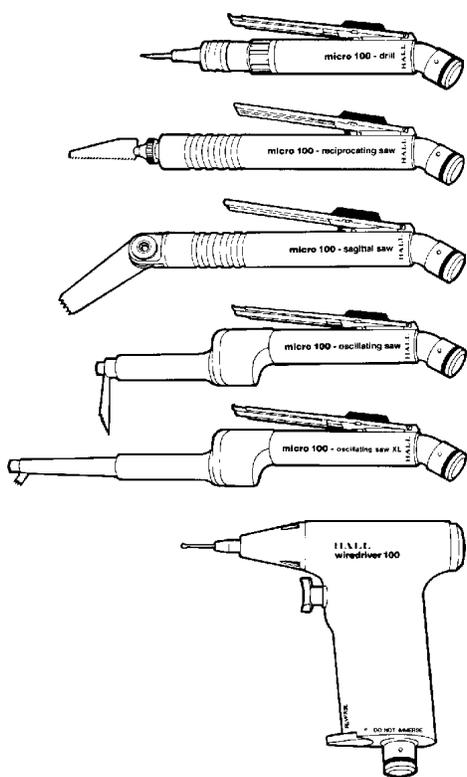


THE HALL® MICRO 100™ INSTRUCTION MANUAL



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GENERAL WARNINGS

1. Hall[®] Surgical equipment is designed for use only by medical professionals who are completely familiar with the required surgical techniques and instructions for use of the equipment.
2. Prior to each use, all instruments and accessories must be inspected for proper operation.
3. Before each use, be sure accessories are correctly attached to the instrument as they could be thrown from the instrument with great force, possibly causing serious injury.
4. Always inspect for bent or otherwise damaged burs/blades before each use. A bent blade or bur can whip severely and could be propelled with great force, causing injury. Do not use excessive force on any bur or blade. Do not attempt to straighten a bent blade or bur.
5. Put the instrument in the “SAFE” position before changing any accessories, burs or blades. Accidental activation of the instrument could injure the patient or operating room personnel.
6. The surgeon and all others in the area must always wear eye protection when operating any Hall Surgical equipment. Eye injury or blindness can result from dislodged drill bits, blades or bone tooth fragments.
7. To assure safety of the patient and operating room personnel, use only Hall Surgical accessories and attachments.
8. Dull burs and blades may cause heat build-up in the handpiece and the bone. It is recommended that single-use burs and blades be used or, if the hospital does not want to use single-use burs or blades, inspections with a magnifying glass of all burs and blades must be done to check for dulled and chipped cutting surfaces.

9. Overheating might occur if the instrument or accessory bearings are worn or are not kept clean. Continually check all parts of the instrument and attachments for overheating and discontinue use and return the equipment for service as necessary. Overheating can cause serious burns or other injury to the patient or operating room personnel.
10. Before each use, check all of the equipment for any air or nitrogen leakage and return the instrument for service if leakage is noticed. Leakage could seriously injure the patient or cause death.
11. Never operate the instrument above its rated pressure. Excessive pressure may cause damage to the instrument and exert unusual stress on the hose.
12. Please follow Hall sterilization recommendations. Steam sterilization without a dry cycle may severely shorten the useful life of the instrument.
13. Please pay close attention to the “Care and Cleaning Instructions” and “Cautions” in this handpiece instruction manual.
14. Handle all medical instruments carefully. If a Hall device is dropped, immersed or damaged in any way, it should be returned immediately for service.
15. The nitrogen regulator is for use with pneumatically powered surgical devices only. Adequate preventive maintenance includes servicing the regulator once every year.

POWER SOURCE AND REGULATION

**NITROGEN
WARNING
— NOT FOR INHALATION —**

**For Use With Powered Surgical Devices Only.
Does Not Support Life.**

Wall and Tank

Research and experience have shown that water-pumped dry nitrogen is the ideal source for pneumatically powered surgical instruments. Water-pumped dry nitrogen is 99.97% pure, and will not support combustion or corrosion. Compressed dry nitrogen should meet the following specifications to ensure optimum safety for both patient and instrument.

Nitrogen Content: 99.97% pure, dry nitrogen.

Quality Assurance: To obtain the quality of gas needed, “water-pumped dry nitrogen, or liquid nitrogen, pumped dry” should be specified.

Nitrogen is readily available from gas supply houses in **H** cylinders compressed to slightly in excess of 300 cubic feet (8.50 cubic meters). Initial set-up costs are relatively inexpensive as compared to compressed air. Nitrogen can be placed in the operating room or in a storage area and piped into the operating room. Manifold systems are available to eliminate routine tank changes.

