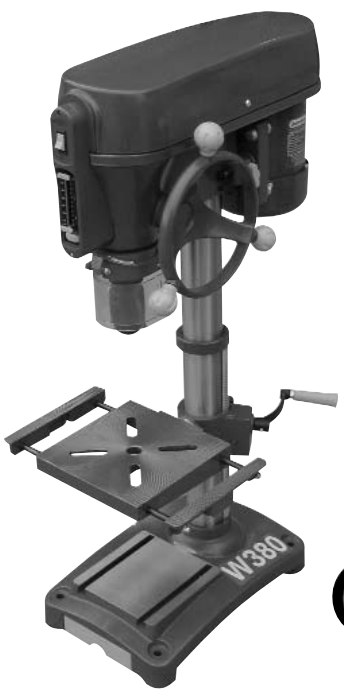
charnwood

Woodworking machinery at its best!

PILLAR DRILL
OPERATING INSTRUCTIONS

Models: W370 & W380



CE

Charnwood, Cedar Court, Walker Road,
Bardon, Leicestershire LE67 1TU
Tel. 01530 516 926 Fax. 01530 516 929
email: sales@charnwood.net Website: www.charnwood.net

1 Safety

Glossary of symbols

☞	gives further advice
→	calls on you to get in action
•	enumeration

This part of the operating manual

- does explain the meaning and how to use the warning references contained in this operating manual,
- does explain how to use the bench drilling machine,
- highlights the dangers that might arise for you and others if these instructions are not followed thoroughly,
- informs you on how to prevent dangers.

In addition to this operating manual, please note

- applicable laws and regulations,
- legal regulations for preventing an accident,
- the prohibition, warning and mandatory signs as well as the warning notes on the bench drilling machine.

American standards must be kept during installation, operation, maintenance and repair of the bench drilling machine.

If American standards are not applied at the national legislation of the country of destination, the specific applicable regulations of each country are to be observed.

If necessary, the required measures must be taken to comply with the specific regulations of each country before the bench drilling machine is used for the first time.

Always keep the operating manual close to the bench drilling machine for further reference.

INFORMATION

If you are not able to solve a problem using this manual, please do not hesitate to contact us for further professional advice:

1.1 Safety warnings (warning notes)

1.1.1 Classification of hazards

We classify the safety warnings into various levels. The table below gives an overview of the classification of symbols (ideogram) and warning signs for each specific danger and its (possible) consequences.

ideogram	warning alert	definition / consequence
	**DANGER!**	Threatening danger that will cause serious injury or death to people.
	WARNING!	Risk: A danger that might cause serious injury or death to a person.
	CAUTION!	Danger or unsafe procedure that might cause injury to people or damage to property.
	**ATTENTION!**	Situation that could cause damage to the machine and to the product and other types of damages. No risk of injury to people.
	**INFORMATION**	Application advice and other important or useful information and notes. No dangerous or harmful consequences for people or objects.

In case of certain dangers, we replace the ideogram by

general danger | with a warning of | injuries to hands | hazardous electrical voltage | or | rotating parts

1.2 Further ideograms

Warning of automatic start-up!

Activation forbidden!

Pull the main plug!

Use safety glasses!

Use ear protection!

Use protective gloves!

Use protective boots!

Wear a safety suit!

Protect the environment!

Contact address

1.3 Proper use

Application

The bench drilling machine is designed and manufactured to produce holes in cold metal or other not health hazardous or not bumble material by using a rotating cutting tool with several chucking grooves.

The bench drilling machine is used with tools where the arrangement of cutting edges are building a couple of forces in the camming around the rotation axis.

A quick action drill chuck is being delivered for the tool holding fixture. The bench drilling machine is to be operated only with a quick action drill chuck.

Improper use!

If the bench drilling machine is used in any way other than prescribed above, then the bench drilling machine is being used improperly.

We do not take liablity for damage caused through improper use.

We would like to stress that any modifications to the construction, or technical or technological modifications that have not been authorized by Optimum Maschinen GmbH will also render the guarantee null and void.

It is also part of proper use that

- the maximum values of the bench drilling machine are complied with, ☞ "Technical Data" on page 13
- the operating manual is constantly observed,
- inspection and maintenance instructions are observed.

WARNING!

Very serious injury.

It is forbidden to make any modifications or alternations to the operating values of the bench drilling machine! They could endanger employees and cause damage to the bench drilling machine.

1.4 Possible dangers caused by the bench drilling machine

The bench drilling machine is state of the art.

Nevertheless, there is a residual risk as the bench drilling machine operates with

- high revolutions,
- rotating parts,
- electrical voltage and currents.

We have used construction resources and safety techniques to minimize the health risk to persons resulting from these hazards.

If the bench drilling machine is used and maintained by employees who are poorly qualified, then there might be a risk resulting from incorrect operation and unsuitable maintenance of the bench drilling machine.

INFORMATION

Everyone involved in the assembly, commissioning, operation and maintenance must

- be duly qualified,
- strictly follow this operating manual.

Due to improper use

- there is a risk for the employee,
- the machine and further property might be endangered,
- the function of the bench drilling machine could be affected.

Always disconnect the bench drilling machine if cleaning or maintenance work is being carried out.

WARNING!

The bench drilling machine may only be used with the safety devices activated. Disconnect the bench drilling machine immediately whenever you detect a failure in the safety device or when they are not mounted! ☞ **"Safety devices" on page 8**

All additional installations carried out by the operator must incorporate the safety devices prescribed.

This is your responsibility being the operator!

1.5 Qualification of employees

1.5.1 Target group

This manual applies to

- the operators,
- the users,
- the maintenance staff.

Therefore, the warning notes refer to both operation and maintenance of the bench drilling machine.

Determine clearly and make a permanent decision in who will be responsible for the different activities on the machine (operation, maintenance and repair).

Vague and unclear assignment of responsibilities constitute a safety hazard!

Always disconnect the main plug of the bench drilling machine. This will prevent it from being used by unauthorized persons.

1.5.2 Authorized persons

WARNING!

Incorrect use and maintenance of the bench drilling machine constitute a danger for the staff, objects and the environment.

Only authorized persons may operate the bench drilling machine!

Persons authorized to operate and maintain should be trained technical staff and instructed by the ones who are working for the operator and for the manufacturer.

