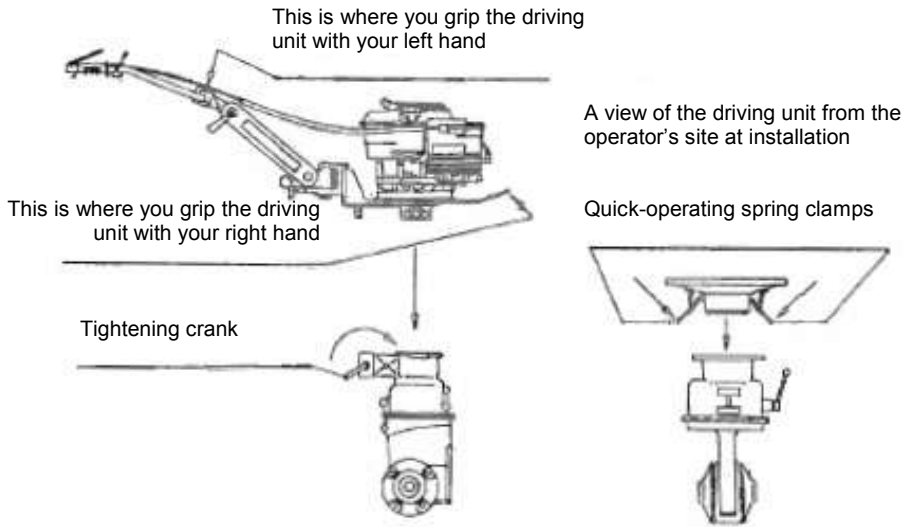


For an easier installation of the driving unit onto the case it is possible to lightly move the unit to and fro until the flange on the engine settles on the gearbox flange front end. The driving unit is then to be secured by two quick-operating clamps hung on the engine. Latches of quick-operating clamps are to be hooked into notches in rivets on gearbox case lugs and the clamps are clipped. Tightening of the pin on the handlebars bracket is made by a crank located on the left side of gearbox flange. A reverse procedure is to be used for the removal of the driving unit.

⚠ All connecting surfaces should be kept clean.

Be also particular about avoiding a deformation of the connecting surfaces, which might result in a more difficult connection of attachable implements or driving unit to the gearbox.

Fig. 6



Method of driving unit installation is presented in Fig. 6

USING THE GEARBOX DSK-317/S:

Gearbox DSK-317/S can be used for all works with the passive implements of the VARI system.

If some of tow axles is mounted on the gearbox case, a small one-axle tractor comes to existence. Wheels have freewheel hubs with a freewheel flexible finger enabling four positions of the freewheel.

Finger positions are illustrated in Fig. 7.

LOCKING POSITION: At this finger position the wheel is firmly connected with the hub. Tip of the finger draw bar points either into the wheel centre or from the wheel centre out. This position serves for travel straight forward or back. Turning with the assembly is however difficult with this position.

POSITION OF CURB IDLE SPEED FORWARD: At this finger position in wheel turning forward the wheel is firmly connected with the hub. When the wheel turns back or in a situation when the wheel turns faster than the axle, the bevelled surface on the finger enables a partial disengagement of the finger from the notch in the hub, which manifests as a clapping sound.

Tip of the finger draw bar points in the turning direction of the wheel. This position is used in field works and for driving with one-axle semi-trailers.

POSITION OF CURB IDLE SPEED REVERSE: At this finger position in wheel turning back the wheel is firmly connected with the hub. When the wheel turns forward or in a situation when the wheel turns slower than the axle, the bevelled surface on the finger enables a partial disengagement of the finger from the notch in the hub. Tip of the finger draw bar points against the turning direction of the wheel back. This position is used in field works.

POSITION OF IDLE RUN: The finger is disengaged and the draw bar is in the slanted grooving on the disc wheel lug. The wheel can freely turn. This position is used in the manual transport of the machine.

⚠ To make the finger fall into the required position, it is necessary to drive a bit with the machine and/or move the machine by means of handlebars from side to side until the finger falls in.

In case that the finger cannot be disengaged, drive a bit with the machine to let the finger out of engagement.

⚠ V-treads on tires must point forward in the direction of machine travel.

⚠ Adhere to the correct tire inflation at **120 kPa**!

This inflation is fully sufficient for most working operations as well as for driving on roads. Also, both wheels must be inflated to the same value. If not so, the machine tends to turn to the side with the underinflated wheel.