CAUTION: DO NOT EXCEED 100 psi RUNNING (7kg/cm²). The Micro 100 handpieces should be operated at 100 psi (7kg/cm²) for maximum operating efficiency, and should be monitored by the operating pressure gauge of the regulator. Pressure must be set with the instrument running to avoid too low an operating pressure.

1. The tank should be thoroughly wiped off with disinfectant and draped prior to placement in the operating room. Always have the tank securely fastened to a wall, stable cart or some other stationary device.

2. Prior to set-up in the operating room, open the tank valve slowly and allow gas to escape to blow out any debris. Stay clear of the opening during this procedure. Return the valve to the closed position.
3. Install regulator with a 1 1/8 inch wrench.

NOTE: The threaded adaptor of the nitrogen regulator is designed to fit nitrogen fittings only. Incompatibility of the regulator and tank indicates a gas source other than nitrogen or an improper regulator for use with a nitrogen tank.



4. Once the regulator is securely installed, be certain that the regulator knob is in the full OFF position by turning the regulator knob counterclockwise. SUDDEN PRESSURE EXERTED TO THE REGULATOR MAY CAUSE INTERNAL DAMAGE.



5. Open the nitrogen tank valve slowly until it is fully open. This will allow nitrogen to pressurize the regulator. The gauge on the right indicates the nitrogen pressure stored within the nitrogen tank. NEVER start a procedure if this gauge indicates less than 500 psi. NEVER run the tank pressure below 200 psi.



6. The diffuser end of the hose is inserted into the quick disconnect on the regulator with a forward thrust.



7. Operating pressure is established by turning the regulator control knob clockwise. ALWAYS establish the designated pressure on the operating gauge while the instrument is running. Do not exceed 100 psi dynamic pressure (dynamic pressure is measured while the instrument is running).



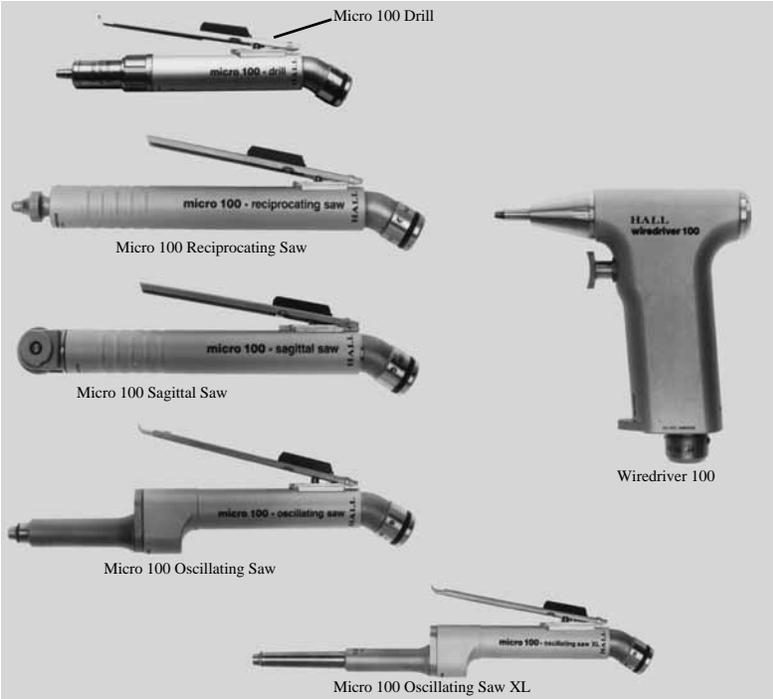
8. Before removing the instrument from the regulator:
- Close tank valve by turning it clockwise.
 - Turn regulator knob counterclockwise until the pressure gauge indicates 0 psi.
 - Run tool until the gas pressure is exhausted.
 - If a standard Schrader connector is used, twist and release as usual.
 - If the Hall Pneumatic Connector* is used:
 - Locate the button marked "PRESS".

* U.S. Patent 4,863,201

2. Depress the button and keep it depressed until the audible release of residual gas is completed.
3. Release the button.
4. The hose can then be removed.
5. If the hose is not easily removed, depress the "PRESS" button again, release it, then remove the hose.



SPECIFICATIONS



The following information applies to all Micro 100 handpieces.

