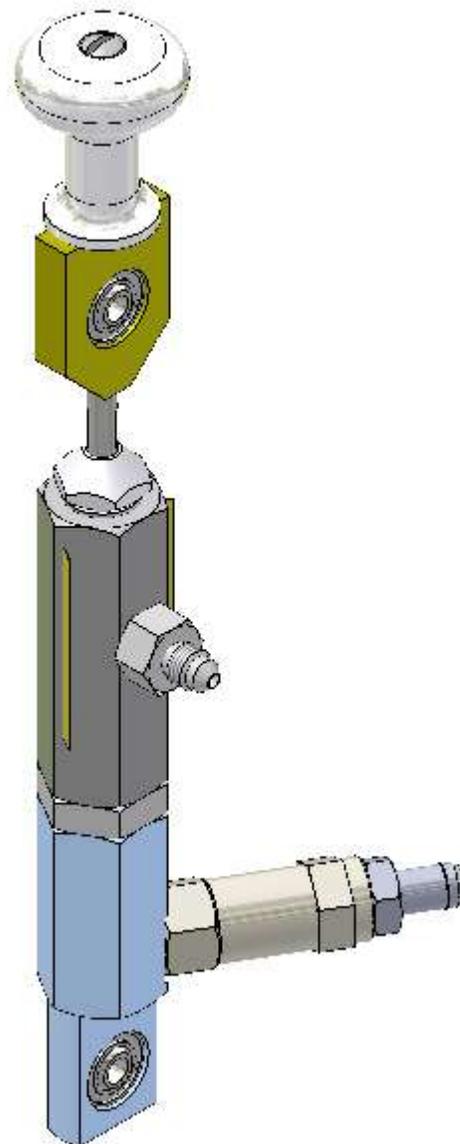


PCP Catalyst Pump

Component Manual

This manual is applicable to the following models:

- PCP-1000-C-3J
- PCP-1000-RV
- PCP-1000-RV-INT
- PCP-1000-TMA
- PCP-2000-C-3J
- PCP-2000-RV
- PCP-2000-RV-INT
- PCP-2000-RV-PR





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For a list of international distributors, visit our website at :

www.mvpind.com/mvp-international

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



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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.

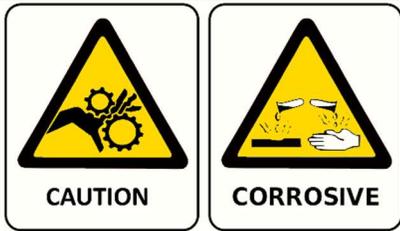
Safety Precautions

- 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 should be 1 meg ohm (10^6 ohms) or less.



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 PCP Catalyst Pump. The following procedures are included:

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



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.



CAUTION

Always wear proper safety equipment (glasses, gloves, respirator, etc.) when performing service and repair on this equipment. Refer to and follow the requirements of the Material Safety Data Sheets (MSDS) supplied by your material manufacturer(s).

As you disassemble the equipment, lay out the components in the correct order and orientation to assist with reassembly.

Note ***Some parts and part numbers vary between the different catalyst pump assemblies. It is important to have a current drawing for the pump you are working on for reference.***

You will need the following for removal and repair of the catalyst pump:

- 8” Adjustable Wrench
- 6” Adjustable Wrench
- Flathead Screwdriver
- $\frac{5}{64}$ ” Allen Wrench

- Straight Scribe
- Seal Kit for Your Pump

Note *If you are flushing the complete catalyst system before working on the pump, use only distilled water to flush.*

Completely disassemble and inspect the catalyst pump at least every six months. Replace the stainless steel balls, O-rings, springs, piston seal, and packing assembly each time you disassemble the pump.

Removing Pump from System



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

To prevent injury, never perform service on the catalyst system until after relieving pressure from the system. If material is plugging the system some parts may still contain fluids under high pressure, even following pressure relieving procedure. Use extreme caution.

1. Turn pump pressure regulator to zero (0) psi.
2. Relieve fluid pressure by opening the recirculation valve on the catalyst manifold.

Note *For systems without a catalyst manifold, hold the gun over an appropriate waste container and pull the trigger.*

3. Drain any remaining catalyst from the catalyst jug.



WARNING

Follow your catalyst manufacturer's recommendations regarding safe handling, storage, and disposal of catalyst.

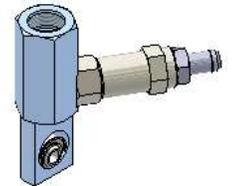
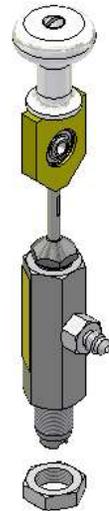
4. Place a large rag or towel over each of the hose fittings and a wrench, then slowly remove the fittings, allowing any trapped fluid pressure to escape into the cloth.
5. Cover the lines so that they do not leak.
6. Remove the priming knob and upper and lower quick pins from the slave arms and remove the pump assembly.

Disassembling Pump

Remove Outlet Body from Inlet Body

1. Place the pump into a smooth-jawed vise, clamping on the flat edges of the inlet body.
2. Use two opposing wrenches to loosen the lock nut above the inlet body, then unscrew the outlet body from the inlet body.
3. Discard the O-ring between the inlet and outlet bodies.
4. Remove the inlet body from the vise, being careful not to drop the stainless-steel (SS) ball.

Note *There are four (4) small stainless-steel balls in the catalyst pump assembly. If a ball falls to the floor, it will be damaged. Even if it appears undamaged, microscopic dents and scratches will create problems. Damaged balls must be replaced or the pump will not work properly.*



Disassemble Outlet Body

5. Unscrew the outlet check valve assembly from the catalyst pump's outlet body, if applicable.

Note *Not all systems will have a check valve. Some will have the outlet fitting or the relief valve adapter.*

6. Unscrew the bearing block assembly from the piston rod.

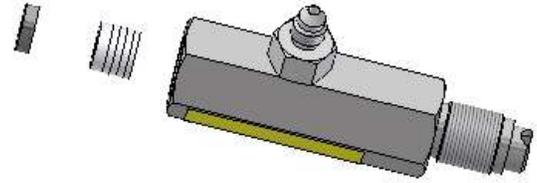
Note *Do not remove the bearing from the bearing block assembly unless it is worn or damaged.*



7. Unscrew the packing nut from the outlet body.
8. Push the piston rod out of the outlet body, being careful not to scratch the inside of the outlet body.

9. Use a clean ¼ inch dowel or rod to push the packing assembly and upper guide out of the top of the outlet body.

Note *If your catalyst pump has a spring disc set in the outlet body you will need to order and install the upgrade kit.*



Disassemble Piston Rod

10. Remove the following items from the piston rod:
 - Seal retainer
 - Piston guide
 - Piston seal
 - Piston body (being careful not to drop the SS ball)
 - SS ball from inside the piston body
11. If the spring in the end of the piston rod is damaged, remove it.
12. Roll the piston rod on a flat surface to make sure it is not bent.

Note *If the piston rod is bent, it must be replaced. Use only genuine MVP replacement parts. Using unauthorized parts may lead to equipment damage or personal injury.*



Disassemble Outlet Check Valve

Note *Not all systems will have this outlet check valve installed; some will have the outlet fitting or relief valve adapter. If you do not have the check valve, remove the fitting that is installed and then skip to step [17](#).*

13. Unscrew the retainer with a hex wrench while the retainer side of the check valve is facing upward.
14. Remove the spring and SS ball from the check valve and inspect them.
15. Clean or replace spring and ball as needed.
16. Discard the two O-rings.



Disassemble Inlet Body

17. Remove the SS ball from the inlet body, being careful not to drop it.

Note *If you drop the ball, it must be replaced.*

18. Remove the tube fitting from the inlet body.

19. If your system does not have the inlet check valve installed, skip to step [32](#).
20. Remove the check valve from the inlet body.
21. Remove and discard the O-ring from the check valve.
22. Remove the inlet tube fitting from the check valve.
23. Remove and discard the O-ring from the inlet tube fitting.
24. Remove the seat housing from the spring housing.



