

**Genesis Pressure Tool #20-650-400**

**Assembly:** Install the short piece of vinyl tubing between the syringe and the tool. Push the tubing all the way onto the syringe tip as far as it will go. Do not use lubricant! Push the opposite end of the tubing onto the barbed brass fitting on the back of the tool (see illustration).

**Regulator Set Up:** The first stage must be fully assembled and ready to pressurize. Install an intermediate pressure gauge into one of the low pressure ports. Check the Intermediate pressure for "lock up". If IP drift is present, the following procedure will not work.

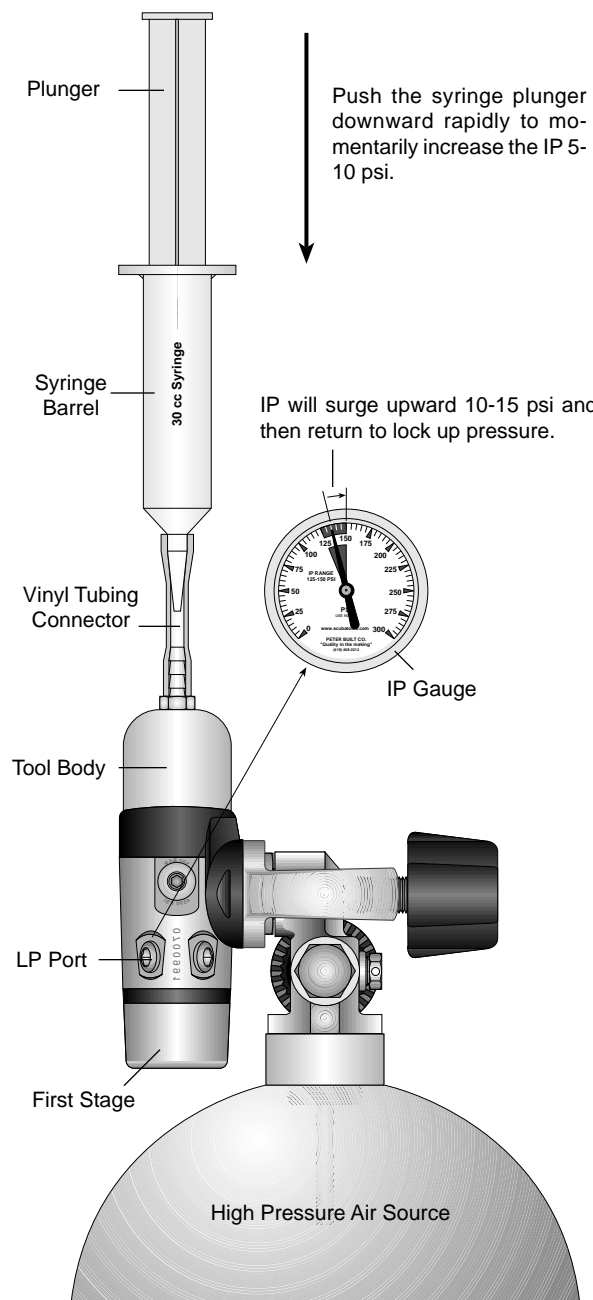
**Directions - Schrader Valve Activation:**

- Install the first stage onto a high pressure source so that the black plastic boot is pointing upward (see illustration).
- Pressurize the first stage. Supply pressure is not critical, but should be greater than 500 psi.
- Observe the IP to be sure that it is locked up and stable.
- Pull the syringe plunger outward to approximately 3/4 stroke.
- Place the tool onto the black plastic boot so that the lip of the tool indexes with the groove in the boot.
- Push down "hard" on the tool to insure an airtight seal between the tool o'ring and the boot.
- Rapidly push the plunger into the syringe. This action will momentarily apply a positive pressure of 10-15 psi on the diaphragm under the boot. This diaphragm movement will depress the Schrader valve stem allowing air to flow to the ambient piston chamber. This air surge will open the piston and increase the intermediate pressure approximately 5-10 psi. Notes: This procedure may take a little practice to determine the best speed for depressing the syringe plunger. Lubricating the inside of the syringe barrel and plunger tip with silicone may be necessary to achieve an airtight seal during pressurization.
- Repeat this procedure 2-3 times to confirm the results.

**Directions - Schrader Valve Continuous Leak:**

- Position the syringe plunger near the bottom of the stroke.
- Seal the tool onto the boot, as above, by applying hard downward hand pressure.
- Maintain the seal for 10 to 15 seconds.
- Watch the plunger to see if it remains stable. If the plunger is pushed outward, the Schrader valve has a continuous leak and will need to be replaced.

