



BETTCHEER Industries, Inc.

Operating Instructions & Parts List for

WHIZARD®

A I R M A X

M A C H 3

Manual # 188000

Issued : September 1, 2009
TMC #754

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The Information Provided In These Operating Instructions Is Important To Your
Health, Comfort And Safety.
For Safe And Proper Operation, Read This Entire Manual Before Using This
Equipment.



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Original Instructions

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Section 1

Safety and Ergonomics

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NOTICE

The manufacturer assumes no liability for any unauthorized changes in operating procedures or for unauthorized changes or modifications made to the design of the machine or any factory-installed safety equipment, whether these changes are made by the owner of this equipment, by his employees, or by service providers not previously approved by Bettcher Industries, Inc.



Safety Recommendations and Warnings

Whizard[®] AirMax MACH 3 Trimmers are used for removal of fat and tissue, the recovery of lean meat from bone, and as a universal cutting tool in industry. Any use in applications other than those for which the Whizard[®] trimmer was designed and built may result in serious injuries.




W A R N I N G



THE MANUFACTURER ASSUMES NO LIABILITY FOR ANY UNAUTHORIZED DESIGN CHANGES, MODIFICATION, OR USE OF PARTS NOT SUPPLIED BY THE MANUFACTURER OR THE USE OF PARTS NOT DESIGNED FOR USE ON THAT SPECIFIC MODEL, INCLUDING CHANGES IN OPERATING PROCEDURES MADE BY THE OWNER OR ANY OF HIS PERSONNEL.

THE USE OF PARTS OTHER THAN THOSE LISTED IN THE PARTS LIST FOR THE SPECIFIC MODEL MAY CAUSE BLADE LOCK-UP RESULTING IN AN UNSAFE OPERATING CONDITION.



W A R N I N G



SHARP BLADE MAY CAUSE INJURY !





Safety Recommendations and Warnings (Continued)





Whizard® AirMax MACH 3 Trimmers have been designed to obtain the highest possible degree of safety. The trimmer contains a sharp knife blade. Handle this equipment with caution, as you would any sharp object. In particular, read and apply the following safety recommendations:

Warnings identify conditions that can cause serious bodily injury to the user.

Cautions identify conditions that are important to the operation, care and maintenance of the machine.

		<u>WARNING</u>		
SHARP BLADES MAY CAUSE CUT INJURY!				
FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF THE BLADES. METAL MESH GLOVES ARE RECOMMENDED FOR THE “NON-KNIFE” HAND.				

		<u>WARNING</u>		
KEEP HANDS AWAY FROM MOVING BLADES!				

		<u>WARNING</u>		
IF AT ANY TIME THIS MACHINE DOES NOT APPEAR TO OPERATE NORMALLY OR EXHIBITS A MARKED CHANGE IN PERFORMANCE, IT SHOULD BE IMMEDIATELY SHUT DOWN, DISCONNECTED FROM THE AIR SUPPLY, AND TAGGED AS “UNSAFE” UNTIL SUCH TIME AS PROPER REPAIRS ARE MADE AND THE MACHINE AGAIN OPERATES NORMALLY.				



Safety Recommendations and Warnings (Continued)

 **WARNING** 
**HEARING LOSS MAY OCCUR!
ALWAYS OPERATE WITH HOSE AND MUFFLER ATTACHED.**

  **WARNING**  
**SHARP BLADE MAY CAUSE INJURY!
ALWAYS DISCONNECT AIR SUPPLY PRIOR TO
SERVICING UNIT.**

 **WARNING** 
**LONG OR REPEATED USE OF VARIOUS POWER TOOLS
VIBRATING EXCESSIVELY IS SUSPECTED OF CONTRIBUTING
TO CERTAIN HAND, WRIST OR FOREARM DISORDERS IN
SUSCEPTIBLE INDIVIDUALS. IF EXCESSIVE VIBRATION
OCCURS, IT IS AN INDICATION THAT THERE ARE WORN
PARTS THAT NEED REPLACEMENT.**



Safety Recommendations and Warnings (Continued)



WARNING



IF YOUR TRIMMER DEVELOPS UNUSUAL VIBRATION, DO NOT CONTINUE TO USE IT WITHOUT FIRST UNDERTAKING CORRECTIVE ACTION AS OUTLINED IN THE FAULT AND DETECTION SECTION OF THIS OPERATING INSTRUCTION.

CAUTION

USE ONLY REPLACEMENT PARTS MANUFACTURED BY
BETTCHER INDUSTRIES, INC.
USE OF SUBSTITUTE PARTS WILL VOID THE
WARRANTY AND MAY CAUSE INJURY TO OPERATORS AND DAMAGE TO
EQUIPMENT.



Safety Features

Two-handed start-up prevents the tool from being started accidentally.

The air supply is disconnected from the motor when the run lever is released.

Ergonomic Features

Right and Left-Handed – The Whizard® AirMax MACH 3 Trimmers have been manufactured in both right and left-handed configurations.

Optional Thumb Support - A thumb support is available to ensure a proper and comfortable fit while providing added control and stability of the tool during use.

Additional Features

The hose assembly swivels for easier trimmer rotation and operator comfort.

The hose is ten feet (3.05 m) long to allow for greater operator mobility.



Section 2

Designated Use

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Recommended Operation

Whizard® AirMax MACH 3 Trimmers are made for several recommended operations. Assure that you are using the correct tool for your specific application. The following recommendation list is not intended to be a total and comprehensive listing, but is offered as a guide. Additional applications are possible.

Model 350 / 360

BEEF

- Cartilage Removal
- Liver Spotting
- Bone Trimming
- Strip Intestine

PORK

- Button Bones
- Bone Trimming
- Spotting Livers / Removing Gall Sacks

POULTRY

- Turkey Breast
- Turkey Necks
- Chicken Backs
- Turkey Thighs
- Turkey Cage
- Oil Sacks

Model 620

BEEF KILL/OFFAL

- Removing Lean from Heads
- De-Veining Livers

POULTRY

- Removing Lean from Turkey Carcasses
- Removing Lean from Turkey Necks
- Removing Oil Sacks

PORK KILL/OFFAL

- Removing Eyelids
- Cleaning Stick Wounds
- Removing Eardrums
- Removing Lean from Heads
- Spotting Livers / Removing Gall Sacks

BEEF BONING / FABRICATION

- Removing Lean from Bones, Especially:
 - Neck Bones - Atlas Bones
 - Chine Bones from Strips or Rib Eyes
 - Pelvic Bones / Aitch Bones
 - Rib Cages
 - Blade Bones
 - Strip Bones
 - Feather Bones

PORK CUT

- Trimming Neck Bones
- Removing Lean from Bones
- Removing Tails



Recommended Operation (Continued)

Model 625

BEEF

- Upgrading Retrim

POULTRY

- Fat Trimming of Turkey Thighs
- Trimming of Turkey Skins

PORK

- Fat Trimming of Pork Loins
- Upgrading Retrim

Model 500

POULTRY

- Turkey Thigh Knuckles

PORK KILL

- Trim Pork Snouts
- Trim Pork Trachea
- Trim Pork Heads

PORK CUT

- Remove Lean from Neck Bones of Heavy Hogs
- Remove Tails from Heavy Hogs
- Removing 99% Picnic Muscle from Bellies
- Removing Pork Tenderloins

INDUSTRIAL

- Foam Industry

Model 505

POULTRY

- Turkey Thigh Trim

BEEF BONING/FABRICATION

- Removing Lean from Fat Generated in Fabrication

Model 750

PORK CUT

- Remove Diaphragm Lean
- Removal of Picnic Hearts

PORK KILL

- Remove Cheek Meat
- Remove Blood Clots from Jowls

FOAM INDUSTRY

- Remove Defects
- Flash Trimming



Recommended Operation (Continued)

Model 850 / 1850

PORK KILL

- Removing Leaf Lard

HAM PROCESSING

- External Ham Defatting
- Internal Ham Defatting
- Defat Pork Loins
- Remove Oyster Meat

BEEF

- Recover Lean from Fat
- Trim Lean from Rib Caps
- Trim Beef Tripe

POULTRY

- Defatting Turkey Skins
- Defatting Turkey Thighs

Model 880-B / 1880 with Adjustable Depth Gauge

BEEF BONING/FABRICATING

- Removing Dirt and Hair
 - Slaughter Floor
 - Prior to Loading
 - Upon Receiving
 - Prior to Fabrication
- Final Trim on Primal Fat Shaping

Model 880-S with Adjustable Depth Gauge

PORK

- Remove Skin or Hair Patches
- Trimming Pork Loins and Canadian Backs
- Internal and External Defatting of Hams

POULTRY

- Defatting Turkey Thighs

BEEF

- Removing Membranes and Light Fat Covering from Top Rounds, Bottom Rounds, Briskets and Cube Steak Material



Recommended Operation (Continued)

Model 1000

PORK CUT

- Defat Hams, Picnics and Butts
- Removing Lean from:
 - Picnic Face
 - Fat Backs
 - Clear Plates
 - Bootjack
- Jowls Shoulder End of Belly
- Belly (Wire Muscle – Pickle Pocket)
- Plate Trim

BEEF SLAUGHTER

- Defatting Hot Beef Externally & Internally
- Kidney Fat, Heart Fat, Pelvic Fat & Cod Fat

Model 1300

BEEF KILL

- Pizzle Cord Removal
- Removing External Fat

BEEF BONING / FABRICATION

- Primal Fat Shaping :
 - Strips
 - Sirloin Butts
 - Ribs
- Defat Navels (Pastrami)

HAM BONING

- External Defat of Hams
- External Defat of Pork Shoulders

Model 1400 with Adjustable Depth Gauge

PORK PROCESSING

- Defatting
 - Whole Hams
 - Shoulders
 - Canadian Backs
- Removing Beater Marks
- Scraping Leaf Lard

BEEF PROCESSING

- Carcass Hair & Dirt Removal
- Defatting
 - New York Strips & Sirloin Butts
 - Rounds and Ribeyes



Recommended Operation (Continued)

Model 1500 with Adjustable Depth Gauge

PORK PROCESSING

- Removing Skin Patches from Bellies
- Defatting
 - Whole Hams
 - Pork Loins

BEEF SLAUGHTER

- Defatting Hot Beef Externally
- Hair and Dirt Removal

Model TRIMVAC® 18AMX

BEEF and PORK SLAUGHTER

- Removal of Spinal Column

Model TRIMVAC® 45AMX

BEEF and PORK SLAUGHTER

- Internal Defatting

Salmon and Whitefish Processing

- Frame Scraping

Cheese Processing

- Remove Mold



Section 3

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Safety First

		<u>W A R N I N G</u>		
<p>SHARP BLADES MAY CAUSE CUT INJURY! UNPACK THE WHIZARD TRIMMER CAREFULLY.</p>				

Included with your Machine – (Small Whizard® AirMax MACH 3 Tools)
Models: 350, 360, 620, 625, 500, 505

Part Number	Description
173226	Filter Regulator Lubricator (FRL) Kit
100655	Special Stone
100641	Special Steel
103603	Pint of Oil
113326	Planetary Gear Grease Gun (Needle-Nose)
184134	Spanner Wrench
184128	Hex Wrench
184282	4 oz. Tube of Max-Z-Lube
And one of the following:	
143631	14 oz. Cartridge of Special Whizard® Grease
100608	8 oz. Tube of Special Whizard® Grease



Included With Your Machine – (Large Whizard® AirMax MACH 3 Tools)

Models: 750, 850, 880-B, 880-S, 1850, 1880, 1000, 1300, 1400, 1500

Part Number	Description
173226	Filter Regulator Lubricator (FRL) Kit
100660	Special Stone
100642	Special Steel
103603	Pint of Oil
113326	Planetary Gear Grease Gun (Needle-Nose)
184134	Spanner Wrench
184128	Hex Wrench
184282	4 oz. Tube of Max-Z-Lube
And one of the following:	
143631	14 oz. Cartridge of Special Whizard® Grease
100608	8 oz. Tube of Special Whizard® Grease



Included With Your Machine – (TRIMVAC® Tools)

Models: TRIMVAC® 18AMX and TRIMVAC® 45AMX

Part Number	Description
113326	Planetary Gear Grease Gun (Needle-Nose)
184134	Spanner Wrench
184128	Hex Wrench
184325	Hex Wrench – 3/32”
184437	Hex Wrench – 9/64”
184282	4 oz. Tube of Max-Z-Lube



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Installation

The workstation for each operator should be designed so that the operator's movements in performing the job are natural and easy. A sideways sweeping motion with the Whizard® AirMax MACH 3 Trimmer is preferable to a reaching motion. Long reaching motions and high muscle strain should be avoided if possible. Also, a proper working height is needed to avoid excessive shoulder and back exertion.

Air Supply

A clean, dry, lubricated air supply is critical to proper operation. The filter, regulator and lubricator (FRL) unit, furnished with your complete Whizard® AirMax MACH 3, should be mounted horizontally at the air supply outlet and in such a position as to be easily reached for draining the filter bowl and refilling the lubricator. The filter bowl should be drained, and the lubricator refilled, daily.

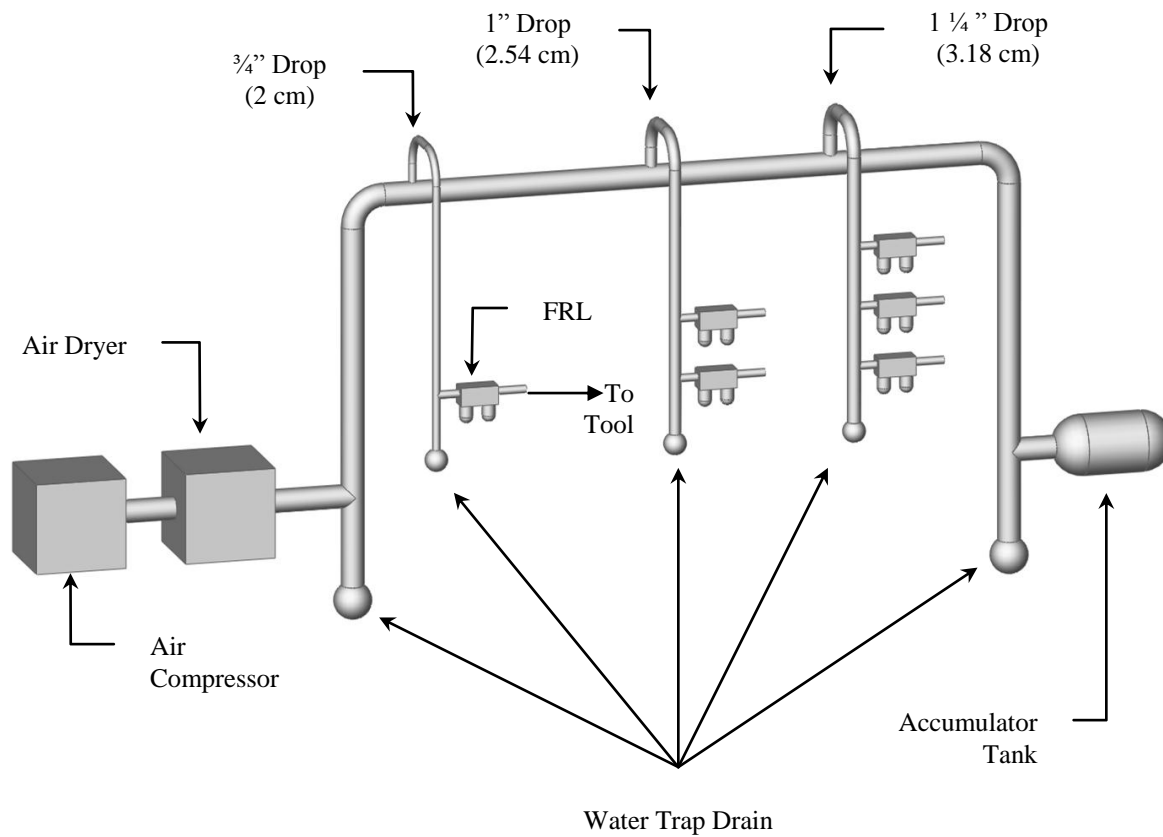
IMPORTANT: Be sure the air supply is a constant 90 pounds per square inch (6.2 bar) and the volume is a minimum of 14 cubic feet per minute (396 liters per minute) per unit.

Supply Line:

- Use a 2 inch to 6 inch (5 cm to 15 cm) pipe for the air supply.
- All air outlet drops should be connected to the top of the main air supply line to minimize the possibility of moisture and dirt reaching the motor.
- Drops should be at least:
 - ¾ inch (2 cm) pipe for one (1) tool.
 - 1 inch (2.54 cm) pipe for two (2) tools.
 - 1 ¼ inch (3.18 cm) pipe for three (3) tools.
- A FRL should be used for each tool. Do not run multiple tools off of a single FRL.
- All air outlets should be located close enough to the operator's work station so that additional hose is not required.



Installation (Continued)





Section 4

Instructions for Operation

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Optional Thumb Support

Your Whizard® AirMax MACH 3 Trimmer has been supplied with a spacer ring and an optional thumb support. If using the optional thumb support, the operator's thumb should be fully supported and rest comfortably in the support. The thumb support has been optimized to fit most hands comfortably.

NOTE

If the operator normally wears a glove, this process should be done with the glove(s) used in normal operation.

We do not recommend the use of Nitrile gloves in direct contact with the Whizard® AirMax MACH 3 handles because the gloves may become slippery.



Power Unit / Head Assembly - Attachment and Adjustment

The Whizard® AirMax MACH 3 Trimmers have been designed to allow the head of the tool to be rotated relative to the handle. In this way, the tool can be adjusted to align the blade with the product, while maintaining a comfortable position for the operator's wrist.

The position that is selected should be based on the individual workstation, product, and operator. To determine the proper position, it will be necessary to observe the operator while trying various positions. Select the position which is most comfortable to the operator.

Note that left-handed tools are available for left-handed users. Do not assign a right-handed tool to a left-handed user.

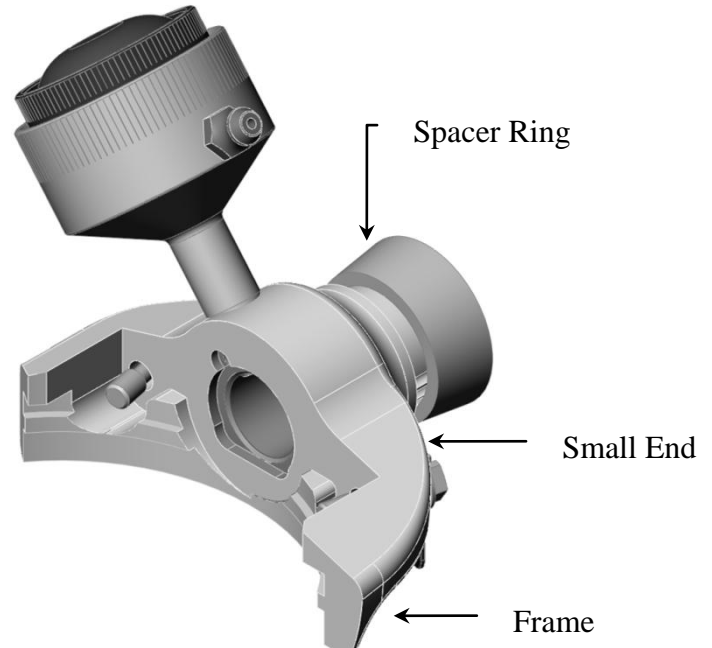




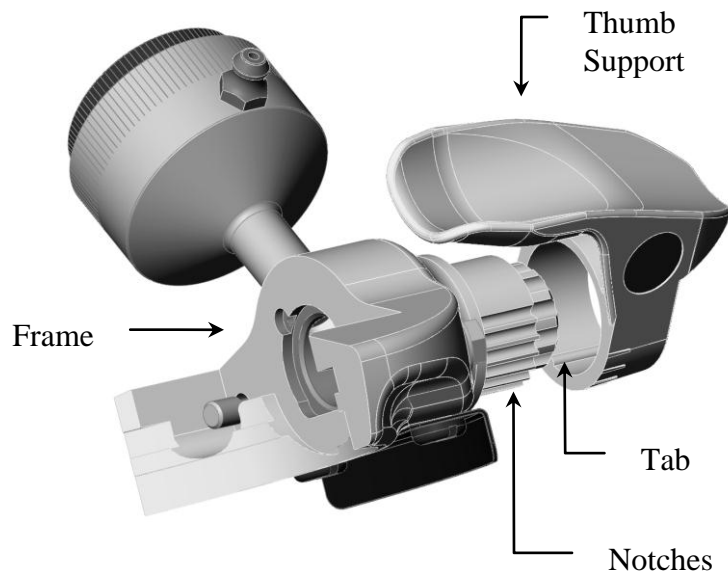
Power Unit / Head Assembly - Attachment and Adjustment (Continued)

Step 1:

- Select the spacer ring or optional thumb support.
- **If a spacer ring is used:** Slide the spacer ring onto the frame, small end first.



- **If an optional thumb support is used:** The thumb support should be positioned on the opposite side of the grease cup.
 - Align the thumb support tab with a notch on the underside of the frame and slide the thumb support onto the frame.
 - The frame is designed with multiple notches to allow the thumb support to be adjusted to the most comfortable position for the operator.

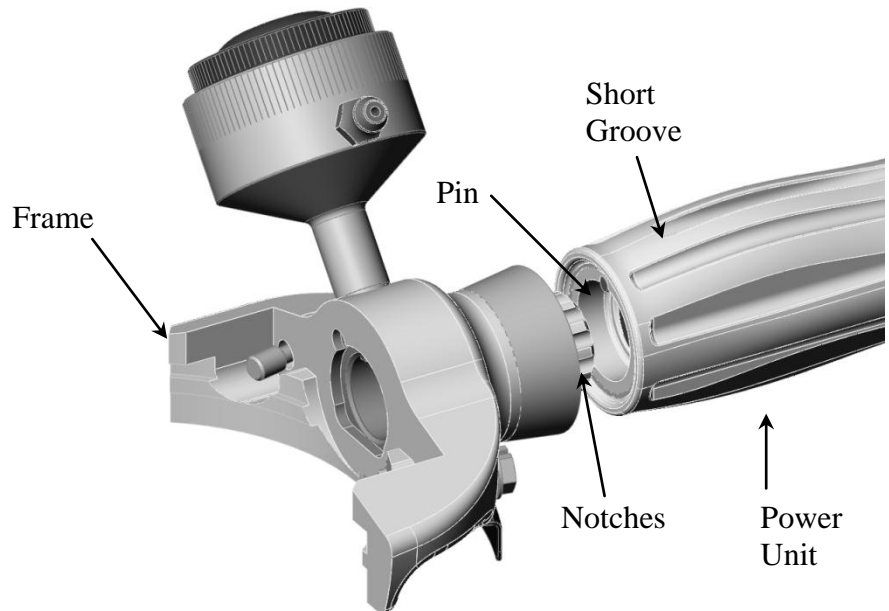




Power Unit / Head Assembly - Attachment and Adjustment (Continued)

Step 2:

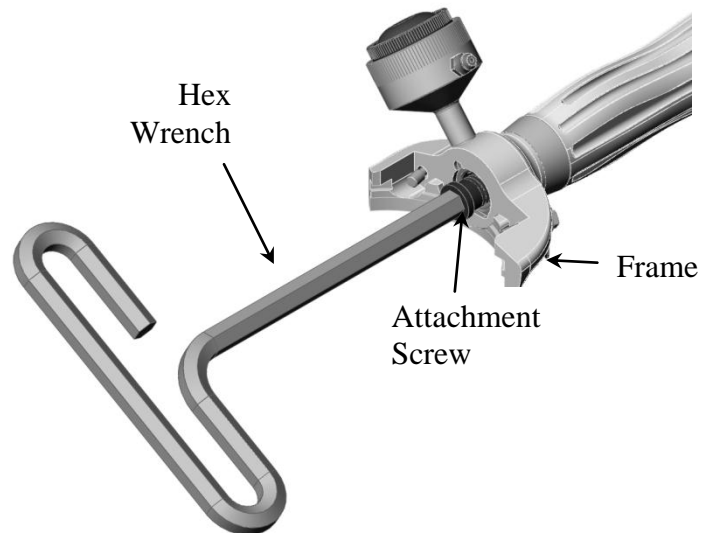
- While holding the Whizard® AirMax MACH 3 frame, align the pin in the power unit with one of the notches on the frame.
- The frame is designed with multiple notches to allow the head to be adjusted to the most comfortable position for the operator.
- For the initial adjustment position, the short groove on the power unit should be facing up. See illustration at right.



Step 3:

- Insert the attachment screw in the frame.
- Tighten the attachment screw **FIRMLY**, using the supplied hex wrench.

NOTE: *Recommended torque of 115-140 lb-in (13-16 N-m).*

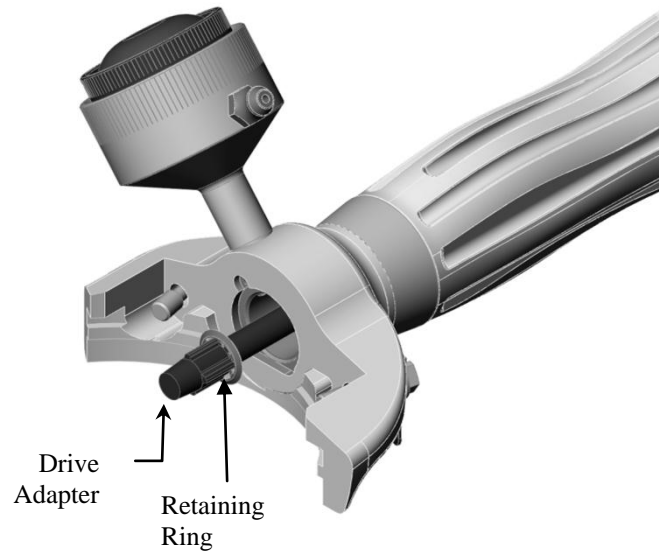




Power Unit / Head Assembly - Attachment and Adjustment (Continued)

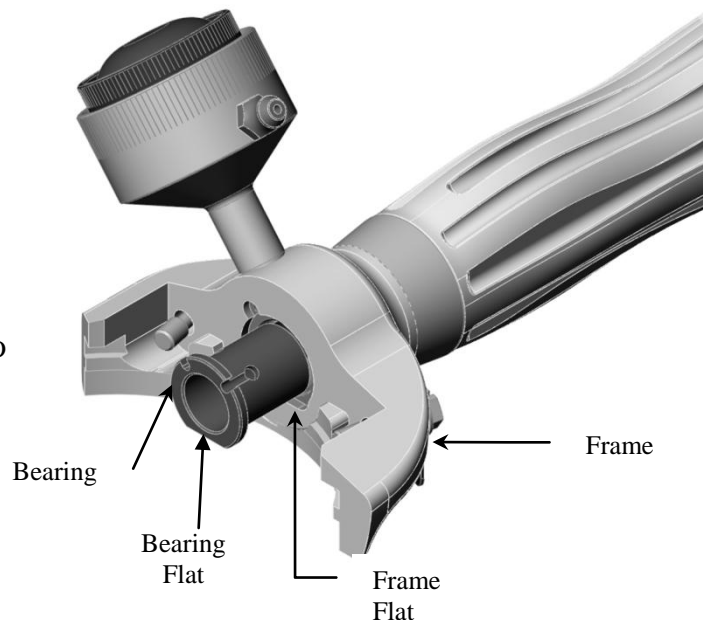
Step 4: Install Drive Adapter

- Insert the drive adapter and align the square end with the square hole in the power unit.
- The drive adapter should drop in with no force required.
- The retaining ring will sit flush against the attachment screw when properly aligned.



Step 5: Install Bearing

- Slide the handpiece bearing into the frame bore, aligning the bearing flat with the frame flat.
- The bearing should go in with minimal effort and not require pressing.
- Do not force the bearing into the frame. If the bearing does not go in easily, check frame and bearing for damage or build-up.

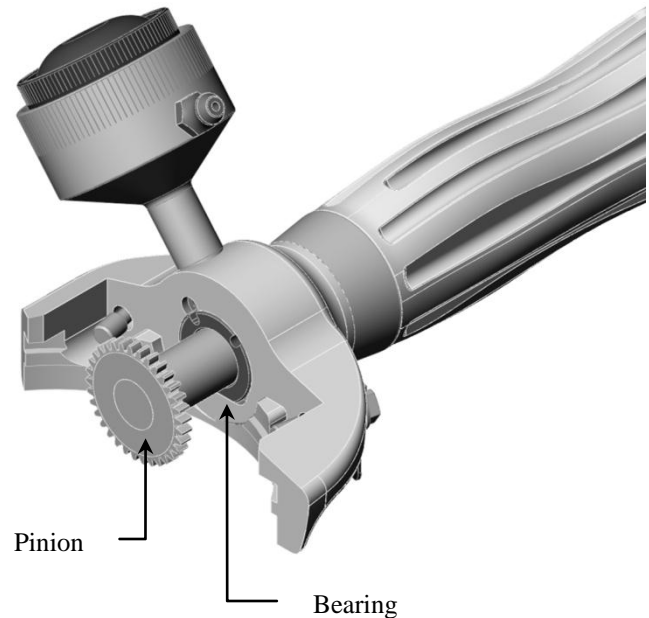




Power Unit / Head Assembly - Attachment and Adjustment (Continued)

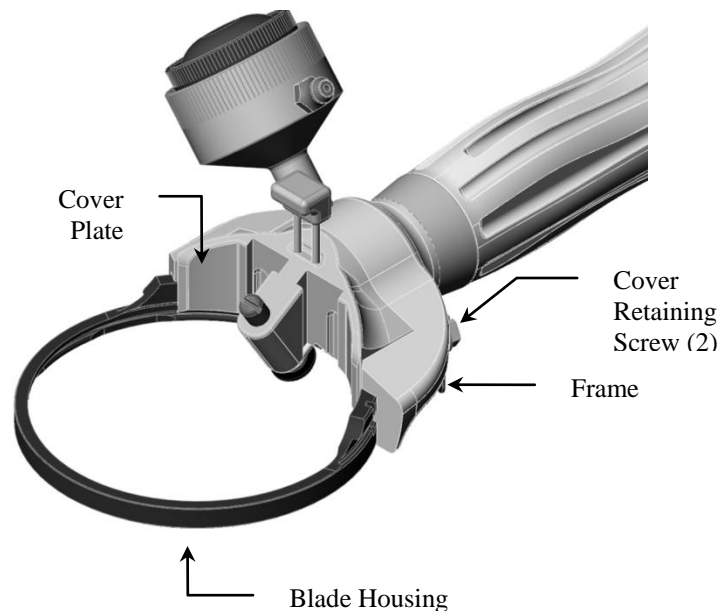
Step 6: Install Pinion

- Insert the pinion into the bearing bore.
- The pinion should go in with minimal effort and not require pressing.
- Do not force the pinion into the bearing. If the pinion does not go in easily, check bearing and pinion for damage or build-up.
- The pinion should sit flush against the bearing. If the pinion does not, rotate the pinion to seat it flush with the bearing.



STEP 7: Install Cover And Blade Housing

- Set the blade housing on the frame and place the cover plate over the blade housing.
- While holding the cover plate firmly against the housing and frame, start the two cover retaining screws.
- Thread the cover retaining screws in, leaving a slight tension to allow for blade adjustment.





Power Unit / Head Assembly - Attachment and Adjustment (Continued)

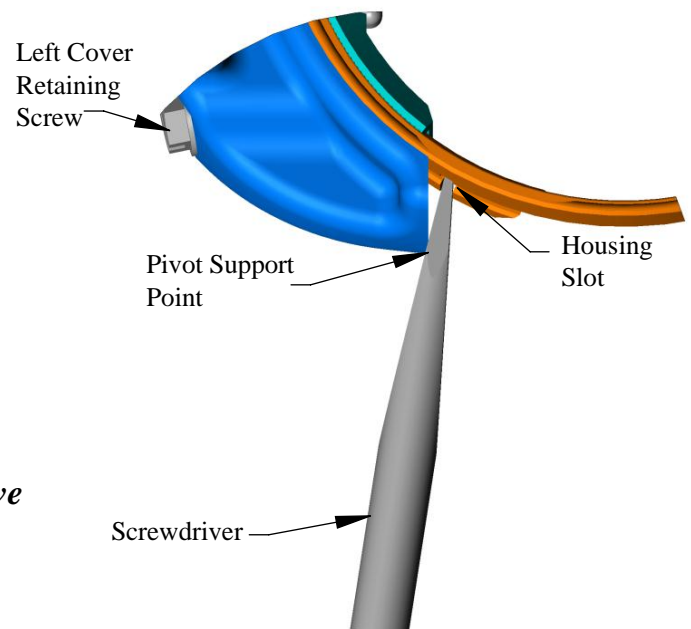
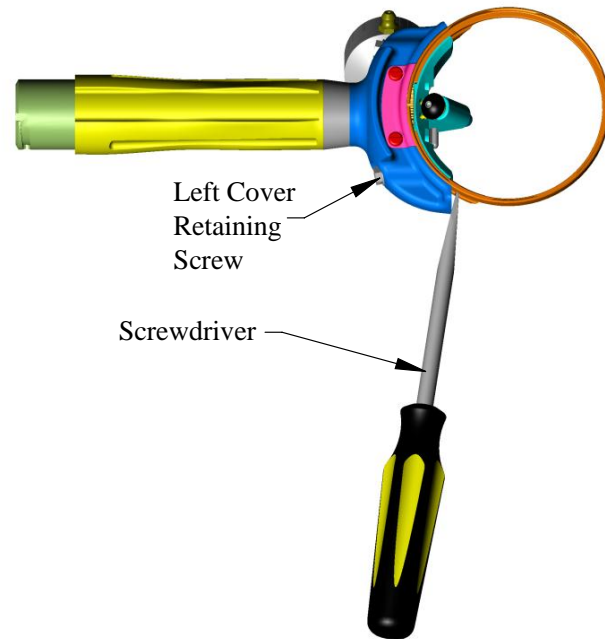
NOTE: *Leave a slight tension on the left cover retaining screw so the blade housing will stay open on its own.*

Step 8: Install Blade

- Holding the tool blade side up, pry open the blade housing with a screwdriver.
- Insert a new blade into the housing.
- Loosen the left cover retaining screw to allow the housing to close.
- Tighten the right cover retaining screw.
- With left cover retaining screw $\frac{1}{2}$ turn loose, adjust housing for proper fit.
- Gently pry the housing open until the blade rotates freely and has enough clearance to allow the blade to move forward and backward in the housing. Only a slight amount of movement is necessary.
- Tighten the cover retaining screws to the
- recommended torque.

NOTE: *Recommended torque of 30-40 lb-in (3.4-4.5 N-m).*

IMPORTANT: *Be sure that the blade is free to move in the housing. If the blade does not move freely, it may cause the trimmer to overheat.*

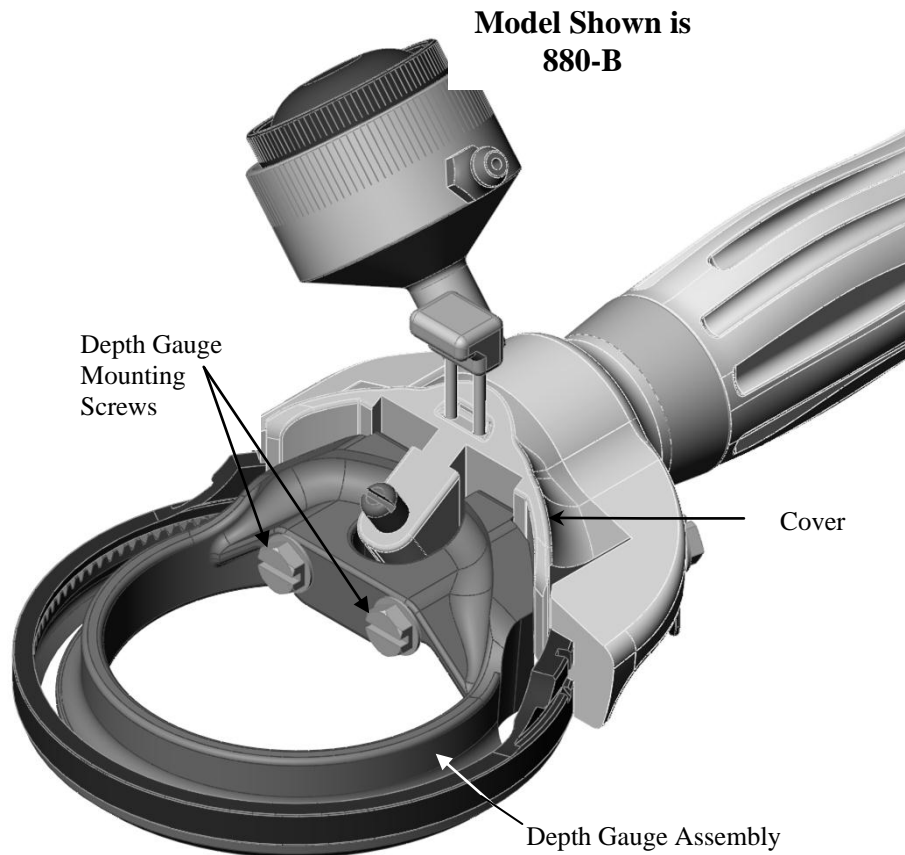




Power Unit / Head Assembly - Attachment and Adjustment (Continued)

Step 9: Install Depth Gauge (Optional)

- Loosen depth gauge mounting screws.
- Slide depth gauge onto the cover.
- Adjust the depth gauge to the desired height.
- (See Depth Gauge Adjustment for more information)
- Tighten the depth gauge mounting screw(s).

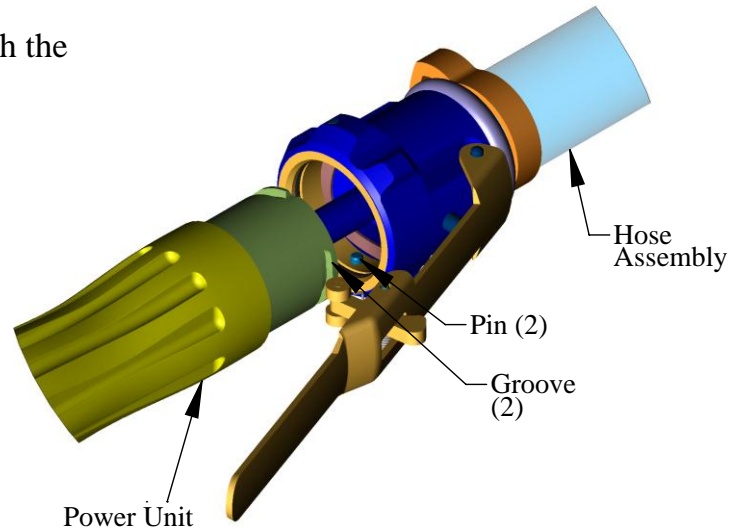




Hose Assembly Attachment

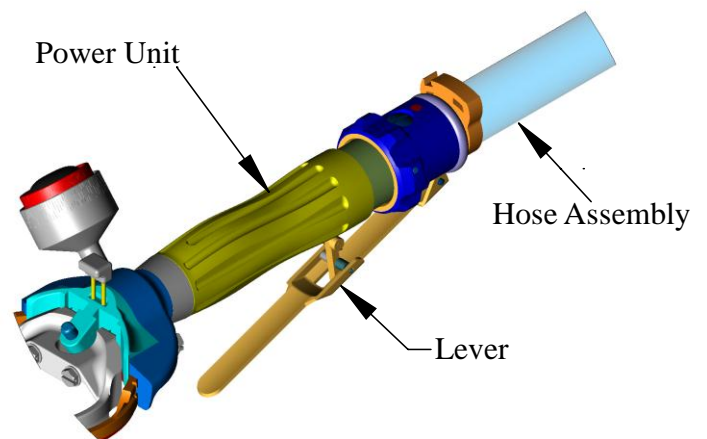
Step 1:

Align the pins in the hose assembly with the grooves on the power unit.



Step 2:

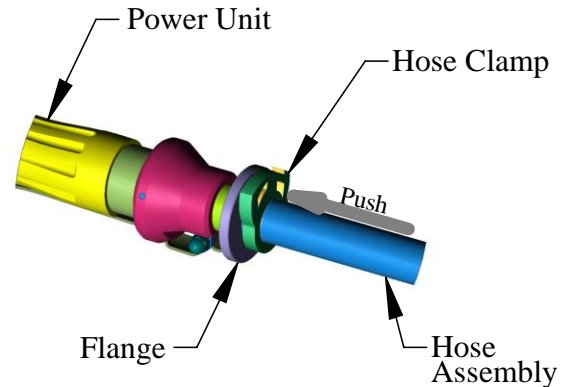
- Slide the power unit into the hose assembly
- Rotate the power unit 90°
- Lever will rotate toward the bottom of the tool.



