



Operating instructions

for

floor saw

WAKRA BS20E3-1200

Engines no.: _____

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Receiver:	Machine card: BS20-E3 Machine No.: Year.			
Remarks:	Tension: ... 400 ... V Current 32 ... A	Power: .. 15 .. kW	Revolutions at the shaft: 950 Upm	
	Engine No.:	Engine, Typ: <i>Halter</i>	Engine Power: <i>15kW - 20PS</i>	Engine revolutions <i>1445 Upm</i>
	Water pump: V-belt:	Pushing forward engine: <i>Bosch</i> <i>12/24V</i>	Pushing forward control: <i>Puls-Breit-Steuerung</i> <i>12/24V, 10A</i> ...	Remarks:
	Motor pulli: <i>D=85mm</i>	V-belt pulli on the shaft: <i>D=130mm</i>	V-belts: <i>1</i> ... Stk. <i>16P L953</i>	Remarks:
	Main switch: <i>Mery</i> <i>KSWMG 270/25</i> ...	Relais:	Trafo: <i>Huber</i>	Batterie:

Engine card internal:

Empfänger:	Maschinenkarte: BS20E3 Masch. Nr.: Bj.			
Bemerkung:	Spannung: ... <i>400</i> ... V Strom: <i>32</i> ... A	Leistung: <i>15</i> .. kW	Spindeldrehzahl: <i>950</i> Upm	
	Antriebsmotor-Nr:	Hersteller, Typ: <i>Halter</i>	Leistung: <i>15kW - 20PS</i>	Drehzahl: <i>1445 Upm</i>
	Wasserpumpe: Keilriemen:	Vorschubmotor: <i>Bosch</i> <i>12/24V</i>	Vorschubsteuerung: <i>Puls-Breit-Steuerung</i> <i>12/24V, 10A</i>	Bemerkungen:
	Motorenpulli: <i>D=85mm</i>	Riemenscheibe Welle: <i>D=130mm</i>	Keilriemen Welle: <i>1</i> ... Stk. <i>16PL953</i>	Bemerkungen:
	Elektroschalter: <i>Mery</i> <i>KSWMG 270/25</i>	Relais:	Trafo: <i>Huber</i>	Batterie:
Datum:Name:		WAKRA Maschinen GmbH An der Wiese 7, D-79650 Schopfheim Tel.: (0049) 07622/7083, Fax: 07622/64479		

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Konformitätserklärung

Wir erklären in alleiniger Verantwortung, dass die Maschinen:

WAKRA Fugenschneider Typ BS6E3, BS20E3

mit folgenden Normen und Dokumenten gemäss den Bestimmungen der EU-Richtlinien übereinstimmt:

Maschinen Richtlinien 2006/42/CE
Niederspannungsrichtlinien 2006/95/CE
EMV Richtlinie 2004/108/CE
Sicherheit für Fugenschneider EN 13862

Declaration of conformity


We declare under our sole responsibility that the machines:

WAKRA joint cutter type BS6E3, BS20E3

Are confirm with the following standards and documents according to the provisions of the EU directives:

Machinery Directive 2006/42 / CE
Low voltage directive 2006/95 / CE
EMC Directive 2004/108 / CE
Safety for joint cutters EN 13862

WAKRA Maschinen GmbH


Peter Kanne

Schopfheim, 3.März.2017

General

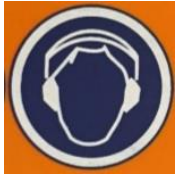
Warnings and symbols



Read owner's manual before the first initiation



Wear safety glasses



Wear ear muffs



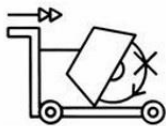
Wear protective gloves



General danger



Danger exist to cut oneself



It is not allowed to move the machine with rotating blade outside of the area in which cutting works have to be performed

With the BS20E3 a floor saw has been developed convincing by its compact size and low weight. The working feed is effected by an electronically adjustable working feed drive. Blade admission left and right side. Blade lowering by crank mechanism. The machine has been specially designed to cut floor joints or floor separating cuts on civil or building engineering. To execute the cuts, you are using a corresponding diamond saw blade up to 1200mm diameter.