The operator must

Obligations of the operator

- train the staff,
- instruct the staff in regular intervals (at least once a year) on
  - all safety standards that apply to the bench drilling machine,
  - the operation,
  - accredited technical guidelines,
- check the knowledge of the staff,
- document training / instructions,
- require the staff to confirm participation in training / instructions by means of a signature,
- check if the staff is aware of safety rules and dangers in the workplace so that they observe the operating manual.

The user must

Obligations of the user

- have followed a training on the operation of the bench drilling machine,
- know the function and performance,
- before commissioning
  - have read and understood the operating manual,
  - be familiar with all safety devices and regulations.

further requirements to the qualification

For working on the following machine parts, additional requirements are being applied:

- Electrical parts or operating agents: shall only be performed by an electrician or under the guidance and supervision of an electrician.

  Before starting work on electrical parts or operating agents, following measures are to be performed in the following order.
  - disconnect all poles
  - secure against switching on
  - check dead circuit

1.6 User's position

The user must stand in front of the bench drilling machine.

INFORMATION

The main switch of the bench drilling machine must be easily accessible.

1.7 Safety devices

Operate the bench drilling machine only with properly functioning safety devices.

Stop the bench drilling machine immediately if there is a failure in the safety device or if it is not functioning for some reason.

It is your responsibility!

If the safety device has been activated or has failed, the bench drilling machine must only be operated again when

- the cause of the failure has been removed,
- you have made sure that there is no existing danger for persons or objects.

WARNING!

If you bypass, remove or override a safety device in any other way, you are endangering yourself and other persons working on the bench drilling machine. The possible consequences are the following

- **injuries due to components or parts of components flying off at high speed,**
- **contact with rotating parts,**
- **fatal electrocution.**

The bench drilling machine includes the following safety devices:

- a fixed screwed-on protective cover for the pulleys,
- a drilling machine table with grooves to fasten the workpiece or a vice.

1.7.1 Drilling machine table

The drilling machine table is provided with holding fixtures for sliding blocks.

WARNING!

Risk of injury through spinning of parts. Fasten the workpiece safely on the drilling machine table.

1.7.2 Prohibition, warning and mandatory labels

INFORMATION

All warning labels must be legible.

Check them regularly.

1.8 Safety check

Check the bench drilling machine at least once per shift. Inform the person responsible immediately of any defect or change in the operating function.

Check all safety devices

- at the beginning of each shift (with the machine stopped),
- once a week (with the machine in operation),
- after every maintenance and repair work.

Check that the prohibition, warning and information labels as well as the markings on the bench drilling machine

- are legible (clean them, if necessary),
- are complete.

1.9 Personal protective equipment

For certain work, personal protective equipment is required, such as:

- safety helmet,
- protective glasses or face guard,
- protective gloves,

- safety shoes with steel caps,
- ear protection.

Before starting work, make sure that the prescribed personal protective equipment is available at the workplace.

CAUTION!

Dirty or eventually contaminated personal protective equipment might cause disease.

Clean your personal protective equipment

- **after each use,**
- **regularly once a week.**

Personal protective equipment for special work

Protect your face and your eyes: Wear a safety helmet with a face guard for every work, especially for the kind of work where your face and eyes are exposed to hazards.

Use protective gloves when lifting or handling pieces with sharp edges.

Wear safety shoes when fitting, dismanteling or transporting heavy components.

1.10 Safety during operation

In the description of work with and on the bench drilling machine we highlight the dangers specific to that work.

WARNING!

Before activating the bench drilling machine, double check that this will

- **not endanger other people,**
- **not cause damage to equipment.**

Avoid unsafe working practice:

- Make sure that your work does not endanger anyone.
- The instructions of this manual must be observed strictly during assemby, operation, maintenance and repair.
- Do not work on the bench drilling machine if your concentration is reduced, for example, because you are taking medication.
- Observe the regulations for the prevention of accidents issued by your association for the prevention of accidents and safety in the workplace or other inspection authorities.
- Inform the inspector of any danger or failure.
- Use the prescribed personal protective equipment. Make sure to wear a well-fitting work suit and a hairnet, if necessary.
- Do not use protective gloves when drilling.

1.11 Safety during maintenance

Report and document changes

Inform the operating staff on time of any repair and maintenance work.

1.12 Accident report

Inform your superiors and Optimum Maschinen GmbH immediately in case of accidents, possible sources of danger and any action which almost lead to an accident "near misses".

"Near misses" may have many possible causes.

The sooner they are notified, the faster these causes can be eliminated.

INFORMATION

In the description of execution of work with and on the bench drilling machine we highlight the dangers specific to that kind of work.

1.13 Electric

☞ "Maintenance" on page 26

Have the machine and / or the electrical equipment checked regularly, at least every six months.

Eliminate immediately all defects such as loose connections, defective wires, etc.

A second person must be present during work on live components, to disconnect the power in case of an emergency.

Disconnect the bench drilling machine immediately if there is a malfunction in the power supply!

2 Technical Data

	W370	W380
Motor	230V 50Hz 350W	230V 50Hz 500W
Spindle Travel	50mm	65mm
Max Drilling Dimaeter	13mm	16mm
Columm Diameter	50mm	60mm
Spindle Taple	MT2#	MT2#
Spindle speeds	5 speeds	12 speeds
Table size	152 x 170 mm	200 x 200 mm
Base Size	320 x 185 mm	380 x 265 mm
Max Distance from Spindle Axis to Surface of Columm	102mm	126mm
Max Distance from Spindle Axis to Surface of Table	320mm	385mm
Max Distance from Spindle Axis to Surface of Base		495mm
Extended Table saw	195(Max.275)x 170mm	240(Max.340) x 200mm
Extenor Size	410 x 240 x 710 mm	520 x 300 x 880mm
G.W./N.W.	28/26kgs	43/40kgs
Packing size	577x377x260mm	712x430x315mm

The emission of the bench drilling machine is below 78 dB(A). If the bench drilling machine is installed in an area where various machines are in operation, the acoustic influence (immission) on the operator of the bench drilling machine may exceed 85 dB(A).

INFORMATION

We recommend the use of soundproofing and ear protection. Please note that the duration of the acoustic exposure ? / strain ? the kind and nature of the working area as well as other machines may influence the noise level in the workplace.

