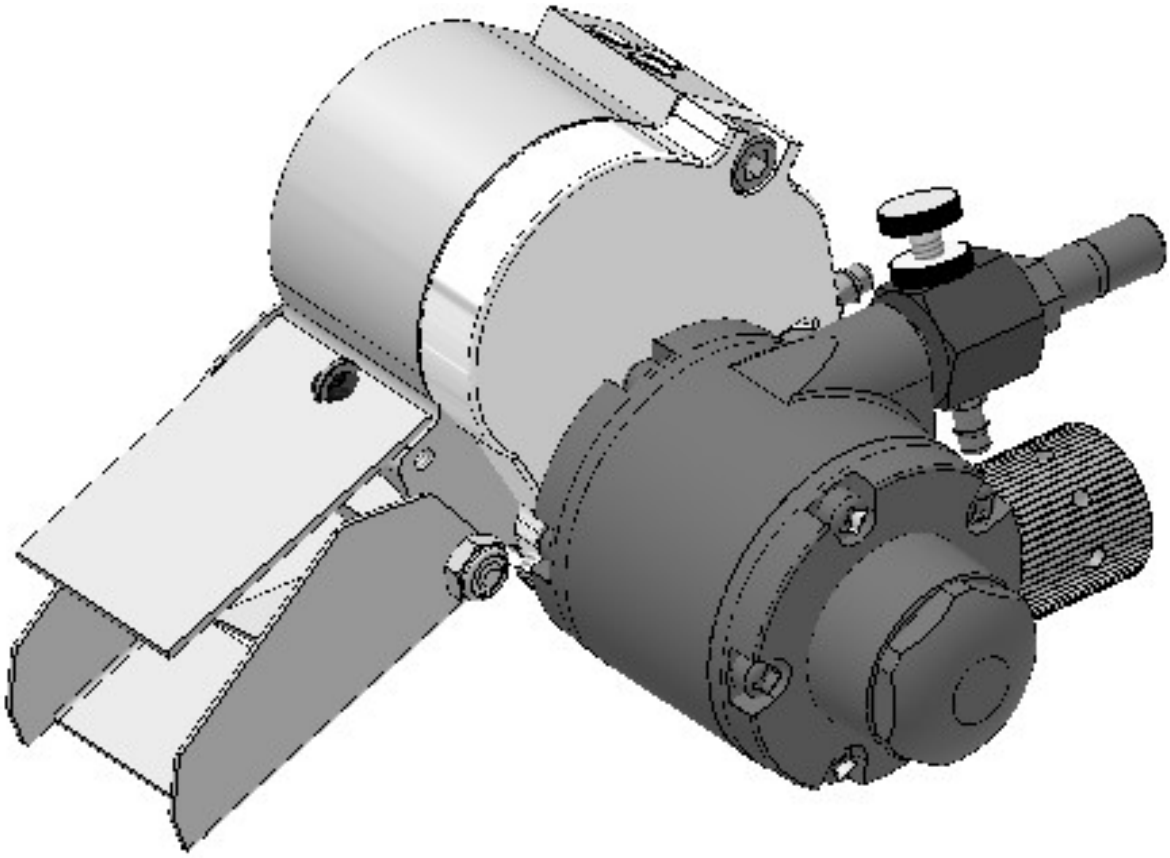
Super Pro Cutter

Manual

This manual is applicable to the following models:

- VRC-1000



MAGNUM VENUS PRODUCTS

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Use of this product confirms that Magnum Venus Products, Inc.'s standard terms and conditions of sale apply.

Table of Contents

Safety & Warning Information

Warnings

Due to the vast number of chemicals that could be used and their varying chemical reactions, the buyer and user of this equipment should determine all factors relating to the fluids used, including any of the potential hazards involved. Particular inquiry and investigation should be made into potential dangers relating to toxic fumes, fires, explosions, reaction times, and exposure of human beings to the individual components or their resultant mixtures. MVP assumes no responsibility for loss, damage, expense or claims for bodily injury or property damage, direct or consequential, arising from the use of such chemical components.

The end user is responsible for ensuring that the end product or system complies with all the relevant laws in the country where it is to be used and that all documentation is adhered to.

Recommended Occupational Safety & Health Act (OSHA) Documentation:

- 1910.94 Pertaining to ventilation
- 1910.106 Pertaining to flammable liquids
- 1910.107 Pertaining to spray finishing operations, particularly paragraph (m), Organic Peroxides and Dual Component Coatings

For Additional information, contact the Occupational Safety and Health Administration (OSHA) at https://www.osha.gov/about.html.

Recommended National Fire Protection Association (NFPA) Documentation:

- NFPA No.33 Chapter 14 Organic Peroxides and Dual Component Materials
- NFPA No. 63 Dust Explosion Prevention
- NFPA No. 70 National Electrical Code
- NFPA No. 77 Static Electricity
- NFPA No. 91 Blower and Exhaust System
- NFPA No. 654 Plastics Industry Dust Hazards

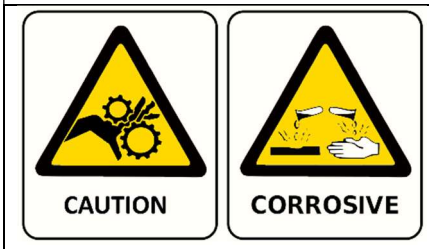
Fire Extinguisher – code ABC, rating number 4a60bc using Extinguishing Media –Foam, Carbon Dioxide, Dry Chemical, Water Fog, is recommended for this product and applications.

The following general warnings and guidelines are for the setup, use, grounding, maintenance, and repair of equipment. Additional product-specific warnings may be found throughout this manual as applicable. Please contact your nearest MVP Technical Service Representative if additional information is needed.

Safety Precautions
• Avoid skin contact and inhalation of all chemicals.
• Review Material Safety Data Sheet (MSDS) to promote the safe handling of chemicals in use.
• Restrict the use of all chemicals to designated areas with good ventilation.
• Chemicals are flammable and reactive.
• Noxious fumes released when combusted.
• Operate equipment in a ventilated environment only.
• Uncured liquid resins are highly flammable unless specifically labeled otherwise.
• Cured laminate, accumulations of overspray, and laminate sandings are highly combustible.
• Do not operate or move electrical equipment when flammable fumes are present.
• Ground all equipment.
• If a spark is seen or felt, immediately halt operation. Do not operate the equipment until the issue has been identified and repaired.
• Contaminated catalyst may cause fire or explosion.
• Containers may explode if exposed to fire / heat.
• Use and store chemicals away from heat, flames, and sparks.
• Do not smoke in work areas or near stored chemicals.
• Do not mix Methyl Ethyl Ketone Peroxide (MEKP) with materials other than polyethylene.
• Do not dilute MEKP.
• Keep food and drink away from work area.


Physical Hazards

- Never look directly into the spray gun fluid tip. Serious injury or death can result.
- Never aim the spray gun at or near another person. Serious injury or death can result.
- Chemical compounds can be severely irritating to the eyes and skin.
- Inhalation, ingestion, or injection may damage internal organs and lead to pulmonary disorders, cancers, lymphomas, and other diseases or health conditions.
- Other potential health effects include: irritation of the eyes and upper respiratory tract, headache, light-headedness, dizziness, confusion, drowsiness, nausea, vomiting, and occasionally abdominal pain.
- Eye contact: Immediately flush with water for at least 15 minutes and seek immediate medical attention.
- Skin Contact: Immediately wash with soap and water and seek immediate medical attention.
- Inhalation: Move the person to fresh air and seek immediate medical attention.
- Do not remove shields, covers, or safety features on equipment that is in use.
- Never place fingers, hands, or any body part near or directly in front of the spray gun fluid tip. The force of the liquid as it exits the spray tip can shoot liquid through the skin.
- Keep hands and body parts away from any moving equipment or components.
- Do not stand under plunger
- An improperly loaded drum may lead to an imbalance, causing a unit to tip over



Personal Protective Equipment (PPE)

- MVP recommends the use of personal safety equipment with all products in our catalog.
- Wear safety goggles, hearing protection, a respirator, and chemical resistant gloves.
- Wear long sleeve shirts or jackets and pants to minimize skin exposure.
- PPE should be worn by operators and service technicians to reduce the risk of injury.

For Additional information, contact the Occupational Safety and Health Administration (OSHA). https://www.osha.gov/about.html

Symbol Definitions

Indicates the risk of contact with chemicals that are hazardous, which may lead to injury or death.

Indicates the risk of contact with voltage / amperage that may lead to serious injury or death

Indicates that the materials being used are susceptible to combustion

Indicates the risk of contact with moving components that may lead to serious injury or death.

Indicates that the system or component should be grounded before proceeding with use or repair.

Indicates the use of lit cigarettes or cigars is prohibited, because the materials being used are susceptible to combustion.

Indicates that the materials and/or the process being performed can lead to ignition and explosion.

A recommendation for the use of Personal Protective Equipment (PPE) before using or repairing the product.

Polymer Matrix Materials: Advanced Composites

Potential health hazards associated with the use of advanced composites can be controlled through the implementation of an effective industrial hygiene and safety program.

https://www.osha.gov/dts/osta/otm/otm_iii/otm_iii_1.html#t iii:1_1

Resins		
Composite Component	**Organ System Target (Possible Target)**	**Known (Possible) Health Effect**
Epoxy resins	Skin, lungs, eyes	Contact and allergic dermatitis, conjunctivitis
Polyurethane resins	Lungs, skin, eyes	Respiratory sensitization, contact dermatitis, conjunctivitis
Phenol formaldehyde	Skin, lungs, eyes	As above (potential carcinogen)
Bismaleimides (BMI)	Skin, lungs, eyes	As above (potential carcinogen)
Polyamides	Skin, lungs, eyes	As above (potential carcinogen)
Reinforcing materials		
Composite Component	**Organ System Target (Possible Target)**	**Known (Possible) Health Effect**
Aramid fibers	Skin (lungs)	Skin and respiratory irritation, contact dermatitis (chronic interstitial lung disease)
Carbon/graphite fibers	Skin (lungs)	As noted for aramid fibers
Glass fibers (continuous filament)	Skin (lungs)	As noted for aramid fibers
Hardeners and curing agents		
Composite Component	**Organ System Target (Possible Target)**	**Known (Possible) Health Effect**
Diaminodiphenylsulfone	N/A	No known effects with workplace exposure
Methylenedianiline	Liver, skin	Hepatotoxicity, suspect human carcinogen
Other aromatic amines		
Composite Component	**Organ System Target (Possible Target)**	**Known (Possible) Health Effect**
Meta-phenylenediamine (MPDA)	Liver, skin (kidney, bladder)	Hepatitis, contact dermatitis (kidney and bladder cancer)
Aliphatic andcyclo-aliphatic amines	Eyes, skin	Severe irritation, contact dermatitis
Polyaminoamide	Eyes, skin	Irritation (sensitization)
Anhydride	Eyes, lungs, skin	Severe eye and skin irritation, respiratory sensitization, contact dermatitis

Catalyst - Methyl Ethyl Ketone Peroxide (MEKP)

MEKP is among the more hazardous materials found in commercial channels. The safe handling of the "unstable (reactive)" chemicals presents a definite challenge to the plastics industry. The highly reactive property which makes MEKP valuable to the plastics industry in producing the curing reaction of polyester resins also produces the hazards which require great care and caution in its storage, transportation, handling, processing and disposal. MEKP is a single chemical. Various polymeric forms may exist which are more or less hazardous with respect to each other. These differences may arise not only from different molecular structures (all are, nevertheless, called "MEKP") and from possible trace impurities left from the manufacture of the chemicals, but may also arise by contamination of MEKP with other materials in its storage or use. Even a small amount of contamination with acetone, for instance, may produce an extremely shock-sensitive and explosive compound.

WARNING

Contamination with promoters, materials containing promoters (such as laminate sandings), or with any readily oxidizing material (such as brass or iron) will cause exothermic redox reactions which can be explosive in nature. Heat applied to MEKP or heat buildup from contamination reactions can cause the material to reach its Self-Accelerating Decomposition Temperature (SADT).

Researchers have reported measuring pressure rates-of-rise well over 100,000 psi per second when certain MEKP's reach their SADT. For comparison, the highest-pressure rate-of-rise listed in NFPA Bulletin NO.68, "Explosion Venting", is 12,000 psi per second for an explosion of 12% acetylene and air. The maximum value listed for a hydrogen explosion is 10,000 psi per second. Some forms of MEKP, if allowed to reach their SADT, will burst even an open topped container. This suggests that it is not possible to design a relief valve to vent this order of magnitude of pressure rate-of-rise. The user should be aware that any closed container, be it a pressure vessel, surge chamber, or pressure accumulator, could explode under certain conditions. There is no engineering substitute for care by the user in handling organic peroxide catalysts. If, at any time, the pressure relieve valve on top of the catalyst tank should vent, the area should be evacuated at once and the fire department called. The venting could be the first indication of a heat, and therefore, pressure build-up that could eventually lead to an explosion. Moreover, if a catalyst tank is sufficiently full when the pressure relief valve vents, some catalyst may spray out, which could cause eye injury. For this reason, and many others, anyone whose job puts them in an area where this vented spray might go, should always wear full eye protection even when laminating operations are not taking place.

Safety in handling MEKP depends to a great extent on employee education, proper safety instructions, and safe use of the chemicals and equipment. Workers should be thoroughly informed of the hazards that may result from improper handling of MEKP, especially regarding contamination, heat, friction and impact. They should be thoroughly instructed regarding the proper action to be taken in the storage, use, and disposal of MEKP and other hazardous materials used in the laminating operation. In addition, users should make every effort to:

- Store MEKP in a cool, dry place in original containers away from direct sunlight and away from other chemicals.
- Keep MEKP away from heat, sparks, and open flames.
- Prevent contamination or MEKP with other materials, including polyester over spray and sandings, polymerization accelerators and promoters, brass, aluminum, and non-stainless steels.

- Never add MEKP to anything that is hot, since explosive decomposition may result.
- Avoid contact with skin, eyes, and clothing. Protective equipment should be worn at all times. During clean-up of spilled MEKP, personal safety equipment, gloves, and eye protection must be worn. Firefighting equipment should be at hand and ready.
- Avoid spillage, which can heat up to the point of self-ignition.
- Repair any leaks discovered in the catalyst system immediately, and clean-up the leaked catalyst at once in accordance with the catalyst manufacturer's instructions.
- Use only original equipment or equivalent parts from Magnum Venus Products in the catalyst system (i.e.: hoses, fitting, etc.) because a dangerous chemical reaction may result between substituted parts and MEKP.
- Catalyst accumulated from the purging of hoses or the measurement of fluid output deliveries should never be returned to the supply tank, such catalyst should be diluted with copious quantities of clean water and disposed of in accordance with the catalyst manufacturer's instructions.

The extent to which the user is successful in accomplishing these ends and any additional recommendations by the catalyst manufacturer determines largely the safety that will be present in his operation.

Clean-Up Solvents and Resin Diluents

WARNING

A hazardous situation may be present in your pressurized fluid system! Hydro carbon solvents can cause an explosion when used with aluminum or galvanized components in a closed (pressurized) fluid system (pump, heaters, filters, valves, spray guns, tanks, etc.). An explosion could cause serious injury, death, and/or substantial property damage. Cleaning agents, coatings, paints, etc. may contain Halogenated Hyrdrocarbon solvents. Some Magnum Venus Products spray equipment includes aluminum or galvanized components and will be affected by Halogenated Hydrocarbon solvents.

There are three key elements to the Halogenated Hyrdocarbon (HHC) solvent hazard.

1.	The presence of HHC solvents.	1,1,1 – Trichloroethane and Methylene Chloride are the most common of these solvents. However, other HHC solvents are suspect if used; either as part of paint or adhesives formulation, or for clean-up flushing.
2.	Aluminum or Galvanized Parts.	Most handling equipment contains these elements. In contact with these metals, HHC solvents could generate a corrosive reaction of a catalytic nature.
3.	Equipment capable of withstanding pressure.	When HHC solvent contact aluminum or galvanized parts inside a closed container such as a pump, spray gun, or fluid handling system, the chemical reaction can, over time, result in a build-up of heat and pressure, which can reach explosive proportions. When all three elements are present, the result can be an extremely violent explosion. The reaction can be sustained with very little aluminum or galvanized metal; any amount of aluminum is too much.