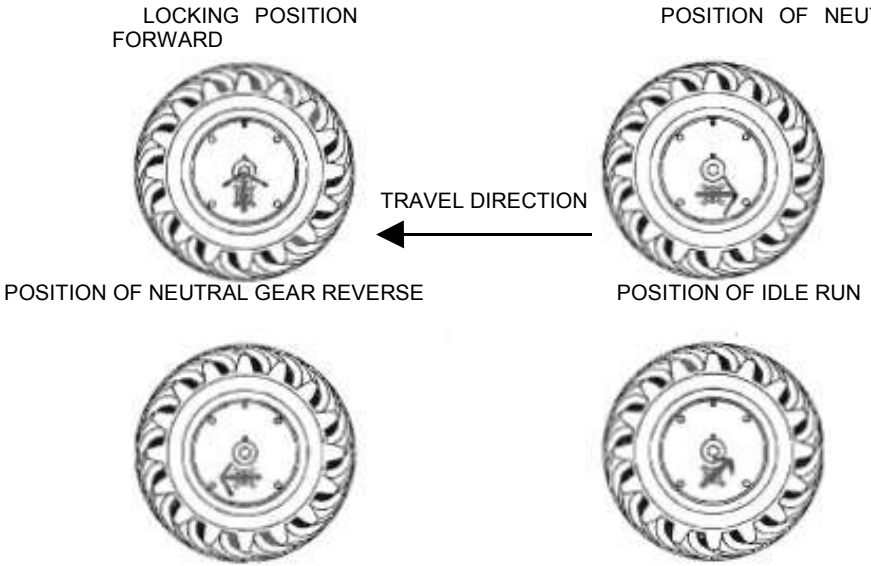


Fig. 7

If the wheels are underinflated, there is a danger of tire spinning on the rim at a sudden wheel engagement and hence a danger of air hose valve breaking away.

CONTROLLING THE GEARBOX MODEL DSK-317/S:

Gearbox Model DSK-317/S has three forward gears and one reverse gear. Gears are changed by the gear change lever which is located on the left side of the gearbox. Indicator on the gear change lever points to letters casted on the gearbox case indicating the gears:

2 – Gear 2
1 – Gear 1
0 – Neutral
R – Reverse
P – Travel speed (Gear 3)

Gears should be changed only at curb idle revolutions of the engine. If the engine revolutions are higher than the curb idle speed, the centrifugal clutch on the engine is in engagement, the toothed wheels of gear system in the gearbox are turning and this is why the gear cannot be changed. If it is to smoothly shift gear even at the curb idle speed of the engine, open the throttle and immediately reduce the speed again down to curb idle speed and try to shift the gear once again. It is also possible to manually drive a bit with the machine with the shifted gear and than change the gear.

If all this fails, it is necessary to readjust the engine curb idle speed.

Fig. 8

Arrestment of Gear **1** and **R**everse gear is an aid at working with the passive implement, the design preventing the operator to accidentally shift to Gear 3 instead of to Reverse gear.

The arrestment draw bar is on the left side of the gearbox in front of the gear change lever. If the pin that is in the arrestment draw bar is plugged in the sheath notch, it is only Gears **1**, **0** and **R** that can be shifted; Gears **2** and **P** (Gear 3) are impossible to shift.

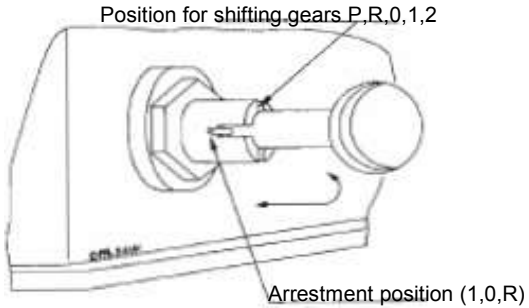
The arrestment of gears is to be made only with the machine at standstill and with the shifted neutral.

Travel with the assembly:

Connection of one-axle semi-trailer to the small one-axle tractor gives an assembly for the transport of materials, attachable implements and machines. Prior to travelling with the assembly you have to adjust the guiding handles to a position in which you can control the accelerator lever and the lever of safety ignition switch on handrails of guiding handles also when turning with the assembly.

On paved roads and on Class III roads it is advised to use travel gear (indicated as **P** on the gearbox) according to semi-trailer load and terrain character. If the engine starts losing speed and performance while driving in the field or up the hill, and there is a danger of possible clutch slippage, stop the machine and shift to a lower gear with no delay.

Fig. 8



Gear is to be changed only at curb idle speed of the engine!

If you travel down the hill and latches on the wheels are set to the position of curb idle speed forward, use the foot brake on the semi-trailer to provide additional braking for the assembly to prevent the start of the assembly on a higher gear and hence its impaired maneouvrability.

Do not overload the assembly. Brakes of semi-trailer are sized for a total assembly weight (small one-axle tractor + semi-trailer+effective load) of max. 600 kg.

CONNECTION OF EXTENSION BODY NT-3:

Extension body **NT-3** is used for the connection of attachable implements to the machine and for the adjustment of their working position. The Extension body **NT-3** is connected into the fork of trailer hitch **BZN-002** by means of a pin and a safety split pin (see Fig. 5). Two adjustment bolts on lugs of the extension body are to be set so that a clearance remains between the bolt head and the fork.

Its sizes see Instructions for use of the Extension body NT-3.

The extension body **NT-3** serves for the connection of all attachable implements by means of a pin and a safety split pin. Extension body has separate Instructions for use.

Use of additional weights 33 kg and 2 x 5 kg:

At working with attachable implements it is desirable that the assembly has a good balance. This is why the additional weights are used.

