

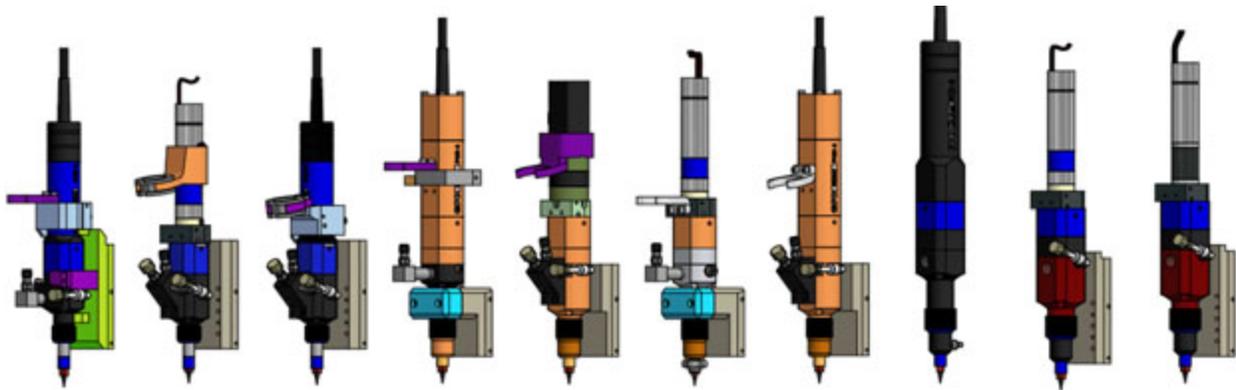
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# *PCD Pump User Guide*

Version 6.1  
February 26, 2020  
Part No. 22293078M

*for use with:*

PCD3..... PN 22293093, 22293093-1004, 22293099  
PCD3L ..... PN 22293093-1002  
PCD3H ..... PN 22293093-1003, 22293093-1006, 22293121  
PCD4..... PN 22293081, 22293098, 22293098-0002  
PCD4L..... PN 22293122  
PCD4H ..... PN 22293103, 22293227-0002, 22293227-0003  
PCD4HB..... PN 22293205, 22293240  
PCD6..... PN 22293160-001  
PCD6HB..... PN 22293161-003  
PCD7H ..... PN 22293306-0003



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## Safety Notices

Despite adhering to all applicable safety guidelines, some hazards remain which should be taken note of for operation of the system:



**CAUTION:** Very high pressures can be produced, depending on the viscosity and speed of rotation, and this could result in unintended spurting of medium. **Check the flow quantity in relation to the dispensing needle used.**



**CAUTION: DO NOT use air pressure to vent trapped air from syringe material.** Instead, manually apply pressure to syringe material so air vents through the pump feed way port.



**CAUTION:** For initial start up and after being refilled, air bubbles in the medium could cause an uncontrollable spurting from the outlet nozzle. Only start production operation once the dispense pump has been completely bled.



**CAUTION:** Wear suitable protective clothing if chemical, corrosive, or dangerous products are to be used. **Note and comply with the safety stipulations and the information from the manufacturer.** Ensure sufficient bleeding or extraction of air. Take special safety precautions if working with dangerous media; for example, provide eye flushing facilities if working with corrosive chemicals.



**CAUTION: Preparation before starting up - visual check.** Make a daily visual check of the dispense pump before starting work and before each shift change. If there is any doubt that the unit is not perfectly ready for operation, it must be shut down at once and inspected by a suitably qualified person before it used again.

### General Safety

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#### Informal safety measures

- Always keep the operation and maintenance instructions with the dispense pump.
- This is to be supplemented by the generally and locally applicable rules and regulations to prevent accidents and for protection of the environment.

#### Operating environment, prevention of damage

In order to prevent damage and to ensure chambers required for precise dispensing are filled, make sure that:

- the dispense pump is never operated without medium (the stator will be destroyed),
- the discharge side is not closed off during operation.

#### Appropriate use, warranty

The dispenser pump is intended to be used for the conveying and precise dispensing of media in non-explosion-proof environments.

Check the chemical resistance of the parts in contact with the product before starting up the unit for the first time. Refer to [Specifications](#) (pg 24).

Any of the following that are done without the explicit and written approval of the manufacturer:

- conversions or additions,
- the use of non-original spare parts,
- repairs carried out by companies or persons that haven't been authorized by manufacturer can lead to the warranty being rendered null and void. The manufacturer shall have no liability whatsoever for damage resulting from failure to follow the [Operations](#) (pg 8) and [Maintenance](#) (pg 13) instructions.

**Qualifications of the operating and maintenance personnel**

The owner bears the responsibility for ensuring that operating and maintenance personnel have the required qualifications. The operation and maintenance instructions must be read and understood. Comply with the relevant applicable technical and safety regulations.

**Organizational measures**

The owner is to provide any personal protective equipment that is required. All the safety devices are to be checked regularly. Wear protective glasses and a protective suit for operation and cleaning to protect against any chemicals that may be sprayed out.

## Warranty

**General Warranty.** Subject to the remedy limitation and procedures set forth in the Section “Warranty Procedures and Remedy Limitations,” GPD Global warrants that the system will conform to the written description and specifications furnished to Buyer in GPD Global’s proposal and specified in the Buyer’s purchase order, and that it will be free from defects in materials and workmanship for a period of one (1) year. GPD Global will repair, or, at its option, replace any part which proves defective in the sole judgment of GPD Global within one (1) year of date of shipment/invoice. Separate manufacturers’ warranties may apply to components or subassemblies purchased from others and incorporated into the system. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

**Limitations.** GPD Global reserves the right to refuse warranty replacement, where, in the sole opinion of GPD Global the defect is due to the use of incompatible materials or other damages from the result of improper use or neglect.

This warranty does not apply if the GPD Global product has been damaged by accident, abuse, or has been modified without the written permission of GPD Global.

Items considered replaceable or rendered unusable under normal wear and tear are not covered under the terms of this warranty. Such items include fuses, lights, filters, belts, etc.

**Warranty Procedures and Remedy Limitations.** The sole and exclusive remedy of the buyer in the event that the system or any components of the system do not conform to the express warranties stated in the Section “Warranties” shall be the replacement of the component or part. If on-site labor of GPD Global personnel is required to replace the non-warranted defective component, GPD Global reserves the right to invoice the Buyer for component cost, personnel compensation, travel expenses and all subsistence costs. GPD Global’s liability for a software error will be limited to the cost of correcting the software error and the replacement of any system components damaged as a result of the software error. In no event and under no circumstances shall GPD Global be liable for any incidental or consequential damages; its liability is limited to the cost of the defective part or parts, regardless of the legal theory of any such claim. As to any part claimed to be defective within one (1) year of date of shipment/invoice, Buyer will order a replacement part which will be invoiced in ordinary fashion. If the replaced part is returned to GPD Global by Buyer and found by GPD Global in its sole judgment to be defective, GPD Global will issue to Buyer a credit in the amount of the price of the replacement part. GPD Global’s acceptance of any parts so shipped to it shall not be deemed an admission that such parts are defective.

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Specifications, descriptions, and all information contained in this manual are subject to change and/or correction without notice.

Although reasonable care has been exercised in the preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.

## Scope of Supply

Includes PCD Pump, Stator, Syringe Support, Mounting Hardware, Pump Maintenance Tools, and Documentation:

- *PCD Pump User Guide* - PN 22293078M
- *PCD Pump Parts List* - PN 22200613
- *KITS: Spare Parts/Setup/Cleaning*, PN 22290036

## Introduction

The Progressive Cavity Displacement (PCD) Pumps are dispensing devices for precision work with products requiring very high repeat accuracy with a wide range (low-to-high) viscosity. These dispense pumps are true volumetric dispensing systems that can be dismantled in a short period of time when maintenance is required.

## Functional Description

PCD Pumps use a rotating displacement consisting of a rotor and a stator.

A number of voids are produced as a result of the various geometries of the conveying elements. Conveying that is either proportional to the angle of rotation or else is RPM-dependent (produced by the rotation of the rotor in the stator).

Since the direction of flow is reversible, the medium can be sucked back to allow a clean break of the thread. Self-sealing depends on the viscosity.

## Applications

PCD Pumps are classified by the minimum volume and the maximum flow rate. Compatible fluids for all models generally have a viscosity of less than 60,000 cps and include fluid types such as water, grease, gel, silicones, glues, LED encapsulants, underfills, fats, oils, colors, sealing compounds, adhesives, etc.

## Features

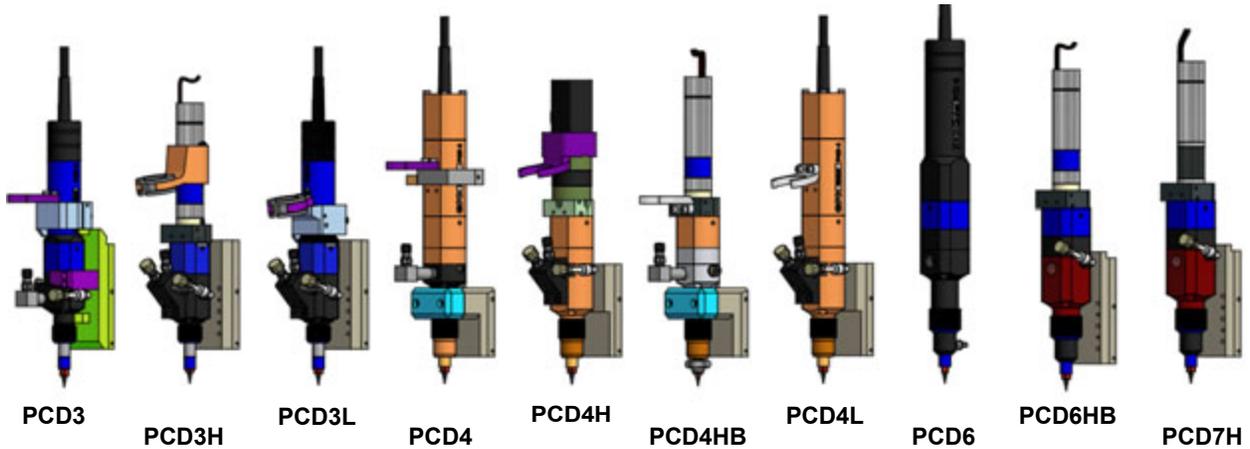
- **PCD3** - The PCD3 model is designed for low volume applications with a minimum volume of 1 $\mu$ L and a maximum flow rate of 1.3 ml/minute.
- **PCD4** - The PCD4 model is designed for applications with a minimum volume of 4 $\mu$ L and a maximum rate of 6 ml/minute.
- **PCD6 & PCD7**- PCD6 and PCD7 models offer a higher flow rate than PCD3 and PCD4. PCD6 has a minimum volume of 15 $\mu$ L and a maximum flow rate of 18 ml/minute. PCD7 has a minimum volume of 60 $\mu$ L and a maximum flow rate of 60ml/minute.
- **H and L** - Both H and L models benefit from lower priming volumes and air-free reservoir change. H models use a high precision motor and may be used with the GPD stand-alone controllers.
- **PCD3H and PCD4H** - These models offer higher resolution in dispense volumes. PCD3H and PCD4H models include a low volume feed way for lower priming volumes and also offer a higher resolution of dispense volume. Available only on MAX Series and DS Series systems.

## Options

A material level detect option is available for all PCD pump models when used on these GPD Global platforms: MAX Series or DS Series.

# Pump Identification

Figure 1: Pump Model Names



Each pump model can be identified by the type of motor and feed way it uses - refer to Table 1. Additional detail is available in [Assembly Drawings](#) (pg 35).

Table 1: Distinguishing Features

Model	Part Number	Feed Way		Motor			
		High Volume 	Low Volume 	Cylindrical, Shiny 	Square 	Cylindrical, Black 	Dual Flat 
PCD3	22293093 22293093-1004 22293099	X				X	
PCD3L	22293093-1002		X			X	
PCD3H	22293093-1003 22293093-1006		X	X			
	22293121		X		X		
PCD4	22293081	X					X
	22293098-0002						X
PCD4L	22293122		X				X
PCD4H	22293103		X	X			
PCD4HB	22293240	X		X			
PCD6	22293161-001	X				X	
PCD6HB	22293161-003	X		X			
PCD7H	22293306-0003	X		X			

## Installation

- [Mounting Hardware](#) (pg 3)
- [Integration on Robotic Systems](#) (pg 4)
- [Integration on Table Top Systems](#) (pg 6)

## Mounting Hardware

Any PCD model can be integrated with GPD hardware or non-GPD hardware using either a GPD Clamp Positioning Mount or a GPD Taper-Lock™.

- [Taper-Lock™ Mount](#) (pg 3)
- [Clamp Positioning Mount](#) (pg 3)

### Taper-Lock™ Mount

The Taper-Lock™ is a quick, secure, and convenient (no tools required) way to mount any GPD pump to a system. All PCD pumps use the same Taper-Lock™ hardware.

To mount a PCD pump on non-GPD hardware with a Taper-Lock™ mount:

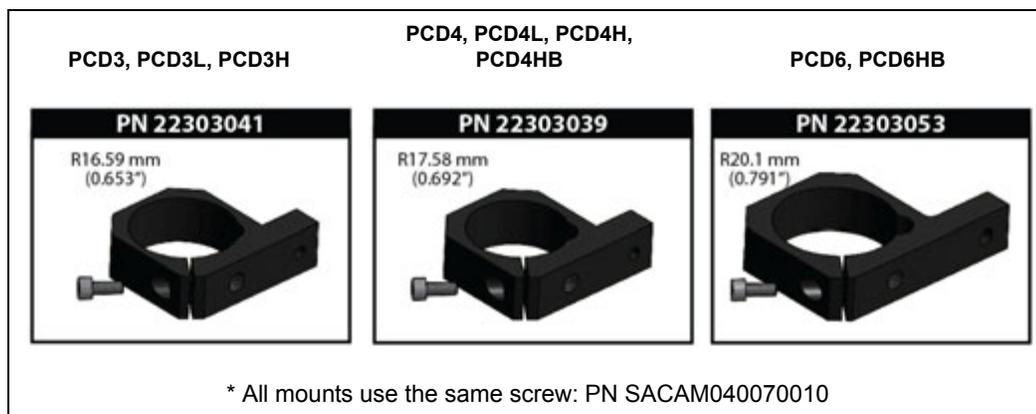
1. Prepare your hardware to accept the Taper-Lock™ hardware. For hole pattern and dimension details, refer to [Taper-Lock Mounting Detail - 22110291](#) (pg 63).
2. Fasten the Taper-Lock™ to your hardware.
3. Mount the pump in the Taper-Lock™.
  - a. Press down and hold the latching lever at the top of the mount.
  - b. Align and engage the pump with the top dowel pin of the mount.
  - c. Apply downward pressure to the pump while releasing the latching lever.

### Clamp Positioning Mount

To mount a PCD pump on non-GPD hardware with a Clamp Positioning Mounts:

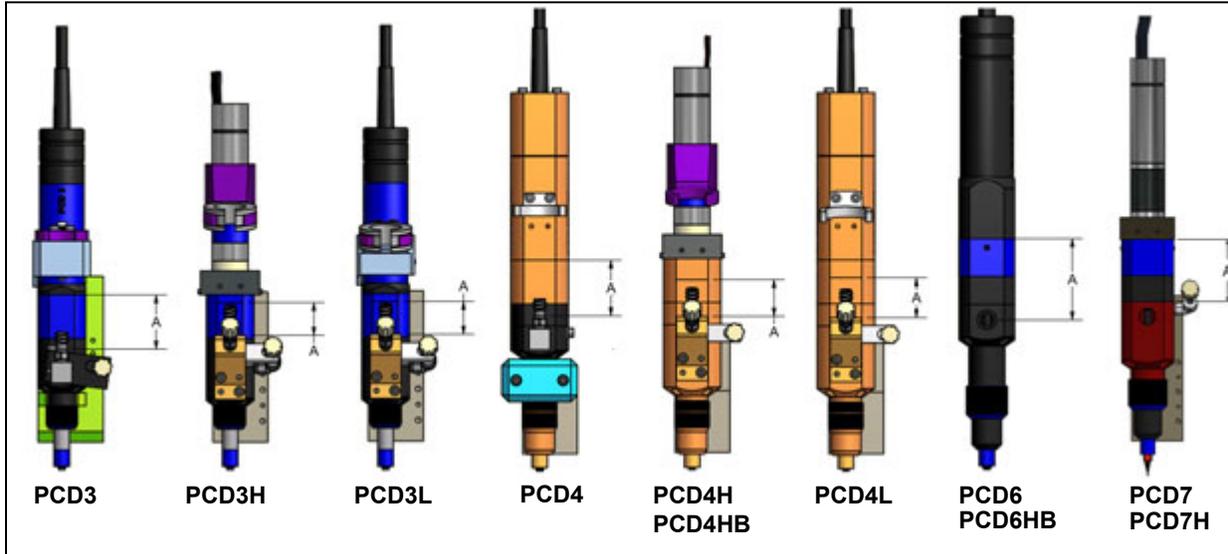
1. Select a clamp mount sized to fit your PCD pump.

**Figure 2: Clamp Positioning Mounts by Model\***



2. Prepare your hardware to accept the clamp mount. Refer to [Clamp Mount Dimensions - 22212002](#) (pg 62) and [Clamp Mount Hole Patterns & Groove - 22212002](#) (pg 61).
3. Fasten the clamp mount to your hardware.
4. Position the PCD pump body so the clamp mount is located within the indicated mounting range (A), and then tighten the clamp mount screw.

**Figure 3:** Position Clamp Mount on PCD Body within “A” Range



## Integration on Robotic Systems

*Table 2: Controller Required for Integration by Pump*

Pump	GPD Integrated Electronic Control System for MAX Series & DS Series	Machine Integrated Controller
PCD3		X
PCD3L		X
PCD3H	X	
PCD4		X
PCD4L		X
PCD4H	X	
PCD4HB	X	
PCD6		X
PCD6HB	X	
PCD7		X
PCD7H	X	

## Machine Integrated Controller

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This GPD Global controller allows integrators to use PCD pumps in their designs. Requirements:

- 24V signal to enable forward motion
- 24V signal to enable reverse motion
- Variable 0-10V signal to control the speed in forward or reverse



## Install on GPD Global MAX Series or DS Series Robotic System

### PCD3H, PCD4H, PCD4HB, PCD6HB, PCD7H

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To mount one of these PCD pump models on a standard GPD Global MAX Series or DS Series dispensing system:

1. Mount material on the pump.
2. Mount the pump in the Taper-Lock™ mount:
  - a. Press down and hold the latching lever at the top of the mount.
  - b. Align and engage the pump with the top dowel pin of the mount.
  - c. Apply downward pressure to the pump while releasing the latching lever.
3. Connect the two (2) pump cables into the base of the dispensing system Z-axis motor cover.

### PCD3, PCD3L, PCD4, PCD4L, PCD6, PCD7H

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**NOTE:** To operate pump models PCD3, PCD3L, PCD4, and PCD4L, the GPD Global MAX Series or DS Series dispensing system must be configured with a tabletop controller and cable for pump control. To mount one of these PCD pump models on an upgraded dispensing system (configured with a tabletop controller and cable):

1. Mount material on the pump.
2. Press the dispenser MOTION STOP button to remove power from the PCD controller.
3. Mount the pump in the Taper-Lock™ mount:
  - a. Press down and hold the latching lever at the top of the mount.
  - b. Align and engage the pump with the top dowel pin of the mount.
  - c. Apply downward pressure to the pump while releasing the latching lever.
4. Connect the pump cable to the dispenser receptacle panel.
5. Release the MOTION STOP button to return power to the PCD controller.

## Install on Non-GPD Equipment

For easy-installation options available for mounting any model of PCD pump on non-GPD hardware, refer to [Mounting Hardware](#) (pg 3).

## Integration on Table Top Systems

All relevant settings for your production results can be easily saved via a graphic user interface if you operate your dispense pump with a GPD Global PCD Tabletop Controller especially matched to the pump.



**Table 3: Pumps with Table Top Capability**

Pump	Controller
PCD3	X
PCD3L	X
PCD3H	—
PCD4	X
PCD4L	X
PCD4H	—
PCD4HB	—
PCD6	X
PCD6HB	—
PCD7H	X

### Install on GPD Global Island Series Robotic System

#### **PCD3, PCD3L, PCD4, PCD4L, PCD6, PCD7H**

To mount a PCD pump on a GPD Global Island Series dispensing system:

1. Turn off the PCD Tabletop Controller or, if system is configured with one, turn off the pump power switch.
2. Mount the pump in the Taper-Lock™ mount:
  - a. Press down and hold the latching lever at the top of the mount.
  - b. Align and engage the pump with the top dowel pin of the mount.
  - c. Apply downward pressure to the pump while releasing the latching lever.
3. Connect the pump cable to the power port on the Z axis.
4. Turn on the PCD Tabletop Controller or, if your system is configured with one, turn on the pump power switch.

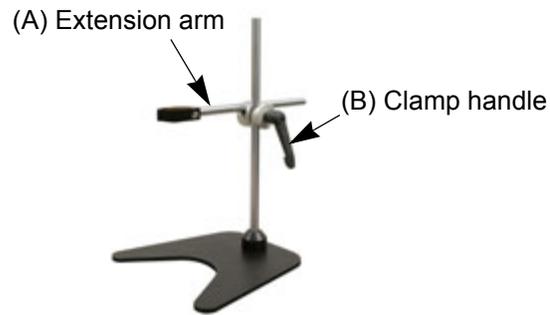
### Install Pump in PCD Table Stand

#### **PCD3, PCD3L, PCD4, PCD4L, PCD6, PCD7H**

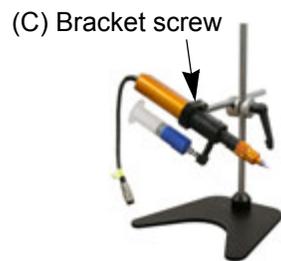
To mount a PCD pump in a PCD Table Stand:

1. Place a PCD Table Stand on a level surface.

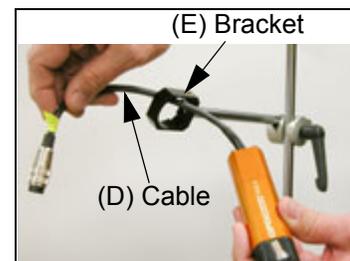
2. Prepare the PCD Table Stand to hold a pump:
  - a. With one hand, support the extension arm (Item A) while loosening the clamp handle (Item B) with the other hand.



- b. As needed, slide and rotate the extension arm vertically and laterally to establish desired position and orientation.
  - c. To lock the extension arm in place, tighten the clamp handle.
  - d. Using a 4 mm Allen key, loosen the bracket screw (Item C).



3. Mount a pump in the PCD Table Stand:
  - a. Disconnect the pump cable from the pump controller.
  - b. Feed the pump cable (Item D) through the bracket (Item E).
  - c. Then position the pump in the bracket so the central barrel (black section) of the pump is positioned in the bracket as shown above.
  - d. Tighten the bracket screw (Item C).



## Operations

Prior to operations, identify which model of PCD pump you will be using. Each PCD pump model can be identified by the type of motor and feed way it uses; see details under [Pump Identification](#) (pg 2).

### 1- Read Safety Notices

**!** **IMPORTANT:** Prior to start up, read [Safety Notices](#) (pg iii) as this information must be read and understood prior to using the pump!

### 2- Initial Start Up

**!** **CAUTION:** Do not switch on the dispense pump before medium has been fed into it. There is a danger of damage to the pump if it is run dry. Even a brief period of dry run time can lead to the destruction of the stator.

#### A- Disconnect Dispense Unit from Drive Unit

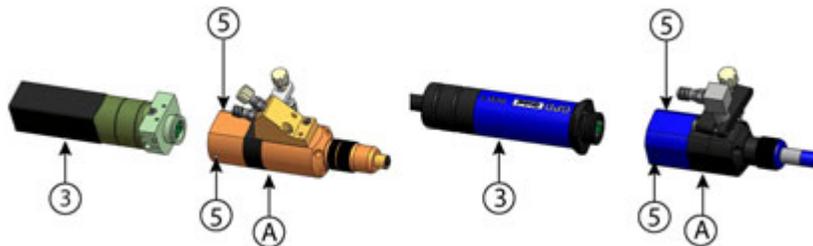
##### PCD3, PCD3L, PCD3H, PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

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To disconnect the dispense and drive units from each other:

1. Loosen the two (2) set screws (Item 5).
2. Gently pull the drive unit (Item 3) away from the dispense unit (Item A).

**!** **CAUTION:** Proceed carefully to avoid damage to the fit.



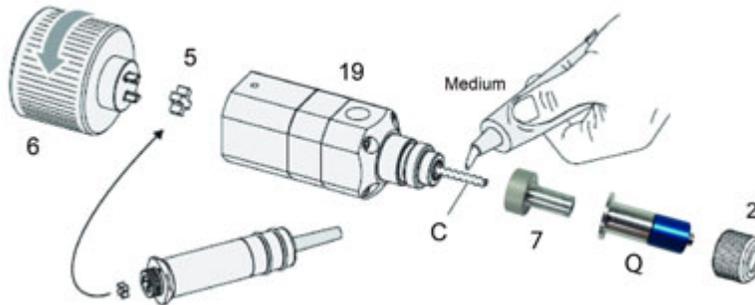
## B- Insert Stator

### PCD3, PCD3L, PCD3H

To attach the stator *for the first time*:

**⚠ CAUTION:** DO NOT assemble the pump dry. There is a danger of damage to the pump if it is run dry. Even a brief period of dry run time can lead to the destruction of the stator.

1. Unscrew the union ring (Item 2) from the dispenser housing (19).



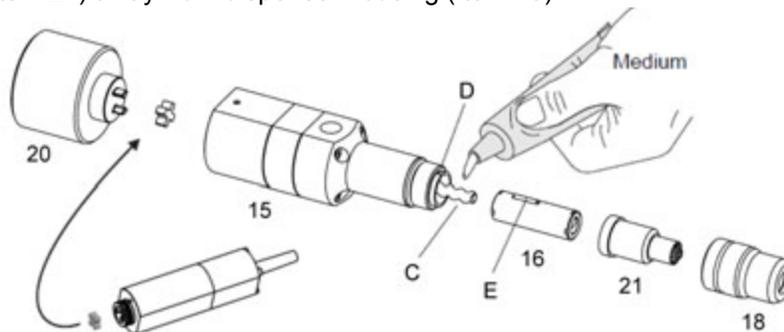
2. Remove the stator cover (Item Q) and set aside.
3. Wet the rotor (Item C) with the medium to be used or a suitable lubricant.
4. Screw the stator (Item 7) onto the rotor (Item C) until it reaches the limit on the body (Item 19). There will be approximately 1 mm between the end of the stator and the threads of the dispenser housing.
5. Place the stator cover (Item Q) over the stator (Item 7) and install the union ring (Item 2), firmly clamping the two pieces together.

### PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

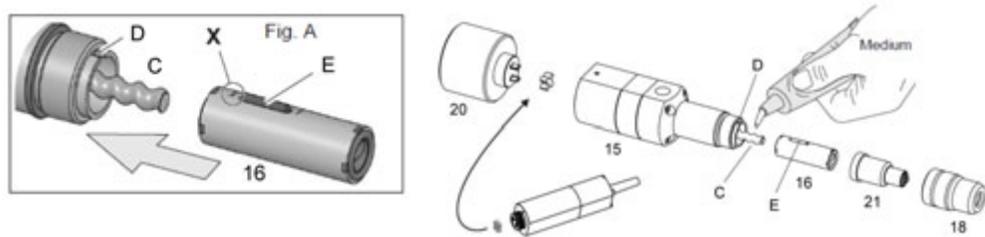
To insert the stator *for the first time*:

**⚠ CAUTION:** DO NOT assemble the pump dry. There is a danger of damage to the pump if it is run dry. Even a brief period of dry run time can lead to the destruction of the stator.

1. Unscrew the union ring (Item 18), and then slide both the union ring and threaded sleeve (Item 21) away from dispenser housing (Item 15).



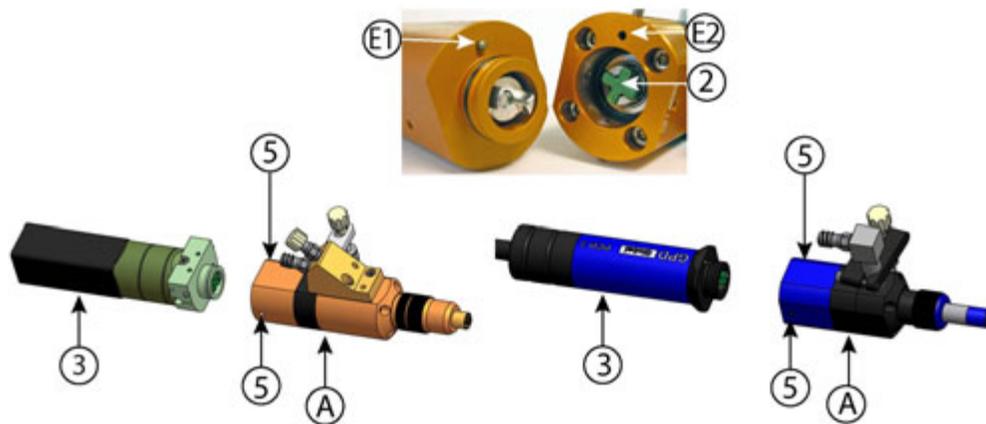
- Couple the assembly aid (Item 20) to the dispense pump housing (Item 15). The star-shaped coupling (Item 5) must be attached to the dispenser pump housing (Item 15).
- Wet the rotor (Fig A, Item C) with the medium or a suitable lubricant.



- Orient the 'X' end (see Fig. A) of the stator (Item 16) toward the rotor (Item C) and then turn the stator on the rotor until the dowel pin begins to engage with the key way (Fig. A, Item D).
- Lightly press the stator in the direction of the dispenser housing (Item 15) and turn the assembly aid in the direction of the arrow until the stator has been guided into the dispense pump housing. The dowel pin will barely be visible in the key way (Item D).
- Uncouple the assembly aid, install the end piece and the union ring, and attach the required needle/nozzle.

### C- Connect Dispense Unit to Drive Unit

**PCD3, PCD3L, PCD3H, PCD4, PCD4L, PCD4H PCD4HB, PCD6, PCD6HB, PCD7H,**



To connect the dispense and drive units together:

**⚠ CAUTION:** Proceed carefully to avoid damage to the fit.

- Loosen the two (2) set screws (Item 5) so they do not protrude into the coupling area.
- Verify the star coupling (Item 2) is seated properly in the dispense unit (Item A).

**NOTE:** Inspect the star-shaped coupling (Item 2) and adjacent O-ring for wear. Replace these items as needed

3. Couple the drive unit (Item 3) with the dispense unit (Item A) until there is a gap <1 mm between the anti-rotation lock (Item E1) and the dispense unit (Item A).
4. Rotate the drive unit (Item 3) until the anti-rotation lock (E1) aligns with the anti-rotation lock feature (Item E2) of the dispense unit (Item A).
5. Press the drive unit (Item 3) and the dispense unit (Item A) together completely.
6. Lightly turn the set screws (Item 5) to secure units together.

### 3- Prime Pump with Medium



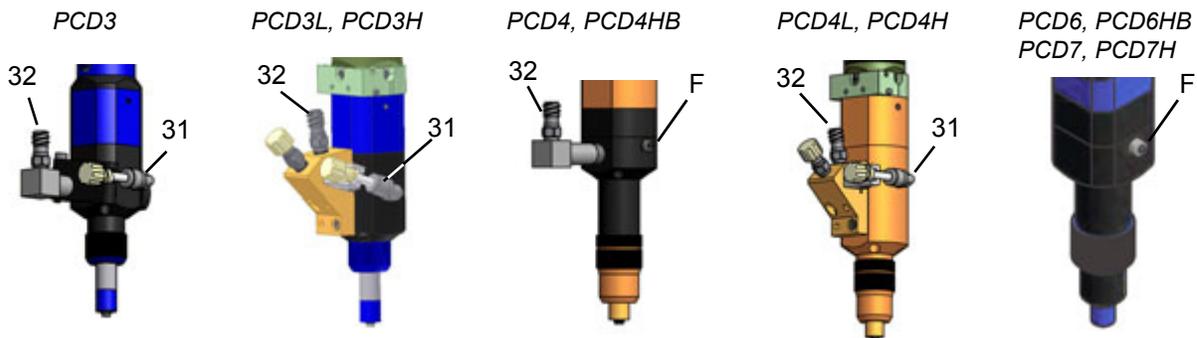
**CAUTION:** Follow the safety stipulations and instructions of the manufacturer of the medium to be used to fill the unit. If applicable, use protective equipment.

**NOTE:** Priming a pump can be performed online or offline. When working offline, GPD Global recommends using the [Install Pump in PCD Table Stand](#) (pg 6) method.

#### PCD3, PCD3L, PCD3H, PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

1. Connect a material reservoir (cartridge, supply line, tank) of material to the pump adapter/feed reservoir (Item 32). For thread details, refer to [Threads & Materials](#) (pg 32).
2. Connect air (0.14-0.2 bar [2-3 psi]) to the material reservoir.
3. For applicable models, verify the purge tube support (Item 31) is secured in the tube support and then remove the cap. For all other models, remove the bleed port plug (Item F).
4. Orient the dispense pump so the needle/nozzle end points downward.
5. Increase air pressure on the material reservoir until material feeds into the purge tube (or out of the bleed port). Using a cup or wipe to catch expelled material, allow a small amount of material to bleed from the purge tube to ensure all air is displaced.
6. For applicable models, screw the cap onto the purge tube. For all other models, screw the bleed port plug (Item F) into the bleed port.

**Figure 4:** Adapter/feed reservoir (32), purge tube support (31), & bleed port plug (F) by pump model



## 4- Install Pump

Refer to [Installation](#) (pg 3).

## 5 - Vent Trapped Air

For safety purposes and to prevent material waste, follow this procedure when trapped air needs to be vented from syringe material. The process of replacing a pump material syringe can introduce air into the pump material feed way. It is important to bleed the air safely.

To replace the material syringe mounted to the pump and then vent trapped air:

1. Remove spent material syringe from the pump.
2. Leaving the syringe air cap disconnected, install new material syringe on the pump.

 **CAUTION: DO NOT use air pressure to vent trapped air from syringe material.** Instead, manually apply pressure to syringe material so air vents through the pump feed way port.

**NOTE:** Leave the syringe air cap disconnected from the syringe until you are instructed to connect it during a later step.

3. Remove the pump feed way port cap and set it aside.
4. Using a narrow tool (e.g., forceps, screw driver), manually apply pressure to syringe material until trapped air vents through the feed way port.
5. Screw the cap back on the feed way port.
6. Attach the syringe air cap to the material syringe.

## Maintenance

### Cleaning Time

Cleaning a pump requires 15 minutes or more. The amount of time required relates directly to type of material and solvent used.

### Cleaning Kit

PCD Pump Series Cleaning Kit (PN 22110467)

Kit contents are illustrated in *KITS: Spare Parts/Setup/Cleaning* (PN 22290036)

### Cleaning Frequency Guidelines

Initially, a once a month inspection and cleaning is recommended, then based on your experience using with the pump and fluid, extend or shorten the cleaning interval as needed.

Cleaning frequency is determined according to the type of fluid being dispensed. For pumps in continuous use, clean in intervals no greater than 3 x fluid pot life. For pumps dispensing fluids stable at room temperature and that have no significant pot life issues, the pump may be run continually without issue.

### Cleaning Procedures

- [Flush Pump](#) (pg 13)
- [Clean PCD3, PCD3L, PCD3H](#) (pg 14)
- [Clean PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H](#) (pg 18)

## Replace Material Syringe

When replacing the material syringe mounted to the pump, follow the [5 - Vent Trapped Air](#) (pg 12) procedure. Changing a pump material syringe can introduce air into the pump material feed way. It is important to bleed the air properly.



**CAUTION: DO NOT use air pressure to vent trapped air from syringe material.** Instead, manually apply pressure to syringe material so air vents through the pump feed way port.

## Flush Pump

The flush procedure is used primarily when underfill material needs to be purged from the pump. The dispense tip and needle can be removed or left in place:

- The dispense tip may be left in place or removed during the flush procedure.
- If a disposable needle is present, remove and discard it.
- A needle intended for reuse can remain in place on the pump as the flush procedure will clean the needle.

To flush fluid from the pump:

1. Remove the fluid reservoir from the pump.
2. If present, remove disposable needle.
3. Install an empty syringe on the pump.
4. Fill the syringe with a suitable solvent.
5. Set the pump to purge into a purge cup or suitable container.
6. Continue to purge until all dispense fluid has been purged and only solvent is exiting the pump.

## Clean PCD3, PCD3L, PCD3H

**⚠ IMPORTANT:** Wear suitable protective clothing if chemical, corrosive, or dangerous products are to be used. Note and comply with the safety stipulations and the information from the manufacturer. Ensure sufficient bleeding or extraction of air. Take special safety precautions if working with dangerous media; for example, provide eye flushing facilities if working with corrosive chemicals.

### 1 - Cleaning Kit

Obtain the recommended [Cleaning Kit](#) (pg 13).

### 2- Flush Pump

Prior to disconnecting the pump from its power source, flush the pump with a syringe of appropriate solvent, stopping the flush before pump runs dry.

**⚠ CAUTION:** Never run the pump dry. There is a danger of damage to the pump if it is run dry. Even a brief period of dry run time can lead to the destruction of the stator.

### 3- Remove Power

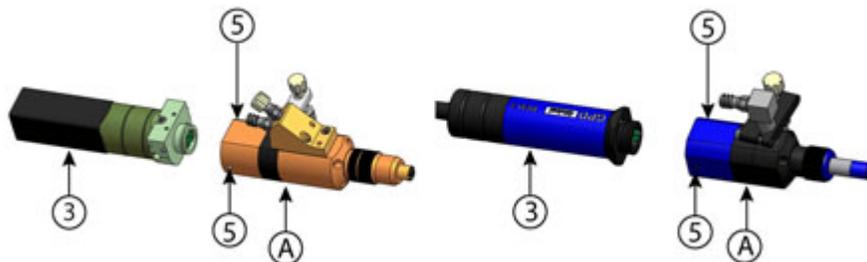
Disconnect the drive unit power supply and uncouple it from the dispensing unit in the reverse order as described in [4- Install Pump](#) (pg 12).

### 4- Remove Drive Unit from Dispense Unit

#### PCD3, PCD3L, PCD3H

1. Remove material syringe (not shown) and set it aside.
2. Remove the needle/nozzle (not shown) and either clean or dispose of it.
3. Partially loosen set screws (Item 5).
4. To separate drive unit (Item 3) from dispense unit (Item A), pull units apart.

**⚠ CAUTION:** Proceed carefully to avoid damage to the fit.



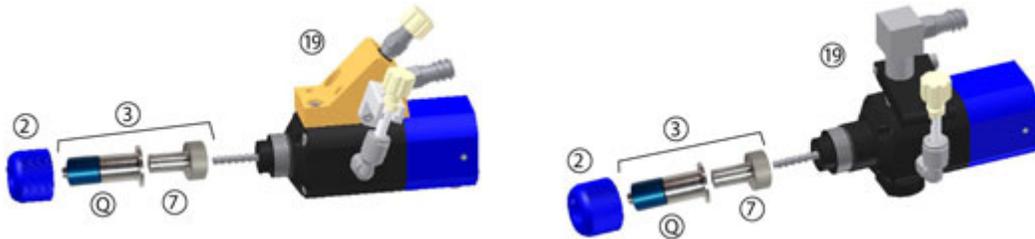
## 5- Remove & Clean Stator

### PCD3, PCD3L, PCD3H

To access the stator (Item 7):

1. Unscrew and remove union ring (Item 2).
2. Remove the stator assembly (Item 3) by unscrewing it (do NOT pull) from the dispenser housing (Item 19).
3. Remove the stator cover (Item Q) from the stator (Item 7) and, as needed, clean stator cover.
4. Carefully and thoroughly clean stator (Item 7) using swabs and brushes supplied in the cleaning kit. Remove all debris; anything less than a thorough cleaning can affect pump performance.

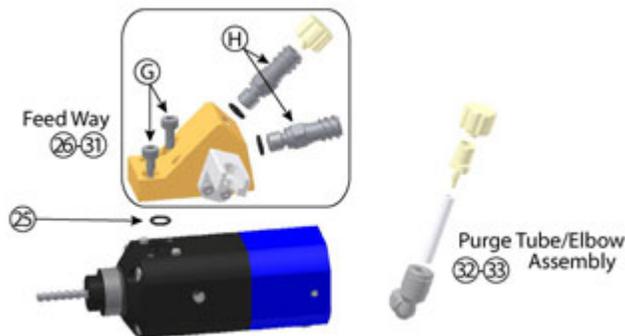
**RECOMMENDATION:** To clean the stator thoroughly, use an ultrasonic cleaner with an appropriate solvent.



## 6- Remove & Clean Feed Way

### PCD3L, PCD3H

1. To separate the feed way assembly (Items 26-31) and O-ring (Item 25) from the pump body, remove screws (Item G).

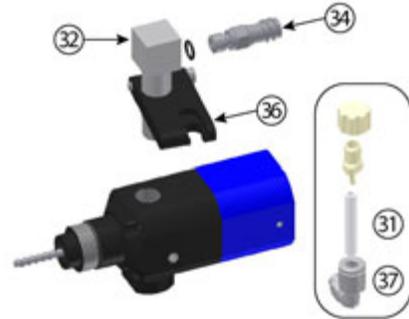


2. Clean feed way assembly (Items 26-31):
  - a. Remove luer feed ways (Item H) and associated O-rings. Replace O-rings if brittle or worn.
  - b. Clean and flush feed way body and luer feed ways (H) using cleaning kit supplies.
  - c. Inspect and clean O-ring (Item 25). Replace O-rings if brittle or worn.

3. Unscrew and remove the purge tube/elbow assembly (Items 32-33) by pressing inward slightly while compressing the ring on elbow.
4. Replace the purge tube and clean the elbow. The elbow will need to be replaced after being cleaned several times; use good judgement regarding cleanliness of elbow.

### PCD3

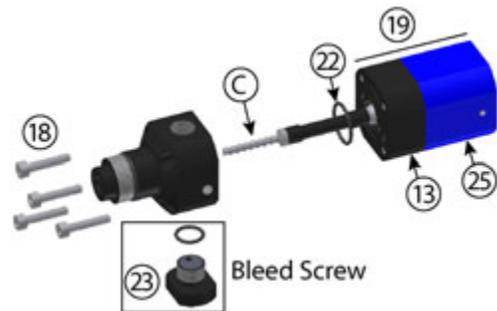
1. Separate the purge tube (Item 31) from the purge tube support (Item 36).
2. Unscrew the feed way (Items 32) from the pump body.
3. Separate the luer feed way (Item 34) and associated O-ring from the feed way (Item 32).
4. Clean and flush feed way and luer feed way using cleaning kit supplies.
5. Inspect and clean O-ring. Replace O-ring if brittle or worn.
6. Remove and clean the purge tube assembly:
  - a. Remove the purge tube (Item 31) from the elbow (Item 37) by pulling down on the orange ring and then pulling the purge tube out of the elbow.
  - b. Using a crescent wrench, unscrew the elbow (Item 37) from the pump body.
  - c. Replace the purge tube and clean the elbow. The elbow will need to be replaced after being cleaned several times; use good judgement regarding cleanliness of elbow.



## 7- Clean Dispenser Housing & Rotor

### PCD3, PCD3L, PCD3H

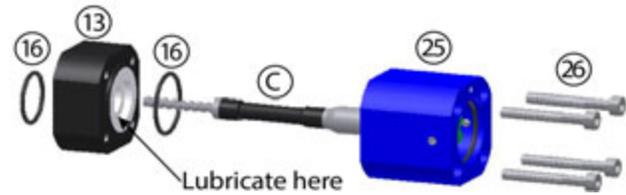
1. If a bleed screw (Item 23) is present, remove it from dispenser (Item 19) and verify the rubber disk that fits into the bleed screw has been removed from dispenser housing; otherwise, skip this step.
2. Remove screws (Item 18) and then separate dispenser housing (Item 19) from “bearing housing with rotor” assembly (Items 13 and 25).
3. Inspect and clean O-ring (Item 22). Replace if it is brittle or worn.
4. Using a cloth and brush, clean thoroughly:
  - dispenser housing (Item 19)
  - rotor (see Item C)
  - (if present) bleed screw (Item 23) and rubber disk



**CAUTION:** DO NOT rinse “bearing housing with rotor” (Items 13 and 25) or submerge it in an ultrasonic cleaner as either action could damage bearings.

## 8- Clean Seal Housing

**IMPORTANT:** Perform this step only as needed; in rare cases, the seal housing (Item 25) may need to be cleaned.



1. Remove screws (Item 26).
2. Unsnap and pull seal housing (Item 13) over rotor (Item C) and away from bearing housing (Item 25).
3. Thoroughly clean seal housing (Item 13).
4. Inspect and clean the two O-rings (Item 16). Replace if brittle or worn.
5. Liberally lubricate the seal housing (Item 13) using lubricant listed on [Parts Lists](#) (pg 24).

## 9- Reassemble Pump

To reassemble the pump:

1. Perform [8- Clean Seal Housing](#) (pg 17) in reverse order.
2. Do not exceed a tightening torque of 0.35 Nm while performing [7- Clean Dispenser Housing & Rotor](#) (pg 16) in reverse order.
3. Perform [6- Remove & Clean Feed Way](#) (pg 15) in reverse order.
4. Install the stator according to [B- Insert Stator](#) (pg 9)
5. Connect the dispensing unit to the drive unit per [C- Connect Dispense Unit to Drive Unit](#) (pg 10).

## Clean PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

**IMPORTANT:** Wear suitable protective clothing if chemical, corrosive, or dangerous products are to be used. Note and comply with the safety stipulations and the information from the manufacturer. Ensure sufficient bleeding or extraction of air. Take special safety precautions if working with dangerous media; for example, provide eye flushing facilities if working with corrosive chemicals.

### 1 - Cleaning Kit

Obtain the recommended [Cleaning Kit](#) (pg 13).

### 2- Flush Pump

Prior to disconnecting the pump from its power source, flush the pump with a syringe of appropriate solvent, stopping the flush before pump runs dry.

**CAUTION:** Never run the pump dry. There is a danger of damage to the pump if it is run dry. Even a brief period of dry run time can lead to the destruction of the stator.

### 3- Remove Power

Disconnect the drive unit power supply and uncouple it from the dispensing unit in the reverse order as described in [4- Install Pump](#) (pg 12).

### 4- Remove Drive Unit from Dispense Unit

#### PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB

1. Remove material syringe (not shown) and set it aside.
2. Remove the needle/nozzle (not shown) and either clean or dispose of it.
3. Partially loosen set screws (Item 5).
4. To separate drive unit (Item 3) from dispense unit (Item A), pull units apart.

**CAUTION:** Proceed carefully to avoid damage to the fit.



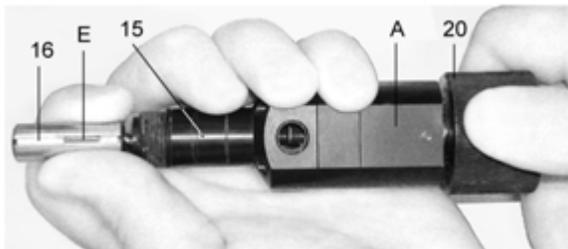
## 5- Remove & Clean Stator

### PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

1. To access the stator (Item 16):
  - a. Unscrew and remove union ring (Item 18) and end piece assembly (Items 17 and 19) from dispenser housing (Item 15).
  - b. Unscrew threaded sleeve (Item 17) from end section (Item 19) and, as needed, clean threaded sleeve.
  - c. If an O-ring (Item 10) is present, inspect and clean the O-ring. Replace if it is brittle or worn.



2. To unscrew the stator (Item 16) from the dispenser housing (Item 15) without separating the pin (Item E) mounted on the stator:
  - a. Hold dispenser housing (Item 15) in the palm of one hand with the stator (Item 16) loosely secured between thumb and forefinger of the same hand.
  - b. With the other hand, couple and turn the assembly aid (Item 20) counterclockwise in the base of the dispense unit (Item A) until the stator completely separates from the dispenser housing (Item 15).
  - c. Uncouple the assembly aid (Item 20) from the dispenser unit (Item A).



3. Carefully pull the stator (Item 16) away from dispenser housing (Item 15).



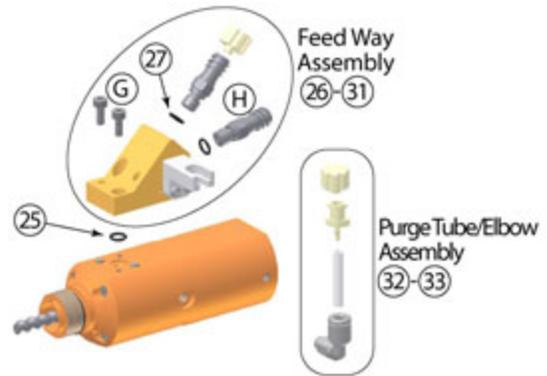
4. Carefully and thoroughly clean the stator (Item 16) using swabs supplied in the cleaning kit. Remove all debris; anything less than a thorough cleaning can affect pump performance.

**RECOMMENDATION:** To clean the stator thoroughly, use an ultrasonic cleaner with an appropriate solvent.

## 6- Remove & Clean Feed Way

### PCD4L, PCD4H, PCD4HB

1. To separate the feed way assembly (Items 26-31) and O-ring (Item 25) from the pump body, remove screws (Item G).
2. Clean feed way assembly:
  - a. Remove luer feed ways (Item H) and O-rings (Item 27). Replace O-rings if brittle or worn.
  - b. Clean and flush feed way body and luer feed ways (Item H) using cleaning kit supplies.
  - c. Inspect and clean O-ring (Item 25). Replace O-rings if brittle or worn.



3. Unscrew and remove the purge tube/elbow assembly (Items 32-33) by pressing inward slightly while compressing the ring on elbow.
4. Replace the purge tube and clean the elbow. The elbow will need to be replaced after being cleaned several times; use good judgement regarding cleanliness of elbow.

### PCD4, PCD6, PCD6HB, PCD7H

1. If present, unscrew the feed way (Items 32) from the pump body.
2. Separate the luer feed way (Item 34) and O-ring from the feed way (Item 32).
3. Clean and flush feed way and luer feed way using cleaning kit supplies.
4. Inspect and clean O-ring. Replace O-ring if brittle or worn.



## 7- Clean Dispenser Housing & Rotor

### PCD4, PCD4L, PCD4H, PCD4HB, PCD6, PCD6HB, PCD7H

1. If a bleed screw (Item 13) and washer (Item 14) are present, remove them from the dispenser housing (Item 15); otherwise, skip this step.



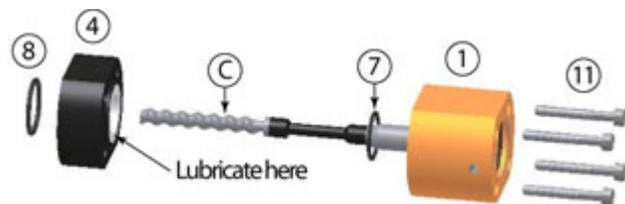
2. Remove screws (Item 12) and then separate dispenser housing (Item 15) from “bearing housing with rotor” assembly (Items 1 and 4).
3. Inspect and clean O-ring (Item 8). Replace if it is brittle or worn.
4. Using a cloth and brush, clean thoroughly:
  - dispenser housing (Item 15)
  - rotor (Item C)
  - (if present) bleed screw (Item 13) and washer (Item 14)



**CAUTION:** DO NOT rinse “bearing housing with rotor” (Items 1 and 4) or submerge it in an ultrasonic cleaner as either action could damage bearings.

## 8- Clean Seal Housing

**IMPORTANT:** Perform this step only as needed; in rare cases, the seal housing (Item 4) may need to be cleaned.



1. Remove screws (Item 11).
2. Unsnap and pull seal housing (Item 4) over rotor (Item C) and away from bearing housing (Item 1).
3. Thoroughly clean seal housing (Item 4).
4. Inspect and clean the O-rings (Items 7 & 8). Replace if brittle or worn.
5. Liberally lubricate the seal housing (Item 13) using lubricant listed on [Parts Lists](#) (pg 24).

## 9- Reassemble Pump

To reassemble the pump:

1. Perform [8- Clean Seal Housing](#) (pg 21) in reverse order.
2. Do not exceed tightening torque specified below while performing [7- Clean Dispenser Housing & Rotor](#) (pg 21) in reverse order.