- The reaction is unpredictable. Prior use of an HHC solvent without incident (corrosion or explosion) does NOT mean that such use is safe. These solvents can be dangerous alone (as a clean-up or flushing agent) or when used as a component or a coating material. There is no known inhibitor that is effective under all circumstances. Mixing HHC solvents with other materials or solvents such as MEKP, alcohol, or toluene may render the inhibitors ineffective.
- The use of reclaimed solvents is particularly hazardous. Reclaimers may not add any inhibitors. The possible presence of water in reclaimed solvents could also feed the reaction.
- Anodized or other oxide coatings cannot be relied upon to prevent the explosive reaction. Such coatings can be worn, cracked, scratched, or too thin to prevent contact. There is no known way to make oxide coatings or to employ aluminum alloys to safely prevent the chemical reaction under all circumstances.
- Several solvent suppliers have recently begun promoting HHC solvents for use in coating systems. The increasing use of HHC solvents is increasing the risk. Because of their exemption from many state implementation plans as Volatile Organic Compounds (VOCs), their low flammability hazard, and their not being classified as toxic or carcinogenic substances, HHC solvents are very desirable in many respects.

WARNING

Do not use Halogenated Hydrocarbon (HHC) solvents in pressurized fluid systems having aluminum or galvanized wetted parts.
Magnum Venus Products is aware of NO stabilizers available to prevent HHC solvents from reaction under all conditions with aluminum components in closed fluid systems. HHC solvents are dangerous when used with aluminum components in a closed fluid system.

- Consult your material supplier to determine whether your solvent or coating contains Halogenated Hydrocarbon solvents.
- Magnum Venus Products recommends that you contact your solvent supplier regarding the best non-flammable clean-up solvent with the heat toxicity for your application.
- If, however, you find it necessary to use flammable solvents, they must be kept in approved, electrically grounded containers.
- Bulk solvent should be stored in a well-ventilated, separate building, 50 feet away from your main plant.
- You should only allow enough solvent for one day's use in your laminating area.
- NO SMOKING signs must be posted and observed in all areas of storage or where solvents and other flammable materials are used.
- Adequate ventilation (as covered in OSHA Section 1910.94 and NFPA No.91) is important wherever solvents are stored or used, to minimize, confine and exhaust the solvent vapors.
- Solvents should be handled in accordance with OSHA Section 1910.106 and 1910.107.

Catalyst Diluents

Magnum Venus Products spray-up and gel-coat systems currently produced are designed so that catalyst diluents are not required. Magnum Venus Products therefore recommends that diluents not be used to avoid possible contamination which could lead to an explosion due to the handling and mixing of MEKP and diluents. In addition, it eliminates any problems from the diluent being contaminated through rust particles in drums, poor quality control on the part of the diluents suppliers, or any other reason. If diluents are absolutely required, contact your catalyst supplier and follow his instructions explicitly. Preferably the supplier should premix the catalyst to prevent possible "on the job" contamination while mixing.

WARNING

If diluents are not used, remember that catalyst spillage and gun, hose, and packing leaks are potentially more hazardous since each drop contains a higher concentration of catalyst and will therefore react more quickly with overspray and the leak.

Cured Laminate, Overspray and Laminate Sandings Accumulation

- Remove all accumulations of overspray, Fiberglass Reinforced Plastic (FRP) sandings, etc. from the building as they occur. If this waste is allowed to build up, spillage of catalyst is more likely to start a fire; in addition, the fire would burn hotter and longer.
- Floor coverings, if used, should be non-combustible.
- Spilled or leaked catalyst may cause a fire if it comes in contact with an FRP product, over-sprayed chop or resin, FRP sandings or any other material with MEKP.

To prevent spillage and leakage, you should:

1.	Maintain your Magnum Venus Products System.	Check the gun several times daily for catalyst and resin packing or valve leaks. REPAIR ALL LEAKS IMMEDIATELY.
2.	Never leave the gun hanging over or lying inside the mold.	A catalyst leak in this situation would certainly damage the part, possibly the mold, and may cause a fire.
3.	Inspect resin and catalyst hoses daily for wear or stress at the entry and exits of the boom sections and at the hose and fittings.	Replace if wear or weakness is evident or suspected.
4.	Arrange the hoses and fiberglass roving guides so that the fiberglass strands DO NOT rub against any of the hoses at any point.	If allowed to rub, the hose will be cut through, causing a hazardous leakage of material which could increase the danger of fire. Also, the material may spew onto personnel in the area.

Toxicity of Chemicals

- Magnum Venus Products recommends that you consult OSHA Sections 1910.94, 1910.106, 1910.107 and NFPA No.33, Chapter 14, and NFPA No.91.
- Contact your chemical supplier(s) and determine the toxicity of the various chemicals used as well as the best methods to prevent injury, irritation and danger to personnel.
- Also determine the best methods of first aid treatment for each chemical used in your plant.

Equipment Safety

Magnum Venus Products suggest that personal safety equipment such as EYE GOGGLES, GLOVES, EAR PROTECTION, and RESPIRATORS be worn when servicing or operating this equipment. Ear protection should be worn when operating a fiberglass chopper to protect against hearing loss since noise levels can be as high as 116 dB (decibels). This equipment should only be operated or serviced by technically trained personnel!

CAUTION

Never place fingers, hands, or any body part near or directly in front of the spray gun fluid tip. The force of the liquid as it exits the spray tip can cause serious injury by shooting liquid through the skin. NEVER LOOK DIRECTLY INTO THE GUN SPRAY TIP OR POINT THE GUN AT OR NEAR ANOTHER PERSON OR AN ANIMAL.

DANGER

Contaminated catalyst may cause fire or explosion. Before working on the catalyst pump or catalyst accumulator, wash hands and tools thoroughly. Be sure work area is free from dirt, grease, or resin. Clean catalyst system components with clean water daily.

DANGER

Eye, skin, and respiration hazard. The catalyst MEKP may cause blindness, skin irritation, or breathing difficulty. Keep hands away from face. Keep food and drink away from work area.

Treatment of Chemical Injuries

CAUTION

Refer to your catalyst manufacturer's safety information regarding the safe handling and storage of catalyst. Wear appropriate safety equipment as recommended.

Great care should be used in handling the chemicals (resins, catalyst and solvents) used in polyester systems. Such chemicals should be treated as if they hurt your skin and eyes and as if they are poison to your body. For this reason, Magnum Venus Products recommends the use of protective clothing and eye wear in using polyester systems. However, users should be prepared in the event of such an injury.

Precautions include:

1. Know precisely what chemicals you are using and obtain information from your chemical supplier on what to do in the event the chemical gets onto your skin or into the eyes, or if swallowed.
2. Keep this information together and easily available so that it may be used by those administering first aid or treating the injured person.
3. Be sure the information from your chemical supplier includes instructions on how to treat any toxic effects the chemicals have.

WARNING

Contact your doctor immediately in the event of an injury. If the product's MSDS includes first aid instructions, administer first aid immediately after contacting a doctor.

Fast treatment of the outer skin and eyes that contact chemicals generally includes immediate and thorough washing of the exposed skin and immediate and continuous flushing of the eyes with lots of clean water for at least 15 minutes or more. These general instructions of first aid treatment may be incorrect for some chemicals; you must know the chemicals and treatment before an accident occurs. Treatment for swallowing a chemical frequently depends upon the nature of the chemical.

Emergency Stop Procedure

In an emergency, follow these steps to stop a system:

1. The ball valve located where the air enters the power head of the resin pump, should be moved to the "OFF" or closed position.

Note ***The "open" or "on" position is when the ball valve handle is parallel (in line) with the ball valve body. The "closed" or "off" position is when the ball valve handle is perpendicular (across) the ball valve body.***

2. Turn all system regulators to the "OFF" position (counter-clockwise) position.
3. Verify / secure the catalyst relief line, located on the catalyst relief valve.
4. Verify / secure the resin return line, located on the resin filter.
5. Place a container under the resin pump ball valve to catch ejected resin.
6. Locate the ball valve on the resin pump.
7. Rotate the ball valve 90 degrees to the "On" or open position.

Grounding

Grounding an object means providing an adequate path for the flow of the electrical charge from the object to the ground. An adequate path is one that permits charge to flow from the object fast enough that it will not accumulate to the extent that a spark can be formed. It is not possible to define exactly what will be an adequate path under all conditions since it depends on many variables. In any event, the grounding means should have the lowest possible electrical resistance.

Grounding straps should be installed on all loose conductive objects in the spraying area. This includes material containers and equipment. Magnum Venus Products recommends grounding straps be made of AWG No.18 stranded wire as a minimum and the larger wire be used where possible. NFPA Bulletin No77 states that the electrical resistance of such a leakage path may be as low as 1 meg ohm (10 ohms) but that resistance as high as 10,000 meg ohms will produce an adequate leakage path in some cases.

CAUTION

Whenever flammable or combustible liquids are transferred from one container to another, or from one container to the equipment, both containers or container and equipment shall be effectively bonded and grounded to dissipate static electricity. For further information, see National Fire Protection Association (NFPA) 77, titled "Recommended Practice on Static Electrical". Refer especially to section 7-7 titled "Spray Application of Flammable and Combustible Materials".

Introduction

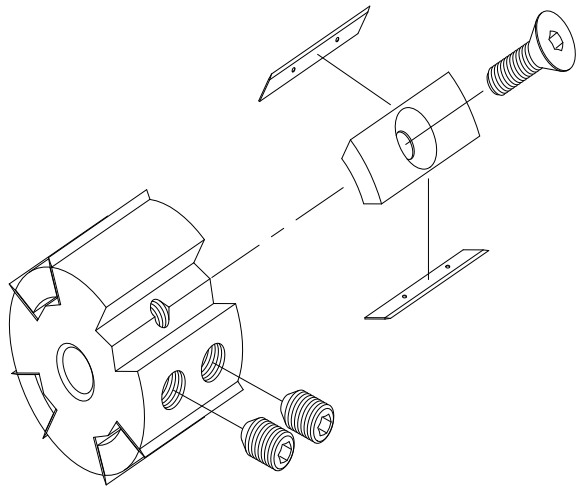
This manual provides information for the operation, maintenance, and simple repair of the MVP Super Pro Cutter. The following procedures are included:

- Maintenance instructions
- Specifications and adjustments

Please read this manual carefully and retain for future reference. Follow the steps in the order given, otherwise you may damage the equipment or injure yourself.

Specifications

The Super Pro Cutter uses a wedge style rotor assembly. The rotor is 1.375" (34.9 mm) diameter.



Wedge Rotor Assemblies			
Part Number	**Description**	**Chop Length**	**Optional Config.**
5113-04-01	6 Blade Wedge Rotor	0.72”	2 Blade, 2.16” chop
			3 Blade, 1.44” chop
5103-03-01	8 Blade Wedge Rotor	0.54”	2 Blade, 2.16” chop
			4 Blade, 1.08” chop

Performing Maintenance

Replacing Chopper Blades

Inspect chopper blades daily and replace any that become worn or chipped.

WARNING

Before attempting to inspect or replace blades, make sure all air to the chopper is disconnected.

1. Remove the chopper cover by turning the cover stud.
2. Remove the rotor from the air motor shaft.

WARNING

BLADES ARE SHARP. To prevent injury, use caution when working with the rotor.

3. Remove the set screws, then each of the hex screws holding a wedge in place and remove the wedge and blades.
4. Before installing the new blades, lightly dull the sharp edges by moving them gently back and forth on cardboard.
5. If you have a wedge style rotor, slide the new blades in place and secure with the wedges, then skip to step 13.
6. Stack one spring, one spacer, and one blade together.
7. Locate the deep side of a slot in the rotor.
8. Slide the stack into the slot from the end of the rotor (not the top of the slot), so that the blade is on the deep side of the slot.

Note ***Make sure the blade aligns with the center line of the rotor.***

9. Center the spring, the spacer, and the blade in the rotor.
10. Press the spacer and spring to the bottom of the slot with a screwdriver handle.
11. Press the blade to the bottom of the slot by pushing the blade against the bench or a piece of wood.
12. Repeat steps 6 - 11 until all the slots on the rotor are filled.
13. Position the rotor so that as it rotates clockwise, the retainer and spring contact the rubber roll before the blade does (i.e. the blade hits last).

14. Slide the rotor onto the air motor shaft so that the set screws align with the flat on the air motor shaft.
15. Adjust the rotor so that the blades should align with the rubber roll.
16. Secure the rotor by tightening the set screws.
17. Attach the cover to the chopper, aligning the base plate's notch with the boss in the cover.
18. Twist the cover stud to lock the cover in place.

WARNING

Never operate the chopper without the cover installed or personal injury may result.

Reinstall Glass

19. Thread the glass strands through the brake guides on the boom.
20. Bend the end of a strand of glass to form a small loop.
21. Insert the loop into a hole in the chopper cover.
22. **Carefully** insert your finger into the chopper and rotate the rubber roll by placing your finger under the roll and pulling **toward** you.

    This pulls the glass strand into position between the rubber roll and the blade rotor assembly.

Note ***Using two strands of glass results in a better glass pattern and less wear on the chopper unit.***

Replacing Rubber Roll

Inspect the rubber roll daily. If you see deep grooves in the roll or if the chopper is delivering longer glass strands than normal, replace the roll.

WARNING

Before attempting to inspect or repair the equipment, make sure all air to the chopper is disconnected.

1. Disconnect air to the chopper.
2. Remove the chopper cover by turning the cover stud.

WARNING

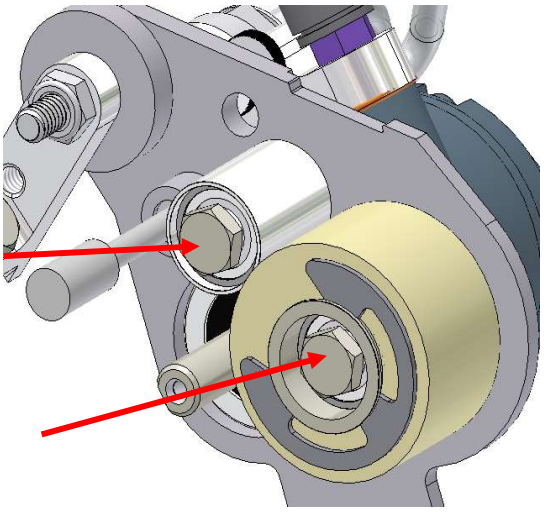
BLADES ARE SHARP. To prevent injury, use caution when working with the rotor.

3. Loosen the socket cap screw in the center of the rubber roll and mandrel enough to slide the slide adjust nut from the slot in the base plate.
4. Remove the E-ring on the mandrel.
5. Pull the rubber roll off the mandrel.

Note ***If needed, a screwdriver may be used as a lever to remove the E-ring and rubber roll.***

Note ***Do not soak the mandrel or rubber roll in solvent.***

6. Push the new rubber roll onto the mandrel.
7. Snap the E-ring into position on the end of the mandrel.
8. Use the socket wrench to secure the rubber roll and mandrel to the chopper.



Adjusting Rubber Roll

1. Loosen the screw holding the idler roll.

Note ***The idler role is also called the sleeve and bearing.***

2. Loosen the screw holding the rubber roll and mandrel.

Note ***The rubber roll should exert just enough pressure against the blade rotor to turn the rotor. You should not be able to turn the rubber roll while holding the rotor.***

Note ***The rubber roll may not be perfectly round. Adjust to the middle point rather than the high or low point.***

3. Adjust the idler roll and the rubber roll until the idler roll is barely touching the rubber roll.

Note ***The idler roll should be just close enough to the rubber roll to pull the fiberglass into the chopper without pulling the glass too tightly.***

4. Turn the roller eccentric nuts clockwise to tighten.
5. Attach the cover to the chopper, aligning the base plate's notch with the boss in the cover.
6. Twist the cover stud to lock the cover in place.

WARNING

Never operate the chopper without the cover installed or personal injury may result.

Reinstall Glass

1. Thread the glass strands through the brake guides on the boom.
2. Bend the end of a strand of glass to form a small loop.
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   This pulls the glass strand into position between the rubber roll and the blade rotor assembly.

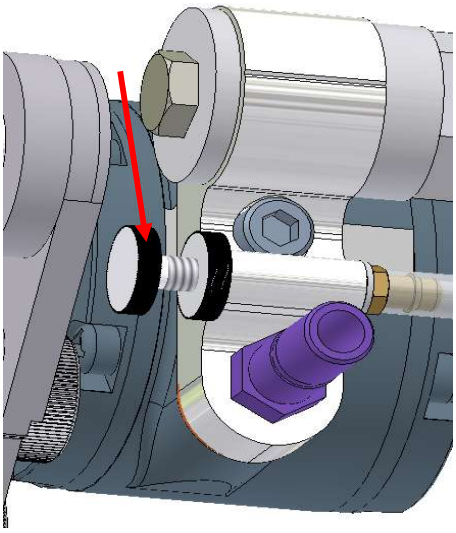
Note ***Using two strands of glass results in a better glass pattern and less wear on the chopper unit.***

Lubricating Chopper Air Motor

CAUTION

Lubricate the air motor every 4 hours during operation to prevent damage to the equipment.