25. Remove the spring and piston and clean with warm water.
26. Remove and clean the O-ring, replace as necessary.
27. Clean the seat housing and spring housing with warm water and inspect for damage.
28. Install the spring into the piston and the piston into the spring housing.
29. Install a new O-ring into the seat housing and thread the seat housing onto the spring housing.
30. Install the tube fitting into the outlet side of the check valve.
31. Install the rebuilt check valve.
32. Flush all parts in distilled water, inspect for damage, and replace as necessary.

Reassembling Pump

Assemble Outlet Check Valve

Note *Not all systems will have this outlet check valve installed; some will have the outlet fitting or relief valve adapter.*



DANGER

Contaminated catalyst may cause fire or explosion. Use only clean water to wet the SS ball.

1. Wet the SS ball and ball seat with clean water, then gently roll the ball into the check valve body.
2. Insert the spring on top of the SS ball in the check valve body.
3. Screw the retainer into the check valve.
4. Make sure the jam nut is screwed onto the check valve.

Assemble Outlet Body

5. Install the piston seal onto the piston body, making sure the spring in the piston seal faces toward the piston body (top of the pump).
6. Install the piston guide onto the piston body just below the piston seal.
7. Screw the seal retainer onto the piston body.

Note ***Bottom out the seal retainer on the threads, but do not overtighten. The seal should still be able to move slightly.***

8. Clean the piston seal with clean water.
9. Clean the SS ball and ball seat with clean water, then gently roll the ball into the piston body.
10. If the spring was removed from the piston rod, replace it with a new one.
11. Screw the piston body over the spring onto the piston rod.
12. Slide the piston body assembly into the outlet body, being careful not to cut the piston seal or scratch the inside of the outlet body.
13. Slide the packing assembly onto the piston rod with the wide packing going on last.
14. Slide the upper guide onto the piston rod on top of the packing set.
15. Install the packing nut onto the piston rod and screw into the outlet body until hand-tight, do not over tighten.

Note ***If the packing nut leaks, turn the nut one quarter turn. Do not allow the packing nut to bottom out on the outlet body.***

16. Put medium-strength Loctite® on the threads of the piston rod, then screw the bearing block assembly onto the top of the piston rod using two wrenches.
17. If your system has the outlet check valve, connect the outlet check valve assembly to the outlet body

Note ***The arrow on the outlet check valve should point away from the outlet body.***

Assemble Inlet Body

18. Wet the SS ball with clean water, then gently roll the ball into the inlet body.
19. For systems that do not have the inlet check valve installed, wet the new O-ring with clean water and slide it onto the tube fitting.
20. Screw the tube fitting into the inlet body.

Connect Outlet Body to Inlet Body

21. Be sure the lock nut is screwed onto the outlet body.
22. Wet the new O-ring with clean water and place onto the outlet body, making sure it is not on the threads of the outlet body.

23. Screw the outlet body into the inlet body until it makes contact, then unscrew the outlet body part of a turn so that the inlet and outlet ports are offset one flat on hex.
24. Tighten the lock nut to the outlet body.

Connect Catalyst Pump Assembly

Note ***If you are servicing other parts of the pumping system, do not connect the catalyst pump assembly until after you have serviced the pump and accumulator.***

25. Reattach the catalyst pump assembly to the slave arms with the upper quick pin assembly.

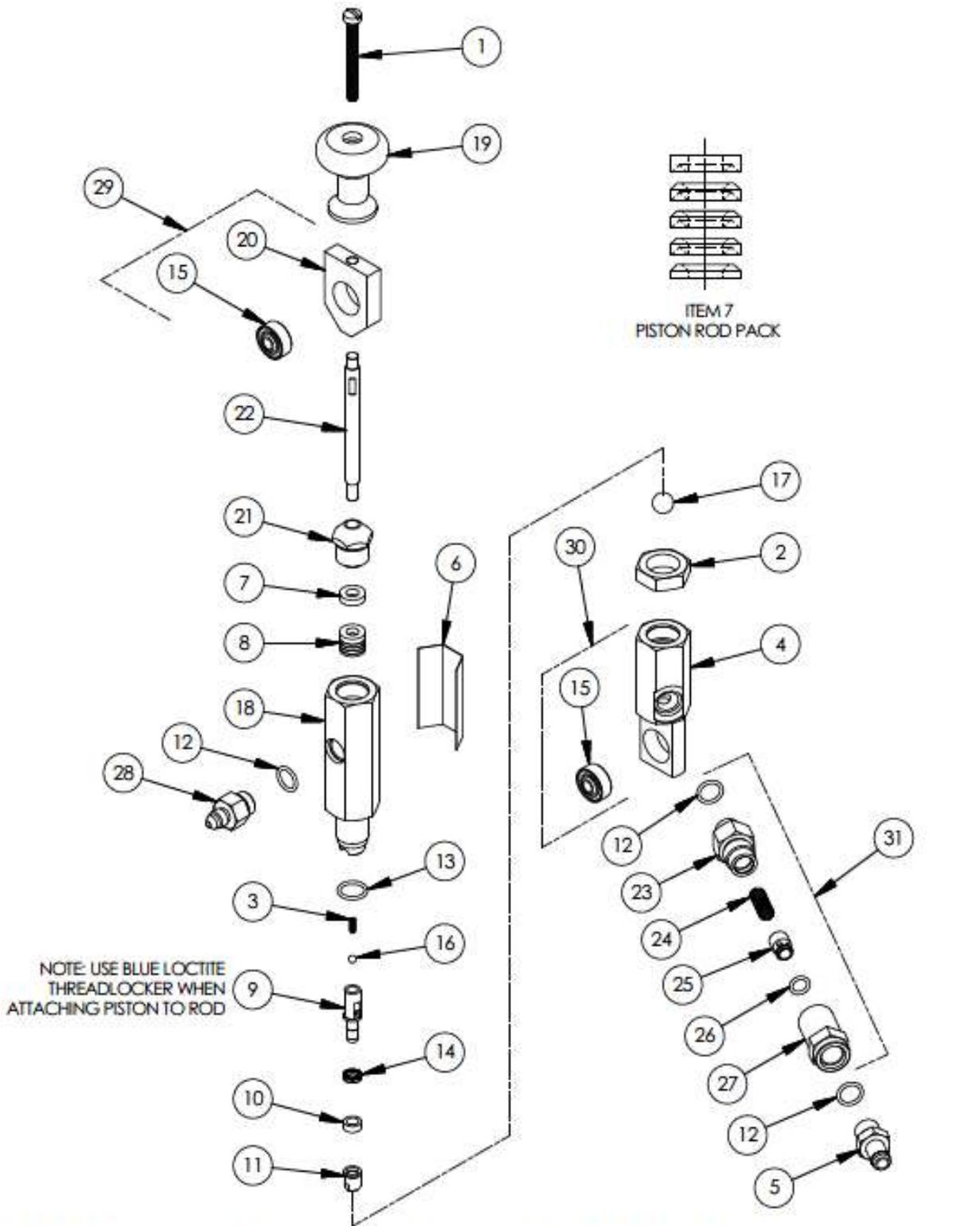
Note ***Make sure the quick pins are in the same hole on both the upper and lower slave arms.***

26. Reattach the priming know to the top of the bearing block assembly.
27. Cut ½ inch of the end of the inlet hose that attaches to the inlet body's tube fitting.
28. Connect the inlet hose between the catalyst jug and the pump.
29. Connect the remaining hoses.

Parts Drawings

The following illustrations are included for reference when servicing the equipment. Make sure you refer to the drawing specific to the equipment you are servicing to ensure that you have the correct part numbers.