Pump Model	Maximum Tightening Torque
PCD4 PCD4L PCD4H	0.35 Nm
PCD6 PCD7	0.5 Nm

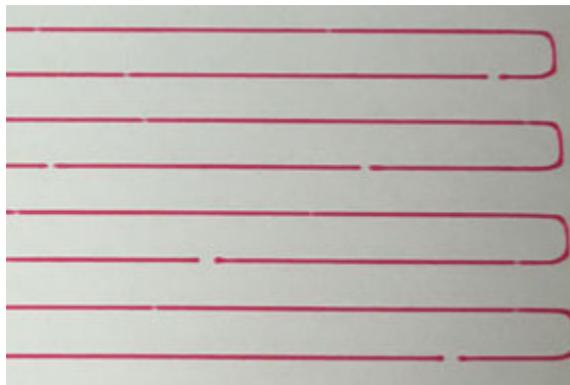
3. Perform [6- Remove & Clean Feed Way](#) (pg 15) in reverse order.
4. Install the stator according to [B- Insert Stator](#) (pg 9)
5. Connect the dispensing unit to the drive unit per [C- Connect Dispense Unit to Drive Unit](#) (pg 10).

## Troubleshooting

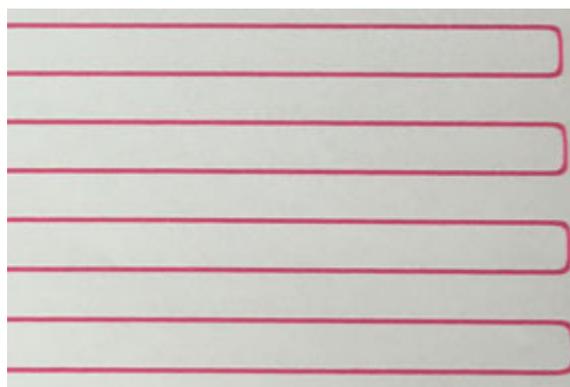
**Table 4: Troubleshooting**

Error	Possible Cause	Correction
No or too little medium conveyed	Needle blocked.	Clean/replace the needle.
	Medium hardened.	Dispenser clean.
	Needle too small or too long.	Use a different needle cross-section. Reduce the speed / flow rate.
	Stator swollen.	Replace the stator.
	Inadequate supply of medium.	Supply the medium, check the hose, check the primary pressure and increase it if necessary.
	Motor not connected.	Connect the motor.
Dripping / "running on" of the medium	Sucking back not set correctly.	Set the sucking back.
	Air bubbles in the medium.	Bleed the medium.
	Medium compressible.	Degas the medium.
Dispense results include bubbles or skips. Example: Figure 5	The Union ring may have been tightened too much. The union ring holds the stator in place during dispensing. If the union ring is too tight, it can collapse the stator on the rotor and cause voids in dispensed material.	<ol style="list-style-type: none"> <li>1 - Loosen the union ring 1/8 turn to 1/4 turn.</li> <li>2 - Rerun dispense process and inspect results.</li> <li>3 - Repeat above steps until desired results are attained. Example: Figure 6</li> </ol>

**Figure 5: Dispense results include bubbles or skips.**



**Figure 6: Desired results - no bubbles or skips.**



## Parts Lists

For consumable, spare, and general part information, refer to this document:

*PCD Pump Parts List* (PN 22200613).

## Specifications

- [PCD3 Specifications](#) (pg 25)
- [PCD4 Specifications](#) (pg 26)
- [PCD6 Specifications](#) (pg 27)
- [PCD7 Specifications](#) (pg 28)
- [Additional Dimensions](#) (pg 29)
- [Threads & Materials](#) (pg 32)

Table 5: PCD3 Specifications

Specification	PCD3 22293093 22293093-1004	PCD3L 22293093-1002	PCD3H 22293093-1003, 22293093-1006, 22293121
Dimensions (height, SQ, diameter) Also see <a href="#">Additional Dimensions</a> (pg 29)	207.56, SQ 29x29, ø 34.80 mm (8.176", SQ 1.142"x1.142", ø 1.3")	208.28, SQ 29x29, ø 34.80 mm (8.176", SQ 1.142"x1.142", ø 1.3")	220.73, SQ 29x29, ø 34.80 mm (8.176", SQ 1.142"x1.142", ø 1.3")
Weight	approx. 380 g (0.8 lb)	approx. 556 g (1.2 lb)	approx. 451 g (1.0 lb)
Dispensing volume	≈ 0.012 ml/rotation		
Theoretical flow rate per minute **	0.12 to 1.48 ml/min		
Minimum dispensing amount ml	0.001 ml		0.0005 ml
Priming volume	≈ 3 cc	≈ 1.5 cc	
Dispensing precision *	±1%		
Repeat accuracy	>99%		
Minimum operating pressure	0 bar (0 psi), with self-leveling liquid		
Maximum operating pressure	0-6 bar (0-87 psi), with non-self-leveling liquid		
Maximum dispensing pressure ***	16-20 bar (232-290 psi)		
Self-sealing *	approx. 2 bar (29 psi)		
Maximum viscosity ‡	60,000 cps		
Parts touched by medium	HD-POM, Stainless steel, Anodized Aluminum		
Sealings	High-molecular PE, VisChem		
Sealings static	O-ring Viton		
Motor	18 - 24 VDC		24 VDC
Motor rotating speed, per minute	0-120 rpm		
Operating ambient conditions ° C	+10 to +40 non-condensing, air pressure 1 bar (14.5 psi)		
Medium temperature ° C	+10 to +40		
Storage conditions/temp. ° C	dry and dust free, -10 to +40		
Cable dimensions	O.D.: 9.423 mm (0.371"). Length: 250 mm (10"), extension cable available		
Cable flexibility	High flex cable; flex cycles 5 million minimum. Bending radius -min: 5 x d, opt: 10 x d		
Cable features	Max voltage 600V. Copper 22AWG. 6 cores of TPE-E. Black jacket of FHF, PUR. Connector at each end.		
<p>* Reference medium approx. 1.000 mPas at 20 ° C. Maximum dispensing pressure and self-sealing decrease with decreasing viscosity and increase with increasing viscosity.  ** Volume flow dependent on viscosity and primary pressure.  *** Maximum dispensing pressure and self-sealing decrease with decreasing viscosity and increase with increasing viscosity.  ‡ Higher viscosity may be possible based on nozzle size and flow rate.</p>			

Table 6: PCD4 Specifications

Specification	PCD4 22293081 22293098-0002	PCD4L 22293122	PCD4H 22293103	PCD4HB 22293240
Dimensions (height, SQ, dia.) Also see <a href="#">Additional Dimensions</a> (pg 29)	230.28, SQ 29, ø 35 mm (9.457", SQ 1.142", ø 1.378")	230.35, SQ 29, ø 35 mm (9.457", SQ 1.142", ø 1.378")	240.2, SQ 29, ø 35 mm (9.457", SQ 1.142", ø 1.378")	252.1, SQ 29, ø 35 mm (9.927", SQ 1.142", ø 1.378")
Weight	approx. 420 g (0.9 lb)	671 g (1.48 lb)	approx. 689 g (1.52 lb)	
Dispensing volume	≈0.05 ml/rotation			
Theoretical flow rate per minute ***	0.5-6.0 ml/min		0.2-6.0 ml/min	
Minimum dispensing amount ml *	0.004 ml		0.001 ml	
Priming volume	≈ 3 cc	≈ 1.5 cc		
Precision ml ±, absolute *	±1%			
Repeat accuracy	>99%			
Minimum operating pressure	0 bar (0 psi), with self-leveling liquid			
Maximum operating pressure	0-6 bar (0-87 psi)			
Maximum dispensing pressure	16-20 bar (232-290psi)			
Self-sealing **	approx. 2 bar (29 psi)			
Maximum viscosity ‡	60,000 cps			
Parts touched by medium	HD-POM, Stainless Steel, Anodized Aluminum			
Sealings	High-molecular PE, VisChem			
Sealings static	O-ring Viton			
Motor	18-24 VDC incremental encoder		Servo	
Motor rotating speed, per minute	0-120 rpm			
Operating ambient conditions ° C	+10 to +40 non-condensing, air pressure 1 bar (14.5 psi)			
Medium temperature ° C	+10 to +40			
Storage conditions/temp. ° C	dry and dust free, -10 to +40			
Cable dimensions	O.D.: 9.423 mm (0.371"). Length: 250 mm (10"), extension cable available			
Cable flexibility	High flex cable; flex cycles 5 million minimum. Bending radius -min: 5 x d, opt: 10 x d			
Cable features	Max voltage 600V. Copper 22AWG. 6 cores of TPE-E. Black jacket of FHF, PUR. Connector at each end.			
<p>* Reference medium approx. 1.000 mPas at 20 ° C.  ** Maximum dispensing pressure and self-sealing decrease with decreasing viscosity.  *** Depending on viscosity and primary pressure of medium. All pressure details are maximum values for low-to-medium viscosity media (20,000 mPas).  ‡ Higher viscosity may be possible based on nozzle size and flow rate.</p>				

Table 7: PCD6 Specifications

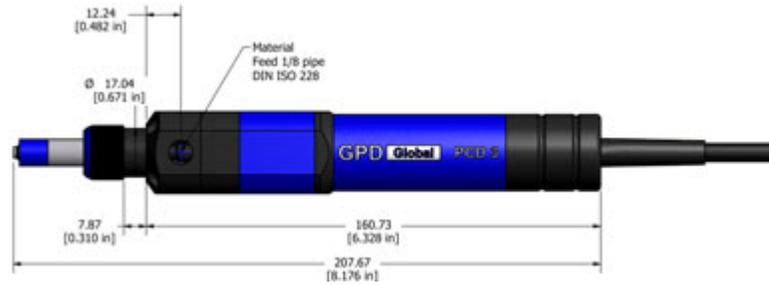
Specification	PCD6 22293161-001	PCD6HB 22293161-003
Dimensions (height, SQ, dia.) Also see <a href="#">Additional Dimensions</a> (pg 29)	274, SQ 34, ø 40 mm (10.78", SQ 1.338", ø 1.57")	255, SQ 34, ø 40 mm (10.04", SQ 1.338", ø 1.57")
Weight	753 g (1.66 lb)	approximately 753 g (1.66 lb)
Dispensing volume	≈ 0.14 ml/rotation	
Theoretical flow rate per minute ***	1.4-16.0*** ml/min	
Minimum dispensing amount ml *	0.015 ml	
Priming volume	≈ 4 cc	
Precision ml ±, absolute *	±1%	
Repeat accuracy	>99%	
Minimum operating pressure	0 bar (0 psi), with self-leveling liquid	
Maximum operating pressure	0-6 bar (0-87 psi)	
Maximum dispensing pressure	16-20 bar (232-290psi)	
Self-sealing **	approx. 2 bar (29 psi)	
Maximum viscosity ‡	60,000 cps	
Parts touched by medium	HD-POM, Stainless Steel, Anodized Aluminum	
Sealings	High-molecular PE, VisChem	
Sealings static	Viton O-ring (medium), NBR (dust)	
Motor	18-24 VDC incremental encoder	
Motor rotating speed, per minute	0-120 rpm	
Operating ambient conditions ° C	+10 to +40 non-condensing, air pressure 1 bar (14.5 psi)	
Medium temperature ° C	+10 to +40	
Storage conditions/temp. ° C	dry and dust free, -10 to +40	
Cable dimensions	O.D.: 9.423 mm (0.371"). Length: 250 mm (10"), extension cable available	
Cable flexibility	High flex cable; flex cycles 5 million minimum. Bending radius -min: 5 x d, opt: 10 x d	
Cable features	Max voltage 600V. Copper 22AWG. 6 cores of TPE-E. Black jacket of FHF, PUR. Connector at each end.	
<p>* Reference medium approx. 1.000 mPas at 20 ° C.  ** Maximum dispensing pressure and self-sealing decrease with decreasing viscosity.  *** Depending on viscosity and primary pressure of medium. All pressure details are maximum values for low-to-medium viscosity media (20,000 mPas).  ‡ Higher viscosity may be possible based on nozzle size and flow rate.</p>		

**Table 8: PCD7 Specifications**

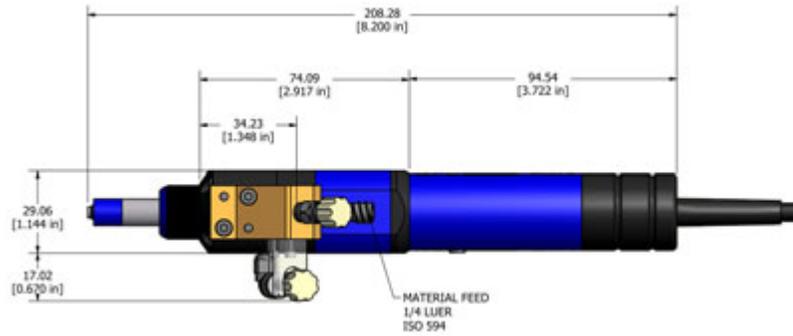
Specification	PCD7H 22293306-003
Dimensions (height, SQ, dia.) Also see <a href="#">Additional Dimensions</a> (pg 29)	274, SQ 34, ø 40 mm (10.78", SQ 1.338", ø 1.57")
Weight	753 g (1.66 lb)
Dispensing volume	≈ 0.53 ml/rotation
Theoretical flow rate per minute ***	5.3-60.0*** ml/min
Minimum dispensing amount ml *	0.06 ml
Priming volume	≈ 4 cc
Precision ml ±, absolute *	±1%
Repeat accuracy	>99%
Minimum operating pressure	0 bar (0 psi), with self-leveling liquid
Maximum operating pressure	0-6 bar (0-87 psi)
Maximum dispensing pressure	16-20 bar (232-290psi)
Self-sealing **	approx. 2 bar (29 psi)
Maximum viscosity ‡	60,000 cps
Parts touched by medium	HD-POM, Stainless Steel, Anodized Aluminum
Sealings	High-molecular PE, VisChem
Sealings static	Viton O-ring (medium), NBR (dust)
Motor	18-24 VDC incremental encoder
Motor rotating speed, per minute	0-120 rpm
Operating ambient conditions ° C	+10 to +40 non-condensing, air pressure 1 bar (14.5 psi)
Medium temperature ° C	+10 to +40
Storage conditions/temp. ° C	dry and dust free, -10 to +40
Cable dimensions	O.D.: 9.423 mm (0.371"). Length: 250 mm (10"), extension cable available
Cable flexibility	High flex cable; flex cycles 5 million minimum. Bending radius -min: 5 x d, opt: 10 x d
Cable features	Max voltage 600V. Copper 22AWG. 6 cores of TPE-E. Black jacket of FHF, PUR. Connector at each end.
<p>* Reference medium approx. 1.000 mPas at 20 ° C.  ** Maximum dispensing pressure and self-sealing decrease with decreasing viscosity.  *** Depending on viscosity and primary pressure of medium. All pressure details are maximum values for low-to-medium viscosity media (20,000 mPas).  ‡ Higher viscosity may be possible based on nozzle size and flow rate.</p>	

## Additional Dimensions

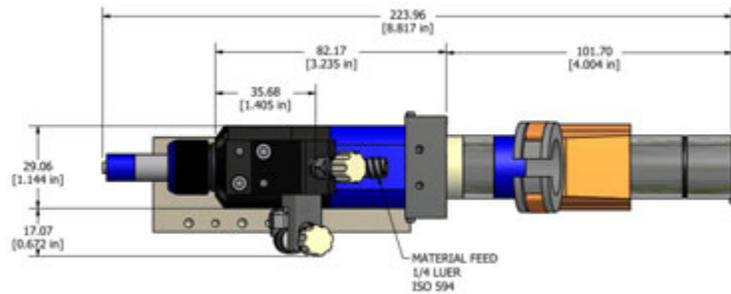
### PCD3 (PN 22293093-1004)



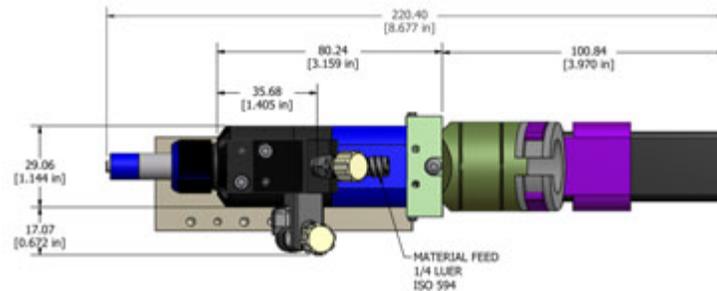
### PCD3L (PN 22293093-1002)



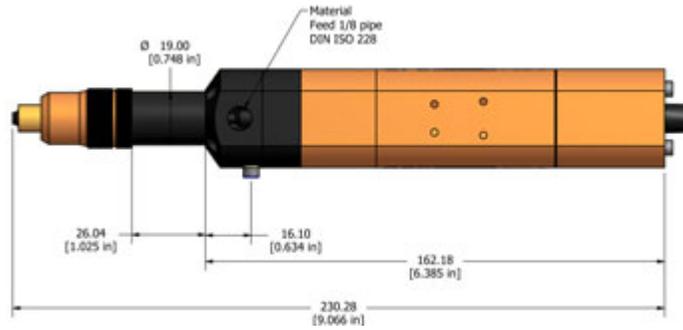
### PCD3H (PN 22293093-1003 & 22293093-1006)



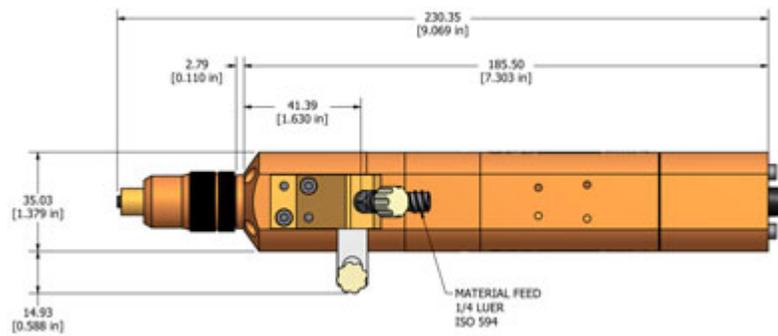
### PCD3H legacy (PN 22293121)



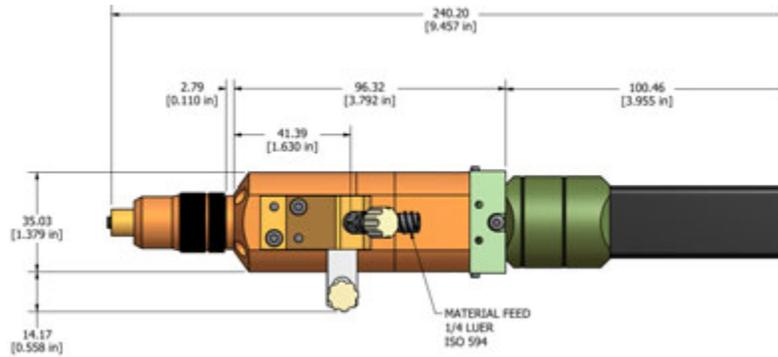
**PCD4 (PN 22293081)**



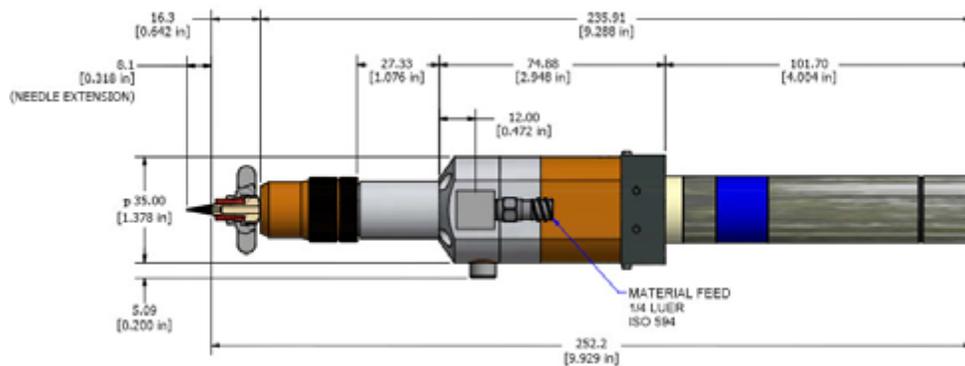
**PCD4L (PN 22293122)**



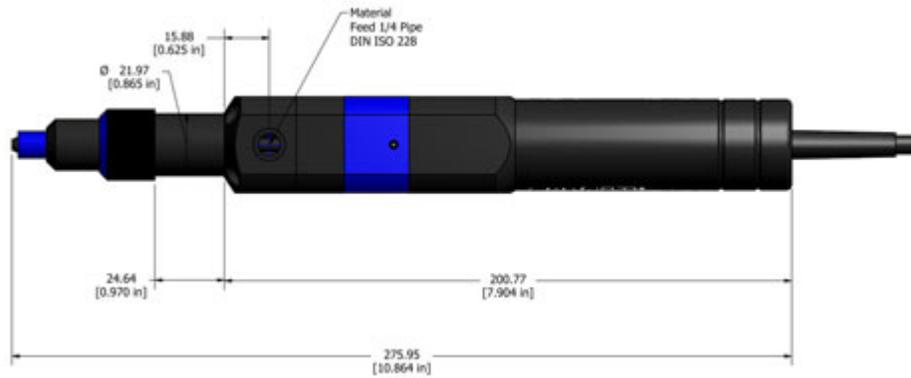
**PCD4H (PN 22293103)**



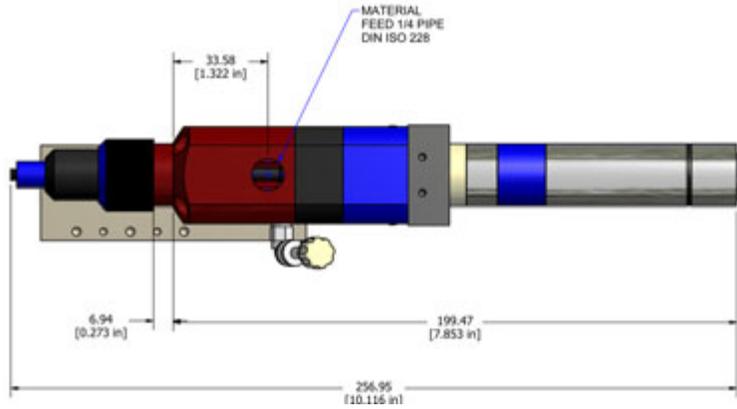
**PCD4HB (PN 22293240)**



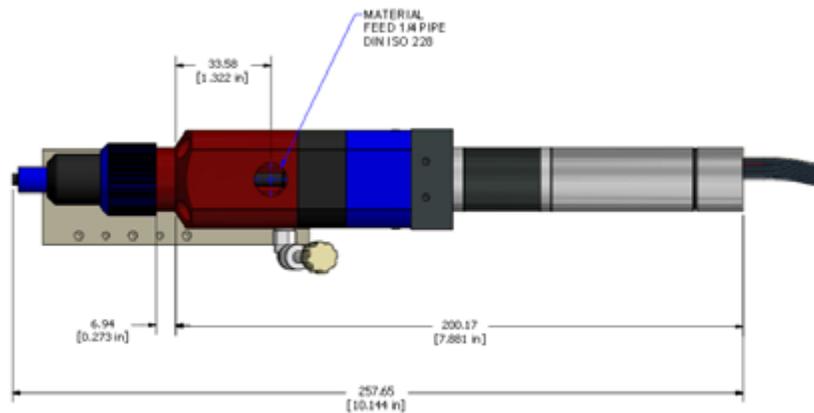
**PCD6 (PN 22293161-001)**



**PCD6HB (PN 22293161-003)**



**PCD7H (PN 22293306-003)**



## Threads & Materials

**Table 9: Threads & Materials Specifications**

Threads/Materials Used		PCD3 22293099 22293093-1004	PCD3H 22293093-1003 22293093-1006 22293121	PCD3L 22293093-1002	PCD4 22293081 22293098-0002	PCD4H 22293103	PCD4L 22293122	PCD6 22293161-001	PCD7H 22293306-003	
<b>Threads</b>	Medium input	1/8" cylindrical Whitworth pipe thread		Standard luer lock or 1/4-32		1/8" cylindrical Whitworth pipe thread		Standard luer lock or 1/4-32		1/4" cylindrical Whitworth pipe thread DIN/ISO 228
	Bleed hole	Luer DIN EN 20594-1		M5 x 0.8		M3 x 5.5 DIN 13		M5 x 0.8		M4 x 8 DIN 13
	Nozzle Connection	Luer Lock DIN EN 1707 with O-ring, patented		Standard conical (6% taper) luer lock		Luer Lock DIN EN 1707 with O-ring, patented		Standard conical (6% taper) luer lock		Luer Lock DIN EN 1707 with O-ring, patented
<b>Materials</b>	Dispenser housing, end nozzles	HD-POM		Anodized aluminum		PM black		Anodized aluminum		POM black
	Dispenser parts, motor housing	Anodized aluminum								
	Screws, washers, etc.	Stainless steel A2		Stainless steel		Stainless steel A2		Stainless steel		Stainless steel A2
	Stator elastomer, flexible shaft covering	VisChem, Chemrez		Kalrez, Chemrez		VisChem, Chemrez		Kalrez, Chemrez		VisChem, Chemrez
	Shaft sealing rings	Z80								
	O-rings	Viton								
	Drive shaft, rotor	A4		Stainless steel*		Stainless steel 1.4305		Stainless steel*		Stainless steel 1.4305

\* Plating options available.

## References

- [Disposal](#) (pg 33)
- [Connection Options](#) (pg 33)
- [Assembly Drawings](#) (pg 35)

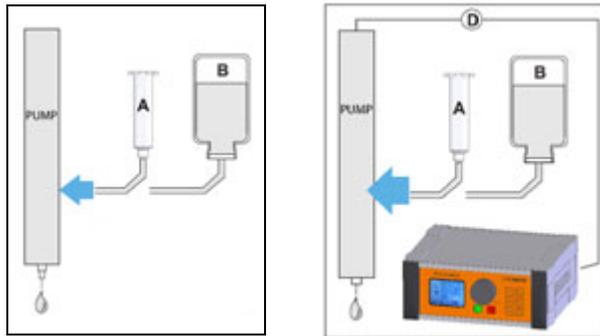
## Disposal

The final disposal of the dispense pump is to be done in an environmentally-appropriate manner. All the materials and packaging must be handled in accordance with the recycling stipulations.

Do not dispose of electrical parts in the household garbage. They are to be taken to the appropriate collecting points. 2002/96/EU (WEEE) EU DIRECTIVE concerning used electrical and electronic equipment.

