

★ IF THE MAIN SWITCH DOES NOT TURN ON

- CHECK WHETHER THE A. C. CABLE IS CERTAINLY PLUGGED IN OR NOT.
- CHECK WHETHER THE FUSE IS BURNT OUT OR NOT.

★ IF THE HANDPIECE DOES NOT OPERATE.

- CHECK WHETHER THE CURLED CORD IS CERTAINLY CONNECTED TO D. C. MOTOR SOCKET OR NOT.
- CHECK WHETHER THE COLLET RELEASE RING OF THE HANDPIECE IS IN "SET" POSITION.
- CHECK WHETHER THE FOOT SWITCH IS CONNECTED OR NOT. WHEN THE FOOT SWITCH IS CONNECTED, THE REMOTE SWITCH AND ON/OFF SWITCH WILL NOT OPERATE.

★ IF THE OVERLOAD ALARM CANNOT BE RESET.

- THE SAFETY SYSTEM WILL ALSO ACTUATE WHEN THE SURFACE TEMPERATURE OF THE POWER TRANSISTOR IN THE POWER PACK GOES OVER 100° C. IN THIS CASE, WAIT UNTIL THE TEMPERATURE FALLS DOWN.

* ANY OTHER TROUBLES OR OBSCURE POINTS, PLEASE CONTACT OUR MINITOR DEALER.

[C20M · C21M · C22M SPECIFICATIONS]

- INPUT VOLTAGE C 2 0 M AC100V ± 5% 50/60 Hz
C 2 1 M AC115V ± 5% 50/60 Hz
C 2 2 M AC230V ± 5% 50/60 Hz
- POWER CONSUMPTION RATING 25 W (MAX. 60 W)
- OUTPUT VOLTAGE DC 3 ~ 30V
- SAFETY SYSTEM · WHEN THE OUTPUT CURRENT FLOWS MORE THAN 1 A CONTINUOUSLY, THE OUTPUT CURRENT WILL BE SHUT DOWN WITHIN 10 SECONDS.
· WHEN THE SURFACE TEMPERATURE OF THE POWER TRANSISTOR IN THE POWER PACK RISES OVER 100° C, THE SYSTEM WILL SHUT DOWN THE OUTPUT CURRENT.
- OPERATING TEMPERATURE AND HUMIDITY RANGE ... 0 ~ 40°C AND 20 ~ 80% (NO CONDENSATION)
- DIMENSIONS 103 (W) × 178 (D) × 116 (H)
- WEIGHT APPROX. 1.5 Kg



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INSTRUCTION MANUAL

D.C. POWER PACK C20M · C21M · C22M

READ FOLLOWING INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING TO USE.
ALSO READ THE INSTRUCTION MANUAL OF THE HANDPIECE AS WELL.
KEEP THIS MANUAL ALWAYS IN THE VICINITY OF USE FOR YOUR REFERENCE.
BEFORE USING THE UNIT, CHECK IF THERE ARE ANY DAMAGES ON THE UNIT DUE TO TRANSPORT CONDITIONS. IF ANY DAMAGES ARE FOUND, CONTACT OUR MINIMO DEALER.

SAFETY PRECAUTIONS



WARNING (INDICATES THAT INCORRECT OPERATION PRESENTS SIGNIFICANT DANGER OF ACCIDENT RESULTING IN DEATH OR SERIOUS INJURY TO THE USER.)