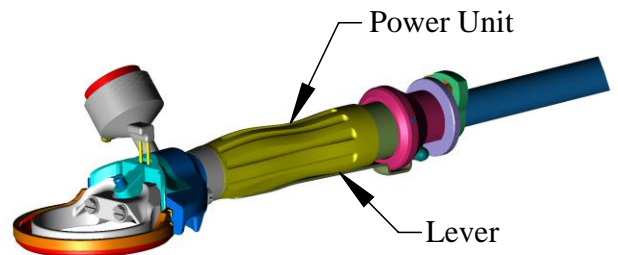


Starting the Trimmer with Standard Hose Assembly

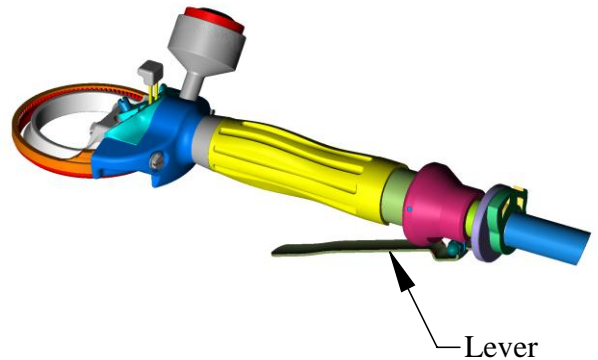
- Hold the power unit and push the flange and or hose clamp of the hose assembly toward the power unit.



- Hold the lever against the power unit to keep the trimmer running.



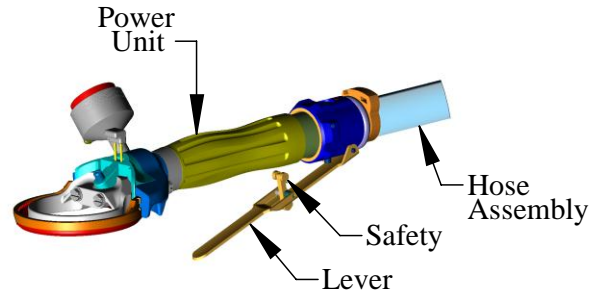
- Release the lever to turn the trimmer off.



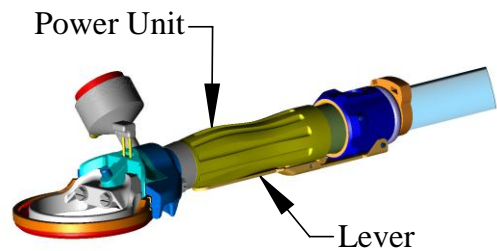


Starting the Trimmer with Quick-Start Hose Assembly

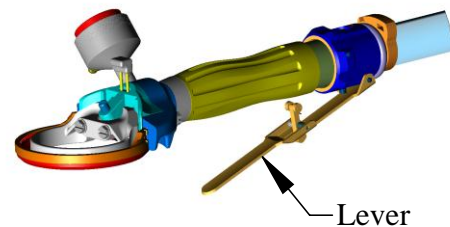
- Fold the safety into the lever.



- Hold the lever against the power unit to keep the trimmer running.





- Release the lever to turn the trimmer off.







Depth Gauge Adjustment



WARNING



SHARP BLADES MAY CAUSE CUT INJURY!
FOR PROPER PROTECTION OF HANDS, A PROTECTIVE
GLOVE SHOULD BE USED WHEN OPERATING THIS
EQUIPMENT AND DURING THE HANDLING OF BLADES.

ALWAYS DISCONNECT THE TOOL FROM THE AIR SUPPLY
PRIOR TO SERVICING.

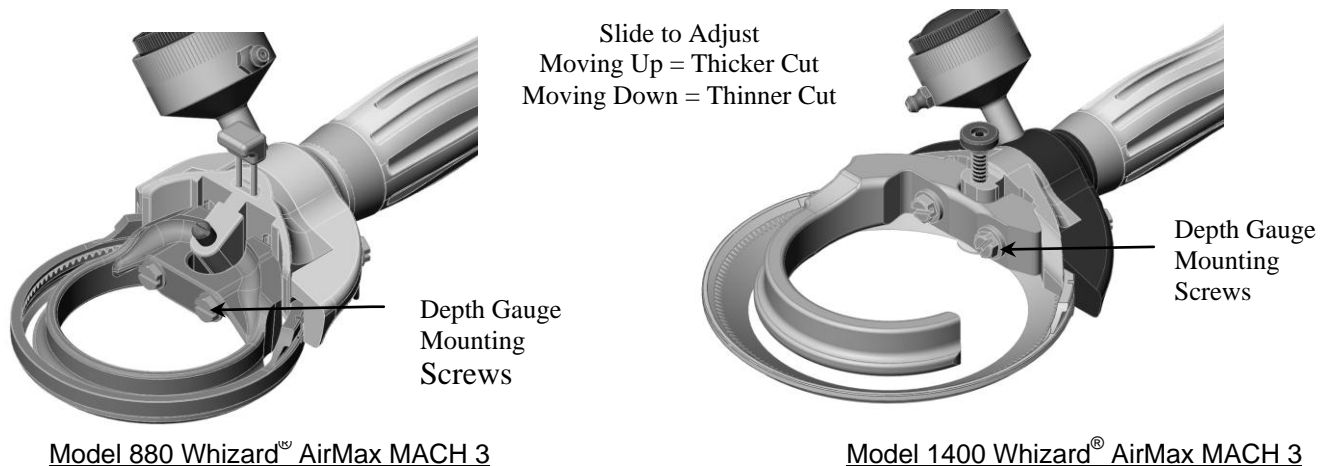
Models 880, 1880, 1400, 1500 and optional 505:

These models are equipped with an adjustable depth gauge for setting a controlled product trim thickness. The depth gauge can be adjusted for cuts up to 1/4" thick. A depth gauge setting device is also available.

To adjust the depth:

- Hold the handpiece with the blade facing downward.
- Loosen the depth gauge mounting screw(s).
- Adjust the depth gauge setting by sliding it up or down to the desired height.
- Retighten the depth gauge mounting screw(s).

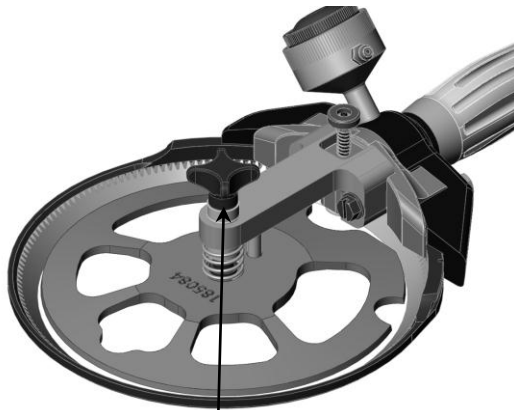
Depth Gauge Adjustment Range:





Depth Gauge Adjustment (Continued)

Optional Adjustable Fat (F) and Skinner (S) Disc Gauges for the 850, 1000 and 1300



Adjustment
Knob

- Hold the handpiece with the blade facing downward.
- Adjustments – Turn the adjustment knob **clockwise** for a thicker cut, or **counterclockwise** for a thinner cut.

Important: *Take care not to turn the adjustment knob too far as the disc may disengage from the shaft.*

		<u>WARNING</u>		
<p>SHARP BLADES MAY CAUSE CUT INJURY!</p> <p>FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.</p> <p>ALWAYS DISCONNECT THE TOOL FROM THE AIR SUPPLY PRIOR TO SERVICING.</p>				



Tool Operation



Always hold the handle of the Whizard® AirMax MACH 3 Trimmer with your thumb extended. Let the handle rest naturally in your hand, in a relaxed manner. Each person should be allowed to hold the handpiece in a position that is most comfortable to them.

The most-commonly used motion is a long sweeping or gliding stroke across the trimming surface. Hold the blade surface as flat to the trim surface as possible. A scooping action should be used around the vertebra.

On flat bones, such as backbones or blades, use a long, quick, gliding stroke.

During the cutting operation do not try to pull the blade out of a cut. Let the blade do the work, as you would any other cutting tool. Finding the proper angle for Whizard® AirMax MACH 3 trimming will become easier as the operator gains experience using the tool.

As with any meat cutting tool, your speed and efficiency is only as good as the blade sharpness.



In order to achieve maximum unit and operator efficiency, it is recommended that sharp blades be installed at each shift break. For this reason, it is suggested that extra blades be kept on hand. For example, if 4 units are being used and there are 3 shift breaks, 16 blades would be required. This would provide a sharp blade for start up and one for each break.

When following this procedure, steeling of the blade is minimized, and blades need only be sharpened once a day with the use of a Whizard® Model 210 Universal Blade Sharpener, Whizard® Model 214 Blade Sharpener, Bettcher® AutoEdge, or by hand stoning.



If blades are not changed at each shift break, it may be required to steel the blade.



Blade Steeling



WARNING



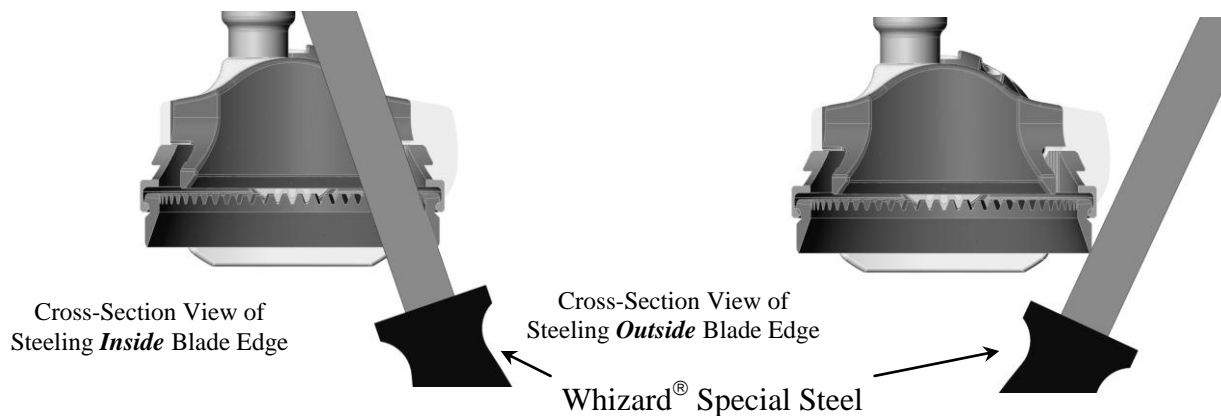
SHARP BLADES MAY CAUSE CUT INJURY!

FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.

ALWAYS DISCONNECT THE TOOL FROM THE AIR SUPPLY PRIOR TO SERVICING.

Steeling For Models: 350, 500, 620 and 750:

- Be sure to hold the steel at the actual angle of the blade edge. Running the steel at an angle greater than the factory ground angle will round over the edge and make re-sharpening more difficult.



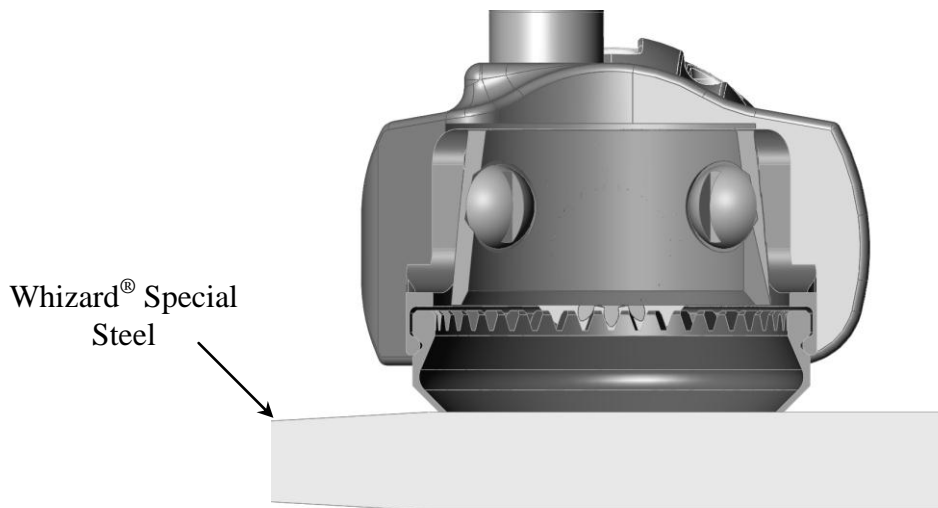
- Use the steel lightly and always make the last pass of the steel on the inside surface of the blade.
- Steeling can be accomplished with much greater consistency with the use of the specially designed Whizard® EdgeMaster™ Steels. See Section 7; Blade Sharpening and Steeling Equipment, or contact your Regional Manager or Bettcher Industries, Inc. for more information.
- Replace or sharpen the blade if this procedure does not improve the cutting action.
- The Whizard® AirMax MACH 3 Trimmers have been designed to allow the blades to be quickly removed and reinstalled.



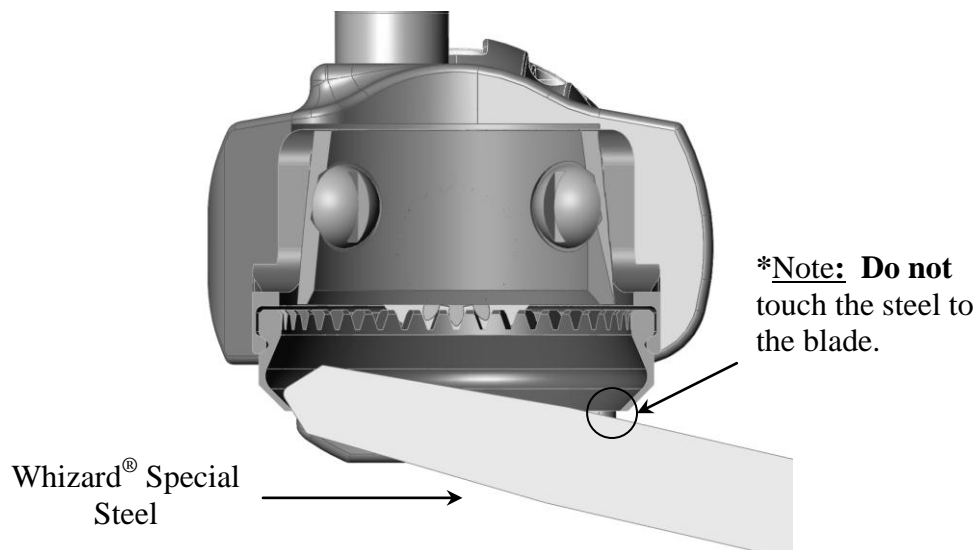
Blade Steeling (Continued)

Steeling for Model: 360

- Steel the outside edge of the blade by laying the special Whizard® steel flat against the outside surface of the blade. Be sure to hold the steel flat and across the centerline of the blade to prevent “rounding off” or rolling of the edge.



- Steel the inside of the blade by placing the cone shaped tip of the Whizard® special steel on the inside edge of the blade. Do not touch the blade with the shaft of the Whizard® special steel.

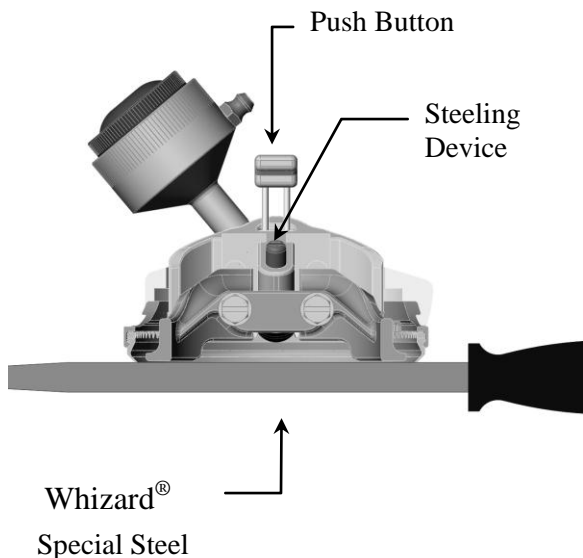




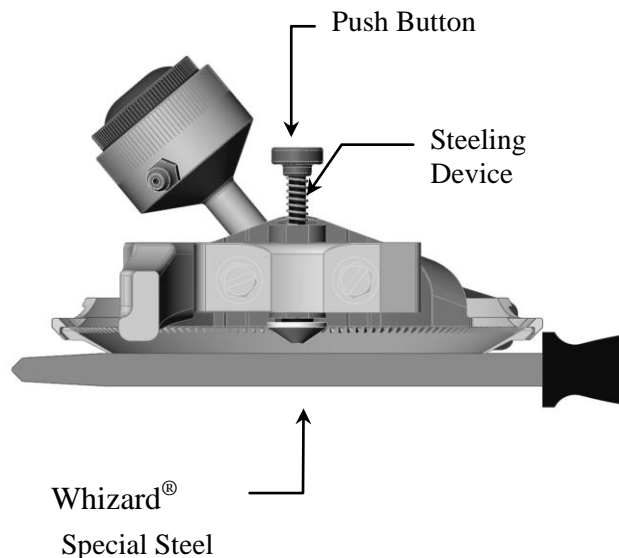
Blade Steeling (Continued)

Steeling for Models: 505, 625, 850, 880, 1850, 1880, 1000, 1300, 1400 and 1500

- Use the Whizard® special steel against the flat ground surface on the outside surface of the blade. Be sure to hold the steel flat and across the centerline of the blade to prevent "rounding off" or rolling of the edge.
- The inside edge of the blade should be steeled only with the special steeling device mounted on the inside diameter of the blade housing. This is accomplished as follows :
- Hold the Whizard® special steel on the bottom edge of the blade, and the handpiece in your normal operating hand, with the blade down, or away from you.
- At the same time, lightly push down with your thumb on the push button, holding the steeling device lightly against the blade edge for several blade rotations.





Model 880-B Whizard® AirMax MACH 3 Shown





Model 1400 Whizard® AirMax MACH 3 Shown



Blade Changing



WARNING



SHARP BLADES MAY CAUSE CUT INJURY!
FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.
ALWAYS DISCONNECT THE TOOL FROM THE AIR SUPPLY PRIOR TO SERVICING.

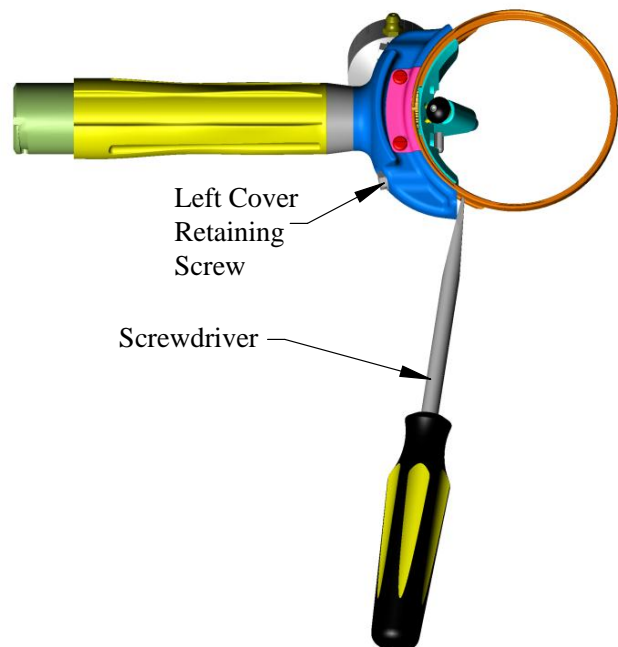
The Whizard® AirMax MACH 3 Trimmers have been designed to allow the blades to be quickly removed and reinstalled.

To Change the Blade

- Loosen only the left cover retaining screw.

NOTE: *Slight tension on the left cover screw will allow the blade housing to stay open.*

- Holding the tool blade side up, pry open the blade housing with a screwdriver.
- Carefully remove the old blade.
- Insert a new blade in the housing.



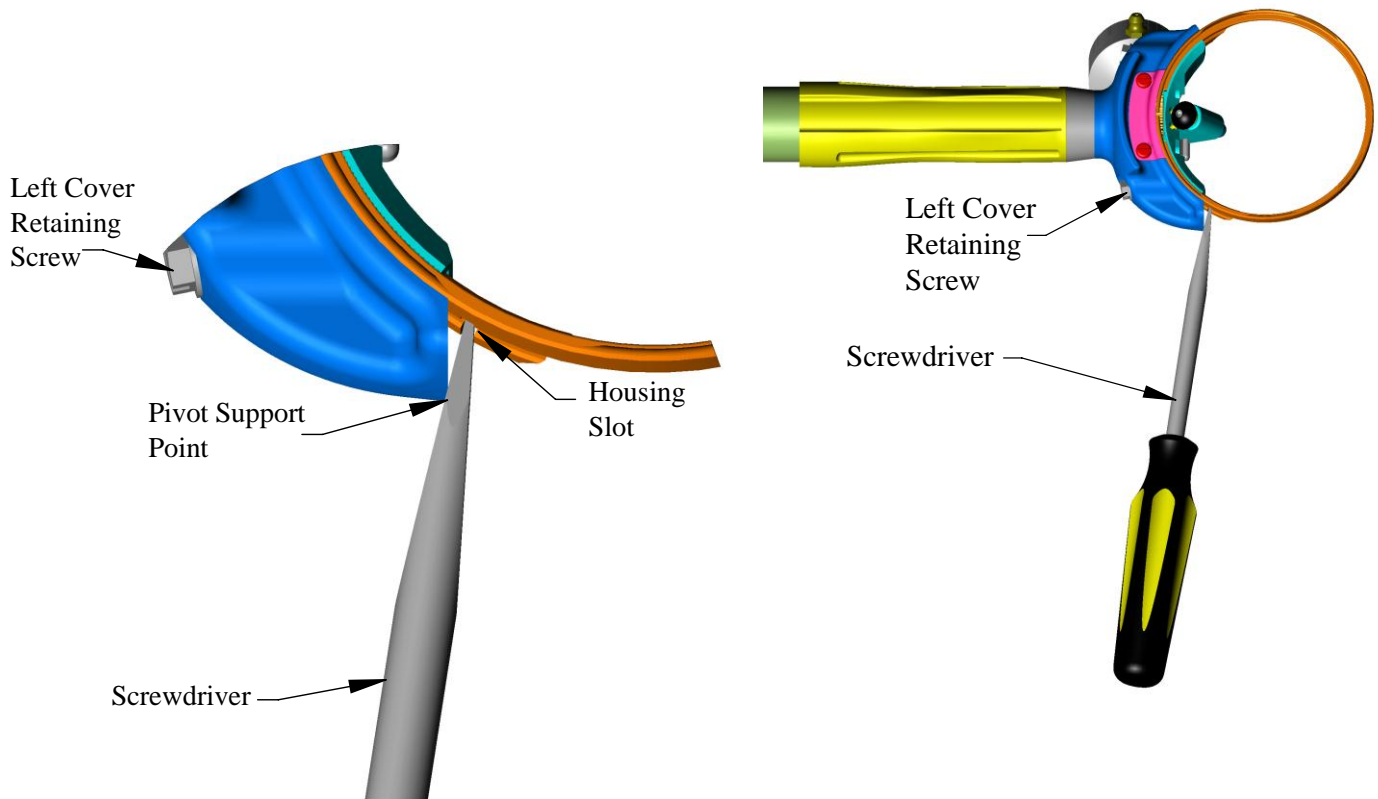


Blade Changing (Continued)

- Loosen the left cover retaining screw to allow the housing to close.
- Tighten the right cover retaining screw.
- With left cover retaining screw ½ turn loose, adjust housing for proper fit.
- Gently pry the housing open until the blade rotates freely and has enough clearance to allow the blade to move forward and backward in the housing. Only a slight amount of movement is necessary.
- Tighten the cover retaining screws to the recommended torque.

NOTE: *Recommended torque of 30-40 lb-in (3.4-4.5 N-m).*

IMPORTANT: *Be sure that the blade is free to move in the housing. If the blade does not move freely, it may cause the trimmer to overheat.*





Section 5

Maintenance

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Maintenance Schedule

Description	Maintenance Schedule
Handpiece	Daily
Power Unit	After Every 80 Hours of Use
Hose Assembly	As Required



General Maintenance

- Drain filter bowls daily.
- Inspect filter for damage and dirt build-up. Replace when necessary.
- Fill lubricator (oiler) daily or more often if needed.
- Verify oiler is set to deliver 3 drops of oil per minute.
- Verify air pressure is set at 90-100 psi. *Do not exceed 100 psi!*

Handpiece Maintenance

WARNING

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FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.

ALWAYS DISCONNECT AIR SUPPLY AND REMOVE TOOL FROM HOSE ASSEMBLY PRIOR TO SERVICING.

The Whizard® AirMax MACH 3 Trimmer was designed to allow quick and easy removal of the handpiece from the hose assembly. This allows the trimmer to be removed from the hose assembly while still on the production line. The hose assembly can be left hanging on the production line and the handpiece can be returned to the knife room for service. It is recommended that this procedure be followed. The removal of the 10 feet (3.05 m) of hose will allow easier service, storage, and handling by knife room personnel.

Required Tools for Handpiece Maintenance

- 1 – Flat head screwdriver
- 1 – Hex Wrench (supplied with the Whizard® AirMax MACH 3 Trimmer)



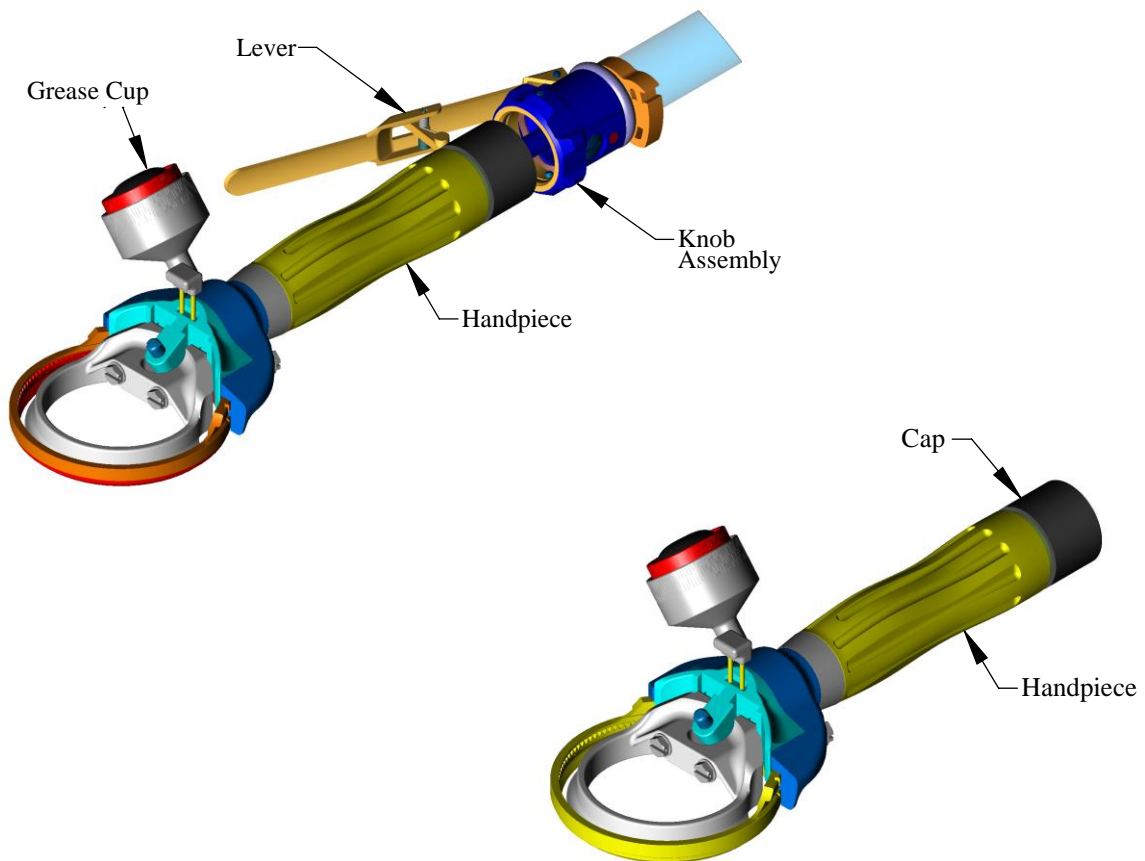
Disassembly of Handpiece

Step 1: Remove Handpiece from Hose Assembly:

- While holding the handpiece, grip the knob assembly with the opposite hand.
- Rotate the knob assembly 90° and pull the hose assembly from the handpiece.

NOTE: *The lever will rotate toward the grease cup for right-handed models, and away from the grease cup for left-handed models.*

- Place the cap over the end of the handpiece to protect the handle and protect the motor from water damage.

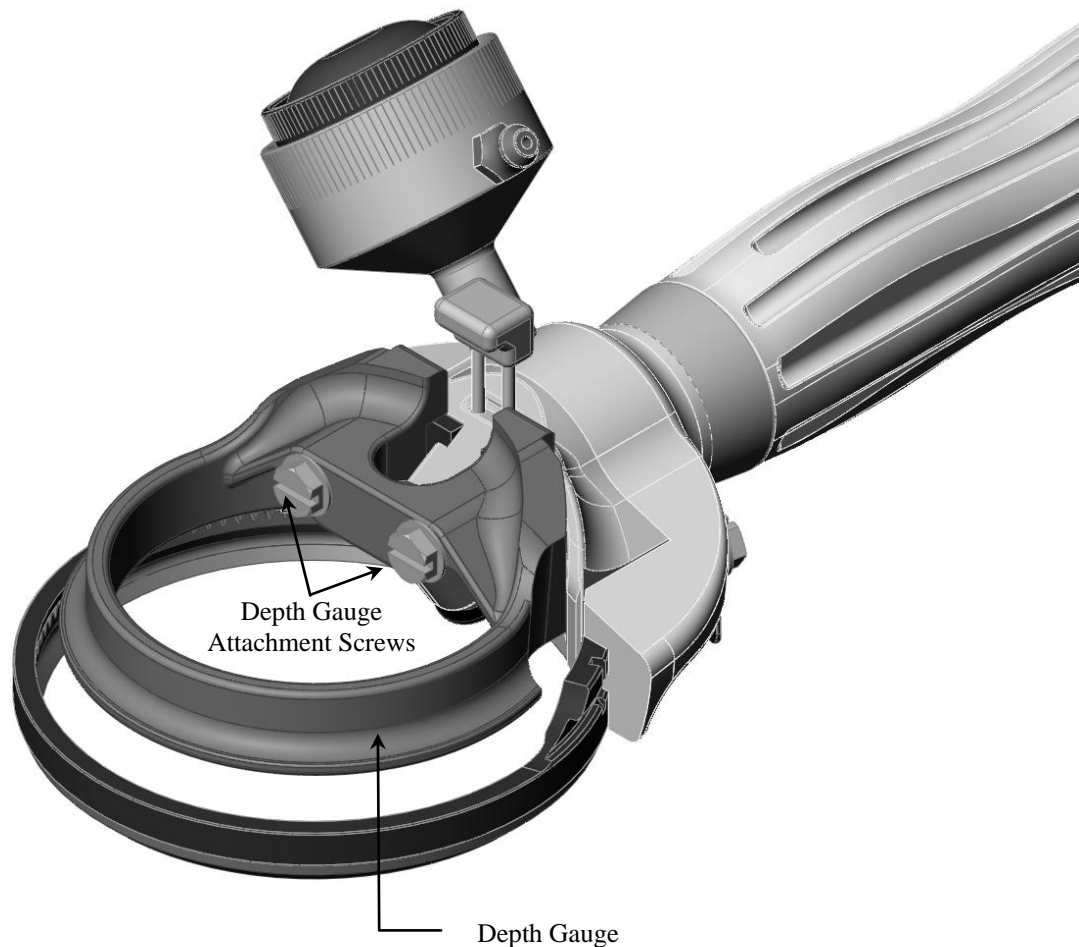




Disassembly of Handpiece (Continued)

Step 2: Removal/Disassembly of the Depth Gauge from the Cover:

- Loosen, but do not remove, the depth gauge attachment screw(s) located inside the depth gauge.
- Slide the depth gauge upward until the depth gauge clamp(s) slide out of the cover plate grooves.





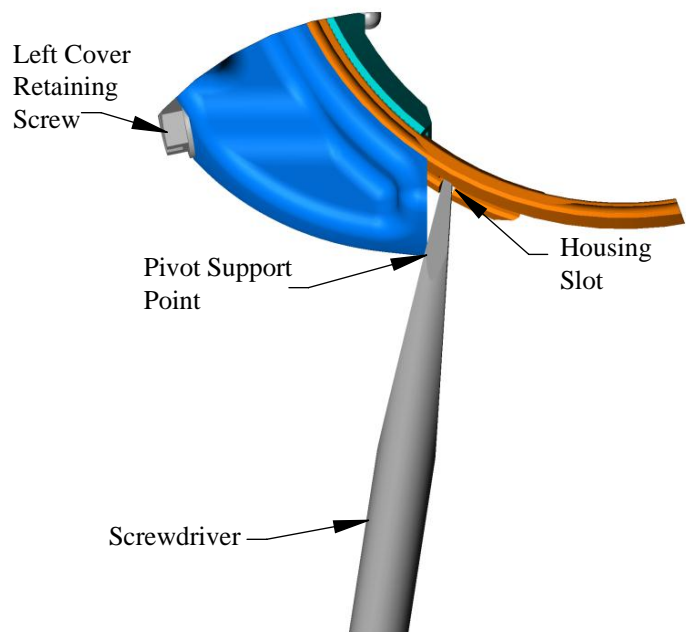
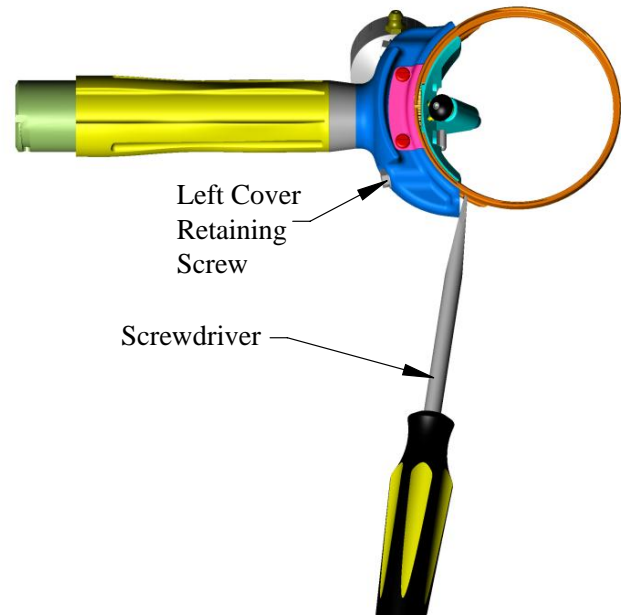
Disassembly of Handpiece (Continued)

Step 3: Remove Blade:

- Hold the tool with the blade side up.
- Loosen only the left cover retaining screw.

NOTE: *A slight tension on the left cover screw will allow the blade housing to stay open on its own.*

- Insert a screwdriver into the housing slot.
- Using the frame as the support point, spread open the housing, just far enough to remove the blade.
- Carefully remove the blade.

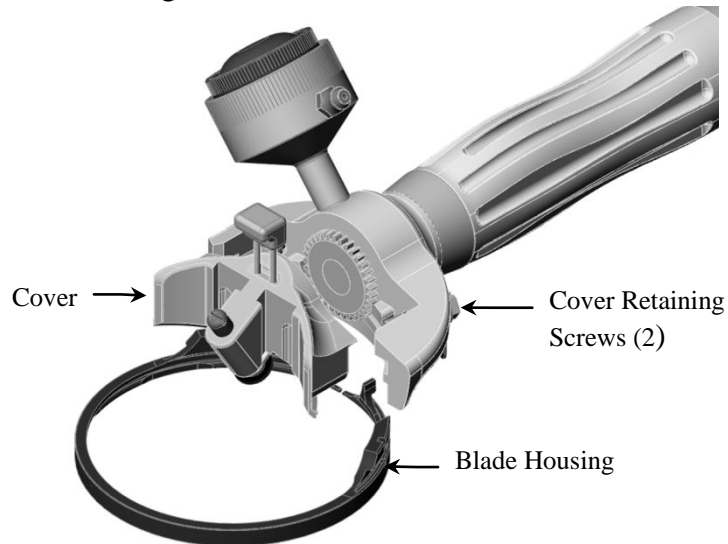




Disassembly of Handpiece (Continued)

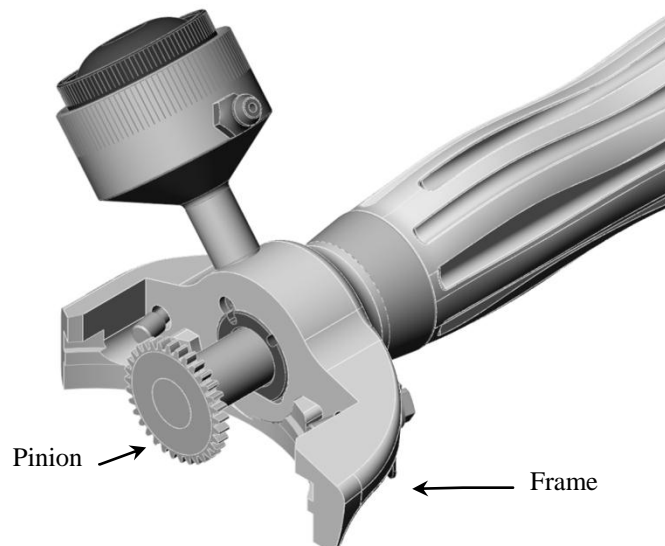
Step 4: Remove Cover and Blade Housing:

- Loosen the cover retaining screws until the cover can be removed.
- Remove the blade housing and cover.



Step 5: Remove Pinion:

- Pull the pinion out of the frame.

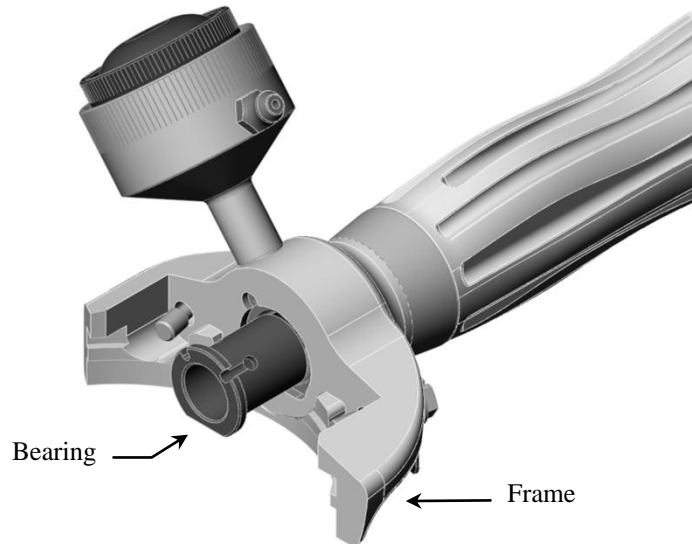




Disassembly of Handpiece (Continued)

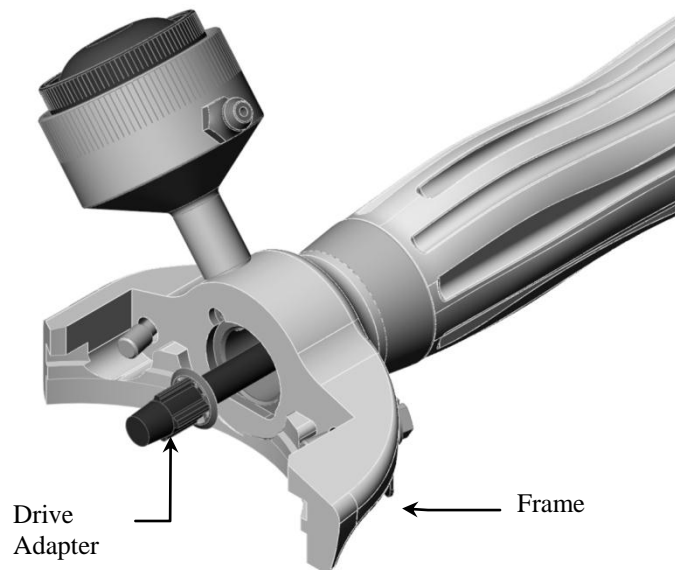
Step 6: Remove Bearing:

- Pull the bearing out of the frame.



