High Frequency Beveler

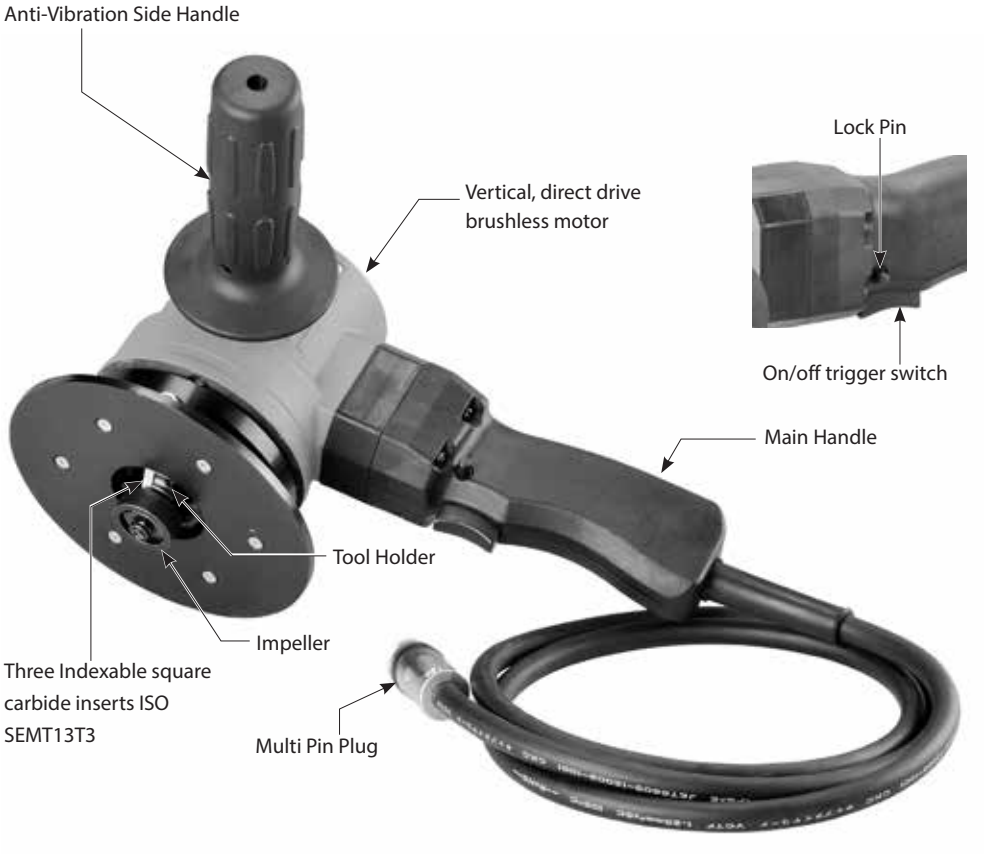
Instruction manual

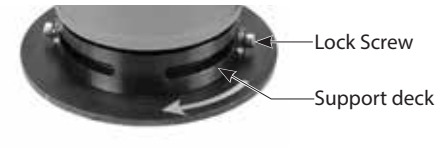
For your personal safety,
READ and UNDERSTAND before using.
SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

Warning:
Only tools equipped with over load protection, when motor has been cut off due to over load, always switch on machine with no load for at least 3 minutes to reduce temperature before switch on again to avoid burn out to the motor.

Version:20150306

Power output	1400W
No Load min^{-1}	6000-8550
Bevel Angle	45 Deg.(Optional 30 Deg.)
Max. Bevel Height (45 Deg.)	6mm
Min. Diameter For Inside Bevels	30mm
Inserts	Square, ISO SEMT13T3
Dimensions	310mm x 150mm x 150mm
Net Weight	4.4kg (9.68Lbs)





GENERAL SAFETY INSTRUCTIONS

WARNING! Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference. The term "power tool" in the warnings refers to your mainsoperated (corded) power tool or battery-operated (cordless) power tool.

1) WORK AREA SAFETY

a. **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.

b. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.

c. **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) ELECTRICAL SAFETY

a. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.**
Unmodified plugs and matching outlets will reduce risk of electric shock.

b. **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

c. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

e. **When operating a power tool outdoors, use an extension cord suitable for outdoor use**. Use of a cord suitable for outdoor use reduces the risk of electric shock.

f. **If operating a power tool in a damp location is unavoidable, use an earth leakage circuit breaker.** Use of an earth leakage circuit breaker reduces the risk of electric shock.

