



BD-10VS

OPERATING MANUAL LATHE

Original:

GB
Operating Instructions



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EN Operating Instructions (Original)

1.0 About this Manual

This manual is provided by JET, covering the safe operation and maintenance procedures for a **JET Model BD-10VS Metal Lathe**. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. The machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

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3.0 IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING **THIS LATHE**.



– To reduce risk of injury:

1. Read and understand entire owner's manual before attempting assembly or operation of this **machine**.
2. Read and understand the warnings posted on the machine and in this manual.
3. Replace warning labels if they become obscured or removed.
4. This machine is designed and intended for use by properly trained and experienced personnel only. If you are not familiar with the proper and safe operation of **a metal lathe**, do not use until proper training and knowledge have been obtained.
5. Do not use this machine for other than its intended use. If used for other purposes, **JET** disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.
6. Always wear approved safety glasses or face shield while using this machine. (Everyday eyeglasses only have impact resistant lenses; they are *not* safety glasses.)
7. Before operating this machine, remove tie, rings, watches and other jewellery, and roll sleeves up past the elbows. Remove loose clothing and confine long hair. Non-slip footwear or anti-skid floor strips are recommended. Do **not** wear gloves.
8. Wear hearing protection (plugs or muffs) during extended periods of operation.
9. Some dust created by sawing may contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.
10. Do not operate this machine while tired or under the influence of drugs, alcohol or any medication.
11. Make certain the switch is in the **OFF** position before connecting the machine to the power supply. Turn off all controls before unplugging.
12. Make certain the machine is properly grounded. Connect to a properly grounded outlet only. See Grounding instructions.
13. Make all machine adjustments or maintenance with the machine unplugged from the power source.
14. Remove adjusting keys and wrenches. Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
15. Keep safety guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards immediately after maintenance is complete.
16. Check damaged parts. Before further use of the machine, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
17. Provide for adequate space surrounding work area and non-glare, overhead lighting.
18. Keep the floor around the machine clean and free of scrap material, oil and grease.
19. Keep visitors a safe distance from the work area. **Keep children away.**
20. Make your workshop child proof with padlocks, master switches or by removing starter keys.
21. Give your work undivided attention. Looking around, carrying on a conversation and "horse-play" are careless acts that can result in serious injury.
22. Keep an ergonomic body position. Maintain a balanced stance at all times so that you do not fall or lean against the chuck or other moving parts. Do not overreach or use excessive force to perform any machine operation.
23. Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and safer.
24. The machine is intended for indoor use. To reduce the risk of electric shock, do not use outdoors or on wet surfaces.
25. Do not handle plug or machine with wet hands.
26. Use recommended accessories; improper accessories may be hazardous.
27. Maintain tools with care. Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.
28. Turn off machine and disconnect from power before cleaning. Use a brush or compressed air to remove chips or debris; do not use bare hands.
29. Do not stand on the machine. Serious injury could occur if the machine tips over.
30. Never leave the machine running unattended. Turn the power off and do not leave the machine until it comes to a complete stop.
31. Remove loose items and unnecessary work pieces from the area before starting the machine.
32. Pull the mains plug if the machine is not in use.
33. Make sure the workpiece is securely clamped.

Familiarize yourself with the following safety notices used in this manual:



WARNING: This means that if precautions are not heeded, it may result in serious, or possibly even fatal, injury.



CAUTION: This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

SAVE THESE INSTRUCTIONS



WARNING:

These symbols below advise that you follow the correct safety procedures when using this machine.



Read and understand the entire user manual before attempting assembly or machine operation.



Any work piece stock extending the rear end of the headstock must be covered on its entire length. High danger of injury



Always wear approved working outfit
Wear safety goggles.
Wear ear protection.



Do not operate this machine under the influence of drugs, alcohol or medication



Always wear the approved working outfit
Wear safety shoes.
Remove tie, rings, watches, jewellery.
Roll up sleeves above elbows.
Remove all loose clothing and confine long hair



Do not wear gloves while operating this machine



Make all machine adjustments or maintenance with the machine unplugged from the power source.



Connection and repair work on the electrical installation may be carried out by a qualified electrician only.



Never reach into the machine while it is operating or running down.

3.1 Designated use and limitations to use

The machine is designed for turning and drilling machinable metal and plastic materials only.

The workpiece must allow to safely be loaded, supported and clamped.

The machine is intended for indoor use. The protection rating of the electrical installation is IP 54.

To avoid tipping, the machine must be bolted down with four anchor bolts.

If used for other purposes, JET disclaims any real or implied warranty and holds itself harmless from any injury that may result from that use.



WARNING:

The machine is not suitable for machining magnesium...high danger to fire!

Never place your fingers in a position where they could contact any rotating parts or chips.

Check the safe clamping of the work piece before starting the machine.

Don't exceed the clamping range of the chuck.

Work pieces longer than 3 times the chucking diameter need to be supported by the tailstock or a steady rest.

Avoid small chucking diameters at big turning diameters. Avoid short chucking lengths and small chucking contact.

Do not exceed the max speed of the work holding device.

Use the right tool at the correct speed and feed rate. Do not force a tool or attachment to do a job for which it was not designed. The right tool will do the job better and more safely.

Use recommended accessories; improper accessories may be hazardous.

Maintain tools with care. Keep cutting tools sharp and clean for the best and safest performance.

Follow instructions for lubricating and changing accessories.

Do not attempt to adjust or remove tools during operation.

Never stop a rotating chuck or workpiece with your hands.

Choose a small spindle speed when working unbalanced work pieces and for threading and tapping operations.

Any work piece stock extending the rear end of the headstock must be covered on its entire length. High danger of injury!

Long work pieces may need a steady rest support. A long and thin work piece can suddenly bend at high speed rotation.

Never move the tailstock or tailstock quill while the machine is running.

Remove cutting chips with the aid of an appropriate chip hook when the machine is at a standstill only.

Measurements and adjustments may be carried out when the machine is at a standstill only.

Maintenance and repair work may only be carried out after the machine is protected against accidental starting, pull the mains plug.

Remove loose items and unnecessary work pieces from the area before starting the machine.

Rotate workpiece by hand before applying power. Use lowest speed when starting new workpiece.

Tighten all locks before operating.

3.2 Remaining hazards

When using the machine according to regulations some remaining hazards may still exist.

The rotating work piece and chuck can cause injury.

Thrown and hot work pieces and cutting chips can lead to injury.

Chips and noise can be health hazards. Be sure to wear personal protection gear such as safety goggles and ear protection.

The use of incorrect mains supply or a damaged power cord can lead to injuries caused by electricity.

When opening the electrical cabinet, the grid-feeding voltage persists. Therefore pay attention every time you enter it.

4.0 Specifications

Model number.....BD-10VS
Stock number.....50000912M

Motor and electricals:

Motor type.....DC-motor, variable speed
Motor power.....1.1 kW
Power supply.....1~230V, PE, 50Hz
Protection class.....IP54
Listed load amps.....6.5A
Machine lamp.....Halogen lamp 24V, 35 W
Coolant pump.....40 W

Capacities:

Centre height.....125 mm
Swing over bed.....250 mm
Swing over cross slide.....140 mm
Distance between Centres.....550 mm

Spindle:

Spindle nose mounting.....short taper (1:4 Ø53.975mm, Ø75x3xØ9)
Spindle bore.....26 mm
Spindle taper.....MT4
Number of spindle speeds.....variable
Range of spindle speeds.....50~1250 & 100~2500 /min

Tailstock:

Tailstock ram travel.....60 mm
Tailstock taper.....MT2

Tool Slide:

Cross slide travel.....100 mm
Top slide travel.....70 mm
Tool size max.....12x12 mm
Lead screw pitch.....3 mm
Longitudinal feed.....(6x) 0.07/ 0.1 / 0.14/ 0.2/ 0.28/ 0.40 mm/rev
Metric threads.....(21x) 0.2 ~ 4.0 mm/rev
Inch threads.....(21x) 8 ~ 56 TPI

Materials:

Machine Bed.....Cast iron, induction hardened and precision ground
Headstock, tailstock, slides.....Cast iron
Spindle bearings.....Taper roller bearings, quality level P5

Sound emission in idle 1.....73.4 dB (LpA)
Sound emission during cutting 1.....78.3 dB (LpA)

¹ Sound emission measured in 1m distance, 1.6m above ground. The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

Dimensions and Weights:

Overall dimensions, assembled (W x D x H).....1250 x 590 x 480 (1300) mm
Shipping dimensions (W x D x H).....1200x560x610 & 820x580x430 mm
Net weight (approximate).....178 kg
Shipping weight (approximate).....200 kg

L = length; W = width; H= height; D= depth

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

4.1 Spindle nose mounting:

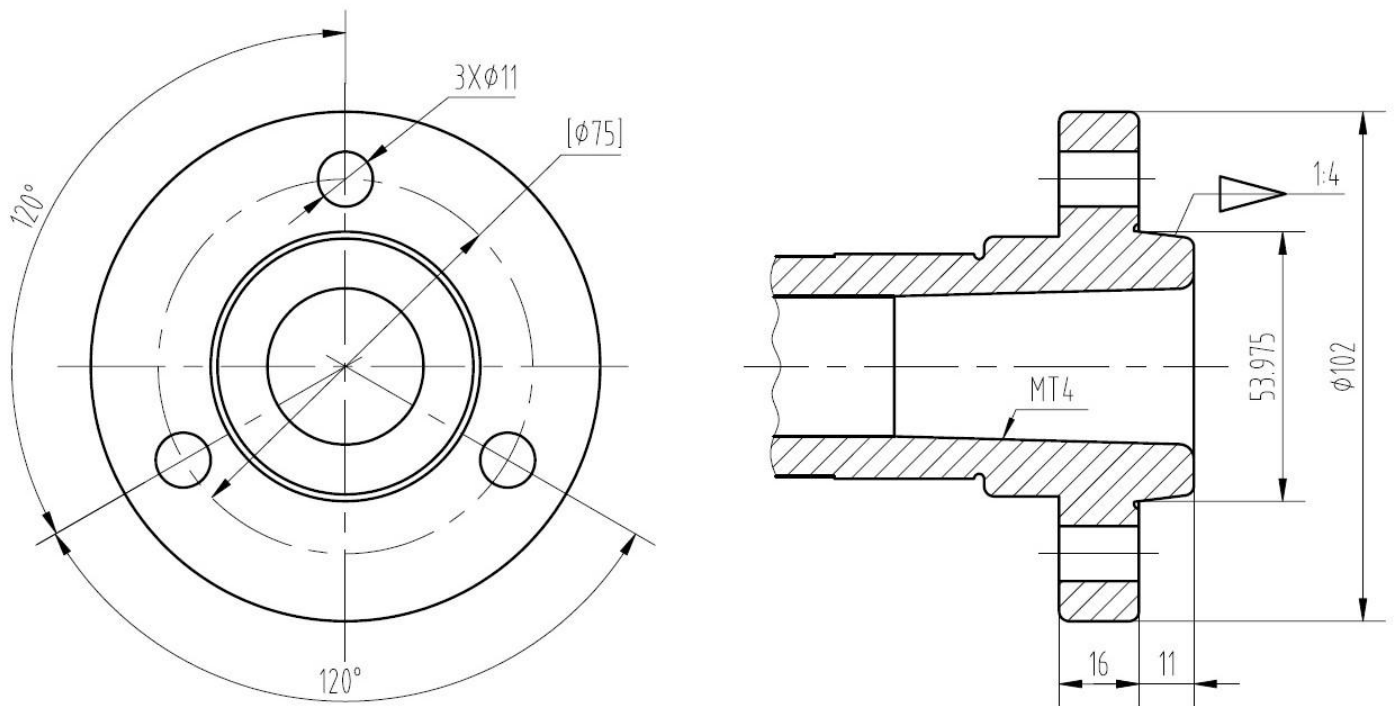


Figure 4-1: Spindle nose mounting

4.2 Anchor bolt hole pattern:

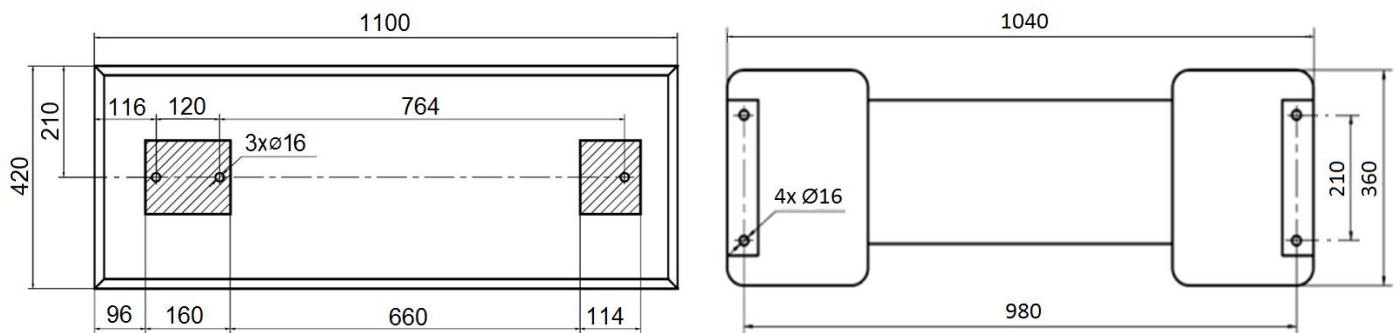


Figure 4-2: Anchor bolt pattern for lathe bed (left) & machine stand (right)



WARNING:

To avoid tipping, the machine must be bolted down with four anchor bolts (not provided).