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**Dual Drive In-line Adjusting Tool #20-500-200**  
**Optional IP Gauge Assembly # 20-510-100**

The Genesis Dual Drive In-Line Adjusting Tool is designed to make final precision orifice adjustments on the GS 2000, Atlas, Yukon, S.K.O., and Sidekick second stages. The Side Kick requires a special procedure described below. This tool also fits all Sherwood second stages as well as many other diving industry regulators.

The dual drive feature allows the tool to be quickly converted to adjust both slotted and 5mm hex orifices (see middle illustration). The one piece stainless steel spool is designed to flow air through the center of the spool. This feature pneumatically balances the spool so that it is not necessary to push inward on the knob against the air pressure to engage the drive bit. An optional IP gauge assembly allows the technician to monitor intermediate pressure throughout the adjustment procedure. Two o-rings are located on the extreme ends of the spool and can be lubricated without disassembling the tool. If it is necessary to remove the spool, it is retained by a single SS set screw in the knurled knob.

The knurled knob can be located in two positions on the center spool. Under normal conditions, the knob should be located in the dimple nearest to the slotted drive end of the spool. This location centers the spool and provides ample stroke to reach most orifices. If the orifice is exceptionally deep, the knob can be moved back to the deep reach dimple (see top illustration). This provides an additional 1/4" inch to the slotted drive stroke.

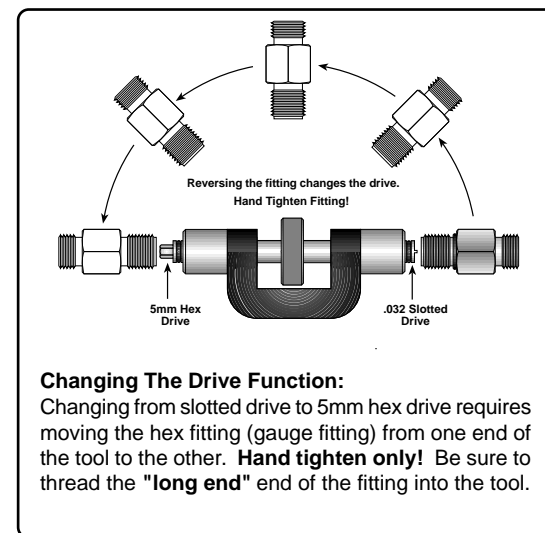
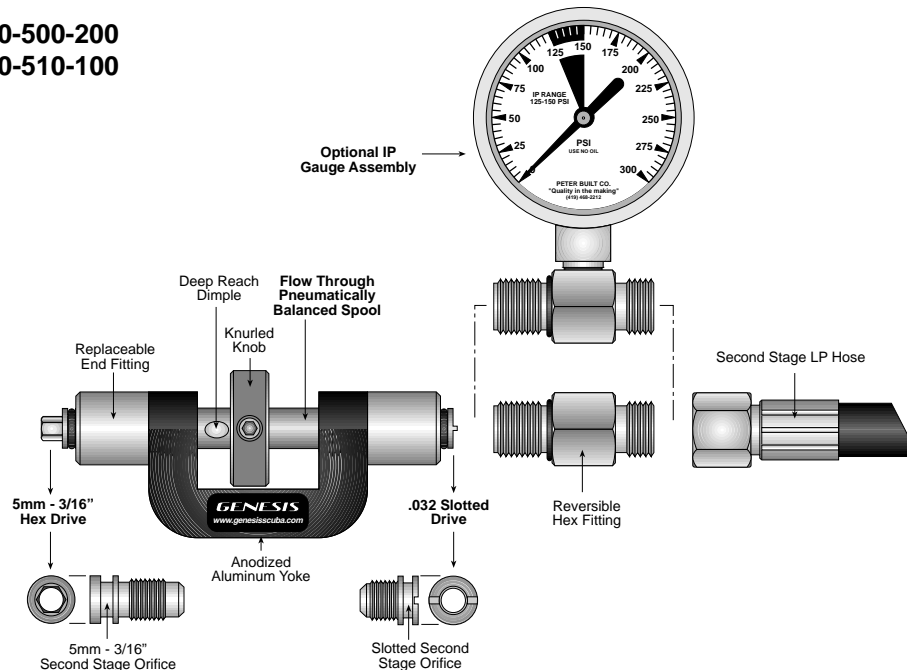
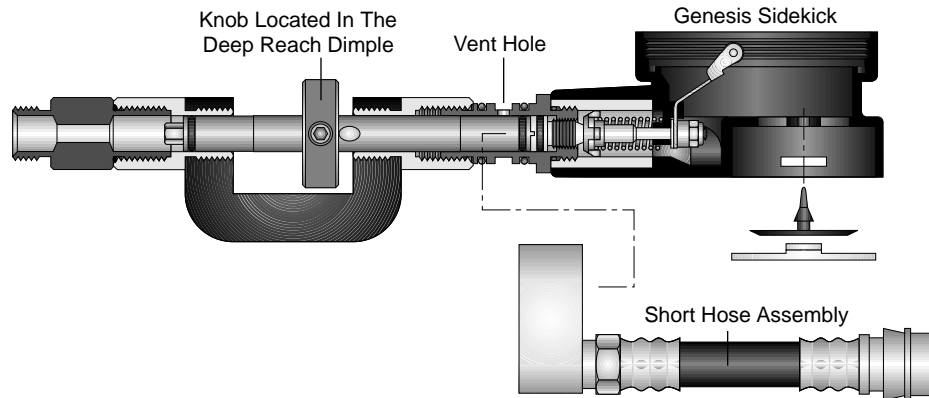
The standard procedure for using the tool is to thread the tool onto the second stage, connect the low pressure hose to the opposite end of the tool, and turn the air on. Push the spool inward to the second stage and engage the drive bit. The orifice can be turned in either direction to locate the correct adjustment. When the orifice adjustment is completed, be sure to retract the drive bit before unthreading the tool from the second stage.

