

MARATHON

MICROMOTOR HANDPIECE

USER'S MANUAL

SDE-H37L1
SDE-SH37LN

Read this User's Manual thoroughly for safety before preparing the Control Unit for use.



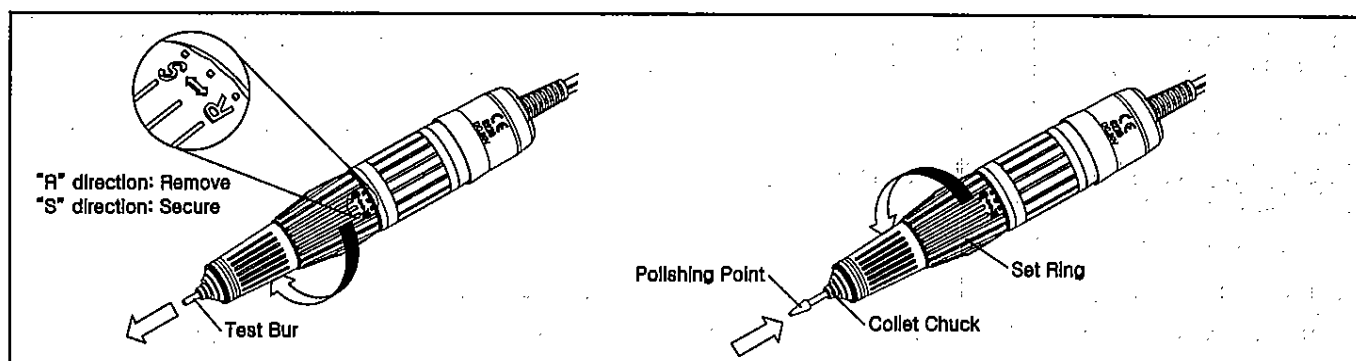
Wear the safety glasses for protecting eyes.

How to operate

1. Connect the Motor Cord and Foot Pedal Cord to the Control Unit(refer to separated sheet of Control Units).
2. After confirm the permission power of the Control Unit, plug the Power Cord into an electric outlet.
3. Set the Speed Control Knob to the slowest position.
4. Turn on the power of the Control Unit.
5. If operate the Speed Control Knob clockwise, the rotation speed of the Micromotor increases.
6. When wish to turn a rotating direction, after halt the Micromotor, operate the Forward/Reverse Selector Switch.
7. When wish to regulate a rotating speed using the Foot Pedal, after operate the Hand/Foot Selector Switch as "FOOT", use.