Danger

When cutting check that neither your hands nor your foots reach the cutting area, note the you can seriously be injured when getting in contact with the rotating saw blade. If you are not 100% familiar with the use of the joint tailor WAKRA BS20E3, we carefully recommend you unconditional, to read this instruction manual and let you be instructed be a technical staff. Use the machine correctly and only according to its purpose.

Technical data:

WAKRA

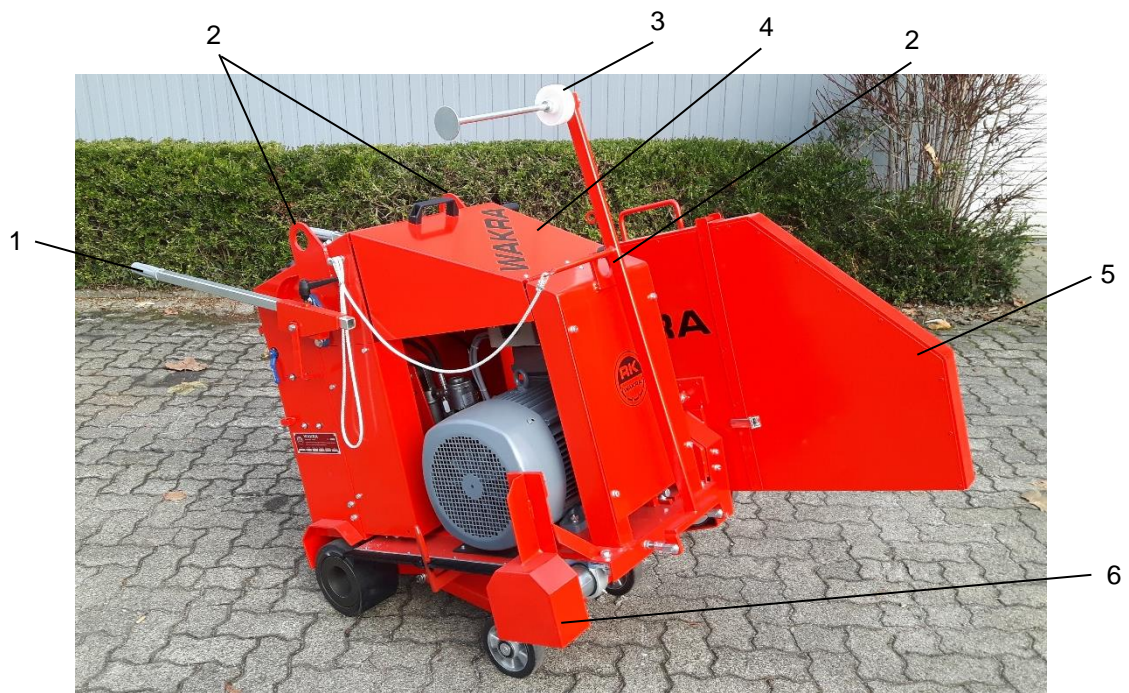
BS20E3-1200

Motor	400 volts/32 Amp.
Motor type	Halter 4 pole.
Engine output	15 kW, 20 hp
Diamond saw diameter	1200 mm
Center hole	35 mm
Cutting depth	510 mm on the left and on the right
Weight	approx. 410 kg
Measurements	LxBxH in mm: 1300x690x750



In order to facilitate the work with the machine, we have made this operating instruction. Please make it available to your staff to assure a correct use and careful treatment.

1. Fast over look



WAKRA BS20E3

- | | |
|-------------------------------------|--------------------------|
| 01 handle | 10 working feed on/off |
| 02 crane mounting | 11 lowering valve |
| 03 direction indicator | 12 pressure switch |
| 04 bonnet | 13 controller feed speed |
| 05 protective hood to diamond sheet | 14 ignition lock |
| 06 empty flange cover | 15 water connection |
| 07 parking brake | |
| 08 feed switch | |
| 09 emergency button | |

2nd Putting into service

2.1 Installation of the diamond saw blade

Important: Switch motor off, remove power connection!