3) PERSONAL SAFETY

a. **a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication**. A moment of inattention while operating power tools may result in serious personal injury.

b. **b) Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

c. **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

d. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

e. **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.

g. **If devices are provided for the connection of dust extraction and collection facilities,**

ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

4) POWER TOOL USE AND CARE

a. Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.

b. Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

c. Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

d. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

e. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

f. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g. Use the power tool, accessories and tool bits etc., in accordance with these instructions, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

5) SERVICE

Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

Symbols used in this manual

V…….....volts
A…….....amperes
Hz…….....hertz
W…….....watt
~……....alternating current
n_o……..no load speed
min^{-1}…….....revolutions or reciprocation per minute


.....warning of general danger


…..class II tool


….with electrical earth


.....read these instructions


.....always wear eye protection


.....always wear a dust mask.


.....always wear hearing protection


.....wear safety-approved hard hat


.....Keep hands clear – pinching hazard.


DANGER! Keep hands away from cutting area and the blade.


rotating parts - entanglement hazard. Keep hands, loose clothing and long hair away from moving parts


do not dispose of electric tools, accessories and packaging together with household waste material

SPECIFIC SAFETY RULES

1. **Never operate** the tool in an area with flammable solids, liquids, or gases.

   Warning:**Risk of injury from high-temperature chips!**
   High-temperature chips are expelled at high speed.

   Never touch the tool holder and keep all vulnerable body parts clear while the machine is running.
2. **Always guide the machine away from the body while working.**
3. **Do not work holding the machine above your head.**

   WARNING! Some dust created by power grinding contains chemicals known to cause cancer, birth defects or other reproductive harm.

   An example of these chemicals are:
   lead from lead-based paint
   Your risk from these exposures 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 those dust masks that are specifically designed to filter out microscopic particles.

   WARNING!: Never machine materials which contain asbestos.

4. **Use only recommended** carbide inserts, rated at the machine's maximum rated cutting rate or higher.
5. **Do not use dull or damaged** carbide inserts. Dull inserts cause excessive friction and binding and excessive load on the motor, leading to possible damage.
6. **Important: After completing the operation,** Wait for coasting tool holder to stop rotating completely before putting the machine down.
7. **Maintain labels and nameplates.** These carry important information. If unreadable or missing, obtain a replacement.

INTRODUCTION

This machine is a special, high frequency power tool which must be used in conjunction with a special high frequency converter for its power supply. This converter (which is sold separately) takes 50Hz or 60Hz supply and converts it to up to 285Hz for use with this power tool. Any other use is strictly prohibited.
High frequency power tools have many advantages: High frequency allows high power to weight ratio as well as extremely even operating speed. High frequency also has the benefits of long duty cycles, long motor life, and quiet operation. The motor is brushless and maintenance free.

FUNCTIONAL DESCRIPTION INTENDED USE

This shape beveling and deburring tool is an electrically driven portable machine:
For machining workpieces in steel, chrome steel alloys, aluminum, aluminum alloys, brass and plastic. The machine is designed exclusively for Adding beveled edges, rounding off edges, removing burrs , and removing sharp corners on workpieces. By adjusting the frequency at the converter, the speed of the machine is variable to suit the needs of various materials and is equipped with a graduated, depth adjustable support deck. It comes with a standard 45 degree tool holder for use with triangle indexable carbide cutter inserts to achieve quick and easy beveling.
The machine is equipped with a brake which allows the spindle to quickly come to a stop when switched off.

WARNING: The machine should not be converted or modified, e.g. for any other form of use, other than as specified in these operating instructions.
The user shall be liable for damages and accidents due to incorrect use.

