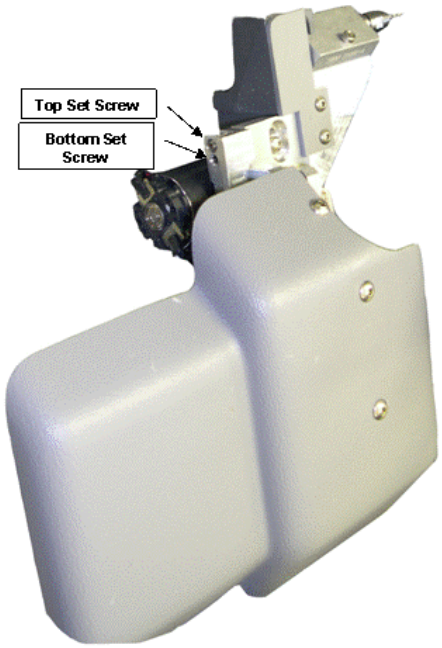
Help Graphics

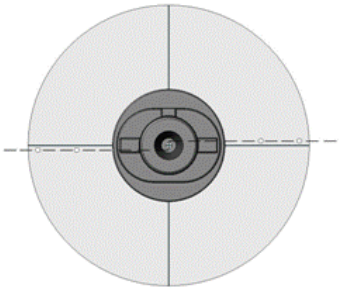
Instruction - Adjusting the Drill Height

NATIONAL OPTRONICS
1-800-247-9796

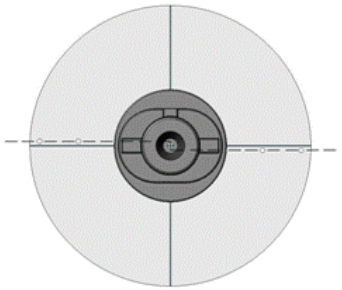
Adjusting the Drill Height

These hole patterns (below) indicate the drill height is off, which requires adjusting the set screws on the drill mechanism—see below left for screw locations.





Drill is too high.



Drill height is too low.

To raise the drill by 0.5mm:

- Press the Drill Up function key (F2) to raise the drill into position for adjustment.
- Turn the Top Set Screw CCW 1/8 of a turn.
- Turn the Bottom Set Screw CW 1/8 of a turn (or until tight).
- Press the Drill Down function key (F8) to return the drill to inactive position.

To lower the drill by 0.5mm:

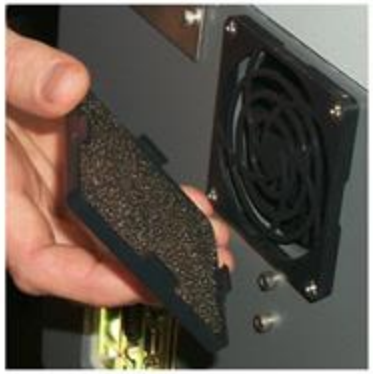
- Press the Drill Up function key (F2) to raise the drill into position for adjustment.
- Turn the Bottom Set Screw CCW 1/8 of a turn.
- Turn the Top Set Screw CW 1/8 of a turn (or until tight).
- Press the Drill Down function key (F8) to return the drill to inactive position.

HG-13 A

Instruction - Cleaning the Air Filter

NATIONAL OPTRONICS
1-800-247-9796

Cleaning the Air Filter



For proper maintenance of your air filter, follow these steps:

1. Turn off the power switch on the side of the edger.
2. Remove the outer part of the air filter cage as shown above. (The cage will snap out.)
3. Remove the foam filter.
4. Clean the filter with soap and water or replace it with a new filter
5. Place the new or cleaned filter back in the air filter cage and snap the outer part of the cage back in place.
6. Turn the power switch back on.

HG-11 A

Instruction - Filling the Coolant Reservoir

Filling the Coolant Reservoir

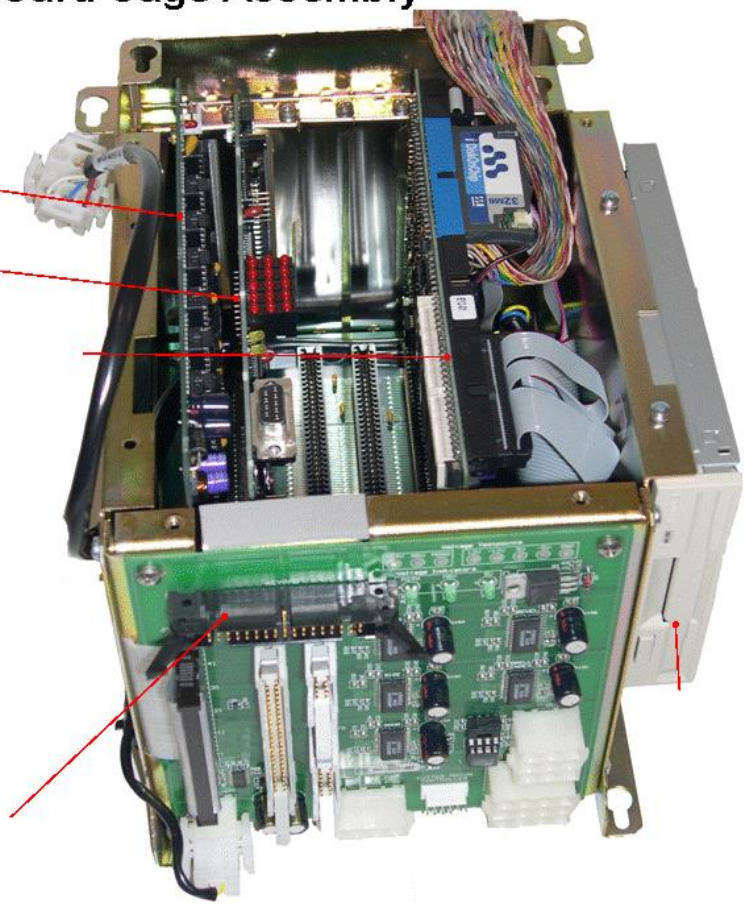
1. Fill the coolant reservoir (water bottle) to the "Max. Fill" line with distilled water.
2. Go to the "Cleaning" section of the *Maintenance Screen* and set the *Water Flow* field to 20.
3. Down by the solenoid, disconnect the water line running from the pump (to the solenoid).
4. Remove the lid of the water bottle.
5. Hold the water line you just connected so that it will squirt water back in the water bottle.
6. Press the *Pump on* function key on the *Maintenance Screen* and watch the clear tubes to see if water is coming out—it should be shooting water into the bottle.
7. Once the water is pumping continuously, press the *Pump off* function key.
8. Reconnect the water line to the solenoid.
9. Turn the pump on again and wait for the air to be cleared from the hose leading to the sponge.
10. Turn the pump off once the air is cleared and the sponge is saturated.