1. Remove the hose fitting that attaches the flexible conduit to the chopper.
2. Completely close the blower thumbscrew to prevent oil from entering the interior of the chopper.
3. Insert 1 to 2 drops of chopper motor oil into the hose fitting port.
4. Reconnect the hose fitting.
5. Reconnect the air supply.
6. Operate the chopper briefly with the blower thumbscrew closed.
7. Reopen the blower thumbscrew to the desired setting for normal operations.



Disassembling Cutter

WARNING

Before attempting to inspect or repair the equipment, make sure all air to the chopper is disconnected.

1. Remove the air line from the back of the chopper.
2. Unscrew the cover nut and remove the cover.
3. Use a wrench to loosen the socket cap screw holding the rubber roll assembly enough to slide the slide adjust nut from the slot in the base plate and remove.
4. Remove the E-ring from the rubber roll and slide the rubber roll off the mandrel assembly.
5. Loosen the two socket up point set screws and slide the rotor assembly off of the air motor shaft.

WARNING

BLADES ARE SHARP. To prevent injury, use caution when working with the rotor.

6. Loosen the socket flat head screws used to secure the wedge inserts and remove the chopper blades from the rotor assembly.

Assembling Cutter

1. Insert chopper blades between the rotor hub and wedge insert, with the back edge of the blade bottomed against the rotor.
2. Align the edges of the blade with the end of the rotor hub.

3. Tighten the socket flat head screw in the wedge insert to secure the blades in place.
4. Wipe a small amount of grease on the air motor shaft.
5. Slide the wedge rotor assembly onto the air motor shaft so that the set screws in the rotor hub ride on the flat of the chopper motor shaft.

Note ***The rotor must be positioned on the air motor so it aligns with the rubber roll.***

6. Press the rubber roll onto the mandrel assembly.
7. Secure the rubber roll by inserting the E-ring into the groove on the mandrel.
8. Insert the mandrel assembly into the top of the T-slot on the base plate.
9. Align the slide adjust nut with the T-slot.
10. Slide the rubber roll assembly toward the wedge rotor assembly and tighten the socket cap screw.

Adjusting Cutter

CAUTION

Before adjusting the chopper the resin, catalyst, and solvent should be pressurized and operating correctly. Refer to your system's operating instructions before proceeding.

Adjust Rubber Roll

1. Slightly loosen the socket cap screw just enough so the rubber roll assembly will slide into the T-slot.
2. Apply slight pressure on the rubber roll assembly to the wedge rotor assembly and tighten the socket head cap screw.

Note ***When making this adjustment, the rubber roll must be in contact with the chopper blade.***

Adjust Idler

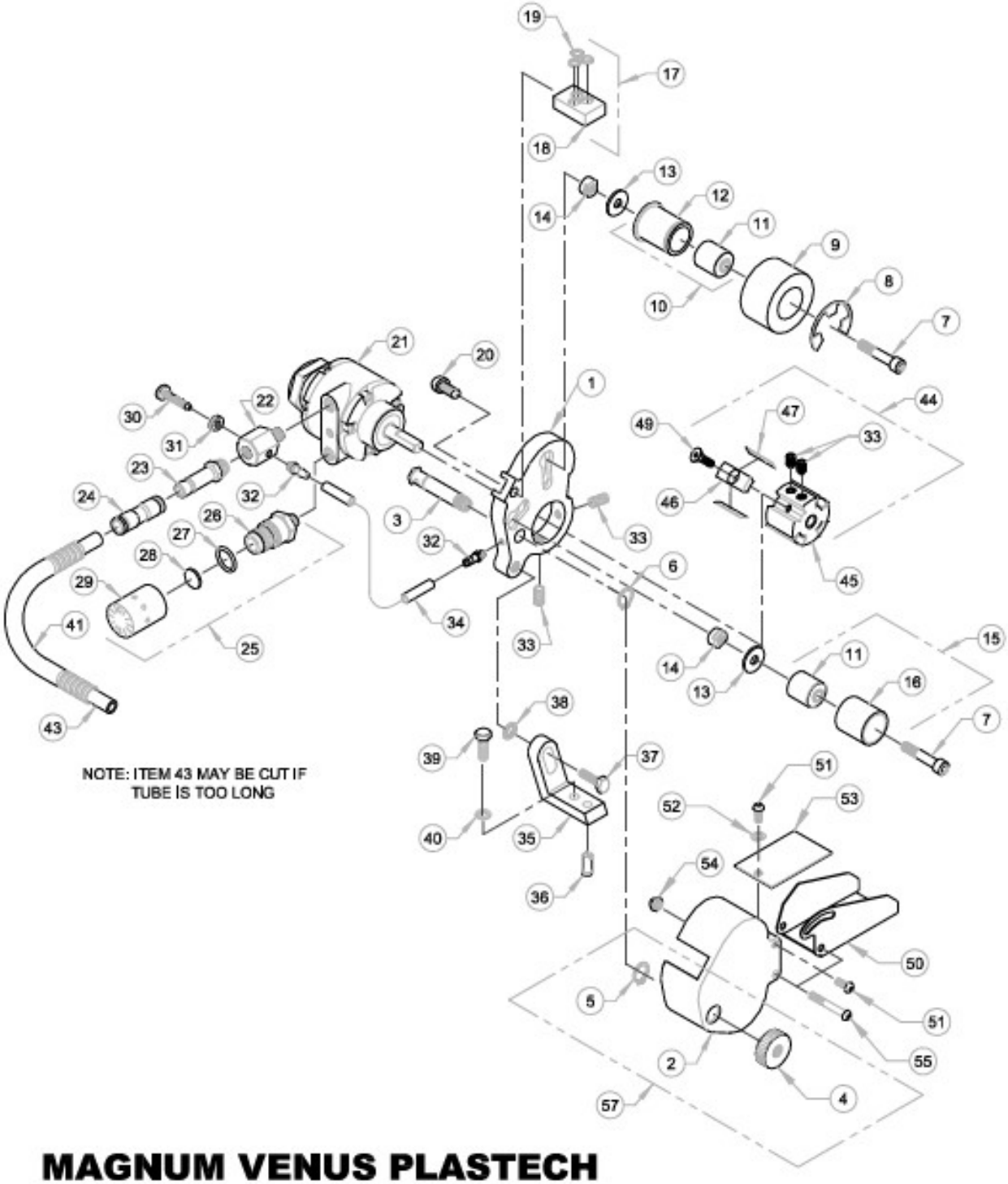
3. Slightly loosen the socket head cap screw just enough so the idler assembly will slide into the T-slot.
4. Slide the idler (a.k.a. the sleeve and bearing) until it just contacts the rubber roll.

Note ***Proper adjustment has the idler assembly touching the rubber roll but still able to rotate with minimal effort.***

Parts Drawings

The following drawings are included for your reference:

Parts Drawings	
Part Number	**Description**
VRC-1000	SuperPro II FIT Roving Cutter Assy
VRC-1000-CNP	Roving Cutter Assembly
VRC-1000-TLN-I	Chopper For Internal Mix Talon Gun
VRC-1000-TLN-IF	Chopper For Internal Mix FIT Talon Gun
VRC-1000-TLN-X	Chopper For External Mix Talon Gun
5103-01-01	SuperPro Chopper Assembly – Short Chute
VHTC-1000	SuperPro Chopper Assembly – High Torque Motor
VHTC-1000-TLN-I	SuperPro Chopper Assy – High Torque – Internal Mix Talon Gun
VHTC-1000-TLN-IF	SuperPro Chopper Assy – High Torque – Internal Mix FIT Talon Gun
VHTC-1000-TLN-X	SuperPro Chopper Assy – High Torque – External Mix Talon Gun
VRC-1000-80-MK	Mounting Kit – 80, Duramax Guns
VRC-1000-ATC-MK	Mounting Kit – ATC Chopper Gun
VRC-1000-VPR-MK	Mounting Kit – Viper & Titan Guns
VRC-TLN-I-CK	Conversion Kit – High Torque Motor
VRC-TLN-IF-CK	Conversion Kit – Talon Internal Mix Chopper
VRC-TLN-X-CK	Conversion Kit – Talon External Mix Chopper
VRC-TM-100	Throttle Muffler Assembly
VRC-TM-200	Throttle Muffler Assembly - Large
VRC-TM-200-HTM	Throttle Muffler Assembly – Large – High Torque Motor
5103-03-01	8 Blade Wedge Rotor – SuperPro Chopper
5103-04-01	6 Blade Wedge Rotor – SuperPro Chopper
00952-1	Chopper Air Motor Repair Kit – for 8402-1-1



MAGNUM VENUS PLASTECH

SuperPro II - FIT Roving Cutter Assy	VRC-1000

REV. C = ITEM 43 WAS QTY 1 09/04/08 BT2
REV. D = CLARIFIED BOX FOR ITEM 57 01/18/12 BT2
REV. E = UPDATED SEVERAL NUMBERS TO ALPHA-NUMERIC, ADDED NOTE FOR ITEM 43 08/09/12 BT2
REV. F = ITEM 47A WAS 9210-1-100 AND 47B WAS 9210-1-1000 02/27/14 BT2

SuperPro II - FIT Roving Cutter Assy VRC-1000

PARTS LIST

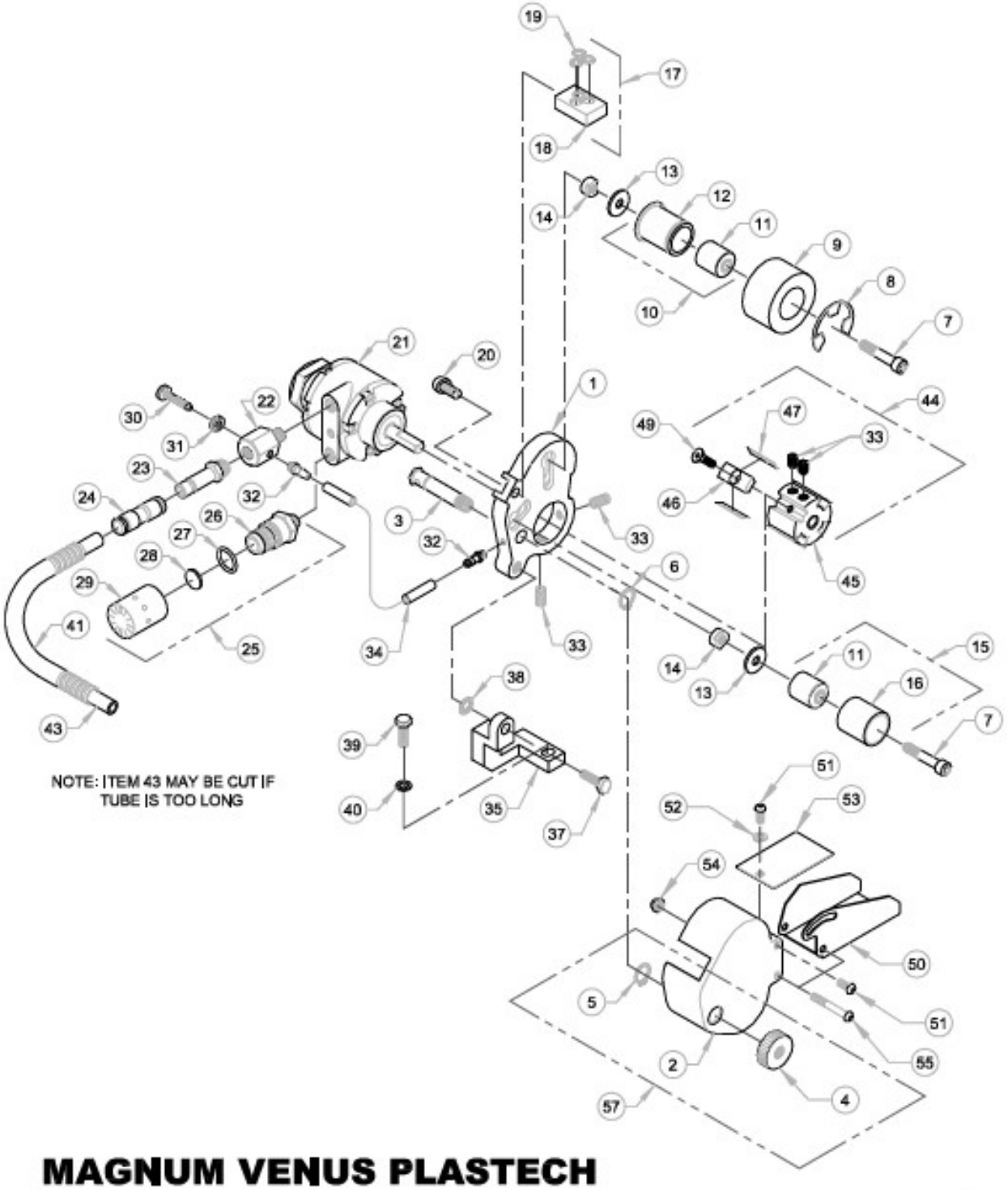
ITEM	PART NO.	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-13-1	1	CHOPPER COVER
3	5103-2-01	1	AIR STUD SPA
4	5103-14-1	1	COVER NUT
5	BOS-3056	1	SNAP RING DIA 1/2"
6	7205-2-6	1	SNAP RING DIA 3/8"
7	F-CS-04C-20	2	SOCKET HD CAP SCREW
8	7205-3-31	1	E-RING
9	5103-6-1	1	70 DURO RUBBER ROLL
11	RC-1018A	2	SEALED BALL BEARING
12	5103-5-1	1	MANDREL
13	5103-18-1	2	SPACER WASHER
14	5103-4-1	2	SLIDE ADJ NUT
16	5103-7-1	1	SLEEVE
17	5103-3-01	1	ROVING GUIDE SPA
20	F-CS-04C-08	1	SOCKET HD CAP SCREW
21	8402-1-1	1	AIR MOTOR
22	5103-9-1	1	CHOPPER AIR VALVE
23	5103-12-1	1	OILER DISCONNECT
24	7701-6-8	1	PUSH-IN FITTING
26	5103-19-1	1	SPEED CONTROL HOUSING
27	O-V-016	1	O-RING
28	5103-20-1	1	SPEED CONTROL SEAL
29	5103-21-1	1	SPEED CONTROL COVER
30	5103-11-1	1	THUMBSCREW
31	5103-10-1	1	LOCK RING
32	7701-6-3	2	BARB FITTING
33	7102-11-6	4	SOCKET CUP POINT SET SCREW
34	09073	.33 FT	URETHANE TUBING 1/4" OD
35	5103-16-1	1	MOUNT BRACKET
36	5103-17-1	1	ECCENTRIC STUD
37	F-HB-05C-16	1	HEX HD BOLT
38	7202-5-10	1	INTERNAL STAR WASHER HEAVY DUTY
39	F-HB-04C-12	1	HEX HEAD BOLT
40	F-SW-04	1	LOCK WASHER
41	5103-15-01	1	CHOPPER CONDUIT
43	00004	1.17 FT	3/8" POLY TUBING BLACK (14 INCHES)
45	5103-28-1	1	ROTOR HUB 8-BLADE
46	5103-29-1	4	WEDGE INSERT 8-BLADE
47	5103-8-1	8	CHOPPER BLADE
49	F-FHCS-1024-06	4	SOCKET FLAT HEAD SCREW
50	5103-24-1	1	CHOPPER CHUTE
51	F-BHCS-1024-06	2	SOCKET BUTTON HEAD SCREW
52	F-SW-1024	1	LOCK WASHER
53	5103-25-1	1	TOP DEFLECTOR
54	F-LN-1024	1	NYLOCK HEX NUT
55	7102-16-28	1	SOCKET BUTTON HEAD SCREW

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
9B	5103-6-2	1	60 DURO RUBBER ROLL
10	5103-5-01	1	MANDREL SPA
15	5103-7-01	1	SLEEVE W/BEARING
18	5103-3-1	1	GUIDE BLOCK
19	9209-1-1	3	GUIDE
25	5103-02-01	1	SPEED CONTROL ASSY
44	5103-03-01	1	8-BLADE WEDGE ROTOR ASSY
47A	5103-8-100	1	BLADES (PACKAGE OF 100)
47B	5103-8-1000	1	BLADES (PACKAGE OF 1000)
57	VRC-1001	1	CHOPPER COVER ASSY.