Mounting and removing a bur

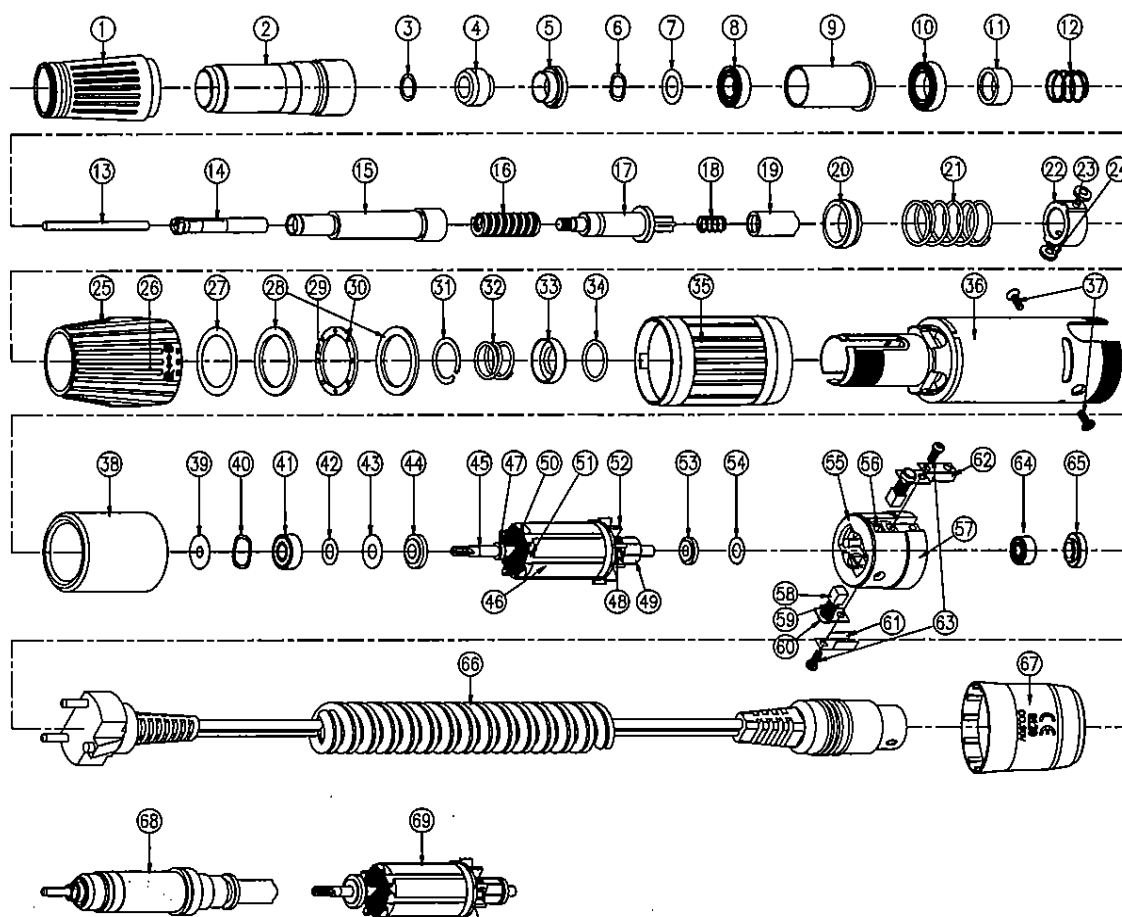
1. After turn the Set Ring of the Handpiece for "R" direction to open the Collet Chuck, extract a old bur.
2. After insert perfectly a new bur until reach in the back of the chuck, turn the Set Ring for "S" direction to lock the Chuck.



Checking items in case of not working

1. Confirm whether the power of an electric outlet is suitable in the permission power of the Control Unit.
2. Confirm whether the built-in Fuse is blown.
3. Confirm whether the Power Cord, the Motor Cord and the Foot Pedal Cord are connected correctly.
4. Check that the Collet Chuck of the Handpiece is opened.
5. Confirm whether Carbon Brushes of the Micromotor are worn away since replace need.
6. In case electron equilibrator operated by overload, press the Reset Switch(some models are exception) or restart running the Control Unit after turning off the power.

Handpiece deal drawing(SDE-H37L1)

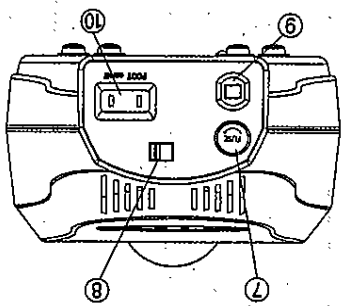
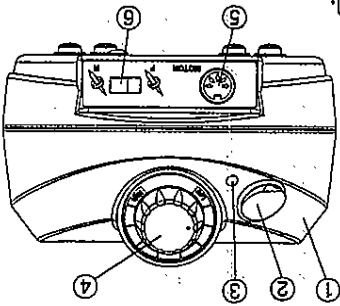