HG-12 A

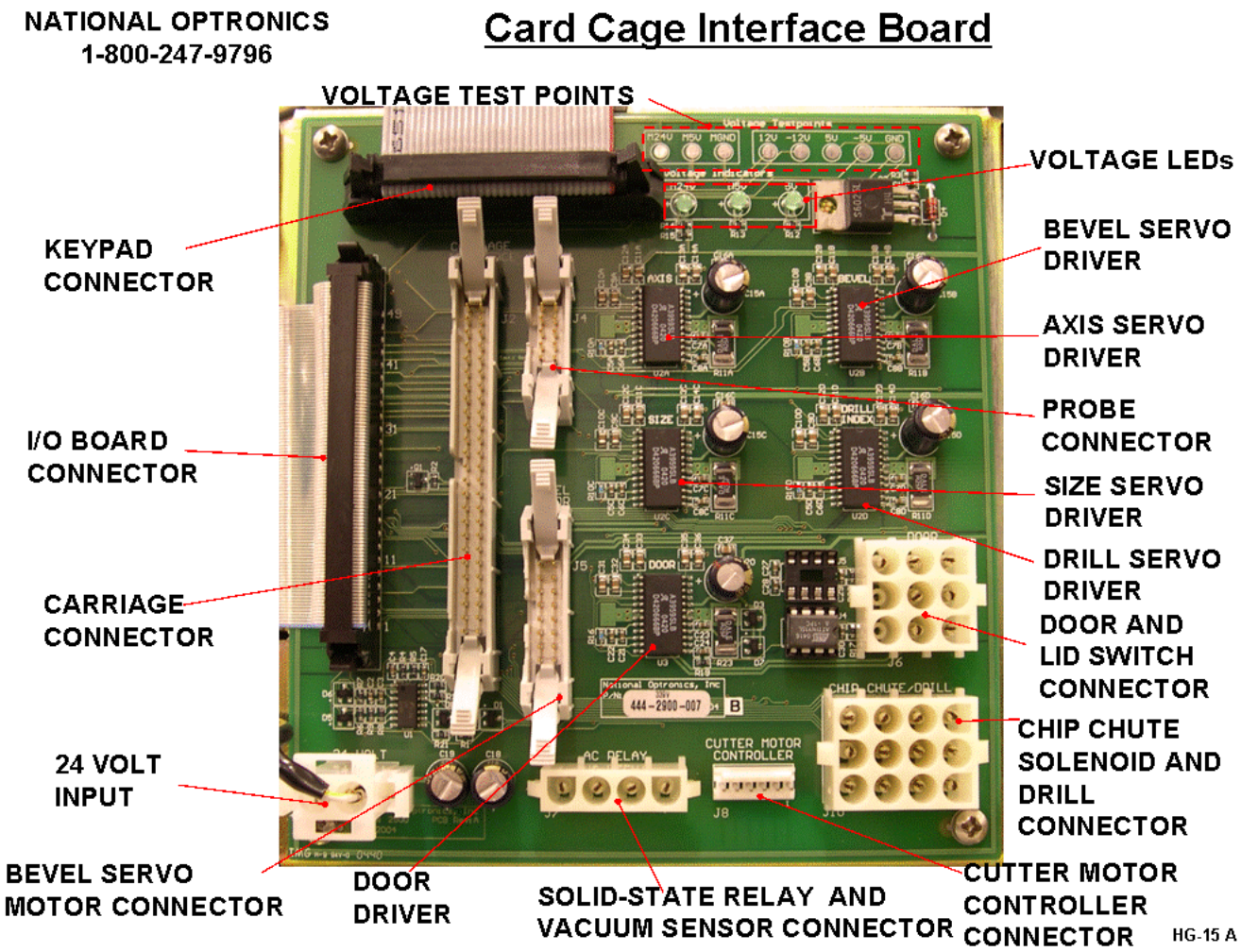
Reference - Card Cage Assembly

NATIONAL OPTRONICS
1-800-247-9796

Card Cage Assembly



Reference - Card Cage Interface



Reference - Consumable Parts

NATIONAL OPTRONICS
1-800-247-9796

Consumables


Probe tip, P/N 27092


Cutter clamp screw, P/N 65232


Wheel cleaning brush, P/N 65411


Full size rubber lens clamp insert, P/N *90177*


6 Pack, Rubber plug, 1/2 eye clamp, PN 90178


Rectangular pattern blank, P/N 87605


7E polishing sponge, P/N 29104

7E drill bit, P/N *29209*


Vacuum bag, 10-pack P/N: 90145 / 25 Pack P/N: 90140


Tri-Cool (qt.), P/N 75170


Water Filter, P/N 75158


Air Filter, P/N 3068

Reference - Cutter Blade Options

NATIONAL OPTRONICS
1-800-247-9796

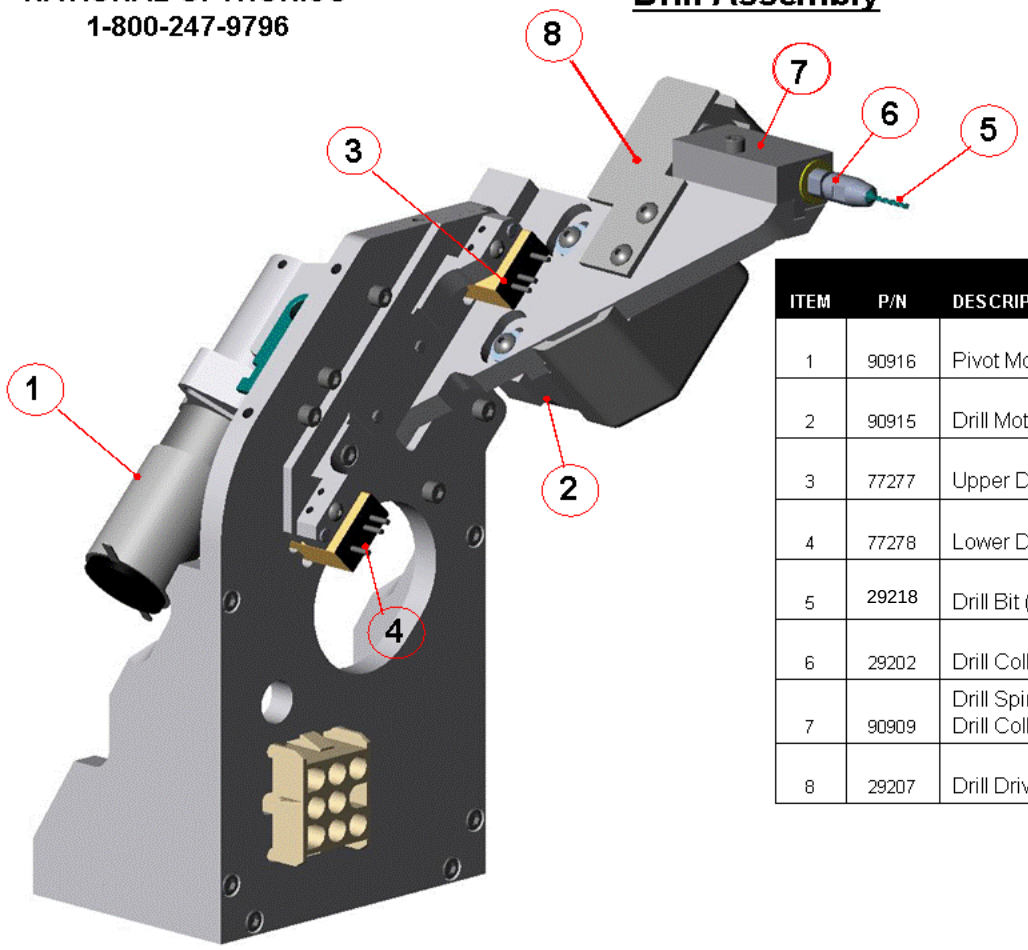
Cutter Blades

Graphic Representation	Cutter Blade Name/Description	Dual Polish P/N	Multi-Cutter P/N
	Standard 115° Bevel Cutter Carbide Coated Diamond	92007898 92008052 92008265	Primary Cutter: 92007898 92008052 92008265