## Connection Options

### Gravity Fed, Low Viscosity Medium



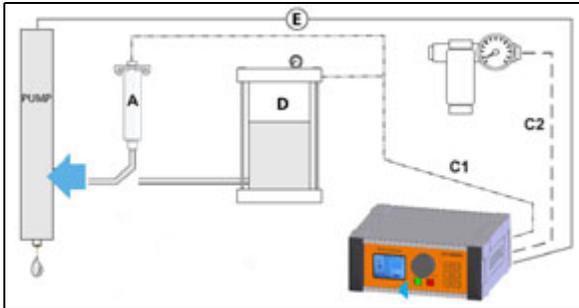
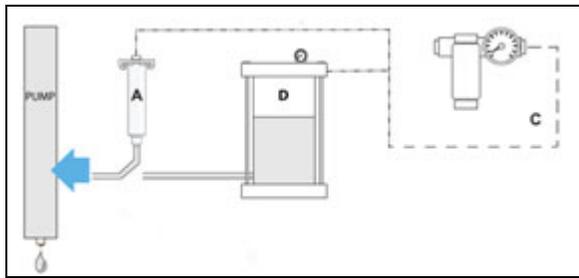
A = supply of medium from a cartridge (A).

B = supply of medium from a bottle (B).

D = Power supply drive unit

Select a size of hose such that the liquid flows out of the dispense pump by gravity without air bubbles. Self-suction is possible.

## Pressurized, Medium/High Viscosity Medium



- A - supply of medium from a cartridge
- C - compressed air, 0-7 bar regulated
- C1 - compressed air, 0-6 bar regulated.
- C2 - Compressed air, 7 bar, dry, clean, oil-free
- D - supply of medium from a pressure tank.
- E - Power supply drive unit

Compressed air supplies either the cartridge (A) or pressure tank (D).

- 1 - Cartridge (Item A) supplied with compressed air (C or C1), connected to the dispense pump.
- 2 - Medium supply from the pressure tank (Item D).

## Assembly Drawings

### PCD3 Models

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- [PCD3 - 10/4807](#) (pg 36)
- [PCD3 - 22293093](#) (pg 37)
- [PCD3 - 22293093-1004](#) (pg 38)
- [PCD3 - 22293099 - Tabletop/Standalone](#) (pg 42)
- [PCD3L - 22293093-1002](#) (pg 39)
- [PCD3H - 22293093-1003](#) (pg 40)
- [PCD3H - 22293093-1006 - Stainless Steel](#) (pg 41)
- [PCD3H - 22293121 - Legacy](#) (pg 43)
- [PCD3 Stator End Piece - 22293179](#) (pg 44)
- 22293091 *replaced by 22293093-1004*
- 22293120 *replaced by 22293093-1002*
- 22293228 *replaced by 22293093-1003*

### PCD4 Models

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- [PCD4 - 2650-0048](#) (pg 45)
- [PCD4 - 22293098](#) (pg 46)
- [PCD4 - 22293081](#) (pg 47)
- [PCD4 - 22293098-0002](#) (pg 48)
- [PCD4L - 22293122](#) (pg 49)
- [PCD4H - 22293103](#) (pg 50)
- [PCD4H - 22293227-0002](#) (pg 51)
- [PCD4H - 22293227-0003](#) (pg 52)
- [PCD4HB - 22293240](#) (pg 53)
- [PCD4HB legacy - 22293205](#) (pg 54)

### PCD6 Models

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- [PCD6 - 22293160](#) (pg 55)
- [PCD6 - 22293161-001](#) (pg 56)
- [PCD6HB - 22293161-003](#) (pg 57)

### PCD7 Models

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- [PCD7H - 22293306-003](#) (pg 58)

### Related Items

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#### Level Detect

- [Level Detect, DS Series - 22110521](#) (pg 59)
- [Level Detect, MAX Series - 22293101](#) (pg 60)

#### Mounting Detail

- [Clamp Mount Hole Patterns & Groove - 22212002](#) (pg 61)
- [Clamp Mount Dimensions - 22212002](#) (pg 62)
- [Taper-Lock Mounting Detail - 22110291](#) (pg 63)

# PCD3 - 10/4807

Parts List				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	10/0427	ORING,VITON,SPECIAL_.25 X .18 X .035	A	6/24/16	IHD	REPLACED PART 27, 22293179 WITH CORECTED 22293179 ASSEMBLY, PART 33
2	1	10/1804	ELBOW,5/32 HOSE				
3	1	10/3171	ADAPTER, THD, LUER, FEMALE, SST,1/4-32				
4	1	10/4673	COUPLING STAR SHAPED				
5	1	10/4674	ASSEMBLY AID HAND DRIVER				
6	2	10/4678	SET SCREW M3 X 5				
7	1	10/4679	O-RING FKM 16MM DIA X 1.25				
8	1	10/4683	O-RING FKM 13MM DIA X 1.25				
9	1	10/4686	SEAL SET W/HOUSING				
10	4	10/4687	ALLEN SCREW M3 X 25				
13	1	10/4691	O-RING NBR 17MM DIA X 1.25				
14	1	10/4822	DISPENSING UNIT PCD3 CPL				
15	1	10/4823	UNION RING PCD3				
16	1	10/4826	DRIVE UNIT CPL_PCD 3				
17	1	10/4829	O-RING FKM 14MM DIA X 1.5				
18	1	10/4830	BLEED SCREW PCD3				
19	1	10/4831	O-RING FKM 8MM DIA X 1.25				
20	4	10/4834	ALLEN SCREW M3 X 16				
22	1	22110495	PURGE TUBE ASSY PCD VALVES				
23	1	22203375	FEED RESERVOIR_PCD				
24	1	22203403	DISPENSER HOUSING PCD3_MODIFIED				
25	1	22203411	TUBE SUPPORT_PCD3 PURGE				
26	1	22203466	BEARING HOUSING W/ROTOR SET CPL				
28	1	SACSM030050020	CAP SCREW, SST, 3MM X 0.5 20MM LG				
29	1	22203583	STATOR END PIECE_PCD3_MOD_FEMALE				
30	1	22203584	STATOR END PIECE_PCD3_MOD_MALE				
31	1	10/4690	THREADED SLEEVE_LUER-LOCK				
32	1	2825-0035	WASHER_TEFLO_N_1971D X .280OD X .015 THICK				
33	1	22293179	END PIECE_PCD3_STATOR MOD_ASSY				

TOLERANCES UNLESS OTHERWISE SPECIFIED		DESCRIPTION	
FRACTIONS	± 1/32	VALVE PCD3 W 1 METER CABLE ASSEMBLY	
X.XXX	± 0.015		
X.XXX	± 0.005		
ANGULAR	± 0.5°		
RUNOUT	± 0.003 T.I.R.		
FINISH		MATERIAL	
HEAT TREATMENT		DWG NO	
		<b>10_4807</b>	
DWG SIZE		DRAWN BY	
<b>B</b>		ARM	
		DATE	
		11/2/2010	
		SHEET 1 OF 1	

LAST REVISED 11/10/17

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# PCD3 - 22293093

Parts List				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	10/4673	COUPLING STAR SHAPED	A	8/19/13	BLH	22293179 REPLACED 10/4824 STATOR ASSY
2	1	10/4674	ASSEMBLY AID HAND DRIVER	B	2/7/14	IAH	REMOVED 22203403, ADDED BALLOON FOR 22203401, ADDED PART 22203466
3	2	10/4678	SET SCREW M3 X 5	C	7/25/2017	MW	ADD STOCK PARTS AND TOOLS TO BOM
4	1	10/4686	SEAL SET W/HOUSING				
5	4	10/4687	ALLEN SCREW M3 X 25				
6	1	10/4691	O-RING NBR 17MM DIA X 1.25				
7	1	10/4772	WRENCH_HEX-KEY_2.5MM W/HANDLE				
8	1	10/4823	UNION RING PCD3				
9	1	10/4826	DRIVE UNIT CPL PCD3				
10	1	10/4828	DISPENSER HOUSING PCD3				
11	4	10/4834	ALLEN SCREW M3 X 16				
12	1	22203466	BEARING HOUSING W/ROTOR SET CPL				
13	1	22293179	END PIECE_PCD3_STATOR MOD_ASSY				
14	1	22293221	ASSY_DRIVE UNIT_PCD3_HOUSING				
15	1	2575-0004	O-RING_FKM_547ID X .051W				
16	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION				
17	1	2575-0007	O-RING FKM 14MM DIA X 1.5				
18	1	M2003	WRENCH_HEX-KEY_1.5MM_L SHAPE				

TOLERANCES UNLESS OTHERWISE SPECIFIED				DESCRIPTION	
FRACTIONS	b 1/32	METRIC		VALVE_PCD3_10" WIRE LENGTH_VER1	
X.XX	b 0.015	0 MM	b 1.0 MM	ASSEMBLY	
X.XXX	b 0.005	0.0 MM	b 0.4 MM	PUMP_PCD3	
ANGULAR	b 0.5°	0.00 MM	b 0.1 MM	MATERIAL	
RUNOUT	b 0.003 T.I.R.			10/4807	
FINISH					DWG NO
				22293093	
HEAT TREATMENT		DWG SIZE		DRAWN BY MW 4/13/2011 SHEET 1 OF 1	
NA		B			

**NOTES:**

- DISASSEMBLE PUMP 10/4807 RETAINING BOX AND TOOLS.
- DISCARD O-RINGS INCLUDED WITH PUMP AND USE SPECIFIED O-RINGS ON REASSEMBLY.
- REPLACE MOTOR HOUSING WITH PN 22203401.
- MODIFY BEARING HOUSING W/ROTOR SET CPL AS PER DRAWING 22203466.
- MODIFY AND REPLACE STATOR END PIECE AS PER DRAWING 22293179.
- REASSEMBLE PUMP AND RETURN TO BOX WITH TOOLS.



# PCD3 - 22293093-1004

PARTS LIST				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	10/2017	ELBOW_MALE_MSX4MM TUBE	-	-	-	ORIGINAL ISSUE
2	1	10/3171	ADAPTER_THD_LUER_FEMALE_SST_1/4-32	A	6/1/2018	HTB	ROTATED THE PUMP VIEW NOZZLE DOWN
3	1	10/4912	ORING_VITON_5mmID X 1mmW				
4	1	22110495	PURGE TUBE ASSY_PCD VALVES				
5	1	22203375	FEED RESERVOIR_PCD				
6	1	22203379	SYRINGE SUPPORT_PCD 450_SNAP STYLE				
7	1	22203380	MOTOR CLAMP_SYRINGE SUPPORT_PCD 450				
8	1	22203402	MALE ADAPTER_PCD3				
9	1	22203404	MOTOR CLAMP_PCD3				
10	1	22203411	TUBE SUPPORT_PCD3 PURGE				
11	1	22293093-0004	PUMP_PCD3_BASE				
11.1	1	22203403	DISPENSER HOUSING_PCD3_MODIFIED				
11.2	1	22293093	PUMP_PCD3				
11.2.1	1	10/4673	COUPLING STAR SHAPED				
11.2.2	1	10/4674	ASSEMBLY AID HAND DRIVER				
11.2.3	2	10/4678	SET SCREW M3 X 5				
11.2.4	1	10/4686	SEAL SET W/HOUSING				
11.2.5	4	10/4687	ALLEN SCREW M3 X 25				
11.2.6	1	10/4691	O-RING NBR 17MM DIA X 1.25				
11.2.7	1	10/4772	WRENCH_HEX-KEY_2.5MM W/HANDLE				
11.2.8	1	10/4823	UNION RING_PCD3				
11.2.9	4	10/4834	ALLEN SCREW M3 X 16				
11.2.10	1	2575-0004	O-RING_FKM_547ID X .051W				
11.2.11	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION				
11.2.12	1	2575-0007	O-RING_FKM 14MM DIA X 1.5				
11.2.13	1	22203466	BEARING HOUSING W/ROTOR SET CPL				
11.2.14	1	22293179	END PIECE_PCD3_STATOR MOD_ASSY				
11.2.14.1	1	10/4690	THREADED SLEEVE LUER-LOCK				
11.2.14.2	1	2825-0035	WASHER_TEFLON_197ID X .280OD X .015 TH				
11.2.14.3	1	22203583	STATOR END PIECE_PCD3_MOD_FEMALE				
11.2.14.4	1	22203584	STATOR END PIECE_PCD3_MOD_MALE				
11.2.15	1	22293221	ASSY_DRIVE_UNIT_PCD3 HOUSING				
11.2.16	1	M2003	WRENCH_HEX-KEY_1.5MM_L SHAPE				
12	1	DA12100	DOWEL PIN 1/8 X 1.0 LONG				
13	2	SACSM030050012	SCR.A.CP.SST.MET.M3X.5_12MM LG				
14	2	SACSM030050020	SCR.A.CP.SST.MET.M3X.5_20MM LG				
15	2	SACSM030050030	SCR.A.CP.SST.MET.M3X.5_30MM LG				

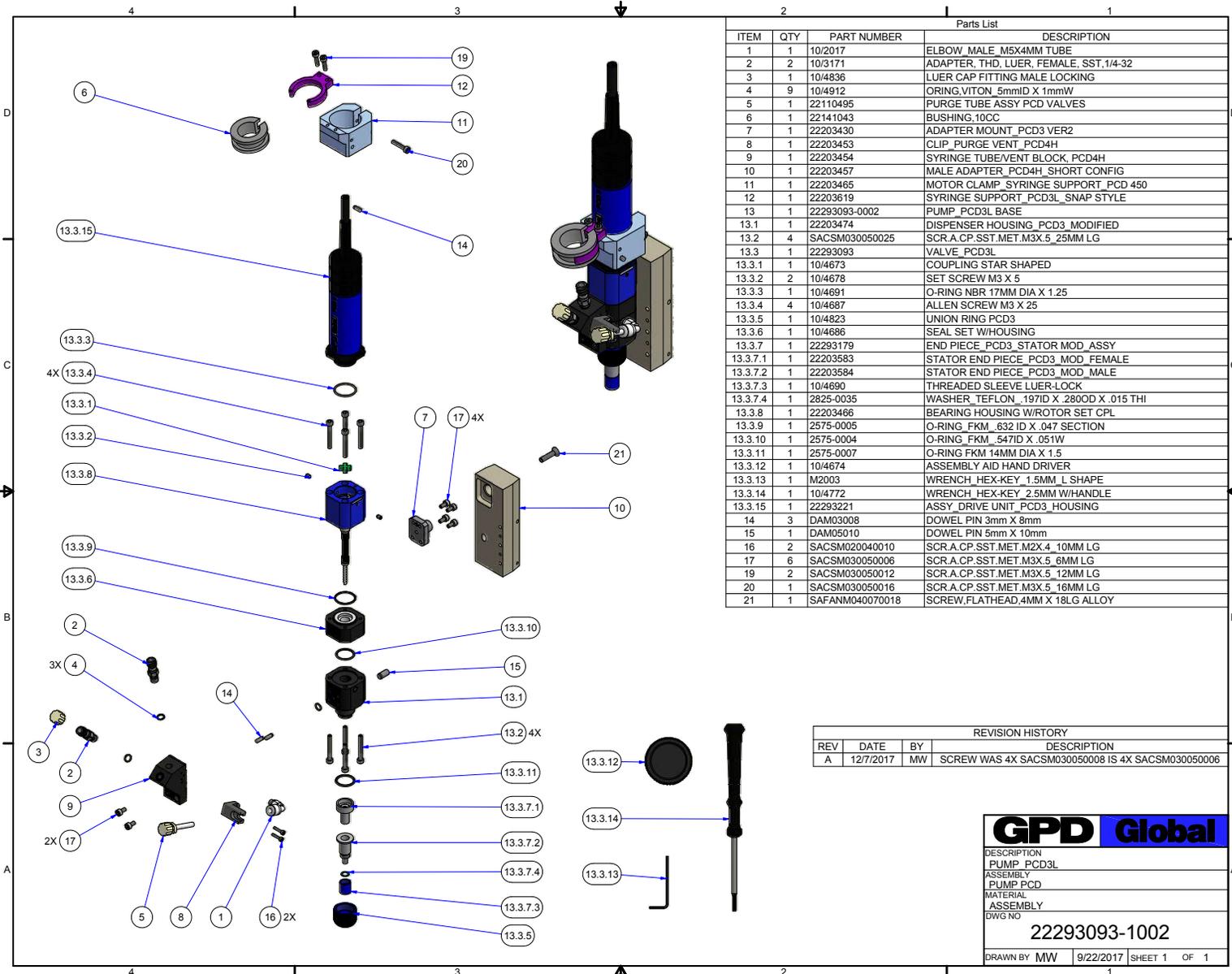
TOLERANCES UNLESS OTHERWISE SPECIFIED		DESCRIPTION	
FRACTIONS	± .02	METRIC	PUMP_PCD
XXX	± 0.05	0.0MM	ASSEMBLY
X .XX	± 0.05	± 0.1MM	PCD3
ANGULAR	± 0.5°	± 0.4MM	
FINISH	± 0.003 T.I.R.	± 0.1MM	
HEAT TREATMENT		MATERIAL	
DWG SIZE		ASSEMBLY	
C		22293093-1004	
DRAWN BY MW		DWG NO	
9/27/2017		22293093-1004	
SHEET 1 OF 1		DWG NO	

# PCD3L - 22293093-1002

2/26/20

PCD Pump User Guide

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ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW MALE_M5X4MM TUBE
2	2	10/3171	ADAPTER_THD_LUER_FEMALE_SST.1/4-32
3	1	10/4836	LUER CAP FITTING MALE LOCKING
4	9	10/4912	ORING,VITON_5mmID X 1mmW
5	1	22110495	PURGE TUBE ASSY_PCD VALVES
6	1	22141043	BUSHING,10CC
7	1	22203430	ADAPTER MOUNT_PCD3 VER2
8	1	22203453	CLIP_PURGE VENT_PCD4H
9	1	22203454	SYRINGE TUBE/VENT BLOCK_PCD4H
10	1	22203457	MALE ADAPTER_PCD4H_SHORT CONFIG
11	1	22203465	MOTOR CLAMP_SYRINGE SUPPORT_PCD 450
12	1	22203619	SYRINGE SUPPORT_PCD3L_SNAP STYLE
13	1	22293093-0002	PUMP_PCD3L BASE
13.1	1	22203474	DISPENSER HOUSING_PCD3_MODIFIED
13.2	4	SACSM030050025	SCR A.CP.SST.MET.M3X.5_25MM LG
13.3	1	22293093	VALVE_PCD3L
13.3.1	1	10/4673	COUPLING STAR SHAPED
13.3.2	2	10/4678	SET SCREW M3 X 5
13.3.3	1	10/4691	O-RING NBR 17MM DIA X 1.25
13.3.4	4	10/4687	ALLEN SCREW M3 X 25
13.3.5	1	10/4823	UNION RING_PCD3
13.3.6	1	10/4686	SEAL SET_WHOUSING
13.3.7	1	22293179	END PIECE_PCD3_STATOR MOD_ASSY
13.3.7.1	1	22203583	STATOR END PIECE_PCD3_MOD_FEMALE
13.3.7.2	1	22203584	STATOR END PIECE_PCD3_MOD_MALE
13.3.7.3	1	10/4690	THREADED SLEEVE LUER-LOCK
13.3.7.4	1	2825-0035	WASHER_TEFLON_197ID X 280OD X .015 THI
13.3.8	1	22203466	BEARING HOUSING_W/ROTOR SET CPL
13.3.9	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
13.3.10	1	2575-0004	O-RING_FKM_547ID X .051W
13.3.11	1	2575-0007	O-RING_FKM 14MM DIA X 1.5
13.3.12	1	10/4674	ASSEMBLY AID HAND DRIVER
13.3.13	1	M2003	WRENCH_HEX-KEY_1.5MM_L SHAPE
13.3.14	1	10/4772	WRENCH_HEX-KEY_2.5MM_W/HANDLE
13.3.15	1	22293221	ASSY_DRIVE UNIT_PCD3_HOUSING
14	3	DAM03008	DOWEL PIN 3mm X 8mm
15	1	DAM05010	DOWEL PIN 5mm X 10mm
16	2	SACSM020040010	SCR A.CP.SST.MET.M2X.4_10MM LG
17	6	SACSM030050006	SCR A.CP.SST.MET.M3X.5_6MM LG
19	2	SACSM030050012	SCR A.CP.SST.MET.M3X.5_12MM LG
20	1	SACSM030050016	SCR A.CP.SST.MET.M3X.5_16MM LG
21	1	SAFANM040070018	SCREW_FLATHEAD,4MM X 18LG ALLOY

REV	DATE	BY	DESCRIPTION
A	12/7/2017	MW	SCREW WAS 4X SACSM030050008 IS 4X SACSM030050006

**GPD Global**

DESCRIPTION  
PUMP\_PCD3L

ASSEMBLY  
PUMP\_PCD

MATERIAL  
ASSEMBLY

DWG NO  
22293093-1002

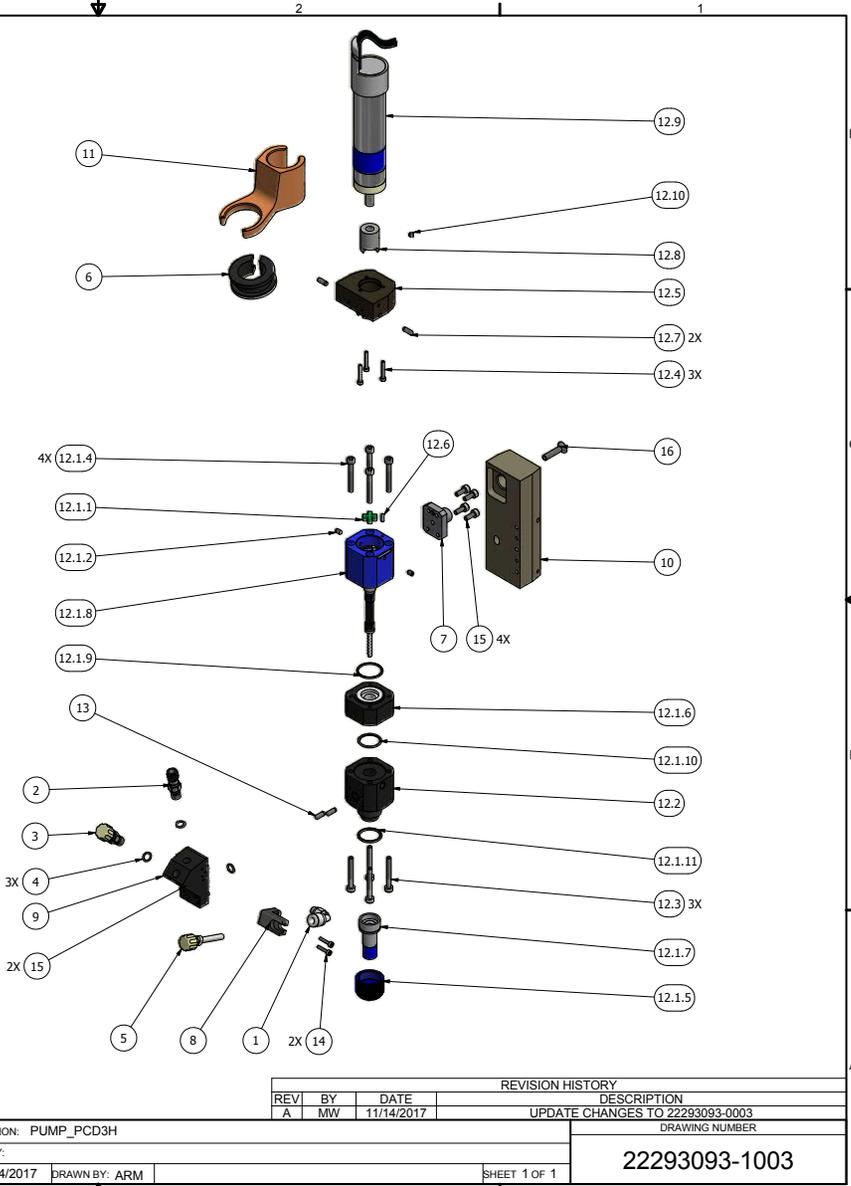
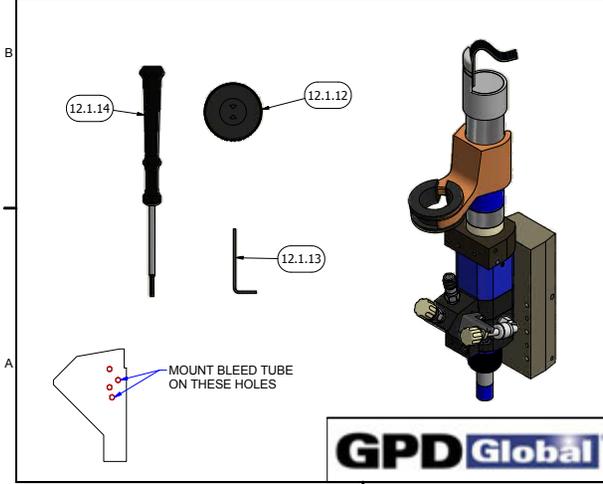
DRAWN BY MW 9/22/2017 SHEET 1 OF 1

GPD Global®

PCD3L - 22293093-1002

# PCD3H - 22293093-1003

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW_MALE_M5X4MM TUBE
2	2	10/3171	ADAPTER_THD_LUER_FEMALE_SST,1/4-32
3	1	10/4836	LUER CAP FITTING MALE LOCKING
4	3	10/4912	ORING,VITON_5mmID X 1mmW
5	1	22110495	PURGE TUBE ASSY_PCD VALVES
6	1	22141043	BUSHING,10CC
7	1	22203430	ADAPTER_MOUNT_PCD3 VER2
8	1	22203453	SUPPORT_TAB_LUER FITTING_PCD4H
9	1	22203454	SYRINGE TUBE/VENT BLOCK_PCD4H
10	1	22203457	MALE ADAPTER_PCD4H_SHORT CONFIG
11	1	22203606	SYRINGE SUPPORT_PCD_SNAPSTYLE_RND
12	1	22293093-0003	PUMP_PCD3H BASE
12.1	1	22293093	PUMP_PCD3H
12.1.1	1	10/4673	COUPLING STAR SHAPED
12.1.12	1	10/4674	ASSEMBLY AID HAND DRIVER
12.1.2	2	10/4678	SET SCREW M3 X 5
12.1.6	1	10/4686	SEAL SET W/HOUSING
12.1.4	4	10/4687	ALLEN SCREW M3 X 25
12.1.14	1	10/4772	WRENCH_HEX-KEY_2.5MM W/HANDLE
12.1.5	1	10/4823	UNION RING_PCD3
12.1.8	1	22203466	BEARING HOUSING W/ROTOR SET CPL
12.1.7	1	22293179	END PIECE_PCD3_STATOR MOD_ASSY
12.1.10	1	2575-0004	O-RING_FKM_547ID X .051W
12.1.9	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
12.1.11	1	2575-0007	O-RING_FKM 14MM DIA X 1.5
12.1.13	1	M2003	WRENCH_HEX-KEY_1.5MM_L SHAPE
12.2	1	22203474	DISPENSER HOUSING_PCD3_MODIFIED
12.3	4	SACSM030050025	SCR.A.CP.SST.MET.M3X.5_25MM LG
12.4	3	SACSM020040014	SCR.A.CP.SST.MET.M2X.4_14MM LG
12.5	1	22203605	BODY ADAPTER_MICRO MOTOR ADAPTER
12.6	1	DAM02006	DOWEL PIN 2mm X 6mm
12.7	2	DAM03008	DOWEL PIN 3mm X 8mm
12.8	1	22203421	COUPLER,6MM
12.9	1	22293288	DEVICE MOTOR_SERVO_20 PIN CONNECTOR
12.10	1	TACSM030050003	SET.A.CU.SST.MET_3MMX0.5 X 3MM LG SST
13	2	DAM03008	DOWEL PIN 3mm X 8mm
14	2	SACSM020040010	SCR.A.CP.SST.MET.M2X.4_10MM LG
15	6	SACSM030050008	SCR.A.CP.SST.MET.M3X.5_8MM LG
16	1	SAFANM040070018	SCREW,FLATHEAD,4MM X 18LG ALLOY