5.0 Machine Description

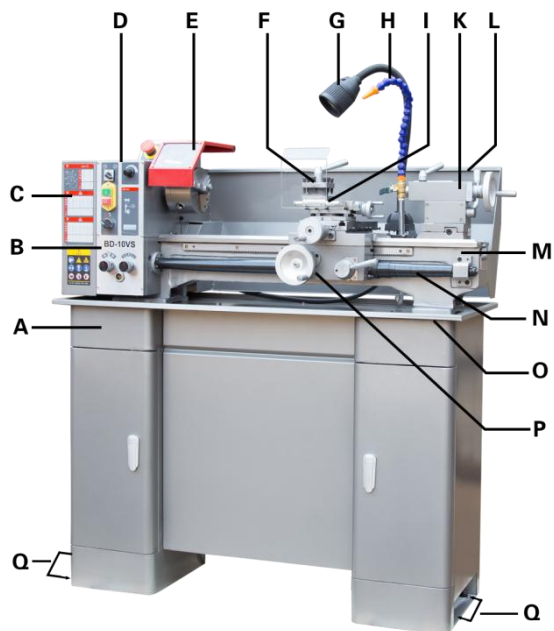


Figure 5-1: Machine description

- A Machine cabinet stand
- B Gear box
- C Pulley cover
- D Headstock
- E Chuck and chuck guard
- F Tool post and tool post guard
- G Machine lamp
- H Coolant nozzle
- I Top slide
- J Carriage
- K Tailstock
- L Splash guard
- M Lathe bed
- N Lead screw
- O Chip tray
- P Apron
- Q Anchor points

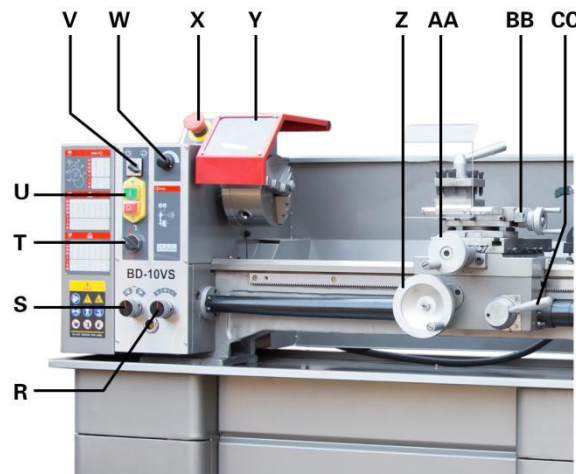


Figure 5-2: Machine description

- R Feed speed select knob
- S Feed forward/off/reverse
- T Coolant ON/OFF
- U Spindle power ON/OFF
- V Spindle forward/reverse
- W Variable speed select knob
- X Emergency Stop
- Y Spindle speed display
- Z Apron hand wheel
- AA Cross slide hand wheel
- BB Top slide hand wheel
- CC Half-nut lever

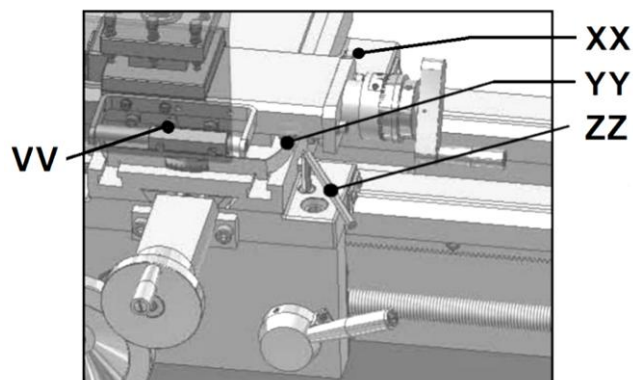


Figure 5-3 Machine description

- VV Top slide lock
- XX Cross slide lock
- YY Top slide taper adjustment
- ZZ Carriage lock

6.0 Setup and Assembly



WARNING:

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

6.1 Unpacking and clean up

Remove all contents from shipping crate and compare parts to the contents list in this manual. If shipping damage or any part shortages are identified, contact your distributor. Do not discard crate or packing material until **machine** is assembled and running satisfactorily.

Clean all rust protected surfaces with kerosene or a light solvent. Do not use lacquer thinner, paint thinner or gasoline, as these can damage plastic components and painted surfaces.

6.2 Shipping contents

- 1 Machine
- 1 Cabinet stand (Optional)
- 1 Coolant facility (Optional)
- 1 Machine lamp
- 1 125mm 3-jaw universal chuck
- 1 4-jaw chuck (Optional)
- 1 Face plate (Optional)
- 1 Chuck guard
- 1 4-way tool post
- 1 Tool post guard
- 1 Set of change gears
- 1 MT4 fixed centre
- 1 MT2 fixed centre
- 1 **MT2 live centre (Optional)**
- 1 Steady rest (Optional)
- 1 Follow rest (Optional)
- 1 Operating tools in tool box
- 1 Oil can
- 1 Operating instructions and parts manual

6.3 Assembly

The machine comes completely assembled. Install the drive belt (V-belt). Inspect that all fasteners are tight.

6.4 Initial lubrication

The machine must be serviced at all lubrication points before it is placed into service (see chapter 11.1 for lubrication).

6.5 Installation

Unbolt the lathe from the shipping crate bottom.

Use heavy duty fibre belt for lifting the machine off the pallet.



Warning:

The machine is heavy (200 kg)!

Assure the sufficient load capacity and proper condition of your lifting devices.

Never step underneath suspended loads.

To avoid tipping, the machine must be bolted down with four anchor bolts (not provided).

To avoid twisting the bed, make sure the setup surface is absolutely flat and level.

Loosen anchor bolts, shim and tighten bolts if needed.

The machine must be level to be accurate!

7.0 Electrical Connections



WARNING:

All electrical connections must be done by a qualified electrician in compliance with all local codes and ordinances. Failure to comply may result in serious injury.

The BD-10VS Metal Lathes are rated at **1~230V, PE, 50Hz** power supply. The machines come with a plug designed for use on a circuit with a *grounded outlet*.

Mains connection and any extension cords and plugs used must comply with the information on the machine license plate.

The mains connection must have a 16A surge-proof fuse.

Only use extension cords marked H07RN-F, with wires 1,5mm² or more.

The total length of cord may not exceed 18 Meter

Power cords and plugs must be free from defects.

Connections and repairs to the electrical equipment may only be carried out by qualified electricians.

The machine is equipped with 1.8m power cord and plug.

Before connecting to power source, be sure main switch is in off position.

7.1 Grounding instructions

This tool must be grounded. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.



WARNING:

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the tool.

The green/yellow conductor is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Use only 3-wire extension cords with grounding plugs.

Repair or replace damaged or worn cord immediately.

7.2 Extension cords

The use of extension cords is discouraged; try to position machines near the power source. If an extension cord is necessary, make sure it is in good condition.

An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

Only use extension cords marked H07RN-F, with wires 1,5mm² or more.

The total length of cord may not exceed 18 Meter

Extension cords and plugs must be free from defects.

8.0 Adjustments

8.1 Changing spindle speed range

The speeds of the lathe are controlled by the variable speed select knob (W, Fig 5-2) as well as the position of the belt on the pulleys (Fig 8-1).

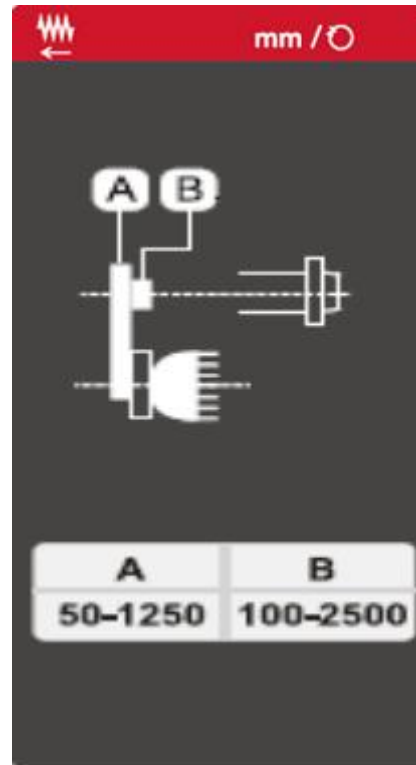


Figure 8-1: Spindle speed range setup

A 50~1250 RPM for maximum torque.

B 100~2500 RPM for maximum speed.

Remove the pulley cover (C, Fig 5-1) to change the belt position. Reinstall the pulley cover.

8.2 Change gear setup

Remove the pulley cover.

The rotational speed of the lead screw, and hence the rate of feed of the cutting tool, is determined by the gear configuration and by the feed speed select lever (R, Fig 5-2).

Assemble the gears with desired setup (Fig 8-2)

	Z1	Z2	Z3	Z4	L	I	II	III								
mm / ⌀	60	70	30	25	75	75	20	20	80	80	0.10	0.07	0.20	0.14	0.40	0.28

	Z1	Z2	Z3	Z4	L	I	II	III
mm	-	-	-	-	-	-	-	-
Z1	50	50	45	45	50	50	60	60
Z2	75	80	80	80	80	80	80	80
Z3	20	30	50	50	60	70	60	60
Z4	80	75	75	60	60	60	45	45
L	0.20	0.30	0.50	0.625	0.75	0.875	1.00	1.00
I	0.40	0.60	1.00	1.25	1.50	1.75	2.00	2.00
II	0.80	1.20	2.00	2.50	3.00	3.50	4.00	4.00
III	-	-	-	-	-	-	-	-

	Z1	Z2	Z3	Z4	L	I	II	III
mm	-	-	-	-	-	-	-	-
Z1	50	50	45	60	45	50	50	50
Z2	70	85	75	50	80	85	85	85
Z3	60	60	50	45	50	60	45	45
Z4	65	60	60	85	65	80	70	70
L	8.0	9.0	9.5	10	11	12	14	14
I	16	18	19	20	22	24	28	28
II	32	36	38	40	44	36	56	56
III	-	-	-	-	-	-	-	-

Figure 8-2: Change gear setup

Adjust gears to mesh with upper and lower gear.

Placing ordinary paper in between gears helps to adjust for correct gear spacing (... remove the paper afterwards!).

Reinstall the pulley cover.

8.3 Taper turning with tailstock

Mount the work piece fitted with the drive dog between centres. The drive dog is driven by the face plate.

Lubricate the tailstock centre with grease to prevent tip from overheating.

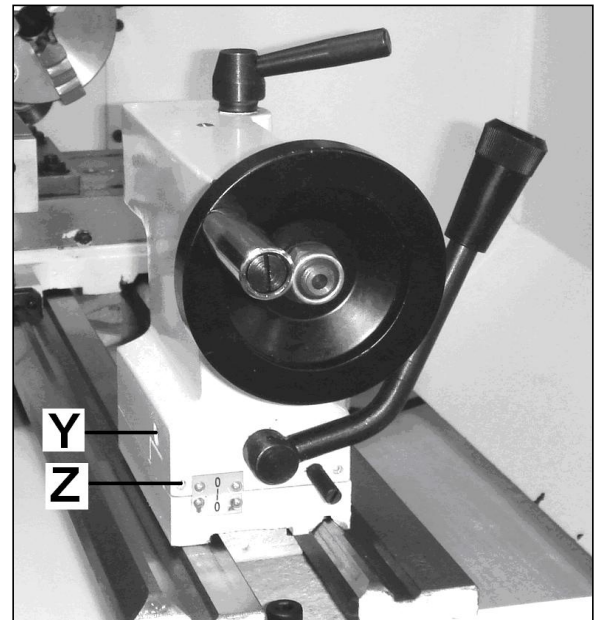


Figure 8-3: Taper turning between centres

To turn a taper, offset the tailstock, loosen the locking screws (Z, Fig 8-3) and use screws (Y) to adjust.

After taper turning, the tailstock must be returned to its original position. Turn a test piece and adjust until the machine turns a perfect cylinder.

8.4 Taper turning with top slide

By angling the top slide, tapers may be turned.

Loosen two hex nuts (A, Fig 8-4) and rotate the top slide according to the graduated scale (B).

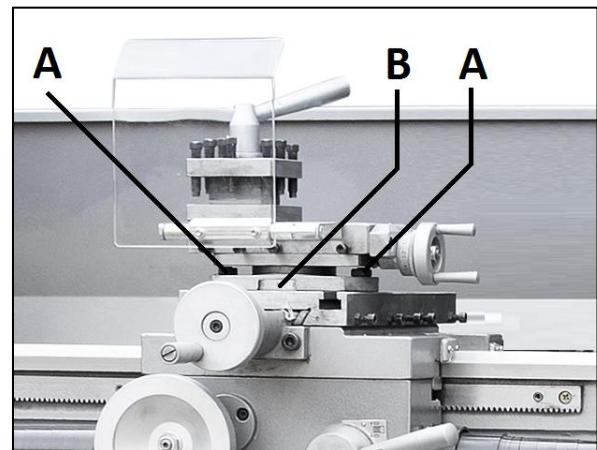


Figure 8-4: Taper turning with top slide

8.5 Three jaw universal chuck

With this universal chuck, cylindrical, triangular and hexagonal stock may be clamped (Fig 8-5).

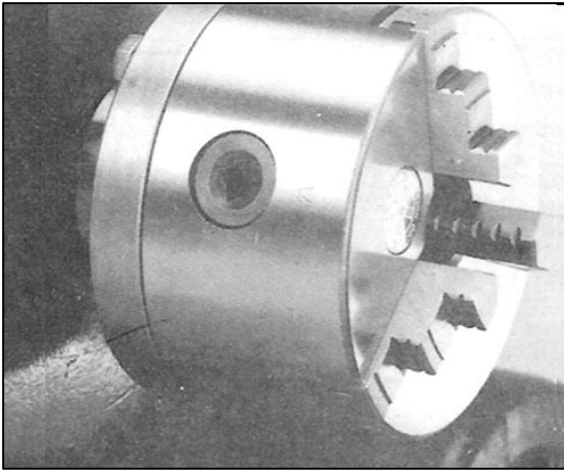


Figure 8-5: Three jaw universal chuck

To hold big diameter stock, a set of OD chuck jaws is supplied. The jaws need to be inserted to the chuck in the correct order. Use Molykote Paste G (or adequate grease) to lubricate the jaws.

8.6 Four jaw independent chuck (Optional)

This chuck has four independently adjustable chuck jaws (Fig 8-6).

These permit the holding of square and asymmetrical pieces and enables accurate concentric set-up of cylindrical pieces.



Figure 8-6: Four jaw independent chuck

8.7 Live centre (Optional)

The live centre (Fig 8-7) is mounted in ball bearings.

Its use is highly recommended for speeds above 500 RPM.

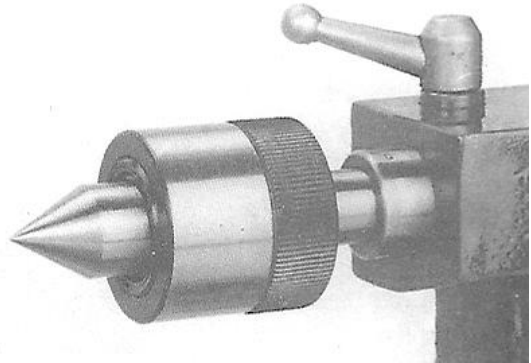


Figure 8-7: Live centre

To eject the live centre, fully retract the tailstock quill.

8.8 Steady rest and follow rest (Optional)

The rests prevent flexing of long and thin work pieces under pressure from the tool.

The steady rest (Fig 8-8) serves as a support for longer shafts and ensures a safe and chatter free operation.

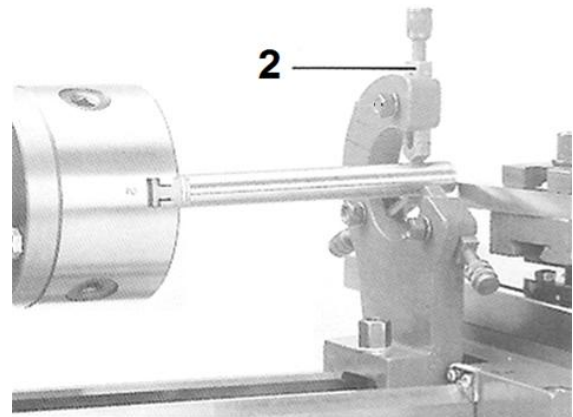


Figure 8-8: Steady rest

The follow rest (Fig 8-9) is mounted on the carriage and follows the movement of the tool.