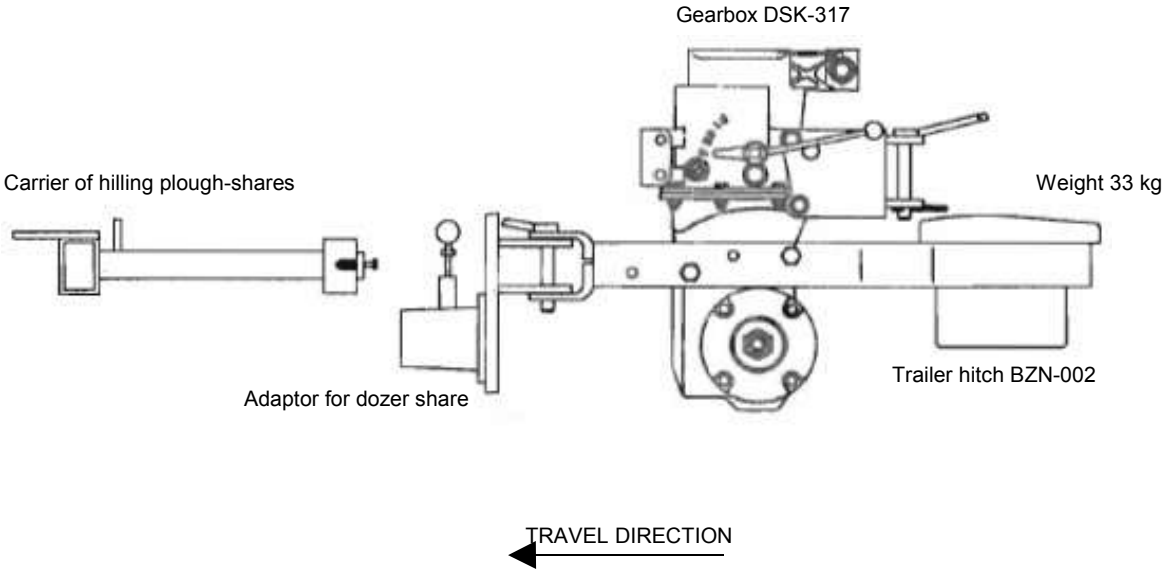
The big weight of 33 kg is to be inserted into the open end of the trailer hitch BZN-002. This weight serves to load the tow axle and to increase the adhesion of wheels by which the force transmission from wheels to the terrain is enhanced. Two small weights of 5 kg each serve to balance the machine. They are to be slid on the weight carrier that is mounted on the lugs in the front part of gearbox by means of two bolts with nuts and spring washers. The weights are to be secured on the carrier rod by means of a holding screw.

The assembly of small one-axle tractor can also be attached a dozer share to rake snow or light-weight loose materials.

Adaptor for the dozer share is to be mounted on the gearbox **DSK-317/S** into the trailer hitch BZN-002 by means of two pins with safety split pins. The trailer hitch must be turned so that the suspension fork points forward in the machine travel direction (Fig. 9).

Fig. 9

Gearbox Model DSK-317 with trailer hitch BZN-002, adaptor for dozer share and hilling plough-share carrier



ATTACHABLE IMPLEMENTS THAT CAN BE USED WITH THE GEARBOX MODEL DSK-317/S:

connected in trailer hitch BZN-002 and extension body NT-3:

Spiked harrow ABR-354, BH-138, BT-593
Chisel-shovel tiller AKY-356
General-purpose weeding machine ELKRO P-992
Double-furrow plough APH-352
Single-furrow plough APJ-018
Digging blade AVR-453
Potato digger AVB-305

connected in trailer hitch BZN-002:

Sowing machine SeXJ 7 and SeXJ 11
Double-row bulb planter
Potato planter
Carrier of hilling plough-shares NM1-001 with shares AHR-355 or AHR-360

connected in adaptor ASR-120 for dozer share:

Dozer share ASR-349 or ASR-339 (with the use of reduction member)

connected onto gearbox PTO-shaft:

Tow axle TN-01, TN-05

connected in suspension Z-1:

One-axle semi-trailer ANV-350 U or ANV-368
Implement carrier AV-1

VI. MAINTENANCE AND CARE

To ensure a long-term satisfaction with our products, the machines and attachments must be given a proper care in terms of their current maintenance and treatment.

It is therefore advised to adhere to the following instructions:

1. Toothed set of gears work in an oil bath. In new machines, oil replacement should be made after the first **10** hours of operation and then after **100** machine hours or after the end of the season. This will ensure that the gears will not suffer excessive wear. Oil level is to be checked once a month.

Oil should be drained when warm; its draining from the gearbox is easier.

Oil exchange is made so that the drain plug (in the lower part of gearbox) is unscrewed, the gearbox is placed horizontally and the oil is drained into a prepared vessel. New oil is to be poured into the gearbox through a pour-in hole in the upper part of the gearbox beneath the gear change lever. Oil should be filled below the lower edge of the plug (volume is about 1.75 litre). Should the sealing under the plugs be damaged, replace it with a new one.

When draining and filling oil from/to the gearbox, adhere to principles of hygiene and basic regulations of environment protection.

For a perfect lubrication of the gearbox it is necessary to use transmission oils that meet specifications according to API GL-4, GL-5, SAE 90 or even better 80W-90.