Parts Drawings	
Part Number	Description
PCP-1000-C-3J	Catalyst Pump Assembly – Internal & External
PCP-1000-RV	Catalyst Pump Assembly
PCP-1000-RV-INT	Catalyst Pump Assembly – International
PCP-1000-TMA	Catalyst Pump Assembly – Tape Machine
PCP-1000-SK	Catalyst Pump Seal Kit
PCP-2000-C-3J	Catalyst Pump Assembly – Internal & External
PCP-2000-RV	Catalyst Pump Assembly
PCP-2000-RV-INT	Catalyst Pump Assembly – International
PCP-2000-RV-PR	Catalyst Pump Assembly - Pro
PCP-2000-SK	Catalyst Pump Seal Kit



MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP

PCP-1000-C-3J

REV: -

SHEET 1 / 2

3/13/2017

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	INLET FITTING
6	6701-24-EN	1	PUMP SEAL WARNING DECAL
*	7	4102-4-1	UPPER GUIDE
*	8	4102-5-01	PACKING SET
9	4102-7-1	1	PISTON BODY
*	10	4102-8-1	PISTON GUIDE
11	4102-9-1	1	SEAL RETAINER
*	12	O-S-013	O-RING
*	13	O-S-014	O-RING
*	14	7304-1-1	PISTON SEAL (C72)
15	9202-1-1	2	SPHERICAL BEARING
16	9201-1-5	1	SS BALL
17	9201-1-14	1	SS BALL
18	15824-3	1	CYLINDER OUTLET BODY
19	50100-1	1	PRIMING KNOB - CATALYST PUMP
20	50210-1	1	BUSHING BLOCK
21	50590-1	1	PACKING NUT
22	85788-1	1	PRO CAT ROD (ø.265)
23	CV-2002	1	SPRING HOUSING
24	CV-2004	1	VALVE SPRING
25	CV-2003	1	VALVE PISTON
*	26	O-S-011A	O-RING
27	CV-2001	1	SEAT HOUSING
28	51501-1	1	OUTLET FITTING

REPAIR KITS

* PCP-1000-SK SEAL KIT

* ASTERISKS DENOTE PARTS IN REPAIR KIT

OPTIONAL ITEMS

29 50210-3 BUSHING BLOCK ASSEMBLY
 30 4101-7-01 INLET BODY ASSEMBLY
 31 CV-2000 CHECK VALVE

MAGNUM VENUS PRODUCTS

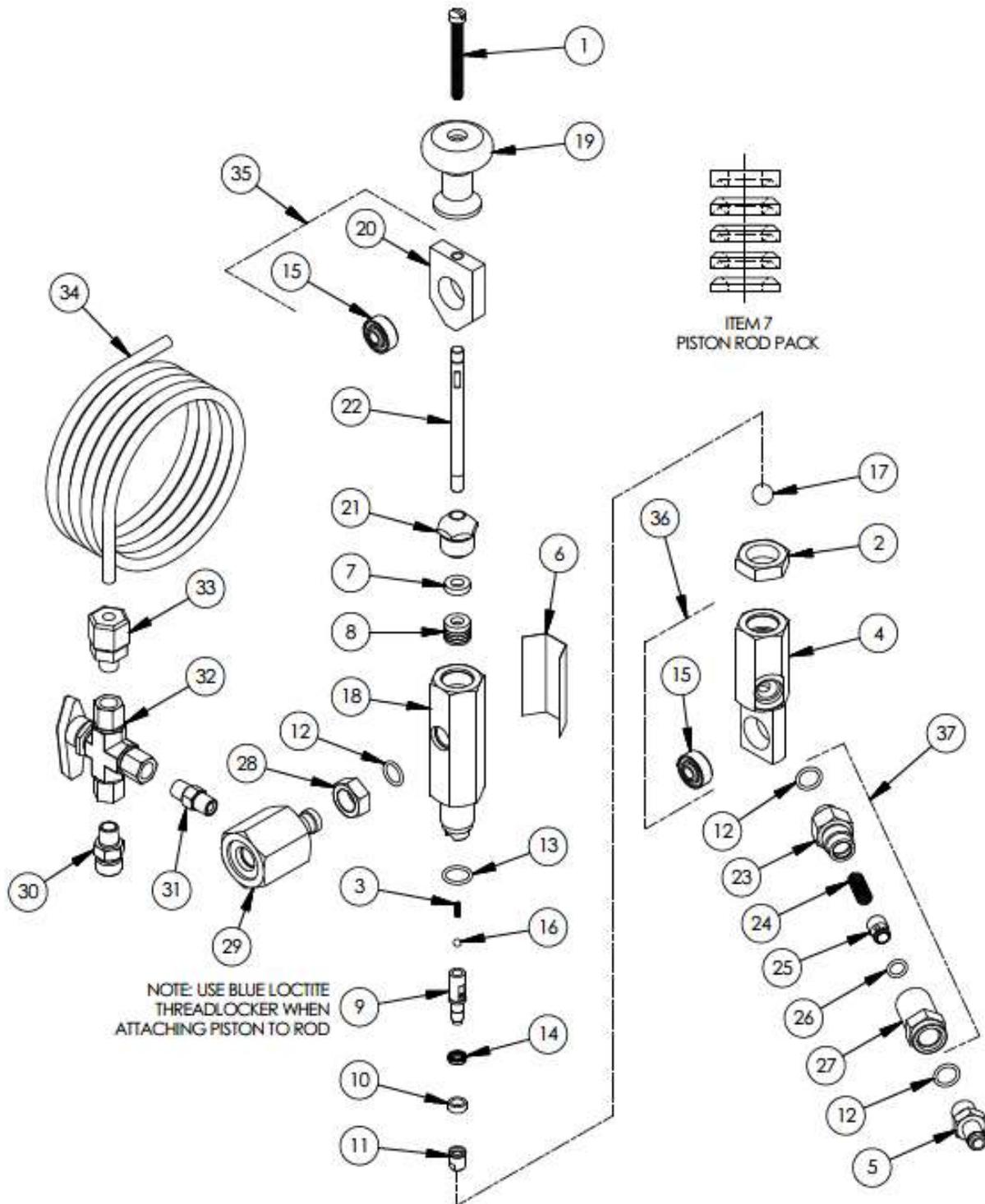
PRO CATALYST PUMP

PCP-1000-C-3J

REV: -

SHEET 2 / 2

3/13/2017



MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP

PCP-1000-RV

REV: -

SHEET 1 / 2

3/13/2017

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	INLET FITTING
6	6701-24-EN	1	PUMP SEAL WARNING DECAL
*	7	4102-4-1	UPPER GUIDE
*	8	4102-5-01	PACKING SET
	9	4102-7-1	PISTON BODY
*	10	4102-8-1	PISTON GUIDE
	11	4102-9-1	SEAL RETAINER
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*	14	7304-1-1	PISTON SEAL (C72)
	15	9202-1-1	2 SPHERICAL BEARING
	16	9201-1-5	1 SS BALL
	17	9201-1-14	1 SS BALL
	18	15824-3	1 CYLINDER OUTLET BODY
	19	50100-1	1 PRIMING KNOB - CATALYST PUMP
	20	50210-1	1 BUSHING BLOCK
	21	50590-1	1 PACKING NUT
	22	85788-1	1 PRO CAT ROD (ø.265)
	23	CV-2002	1 SPRING HOUSING
	24	CV-2004	1 VALVE SPRING
	25	CV-2003	1 VALVE PISTON
*	26	O-S-011A	1 O-RING
	27	CV-2001	1 SEAT HOUSING
	28	4101-18-1	1 JAM NUT
	29	RV-1021	1 ADAPTER
	30	PF-HN-02-04S-SS	1 HOSE ADAPTER
	31	PF-HN-02-SS	1 HEX NIPPLE
	32	8407-6-1	1 BALL VALVE - SS
	33	HPC-1028	1 FITTING
	34	MS-2052-1	6 FT POLY TUBE

REPAIR KITS

- * PCP-1000-SK SEAL KIT
- * ASTERISKS DENOTE PARTS IN REPAIR KIT

CAUTION!