REPAIR KIT

PART NO.	DESCRIPTION
6702-03-01	ROVING CUTTER REPAIR KIT



MAGNUM VENUS PLASTECH

Roving Cutter Assembly	VRC-1000-CNP

REV. A - CLARIFIED BOX FOR ITEM 57 01/19/12 BT2
REV. B - ADDED NOTE FOR ITEM 43 05/09/12 BT2
REV. C - ITEM 47A WAS 9210-1-100 AND ITEM 47B WAS 9210-1-1000 02/27/14 BT2

Roving Cutter Assy VRC-1000-CNP

PARTS LIST

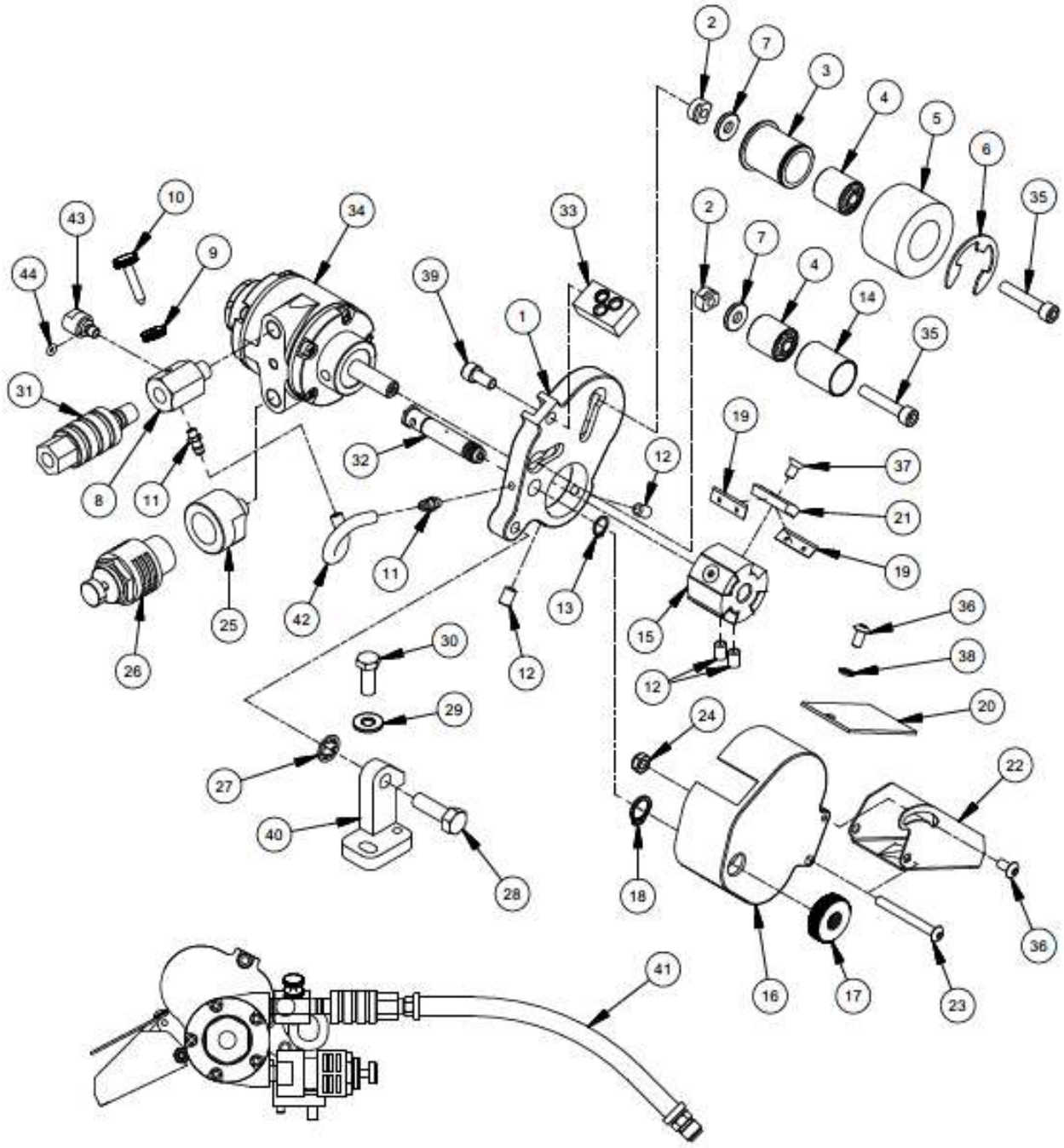
ITEM	PART NO.	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-13-1	1	CHOPPER COVER
3	5103-2-01	1	AIR STUD SPA
4	5103-14-1	1	COVER NUT
5	BOS-3056	1	SNAP RING DIA 1/2"
6	7205-2-6	1	SNAP RING DIA 3/8"
7	F-CS-04C-20	2	CAP SCREW
8	7205-3-31	1	E-RING
9	5103-6-1	1	70 DURO RUBBER ROLL
11	RC-1018A	2	BEARING
12	5103-5-1	1	MANDREL
13	5103-18-1	2	SPACER WASHER
14	5103-4-1	2	SLIDE ADJUSTMENT NUT
16	5103-7-1	1	SLEEVE
17	5103-3-01	1	ROVING GUIDE SPA
20	F-CS-04C-08	1	CAP SCREW
21	8402-1-1	1	AIR MOTOR
22	5103-9-1	1	CHOPPER AIR VALVE
23	5103-12-1	1	OIL DISCONNECT
24	7701-6-8	1	PUSH-IN FITTING
26	5103-19-1	1	SPEED CONTROL HOUSING
27	O-V-016	1	O-RING
28	5103-20-1	1	SPEED CONTROL SEAL
29	5103-21-1	1	SPEED CONTROL COVER
30	5103-11-1	1	THUMBSCREW
31	5103-10-1	1	LOCK RING
32	7701-6-3	2	BARB FITTING
33	7102-11-8	4	SET SCREW
34	09073	.33 FT	1/4" TUBING
35	GNP-1065-M	1	MOUNT BRACKET
37	F-HB-05C-16	1	HEX BOLT
38	7202-5-10	1	INTERNAL STAR WASHER
39	F-HB-04C-12	1	HEX BOLT
40	F-FW-04-SAE	1	FLAT WASHER
41	5103-15-01	1	CHOPPER CONDUIT
43	00004	1.17 FT	3/8" POLY TUBE (14 INCHES)
45	5103-28-1	1	ROTOR HUB 8-BLADE
46	5103-29-1	4	WEDGE INSERT 8-BLADE
47	5103-8-1	8	CHOPPER BLADE
49	F-FHCS-1024-06	4	FLAT HEAD CAP SCREW
50	GNP-1068	1	CHOPPER CHUTE
51	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
52	F-SW-1024	1	LOCK WASHER
53	5103-25-1	1	TOP DEFLECTOR
54	F-LN-1024	1	NYLOCK HEX NUT
55	7102-16-28	1	BUTTON HEAD CAP SCREW

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
9B	5103-6-2	1	60 DURO RUBBER ROLL
10	5103-5-01	1	MANDREL SPA
15	5103-7-01	1	SLEEVE WITH BEARING
18	5103-3-1	1	GUIDE BLOCK
19	9209-1-1	3	GUIDE
25	5103-02-01	1	SPEED CONTROL ASSEMBLY
44	5103-03-01	1	8 BLADE WEDGE ROTOR ASSY.
47A	5103-8-100	1	BLADES (PACKAGE OF 100)
47B	5103-8-1000	1	BLADES (PACKAGE OF 1000)
57	VRC-1001	1	COVER ASSEMBLY

REPAIR KIT

PART NO.	DESCRIPTION
6702-03-01	ROVING CUTTER REPAIR KIT



MAGNUM VENUS PLASTECH

CHOPPER FOR INTERNAL MIX TALON GUN	VRC-1000-TLN-I

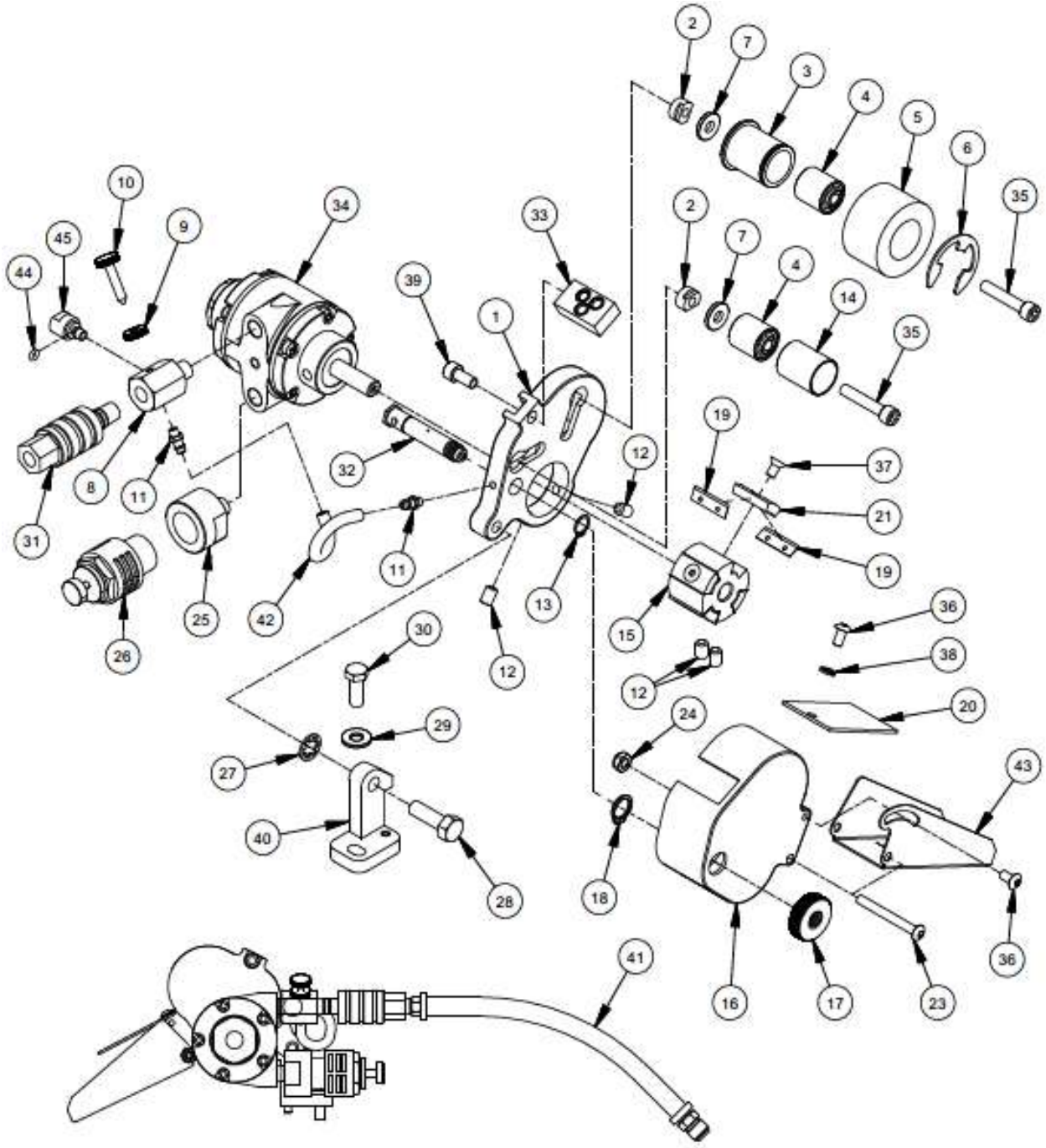
REV: C 10/16/2014 SHEET 1 / 2 7/3/2013

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	VRC-1016	1	CHOPPER AIR VALVE
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
22	5103-24-1	1	CHOPPER CHUTE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2014	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	F-HB-05C-16	1	HEX BOLT
29	F-FW-04-SAE	1	FLAT WASHER SAE
30	F-HB-04C-12	1	1/4 HEX BOLT
31	RC-1007	1	VALVE
32	5103-2-01	1	AIR STUD
33	5103-3-01	1	ROVING GUIDE
34	8402-1-1	1	AIR MOTOR
35	F-CS-04C-20	2	CAP SCREW
36	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
37	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
38	F-SW-1024	1	LOCK WASHER
39	F-CS-04C-08	1	CAP SCREW
40	TLN-1060-01	1	CHOPPER BRACKET
41	RC-1084	1	HOSE
42	09073	.33 FT	TUBE
43	VRC-1017	1	OIL PORT PLUG
44	O-B-006	1	O-RING

MAGNUM VENUS PLASTECH

CHOPPER FOR INTERNAL MIX TALON GUN — VRC-1000-TLN-I

REV: C 10/16/2014 — SHEET 2 / 2 — 7/3/2013



MAGNUM VENUS PLASTECH

CHOPPER FOR INTERNAL MIX FIT TALON GUN	VRC-1000-TLN-IF

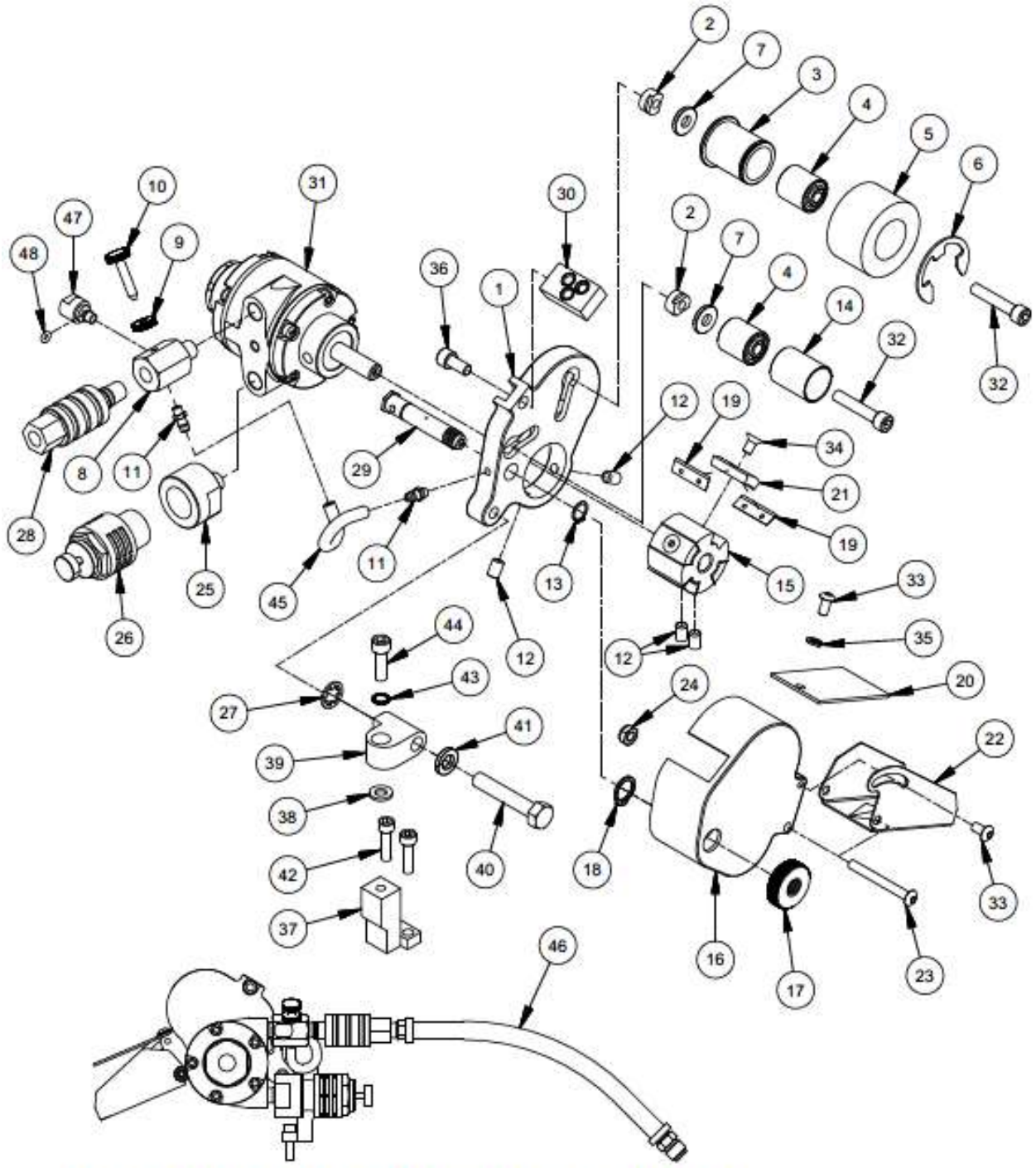
REV: C 10/16/2014 SHEET 1 / 2 7/3/2013

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	VRC-1016	1	CHOPPER AIR VALVE
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2014	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	F-HB-05C-16	1	HEX BOLT
29	F-FW-04-SAE	1	FLAT WASHER SAE
30	F-HB-04C-12	1	1/4 HEX BOLT
31	RC-1007	1	VALVE
32	5103-2-01	1	AIR STUD
33	5103-3-01	1	ROVING GUIDE
34	8402-1-1	1	AIR MOTOR
35	F-CS-04C-20	2	CAP SCREW
36	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
37	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
38	F-SW-1024	1	LOCK WASHER
39	F-CS-04C-08	1	CAP SCREW
40	TLN-1060-01	1	CHOPPER BRACKET
41	RC-1084	1	HOSE
42	09073	.33 FT	TUBE
43	71320-1	1	CHOPPER CHUTE
44	O-B-006	1	O-RING
45	VRC-1017	1	OIL PORT PLUG