The protective hood 05 must be removed and the engine must be put with the pressure switch 12 in its highest position. Important: The fastening is with a left-hand thread on the right side. A normal right-hand thread is on the left. The two flange parts have to be checked in respect of cleanness, if necessary they have to be cleaned. When fixing the diamond blade, the rotating direction shown by an arrow has to be observed. The fastening screw has to be tightened normally with the fork wrench. An excessive tightening is senseless and leads to increased wear. Now the cover hood 05 must be mounted and fixed again. The enclosed fork key SW22 matches for the corresponding screws



Check that the cover hood is firmly mounted and that it the saw not toots touch the cover hood.

At not right assembly of the diamond saw blade very danger!

You start the engine first after all assembly work is completed completely and the protective hood still is placed correctly!

2.2 Switching On / Off of the electrical main motor

The blade drive is effected by a 400 Volt three phase electric engine with 15kW power. **To start the engine**, use the main switch installed on the engine. When starting the engine check that neither your hands nor your foots reach the cutting area, **note the you can seriously be injured when getting in contact with the rotating saw blade.**

To start turn the main switch 16 (see the next picture) up to the position "star" and you stay in this position until the diamond saw has reached its full revolutions (approx. 10-15 seconds). Then turn the switch up to the position "triangle". According to the direction of rotation of the diamond saw (rotating direction shown by an arrow on the cover hood), you have to turn the main switch in to the opposite direction.



Figure of the main switch



It's important, that the machine is started in this order since otherwise the net is overloaded.

If the engine is operated in the permanent operation into switch position "star", the motor is missing performance and it will take damage. The engine works only in the position "triangle" in the permanent operation.

When turning the engine off you turn the main switch slowly backwards in the 2 steps to the '0-position'. The Emergency-Button 09 on the top of the machine is always at your disposal. The Emergency-Button 09 is pressed by pushing.

It is pointed out, to particularly, that the rearrangement to another tension or current intensity only may be carried out by an expert.

The appropriate prescriptions of the VDE/SEV and the electricity works have to be observed at connection of the engine. The connection network has to be checked. To protect the engine and persons from damage, whether the being device is grounded net-sided unobjectionable has to be checked.

2.3 Waters supply

Before cutting it has to be checked, that the saw blade is provided with sufficiently cooling water. The cooling water is guided through the cutting shaft and the flange. There are two type of flanges. There is a flange with a sealing joint. This flange is always to be used on the side where the saw blade is not installed. The other flange with water channels, has to be used always with the saw blade.



Please note that too little cooling water or only single-sided water supply has an important influence of the life time and cutting characteristics of the diamond saw blade!

3rd Cutting operation

3.1 Working with the electrical working forward feed

As a rule, moving the machine to the cutting position shall be done by pushing the machine, without the electrical working feed. The working feed is thought only for cutting. A DC-Motor, 24 volts and 100 watts, drives the machine over two rubbing wheels for the rear axle about a gear train. The forward working feed speed is adjustable electronically by a potential converter 13. The potential converter permits to adjust the working feed speeds step less between 0 and 12 m per minute.

The switching **On / Off** of the pushing forward working feed is carried out via the feed lever 10.

3.2. depth adjusting

The desired cutting depth is adjusted by a hydraulic system. By turning the lowering valve 11, the saw blade is going down, in to the cut. The simple depth display on the right side of the machine indicates the respective depth of cut in cm. The lifting or complete lifting of the diamond saw blade is done by pressing the pressure switch 12.

3.3 Cutting operation

Aligning the machine according the cutting line. Lowering the direction indicators 03. Check that nobody is near by the saw blade. Start the main engine according instruction under point 2.2 of this manual. Putting on feed levers and turning pushing forward knob on 0 position and then opening water supply. Adjust cutting depth indicate to zero according point 3.2.