3 Assembly

INFORMATION

The bench drilling machine is disassembled ready for packaging.

The bench drilling machine is to be assembled before using.

3.1 Transport

WARNING!

Machine parts which fall off forklift trucks or other transport vehicles could cause very serious or even fatal injuries. Follow the instructions and information on the box:

- **centres of gravity**
- **suspension points**
- **weights**
- **means of transport to be used**
- **prescribed shipping position**

WARNING!

Use of unstable lifting and load suspension gear that breaks under load can cause very serious injuries or even death.

Check that the lifting and load suspension gear

- **has sufficient load capacity,**
- **is in perfect condition.**

Observe the rules for preventing accidents issued by your association for the prevention of occupational accidents and safety in the workplace or other inspection authorities.

Hold the loads properly.

Never walk under suspended loads!

3.2 Delivery volume

When the bench drilling machine is being delivered, please check immediately that it has not been damaged during transportation and that all components are complete. For this purpose, take all parts off the box and compare them to the following list.

- drilling head
- stand
- tripod
- toothed rack with guiding rings (MX-1304 and MX-1604)
- drilling machine table and support for drilling machine table (support for table pre-assembled)
- quick clamp drill chuck
  for **ZJ4113II** , 1-13 mm
  for **ZJ4116 II** , 3-16mm
- clamping lever drilling machine table
- handle for drilling machine table
- drawer for drills (drill drift, hexagon socket screw key)
- operating manual

3.3 Storage

ATTENTION!

Improper storage may cause important parts to be damaged or destroyed.

Store packed or unpacked parts only under the following ambient conditions: ☞ "Environmental conditions" on page 13

Consult Optimum Maschinen GmbH if the bench drilling machine and accessories have to be stored for a period of over three monthes or under different external conditions than those given here.

3.4 Installation and assemby

3.4.1 Requirements of the installation site

Organize the workplace around the bench drilling machine in accordance with local safety regulations. Operation, maintenance and repair in the work area must not be hindered.

INFORMATION

The main plug of the bench drilling machine must be easily accessible.

3.4.2 Assembly

WARNING!

Danger of crushing when grouping, assembling and mounting the machine components.

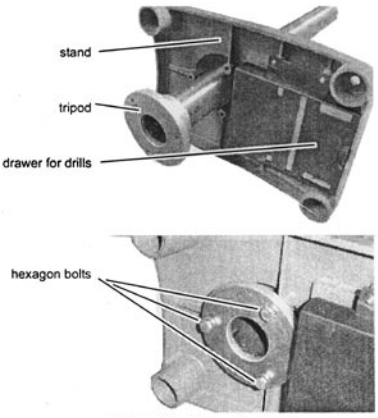
Assembly of stand and tripod

INFORMATION

You need a hexagon **wrench** 14mm and a hexagon socket screw key 5mm to assemble the bench drilling machine. You will find the required hexagon socket screw key in the drawer for drills in the stand.

→ Pass the tripod through the stand.

→ Tighten the tripod with the three hexagon bolts.
(hexagon bolts, spring washer, attaching enclosed disk).

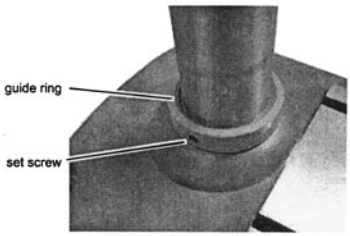


Illustr.3-1: Assembly tripod

○ The following assembly instructions refer to the bench drilling machine **ZJ4116 II**

→ Mount the lower guide ring of the toothed rack.

→ Fasten the guide ring with the set screw.



Illustr.3-2: Assembly guide ring

Assembly of the drilling machine table

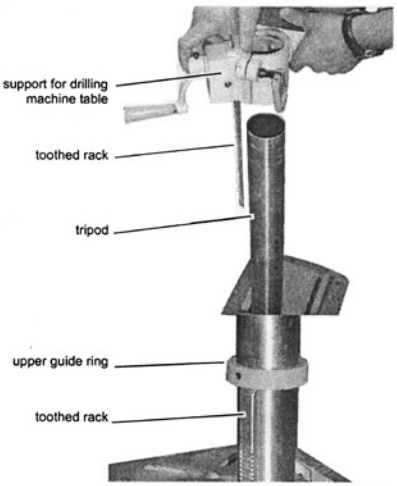
→ Introduce the spiral wheel into the support for the drilling machine table.

→ Adjust the toothed rack within the drilling machine table in a way that the teeth of the toothed rack cam into the spiral wheel of the support for the drilling machine table.

→ Push the complete table with the toothed rack onto the tripod. The larger part without toothing of the toothed rack must be upside.

→ Mount and tighten the upper guide ring of the toothed rack. Make sure that the drilling machine table is easily movable around the tripod.

→ Mount the clamping lever to fix the drilling machine table.



Illustr. 3-3: Assembly drilling machine table

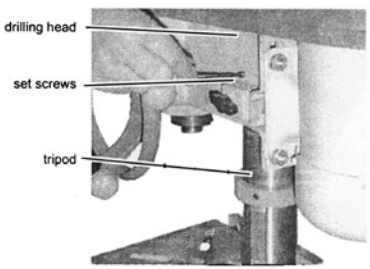
Assembly of the drilling head

→ Put the drilling head on the tripod and turn it until it aligns with the stand.

○ Make sure that the drilling head is completely fixed onto the tripod.

→ Tighten the drilling head with the two set screws.

→ Mount the handwheel for the spindle sleeve feed.



Illustr. 3-4:

Assembly of the quick clamping drill chuck

☞ "Mounting of the quick action drill chuck" on page 23

3.4.3 Installation

Check the horizontal orientation of the base of the bench drilling machine with a spirit level.

Attach the bench drilling machine to the base using the holes in the stand.

The place where the bench drilling machine is installed must comply with ergonomic workplace requirements.

ATTENTION!

Tighten the setscrews on the bench drilling machine only until it is firmly secured and can neither move during operation nor be turned over.

If the setscrews are too tight and the base is uneven, the stand of the bench drilling machine may break.

3.5 First use

WARNING!