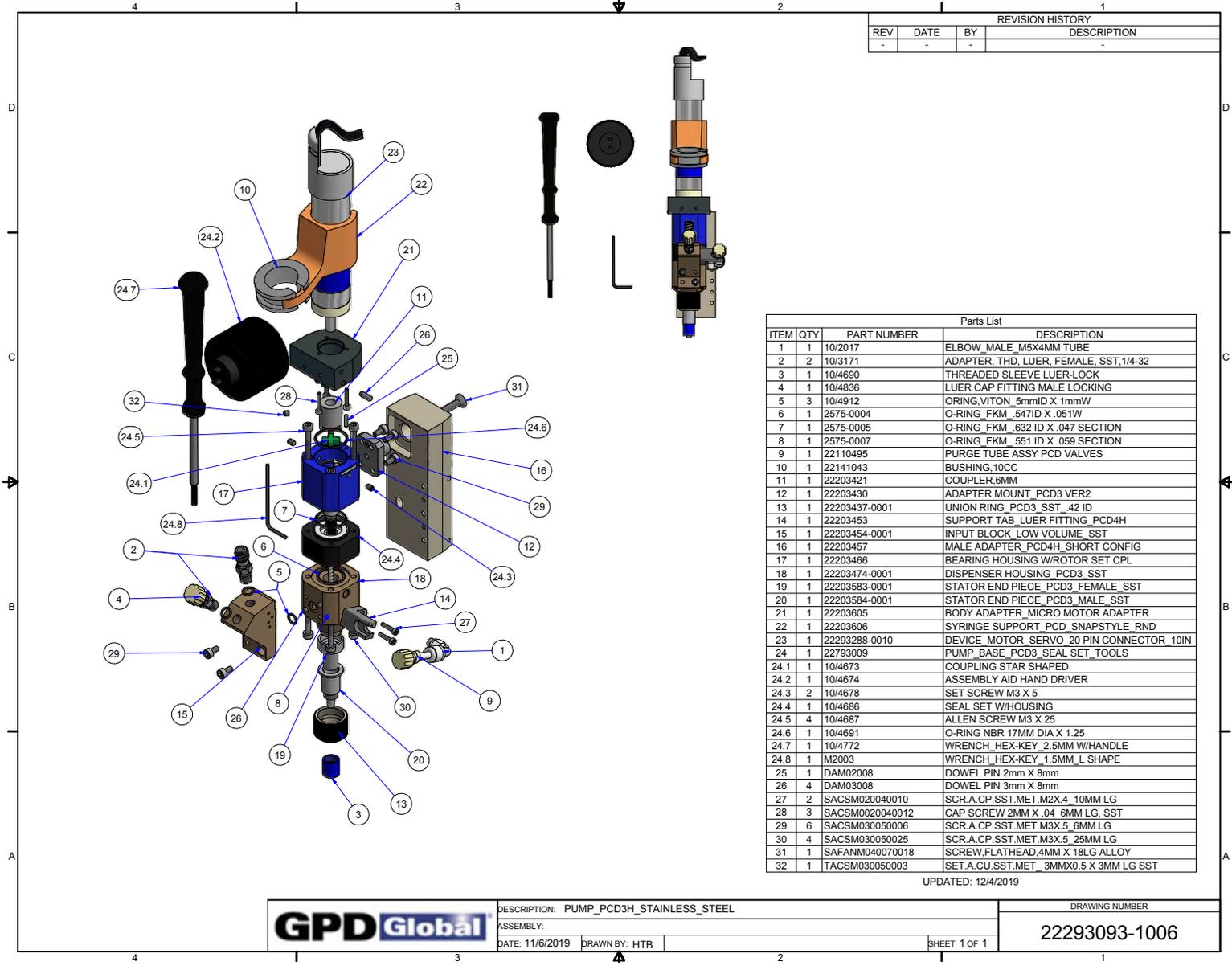
REVISION HISTORY			
REV	BY	DATE	DESCRIPTION
A	MW	11/14/2017	UPDATE CHANGES TO 22293093-0003

**GPD Global**

DESCRIPTION: PUMP\_PCD3H  
 ASSEMBLY:  
 DATE: 8/14/2017 DRAWN BY: ARM SHEET 1 OF 1

22293093-1003  
 DRAWING NUMBER

# PCD3H - 22293093-1006 - Stainless Steel



REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	-

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW MALE_M5X4MM TUBE
2	2	10/3171	ADAPTER_THD_LUER_FEMALE_SST,1/4-32
3	1	10/4690	THREADED SLEEVE LUER-LOCK
4	1	10/4836	LUER CAP FITTING MALE LOCKING
5	3	10/4912	ORING,VITON_5mmID X 1mmW
6	1	2575-0004	O-RING_FKM_.547ID X .051W
7	1	2575-0005	O-RING_FKM_.632 ID X .047 SECTION
8	1	2575-0007	O-RING_FKM_.551 ID X .059 SECTION
9	1	22110495	PURGE TUBE ASSY_PCD VALVES
10	1	22141043	BUSHING,10CC
11	1	22203421	COUPLER,6MM
12	1	22203430	ADAPTER MOUNT_PCD3 VER2
13	1	22203437-0001	UNION RING_PCD3_SST_.42 ID
14	1	22203453	SUPPORT TAB_LUER FITTING_PCD4H
15	1	22203454-0001	INPUT BLOCK_LOW VOLUME_SST
16	1	22203457	MALE ADAPTER_PCD4H_SHORT CONFIG
17	1	22203466	BEARING HOUSING_W/ROTOR SET CPL
18	1	22203474-0001	DISPENSER HOUSING_PCD3_SST
19	1	22203583-0001	STATOR END PIECE_PCD3_FEMALE_SST
20	1	22203584-0001	STATOR END PIECE_PCD3_MALE_SST
21	1	22203605	BODY ADAPTER_MICRO MOTOR ADAPTER
22	1	22203606	SYRINGE SUPPORT_PCD_SNAPSTYLE_RND
23	1	22293288-0010	DEVICE MOTOR_SERVO_20 PIN CONNECTOR_10IN
24	1	22793009	PUMP_BASE_PCD3_SEAL SET_TOOLS
24.1	1	10/4673	COUPLING STAR SHAPED
24.2	1	10/4674	ASSEMBLY AID HAND DRIVER
24.3	2	10/4678	SET SCREW M3 X 5
24.4	1	10/4686	SEAL SET W/HOUSING
24.5	4	10/4687	ALLEN SCREW M3 X 25
24.6	1	10/4691	O-RING NBR 17MM DIA X 1.25
24.7	1	10/4772	WRENCH_HEX-KEY_2.5MM W/HANDLE
24.8	1	M2003	WRENCH_HEX-KEY_1.5MM L SHAPE
25	1	DAM02008	DOWEL PIN 2mm X 8mm
26	4	DAM03008	DOWEL PIN 3mm X 8mm
27	2	SACSM020040010	SCR.A.CP.SST.MET.M2X.4_10MM LG
28	3	SACSM0020040012	CAP SCREW 2MM X .04_6MM LG, SST
29	6	SACSM030050006	SCR.A.CP.SST.MET.M3X.5_6MM LG
30	4	SACSM030050025	SCR.A.CP.SST.MET.M3X.5_25MM LG
31	1	SAFANM040070018	SCREW.FLATHEAD.4MM X 18LG ALLOY
32	1	TACSM030050003	SET A.CU.SST.MET_3MMX0.5 X 3MM LG SST

UPDATED: 12/4/2019

<b>GPD Global</b>	DESCRIPTION: PUMP_PCD3H_STAINLESS_STEEL		DRAWING NUMBER	
	ASSEMBLY:		22293093-1006	
DATE: 11/6/2019	DRAWN BY: HTB	SHEET 1 OF 1		

### PCD3 - 22293099 - Tabletop/Standalone

				REVISION HISTORY					
REV	DATE	BY	DESCRIPTION						
-	-	-							

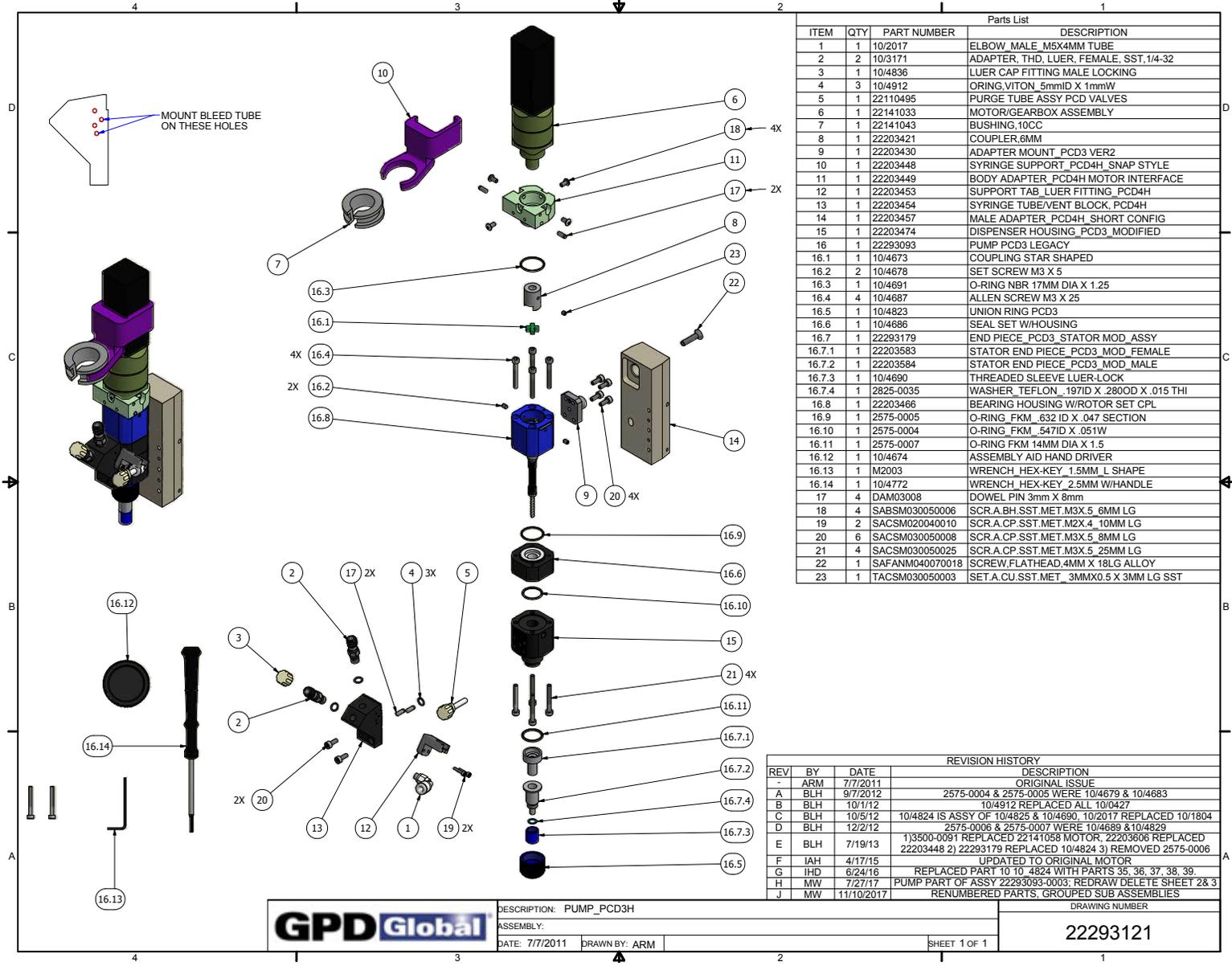
  
  

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	22293211	VALVE_PCD3_10" WIRE LENGTH_VER1
2	1	10/1804	ELBOW,5/32 HOSE
3	1	10/3171	ADAPTER, THD, LUER, FEMALE, SST,1/4-32
4	1	22110485	PURGE TUBE ASSY PCD VALVES
5	1	22203375	FEED RESERVOIR_PCD
6	1	22203379	SYRINGE SUPPORT_PCD 450_SNAP STYLE
7	1	22203380	MOTOR CLAMP_SYRINGE SUPPORT_PCD 450
8	1	22203411	TUBE SUPPORT_PCD3 PURGE
9	1	22303041	MOUNTING DISPENSE_TABBED_PCD 3
10	1	22303034	MOUNT BLOCK_PCD4 VALVE_Z-STOP
11	2	SACSM030050016	CAP SCREW 3MM X .05 16MM LG
12	1	SACSM030050020	CAP SCREW, SST, 3MM X 0.5 20MM LG
13	1	SACSM040070012	CAP SCREW 4MM X 0.7 - 12MM LG SS
14	1	SACSM030050018	CAP SCREW 3MM X .05 18MM LG

<b>GPD Global</b>	DESCRIPTION: PUMP_PCD3_TABLETOP/STANDALONE				DRAWING NUMBER	
	ASSEMBLY:				<b>22293099</b>	
DATE: 7/11/2014	DRAWN BY: IAH			SHEET 1 OF 1		

# PCD3H - 22293121 - Legacy



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW_MALE_M5X4MM TUBE
2	2	10/3171	ADAPTER_THD_LUER_FEMALE_SST_1/4-32
3	1	10/4836	LUER_CAP_FITTING_MALE_LOCKING
4	3	10/4912	ORING_VITON_5mmID X 1mmW
5	1	22110495	PURGE_TUBE_ASSY_PCD_VALVES
6	1	22141033	MOTOR/GEARBOX ASSEMBLY
7	1	22141043	BUSHING_10CC
8	1	22203421	COUPLER_6MM
9	1	22203430	ADAPTER_MOUNT_PCD3_VER2
10	1	22203448	SYRINGE_SUPPORT_PCD4H_SNAP_STYLE
11	1	22203449	BODY_ADAPTER_PCD4H_MOTOR_INTERFACE
12	1	22203453	SUPPORT_TAB_LUER_FITTING_PCD4H
13	1	22203454	SYRINGE_TUBE/VENT_BLOCK_PCD4H
14	1	22203457	MALE_ADAPTER_PCD4H_SHORT_CONFIG
15	1	22203474	DISPENSER_HOUSING_PCD3_MODIFIED
16	1	22293093	PUMP_PCD3_LEGACY
16.1	1	10/4673	COUPLING_STAR_SHAPED
16.2	2	10/4678	SET SCREW M3 X 5
16.3	1	10/4691	O-RING_NBR_17MM DIA X 1.25
16.4	4	10/4687	ALLEN SCREW M3 X 25
16.5	1	10/4823	UNION_RING_PCD3
16.6	1	10/4686	SEAL_SET_W/HOUSING
16.7	1	22293179	END_PIECE_PCD3_STATOR_MOD_ASSY
16.7.1	1	22203583	STATOR_END_PIECE_PCD3_MOD_FEMALE
16.7.2	1	22203584	STATOR_END_PIECE_PCD3_MOD_MALE
16.7.3	1	10/4690	THREADED_SLEEVE_LUER-LOCK
16.7.4	1	2825-0035	WASHER_TEFLON_197ID X .280OD X .015 THI
16.8	1	22203466	BEARING_HOUSING_W/ROTOR_SET_CPL
16.9	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
16.10	1	2575-0004	O-RING_FKM_547ID X .051W
16.11	1	2575-0007	O-RING_FKM_14MM DIA X 1.5
16.12	1	10/4674	ASSEMBLY_AID_HAND_DRIVER
16.13	1	M2003	WRENCH_HEX-KEY_1.5MM L SHAPE
16.14	1	10/4772	WRENCH_HEX-KEY_2.5MM W/HANDLE
17	4	DAM03008	DOWEL_PIN_3mm X 8mm
18	4	SABSM030050006	SCR.A.BH.SST.MET.M3X.5_6MM LG
19	2	SACSM020040010	SCR.A.CP.SST.MET.M2X.4_10MM LG
20	6	SACSM030050008	SCR.A.CP.SST.MET.M3X.5_8MM LG
21	4	SACSM030050025	SCR.A.CP.SST.MET.M3X.5_25MM LG
22	1	SAFANM040070018	SCREW_FLATHEAD_4MM X 18LG ALLOY
23	1	TACSM030050003	SET.A.CU.SST.MET_3MMX0.5 X 3MM LG SST

REVISION HISTORY			
REV	BY	DATE	DESCRIPTION
-	ARM	7/7/2011	ORIGINAL ISSUE
A	BLH	9/7/2012	2575-0004 & 2575-0005 WERE 10/4679 & 10/4683
B	BLH	10/1/12	10/4912 REPLACED ALL 10/0427
C	BLH	10/5/12	10/4824 IS ASSY OF 10/4825 & 10/4690, 10/2017 REPLACED 10/1804
D	BLH	12/2/12	2575-0006 & 2575-0007 WERE 10/4689 & 10/4829
E	BLH	7/19/13	1)3500-0091 REPLACED 22141058 MOTOR; 22203606 REPLACED 22203448 2) 22293179 REPLACED 10/4824 3) REMOVED 2575-0006
F	IAH	4/17/15	UPDATED TO ORIGINAL MOTOR
G	IHD	6/24/16	REPLACED PART 10 4824 WITH PARTS 35, 36, 37, 38, 39
H	MW	7/27/17	PUMP PART OF ASSY 22293093-0003; REDRAW DELETE SHEET 28 & 3
J	MW	11/10/2017	RENUMBERED PARTS, GROUPED SUB ASSEMBLIES

**GPD Global**

DESCRIPTION: PUMP\_PCD3H  
 ASSEMBLY:  
 DATE: 7/7/2011 DRAWN BY: ARM

DRAWING NUMBER: **22293121**

SHEET 1 OF 1

### PCD3 Stator End Piece - 22293179

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	22203583	STATOR END PIECE_PCD3_MOD_FEMALE
2	1	22203584	STATOR END PIECE_PCD3_MOD_MALE
3	1	10/4690	THREADED SLEEVE LUER-LOCK
4	1	2825-0035	WASHER_TEFLON_.197ID X .280OD X .015 THI

**NOTES UNLESS OTHERWISE SPECIFIED:**

1. EDGE BREAK ALL CORNERS, EDGES AND HOLES:  
     .005/.015 FOR MATERIAL  $\geq$  .100 THICK  
     5%/15% OF THICKNESS FOR MATERIAL  $<$  .100 THICK
2. .015 MAXIMUM FILLET
3. 64 MACHINE FINISH OR BETTER
4. ALL DIMENSIONS ARE PRE-PLATE (IF APPLIED)
5. PLATING THICKNESS IS PER SIDE (IF APPLIED)
6. REMOVE RAW STOCK LETTERING, LINEAR GRAIN, OR MATERIAL REMOVAL

TOLERANCES UNLESS OTHERWISE SPECIFIED			
		METRIC	
FRACTIONS	$\pm 1/32$	0 MM	$\pm 1.0$ MM
X.XX	$\pm 0.015$	0.0 MM	$\pm 0.4$ MM
X.XXX	$\pm 0.005$	0.00 MM	$\pm 0.1$ MM
ANGULAR	$\pm 0.5^\circ$		
RUNOUT	$\pm 0.003$ T.I.R.		

FINISH	NONE
HEAT TREATMENT	N/A

<b>GPD Global</b>	
DESCRIPTION END PIECE_PCD3_STATOR MOD_ASSY	
ASSEMBLY PCD3	
MATERIAL NOTED	
DWG NO <b>22293179</b>	
HEAT TREATMENT N/A	DWG SIZE <b>B</b>
DRAWN BY BLH	6/14/2013 SHEET 1 OF 1

# PCD4 - 2650-0048

Parts List				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	10/4673	COUPLING STAR SHAPED	A	6/24/2016	IHD	REPLACED PARTS 4, 18 WITH CORRECTED O-RINGS
2	1	10/4674	ASSEMBLY AID / HAND DRIVER				
3	1	10/4675	STATOR CPL_PCD4				
4	1	2575-0005	O-RING_FKM_.632 ID X .047 SECTION				
5	4	10/4680	ALLEN SCREW M3 X 20				
6	1	10/4682	O-RING FKM 15MM DIA X 1.5				
7	1	10/4684	ALLEN SCREW M3 X 6				
8	1	10/4685	WASHER A 3.2				
9	4	10/4687	ALLEN SCREW M3 X 25				
10	1	10/4691	O-RING NBR 17MM DIA X 1.25				
11	1	10/4803	UNION RING PCD4				
12	1	10/4804	THREADED SLEEVE LUER-LOCK				
13	1	10/4805	END PIECE PCD4 W/LUER-LOCK OEM				
14	1	10/4817	DISPENSING UNIT PCD4 CPL. (WITHOUT 20)				
15	1	10/4818	END PIECE PCD4 WITH LUER-LOCK CPL.				
16	1	10/4820	BEARING HOUSING W/ROTOR SET CPL				
17	1	10/4821	SEAL SET W/HOUSING				
18	1	2575-0004	O-RING_FKM_.547ID X .051W				
19	1	2575-0006	O-RING_FKM_.110 ID X .028 SECTION				
20	1	2650-0049	DISPENSER HOUSING_PCD4_SIDE PURGE				
21	1	2650-0050	DRIVE UNIT CPL PCD4 INCL 9 & 1				

LAST REVISED 5/4/15

<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b>			<b>GPD Global</b>		
FRACTIONS	± 1/32	METRIC	<b>DESCRIPTION</b> VALVE PCD4 250MM CABLE_VER2 ASSEMBLY <b>MATERIAL</b> _____ <b>DWG NO</b> 2650-0048 <b>DRAWN BY</b> ARM <b>DATE</b> 2/1/2012 <b>SHEET</b> 1 <b>OF</b> 1		
XXX	± 0.015	0 MM			± 1.0 MM
XXX	± 0.005	0.0 MM			± 0.4 MM
ANGULAR	± 0.5°	0.00 MM			± 0.1 MM
RUNOUT	± 0.003 T.I.R.				
<b>FINISH</b>					
<b>HEAT TREATMENT</b>			<b>DWG SIZE</b> B		

PCD4 - 22293098

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/3171	ADAPTER, THD, LUER, FEMALE, SST, 1/4-32
2	1	10/4912	ORING, VITON_5mmID X 1mmW
3	1	22141043	BUSHING, 10CC
4	1	22203375	FEED RESERVOIR_PCD
5	1	22203523	SYRINGE SUPPORT_PCD_VER2_STRAIGHT
6	1	22303034	MOUNT BLOCK_PCD4 VALVE_Z-STOP
7	1	22303039	MOUNTING DISPENSE_TABBED_PCD ORANGE
8	1	2650-0048	VALVE PCD4 250MM CABLE_VER2
9	1	SACAM040070010	CAP SCREW 4MM X 0.7 - 10MM LG
10	2	SACSM030050010	CAP SCREW 3MM X 0.5 X 10MM LG

REVISED: 3/12/2019

<b>GPD Global</b>	DESCRIPTION: PUMP_PCD4_TABLETOP/STANDALONE	NONE
	ASSEMBLY: PCD4	
DATE: 3/13/2013	DRAWN BY: BLH	SHEET 1 OF 1
		DRAWING NUMBER <b>22293098</b>

# PCD4 - 22293081

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	-
A	11/2/12	BLH	10/4912 WAS 10/0427
B	3/13/13	BLH	22203523 SYRINGE SUPPORT REPLACED 22203379,22203386,