With the lowering valve 11 you adjust to the desired cutting depth. Now you turn the pushing forward knob (potentiometer) 13 an till the working feed speed has reached it maximum, so the main motor dos not lose revolutions and that saw blade stays down in the cutting depth. Make sure that the direction indicator 03 follows the predefined cutting line.

Its recommends to start with the first cut as a guide cut of only 5 to 6 cm depth. After this you can easily work with cutting slices of 10 to 12cm depth an till you reach the full cutting depth. Always drive at multiple slices in the same direction. Don't pull the machine back with an the saw blade still cutting since it is so possible that the diamond sheet of high stroke can get.

4th Maintenance and transportation

4.1 Maintenance

Switch the engine off according to section 2.2 and pull out the power cord.

It is recommended to spraying and cleaning the machine with water after the deployment of labor.

Grease periodically the bearings of the cutting shaft, the blade lowering crank mechanism and all other bearings as well as the bearings of the wheels.



Danger

Check the state of the electrical prolongation wire. Never use a faulty cable!

Faulty cables are highly dangerous, you maybe get killed!

4.2. Tensioning of the V-belts

The V-belts being used for driving the cutting shaft have to be strained tight (V-belt should allow to be pressed down approx. 1 cm). Too much tension means bearing load of the engine and cutting shaft and should be avoided.

Changes of the drive-belts:

1. Switch the engine off and remove the power cord
2. Release the tow screws from V-Belt protection
3. Relax the drive-belts by the clamp bolt
4. Push the motor backward
5. Assemble the new drive-belts
6. Stretch the drive-belts with the clamp bolt, (V-belt should allow to be pressed down approx. 1 cm)
7. Assemble the V-belt protection cover with the 2 screws

4.3. Transport

The engine is transported without assembled diamonds sawing blade. Through this injuries and damages are avoided. Loaded the engine using to the central.



Danger

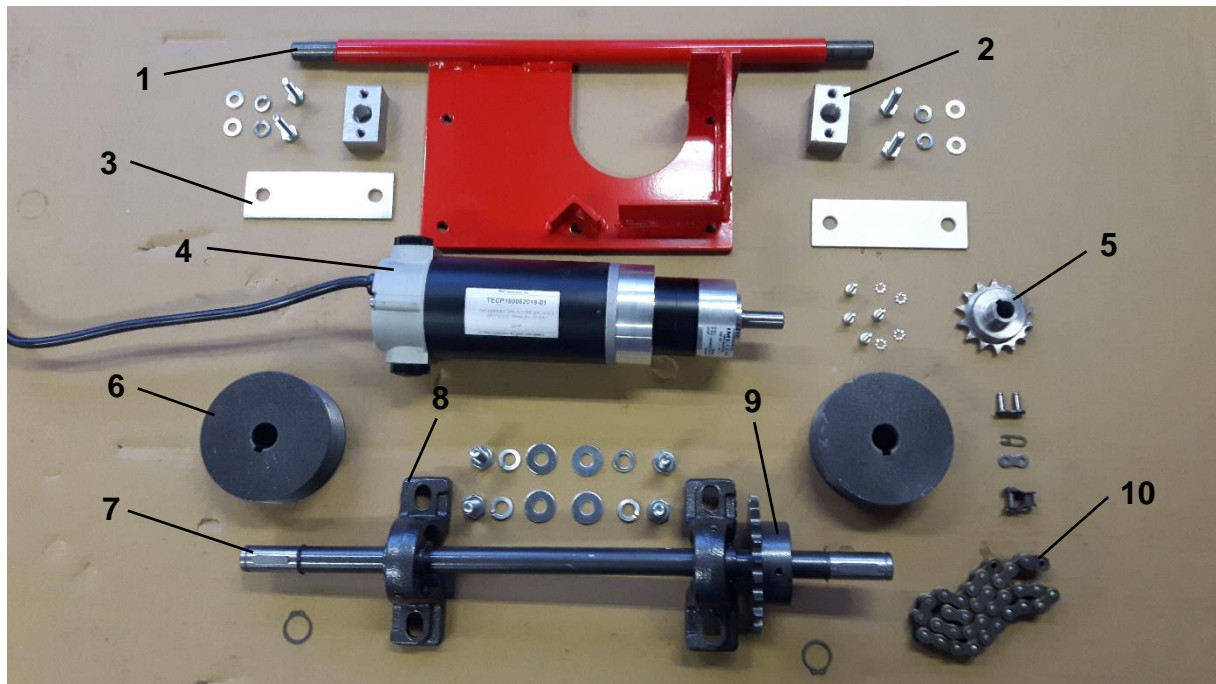
At the transport, check always that the machine never is hangs free suspendedly over persons. Always fix the machine with belts on the transport surfaces.