Staff and equipment may be endanged if the bench drilling machine is first used by unexpert staff.

We do not take responsibility for damage caused by incorrect commissioning.

Power supply

Connect the main plug of the bench drilling machine to the power supply. Check the fuse protection of your power supply to the technical data for the power consumption of the engine.

4 Handling

4.1 Safety

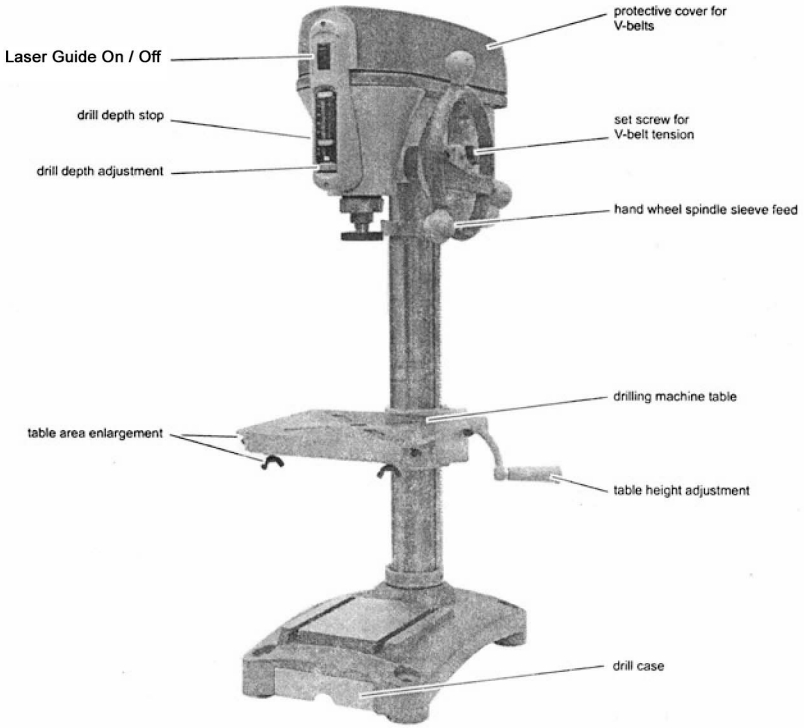
Use the bench drilling machine only under the following conditions:

- The bench drilling machine is in proper working order.
- The bench drilling machine is used as prescribed.
- The instruction manual has been followed.
- All safety devices are installed and activated.

All malfunctions should be eliminated immediately. Stop the machine immediately at an event of any malfunction in operation and make sure it cannot be started up accidentally or without authorization.

Notify the person responsible immediately of any modification.

4.2 Control and indicating elements



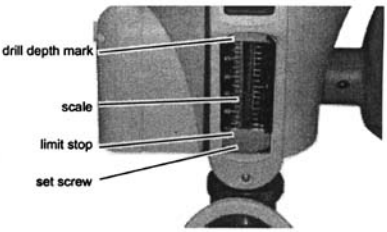
Illustr. 4-1: Bench drilling machine **W370 and W380**

4.2.1. Drill depth stop

When drilling several holes of the same depth, you can use the drill depth stop.

→ Adjust the drill depth mark with the set screw to the required drill depth.

○ The spindle can now only be lowered to the adjusted value.

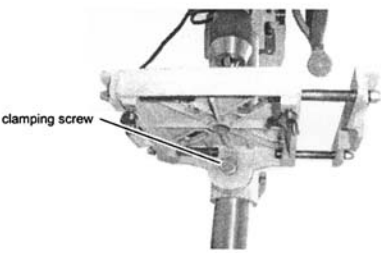


Illustr. 4-3: scale drill depth stop

4.2.2 Inclination of the drilling machine table

The drilling machine table can be inclined to the right or to the left.

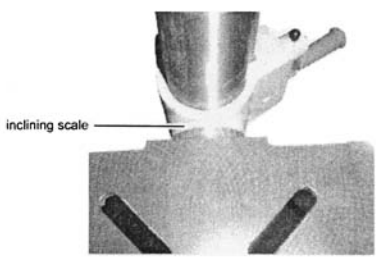
→ Loosen the fastening screws to incline the drilling machine table.



Illustr. 4-4: fastening screw

→ Use the inclining scale to adjust the drilling machine table.

→ Re-tighten the clamping screws firmly.



Illustr. 4-5: inclining scale

4.3 Speed alternation

WARNING!

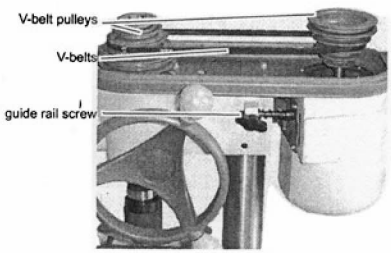
Only open the cover hood when the bench drilling machine is disconnected from the electrical power supply.

Close and screw the covering hood after each modification of the position of the V-belts.

Adjust the required speed respectively the speed range of the drilling spindle by modifying the position of the V-belt on the V-belt pulley.

→ Disconnect the machine from the electrical power supply.

→ Detach the screws on the protective cover of the V-belts.



Illustr.4-6: V-belt pulleys

→ Open the protective cover.

→ Unscrew the guide rail screws each left and right of the drilling head and push the engine in direction of the quick action drill chuck.

○ MX-1304 guide rail screw only on the right

○ MX-1604 , guide rail screw on the left and on the right

ATTENTION!

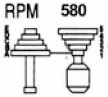
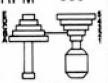
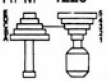
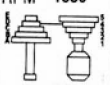
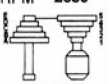
Make sure that the tension of the V-belts is correct.

If the tension of the V-belts is too high or too low, it may lead to damages.

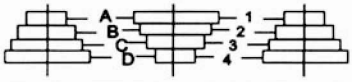
The V-belts are well tightened if the they could be squeezed approximately 1 cm.