OPERATION PRESSURE: 100 lbs. per square inch Dynamic pressure (7kg/cm ²)	NITROGEN CONSUMPTION: 8 cubic feet (226 liters) per minute maximum
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RECOMMENDED POWER SOURCE: Water pumped, compressed dry nitrogen. 99.97% pure medical grade.	WEIGHT: 5.0 oz. (142 g) to 7.62 oz. (216 g)
	LENGTH: 6 in. (15.3 cm) to 7.5 in. (19.0 cm)
	DIAMETER: 0.7 in. (18mm)

MICRO 100 DRILL-5053-009

Operating Speed: 500 to 20,000 rpm
Output Torque: 6 in. -oz.
Bur Pull-Out Force: Exceeds 12 lbs. (5.45 kg)

MICRO 100 RECIPROCATING SAW-5053-010

Operating Speed: 14,000 cycles/min. (28,000 strokes/minute)
Stroke: 1/10 inch (2.54mm)

MICRO 100 SAGITTAL SAW-5053-011

Operating Speed: 18,000 cycles/min. (36,000 strokes/minute)
Stroke: 4°

**MICRO 100 OSCILLATING SAW-5053-012
& MICRO 100 OSCILLATING SAW XL-5053-022**

Operating Speed: 22,000 cycles/min. (44,000 strokes/minute)
Stroke: 7°

WIREDRIVER 100-5053-013

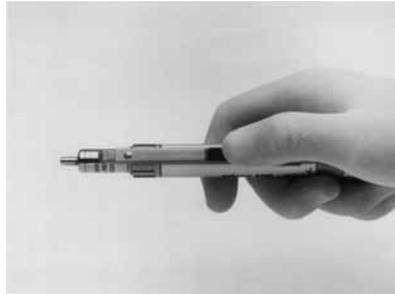
Operating Speed: 0 to 1,100 rpm
Output Torque: 30 in.-oz.
Cannulated: Accepts wires from 0.028 in. (0.71mm) to 0.062 in. (1.57mm)

GENERAL INSTRUCTIONS

With the exception of the Wiredriver 100, all Micro 100 handpieces have the same basic configuration and many features in common. See pages 22-24 for Wiredriver 100 instructions.

1. To prevent accidental activation of the instrument, slide the safety knob on the throttle forward until only the word "SAFE" appears.

WARNING: THE THROTTLE OF EACH INSTRUMENT SHOULD BE PLACED IN THE "SAFE" POSITION WHEN NOT IN USE.



2. To attach the handpiece to the hose:
 - (a) Place the instrument in the "SAFE" position.
 - (b) Grasp both the swivel end of the handpiece and the hose firmly.
 - (c) Push together and twist the hose until the pins are seated in the indentations.



NOTE: An automatic shut-off valve in the end of the hose permits hose removal under pressure so that the handpieces may be changed during surgery.



3. To activate the instrument:

- (a) Lift the lever and slide the safety knob to the “ON” position.
- (b) Depress the throttle lever to activate the instrument.



4. To use the optional foot control:

Circulator:

- (a) Attach the foot control hose to the nitrogen regulator.
- (b) Insert the diffuser end of the hose, presented by the scrub nurse, in the fitting on the foot control.

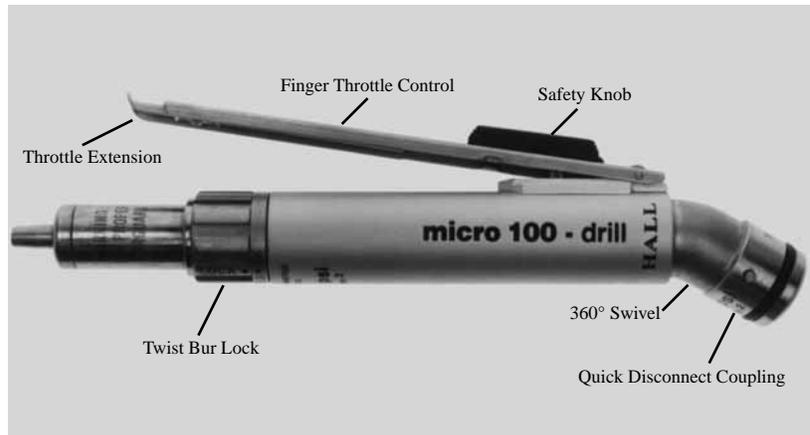


Scrub Nurse:

- (a) Attach the Universal Hose to the handpiece.
- (b) Place the safety knob in the "ON" position.
- (c) Affix the throttle clip (5053-074) over the lever.



MICRO 100 DRILL



WARNING: THE THROTTLE OF THE INSTRUMENT SHOULD BE PLACED IN THE “SAFE” POSITION WHEN NOT IN USE.

WARNING: ALWAYS OPERATE THE MICRO 100 DRILL WITH THE APPROPRIATE BUR GUARD.

1. To insert bur:

- (a) Slide the appropriate bur guard over the end of the Micro 100 Drill. Be certain that it is completely seated.