5th Possible troubles and its elimination

<u>Fault</u>	<u>Cause</u>	<u>Remedy</u>
Engine doesn't work	Electric cable not plugged in	Plugging electric cables in
	no mains current	Current connection through Having expert examined
	emergency button pressed	Pull out emergency button and pressing counters newly
Working feed doesn't run	no electrical supply	making an electrical supply
	Feed lever 02 not 'one' put.	Feed lever on 'one' Putting
	Safeguarding blown	replace the electrical safeguarding
Motor overheats	electrical supply too weak	Using next bigger electrical cables Having expert examined
Direction of rotation of Is wrong	Electric phases	Turn main switch in opposite direction, see on point 2.2 of this manual
Cutting performance weak	Diamond saw is blunt	sharpens the saw with sandstone or abrasive material Make contact with us, our experts will deliver you an optimal Diamond tool.

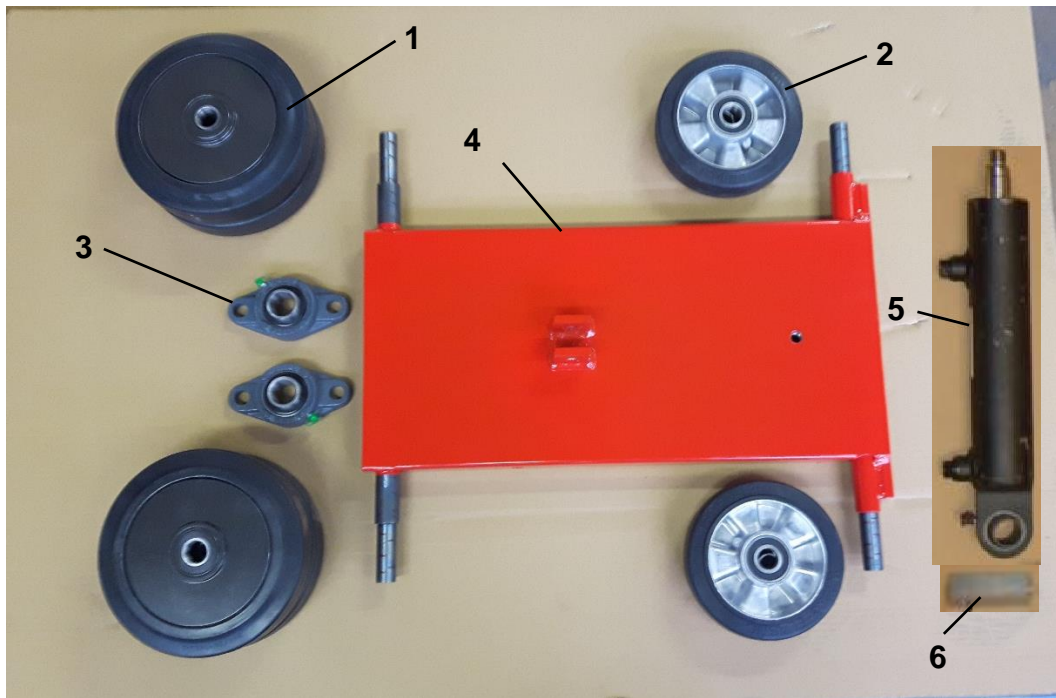
6. Spare Parts

All spare parts are available from our stock. When ordering parts please mention corresponding part number, which you can find on enclosed spare parts list, respectively spare parts drawings.