ABOUT HIGH FREQUENCY

High frequency has a number of advantages. It provides extremely high power-to-weight ratio, even operating speed, quiet operation, long duty cycles, long tool life, and low maintenance. An induction motor depends on the frequency (Hz) of the supplied current to determine its speed. Thus, by increasing the frequency, we can generate

much higher power output. This requires the use of a high frequency converter to supply the required frequency.
This high frequency beveler is designed to be powered by a special high frequency converter which converts the 50 or 60Hz supplied from the grid to up to 285Hz. Thus it has a special 5 pin plug. It may only be used when powered by the converter. It cannot be used directly with ordinary household current. The variable speed is set at the converter.
The supplied voltage must conform to the voltage indicated on the tool name plate. Under no circumstances should the tool be used when the power supply cable is damaged. A damaged cable must be replaced immediately by an authorized Customer Service Center. Do not try to repair the damaged cable yourself. The use of damaged power cables can lead to an electric shock.
This machine may only be used in conjunction with a specially designed high frequency power pack. The special coupling cable's multi-pin plug and the converter's socket must match exactly. Never modify the connectors in any way. Only use plugs and connections which are designed specifically for this device.

UNPACKING

Carefully remove the tool and all loose items from the shipping container.
Retain all packing materials until after you have inspected and satisfactorily operated the machine.

CARTON CONTENTS

1. T15 Torx Wench
2. Hook Spanner Wrench
3. Face Spanner Wrench
4. Side Handle
5. M4 Hex Key

DO NOT OPERATE THIS TOOL UNTIL YOU READ AND UNDERSTAND THE ENTIRE INSTRUCTION MANUAL.

SETTING THE CHAMFER HEIGHT-

DISCONNECT TOOL FROM POWER SOURCE.

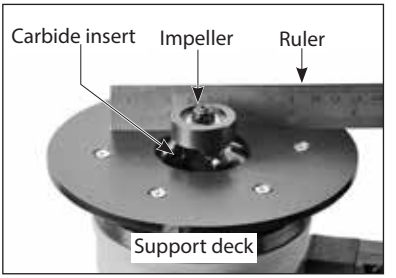
1. Loosen the 2 lock knobs
2. Turn the entire support deck assembly to set the chamfer height as desired.
3. retighten the 2 lock screws.

ZEROING-IN THE CHAMFER HEIGHT-

DISCONNECT TOOL FROM POWER SOURCE.

Note: The machine's chamfer height is determined by the size and shape of the carbide insert. Follow the instructions below for zeroing-in.

1. Loosen the 2 lock screws then loosen the support deck assembly so that the inserts are below flush level.
2. Use a steel ruler or other accurate device with a right angle. While keeping the ruler square with the impeller and the support deck, slowly adjust the support deck until the ruler just touches the carbide insert. This is the zero point.
3. Once the zero point is found, turn the support deck to acheive the desired chamfering depth. If the depth is crucial, measure the amount the support deck drops from the zero point. Then retighten the set screw.



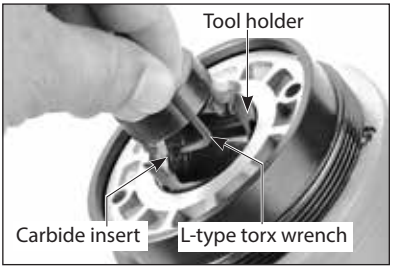
CHANGING THE INDEXABLE CARBIDE INSERTS - DISCONNECT TOOL FROM POWER SOURCE.

WARNING: Danger of Burns! Tool holder and carbide inserts become hot in operation. Wear gloves and take precautions to prevent burns when working with this part of the machine.

Note: indexable carbide inserts have multiple edges. When one edge is dull simply rotate to the next sharp edge. Once all edges are dull, replace with new inserts.

NOTE: Make sure the indexable carbide inserts are installed in the correct direction, incorrect installation of indexable carbide inserts can cause the failure of chamfering or even rupture of the indexable carbide inserts. Please refer to the front of the machine for rorating direction, and install the indexable carbide inserts accordingly.

1. Using the supplied L-type torx wrench, Loosen fixing screw and remove the carbide insert.
2. Index the carbide insert to the next sharp edge or insert a new one as needed.
3. Retighten carbide insert with its torx fixing screw.

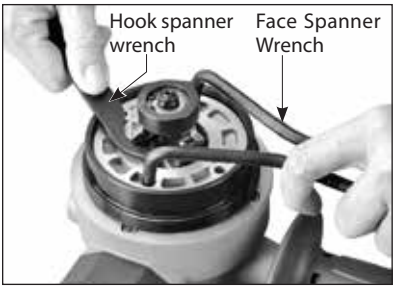


REMOVING THE TOOL HOLDER -

DISCONNECT TOOL FROM POWER SOURCE.