Step 7: Remove Drive Adapter:

- Pull the drive adapter out of the frame.

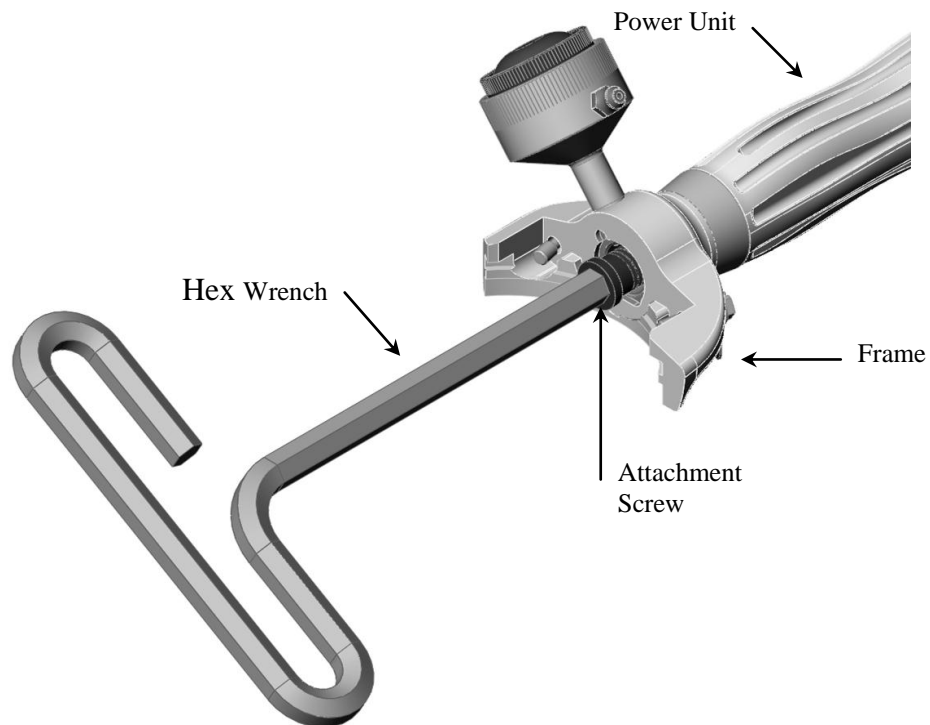




Disassembly of Handpiece (Continued)


Step 8: Remove Frame from Power Unit:

- Remove attachment screw from inside the frame using the supplied hex wrench.
- Remove the frame from the power unit.





Inspection and Maintenance of Handpiece



WARNING

SHARP BLADES MAY CAUSE CUT INJURY!

ALWAYS DISCONNECT THE AIR SUPPLY PRIOR TO SERVICING.

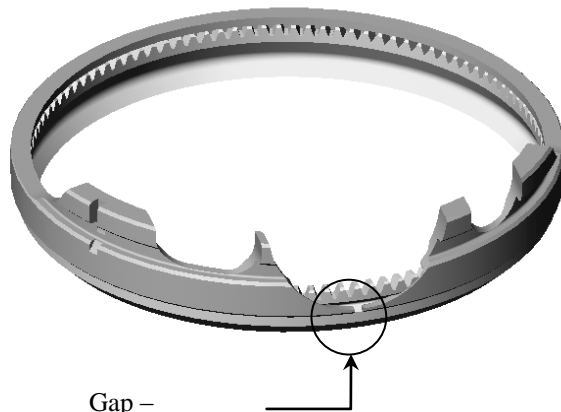
FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.

Blade

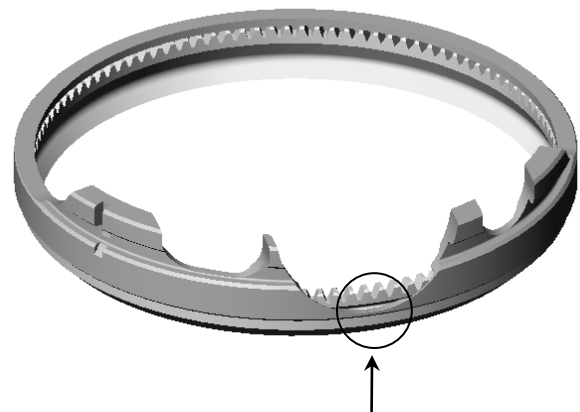
- Inspect the cutting edge height with a Whizard[®] blade gauge.
- Check for worn or chipped teeth.
- Check for damage to the cutting edge.

Blade Housing

- Inspect inner diameter of the housing for wear.
- Look for evidence of the blade rubbing the outer wall of the housing.
- When holding the housing with a new blade installed, if the split in the housing touches the other side, and the blade is still loose, the housing needs to be replaced. If a gap is seen, the housing is acceptable.



Gap –
Housing is Acceptable



No Gap –
Replace Housing



Inspection and Maintenance of Handpiece (Continued)

Pinion Gear

- Check for worn or chipped teeth. Worn out teeth are indicated by rounded off or pointed tops on the teeth.

Bearing

- Install a new pinion and move the pinion side to side.
- If the pinion feels loose in the bearing, the bearing should be replaced.
- The bearing should be replaced after 500 hours of use.

Cover Plate

- Look for signs of corrosion or wear on the cover.
- Pay special attention to the area covering the gear teeth.
- If the edge of the cover is worn, exposing the pinion and blade teeth, the cover should be replaced.
- Look for signs of wear on the pinion cover surface. If excessive wear signs are present, check the seal on the power unit for leakage.

Frame

- Inspect the frame surface where the housing is attached.
- Look for corrosion and any nicks or burrs that may prevent proper housing seating.
- Inspect the housing locating key for damage.
- Inspect the cover retaining screws and replace if bent or damaged.

Steeling Device

- Inspect the surface condition of the carbide steel. If chipped or cracked, it should be replaced.
- The plunger and steel should be cleaned and oiled with mineral oil in order to keep free movement and prevent build-up of dirt.

Depth Gauge and Depth Gauge Clamps

- Inspect the depth gauge for wear or damage.
- If the depth gauge clamps are bent, replace the depth gauge.





Inspection and Maintenance of Handpiece (Continued)

Drive Adapter Assembly



- Inspect the drive adapter assembly for the following. Replace the drive adapter assembly if damaged.
 - Inspect the square end of the driver for rounded corners.
 - Inspect the retaining ring for damage.
- If retaining ring has moved out of the groove or is missing, replace drive adapter assembly.



Blade Sharpening




W A R N I N G




SHARP BLADES MAY CAUSE INJURY!

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W A R N I N G



AFTER SHARPENING, ALL ABRASIVE DUST MUST BE COMPLETELY REMOVED FROM THE HANDPIECE.

DISASSEMBLE THE UNIT AND CAREFULLY WASH EACH PIECE WITH HOT, SOAPY WATER AND A SMALL BRUSH.

- The blade should be sharpened daily with the use of a Whizard[®] Model 210 Universal Blade Sharpener, a Whizard[®] Model 214 Blade Sharpener, a Bettcher[®] AutoEdge, or by hand stoning.
- Clean all grease and meat particles from the blade before sharpening. Sharpening blades that have not been cleaned will coat the stone or grinding wheel and greatly reduce its effectiveness.
 - If the stone or grinding wheel becomes coated, gently scrub them clean using hot, soapy water.



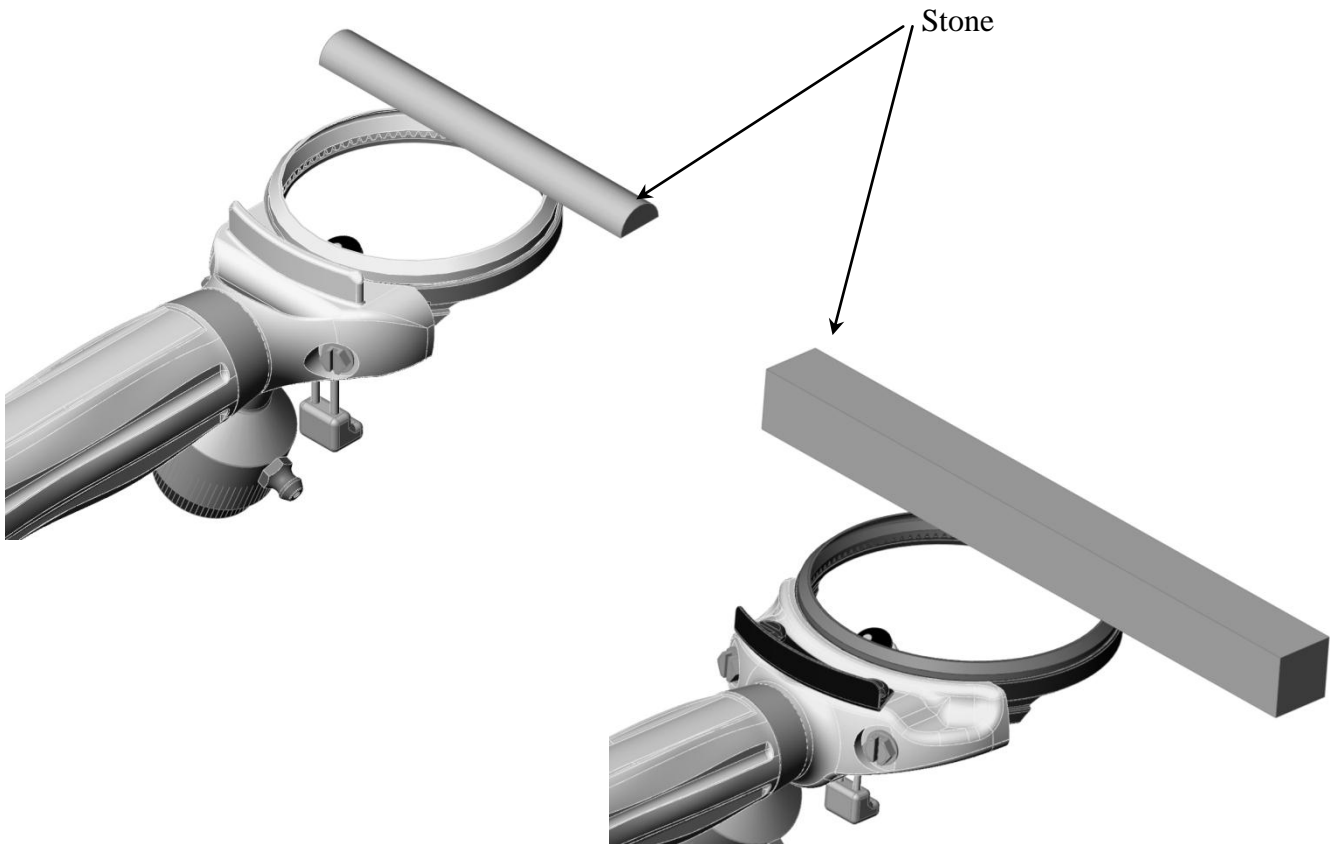
Blade Sharpening (Continued)

Hand Stoning

- With the motor running, apply the flat side of the stone to the flat part of the blade.



- Move the stone, using a “back and forth” motion.
- Use the Special Whizard® Steel to finish sharpening. (See Blade Steeling in Section 4)



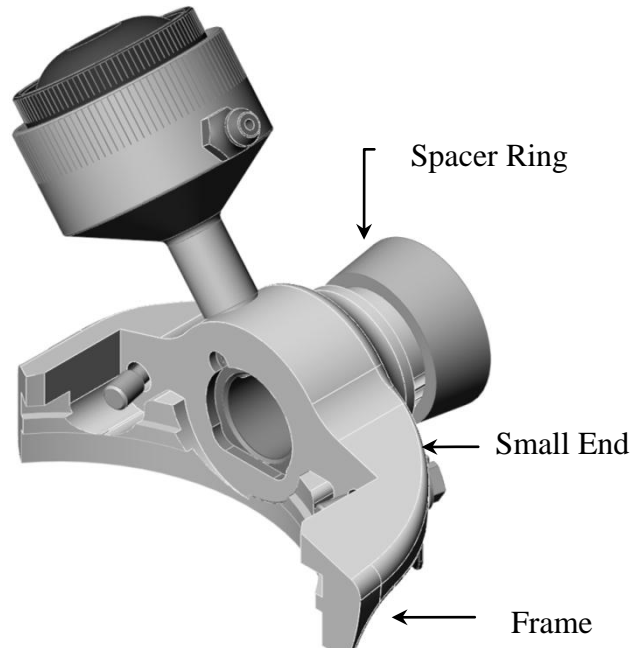


Assembly of Handpiece

Prior to assembly, be sure all parts are clean and have been inspected for wear per Section 5.

Step 1: Attach Head to Power Unit

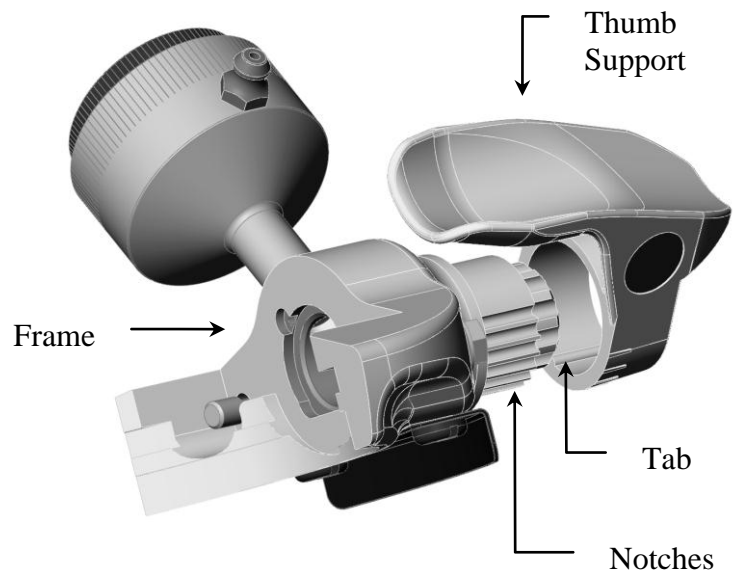
- Select the spacer ring or optional thumb support.
- **If a spacer ring is used:** Slide the spacer ring onto the frame, small end first.



- **If an optional thumb support is used:**

The thumb support should be positioned on the opposite side of the grease cup.

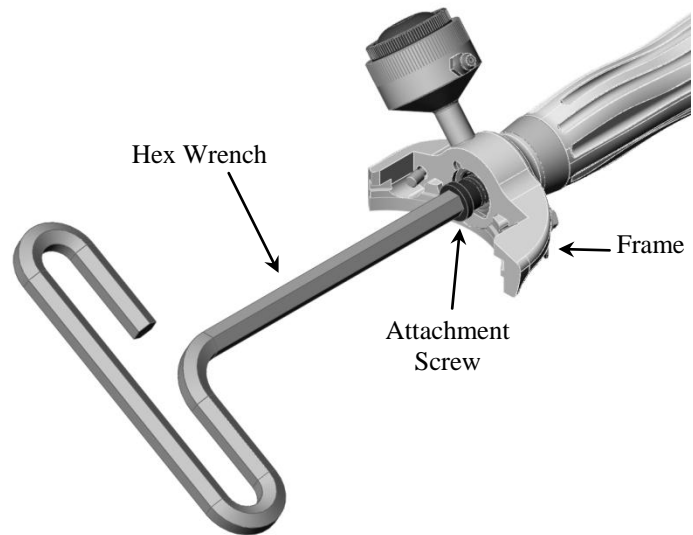
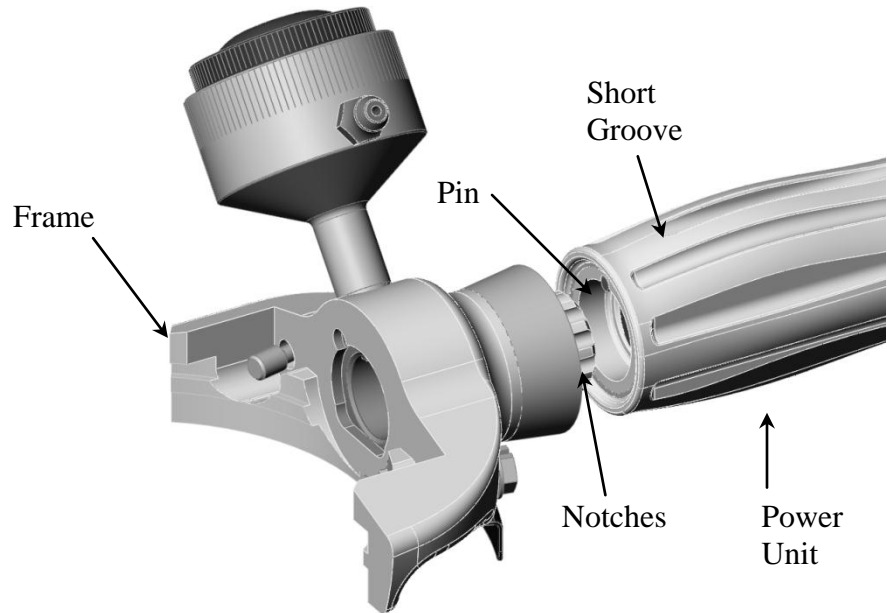
- Align the thumb support tab with a notch on the underside of the frame and slide the thumb support onto the frame.
- The frame is designed with multiple notches to allow the thumb support to be adjusted to the most comfortable position for the operator.





Assembly of Handpiece (Continued)

- While holding the Whizard® AirMax MACH 3 frame, align the pin in the power unit with one of the notches on the frame.
- The frame is designed with multiple notches to allow the head to be adjusted to the most comfortable position for the operator.
- For the initial adjustment position, the short groove on the power unit should be facing up. *See illustration at right.
- Insert the attachment screw in the frame.
- Tighten the attachment screw **FIRMLY**, using the supplied hex wrench.



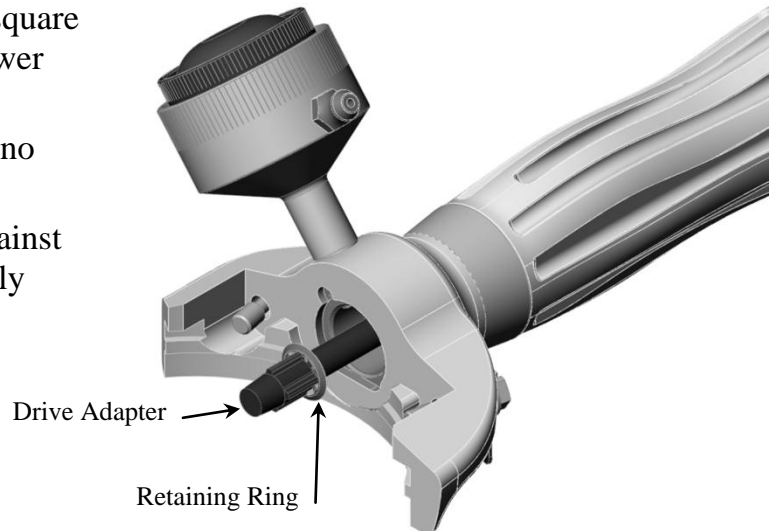
NOTE: *Recommended torque of 115-140 lb-in (13-16 N-m)*



Assembly of Handpiece (Continued)

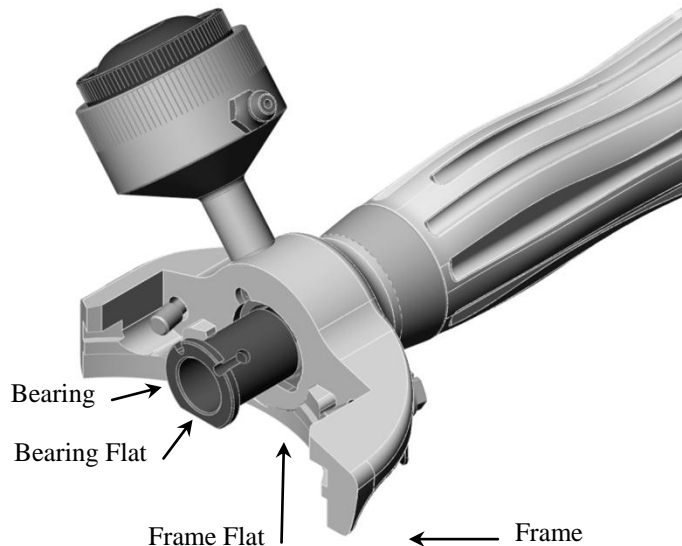
Step 2: Install Drive Adapter

- Insert drive adapter and align the square end with the square hole in the power unit.
- Drive adapter should drop in with no pressing force required.
- The retaining ring will sit flush against the attachment screw when properly aligned.



Step 3: Install Bearing

- Push handpiece bearing into the frame bore and align the bearing flat with the frame flat.
- The bearing should go in with minimal effort and not require pressing.
- Do not force the bearing in. If the bearing does not go in easily, check frame and bearing for damage or build-up.

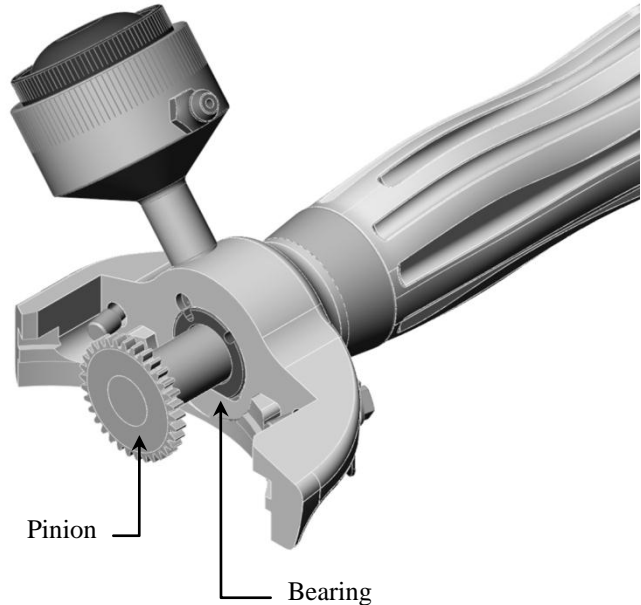




Assembly of Handpiece (Continued)

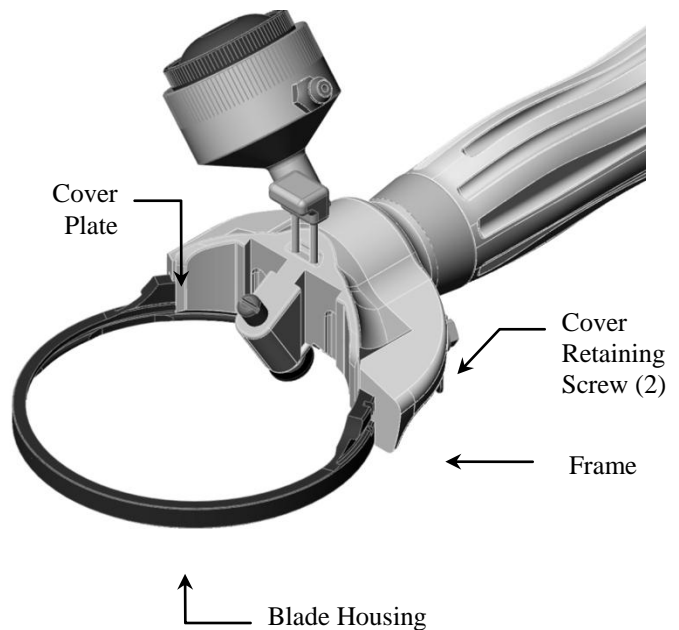
Step 4: Install Pinion

- Insert the pinion into the bearing bore.
- The pinion should go in with minimal effort and not require pressing.
- Do not force the pinion into the bearing. If the pinion does not go in easily, check bearing and pinion for damage or build-up.
- The pinion should sit flush against the bearing. If it does not, rotate the pinion to seat it flush with the bearing.



Step 5: Install Cover and Blade Housing

- Set the blade housing on the frame and place the cover plate over the blade housing.
- While holding the cover plate firmly against the housing and frame, start the two cover mounting screws.
- Thread the cover retaining screws in, leaving a slight tension to allow for blade adjustment.





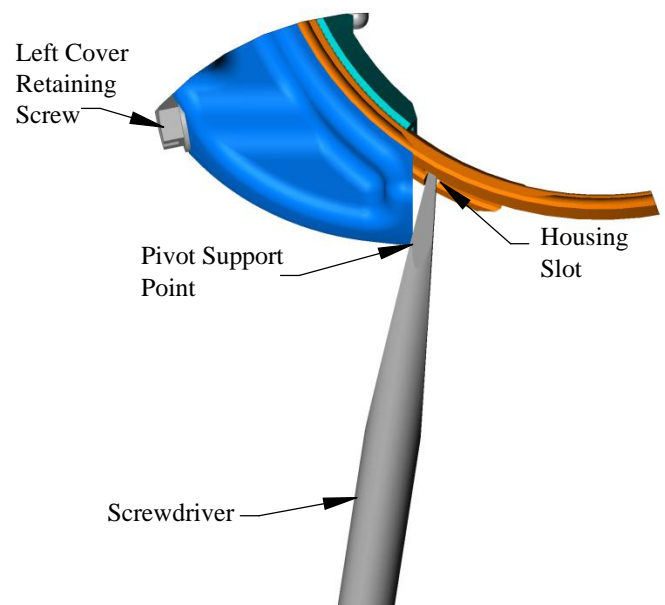
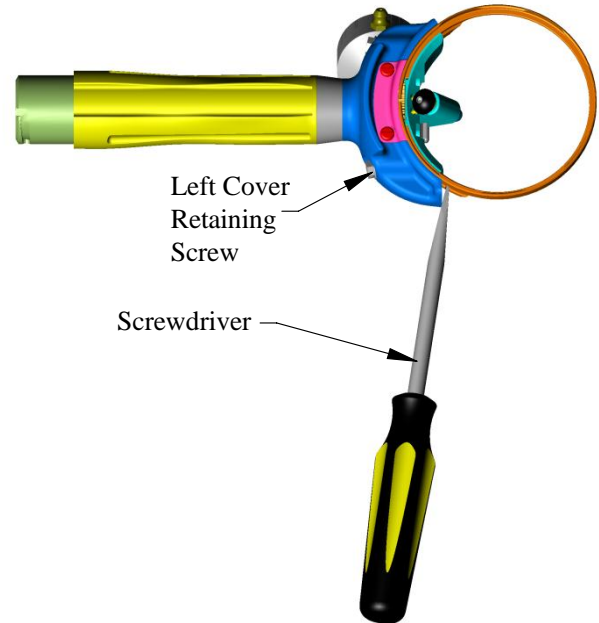
Assembly of Handpiece (Continued)

Step 6: Install Blade

- Holding the tool blade side up, pry open the blade housing with a screwdriver.
- Insert a new blade into the housing.
- Loosen the left cover retaining screw to allow the housing to close.
- Tighten the right cover retaining screw.
- With left cover retaining screw ½ turn loose, adjust housing for proper fit.
- Gently pry the housing open until the blade rotates freely and has enough clearance to allow the blade to move forward and backward in the housing. Only a slight amount of movement is necessary.
- Tighten the cover retaining screws to the recommended torque.

NOTE: *Recommended torque of 30-40 lb-in (3.4-4.5 N-m).*

IMPORTANT: *Be sure that the blade is free to move in the housing. If the blade does not move freely, it may cause the trimmer to overheat.*

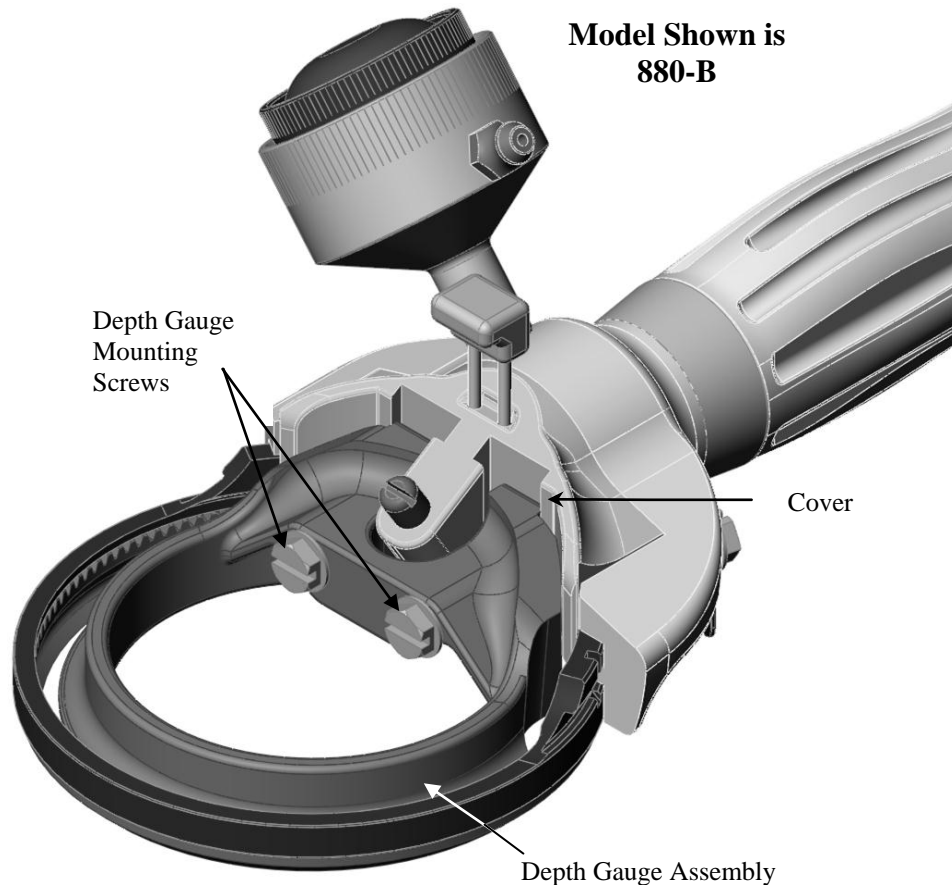




Assembly of Handpiece (Continued)



Step 7: Install Depth Gauge (Optional)

- Loosen depth gauge mounting screw(s).
- Slide depth gauge onto the cover.
- Adjust the depth gauge to the desired height.
- (See Depth Gauge Adjustment for more information)
- Tighten the depth gauge mounting screw(s).







TRIMVAC[®] AMX Handpiece Maintenance



W A R N I N G



SHARP BLADES MAY CAUSE INJURY!

FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.

ALWAYS DISCONNECT AIR SUPPLY AND REMOVE TOOL FROM HOSE ASSEMBLY PRIOR TO SERVICING.

Required Tools for Handpiece Maintenance

- 1 – Flat head screwdriver
- 1 – 3/32” hex wrench (supplied with the TRIMVAC[®] AMX Trimmer)
- 1 – 9/64” hex wrench (supplied with the TRIMVAC[®] AMX Trimmer)
- 1 – 3/8” hex wrench (supplied with the TRIMVAC[®] AMX Trimmer)



Disassembly of TRIMVAC® AMX Handpiece

Step 1: Remove Blade from Handpiece:

TRIMVAC® 18AMX:

- Hold the tool with the blade side up.
- Loosen only the left cover retaining screw, using the supplied 3/32" hex wrench.



- Insert a screwdriver into the housing slot.
- Using the frame support point, spread open the housing, just far enough to remove the blade.



- Carefully remove the blade.





Disassembly of TRIMVAC[®] AMX Handpiece (Continued)

TRIMVAC[®] 45AMX:

- Hold the tool with the blade side up.
- Loosen only the left cover retaining screw.



- Insert a screwdriver into the housing slot.
- Using the frame support point, spread open the housing, just far enough to remove the blade.



- Carefully remove the blade.





Disassembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 2: Remove Vacuum Hose:

- Slide the Whizard[®] AirMax MACH 3 hose out of the clips on the vacuum hose.
- Repeat for each clip.



- Loosen the screw on the hose clamp.



- Slide the vacuum hose off of the hose adapter.



- Slide the hose out of the vacuum hose bracket.



Disassembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 3: Remove Handpiece from Hose Assembly:

- While holding the handpiece grip the knob assembly with the other hand.
- Rotate the knob assembly 90° and pull the hose assembly from the handpiece.



Step 4: Remove Hose Adapter, Cover, and Blade Housing:

TRIMVAC[®] 18AMX:

- Loosen the cover retaining screws until the hose adapter, cover, and blade housing can be removed.



- Remove the hose adapter, cover and blade housing





Disassembly of TRIMVAC® AMX Handpiece (Continued)

Step 4: Remove Hose Adapter, Cover, and Blade Housing (Continued):

- Separate the parts.



TRIMVAC® 45AMX:

- Loosen the cover retaining screws until the hose adapter, cover and blade housing can be removed.



- Remove the hose adapter, cover and blade housing



- Separate the parts.





Disassembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 5: Remove Pinion:

- Pull the pinion out of the bearing.



Step 6: Remove Bearing:

- Pull the bearing out of the frame.



Step 7: Remove Drive Adapter:

- Pull the drive adapter out of the frame.





Disassembly of TRIMVAC® AMX Handpiece (Continued)

Step 8: Remove Vacuum Hose Bracket:

- Loosen the hose bracket screws.



- Slide the hose bracket off of the power unit.




Step 9: Remove Frame from Power Unit:

- Remove the attachment screws from inside the frame using the supplied hex wrench.
- Remove the frame from the power unit.





Inspection and Maintenance of TRIMVAC® AMX Handpiece



WARNING

**SHARP BLADES MAY CAUSE CUT INJURY!
ALWAYS DISCONNECT THE AIR SUPPLY PRIOR TO
SERVICING.**

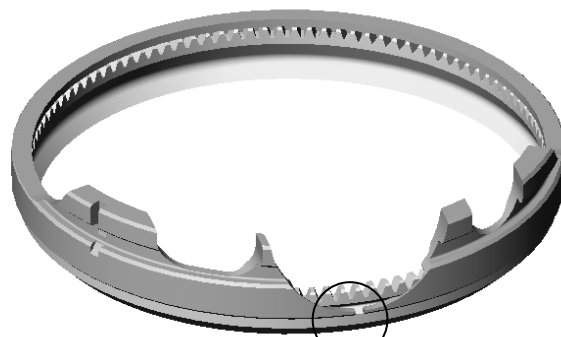
**FOR PROPER PROTECTION OF HANDS, A PROTECTIVE
GLOVE SHOULD BE USED WHEN OPERATING THIS
EQUIPMENT AND DURING THE HANDLING OF BLADES.**

Blade

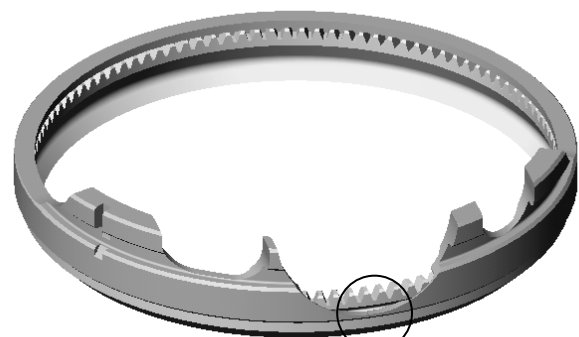
- Inspect the cutting edge height with a Bettcher blade gauge.
- Check for worn or chipped teeth.
- Check for damage to the cutting edge.

Blade Housing

- Inspect inner diameter of the housing for wear.
- Look for evidence of the blade rubbing the outer wall of the housing.
- When holding the housing with a new blade installed, if the split in the housing touches the other side, and the blade is still loose, the housing needs to be replaced. If a gap is seen, the housing is acceptable.



Gap –
Housing is Acceptable



No Gap –
Replace Housing



Inspection and Maintenance of TRIMVAC® AMX Handpiece

(Continued)

Pinion Gear

- Check for worn or chipped teeth. Worn out teeth are indicated by rounded off or pointed tops on the teeth.

Bearing

- Install a new pinion and move the pinion side to side.
- If the pinion feels loose in the bearing, the bearing should be replaced.
- The bearing should be replaced after 500 hours of use, or if it is worn, whichever comes first.

Cover Plate

- Look for signs of corrosion or wear on the cover.
- Pay special attention to the area covering the gear teeth.
- If the edge of the cover is worn, exposing the pinion and blade teeth, the cover should be replaced.
- Look for signs of wear on the pinion cover surface. If excessive wear signs are present, check the seal on the power unit for leakage.

Hose Adapter

- Inspect the hose adapter for chips or cracks and replace if damaged.

Frame



- Inspect the frame surface where the housing is attached.
- Look for corrosion and any nicks or burrs that may prevent proper seating of the housing.
- Inspect the housing locating key for damage.
- Inspect the cover retaining screws and replace if bent or damaged.

Drive Adapter Assembly



- Inspect the drive adapter assembly for the following. Replace the drive adapter assembly if damaged.
 - Inspect the square end of the driver for rounded corners.
 - Inspect the retaining ring for damage.
- Press the retaining ring back into the groove if the retaining ring has moved.



Blade Sharpening of TRIMVAC[®] AMX Handpiece




WARNING




SHARP BLADES MAY CAUSE INJURY!

FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.



WARNING



AFTER SHARPENING, ALL ABRASIVE DUST MUST BE COMPLETELY REMOVED FROM THE HANDPIECE.

DISASSEMBLE THE UNIT AND CAREFULLY WASH EACH PIECE WITH HOT, SOAPY WATER AND A SMALL BRUSH.

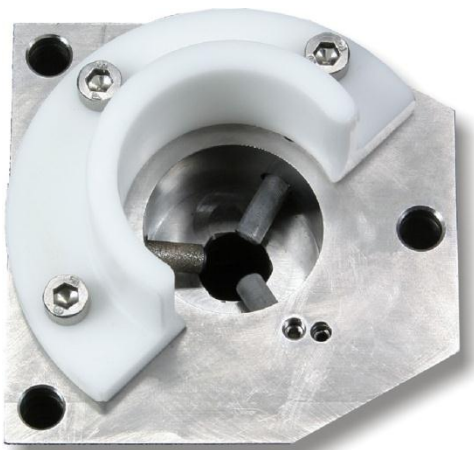
- The blade should be sharpened daily with the use of a Whizard[®] Model 210 Universal Blade Sharpener, a Whizard[®] Model 214 Blade Sharpener, Bettcher[®] AutoEdge, or by hand stoning.
- Clean all grease and meat particles from the blade before sharpening. Sharpening blades that have not been cleaned will contaminate the stone or grinding wheel and greatly reduce its effectiveness.
 - If the stone or grinding wheel becomes contaminated, gently scrub them clean using hot, soapy water.



Blade Sharpening of TRIMVAC[®] AMX Handpiece (Continued)

TRIMVAC[®] Sharpening

- With the trimmer running, insert the blade into the TRIMVAC[®] Sharpener. The plastic cap on the top of the sharpener will guide the handpiece into the sharpener.
- Press the blade lightly onto the sharpening and steeling rods for a few seconds.





Assembly of TRIMVAC[®] AMX Handpiece

Prior to assembly, be certain all parts are clean and have been inspected for wear per Section 5.

Step 1: Attach Frame to Power Unit:

- Slide the spacer ring onto the frame, small end first.
- While holding the Whizard[®] AirMax MACH 3 frame, align the pin in the power unit with one of the notches on the frame.
- The frame is designed with multiple notches to allow the head to be adjusted to the most comfortable position for the operator
- For the initial adjustment position, the short groove on the power unit should be facing up.
- Insert the attachment screw in the frame.
- Tighten the attachment screw ***firmly***, using the supplied hex wrench.



NOTE: *Recommended torque of 115-140 lb-in (13-16 N-m).*

Step 2: Install Drive Adapter:

- Insert the drive adapter and align the square end with the square hole in the power unit.
- The drive adapter should drop in with no pressing force required.
- The retaining ring will sit flush against the attachment screws when properly inserted.