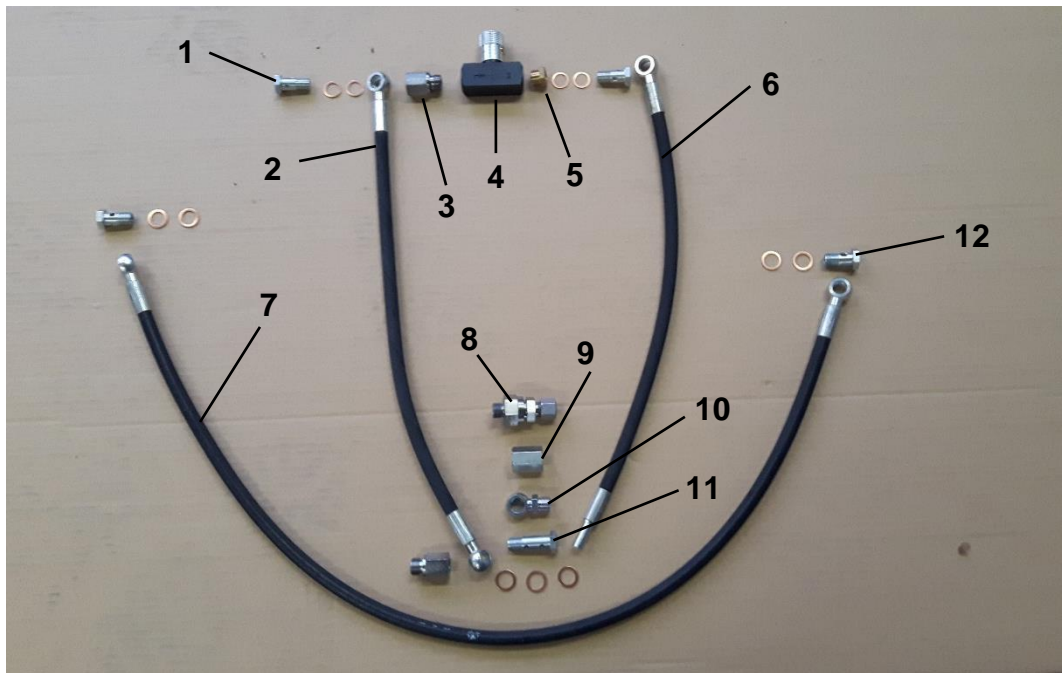
Feed unit

Pos.	Part-No.	Description	Pieces
1	BS20-011	Seesaw for feed unit	1
2	BS20-012	Bearing to seesaw	2
3	BS20-013	Plate	2
4	BS20-014	Feed motor	1
5	BS20-015	Sprocket motor 1/2x5/16" Z14	1
6	BS20-016	Friction wheel	2
7	BS20-017	Drive shaft	1
8	BS20-018	Stand stock UCP 204	2
9	BS20-019	Sprocket drive shaft 1/2x5/16" Z23	1
10	BS20-020	Roller chain 1/2x5/16 l=403mm + lock	1