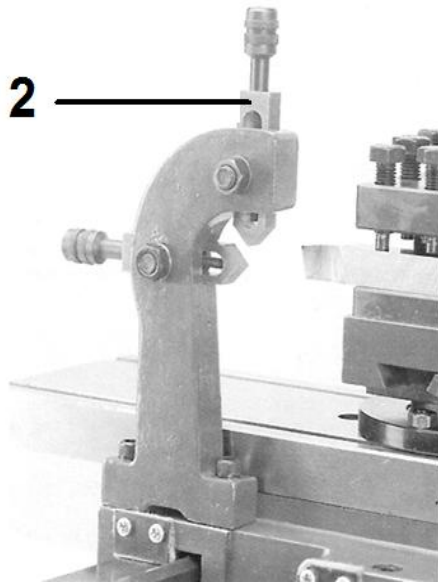


Figure 8-9: Follow rest

Set the fingers (2) snug but not overly tight.

Lubricate the fingers to prevent premature wear.

9.0 Operating Controls

Refer to Figure 9-1:

- R Feed select knob
- S Feed forward/off/reverse
- T Coolant ON/OFF
- U Spindle power ON/OFF
- V Spindle forward/reverse
- W Variable speed select knob
- X Emergency Stop
- Y Spindle speed display

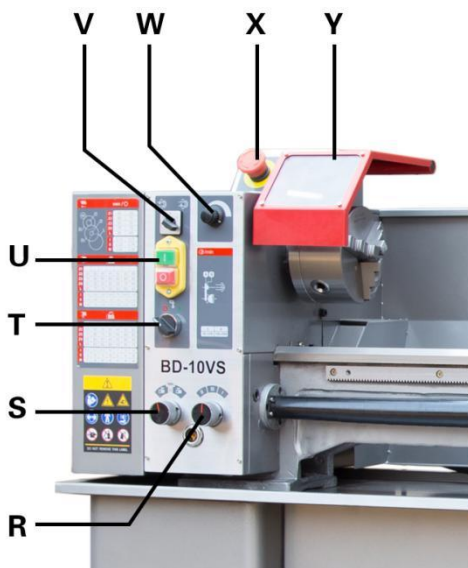


Figure 9-1: Operating Controls

10.0 Machine Operation

10.1 Cutting execution

Before starting the machine check the proper chucking.

Close the chuck guard and pulley cover before you start the machine.

Select running direction, forward or reverse (V, Fig 9-1).

You can start the machine with the green ON-button (U).

The red OFF-button stops the machine.

The speed can be adjusted with the variable speed select knob (W).

The spindle speed will be shown on the display (Y).

The emergency stop button (X) stops all machine functions.

Turn emergency stop button clockwise to reset.

The work lamp (G, Fig 5-1) operates independently; ON/OFF switch is on top of lamp housing.

Unplug the machine if not in use.

10.2 Chucking

Do not exceed the max speed of the work holding device.

Jaw teeth and scroll must always be fully engaged. Otherwise chuck jaws may break and fly off in rotation (Fig 10-1).

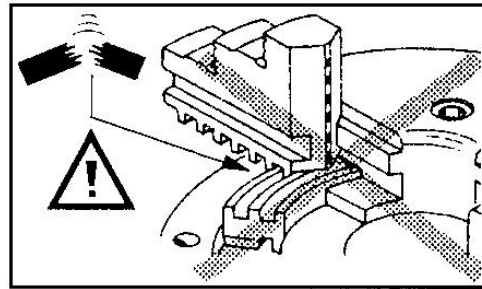


Figure 10-1: Poor jaw engagements

Avoid long workpiece extensions. Parts may bend (Fig 10-2) or fly off (Fig 10-3). Use tailstock or rest to support.

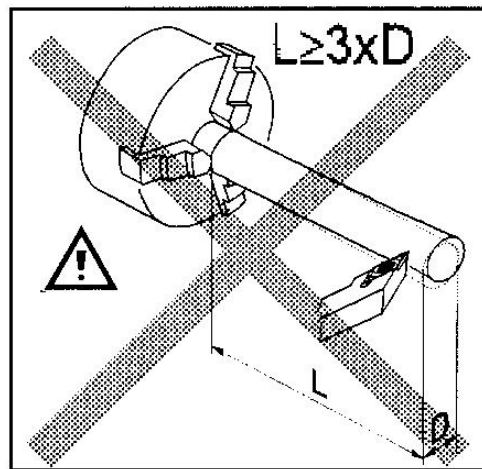


Figure 10-2: Workpiece too long

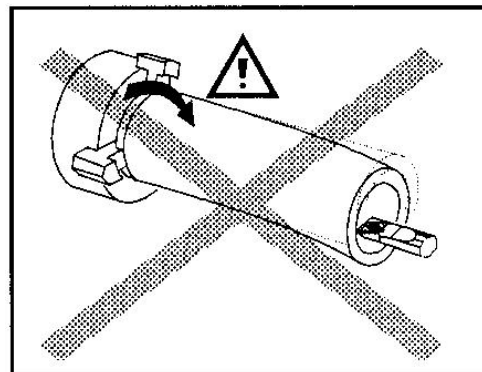


Figure 10-3: Workpiece too long

Avoid short clamping contact (A, Fig 10-4) or clamping on a minor diameter (B). Face locate workpiece for added support

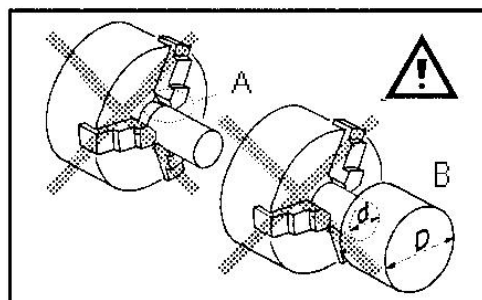


Figure 10-4: Poor clamping

10.3 Cutting Tool Setup

The cutting angle is correct when the cutting edge is in line with the centre axis of the work piece. Use the point of the tailstock centre as a gauge and shims under the tool to obtain the correct centre height (Fig 10-5).

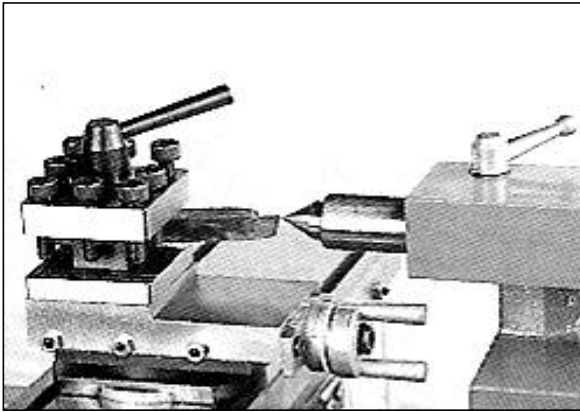


Figure 10-5: Cutting tool setup

Use a minimum of two screws to clamp the cutting tool.
Avoid large tool extensions.

10.4 Recommended spindle speeds

ATTENTION:

Generally speaking, the smaller the **cut diameter**, the greater the RPM required. Soft materials require higher speeds; hard metals slower speeds.

Metal is usually **machined with coolant** or cutting oil applied.

Recommended speeds for cutting 10mm diameter, with HSS tools (High speed steel tools):

- Plastic: 2500 RPM
- Aluminium:..... 2500 RPM
- Brass: 1000 RPM
- Cast iron:..... 1000 RPM
- Mild steel:..... 800 RPM
- High carbon steel:..... 600 RPM
- Stainless steel:..... 300 RPM

For carbide tools (HM), 5 times higher speeds can be chosen.

For example:

- Turning mild steel at a diameter of 20mm allows
- With HSS tool..... 400 RPM
- With carbide tool.....2000 RPM

10.5 Manual turning

Apron travel (Z, Fig 10-6), cross travel (AA) and top slide travel (BB) can be operated for longitudinal and cross feeding.

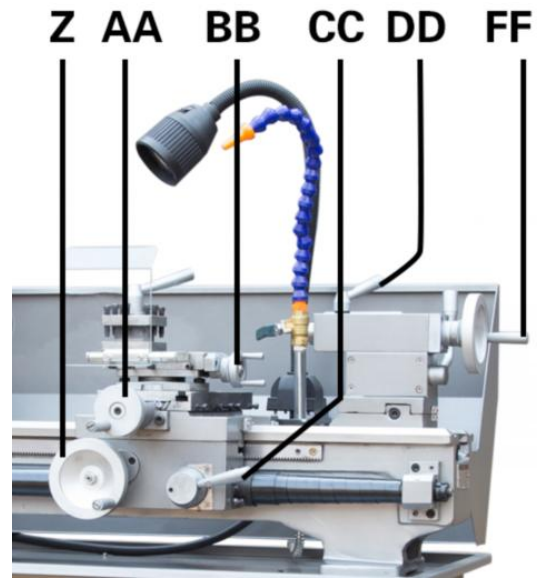


Figure 10-6: Machine controls

The correct feed depends on the material to be cut, the cutting operation, the type of tool, the rigidity of the work piece chucking, the depth of cut and the desired surface quality.

10.6 Turning with auto feed

Move the half-nut lever (CC, Fig 10-6) down, to engage the automatic longitudinal feed. Move it up to disengage

Three feed rates are readily available by rotating the feed select knob (R, Fig 9-1).

For example:

Operation	feed/rev	select knob
Stock removal	0,28mm.....	III
Finishing cut	0.14mm.....	II
Micro finishing cut	0.07mm.....	I

NOTE: Three additional feed rates are available with different change gear setup (Fig 10-7).

	mm / ⌀	
Z1	60	70
Z2	30	25
Z3	75	75
Z4	20	20
L	80	80
I	0.10	0.07
II	0.20	0.14
III	0.40	0.28

Figure 10-7: Available feed rates

The correct feed depends on the material to be cut, the cutting operation, the type of tool, the rigidity of the work piece chucking, the depth of cut and the desired surface quality.

When roughing big diameters reduce the depth of cut!

10.7 Thread cutting

Threading is performed in multiple passes with a threading tool.

Each depth of cut should be about 0,2mm and become less for the finishing passes.

A) To cut inch and metric threads

Set the machine up for the desired threading pitch (see chapter 8.1).

Select the lowest possible spindle speed.

Engage the halve nut (CC, Fig 10-6).

NOTE: The halve nut must stay engaged during the entire threading process.

- Set the tool up for the threading pass.

- Start the motor.

- When the tool approaches the end of cut, stop the motor and at the same time back the tool out, so that it clears the thread diameter.

- Start the motor in reverse direction, let the cutting tool travel back to the starting point.

Repeat these steps until you have obtained the desired results.

B) To cut metric threads with pitch 0.4/ 0,5/1,0/2,0 mm:

The halve nut can be opened at the end of cut, rather than the motor being stopped and reversed.

10.8 Drilling operation

Use a drill chuck with MT2 arbor (option) to clamp centre drills and twisted drills in the tailstock (Fig 10-8).

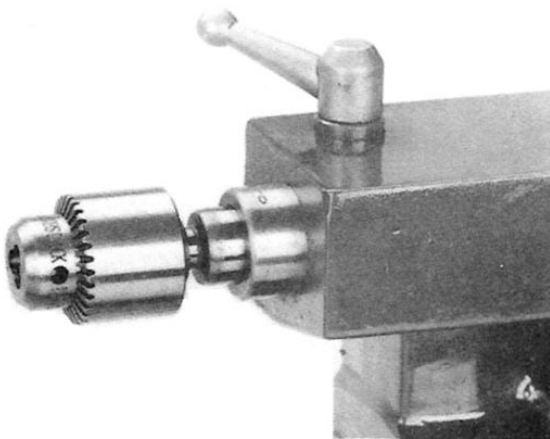


Figure 10-8: Drilling operation

For recommended speeds refer to section 10.4

To eject the drill chuck, fully retract the tailstock quill.

11.0 User-Maintenance



WARNING:

Before any intervention on the machine, disconnect it from electrical supply, pull the mains plug. Failure to comply may cause serious injury.

An important security factor is the cleaning of the machine, of bed, carriage and slides, of the floor and the surrounding places.

Loose objects could come into contact with the moving chuck or workpiece, creating hazards.

Empty the chip tray regularly.

Replace the coolant regularly, follow manufacturer's advice.

Check that bolts are tight and electrical cords are in good condition. If an electrical cord is worn, cut, or damaged in any way, have it replaced immediately.

11.1 Lubrication

Spindle bearings are pre-lubricated and sealed, and require no further lubrication.

Weekly apply oil:

DIN 51502 CG ISO VG 68

(e.g. BP Maccurat 68, Castrol Magna BD 68, Mobil Vectra 2)

- 1...oil balls on change gear hubs
- 2...oil bed ways lightly
- 3...oil tailstock quill over entire length
- 4...oil lead screw on entire length
- 5...oil ball on lead screw bracket
- 6...oil balls on top slide
- 7...oil balls on tailstock
- 8...oil balls on carriage
- 9...oil balls on apron

Monthly apply grease:

DIN 51807-1 non slinging grease

(e.g. BP L2, Mobilgrease Special).

- 10...grease teeth of change gears
- 11...grease rack over entire length

Gear box oil:

DIN 51517-2 CL ISO VG 68

(e.g. Castrol Hyspin AWS 68, Mobil DTE Oil Heavy Medium)

Oil must be up to indicator mark in oil sight glass.

In case, fill up with oil by removing plug on right side of gear box.

12.0 Troubleshooting

Symptom	Possible Cause	Correction *
Lathe will not start.	Lathe unplugged from wall, or motor.	Check all plug connections.
	Fuse blown, or circuit breaker tripped.	Replace fuse, or reset circuit breaker.
	Cord damaged.	Replace cord.
	Chuck guard not closed.	Close chuck guard.
	Pulley cover removed	Install pulley cover
Lathe does not come up to speed.	Extension cord too light or too long.	Replace with adequate size and length cord.
	Low current.	Contact a qualified electrician.
Lathe vibrates excessively.	Base on uneven surface.	Locate lathe on even floor.
	Lathe not bolted to the floor	Bolt machine to the floor
	Unbalanced workpiece	Reduce speed
	Workpiece deflection	Improve chucking length or diameter, support on tailstock end
	Tool deflection	Reduce tool length
	Slide backlash	Adjust slides
	Slides running dry	Lubricate with oil
	Dull tool tip	Re-sharpen or change tool
	Chip load too high	Reduce depth of cut or feed
Noisy operation	Dry change gear hubs.	Lubricate with oil.
	Dry change gears	Lubricate with grease.
Tool tip burns	Cutting speed too high	Reduce spindle speed
	Dull tool tip.	Re-sharpen or change tool
	Dry cutting.	Use coolant.
	Feeding too slowly.	Increase feed rate.
Machine turns a taper.	Tailstock alignment is offset.	Align tailstock position.
	Machine bed is twisted.	Stand supporting surface must be flat. Shim if needed
	Workpiece deflection.	Reduce depth of cut or feed
Drill chuck or arbor does not stay in place.	Dirt, grease, etc. on arbor, chuck, or tailstock quill	Clean all mating surfaces thoroughly with a cleaner-degreaser.