MAGNUM VENUS PLASTECH

CHOPPER FOR INTERNAL MIX FIT TALON GUN	VRC-1000-TLN-IF

REV: C 10/16/2014 SHEET 2 / 2 7/3/2013



MAGNUM VENUS PLASTECH

CHOPPER FOR EXTERNAL MIX TALON GUN	VRC-1000-TLN-X

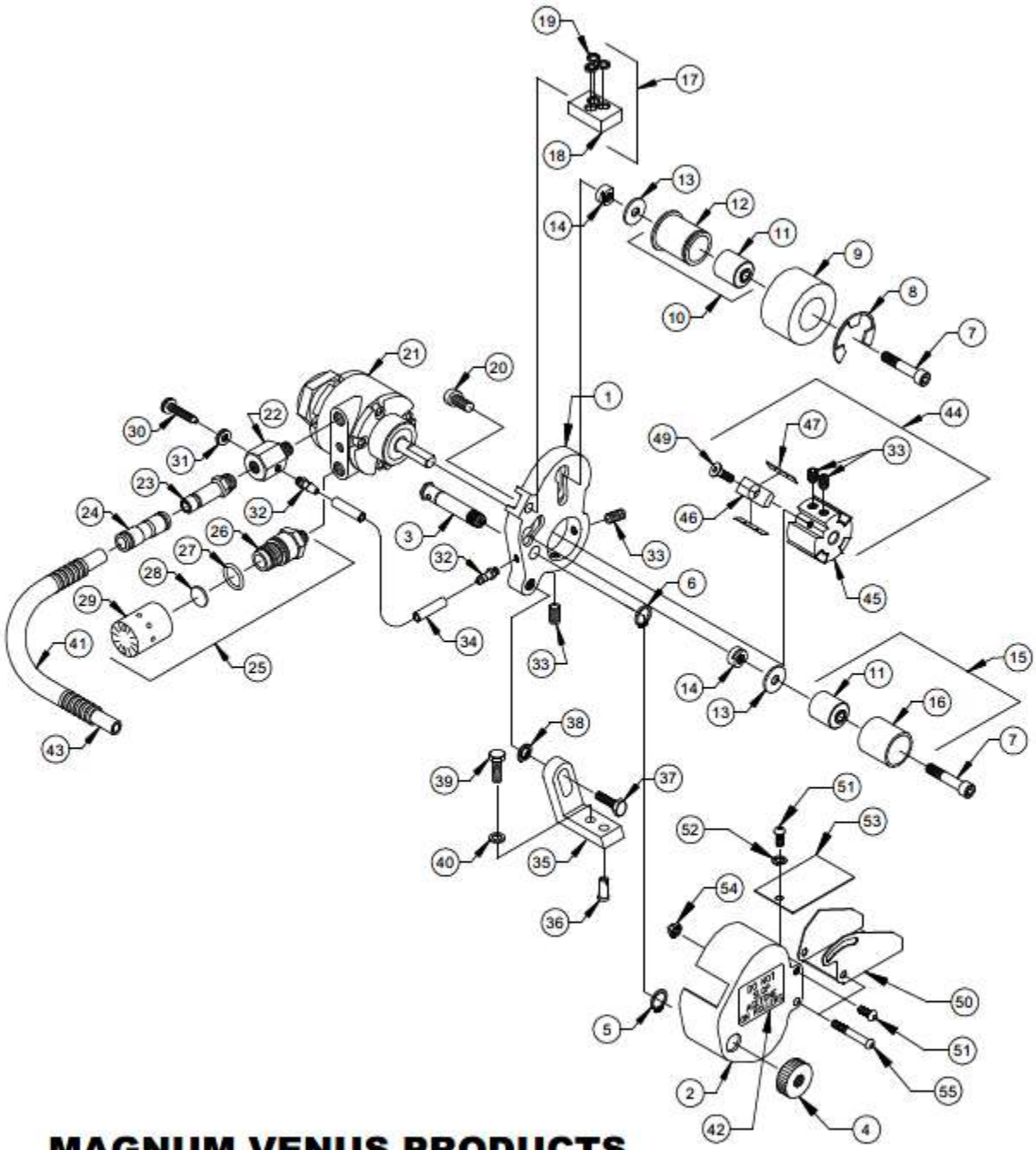
REV: C 10/16/2014 SHEET 1 / 2 7/10/2013

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	VRC-1016	1	CHOPPER AIR VALVE
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
22	5103-24-1	1	CHOPPER CHUTE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2014	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	RC-1007	1	VALVE
29	5103-2-01	1	AIR STUD
30	5103-3-01	1	ROVING GUIDE
31	8402-1-1	1	AIR MOTOR
32	F-CS-04C-20	2	CAP SCREW
33	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
34	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
35	F-SW-1024	1	LOCK WASHER
36	F-CS-04C-08	1	CAP SCREW
37	TLN-2040	1	CHOPPER MOUNT
38	RC-1034	1	NYLON WASHER
39	TLN-2042	1	PIVOT PIECE
40	F-HB-05C-28	1	HEX BOLT
41	F-SW-05	1	LOCK WASHER
42	F-CS-1224-12	2	CAP SCREW
43	F-SBW-04	1	WASHER
44	F-CS-04C-12	1	CAP SCREW
45	09073	.33 FT	TUBE
46	RC-1084	1	HOSE
47	VRC-1017	1	OIL PORT PLUG
48	O-B-006	1	O-RING

MAGNUM VENUS PLASTECH

CHOPPER FOR EXTERNAL MIX TALON GUN — VRC-1000-TLN-X

REV: C 10/16/2014 — SHEET 2 / 2 — 7/10/2013



MAGNUM VENUS PRODUCTS

CompleteRoving Cutter Assy	5103-01-01
Basic Stocking Roving Cutter Assy	5103-01-00

REV. C = ADDED 5103-01-00 TO DWG. 5/20/02 JEM

Common assembly Parts For:
Roving Cutter Assy 5103-01-01
✱ Basic Stocking Roving Cutter Assy 5103-01-00
PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-13-1	1	CHOPPER COVER
3	5103-2-01	1	AIR STUD SPA
4	5103-14-1	1	COVER NUT
5	7205-2-8	1	SNAP RING DIA 1/2"
6	7205-2-6	1	SNAP RING DIA 3/8"
7	7102-2-20	2	SOCKET HD CAP SCREW
8	7205-3-31	1	E-RING
9	5103-6-1	1	70 DURO RUBBER ROLL
11	9202-2-1	2	SEALED BALL BEARING
12	5103-5-1	1	MANDREL
13	5103-18-1	2	SPACER WASHER
14	5103-4-1	2	SLIDE ADJ NUT
16	5103-7-1	1	SLEEVE
17	5103-3-01	1	ROVING GUIDE SPA
20	7102-2-8	1	SOCKET HD CAP SCREW
21	8402-1-1	1	AIR MOTOR
22	5103-9-1	1	CHOPPER AIR VALVE
23	5103-12-1	1	OILER DISCONNECT
24	7701-6-8	1	PUSH-IN FITTING
26	5103-19-1	1	SPEED CONTROL HOUSING
27	7301-3-016	1	O-RING
28	5103-20-1	1	SPEED CONTROL SEAL
29	5103-21-1	1	SPEED CONTROL COVER
30	5103-11-1	1	THUMBSCREW
31	5103-10-1	1	LOCK RING
32	7701-6-3	2	BARB FITTING
33	7102-11-6	4	SOCKET CUP POINT SET SCREW
34	09073	.33ft	URETHANE TUBING 1/4" OD
41	5103-15-01	1	CHOPPER CONDUIT
42	6701-5-EN	1	LABEL
43	00004	1	3/8" POLY TUBING BLACK
45	5103-28-1	1	ROTOR HUB 8-BLADE
46	5103-29-1	4	WEDGE INSERT 8-BLADE
47	5103-8-1	8	CHOPPER BLADE
49	7102-13-6	4	SOCKET FLAT HEAD SCREW

ASSOCIATED PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
9B	5103-6-2	1	60 DURO RUBBER ROLL
10	5103-5-01	1	MANDREL SPA
15	5103-7-01	1	SLEEVE W/BEARING
18	5103-3-1	1	GUIDE BLOCK
19	9209-1-1	3	GUIDE
25	5103-02-01	1	SPEED CONTROL ASSY
44	5103-03-01	1	8-BLADE WEDGE RTR ASSY
47A	9210-1-100	1	BLADES (PKG OF 100)
47B	9210-1-1000	1	BLADES (PKG OF 1000)
50B	5103-24-1	1	CHOPPER CHUTE

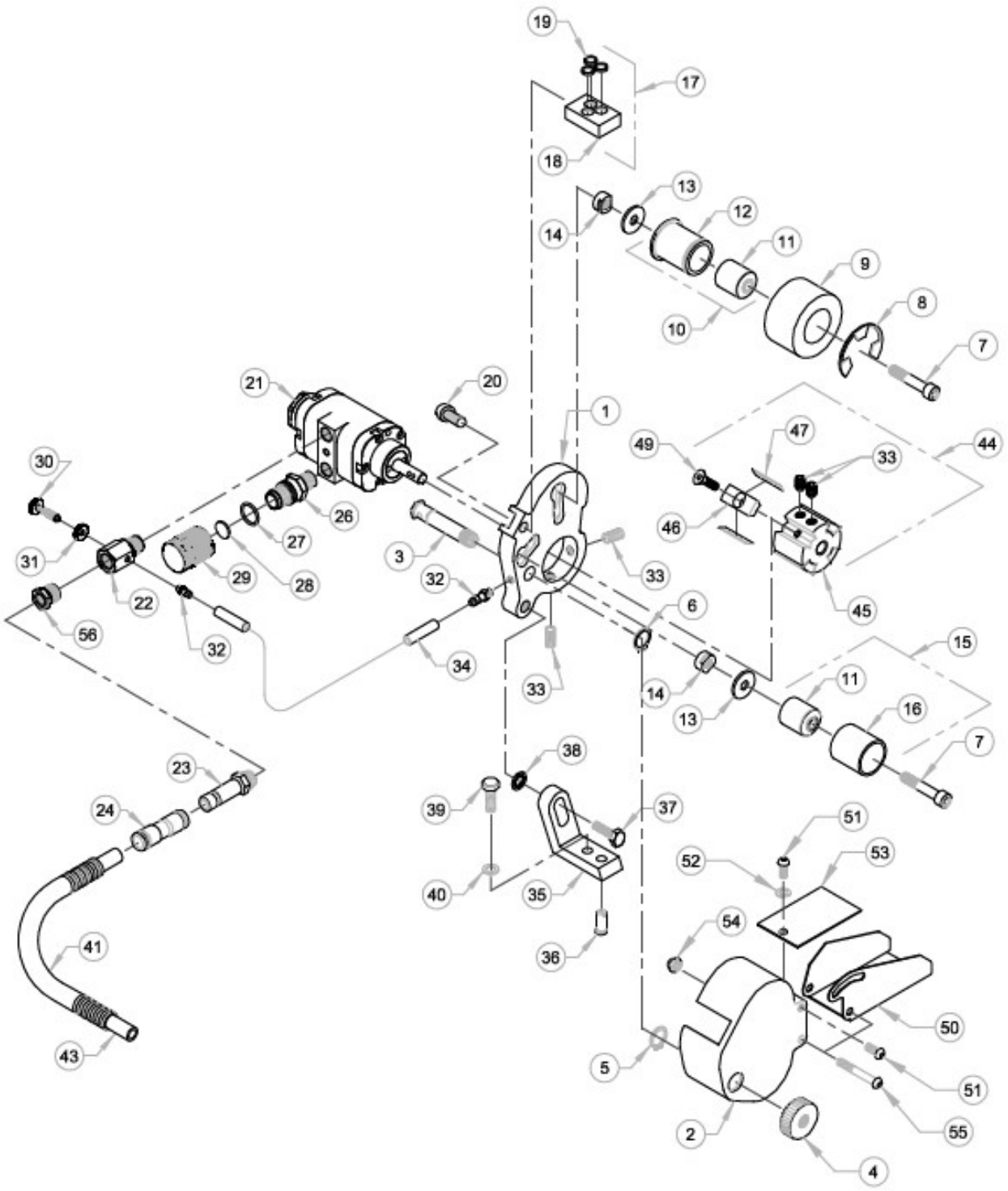
REPAIR KIT

PART NO.	DESCRIPTION
6702-03-01	RC1S1 ROVING CUTTER REPAIR KIT

Roving Cutter Assy 5103-01-01

ITEM	PART NO.	QTY	DESCRIPTION
✱	5103-01-00	1	BASIC STOCK CHOPPER ASSY
50	5103-23-1	1	CHOPPER CHUTE
51	7102-16-6	2	SOCKET BUTTON HEAD SCREW
52	7202-6-10	1	LOCK WASHER
53	5103-25-1	1	TOP DEFLECTOR
54	7201-11-10	1	NYLOCK HEX NUT
55	7102-16-28	1	SOCKET BUTTON HEAD SCREW
35	5103-16-1	1	MOUNT BRACKET
36	5103-17-1	1	ECCENTRIC STUD
37	7101-7-8	1	HEX HD BOLT
38	7202-5-10	1	INTERNAL STAR WASHER HEAVY DUTY
39	7101-1-6	1	HEX HEAD BOLT
40	7202-4-8	1	LOCK WASHER

✱ 5103-01-00 ASSEMBLY IS FOR STOCK ONLY, (NOT RESALE).
SEE 5103-01-01 ASSY ABOVE FOR SALEABLE ASSEMBLY.



MAGNUM VENUS PLASTECH

SuperPro II - FIT Roving Cutter Assy	VHTC-1000

REV. 3/20/07 JEM
REV. A - REMOVED ITEM 42 6701-5-EN 08-24-09 BT2
REV. B - PROPERLY ORIENTED INLET AND OUTLET PORTS 10-19-11 BT2