NO	PARTS NAME	QUANTITY	DRAWING NO
1	HAND CAP COVER	1	H37L-1-101-00-00
2	HAND CAP	1	H37L-1-102-00-00
3	CHUCK HOUSING C-RING	1	H37L-1-104-00-04
4	COLLAR	1	H37L-1-105-00-05
5	BEARING FLX WASHER	1	H37L-1-106-00-06
6	1750 WAVE WASHER	1	H37L-2-107-00-01
7	1750 WASHER	1	H37L-2-111-00-01
8	BALL BEARING(1750Z)	1	H37L-2-201-00-01
9	BUSH	1	H37L-2-117-00-01
10	BALL BEARING(1750Z)	1	H37L-2-202-00-01
11	SPRING SHEET	1	H37L-2-113-00-00
12	COL SPRING	1	H37L-2-114-00-01
13	TEST BUR	1	H37L-2-115-00-01
14	COLLET CHUCK 2.35	1	H37L-2-117-00-01
15	CHUCK HOUSING	1	H37L-2-119-00-01
16	CHUCK SPRING	1	H37L-2-118-00-01
17	SPRING SHEET	1	H37L-2-120-00-01
18	CONNECTOR COIL SPRING	1	H37L-2-122-00-01
19	CONNECTOR	1	H37L-2-123-00-04
20	BEARING BRUSH COLLAR	1	H37L-2-124-00-01
21	BEARING BRUSH COLLAR COIL SPRING	1	H37L-2-125-00-01
22	ROLLER BODY	1	H37L-2-126-00-04
23	ROLLER BODY PIN	2	H37L-2-127-00-01
24	ROLLER GUIDE	1	H37L-2-128-00-01
25	SET RING	1	H37L-2-129-00-00
26	CAM	1	H37L-2-130-00-04
27	TEFLON WASHER	1	H37L-2-131-00-01
28	BLADE WASHER	2	H37L-2-132-00-00
29	BLADE BODY	1	H37L-2-133-00-01
30	BALL	1	H37L-2-134-00-01
31	MOTOR CASE C-RING	1	H37L-2-135-00-01
32	MOTOR CASE COIL SPRING	1	H37L-2-136-00-04
33	MOTOR CASE COIL SPRING SHEET	1	H37L-2-137-00-02
34	1750 FLX SPRING	1	H37L-2-138-00-01
35	MOTOR CASE COVER	1	H37L-2-139-00-00
36	MOTOR CASE	1	H37L-2-140-00-01
37	MOTOR CASE BOLT	2	H37L-2-141-00-00
38	WASHER	1	H37L-2-142-00-03
39	COPPER WASHER	1	H37L-2-143-00-01
40	1750 WAVE WASHER	1	H37L-2-144-00-02
41	BALL BEARING(1750Z)	1	H37L-2-145-00-01
42	COPPER WASHER	1	H37L-2-146-00-01
43	1750 FLX SPRING	1	H37L-2-147-00-01
44	1750 SPRING	1	H37L-2-148-00-00
45	SHAFT	1	H37L-2-149-00-00
46	COIL	22	H37L-2-150-00-01
47	FRONT SHAFT BRUSH	1	H37L-2-151-00-01
48	REAR SHAFT BRUSH	1	H37L-2-152-00-01
49	COMMUTATOR	1	H37L-2-153-00-03
50	COIL	1	H37L-2-154-00-01
51	WEDGE	1	H37L-2-155-00-02
52	FAN	1	H37L-2-156-00-02
53	AXIS SPACER	1	H37L-2-157-00-01
54	TEFLON WASHER	1	H37L-2-158-00-00
55	BEARING HOUSING	1	H37L-2-159-00-00
56	BACK BEARING SET	1	H37L-2-160-00-00
57	MOTOR HOLDER	2	H37L-2-161-00-04
58	CARBON BRUSH	2	H37L-2-162-00-00
59	BRUSH SPRING	2	H37L-2-163-00-02
60	BRUSH CAP	2	H37L-2-164-00-01
61	TEFLON RING	1	H37L-2-165-00-02
62	TEFLON RING	1	H37L-2-166-00-03
63	CARBON BRUSH BOLT	2	H37L-2-167-00-00
64	BALL BEARING(1750Z)	1	H37L-2-168-00-01
65	REAR SHAFT BRUSH	1	H37L-2-169-00-00
66	MOTOR END	1	H37L-2-170-00-00
67	MOTOR HOUSING COVER	1	H37L-2-171-00-00
68	SPRING ASSY	1	H37L-2-172-00-00
69	ASSEMBLY ASSY	1	H37L-2-173-00-01