* **WARNING:** Some corrections may require a qualified electrician.

Table 1

13.0 Environmental Protection

Protect the environment.

Dispose all packaging material in an environmental friendly manner.

Dispose coolant in an environmentally friendly manner.

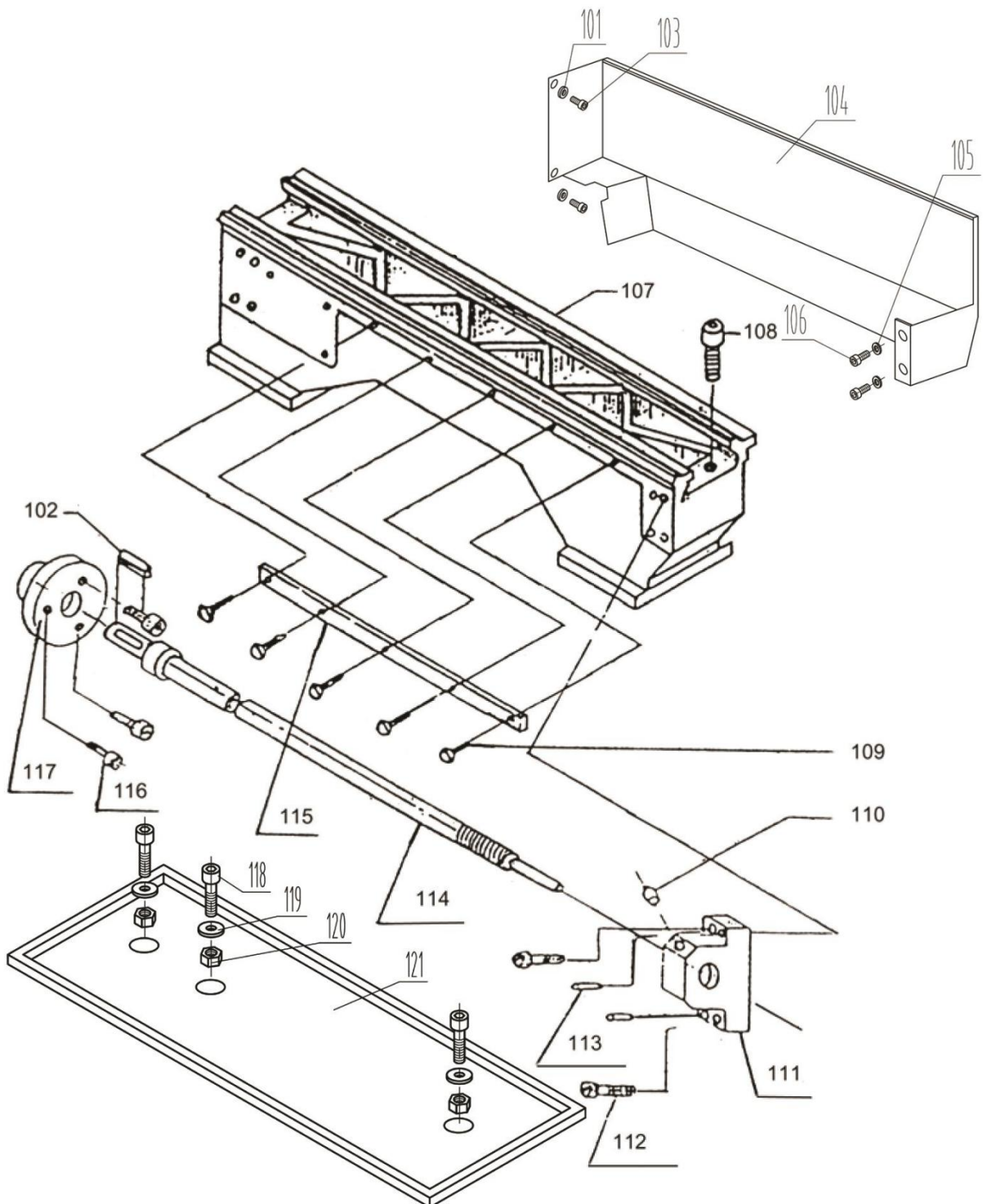
Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.

14.0 Available Accessories

Refer to the JET price list.

15.0 Replacement Parts

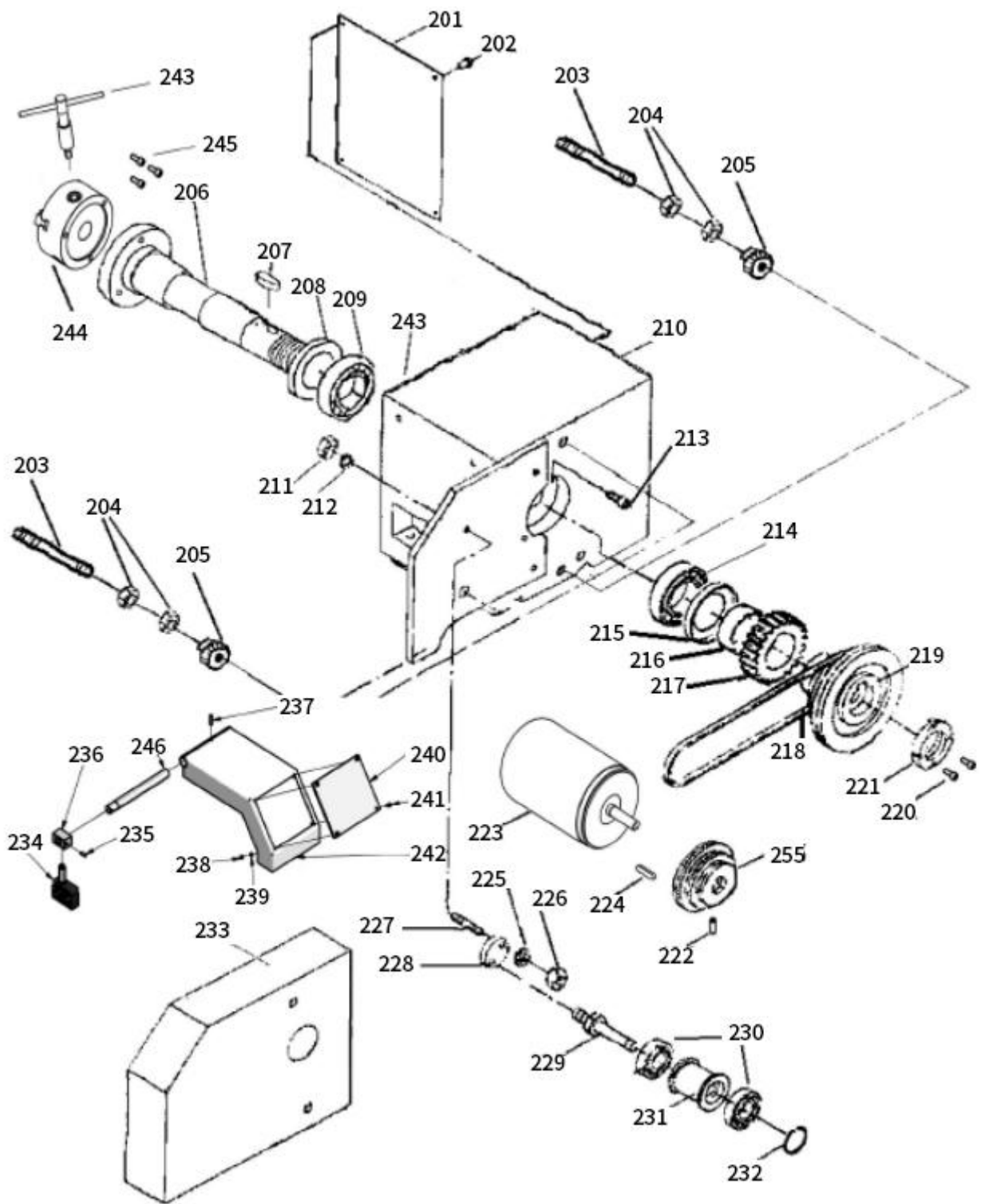
BD-10VS Assembly Breakdown -1



BD-10VS Parts List for Breakdown -1

Index No.	Part No.	Description	Size	Qty.
101.....	GB97185-6.....	WASHER.....	6.....	2
102.....	BD-10VS-1.....	FLAT KEY.....	4 x 12 mm.....	1
103.....	BD-10VS-50.....	HEXAGONAL SOCKET HEAD SCREW DIN 912.....	M6x10.....	1
104.....	BD-10VS-1-104.....	SPLASH GUARD.....		1
105.....	GB97185-6.....	WASHER.....	6.....	2
106.....	BD-10VS-50.....	HEXAGONAL SOCKET HEAD SCREW DIN 912.....	M6x10.....	1
107.....	BD-10VS-1-107.....	LATHE BED.....		1
108.....	BD-10VS-2.....	HEXAGON SOCKET SCREW M8x12.....	M8x12.....	1
109.....	BD-10VS-3.....	HEXAGON SOCKET SCREW M5x12.....	M5x12.....	5
110.....	BD-10VS-4.....	BALL OILER.....	6.....	1
111.....	BD-10VS-1-111.....	RIGHT BEARING PEDESTAL		1
112.....	BD-10VS-5.....	HEXAGON SOCKET SCREW M6x16.....	M6x16.....	4
113.....	BD-10VS-6.....	FLAT KEY TAPER PIN 6x22.....	DIN6885.....	2
114.....	BD-10VS-1-114.....	LEADSCREW.....		1
115.....	BD-10VS-1-115.....	RACK	1	1
116.....	BD-10VS-7.....	HEXAGON SOCKET SCREW M4x16.....	M4x16.....	3
117.....	BD-10VS-1-117.....	ADJUSTING FLANGE.....		1
118.....	BD-10VS-1-118.....	SCREW BOLT.....	M12X40.....	3
119.....	GB97185-12.....	WASHER.....	12.....	3
120.....	GB617086-12.....	HEX NUT.....	M12.....	3
121.....	BD-10VS-1-121.....	OIL PAN.....		1