SuperPro II - FIT Roving Cutter Assy VHTC-1000

PARTS LIST

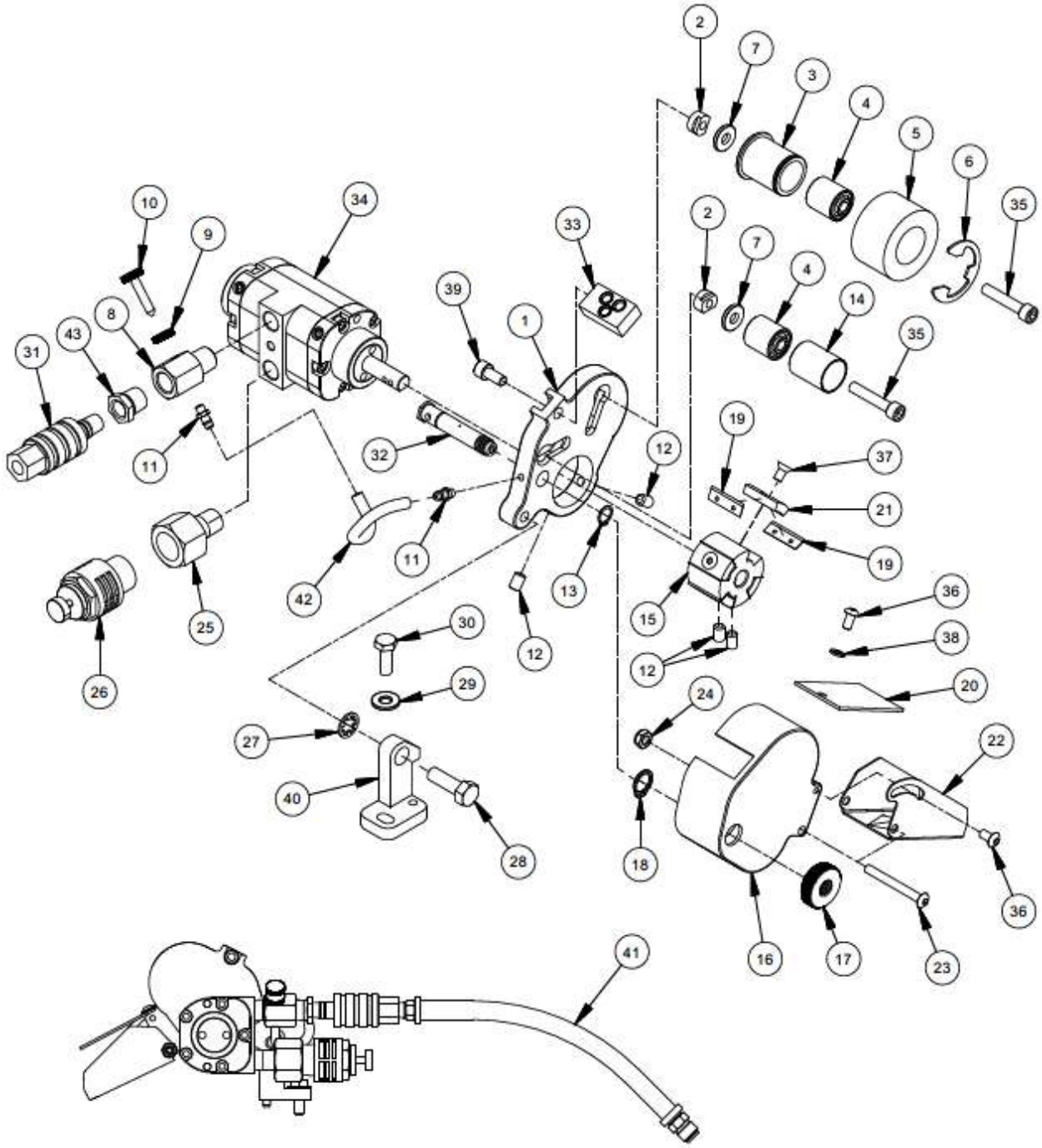
ITEM	PART NO.	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-13-1	1	CHOPPER COVER
3	5103-2-01	1	AIR STUD SPA
4	5103-14-1	1	COVER NUT
5	BOS-3056	1	SNAP RING DIA 1/2"
6	7205-2-6	1	SNAP RING DIA 3/8"
7	F-CS-04C-20	2	SOCKET HD CAP SCREW
8	7205-3-31	1	E-RING
9	5103-6-1	1	70 DURO RUBBER ROLL
11	RC-1018A	2	SEALED BALL BEARING
12	5103-5-1	1	MANDREL
13	5103-18-1	2	SPACER WASHER
14	5103-4-1	2	SLIDE ADJ NUT
16	5103-7-1	1	SLEEVE
17	5103-3-01	1	ROVING GUIDE SPA
20	F-CS-04C-08	1	SOCKET HD CAP SCREW
21	HTM-4000-CW	1	AIR MOTOR
22	HTM-4029	1	INLET COUPLING
23	5103-12-1	1	OILER DISCONNECT
24	7701-6-8	1	PUSH-IN FITTING
26	HTM-4025	1	SPEED CONTROL HOUSING
27	O-V-016	1	O-RING
28	5103-20-1	1	SPEED CONTROL SEAL
29	5103-21-1	1	SPEED CONTROL COVER
30	5103-11-1	1	THUMBSCREW
31	5103-10-1	1	LOCK RING
32	7701-6-3	2	BARB FITTING
33	7102-11-6	4	SOCKET CUP POINT SET SCREW
34	09073	.33 FT	URETHANE TUBING 1/4" OD
35	5103-16-1	1	MOUNT BRACKET
36	5103-17-1	1	ECCENTRIC STUD
37	F-HB-05C-16	1	HEX HD BOLT
38	7202-5-10	1	INTERNAL STAR WASHER HEAVY DUTY
39	F-HB-04C-12	1	HEX HEAD BOLT
40	F-SW-04	1	LOCK WASHER
41	5103-15-01	1	CHOPPER CONDUIT
43	00004	1	3/8" POLY TUBING BLACK
45	5103-28-1	1	ROTOR HUB 8-BLADE
46	5103-29-1	4	WEDGE INSERT 8-BLADE
47	5103-8-1	8	CHOPPER BLADE
49	F-FHCS-1024-06	4	SOCKET FLAT HEAD SCREW
50	5103-24-1	1	CHOPPER CHUTE
51	F-BHCS-1024-06	2	SOCKET BUTTON HEAD SCREW
52	F-SW-1024	1	LOCK WASHER
53	5103-25-1	1	TOP DEFLECTOR
54	F-LN-1024	1	NYLOCK HEX NUT
55	7102-16-28	1	SOCKET BUTTON HEAD SCREW
56	PF-RB-04-02	1	PIPE BUSHING

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
9B	5103-6-2	1	60 DURO RUBBER ROLL
9C	07118	1	MOLDED RUBBER ROLL
10	5103-5-01	1	MANDREL SPA
15	5103-7-01	1	SLEEVE W/BEARING
18	5103-3-1	1	GUIDE BLOCK
19	9209-1-1	3	GUIDE
44	5103-03-01	1	8-BLADE WEDGE ROTOR ASSY
47A	9210-1-100	1	BLADES (PACKAGE OF 100)
47B	9210-1-1000	1	BLADES (PACKAGE OF 1000)

REPAIR KIT

PART NO.	DESCRIPTION
6702-03-01	RC1S1 ROVING CUTTER REPAIR KIT



MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR INTERNAL MIX TALON GUN	VHTC-1000-TLN-I

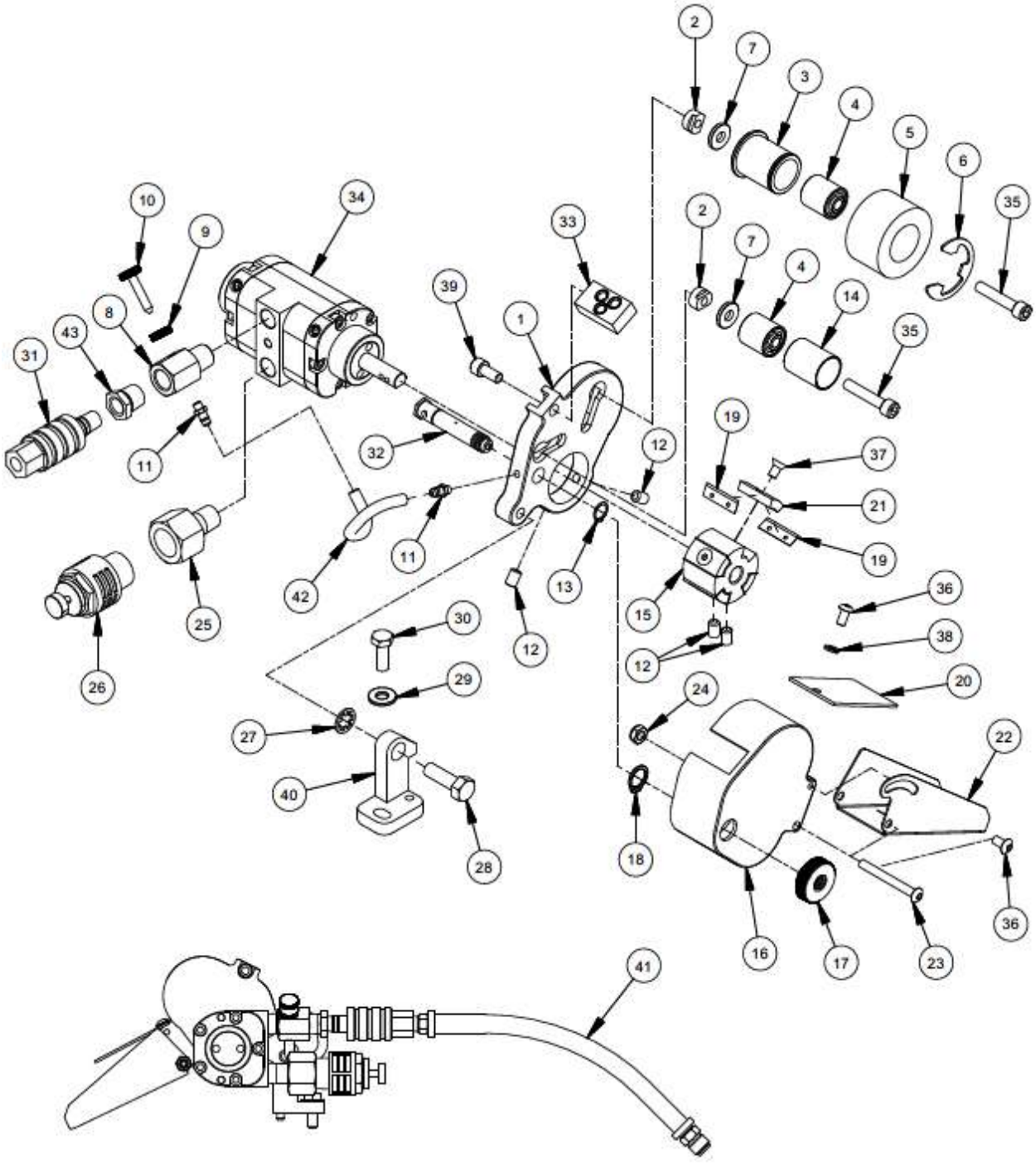
REV: SHEET 1 / 2 1/10/2014

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	HTM-4029	1	INLET COUPLING
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
22	5103-24-1	1	CHOPPER CHUTE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2024	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	F-HB-05C-16	1	HEX BOLT
29	F-FW-04-SAE	1	FLAT WASHER SAE
30	F-HB-04C-12	1	1/4 HEX BOLT
31	RC-1007	1	VALVE
32	5103-2-01	1	AIR STUD
33	5103-3-01	1	ROVING GUIDE
34	HTM-4000-CW	1	AIR MOTOR ASSY-CLOCKWISE ROTATION
35	F-CS-04C-20	2	CAP SCREW
36	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
37	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
38	F-SW-1024	1	LOCK WASHER
39	F-CS-04C-08	1	CAP SCREW
40	TLN-1060-01	1	CHOPPER BRACKET
41	RC-1084	1	HOSE
42	09073	.33 FT	TUBE
43	PF-RB-04-02	1	PIPE BUSHING

MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR INTERNAL MIX TALON GUN	VHTC-1000-TLN-I

REV: SHEET 2 / 2 1/10/2014



MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR INTERNAL MIX FIT TALON GUN	VHTC-1000-TLN-IF

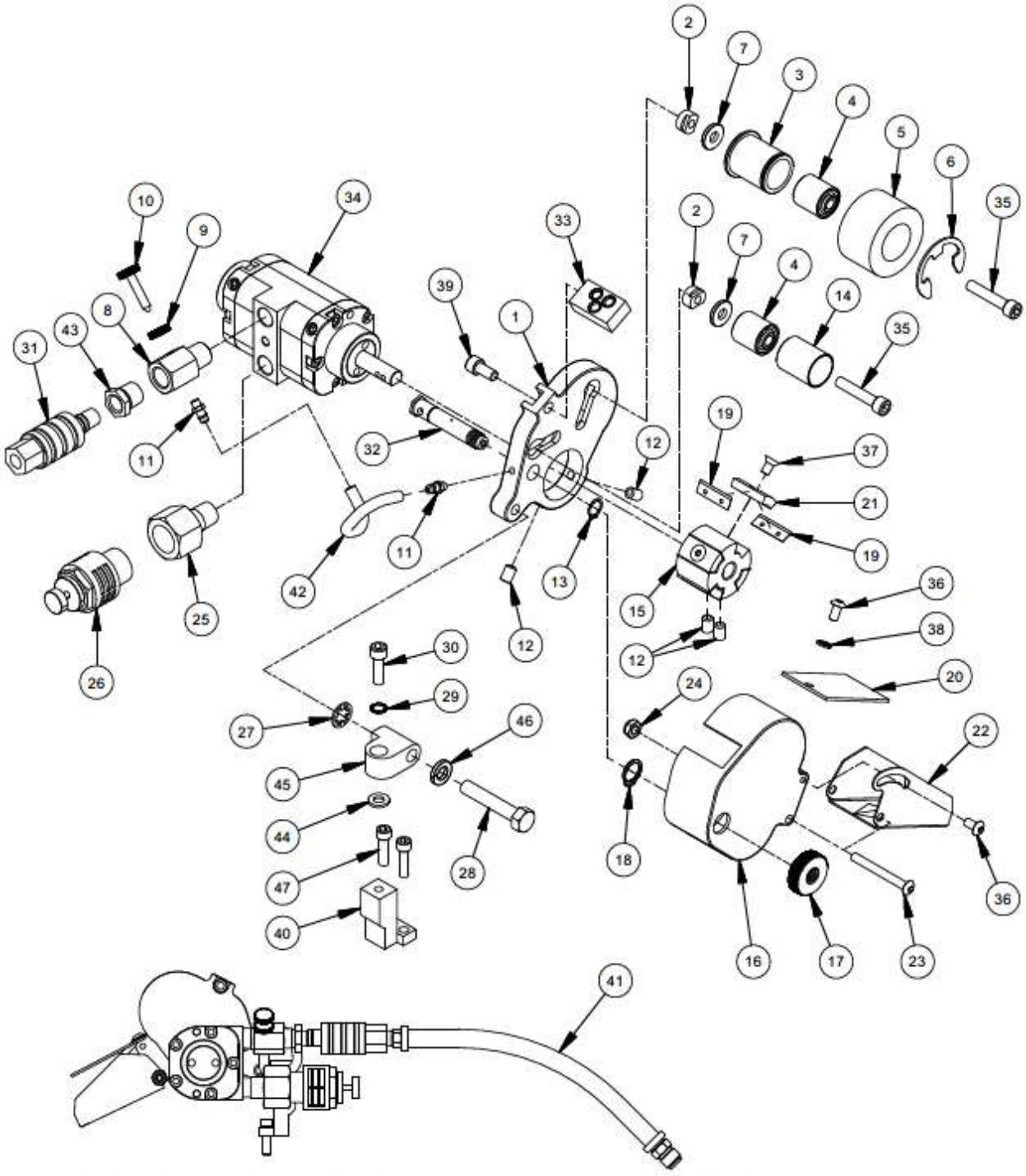
REV: SHEET 1 / 2 1/10/2014

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	HTM-4029	1	INLET COUPLING
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
22	71320-1	1	CHOPPER CHUTE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2024	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	F-HB-05C-16	1	HEX BOLT
29	F-FW-04-SAE	1	FLAT WASHER SAE
30	F-HB-04C-12	1	1/4 HEX BOLT
31	RC-1007	1	VALVE
32	5103-2-01	1	AIR STUD
33	5103-3-01	1	ROVING GUIDE
34	HTM-4000-CW	1	AIR MOTOR ASSY-CLOCKWISE ROTATION
35	F-CS-04C-20	2	CAP SCREW
36	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
37	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
38	F-SW-1024	1	LOCK WASHER
39	F-CS-04C-08	1	CAP SCREW
40	TLN-1060-01	1	CHOPPER BRACKET
41	RC-1084	1	HOSE
42	09073	.33 FT	TUBE
43	PF-RB-04-02	1	PIPE BUSHING

MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR INTERNAL MIX FIT TALON GUN	VHTC-1000-TLN-IF

REV: SHEET 2 / 2 1/10/2014



MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR EXTERNAL MIX TALON GUN	VHTC-1000-TLN-X

