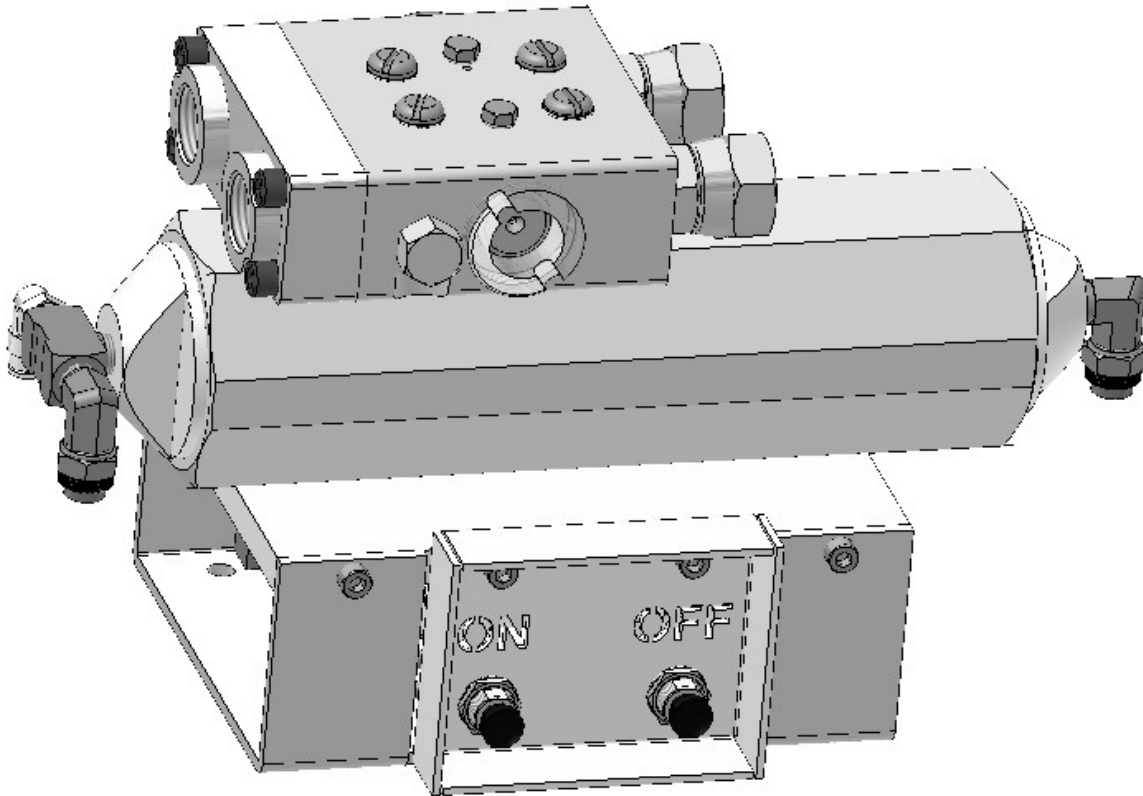


High Volume 1:1 Pro Gun

Operations Manual

This manual is applicable to the following models:

- HVDG-2000
- HVDG-2000-DR
- HVDG-2000-R
- HVDG-2000-TM
- HVDG-4000
- HVDG-4000-EP





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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.

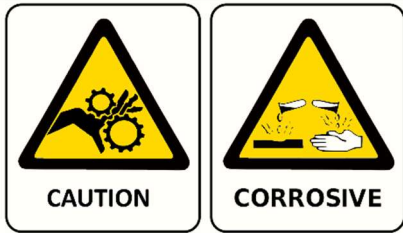
Safety Precautions

- 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 and cyclo-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 Hydrocarbon 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 Hydrocarbon (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, oversprayed 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 High Volume 1:1 Pro Gun. The following procedures are included:

- Step-by-step assembly and disassembly
- Troubleshooting information

The gun will not need to be completely disassembled for daily cleaning, however the entire gun should be disassembled and the O-rings replaced every six months (depending on use).

The gun breaks down into two separate modules which can be disassembled further into their individual parts.



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.

During Disassembly

A special tool kit (HVPG-TOOLS), which includes a specially designed Pro Gun tool and a packing assembly tool, is available to aid in maintenance and repair.

As you disassemble the equipment, lay out the components on a clean surface in the correct order and direction to aid in reassembly.

Requirements

You will need the following tools:

- Rubber mallet
- Thread sealant

- Adjustable wrench
- Needle-nose pliers
- Flathead screwdriver
- Lubriplate™ lubricant
- Scribe set
- Pro Gun oil
- Seal installation tool
- HV Pro Gun packing bit

You need appropriate cleaning materials such as solvent, clean shop towels or rags, a small brush, and empty containers into which you may flush the gun. You will also need new O-rings and seals to replace the current ones. Refer to the parts drawing for your model to ensure you obtain correct part numbers for the O-rings and seals needed.

Note ***If you are using O-ring part number O-K-008 in the flush assembly, you do not need to replace the O-ring unless it is showing obvious signs of wear. This O-ring is specially designed to handle most solvents.***

Disassembling Gun

Release Pressure



WARNING

To prevent accidental injection injury disconnect all air and electrical power to the unit before beginning repair or maintenance of this equipment.

1. Turn off air supply to pump and set regulator to zero (“0”).
2. Hold the gun over an appropriate container and activate the gun to release fluid pressure from the lines.
3. If your system has a recirculation assembly, release the pressure from those lines as well.
4. Flush the gun into an appropriate container.
5. Turn OFF the main air supply to the unit.
6. Turn OFF air supply to the solvent tank.
7. Release any pressure in the flush tank by gently pulling upward on the ring attached to the pressure relief valve.

Remove Hoses



CAUTION

If you followed previous steps you should have removed all pressure from the lines, however there may still be trapped fluids in the lines.



CAUTION

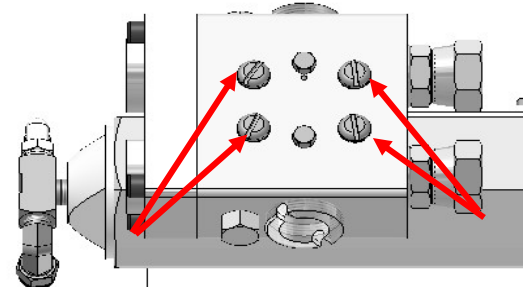
Wear appropriate eye protection. Pressurized fluids can cause eye injuries.

8. Fit a wrench to the resin fitting and wrap them both in a large rag or towel.
9. Slowly loosen the fitting, allowing any trapped fluids to escape into the cloth, until you can remove the resin hose.
10. Use the same technique to remove the solvent hose and the catalyst hose.

Disassemble into Modules

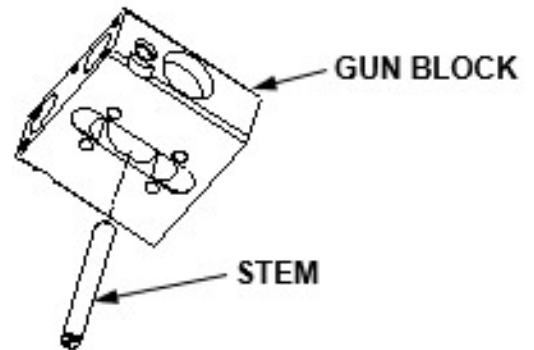
11. Remove the four screws that secure the gun block to the actuator and set the gun block aside.

You now have two major components.



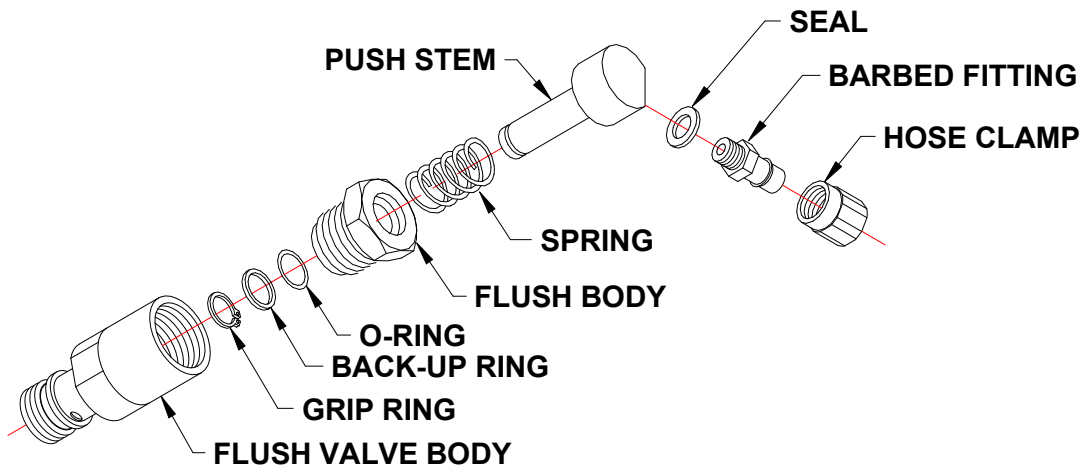
Disassembling Gun Block

1. Unscrew the actuating stem from the valve rod.
2. Tightly clamp the actuating stem into a soft-jawed vise and rotate the whole gun block to remove the stem.



Disassemble Flush Valve

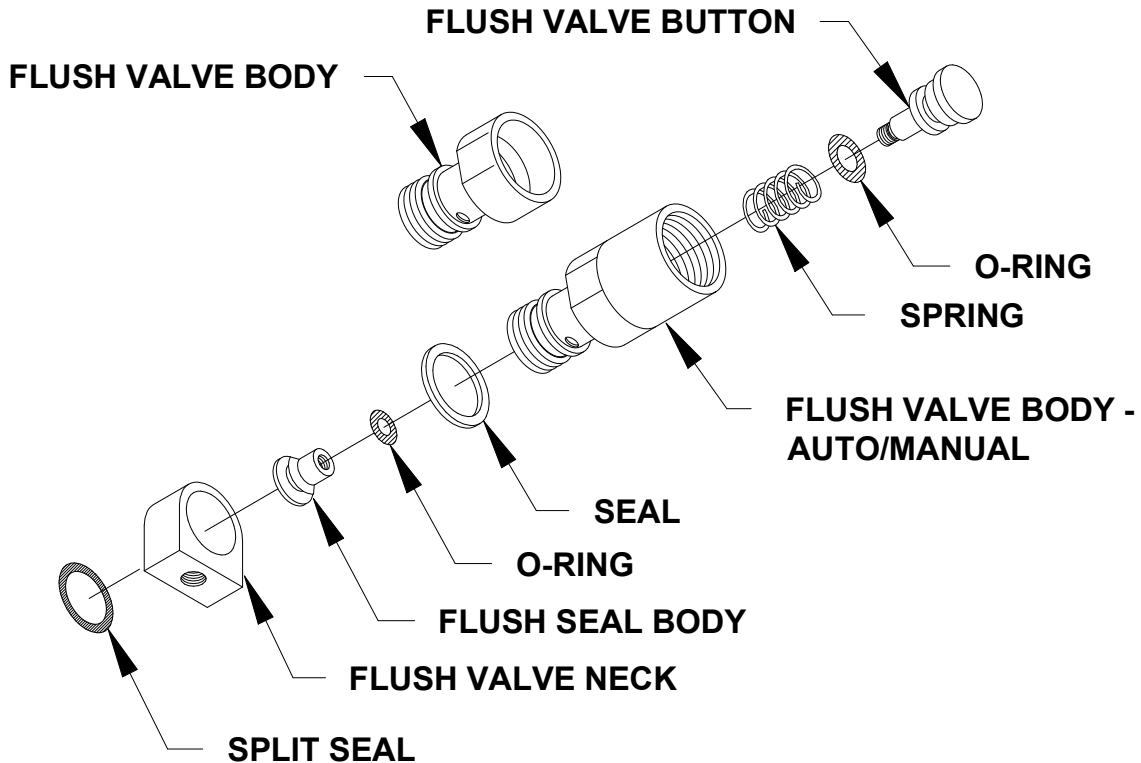
3. Unscrew the flush valve body from either side of the gun block.
4. Remove the split seal from the flush valve body.
5. Remove the flush valve body from the flush valve neck.
6. Remove the flush valve seal from the flush valve body.



7. If your system does not have auto/manual flush, skip to step [11](#).
8. Unscrew the auto/manual flush body assembly from the flush valve body.
9. Remove the grip ring from the push stem of the auto/manual flush body assembly.

Note ***Be careful not to lose the spring in the flush body.***

10. Remove the O-ring from the push stem.
11. Unscrew the flush seal body from the flush valve button.
12. Remove the spring.

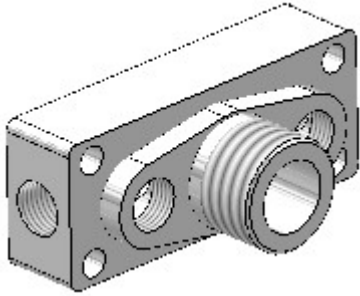


13. Use a scribe to remove the O-ring from the flush valve button.
14. Remove the O-ring from the flush seal body.
15. Discard and replace the flush valve's O-rings and seals.