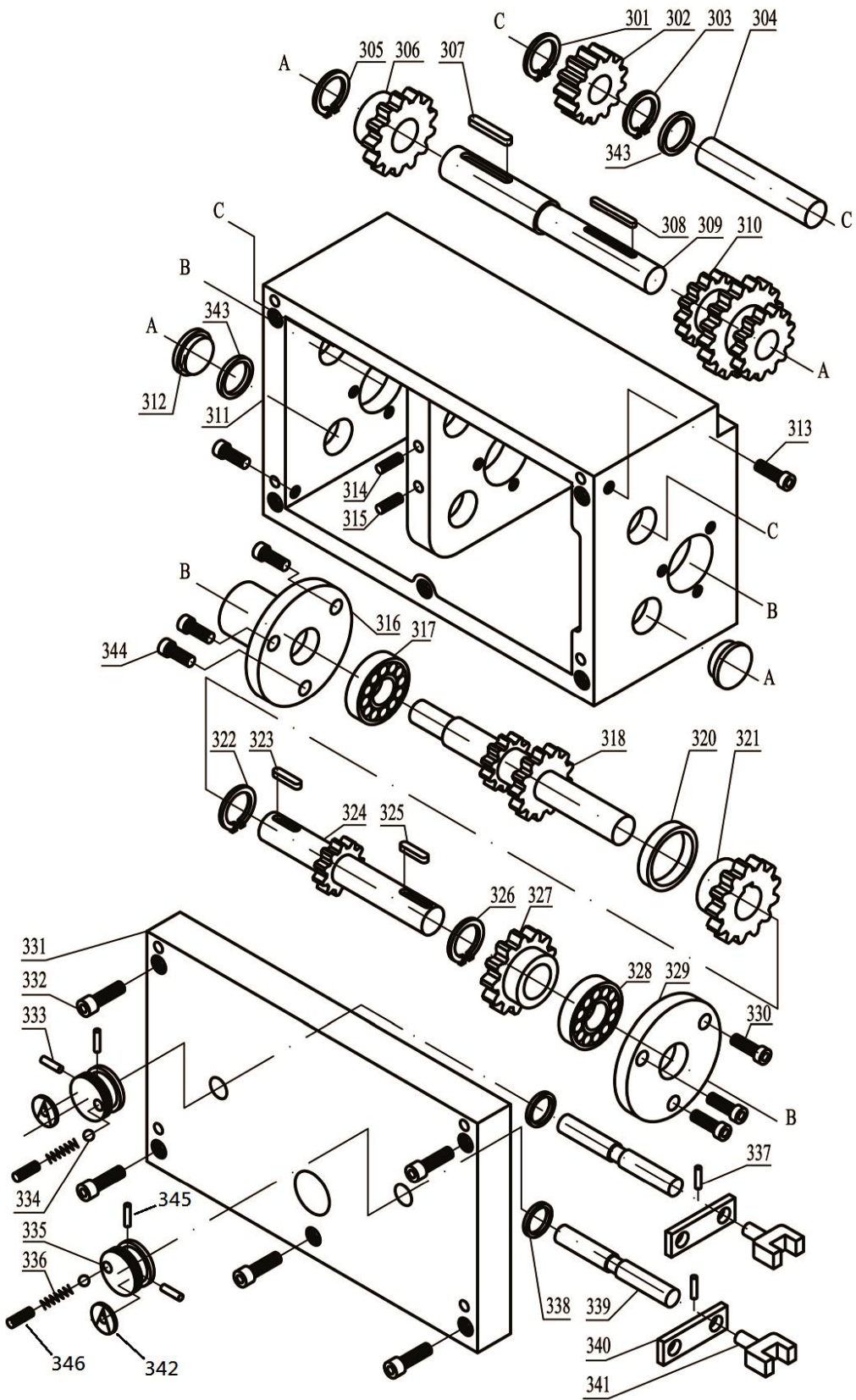
BD-10VS Assembly Breakdown -2



BD-10VS Parts List for Breakdown -2

Index No.	Part No.	Description	Size	Qty.
201.....	BD-10VS-2-201.....	CHARACTERISTICS PLATE.....		1
202.....	BD-10VS-8.....	FASTENING SCREW.....	M 4x10.....	6
203.....	BD-10VS-2-203.....	PROTECTIVE COVER OF THREADED ROD.....		2
204.....	BD-10VS-9.....	NUT..M10.....		4
205.....	BD-10VS-2-205.....	KNURL NUT.....		2
206.....	BD-10VS-2-206.....	WORK SPINDLE.....		1
207.....	BD-10VS-10.....	FEATHER KEY.....	8x45.....	1
208.....	BD-10VS-2-208.....	RING.....		1
209.....	BD-10VS-11.....	BEARING.....	32009.....	1
210.....	BD-10VS-2-210.....	HEADSTOCK.....		1
211.....	BD-10VS-12.....	NUT..M10.....		1
212.....	BD-10VS-13.....	WASHER.....	10.....	1
213.....	BD-10VS-14.....	HEXAGON SOCKET SCREW.....	M8x25.....	1
214.....	BD-10VS-15.....	BEARING.....	32009.....	1
215.....	BD-10VS-2-215.....	RING.....		1
216.....	BD-10VS-2-216.....	BUSH.....		1
217.....	BD-10VS-2-217.....	GEARWHEEL.....		1
218.....	BD-10VS-2-218.....	SHORT V-BELT.....	7M-730.....	1
219.....	BD-10VS-2-219.....	PULLEY COMBINATION WORK SPINDLE.....		1
220.....	BD-10VS-16.....	ALLEN SCREWS.....	M5x12.....	2
221.....	BD-10VS-17.....	SHAFT NUT (GROOVE NUT).....		1
222.....	BD-10VS-18.....	THREADED PIN.....	ISO 4028-M6X10.....	1
223.....	BD-10VS-2-223.....	MOTOR.....	110ZYT59T1.....	1
224.....	BD-10VS-19.....	FLAT KEY.....	4 x 30 mm.....	1
225.....	BD-10VS-20.....	WASHER.....		1
226.....	BD-10VS-21.....	HEXAGONAL NUT M8.....	DIN439.....	1
227.....	BD-10VS-2-227.....	ALLEN SCREWS.....		1
228.....	BD-10VS-2-228.....	ECCENTRIC OF TEN-SION PULLEY.....		1
229.....	BD-10VS-2-229.....	SHAFT OF TENSION PULLEY.....		1
230.....	BD-10VS-22.....	BEARING 6001RZ.....	6001RZ.....	2
231.....	BD-10VS-2-231.....	TENSION PULLEY.....		1
232.....	BD-10VS-23.....	CIRCLIP.....		1
233.....	BD-10VS-2-233.....	HANGING WHEEL BOX COVER.....		1
234.....	BD-10VS-2-234.....	MICRO SWITCH.....		1
235.....	BD-10VS-24.....	HEXAGONAL CYLINDRICAL SIDE SCREW SET.....	M5x12.....	1
236.....	BD-10VS-2-236.....	SHAFT SLEEVE.....		1
237.....	BD-10VS-25.....	CYLINDRICAL PIN.....	3x20.....	1
238.....	BD-10VS-26.....	NUT..M4.....		4
239.....	BD-10VS-27.....	FLAT WASHER.....	Φ 4.....	4
240.....	BD-10VS-2-237.....	PROTECTIVE GLASSES.....		1
241.....	BD-10VS-28.....	SOCKET HEAD CAP SCREW.....	M4x10.....	4
242.....	BD-10VS-2-242.....	CHUCK SHIELD.....		1
243.....	BD-10VS-2-243.....	KEY FOR 3 - JAW CHUCK.....	10mm.....	1
244.....	BD-10VS-2-244.....	THREE JAW CHUCK.....	K11-125.....	1
245.....	BD-10VS-29.....	HEXAGON SOCKET SCREW.....	M8X35.....	3
246.....	BD-10VS-2-246.....	CHUCK SHIELD SHAFT.....		1
247.....	BD-10VS-2-247.....	MOTOR PULLEY.....		1

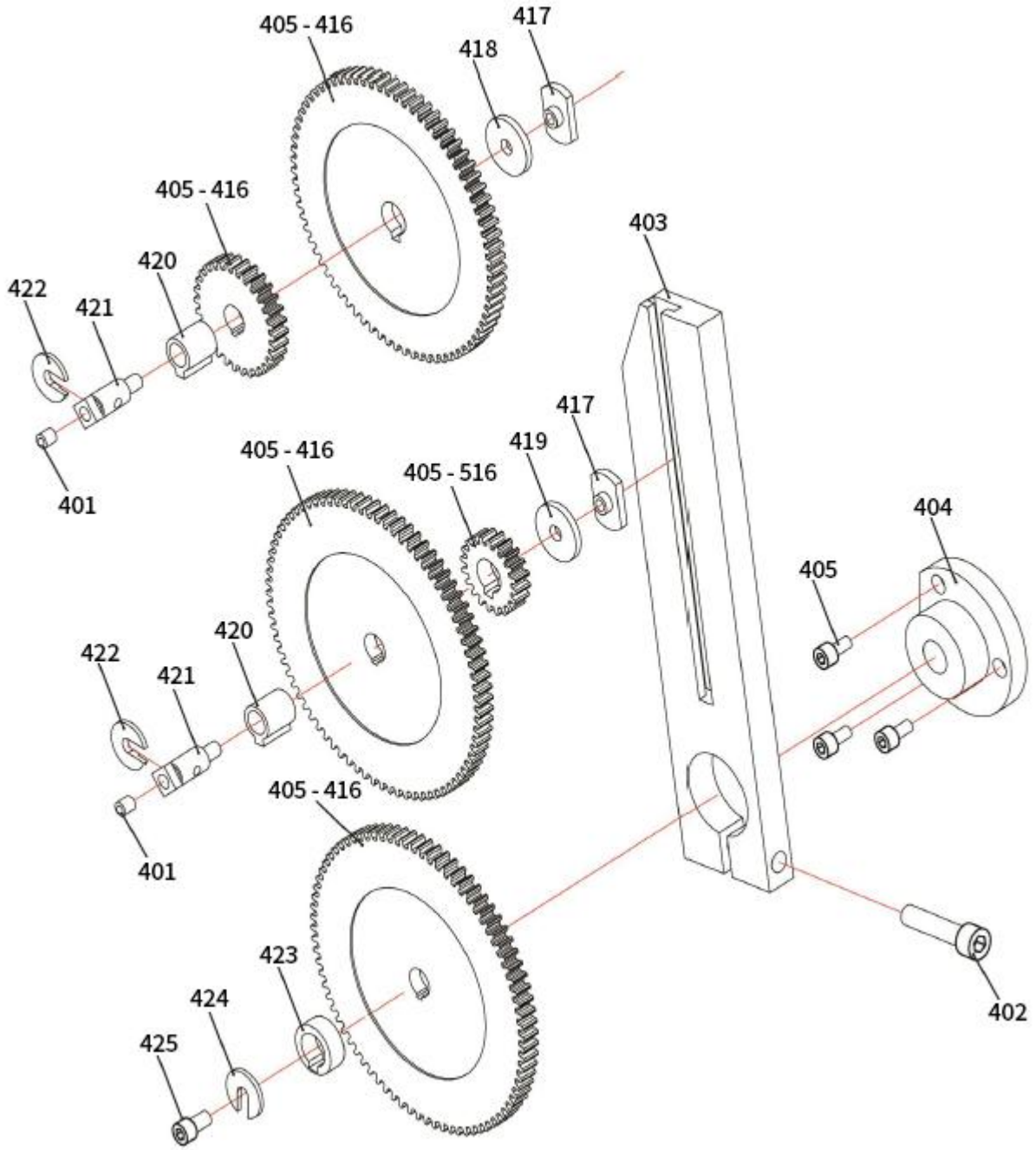
BD-10VS Assembly Breakdown -3



BD-10VS Parts List for Breakdown -3

Index No.	Part No.	Description	Size	Qty.
301	BD-10VS-30	LOCK WASHER	Φ 12	1
302	BD-10VS-3-302	GEARWHEEL		1
303	BD-10VS-31	LOCK WASHER	Φ 12	1
304	BD-10VS-3-304	SHAFT C		1
305	BD-10VS-3-305	CIRCLIP FOR SHAFT Φ 16		1
306	BD-10VS-3-306	GEARWHEEL		1
307	BD-10VS-32	FEATHER KEY	4x30	1
308	BD-10VS-33	FEATHER KEY	4x60	1
309	BD-10VS-3-309	SHAFT A		1
310	BD-10VS-3-310	GEARWHEEL COMBINATION		1
311	BD-10VS-3-311	GEAR WHEEL BOX		1
312	BD-10VS-3-312	PLUG		2
313	BD-10VS-3-313	SET SCREW ZG3/8	ZG 3/8	2
314	BD-10VS-34	HEXAGON SOCKET SCREW	M 6x10	1
315	BD-10VS-35	HEXAGON SOCKET SCREW	M 6x10	1
316	BD-10VS-3-316	FLANGE		1
317	BD-10VS-3-317	BEARING	180202	1
318	BD-10VS-3-318	GEARWHEEL		1
319	BD-10VS-3-319	SHAFT	1215	1
320	BD-10VS-3-320	SHAFT RING		1
321	BD-10VS-3-321	GEARWHEEL		1
322	BD-10VS-36	CIRCLIP	Φ 15	1
323	BD-10VS-37	FEATHER KEY	4x14	1
324	BD-10VS-3-324	LONG-FACE PINION		1
325	BD-10VS-38	FEATHER KEY	4x10	1
326	BD-10VS-39	LOCK WASHER	Φ 15	1
327	BD-10VS-3-327	GEARWHEEL		1
328	BD-10VS-3-328	BEARING	180202	1
329	BD-10VS-3-329	FLANGE COVER OF LEADSCREW		1
330	BD-10VS-40	HEXAGON SOCKET SCREW	M 6x12	3
331	BD-10VS-3-331	FRONT PLATE		1
332	BD-10VS-41	HEXAGON SOCKET SCREW M6X20	M6X20	5
333	BD-10VS-42	SPRING PIN, ISO8752	A5x30	2
334	BD-10VS-43	STEEL BALL	Φ 5	2
335	BD-10VS-3-335	SELECTOR SWITCH		2
336	BD-10VS-44	SPRING	0, 8x45x11	2
337	BD-10VS-45	PIN Φ 5x20		2
338	BD-10VS-46	O-RING	1800710	2
339	BD-10VS-3-339	SHAFT		2
340	BD-10VS-3-340	PLATE		2
341	BD-10VS-3-341	GEAR FORK		2
342	BD-10VS-3-342	SELECTOR SWITCH MARKING		2
343	BD-10VS-3-343	RUBBER SEALING RING 14.0X2.65		2
344	BD-10VS-3-344	HEX SOCKET HEAD SCREW	M5X12	3
345	BD-10VS-3-345	HEXAGON SOCKET SCREW		1
346	BD-10VS-3-346	HEXAGON SOCKET SCREW		1

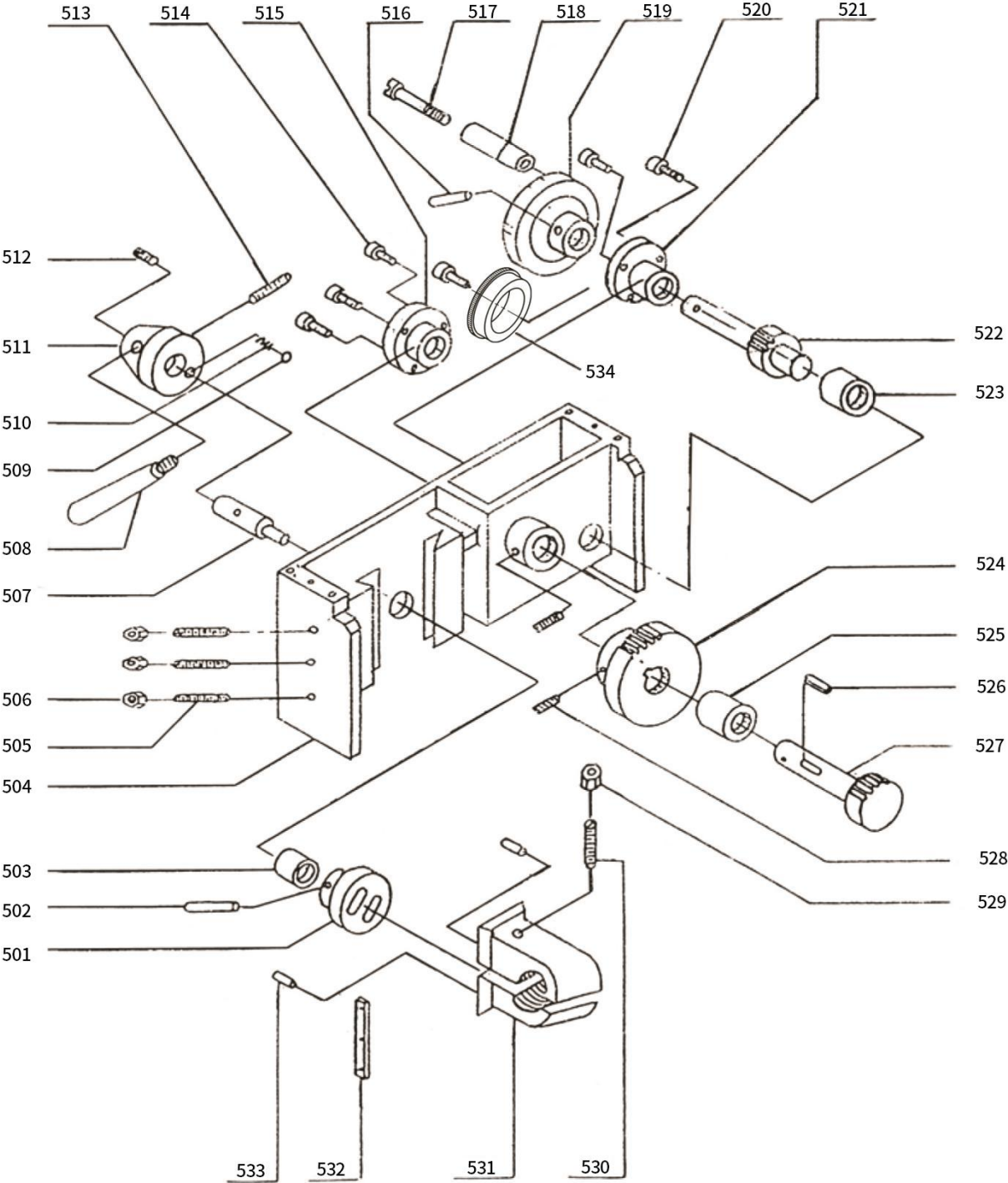
BD-10VS Assembly Breakdown -4



BD-10VS Parts List for Breakdown -4

Index No.	Part No.	Description	Size	Qty.
401.....	BD-10VS-47.....	OIL NIPPLE.....		2
402.....	BD-10VS-48.....	HEXAGONAL SOCKET HEAD SCREW DIN 912.....	M 8x35.....	1
403.....	BD-10VS-4-403.....	CHANGE GEAR RAIL.....		1
404.....	BD-10VS-4-404.....	BEARING PEDESTAL.....		1
405.....	BD-10VS-49.....	HEXAGONAL SOCKET HEAD SCREW DIN 912.....	M5x10.....	3
406.....	BD-10VS-4-406.....	GEARZ85, Module 1.5.....		1
407.....	BD-10VS-4-407.....	GEARZ80, Module 1.5.....		1
408.....	BD-10VS-4-408.....	GEARZ75, Module 1.5.....		1
409.....	BD-10VS-4-409.....	GEARZ70, Module 1.5.....		1
410.....	BD-10VS-4-410.....	GEARZ65, Module 1.5.....		1
411.....	BD-10VS-4-411.....	GEARZ60, Module 1.5.....		2
412.....	BD-10VS-4-412.....	GEARZ50, Module 1.5.....		1
413.....	BD-10VS-4-413.....	GEARZ45, Module 1.5.....		1
414.....	BD-10VS-4-414.....	GEARZ30, Module 1.5.....		1
415.....	BD-10VS-4-415.....	GEARZ25, Module 1.5.....		1
416.....	BD-10VS-4-416.....	GEARZ20, Module 1.5.....		1
417.....	BD-10VS-4-417.....	T-NUT.....	M5.....	2
418.....	BD-10VS-4-418.....	SPACER.....	1,5mm.....	1
419.....	BD-10VS-4-419.....	SPACER.....	3mm.....	1
420.....	BD-10VS-4-420.....	BUSHING.....		2
421.....	BD-10VS-4-421.....	AXLE SHAFT.....		2
422.....	BD-10VS-4-422.....	C-WASHER.....		2
423.....	BD-10VS-4-423.....	COLLAR SPREADER.....		1
424.....	BD-10VS-4-424.....	C-WASHER.....		1
425.....	BD-10VS-50.....	HEXAGONAL SOCKET HEAD SCREW DIN 912.....	M6x10.....	1