4.4 Speed table

4.4.1 Speed table W370

❶	❷	❸	❹	❺
RPM 580	RPM 850	RPM 1220	RPM 1650	RPM 2650
				
BELT:A-1	BELT:B-2	BELT:C-3	BELT:D-4	BELT:E-5

4.4.2 Speed table W380



① D-1 425	② C-1 560	③ D-2 645	④ B-1 730
⑤ C-2 790	⑥ D-3 860	⑦ A-2 1275	⑧ B-3 1350
⑨ C-4 1600	⑩ A-3 1710	⑪ B-4 2060	⑫ A-4 2545

4.4.5 Application table

Reference speed values [min^{-1}] :

bit Ø [in.]	grey cast iron	special steel	steel St 37	aluminium	bronze
1/8	2550	1600	2230	9500	8000
5/32	1900	1200	1680	7200	6000
3/16	1530	955	1340	5700	4800
1/4	1270	800	1100	4800	4000
9/32	1090	680	960	4100	3400
5/16	960	600	840	3600	3000
11/32	850	530	740	3200	2650
3/8	765	480	670	2860	2400
7/16	700	435	610	2600	2170
15/32	640	400	560	2400	2000
1/2	590	370	515	2200	1840
9/16	545	340	480	2000	1700
5/8	480	300	420	1800	1500
23/32	425	265	370	1600	1300
25/32	380	240	335	1400	1200
7/8	350	220	305	1300	1100
1	305	190	270	1150	950

4.5 Cooling

The friction generated during rotation can cause the edge of the tool to become very hot.

The tool should be cooled during the drilling process. Cooling the tool with a suitable cooling lubricant ensures better working results and a longer edge life of the tools. This is best realized by a separate cooling equipment. If there is no cooling equipement included in the delivery volume, you can cool by means of a spray gun or a washing bottle.

ATTENTION!

Danger of injury due to brushes getting caught or pulled in. Use a spray gun or a washing bottle for cooling.

INFORMATION

Use a water-soluble and non-polluant drilling emulsion which can be obtained from authorized distributors.

Make sure that the cooling agent is being collected.

Respect the environment when disposing any lubricants and cooling agents.

Follow the manufacturer's disposal instructions.

4.6 Before starting the working process

Before you start working, select the required speed. It is depending on the drilling diameter and on the material used.

☞ "Speed alternation" on page 21

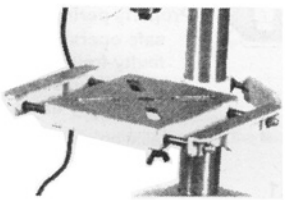
WARNING!

For drilling jobs, it is necessary to clamp the workpiece firmly to prevent the bit catching on the piece. Example of suitable clamping devices include a machine vice or clamping jaws.

Put a wooden or plastic board beneath the workpiece to avoid drilling through to the work table, vice, etc.

If necessary, enlage the support area of the drilling machine table.

Use the drill depth stop when you want to have various bore holes with the same depth.



Illustr.4-12: enlage table area

Use a dust remover unit while working with wood. Sawdust can be health hazardous. Also use a suitable protective mask for any work which generates dust.

4.7 During the working process

The spindle sleeve feed is being performed by the hand wheel. Make sure that the feed is being at a regular pace and not too fast.

The reset of the spindle sleeve is being performed by a track recoil spring.

WARNING!

Danger of clothing and / or long hair getting caught.

- **Make sure to wear a well-fitting work suit during drilling work.**
- **Do not use gloves.**
- **If necessary, wear a hairnet.**

Thin bits break easily.

In case of deep drilling, remove the bit from time to time, to remove drilling chips from the bore hole. Some drops of oil reduce friction and ensure a longer edge life of the bit.

CAUTION!

Danger of crushing! Do not place your hand between the drill head and the spindle sleeve.

5 Maintenance

In this chapter you will find important information about

- Inspection
- Maintenance
- Repair

of the bench drilling machine.

ATTENTION !

Properly performed regular maintenance is an essential prerequisite for

- **safe operation,**
- **faulty-free operation,**
- **long service life of the bench drilling machine,**
- **the quality of the products you manufacture.**

Installation and equipment from other manufacturers must be in optimum condition.

5.1 Safety

WARNING!

The consequences of incorrect maintenance and repair work may include:

- **very serious injury to employees working on the bench drilling machine**
- **damage to the bench drilling machine.**

Only qualified staff should carry out maintenance and repair work on the bench drilling machine.

5.1.1 Preparation

WARNING!

Only carry out work on the bench drilling machine if it has been unplugged from the mains power supply.

☞ "Switching-off and securing the bench drilling machine" on page 11

Position a warning sign.

5.1.2 Restarting

Before restarting run a safety check.

☞ "Safety check" on page 9

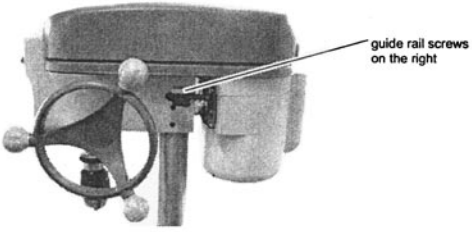
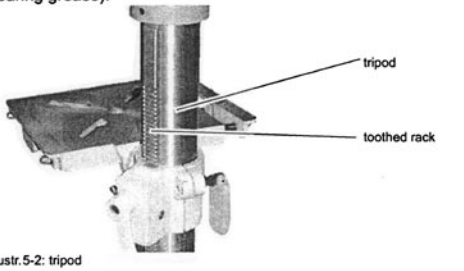
WARNING!

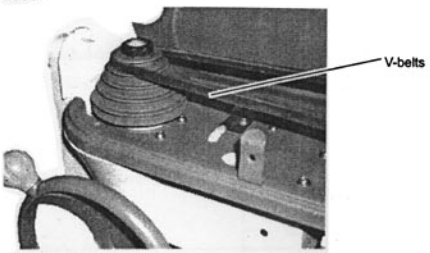
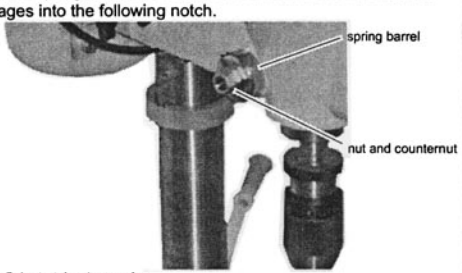
Before activating the bench drilling machine, double check that this will not

- **endanger other people,**
- **damage the bench drilling machine.**

5.2 Inspection and maintenance

The type and extent of wear depends to a large extent on individual usage and service conditions.