**Sidekick Procedure:** The Genesis Sidekick requires that the knob be adjusted to the deep reach dimple. Please follow the procedure listed below for making orifice adjustments to this second stage.

- Remove the short hose assembly from the end fitting and locate the vent hole in the fitting.
- Thread the tool onto the fitting and push the spool inward until the o-ring passes the vent hole.
- Turn the air pressure on and adjust the orifice.
- Turn the air off before retracting the spool out of the fitting.
- Unthread the tool and reinstall the short hose assembly.

The above procedure prevents cutting the spool o-ring as it passes over the vent hole.

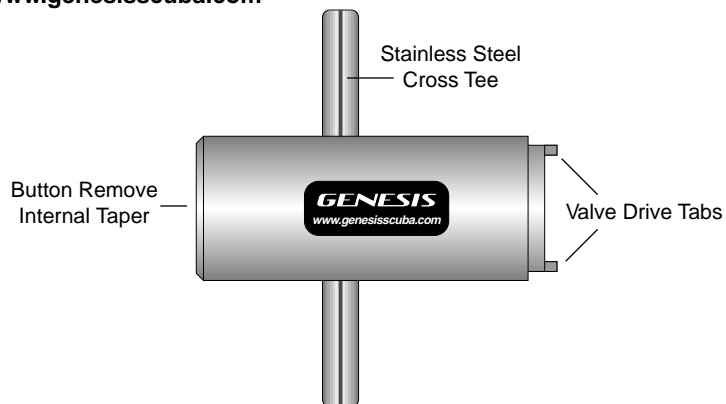
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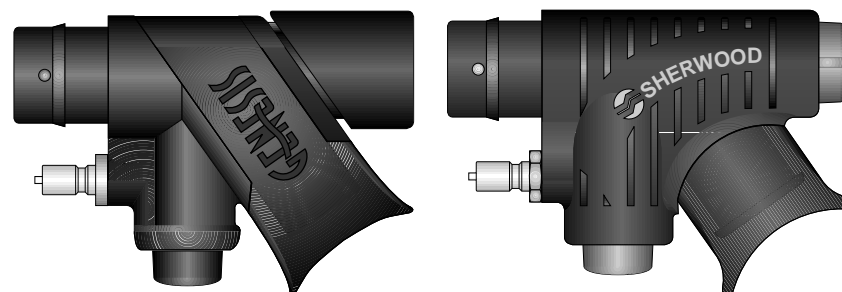
**Changing The Drive Function:**  
Changing from slotted drive to 5mm hex drive requires moving the hex fitting (gauge fitting) from one end of the tool to the other. **Hand tighten only!** Be sure to thread the "long end" of the fitting into the tool.



**Genesis/Sherwood Inflator T- Tool #20-660-200**



**This Tool Fits Both Genesis & Sherwood Inflators**



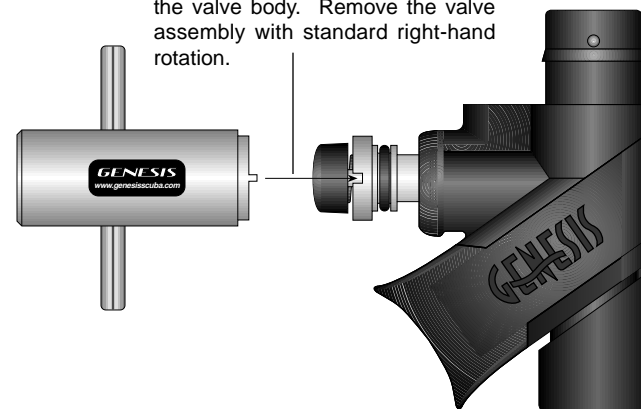
This special T-Tool fits both Genesis & Sherwood power inflators. The tool is designed to provide two functions in the disassembly/assembly of these inflators.