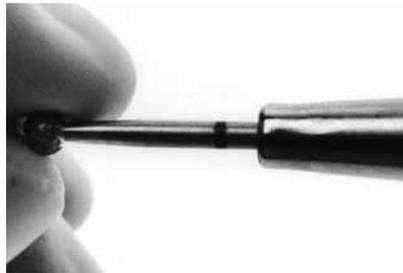
WARNING: CHECK EACH BUR BEFORE USE IN THE MICRO 100 DRILL.



- (b) Twist the bur lock to the unlocked position.



- (c) Insert the bur to the safe line or until the bur seats completely. Never lock the collet without a bur inserted.



2. To secure bur:

- (a) Twist the bur lock until the red indicator dots are aligned.



3. To use the Laminectomy or Rhinoplasty attachment:

- (a) Place the instrument in the “SAFE” position.
- (b) Twist the bur lock to the unlocked position and insert either the laminectomy or rhinoplasty bur.
- (c) Twist bur lock until the red indicator dots are aligned.
- (d) Slide the appropriate guard over the bur and the end of the Micro 100 Drill. Be certain the guard is completely seated.



NOTES:

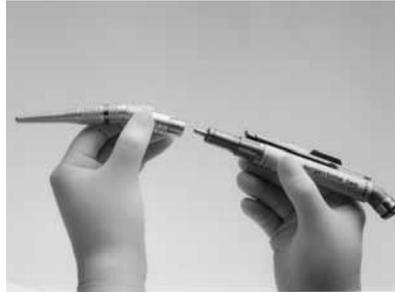
- 1: These are the only burs that should be inserted prior to placing the appropriate bur guard on the instrument.**
- 2: To avoid premature wear or damage to the instrument, the drill should be kept in the “SAFE” position when not in use.**
- 3: The bur lock should NOT be placed in the “LOCK” position without a bur fully seated in the device.**

HALL MICRO 100 DRILL ATTACHMENTS

WARNING: BE CERTAIN THAT THE ATTACHMENTS ARE COMPLETELY SEATED ON THE INSTRUMENT BEFORE USE.

1. To use the HALL Drill Attachments:

- (a) Twist the bur lock to the unlocked position.
- (b) Seat the attachment completely over the end of the Micro 100 Drill.
- (c) Twist the bur lock until the red indicator dots are aligned to lock the attachment into place.



20° and 20° Extra Long and Angle Attachments:

1. To insert burs:

- (a) Open the collet by twisting the attachment bur locking ring to the left (counterclockwise) until the locking ring is in the fully open position.
- (b) Insert bur. Turn bur locking ring to the right (clockwise) until the locking ring is in the locked position. Use only long burs (5092 series) in the 1375-032, 20° angled attachment.



Use only extra long burs (5093 series) in the 1375-033 X-long 20° angled attachment.

70° and 90° Angle Attachments:

CAUTION: Only HALL short 5090 series and extra-short 5089 series burs should be used with the 90° Angle Attachment, and the 70° Contra Angle Surgical Head Attachment.



1. To insert bur:

- (a) Place the bur in the opening on the front of the attachment.
- (b) Use the grooved side of the bur changer (1375-003) to press the bur firmly in place.

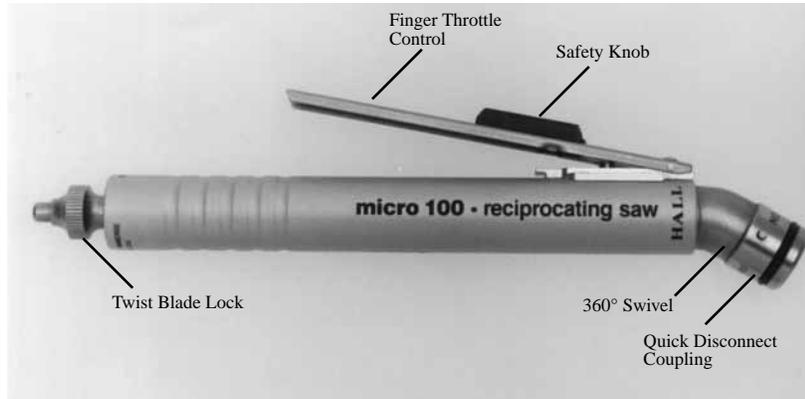


2. To remove bur:

- (a) Place the bur changer pin in the opening at the rear of the attachment.
- (b) Press firmly on the bur changer to push the bur out.



MICRO 100 RECIPROCATING SAW



WARNING: BE SURE THE INSTRUMENT CONTROL LEVER IS PLACED IN THE “SAFE” POSITION BEFORE INSERTING BLADES.