WARNING: Danger of Burns! Tool holder and carbide inserts become hot in operation.

Wear gloves and take precautions to prevent burns when working with this part of the machine.
If it is necessary to change from the standard 45 deg. Tool holder to an optional 30 deg. Tool holder, the entire tool holder must be changed.



1. Loosen the 2 lock screws and fully unscrew and remove the support deck assembly.
2. Using the supplied face spanner wrench, secure the spindle.
3. Using the supplied hook spanner wrench, engage the tool holder and loosen the tool holder from the spindle. Take care not to put force directly on the carbide inserts.
4. Assembly is the reverse of disassembly
5. Replace and adjust the support deck assembly.

STARTING AND STOPPING TOOL

Couple the beveler to the high frequency converter unit using the special coupling cable. Make sure that the beveler's switch is in the OFF position. Turn on the converter and wait at least 5 seconds. Set the speed to the desired speed at the converter. Then switch the machine on. Do not switch on with a load.
Make sure that the power circuit voltage is the same as that shown on the specification plate of the machine and that switch is “OFF” before connecting the tool to the power circuit.

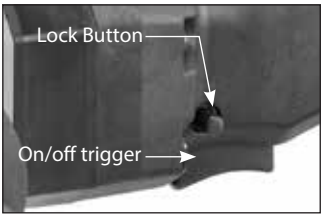
Switching the machine on and off

To switch on:
Press the trigger switch to start.
To lock the switch on, press the lock pin next to the switch.

CAUTION: Do not repeatedly switch the machine ON and OFF in rapid succession. The spindle brake will lead to overheating.

To switch off

Squeeze and release the trigger switch to unlock the switch and switch off.
After the machine has been switched off, the arbor will still rotate for a time. Take care that parts of your body do not come into contact with the rotating parts or set the machine down while it is still rotating!



SPEED CONTROL

The speed is set at the converter. By pressing the buttons, the speed can be adjusted from 6000 up to 8550 rpm in increments of 150.

HOW TO USE THE TOOL

- Effective control of this powerful tool requires two-handed operation at all times for maximum control and safety.
- Protect your eyes from injury with safety glasses or goggles.

OPERATION

The machine must reach full speed before beveling/deburring begins.

- Hold the machine keeping the support deck flat and securely to the workpiece. From the operator's perspective, the spindle is spinning clockwise, so always operate in the direction from left to right (up mill).
- When performing inside bevels, work in a clockwise direction only.
- Do not bevel more than about 2mm per pass. If more depth is needed, make multiple passes until the desired bevel height is reached

MAINTENANCE

Every 50 hours of operation blow compressed air through the motor while running at no load to clean out accumulated dust. (If operating in especially dusty conditions, perform this operation more often.)

KEEP TOOL CLEAN

Periodically blow out all air passages with dry compressed air. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.
Wear safety glasses while using compressed air.

REPLACE THE IMPELLER WHEN WORN

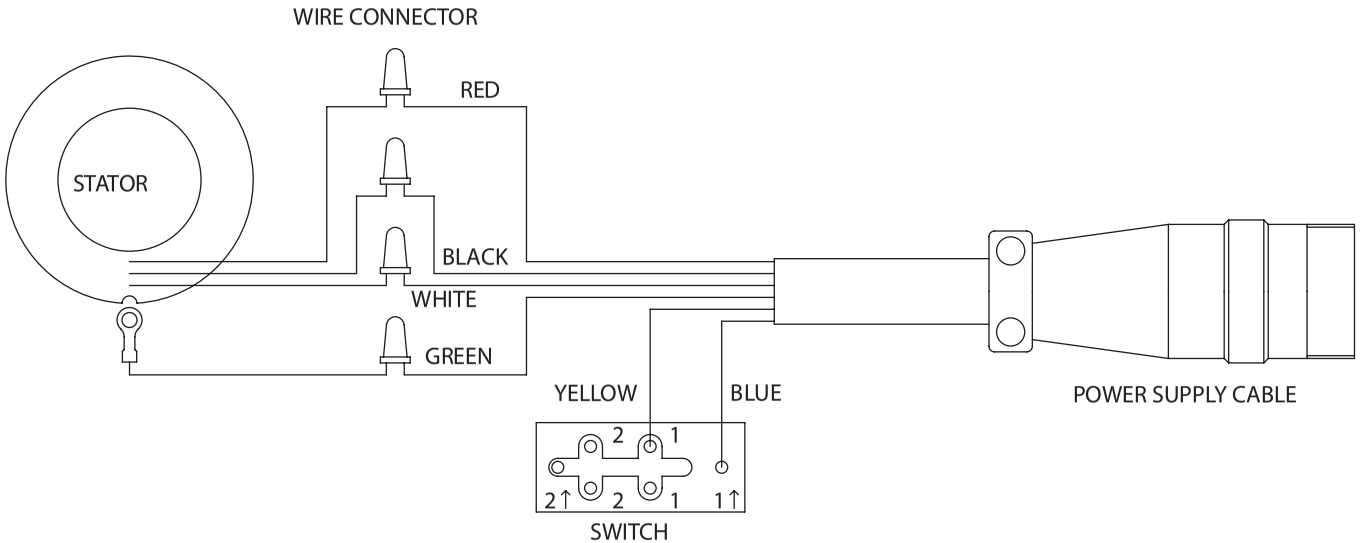
When the impeller becomes worn the workpiece surfaces will be machined unevenly. Replace when worn as follows:

1. Remove the support deck and use the face spanner to immobilize the spindle.
2. Using an appropriate sized wrench loosen the nut securing the impeller and remove.
3. Replacement is the reverse of removal.

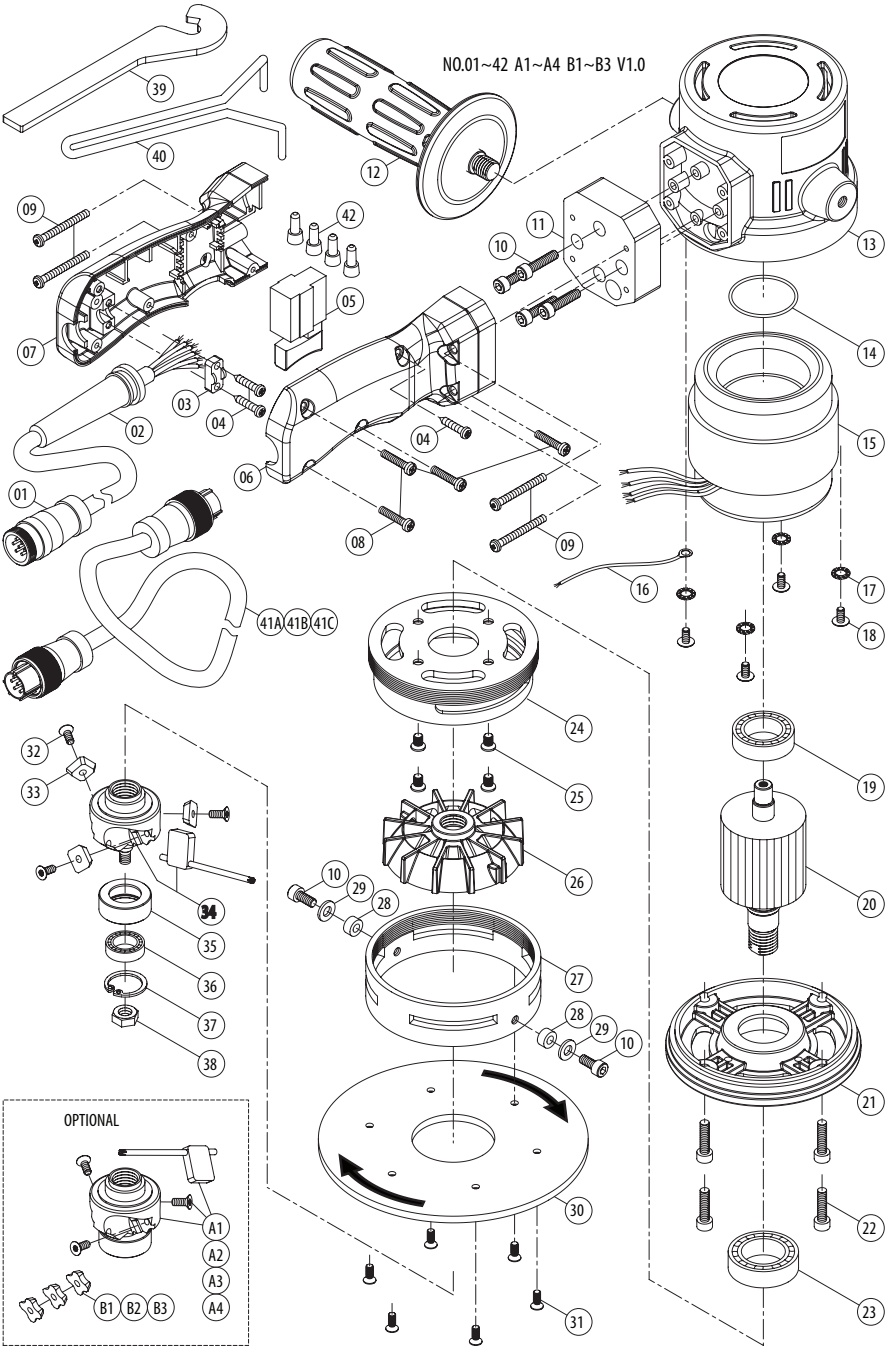
If the replacement of the power supply cord is necessary, this has to be done by the manufacturer or their agent in order to avoid a safety hazard.