Interval	Where?	What?	How?
start of shift after each maintenance or repair operation	bench drilling machine	☞ "Safety check" on page 9	
every week	guide rail screws	check	• Check if the guide rail screws for the V-belt tension on the left and right side of the drilling head are well fastened. • Check if the V-belts are well tightened. Checking the tension of the V-belts, ☞ "Speed alternation" on page 21.  Illustr.5-1: drilling head on the right
every month	tripod and rack	lubricate	• Lubricate the tripod regularly with commercial oil. • Lubricate the rack regularly with commercial grease (e.g. friction bearing grease).  Illustr.5-2: tripod

Interval	Where?	What?	How?
every six months	V-belts on the drilling head	visual inspection	• Check the V-belt on the drilling head that it is not being porous or used.  Illustr. 5-3: V-belts
every six months	electric	check	Check the electrical equipment / parts of the Bench drilling machine. ☞ "Qualification of employees" on page 7
as required	spindle sleeve	adjust stretch return spring	• Detach the two nuts about 1/4 turn anticlockwise on the spring barrel. Do not remove the nuts completely from the barrel! • Hold the spring barrel with one hand and pull out slightly with the other hand. • Turn the spring barrel around its own axis until the indentation engages into the following notch.  Illustr. 5-4: stretch return spring **INFORMATION** **Turn the barrel clockwise when the tension is being increased, turn it anticlockwise when the tension is being reduced.** **Make sure that the notch on the spring barrel is correctly engaged and then fasten the nut.** **The second nut is being jammed with the first nut.**

5.3 Repair

For any repair work, request the assistance of an employee of Northern Tool & Equipment technical service or send us the Bench drilling machine.

If the repairs are carried out by qualified technical staff, they must follow the indications given in this manual.

Northern Tool & Equipment does not take responsiblity nor does it guarantee against damage and operating malfunctions resulting from failure to observe this operating manual.

For repairs only use

- faultless and suitable tools,
- original parts or parts from series .

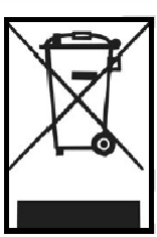
5.4 Environmental information

Please dispose of packaging for the product in a responsible manner.
It is suitable for recycling.
Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

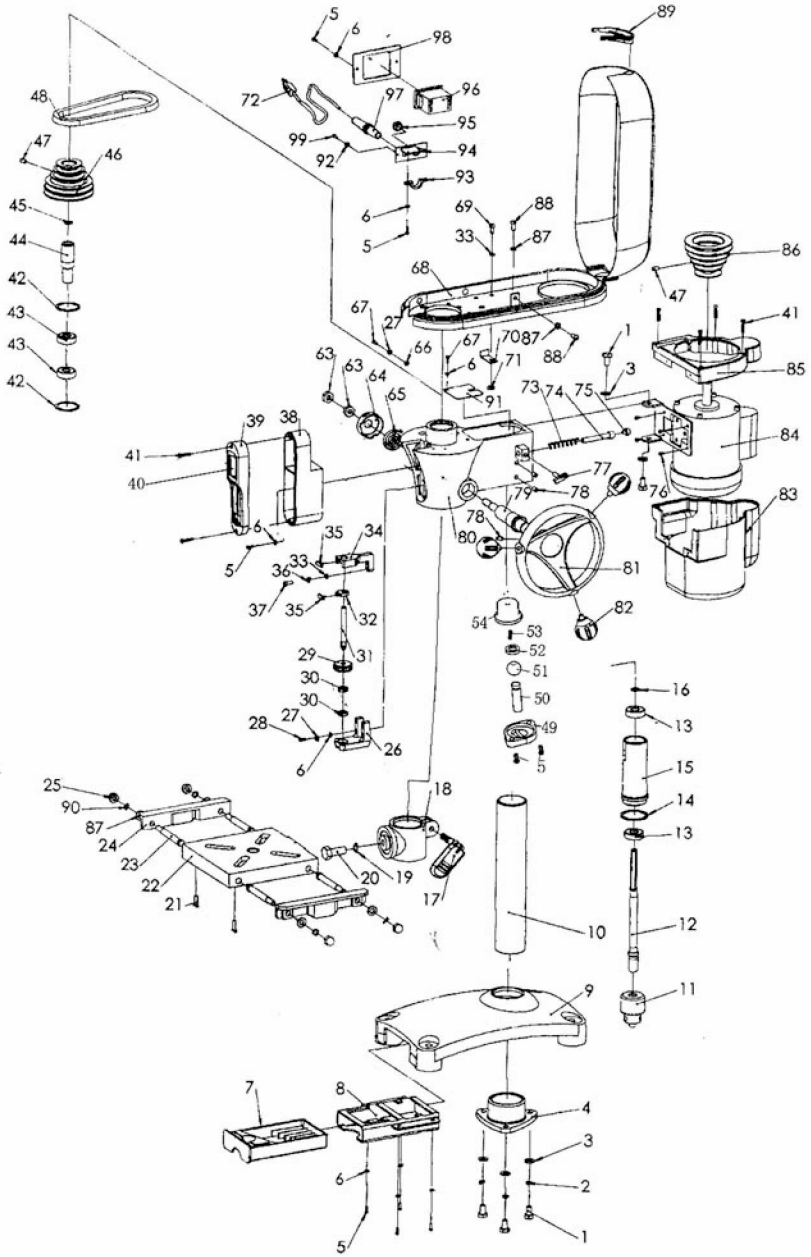
Only for EU countries

Do not dispose of electric tools together with household waste material!
In observance of European Directive 2002/96/EC on waste electrical and electronic equipment (EEE) and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

Your local refuse amenity will have a separate collection area for EEE goods.