Note ***The O-E-008 flush button O-ring can be replaced by O-K-008, designed for use with all solvents.***

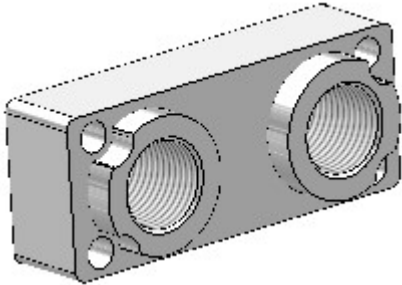
Remove Gun Head/Mix Chamber

There are four gun heads/mix chambers available for the HV Duo gun:



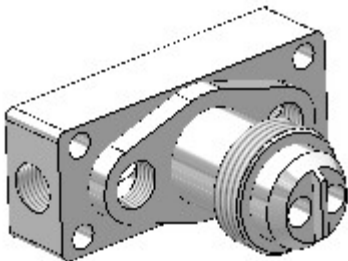
HVDG-2202 Static Mixer Gun Head

Use with 3/4" static mixer



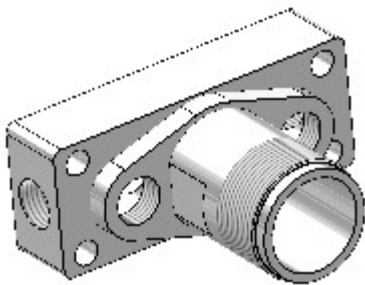
HVDG-2204 Ratio Gun Head

Used for checking material ratios and recirculation guns



HVDG-2212 Disposable Mixer Gun Head

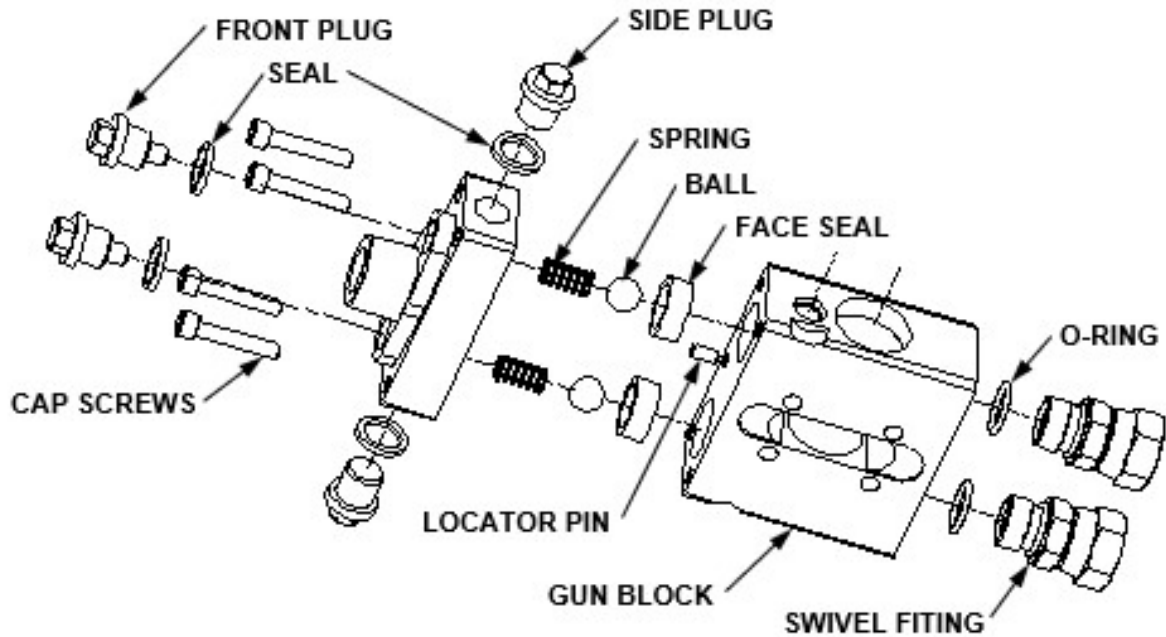
Use with 3/4" disposable mixer



HVDG-2214 High Volume Gun Head

Use for spray or all application of the standard HV Pro Gun

16. Remove any items connected to the front of the gun head (nozzle, mixer, etc.).
17. Remove the two front plugs and seals, being careful not to lose the spring and ball.
18. Remove the spring and ball from the gun head, if applicable.
19. Remove the side plugs and seals from the gun head.
20. Unscrew the four screws holding the gun head to the gun block and remove the gun head, using caution not to drop the locator pin.
21. Remove the two check face seals from the gun block.
22. Inspect and clean the gun head and components with solvent.



23. Remove and clean the fitting and O-rings on the rear of the gun block.

Remove Valve Rod

24. Remove the two set screws and seals from the top of the gun block assembly.

25. Use the packing bit to unscrew the packing nuts from both the catalyst and resin sides.

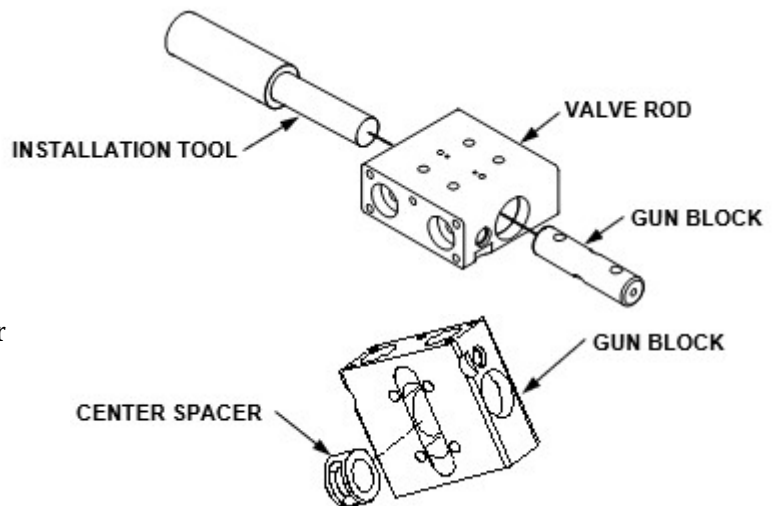
Note Use caution not to damage the packing bit. If you are unable to remove the packing nut, soak in a solvent or apply heat to the packing nuts.

26. Place the small end of the seal installation tool onto one end of the valve rod.

27. Use a rubber mallet to gently tap the valve rod out of the gun block.

28. Inspect the valve rod for damage and clean with solvent.

29. Use needle-nose pliers to remove the center spacer.



Remove Seals

30. Insert the seal installation tool into one of the side ports and gently tap it completely through the gun block with a rubber mallet.

As the tool is tapped through the interior of the gun block it will remove the seal sets for both the resin and hardener sides.

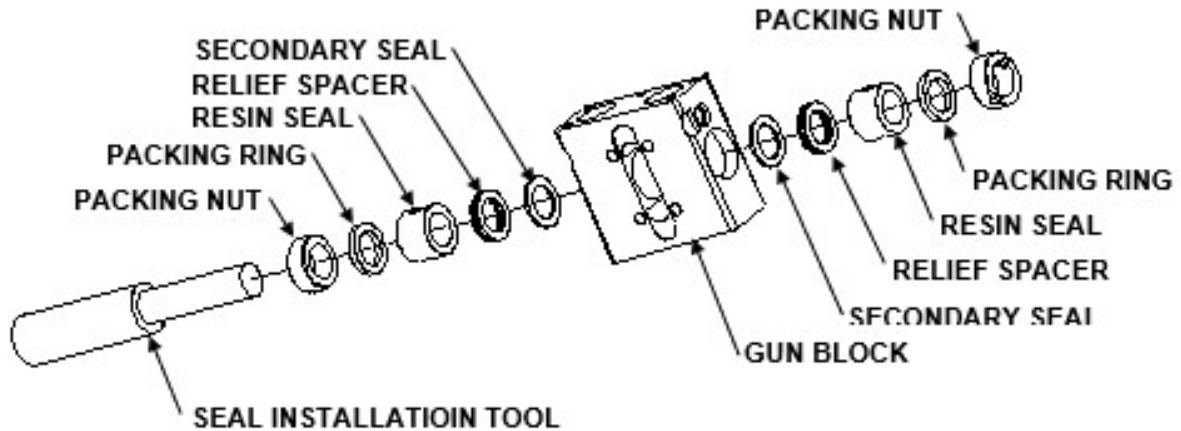
31. Remove the hardener and resin seals (relief spacer and secondary seal) from the seal installation tool and clean with solvent.



CAUTION

Keep the components of the hardener side separate from the components of the resin side to avoid cross-contamination.

32. Clean the two relief spacers with solvent and allow to air dry.
33. Discard the resin seals and replace with new ones from the repair kit.

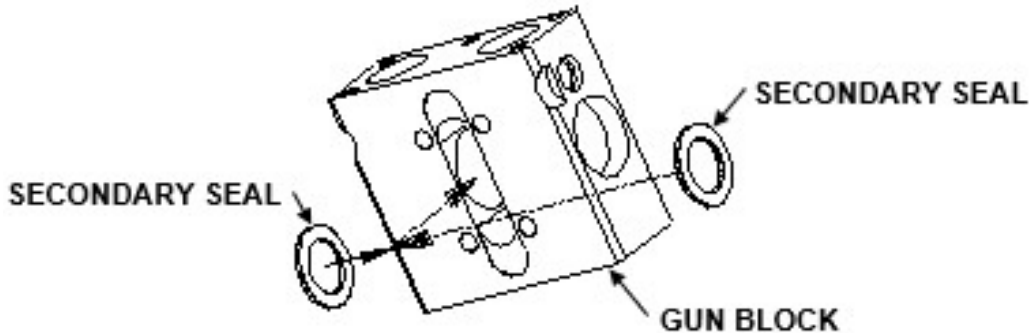


34. Discard the old O-rings and seals.
35. Clean all remaining gun block components with solvent and allow to air dry.

Assembling Gun Block

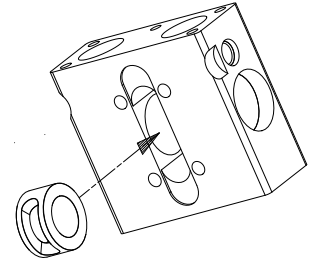
Install Seals and Spacer

1. Place one of the secondary seals into the center of the gun block where the center spacer goes.
2. Gently push the secondary seal into position with something flat until flush with the gun block, using care not to damage the seal.
3. Repeat the process for the other secondary seal



- Place the center spacer into the gun block, making sure that it is aligned as accurately as possible with the slot facing up.

Note *Be careful not to damage the secondary seals already installed.*

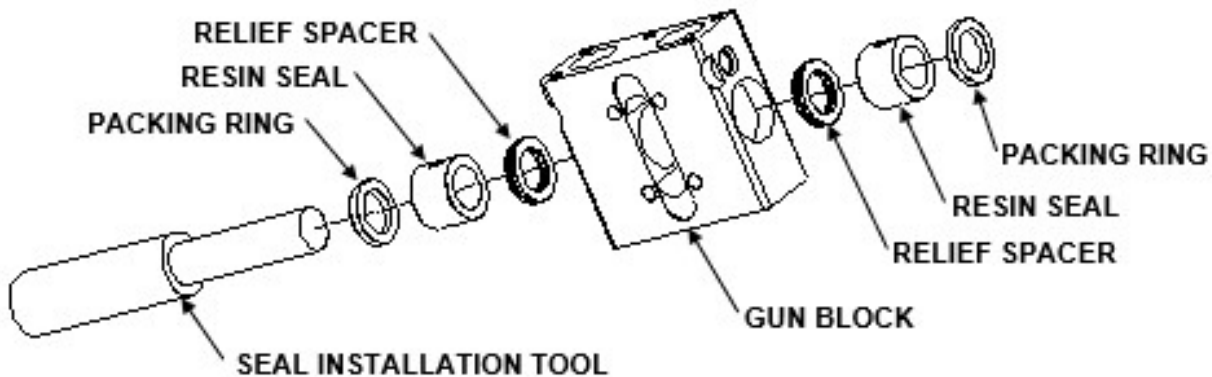


Reassemble Resin & Hardener Components

- Place the resin seal components onto the seal installation tool in the following order:

- Packing ring
- Seal
- Relief spacer

Note *The hole in the seal should be aligned with the port hole in the gun block.*



- Insert the seal installation tool with the components on it into the appropriate side of the gun block.
- Press firmly or tap with a rubber mallet.
- Pull the packing tool out of the gun block.

The seal components should be seated in the interior of the gun block against the center spacer.

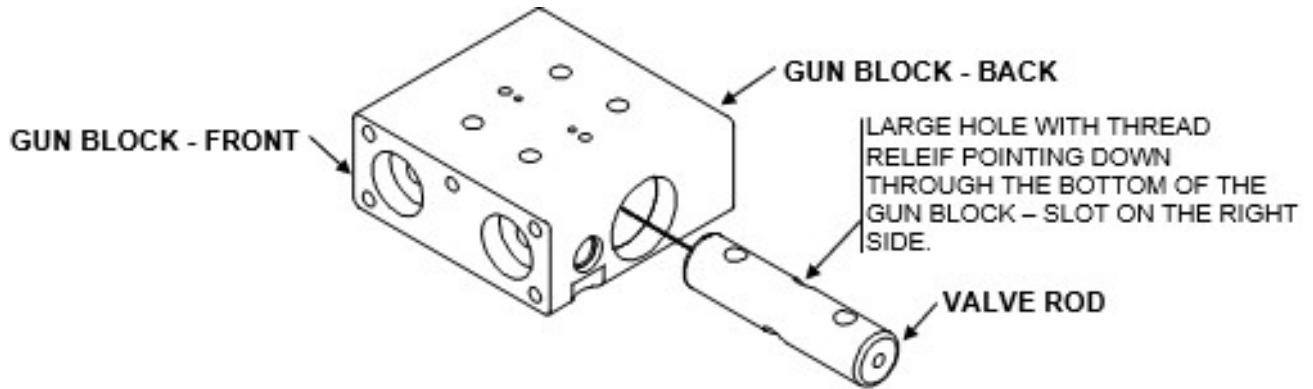
- Check that the hole in the seal is properly aligned with the holes in the gun block by looking through the ports in the gun block.
- Gently screw a packing nut into the gun block; do not overtighten.
- Repeat steps [5](#) through [10](#) with the hardener seal components on the catalyst side of the gun.

Note *At this point the packing nuts should only be hand tight.*

Install Valve Rod

- Insert the valve rod into the gun block through the resin side, using the seal installation tool to center the valve rod.