	NBA 30° Cutter with Sharp Bevel	92007868	92007885
	NBA 30° Cutter with .025-inch flat	92007869	92007886
	Fendall 115° Safe T	92007870	92007887
	Liberty 100°	92007871	92007888
	Hi-Wrap-1 54°/30°	92008000	92007872
	Hi-Wrap-2 44°/40°	92007893	92007873
	Hilco Sport Goggle RX	92007875	92007889
	Hilco Sport Goggle A2	92007876	92007890
	Shallow Bevel 84°	92007892	92007874
	Standard Groover	N/A	92007943
	Light Bender	N/A	92008232
	Shelving	N/A	92007891

Reference - Drill Assembly

NATIONAL OPTRONICS
1-800-247-9796

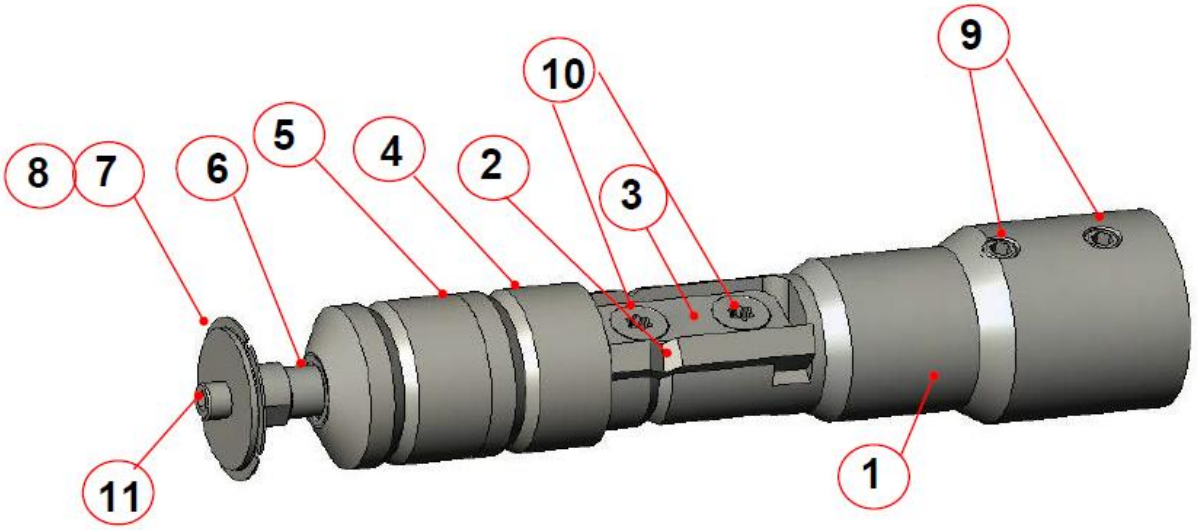
Drill Assembly



ITEM	P/N	DESCRIPTION
1	90916	Pivot Motor Assembly
2	90915	Drill Motor Assembly
3	77277	Upper Drill Switch Assembly
4	77278	Lower Drill Switch Assembly
5	29218	Drill Bit (1.0 mm) or 29209
6	29202	Drill Collet Nut
7	90909	Drill Spindle Assembly (includes Drill Collet Nut)
8	29207	Drill Drive Belt (under the cover)