1. To insert saw blades:

- (a) Twist the blade lock to loosen.
- (b) Insert the blade into the end of the handpiece. Be certain the blade is fully seated.

2. To secure blade:

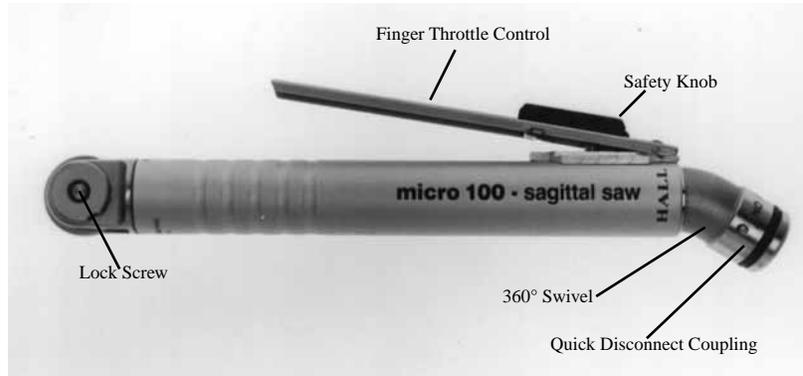
- (a) Twist the blade lock until it is completely tightened.
- (b) Activate the instrument briefly and retighten the blade lock.



3. An optional, smoother collet nut (5053-025) is available for increased visibility and surgical access.

WARNING: BE CERTAIN THAT THE SAW BLADES ARE TIGHTLY SECURED BEFORE USE.

MICRO 100 SAGITTAL SAW



WARNING: BE SURE THE INSTRUMENT CONTROL LEVER IS PLACED IN THE “SAFE” POSITION BEFORE INSERTING BLADES.

1. To attach saw blades:

- (a) Place the blade in the center slot at the end of the handpiece.



NOTE: Be certain that the blade is inserted between the washers.

2. To secure blade:

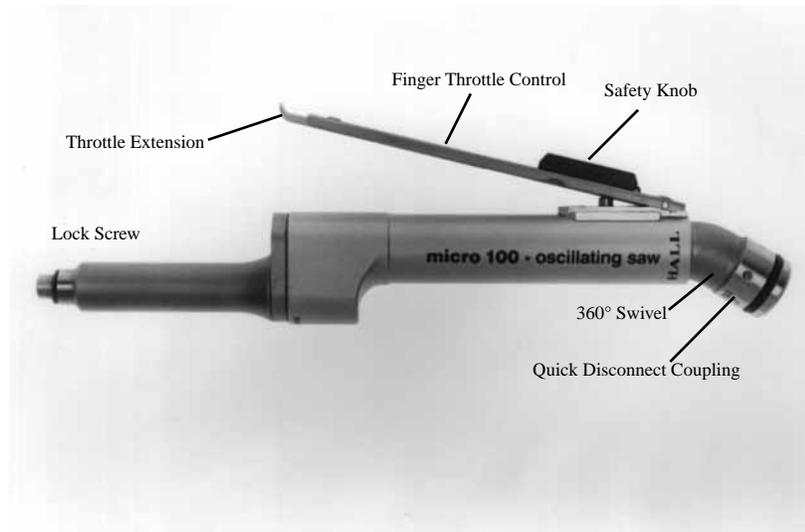
- (a) Tighten the lock screw with the hex wrench (1365-005).
- (b) Activate the instrument briefly, then retighten the lock screw to assure that the blade is held securely.



NOTE: The blade may be positioned anywhere within a 180° arc.

WARNING: BE CERTAIN THAT THE SAW BLADES ARE TIGHTLY SECURED BEFORE USE.

MICRO 100 OSCILLATING SAW & MICRO 100 OSCILLATING SAW XL



WARNING: BE SURE THE INSTRUMENT CONTROL LEVER IS PLACED IN THE “SAFE” POSITION BEFORE INSERTING BLADES.

1. To attach blade:

- (a) Place the blade between the end of the output shaft and the compression washer.

NOTE: Do not place the blade between the washer and the head of the screw.



2. To secure blade:

- (a) Tighten the lock screw with the hex wrench (1365-005).
- (b) Activate the instrument briefly and retighten the lock screw.



NOTE: The blades may be positioned at any angle.

WARNING: BE CERTAIN SAW BLADES ARE TIGHTLY SECURED BEFORE USE.

WIREDRIVER 100



WARNING: BE CERTAIN THE INSTRUMENT CONTROL LEVER IS PLACED IN THE “SAFE” POSITION WHEN INSERTING WIRES.

NOTE: The Wiredriver 100 accepts threaded or unthreaded wires from 0.028 inch to 0.062 inch (0.71mm to 1.57mm).