- VALVE MUST BE TURNED TO THE DESIRED DIRECTION OF FLOW
- TOWARD THE WHITE POLYTUBE AND FITTING TO CLEAR AIR BUBBLES FROM PUMP TO JUG
- TOWARD THE BLUE OR STAINLESS CATALYST HOSE FOR FLOW TO GUN
- VALVE MUST BE FULLY OPEN TOWARD THE GUN DURING OPERATION OR IMPROPER CATALYZATION WILL OCCUR

OPTIONAL ITEMS

- 35 50210-3 BUSHING BLOCK ASSEMBLY
- 36 4101-7-01 INLET BODY ASSEMBLY
- 37 CV-2000 CHECK VALVE

MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP

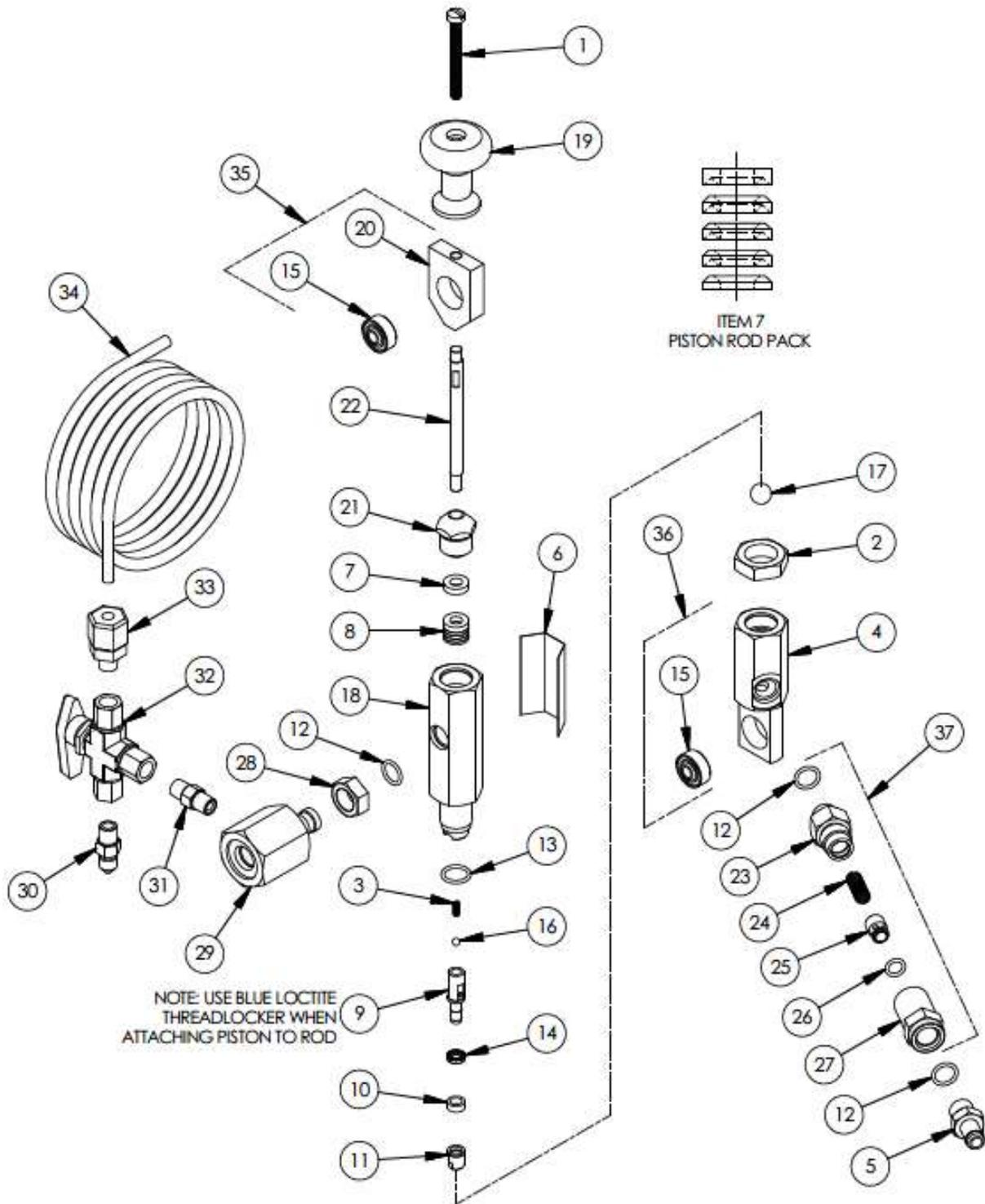
PCP-1000-RV

REV: -

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3/13/2017





MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP	PCP-1000-RV-INT
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REV:

SHEET 1 / 2

3/13/2017

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	INLET FITTING
6	6701-24-EN	1	PUMP SEAL WARNING DECAL
*	7	4102-4-1	UPPER GUIDE
*	8	4102-5-01	PACKING SET
	9	4102-7-1	PISTON BODY
*	10	4102-8-1	PISTON GUIDE
	11	4102-9-1	SEAL RETAINER
*	12	O-S-013	O-RING
*	13	O-S-014	O-RING
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	15	9202-1-1	SPHERICAL BEARING
	16	9201-1-5	SS BALL
	17	9201-1-14	SS BALL
	18	15824-3	CYLINDER OUTLET BODY
	19	50100-1	PRIMING KNOB - CATALYST PUMP
	20	50210-1	BUSHING BLOCK
	21	50590-1	PACKING NUT
	22	85788-1	PRO CAT ROD (ø.265)
	23	CV-2002	SPRING HOUSING
	24	CV-2004	VALVE SPRING
	25	CV-2003	VALVE PISTON
*	26	O-S-011A	O-RING
	27	CV-2001	SEAT HOUSING
	28	4101-18-1	JAM NUT
	29	RV-1021	ADAPTER
	30	PF-HN-02-03J-SS	HEX NIPPLE
	31	PF-HN-02-SS	HEX NIPPLE
	32	8407-6-1	BALL VALVE - SS
	33	HPC-1028	FITTING
	34	MS-2052-1	6 FT POLY TUBE

REPAIR KITS

- * PCP-1000-SK SEAL KIT
- * ASTERISKS DENOTE PARTS IN REPAIR KIT

CAUTION!

- VALVE MUST BE TURNED TO THE DESIRED DIRECTION OF FLOW
- TOWARD THE WHITE POLYTUBE AND FITTING TO CLEAR AIR BUBBLES FROM PUMP TO JUG
- TOWARD THE BLUE OR STAINLESS CATALYST HOSE FOR FLOW TO GUN
- VALVE MUST BE FULLY OPEN TOWARD THE GUN DURING OPERATION OR IMPROPER CATALYZATION WILL OCCUR