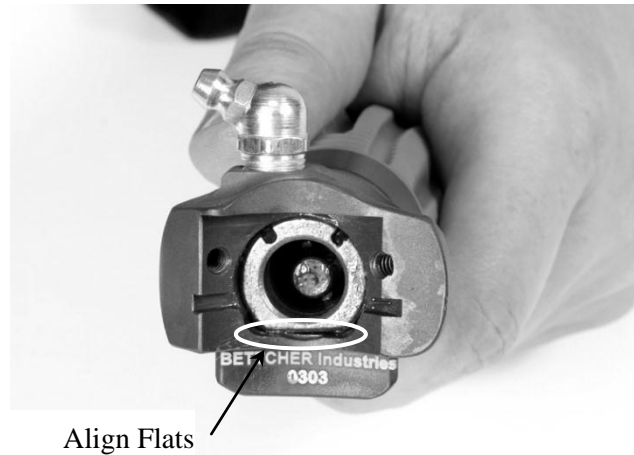




Assembly of TRIMVAC® AMX Handpiece (Continued)

Step 3: Install Bearing:

- Push the handpiece bearing into the frame bore and align the bearing flat with the frame flat.
- The bearing should go in with minimal effort and not require pressing.
- Do not force the bearing in. If the bearing does not go in easily, check frame and bearing for damage or build-up.



Step 4: Install Pinion:

- Insert the pinion into the bearing bore.
- The pinion should go in with minimal effort and not require pressing.
- Do not force the pinion into the bearing. If the pinion does not go in easily, check the bearing and pinion for damage or build-up.
- The pinion should sit flush against the bearing. If it does not, rotate the pinion to seat it flush with the bearing.





Assembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 5: Install Hose Adapter onto Housing:

- Slide the hose adapter into the housing.



TRIMVAC[®] 18AMX



TRIMVAC[®] 45AMX



Assembly of TRIMVAC® AMX Handpiece (Continued)

Step 6: Attach Housing to Frame:

TRIMVAC® 18AMX:

- Set the blade housing with the hose adapter installed on the frame.



- Insert the cover plate into the housing. Align the holes in the cover plate with the holes in the frame.
- Insert the cover retaining screws. Thread the cover retaining screws in, leaving a slight tension to allow for blade adjustment.





Assembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 6: Attach Housing to Frame (Continued):

TRIMVAC[®] 45AMX:

- Insert the cover into the hose adapter and blade housing assembly.



- Set the blade housing on the frame. Make sure both the housing and cover are seated properly.
- While holding the cover plate firmly against the housing and frame, start the two cover retaining screws.
- Thread the cover retaining screws in, leaving a slight tension to allow for blade adjustment.





Assembly of TRIMVAC® AMX Handpiece (Continued)

Step 7: Install Blade:

TRIMVAC® 18AMX:

- Hold the tool with the blade side up.
- Loosen only the left cover retaining screw using the supplied 3/32" hex wrench.

NOTE: *Leave a slight tension on the left cover retaining screw so the blade housing will stay open.*



- Insert a screwdriver into the housing slot.
- Using the frame support point, spread open the housing, just far enough to install the blade.





Assembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 7: Install Blade (Continued):

TRIMVAC[®] 18AMX:

- Carefully insert the blade.



- Loosen the left cover retaining screw so the housing will close.

NOTE: *Be certain that the blade is free to move in the housing. If the blade does not move freely, it may cause the trimmer to overheat.*

- Adjust the housing for proper running clearance.
- When the housing is properly adjusted there will be a slight “left to right” movement, plus a light “up and down” movement.
- If the blade does not move “left to right” and “up and down”, pry the housing open slightly.
- Retighten the cover retaining screws.

NOTE: *Recommended torque of 30-40 lb-in (3.4-4.5 N-m)*





Assembly of TRIMVAC® AMX Handpiece (Continued)

Step 7: Install Blade (Continued):

TRIMVAC® 45AMX:

- Hold the tool with the blade side up.
- Loosen only the left cover retaining screw.

NOTE: *Leave a slight tension on the left cover retaining screw so the blade housing will stay open.*



TRIMVAC® 45AMX:

- Insert a screwdriver into the housing slot.
- Using the frame support point, spread open the housing, just far enough to install the blade.





Assembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 7: Install Blade (Continued):

- Carefully insert the blade.



- Loosen the left cover retaining screw so the housing will close.

NOTE: *Be certain that the blade is free to move in the housing. If the blade does not move freely, it may cause the trimmer to overheat.*

TRIMVAC[®] 45AMX:

- Adjust the housing for proper running clearance.
- If the blade is tight in the housing, adjustments can be made by loosening the left cover retaining screw and slightly spreading open the housing. Check for free movement.
- Retighten the cover retaining screws.

NOTE: *Recommended torque of 30-40 lb-in (3.4-4.5 N-m)*





Assembly of TRIMVAC® AMX Handpiece (Continued)

Step 8: Install Vacuum Hose Bracket:

- Slide the hose bracket onto the power unit.
- Align the flat on the vacuum hose bracket with the lever relief groove on the power unit.
- Tighten the hose bracket screws.



Step 9: Attach Whizard® AirMax MACH 3 Hose to Power Unit:

- Align the pins in the hose assembly with the grooves on the power unit.
- Slide the power unit into the hose assembly.
- Rotate the power unit 90°.
- The lever will rotate toward the bottom of the tool.





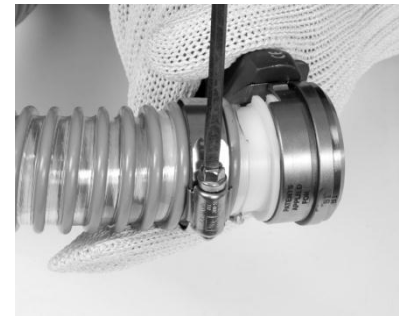
Assembly of TRIMVAC[®] AMX Handpiece (Continued)

Step 10: Attach Vacuum Hose:

- Slide the vacuum hose through the vacuum hose bracket.
- Slide the vacuum hose onto the hose adapter.



- Tighten the hose clamp screw.



- Slide the Whizard[®] AirMax MACH 3 hose into the clips on the vacuum hose.
- Repeat step for each clip.





Power Unit Maintenance

Required Tools for Power Unit Maintenance

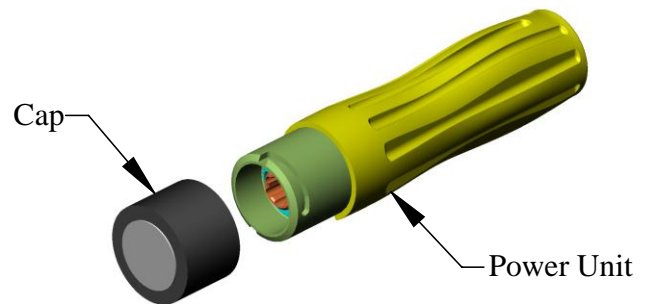
1 – Spanner Wrench (Supplied with your Whizard® AirMax MACH 3 Trimmer)

Disassembly of Power Unit

Step 1: Remove Cap

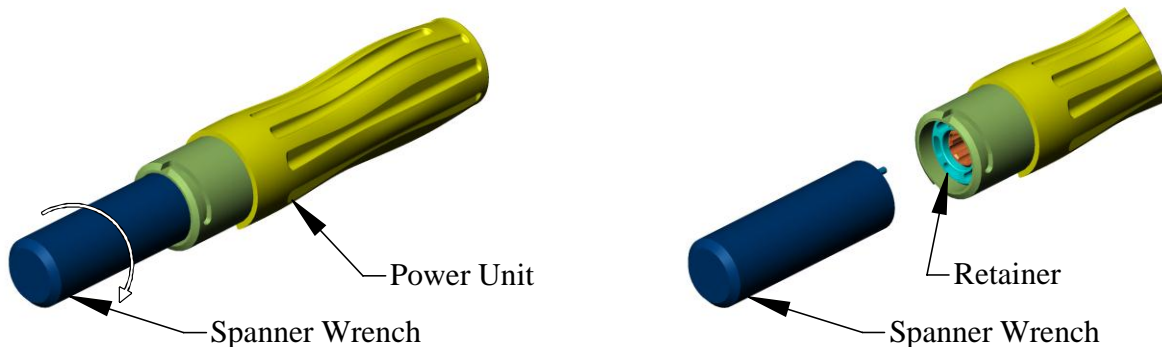
- Remove the cap.

NOTE: *Do not discard the cap.*



Step 2: Unscrew Retainer

- Unscrew the retainer using the supplied spanner wrench. The retainer is a left-handed thread and must be turned to the right (clockwise) to unscrew.

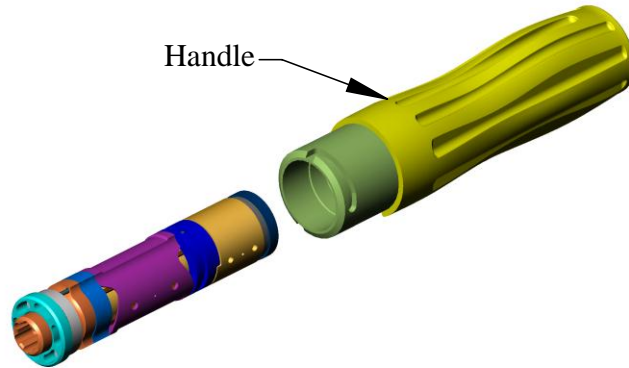




Disassembly of Power Unit (Continued)

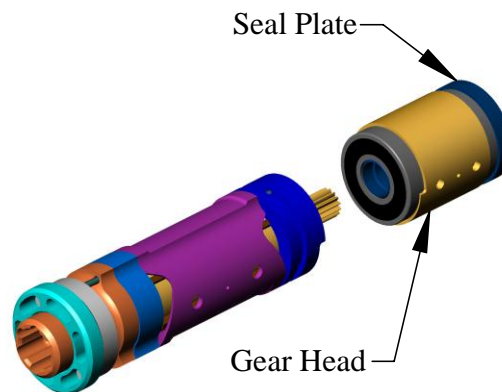
STEP 3: Slide Components Out Of Handle

- Slide the seal plate, gear head, air motor, adapter plate, muffler, and retainer out of the handle.
- The parts should slide out easily. If the parts do not slide out, tap the handle lightly against a plastic block to dislodge the parts.



STEP 4: Separate Seal Plate And Gear Head Assembly

- Separate the seal plate and gear head assembly from the air motor, adapter plate, muffler, and retainer.

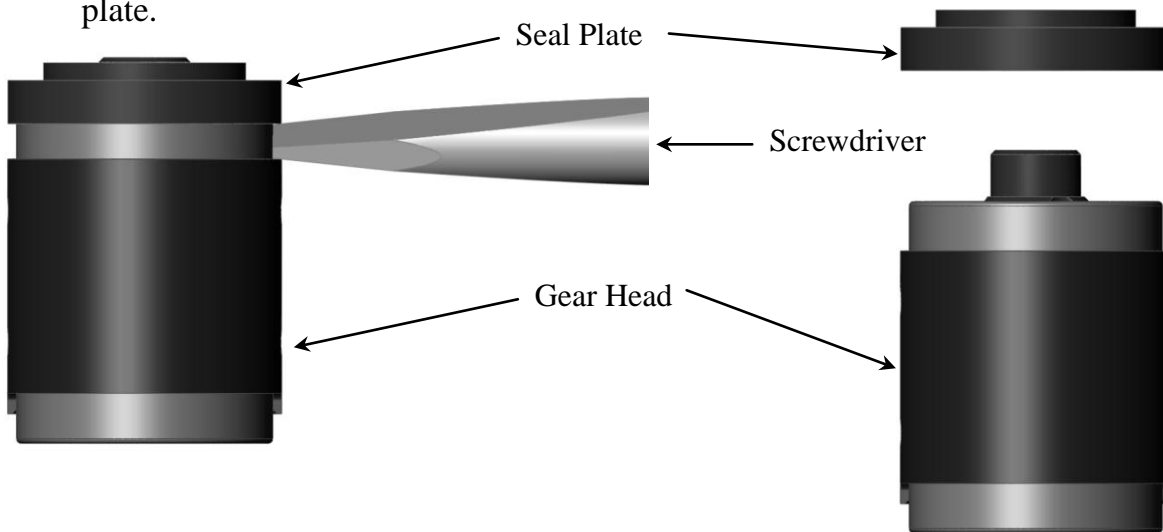




Disassembly of Power Unit (Continued)

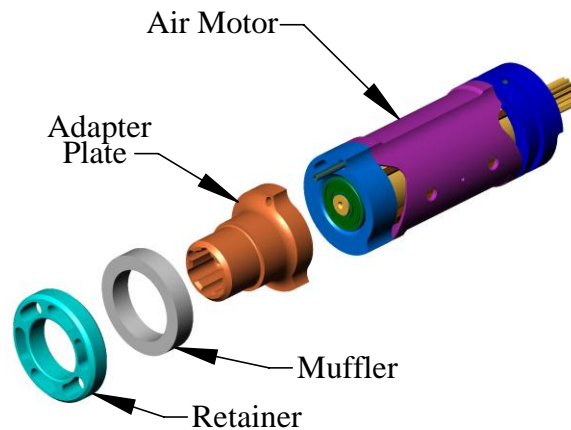
Step 5: Remove Seal Plate

- Remove the seal plate from the top of the gear head.
- Insert a screwdriver between the seal plate and ring gear and twist to remove the seal plate.



Step 6: Separate Remaining Components

- Separate air motor, adapter plate, muffler, and retainer.



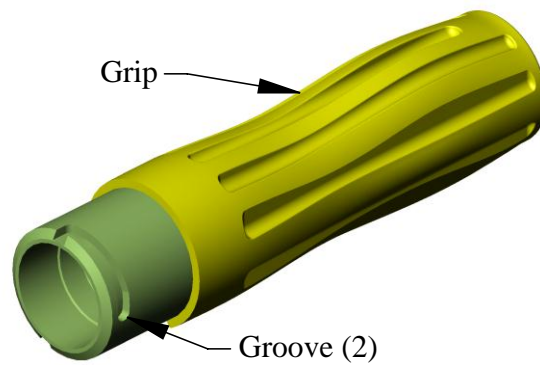


Inspection and Maintenance of Power Unit

Inspection and maintenance should be performed after every 80 hours of use.

Handle

- Clean the handle with warm soapy water and a soft brush. Remove any build up from the grooves. Rinse the handle and dry thoroughly.
- Inspect the handle for the following and replace if damage is detected.
 - Inspect the handle grip for tears, cuts, or wear.
 - Inspect the handle grooves for nicks or wear.
 - Inspect the handle I.D. for dents.

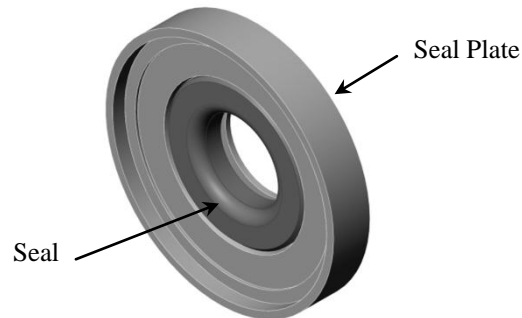




Inspection and Maintenance of Power Unit (Continued)

Seal Plate

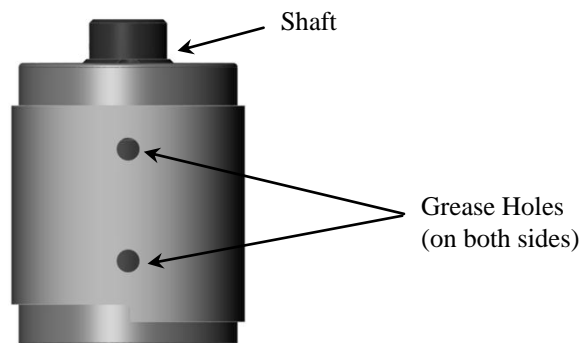
- Inspect the seal plate I.D. and O.D. for nicks, dents or wear. Replace the seal plate if damaged. (See Seal Plate Maintenance).
- Inspect the seal I.D. for nicks, cuts or cracks. Replace the seal if damaged. (See Seal Plate Maintenance).



Gear Head

- Inspect the gear head, by rotating the shaft.
 - If the shaft does not rotate, replace the gear head.
 - If you feel a rough or gritty resistance while rotating the shaft, replace the gear head.
- Re-grease gear head with Max-Z-Lube grease every 80 hours of use.
 - Squeeze grease in through the rotor shaft hole in the bottom of the gear head.
 - Continue to supply grease until clean grease comes out of the grease holes in the ring gear.
 - This method will thoroughly re-grease gear head and clean out debris trapped in the gear head.

NOTE: *Use only Max-Z-Lube high performance lubricant.*

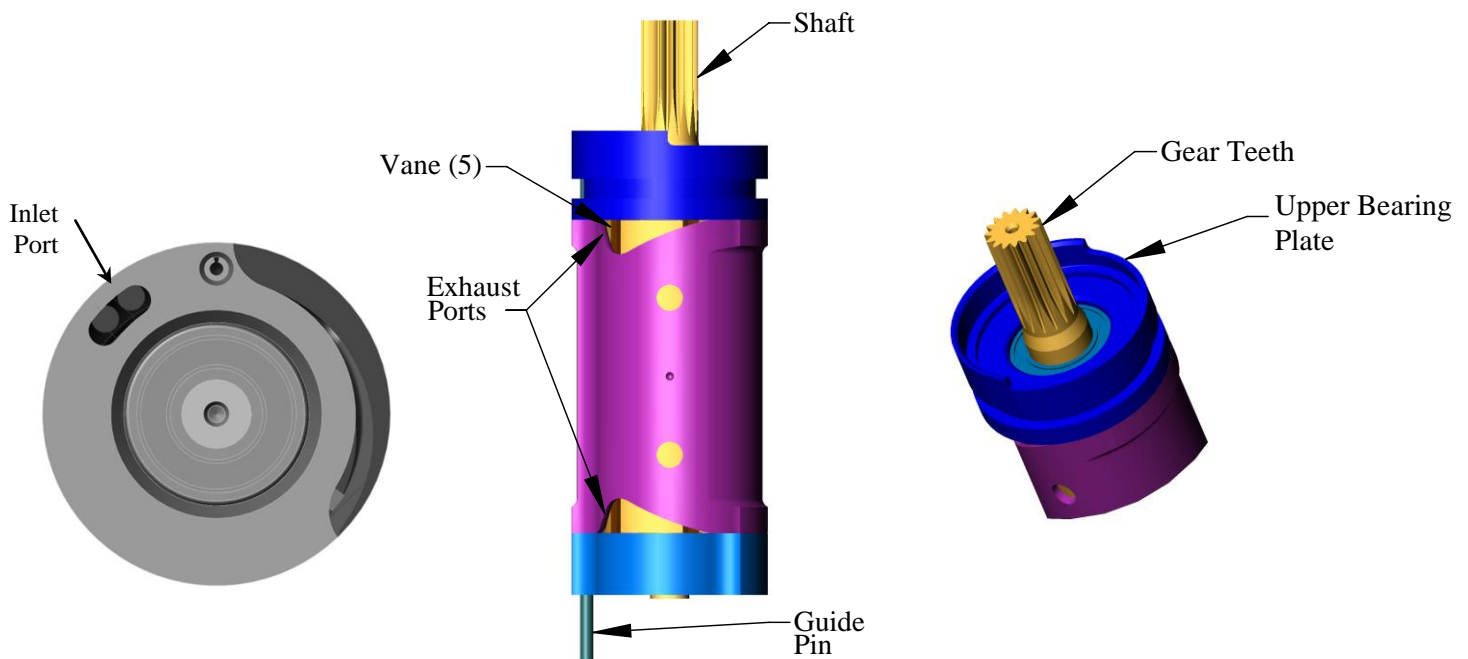




Inspection and Maintenance of Power Unit (Continued)

Air Motor

- Clean all build-up out of the inlet and exhaust ports.
- Inspect the air motor for the following and replace or repair the air motor if damage is detected. (See Air Motor Maintenance Section to repair the air motor).
 - Check for worn or chipped teeth. Worn out teeth are indicated by rounded off or pointed tops on the teeth.
 - Look for cracked or broken gear teeth.
 - Inspect the upper bearing plate I.D. and O.D. for nicks, dents, or wear.
 - Inspect the vanes for chipped or broken tips by looking through the exhaust ports and rotating the shaft to see all five vanes.
 - Inspect the guide pin to verify it is not bent.
 - The shaft should rotate freely.
- Lubricate the air motor with mineral oil through the exhaust ports.

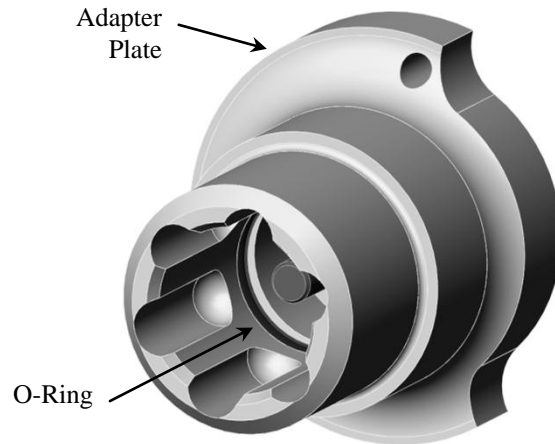




Inspection and Maintenance of Power Unit (Continued)

Adapter Plate

- Inspect the adapter plate for cracks or chips. Replace the adapter plate if damaged.
- Inspect o-ring for nicks, cuts or tears. Replace the o-ring if damaged.



Muffler

- Inspect the muffler for broken or protruding wires. Replace the muffler if damaged.
- Muffler may be cleaned with parts cleaner to remove build-up. Replace muffler if excessive build up prevents proper cleaning.

Note:

Do not clean the muffler while it is installed in the power unit.



Retainer

- Inspect the retainer for cracks or chips. Replace the retainer if damaged.
- Inspect the retainer threads for damage. Replace the retainer if damaged.



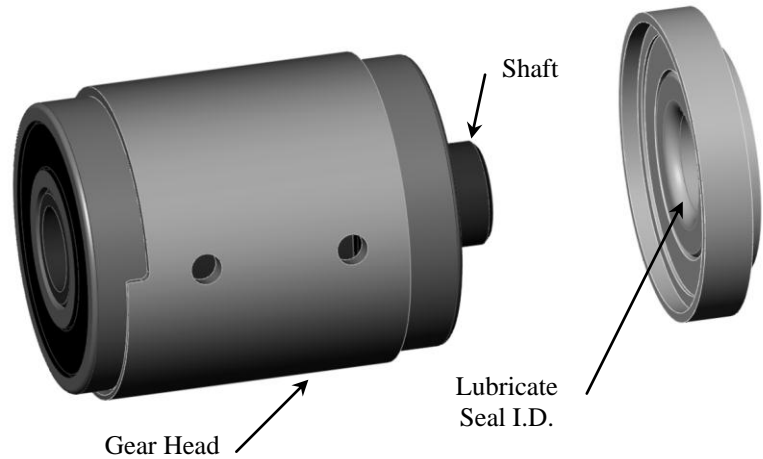
Assembly of Power Unit

Step 1: Install Seal Plate

- Apply a small amount of Max-Z-Lube to the seal I.D.

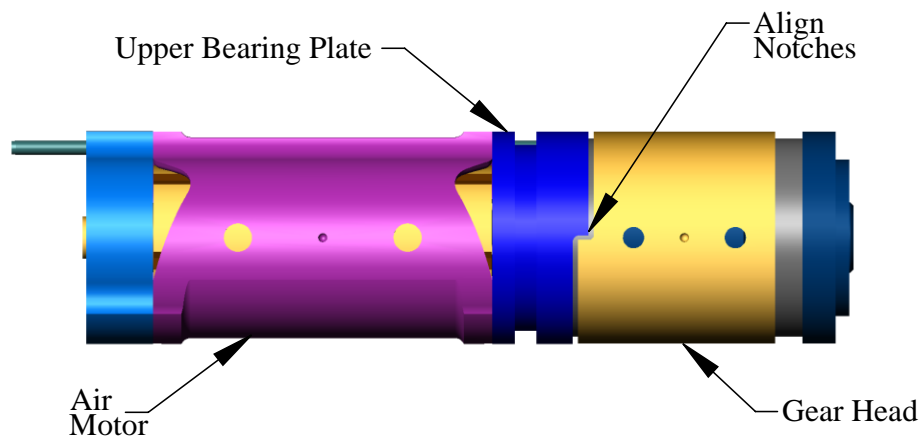
NOTE: Use only Max-Z-Lube high performance lubricant.

- Slide the seal plate over the gear head shaft and onto the gear head bearing.



Step 2: Align Gear Head And Air Motor

- Slide the gear head over the rotor shaft.
- Align the top notches on the gear head and upper bearing plate.
- Seat gear head in top plate.

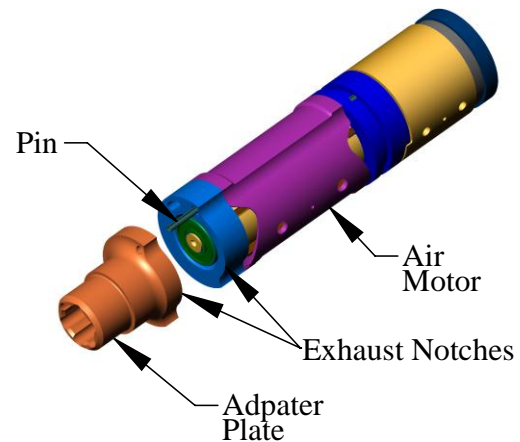




Assembly of Power Unit (Continued)

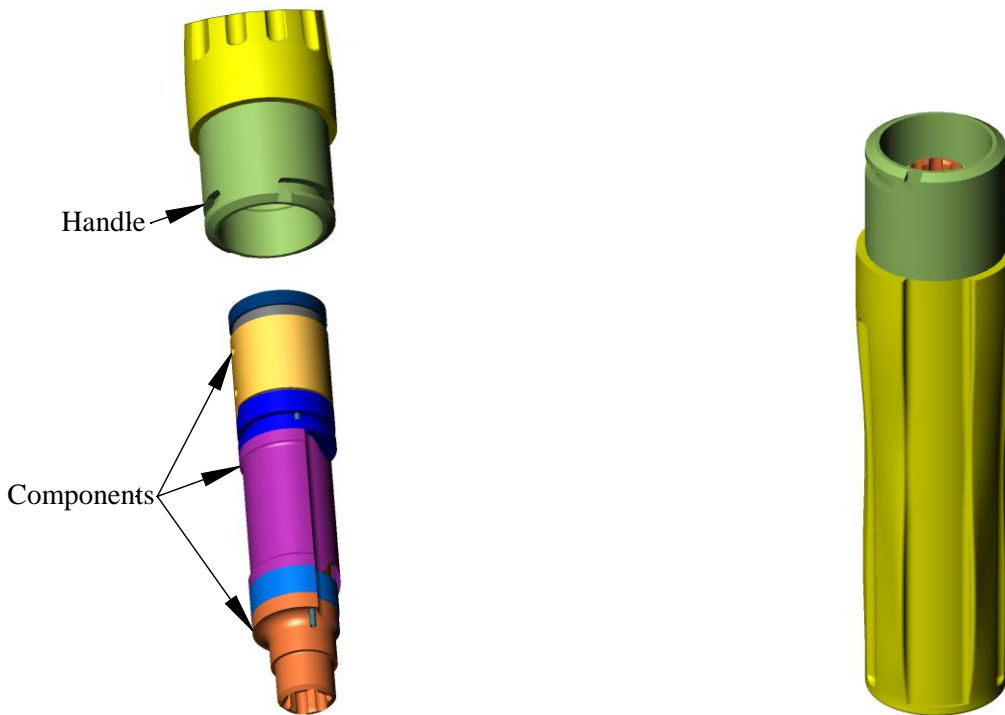
Step 3: Align Adapter Plate

- Slide the adapter plate over the pin in the air motor.
- Align the exhaust notches on the adapter plate and the air motor.



Step 4: Slide Components Into Handle

- Slide components up into the handle.
- Be careful not to let the components separate and become misaligned.
- While holding the components in place, turn the handle over.

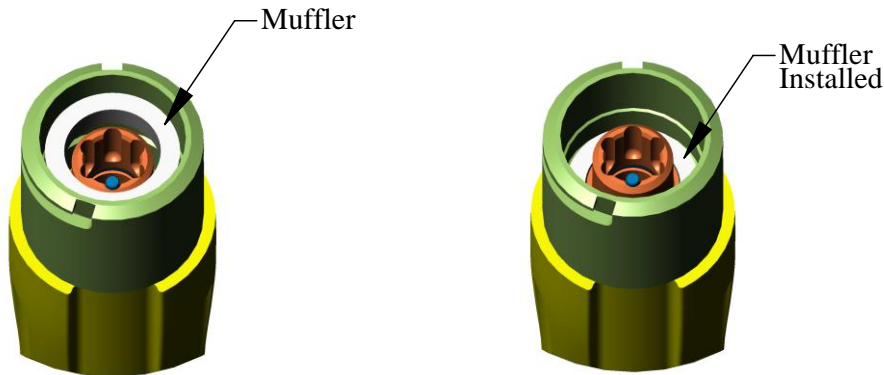




Assembly of Power Unit (Continued)

Step 5: Install Muffler

Slide the muffler into the power unit.

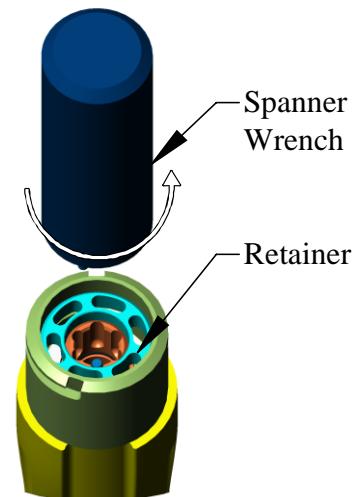


Step 6: Install Retainer

- Screw the retainer firmly into the power unit, using the supplied spanner wrench. The retainer is a left-hand thread, and must be turned to the left (counter clockwise), to tighten.

NOTE: Recommended torque of 25-30 lb-in (2.8-3.4 N-m)

IMPORTANT: Be careful not to cross thread the retainer. This will cause poor motor performance.

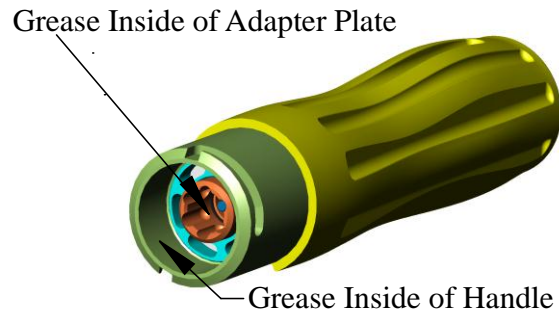




Assembly of Power Unit (Continued)

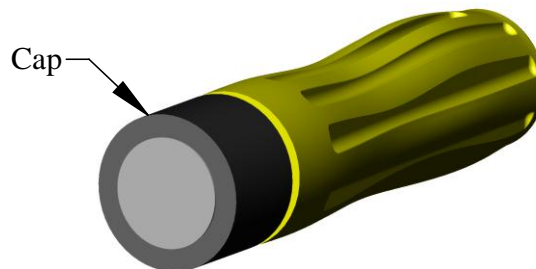
Step 7: Grease Power Unit

- Grease the inside of the handle and the inside of the adapter plate with Max-Z-Lube.



Step 8: Install Cap

- Slide the cap over the end of the power unit.





Seal Plate Maintenance

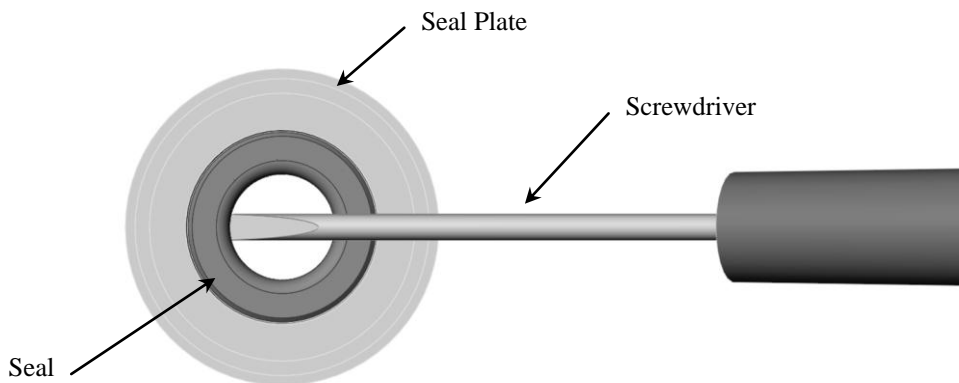
Required Tools for Seal Plate Maintenance

1 – Small flat head screwdriver

Replace Seal

Step 1: Remove Seal

- Use a small flat head screwdriver to pry the seal out of the seal plate.

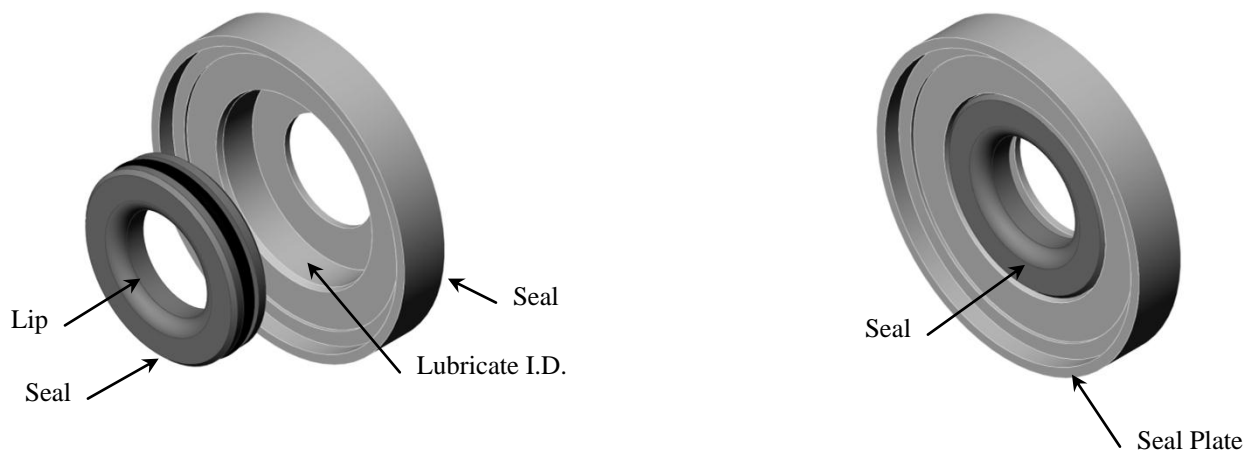


Step 2: Install Seal

- Apply a small amount of Max-Z-Lube to ID of the seal plate.

NOTE: Use only Max-Z-Lube high performance lubricant.

- Press the seal into the seal plate. The lip of the seal should curl into the seal plate.

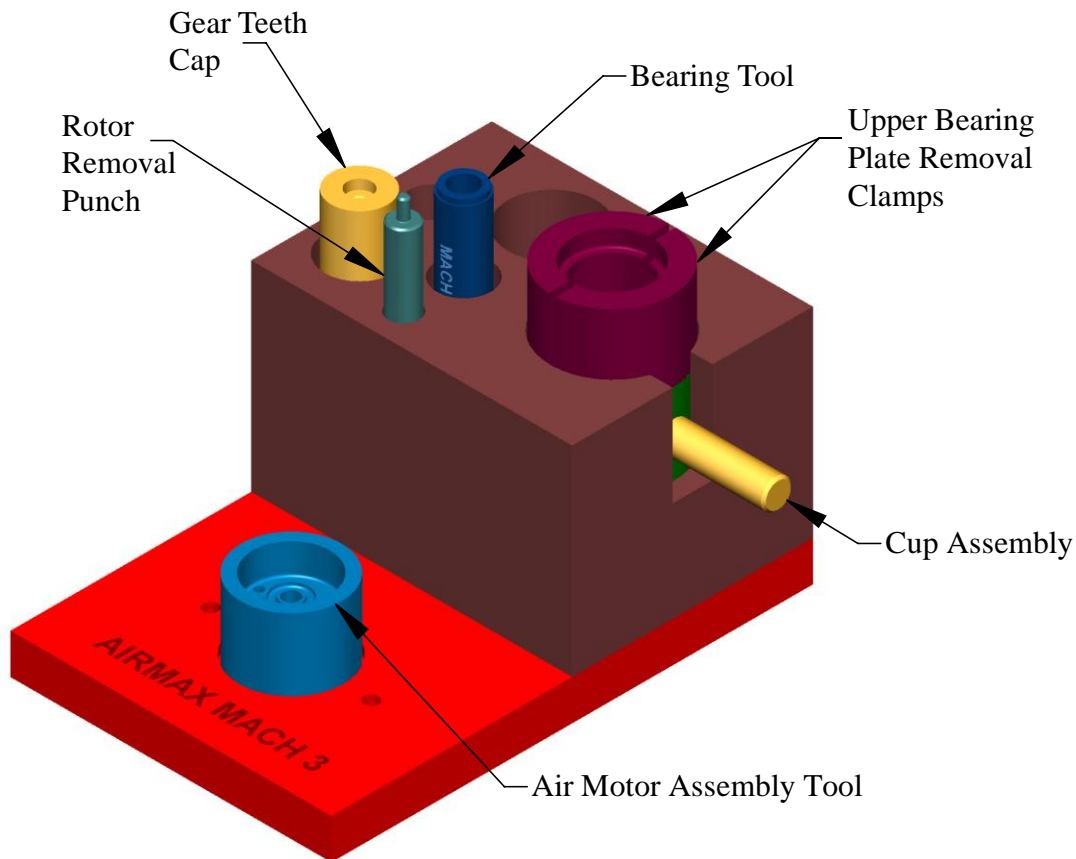




Air Motor Maintenance

Required Tools for Air Motor Maintenance

- 1 – Hammer
- 1 – Whizard® AirMax MACH 3 Maintenance Kit

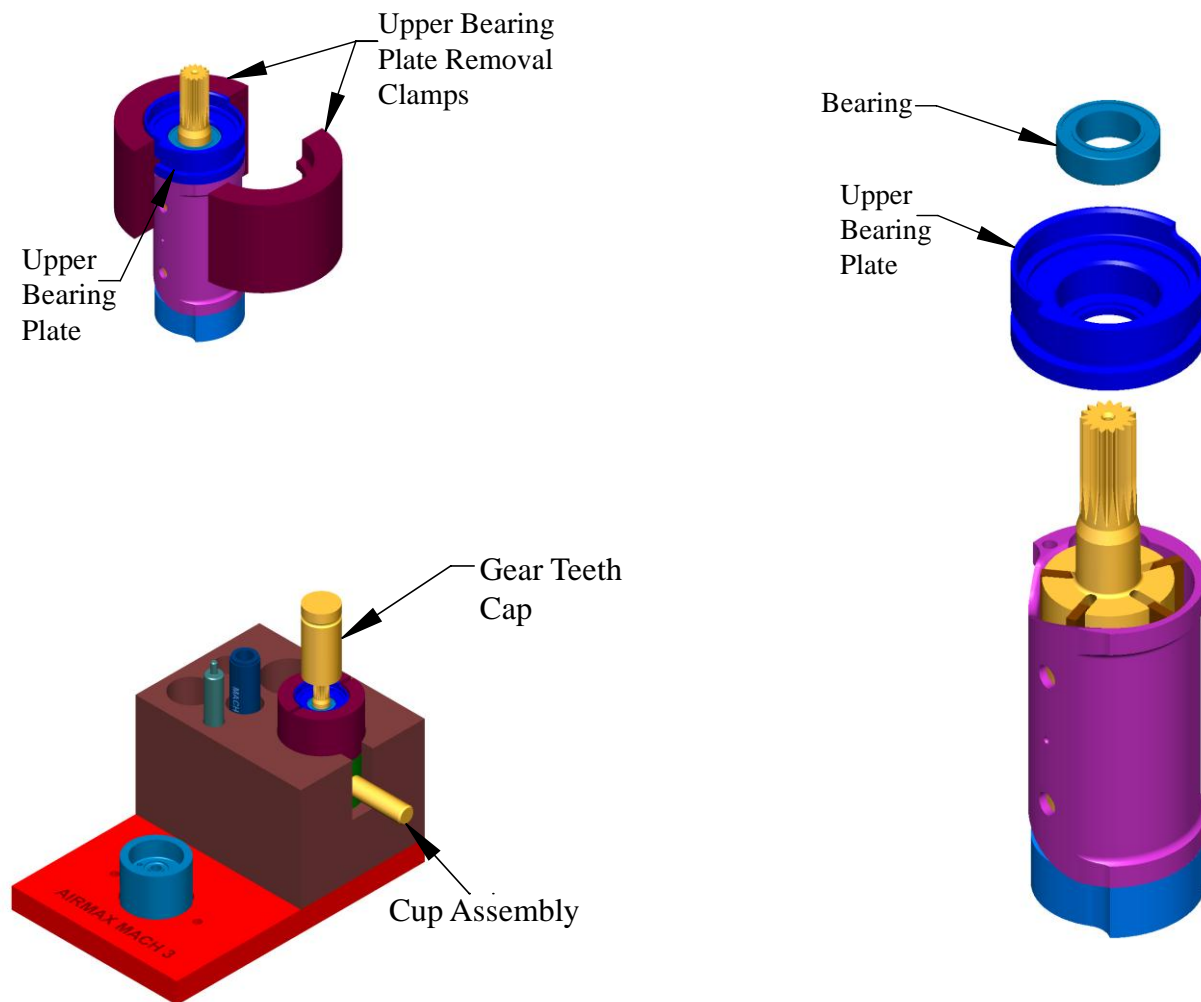




Disassembly of Air Motor

Step 1: Remove Upper Bearing Plate And Bearing

- Place upper bearing plate removal clamps around the upper bearing plate and place this assembly into the cup assembly in the maintenance kit.
- Place gear teeth cap over rotor gear teeth.
- Using a hammer, tap the gear teeth until the rotor is removed from the upper bearing plate.
- Pull the upper bearing out of the upper bearing plate.