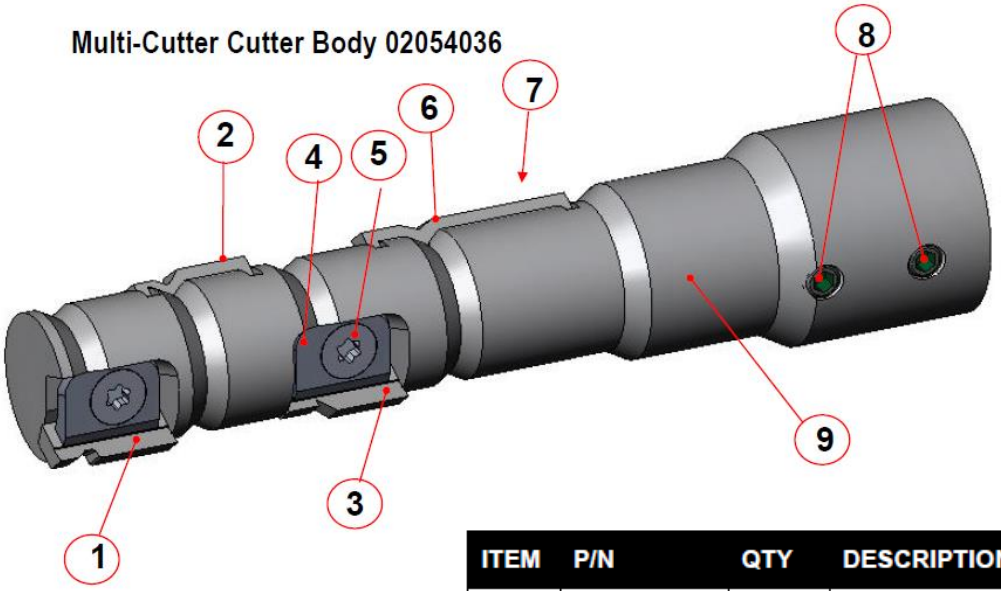
HG-20 A

Dual Polish Cutter Body 02054035



ITEM	P/N	DESCRIPTION
1	N/A	Edger Cutter Body
2	92007898	Standard Beveling Cutter
3	05057841	Cutter Clamp
4	N/A	Wheel2: CR-39 Polish
5	N/A	Wheel 1: Poly Polish
6	05058000	Grooving wheel Adapter
7	92007960	Large Grooving Wheel
8	92008080	Small Grooving Wheel (not shown)
9	35051504	Brass Tip Set Screw (#10-32 x 3/16")
10	35051505	Stainless Steel Torx Screw (#6-32 X 3/8")
11	35051431	Stainless Steel Socket Head Cap Screw (#4-40 X 3/16")

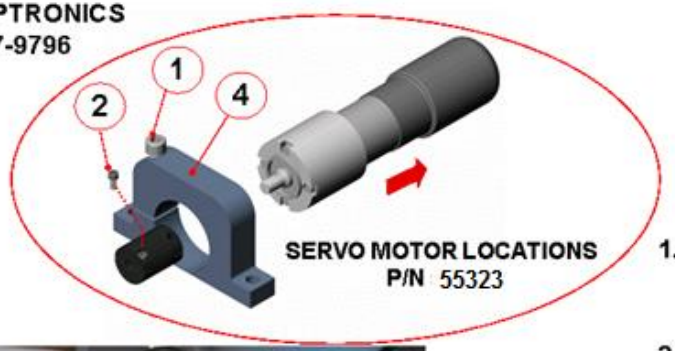
Reference - Multi-Cutter Assembly

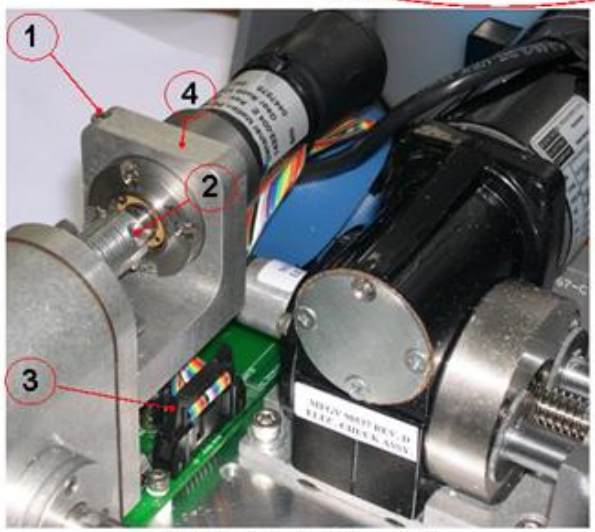


ITEM	P/N	QTY	DESCRIPTION
1	Various	1	Specialty Cutter 1
2	Various	1	Specialty Cutter 2
3	Various	1	Specialty Cutter 3
4	05058245	3	Specialty Cutter Clamp
5	35051505	5	Stainless Steel Torx Screw (#6-32 x 3/8")
6	92007898	1	Primary Cutter (Standard Beveling Cutter)
7	05057841	1	Primary Cutter Clamp (not visible from this view)
8	35051504	2	Brass Tip Set Screw (#10-32 x 3/16)
9	N/A	1	Multi-Fluted Cutter Body

Replace - Axis Servo Motor

NATIONAL OPTRONICS
1-800-247-9796





View from the Left of the 7E

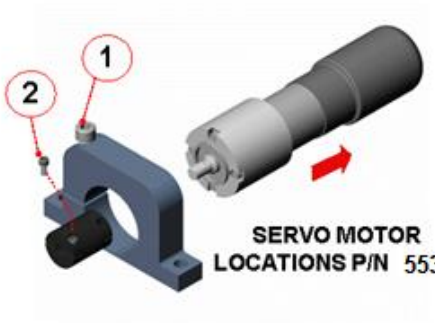
Axis Servo Motor Change

1. Turn the main power switch on side of machine OFF.
2. Loosen the bracket screw (Item 1).
3. Loosen the coupling screw (Item 2).
4. Disconnect the servo motor's plug connection from board (Item 3).
5. Slide the servo motor out the back of its support bracket (Item 4).
6. Install the new servo motor by reversing steps 5 thru 1 to complete installation.

HG-21 A

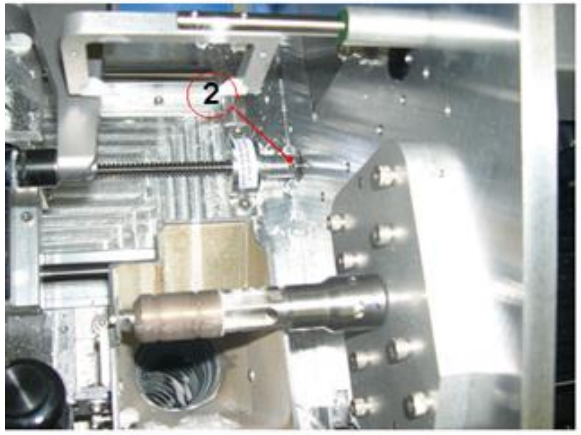
Replace - Bevel Servo Motor

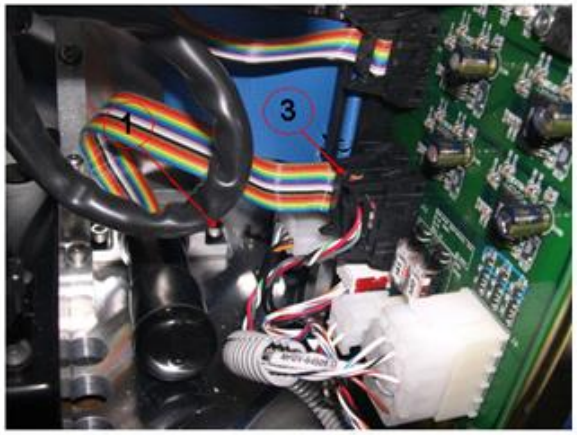
NATIONAL OPTRONICS
1-800-247-9796



Bevel Servo Motor Change

1. Turn the main power switch OFF.
2. Loosen the bracket screw (Item 1).
3. Loosen the coupling screw (Item 2).
4. Disconnect the servo motor's plug connection from board (Item 3).
5. Slide the servo motor out the back of its support.
6. Install the new servo motor and reverse Steps 5 through 1 to complete installation.