OPTIONAL ITEMS

- 35 50210-3 BUSHING BLOCK ASSEMBLY
- 36 4101-7-01 INLET BODY ASSEMBLY
- 37 CV-2000 CHECK VALVE

MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP

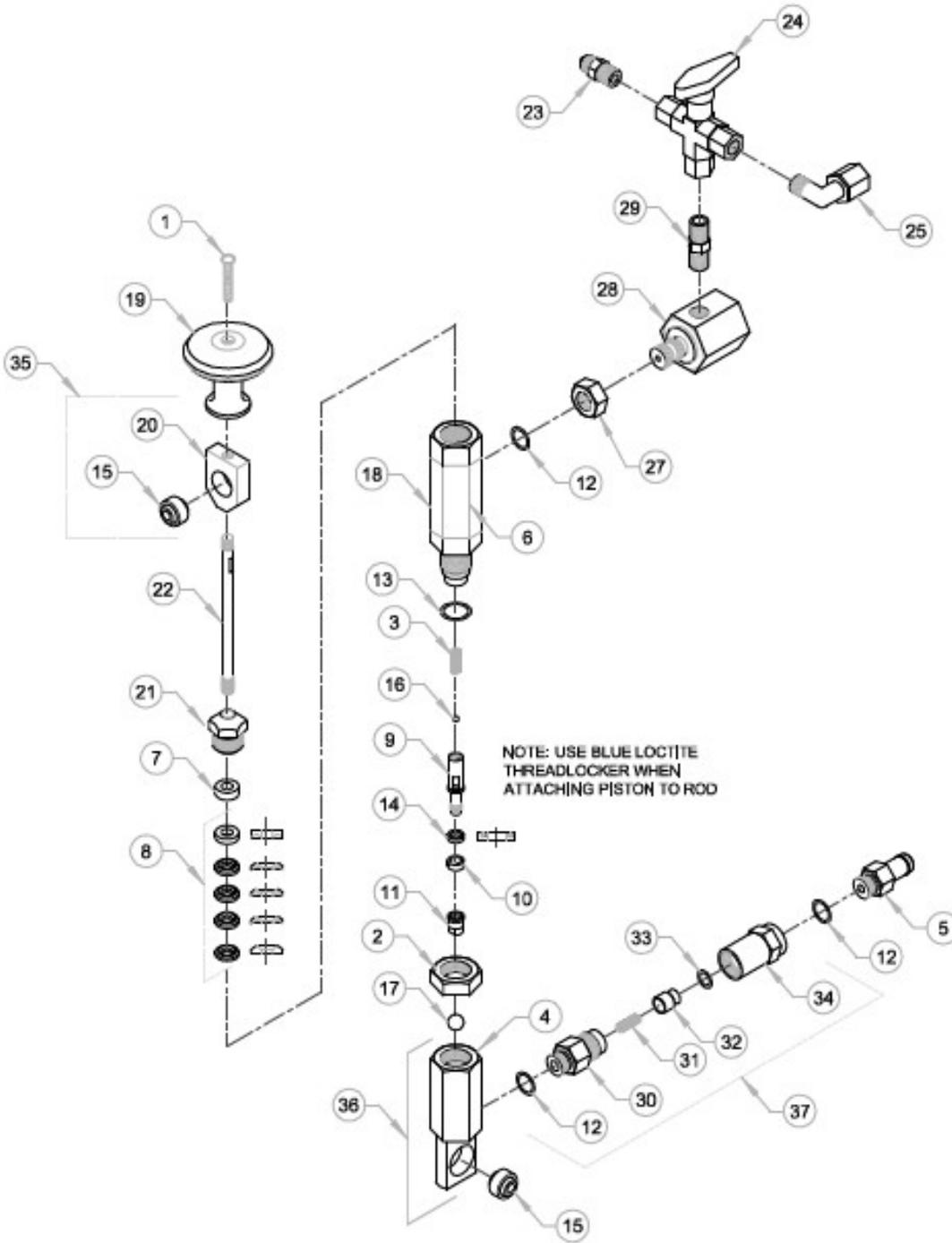
PCP-1000-RV-INT

REV:

SHEET 2 / 2

3/13/2017





MAGNUM VENUS PLASTECH

Catalyst Pump For Tape Machine

PCP-1000-TMA

REV. - 03/19/08 BT2
REV. A - ADDED THREADLOCKER NOTE 02/20/14 BT2

Assy - Catalyst Pump PCP-1000-TMA

PARTS LIST

ITEM	PART NO.	QTY	DESCRIPTION
1	02849-16	1	MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	TUBE FITTING
6	6701-24-EN	1	PUMP SEAL WARNING DECAL
* 7	4102-4-1	1	UPPER GUIDE
* 8	4102-5-01	1	PISTON ROD PACK SPA
9	4102-7-1	1	PISTON BODY
* 10	4102-8-1	1	PISTON GUIDE
11	4102-9-1	1	SEAL RETAINER
* 12	O-S-013	3	O-RING
* 13	O-S-014	1	O - RING
* 14	7304-1-1	1	PISTON SEAL
15	9202-1-1	2	BEARING
16	9201-1-5	1	SS BALL
17	9201-1-14	1	SS BALL
18	15824-3	1	OUTLET BODY
19	50100-1	1	PRIMING KNOB
20	50210-1	1	BUSHING BLOCK
21	50590-1	1	PACKING NUT
22	85788-1	1	PISTON ROD
23	PF-HN-02-03J-SS	1	PISTON ROD
24	8407-6-1	1	BALL VALVE
25	MS-2053	1	ELBOW
27	4101-18-1	1	JAM NUT
28	RV-1021	1	ADAPTER
29	PF-HN-02-SS	1	OUTLET FITTING
30	CV-2002	1	SPRING HOUSING
31	CV-2004	1	SPRING
32	CV-2003	1	PISTON
* 33	O-S-011A	1	O-RING
34	CV-2001	1	SEAT HOUSING

Repair Kits

PART NO.	DESCRIPTION
* PCP-1000-SK	SEAL KIT

Associated Parts and Assemblies

ITEM	PART NO.	QTY	DESCRIPTION
35	50210-3	1	ASSY - BUSHING BLOCK
36	4101-7-01	1	INLET BODY SPA
37	CV-2000	1	CHECK VALVE

PCP-1000-SK
SEAL KIT - CATALYST PUMP

- 1 PC  4102-8-1 (PISTON GUIDE)
- 1 PC  7304-1-1 (PISTON SEAL)
- 1 PC  4102-4-1 (UPPER GUIDE)
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
- 1 PC  0-S-014 O-RING
- 1 PC  (PACKING SET ASSY)
- 3 PCS  4102-5-01 (1 SET)
- 1 PC 

PCP-1000-SK
SEAL KIT - CATALYST PUMP

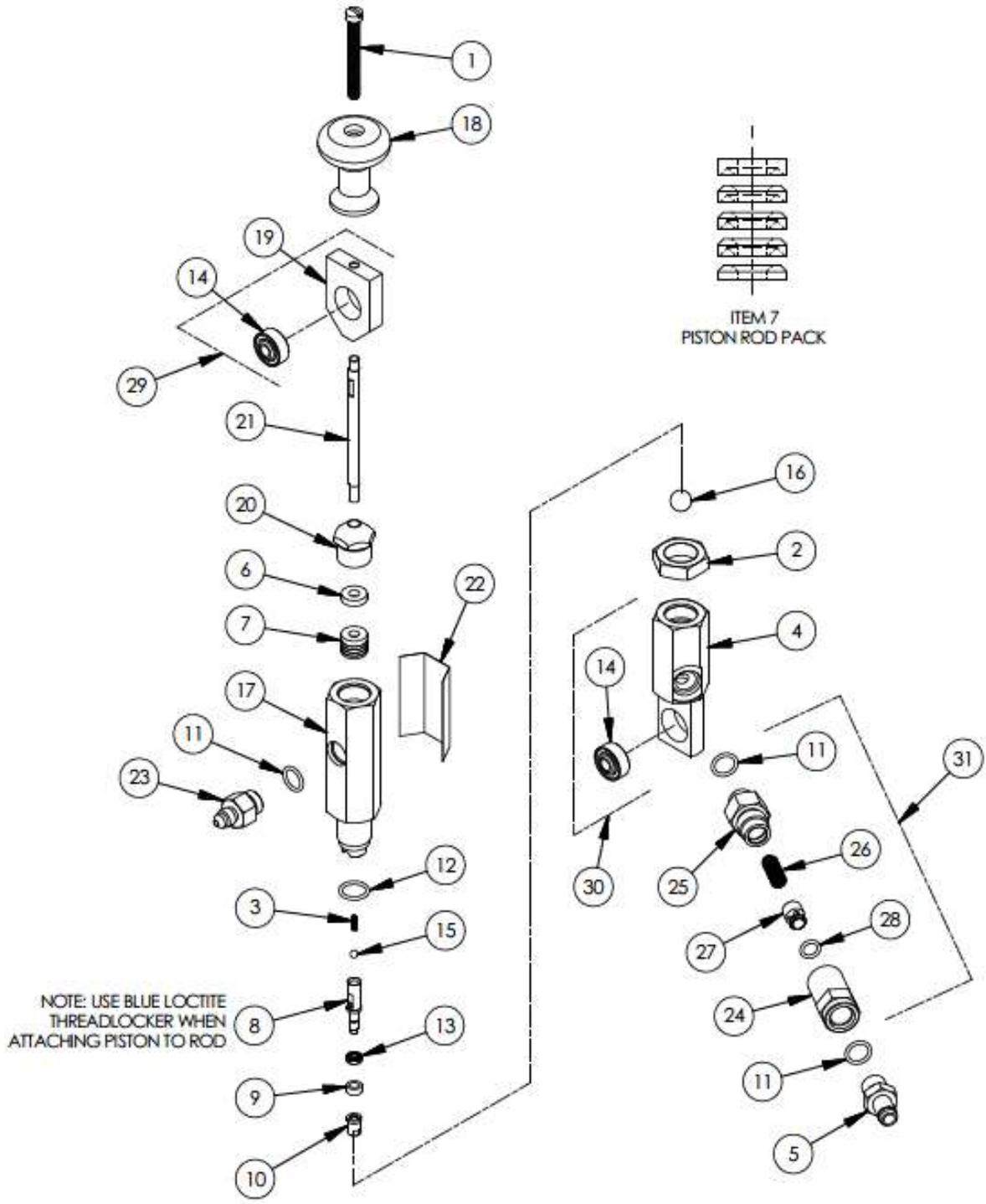
- 1 PC  4102-8-1 (PISTON GUIDE)
- 1 PC  7304-1-1 (PISTON SEAL)
- 1 PC  4102-4-1 (UPPER GUIDE)
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
- 1 PC  0-S-014 O-RING
- 1 PC  (PACKING SET ASSY)
- 3 PCS  4102-5-01 (1 SET)
- 1 PC 