Recommended oils are SHELL SPIRAX MA
SHELL SPIRAX MB.

Czech oils meeting the specifications are transmission oils MOGUL TRANS 90 H and MOGUL TRANS 80W-90.

Interval for gear oil exchange is about **100** machine hours. This can be extended up to **130** hours of operation with the use of higher grade oils (API GL-5, SAE 80W-90).

2. Check bolted connections for their proper tightening. The tightening of axial pins and bolts in axles and tiller assemblies should be checked prior to each employment.

3. Keep all bearing and connecting surfaces clean. If the machine or the working implement are to be put out of operation for a longer period of time, grease the surfaces lightly with conservation oil and protect them against weather impact. In the flange for the connection of the drives of cutter bars, snow blades, dozer shares and brush sweepers the connecting points should be oiled with a thin layer of plastic lubricant (MOGUL A 00).

All Bowdens should be greased with a few oil drops after the end of the season.

Freewheel hubs in tow axles are to be once a month oiled with plastic lubricant (MOGUL A 00) by using a forced-feed lubricator .

4. At the end of the season, clean the machines from all dirt. In tow axles disassemble the freewheel hubs of wheels, wash them in petrol, assemble them again and oil them with plastic lubricant (MOGUL A 00) by using a forced-feed lubricator.
5. When cleaning and washing the machine in water, solvents and other chemicals, proceed to adhere to valid regulations and legislation on the protection of water courses and other water resources against their pollution and contamination with chemical substances.

VII. STORAGE

Machines and attachable implements should be kept at a dry place.

Access of unauthorized persons to the machines and implements should be prevented.

Prior to a long-term storage, the petrol tank of the engine should be emptied. Clean the machines from dirt and plant residues. Cover the clutch disc in order to protect it against pollution during the storage.

When putting out of operation a gearbox with the mounted tow axle, use the support leg ON-01 supplied in a complete set together with the gearbox. The support leg is to be inserted in the hole of the upper suspension Z-1.

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VIII. LIST OF PARTS

Order.no.	Item no.	Part no.	Description	Pcs
3421		532 9 3282 022	**GEARBOX DSK-317/S**	
106 004	1	532 0 3251 003	Case	1
106 005	2	532 0 3214 009	Worm shaft	1
106 500	3		Bearing 30204 ČSN 024720	1
106 032	4	532 0 9220 032	Adjustment filler	2
	5	532 0 9220 085	Adjustment filler	2
101 633	6		Ring 42 x 2 ČSN 029281.2	1
106 006	7	532 0 3221 008	Lid	1
106 543	8		Bolt M6 x 12 ČSN 021143.50	4
106 007	9	532 9 3226 008	Complete worm wheel	1
106 008	10	532 0 9220 106	Washer	2
106 009	11	532 0 9220 107	Washer	2
106 501	12		Bearing 6206 ČSN 024630	2
136 508	13		Retaining ring 62 ČSN 022931	2
121 515	14		Gufero 48x62x8 ČSN 029401.0	2
106 503	15		Ring 30x2 ČSN 029281.2	2
106 504	16	532 0 9520 015	Felt sealing	2
106 010	17	532 0 9526 004	Support ring	2
106 505	18	532 0 9620 009	Sealing	2
106 011	19	532 0 3832 008	Lid	2

Order.no.	Item no.	Part no.	Description	Pcs
106 547	20		Bolt M8x16 ČSN 021103.20	8
104 574	21		Washer 8 ČSN 021740.00	15
106 539	22		Sealing ring 14x18 ČSN 029310.3	3
110 506	23	532 0 9016 036	Plug M14x1.5	2
110 515	24		Retaining ring 20 ČSN 022930	2
106 012	25	532 0 3024 005	Gear change wheel	1
106 013	26	532 9 3253 005	Upper case	1
106 506	27		Bearing 6200 ČSN 024630	1
106 507	29		Bearing 6203 ČSN 024630	1
110 518	30		Bearing 6201 ČSN 024630	5
106 036	31	532 0 9220 113	Washer	2
106 038	32	532 0 3812 020	Pinion gear	1
136 037	33	532 0 3024 013	Countershaft	1
110 516	34		Retaining ring 40 ČSN 022931	1
106 015	35	532 0 3822 008	Layshaft	1
106 044	36	532 0 3830 002	Feather	1
106 016	37	532 0 3021 005	Toothed wheel	1
106 039	38	532 0 3021 010	Toothed wheel	1
106 018	39	532 0 3821 010	Sheath	1
106 541	40		Retaining ring 16x20 ČSN 029310.5	1
106 509	41	532 0 9746 021	Spring	1