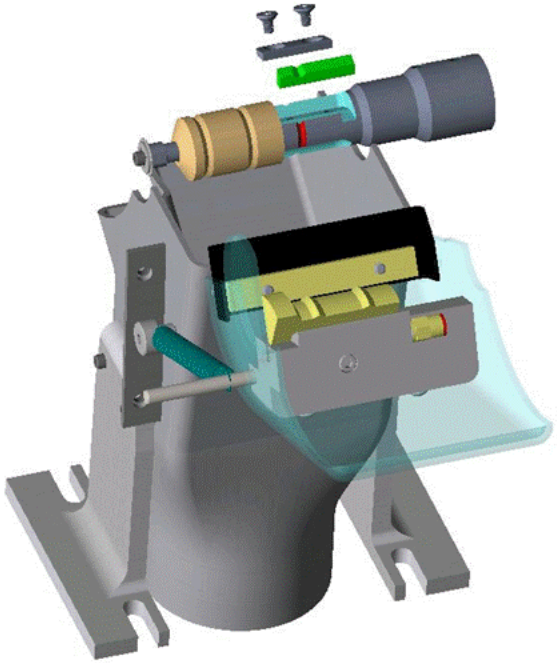




View from the Lower Right of the 7E HG-22 A

Replace - Cutter Blade

NATIONAL OPTRONICS
1-800-247-9796

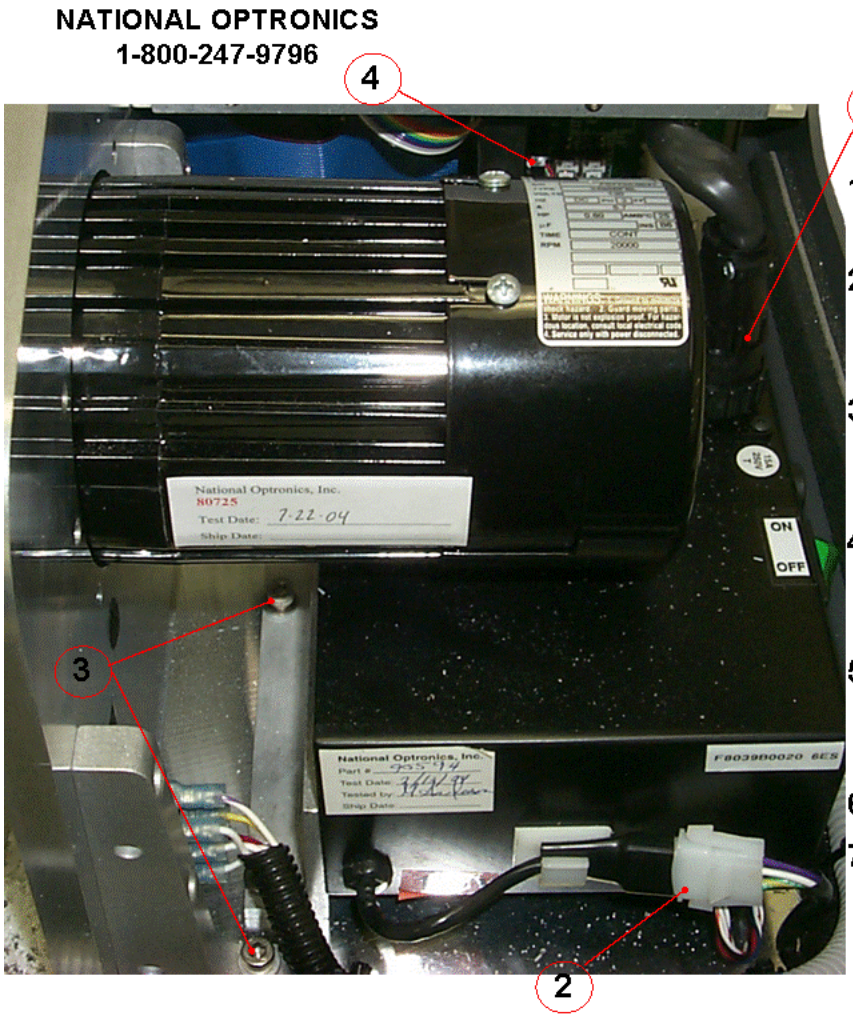


Cutter Change

1. Turn the main power switch OFF.
2. Flip up chip chute top.
3. Remove the two Torx screws and cutter clamp.
4. Remove used insert and discard.
5. Before installing new insert, clean cutter pocket with alcohol to remove debris.
6. Slip new insert into the pocket to the right and re-install the clamp and screws. Tighten the screws alternately to seat insert evenly.
7. Check size and bevel calibration. Some slight adjustment may be necessary.

HG-24 A

Replace - Cutter Motor Controller



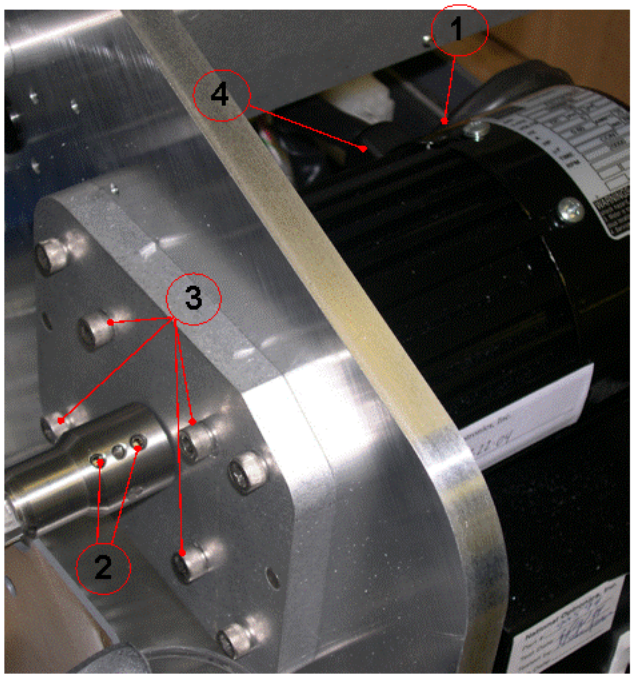
Cutter Motor Controller Change

1. Turn the main power switch OFF.
2. Disconnect the cutter motor cable connection from controller (Item 1).
3. Disconnect the power supply connection from controller (Item 2).
4. Disconnect the speed control connection from the I-O board (Item 4).
5. Remove the two screws from cutter motor controller support plate (Item 3).
6. Remove the old controller.
7. Install new cutter motor controller by reversing Steps 6 through 1.