COMPONENTS

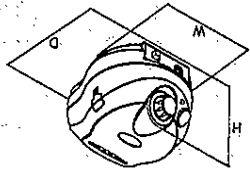
- ① Control Unit
- ② Power Switch
- ③ Pilot Lamp
- ④ Speed Control Knob
- ⑤ Motor Connector
- ⑥ Forward/Reverse Selector Switch
- ⑦ Fuse Holder
- ⑧ Input Voltage Selector Switch
- ⑨ Power Cord Holder
- ⑩ On/Off Foot Pedal Connector

CONTROL UNIT



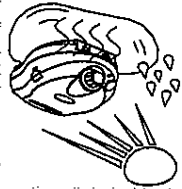
SPECIFICATIONS

110/220V	50/60Hz	DC 30V	Max. Handpiece	140	155	90	1.45
			MOVA				

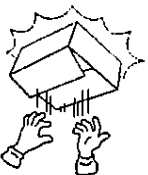


FUNCTION

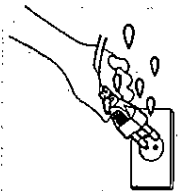
- Non-stage speed dialing system.
- Protective plastic cover.
- Powerful control box.
- Forward & reverse switch.
- On/off foot switch.



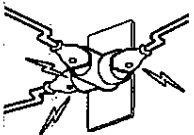
1. Install the Control Unit in the room at suitable temperature (0~40°C), dusty warm or humid location damages to the Control Unit.



2. When taking your Control Unit from the box, never let it fall on the floor. The Control Unit is heavy and has sharp corners. Please handle with care.