Order.no.	Item no.	Part no.	Description	Pcs
106 510	42		Ring 10x6 ČSN 029280.2	1
106 019	43	532 0 3824 006	Latch	1
106 542	44	532 0 9126 014	Nut M16x1.5	1
106 337	45		Pin 2x20 ČSN 022151.1	1
106 538	46		Ball 16 ČSN 025181.21	1
106 035	47	532 0 9220 103	Washer	1
106 021	48	532 9 3832 002	Shift gate	1
106 511	49		Ring 14x10 ČSN 022930	1
110 513	50		Retaining ring 14 ČSN 022930	1
106 545	51	532 0 9220 114	Shim block	1
106 546	52	532 0 9020 115	Shim block	1
110 021	54	532 0 9020 002	Holding screw	1
110 505	55	532 0 9746 003	Spring	1
110 517	56		Ball Ø 7.938 ČSN 023680	1
106 525	57		Nut M14x1.5 ČSN 021401.20	1
106 512	58	532 0 9220 108	Sealing ring	1
106 527	59		Feather 5e7 x 5 x 14 ČSN 022562	1
106 513	60		Gufero 30x40x7 ČSN 029401.0	1
106 022	61	532 0 3621 008	Clutch disc	1
106 514	62	532 0 9632 001	Sealing	1
106 533	63		Washer 13 ČSN 021753.04	1

Order.no.	Item no.	Part no.	Description	Pcs
106 540	64		Nut M12x1.25 ČSN 021403.04	1
110 008	65	532 0 9016 011	Bolt M8x30 ČSN 021403.24	2
110 525	66		Bolt M8x25 ČSN 021103.10	5
1800185	67		Nut M8 ČSN 021401.20	7
106 040	68	532 0 9321 009	Rivet 16	2
106 043	69	532 0 3941 002	Indicator	1
106 001	70	532 9 8059 002	Gear change lever – assembly	1
106 524	71	532 0 9245 001	Split pin	1
106 023	72	532 0 9043 002	Holding screw	1

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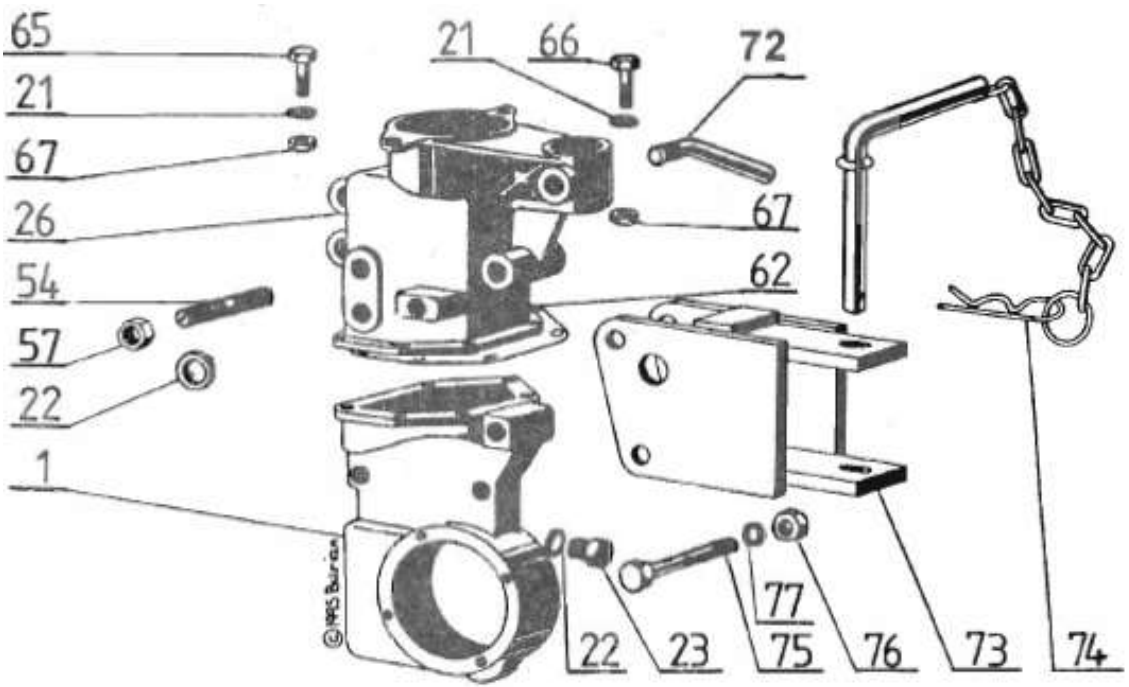
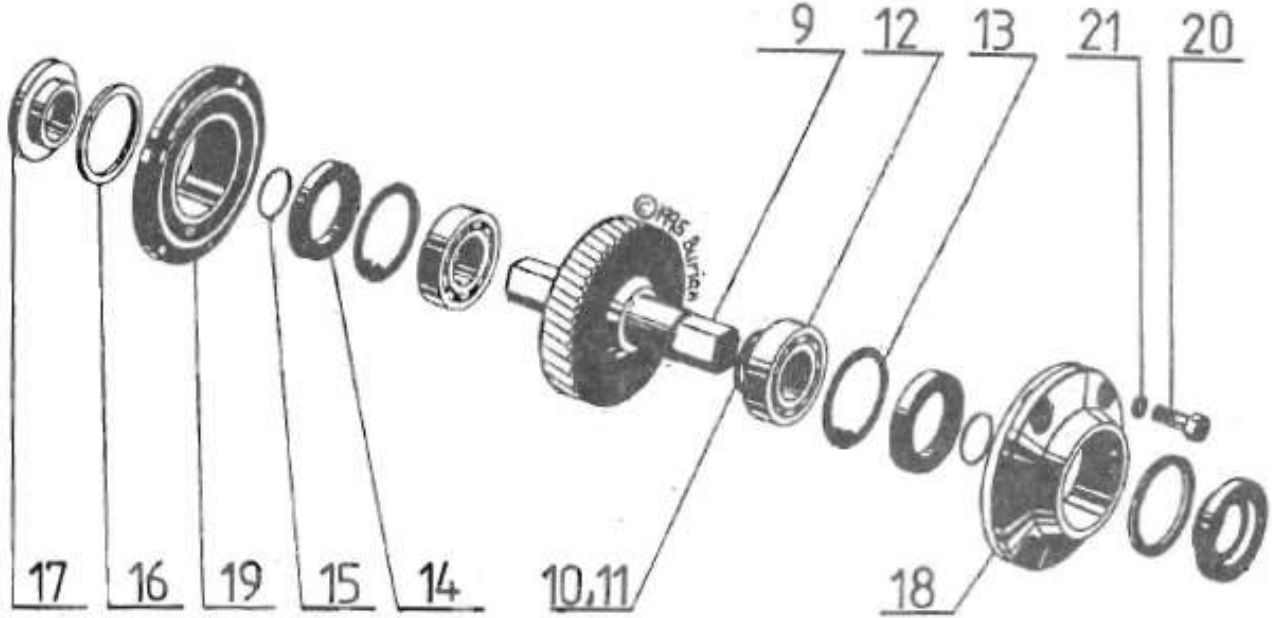
Gearbox and suspension