HG-25 A

Replace - Cutter Motor

NATIONAL OPTRONICS
1-800-247-9796



CUTTER MOTOR CHANGE

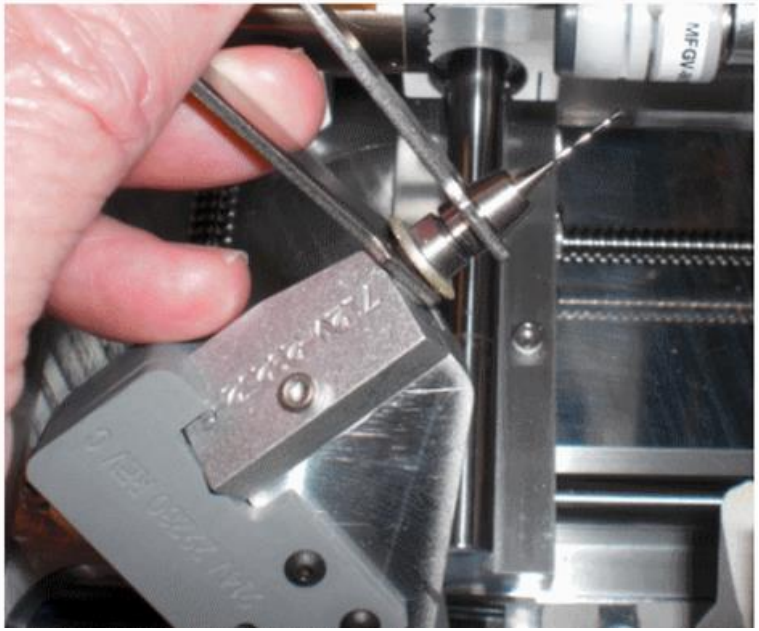
1. Turn the cutter motor OFF. Unplug the motor from its connection to the controller unit (Item1).
2. Loosen the two screws on the Cutter Body (Item 2).
3. Remove the Cutter Body from the motor shaft.
4. Unscrew the inner four bolts on the adapter plate that hold the motor on the bracket (Item 3).

   ***Note that the electric cable comes out of the motor horizontal toward the back of the machine (Item 4). (You will need to place the new motor in with the same orientation.) Now remove the motor from the bracket.
5. Install the new motor on the bracket. Make sure that the circular boss on the motor fits into the circular recess in the plate, and that the power cord comes out of the motor horizontal to the right of vertical, when viewed from the right hand side of the edger.
6. Replace and re-tighten the bolts gradually, going in an "X" pattern around the four bolts, to ensure even tightening.
7. Place the Cutter Body on the motor shaft, bottoming it out.
8. Re-tighten the two screws holding the Cutter Body to the motor shaft.
9. Connect the new motor to the controller unit, and secure the wire so that it will not interfere with other nearby wires. Turn the motor ON.
10. Check the lens size and bevel placement—refer to Chapter 3 of the User's Manual for the procedure. It is possible the calibration numbers on the Setup Screen will have to be adjusted slightly. If so, refer to the "Calibration" chapter in your *User's Manual*.
11. Go to the Maintenance Screen and reset the motor.

HG-23 A

Replace - Drill Bit

NATIONAL OPTRONICS
1-800-247-9796



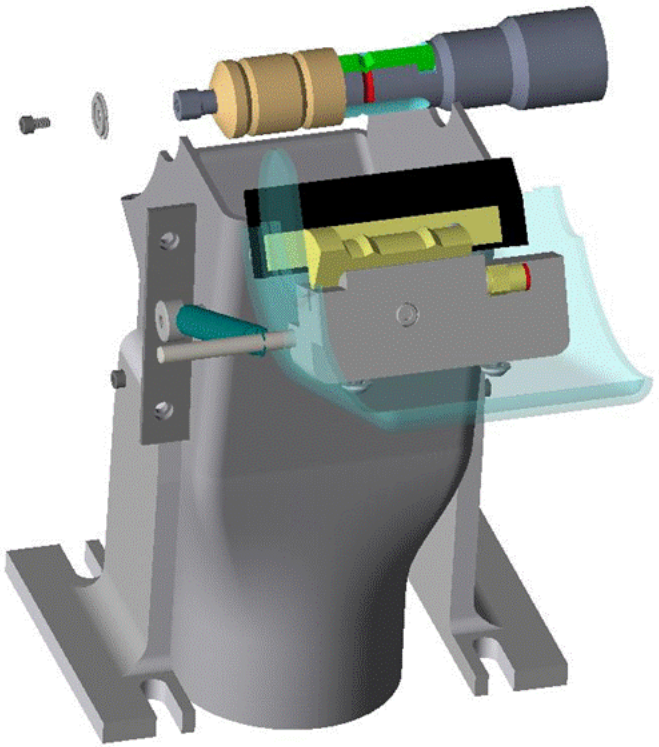
DRILL BIT CHANGE

1. From the *Job Screen*, press the F8 function key three times.
2. On the *Diagnostics Screen*, press the Drill up function key F4.
3. Fold down the display monitor, press the case top release buttons and lift the case top.
4. Turn the cutter motor OFF for safety.
5. Open the chip chute to access the drill bit.
6. Using the two open end wrenches from the Accessory Kit, loosen the collet nut securing the drill bit until it becomes finger loose (about ½ turn); then loosen it with your fingers another turn.
7. Pull the drill bit out with your fingers.
8. Press the new drill bit into the collet until it bottoms out and tighten the collet nut, first with your fingers; then tighten it about ½ turn with the open end wrenches—do not over-tighten it.
9. Close the chip chute and turn the cutter motor back on; then close the case top and move the display monitor back into position.
10. From the *Diagnostics Screen*, press the Drill down function key F4.
11. Go to the *Maintenance Screen* and press the Reset Drill function key F4. Type the password if prompted. The Drill Count resets to zero.
12. Verify the drill calibration—refer to Chapter 5 for directions.