The valve assembly can be removed by indexing the two drive tabs into the slots machined into the valve body (see middle illustration). These slots are recessed under the inflator button. Slide the tool over the button and rotate the tool until the tabs index with the slots. When removing a tight valve assembly, push down firmly to keep the tool tabs fully engaged with the valve body slots. The valve assembly utilizes a standard right-hand thread.

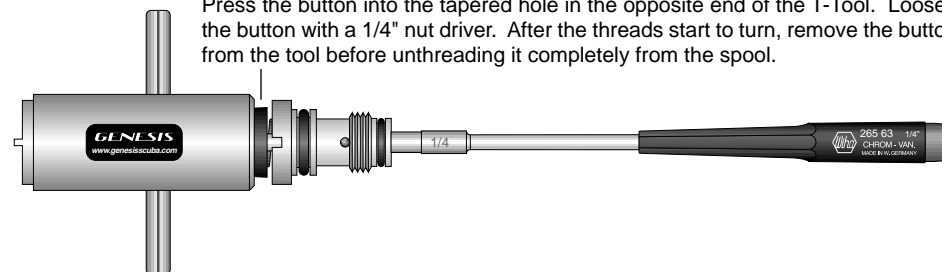
After the valve assembly has been removed, the T-Tool can be used to hold the button while the center brass spool is removed. The opposite end of the tool is internally machined with a slight taper. Push the button into the taper with a 1/4" nut driver. The taper serves to hold the button while the center spool is unthreaded. This button is retained with Loctite® and may require an above normal amount of torque to break the threads loose. It may be necessary to capture the T-Tool in a padded vise to provide additional support for removing the button. After the spool begins to turn, work the button out of the tool before completely unthreading it from the spool. Under normal conditions, this operation should not damage the button.

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Index the drive tabs with the slots in the valve body. Remove the valve assembly with standard right-hand rotation.



Press the button into the tapered hole in the opposite end of the T-Tool. Loosen the button with a 1/4" nut driver. After the threads start to turn, remove the button from the tool before unthreading it completely from the spool.



## Inflator Dump Button & QD Fitting Tool #20-670-400

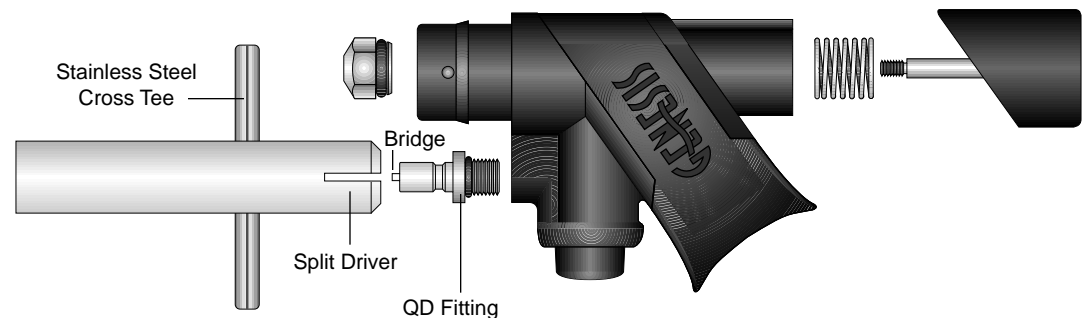
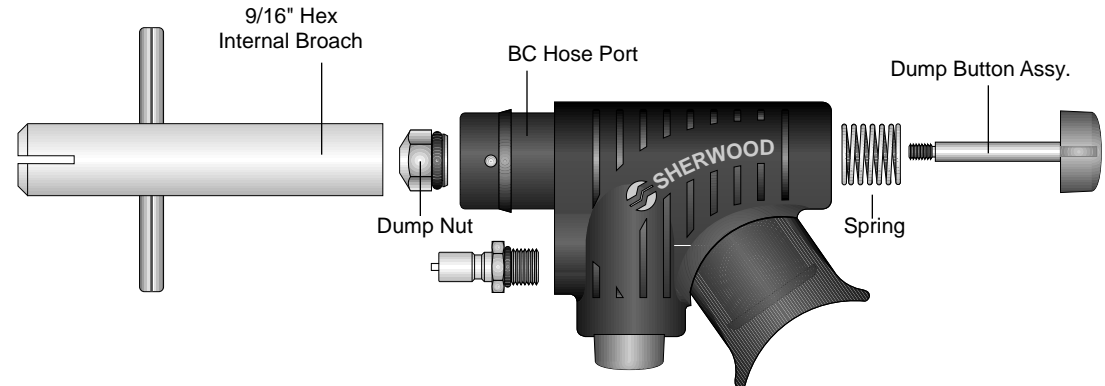
### This Tool Fits Both Genesis & Sherwood Inflators

The Genesis Inflator Dump Button & QD Fitting Tool is designed to remove the deeply recessed nut assembly that retains the dump button and spring. This tool also can be used to remove the quick disconnect (QD) fitting.