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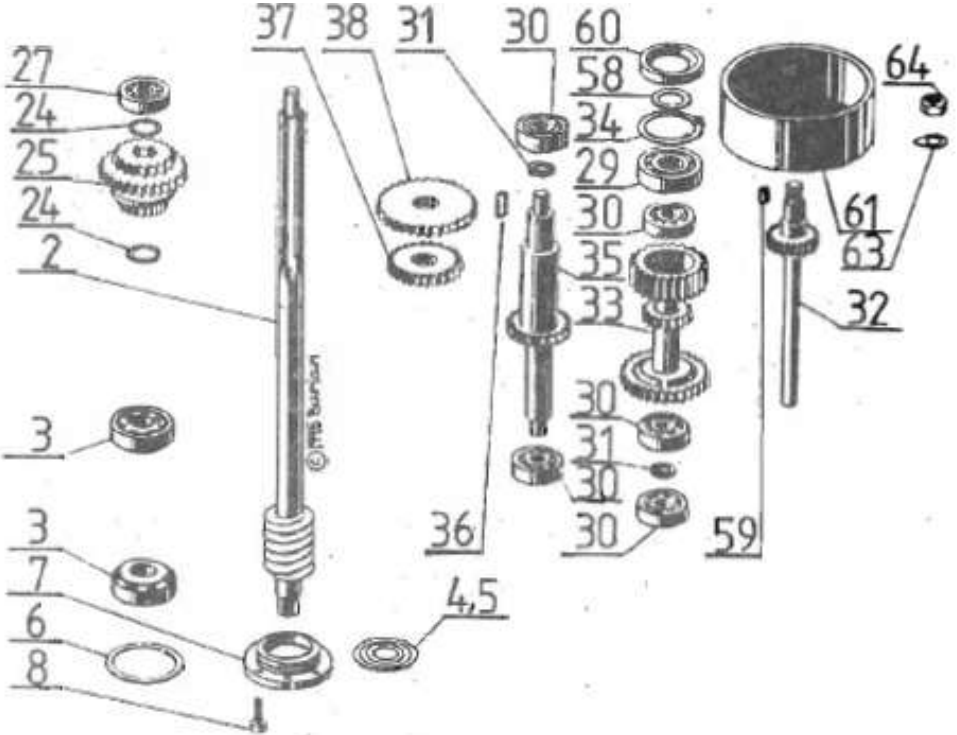
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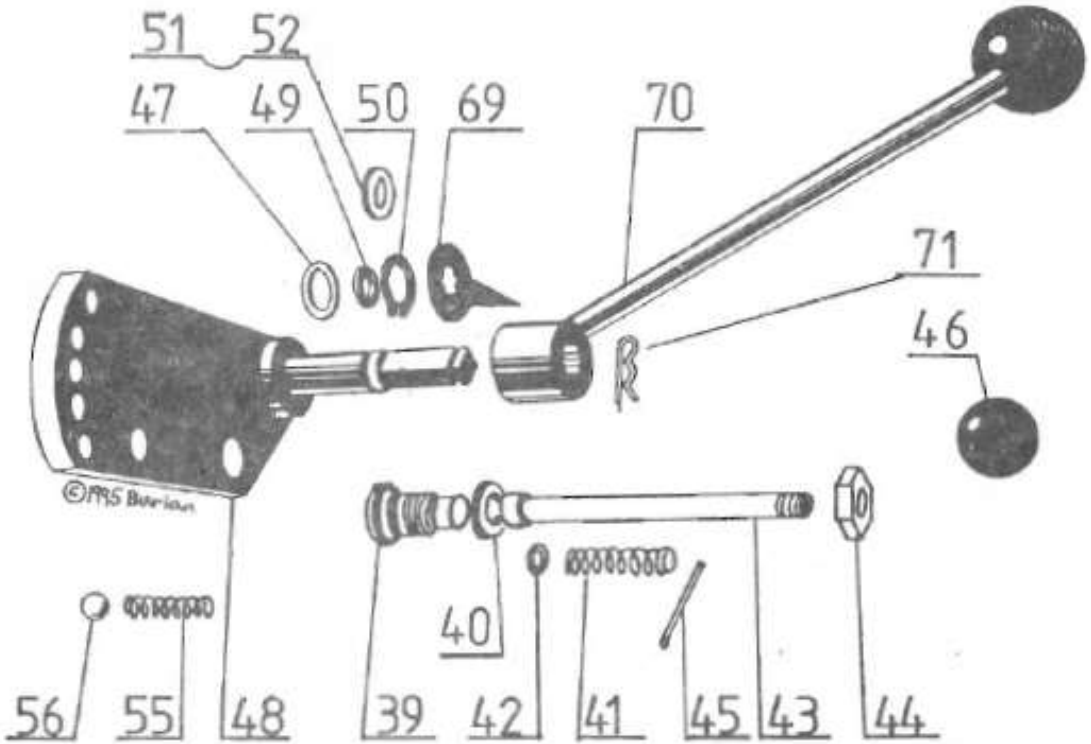
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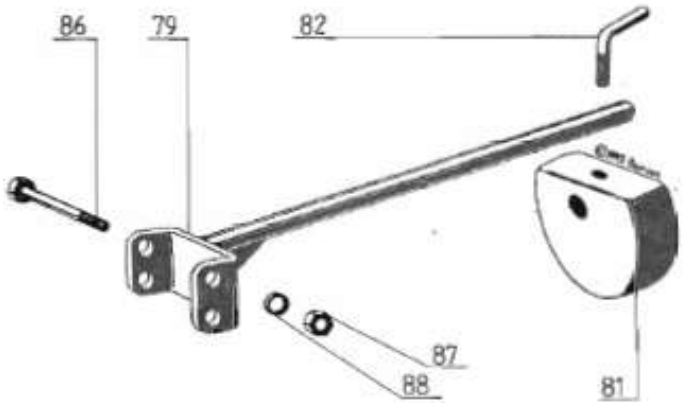
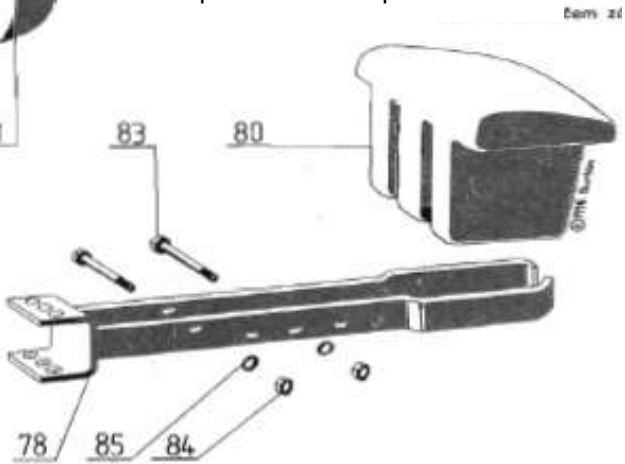
Order.no.	Item no.	Part no.	Description	Pcs
3704		532 9 1972 004	**SUSPENSION Z-1**	
106 002	73	532 9 1937 001	Suspension welded	1
121 001	74	532 9 9316 038	Complete pin	1
106 544	75		Bolt M10x75 ČSN 021101.25	2
106 529	76		Nut M10 ČSN 021401.25	2
106 530	77		Washer 10 ČSN 021740.05	2
3710		532 9 1972 003	**TRAILER HITCH BZN-002**	
107 002	78	532 9 1846 004	Weight carrier – welded	1
107 003	79	532 0 1956 003	Carrier welded	1
107 503	80	532 0 1964 001	Weight 33 kg	1
107 001	81	532 0 1932 003	Weight 5 kg	2
106 023	82	532 0 9043 002	Screw	2
107 502	83		Bolt M12x70 ČSN 021101.15	2
106 531	84		Nut M12 ČSN 021401.15	2
106 532	85		Washer 12 ČSN 021740.05	2
107 501	86		Bolt M10x70 ČSN 021101.15	2
106 529	87		Nut M10 ČSN 021401.15	2
106 530	88		Washer 10 ČSN 021740.05	2