- DO NOT START TO RUN THE HANDPIECE WHILE ITS COLLECT CHUCK OPENS. FAILURE TO DO SO COULD CAUSE THE MOTOR TO BE OVERHEATED, RESULTING IN FIRE OR FAILURE.
- MAKE SURE WHETHER OR NOT THE HANDPIECE RUNS AFTER SWITCHING ON. IF THE HANDPIECE DOES NOT RUN AFTER SWITCHING ON, STOP USING IT. FAILURE TO DO SO COULD CAUSE THE MOTOR TO BE OVERHEATED, RESULTING IN FIRE OR FAILURE.
- WEAR AN APPROPRIATE EYE PROTECTION AND A DUST PROTECTING MASK WHEN USING THE HANDPIECE.
- DO NOT PLACE THE POWER PACK ON A STAND WHICH IS TILTED OR TOTTERY.
- TURN OFF THE MAIN SWITCH IMMEDIATELY AND UNPLUG THE A. C. CABLE WHEN ONE OR MORE OF THE FOLLOWINGS ARE RECOGNIZED: SMOKING, NASTY SMELL AND STRANGE NOISE FROM THE POWER PACK.
- NEVER TOUCH THE PLUG AND THE UNIT WITH WET HANDS.
- DO NOT DISASSEMBLE AND REMODEL THE UNIT. ANY ACCIDENT OR MALFUNCTION CAUSED BY DISASSEMBLING AND/OR REMODELING WILL NOT BE COVERED BY OUR RESPONSIBILITY.
- NEVER USE THE POWER PACK WITH THE INPUT VOLTAGE OTHER THAN THE ONE INDICATED ON BACK OF THE UNIT.
- DO NOT COVER AND/OR SEAL THE VENTILATOR.
- REPLACE THE POWER CABLE WITH NEW ONE WHEN DAMAGED. IT MAY CAUSE A SHORT CIRCUIT, ELECTRIC SHOCK OR FIRE IF THE DAMAGED CABLE IS CONTINUED TO BE USED.



CAUTION (INDICATES THAT INCORRECT OPERATION PRESENTS POSSIBILITY OF INJURY TO THE USER OR DAMAGE TO THE UNIT.)

- DO NOT USE THE POWER PACK IN EXCESSIVELY HUMID PLACE. THE CONDENSATION OF VAPOR ON OR INSIDE OF THE UNIT CAUSES A MALFUNCTION, A SHORT CIRCUIT, FIRE AND A ELECTRIC SHOCK.
- DO NOT USE THE POWER PACK WHERE CORROSIVE GASES AND CHEMICALS POSSIBLY EXIST.
- THE AMBIENT TEMPERATURE SHOULD BE IN THE RANGE OF 0° ~ 40° C.
- KEEP THE UNIT AWAY FROM CHILDREN.
- AVOID ANY HEAVY SHOCK TO THE POWER PACK. DO NOT DROP IT!
- KEEP ANY LIQUIDS (OIL, WATER, ETC.) OFF THE UNIT. IF ANY LIQUID HAPPENS TO GET INTO THE UNIT, STOP THE OPERATION AND CONTACT YOUR NEAREST DEALER FOR REPAIR.
- DO NOT PUT ANY HEAVY GOODS ON THE CABLE.
- AVOID EXPOSURE TO DIRECT RAY OF THE SUN, HOT BLAST, OR HEATER AIR.
- WHEN UNPLUGGING, ALWAYS HOLD THE PLUG (NOT THE CABLE) AND PULL.
- ALWAYS UNPLUG THE A. C. CABLE WHEN REPLACING THE FUSE, CLEANING UP THE UNIT, OR DOING ANY OTHER MAINTENANCE FOR THE UNIT.
- DO NOT USE BENZINE, ALCOHL, PAINT THINNER OR OTHER VOLATILE SOLVENT TO CLEAN THE UNIT.
- ALWAYS UNPLUG THE A. C. CABLE WHEN LEAVING YOUR WORKSHOP.

※ THE WORD "REMOTE SWITCH" IN THE TEXT STANDS FOR THE REMOTE SWITCH ON THE HANDPIECE. (PLEASE REFER TO THE MANUAL OF THE HANDPIECE.)

1 FEATURES

- ECONOMY TYPE D. C. POWER PACK WHICH IS DESIGNED TO BE COMPACT AND LIGHT WEIGHT.
 - DESIGNED FOR USE WITH LESS DEMANDING OPERATIONS.
- SUITABLE HANDPIECES STANDARD ROTARY (V112H/V212H/M112H/M212H/V212/M112, V11H/V21H/M11H/M21H/V21/M11)
 SLENDER ROTARY (V112HS/V212HS/M112HS/M112S, V11HS/V21HS/M11HS/M11S)