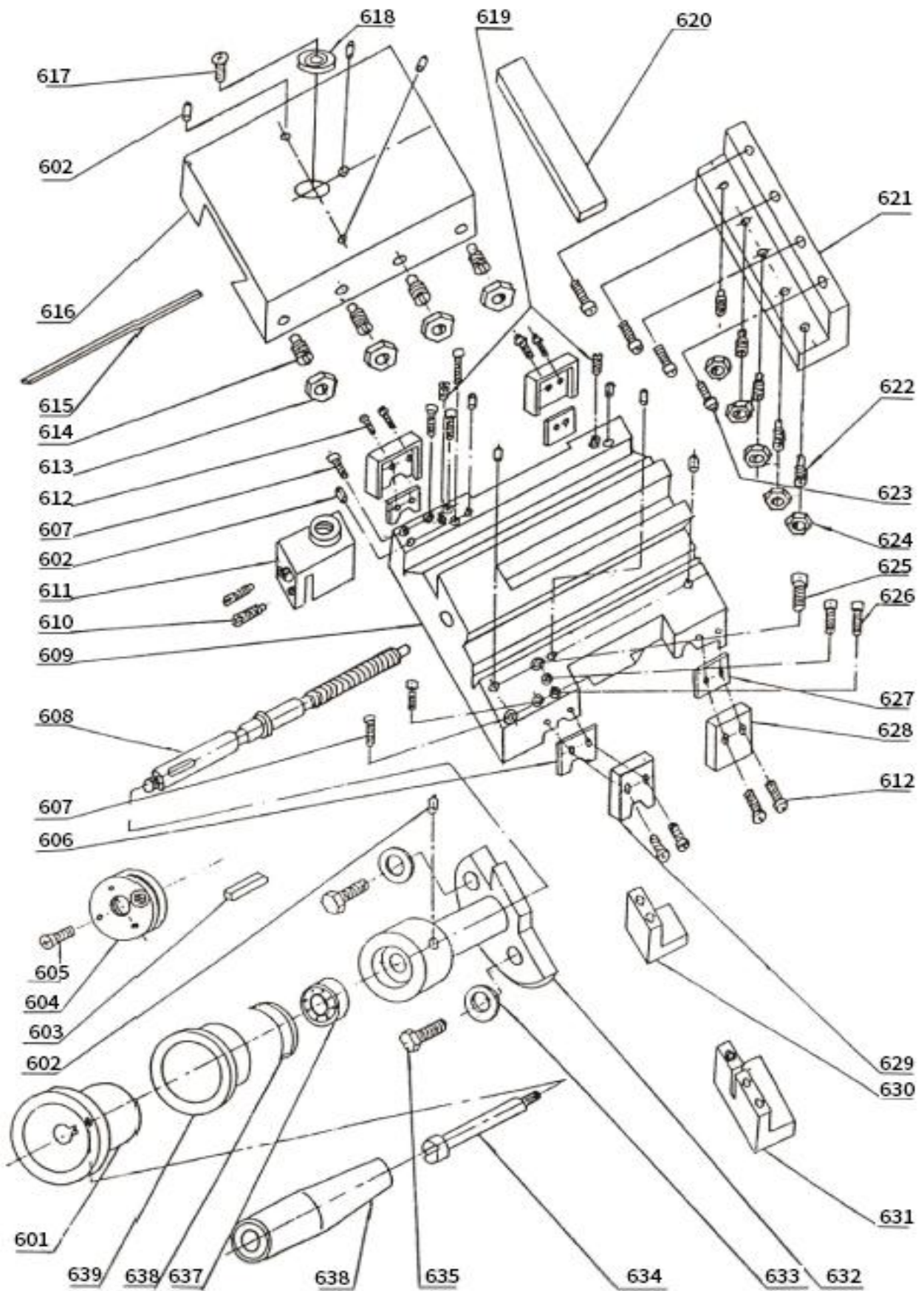
BD-10VS Assembly Breakdown -5



BD-10VS Parts List for Breakdown -5

Index No.	Part No.	Description	Size	Qty.
501	BD-10VS-5-501	ECCENTER		1
502	BD-10VS-51	TAPER PIN	3x20	1
503	BD-10VS-5-503	BUSH		1
504	BD-10VS-5-504	HOUSING		1
505	BD-10VS-52	HEXAGON SOCKET SCREW	M5X30	3
506	BD-10VS-53	NUT M5	DIN439	3
507	BD-10VS-5-507	SHAFT		1
508	BD-10VS-5-508	HANDLE		1
509	BD-10VS-54	STEEL BALL 5		1
510	BD-10VS-55	COMPRESSION SPRING	0.8x5x25	1
511	BD-10VS-5-511	ENGAGING HUB		1
512	BD-10VS-56	HEXAGON SOCKET SCREW	M6x10	1
513	BD-10VS-57	HEXAGON SOCKET SCREW	M4x8	3
514	BD-10VS-58	HEXAGON SOCKET SCREW	M4x8	3
515	BD-10VS-5-515	FLANGE PEDESTAL		1
516	BD-10VS-59	TAPER PIN	3x30	1
517	BD-10VS-5-517	HANDLE BAR		1
518	BD-10VS-5-518	HANDLE		1
519	BD-10VS-5-519	HANDWHEEL		1
520	BD-10VS-60	HEXAGON SOCKET SCREW	M4x8	3
521	BD-10VS-5-521	FLANGE PEDESTAL		1
522	BD-10VS-5-522	PINION SHAFT		1
523	BD-10VS-5-523	BUSH		1
524	BD-10VS-5-524	GEARWHEEL		1
525	BD-10VS-5-525	BUSH		1
526	BD-10VS-61	FLAT KEY	5 x 10 mm	1
527	BD-10VS-5-527	PINION SHAFT		1
528	BD-10VS-62	SCREW	M4x8	2
529	BD-10VS-63	NUT M5	1	1
530	BD-10VS-64	HEXAGON SOCKET SCREW	M5x25	1
531	BD-10VS-5-531	LEADSCREW NUT (SET)		1
532	BD-10VS-5-532	GUIDE BEAD		1
533	BD-10VS-65	PINION PIN	5x20	2
534	BD-10VS-5-534	GRADUATED COLLAR		1

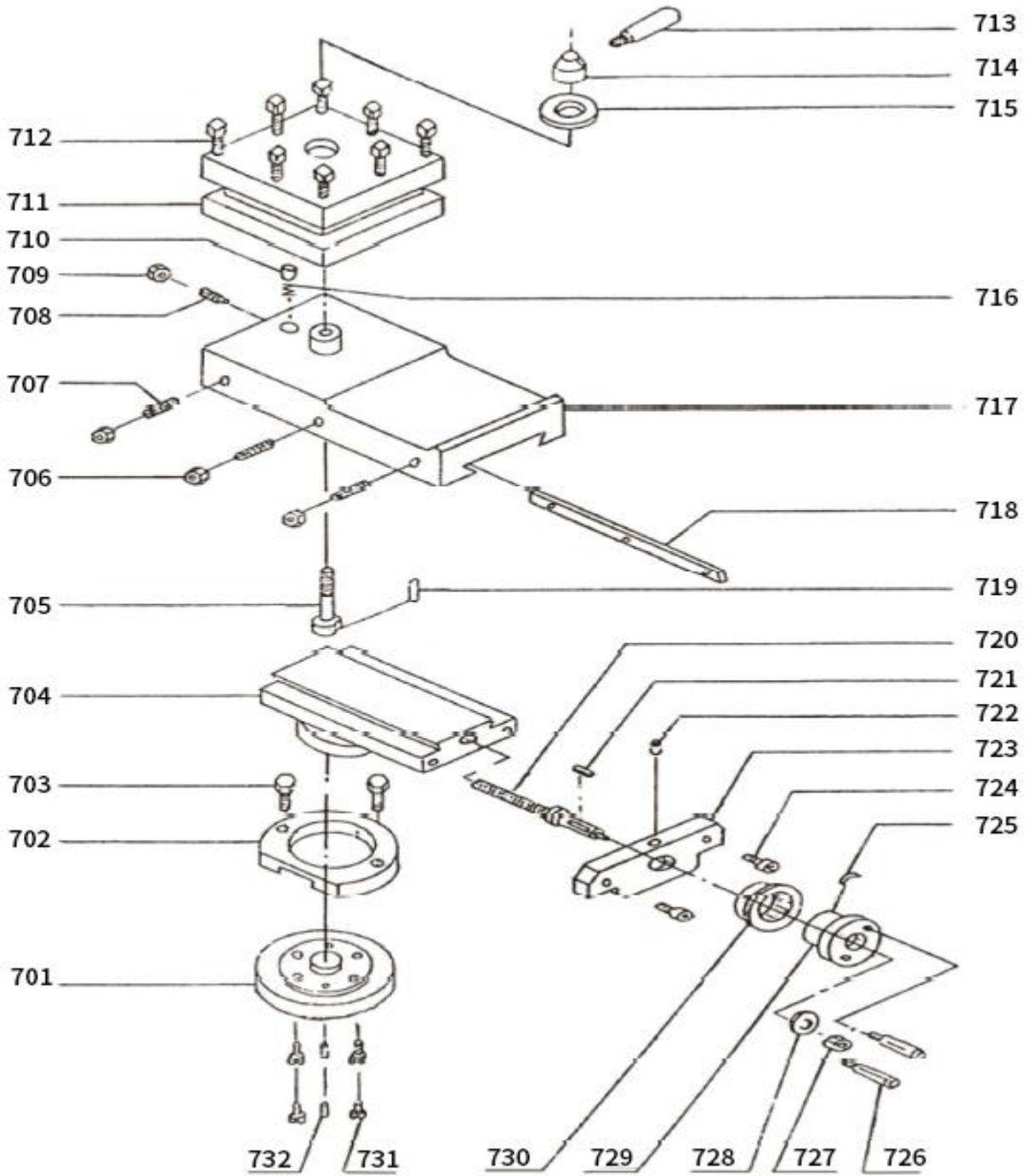
BD-10VS Assembly Breakdown -6



BD-10VS Parts List for Breakdown -6

Index No.	Part No.	Description	Size	Qty.
601	BD-10VS-6-601	HANDWHEEL		1
602	BD-10VS-66	BALL OILER	6	10
603	BD-10VS-67	FLAT KEY	4 x 12 mm	1
604	BD-10VS-6-604	ROUND NUT		1
605	BD-10VS-68	SCREW	M3x6	1
606	BD-10VS-6-606	SCRAPER		2
607	BD-10VS-69	HEXAGON SOCKET SCREW	M6x35	4
608	BD-10VS-6-608	CROSS SLIDE SPINDLE		1
609	BD-10VS-6-609	LATHE SADDLE		1
610	BD-10VS-70	HEXAGON SOCKET SCREW	M3x12	2
611	BD-10VS-6-611	SPINDLE NUT OF CROSS SLIDE		1
612	BD-10VS-71	SCREW		8
613	BD-10VS-72	NUT .M5		4
614	BD-10VS-73	HEXAGON SOCKET SCREW	M5x25	4
615	BD-10VS-6-615	GUIDE BEAD		1
616	BD-10VS-6-616	CROSS SLIDE		1
617	BD-10VS-74	HEXAGON SOCKET SCREW	M5x10	1
618	BD-10VS-6-618	WASHER		1
619	BD-10VS-75	HEXAGON SOCKET SCREW	M8x10	2
620	BD-10VS-6-620	GUIDE BEAD		1
621	BD-10VS-6-621	GUIDE RAIL		1
622	BD-10VS-76	HEXAGON SOCKET SCREW	M4x16	5
623	BD-10VS-77	HEXAGON SOCKET SCREW	M5x16	4
624	BD-10VS-78	NUT .M4		5
625	BD-10VS-79	SCREW	M8x20	1
626	BD-10VS-80	SCREW	M5x20	4
627	BD-10VS-6-627	SCRAPER		2
628	BD-10VS-6-628	METAL REINFORCEMENT		2
629	BD-10VS-6-629	METAL REINFORCEMENT		2
630	BD-10VS-6-630	FRONT SAFETY BLOCK		1
631	BD-10VS-6-631	SAFETY BLOCK		1
632	BD-10VS-6-632	GUIDE BEARING		1
633	BD-10VS-81	WASHER	8	2
634	BD-10VS-6-634	HAND SCREW		1
635	BD-10VS-82	SCREW	M6x20	2
636	BD-10VS-6-636	HANDLE		1
637	BD-10VS-6-637	ROLLING BEARING	51101	1
638	BD-10VS-83	SINOUS SPRING		1
639	BD-10VS-6-639	GRADUATED COLLAR		1