The dump nut can be captured by the tool and unthreaded by inserting the 9/16" hex broached end of the tool into the BC hose port. (The inflator cross pin will need to be removed to open the hose port.) After inserting the tool and indexing the socket over the dump nut, push the dump button in as far as it will go before removing the nut. This procedure will keep the dump button from rotating during disassembly.

The opposite end of the tool is machined with a special split driver to assist in removing the QD fitting from the inflator body. This tool feature was included to handle the original QD fitting that did not have hex flats at the base of the fitting. The newer QD fittings have hex flats and should be removed with a standard 1/2" open end wrench. To use the split driver, push the tool onto the QD fitting so the bridge on the top of the fitting is fully engaged at the end of the split. Unthread the fitting from the body.

**Special Note:** The split driver may not be strong enough to remove a very tight QD fitting. If the fitting is extremely tight, it may be damaged during the removal process. If the bridge or fitting exterior are damaged during the disassembly process, be sure to replace the fitting when the inflator is reassembled.



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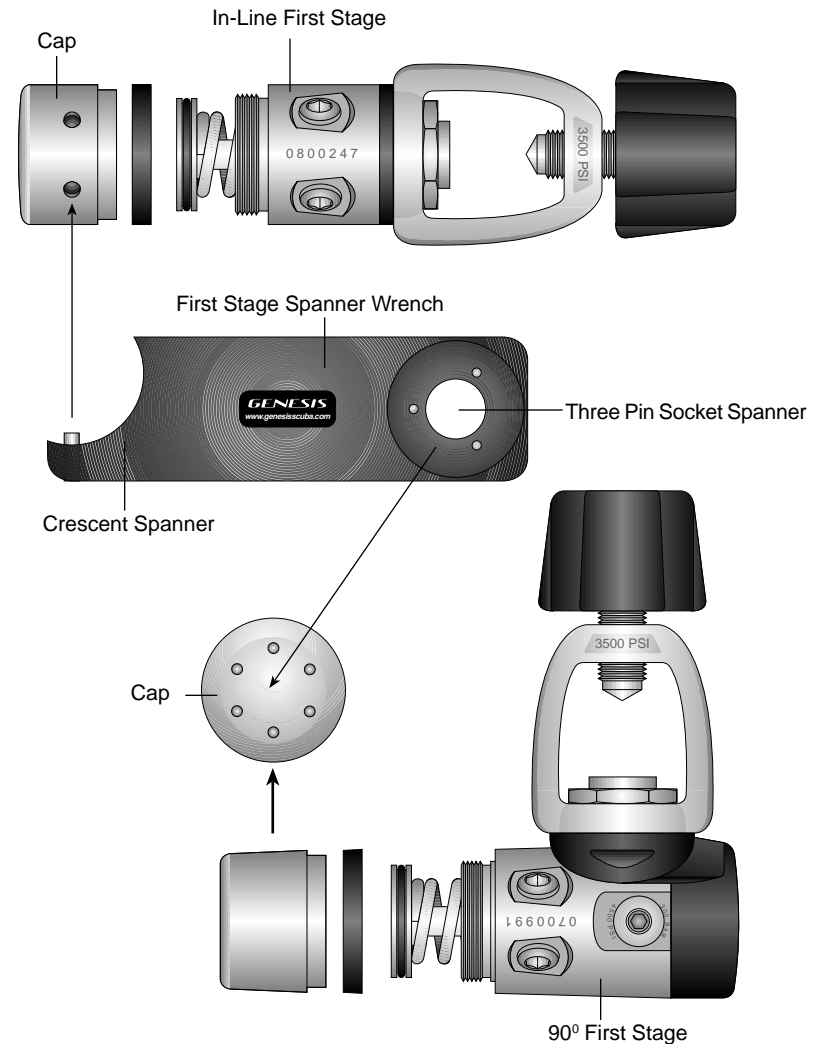
**Genesis Spanner Wrench #20-600-200**

The Genesis Spanner Wrench is a dual function tool that is used in the disassembly/assembly of Genesis first stages.

The crescent spanner is an open end wrench that fits the outside diameter of the in-line first stage. The drive pin can be indexed in any of the perimeter ambient holes, and the wrench can be used to turn the cap in either direction. The first stage body can be held with either a field handle installed in an output port or captured in a soft jaw vise. When installing the cap, be sure that it is tight enough to prevent removal by hand. Overtightening is not necessary.