Model No: W370

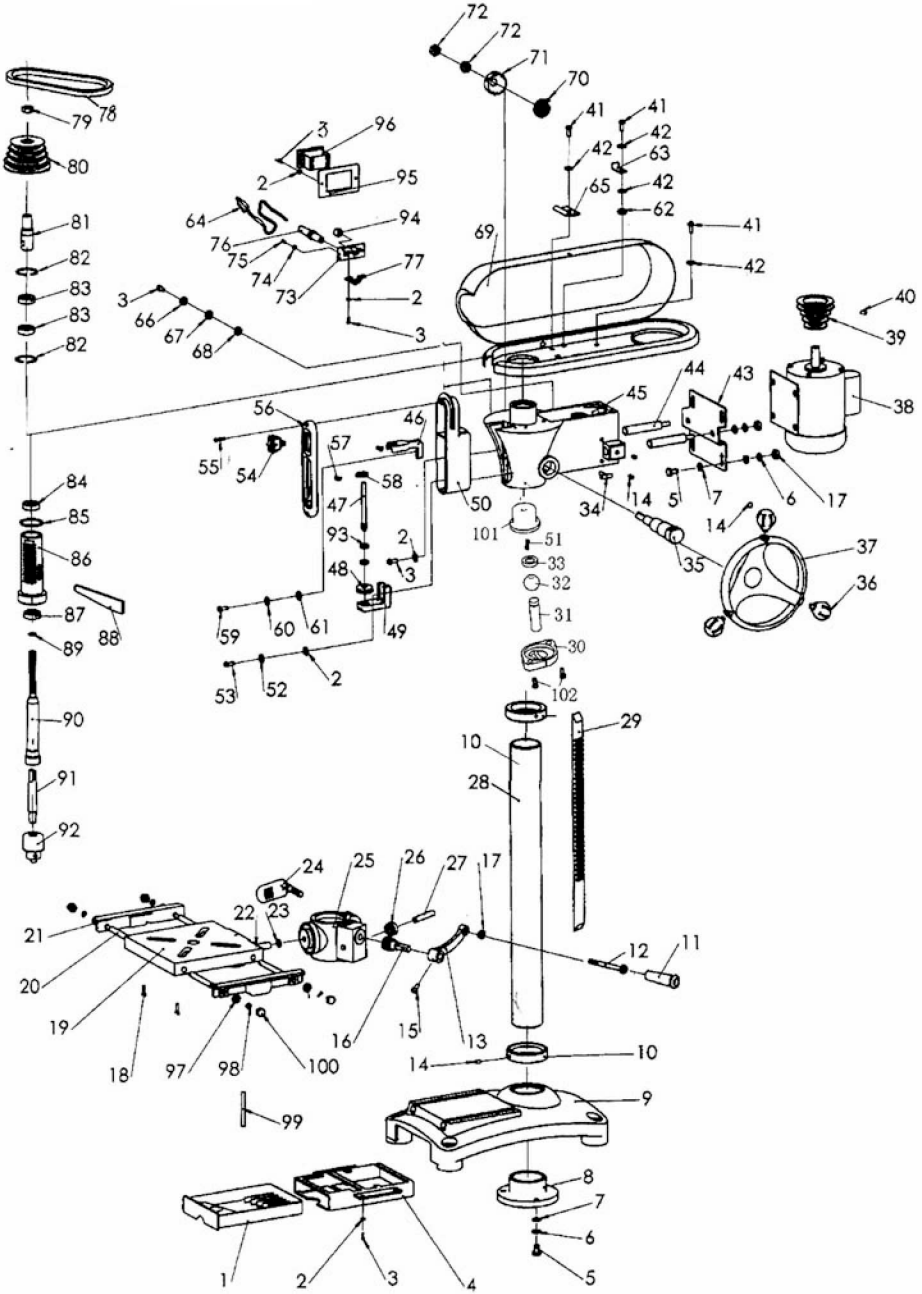


5.4.1 Spare parts list W370

Pos.	Quantity	Designation	Dimen-sion
1	5	hexagon bolt	M8x16
2	7	spring washer	8
3	9	washer	8
4	1	spindle flange	
5	10	screw	M4x12
6	17	washer	4
7	1	bit drawer	
8	1	bit drawer - housing	
9	1	stand	
10	1	tripod	
11	1	quick action drill chuck	
12	1	drilling spindle	
13	2	bearing	6201
14	1	rubber ring	
15	1	spindle sleeve	
16	1	washer	12
17	1	clamping leveer	
18	1	support for drilling machine table	
19	1	washer	12
20	1	screw	M12x26
21	2	wing nut	M6x12
22	1	drilling machine table	
23	4	extension rod drilling machine table	
24	2	extension of support drilling machine table	
25	4	cap nut	M6
26	1	lower holder drill depth stop	
27	6	washer	4
28	5	screw	M4x20
29	1	handwheel drill depth stop	
30	2	bearing	625
31	1	threaded rod drill depth stop	
32	1	drill depth stop	
33	3	washer	5
34	1	upper holder drill depth stop	
35	2	display	
36	2	washer	5
37	2	screw	M5x20
38	1	housing drill depth stop	
39	1	front cover drill depth stop	
40	1	laster switch	
41	6	screw	M4x12
42	2	ring	40
43	2	bearing	6203
44	1	taper	
45	1	ring	
46	1	V-belt pulleys drilling spindle	
47	2	set screw	M6x10
48	1	V-belt	XPZ662
48	2	laser cover	M3x6

Pos.	Quantity	Designation	Dimen-sion
50	1	laser	
51	1	ball	
52	1	laser washer	
53	1	laser spring	
54	1	laser house	
63	2	nut	M10x1
64	1	spiral spring housing	
65	1	spiral spring	
66	2	washer	
67	3	screw	M4x8
68	1	protective cover V-belts	
69	1	screw	M5x12
70	1	angle	
71	1	nut	M5
72	1	connecting cable	
73	1	spring	
74	1	bolt	
75	1	rubber	
76	4	screw	M4x10
77	1	clamping screw	
78	3	set screw	M8x10
79	1	shaft pinion	
80	1	housing drilling head	
81	1	handwheel	
82	3	handle hand wheel	
83	1	engine hood	
84	1	engine 155739	350 W
		engine 155739 Vario	350 W
85	1	protective cover	
86	1	V-belt pulleys engine	
87	9	washer	6
88	5	screw	M6x12
89	1	aperture	
90	4	washer	6
91	1	cover plate	
92	2	washer	3
93	1	traction relief	
94	1	aperture	
95	1	cable bushing	
96	1	switch ON / OFF	
97	1	cable bushing	
98	1	aperture	
99	2	screw	M3x10