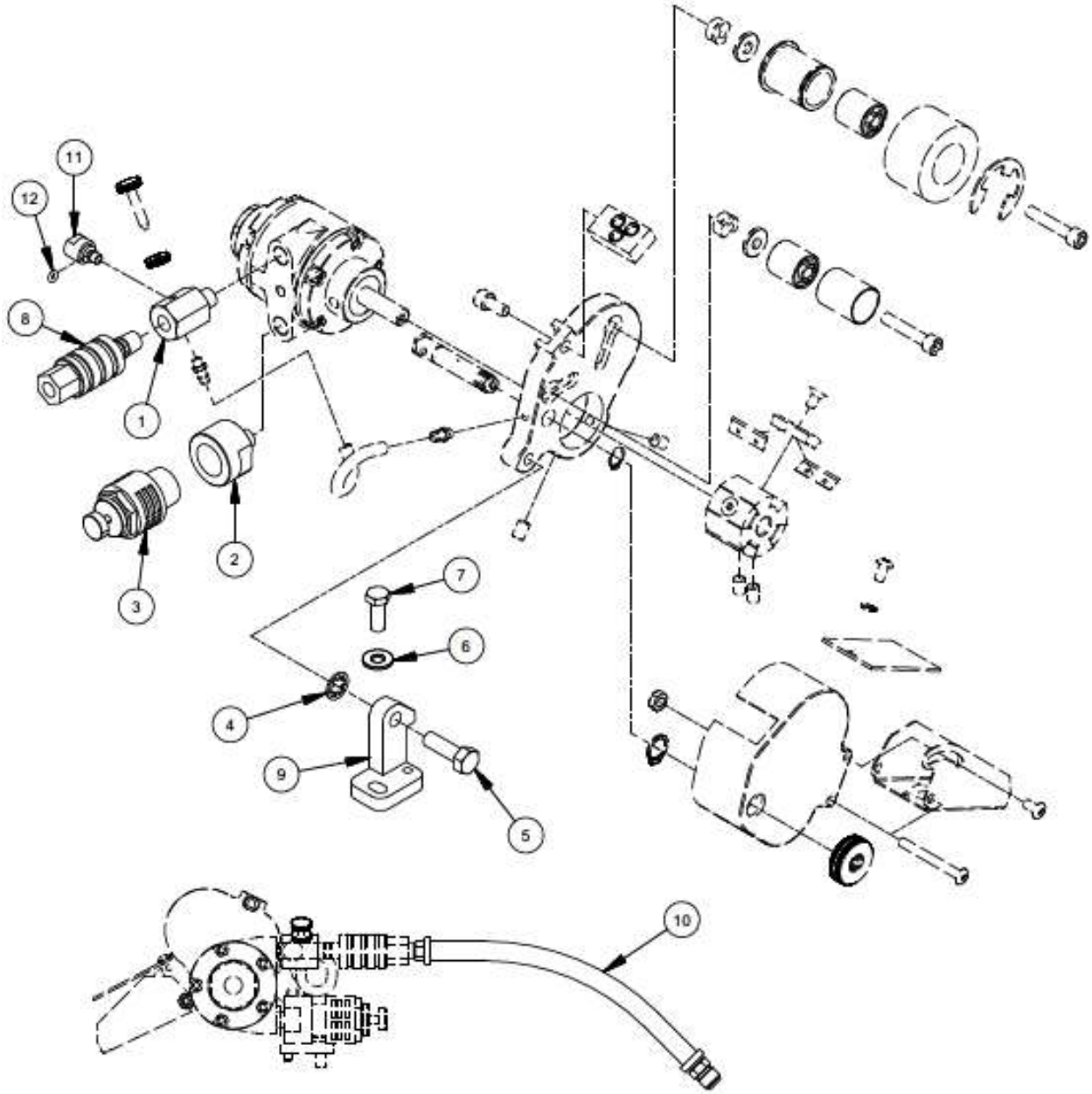
REV: SHEET 1 / 2 1/10/2014

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	5103-1-1	1	BASE PLATE
2	5103-4-1	2	SLIDE ADJUSTING NUT
3	5103-5-1	1	RUBBER ROLL MANDREL
4	RC-1018A	2	BEARING
5	5103-6-1	1	CHOPPER RUBBER ROLL
6	7205-3-31	1	E-RING
7	5103-18-1	2	SPACER
8	HTM-4029	1	INLET COUPLING
9	5103-10-1	1	LOCK RING
10	5103-11-1	1	THUMB SCREW
11	7701-6-3	2	10-32 BARBED FITTING
12	7102-11-6	4	SET SCREW
13	7205-2-6	1	SNAP RING
14	5103-7-1	1	BEARING SLEEVE
15	5103-28-1	1	ROTOR HUB 8-BLADE
16	5103-13-1	1	CHOPPER COVER
17	5103-14-1	1	COVER NUT
18	7205-2-8	1	RETAINING RING
19	5103-8-1	8	CHOPPER BLADE
20	5103-25-1	1	TOP DEFLECTOR
21	5103-29-1	4	WEDGE INSERT 8-BLADE
22	5103-24-1	1	CHOPPER CHUTE
23	7102-16-28	1	BUTTON HEAD CAP SCREW
24	F-LN-1024	1	NYLOCK NUT
25	VRC-2024	1	ADAPTER
26	VRC-TM-2	1	THROTTLE MUFFLER
27	7202-5-10	1	STAR WASHER
28	F-HB-05C-28	1	HEX BOLT
29	F-SBW-04	1	WASHER
30	F-CS-04C-12	1	CAP SCREW
31	RC-1007	1	VALVE
32	5103-2-01	1	AIR STUD
33	5103-3-01	1	ROVING GUIDE
34	HTM-4000-CW	1	AIR MOTOR ASSY-CLOCKWISE ROTATION
35	F-CS-04C-20	2	CAP SCREW
36	F-BHCS-1024-06	2	BUTTON HEAD CAP SCREW
37	F-FHCS-1024-06	4	FLAT HEAD COUNTER SUNK SCREW
38	F-SW-1024	1	LOCK WASHER
39	F-CS-04C-08	1	CAP SCREW
40	TLN-2040	1	CHOPPER MOUNT
41	RC-1084	1	HOSE
42	09073	.33 FT	TUBE
43	PF-RB-04-02	1	PIPE BUSHING
44	RC-1034	1	NYLON WASHER
45	TLN-2042	1	PIVOT PIECE
46	F-SW-05	1	LOCK WASHER
47	F-CS-1224-12	2	CAP SCREW

MAGNUM VENUS PLASTECH

HIGH TORQUE CHOPPER FOR EXTERNAL MIX TALON GUN — VHTC-1000-TLN-X

REV: — SHEET 2 / 2 — 1/10/2014



MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR INTERNAL MIX TALON GUN	VRC-TLN-I-CK

REV: SHEET 1 / 2 11/6/2014

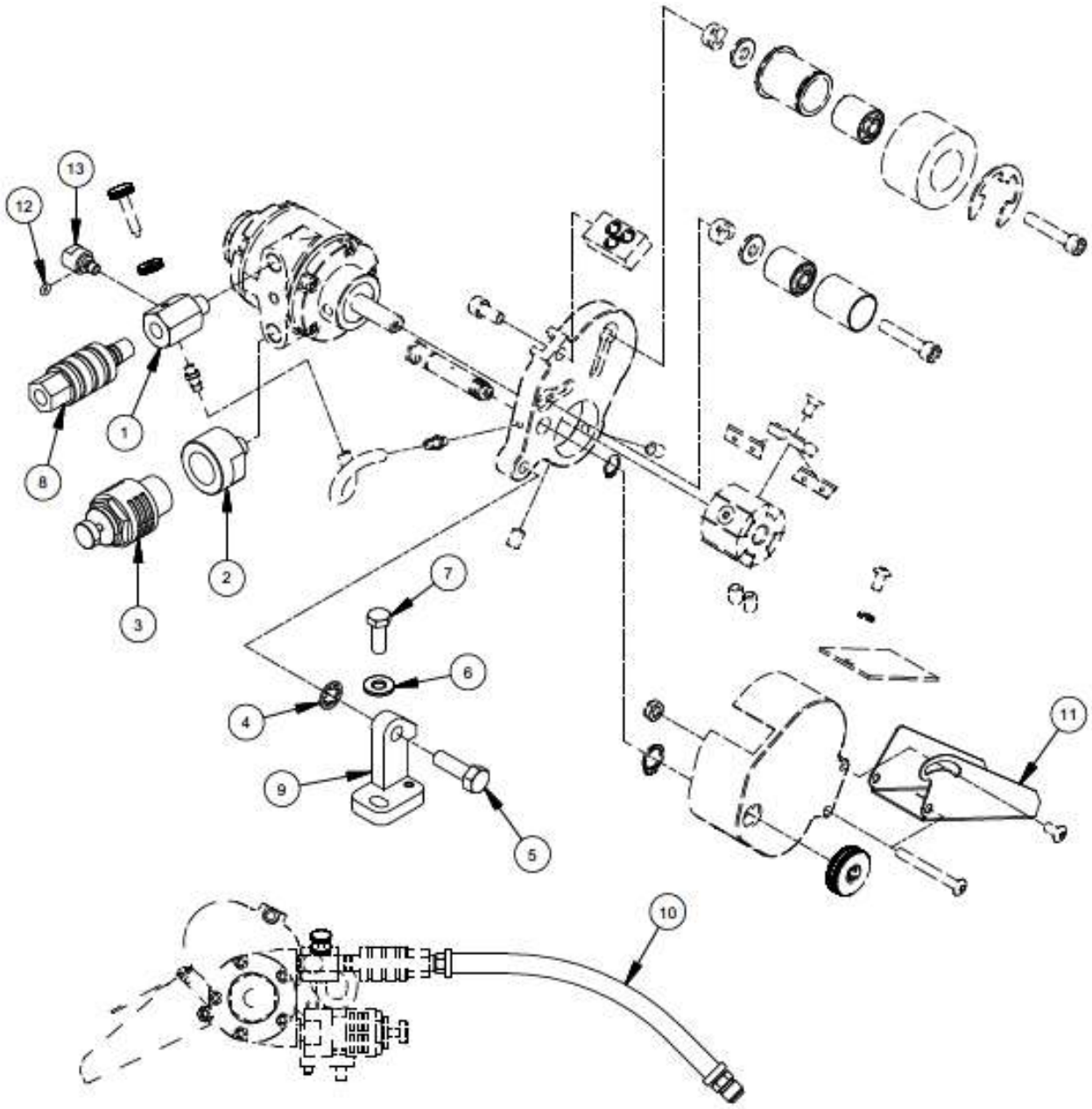
Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-1016	1	CHOPPER AIR VALVE
2	VRC-2014	1	ADAPTER
3	VRC-TM-2	1	THROTTLE MUFFLER
4	7202-5-10	1	STAR WASHER
5	F-HB-05C-16	1	HEX BOLT
6	F-FW-04-SAE	1	FLAT WASHER SAE
7	F-HB-04C-12	1	1/4 HEX BOLT
8	RC-1007	1	VALVE
9	TLN-1060-01	1	CHOPPER BRACKET
10	RC-1084	1	HOSE
11	VRC-1017	1	OIL PORT PLUG
12	O-B-006	1	O-RING

USE VRC-1000-TLN-I DRAWING FOR COMPLETE LIST OF CHOPPER PARTS

MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR INTERNAL MIX TALON GUN	VRC-TLN-I-CK

REV: SHEET 2 / 2 11/6/2014



MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR INTERNAL MIX FIT TALON GUN	VRC-TLN-IF-CK

REV: SHEET 1 / 2 11/6/2014

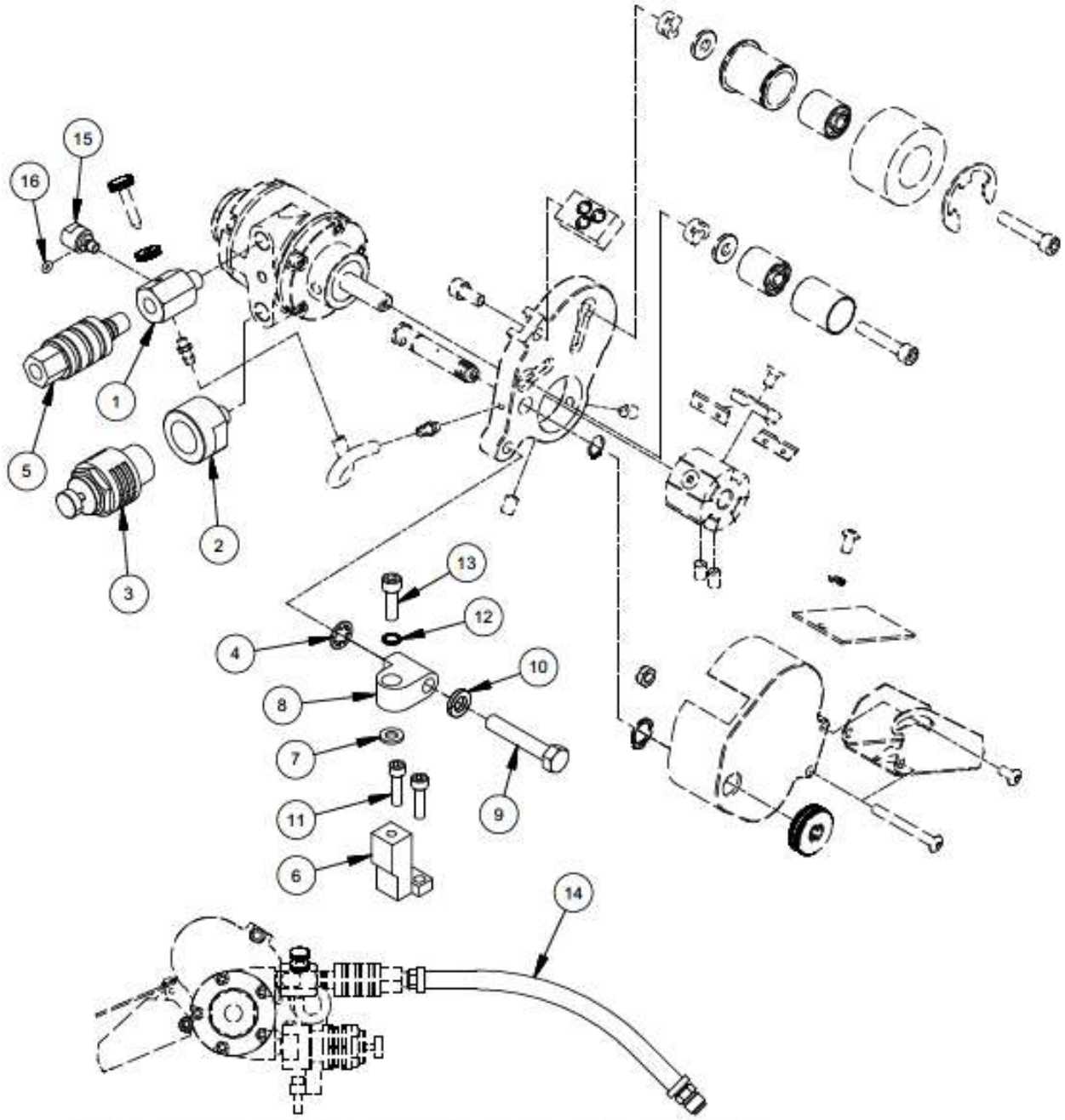
Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-1016	1	CHOPPER AIR VALVE
2	VRC-2014	1	ADAPTER
3	VRC-TM-2	1	THROTTLE MUFFLER
4	7202-5-10	1	STAR WASHER
5	F-HB-05C-16	1	HEX BOLT
6	F-FW-04-SAE	1	FLAT WASHER SAE
7	F-HB-04C-12	1	1/4 HEX BOLT
8	RC-1007	1	VALVE
9	TLN-1060-01	1	CHOPPER BRACKET
10	RC-1084	1	HOSE
11	71320-1	1	CHOPPER CHUTE
12	O-B-006	1	O-RING
13	VRC-1017	1	OIL PORT PLUG

USE VRC-1000-TLN-IF DRAWING FOR COMPLETE LIST OF CHOPPER PARTS

MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR INTERNAL MIX FIT TALON GUN	VRC-TLN-IF-CK

REV: SHEET 2 / 2 11/6/2014



MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR EXTERNAL MIX TALON GUN	VRC-TLN-X-CK

REV: SHEET 1 / 2 11/6/2014

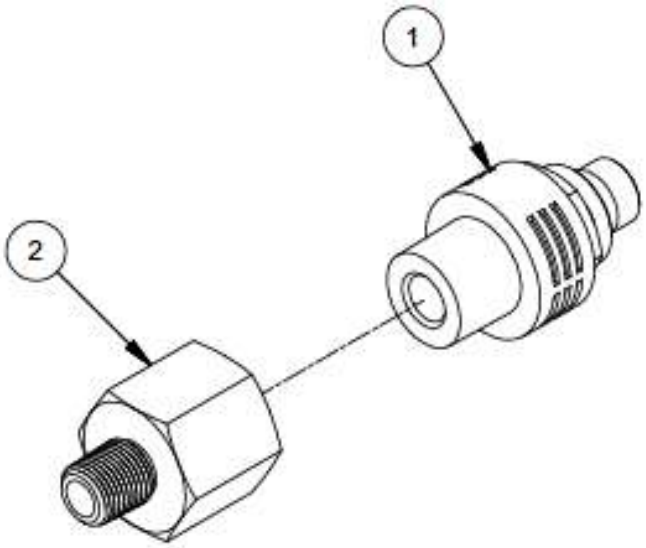
Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-1016	1	CHOPPER AIR VALVE
2	VRC-2014	1	ADAPTER
3	VRC-TM-2	1	THROTTLE MUFFLER
4	7202-5-10	1	STAR WASHER
5	RC-1007	1	VALVE
6	TLN-2040	1	CHOPPER MOUNT
7	RC-1034	1	NYLON WASHER
8	TLN-2042	1	PIVOT PIECE
9	F-HB-05C-28	1	HEX BOLT
10	F-SW-05	1	LOCK WASHER
11	F-CS-1224-12	2	CAP SCREW
12	F-SBW-04	1	WASHER
13	F-CS-04C-12	1	CAP SCREW
14	RC-1084	1	HOSE
15	VRC-1017	1	OIL PORT PLUG
16	O-B-006	1	O-RING