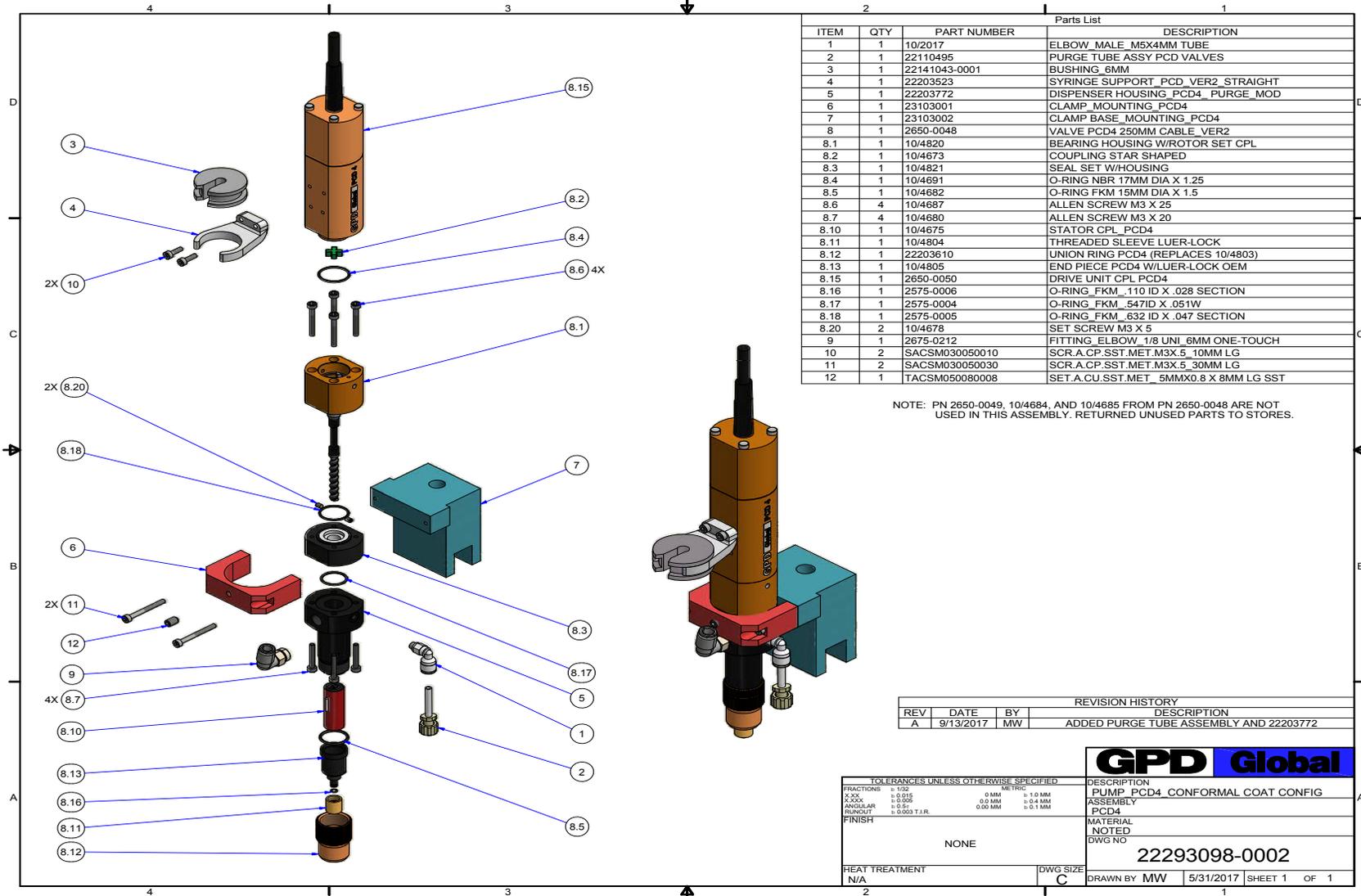
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/3171	ADAPTER, THD, LUER, FEMALE, SST,1/4-32
2	1	2650-0048	VALVE PCD4 250MM CABLE_VER2
3	1	22203375	FEED RESERVOIR
4	1	22203385	VALVE_PCD4 HALF CLAMP
5	1	22203389	MALE ADAPTER_PCD4
6	2	DAM03020	DOWEL PIN 3mm X 20mm
7	2	SACSM030050020	CAP SCREW 3MM X 0.5 20MM LG
8	2	TACAM030050005	SET SCREW 3MMX0.5 X 5MM LG ALLOY
9	1	22293101	LEVEL DETECT_PCD_VER2_CAPACITAN
10	1	10/4912	ORING,VITON_5mmID X 1mmW
11	1	22203523	SYRINGE SUPPORT_PCD_VER2_STRAIGHT
12	2	SACSM030050010	CAP SCREW 3MM X 0.5 X 10MM LG

TOLERANCES UNLESS OTHERWISE SPECIFIED			DESCRIPTION
FRACTIONS		METRIC	
XXX	± 0.015	0 MM	± 1.0 MM
XXXX	± 0.005	0.0 MM	± 0.4 MM
ANGULAR	± 0.5°	0.00 MM	± 0.1 MM
RUNOUT	± 0.003 T.I.R.		
FINISH			MATERIAL
NONE			DWG NO
			22293081
HEAT TREATMENT		DWG SIZE	DRAWN BY ARM 8/23/2010 SHEET 1 OF 2
N/A		B	

NOTE:  
ALL FASTENERS STAINLESS STEEL OR PLATED ALLOY



# PCD4 - 22293098-0002



		Parts List	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW_MALE_M5X4MM TUBE
2	1	22110495	PURGE TUBE ASSY PCD VALVES
3	1	22141043-0001	BUSHING_6MM
4	1	22203523	SYRINGE SUPPORT_PCD_VER2_STRAIGHT
5	1	22203772	DISPENSER HOUSING_PCD4_PURGE_MOD
6	1	23103001	CLAMP_MOUNTING_PCD4
7	1	23103002	CLAMP_BASE_MOUNTING_PCD4
8	1	2650-0048	VALVE_PCD4_250MM_CABLE_VER2
8.1	1	10/4820	BEARING HOUSING W/ROTOR SET CPL
8.2	1	10/4673	COUPLING STAR SHAPED
8.3	1	10/4821	SEAL SET W/HOUSING
8.4	1	10/4691	O-RING NBR 17MM DIA X 1.25
8.5	1	10/4682	O-RING FKM 15MM DIA X 1.5
8.6	4	10/4687	ALLEN SCREW M3 X 25
8.7	4	10/4680	ALLEN SCREW M3 X 20
8.10	1	10/4675	STATOR CPL_PCD4
8.11	1	10/4804	THREADED SLEEVE LUER-LOCK
8.12	1	22203610	UNION RING PCD4 (REPLACES 10/4803)
8.13	1	10/4805	END PIECE PCD4 W/LUER-LOCK OEM
8.15	1	2650-0050	DRIVE UNIT CPL_PCD4
8.16	1	2575-0006	O-RING_FKM_110 ID X .028 SECTION
8.17	1	2575-0004	O-RING_FKM_547ID X .051W
8.18	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
8.20	2	10/4678	SET SCREW M3 X 5
9	1	2675-0212	FITTING_ELBOW_1/8 UNI_6MM ONE-TOUCH
10	2	SACSM030050010	SCR.A.CP.SST.MET.M3X.5_10MM LG
11	2	SACSM030050030	SCR.A.CP.SST.MET.M3X.5_30MM LG
12	1	TACSM050080008	SET.A.CU.SST.MET_5MMX0.8 X 8MM LG SST

NOTE: PN 2650-0049, 10/4684, AND 10/4685 FROM PN 2650-0048 ARE NOT USED IN THIS ASSEMBLY. RETURNED UNUSED PARTS TO STORES.

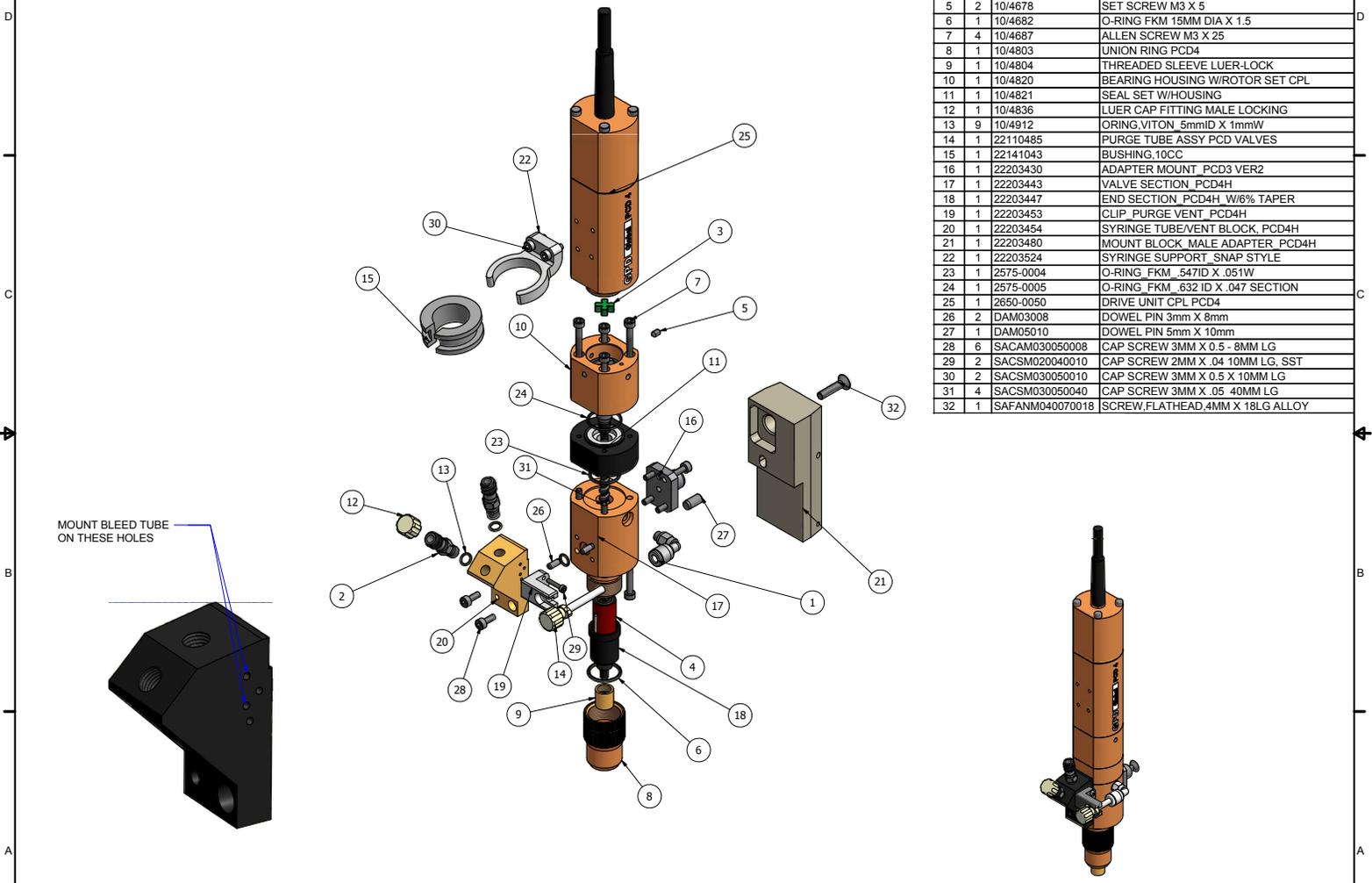
REV		DATE		BY		DESCRIPTION	
A		9/13/2017		MW		ADDED PURGE TUBE ASSEMBLY AND 22203772	

<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b> FRACTIONS ± .15% METRIC 0 MM ± 1.0 MM X.XXX ± 0.015 0.1 MM ± 0.1 MM .XXX ± 0.005 0.3 MM ± 0.1 MM ANGULAR ± 0.05° 0.05 MM ± 0.1 MM RUNOUT ± 0.003 T.I.R. 0.05 MM ± 0.1 MM		<b>DESCRIPTION</b> PUMP_PCD4_CONFORMAL COAT CONFIG ASSEMBLY PCD4 MATERIAL NOTED DWG NO <b>22293098-0002</b>
FINISH		NONE
HEAT TREATMENT		N/A
DWG SIZE		C
DRAWN BY		MW
DATE		5/31/2017
SHEET		1 OF 1

# PCD4L - 22293122

REVISION HISTORY			
REV	B	DATE	DESCRIPTION
-	ALJ	7/7/2011	ORIGINAL ISSUE
A	BLH	9/7/2012	2575-0004 & 2575-0005 WERE 10/4679 & 10/4683
B	BLH	9/26/2012	22110495 WAS 22110485, 10/4912 REPLACED ALL 10/0427

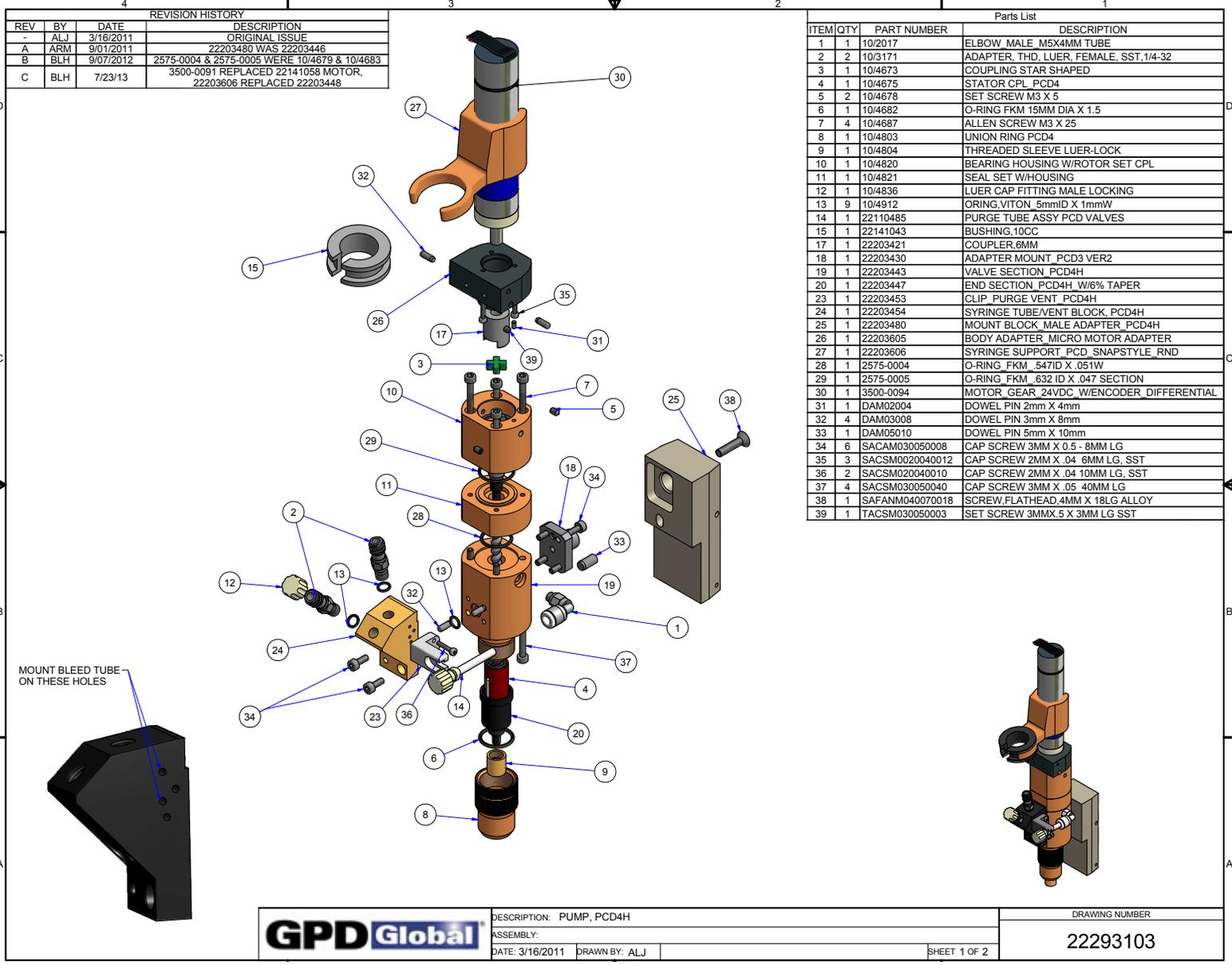
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW MALE M5X4MM TUBE
2	2	10/3171	ADAPTER_THD_LUER_FEMALE_SST_1/4-32
3	1	10/4673	COUPLING STAR SHAPED
4	1	10/4675	STATOR CPL_PCD4
5	2	10/4678	SET SCREW M3 X 5
6	1	10/4882	O-RING FKM 15MM DIA X 1.5
7	4	10/4687	ALLEN SCREW M3 X 25
8	1	10/4803	UNION RING PCD4
9	1	10/4804	THREADED SLEEVE LUER-LOCK
10	1	10/4820	BEARING HOUSING W/ROTOR SET CPL
11	1	10/4821	SEAL SET W/HOUSING
12	1	10/4836	LUER CAP FITTING MALE LOCKING
13	9	10/4912	ORING,VITON_5mmID X 1mmW
14	1	22110485	PURGE TUBE ASSY PCD VALVES
15	1	2211043	BUSHING,10CC
16	1	22203430	ADAPTER MOUNT_PCD3 VER2
17	1	22203443	VALVE SECTION_PCD4H
18	1	22203447	END SECTION_PCD4H_W/6% TAPER
19	1	22203453	CLIP_PURGE VENT_PCD4H
20	1	22203454	SYRINGE TUBE/VENT BLOCK_PCD4H
21	1	22203480	MOUNT BLOCK MALE ADAPTER_PCD4H
22	1	22203524	SYRINGE SUPPORT_SNAP STYLE
23	1	2575-0004	O-RING_FKM_547ID X .051W
24	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
25	1	2650-0050	DRIVE UNIT CPL_PCD4
26	2	DAM03008	DOWEL PIN 3mm X 8mm
27	1	DAM05010	DOWEL PIN 5mm X 10mm
28	6	SACAM030050008	CAP SCREW 3MM X 0.5 - 8MM LG
29	2	SACSM020040010	CAP SCREW 2MM X .04 10MM LG, SST
30	2	SACSM030050010	CAP SCREW 3MM X 0.5 X 10MM LG
31	4	SACSM030050040	CAP SCREW 3MM X .05 40MM LG
32	1	SAFANM040070018	SCREW_FLATHEAD_4MM X 18LG ALLOY



<b>GPD Global</b>	DESCRIPTION: PUMP_PCD4L		DRAWING NUMBER
	ASSEMBLY:		22293122
	DATE: 7/7/2011	DRAWN BY: ALJ	SHEET 1 OF 2

# PCD4H - 22293103

REVISION HISTORY			
REV	BY	DATE	DESCRIPTION
-	ALJ	3/16/2011	ORIGINAL ISSUE
A	ARM	9/01/2011	22203480 WAS 22203448
B	BLH	9/07/2012	2575-0004 & 2575-0005 WERE 10/4679 & 10/4683
C	BLH	7/23/13	3500-0091 REPLACED 22141058 MOTOR, 22203606 REPLACED 22203448



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW MALE M5X4MM TUBE
2	2	10/3171	ADAPTER, THD. LUER, FEMALE, SST, 1/4-32
3	1	10/4673	COUPLING STAR SHAPED
4	1	10/4675	STATOR CPL_PCD4
5	2	10/4678	SET SCREW M3 X 5
6	1	10/4682	O-RING FKM 15MM DIA X 1.5
7	4	10/4687	ALLEN SCREW M3 X 25
8	1	10/4803	UNION RING_PCD4
9	1	10/4804	THREADED SLEEVE LUER-LOCK
10	1	10/4820	BEARING HOUSING W/ROTOR SET CPL
11	1	10/4821	SEAL SET W/HOUSING
12	1	10/4836	LUER CAP FITTING MALE LOCKING
13	9	10/4912	ORING,VITON 5mmID X 1mmW
14	1	22110485	PURGE TUBE ASSY_PCD VALVES
15	1	22141043	BUSHING,10CC
17	1	22203421	COUPLER,6MM
18	1	22203430	ADAPTER MOUNT_PCD3 VER2
19	1	22203443	VALVE SECTION_PCD4H
20	1	22203447	END SECTION_PCD4H W/6% TAPER
23	1	22203453	CLIP_PURGE VENT_PCD4H
24	1	22203454	SYRINGE TUBE/VENT BLOCK_PCD4H
25	1	22203480	MOUNT BLOCK_MALE ADAPTER_PCD4H
26	1	22203605	BODY ADAPTER_MICRO MOTOR ADAPTER
27	1	22203606	SYRINGE SUPPORT_PCD_SNAPSTYLE_RND
28	1	2575-0004	O-RING FKM .547ID X .051W
29	1	2575-0005	O-RING FKM .632 ID X .047 SECTION
30	1	3500-0094	MOTOR_GEAR 24VDC W/ENCODER DIFFERENTIAL
31	1	DAM02004	DOWEL PIN 2mm X 4mm
32	4	DAM03008	DOWEL PIN 3mm X 8mm
33	1	DAM05010	DOWEL PIN 5mm X 10mm
34	6	SACAM030050008	CAP SCREW 3MM X 0.5 - 8MM LG
35	3	SACSM0020040012	CAP SCREW 2MM X .04 6MM LG, SST
36	2	SACSM020040010	CAP SCREW 2MM X .04 10MM LG, SST
37	4	SACSM030050040	CAP SCREW 3MM X .05 40MM LG
38	1	SAFANM040070018	SCREW,FLATHEAD,4MM X 18LG ALLOY
39	1	TACSM030050003	SET SCREW 3MMX 5 X 3MM LG SST

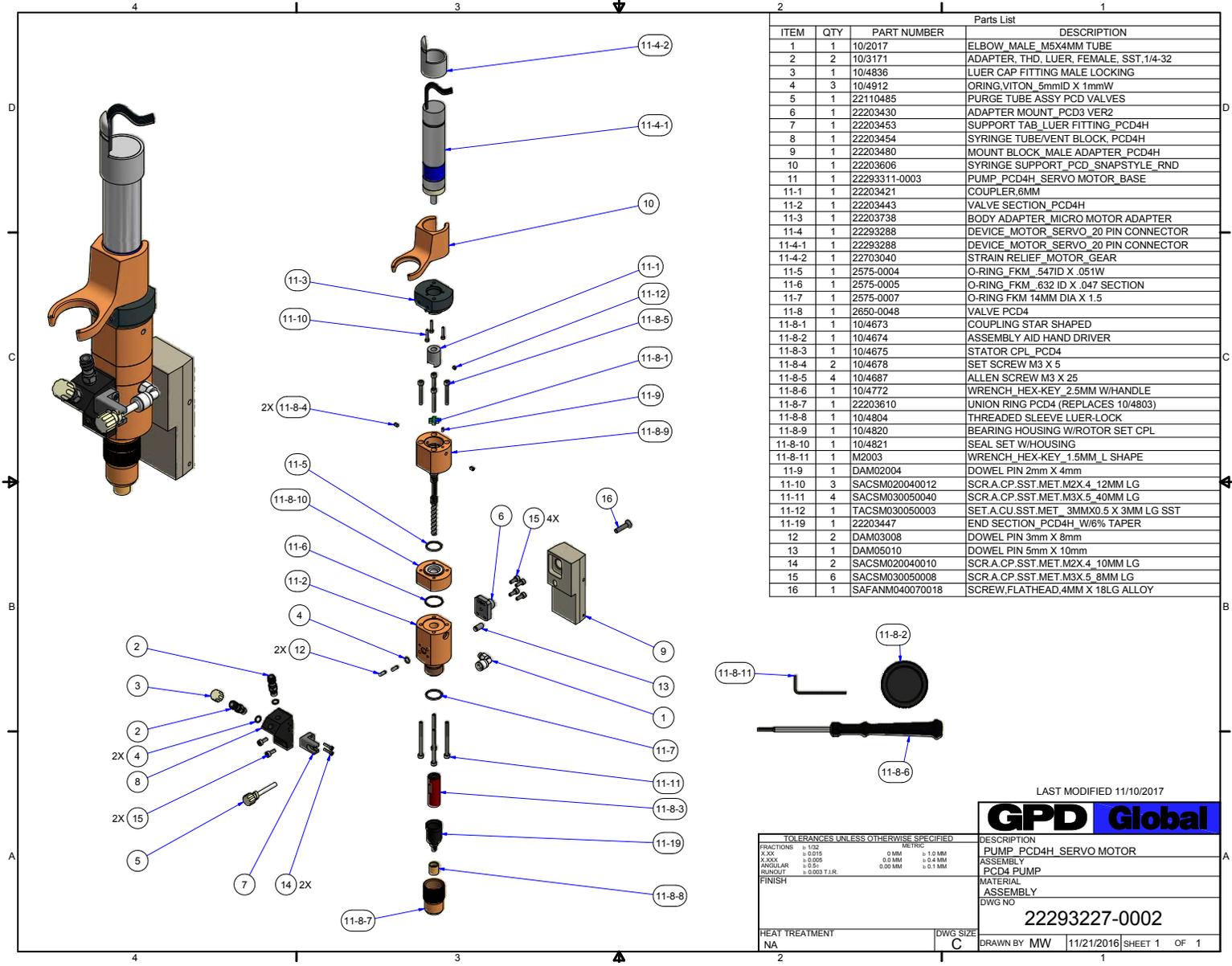
<b>GPD Global</b>	DESCRIPTION: PUMP_PCD4H		DRAWING NUMBER
	ASSEMBLY:		22293103
	DATE: 3/16/2011	DRAWN BY: ALJ	SHEET 1 OF 2

# PCD4H - 22293227-0002

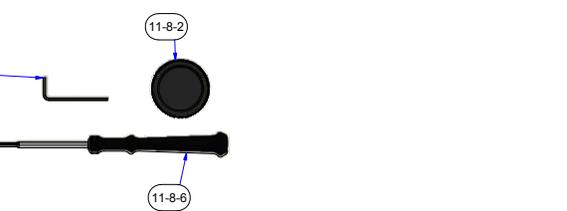
2/26/20

PCD Pump User Guide

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ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	102017	ELBOW_MALE_M5X4MM TUBE
2	2	103171	ADAPTER_THD_LUER_FEMALE_SST_1/4-32
3	1	104836	LUER_CAP_FITTING_MALE_LOCKING
4	3	104912	ORING_VITON_5mmID X 1mmW
5	1	22110485	PURGE_TUBE_ASSY_PCD_VALVES
6	1	22203430	ADAPTER_MOUNT_PCD3_VER2
7	1	22203453	SUPPORT_TAB_LUER_FITTING_PCD4H
8	1	22203454	SYRINGE_TUBE/VENT_BLOCK_PCD4H
9	1	22203480	MOUNT_BLOCK_MALE_ADAPTER_PCD4H
10	1	22203606	SYRINGE_SUPPORT_PCD_SNAPSTYLE_RND
11	1	22293311-0003	PUMP_PCD4H_SERVO_MOTOR_BASE
11-1	1	22203421	COUPLER_6MM
11-2	1	22203443	VALVE_SECTION_PCD4H
11-3	1	22203738	BODY_ADAPTER_MICRO_MOTOR_ADAPTER
11-4	1	22293288	DEVICE_MOTOR_SERVO_20_PIN_CONNECTOR
11-4-1	1	22293288	DEVICE_MOTOR_SERVO_20_PIN_CONNECTOR
11-4-2	1	22703040	STRAIN_RELIEF_MOTOR_GEAR
11-5	1	2575-0004	O-RING_FKM_547ID X .051W
11-6	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
11-7	1	2575-0007	O-RING_FKM_14MM DIA X 1.5
11-8	1	2650-0048	VALVE_PCD4
11-8-1	1	104673	COUPLING_STAR_SHAPED
11-8-2	1	104674	ASSEMBLY_AID_HAND_DRIVER
11-8-3	1	104675	STATOR_CPL_PCD4
11-8-4	2	104678	SET_SCREW_M3 X 5
11-8-5	4	104687	ALLEN_SCREW_M3 X 25
11-8-6	1	104772	WRENCH_HEX-KEY_2.5MM W/HANDLE
11-8-7	1	22203610	UNION_RING_PCD4 (REPLACES 10/4803)
11-8-8	1	104804	THREADED_SLEEVE_LUER-LOCK
11-8-9	1	104820	BEARING_HOUSING_W/ROTOR_SET_CPL
11-8-10	1	104821	SEAL_SET_W/HOUSING
11-8-11	1	M2003	WRENCH_HEX-KEY_1.5MM L SHAPE
11-9	1	DAM02004	DOWEL_PIN_2mm X 4mm
11-10	3	SACSM020040012	SCR.A.CP.SST.MET.M2X.4_12MM LG
11-11	4	SACSM030050040	SCR.A.CP.SST.MET.M3X.5_40MM LG
11-12	1	TACSM030050003	SET.A.CU.SST.MET_3MMX0.5 X 3MM LG SST
11-19	1	22203447	END_SECTION_PCD4H_W/6% TAPER
12	2	DAM03008	DOWEL_PIN_3mm X 8mm
13	1	DAM05010	DOWEL_PIN_5mm X 10mm
14	2	SACSM020040010	SCR.A.CP.SST.MET.M2X.4_10MM LG
15	6	SACSM030050008	SCR.A.CP.SST.MET.M3X.5_8MM LG
16	1	SAFANM040070018	SCREW_FLATHEAD_4MM X 18LG ALLOY