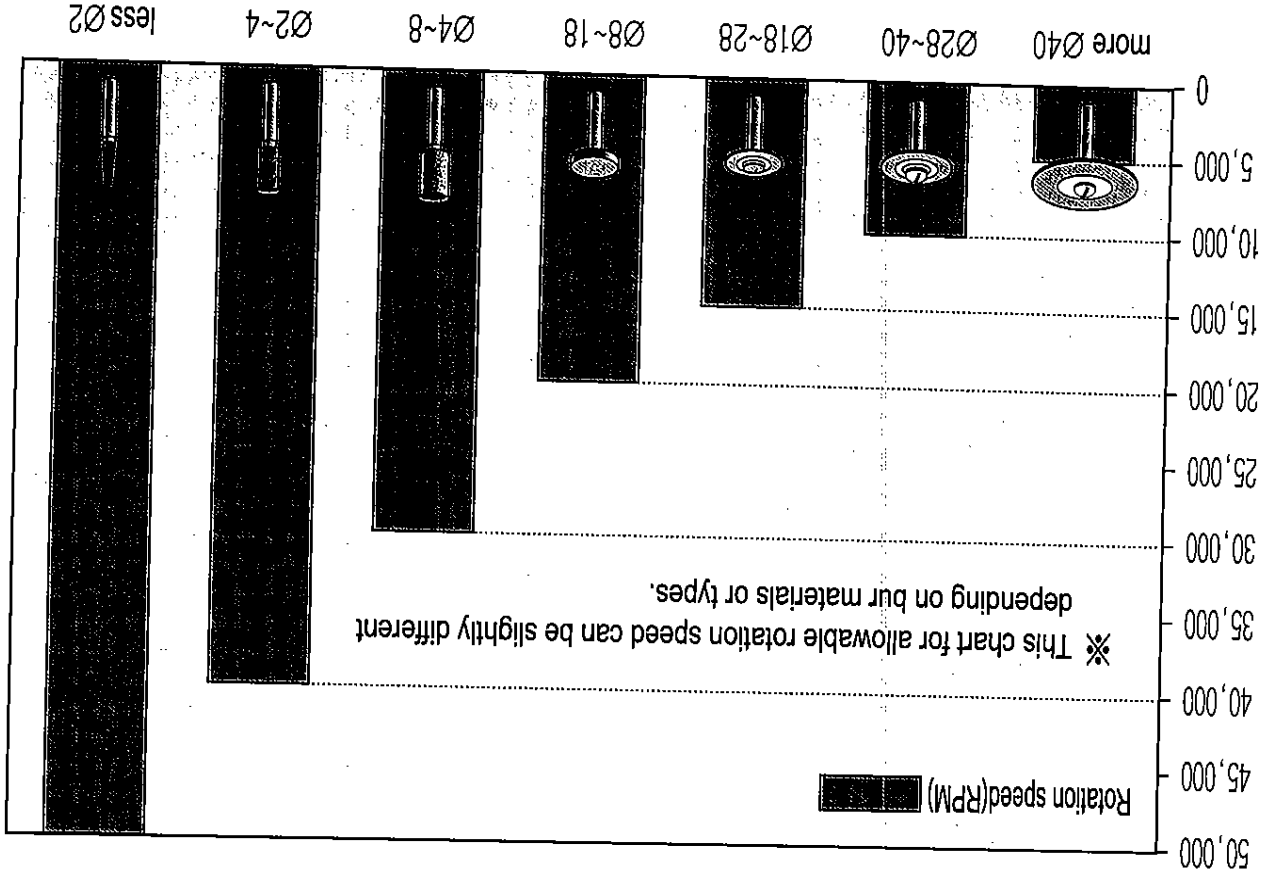


3. Never plug or unplug the Power Cord with wet hands to avoid electric shock.



4. Do not insert too many power cords into one socket.

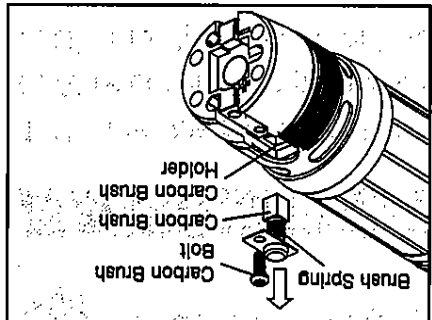
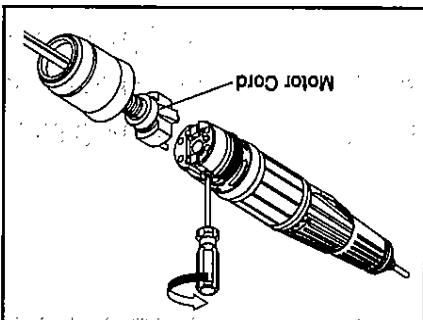
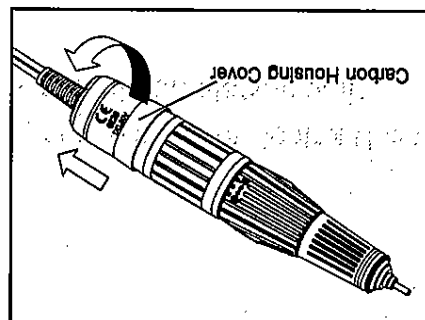
Allowable rotation speed



5. The Control Unit should rest on a flat steady place which is not disturbed by other things.
6. Never use bent, asymmetrical or damaged burs. Always use standard burs.
7. Do not operate exceeding the maximum rotation speed specified by the manufacturer or distributor for the bur being used.
8. Set the rotation speed of bur based on allowable rotation speed chart below.
9. Always thoroughly clean the Collet Chuck and bur before reassembly.
10. Make sure to insert the bur shank all the way, until it touches the back of the Collet Chuck. Then tighten the Collet Chuck. If the bur is used while not inserted completely, it is very dangerous because it may come out by vibration.
11. After replace a bur, it is necessary to make sure that the Collet Chuck is securely held before running the Handpiece.
12. While the Handpiece is running, DO NOT try to adjust the Set Ring to prevent the Control Unit from being damaged.
13. Before operating the Forward/Reverse Selector Switch, it is required that the Micromotor has been stopped.
14. When work cutting or drilling, always wear goggles and mask.
15. Take care not to drop the handpiece. It will damage Ball Bearing or weaken durability of the handpiece.
16. Always put the Handpiece on its stand while in use.
17. Only trained technician is authorized to disassemble the Spindle Set and the Micromotor in order to avoid any damage to them.
18. When the Handpiece is not in use, it is recommended a test bur be inserted into the Collet Chuck of the Handpiece.