The three pin socket spanner is designed to fit the cap on the 90° first stage. The socket diameter fits the cap and the three drive pins can be indexed with any three of the blind holes in the end of the cap. The cap can be both removed and installed with this spanner. When installing the cap, be sure that it is tight enough to prevent removal by hand. Overtightening is not necessary.

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## Genesis Select Set #11-090-500

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### Blunt Probe & Teflon Washer Tool:

The blunt probe in the Genesis Select Set is used to remove the HP orifice assembly from the first stage body. The probe handle has been resized to allow the probe to pass completely through the first stage body. The HP orifice assembly can be easily removed by inserting the probe through the HP orifice from the cap end and pushing the HP orifice, backup ring, o'ring, and belleville washers out through the opposite end of the body (see first illustration).

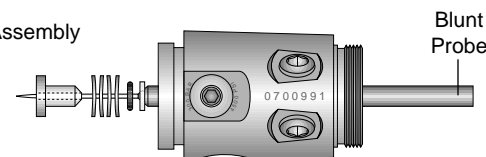
The Teflon Washer Tool is used to seat a new teflon washer inside the first stage body. Install the washer onto the tool and insert the tool and washer into the body. Be sure to press inward firmly to properly seat the washer at the bottom of the internal ledge (see second illustration).

The HP orifice, belleville washers, and o'ring can be installed by stacking the components on the probe in the correct order and inserting (pressing) them into place (see third illustration).

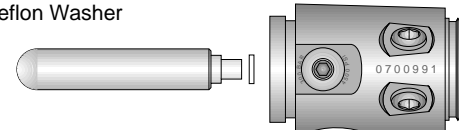
The HP seat can be pushed out of the piston using the blunt probe. Insert the probe into the center hole in the piston and force the seat out of the opposite end of the piston (see fourth illustration).

Note: The 2mm screwdriver can also be used to remove the HP seat on some pistons. The blade diameter of the screwdriver may fit the smallest diameter of the piston hole very tightly. The screwdriver is a lot stronger than the probe, and may come in handy for removing an exceptionally stubborn HP seat (not shown).

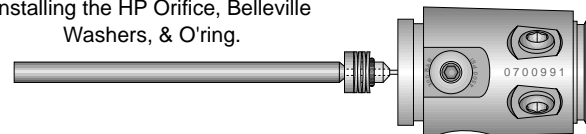
Removing the HP Orifice Assembly



Installing the Teflon Washer



Installing the HP Orifice, Belleville Washers, & O'ring.



Removing the HP soft seat from the first stage pistons using the blunt probe.



### Wiha® Screwdrivers (2):

The two precision screwdrivers included in the set are used for removing the HP soft seat from Genesis first stage pistons (see bottom illustration), and removing/installing the flow vane "C" clip in the GS2000 second stage.

The "C" clip can be removed from the GS2000 flow vane by wedging the tip of the 2mm (small) screwdriver in the "C" clip groove and up against the flow channel molded inside the second stage case. With the screwdriver in this position, the "C" clip cannot rotate. The 3.5mm screwdriver is used to push the clip off the flow vane shaft and into the mouthpiece shank.

Installation of the "C" clip can be done by turning the second stage upside down, placing the clip with the open end facing toward the inside of the housing, and pushing the clip onto the flow vane shaft with the 3.5mm screwdriver.

Be certain during the installation procedure that the clip is "locked in the groove" on the flow vane shaft. It is vital that this clip does not dislodge while the second stage is in use. If the clip comes off during a dive, the flow vane assembly can come out of the housing causing catastrophic flooding of the second stage. The clip can also be inhaled causing the diver to choke. It is advised to double check this assembly process to insure that the clip is secure.

2mm Slotted Screwdriver



3.5mm Slotted Screwdriver



1/8" O'ring Pick:

The o'ring pick included in the Genesis Select Set is for general removal of all o'rings in both the first and second stages. Be careful when using this tool as it is very sharp and may damage regulator parts.



## Genesis Poppet Tool Kit #20-640-100

The Genesis Poppet Tool Kit is designed to assist the technician in the assembly and disassembly of the demand valve components. The kit consists of a special wrench for starting and adjusting the nyloc nut, and a poppet drive tool for turning the poppet from the outside of the case. The poppet drive tool also retains the poppet and spring without inward hand pressure. Note: This tool kit can be used on all models of Genesis second stages. To conserve space, only one second stage is shown in the illustrations to the right.