1. To insert wires:
 - (a) Be certain the directional control lever is in the “SAFE” position.



- (b) Wires may be inserted either through the front or the rear of the handpiece. When inserting wires from the front, care should be taken to align the wire with the front of the instrument. Inserting wires at an angle may cause them to become lodged. Only wires six inches or longer may be inserted from the rear.



NOTE: The wireguard protector (5053-123) may be attached to the rear of the instrument to keep long wires from bending.



2. To lock the wire in a fixed position for use:
 - (a) Depress the trigger to lock the collet on the wire.
3. To drive the wire:
 - (a) Place the directional control in the desired position and further depress the trigger.
 - (b) To expose more wire, release the trigger and pull back on the instrument.
 - (c) To facilitate wire advancement, the end of the collet should be at least 1/4 to 1/2 inch (6-13mm) away from the bone.
 - (d) Depress the trigger again to lock the collet and activate the instrument for further insertion of the wire.

NOTE: The instrument must be in the “REVERSE” position to remove threaded wires.

WIREDRIVER ADAPTOR CHUCK

NOTE: The Wiredriver Adaptor Chuck will accept shaft diameters from 0.062 in. (1.57mm) to 0.125 in. (3.2mm).

1. To attach the Wiredriver Adaptor Chuck:

- (a) Be certain the instrument is in the “SAFE” position.
- (b) Place the shaft of the appropriate drill bit in the collet of the Wiredriver Adaptor Chuck and finger tighten.



- (c) Attach the Wiredriver Adaptor Chuck on the nose of the handpiece. Be certain the chuck is completely seated.



- (d) Set the directional control to the desired mode. Activate the instrument briefly to ensure the concentricity of the item being used.

- (e) Each time the trigger is released the Wiredriver Adaptor Chuck should be reseated to ensure concentricity.



CARE AND CLEANING PRECAUTIONS

1. **DO NOT LUBRICATE.** Lubrication of the Micro 100 handpieces may result in damage to the motor and/or internal parts.
2. **NEVER IMMERSE** the Micro 100 handpieces or attachments. Immersion in any solution will permanently damage the instrument by liquid entering the mechanical parts. Some solutions will corrode metal and delicate moving parts, and also break down internal lubricants.
3. **NEVER CLEAN THE INSTRUMENT WITH LIQUID OR CHEMICAL DISINFECTANTS.** This may damage the instrument.
4. **NEVER CLEAN THE INSTRUMENT IN AN ULTRASONIC CLEANER.** Ultrasonic cleaning will dislodge oil from the bearings and render the instrument inoperative.
5. **NEVER OPERATE THE MICRO 100 HANDPIECES ABOVE 100 psi.** Excessive pressure may cause internal damage to the instrument.
6. **HANDLE ALL POWERED SURGICAL INSTRUMENTS CAREFULLY.** Should the instrument be dropped or damaged, it should be returned for service.
7. **BE SURE THE HOSE AND ATTACHMENTS ARE SECURELY FASTENED TO THE HANDPIECE.**
8. **NEVER STERILIZE THE REGULATOR OR IMMERSE IN ANY SOLUTION.**
9. **STEAM STERILIZE** the Micro 100 handpieces (except regulator) per instructions on page 29. **DO NOT** gas sterilize, or use dry heat sterilization.

CLEANING INSTRUCTIONS

1. It is recommended that the hose remain attached to the handpiece during cleaning.
2. Thoroughly scrub the instrument and attachments with a soft brush and mild detergent. All traces of blood and debris should be removed.
3. Keeping the nose of the handpiece pointed downward, rinse under running water.

CAUTION: DO NOT IMMERSE INSTRUMENTS OR ATTACHMENTS.

4. To dry, wipe the surfaces with a clean, lint-free towel.
5. Detach hose prior to sterilization.



6. Clean cutting surfaces of the burs with a wire brush and mild detergent. Be certain that all surfaces are free of debris. Rinse with running water.



WIREDRIVER 100 SPECIAL CLEANING INSTRUCTIONS

1. To clean the cannulated section of the wiredriver:
 - (a) Remove the wireguard and adaptor.
 - (b) Feed the wire end of the cleaning brush (5053-124) through the back of the instrument.
 - (c) Pull the brush through the handpiece. Repeat until debris is removed.



NOTE: Failure to regularly clean the wiredriver internally may result in improper function. Cleaning of the cannulated section is recommended after each use.

NO LUBRICATION REQUIRED ON HANDPIECES.

LUBRICATION INSTRUCTIONS

CAUTION: ONLY HALL MICRO ANGLED ATTACHMENTS (1375-032, 1375-033, 1375-035, 1375-036) REQUIRE LUBRICATION. DO NOT LUBRICATE HANDPIECES OR BUR GUARDS.