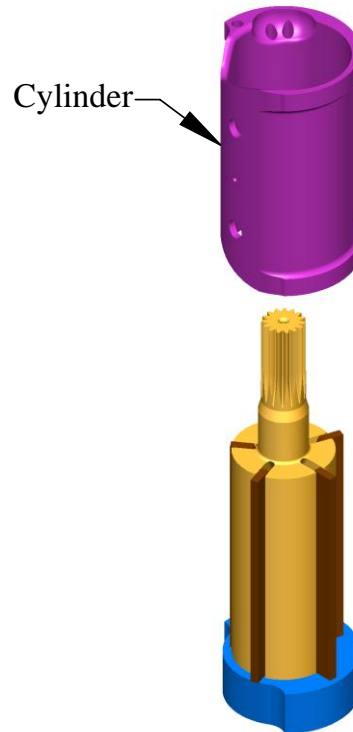




Disassembly of Air Motor (Continued)

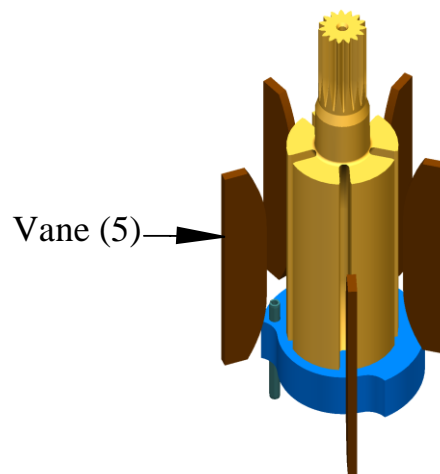
Step 2: Remove Cylinder

- Slide the cylinder off the rotor.



Step 3: Remove Vanes

- Remove the vanes from the slots.

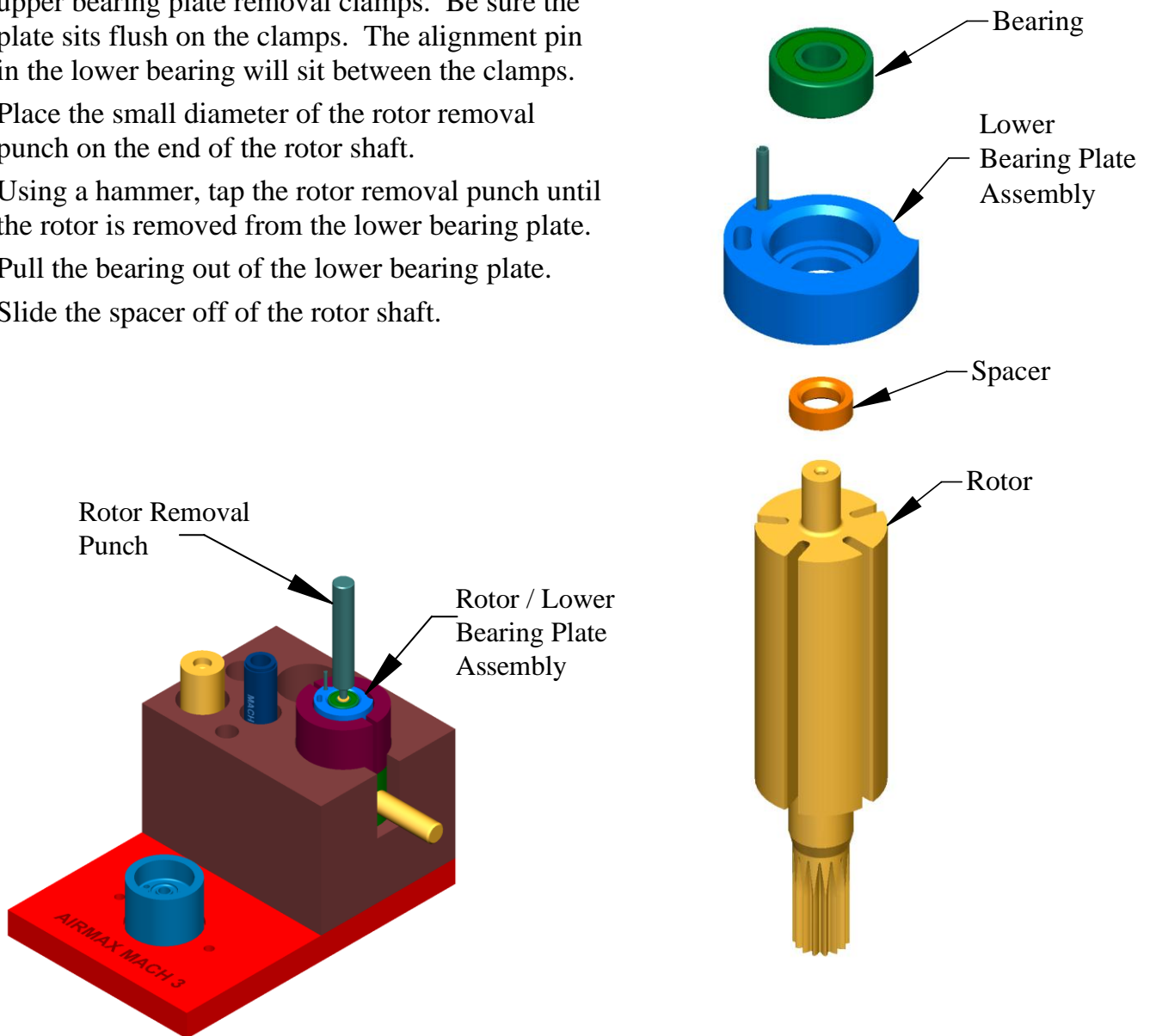




Disassembly of Air Motor (Continued)

Step 4: Remove Lower Bearing Plate

- Set the rotor / lower bearing plate assembly in the upper bearing plate removal clamps. Be sure the plate sits flush on the clamps. The alignment pin in the lower bearing will sit between the clamps.
- Place the small diameter of the rotor removal punch on the end of the rotor shaft.
- Using a hammer, tap the rotor removal punch until the rotor is removed from the lower bearing plate.
- Pull the bearing out of the lower bearing plate.
- Slide the spacer off of the rotor shaft.

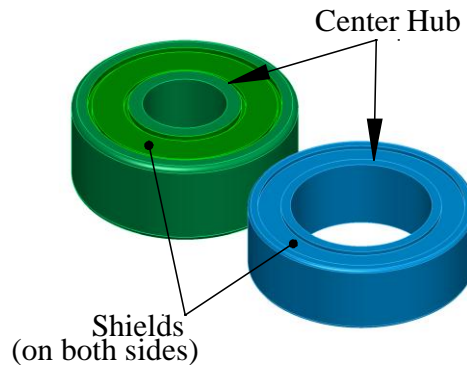




Inspection and Maintenance of Air Motor

Upper and Lower Bearing

- Inspect the shields for dents. If damaged, replace the bearing.
- Rotate the bearing. If you feel a rough or gritty resistance, replace the bearing.
- If the center hub can be moved from side to side, replace the bearing.



Upper Bearing Plate

- Inspect the I.D. and O.D. for nicks, dents, or wear. Replace the upper bearing plate if damaged.
- Inspect the alignment pin to be sure it is not bent. Replace the upper bearing plate if damaged.
- Clean and dry the part thoroughly.

Cylinder

- Inspect the cylinder I.D. for grooves. If the grooves are more than .002" (.05mm) deep, replace the cylinder.
- Clean and dry the part thoroughly.

Vanes

- Inspect the vanes for chipped or broken tips. Replace if damaged.
- Inspect the vanes for grooves. If grooves are more than .010" (.25mm) deep, replace the vanes.
- Inspect the vane height. If the overall vane height is less than .195" (.5mm), replace the vanes.

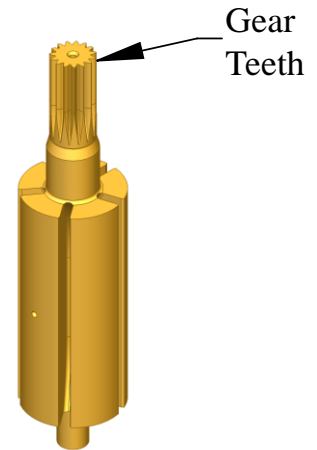
NOTE: *Always replace all five (5) vanes as a set.*



Inspection and Maintenance of Air Motor (Continued)

Rotor

- Inspect the gear teeth for cracked or broken teeth and replace the rotor if damaged.
- Inspect the gear teeth for excessive wear. If the gear teeth are worn to a sharp point, replace the rotor.
- Clean and dry the part thoroughly.



Spacer

- Inspect the spacer for nicks or cracks. Replace if damaged.
- Clean and dry the part thoroughly.

Lower Bearing Plate

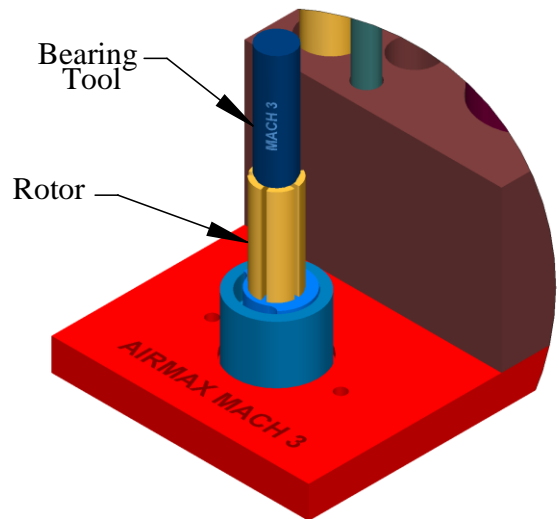
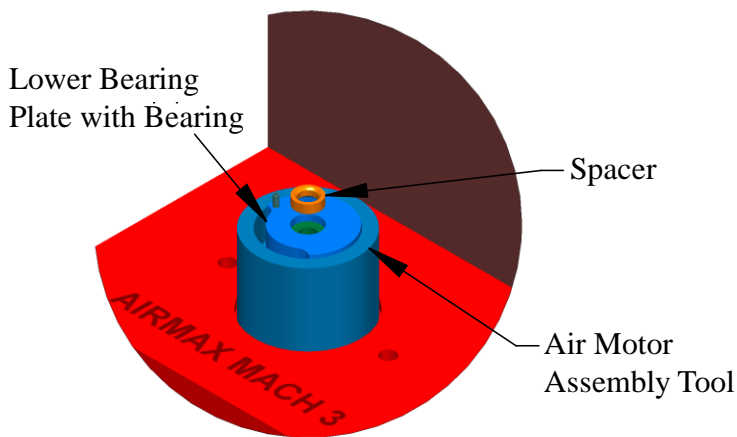
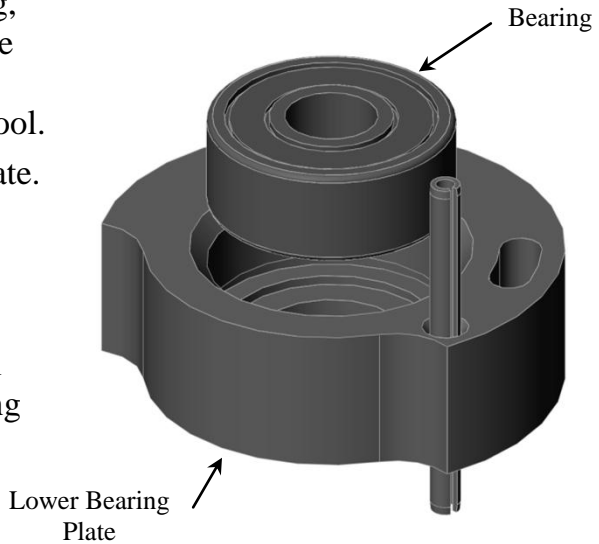
- Inspect the I.D. and O.D. for nicks, dents, or wear. Replace the lower bearing plate if damaged.
- Inspect the alignment pin to be certain it is not bent. Replace the lower bearing plate if damaged.
- Clean and dry the part thoroughly.



Assembly of Air Motor

Step 1: Install Rotor

- Insert the bearing into the lower bearing plate.
- Place the lower bearing plate, with bearing, in the air motor assembly tool. Line up the pin in the lower bearing plate with the clearance hole in the air motor assembly tool.
- Insert the spacer into the lower bearing plate.
- Insert the small shaft of the rotor into the spacer.
- Slide the bearing tool over the rotor shaft.
- Using a hammer, tap the bearing tool until the rotor is fully seated in the lower bearing plate.

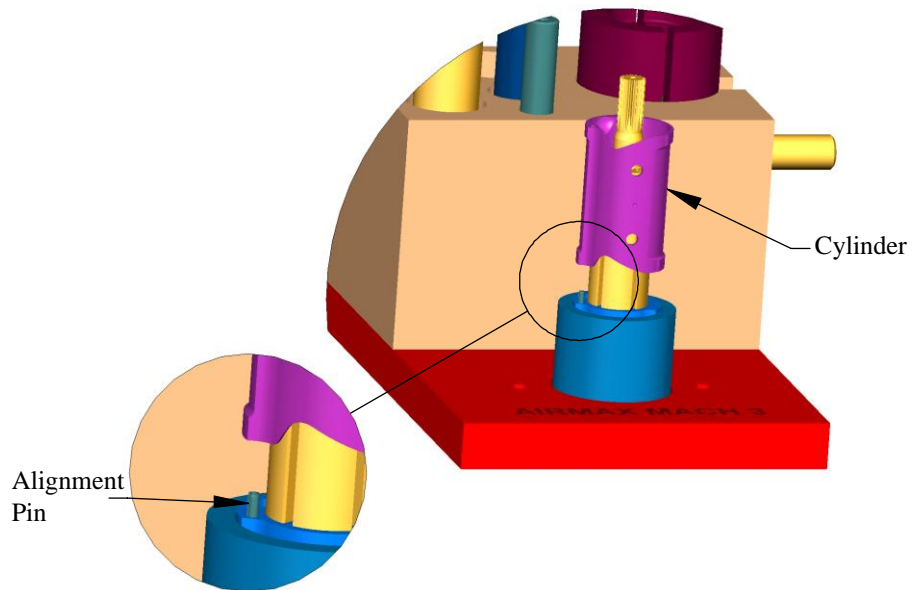




Assembly of Air Motor (Continued)

Step 2: Install Cylinder

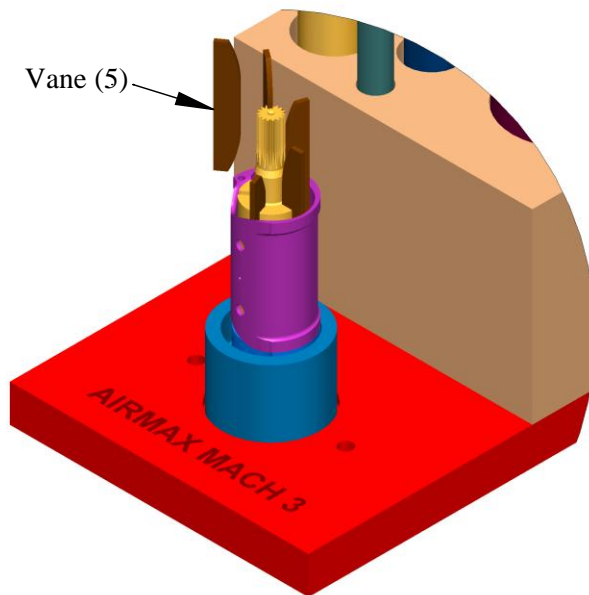
- Align the exhaust channels on the cylinder and lower bearing plate.
- Slide the cylinder over the rotor.
- The alignment pin in lower bearing plate will slide into the alignment hole in the cylinder.



Step 3: Install Vanes

- Slide the vanes (5) into the slots (5).

Note: *Vanesshould be aligned with the curved side towards the rotor center. Vane length should match the length of the rotor slot. Do not use the standard Whizard® AirMax vane kit in the Whizard® AirMax MACH 3.*

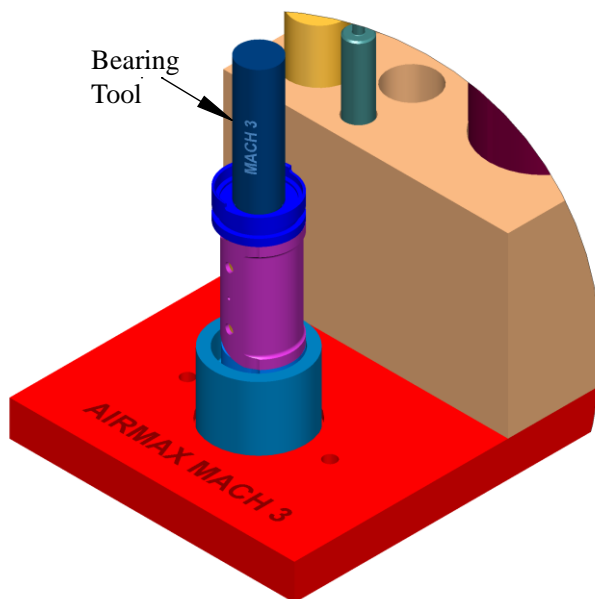
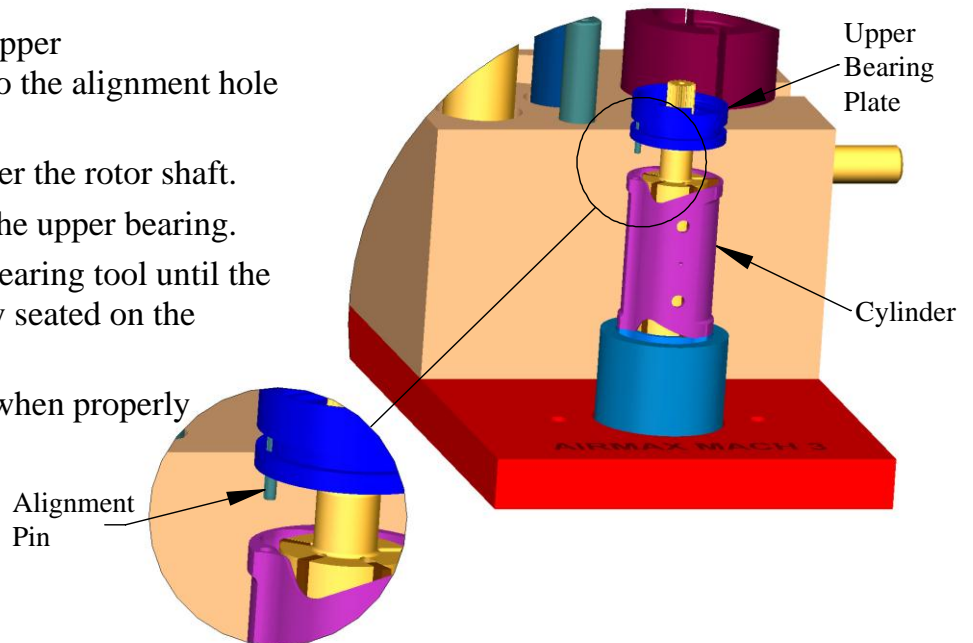




Assembly of Motor (Continued)

Step 4: Install Upper Bearing Plate

- Slide the upper bearing plate over the rotor shaft.
- The alignment pin in the upper bearing plate will slide into the alignment hole in the cylinder.
- Slide the upper bearing over the rotor shaft.
- Place the bearing tool on the upper bearing.
- Using a hammer, tap the bearing tool until the upper bearing plate is fully seated on the cylinder.
- The rotor will spin freely when properly assembled.





Valve and Hose Assembly Maintenance

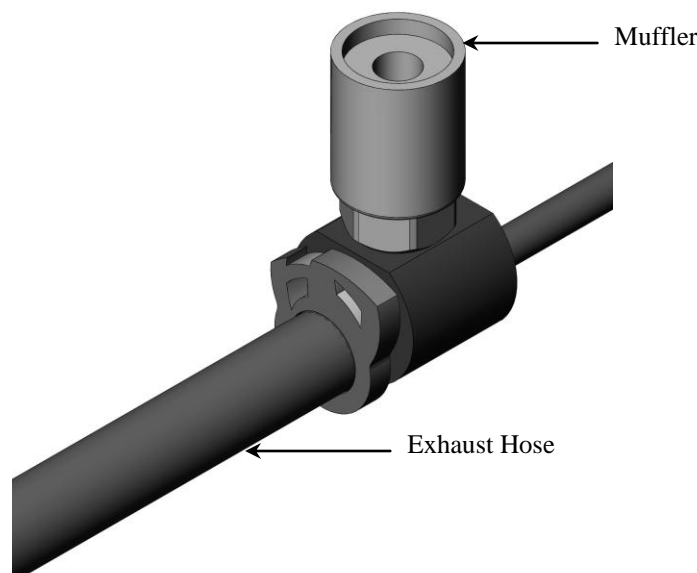
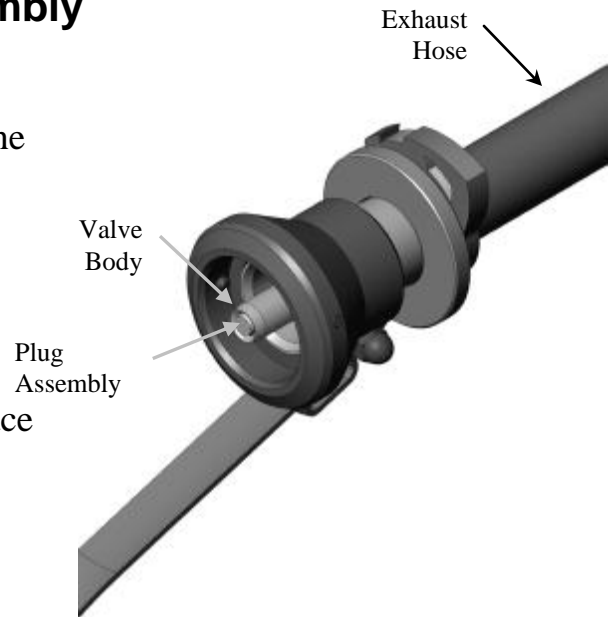
Required Tools for Valve and Hose Assembly Maintenance

- 1 – 1/2" Open End Box Wrench
- 1 – 9/16" Open End Box Wrench

Inspection of Valve and Hose Assembly

Valve and Hose Assembly

- Connect the valve and hose assembly to the FRL at 90-100 psi.
- If air leaks around the plug assembly, replace the valve assembly.
- If the valve body is dented, nicked, or scratched, replace the valve assembly.
- If air can be felt leaving the muffler, replace the hose assembly.
- If the exhaust hose is cut, torn, or nicked, replace the exhaust hose.
- If the muffler is dirty or clogged, replace the muffler.

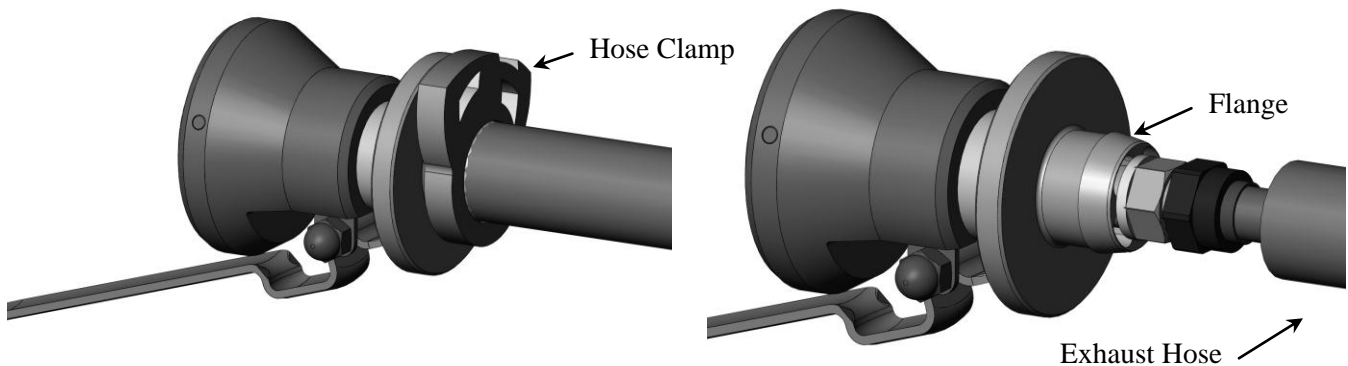




Disassembly of Valve and Hose

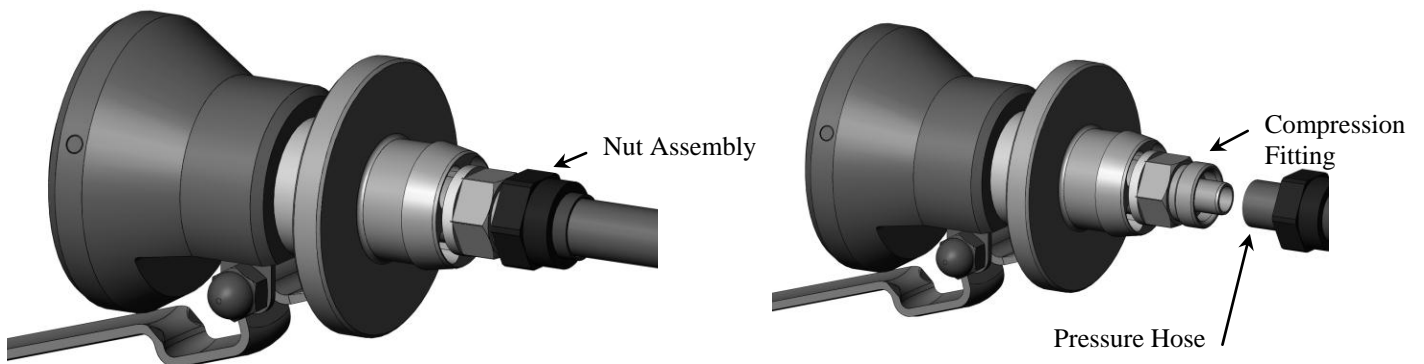
Step 1: Disconnect Exhaust Hose

- Remove the hose clamp.
- Slide the exhaust hose off of the flange.



Step 2: Disconnect Pressure Hose

- Unscrew the nut assembly from the compression fitting.
- Slide the pressure hose off of the compression fitting.

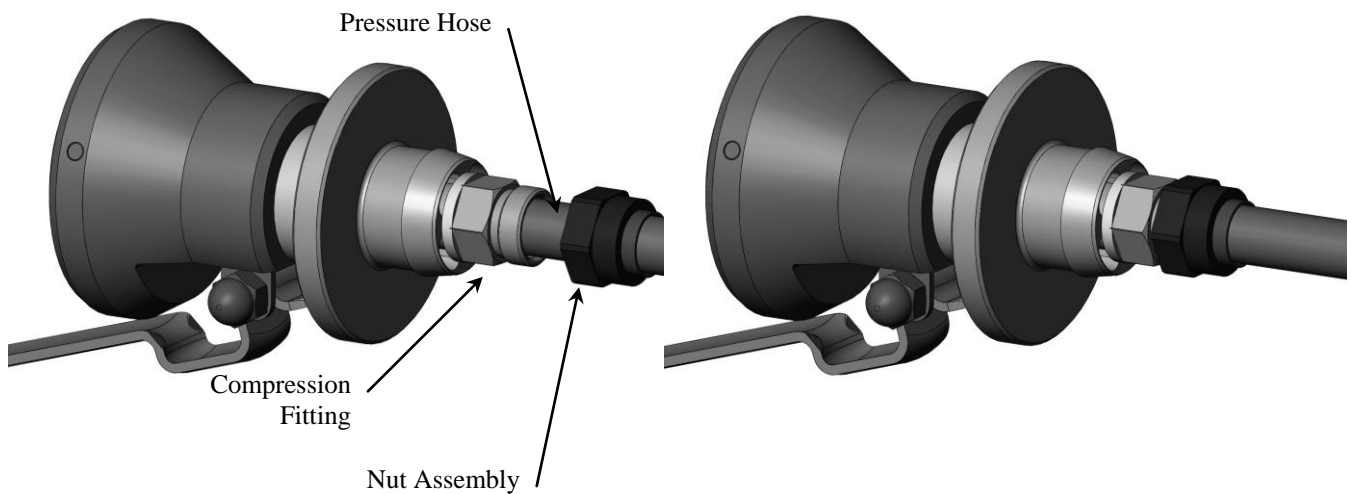




Assembly of Valve and Hose

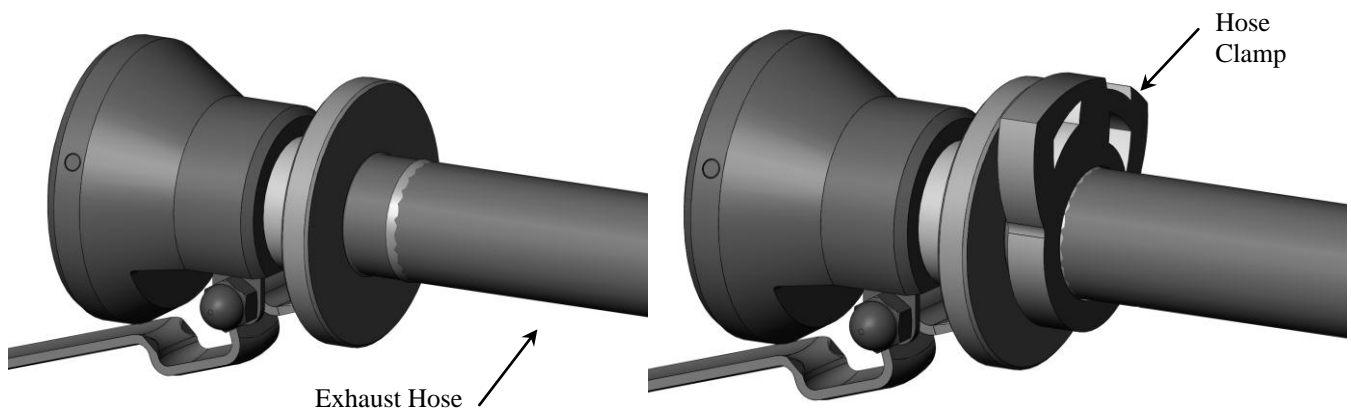
Step 1: Connect Pressure Hose

- Slide the nut assembly over the pressure hose.
- Slide the pressure hose onto the compression fitting.
- Screw the nut firmly onto the compression fitting.



Step 2: Connect Exhaust Hose

- Slide the exhaust hose onto the flange.
- Install hose clamp.





Quick Start Valve and Hose Assembly Maintenance

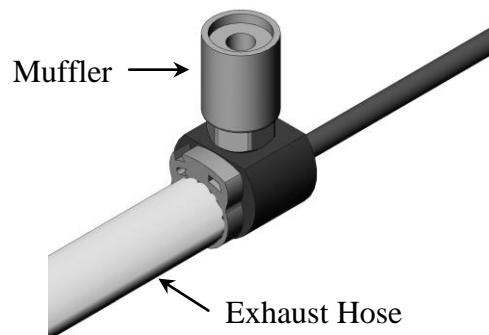
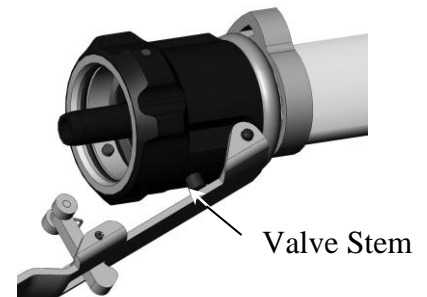
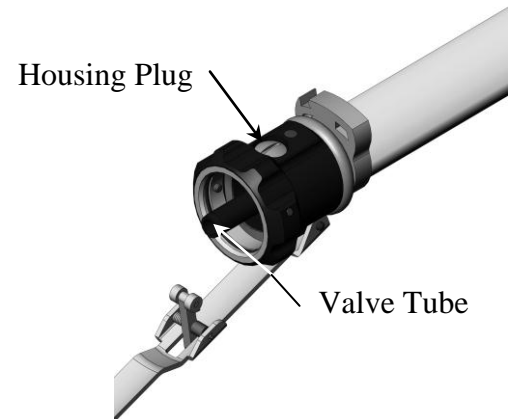
Required Tools for Quick Start Valve and Hose Assembly Maintenance

- 1 – 1/2" Open End Box Wrench
- 1 – 9/16" Open End Box Wrench

Inspection of Valve and Hose Assembly

Quick Start Valve and Hose Assembly

- Connect the valve and hose assembly to the FRL at 90-100 psi.
- If air leaks around the housing plug, replace the o-ring on the housing plug
- If air leaks around the valve stem, replace the lower valve stem o-ring.
- If air leaks through the valve tube, replace the upper valve stem o-ring.
- If replacing the valve stem o-rings does not fix the air leak, replace the valve body assembly
- If the valve tube is dented, nicked, or scratched, replace the valve body assembly.
- If air can be felt leaving the muffler, replace the hose assembly.
- If the exhaust hose is cut, torn, or nicked, replace the exhaust hose.
- If the muffler is dirty or clogged, replace the muffler.

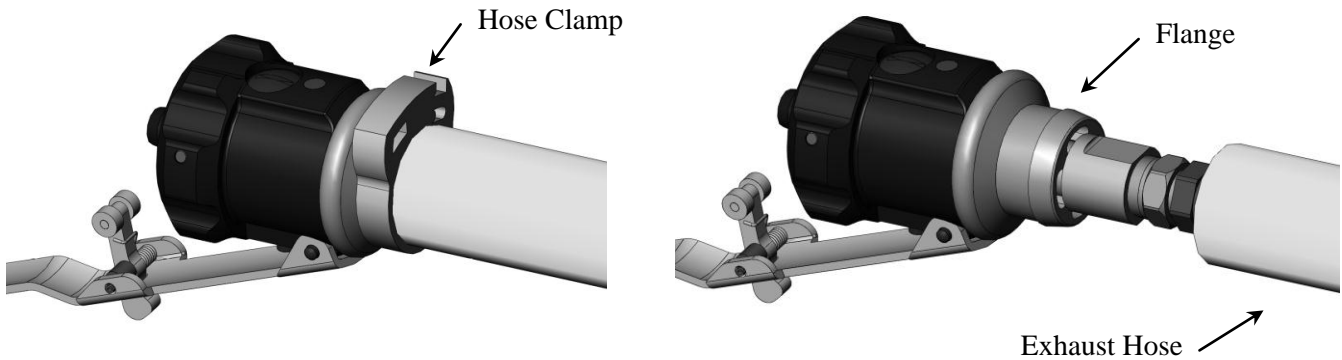




Disassembly of Quick Start Valve and Hose

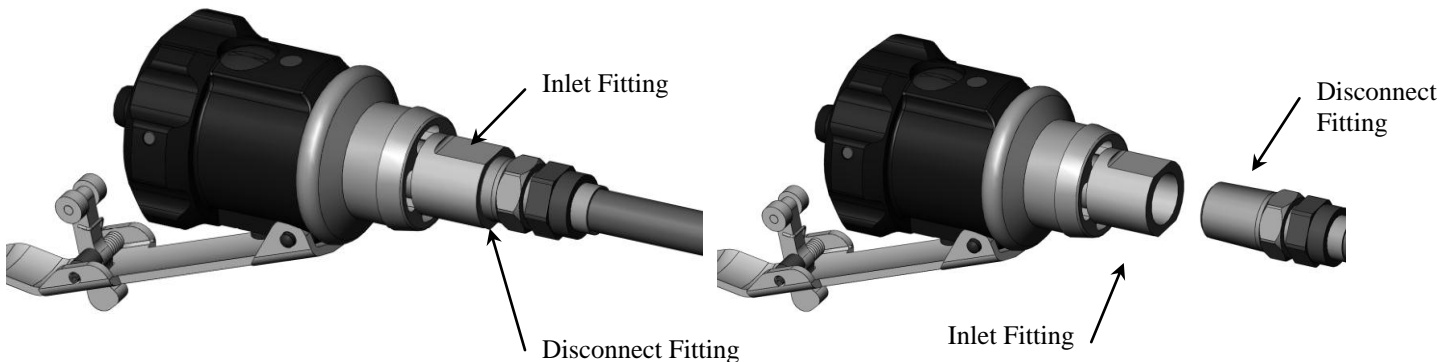
Step 1: Disconnect Exhaust Hose

- Remove the hose clamp.
- Slide the exhaust hose off of the flange.



Step 2: Disconnect Pressure Hose

- Unscrew the disconnect fitting from the inlet fitting.

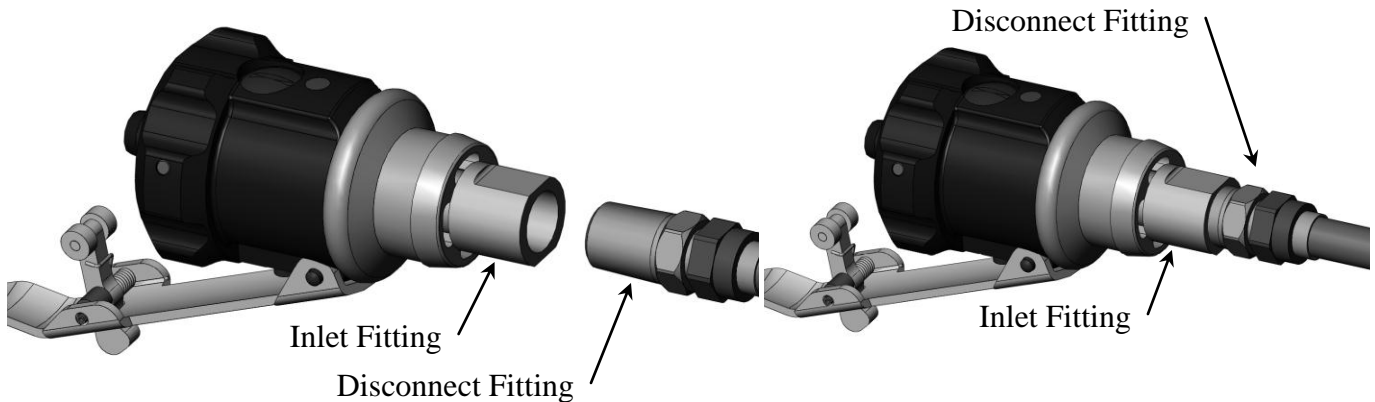




Assembly of Quick Start Valve and Hose

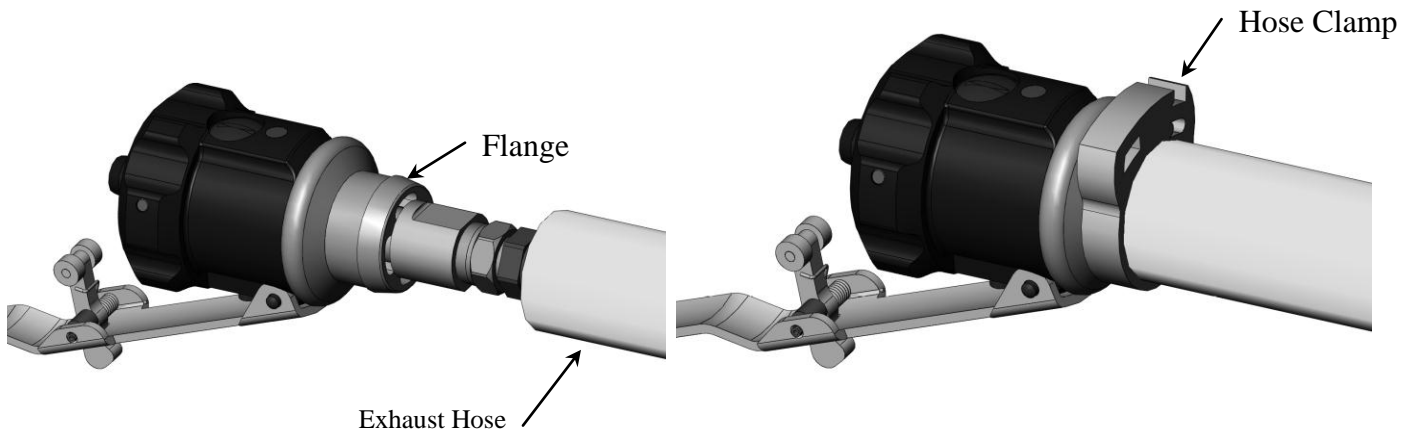
Step 1: Connect Pressure Hose

- Screw the disconnect fitting into the inlet fitting.