Note *Make sure the valve rod is correctly aligned. Rotate the valve rod so that the large actuating stem hole (relief side) is pointing down and the slot on the end of the valve rod is on the right side of the gun block when looking at the back of the gun.*



Reinstall Actuating Stem

13. Screw the actuating stem into the valve rod through the center spacer.

Note *Make sure the actuating stem is screwed into the side of the valve rod with the larger hole (thread relief).*

14. Look down the front of the gun while moving the actuating stem back and forth.

15. Observe the holes opening and closing.

Note *The valve rod is installed properly when the actuating stem is rotated toward the back of the gun block and the ports open.*

16. Set the actuating stem so that the holes are closed.

Tighten Packing Nuts

17. Tighten both the packing nuts, but do not overtighten.

18. Move the actuating stem back and forth, opening and closing the gun.

19. Retighten both packing nuts.

20. Repeat steps [18](#) - [19](#) one more time.

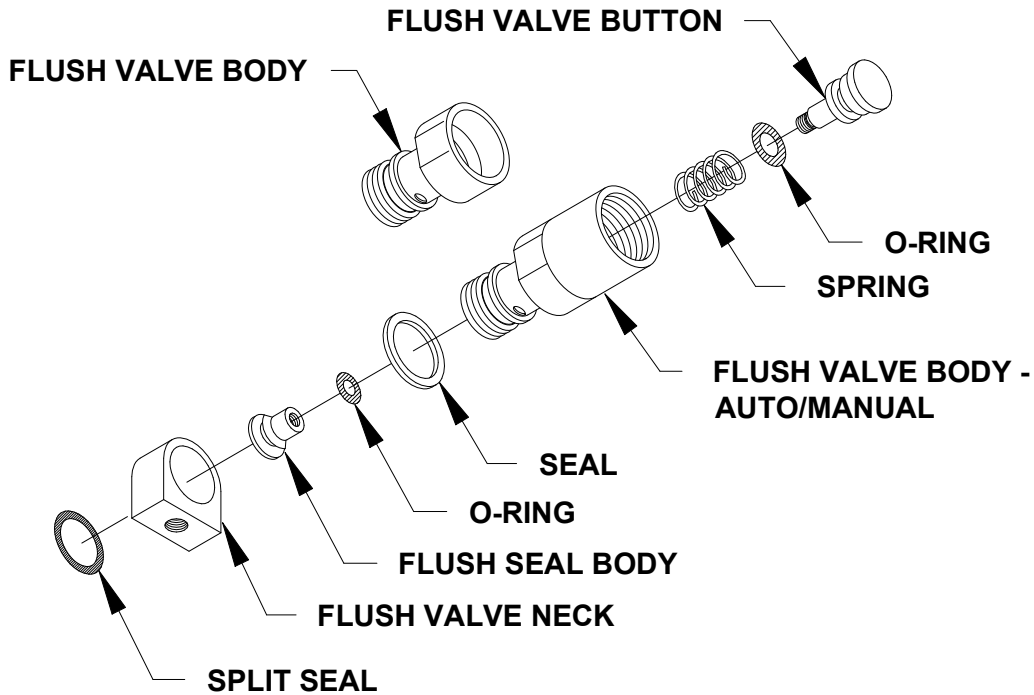
21. Thread the two set screws and seals into the top side of the gun block.

22. Reinstall the hose fitting and O-ring for the resin and hardener hoses on the rear of the gun block.

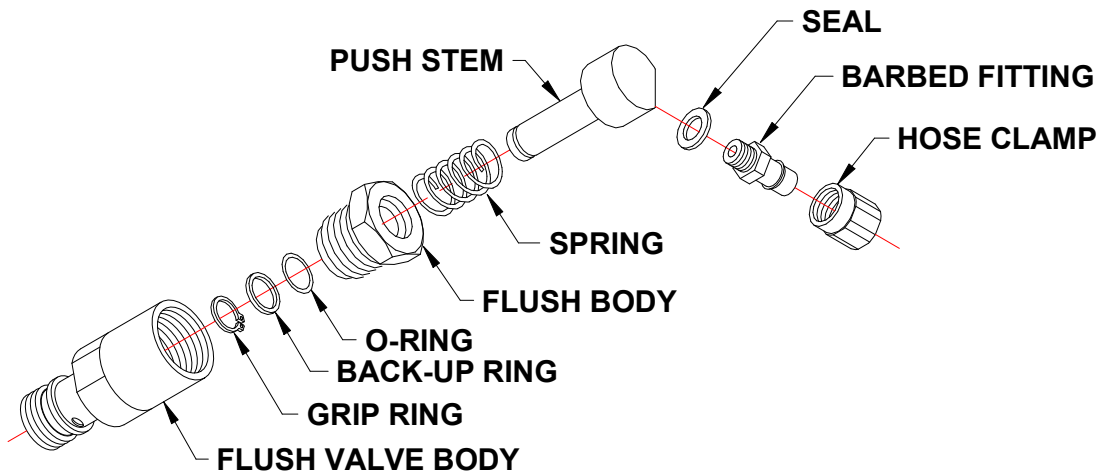
Reassemble Flush Valve

23. Place the O-ring on the flush valve button.

24. Insert the spring onto the flush valve button.



25. Place the O-ring on the flush seal body.
26. Push the button and spring into the flush valve body.
27. Insert the flush seal body into the end of the flush valve body and screw it onto the button.
28. Place a flush valve seal on the flush valve body.
29. Install the flush valve body into the flush valve neck.
30. Install the split seal onto the flush valve body.
31. If your system does not have auto/manual flush, skip to step [37](#).
32. Install the spring and push stem into the flush body.
33. Install a new O-ring onto the end of the push stem sticking out of the flush body.
34. Install the new back-up ring onto the end of the push stem against the new O-ring.



35. Install the grip ring onto the end of the push stem.

36. Thread the auto/manual flush body assembly into the flush valve body.
37. Screw the flush valve assembly into the front side port on the resin side of the gun block.

Assemble Gun Head

38. Install the two check face seals into the front of the gun block.
39. Install the locator pin into either the gun block or gun head, as applicable.
40. Mount the gun head onto the gun block using the four cap screws.
41. If you have the ratio gun head setup (HVDG-2204), skip to Rebuilding Actuator.
42. Install the side plugs and seals into both sides of the gun head.
43. With the gun head pointing upward, place the ball into the front part of the gun head.
44. Place the spring on top of the ball.
45. Screw the front plug and seal into the front port of the gun head, making sure the spring centers on the pin on the front plug.

Rebuilding Actuator

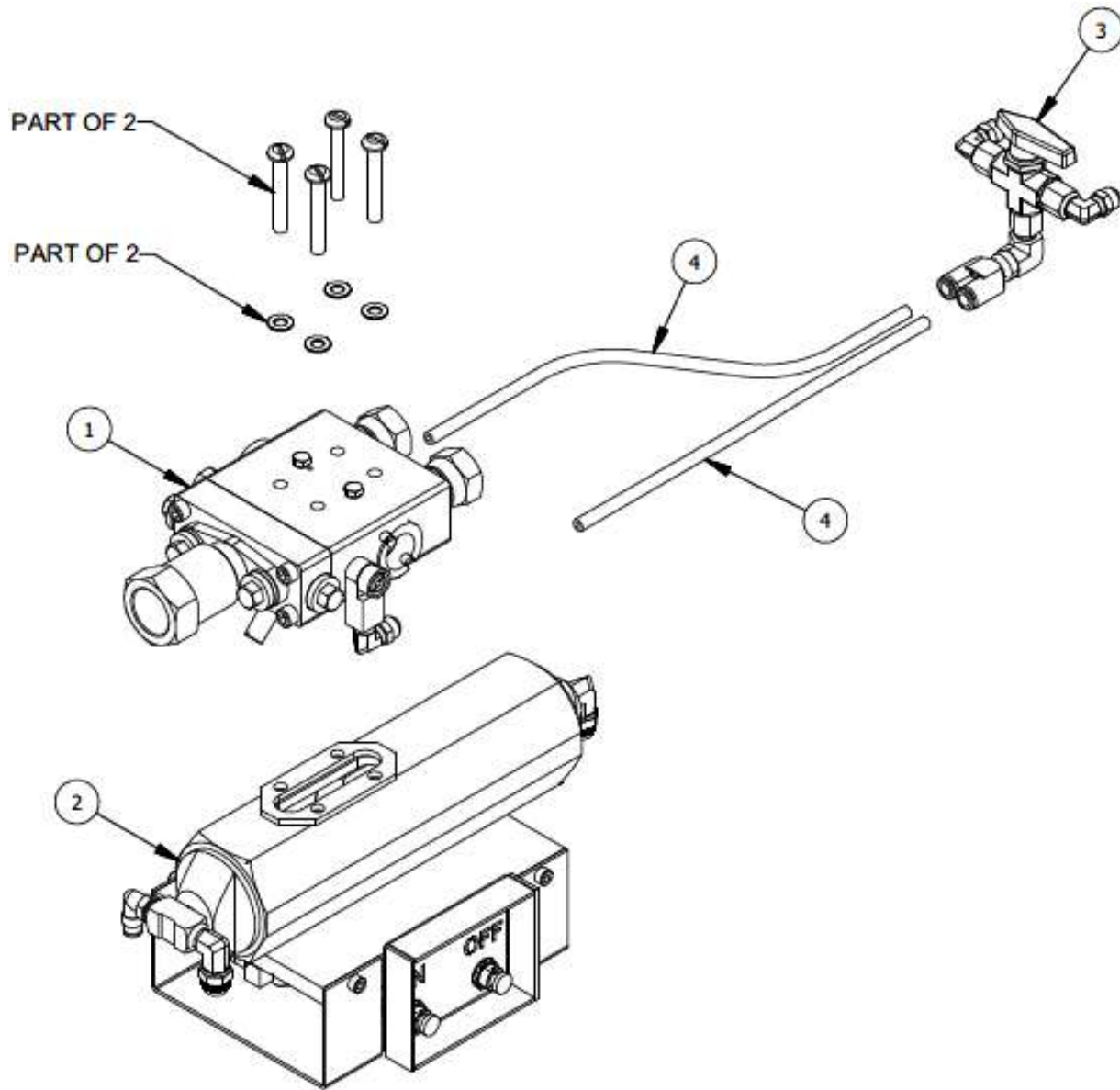
1. Remove the end cap from both ends of the cylinder body.
2. Push the actuator piston out of the back of the cylinder body.
3. Replace the O-ring on the actuator piston
4. Check the actuator bushing and cylinder body for wear or damage.
5. Apply a light film of Pro Gun oil to both the incise of the cylinder and actuator piston.
6. Install the actuator piston into the cylinder body with the actuator bushing first and off center toward the top.
7. Install the end cap onto both ends of the cylinder body.
8. Align the actuator stem on the gun block with the actuator bushing in the cylinder body.
9. Attach the gun block to the cylinder using the four screws and seats.

Parts Drawings

The following drawings are included in this manual for reference:

Parts Drawings	
Part Number	Description
HVDG-2000	HV DUO GUN ASSEMBLY
HVDG- 2000-DR	HV DUO GUN ASSEMBLY – RATIO GUN HEAD
HVDG-2000-TM	HV DUO GUN ASSMELBY – TUBE MIXER
HVDG-2100	HIGH VOLUME DUO GUN BLOCK ASSEMBLY
HVDG-2100-DR	HV DUO GUN BLOCK ASSEMBLY – RATIO
HVDG-2100-TM	HV DUO GUN BLOCK ASSEMBLY – TUBE MIXER

Parts Drawings	
Part Number	Description
HVDG-2200	HV DUO GUN ACTUATOR
HVDG-2000-RK	REPAIR KIT – HV DUO GUN ASSEMBLY
58715-1	AUTO/MANUAL FLUSH VALVE ASSEMBLY
58742-1	AUTOMATIC FLUSH VALVE ASSEMBLY
58742-1-INT	AUTO FLUSH VALVE ASSEMBLY – INTERNATIONAL
SAPV-2000	SOLVENT/AIR PURGE VALVE
HVDG-4000	HV DUO 1:1 PRO GUN ASSEMBLY
HVDG-4000-EP	HV DUO PRO GUN ASSEMBLY – ELECTRONIC
HVDG-4100	HIGH VOLUME DUO GUN BLOCK
HVDG-4200	HIGH VOLUME DUO ACTUATOR ASSEMBLY
HVDG-4200-EP	HIGH VOLME DUO ACTUATOR – ELECTRONIC
HVDG-4000-RK	REPAIR KIT – HV DUO GUN ASSEMBLY



MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN	HVDG-2000
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REV:A 06/17/11

SHEET 1 / 2

4/23/2009

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2100	1	HV DUO GUN BLOCK
2	HVDG-2200	1	HV DUO GUN ACTUATOR
3	SAPV-1000-DUO	1	SOLVENT/AIR PURGE VALVE
4	01443	2 FT	TUBE - 2) 1 FT. SECTIONS

REPAIR KIT - HVDG-2000-RK

MAGNUM VENUS PLASTECH

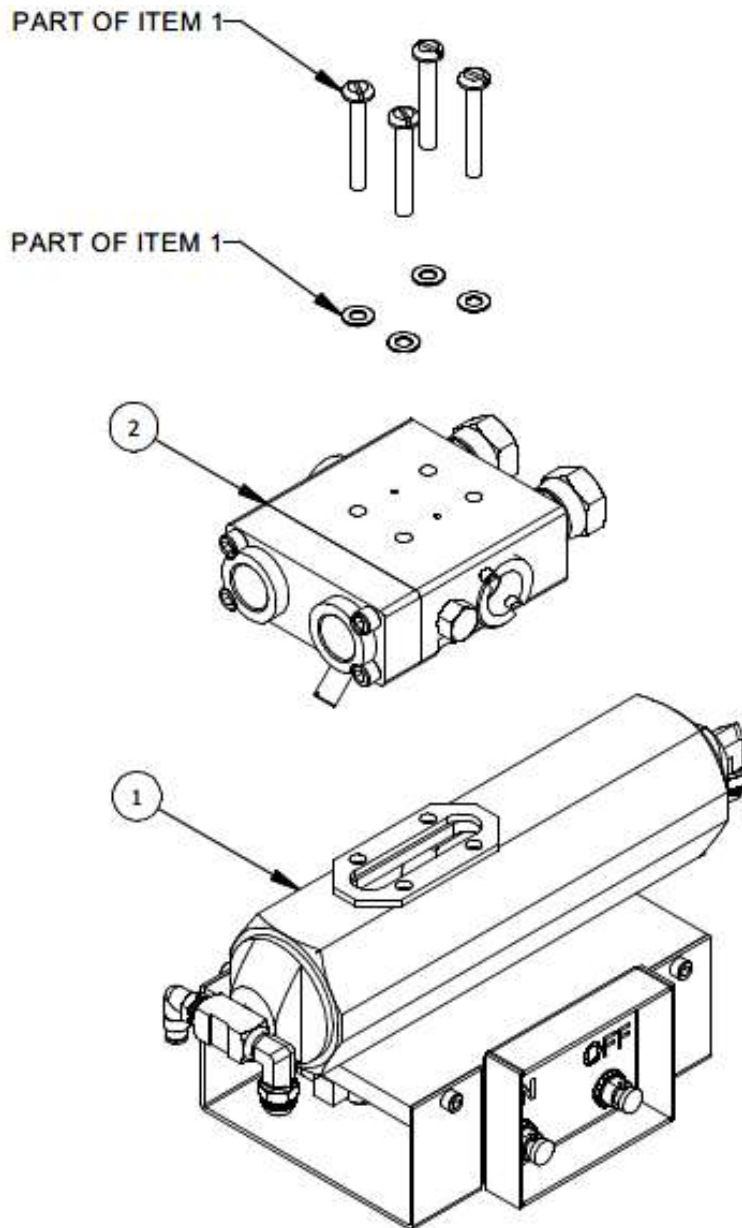
HIGH VOLUME DUO GUN

HVDG-2000

REV:A 06/17/11

SHEET 2 / 2

4/23/2009



MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN - RATIO SETUP

HVDG-2000-DR

REV:

SHEET 1 / 2

7/15/2009

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2200	1	HV DUO GUN ACTUATOR
2	HVDG-2100-DR	1	HV DUO GUN BLOCK - RATIO SETUP

REPAIR KIT - HVDG-2000-DR-RK

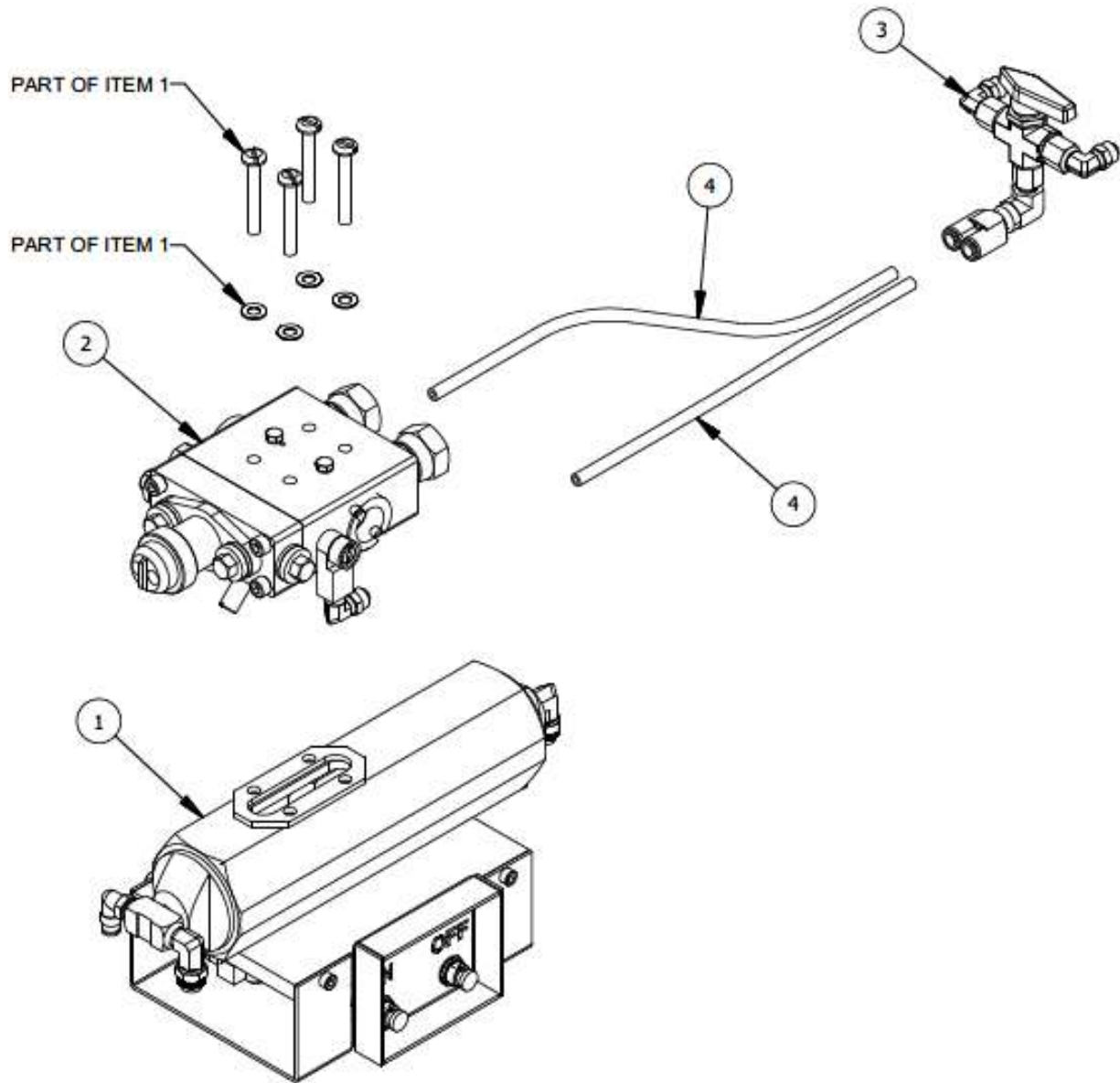
MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN - RATIO SETUP	HVDG-2000-DR
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REV:

SHEET 2 / 2

7/15/2009



MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN - FOR TUBE MIXER

HVDG-2000-TM

REV:A 06/17/11

SHEET 1 / 2

7/15/2009

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2200	1	HV DUO GUN ACTUATOR
2	HVDG-2100-TM	1	HV DUO GUN BLOCK - FOR TUBE MIXER
3	SAPV-1000-DUO	1	SOLVENT/AIR PURGE VALVE
4	01443	2 FT	TUBE - 2) 1 FT. SECTIONS

REPAIR KIT - HVDG-2000-TM-RK

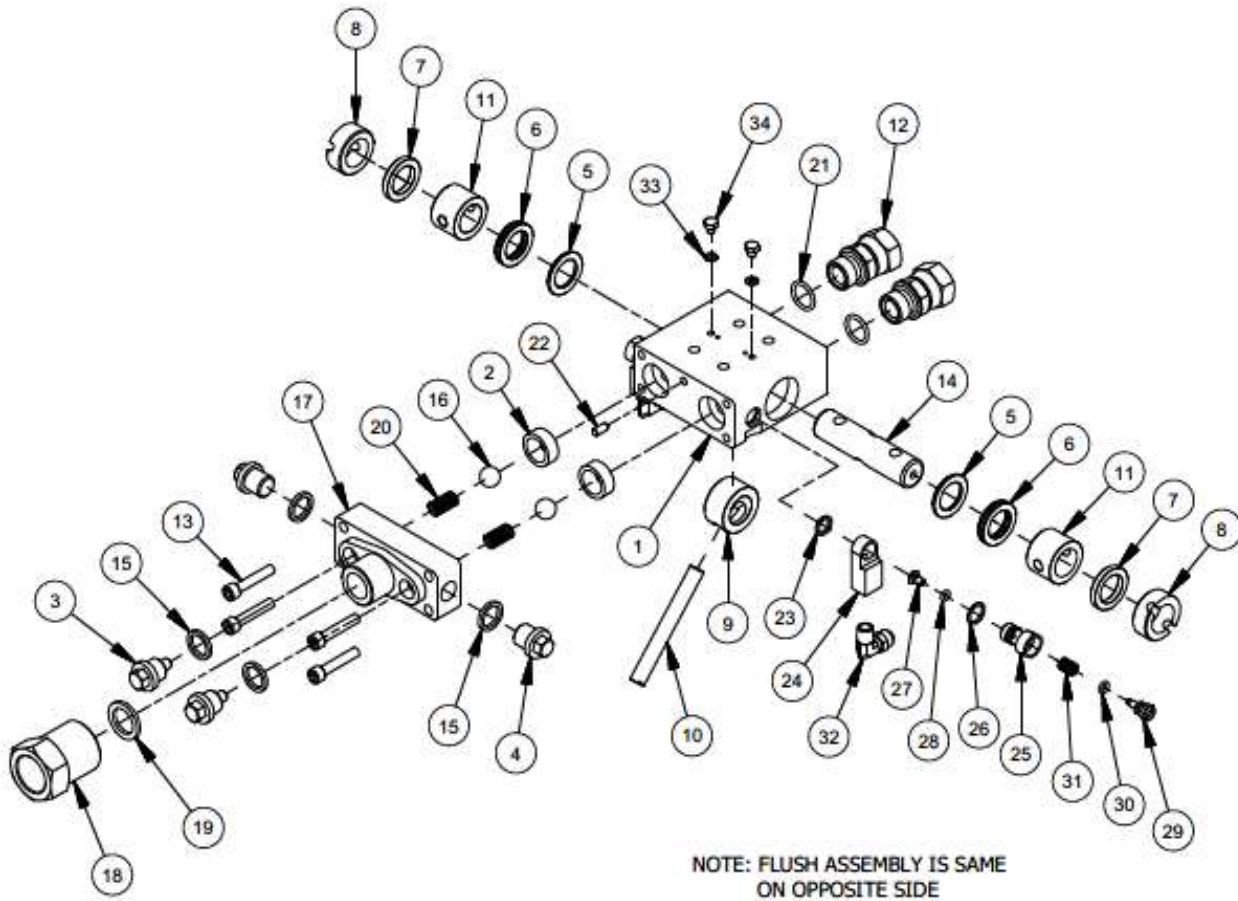
MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN - FOR TUBE MIXER	HVDG-2000-TM
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REV:A 06/17/11

SHEET 2 / 2

7/15/2009



MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN BLOCK

HVDG-2100

REV: B 07/06/12

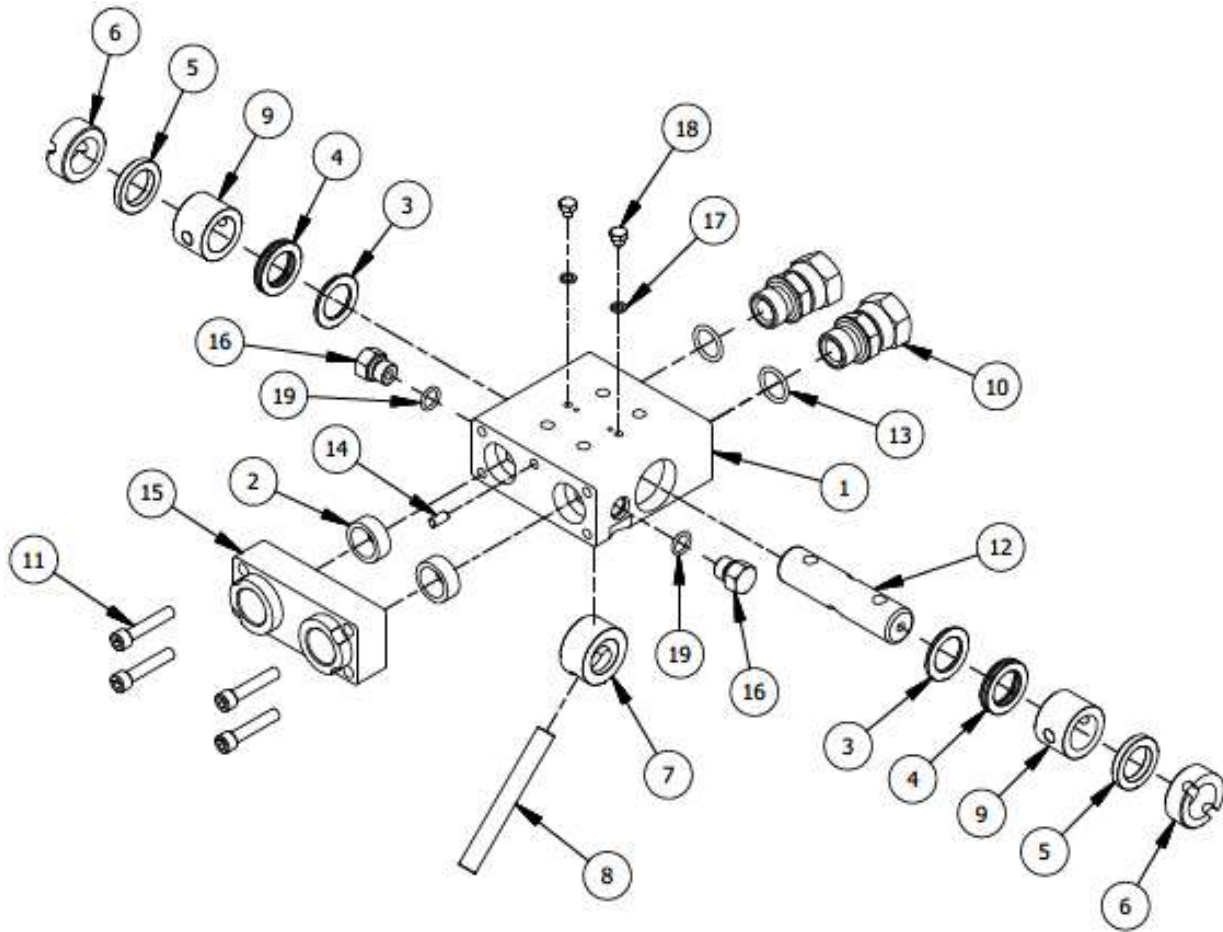
Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2201	1	GUN BLOCK
2	HVDG-2205	2	CHECK FACE SEAL
3	HVDG-2203	2	FRONT PLUG
4	HVDG-2208	2	SIDE PLUG
5	58135-1	2	SECONDARY SEAL
6	58123-1	2	RELIEF SPACER
7	58146-1	2	PACKING RING
8	58122-1	2	PACKING NUT
9	58124-1	1	CENTER SPACER
10	58147-1	1	STEM
11	58126-1-GFT	2	RESIN SEAL, GLASS FILLED
12	05654	2	SWIVEL FITTING
13	F-CS-04F-20	4	CAP SCREW
14	HVDG-2209	1	VALVE ROD
15	HVDG-2210	4	SEAL
16	03402	2	BALL
17	HVDG-2202	1	GUN HEAD
18	HVDG-2206	1	MIXER ADAPTER
19	HVDG-2207	1	SEAL
20	SPR-C-1007	2	SPRING
21	O-V-3-908	2	O-RING
22	HVDG-2225	1	LOCATOR PIN
23	5104-21-1	2	FLUSH VALVE SPLIT SEAL
24	5104-22-2	2	FLUSH VALVE NECK
25	5104-24-1	2	FLUSH VALVE BODY
26	5104-26-1	2	FLUSH VALVE SEAL
27	5104-23-1	2	FLUSH SEAL BODY
28	O-E-007	2	O-RING
29	5104-25-1	2	FLUSH VALVE BUTTON
30	O-E-008	2	O-RING
31	9203-2-3	2	COMPRESSION SPRING
32	MPH-2534	2	POLY ELBOW
33	7304-3-1	2	NYLON SEAL
34	HVDG-2211	2	SET SCREW

MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN BLOCK

HVDG-2100

REV:B 07/06/12



MAGNUM VENUS PLASTECH

HIGH VOLUME DUO GUN BLOCK - RATIO SETUP

HVDG-2100-DR

REV:B 07/06/12

SHEET 1 / 2

2/18/2010

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2201	1	GUN BLOCK
2	HVDG-2205	2	CHECK FACE SEAL
3	58135-1	2	SECONDARY SEAL
4	58123-1	2	RELIEF SPACER
5	58146-1	2	PACKING RING
6	58122-1	2	PACKING NUT
7	58124-1	1	CENTER SPACER
8	58147-1	1	STEM
9	58126-1-GFT	2	RESIN SEAL, GLASS FILLED
10	05654	2	SWIVEL FITTING
11	F-CS-04F-20	4	CAP SCREW
12	HVDG-2209	1	VALVE ROD
13	O-V-3-908	2	O-RING
14	HVDG-2225	1	LOCATOR PIN
15	HVDG-2204	1	RATIO BLOCK
16	F-SP-07F	2	SOLVENT PLUG
17	7304-3-1	2	NYLON SEAL
18	HVDG-2211	2	SET SCREW
19	O-E-012	2	O-RING

MAGNUM VENUS PLASTECH

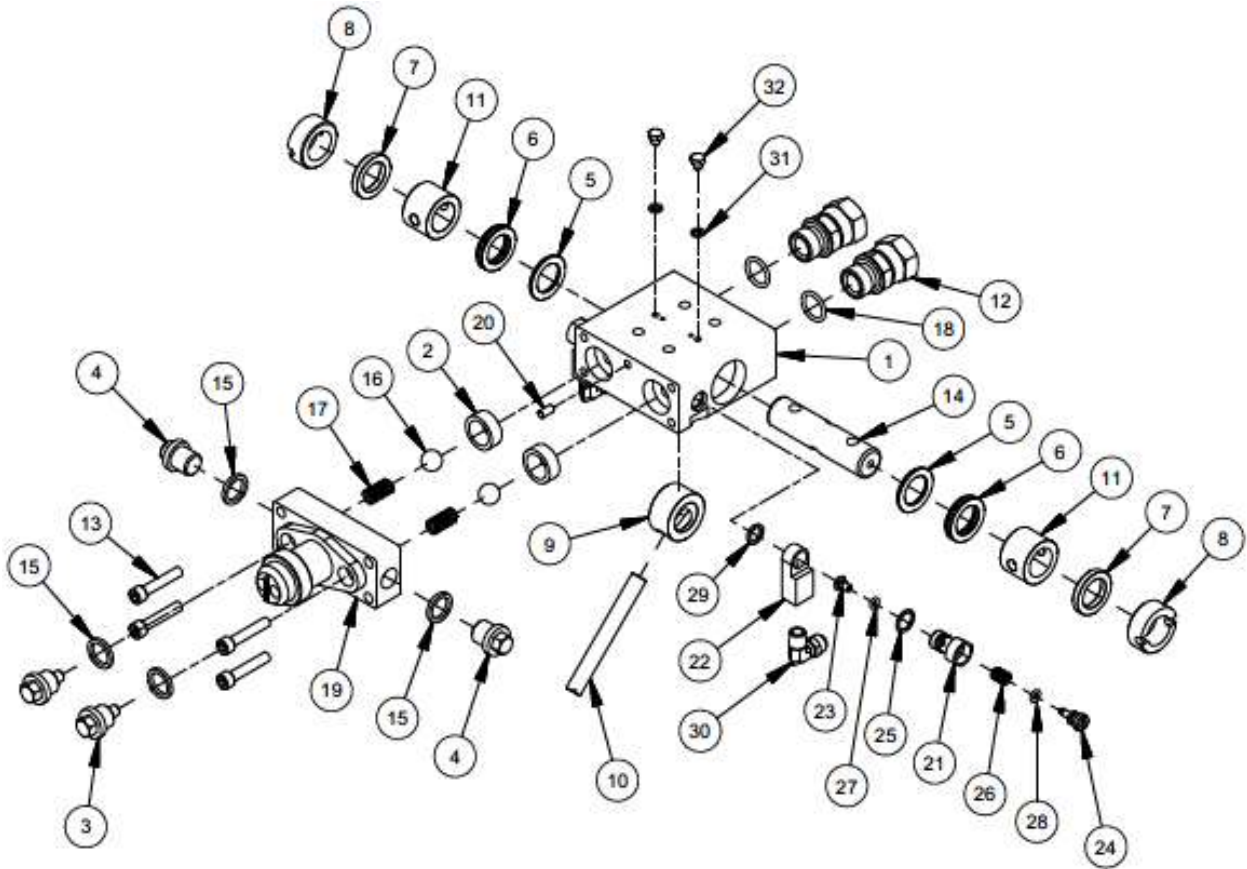
HIGH VOLUME DUO GUN BLOCK - RATIO SETUP

HVDG-2100-DR

REV:B 07/06/12

SHEET 2 / 2

2/18/2010



NOTE: FLUSH ASSEMBLY IS SAME
ON OPPOSITE SIDE

MAGNUM VENUS PLASTECH

HV DUO GUN BLOCK - FOR TUBE MIXER HVDG-2100-TM

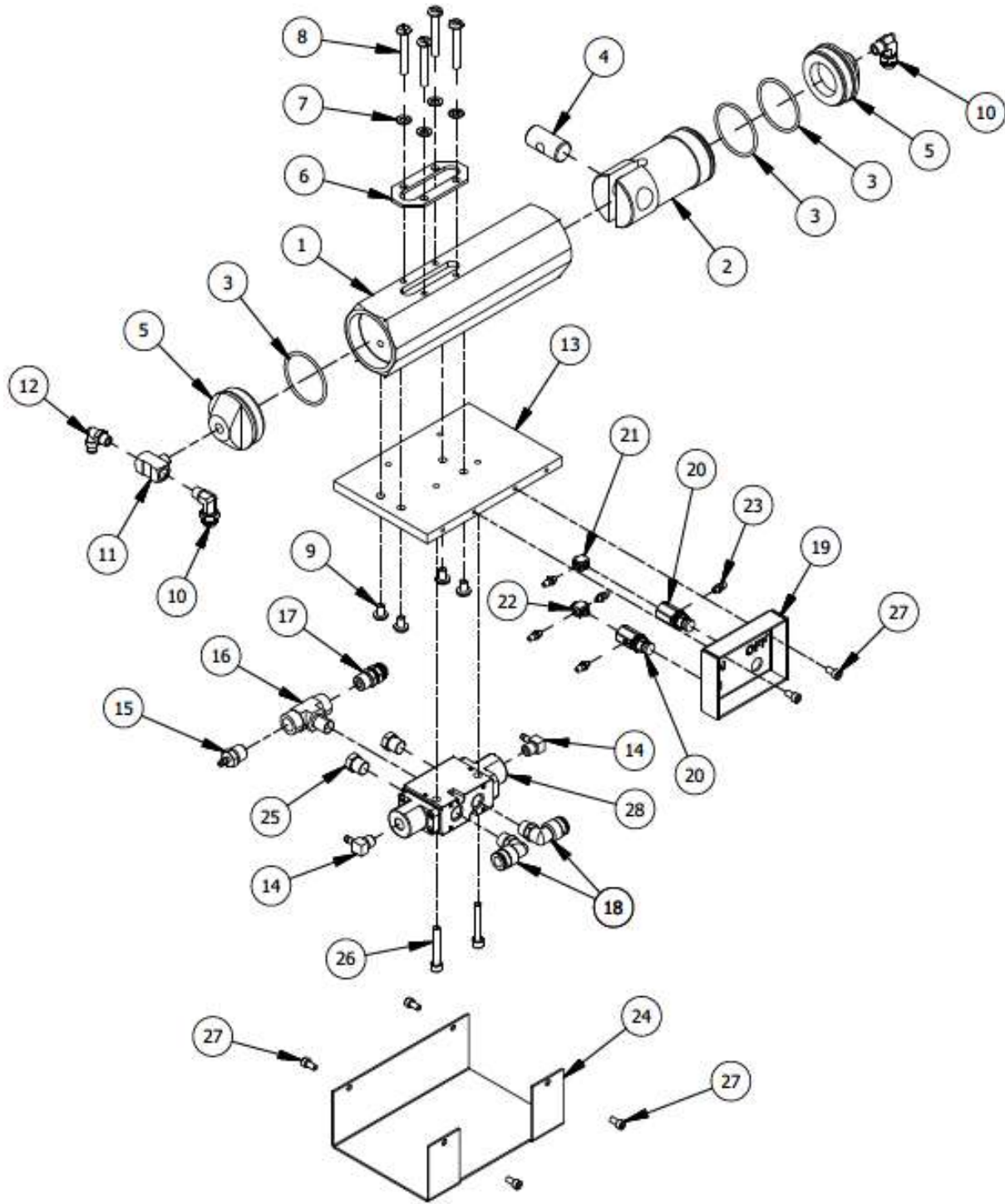
REV: B 07/06/12

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2201	1	GUN BLOCK
2	HVDG-2205	2	CHECK FACE SEAL
3	HVDG-2203	2	FRONT PLUG
4	HVDG-2208	2	SIDE PLUG
5	58135-1	2	SECONDARY SEAL
6	58123-1	2	RELIEF SPACER
7	58146-1	2	PACKING RING
8	58122-1	2	PACKING NUT
9	58124-1	1	CENTER SPACER
10	58147-1	1	STEM
11	58126-1-GFT	2	RESIN SEAL, GLASS FILLED
12	05654	2	SWIVEL FITTING
13	F-CS-04F-20	4	CAP SCREW
14	HVDG-2209	1	VALVE ROD
15	HVDG-2210	4	SEAL
16	03402	2	BALL
17	SPR-C-1007	2	SPRING
18	O-V-3-908	2	O-RING
19	HVDG-2212	1	GUN HEAD
20	HVDG-2225	1	LOCATOR PIN
21	5104-24-1	2	FLUSH VALVE BODY
22	5104-22-2	2	FLUSH VALVE NECK
23	5104-23-1	2	FLUSH SEAL BODY
24	5104-25-1	2	FLUSH VALVE BUTTON
25	5104-26-1	2	FLUSH VALVE SEAL
26	9203-2-3	2	COMPRESSION SPRING
27	O-E-007	2	O-RING
28	O-E-008	2	O-RING
29	5104-21-1	2	FLUSH VALVE SPLIT SEAL
30	MPH-2534	2	POLY ELBOW
31	7304-3-1	2	NYLON SEAL
32	HVDG-2211	2	SET SCREW

MAGNUM VENUS PLASTECH

HV DUO GUN BLOCK - FOR TUBE MIXER HVDG-2100-TM

REV:B 07/06/12



MAGNUM VENUS PLASTECH

HV DUO GUN ACTUATOR	HVDG-2200
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REV:A 05/11/11

SHEET 1 / 2

6/17/2009

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	58140-1	1	ACTUATOR BODY
2	58136-1	1	ACTUATING PISTON
3	O-V-133	3	O-RING
4	58138-1	1	ACTUATING BUSHING
5	58137-1	2	END CAP
6	58144-1	1	ACTUATOR SEAL
7	58143-1	4	MOUNTING SEAL
8	F-PH-04C-28	4	PAN HEAD SCREW
9	02809-3	4	PAN HEAD SCREW
10	7701-6-18	2	POLY TUBE ELBOW
11	PF-MBT-02-02	1	MALE BRANCH TEE
12	PTF90-02-02	1	MALE ELBOW
13	HVDG-2222	1	MOUNTING PLATE
14	MPM-2589	2	MALE ELBOW
15	00421	1	MALE CONNECTOR
16	PF-BT-04F-04F-04M	1	BRANCH TEE
17	7701-3-35	1	MALE CONNECTOR
18	07234	2	MALE POLY ELBOW
19	HVDG-2224	1	CONTROL PANEL
20	09169	2	3-WAY VALVE
21	TRU-1021	1	SWIVEL ELBOW FITTING
22	08807	1	SWIVEL TEE
23	7701-6-7	5	BARB FITTING
24	HVDG-2221	1	VALVE COVER
25	MPM-2568	2	BREATHER VENT
26	F-CS-04C-24	2	CAP SCREW
27	F-CS-1024-06	6	CAP SCREW
28	HVDG-2226	1	MAC DUAL PILOT VALVE