PCP-1000-SK
SEAL KIT - CATALYST PUMP

- 1 PC  4102-8-1 (PISTON GUIDE)
- 1 PC  7304-1-1 (PISTON SEAL)
- 1 PC  4102-4-1 (UPPER GUIDE)
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
- 1 PC  0-S-014 O-RING
- 1 PC  (PACKING SET ASSY)
- 3 PCS  4102-5-01 (1 SET)
- 1 PC 

PCP-1000-SK
SEAL KIT - CATALYST PUMP

- 1 PC  4102-8-1 (PISTON GUIDE)
- 1 PC  7304-1-1 (PISTON SEAL)
- 1 PC  4102-4-1 (UPPER GUIDE)
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
- 1 PC  0-S-014 O-RING
- 1 PC  (PACKING SET ASSY)
- 3 PCS  4102-5-01 (1 SET)
- 1 PC 



MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP	PCP-2000-C-3J
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REV:

SHEET 1 / 2

2/6/2017

Parts List				
ITEM	PART NUMBER	QTY	DESCRIPTION	
	1	02849-16	1	SLOTTED MACHINE SCREW
	2	4101-1-1	1	LOCK NUT
	3	4101-3-1	1	SPRING
	4	4101-7-1	1	INLET BODY
	5	4101-8-1	1	INLET FITTING
*	6	4101-12-1	1	UPPER GUIDE
*	7	4101-13-01	1	PISTON ROD PACK SPA
	8	4101-4-1	1	PISTON BODY
*	9	4101-5-1	1	PISTON GUIDE
	10	4101-6-1	1	SEAL RETAINER
*	11	O-S-013	3	O-RING
*	12	O-S-014	1	O-RING
*	13	7304-2-1	1	SEAL
	14	9202-1-1	2	SPHERICAL BEARING
	15	9201-1-5	1	SS BALL
	16	9201-1-14	1	SS BALL
	17	85781-1	1	CYLINDER OUTLET BODY
	18	50100-1	1	PRIMING KNOB - CATALYST PUMP
	19	50200-1	1	BUSHING BLOCK
	20	4101-11-1	1	PACKING NUT
	21	85780-1	1	PISTON ROD - LOW RANGE
	22	6701-24-EN	1	PUMP SEAL WARNING DECAL
	23	51501-1	1	OUTLET FITTING
	24	CV-2001	1	SEAT HOUSING
	25	CV-2002	1	SPRING HOUSING
	26	CV-2004	1	VALVE SPRING
	27	CV-2003	1	VALVE PISTON
*	28	O-S-011A	1	O-RING

REPAIR KITS

* PCP-2000-SK SEAL KIT
85779-1 MAJOR REPAIR KIT

* ASTERISKS DENOTE PARTS IN REPAIR KIT

OPTIONAL ITEMS

29 50200-3 BUSHING BLOCK ASSEMBLY
30 4101-7-01 INLET BODY ASSEMBLY
31 CV-2000 CHECK VALVE

MAGNUM VENUS PRODUCTS

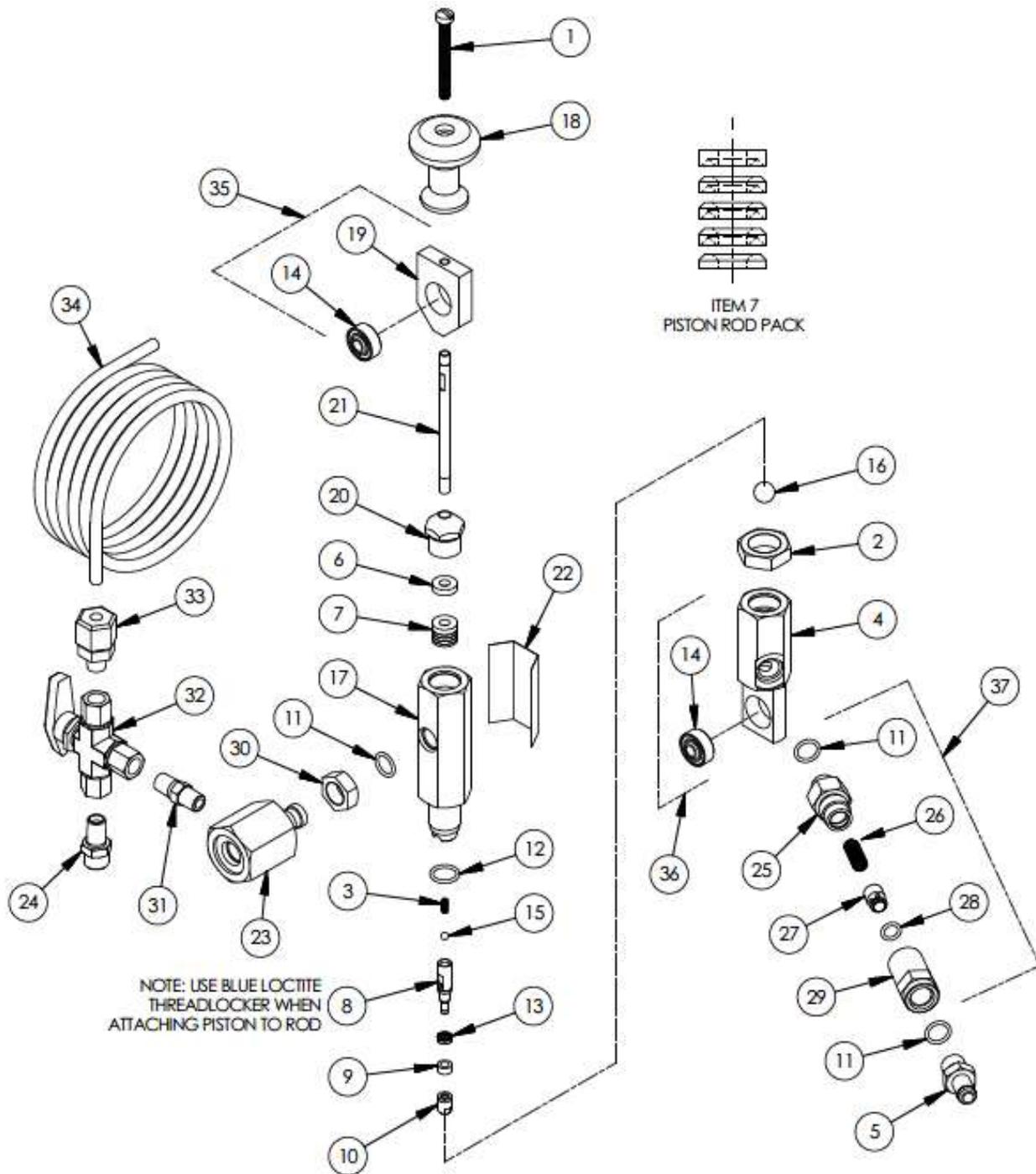
PRO CATALYST PUMP

PCP-2000-C-3J

REV:

SHEET 2 / 2

2/6/2017



MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP	PCP-2000-RV
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REV: A 03/07/2018

SHEET 1 / 2

11/29/2016

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	INLET FITTING
*	6	4101-12-1	UPPER GUIDE
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20	4101-11-1	1	PACKING NUT
21	85780-1	1	PISTON ROD - LOW RANGE
22	6701-24-EN	1	PUMP SEAL WARNING DECAL
23	RV-1021	1	ADAPTER
24	PF-HN-02-04S-SS	1	HOSE ADAPTER
25	CV-2002	1	SPRING HOUSING
26	CV-2004	1	VALVE SPRING
27	CV-2003	1	VALVE PISTON
*	28	O-S-011A	O-RING
29	CV-2001	1	SEAT HOUSING
30	4101-18-1	1	JAM NUT
31	PF-HN-02-SS	1	HEX NIPPLE
32	8407-6-1	1	BALL VALVE - SS
33	HPC-1028	1	FITTING
34	MS-2052-1	1	POLY TUBE

REPAIR KITS

- * PCP-2000-SK SEAL KIT
85779-1 MAJOR REPAIR KIT

* ASTERISKS DENOTE PARTS IN REPAIR KIT

OPTIONAL ITEMS

- 35 50200-3 BUSHING BLOCK ASSEMBLY
- 36 4101-7-01 INLET BODY ASSEMBLY
- 37 CV-2000 CHECK VALVE

CAUTION!

- VALVE MUST BE TURNED TO THE DESIRED DIRECTION OF FLOW
- TOWARD THE WHITE POLYTUBE AND FITTING TO CLEAR AIR BUBBLES FROM PUMP TO JUG
- TOWARD THE BLUE OR STAINLESS CATALYST HOSE FOR FLOW TO GUN
- VALVE MUST BE FULLY OPEN TOWARD THE GUN DURING OPERATION OR IMPROPER CATALYZATION WILL OCCUR

MAGNUM VENUS PRODUCTS

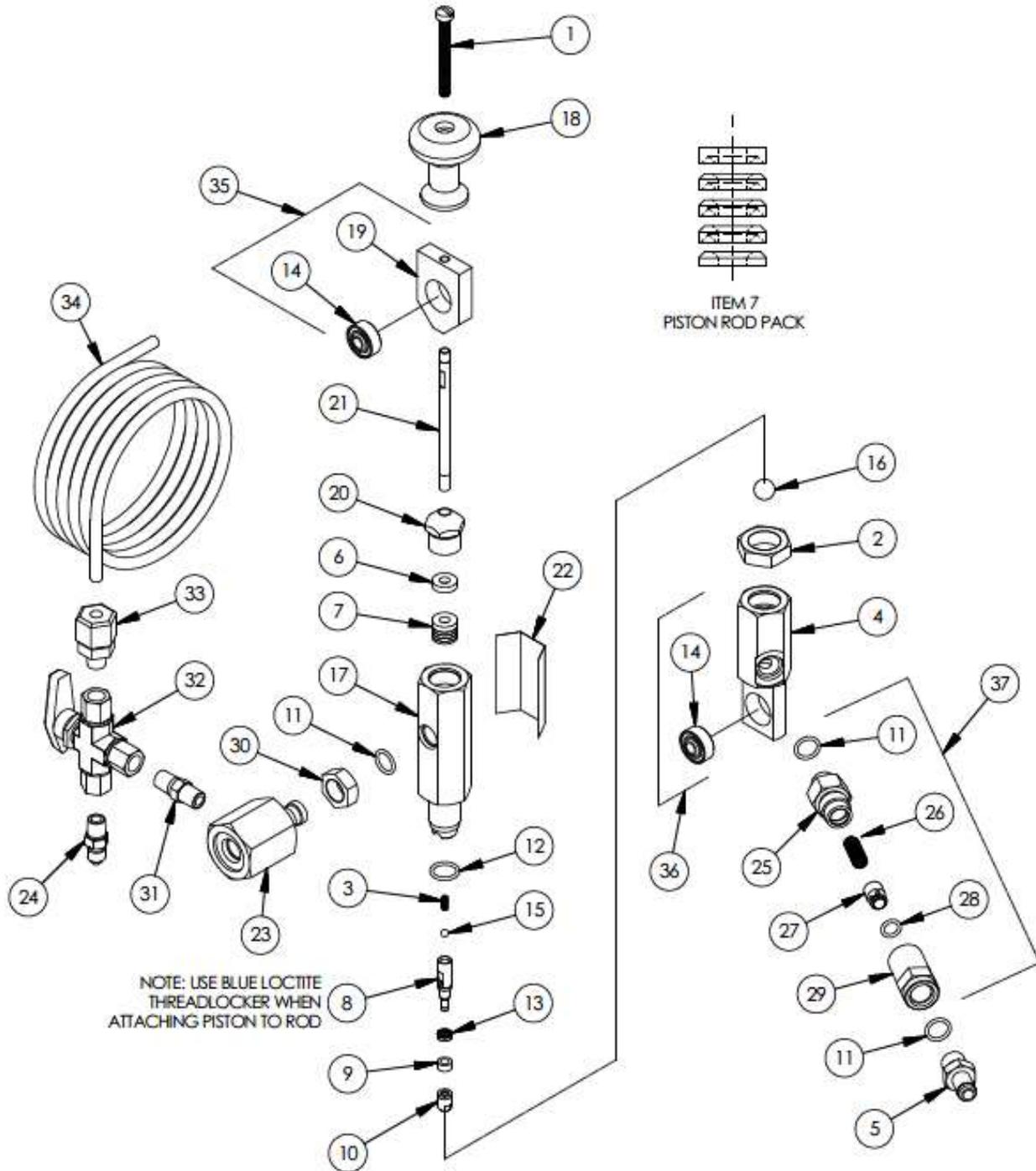
PRO CATALYST PUMP	PCP-2000-RV
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REV: A 03/07/2018

SHEET 2 / 2

11/29/2016





MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP	PCP-2000-RV-INT
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REV: A 03/07/2018

SHEET 1 / 2

11/30/2016

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	4101-8-1	1	INLET FITTING
*	6	4101-12-1	UPPER GUIDE
*	7	4101-13-01	PISTON ROD PACK SPA
8	4101-4-1	1	PISTON BODY
*	9	4101-5-1	PISTON GUIDE
10	4101-6-1	1	SEAL RETAINER
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*	12	O-S-014	O-RING
*	13	7304-2-1	SEAL
14	9202-1-1	2	SPHERICAL BEARING
15	9201-1-5	1	SS BALL
16	9201-1-14	1	SS BALL
17	85781-1	1	CYLINDER OUTLET BODY
18	50100-1	1	PRIMING KNOB - CATALYST PUMP
19	50200-1	1	BUSHING BLOCK
20	4101-11-1	1	PACKING NUT
21	85780-1	1	PISTON ROD - LOW RANGE
22	6701-24-EN	1	PUMP SEAL WARNING DECAL
23	RV-1021	1	ADAPTER
24	PF-HN-02-03J-SS	1	HEX NIPPLE
25	CV-2002	1	SPRING HOUSING
26	CV-2004	1	VALVE SPRING
27	CV-2003	1	VALVE PISTON
*	28	O-S-011A	O-RING
29	CV-2001	1	SEAT HOUSING
30	4101-18-1	1	JAM NUT
31	PF-HN-02-SS	1	HEX NIPPLE
32	8407-6-1	1	BALL VALVE - SS
33	HPC-1028	1	FITTING
34	MS-2052-1	1	POLY TUBE

REPAIR KITS

- * PCP-2000-SK SEAL KIT
85779-1 MAJOR REPAIR KIT

* ASTERISKS DENOTE PARTS IN REPAIR KIT

OPTIONAL ITEMS

- 35 50200-3 BUSHING BLOCK ASSEMBLY
- 36 4101-7-01 INLET BODY ASSEMBLY
- 37 CV-2000 CHECK VALVE

CAUTION!