All lubrication should be done after the attachments have been cleaned and prior to sterilization. We recommend the use of Hall Attachment Spray (1375-037).

1. Before using, shake can well and make sure the Hall Attachment Spray Nozzle is securely attached to the spray dispenser. Read instructions and other information on the label on the attachment spray container.



2. Make sure the Hall Attachment Spray Nozzle is fully inserted into the bottom of the angled attachment. With the can in an upright position, depress the button and spray the lubricant for one to two seconds or until the lubricant flowing from the attachment is clear and free of all traces of blood.



3. Wipe any excess lubricant from the attachment.

STERILIZATION RECOMMENDATIONS

1. Place cleaned instruments in an instrument tray. The 5030-20 sterilization container is recommended.
2. Do not crimp the hose when closing case lid.
3. If instruments are to be wrapped, two double thicknesses of #140 thread count wrappers should be utilized. Do not use Tyvek bags, as they retain moisture and may damage the handpieces. Exposure times are the same for wrapped or unwrapped instruments.
4. Follow the instructions for pre-vacuum steam sterilization or gravity air displacement steam sterilization listed below.

PRE-VACUUM STEAM STERILIZATION

If your pre-vacuum steam sterilizer has a pre-fixed cycle, use the hard goods cycle.

If it does not have a pre-fixed cycle:

1. Set temperature at 270°-272°F (132°-133°C).
2. Set exposure time for four minutes.
3. Set drying time for eight minutes minimum.

GRAVITY AIR DISPLACEMENT STEAM STERILIZATION

Set the temperature and corresponding exposure time:

Exposure time at 270°-272°F (132°-133°C)
35 minutes

Exposure time at 250°-254°F (121°-123°C)
80 minutes

Set drying time for eight minutes minimum.

NOTE: A 3 OR 10 MINUTE “FLASH” STERILIZATION, WITHOUT DRY CYCLE, SHOULD NOT BE USED FOR POWERED SURGICAL INSTRUMENTS AS INTERNAL STERILIZATION OF EQUIPMENT IS REQUIRED BETWEEN CASES.

STEAM STERILIZATION

Steam sterilization is safe and effective, and there are no contraindications for sterilizing Hall Surgical instruments, attachments and accessories. Ethylene Oxide sterilization is not a substitute for steam sterilization. Ethylene Oxide gas sterilization is not recommended for powered surgical instruments, as gas is used primarily for heat sensitive products. Hall powered surgical instruments are capable of withstanding the recommended exposure times and temperatures used in steam sterilization.

- Do not process powered surgical equipment handpieces or accessories in a washer sterilizer.
- Do not immerse in liquid to cool. Cool by exposure to room temperature or cover with a cold, sterile towel.
- Do not run instrument while warm. Allow adequate time for instrument cooling prior to surgery.

TROUBLESHOOTING GUIDE

HANDPIECE	PROBLEM	SUGGESTION
Micro 100	Lack of power	<ul style="list-style-type: none"> • Check nitrogen tank bottle pressure. Must be at least 500 psi. • Check proper regulator setting. Pressure should be at 100 psi dynamic. • Check regulator for malfunction. Run handpiece on another regulator. • Check hose for possible restrictions. Run handpiece on a different hose. • Make sure throttle control is in proper mode. • Do not oil the motor. Oiling causes the motor to slow down. Return for service. • If using a hose longer than the standard 10 ft. universal hose, or if extension hose is used, then add an additional one psi per each extra foot of hose.
Micro 100 Drill	Bur slips out of handpiece	<ul style="list-style-type: none"> • Be sure bur is fully seated and locked in collet.
Micro 100 Reciprocating, Sagittal and Oscillating Saw	Blade vibrates loose	<ul style="list-style-type: none"> • Use a different bur. • Be sure blades are fully seated and locked in place. • Activate handpiece briefly, then retighten blade.

**ACCESSORIES COMMON TO HALL MICRO 100
HANDPIECES**

CAT. NO.	DESCRIPTION
1375-028	Foot Control with throttle clip
5030-020	Sterilization Container
1375-007	Nitrogen Regulator
1375-030	Dual Regulator
5052-010	Universal Hose, 10 Foot
5052-016	Universal Hose, 15 Foot
5052-017	Universal Hose, 20 Foot
5052-018	Extension Hose, 10 Foot
5052-029	Extension Hose, 10 Foot w/DISS connector
5052-030	Extension Hose, 15 Foot
5052-031	Extension Hose, 20 Foot
5053-074	Throttle Clip
5053-025	Oral Surgery Nut and Wrench
5053-501	Extended Warranty (U.S. Only)