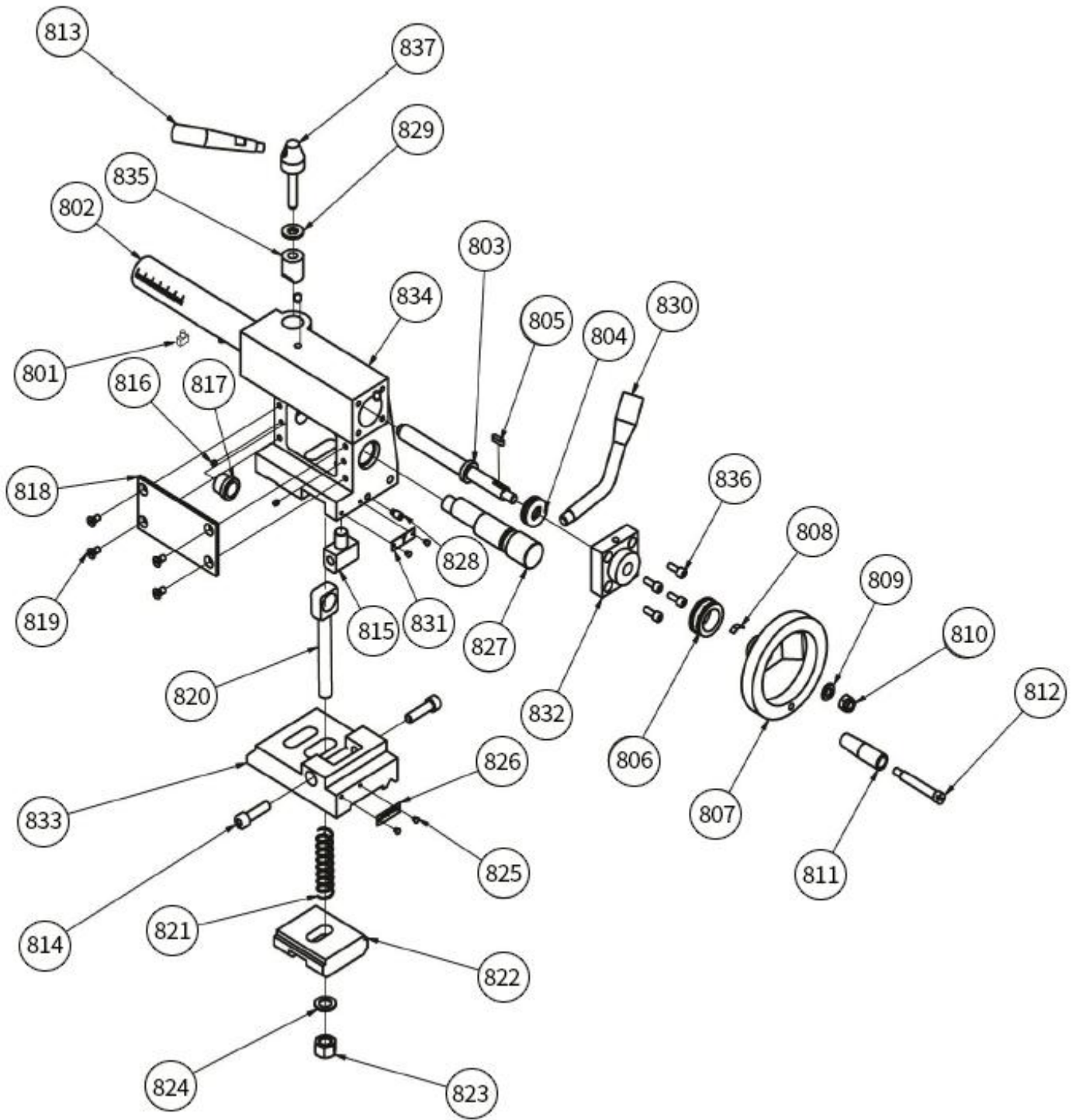
BD-10VS Assembly Breakdown -7



BD-10VS Parts List for Breakdown -7

Index No.	Part No.	Description	Size	Qty.
701.....	BD-10VS-7-701.....	GRADUATED DIAL.....		1
702.....	BD-10VS-7-702.....	INTERMEDIATE FLANGE.....		1
703.....	BD-10VS-84.....	HEXAGON SOCKET SCREW.....	M8x20.....	2
704.....	BD-10VS-7-703.....	SLIDE GUIDE WAY.....		1
705.....	BD-10VS-7-704.....	STRAINING SCREW.....		1
706.....	BD-10VS-85.....	NUT M4.....		3
707.....	BD-10VS-86.....	HEXAGON SOCKET SCREW.....	M4x40.....	3
708.....	BD-10VS-87.....	HEXAGON SOCKET SCREW.....	M4x12.....	1
709.....	BD-10VS-88.....	NUT M4.....		1
710.....	BD-10VS-7-710.....	POSITIONING PIN.....		1
711.....	BD-10VS-7-711.....	LATHE TOOL HOLDER.....		1
712.....	BD-10VS-89.....	SQUARE-HEAD BOLT.....	M8x25.....	8
713.....	BD-10VS-7-713.....	HANDLE.....		1
714.....	BD-10VS-7-714.....	CLAMPING PIECE.....		1
715.....	BD-10VS-7-715.....	WASHER.....		1
716.....	BD-10VS-7-716.....	COMPRESSION SPRING.....	0.8X4X15.....	1
717.....	BD-10VS-7-717.....	TOP SLIDE.....		1
718.....	BD-10VS-7-718.....	GUIDE BEAD.....		1
719.....	BD-10VS-90.....	PARALLEL PIN.....	3x10.....	1
720.....	BD-10VS-7-720.....	TOP SLIDE SPINDLE.....		1
721.....	BD-10VS-91.....	FLAT KEY.....	3 x 12 mm.....	1
722.....	BD-10VS-92.....	BALL OILER.....	6.....	1
723.....	BD-10VS-7-723.....	BEARING PEDESTAL.....		1
724.....	BD-10VS-93.....	HEXAGON SOCKET SCREW.....	M4x16.....	2
725.....	BD-10VS-94.....	SINOUS SPRING.....		1
726.....	BD-10VS-7-726.....	HANDLE.....		2
727.....	BD-10VS-95.....	NUT M8.....		1
728.....	BD-10VS-96.....	WASHER.....	8.....	1
729.....	BD-10VS-7-729.....	HANDWHEEL.....		1
730.....	BD-10VS-7-730.....	GRADUATED COLLAR.....		1
731.....	BD-10VS-97.....	HEXAGON SOCKET SCREW.....	M6x16.....	4
732.....	BD-10VS-98.....	PARALLEL PIN.....	4x16.....	2

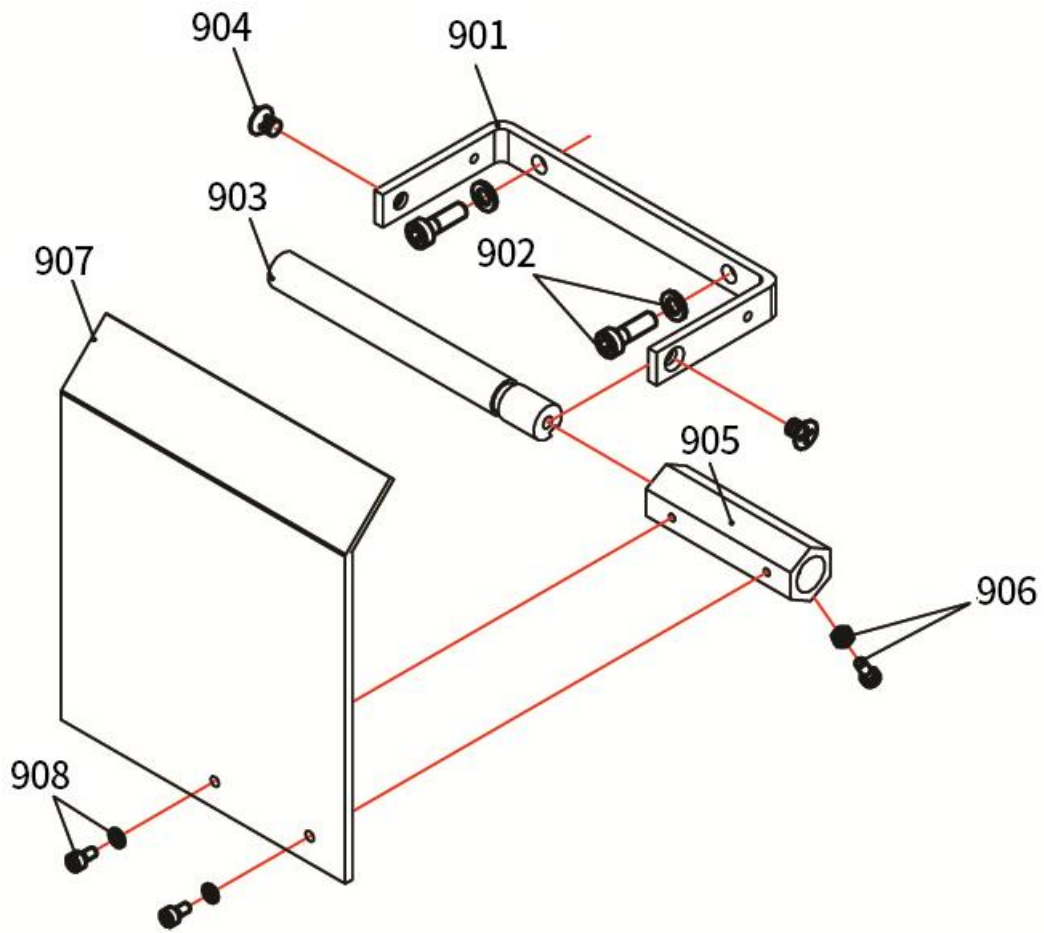
BD-10VS Assembly Breakdown -8



BD-10VS Parts List for Breakdown -8

Index No.	Part No.	Description	Size	Qty.
801	BD-10VS-8-801	PIECE OF CENTERING OF SPINDLE SLEEVE		1
802	BD-10VS-8-802	SPINDLE SLEEVE		1
803	BD-10VS-8-803	SPINDLE		1
804	BD-10VS-8-804	AXIALLY GROOVED BALL BEARING	51101	1
805	BD-10VS-99	FLAT KEY	4 x 14 mm	1
806	BD-10VS-8-806	SCALES RING		1
807	BD-10VS-8-807	HAND WHEEL		1
808	BD-10VS-100	SPRING PLATE		1
809	BD-10VS-101	WASHER	ISO 7090 - 8	1
810	BD-10VS-102	HEXAGON NUT	DIN 6924 -M8	1
811	BD-10VS-8-811	CASE FOR HANDLE		1
812	BD-10VS-8-812	FIXING BOLT FOR CASE		1
813	BD-10VS-8-813	CLAMPING LEVER		1
814	BD-10VS-103	SOCKET HEAD SCREW	GB 70-85 - M8 x 30	2
815	BD-10VS-8-815	PIECE OF CENTERING OF SPINDLE SLEEVE		1
816	BD-10VS-104	THREADED PIN	ISO 4028 - M4 x 5	1
817	BD-10VS-8-817	GUIDE BUSH		1
818	BD-10VS-8-818	COVER		1
819	BD-10VS-105	COUNTERSUNK SCREW	ISO 2009 - M5 x 10	4
820	BD-10VS-8-820	TIGHTENING SCREW		1
821	BD-10VS-8-821	SPRING	1.2 x 13.2 x 40 mm	1
822	BD-10VS-8-822	CLAMPING PLATE		1
823	BD-10VS-106	HEXAGON NUT	ISO 4035 -M12	1
824	BD-10VS-107	WASHER		1
825	BD-10VS-108	RIVET		4
826	BD-10VS-8-826	SCALE		1
827	BD-10VS-8-827	ECCENTRIC CAM		1
828	BD-10VS-109	THREADED PIN	ISO 4028 -M6 x 12	1
829	BD-10VS-8-829	WASHER		1
830	BD-10VS-8-830	CLAMPING LEVER		1
831	BD-10VS-8-831	SCALE		1
832	BD-10VS-8-832	SADDLE		1
833	BD-10VS-8-833	BASE PLATE TAILSTOCK		1
834	BD-10VS-8-834	TAILSTOCK UPPER SECTION		1
835	BD-10VS-8-835	CLAMPING PART COLLAR		1
836	BD-10VS-110	SOCKET HEAD SCREW	GB 70-85 -M5 x 14	4
837	BD-10VS-8-837	HEAD CLAMPING LEVER		1

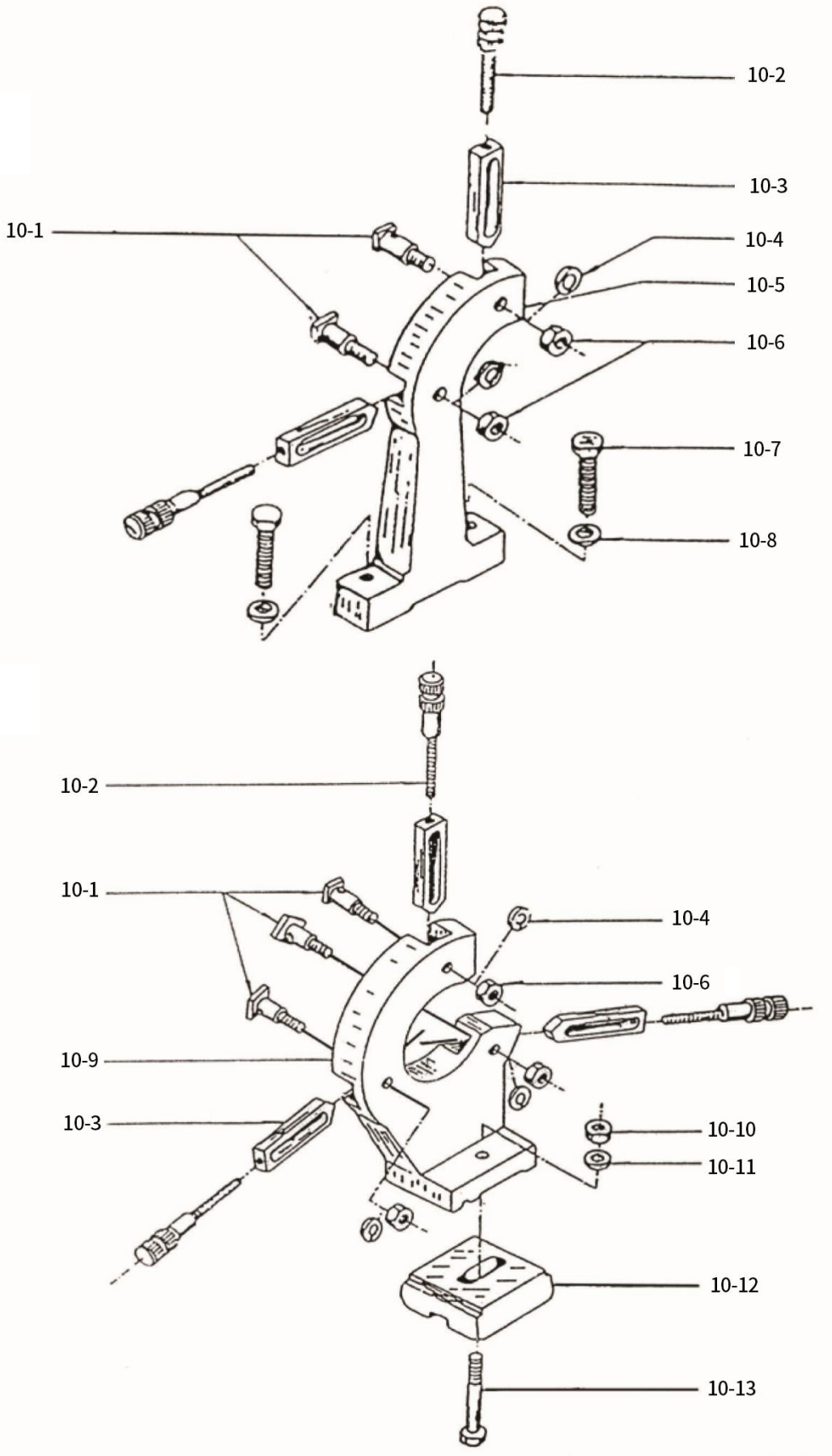
BD-10VS Assembly Breakdown -9



BD-10VS Parts List for Breakdown -9

Index No.	Part No.	Description	Size	Qty.
901.....	BD7VS-601.....	SUPPORT.....		1
902.....	GB7085-5-12.....	SOCKET HD SCREW.....	M5 x 12 mm.....	2
903.....	BD7VS-603.....	SHAFT.....		1
904.....	GB81985-5-6.....	CROSS RECESSED FLAT HD SCREW.....	M5 x 6 mm.....	2
905.....	BD7VS-605.....	HEX SLEEVE.....		1
906.....	GB7085-3-8.....	SOCKET HD SCREW.....	M3 x 8 mm.....	1
907.....	BD7VS-607.....	CHIP SHIELD.....		1
908.....	GB7085-3-6.....	SOCKET HD SCREW.....	M3 x 6 mm.....	2