Step 2: Connect Exhaust Hose

- Slide the exhaust hose onto the flange.
- Install the hose clamp.





Fault Detection and Correction

PROBLEM	PROBABLE CAUSE	REMEDY
Handpiece Vibration	Handpiece bearing worn	Replace bearing
	Pinion gear worn	Replace pinion
	Teeth on pinion worn	Replace pinion
	Blade too tight in blade housing	Adjust blade housing
	Product build-up	Clean trimmer
Handpiece Hot	Pinion gear tight in handpiece bearing	Clean corrosion from the handpiece bearing and lubricate, or replace
	Blade tight in blade housing	Adjust blade housing
	Handpiece bearing not installed correctly (No clearance between face of pinion gear and blade housing) causing mechanical bind	Reinstall the bearing correctly.
	Power Unit seal worn (Air blowing through front of Power Unit)	Replace Seal and O-Ring in Power Unit
Blade Will Not Rotate	Blade housing is too tight	Adjust blade housing
Blade Skips	Blade too loose in blade housing	Adjust blade housing
Dull Blade	Improperly sharpened blades will cause loss of production, increase wear of parts, and operator fatigue	Sharpen blade with a Whizard® Model 210, Whizard® 214 Blade Sharpener or Bettcher® AutoEdge
Optional Thumb Support Rotates	Anti-rotation rib has broken off	Replace thumb support



Fault Detection and Correction (Continued)

PROBLEM	PROBABLE CAUSE	REMEDY
Motor Does Not Run	Air supply hose leaks	Replace hose assembly
	Air supply pressure is too low	Set air pressure to 90-100 psi
	Retainer is cross threaded	Remove retainer and screw in properly
	Adapter plate is damaged	Replace adapter plate
	Air motor bearings are seized	Replace air motor or bearing
	Vanes are broken or worn	Replace all 5 vanes
	Gear head is seized	Replace gear head
Motor Runs but Blade Does Not Turn	Teeth on pinion worn	Replace pinion
	Teeth on blade worn	Replace blade
	Drive adapter worn	Replace drive adapter
	Drive adapter missing	Install drive adapter
	Motor and gear head not engaged	Properly engage air motor and gear head
	Teeth on rotor worn	Replace air motor or rotor
	Gear head worn	Replace gear head
	Head attachment screw loose	Tighten head attachment screw



Fault Detection and Correction (Continued)Whizard®

PROBLEM	PROBABLE CAUSE	REMEDY
Loss of Power	Air pressure too low	Set air pressure to 90-100 psi (6.2-6.9 bar)
	Mineral oil is not being supplied to tool	Fill lubricator (oiler)
	Too much water in the air line	Replace filter
		Drain filter bowl
		Drain water traps
		Replace filter
	Blade tight in blade housing	Adjust blade housing
	Drive adapter worn	Replace drive adapter
	Motor and gear head not engaged	Properly engage air motor and gear head
	Teeth on rotor worn	Replace air motor or rotor
	Gear head worn	Replace gear head
	Gear head not properly greased	Grease gear head
	Air supply hose leaks	Replace hose assembly
	Retainer is cross threaded	Remove retainer and screw in properly
	Adapter plate is damaged	Replace adapter plate
Vanes are broken or worn	Replace all 5 vanes	
Muffler in power unit is clogged	Replace muffler	
Incorrect vane kit in the air motor.	Use vane kit for Whizard® AirMax MACH 3.	



Section 6

Cleaning

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Periodic Cleaning During Use

Light rinsing during operation is recommended.

Thorough rinsing at each break is highly recommended to improve tool performance.

Cleaning after Daily Use

If handpiece is removed from hose assembly, install cap to prevent water and debris from entering the motor during cleaning.

Fully disassemble the Whizard[®] AirMax MACH 3 trimmer head assembly and clean each part thoroughly with a brush and cleaner. For best results, clean the Whizard[®] AirMax MACH 3 trimmer with Bettcher[®] **EXTRA** Heavy Duty Cleaner, diluted according to the directions on the container. After cleaning, rinse each part thoroughly with water and dry. Assemble the head assembly per instructions in Section 5.

Cleaning Solutions

Avoid the use of aggressive cleaning products and all cleaning products containing NaOH (sodium hydroxide) as they will damage the handpiece.



Section 7

Service Parts

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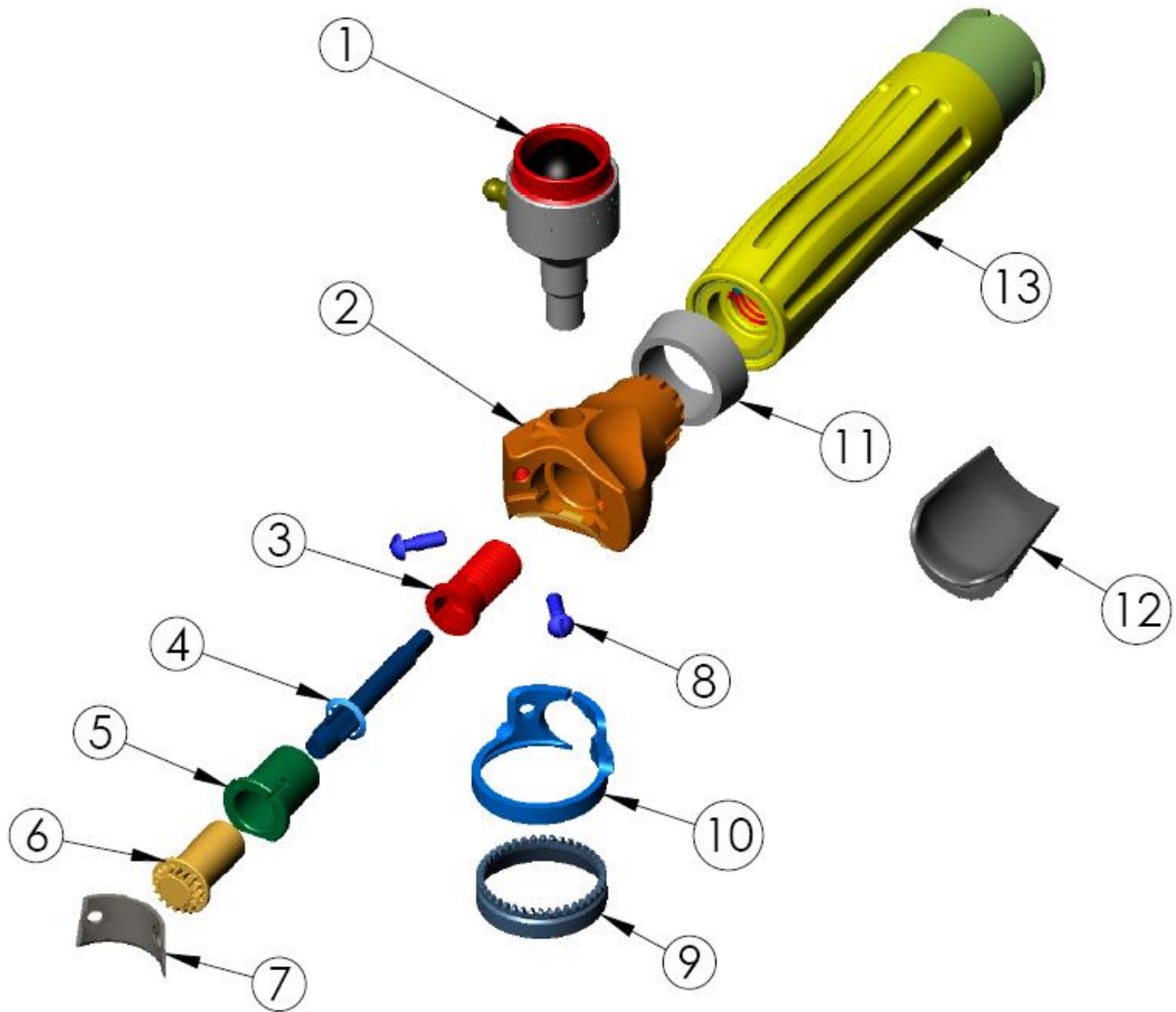
BETTCHER INDUSTRIES, INC. PROUDLY
 MANUFACTURES QUALITY PARTS FOR YOUR
 BETTCHER EQUIPMENT. FOR OPTIMUM
 PERFORMANCE OF YOUR BETTCHER
 EQUIPMENT, USE ONLY PARTS MANUFACTURED
 BY BETTCHER INDUSTRIES, INC.



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350 Whizard® AirMax MACH 3 Head Assembly



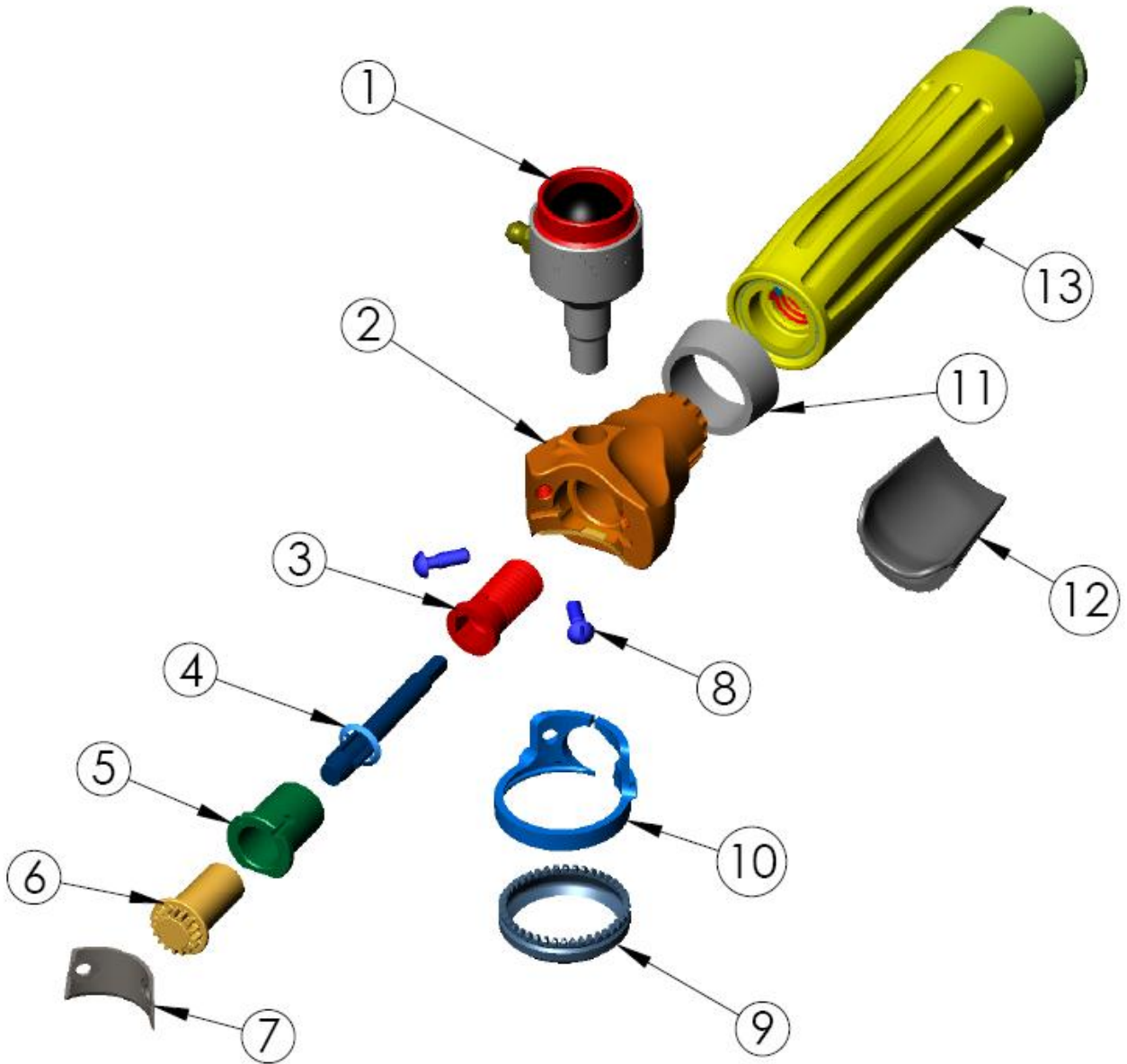


350 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	350 AIRMAX MACH 3 RH	350 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184139	184140	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184143	184144	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183651	183651	1
7	Cover	183648	183648	1
8	Cover Retaining Screw	183703	183703	2
9	Blade	183646	183646	1
10	Blade Housing	183645	183645	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



360 Whizard® AirMax MACH 3 Head Assembly



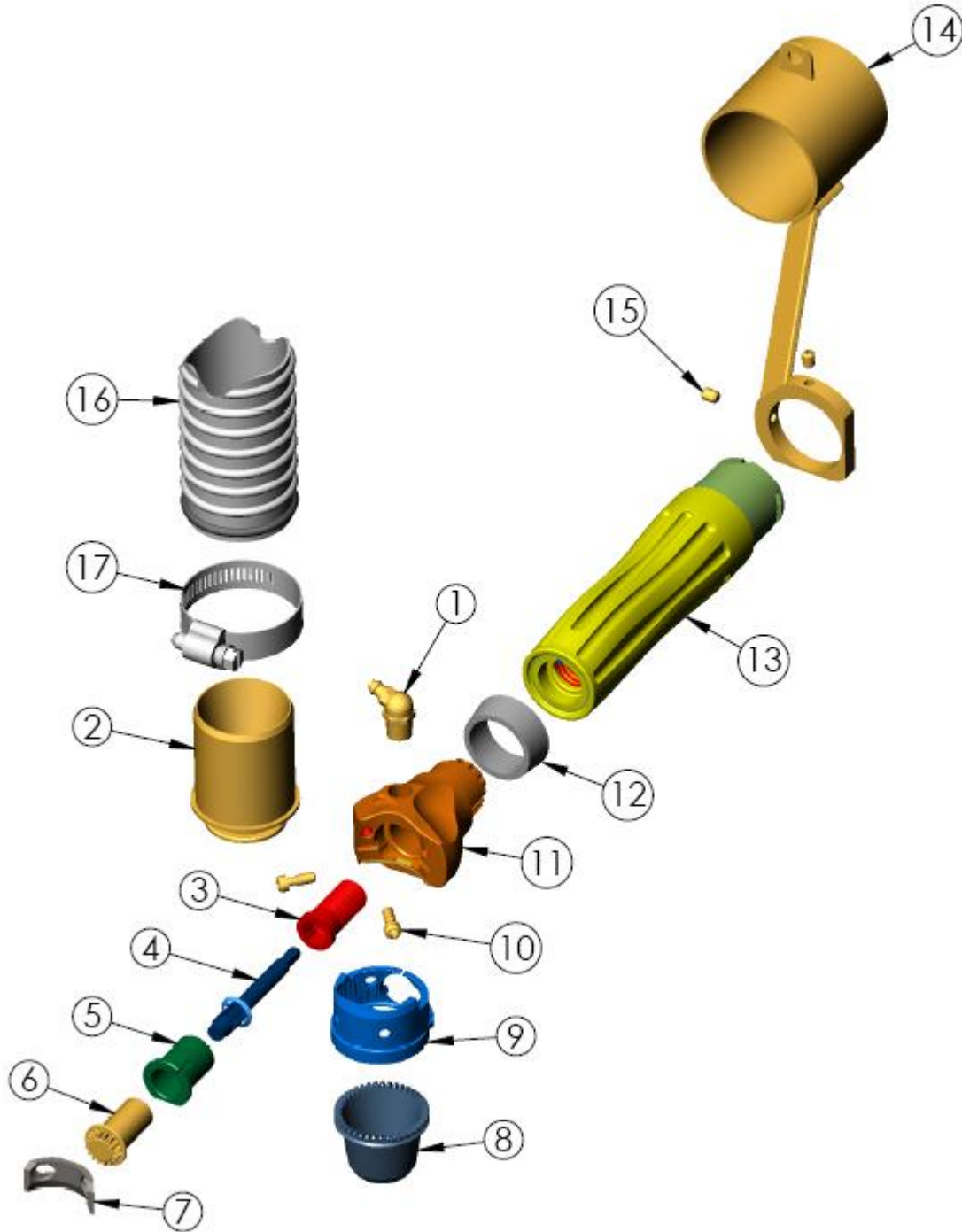


360 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	360 AIRMAX MACH 3 RH	360 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184141	184142	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184143	184144	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183651	183651	1
7	Cover	183648	183648	1
8	Cover Retaining Screw	183703	183703	2
9	Blade	183647	183647	1
10	Blade Housing	183645	183645	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



Whizard® TRIMVAC® 18AMX Head Assembly



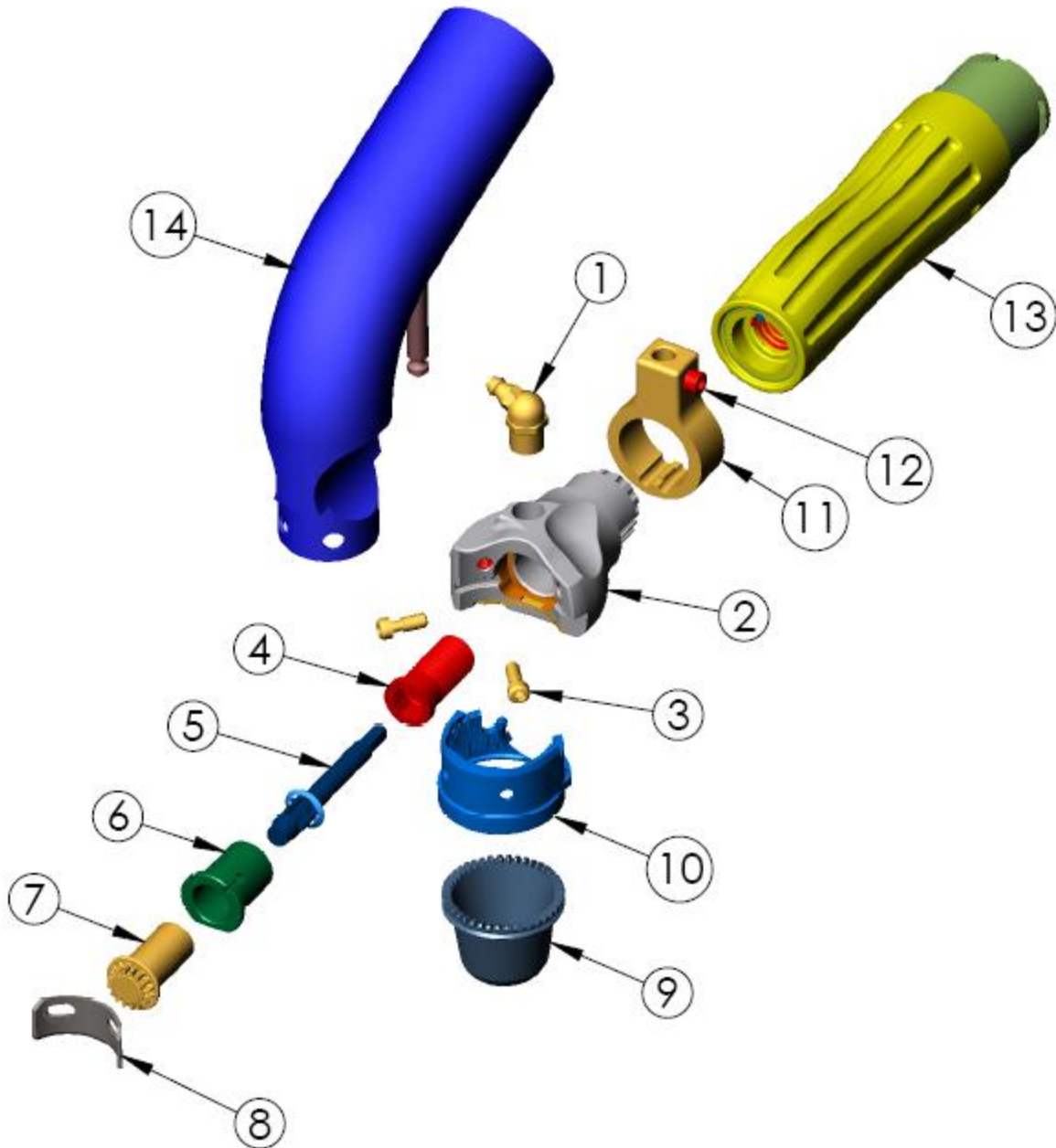


Whizard® TRIMVAC® 18AMX Head Assembly (Continued)

ITEM	DESCRIPTION	TRIMVAC® 18AMX	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	184317	
1	Grease Fitting	125590	1
2	Hose Adapter	184322	1
3	Attachment Screw	184119	1
4	Drive Adapter Assembly	184120	1
5	Bearing	183060	1
6	Pinion	183651	1
7	Cover	184477	1
8	Blade	184319	1
9	Blade Housing	184478	1
10	Cover Retaining Screw	184434	2
11	Frame	184143	1
12	Handle Spacer Ring	183120	1
13	Power Unit – Small Handle (Yellow)	185923	1
	– Small Handle (Sky Blue)	185924	1
14	Vacuum Hose Bracket Kit (Includes Item 15)	184344	1
15	Set Screw	120053	2
16	Vacuum Hose Assembly (Shown Cut Off for Picture) (Includes Item 17)	184358	1
17	Hose Clamp	184359	1



Whizard® TRIMVAC® 18AMX B Head Assembly



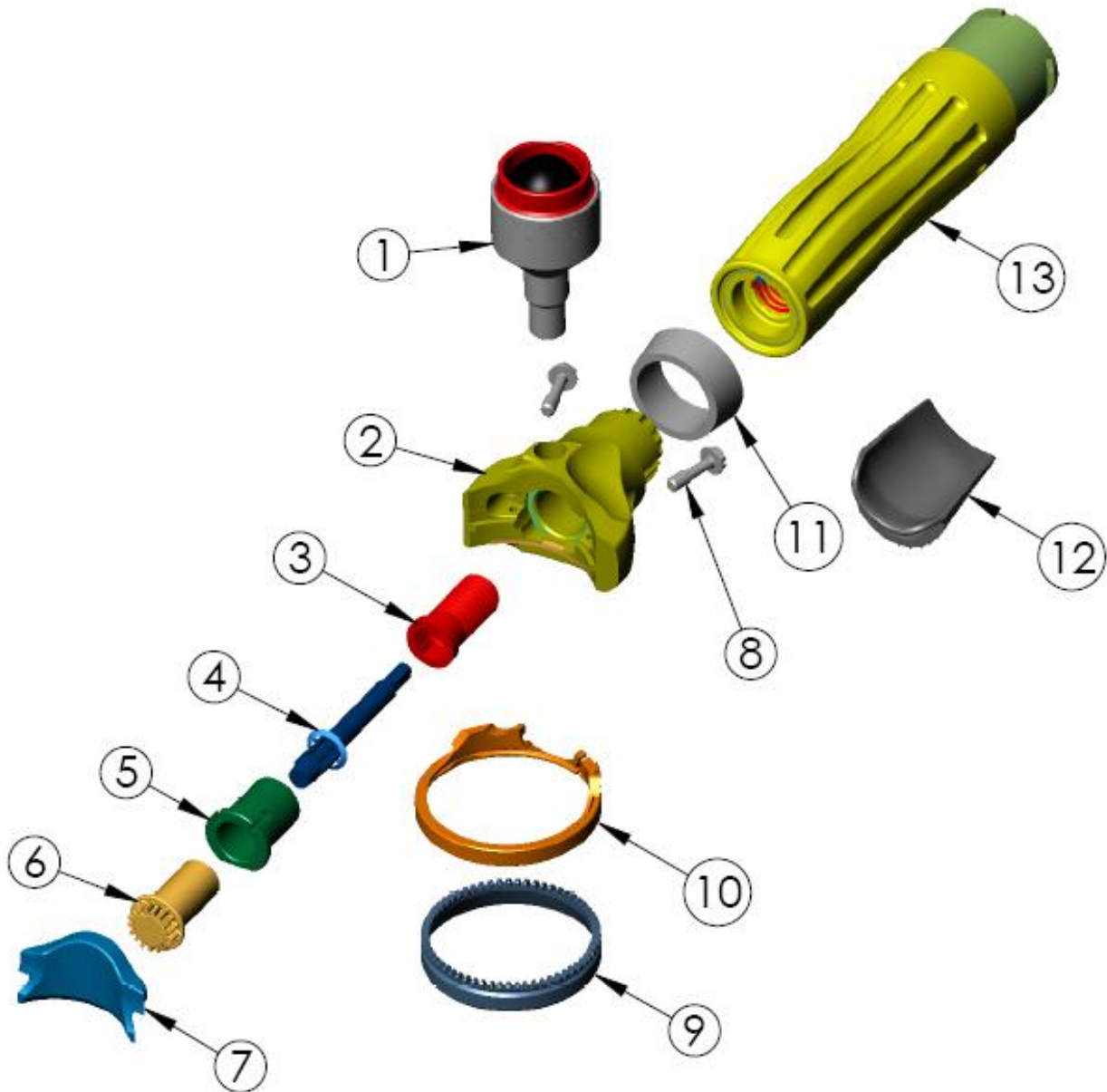


Whizard® TRIMVAC® 18AMX B Head Assembly (Continued)

ITEM	DESCRIPTION	TRIMVAC® 18AMX B	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10)	184432	
1	Grease Fitting	125590	1
2	Frame	184489	1
3	Cover Retaining Screw	184434	2
4	Attachment Screw	184119	1
5	Drive Adapter Assembly	184120	1
6	Bearing	183060	1
7	Pinion	183651	1
8	Cover	184428	1
9	Blade	184319	1
10	Blade Housing	184436	1
11	Collar Assembly (Includes Item 12)	184435	1
12	Collar Screw	184430	1
13	Power Unit – Small Handle (Yellow)	185923	1
	– Small Handle (Sky Blue)	185924	1
14	Tube Adapter (Not supplied by Bettcher Industries)		



620 Whizard® AirMax MACH 3 Head Assembly



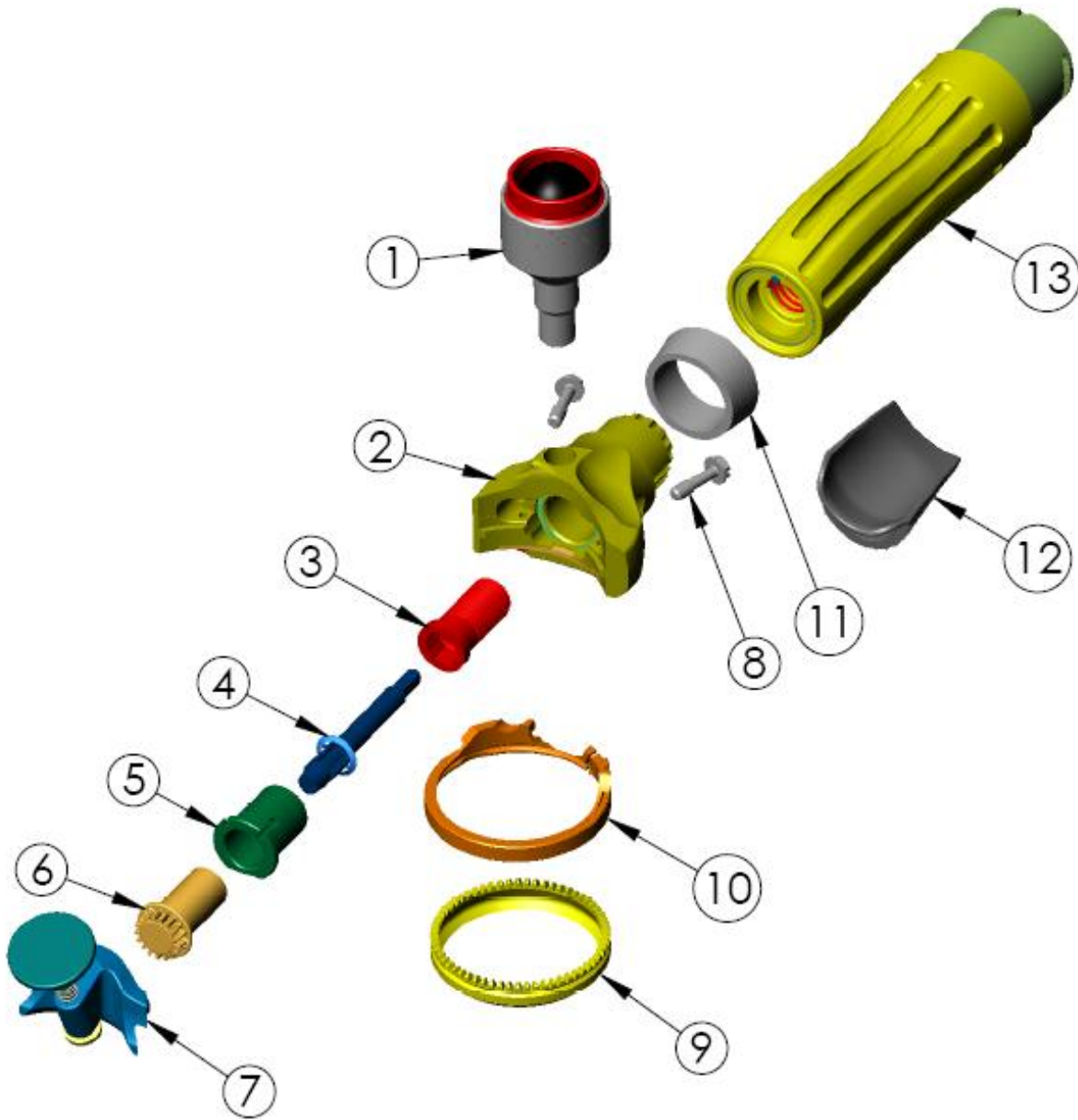


620 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	620 AIRMAX MACH 3 RH	620 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184077	184078	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184081	184082	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183365	183365	1
7	Cover	183356	183356	1
8	Cover Retaining Screw	183376	183376	2
9	Blade	183605	183605	1
10	Blade Housing	185606	185606	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



625 Whizard® AirMax MACH 3 Head Assembly



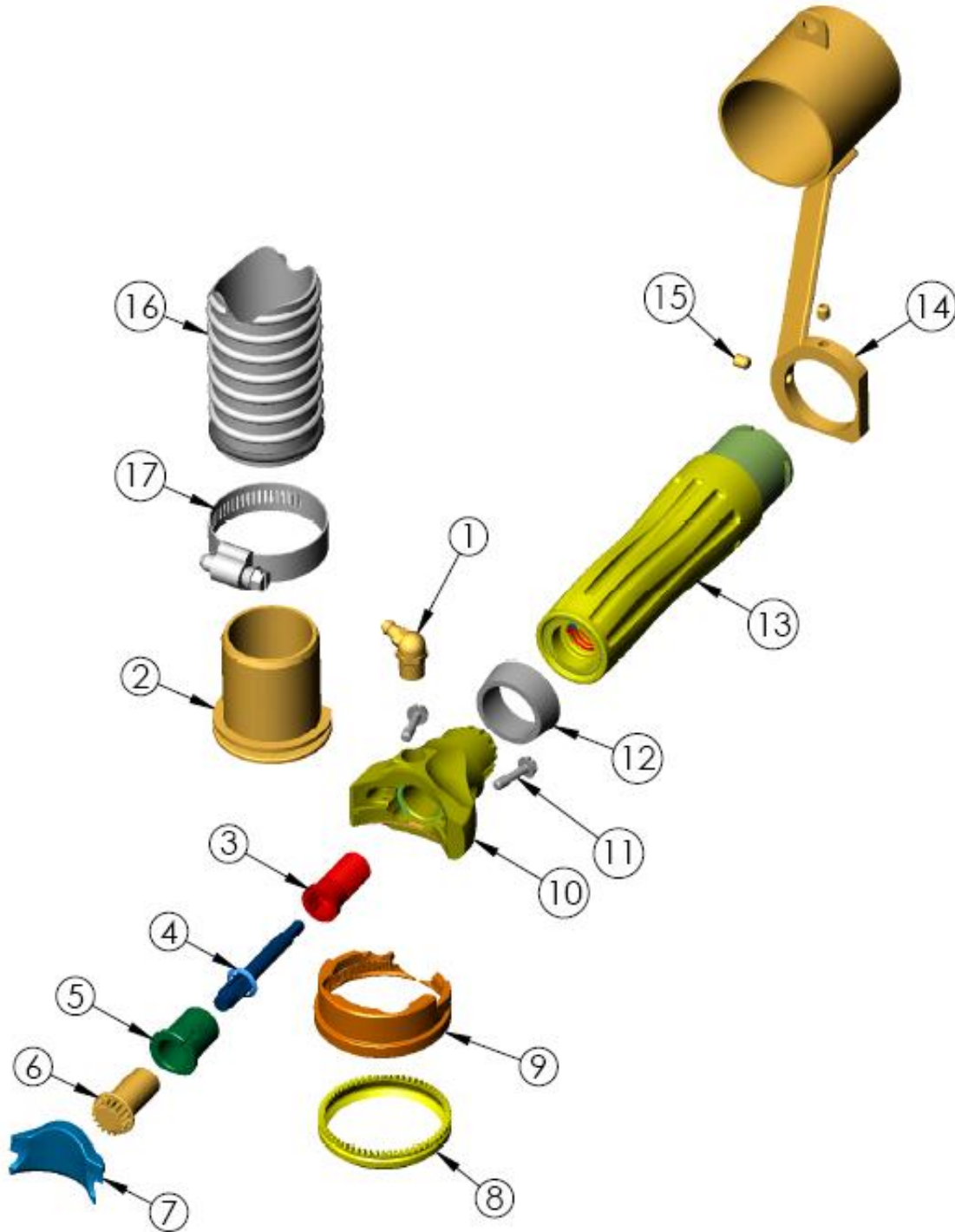


625 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	625 AIRMAX MACH 3 RH	625 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184079	184080	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184081	184082	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183365	183365	1
7	Cover with Special Steeling Device	183368	183368	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183656	183656	1
8	Cover Retaining Screw	183376	183376	2
9	Blade	183354	183354	1
10	Blade Housing	185606	185606	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



Whizard® TRIMVAC® 45AMX Head Assembly



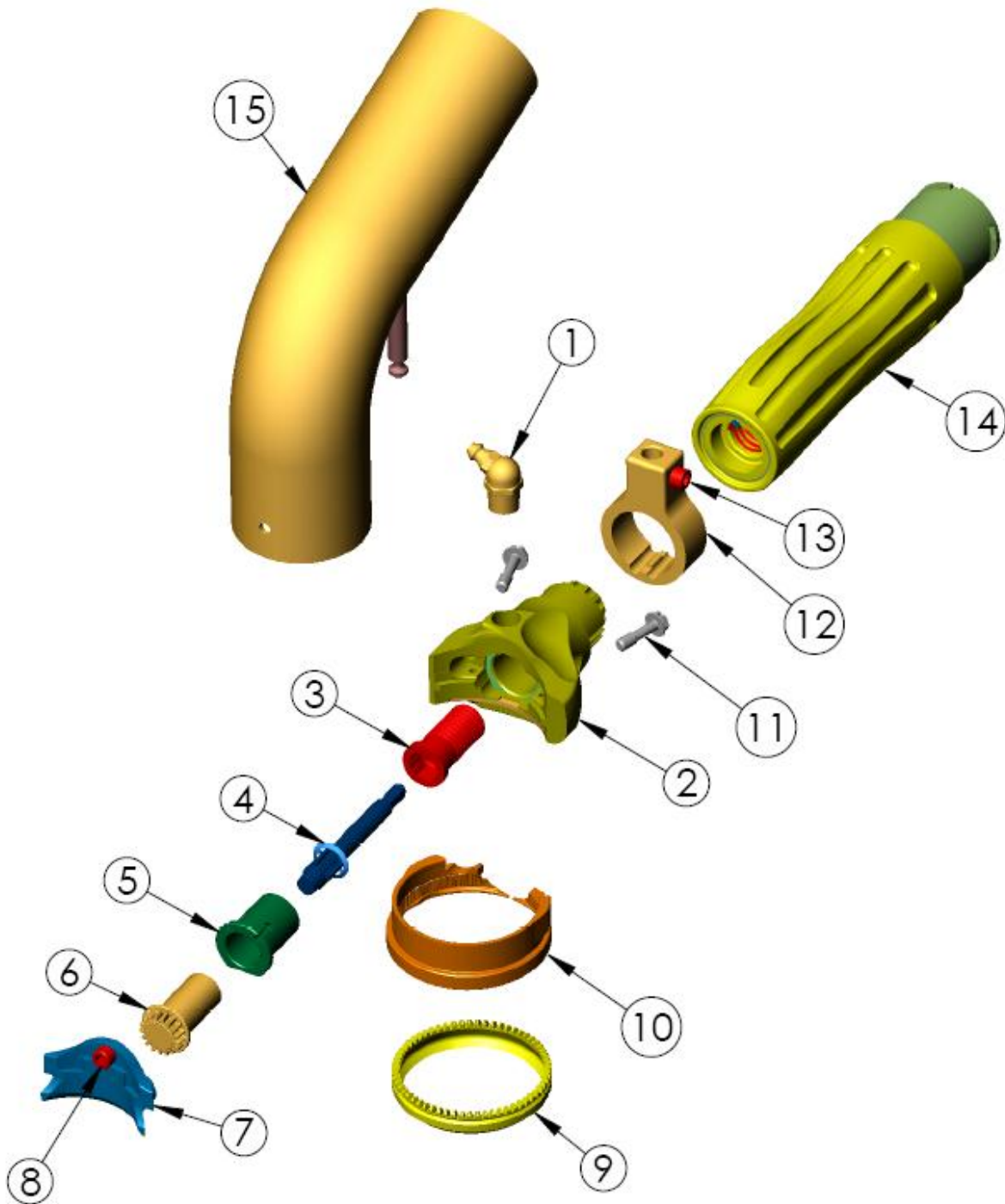


Whizard® TRIMVAC® 45AMX Head Assembly (Continued)

ITEM	DESCRIPTION	TRIMVAC® 45AMX	TRIMVAC® 45AMX- Cheese	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	184327	185788	
1	Grease Fitting	125590	125590	1
2	Hose Adapter	184329	184329	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183365	183365	1
7	Cover	183356	183356	1
8	Blade	183354	185787	1
9	Blade Housing	184328	184328	1
10	Frame	184081	184081	1
11	Cover Retaining Screw	183376	183376	2
12	Handle Spacer Ring	183120	183120	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1
	– Small Handle (Sky Blue)	185924	185924	1
14	Vacuum Hose Bracket Kit (Includes Item 15)	184344	184344	1
15	Set Screw	120053	120053	2
16	Vacuum Hose Assembly (Shown Cut Off for Picture) (Includes Item 17)	184358	184358	1
17	Hose Clamp	184359	184359	1