MAGNUM VENUS PLASTECH

HV DUO GUN ACTUATOR




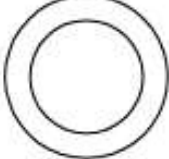


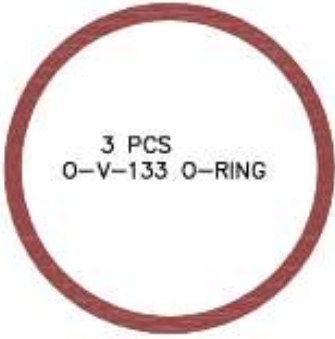


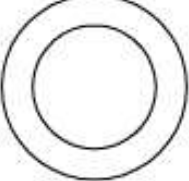

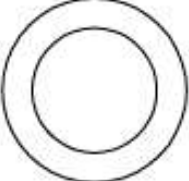




HVDG-2200

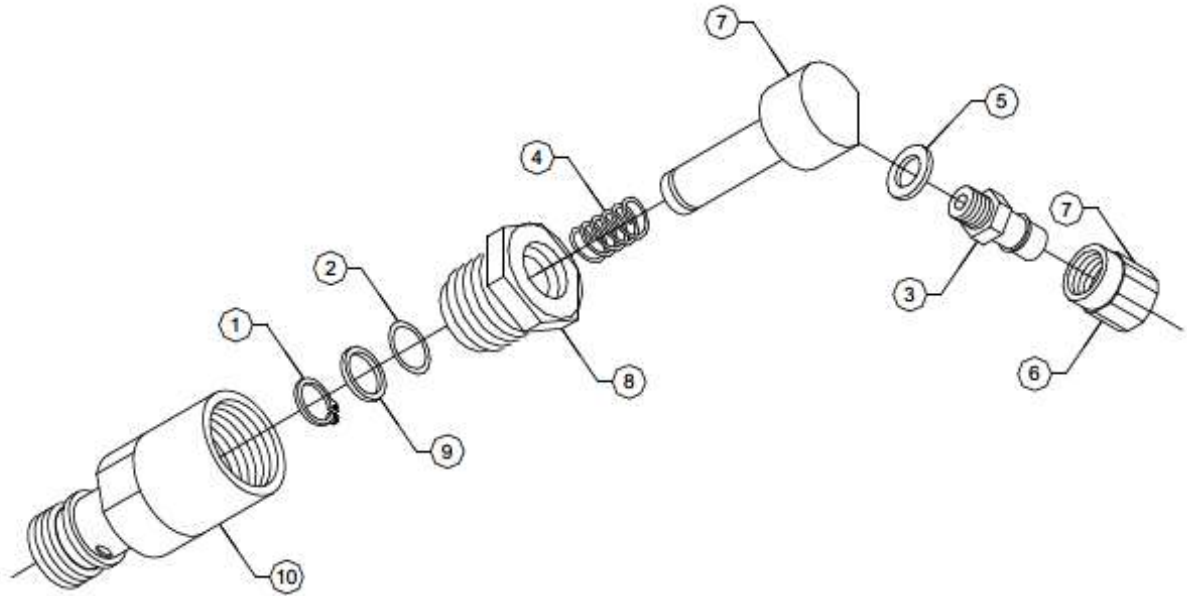
REV:A 05/11/11

SHEET 2 / 2

6/17/2009

HVDG-2000-RK
HV DUO GUN REPAIR KIT

- | | | | | | |
|-------|---|---|-------|--|----------------------------|
| 2 PCS |  | O-E-007 O-RING | 4 PCS |  | HVDG-2210 SEAL |
| 2 PCS |  | O-E-008 O-RING
DO NOT GREASE THIS O-RING | 1 PC |  | HVDG-2207 SEAL |
| 2 PCS |  | O-V-3-908 O-RING | 4 PCS |  | 58143-1 MOUNTING SEAL |
| 3 PCS |  | O-V-133 O-RING | 2 PCS |  | 5104-26-1 FLUSH VALVE SEAL |
| 2 PCS |  | 58126-1-GFT RESIN SEAL | 2 PCS |  | 58135-1 SECONDARY SEAL |
| 2 PCS |  | HVDG-2205 CHECK FACE SEAL | 2 PCS |  | 58146-1 PACKING RING |
| 2 PCS |  | SPR-C-1007 SPRING | 2 PCS |  | 5104-21-1 SPLIT SEAL |
| | | | 2 PCS |  | 03402 BALL |
| | | | 2 PCS |  | 7304-3-1 |



MAGNUM VENUS PRODUCTS

Manual / Auto Flush Button Assy - Pro Gun

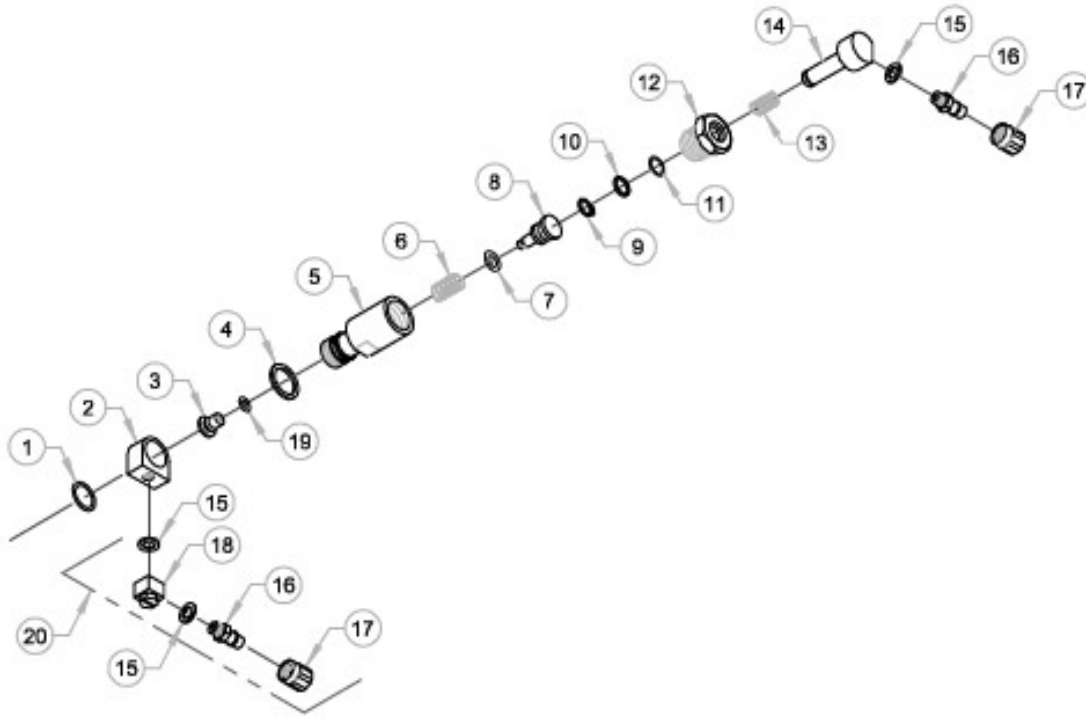
58715-1

REV. B = DWG CHANGED TO NEW FORM, ADDED 58861-1 TO DWG 4/11/03 JEM.

Manual / Auto Flush Button Assy - Pro Gun 58715-1

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	00973	1	GRIP RING
2	01019	1	O-RING
3	7701-6-3	1	BARBED FITTING
4	04356	1	SPRING
5	7304-3-1	1	NYLON SEAL
6	7701-2-1	1	HOSE CLAMP
7	58716-1	1	PUSH STEM
8	58717-1	1	BODY - AUTO FLUSH VALVE
9	58718-1	1	BACK UP RING
10	58681-1	1	BODY - FLUSH VALVE



MAGNUM VENUS PLASTECH

Automatic Flush Valve Assembly

58742-1

REV - 09-11-07 BT2
REV A - ADDED THREADLOCKER NOTE 10-12-08 BT2
REV B - REMOVED THREADLOCKER NOTE 11-23-13 BT2

Automatic Flush Valve Assembly 58742-1

PARTS LIST

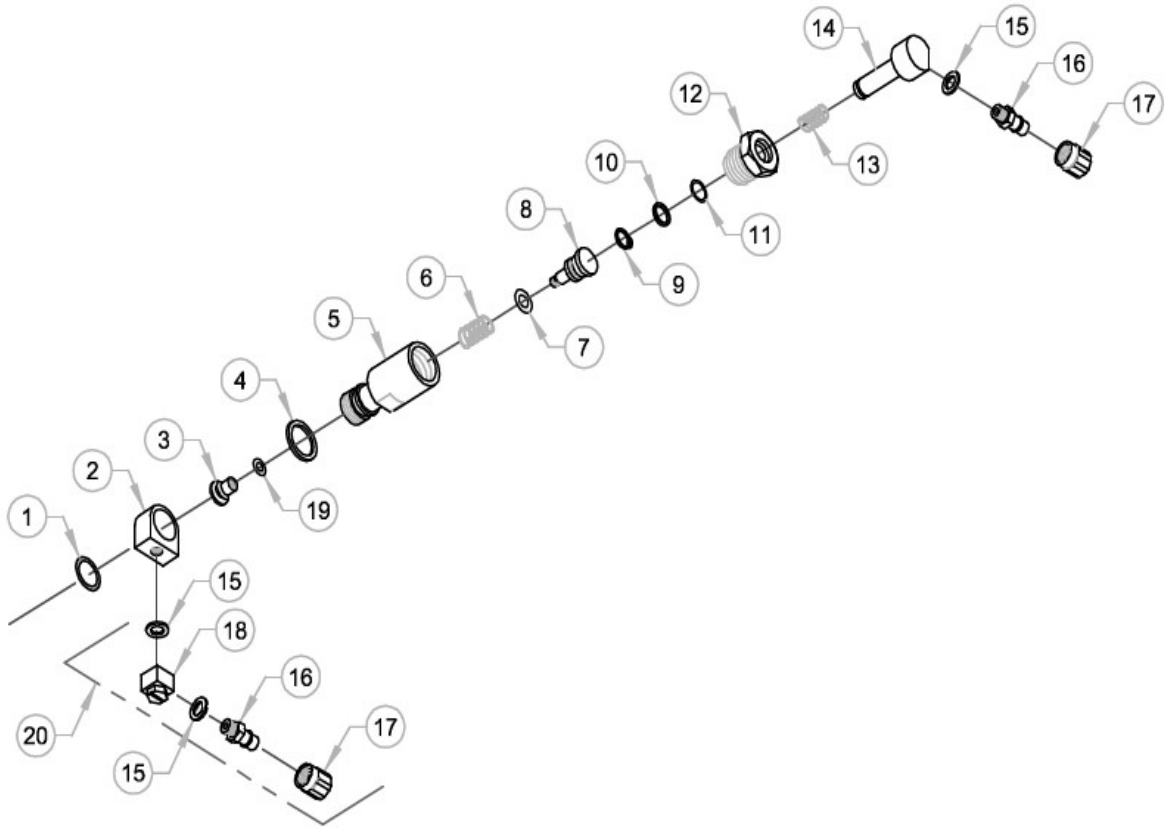
ITEM	PART NO.	QTY	DESCRIPTION
1	5104-21-1	1	FLUSH VALVE SPLIT SEAL
2	5104-22-1	1	FLUSH VALVE NECK
3	5104-23-1	1	FLUSH SEAL BODY
4	5104-26-1	1	FLUSH VALVE SEAL
5	58681-1	1	FLUSH VALVE BODY
6	9203-2-3	1	COMPRESSION SPRING
7	O-E-008	1	O-RING
8	5104-25-1	1	FLUSH VALVE BUTTON
9	00973	1	GRIP RING
10	58718-1	1	BACK UP RING
11	O-B-010	1	O-RING
12	58717-1	1	MANUAL / AUTO FLUSH BODY
13	04356	1	SPRING
14	58716-1	1	PUSH STEM
15	7304-3-1	3	NYLON SEAL
16	7701-6-3	2	BARB FITTING
17	7701-2-1	2	HOSE CLAMP
18	TRU-1021	1	ELBOW FITTING
19	O-E-007	1	O-RING

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
20	5104-02-01	1	FLUSH ELBOW ASSEMBLY

FIGURE 1-1





MAGNUM VENUS PLASTECH

Automatic Flush Valve Assembly

58742-1-INT

REV - 07-19-10 BT2
REV A - REMOVED THREADLOCKER NOTE 11-23-13 BT2

Automatic Flush Valve Assembly 58742-1-INT

PARTS LIST

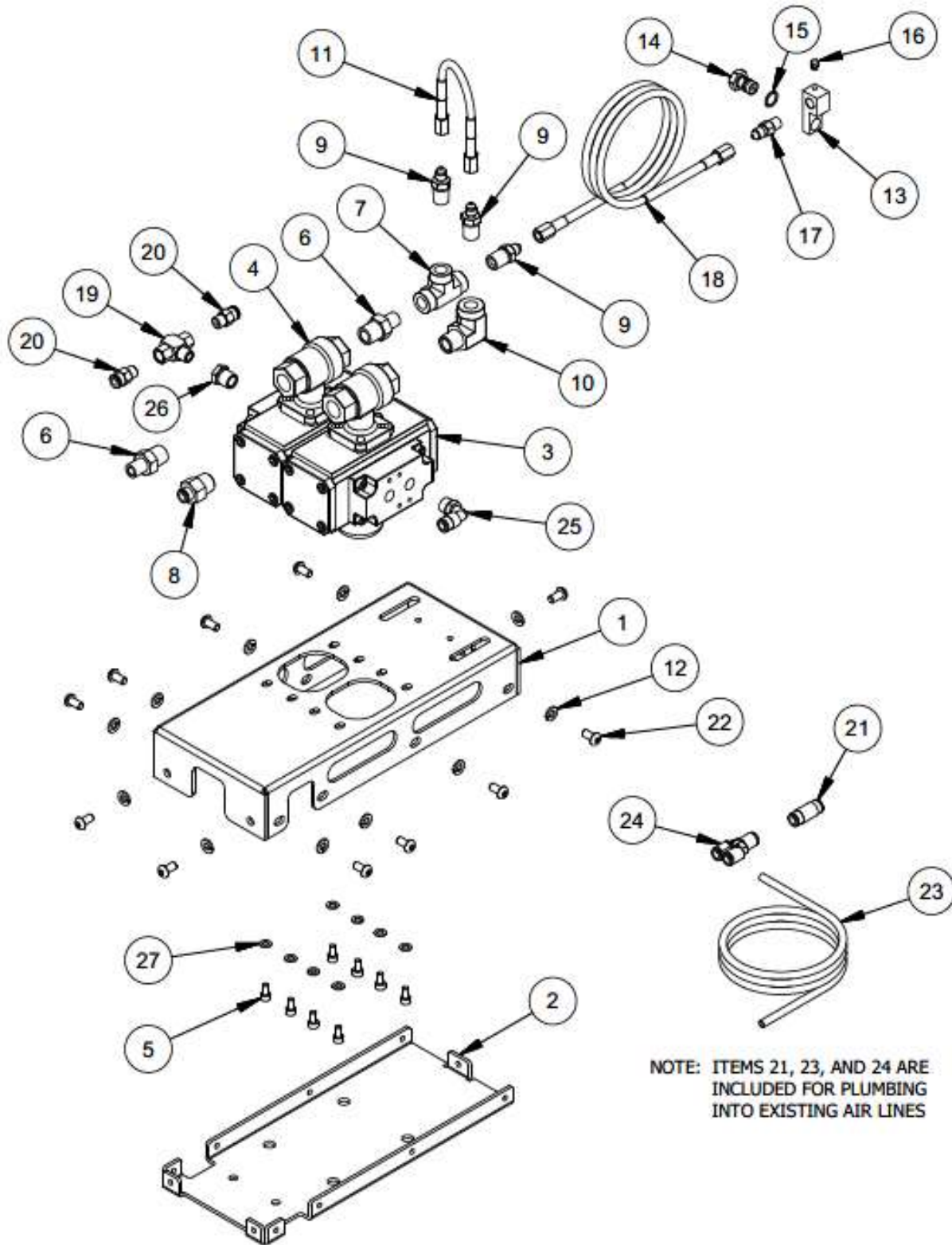
ITEM	PART NO.	QTY	DESCRIPTION
1	5104-21-1	1	FLUSH VALVE SPLIT SEAL
2	5104-22-1	1	FLUSH VALVE NECK
3	5104-23-1	1	FLUSH SEAL BODY
4	5104-26-1	1	FLUSH VALVE SEAL
5	58681-1	1	FLUSH VALVE BODY
6	9203-2-3	1	COMPRESSION SPRING
7	O-E-008	1	O-RING
8	5104-25-1	1	FLUSH VALVE BUTTON
9	00973	1	GRIP RING
10	58718-1	1	BACK UP RING
11	O-B-010	1	O-RING
12	58717-1	1	MANUAL / AUTO FLUSH BODY
13	04356	1	SPRING
14	58716-1	1	PUSH STEM
15	7304-3-1	3	NYLON SEAL
16	7701-6-3	2	BARB FITTING
17	7701-2-1	2	HOSE CLAMP
18	TRU-1021	1	ELBOW FITTING
19	O-A-007	1	O-RING