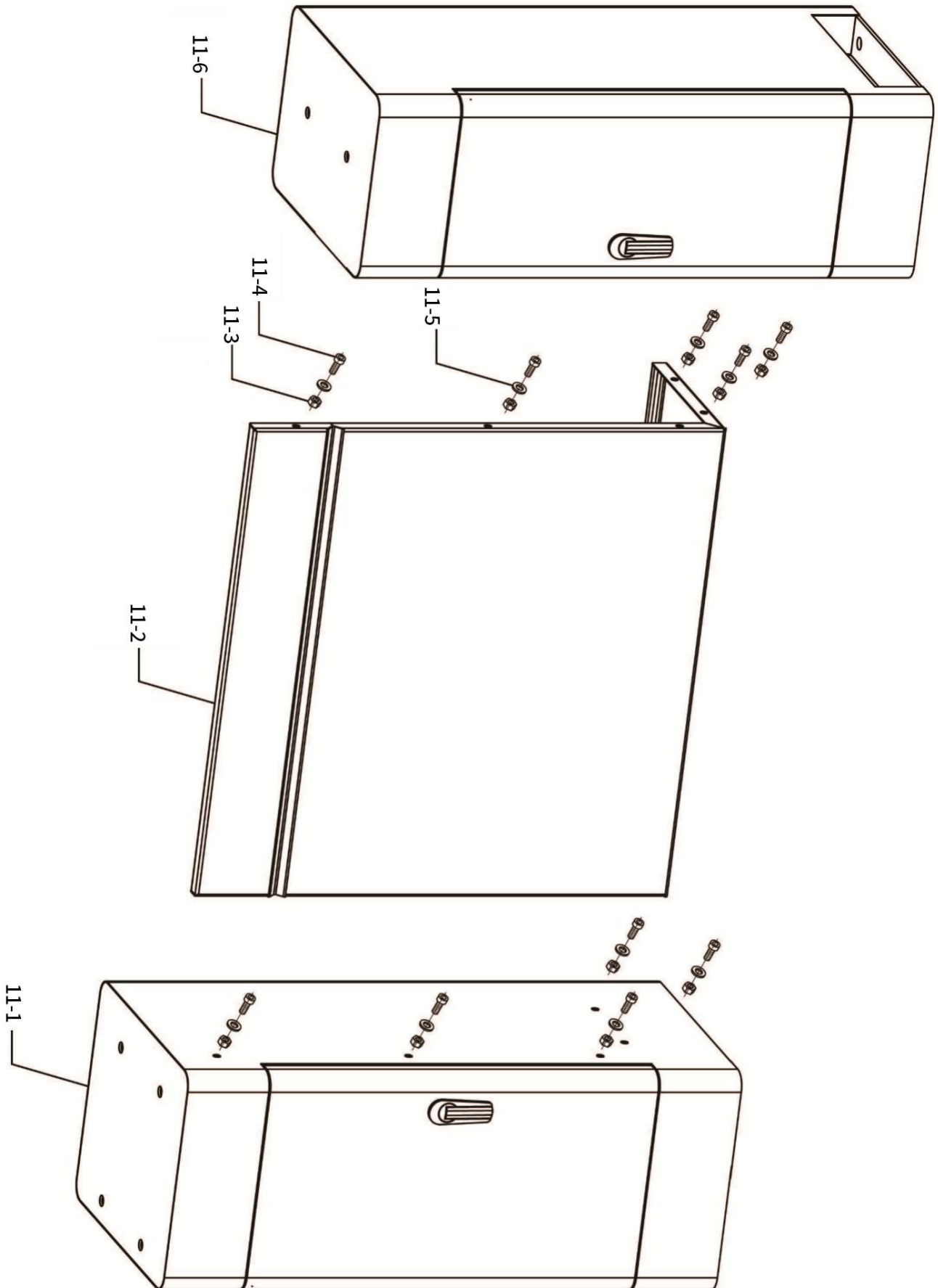
BD-10VS Assembly Breakdown -10



BD-10VS Parts List for Breakdown -10

Index No.	Part No.	Description	Size	Qty.
10-1	BD-10VS-10-10-1	SCREW		5
10-2	BD-10VS-10-10-2	TIGHTENING SCREW		5
10-3	BD-10VS-10-10-3	SLIDE JAW		5
10-4	GB9785-10	SPRING WASHER (STD)	10	5
10-5	BD-10VS-10-10-5	FOLLOW REST		1
10-6	GB617086-10	HEX NUT	M10	5
10-7	GB578186-8-30	HEX HD SCREW	M8 x 30 mm	2
10-8	GB97185-8	WASHER	8	2
10-9	BD-10VS-10-10-9	STEADY REST		1
10-10	GB617086-12	HEX NUT	M12	1
10-11	GB97185-12	WASHER	12	1
10-12	BD-10VS-10-10-12	CLAMPING PLATE		1
10-13	GB578186-12-60	HEX HD SCREW	M12 x 60 mm	1
	BD-10VS-10-10-14	FOLLOW REST KIT		1
	BD-10VS-10-10-15	STEADY REST KIT		1

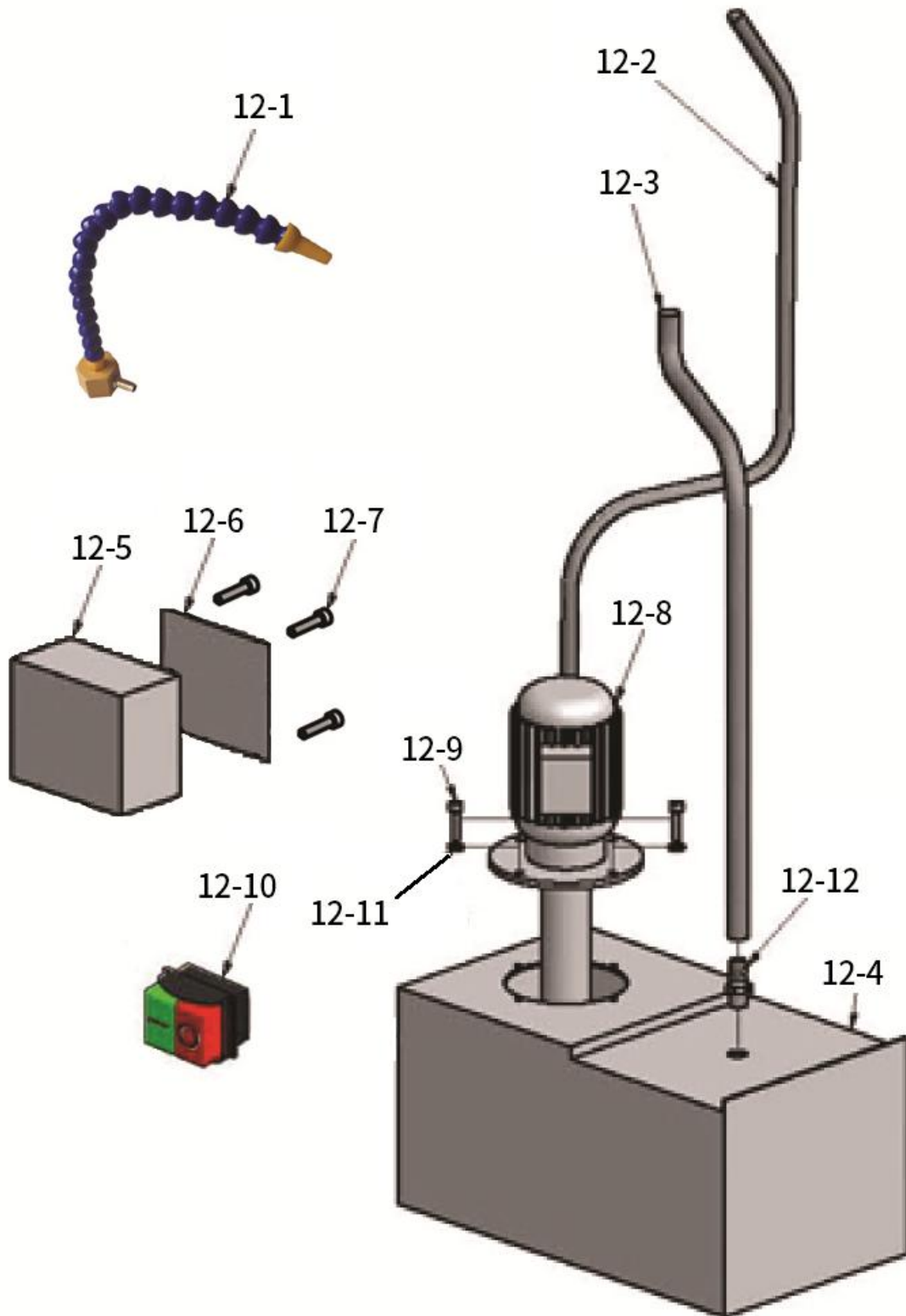
BD-10VS Assembly Breakdown -11



BD-10VS Parts List for Breakdown -11

Index No.	Part No.	Description	Size	Qty.
11-1.....	BD-10VS-11-11-1.....	LEFT STAND.....		1
11-2.....	BD-10VS-11-11-2.....	CONNECTING PLATE.....		1
11-3.....	GB617086-8.....	HEX NUT.....	M8.....	10
11-4.....	GB7085-8-16.....	SOCKET HD SCREW.....	M8 x 16 mm.....	10
11-5.....	GB97185-8.....	WASHER.....	8.....	10
11-6.....	BD-10VS-11-11-6.....	RIGHT STAND.....		1
.....	BD7VS-807.....	STAND KIT.....		1

BD-10VS Assembly Breakdown -12



BD-10VS Parts List for Breakdown -12

Index No.	Part No.	Description	Size	Qty.
12-1	BD-7VS-901	NOZZLE		1
12-2	BD-7VS-902	OUTLET PIPE		1
12-3	BD-7VS-903	RETURNING PIPE		1
12-4	BD-7VS-904	WATER TANK		1
12-5	BD-7VS-905	ELECTRICAL BOX		1
12-6	BD-7VS-906	ELECTRICAL BOX COVER		1
12-7	GB7085-5-30	SOCKET HD SCREW	M5 x 30 mm	4
12-8	BD-7VS-908	COOLANT PUMP		1
12-9	GB7085-5-12	SOCKET HD SCREW	M5 x 12 mm	4
12-10	BD-7VS-910	SWITCH	KJD17B	1
12-11	GB97185-5	WASHER	5	4
12-12	BD-7VS-912	HOSE CLIP		1
	59500112	COOLANT PUMP KIT		1

16.0 Wiring Diagrams

BD-10VS1~230V, PE, 50Hz

BD-10VS Electrical Parts List

Designation	Model	Quantity	Note
Electromagnetic switch	KJD17GF	1	
Reverse Switch F/R	ZH-A	1	
Filter	NF211B10/02	1	
Emergency stop	LAY5	1	
Circuit board	JYMC-220A-I 230VAC 12ADC	1	
Potentiometer	WX14-12 4K7	1	
Speed display and sensor	JD011 5V	1	
DC Motor	ZYT110/59T1	1	
FU1 , FU2	10A	2	
Gear Guard Switch	QKS8	1	
Chunk Guard Switch	LXW5-11Q1	1	

Packing list

BD-10VS standar accessories part

Part NO.	Name	Specification	Quananity
1	oil gun		1
2	hexagon wrench	2.5/3/4/5/6	5
3	double end spanner	8-10/12-14/17-19	3
4	chuck spanner		1
5	steady center	MT2	1
6	follow center	MT4	1
7	reverse chuck 3 jaws	Φ125mm	3
8	painting can		2
9	handle		2
10	change gears	30/45/50/60/60/65/85T	7
14	T allen key	6mm	1
15	gross screwdriver	3"	1
16	straight screwdriver	3"	1
17	quadruple tool holder spanner	8mm	1
18	fuse	10A	2
21	gates belt	7M-710	1





Environmental protection

Protect the environment.

Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.



This symbol indicates separate collection for electrical and electronic equipment required under the WEEE Directive (Directive 2012/19/EC) and is effective only within the European Union.

Umweltschutz

Schützen Sie die Umwelt!

Ihr Gerät enthält mehrere unterschiedliche, wiederverwertbare Werkstoffe. Bitte entsorgen Sie es nur an einer spezialisierten Entsorgungsstelle.



Dieses Symbol verweist auf die getrennte Sammlung von Elektro- und Elektronikgeräten, gemäß Forderung der WEEE-Richtlinie (2012/19/EU). Diese Richtlinie ist nur innerhalb der Europäischen Union wirksam.

Protection de l'environnement

Protégez l'environnement !

Votre appareil comprend plusieurs matières premières différentes et recyclables. Pour éliminer l'appareil usagé, veuillez l'apporter dans un centre spécialisé de recyclage des appareils électriques.



Ce symbole indique une collecte séparée des équipements électriques et électroniques conformément à la directive DEEE (2012/19/UE). Cette directive n'est efficace que dans l'Union européenne.