Model No: W380



5.5.1 Spare parts list W380

Pos.	Quantity	Designation	Dimension
1	1	bit drawer	
2	12	washer	4
3	10	screw	M4x12
4	1	bit drawer - housing	
5	7	screw	M8x25
6	7	spring washer	8
7	11	washer	8
8	1	column flange	
9	1	stand	
10	2	guide ring	
11	1	crank handle	
12	1	screw	M8x35
13	1	handle table hight adjustment	
14	5	set screw	M8x10
15	1	hexagon socket	M5x12
16	1	driving worm	
17	5	nut	M8
18	2	wing screw	M6x12
19	1	drilling table	
20	4	extension rod drilling table	
21	2	extension of support drilling table	
22	1	screw	M12x25
23	1	washer	12
24	1	clamping lever	
25	1	drilling machine table support	
26	1	toothed wheel toothed rack	
27	1	bolt	
28	1	drilling column	
29	1	toothed rod	
30	1	aperture	
31	1	laser cover	
32	1	laser	
33	1	ball	
34	2	screw	
35	1	shaft pinion	
36	3	handle hand wheel	
37	1	hand wheel	
38	1	engine B160T	400 W
	1	engine B160T Vario	500 W
39	1	V-belt pulley engine	
40	2	screw	M6x10
41	7	screw	M6x12
42	8	washer	6
43	1	fixing plate	
44	2	guide rail rod	
45	1	housing drilling head	
46	1	upper holder drill depth stop	
47	1	threaded rod	
48	1	handwheel	
49	1	lower holder	

Pos.	Quantity	Designation	Dimension
50	1	drill depth stop	
51	2	screw	M3x12
52	4	washer	4
53	4	screw	M4x16
54	1	laser switch	
55	2	screw	M4x12
56	1	aparture drill depth stop	
57	2	display	
58	1	holding fixture	
59	2	screw	M5x16
60	2	washer	5
61	2	washer	5
62	1	nut	M6
63	1	angle	
64	1	connection cable	
65	1	traction relief	Q235A
66	2	washer	4
67	2	washer	
68	2	nut	
69	1	protective cover V-belts	
70	1	spiral spring	
71	1	spiral spring housing	
72	2	nut	M12x1
73	1	aperture	
74	2	washer	3
75	2	screw	M3x10
76	1	cable bushing	
77	1	traction relief	
78	1	V-belt	XPZ800
79	1	nut	
80	1	V-belt pulleys drilling spindle	
81	1	taper	
82	2	ring	42
83	2	bearing	6004
84	1	bearing	6201
85	1	ring	
86	1	drilling sleeve	
87	1	bearing	6005
88	1	drill drift	
89	1	washer	12
90	1	drilling spindle	
91	1	morse taper	
92	1	quick action drill chuck	
93	2		625
94	1	cable bushing	
95	1	aperture	
96	1	switch ON / OFF	
97	4	washer	6
98	4	spring washer	6
99	2	scale	3x5
100	4	cap nut	M6
101	1	laser house	

6 Malfunctions

Malfunction	Cause / possible effects	Solution
Noise during working	• Spindle turning dry. • Tool blunt or is being incorrectly secured. • Protective cover of the V-belts not completely closed.	• Grease spindle. • Use new tool and check securing (fixed setting of the bit, drill chuck and morse taper).
Bit „burnt".	• Incorrect speed. • The chips have not been removed from the bore hole. • Bit blunt. • Operating without cooling agent.	• Select another speed, feed is too fast. • Extract the bit more often. • Sharpen or replace bit. • Use coolant.
Bit tip moves, bore hole is not circular.	• Hard fibre in the wood or unequal length of the cutting spiral or unequal angles in the bit. • Bit deformed.	• Replace bit or re-sharpen it.
Defective bit.	• No support used.	• Place a wooden board beneath the workpiece and secure them to one another.
Bit running off-centre or "hopping".	• Bit deformed. • Bearings worn down in the drill head. • Bit badly secured. • Drill chuck defective.	• Replace bit. • Have the bearings in the drill head replaced. • Secure the bit properly. • Replace the drill chuck.
Impossible to introduce drill chuck or morse taper	• There is dirt, grease or oil on the inner conical surface of the drill chuck or on the conical surface of the drilling spindle.	• Clean surfaces well. • Keep surfaces free of grease.
Drill spindle does not turn	• V-belt defective • V-belt slips	• Replace V-belt. • Check V-belt tension and adjust it if necessary.
Engine does not start	• Defective fuse. • Malfunction in the frequency converter (only Vario) • Potentiometer defective (only Vario) • Engine defective	• Have it checked by authorized personnel.
Overheating of motor and lack of power	• Engine overloaded • Insufficient mains voltage	• Disconnect immediately and have it checked by authorized personnel.
Precision of the work deficient	• Heavy and unbalanced or twisted workpiece • Inexact horizontal position of the workpiece holder • Inclination angle of the drilling machine table not being correctly adjusted.	• Balance workpiece statically and secure it without straining • Adjust workpiece holder • Check and adjust inclination angle of the drilling machine table.
Drilling spindle sleeve does not return to its initial position	• Spindle return spring	• ☞ "adjust stretch return spring" on page 28

7 Appendix

7.1 Copyright

This documentation is copyright. All derived rights are also reserved, especially those of translation, re-printing, use of figures, broadcast, reproduction by photo-mechanical or similar means and recording in data processing systems, neither partial nor total.

The company reserves the right to make technical alternations without prior notice.

7.2 Terminology/Glossary

Term	Explanation
drill sleeve	fixed hollow shaft which runs in the drill spindle
drill spindle	shaft driven by the engine
quick action drill chuck	drill holding fixture to be clamped manually
drill chuck	drill holding fixture
drill drift	tool to release the bit or the drill chuck from the drill spindle
morse taper	cone of the drill or of the drill chuck
tool	bit, countersink, etc.
workpiece	part to be drilled, part to be machined
drilling machine table	support face, clamping surface
drilling head	upper part of the bench drilling machine
handwheel	manual control for the drill feed

7.3 Product follow-up

We are required to perform a follow-up service for our products which extends beyond shipment.

We would be grateful if you could send us the following information:

- modified settings
- experiences with the Bench drilling machine, which could be important for other users
- recurring failures