OPTIONAL PARTS AND ASSEMBLIES

ITEM	PART NO.	QTY	DESCRIPTION
20	5104-02-01	1	FLUSH ELBOW ASSEMBLY

FIGURE 1-1





MAGNUM VENUS PLASTECH

AIR PURGE VALVE ASSEMBLY

SAPV-2000

REV:

SHEET 1 / 2

5/6/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HOD-2005	1	BALL VALVE MOUNT
2	HOD-2006	1	AUTO BASE PLATE
3	BV-66L-SS-A	1	AUTOMATIC BALL VALVE - LEFT HAND
4	06018	1	AUTOMATIC BALL VALVE
5	0329	8	SOCKET HEAD CAP SCREW
6	PF-HN-06-04	2	HEX NIPPLE
7	PF-FT-04	1	FEMALE TEE
8	06976	1	MALE CONNECTOR
9	PF-HN-04-03J-SS	3	HEX NIPPLE
10	PF-SE-06M-04F	1	STREET ELBOW
11	HCSS-0203J-6IN	1	BRAIDED HOSE ASSY
12	F-SW-04	11	LOCK WASHER
13	5104-22-T-R	1	FLUSH VALVE NECK
14	5104-24-T	1	FLUSH VALVE BODY
15	5104-26-1	1	FLUSH VALVE SEAL
16	7701-4-6	1	HEX PLUG
17	PF-HN-02-03J-SS	1	HEX NIPPLE
18	HCSS-0203J-25	1	BRAIDED HOSE ASSY
19	8407-3-1	1	SHUTTLE VALVE
20	07223	2	MALE CONNECTOR
21	07246	1	UNION-POLY
22	F-BHCS-04C-08	11	BUTTON HEAD CAP SCREW
23	MS-2052-1	50 FT	CLEAR POLY TUBE - 1/4"x 30'
24	06946	1	POLY Y FITTING
25	07233	1	MALE POLY ELBOW
26	PF-RB-04-02	1	PIPE BUSHING
27	0321	8	FLAT WASHER M5

MAGNUM VENUS PLASTECH

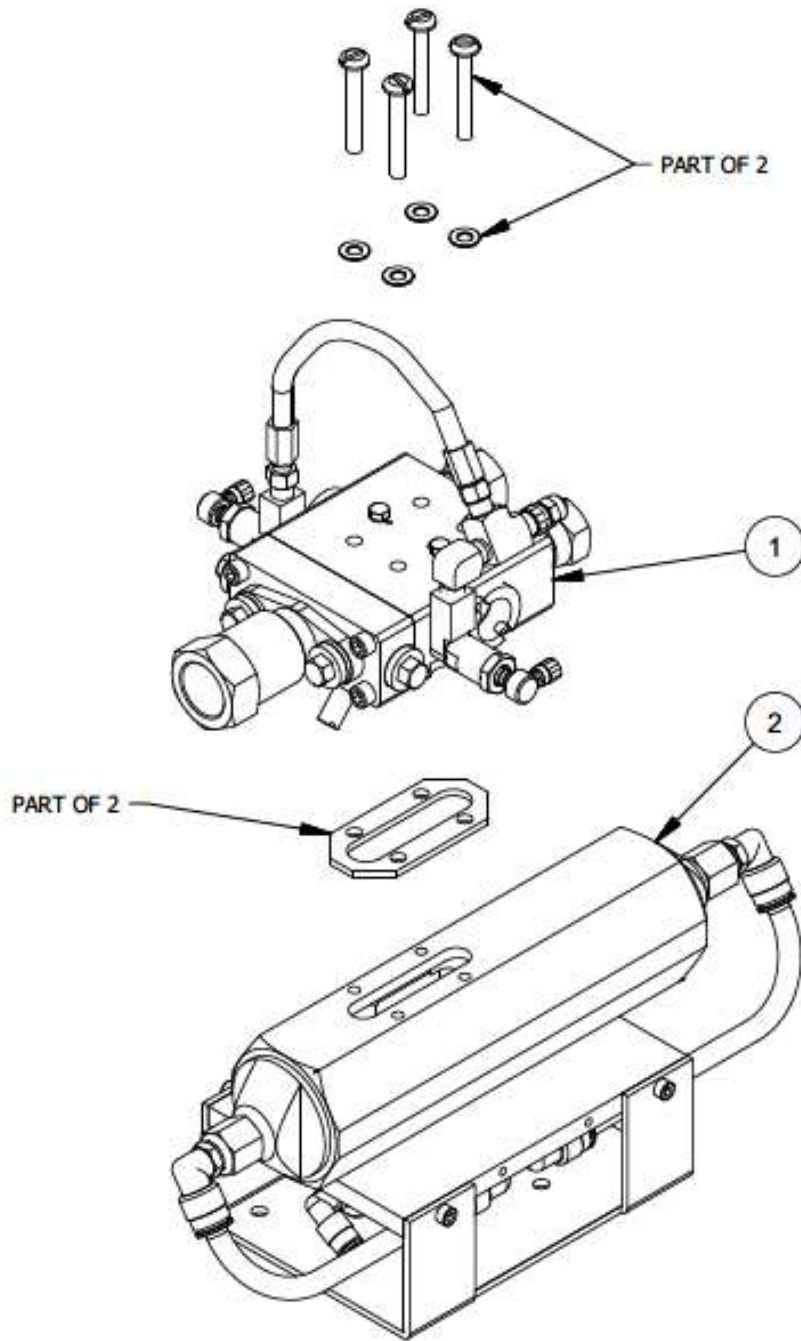
AIR PURGE VALVE ASSEMBLY

SAPV-2000

REV:

SHEET 2 / 2

5/6/2015



MAGNUM VENUS PRODUCTS

HIGH VOLUME DUO GUN WITH PNEUMATIC OPERATOR VALVE

HVDG-4000

REV:

SHEET 1 / 2

11/12/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-4100	1	GUN BLOCK ASSEMBLY
2	HVDG-4200	1	DUAL HIGH VOLUME DUO GUN ACTUATOR

REPAIR KIT - HVDG-4000-RK

MAGNUM VENUS PRODUCTS

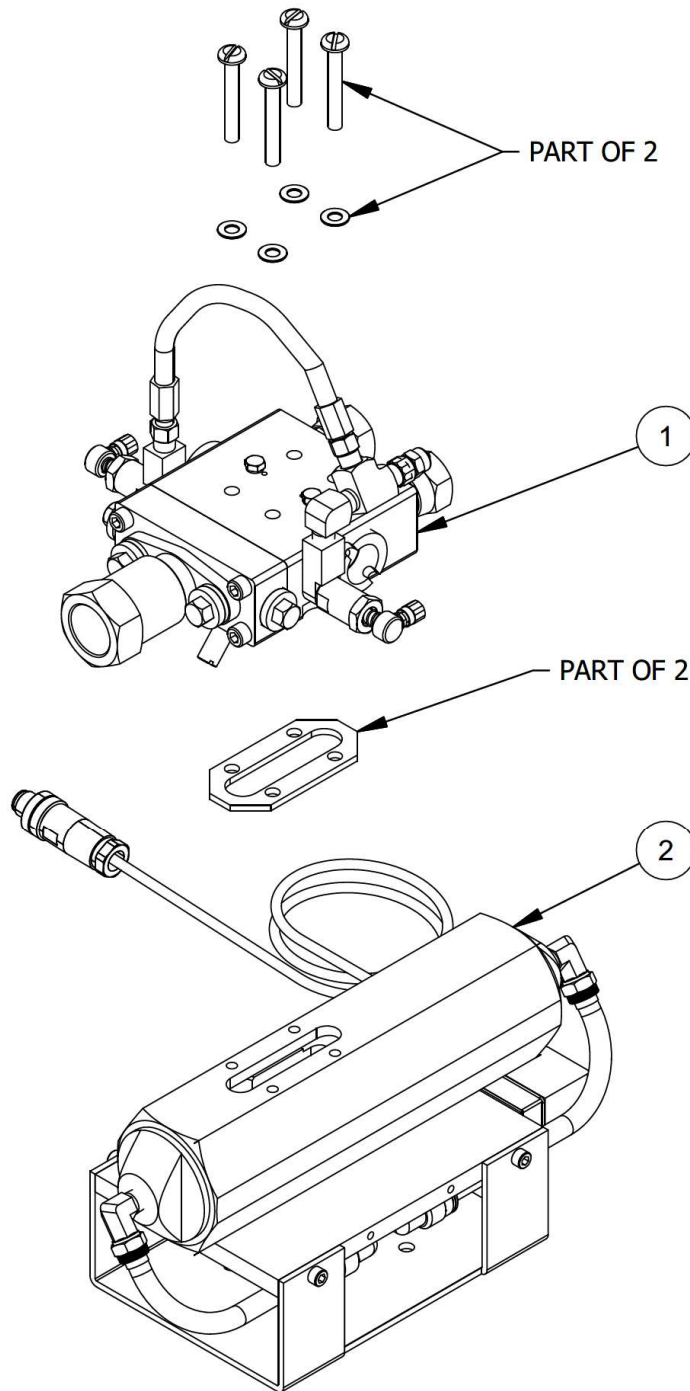
HIGH VOLUME DUO GUN WITH PNEUMATIC OPERATOR VALVE

HVDG-4000

REV:

SHEET 2 / 2

11/12/2015



MAGNUM VENUS PRODUCTS

DUAL HIGH VOLUME GUN WITH ELECTRIC OPERATOR VALVE

HVDG-4000-EP

REV:

SHEET 1 / 2

8/20/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-4100	1	GUN BLOCK ASSEMBLY
2	HVDG-4200-EP	1	GUN ACTUATOR WITH ELECTRIC OPERATOR VALVE

MAGNUM VENUS PRODUCTS

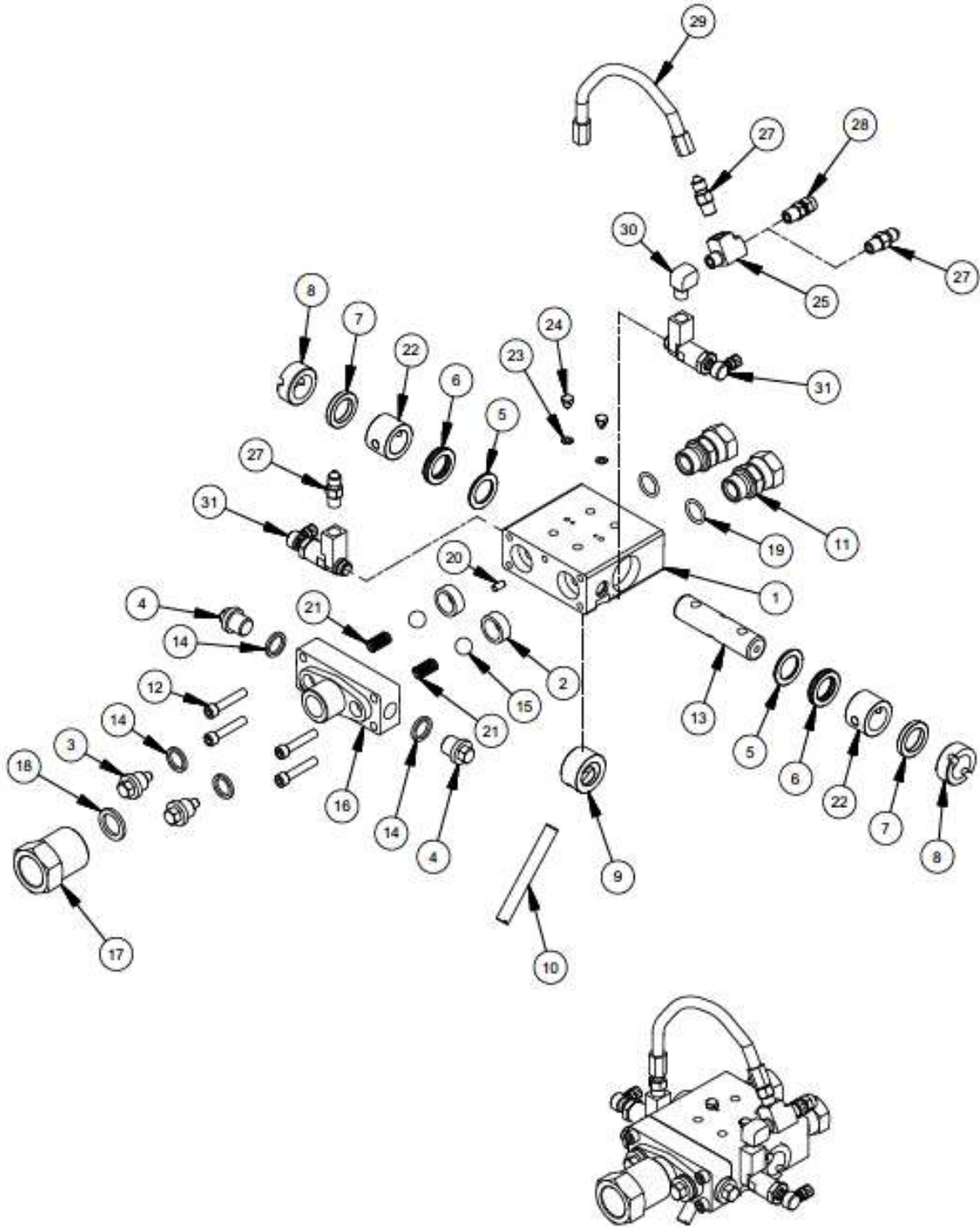
DUAL HIGH VOLUME GUN WITH ELECTRIC OPERATOR VALVE

HVDG-4000-EP

REV:

SHEET 2 / 2

8/20/2015



MAGNUM VENUS PRODUCTS

GUN BLOCK ASSEMBLY	HVDG-4100
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REV:

SHEET 1 / 2

8/19/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	HVDG-2201	1	GUN BLOCK
2	HVDG-2205	2	CHECK FACE SEAL
3	HVDG-2203	2	FRONT PLUG
4	HVDG-2208	2	SIDE PLUG
5	58135-1	2	SECONDARY SEAL
6	58123-1	2	RELIEF SPACER
7	58146-1	2	PACKING RING
8	58122-1	2	PACKING NUT
9	58124-1	1	CENTER SPACER
10	58147-1	1	STEM
11	05654	2	SWIVEL FITTING
12	F-CS-04F-20	4	CAP SCREW
13	HVDG-2209	1	VALVE ROD
14	HVDG-2210	4	SEAL
15	03402	2	BALL
16	HVDG-2202	1	GUN HEAD
17	HVDG-2206	1	MIXER ADAPTER
18	HVDG-2207	1	SEAL
19	O-V-3-908	2	O-RING
20	HVDG-2225	1	LOCATOR PIN
21	SPR-C-1007	2	SPRING
22	58126-1-GFT	2	RESIN SEAL, GLASS FILLED
23	7304-3-1	2	NYLON SEAL
24	HVDG-2211	2	SET SCREW
25	PF-ST-02-BR	1	TEE FITTING
27	PF-HN-02-03J-SS	3	HEX NIPPLE
28	7701-6-14	1	STRAIGHT POLY FITTING
29	HCSS-0203J-6IN	1	HOSE ASSEMBLY
30	PF-SE-02-BR	1	STREET ELBOW
31	58742-1-HD	2	AUTOMATIC FLUSH VALVE

MAGNUM VENUS PRODUCTS

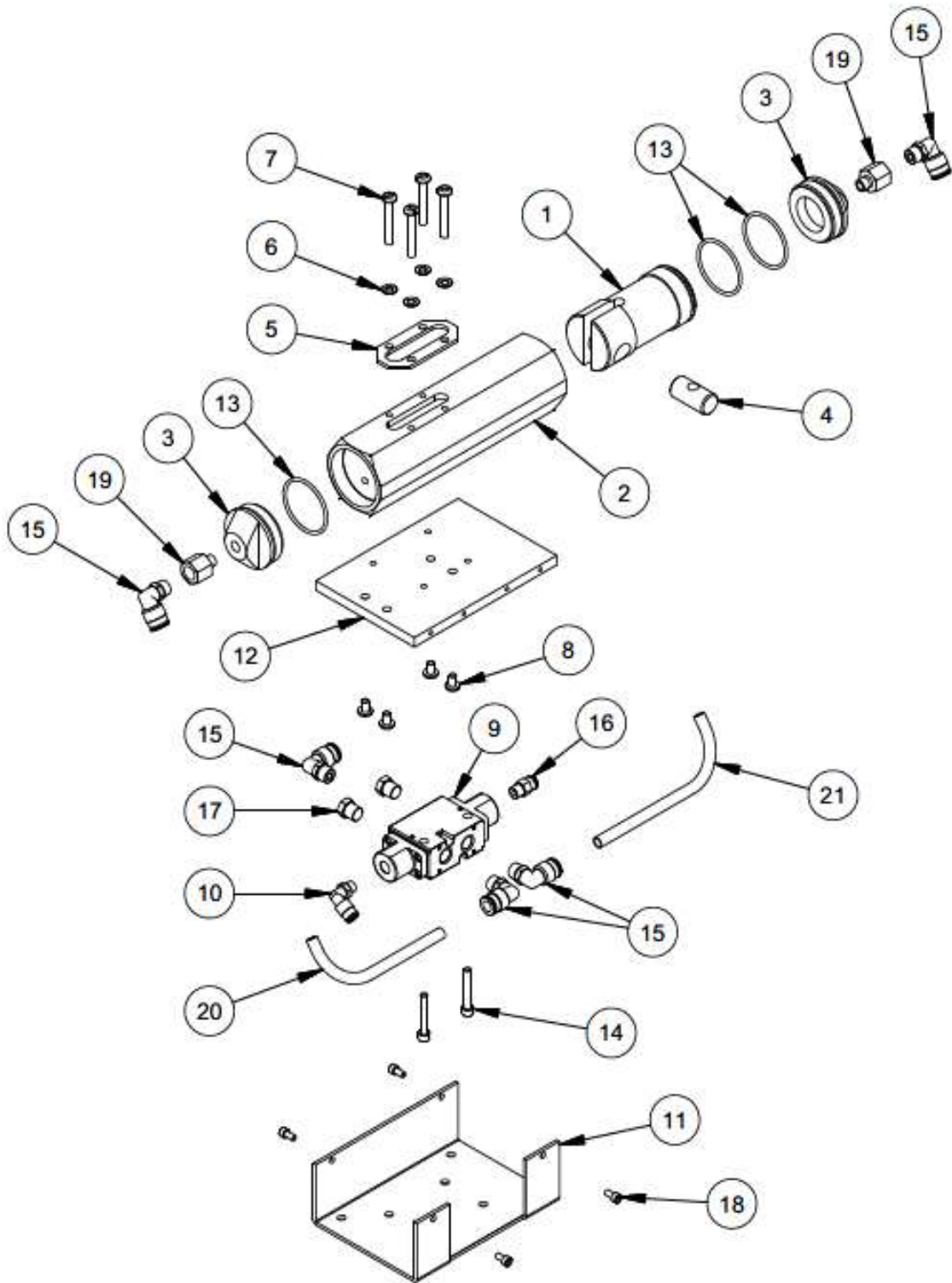
GUN BLOCK ASSEMBLY

HVDG-4100

REV:

SHEET 2 / 2

8/19/2015



MAGNUM VENUS PRODUCTS

HIGH VOLUME DUO GUN ACTUATOR ASSEMBLY	HVDG-4200
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REV: A 03/30/2017

SHEET 1 / 2

11/12/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	58136-1	1	ACTUATING PISTON
2	58140-1	1	ACTUATOR BODY
3	58137-1	2	END CAP
4	58138-1	1	ACTUATING BUSHING
5	58144-1	1	ACTUATOR SEAL
6	58143-1	4	MOUNTING SEAL
7	F-PH-04C-28	4	PAN HEAD SCREW
8	02809-3	4	PAN HEAD SCREW
9	HVDG-2226	1	MAC DUAL PILOT VALVE
10	MPH-2539	1	MALE ELBOW
11	HVDG-2221	1	VALVE COVER
12	HVDG-2222	1	MOUNTING PLATE
13	O-V-133	3	O-RING
14	F-CS-04C-24	2	CAP SCREW
15	07234	5	MALE POLY ELBOW
16	07223	1	MALE CONNECTOR
17	MPM-2568	2	BREATHER VENT
18	F-CS-1024-06	4	CAP SCREW
19	PF-RA-04-02	2	REDUCER ADAPTER
20	MPM-2583-1	.50 FT	TUBE
21	MPM-2583-1	.58 FT	TUBE

MAGNUM VENUS PRODUCTS

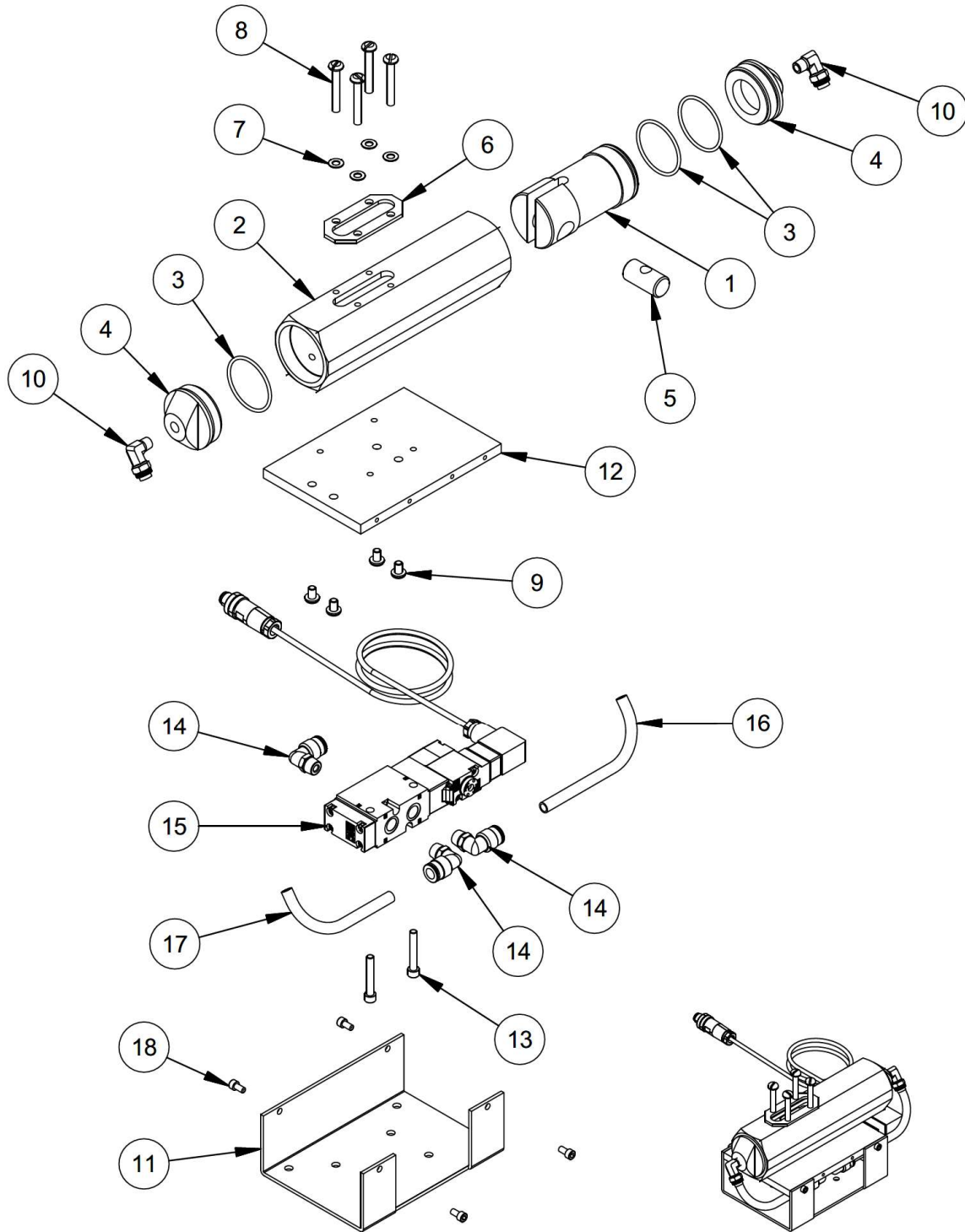
HIGH VOLUME DUO GUN ACTUATOR ASSEMBLY

HVDG-4200

REV: A 03/30/2017

SHEET 2 / 2

11/12/2015



MAGNUM VENUS PRODUCTS

GUN ACTUATOR ASSEMBLY	HVDG-4200-EP
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REV:

SHEET 1 / 2

8/19/2015

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	58136-1	1	ACTUATING PISTON
2	58140-1	1	ACTUATOR BODY
3	O-V-133	3	O-RING
4	58137-1	2	END CAP
5	58138-1	1	ACTUATING BUSHING
6	58144-1	1	ACTUATOR SEAL
7	58143-1	4	MOUNTING SEAL
8	F-PH-04C-28	4	PAN HEAD SCREW
9	02809-3	4	PAN HEAD SCREW
10	7701-6-18	2	POLY TUBE ELBOW
11	HVDG-2221	1	VALVE COVER
12	HVDG-2222	1	MOUNTING PLATE
13	F-CS-04C-24	2	CAP SCREW
14	07234	3	MALE POLY ELBOW
15	PV-103	1	24VDC VALVE ASSEMBLY .250 INCH, 4-3
16	MPM-2583-1	.5 FT	TUBE
17	MPM-2583-1	.5 FT	TUBE
18	F-CS-1024-06	4	CAP SCREW

MAGNUM VENUS PRODUCTS

GUN ACTUATOR ASSEMBLY

HVDG-4200-EP




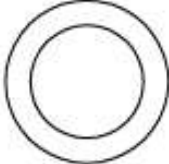




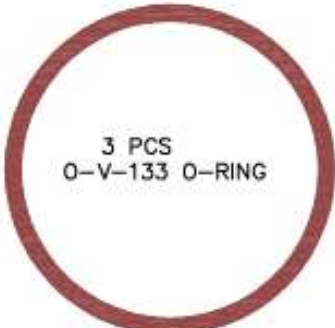
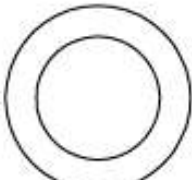
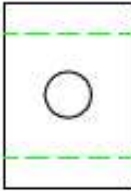
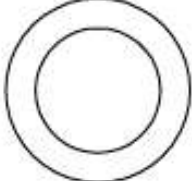





REV:

SHEET 2 / 2

8/19/2015



HVDG-4000-RK
HV DUO GUN REPAIR KIT

- | | | | | | |
|-------|---|---|-------|--|----------------------------|
| 2 PCS |  | O-B-010 O-RING | 4 PCS |  | HVDG-2210 SEAL |
| 2 PCS |  | O-A-007 O-RING | 1 PC |  | HVDG-2207 SEAL |
| 2 PCS |  | O-E-008 O-RING
DO NOT GREASE THIS O-RING | 4 PCS |  | 58143-1 MOUNTING SEAL |
| 2 PCS |  | O-V-3-908 O-RING | 2 PCS |  | 5104-26-1 FLUSH VALVE SEAL |
| |  | 3 PCS
O-V-133 O-RING | 2 PCS |  | 58135-1 SECONDARY SEAL |
| 2 PCS |  | 58126-1-GFT RESIN SEAL | 2 PCS |  | 58146-1 PACKING RING |
| 2 PCS |  | HVDG-2205 CHECK FACE SEAL | 2 PCS |  | 5104-21-1 SPLIT SEAL |
| 2 PCS |  | SPR-C-1007 SPRING | 4 PCS |  | 7304-3-1 NYLON SEAL |
| | | | 2 PCS |  | 03402 BALL |



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