Whizard® TRIMVAC® 45AMX B Head Assembly



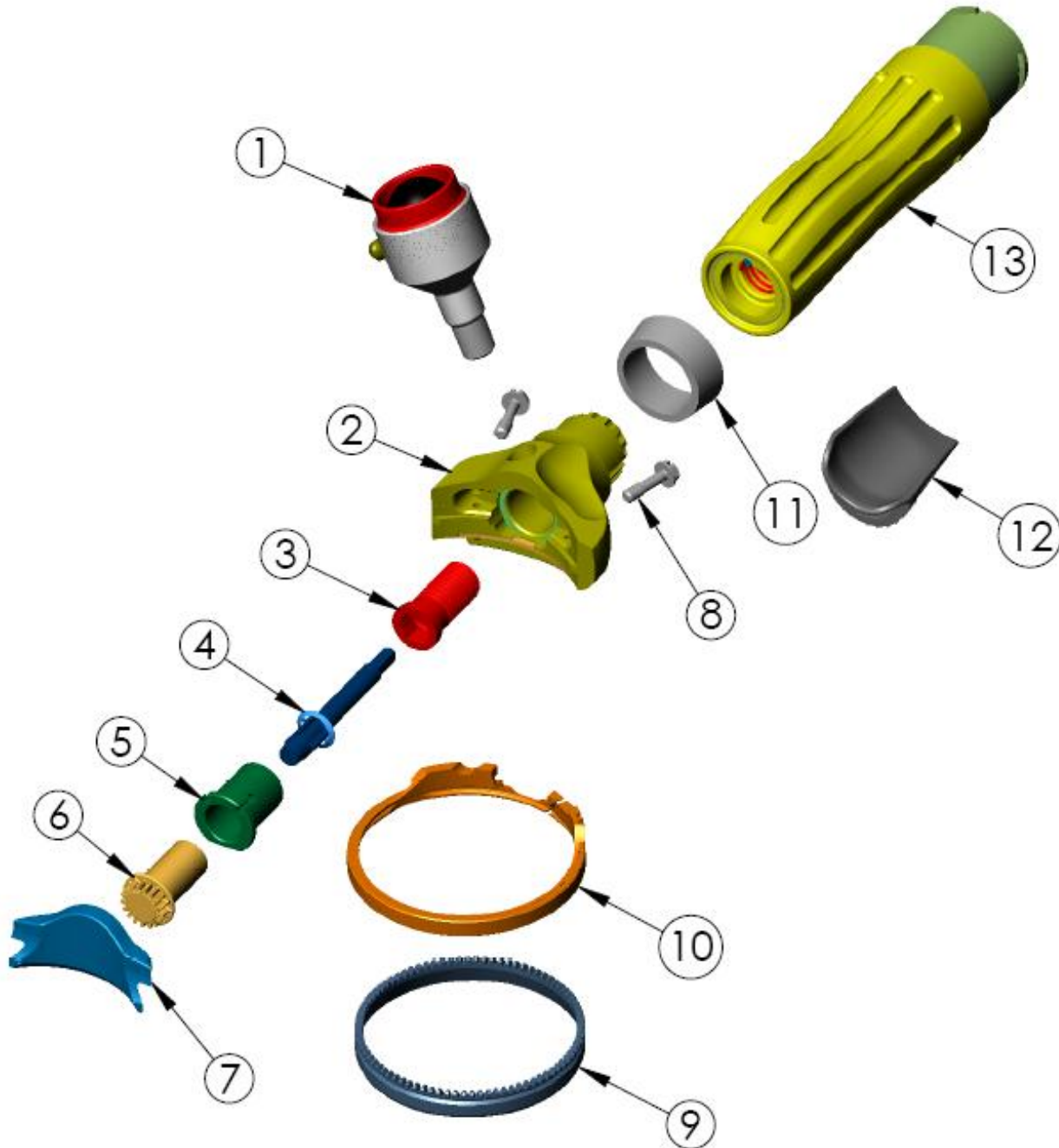


Whizard® TRIMVAC® 45AMX B Head Assembly (Continued)

ITEM	DESCRIPTION	TRIMVAC® 45AMX B	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7,9, 10, 11)	184493	
1	Grease Fitting	125590	1
2	Frame	184081	1
3	Attachment Screw	184119	1
4	Drive Adapter Assembly	184120	1
5	Bearing	183060	1
6	Pinion	183365	1
7	Cover (Includes Item 8)	184496	1
8	Tube Screw	184494	1
9	Blade	183354	1
10	Blade Housing	184497	1
11	Cover Retaining Screw	183376	2
12	Collar Assembly (Includes Item 13)	184435	1
13	Collar Screw	184430	1
14	Power Unit – Small Handle (Yellow)	185923	1
	– Small Handle (Sky Blue)	185924	1
15	Tube Adapter (Not supplied by Bettcher Industries)		



500 Whizard® AirMax MACH 3 Head Assembly



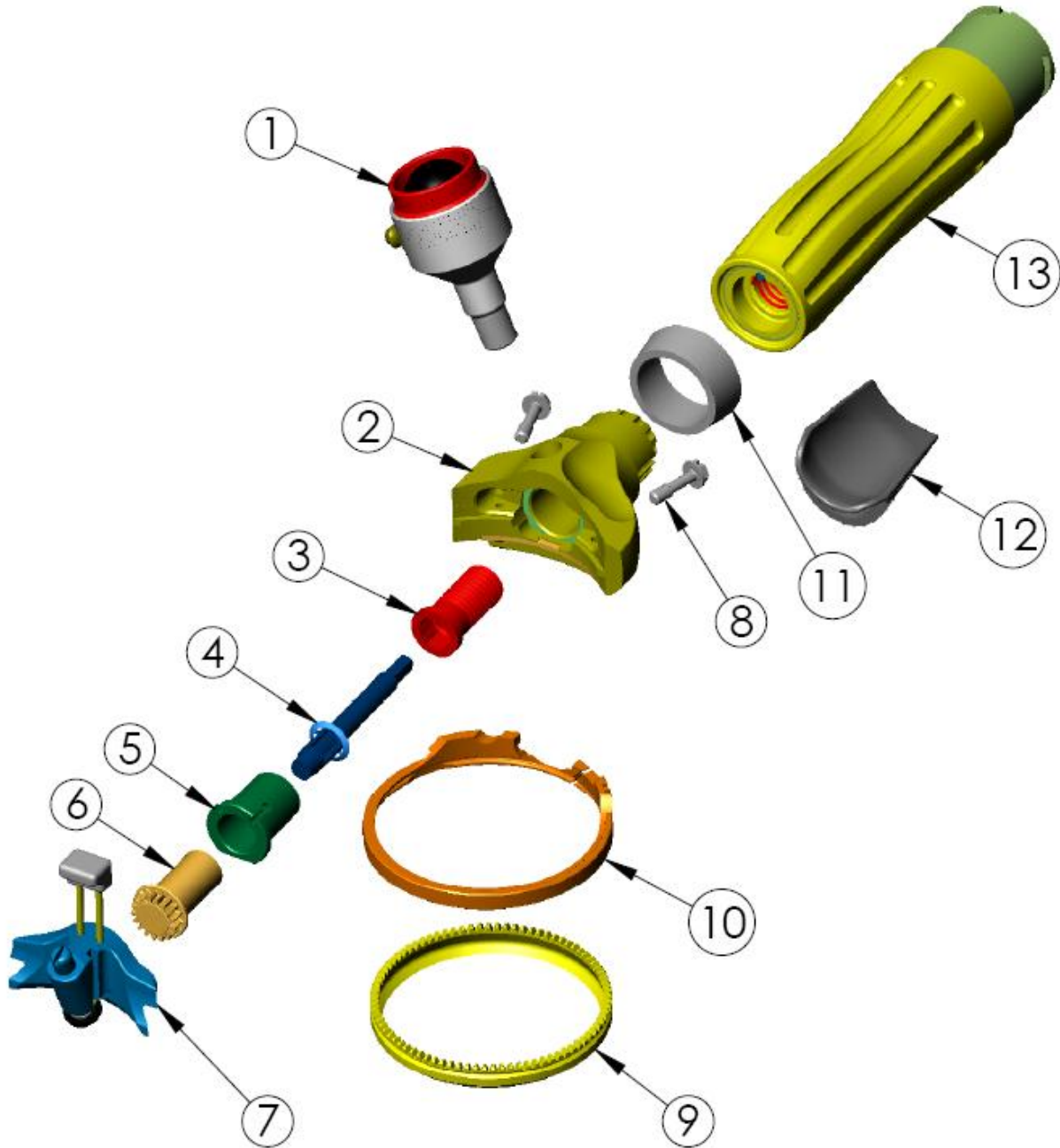


500 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	500 AIRMAX MACH 3 RH	500 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184084	184085	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184088	184089	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183365	183365	1
7	Cover	183579	183579	1
8	Cover Retaining Screw	183376	183376	2
9	Blade	183606	183606	1
10	Blade Housing	183575	183575	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



505 Whizard® AirMax MACH 3 Head Assembly



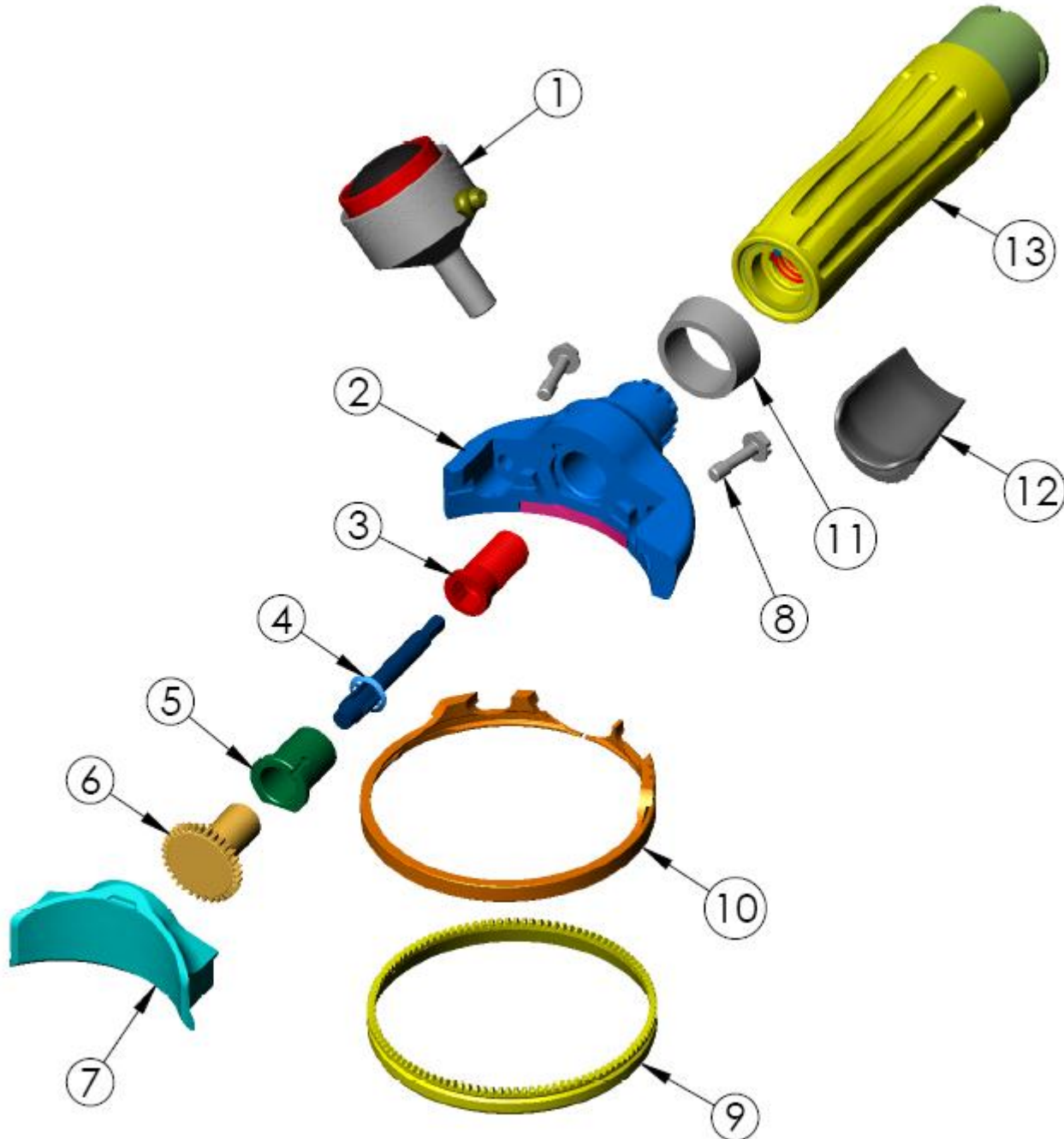


505 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	505 AIRMAX MACH 3 RH	505 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184086	184087	
1	Grease Cup (Parts Not Shown)	163263	163263	1
	Washer	123523	123523	1
	Bulb	163265	163265	1
	Ring	163266	163266	1
	Cup with Fitting	163269	163269	1
2	Frame	184088	184089	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183365	183365	1
7	Cover	183585	183585	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Screw and Instructions	183655	183655	1
8	Cover Retaining Screw	183376	183376	2
9	Blade	183577	183577	1
10	Blade Housing	183575	183575	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



750 Whizard® AirMax MACH 3 Head Assembly



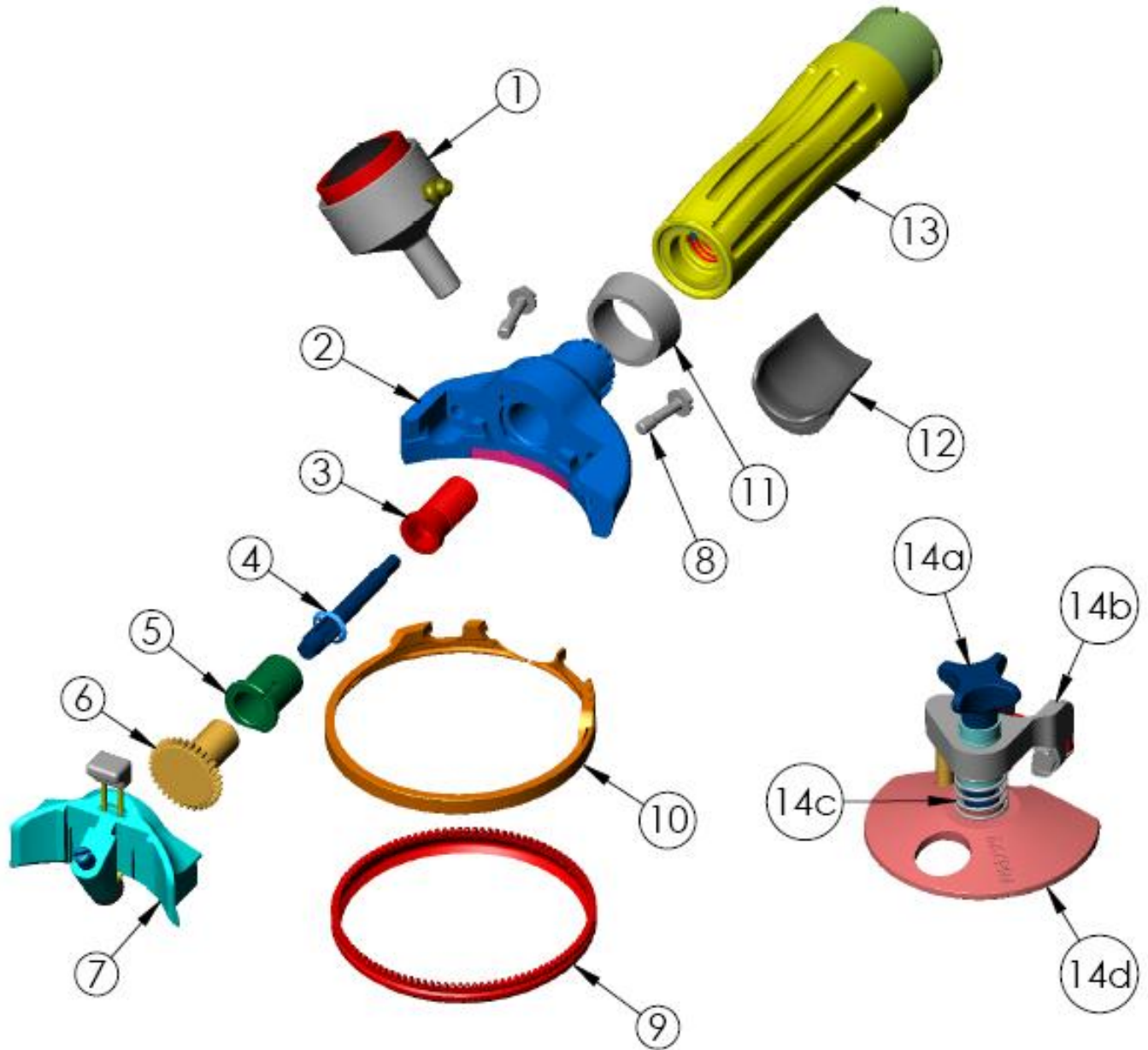


750 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	750 AIRMAX MACH 3 RH	750 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184091	184092	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover	183088	183088	1
8	Cover Retaining Screw	183654	183654	2
9	Blade	183071	183071	1
10	Blade Housing	183070	183070	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



850 Whizard® AirMax MACH 3 Head Assembly



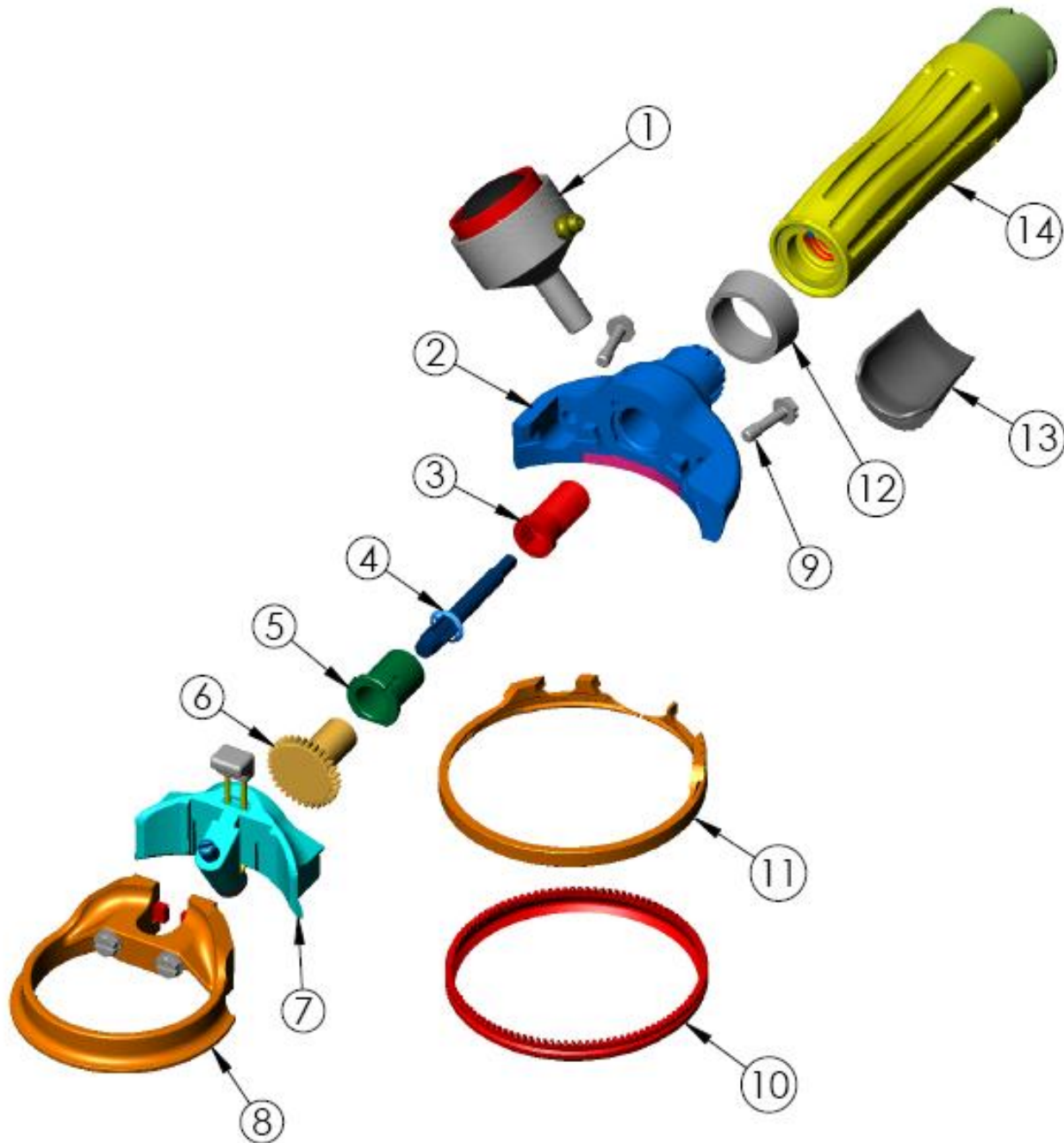


850 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	850 AIRMAX MACH 3 RH	850 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184093	184094	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover with Special Steeling Device	183056	183056	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Screw and Instructions	183474	183474	1
8	Cover Retaining Screw	183654	183654	2
9	Blade	183072	183072	1
10	Blade Housing	183070	183070	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1
14	Disc Gauge Kit 850S (Optional) (Includes 16a, 16b, 16c, 16d)	183801	183801	1
14a	Knob	183791	183791	1
14b	Frame Assembly	183798	183798	1
14c	Spring	121635	121635	1
14d	Disc Assembly	183799	183799	1



880-B Whizard® AirMax MACH 3 Head Assembly



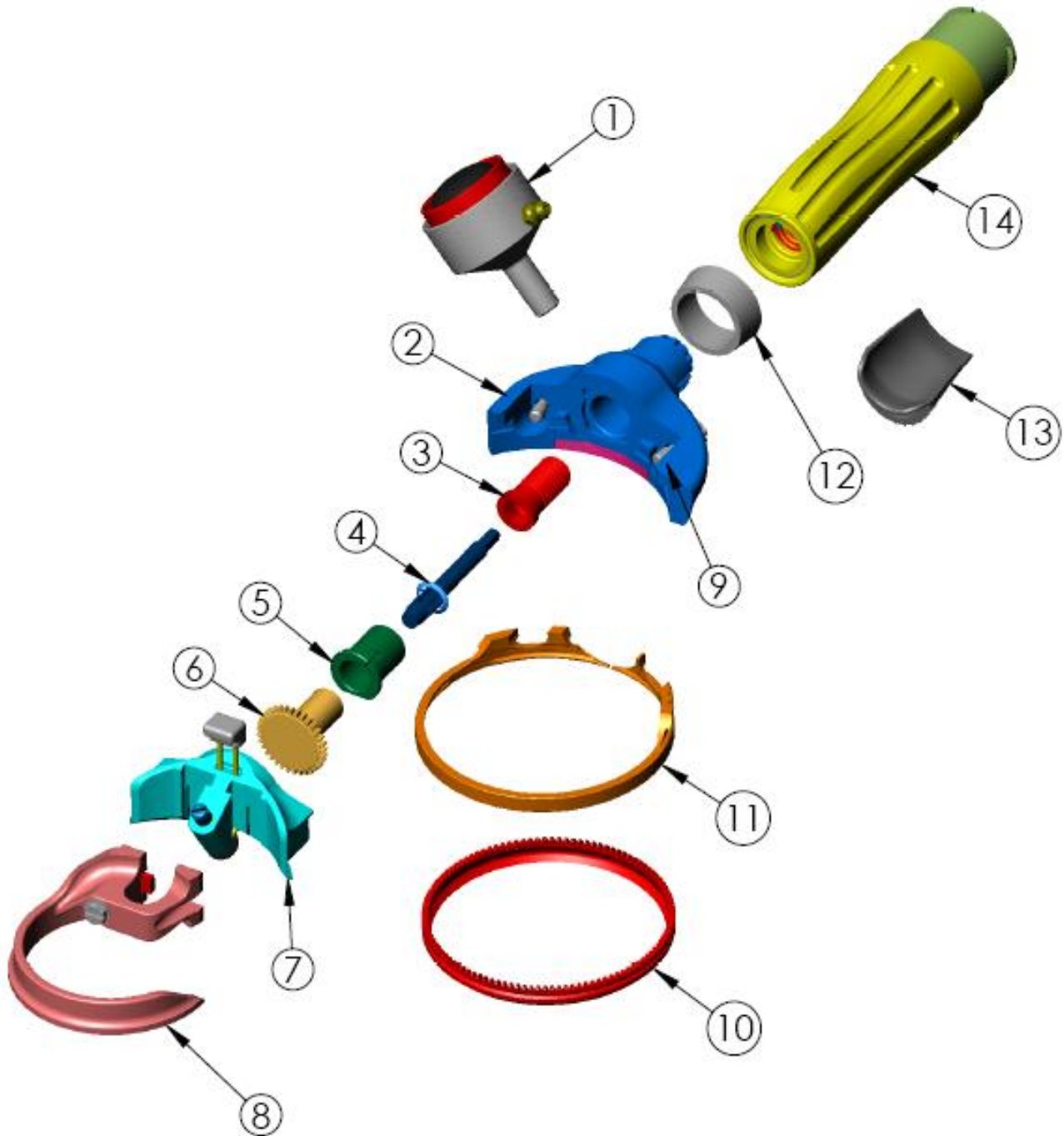


880-B Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	880-B AIRMAX MACH 3 RH	880-B AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,15,16)	184095	184096	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover with Special Steeling Device	183056	183056	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Screw and Instructions	183474	183474	1
8	Depth Gauge Assembly	183075	183075	1
9	Cover Retaining Screw	183654	183654	2
10	Blade	183072	183072	1
11	Blade Housing	183070	183070	1
12	Handle Spacer Ring	183120	183120	1
13	Thumb Support	163207	163207	1
14	Power Unit – Small Handle (Yellow)	185923	185923	1



880-S Whizard® AirMax MACH 3 Head Assembly



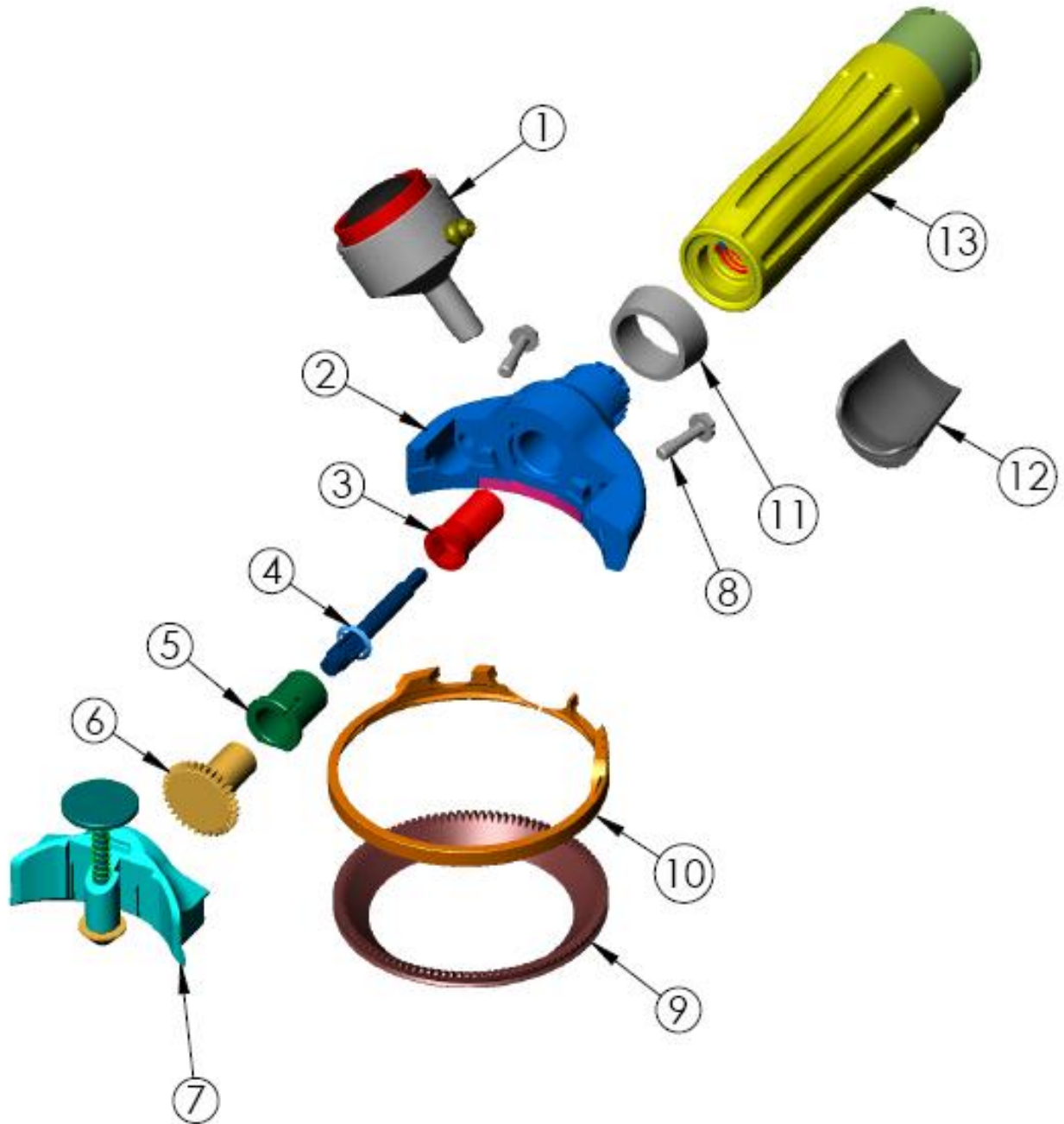


880-S Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	880-S AIRMAX MACH 3 RH	880-S AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,15,16)	184097	184098	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover with Special Steeling Device	183056	183056	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Screw and Instructions	183474	183474	1
8	Depth Guage Assembly	183076	183076	1
9	Cover Retaining Screw	183654	183654	2
10	Blade	183072	183072	1
11	Blade Housing	183070	183070	1
12	Handle Spacer Ring	183120	183120	1
13	Thumb Support	163207	163207	1
14	Power Unit – Small Handle (Yellow)	185923	185923	1



1850 Whizard® AirMax MACH 3 Head Assembly



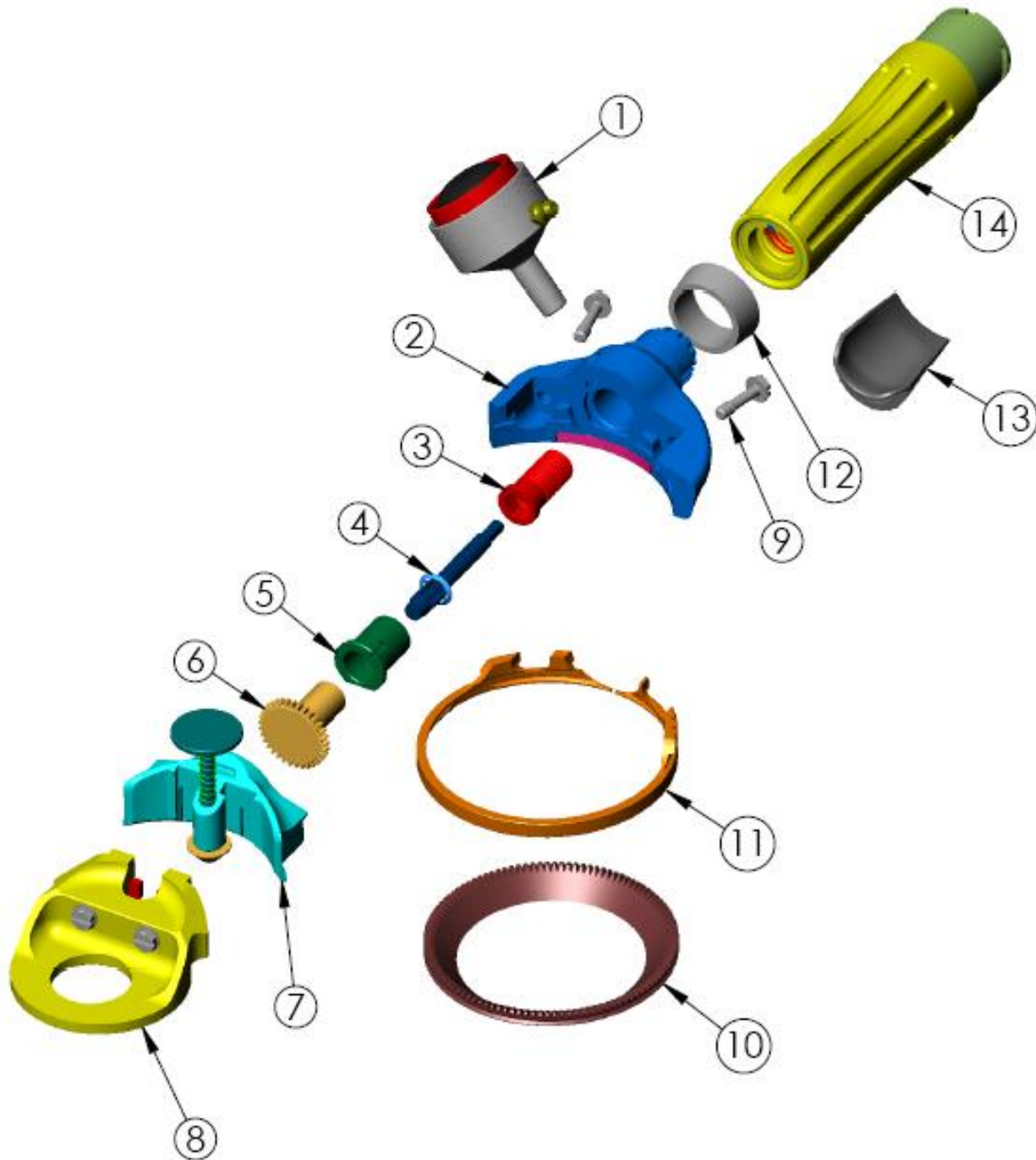


1850 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1850 AIRMAX MACH 3 RH	1850 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14,15)	184099	184100	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover with Special Steeling Device	183053	183053	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183476	183476	1
8	Cover Retaining Screw	183654	183654	2
9	Blade	183073	183073	1
10	Blade Housing	183070	183070	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1



1880 Whizard® AirMax MACH 3 Head Assembly



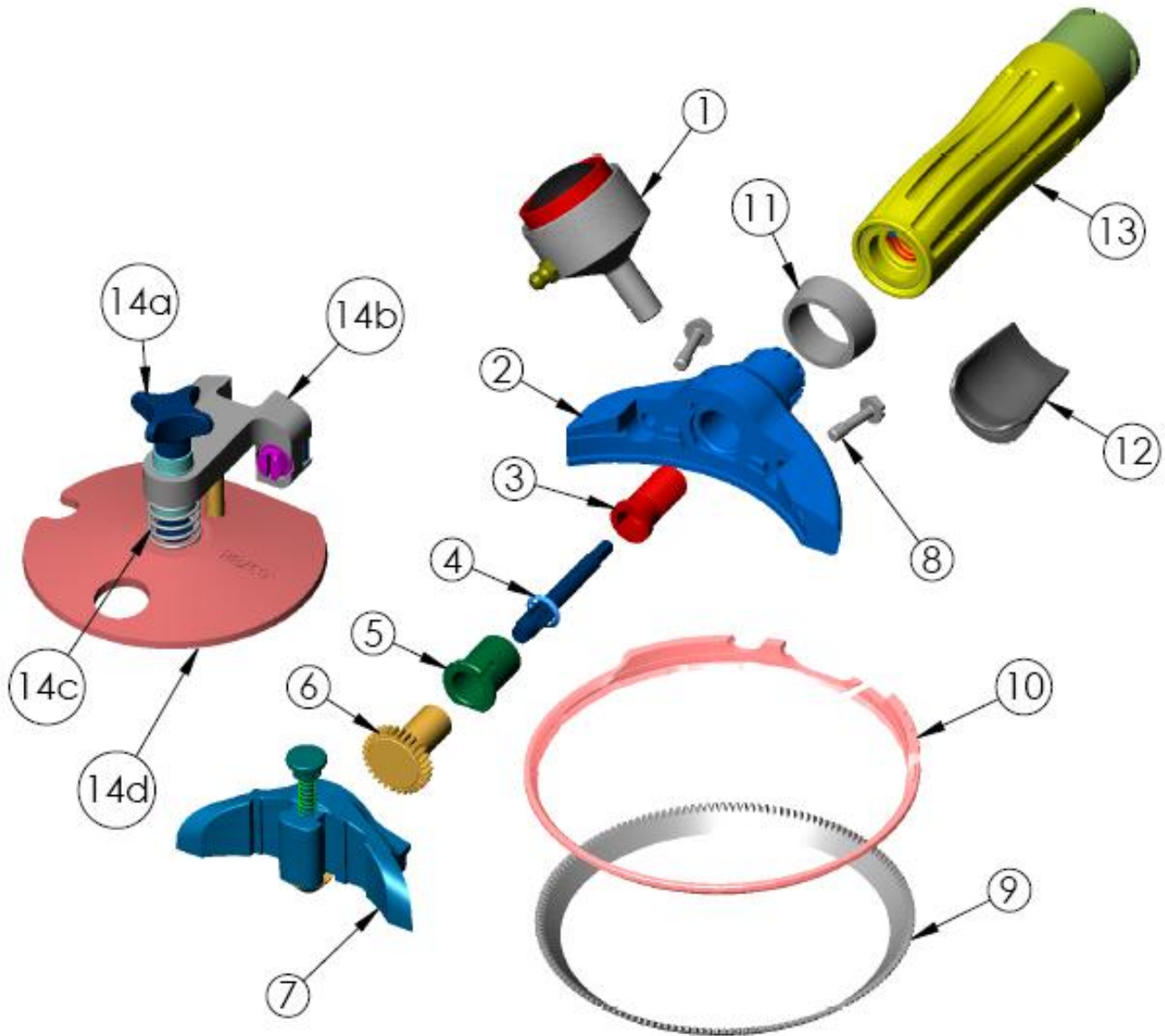


1880 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1880 AIRMAX MACH 3 RH	1880 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,15,16)	184101	184102	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184386	184387	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183063	183063	1
7	Cover with Special Steeling Device	183053	183053	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183476	183476	1
8	Depth Gauge Assembly	183077	183077	1
9	Cover Retaining Screw	183654	183654	2
10	Blade	183073	183073	1
11	Blade Housing	183070	183070	1
12	Handle Spacer Ring	183120	183120	1
13	Thumb Support	163207	163207	1
14	Power Unit – Small Handle (Yellow)	185923	185923	1