ACCESSORIES FOR WIREDRIVER 100

CAT. NO	DESCRIPTION
5053-123	Wireguard
5053-019	Wiredriver Adaptor Chuck
5053-124	Wire Brush

**ADDITIONAL ACCESSORIES AVAILABLE FOR THE
MICRO100 DRILL (5053-009)**

CAT. NO.	DESCRIPTION
1375-003	Bur Changer
1375-005	Bur Release
1375-032	20° NSK Angle Attachment
1375-033	Extra Long 20° NSK Angle Attachment
1375-035	70° Contra-Angle Attachment
1375-036	90° Angle Attachment
1375-037	Hall Attachment Spray (To be used only with attachments as required)
1375-011	Long Bur Guard
1375-012	Medium Bur Guard
1375-020	Laminectomy Bur Guard
1375-021	Rhinoplasty Bur Guard
1375-023	Cloward Extra-Long Bur Guard
1387-022	Tissue Retractor Guard
5053-008	Bur Rack

Linvatec® and Hall Surgical Instrument Warranty

Linvatec Corporation, (“the Company”), warrants to the first purchaser or lessee (“Customer”) that the Linvatec and Hall Surgical instruments, attachments and parts manufactured by or for the Company (hereinafter collectively “Instruments”) have been tested, inspected, and shipped in proper working order.

The Company warrants all new Instruments to be free from defects in materials and workmanship for the following periods, measured from Customer’s receipt:

1. Powered Surgical Equipment (battery, electric, pneumatic) - Twelve (12) Months
2. Battery Chargers - Twelve (12) Months
3. Battery Packs - Three (3) Months
4. Burs and Blades - Upon receipt
5. Pneumatic Hoses - Six (6) Months
6. Handpiece Cords and Power Cords - Twelve (12) Months
7. Camera Consoles - Twenty-four (24) Months
8. Video Components - Twelve (12) Months
9. Video Cables and Light Guides - Three (3) Months
10. Non-autoclavable Camera Heads - Twelve (12) Months
11. Autoclavable Camera Heads - 500 use service program (prorated credit after 250 uses)
12. Shutt SLG Instruments - Lifetime
13. Shutt Non-SLG Instruments - Twelve (12) Months
14. Footswitches - Twelve (12) Months
15. Irrigation Systems - Twelve (12) Months
16. Reusable Procedure Specific Instruments - Twelve (12) Months

The Company warrants to the Customer that any service or repair work performed by the Company on Instruments not within the warranty period shall be free from defects in workmanship and materials for a period of six (6) months after the date the Customer receives the Instrument(s). This limited warranty applies only to the actual service or repair work performed by Company service representatives. The Company warrants that all parts and assemblies used in the repair or service of Instruments meet new part functional specifications, although some parts or assemblies may have been remanufactured.

All parts and assemblies replaced by the Company under warranty shall become the property of the Company.

If within the specified warranty period the Customer discovers that an Instrument has a defect in material and/or workmanship, it must promptly notify the Company. If it becomes necessary to return the Instrument to the Company, the Customer must (a) acquire a "Returned Goods" authorization from the Company Customer Service, (b) pack the unit carefully, and (c) return it to the Company via air freight, prepaid.

Within a reasonable time after receipt of Instrument, the Company will investigate and shall correct any defect covered by warranty by providing, at its option, one of the following: service or repair of the Instrument, a replacement of the Instrument, or a refund of the purchase price of the Instrument. These remedies are the Customer's exclusive remedies under this warranty.

The foregoing limited warranties do not apply to:

1. Instruments which have been tampered with, altered, abused or misused.
2. Instruments damaged through use with other than Company authorized accessories, attachments, burs or blades.
3. Instruments not manufactured by or for the Company.

4. Instruments used for purposes other than those for which they were designed and manufactured, including use in any way inconsistent with the instructions and warnings contained in the Company instruction manuals and package inserts.
5. Instruments which were last serviced, refurbished, reprocessed or reconditioned by a nonauthorized service entity.

The foregoing limited warranties are in lieu of all other warranties, expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Except claims for personal injury, in no case shall the Company be liable for any special, incidental or consequential damages based upon breach of warranty or any other legal theory. Some jurisdictions do not allow limits on warranties, or on remedies, and, in such jurisdictions, the limits in this and the preceding paragraphs may not apply.

The Company reserves the right (a) to make design changes to Instruments at anytime without notice to Customer and without incurring any obligation to incorporate those changes into Instruments previously purchased or leased, and (b) to make changes from time to time in the contents of any publication, instruction manual or package insert without any obligation to notify Customers of such revisions or changes.

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