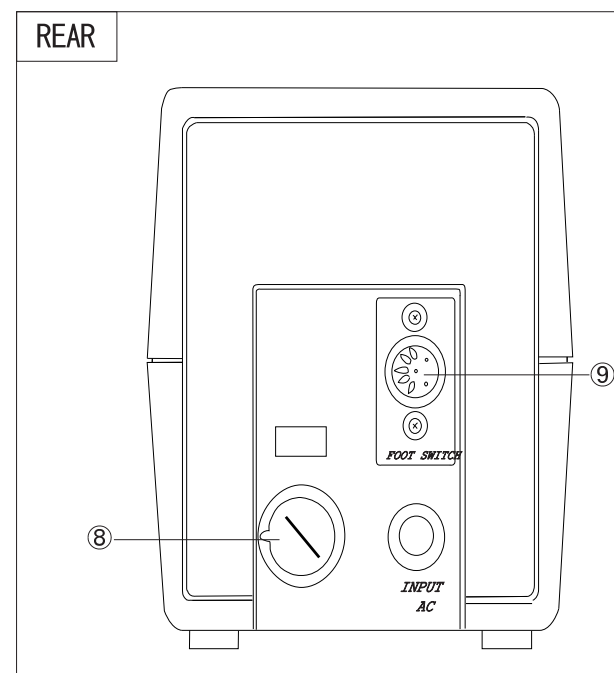
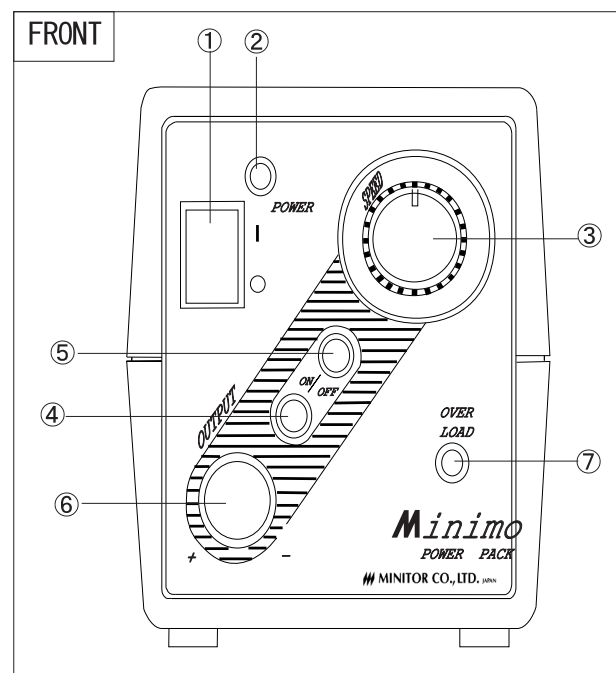
IT IS NOT SUITABLE FOR USING OUR HEAVY-DUTY ROTARY (H031), ANGLON (H211, H221, H231), RUBRON (H311), RECIPRON (RE11, RE21) AND MINI-BELTSANDER (BS31).

2 NAMES OF PARTS AND FUNCTIONS

- ① MAIN SWITCH
TO ON AND OFF THE POWER SUPPLY (| : ON ○ : OFF)
- ② POWER SUPPLY LAMP
GREEN LIGHT WILL BE ON WHEN THE MAIN SWITCH IS ON INDICATING THE INPUT POWER SUPPLY.
- ③ SPEED CONTROL KNOB
CONTROL THE ROTATION SPEED OF THE HANDPIECE.
- ④ ON/OFF SWITCH
SWITCH ON AND OFF THE HANDPIECE (OUTPUT) ON THE FRONT PANEL OF THE POWER PACK.
ONE PUSH TO BE "ON" AND ANOTHER PUSH TO BE "OFF".
- ⑤ OUTPUT LAMP
GREEN LIGHT INDICATES OUTPUT POWER SUPPLY TO THE HANDPIECE IS ON.
- ⑥ D. C. MOTOR SOCKET
A SOCKET FOR CONNECTING THE D. C. MOTOR HANDPIECE.
- ⑦ OVER LOAD ALARM LAMP
RED LIGHT WILL BE ON WHEN THE SAFETY SYSTEM ACTUATES AND THE OUTPUT WILL BE SHUT DOWN. THE SAFETY SYSTEM WILL ACTUATE WHEN THE OUTPUT CURRENT GOES OVER 1A OR THE SURFACE TEMPERATURE OF THE TRANSISTOR IN THE UNIT GOES OVER 100° C.
- ⑧ FUSE HOLDER
WHEN REPLACING THE FUSE, USE A SCREWDRIVER TO UNSCREW THE HOLDER.
USE CORRECT FUSE FOR THE MODEL.
SEE THE TABLE ON THE RIGHT.