### Assembly Procedure:

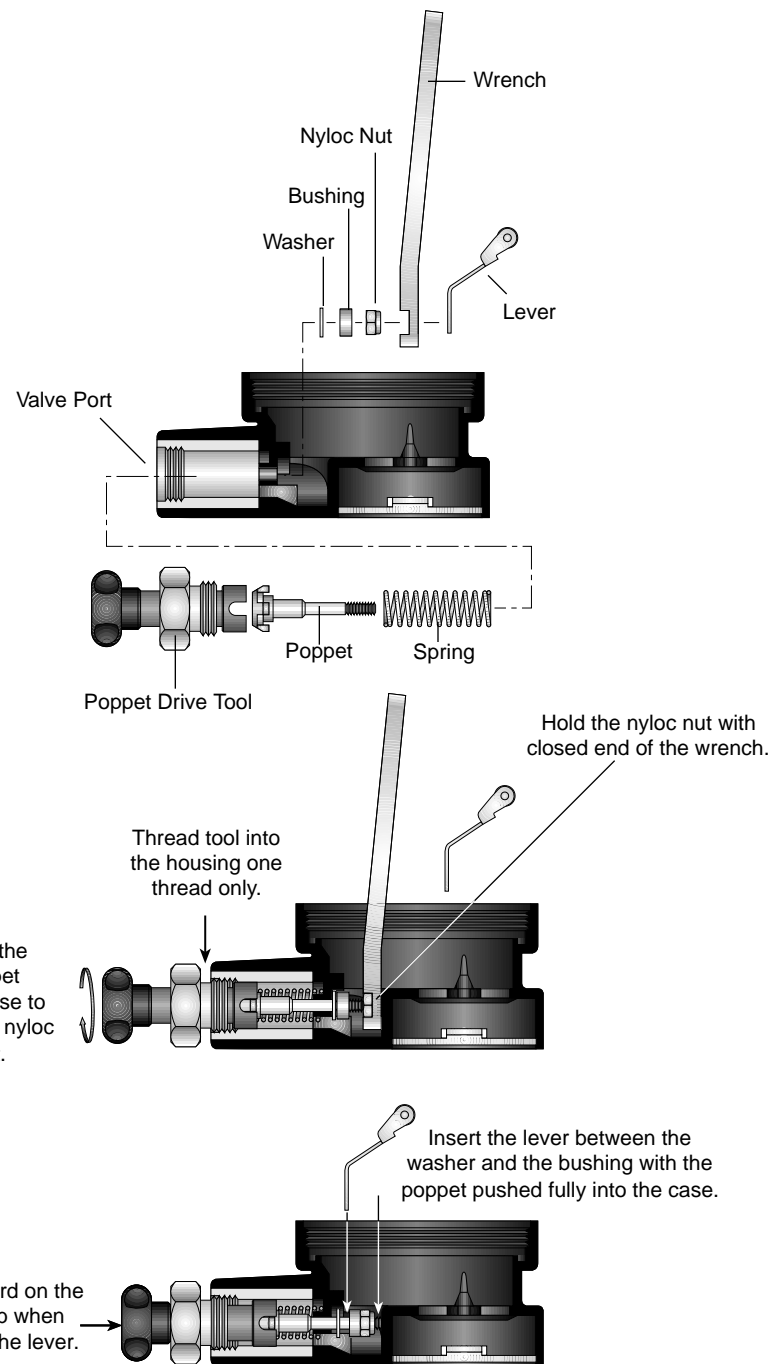
- Hold the Poppet Drive Tool in a vertical position with the drive socket pointing upward.
- Index the poppet tabs into the tool drive head and place the spring over the poppet shank.
- Hold the second stage housing with the valve port pointing downward, and insert the poppet and spring into the second stage housing.
- Push the poppet and spring into the housing far enough to allow the tool swivel nut to be threaded into the valve port. Note: It is best to only thread the swivel nut into the valve port "one full thread". This procedure will extend the poppet shank the right distance into the housing for installing the washer and bushing.
- Install the washer and then the bushing onto the poppet shank.
- Insert the nyloc nut into the closed end of the wrench and position the nut over the end of the poppet shank.
- Turn the tool knob clockwise to start the nyloc nut on the end of the poppet shank.
- Continue threading the nyloc nut on to the poppet shank until approximately 3-4 threads are exposed on the outside of the nyloc nut. Note: Consult the Genesis repair procedures for the correct preset position of the nyloc nut on specific second stage models.
- Remove the wrench from the nyloc nut.
- Push inward on the tool knob to extend the poppet shank fully into the housing.
- Install the lever between the washer and the bushing on the poppet shank while maintaining inward hand pressure on the tool knob.
- Release the inward pressure on the tool knob slowly to allow the lever to slide into the correct position.
- Check the lever action to be certain that it is properly installed.