1000 Whizard® AirMax MACH 3 Head Assembly



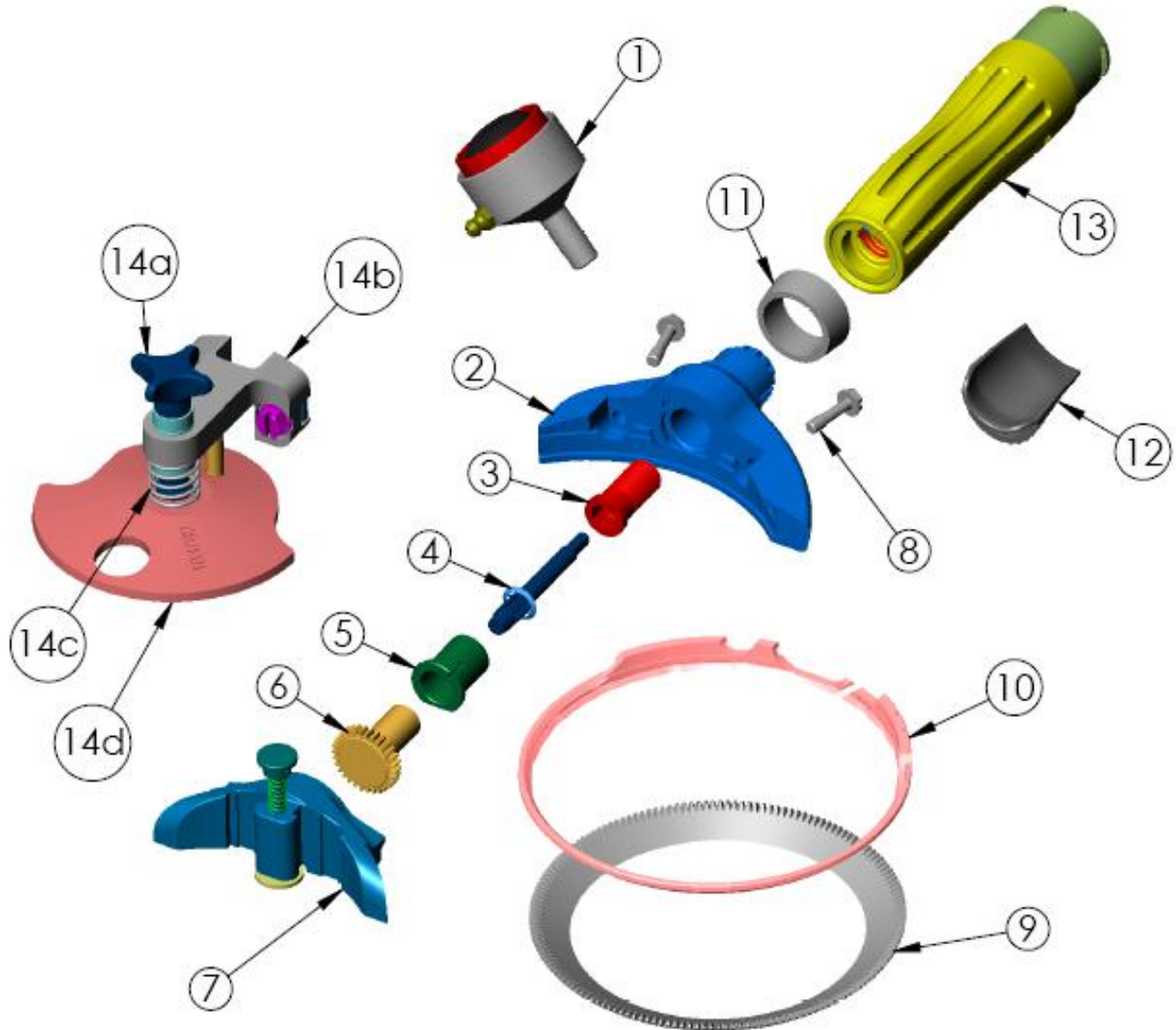


1000 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1000 AIRMAX MACH 3 RH	1000 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184108	184109	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184986	184987	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183154	183154	1
7	Cover with Special Steeling Device	183163	183163	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183477	183477	1
8	Cover Retaining Screw	183654	183654	2
9	Blade	183141	183141	1
10	Blade Housing	183143	183143	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1
14	Disc Gauge Kit (Optional)			
	1000 Skinner (S)	183792	183792	1
	1000 Fat (F)	183793	183793	1
14a	Parts for Disc Gauge (Not Shown)			
	Knob	183791	183791	1
14b	Frame Assembly	183784	183784	1
14c	Spring	121635	121635	1
14d	Disc Assembly (S)	183787	183787	1
	Disc Assembly (F)	183788	183788	1



1300 Whizard® AirMax MACH 3 Head Assembly



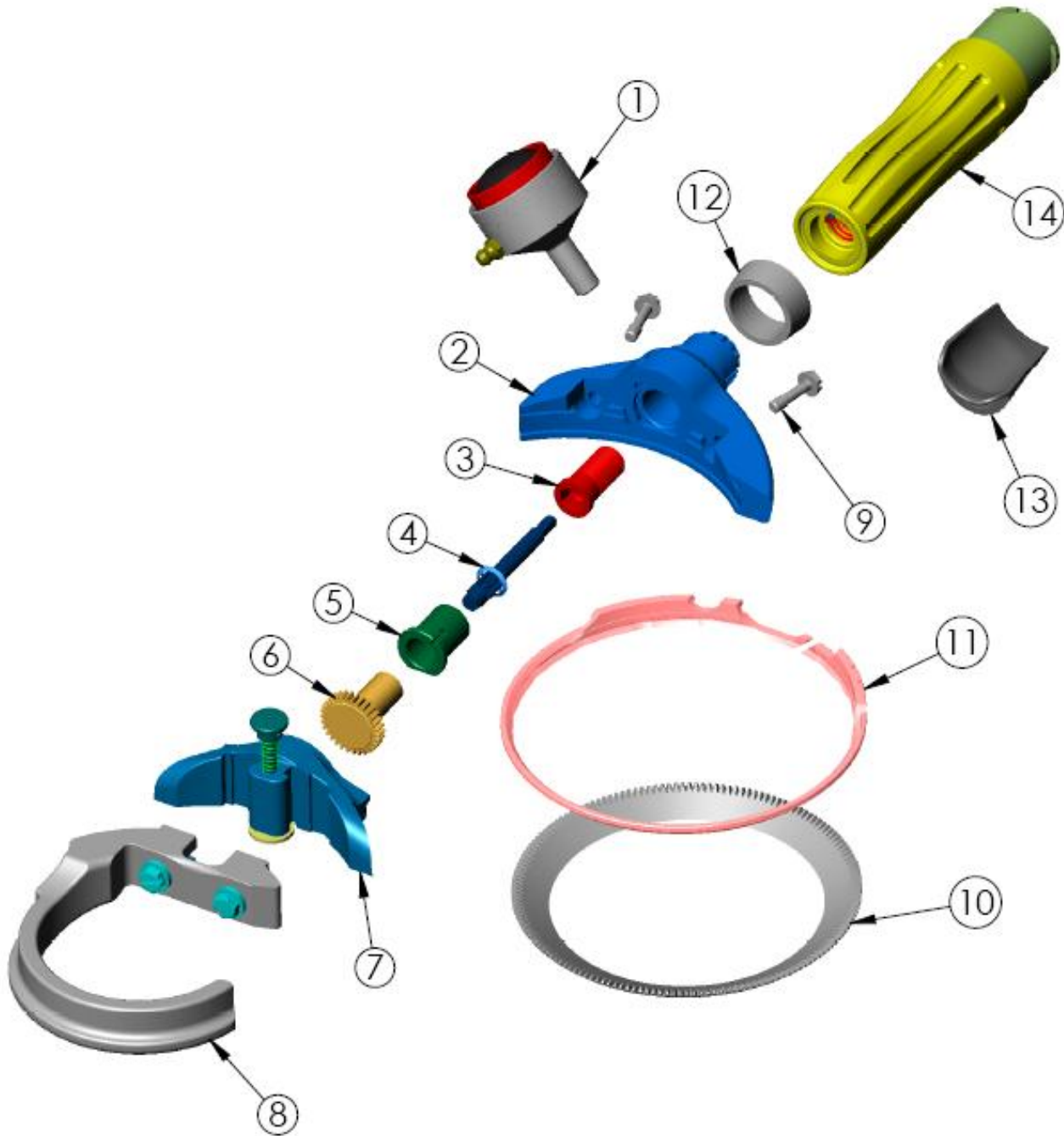


1300 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1300 AIRMAX MACH 3 RH	1300 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10)	184110	184111	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184986	184987	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183154	183154	1
7	Cover with Special Steeling Device	183164	183164	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183478	183478	1
8	Cover Retaining Screw	183654	183654	2
9	Blade	183142	183142	1
10	Blade Housing	183143	183143	1
11	Handle Spacer Ring	183120	183120	1
12	Thumb Support	163207	163207	1
13	Power Unit – Small Handle (Yellow)	185923	185923	1
14	Disc Gauge Kit (Optional)			
	1000 Skinner (S)	183794	183794	1
	1000 Fat (F)	183795	183795	1
14a	Parts for Disc Gauge (Not Shown)			
	Knob	183791	183791	1
14b	Frame Assembly	183784	183784	1
14c	Spring	121635	121635	1
14d	Disc Assembly (S)	183789	183789	1
	Disc Assembly (F)	183790	183790	1



1400 Whizard® AirMax MACH 3 Head Assembly



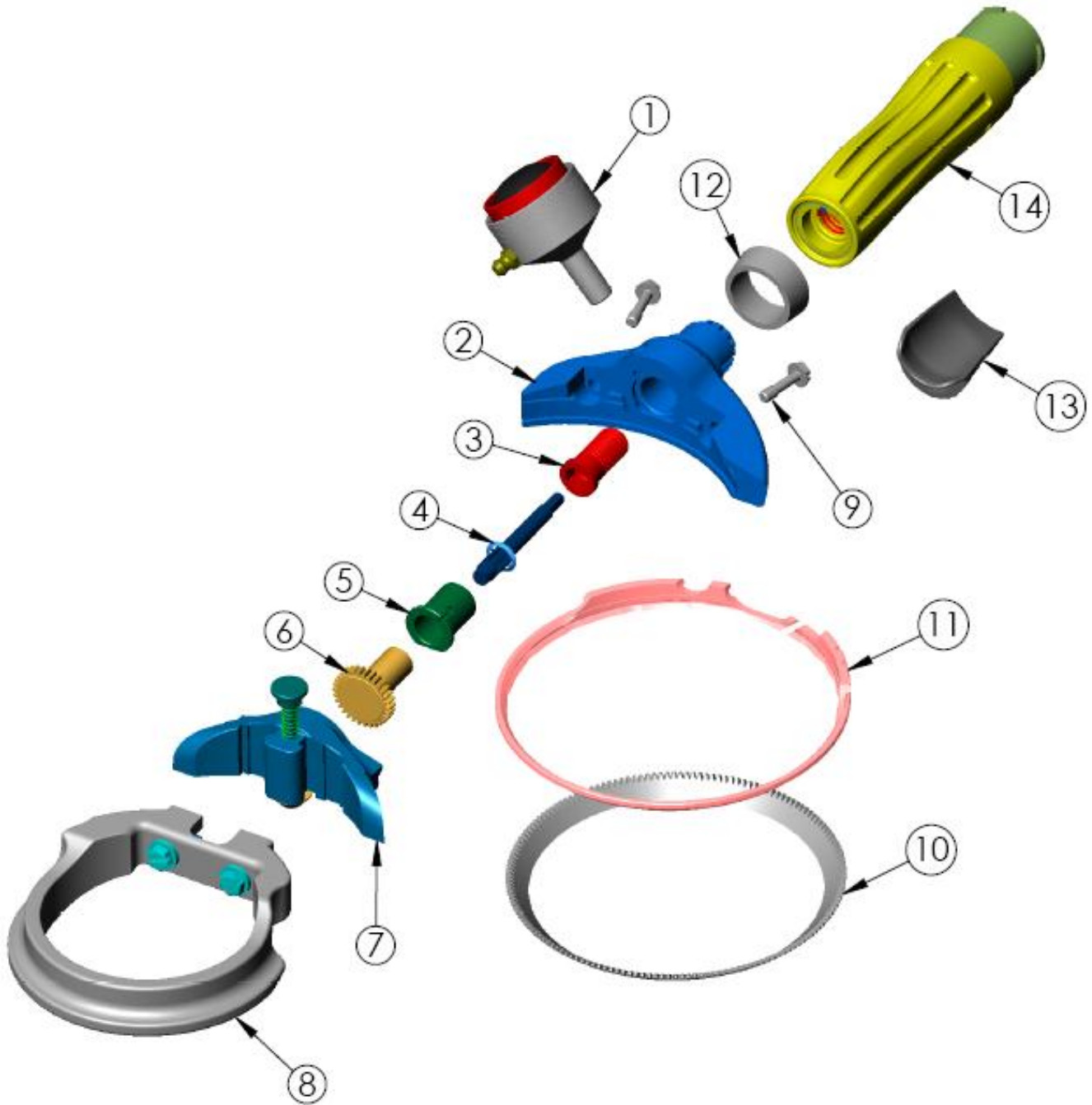


1400 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1400 AIRMAX MACH 3 RH	1400 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	184112	184113	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184986	184987	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183154	183154	1
7	Cover with Special Steeling Device	183164	183164	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183478	183478	1
8	Depth Gauge Assembly	183159	183159	1
9	Cover Retaining Screw	183654	183654	2
10	Blade	183142	183142	1
11	Blade Housing	183143	183143	1
12	Handle Spacer Ring	183120	183120	1
13	Thumb Support	163207	163207	1
14	Power Unit – Small Handle (Yellow)	185923	185923	1



1500 Whizard® AirMax MACH 3 Head Assembly





1500 Whizard® AirMax MACH 3 Head Assembly (Continued)

ITEM	DESCRIPTION	1500 AIRMAX MACH 3 RH	1500 AIRMAX MACH 3 LH	QTY.
	Complete Head Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)	184114	184115	
1	Grease Cup (Parts Not Shown)	173191	173191	1
	Retaining Ring Only	173190	173190	1
	Bulb and Ring Only	173208	173208	1
	Cup with Fitting	173187	173187	1
2	Frame	184986	184987	1
3	Attachment Screw	184119	184119	1
4	Drive Adapter Assembly	184120	184120	1
5	Bearing	183060	183060	1
6	Pinion	183154	183154	1
7	Cover with Special Steeling Device	183163	183163	1
	Kit for Special Steeling Device (Not Shown) Includes Shaft, Spring, Button, Pin and Instructions	183477	183477	1
8	Depth Gauge Assembly	183160	183160	1
9	Cover Retaining Screw	183654	183654	2
10	Blade	183141	183141	1
11	Blade Housing	183143	183143	1
12	Handle Spacer Ring	183120	183120	1
13	Thumb Support	163207	163207	1
14	Power Unit – Small Handle (Yellow)	185923	185923	1



Lubrication and Lubrication Equipment

Part Number	Description
103603	Pint of Oil
184282	4 oz. Tube of Max-Z-Lube Grease
100608	8 oz. Tube of Whizard [®] Grease
143631	14 oz. Cartridge Whizard [®] Grease
163328	25 pack - 14 oz. Cartridge Whizard [®] Grease
100640	35 Pound Bucket Whizard [®] Grease
113415	Grease Gun
113326	Planetary Gear Grease Gun (Needle Nose)
163267	Large Grease Cup (Optional)
102273	Grease Fitting
183631	Elbow - Body

Air Supply Equipment

Part Number	Description
173226	Filter, Regulator, Lubricator (FRL) Kit
185789	Replacement Filter Element
103386	Automatic Air Coupler



Optional Blades

Part Number	Description
183706	350M2 Low Profile Blade
183923	350M2 Cone Blade
183353	620M2 Low Profile Blade
183576	500M2 Low Profile Blade
183289	1850M2 Serrated Blade
183265	1000M2 / 1500M2 Serrated Blade
183266	1300M2 / 1400M2 Serrated Blade
184401	TRIMVAC [®] 14AMX Blade
185699	TRIMVAC [®] 45AMX, Spinal Cord Removal Blade
185684	TRIMVAC [®] 45AMX, Long 620 Style
185786	TRIMVAC [®] 45AMX, Long 620 Serrated
185999	TRIMVAC [®] 18AMX, 8mm Blade
188067	TRIMVAC [®] 18AMX, 8mm Blade, Tapered
188010	TRIMVAC [®] 24AMX, 5/16" Blade



Blade Sharpening and Steeling Equipment

Part Number	Description
100655	Special Stone (Small Tools)
100660	Special Stone (Large Tools)
100641	Special Steel (Small Tools)
100642	Special Steel (Large Tools)
100650	Ceramic Sharpener
163080	350 Whizard® EdgeMaster™
163074	360 Whizard® EdgeMaster™
163079	620 Whizard® EdgeMaster™
163073	625 Whizard® EdgeMaster™
163077	500 Whizard® EdgeMaster™
163072	505 Whizard® EdgeMaster™
163076	750 Whizard® EdgeMaster™
163071	850 / 880 Whizard® EdgeMaster™
163069	1000 / 1500 Whizard® EdgeMaster™
163070	1300 / 1400 Whizard® EdgeMaster™
122740	Positioner Reel for Whizard® EdgeMaster™
183905	350 Bettcher® EZ Edge Sharpener
183928	360 Bettcher® EZ Edge Sharpener
183892	620 Bettcher® EZ Edge Sharpener
183926	625 Bettcher® EZ Edge Sharpener
183907	500 Bettcher® EZ Edge Sharpener
183927	505 Bettcher® EZ Edge Sharpener
183908	750 Bettcher® EZ Edge Sharpener
183925	850/880 Bettcher® EZ Edge Sharpener
173322	1000/1500 Bettcher® EZ Edge Sharpener
173298	1300/1400 Bettcher® EZ Edge Sharpener
184423	Steeling Assembly Ball Tip
185797	Steel for TRIMVAC® 18AMX 8mm Blade
188069	Steel for TRIMVAC® 18AMX 8mm Blade, Tapered



Covers, Depth Gauges and Depth Gauge Equipment

Part Number	Description
185128	Poultry Cover 350
185129	Poultry Cover 440
185130	Poultry Cover 500
185131	Poultry Cover 620
185135	Poultry Cover Assembly 625
185134	Poultry Cover Assembly 750
185979	Depth Gauge Assembly - 625 with Special Cover Assembly
183705	Depth Gauge Assembly – 505M2 With 1 Mounting Screw
188081	Depth Gauge Assembly – 505M2 With 2 Mounting Screws
173347	Depth Gauge Setting Device Kit 880-S&B
173348	Depth Gauge Setting Device Kit 1400 and 1500

Cleaning Equipment

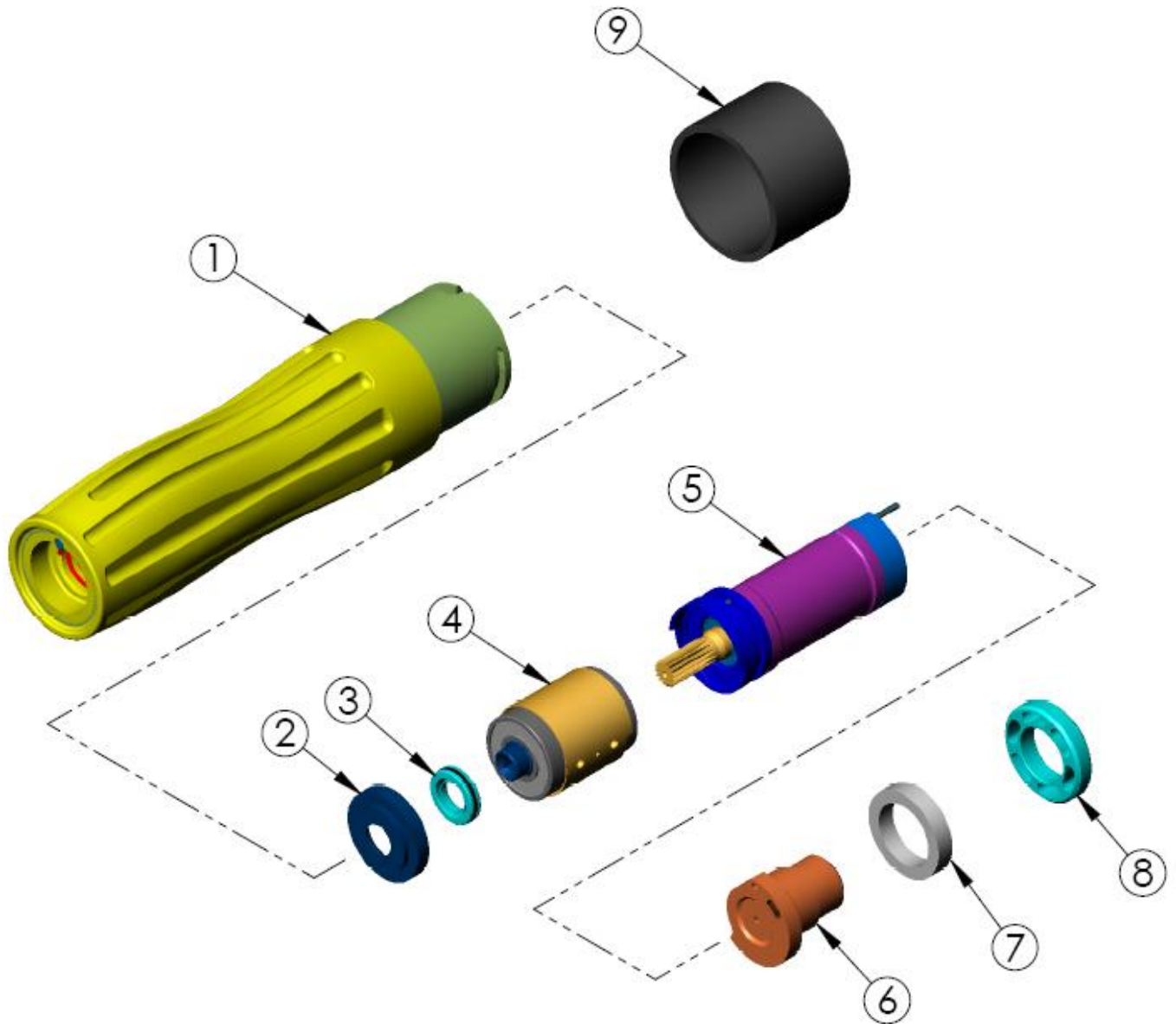
Part Number	Description
184334	Handpiece Cleaning Kit (Contains the following)
184335	Handpiece Cleaning Pick
184336	Stainless Steel Hand Brush
184337	Scrub Brush
184338	1-1/2" Diameter Tubing Brush
184339	½" Diameter Tubing Brush

Cleaning Solution

Part Number	Description
184331	Case of EXTRA Cleaner (four 1 gallon jugs)
184332	EXTRA Cleaner (1 gallon jug)



Complete Power Unit Assembly





Complete Power Unit Assembly (Continued)

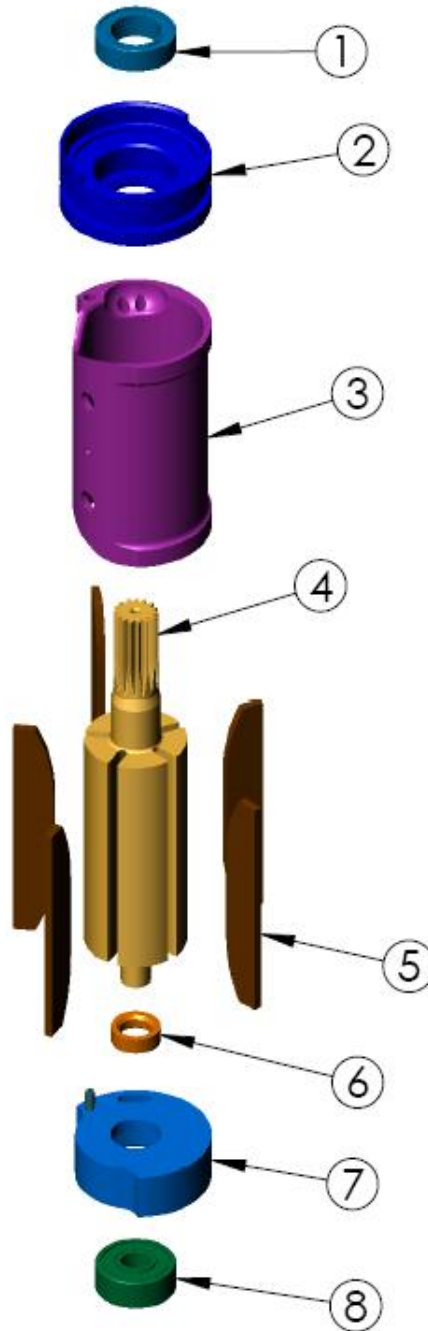
ITEM	DESCRIPTION	SMALL AIRMAX MACH 3 POWER UNIT	QTY.
--	Complete Power Unit Assembly (Yellow) (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9)	185923	
--	Complete Power Unit Assembly (Sky Blue) (Includes Items 1, 2, 3, 4, 5, 6, 7, 8, 9)	185924	
1	Over-molded Handle with O-Ring (Yellow)*	185927	1
	Over-molded Handle with O-Ring (Sky Blue)*	185928	1
--	Handle O-Ring (Not shown) (Included with Item # 1)	122316	1
2	Seal Block	184062	1
3	Seal Kit	184427	1
4	Gear Head Assembly*	185935	1
5	Air Motor Assembly	185942	1
6	Adapter Plate Assembly	184047	1
--	Adapter Plate O-Ring (Not shown) Included with Item#6	122315	1
7	Muffler	184388	1
8	Retainer	184049	1
9	Cap	184286	1

****Refurbished Items Also Available***

ITEM	DESCRIPTION	Part Number
1	Refurbished Over-molded Handle with O-Ring (Yellow) – Old Part must be returned	185794
1	Refurbished Over-molded Handle with O-Ring (Sky Blue) - Old Part must be returned	185795
4	Refurbished Gear Head Assembly – Old part must be returned	185796



Complete Air Motor Assembly



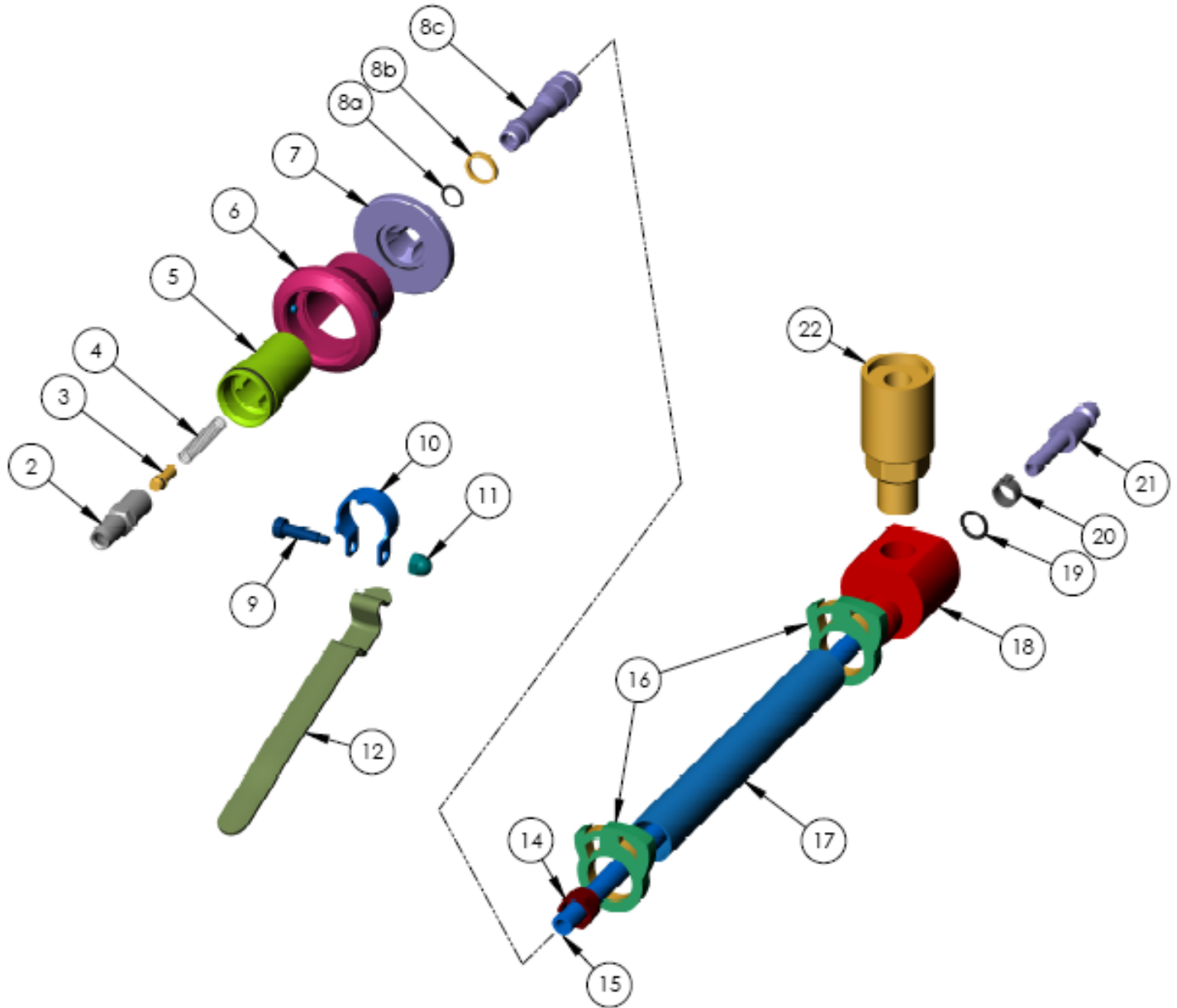


Complete Air Motor Assembly (Continued)

ITEM	DESCRIPTION	PART NUMBER	QTY.
	Complete Air Motor Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7, 8)	185942	
1	Upper Bearing	185950	1
2	Upper Bearing Plate Assembly	185948	1
3	Cylinder	185947	1
4	Rotor	185944	1
5	Vane Kit (Contains 5 Vanes)	185790	1
6	Spacer	184043	1
7	Lower Bearing Plate Assembly	184042	1
8	Lower Bearing	184046	1



Complete Valve and Hose Assembly





Complete Valve and Hose Assembly (Continued)

ITEM	DESCRIPTION	PART NUMBER	QTY.
	Complete Valve and Hose Assembly (Includes Items 1, 12)	185137	
1	Valve Assembly (Includes Items 2, 3, 4, 5, 6, 8a, 8b, 8c, 9, 10, 11, 12)	185138	1
2	Valve Body	185139	1
3	Plug Assembly (includes Plug O-Ring)	185140	1
--	Plug O-Ring (not shown)	103299	1
4	Valve Spring	184057	1
5	Exhaust Fitting Assembly (includes Exhaust Fitting O-Ring)	184264	1
--	Exhaust Fitting O-Ring (not shown)	103388	1
6	Knob Assembly	184051	1
7	Swivel Fitting Assembly (includes Swivel Fitting O-Ring)	184265	1
--	Swivel Fitting O-Ring (not shown)	103388	1
8	Compression Fitting Kit (Includes Items 8a, 8b, 8c)	184260	1
8a	O-Ring	143434	1
8b	Washer	184310	1
8c	Compression Fitting	184240	1
9	Shoulder Screw	184065	1
10	Clamp	184053	1
11	Acorn Nut	184066	1
12	Lever	183108	1
13	Hose Assembly (Includes Items 14,15,16,17,18,19,20,21,22)	184263	1
14	Nut Assembly	184241	1
15	Pressure Tubing	184061	1
16	Hose Clamp	184484	2
17	Exhaust Tubing	184072	1
18	Exhaust Tube Adapter	184074	1
19	O-Ring	122315	1
20	Hose Clamp	184063	1
21	Disconnect Fitting	121433	1
22	Muffler	184498	1

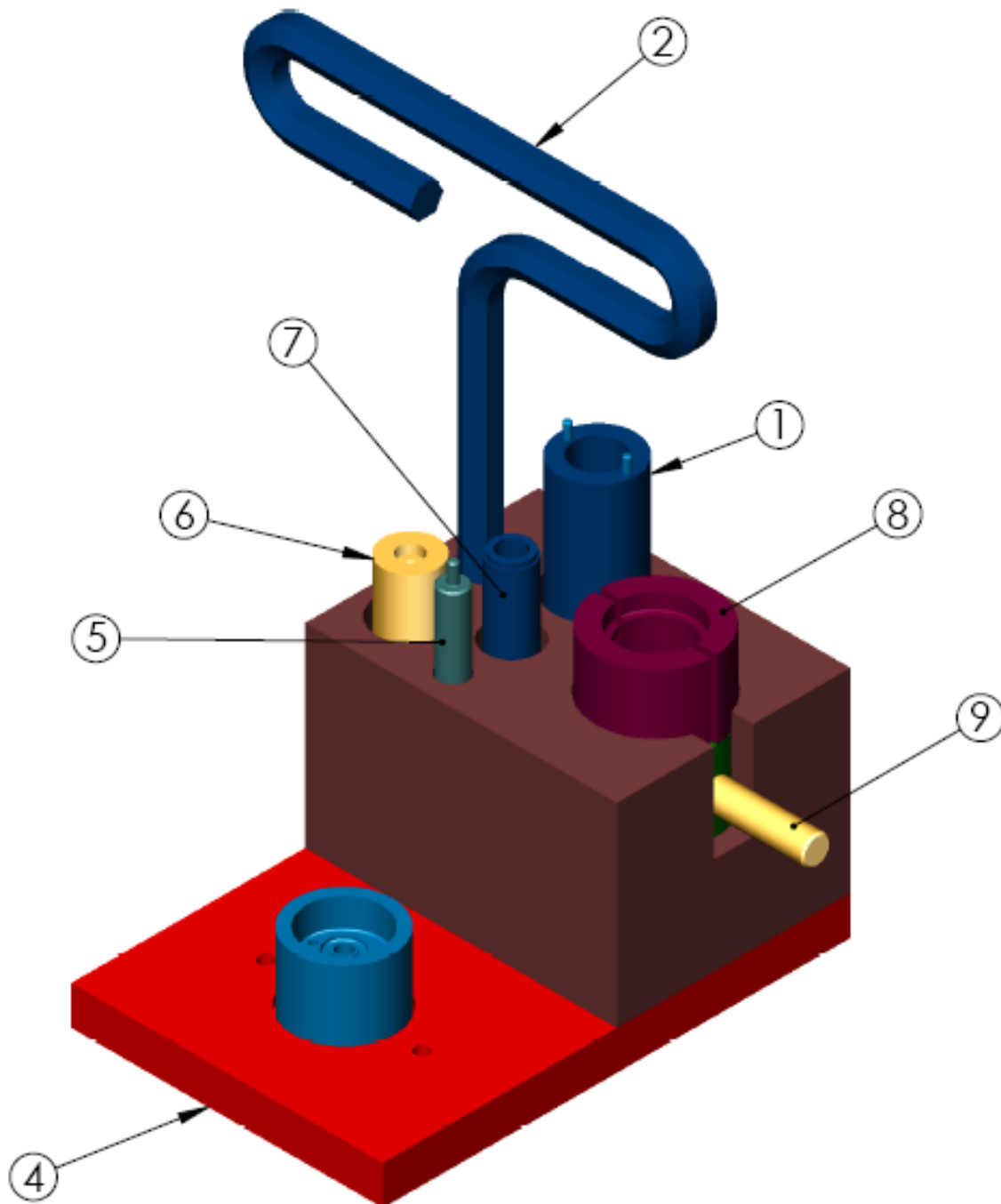


Complete Quick Start Valve and Hose Assembly (Continued)

ITEM	DESCRIPTION	PART NUMBER	QTY.
	Complete Valve and Hose Assembly (Includes Items 1, 14)	185374	
1	Valve Assembly (Includes Items 2, 4, 5, 6, 7, 8, 11, 13)	185351	1
2	Valve Body Assembly (Includes Item 3)	185352	1
3	Lever Assembly Kit (Includes Lever Assembly and Lever Pin)	185385	1
4	O-Ring	122480	1
5	Housing Plug	185383	1
6	O-Ring	143434	2
7	Valve Spring	163792	1
8	Valve Stem Assembly (Includes Items 9,10)	185356	1
9	O-Ring	143328	1
10	O-Ring	122481	1
11	Exhaust Fitting Assembly (Includes Item 12)	185366	1
12	O-Ring	122480	1
13	Inlet Fitting	185368	1
14	Hose Assembly (Includes Items 15, 16, 17, 18, 19, 20, 21, 22, 23)	185369	1
15	1/8" NPT Fitting	143404	1
16	Pressure Tubing	185370	1
17	Exhaust Tubing	185373	1
18	Hose Clamp	185372	2
19	Exhaust Deflector	185371	1
20	O-Ring	122315	1
21	Hose Clamp	184063	1
22	Disconnect Fitting	121433	1
23	Muffler	184498	1



Tools and Maintenance Kit



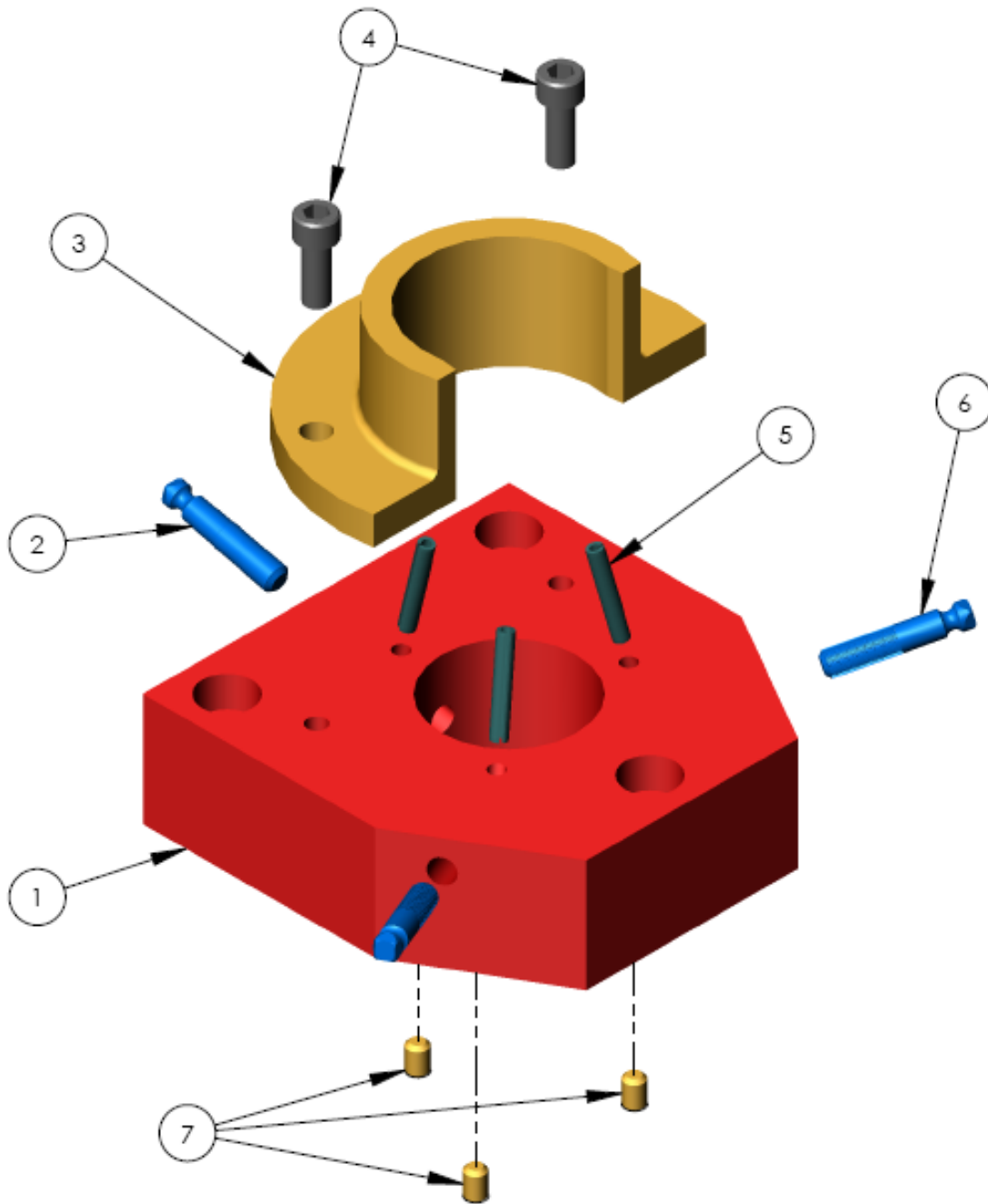


Tools and Maintenance Kit (Continued)

ITEM	DESCRIPTION	PART NUMBER	QTY.
1	Spanner Wrench	184134	1
2	Hex Wrench	184128	1
3	Maintenance Kit (Includes Items 4, 5, 6, 7, 8, 9)	185975	1
4	Base Assembly	185976	1
5	Rotor Removal Punch	184254	1
6	Gear Teeth Cap	185977	1
7	Bearing Tool	185978	1
8	Top Plate Removal Clamp (2 required)	184255	2
9	Cup Assembly	184246	1



Whizard® TRIMVAC® 18AMX Sharpener Assembly





Whizard® TRIMVAC® 18AMX Sharpener Assembly (Continued)

ITEM	DESCRIPTION	PART NUMBER	QTY.
	Complete TRIMVAC® 18AMX Sharpener Assembly (Includes Items 1, 2, 3, 4, 5, 6, 7)	184377	
1	Base	184378	1
2	Sharpening Rod	183893	1
3	Guide	184379	1
4	Socket Head Cap Screw	122510	2
5	Spring Pin	122409	3
6	Steeling Rod	163124	2
7	Set Screw	120092	3



Section 8

Contact and Document Information

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Contact Addresses and Phone

For additional information, technical support and spare parts, contact your Regional Manager, Distributor, or Bettcher Representative:

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Visit our website at www.bettcher.com

Document Identification

Copies of this Operation Instruction may be ordered by quoting the Document ID as listed below:

Document ID:	Manual #188000
Document Description:	Operating Instructions and Spare Parts List For Whizard® AirMax MACH 3 Trimmers
Issued:	September 1, 2009

Operating Instructions for other Whizard® Trimmer Models may be requested by quoting the model designation of the tool as shown on the identification plate on the Whizard® Trimmer.



BETTCHER
Industries, Inc.

Contact and Document Information

Software and Duplication

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