MODEL	CODE NUMBER FOR THE FUSE	SPECIFICATION
C10M / C11M	1A125VM	1A/125V
C12M	0.5A250VMT	0.5A/250V

- ⑨ FOOT SWITCH SOCKET
A SOCKET FOR CONNECTING THE FOOT SWITCH. WHEN THE FOOT SWITCH IS CONNECTED, THE ON/OFF SWITCH ON THE FRONT PANEL OF THE POWER PACK WILL NOT WORK.



3 OPERATIONS

○ WITHOUT USING THE FOOT SWITCH

- ① PLUG IN THE A. C. CABLE
- ② CONNECT THE HANDPIECE TO THE D. C. MOTOR SOCKET.
- ③ TURN THE SPEED CONTROL KNOB ALL THE WAY TO THE LEFT (COUNTER-CLOCKWISE) THIS IS THE MINIMUM ROTATION SPEED.
- ④ TURN THE MAIN SWITCH ON. (POWER LAMP WILL BE GREEN)
- ⑤ TO START THE MOTOR, PUSH THE REMOTE SWITCH OF THE HANDPIECE OR ON/OFF SWITCH ON THE FRONT PANEL.
- ⑥ TURN THE SPEED CONTROL KNOB TO ADJUST THE MOTOR SPEED TO THE APPROPRIATE POSITION FOR YOUR WORK.
- ⑦ TO STOP THE MOTOR, PUSH THE REMOTE SWITCH OR ON/OFF SWITCH OF THE POWER PACK AGAIN.

*WHEN THE SAFETY SYSTEM ACTUATES (THE MOTOR STOPS AND THE OVER LOAD LAMP TURNS RED), PUSH THE REMOTE SWITCH OR ON/OFF SWITCH AGAIN TO RESET.

○ USING THE FOOT SWITCH

- ① CONNECT THE FOOT SWITCH TO THE FOOT SWITCH SOCKET ON THE BACK OF THE POWER PACK.
- ② PLUG IN THE A. C. CABLE.
- ③ CONNECT THE HANDPIECE TO THE D. C. MOTOR SOCKET.
- ④ TURN THE SPEED CONTROL KNOB ALL THE WAY TO THE LEFT (COUNTER-CLOCKWISE) THIS IS THE MINIMUM ROTATION SPEED.
- ⑤ TURN THE MAIN SWITCH ON. (POWER LAMP WILL BE GREEN)
- ⑥ HOLD THE HANDPIECE FOR SURE AND DEPRESS THE PEDAL OF THE FOOT SWITCH TO START THE MOTOR.
- ⑦ TURN THE SPEED CONTROL KNOB TO ADJUST THE MOTOR SPEED TO THE APPROPRIATE POSITION FOR YOUR WORK.
FOR VC301 (VARIABLE SPEED CONTROL TYPE), DEPRESS THE PEDAL ALL THE WAY AND WITH KEEPING THE POSITION, ADJUST THE SPEED WITH SPEED CONTROL KNOB TO THE APPROPRIATE SPEED FOR YOUR WORK. THEN, CONTROL THE SPEED WITH THE PEDAL.
- ⑧ TO STOP THE MOTOR, RELEASE THE PRESSURE TO THE PEDAL. FOR FS211 WITH "A-MODE", DEPRESS THE PEDAL AGAIN TO STOP THE MOTOR.

*WHEN THE SAFETY SYSTEM ACTUATES (THE MOTOR STOPS AND THE OVER LOAD LAMP TURNS RED), ONCE, TURN IT OFF AS ⑧, THEN DEPRESS THE PEDAL AGAIN TO START THE MOTOR.

4 OPTION ACCESSARIES

◀ FOOT SWITCH ▶

- FS201 ON-OFF TYPE FOOT SWITCH
REMAINS ON AS LONG AS PRESSED.
TO TURN OFF, RELEASE THE PRESSURE.
- FS211 TWO INTERCHANGEABLE OPERATION MODES
A-MODE..... REMAINS ON ONCE PRESSED AND PRESS AGAIN TO TURN OFF
B-MODE..... SAME FUNCTION AS FS201
- VC301 VARIABLE SPEED CONTROL TYPE
THE MOTOR SPEED DEPENDS ON HOW FAR THE PEDAL IS DEPRESSED.