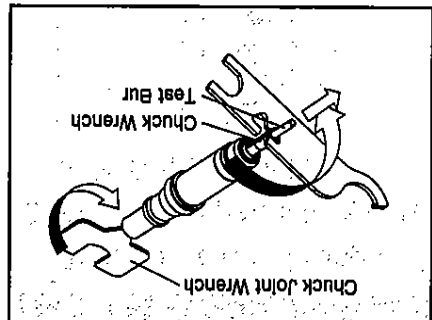
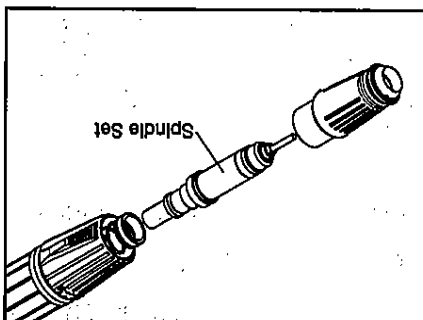
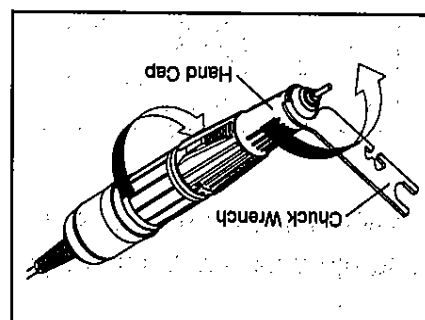
Replacing Carbon Brushes

1. After turn off the power of the Control Unit, remove the Carbon Housing Cover and the Motor Cord from the rear of the Handpiece.
 2. Remove worn-out Carbon Brushes after taking off Carbon Brush Bolts using a screwdriver(+).
 3. Replace by new ones with observing the Brush Spring should get jammed in the Carbon Brush Holder.
 4. Assemble the Handpiece.
 5. After run the Handpiece under no load state about 20,000RPM for 30 minutes, then use.
- ※ Replacing cycle of Carbon Brushes being about one year, can be depending on working hours and loading conditions.



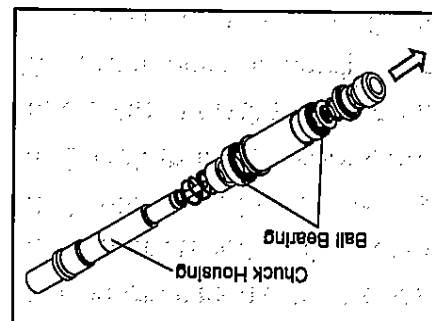
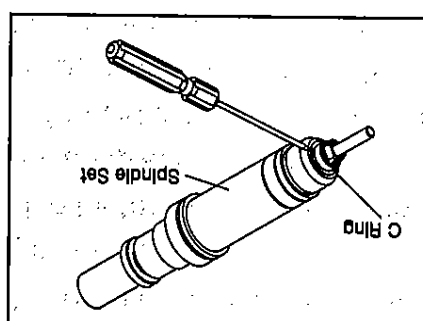
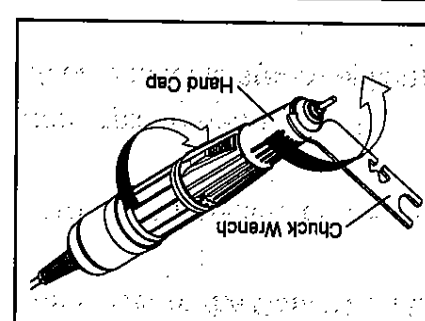
Replacing the Collet Chuck

1. The Hand Cap and the Spindle Set are disjoined by continuously turning the Hand Cap counterclockwise using the Chuck Wrench.
 2. The Collet Chuck is disjoined by continuously turning it counterclockwise using tools.
 3. After replace by new Collet Chuck, assemble the Handpiece.
 4. After run the Handpiece under no load state and confirm something wrong nonexistence, then use.
- ※ Replacing cycle of the Collet Chuck being 2~3 years, can be depending on working hours and loading conditions.