If additional adjustments to the nyloc nut are required, the Poppet Drive Tool can be reinstalled at any time. The open end of the wrench can be used to hold the nyloc nut during these adjustments. When reinstalling the poppet drive tool, be sure that the drive head indexes properly with the poppet tabs before threading the swivel nut into the valve port. The drive head will not automatically slide into place and the poppet can not be turned if the drive head and poppet are not properly indexed.

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This tool designed and manufactured by **Peter Built Co.** • 7990 County Road #20, Galion, Ohio • [www.scubatools.com](http://www.scubatools.com)

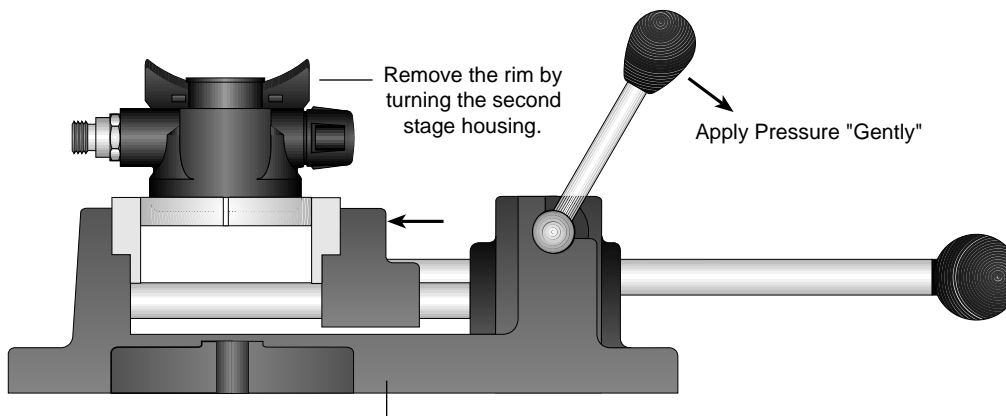
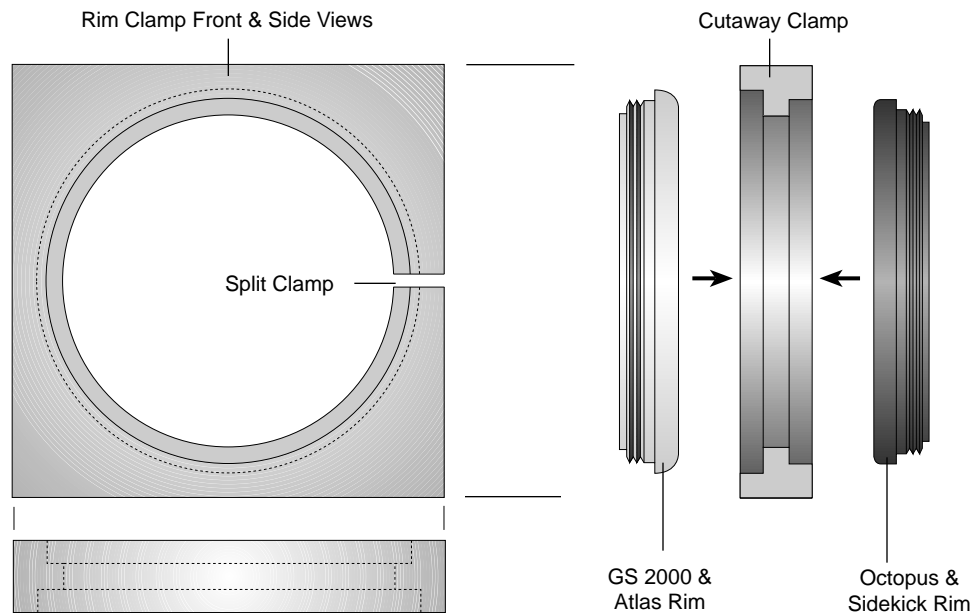


The Genesis Rim Clamp is designed to assist the technician in removing second stage diaphragm retaining rings that can not be normally removed by hand.

The clamp is machined with two different size internal ledges to fit all Genesis second stages. The ledges are machined to fit the rims exactly to help prevent rim distortion during removal. To use the clamp, observe the following procedure:

- Try removing the rim by hand before utilizing the clamp.
- If the rim is too tight to remove by hand, select the correct ledge and press the rim all the way into the clamp.
- Install the clamp between vise jaws with the split in the clamp parallel with the vise jaws.
- Close the vise "gently"! Do not overtighten! It is best to close the vise at the minimum tension that will hold the clamp and second stage. If more tension is needed, slowly apply addition clamping force.
- Loosen the rim by turning the second stage housing. Genesis second stage rims utilize standard right hand threads.
- After the rim has been loosened, remove the second stage from the clamp and unthread the rim by hand.
- It is not necessary to use the clamp to tighten the rim during installation.

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Grip Master Vise with Peter Built Co. Soft Jaws.