HG-26 A

Replace - Groover Blade

NATIONAL OPTRONICS
1-800-247-9796



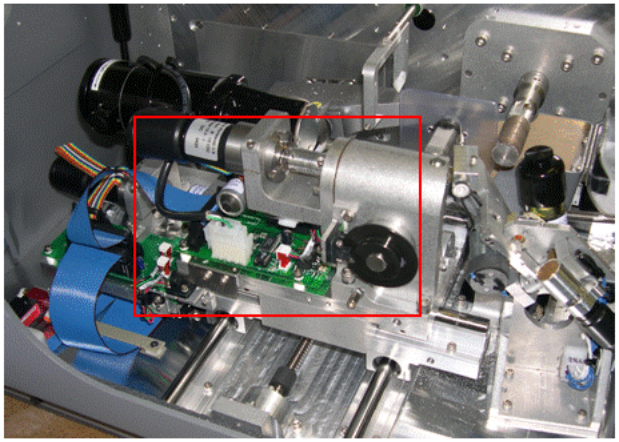
Groover Change

1. Turn the motor OFF with the switch on the controller box.
2. Remove the sockethead screw that secures the wheel.
3. Remove the old groover.
4. Clean any debris from around shaft before installing new groover.
5. Install new groover and tighten with the sockethead screw.

HG-27 A

Replace - Homeswitch

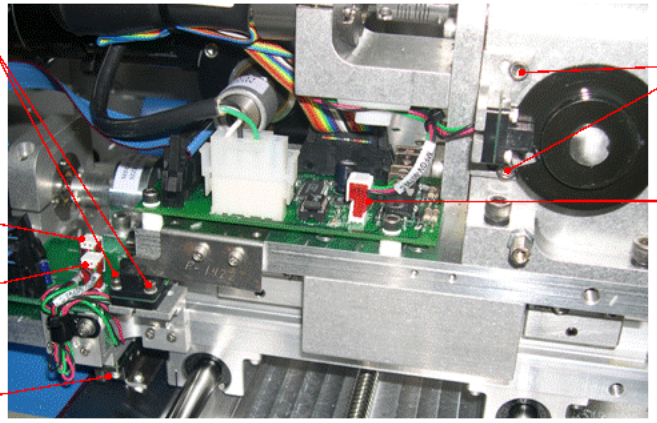
NATIONAL OPTRONICS
1-800-247-9796



Home Switch Change

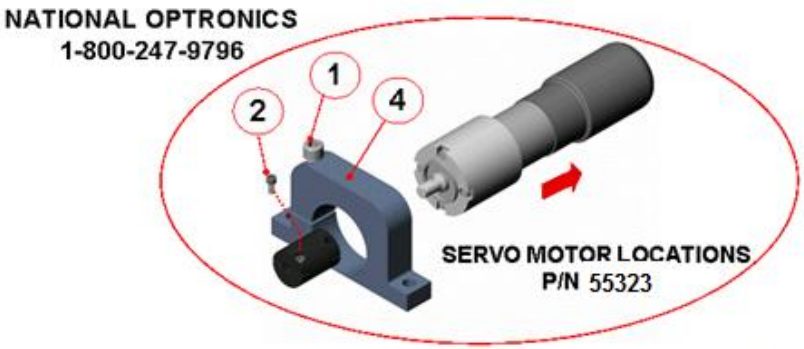
1. Turn off the main power switch on the side of the 7E before changing any home switch(es).
2. Remove the two screws from the home switch bracket (refer to the picture below). For the Axis and Bevel home switch, remove the screws, not the bracket.
3. Disconnect the home switch plug connection from the board (refer to the picture below).
4. Remove the home switch from its location.
5. Install the new home switch and reverse Steps 3 through 1 to complete the installation.

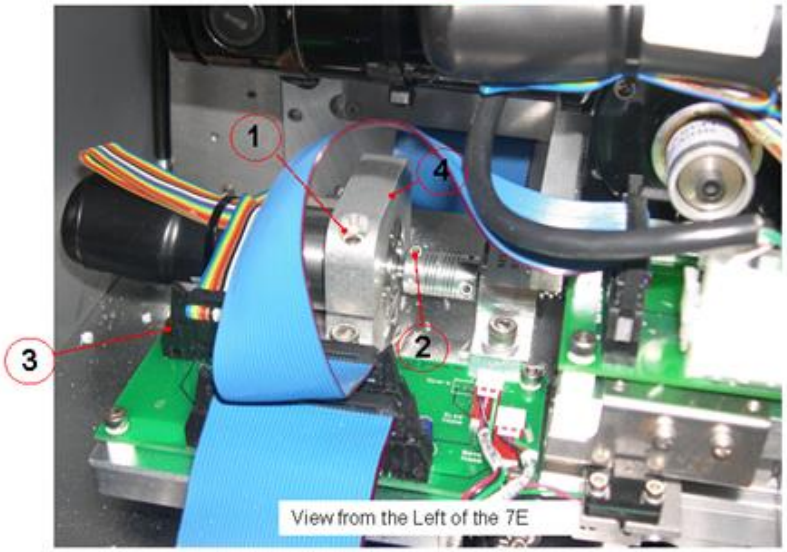
NOTE: AXIS, SIZE & BEVEL HOME SWITCH P/N - 77293



HG-28 A

Replace - Size Servo Motor





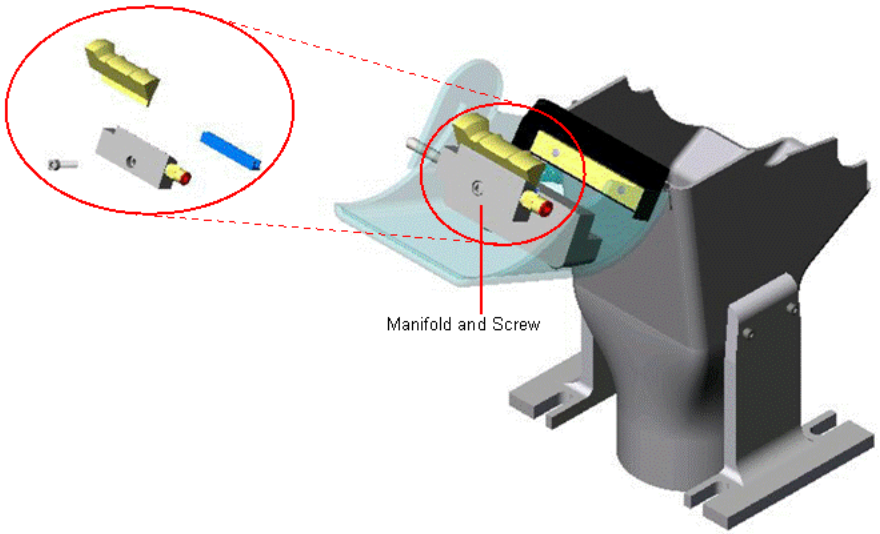
SIZE SERVO Motor Change

1. Turn the main power switch on side of machine OFF.
2. Loosen the bracket screw (Item 1).
3. Loosen the coupling screw (Item 2).
4. Disconnect the servo motor's plug connection from board (Item 3).
5. Slide the servo motor out the back of its support bracket (Item 4).
6. Install the new servo motor by reversing Steps 5 through 1 to complete installation.