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- TOWARD THE WHITE POLYTUBE AND FITTING TO CLEAR AIR BUBBLES FROM PUMP TO JUG
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- VALVE MUST BE FULLY OPEN TOWARD THE GUN DURING OPERATION OR IMPROPER CATALYZATION WILL OCCUR

MAGNUM VENUS PRODUCTS

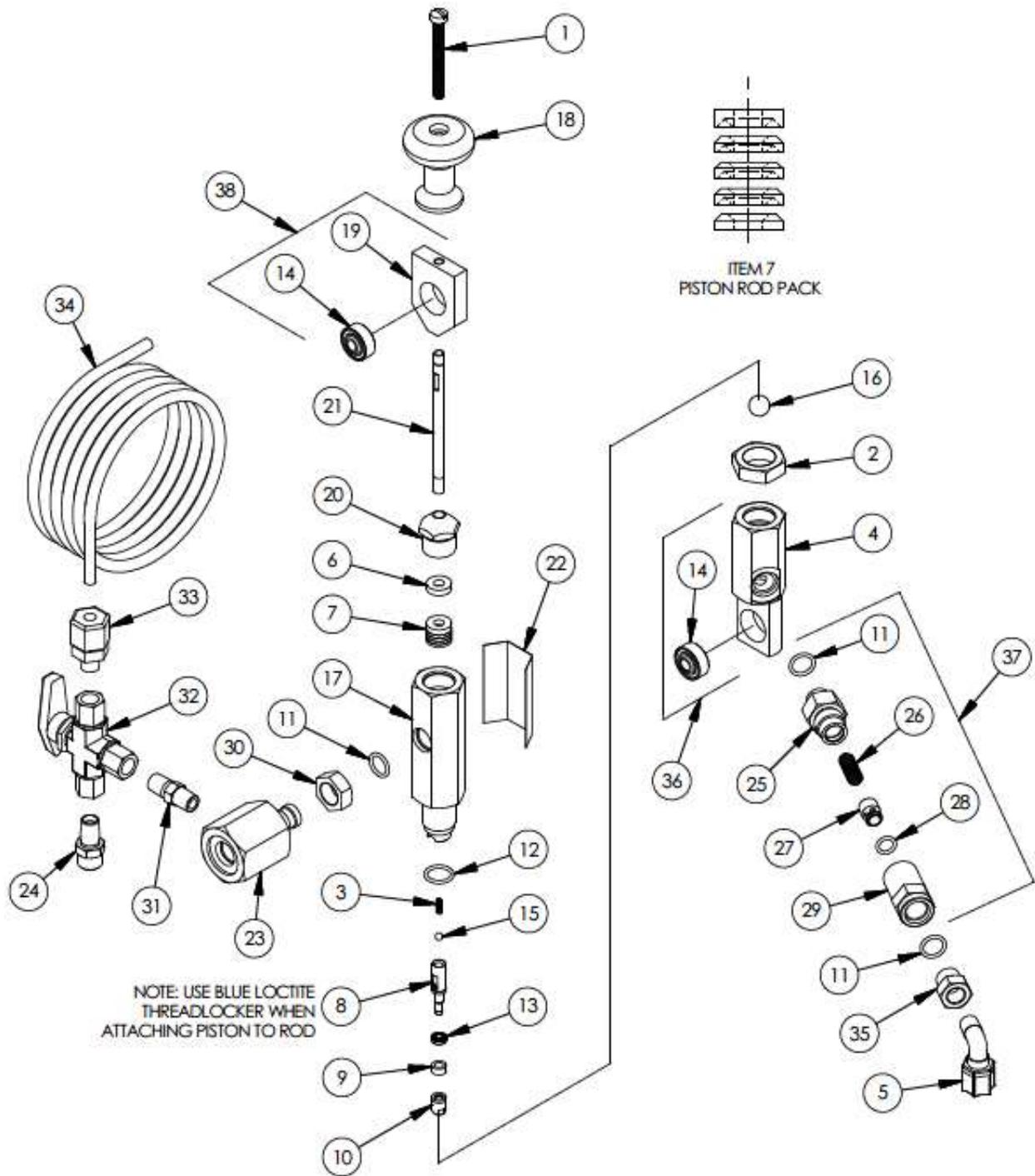
PRO CATALYST PUMP	PCP-2000-RV-INT
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REV: A 03/07/2018

SHEET 2 / 2

11/30/2016





MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP

PCP-2000-RV-PR

REV: A 03/07/2018

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12/2/2016

Parts List			
ITEM	PART NUMBER	QTY	DESCRIPTION
1	02849-16	1	SLOTTED MACHINE SCREW
2	4101-1-1	1	LOCK NUT
3	4101-3-1	1	SPRING
4	4101-7-1	1	INLET BODY
5	MS-2053	1	MALE ELBOW - TUBE
* 6	4101-12-1	1	UPPER GUIDE
* 7	4101-13-01	1	PISTON ROD PACK SPA
8	4101-4-1	1	PISTON BODY
* 9	4101-5-1	1	PISTON GUIDE
10	4101-6-1	1	SEAL RETAINER
* 11	O-S-013	3	O-RING
* 12	O-S-014	1	O-RING
* 13	7304-2-1	1	SEAL
14	9202-1-1	2	SPHERICAL BEARING
15	9201-1-5	1	SS BALL
16	9201-1-14	1	SS BALL
17	85781-1	1	CYLINDER OUTLET BODY
18	50100-1	1	PRIMING KNOB - CATALYST PUMP
19	50200-1	1	BUSHING BLOCK
20	4101-11-1	1	PACKING NUT
21	85780-1	1	PISTON ROD - LOW RANGE
22	6701-24-EN	1	PUMP SEAL WARNING DECAL
23	RV-1021	1	ADAPTER
24	PF-HN-02-04S-SS	1	HOSE ADAPTER
25	CV-2002	1	SPRING HOUSING
26	CV-2004	1	VALVE SPRING
27	CV-2003	1	VALVE PISTON
* 28	O-S-011A	1	O-RING
29	CV-2001	1	SEAT HOUSING
30	4101-18-1	1	JAM NUT
31	PF-HN-02-SS	1	HEX NIPPLE
32	8407-6-1	1	BALL VALVE - SS
33	HPC-1028	1	FITTING
34	MS-2052-1	1	POLY TUBE
35	VHPC-1003	1	INLET TUBE FITTING

REPAIR KITS

- * PCP-2000-SK SEAL KIT
85779-1 MAJOR REPAIR KIT

* ASTERISKS DENOTE PARTS IN REPAIR KIT

OPTIONAL ITEMS

- 36 4101-7-01 INLET BODY ASSEMBLY
- 37 CV-2000 CHECK VALVE
- 38 50200-3 BUSHING BLOCK ASSEMBLY

CAUTION!

VALVE MUST BE TURNED TO THE DESIRED DIRECTION OF FLOW

- TOWARD THE WHITE POLYTUBE AND FITTING TO CLEAR AIR BUBBLES FROM PUMP TO JUG

- TOWARD THE BLUE OR STAINLESS CATALYST HOSE FOR FLOW TO GUN

- VALVE MUST BE FULLY OPEN TOWARD THE GUN DURING OPERATION OR IMPROPER CATALYZATION WILL OCCUR

MAGNUM VENUS PRODUCTS

PRO CATALYST PUMP	PCP-2000-RV-PR
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PCP-2000-SK
SEAL KIT - CATALYST PUMP

- 1 PC  4101-5-1 PISTON GUIDE
- 1 PC  7304-2-1 PISTON SEAL
- 1 PC  4101-12-1 UPPER GUIDE
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
- 1 PCS  0-S-014 O-RING
- 1 PC  }
 3 PCS  } 4101-13-01 (1 SET)
 1 PC  } PACKING SET ASSY

PCP-2000-SK
SEAL KIT - CATALYST PUMP

- 1 PC  4101-5-1 PISTON GUIDE
- 1 PC  7304-2-1 PISTON SEAL
- 1 PC  4101-12-1 UPPER GUIDE
- 1 PCS  0-S-011A O-RING
- 3 PCS  0-S-013 O-RING
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PCP-2000-SK
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PCP-2000-SK
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