LAST MODIFIED 11/10/2017

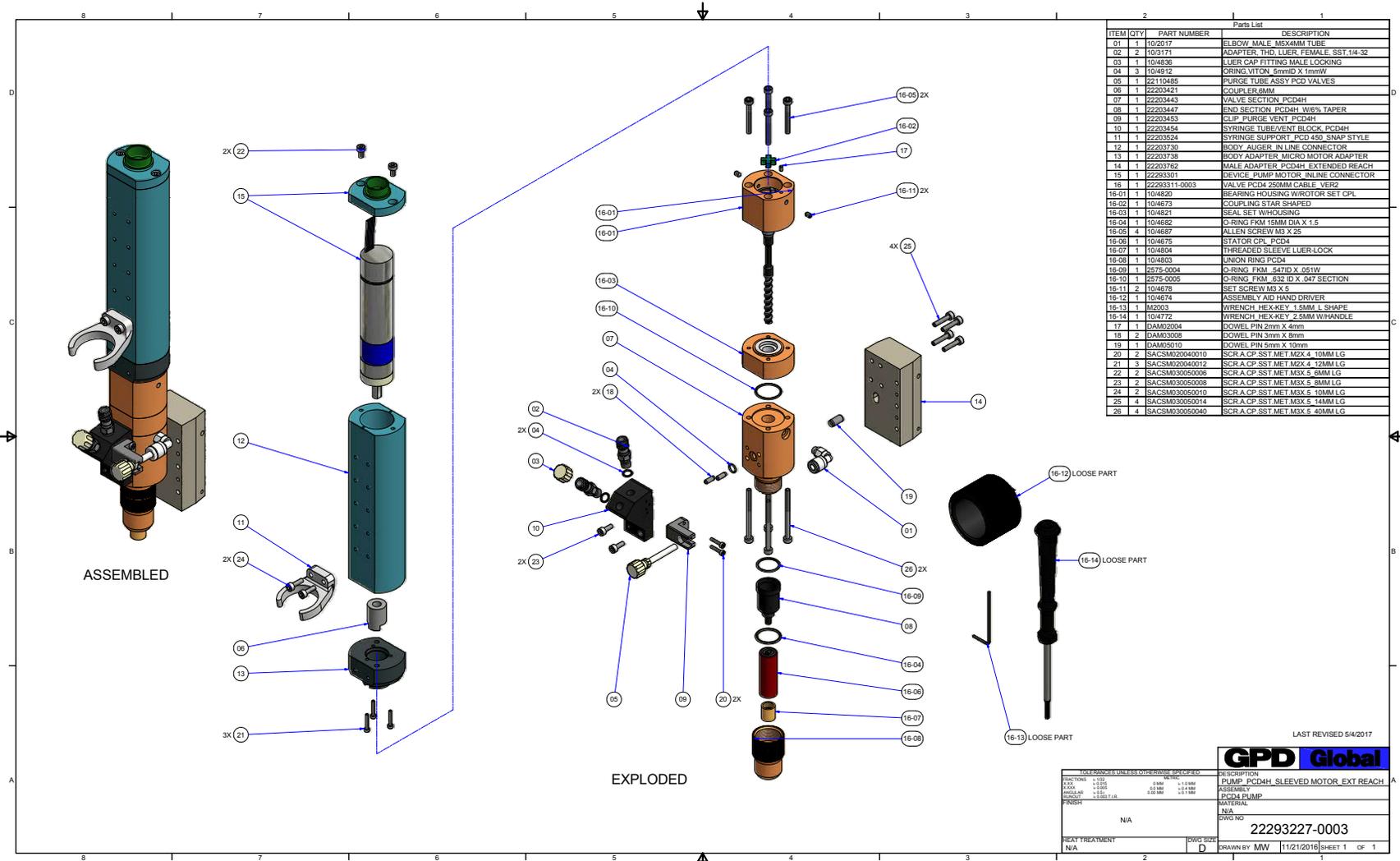
<b>GPD Global</b>	
DESCRIPTION PUMP_PCD4H_SERVO_MOTOR	
ASSEMBLY PCD4_PUMP	
MATERIAL ASSEMBLY	
DWG NO 22293227-0002	
HEAT TREATMENT NA	DWG SIZE C
DRAWN BY MW	11/21/2016 SHEET 1 OF 1

TOLERANCES UNLESS OTHERWISE SPECIFIED	
METRIC	
FRACTIONS	± .12
XXX	± 0.015
X .XXX	± 0.025
ANGULAR	± 0.5°
RADIUS	± 0.003 T.I.R.

GPD Global®

PCD4H - 22293227-0002

# PCD4H - 22293227-0003



ITEM	QTY	PART NUMBER	DESCRIPTION
01	1	102017	ELBOW MALE 1/8X4MM TUBE
02	2	103171	ADAPTER THD LUER FEMALE SST.1/4-32
03	1	104836	LUER CAP FITTING MALE LOCKING
04	3	104812	ORING VITON 6mmID X 1mmW
05	1	22110485	PURGE TUBE ASSY PCD VALVES
06	1	22203421	COUPLER 6MM
07	1	22203443	VALVE SECTION PCD4H
08	1	22203447	END SECTION PCD4H W/8% TAPER
09	1	22203453	CLIP PURGE VENT PCD4H
10	1	22203454	SYRINGE TUBEVENT BLOCK PCD4H
11	1	22203524	SYRINGE SUPPORT PCD 450 SNAP STYLE
12	1	22203730	BODY AUGER IN LINE CONNECTOR
13	1	22203738	BODY ADAPTER MICRO MOTOR ADAPTER
14	1	22203762	MALE ADAPTER PCD4H EXTENDED REACH
15	1	22203801	DEVICE PUMP MOTOR IN LINE CONNECTOR
16	1	22283311-0003	VALVE PCD4 250MM CABLE VER2
16-01	1	104820	BEARING HOUSING W/ROTOR SET CPL
16-02	1	104873	COUPLING STAR SHAPED
16-03	1	104821	SEAL SET W/HOUSING
16-04	1	104682	O-RING FKM 15MM DIA X 1.5
16-05	4	104687	ALLEN SCREW M3 X 25
16-06	1	104675	STATOR CPL PCD4
16-07	1	104804	THREADED SLEEVE LUER-LOCK
16-08	1	104803	UNION RING PCD4
16-09	1	2575-0004	O-RING FKM 547ID X .051W
16-10	1	2575-0005	O-RING FKM .632 ID X .047 SECTION
16-11	2	104678	SET SCREW M3 X 5
16-12	1	104674	ASSEMBLY AID HAND DRIVER
16-13	1	102003	WRENCH HEX KEY 1.5MM L SHAPE
16-14	1	1014772	WRENCH HEX KEY 2.5MM W/HANDLE
17	1	DAM02004	DOWEL PIN 2mm X 4mm
18	2	DAM03008	DOWEL PIN 3mm X 8mm
19	1	DAM05010	DOWEL PIN 5mm X 10mm
20	2	SACSM020040010	SCR A CP SST MET M2X.4 10MM LG
21	3	SACSM020040012	SCR A CP SST MET M2X.4 12MM LG
22	2	SACSM030050008	SCR A CP SST MET M3X.5 8MM LG
23	2	SACSM030050008	SCR A CP SST MET M3X.5 8MM LG
24	2	SACSM030050010	SCR A CP SST MET M3X.5 10MM LG
25	4	SACSM030050014	SCR A CP SST MET M3X.5 14MM LG
26	4	SACSM030050040	SCR A CP SST MET M3X.5 40MM LG

LAST REVISED 5/4/2017

**GPD Global**

DESCRIPTION: PUMP\_PCD4H\_SLEEVED MOTOR\_EXT REACH

ASSEMBLY: PCD4 PUMP

MATERIAL: N/A

DWG NO: 22293227-0003

HEAT TREATMENT: N/A

DWG SIZE: D

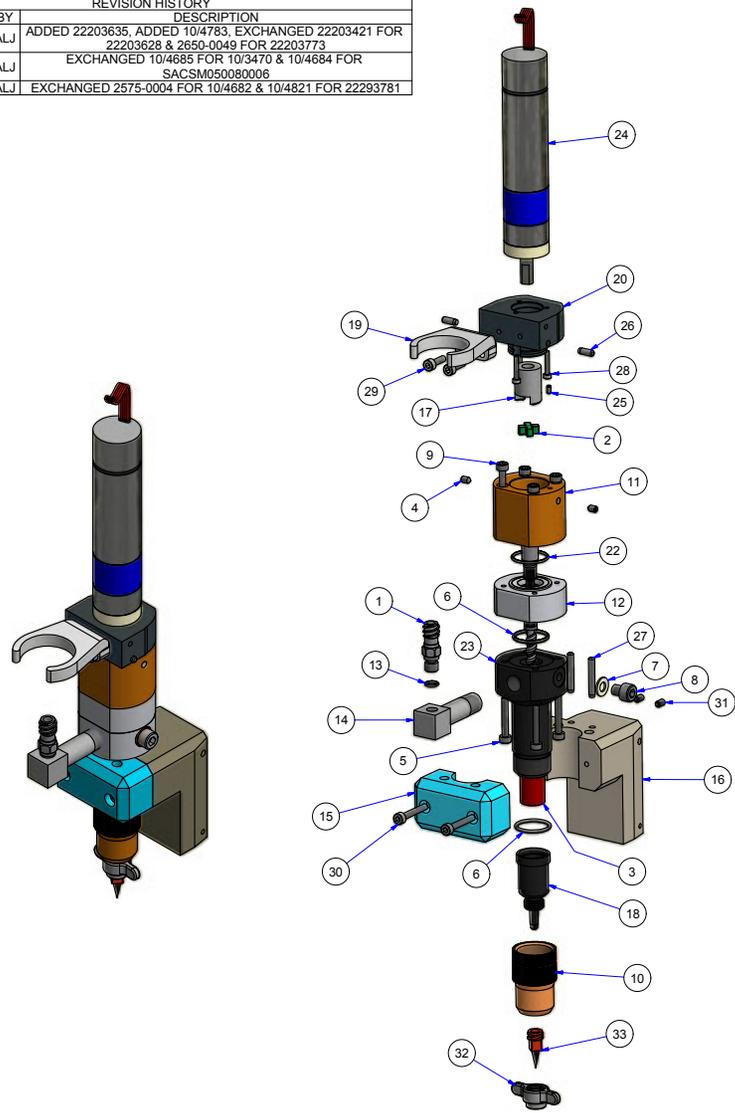
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DATE: 11/21/2016

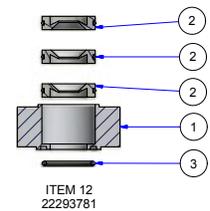
SHEET 1 OF 1

# PCD4HB - 22293240

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
A	10/12/2017	ALJ	ADDED 22203635, ADDED 10/4783, EXCHANGED 22203421 FOR 22203628 & 2650-0049 FOR 22203773
B	11/20/2017	ALJ	EXCHANGED 10/4685 FOR 10/3470 & 10/4684 FOR SACSM050080006
C	2/28/2018	ALJ	EXCHANGED 2575-0004 FOR 10/4682 & 10/4821 FOR 22293781



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/3171	ADAPTER, THD, LUER, FEMALE, SST, 1/4-32
2	1	10/4673	COUPLING STAR SHAPED
3	1	10/4675	STATOR CPL_PCD4
4	2	10/4678	SET SCREW M3 X 5
5	4	10/4680	ALLEN SCREW M3 X 20
6	2	10/4682	O-RING FKM 15MM DIA X 1.5
7	1	10_3470	WASHER,FLAT,TEFLON_37 ODX,19 IDX,031 W
8	1	SACSM050080006	SCR.A.CP.SST.MET.M5X.8_6MM LG
9	4	10/4687	ALLEN SCREW M3 X 25
10	1	10/4803	UNION RING PCD4 (REPLACEMENT PN 22203610)
11	1	10/4820	BEARING HOUSING W/ROTOR SET CPL
12	1	22293781	SEAL SECT_ PCD4_SST W/TEFLON LIP SEALS
13	1	10/4912	ORING,VITON_5mmID X 1mmW
14	1	22203375	FEED RESERVOIR_PCD
15	1	22203385	VALVE_PCD4 HALF CLAMP
16	1	22203389	MALE ADAPTER_PCD4
17	1	22203421	COUPLER,6MM
18	1	22203628	MALE NEEDLE HUB_PCD4
19	1	22203523	SYRINGE SUPPORT_PCD_VER2_STRAIGHT
20	1	22203605	BODY ADAPTER_MICRO MOTOR ADAPTER
21	-	-	-
22	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
23	1	22203773	PUMP HOUSING_PCD4_SST_SIDE PURGE
24	1	3500-0094	MOTOR_SERVO_24VDC_W/ENCODER_DIFFERENTIAL
25	1	DAM02004	DOWEL PIN 2mm X 4mm
26	2	DAM03008	DOWEL PIN 3mm X 8mm
27	2	DAM03020	DOWEL PIN 3mm X 20mm
28	3	SACSM020040012	SCR.A.CP.SST.MET.M2X.4_12MM LG
29	2	SACSM030050010	CAP SCREW 3MM X 0.5 X 10MM LG
30	2	SACSM030050020	CAP SCREW_SST_3MM X 0.5_20MM LG
31	2	TACAM0030050005	SET SCREW 3MMX0.5 X 5MM LG ALLOY
32	1	22203635	NUT_WING_MALE NEEDLE HUB_PCD
33	1	10/4783	KIT_NEEDLE_TAPER TIPS 18G-30G S TYPE



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	22203781	PUMP HOUSING_PCD4_SST_SIDE PURGE
2	3	2575-0080	DISK_LIP SEAL_TEFLOX_W/ORING
3	1	10/4682	O-RING FKM 15MM DIA X 1.5

LAST REVISED 6/1/2018

	DESCRIPTION: PUMP_PCD4H-B_NEW MOTOR		DRAWING NUMBER	
	ASSEMBLY:		22293240	
	DATE: 12/3/2014	DRAWN BY: IAH	SHEET 1 OF 2	

# PCD4HB legacy - 22293205

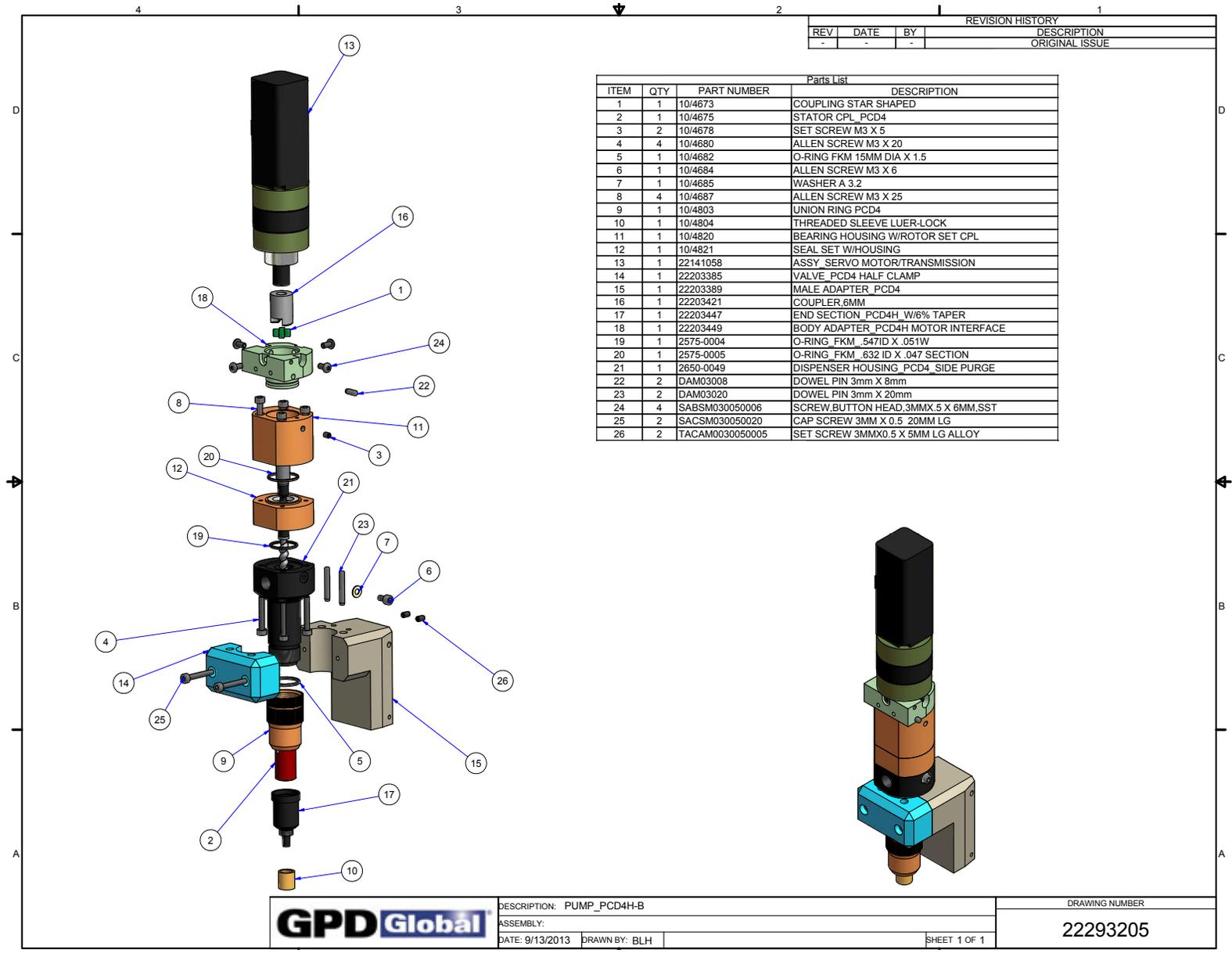
2/26/20

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PCD4HB legacy - 22293205

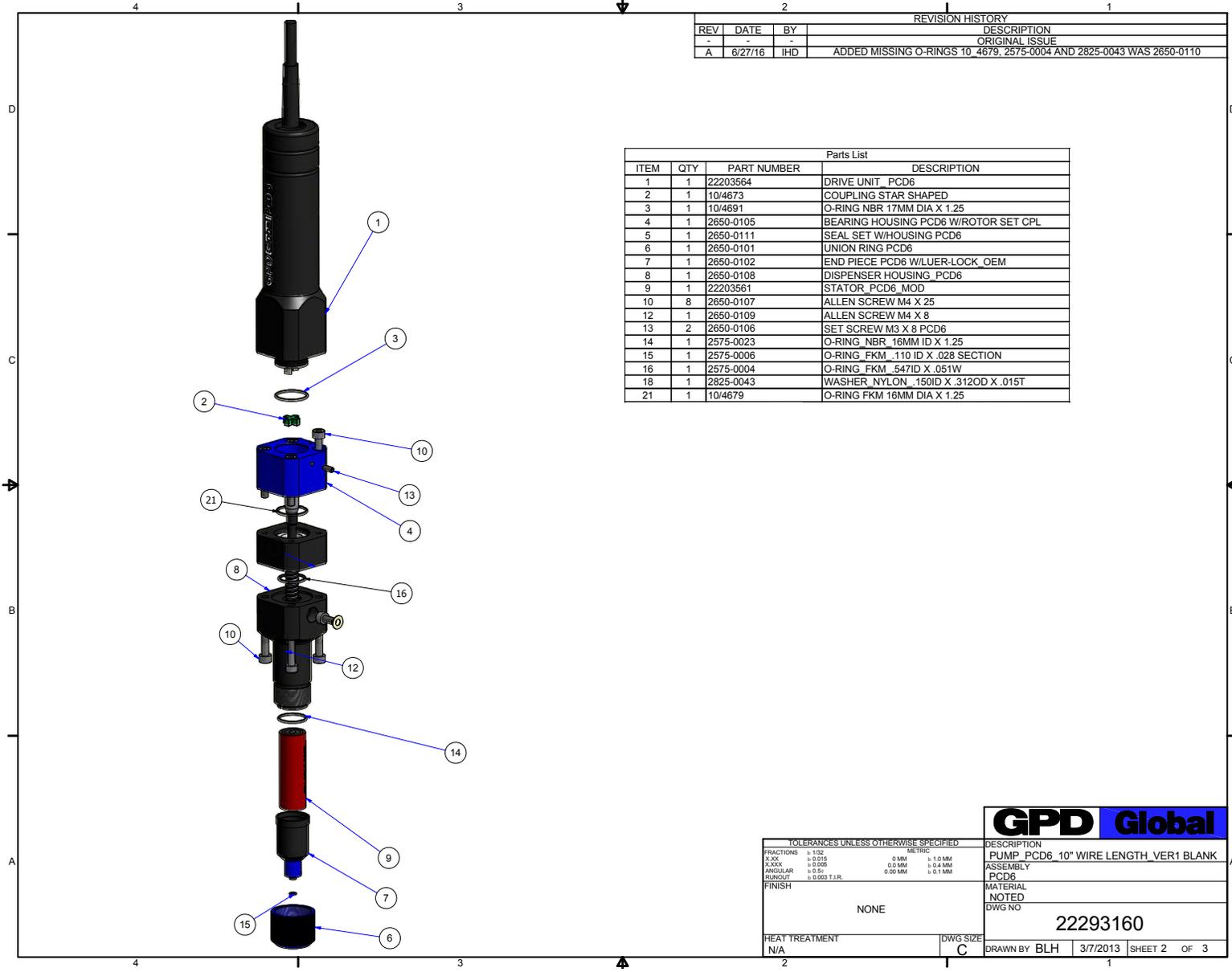


REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/4673	COUPLING STAR SHAPED
2	1	10/4675	STATOR CPL_PCD4
3	2	10/4678	SET SCREW M3 X 5
4	4	10/4680	ALLEN SCREW M3 X 20
5	1	10/4682	O-RING FKM 15MM DIA X 1.5
6	1	10/4684	ALLEN SCREW M3 X 6
7	1	10/4685	WASHER A 3.2
8	4	10/4687	ALLEN SCREW M3 X 25
9	1	10/4803	UNION RING_PCD4
10	1	10/4804	THREADED SLEEVE LUER-LOCK
11	1	10/4820	BEARING HOUSING W/ROTOR SET CPL
12	1	10/4821	SEAL SET W/HOUSING
13	1	22141058	ASSY_SERVO MOTOR/TRANSMISSION
14	1	22203385	VALVE_PCD4 HALF CLAMP
15	1	22203389	MALE ADAPTER_PCD4
16	1	22203421	COUPLER 6MM
17	1	22203447	END SECTION_PCD4H_W/6% TAPER
18	1	22203449	BODY ADAPTER_PCD4H MOTOR INTERFACE
19	1	2575-0004	O-RING_FKM .547ID X .051W
20	1	2575-0005	O-RING_FKM .632 ID X .047 SECTION
21	1	2650-0049	DISPENSER HOUSING_PCD4_SIDE PURGE
22	2	DAM03008	DOWEL PIN 3mm X 8mm
23	2	DAM03020	DOWEL PIN 3mm X 20mm
24	4	SABSM030050006	SCREW_BUTTON HEAD_3MMX.5 X 6MM.SST
25	2	SACSM030050020	CAP SCREW 3MM X 0.5 20MM LG
26	2	TACAM0030050005	SET SCREW 3MMX0.5 X 5MM LG ALLOY

	DESCRIPTION: PUMP_PCD4H-B	DRAWING NUMBER
	ASSEMBLY:	22293205
	DATE: 9/13/2013 DRAWN BY: BLH	SHEET 1 OF 1

# PCD6 - 22293160

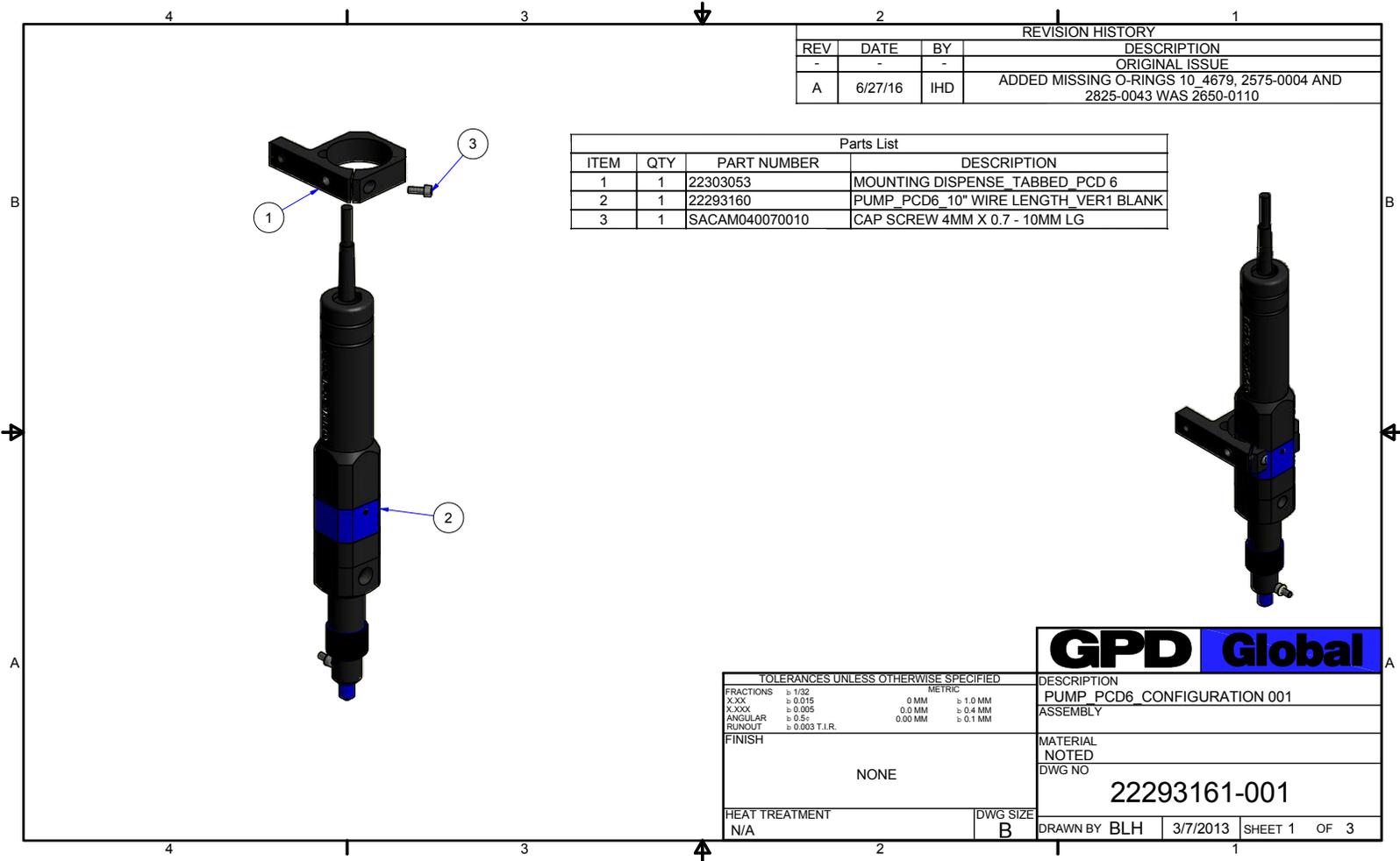


REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE
A	6/27/16	IHD	ADDED MISSING O-RINGS 10, 4679, 2575-0004 AND 2825-0043 WAS 2650-0110