HG-30 A

Replace - Sponge

NATIONAL OPTRONICS
1-800-247-9796



Sponge Change

1. Turn the motor OFF with the switch on the controller box.
2. Pull the chip chute cover back and clean debris from the area around the manifold (refer to the drawing).
3. Remove the manifold screw using a hex wrench.
4. Remove the sponge and bracket from the assembly.
5. Slide or pull the old sponge out of the bracket.
6. Place the new (dry) sponge in the groove of the sponge bracket.
7. Make sure that the right side of the sponge is aligned with the right side of the bracket.
8. While holding sponge in the correct position with the points of the sponge in the bevel grooves, wet the sponge so that it expands into place.
9. Reinsert the manifold and manifold screw and tighten it (snug).

HG-31 A

Replace - Vacuum Bag

NATIONAL OPTRONICS
1-800-247-9796

Vacuum Bag Change

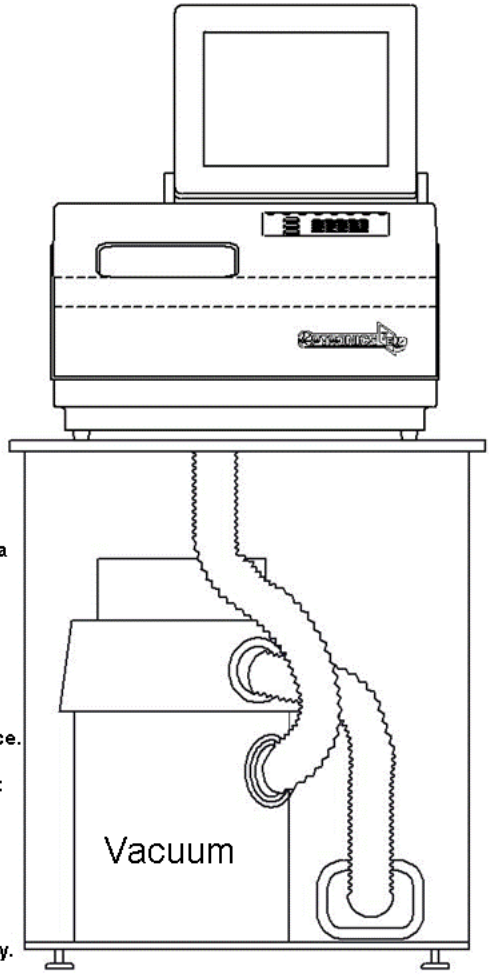
1. Open the cabinet if applicable.
2. Make sure the vacuum is turned off.
3. Disconnect the vacuum hose(s) from the vacuum.
4. Undo the three clamps holding the top on the vacuum.
5. Lift the vacuum head out of the vacuum base and set it aside.
6. Pull the bag back from the inlet fitting.
7. Lift the large bag out and dispose of it.
8. Replace it with a new bag. (The bags and filters are often kept in the cabinet—Bag and Filter 5-Pack Set Part # 87142)
9. Change the paper filter.

A. Examine the top piece that you set aside in Step 5 above. There is a steel ring (some have a thick rubber band) holding the paper filter onto the foam filter. Squeeze the prongs on that ring and pull the paper filter off, leaving the foam filter in place.

B. Throw away the paper filter and put another one in its place (within the steel ring).

C. Squeeze hard on the ring's prongs and slide the filter back into place.

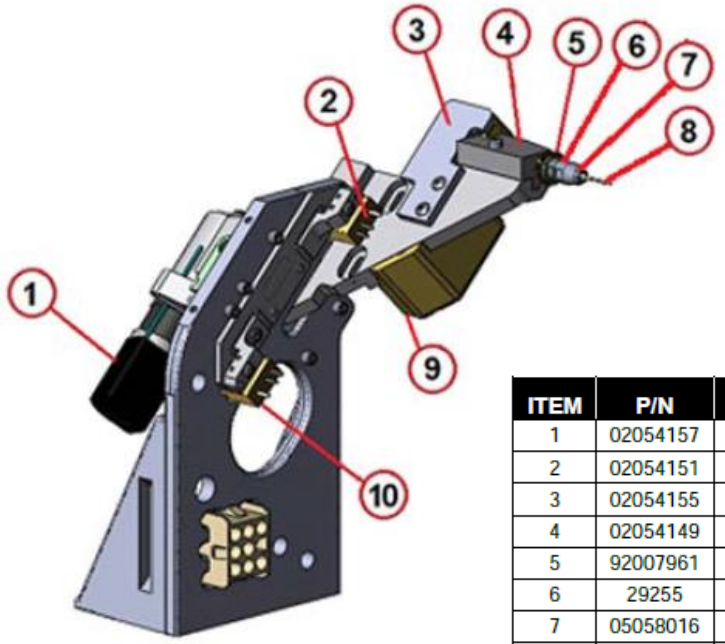
10. Reinstall the vacuum head on the can, aligning the inlet and exhaust holes. Then secure it with the three clamps.
11. Connect the vacuum hose(s).
12. Close the cabinet.
13. Go to the *Maintenance Screen* and press the Reset Vac function key. (Type the password if prompted.) The bag count resets to zero.



HG-32 A

For 7EX / ES-Versa

Combo Drill Assembly



ITEM	P/N	QTY	DESCRIPTION
1	02054157	1	MOTOR ASSEMBLY PIVOT WIRED
2	02054151	1	UPPER DRILL SWITCH ASSEMBLY
3	02054155	1	SPINDLE DRILL BELT (HIDDEN)
4	02054149	1	DRILL SPINDLE
5	92007961	1	DRILL MOUNT GROOVING WHEEL
6	29255	1	COMBO DRILL GROOVE WHEEL NUT
7	05058016	1	DRILL COLLET NUT, VER. 2
8	92007907	1	DRILL BIT 1mm
9	02054156	1	MOTOR ASSEMBLY DRILL WIRED (HIDDEN)
10	02054152	1	LOWER DRILL SWITCH ASSEMBLY
11	90051269	1	DRILL FRONT COVER (NOT SHOWN)