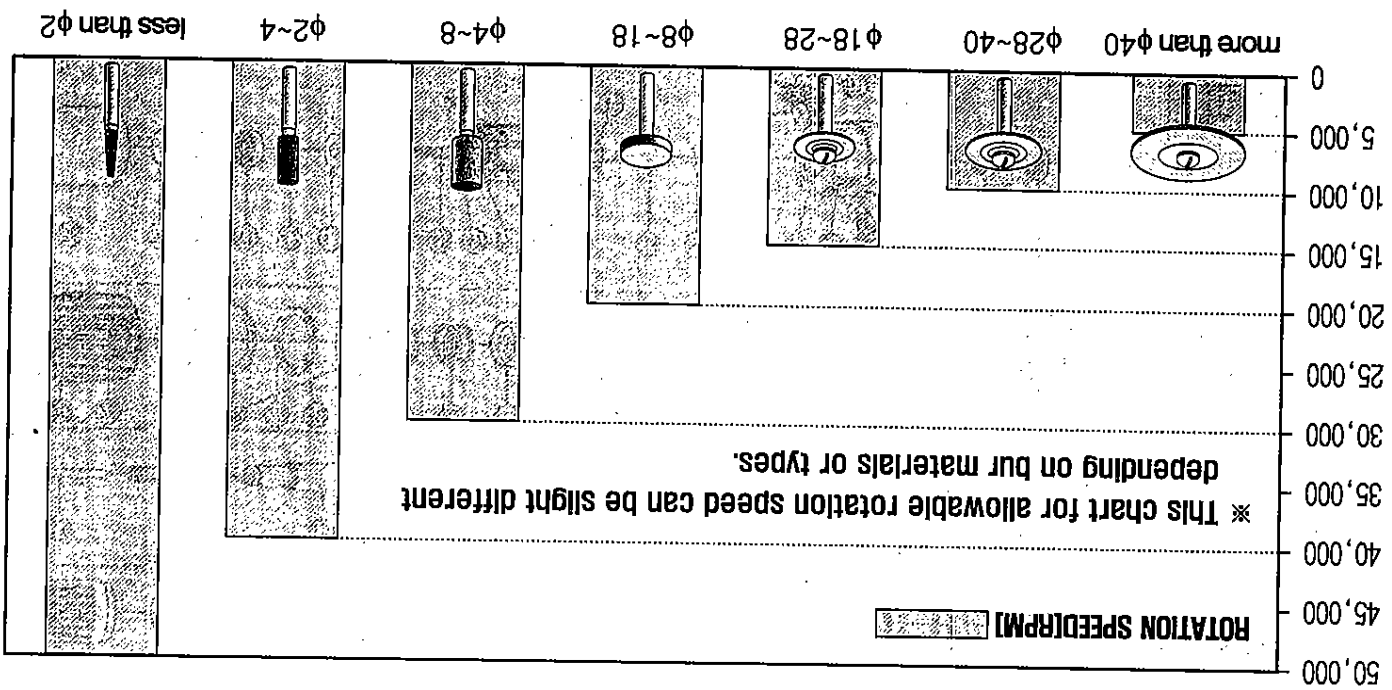


Replacing Ball Bearings

1. Disjoint the Hand Cap and the Spindle Set.
2. If remove the C Ring from the front of the Chuck Housing, Ball Bearings and other parts are disassembled.
3. After assemble other parts and replace with new Ball Bearings sequentially, install the C Ring again.
4. Joint the Hand Cap and the Spindle Set.
5. After run the Handpiece under no load state and confirm something wrong nonexistence, then use.



Allowable rotation speed



SMT

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