Suspension with implement carrier



Suspension with implement carrier



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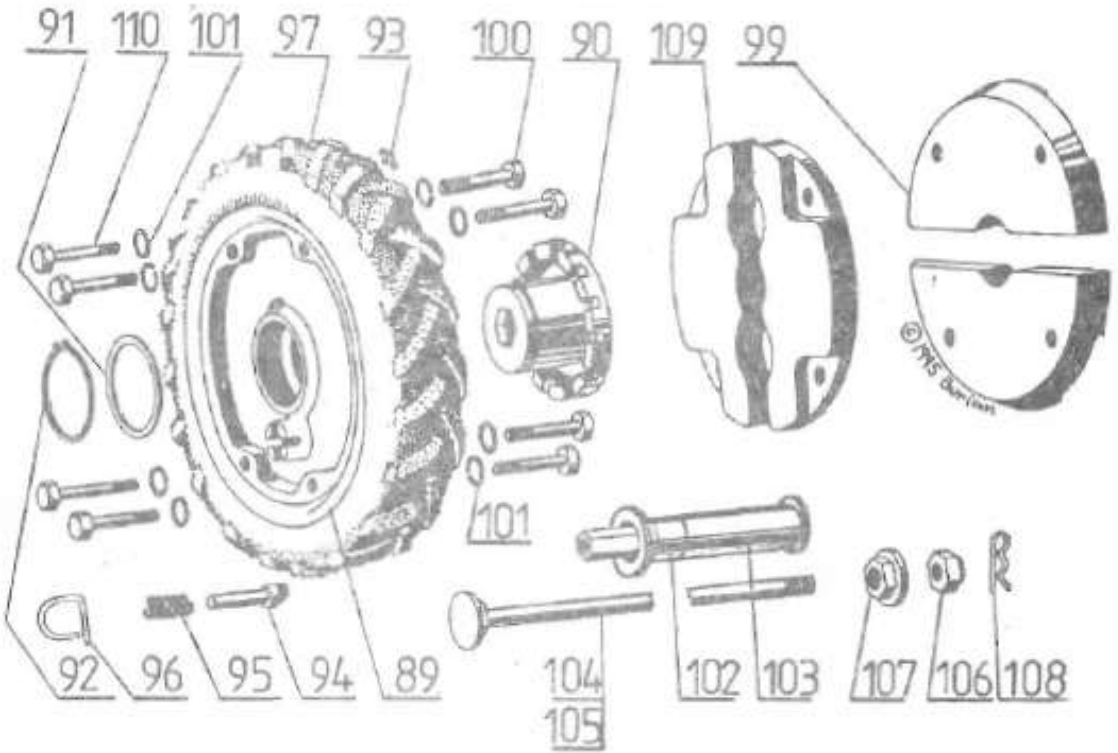
3706		532 9 1796 004	**TOW AXLE TN-01**	
		532 9 1796 006	**Left wheel**	1
		532 9 1796 005	**Right wheel**	1
106 033		532 9 1796 019	Axle 610/480	1
106 515	89	532 9 1724 007	Rim wheel	2
106 516	90	532 9 1724 008	Wheel hub	2
106 042	91	532 0 9520 006	Ring	2
110 532	92		Retaining ring 60 ČSN 022930	2
106 547	93		Head KM 8x1 ČSN 027421.3	2
106 517	94	532 0 1721 001	Finger	2
106 518	95	532 0 9746 007	Spring	2
106 047	96	532 0 9244 001	Latch	2
106 521	97		Tire 5.00″-12″	2
106 520	98		Air hose 5.00″-12″	2
106 523	99	532 9 1725 008	Inner weight	4
106 536	100		Bolt M10x50 ČSN 021101.15	8
106 530	101		Washer 10 ČSN 021740.05	16
106 030	102	532 9 9535 011	Axle shaft 130 mm	2
106 031	103	532 9 9535 012	Axle shaft 480 mm	2
106 024	104	532 9 9316 032	Screw for 610 mm	1
106 027	105	532 9 9316 033	Screw for 480 mm	1

Order.no.	Item no.	Part no.	Description	Pcs
110 531	106		Nut M16x1.5 ČSN 021411.25	1
106 029	107	532 0 9226 001	Washer	1
106 524	108	532 0 9245 001	Split pin	1
106 522	109	532 9 1725 007	Outer weight	4
106 535	110		Bolt M10x40 ČSN 021101.15	8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IX. WARRANTY TERMS

1.The manufacturer answers for design, function, quality and completeness of the supplied machines and implements only under condition that the machine and the implements are treated as specified in the Instructions for use which are an integral art of each machine and implement.

2.Warranty does not apply to safety devices against machine overload, defects resulting from the natural wear of the machine or implement, improper storage or unskilled operation and/or to damages caused by the customer or by third persons.

3.Warranty extincts by the machine or implement breakdown not caused by defect at manufacturer's or resulting from any intervention into machine or implement design without approval of the manufacturer.

4.A detailed description of warranty terms is listed in the Letter of Warranty enclosed to the machine or implement and given to the customer at purchase.

The manufacturer reserves the right of technical modifications and innovations that cannot be included in these Instructions for use. Information on possible modifications and innovations is available on the above address.

The manufacturer warns that the operation of this gearbox with driving units other than above specified is not permissible.

In the case that a driving unit is used different from the above mentioned ones, warranty for this gearbox Model DSK-317/S with accessories will not be accepted.

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