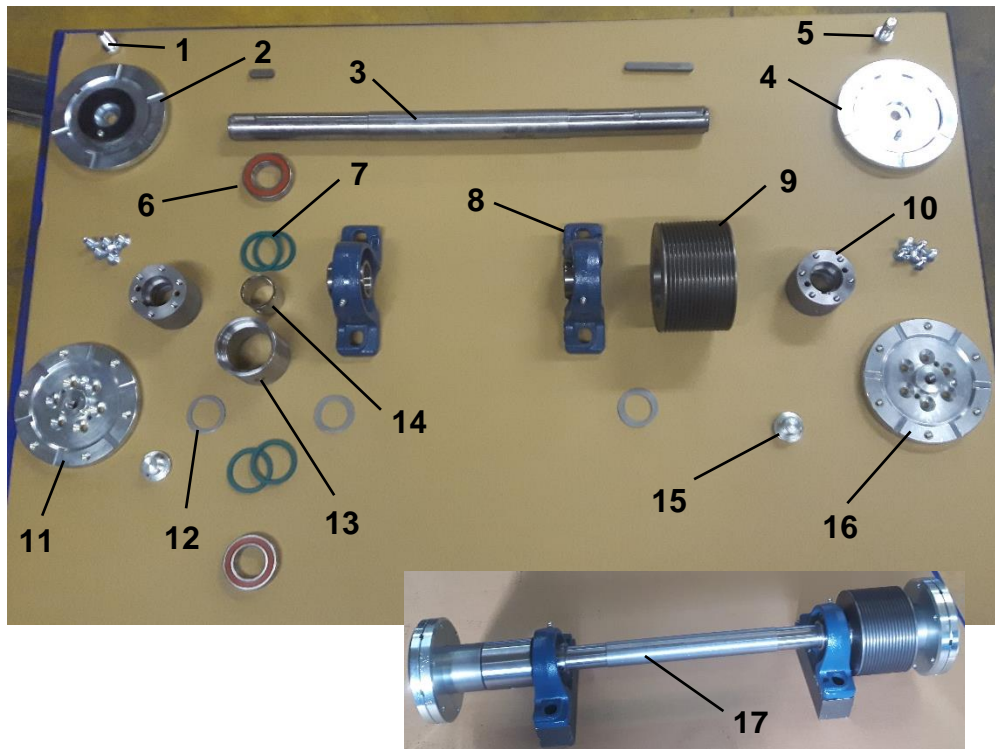
Seesaw with wheels

Pos.	Part-No.	Description	Pieces
1	BS20-030	Back wheel Ø 200mm complete	2
	BS20-031	Bandage 200/50x140	4
	BS20-032	Ball-bearing 6204 RS	4
2	BS20-033	Front wheel Ø 160x50	2
3	BS20-034	Flange bearing UCFL 205	2
4	BS20-035	Seesaw	1
5	BS20-036	Hydraulic cylinders 50/25 - 160	
6	BS20-037	Swivel eye L=45 for Ø 1000mm L=70 for Ø 1200mm	



Hydraulic

Pos.	Part-No.	Description	Pieces
1	BS20-040	Banjo bolt G 1/4"	2
2	BS20-041	Hydraulic hose 480mm HPI – lowering valve	1
3	BS20-042	Reduction G3/8 – G1/4"	2
4	BS20-043	Lowering valve 9N 600S	1
5	BS20-044	Reduction 3/8 – 1/4"	1
6	BS20-045	Hydraulic hose 480mm HPI – lowering valve	1
7	BS20-046	Hydraulic hose 600mm lowering valve - cylinder	1
8	BS20-047	Check valve	1
9	BS20-048	Sleeve M16x1.5	1
10	BS20-039	Nipple ring	1
11	BS20-050	Banjo bolt G 1/4" long cylinder	1
12	BS20-051	Banjo bolt M14x1.5	2
	BS20-052	Banjo bolt M14x1.5 long HPI	1



Cutting shaft with rinsing bush

Pos.	Part-No.	Description	Pieces
1	BS20-060	Hexagonal screw M14x30	1
2	BS20-061	Sealing flange	1
3	BS20-062	Cutting shaft	1
4	BS20-063	Cover flange	1
5	BS20-064	Hexagonal screw M14x30 left	1
6	BS20-065	Deep groove ball bearing 6007 2RS	2
7	BS20-066	Sealing ring 52/42x4	4
8	BS20-067	Pedestal bearing UPC 207	2
9	BS20-068	V-Belt pulley 16 PL Ø 130mm	1
10	BS20-069	Receiving sleeve to driving flange	2
11	BS20-070	Driving flange left / M14 right Ø 35mm / 148	1
12	BS20-071	Suitable disc Ø 45x35x2.0	3
13	BS20-072	Bush for water systems (M8-157)	1
14	BS20-073	Wear sleeve Ø 42x3.5x37	1
15	BS20-074	Fixing screw M22x1.5	2
16	BS20-075	Driving flange right / M14 left Ø 35mm / 148	1
17	BS20-076	Cutting shaft complete	1