USE VRC-1000-TLN-X DRAWING FOR COMPLETE LIST OF CHOPPER PARTS

MAGNUM VENUS PLASTECH

CHOPPER CONVERSION KIT FOR EXTERNAL MIX TALON GUN	VRC-TLN-X-CK

REV: SHEET 2 / 2 11/6/2014



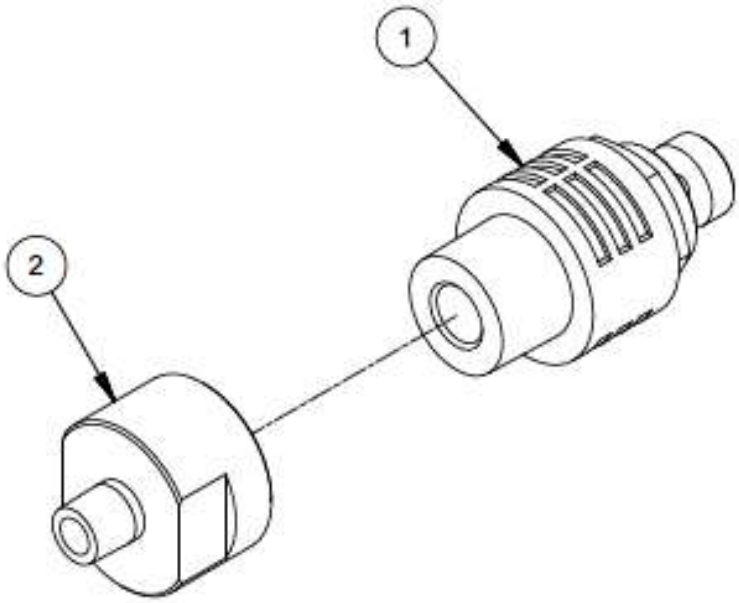
REPLACES 5103-02-01 SPEED CONTROL
ASSEMBLY FOUND ON VRC STYLE CHOPPERS

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-TM-1	1	THROTTLE MUFFLER
2	VRC-1014	1	REDUCER ADAPTER

MAGNUM VENUS PLASTECH

THROTTLE MUFFLER ASSEMBLY	VRC-TM-100

REV: SHEET 1 / 1 6/22/2012



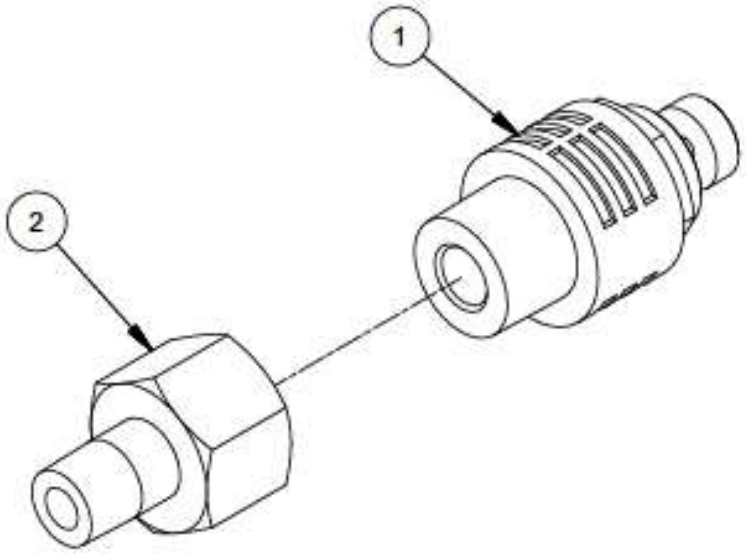
REPLACES 5103-02-01 SPEED CONTROL
ASSEMBLY FOUND ON VRC STYLE CHOPPERS

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-TM-2	1	THROTTLE MUFFLER
2	VRC-2014	1	ADAPTER

MAGNUM VENUS PLASTECH

LARGE THROTTLE MUFFLER ASSEMBLY	VRC-TM-200

REV: A 1/3/2014 SHEET 1 / 1 6/22/2012

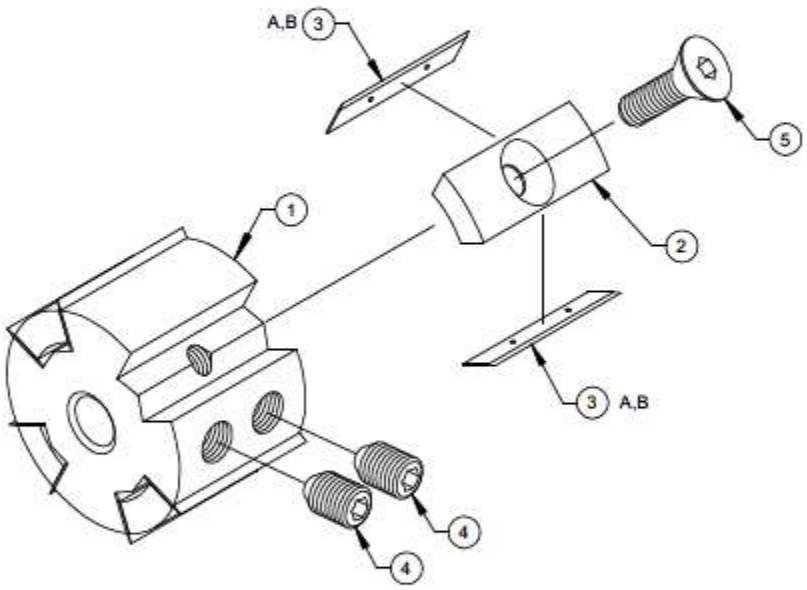


Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	VRC-TM-2	1	THROTTLE MUFFLER
2	VRC-2024	1	ADAPTER

MAGNUM VENUS PLASTECH

THROTTLE MUFFLER ASSEMBLY FOR HTM STYLE CHOPPER MOTORS	VRC-TM-200-HTM

REV: SHEET 1 / 1 1/17/2014



MAGNUM VENUS PRODUCTS

8-Blade Wedge Rotor Assy - RC1S1	5103-03-01

D5103-03-1 REV. - 3/20/00

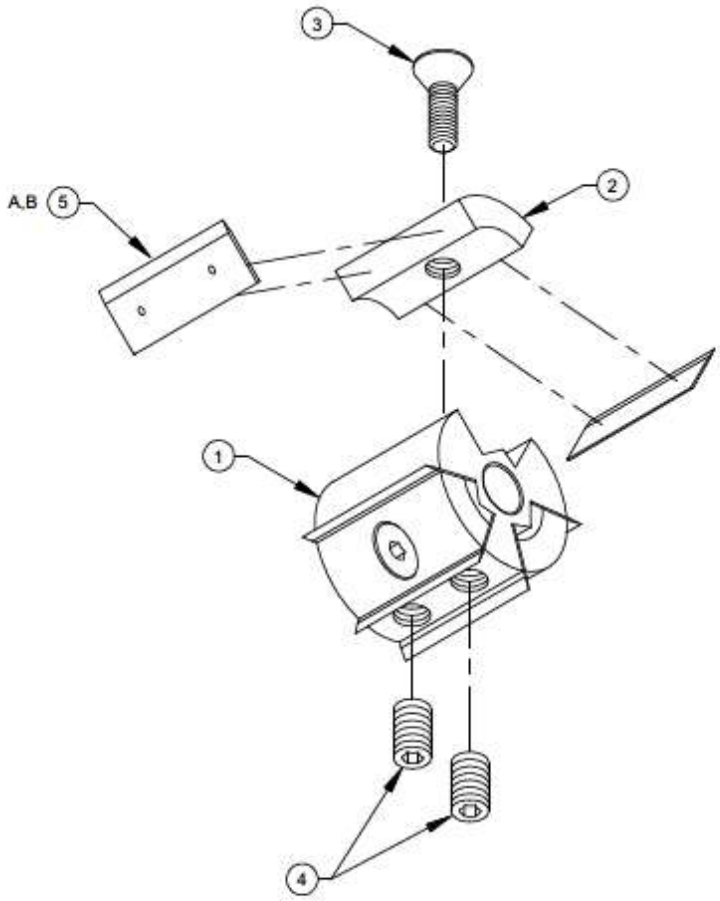
8-Blade Wedge Rotor Assy - RC1S1 5103-03-01

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	5103-28-1	1	ROTOR HUB - 8-BLADE
2	5103-29-1	4	WEDGE INSERT - 8-BLADE
3	5103-8-1	8	CHOPPER BLADE
4	7102-11-6	2	SOCKET HD CUP POINT SET SCREW
5	7102-13-6	4	SOCKET FLAT HEAD SCREW
6	D5103-03-1	1	8-BLADE WEDGE ROTOR ASSY - RC 1S1 DWG

ASSOCIATED PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
3A	9210-1-100	1	BLADES (PACKAGE OF 100)
3B	5103-8-1000	1	BLADES (PACKAGE OF 1000)



MAGNUM VENUS PRODUCTS

6-BLADE WEDGE ROTOR ASSY - RC1S1	5103-04-01

D5103-04-1 REV. - 3/20/00

6-Blade Wedge Rotor Assy - RC1S1 5103-04-01

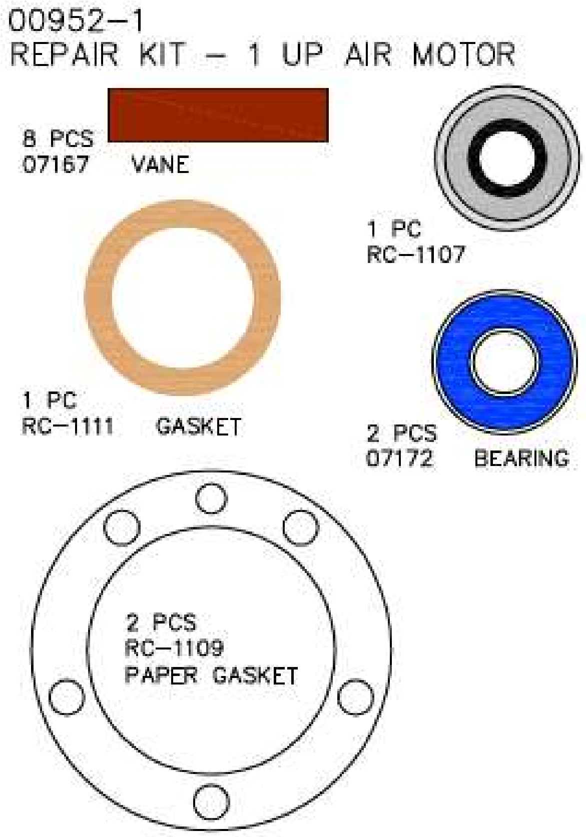
PARTS LIST

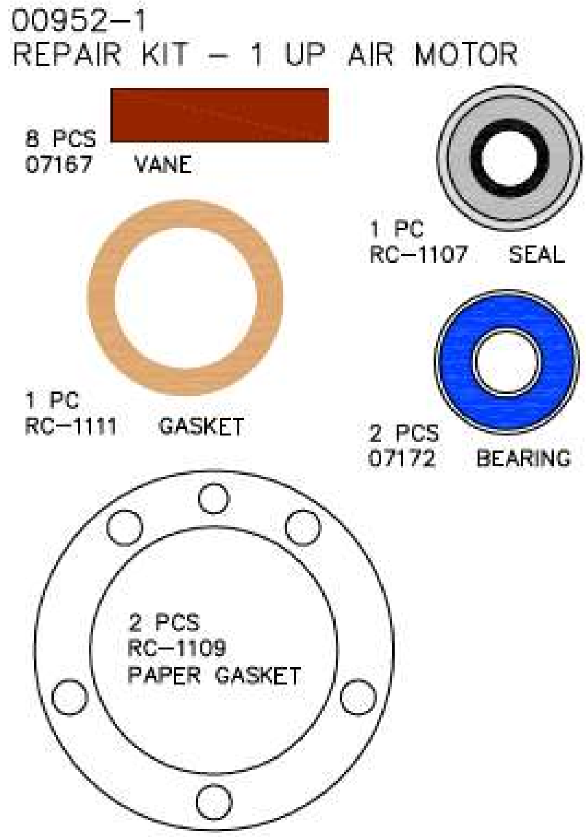
ITEM	PART NO.	QTY	DESCRIPTION
1	5103-30-1	1	ROTOR HUB - 6-BLADE
2	5103-31-1	3	WEDGE INSERT - 6-BLADE
3	7102-13-6	3	SOCKET FLAT HEAD SCREW
4	7102-11-6	2	SOCKET CUT POINT SET SCREW
5	5103-8-1	6	CHOPPER BLADE
6	D5103-04-1	1	6-BLADE WEDGE ROTOR ASSY - RC1S1 DWG

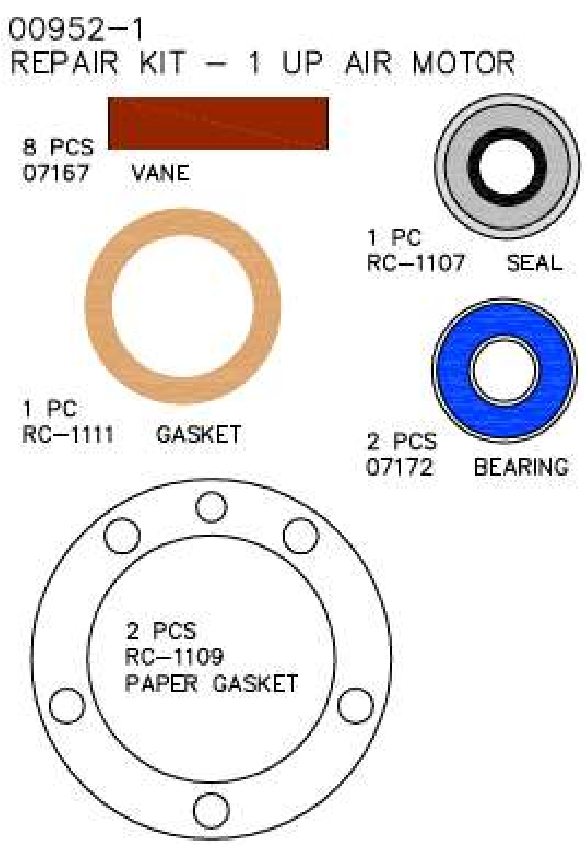
ASSOCIATED PARTS AND ASSEMBLIES

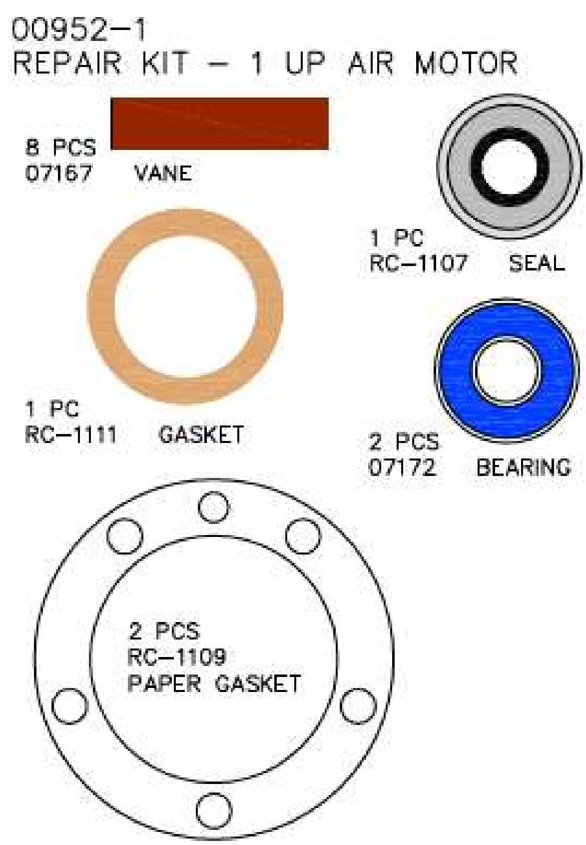
ITEM	PART NO.	QTY	DESCRIPTION
5A	9210-1-100	1	BLADES (PACKAGE OF 100)
5B	5103-8-1000	1	BLADES (PACKAGEOF 1000)

FIGURE 1-1


00952–1
REPAIR KIT – 1 UP AIR MOTOR
8 PCS
07167 VANE
1 PC
RC–1107
1 PC
RC–1111 GASKET
2 PCS
07172 BEARING
2 PCS
RC–1109
PAPER GASKET


00952–1
REPAIR KIT – 1 UP AIR MOTOR
8 PCS
07167 VANE
1 PC
RC–1107 SEAL
1 PC
RC–1111 GASKET
2 PCS
07172 BEARING
2 PCS
RC–1109
PAPER GASKET


00952–1
REPAIR KIT – 1 UP AIR MOTOR
8 PCS
07167 VANE
1 PC
RC–1107 SEAL
1 PC
RC–1111 GASKET
2 PCS
07172 BEARING
2 PCS
RC–1109
PAPER GASKET


00952–1
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8 PCS
07167 VANE
1 PC
RC–1107 SEAL
1 PC
RC–1111 GASKET
2 PCS
07172 BEARING
2 PCS
RC–1109
PAPER GASKET

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