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	22203564	DRIVE UNIT_PCD6
2	1	10/4673	COUPLING STAR SHAPED
3	1	10/4691	O-RING NBR 17MM DIA X 1.25
4	1	2650-0105	BEARING HOUSING PCD6 W/ROTOR SET CPL
5	1	2650-0111	SEAL SET W/HOUSING PCD6
6	1	2650-0101	UNION RING PCD6
7	1	2650-0102	END PIECE PCD6 W/LUER-LOCK_OEM
8	1	2650-0108	DISPENSER HOUSING_PCD6
9	1	22203561	STATOR_PCD6 MOD
10	8	2650-0107	ALLEN SCREW M4 X 25
12	1	2650-0109	ALLEN SCREW M4 X 8
13	2	2650-0106	SET SCREW M3 X 8 PCD6
14	1	2575-0023	O-RING NBR 16MM ID X 1.25
15	1	2575-0006	O-RING FKM .110 ID X .028 SECTION
16	1	2575-0004	O-RING FKM .547ID X .051W
18	1	2825-0043	WASHER_NYLON .150ID X .312OD X .015T
21	1	10/4679	O-RING FKM 16MM DIA X 1.25

<b>GPD Global</b>	
TOLERANCES UNLESS OTHERWISE SPECIFIED	
FRACTIONS	METRIC
X.XX	± 0.05
X.XXX	± 0.005
ANGULAR	± 0.5°
RADIUS	± 0.003 T.I.R.
FINISH	NONE
HEAT TREATMENT	N/A
DWG SIZE: C	
DESCRIPTION: PUMP_PCD6_10" WIRE LENGTH_VER1 BLANK	
ASSEMBLY: PCD6	
MATERIAL: NOTED	
DWG NO: 22293160	
DRAWN BY: BLH	3/7/2013
SHEET 2	OF 3

# PCD6 - 22293161-001



REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE
A	6/27/16	IHD	ADDED MISSING O-RINGS 10_4679, 2575-0004 AND 2825-0043 WAS 2650-0110

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	22303053	MOUNTING DISPENSE_TABBED_PCD 6
2	1	22293160	PUMP_PCD6_10" WIRE LENGTH_VER1 BLANK
3	1	SACAM040070010	CAP SCREW 4MM X 0.7 - 10MM LG

**GPD Global**

DESCRIPTION	
PUMP_PCD6_CONFIGURATION 001	
ASSEMBLY	
MATERIAL NOTED	
DWG NO	
<b>22293161-001</b>	
HEAT TREATMENT	DWG SIZE
N/A	B
DRAWN BY	DATE
BLH	3/7/2013
SHEET	OF
1	3

TOLERANCES UNLESS OTHERWISE SPECIFIED			
FRACTIONS		METRIC	
XXX	b 0.015	0 MM	b 1.0 MM
X.XXX	b 0.005	0.0 MM	b 0.4 MM
ANGULAR	b 0.5°	0.00 MM	b 0.1 MM
RUNOUT	b 0.003 T.I.R.		
FINISH			
NONE			
HEAT TREATMENT			
N/A			

# PCD6HB - 22293161-003

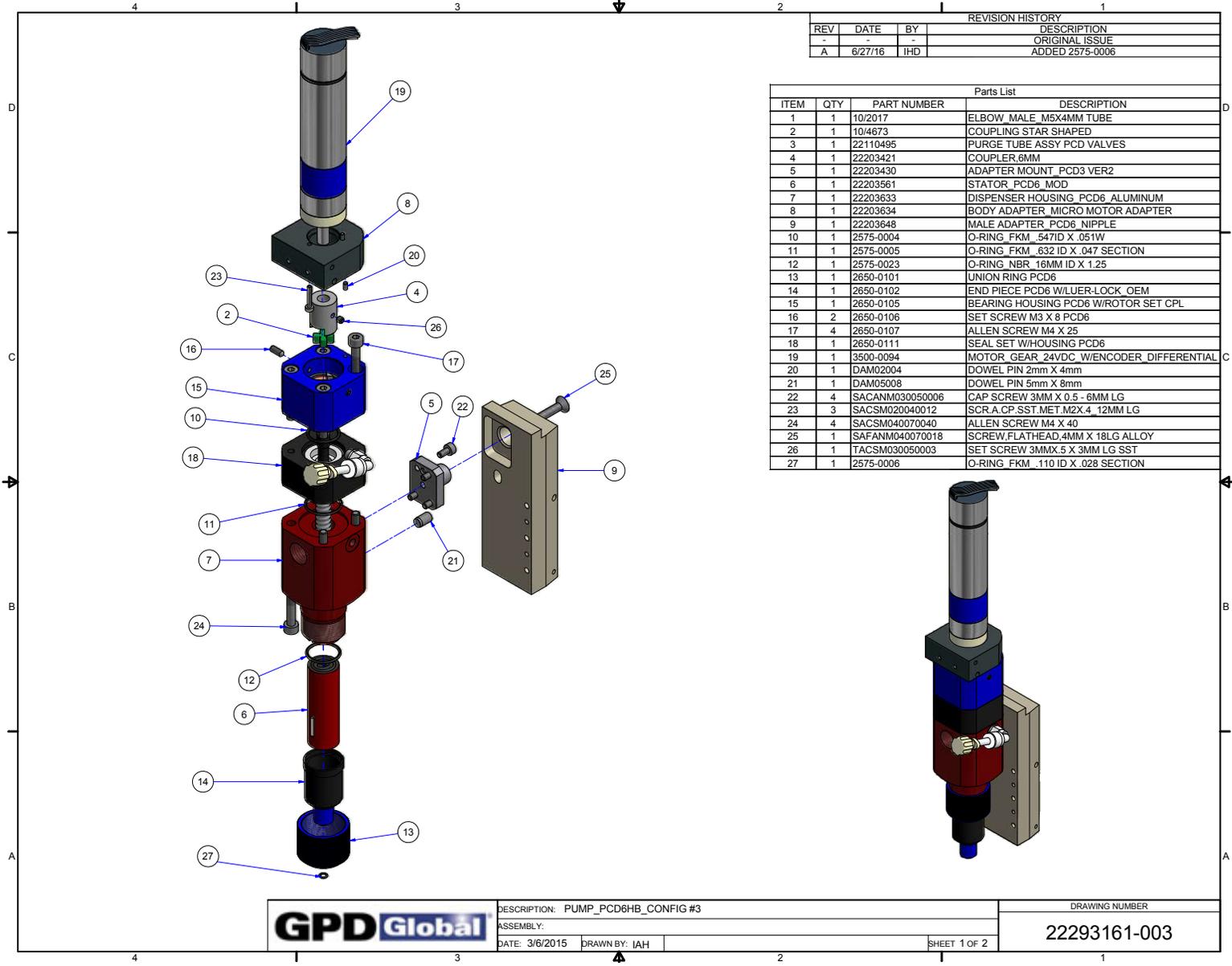
2/26/20

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GPD Global®

PCD6HB - 22293161-003



REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
-	-	-	ORIGINAL ISSUE
A	6/27/16	IHD	ADDED 2575-0006

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	10/2017	ELBOW MALE .65X4MM TUBE
2	1	10/4673	COUPLING STAR SHAPED
3	1	22110495	PURGE TUBE ASSY PCD VALVES
4	1	22203421	COUPLER 6MM
5	1	22203430	ADAPTER MOUNT_PCD3 VER2
6	1	22203561	STATOR_PCD6_MOD
7	1	22203633	DISPENSER HOUSING_PCD6 ALUMINUM
8	1	22203634	BODY ADAPTER MICRO MOTOR ADAPTER
9	1	22203648	MALE ADAPTER_PCD6_NIPPLE
10	1	2575-0004	O-RING_FKM_.547ID X .051W
11	1	2575-0005	O-RING_FKM_.632 ID X .047 SECTION
12	1	2575-0023	O-RING_NBR_16MM ID X 1.25
13	1	2650-0101	UNION RING_PCD6
14	1	2650-0102	END PIECE_PCD6_W/LUER-LOCK_OEM
15	1	2650-0105	BEARING HOUSING_PCD6_W/ROTOR SET CPL
16	2	2650-0106	SET SCREW M3 X 8_PCD6
17	4	2650-0107	ALLEN SCREW M4 X 25
18	1	2650-0111	SEAL SET_W/HOUSING_PCD6
19	1	3500-0094	MOTOR_GEAR_24VDC_W/ENCODER_DIFFERENTIAL
20	1	DAM02004	DOWEL PIN 2mm X 4mm
21	1	DAM05008	DOWEL PIN 5mm X 8mm
22	4	SACANM030050006	CAP SCREW 3MM X 0.5 - 6MM LG
23	3	SACSM020040012	SCR.A CP SST MET M2X 4_12MM LG
24	4	SACSM040070040	ALLEN SCREW M4 X 40
25	1	SAFANM040070018	SCREW_FLATHEAD_4MM X 18LG ALLOY
26	1	TACSM030050003	SET SCREW 3MMX 5 X 3MM LG SST
27	1	2575-0006	O-RING_FKM_.110 ID X .028 SECTION

	DESCRIPTION: PUMP_PCD6HB_CONFIG #3	DRAWING NUMBER
	ASSEMBLY:	22293161-003
DATE: 3/6/2015	DRAWN BY: IAH	SHEET 1 OF 2

# PCD7H - 22293306-003

**EXPLODED**

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	3500-0108	MOTOR_GEAR_24VDC_W/ENCODER - 15:1
2	1	22203634	BODY ADAPTER_MICRO MOTOR ADAPTER
3	1	DAM02004	DOWEL PIN 2mm X 4mm
4	1	22203421	COUPLER 6MM
5	1	TACSM030050003	SET SCREW 3MMX 5 X 3MM LG SST
6	4	2650-0107	ALLEN SCREW M4 X 25
7	1	22203430	ADAPTER MOUNT_PCD3 VER2
8	4	SACANM030050006	CAP SCREW 3MM X 0.5 - 6MM LG
9	1	SAFANM040070018	SCREW_FLATHEAD_4MM X 18LG ALLOY
10	1	22203648	MALE ADAPTER_PCD6_NIPPLE
11	1	DAM05008	DOWEL PIN 5mm X 8mm
12	1	10/2017	ELBOW_MALE_M5X4MM TUBE
13	1	22110495	PURGE TUBE ASSY PCD VALVES
14	1	2650-0101	UNION RING PCD6
15	1	2650-0102	END PIECE PCD6 W/LUER-LOCK_OEM
15.1	1	2650-0112	END SECTION_PCD6
15.2	1	10/4690	THREADED SLEEVE LUER-LOCK
15.3	1	2575-0006	O-RING_FKM_110 ID X .028 SECTION
16	1	2650-0373	STATOR CPL_PCD6
17	1	2575-0023	O-RING_NBR_16MM ID X 1.25
18	4	SACSM040070040	ALLEN SCREW M4 X 40
19	1	22203633	DISPENSER HOUSING_PCD6_ALUMINUM
20	1	2575-0005	O-RING_FKM_632 ID X .047 SECTION
21	1	2650-0111	SEAL SET W/HOUSING PCD6
22	1	2575-0004	O-RING_FKM_547ID X .051W
23	1	2650-0105	BEARING HOUSING_PCD6 W/ROTOR SET CPL
24	2	2650-0106	SET SCREW M3 X 8 PCD6
25	1	10/4673	COUPLING STAR SHAPED
26	3	SACSM020040012	SCR.A.CP.SST.MET.M2X.4_12MM LG

**ASSEMBLED**

LAST REVISED 2/18/2019

<b>GPD Global</b>																					
<p style="text-align: center; font-size: small;">TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <table style="width: 100%; font-size: x-small;"> <tr> <td style="width: 33%;">FRACTIONS</td> <td style="width: 33%;"># 1/32</td> <td style="width: 33%;">METRIC</td> <td></td> </tr> <tr> <td>X.XX</td> <td># 0.015</td> <td>0 MM</td> <td># 1.0 MM</td> </tr> <tr> <td>X.XXX</td> <td># 0.005</td> <td>0.0 MM</td> <td># 0.4 MM</td> </tr> <tr> <td>ANGULAR</td> <td># 0.5</td> <td></td> <td># 0.1 MM</td> </tr> <tr> <td>RUNOUT</td> <td># 0.003 T.I.R.</td> <td>0.00 MM</td> <td></td> </tr> </table>	FRACTIONS	# 1/32	METRIC		X.XX	# 0.015	0 MM	# 1.0 MM	X.XXX	# 0.005	0.0 MM	# 0.4 MM	ANGULAR	# 0.5		# 0.1 MM	RUNOUT	# 0.003 T.I.R.	0.00 MM		<p>DESCRIPTION PUMP_PCD6HB_CONFIG #3 ASSEMBLY</p> <p>MATERIAL -</p> <p>DWG NO <b>22293306-0003</b></p> <p>HEAT TREATMENT -</p> <p>DWG SIZE <b>C</b></p>
FRACTIONS	# 1/32	METRIC																			
X.XX	# 0.015	0 MM	# 1.0 MM																		
X.XXX	# 0.005	0.0 MM	# 0.4 MM																		
ANGULAR	# 0.5		# 0.1 MM																		
RUNOUT	# 0.003 T.I.R.	0.00 MM																			
DRAWN BY  AH  2/12/2019 SHEET 1 OF 2																					

### Level Detect, DS Series - 22110521

Parts List				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	22203382	SENSOR MOUNT	-	12/03/2010	ARM	ORIGINAL ISSUE
2	1	22203427	MOUNT_LEVEL_PCD_VER2	A	1/20/14	IAH	22203382 WAS 22203428, 22203615 WAS 22203429
3	1	22203615	MOUNT_VERT_ADJUST_PCD_LEVEL_DETECT				
4	1	5500-0057	SENSOR CAPACITIVE				
5	1	DAM03008	DOWEL PIN 3mm X 8mm				
6	2	S0061	EXTENSION SPRING				
7	2	SABSM030050008	SCREW,BUTTON HEAD,3MMX.5 X 8MM,SST				
8	2	SACSM030050004	CAP SCREW 3MM X .05 4MM LG				
9	3	SACSM030050008	CAP SCREW 3MM X .05 8MM LG, SST				
10	2	SAFANM030050012	SCREW,FLATHEAD,3MM X 12LG ALLOY				
11	1	WFRBAMM3	WASHER,FLAT,REGULAR,ALLOY,M3				

<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b>				<b>DESCRIPTION</b>	
FRACTIONS		METRIC		LEVEL DETECT_PCD_VER2_CAPACITANCE	
X.XX	± 0.015	0 MM	± 1.0 MM	ASSEMBLY	
X.XXX	± 0.005	0.0 MM	± 0.4 MM	PCD	
ANGULAR	± 0.5°	0.00 MM	± 0.1 MM	MATERIAL	
RUNOUT	± 0.003 T.I.R.			DWG NO	
FINISH				<b>22110521</b>	
HEAT TREATMENT				DWG SIZE	
				<b>B</b>	
DRAWN BY		DATE		SHEET	
IAH		12/5/2013		1 OF 1	

ALL FASTENERS ARE PLATED ALLOY OR STAINLESS STEEL

# Level Detect, MAX Series - 22293101

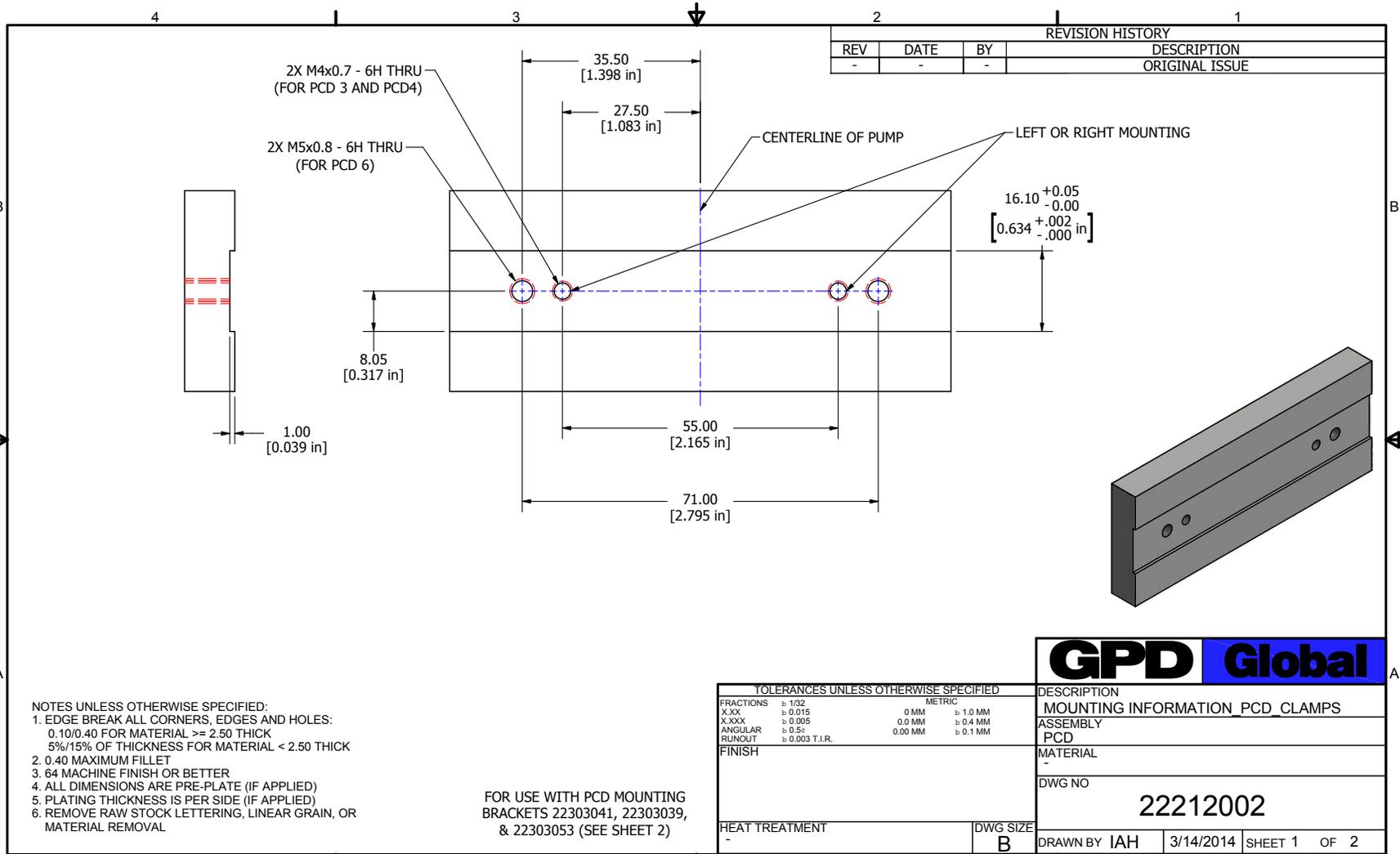
Parts List				REVISION HISTORY			
ITEM	QTY	PART NUMBER	DESCRIPTION	REV	DATE	BY	DESCRIPTION
1	1	22203382	SENSOR MOUNT	-	12/03/2010	ARM	ORIGINAL ISSUE
2	1	22203427	MOUNT_LEVEL_PCD_VER2	A	1/20/14	IAH	22203382 WAS 22203428, 22203615 WAS 22203429
3	1	22203615	MOUNT_VERT_ADJUST_PCD_LEVEL_DETECT				
4	1	5500-0057	SENSOR CAPACITIVE				
5	1	DAM03008	DOWEL PIN 3mm X 8mm				
6	2	S0061	EXTENSION SPRING				
7	2	SABSM030050008	SCREW,BUTTON HEAD,3MMX.5 X 8MM,SST				
8	2	SACSM030050006	CAP SCREW 3MM X .05 6MM LG, SST				
9	3	SACSM030050008	CAP SCREW 3MM X .05 8MM LG, SST				
10	2	SAFANM030050012	SCREW,FLATHEAD,3MM X 12LG ALLOY				
11	1	WFRBAMM3	WASHER,FLAT,REGULAR,ALLOY,M3				

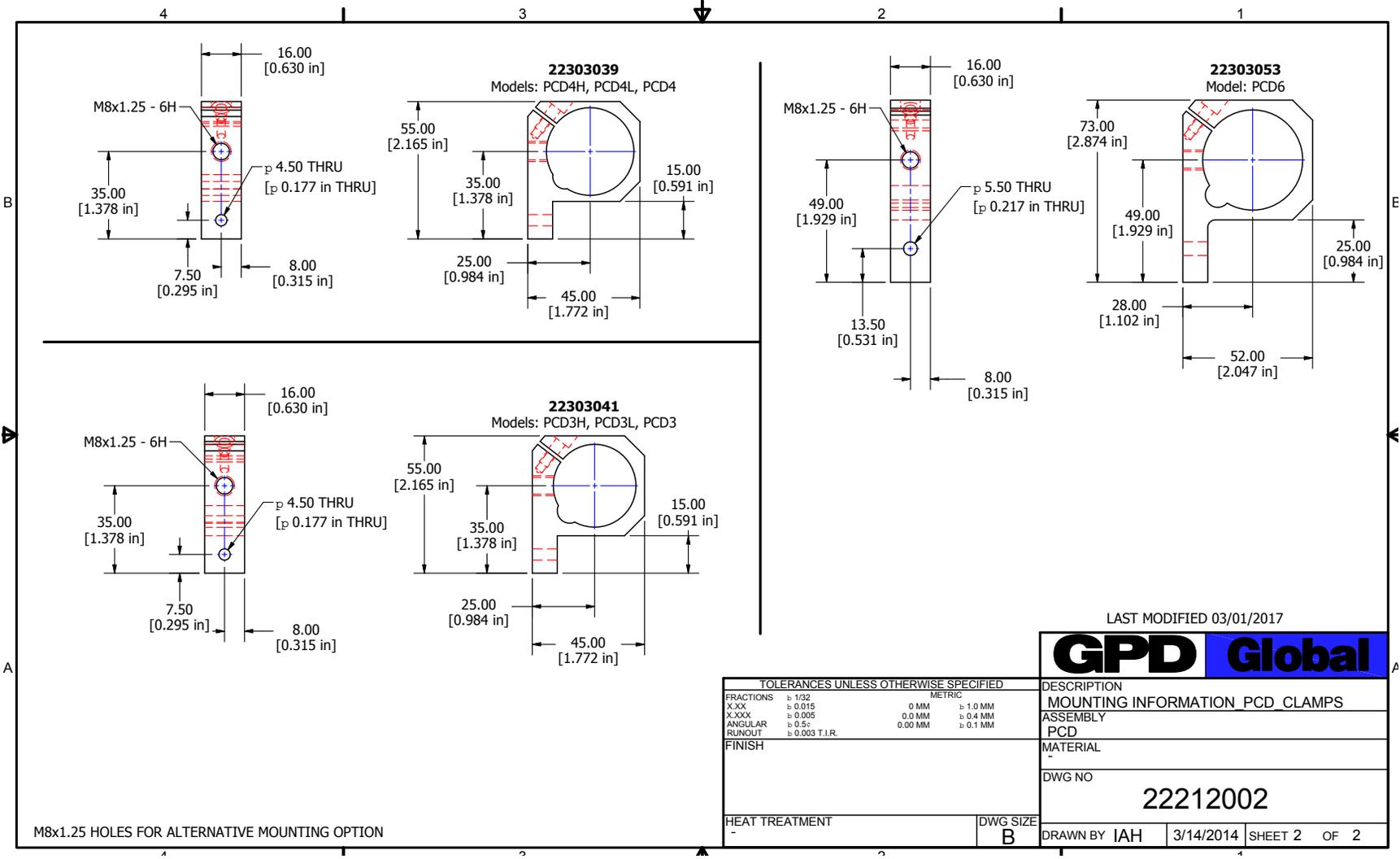
<b>TOLERANCES UNLESS OTHERWISE SPECIFIED</b>		<b>DESCRIPTION</b>	
FRACTIONS	1/32 X.XX X.XXX ANGULAR RUNOUT	METRIC 0 MM 0.005 0.0 MM 0.003 T.I.R.	LEVEL DETECT_PCD_VER2_CAPACITAN ASSEMBLY 22293100
FINISH		MATERIAL	
HEAT TREATMENT		DWG NO	
		<b>22293101</b>	
DWG SIZE		DRAWN BY	DATE
<b>B</b>		ARM	12/3/2010
		SHEET 1 OF 1	

ALL FASTENERS ARE PLATED ALLOY OR STAINLESS STEEL

# Clamp Mount Hole Patterns & Groove - 22212002



# Clamp Mount Dimensions - 22212002



# Taper-Lock Mounting Detail - 22110291