WARNING: All repairs must be entrusted to an authorized service center. Incorrectly performed repairs could lead to injury or death.

WIRING


WIRE CONNECTOR
RED
STATOR
BLACK
WHITE
GREEN
YELLOW
BLUE
POWER SUPPLY CABLE
2
1
2↑
2
1
1↑
SWITCH

EXPLODED VIEW



PARTS LIST

No.	Parts Name		Q'TY
1	POWER SUPPLY CABLE	155CM	1
2	CORD ARMOR		1
3	CABLE CLIP		1
4	SCREW	M4 x 16	3
5	SWITCH		1
6	HANDLE COVER - RIGHT		1
7	HANDLE COVER - LEFT		1
8	SCREW	M4 x 20	4
9	SCREW	M4 x 35	4
10	SOCKET CAP SCREW	M5 x 12	6
11	ANTI-VIBRATION MOUNT		1
12	SIDE HANDLE		1
13	MOTOR HOUSING		1
14	O-RING	S35	1
15	STATOR	Ø83	1
16	GROUND WIRE		1
17	STAR WASHER	M4	4
18	TRUSS HEAD SCREW	M4 x 8	4
19	BALL BEARING	6300 DDU NSK	1
20	ROTOR		1
21	END BELL		1
22	SCREW	M5 x 20	4
23	BEARING	6203 DDU NSK	1
24	INNER SLEEVE		1
25	FLAT HEAD SCREW	M5 x 12	4
26	FAN		1
27	OUTER SLEEVE		1
28	PLASTIC WASHER	5.1 x 12.5 x 2.3	2
29	FLAT WASHER	Ø5 x Ø12 x 1	2
30	SUPPORT DECK		1
31	FLAT HEAD SCREW	M4 x 10	6
32	TORX FIXING SCREW	M4 x 8	3
33	INDEXABLE CARBIDE INSERT		3
34	TOOL HOLDER	45°	1
35	IMPELLER		1
36	BALL BEARING	608 zz NMB	1
37	INTERNAL CIRCLIP	R-22	1
38	IMPELLER NUT	M6 x P1.0	1
39	HOOK SPANNER WRENCH		1
40	FACE SPANNER WRENCH		1
41A	COUPLING CABLE (20M)		1
41B	COUPLING CABLE (10M)		1
41C	COUPLING CABLE (30M)		1
42	WIRE CONNECTOR		4
A1	TOOL HOLDER SET-30°(OPTIONAL)	30°C	1
A2	TOOL HOLDER SET-R2.5 RADIUS(OPTIONAL)	2.5R	1
A3	TOOL HOLDER SET-R3.5 RADIUS(OPTIONAL)	3.5R	1
A4	TOOL HOLDER SET-R4 RADIUS(OPTIONAL)	4R	1
B1	INDEXABLE CARBIDE INSERT-R2.5(OPTIONAL)	2.5R	3
B2	INDEXABLE CARBIDE INSERT-R3.5(OPTIONAL)	3.5R	3
B3	INDEXABLE CARBIDE INSERT-R4(OPTIONAL)	4R	3