

Hold everything!!!!

Are you the same guy who keeps calling in here saying that we sold you a bad unloader because every time you released the trigger the v-belt 'squealed' or the engine shut-down!

I thought so!

Why don't you just buy a pressure gauge?



# YOU WOULD BE 'BLOWN AWAY'

## IF YOU KNEW HOW CONTRACTORS DO NOT HAVE A PRESSURE GAUGE ON THEIR MACHINE!

### ADJUSTING 99% OF THE UNLOADERS IN THE INDUSTRY

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First look at the body of the unloader and identify the markings. You will have an 'IN', an 'OUT', a 'By-pass' and around the adjusting knob a (+) and a (-).

Before you even think about properly adjusting an unloader you need to make sure your machine is nozzled correctly.

If you have a 5.6 GPM Pump that is rated for 3,500 PSI you have to remember the **spike** pressure factor under LESSON 2. You are going to use a nozzle that will give you 5.6 GPM @ 3,000 PSI. Go to your nozzle chart and you will see that will be a #06.5 nozzle size. Caution - do not get confused about the first 2-numbers on a nozzle. Those are the degrees or how wide or narrow the stream of water will be as it exits the nozzle. The last 3 numbers will be the nozzle size. For example: a 1506.5 nozzle is 15 degree with a nozzle size of 06.5.

#### Now - install the **NEW** nozzle and let's get to unloader adjusting.

1. The first thing you want to do is take off the chemical injector if you have one installed. Then place your pressure gauge between the unloader and the trigger gun. Before you crank the engine turn the knob on the unloader to it's lowest possible pressure - see (-).

2. Now crank the engine and get it to full operating RPMs. While holding the gun **OPEN** start turning the knob on the unloader toward the (+) direction and watch the gauge closely. When the gauge **STOPS** moving then you must **STOP - YES - STOP!** **DO NOT** turn that knob any more. If the pressure shows that you have **exceeded** what you have calculated to be the proper operating pressure then you need to use a larger nozzle size in order to bring the pressure back down. Using this example try a 07.0 nozzle instead of the 06.5 and see if it brings the PSI down to the proper operating pressure. On the other hand, if the pressure will not come up to that pre-determined operating PSI then you will need to install a smaller nozzle. In this case start by installing a 06.0 instead of the 06.5 nozzle size.

**WHY** am I having problems getting to the proper operating pressure. First you should know that some pumps are over rated by the manufacturer. For example; we have bench tested the TS-2021 pump many times and have yet to get one to produce more than 5.3 GPM at it's rated 1450 RPM although it is rated for 5.6 GPM. Having to reduce the nozzle size on this pump is normal.

Now if you understand how to properly adjust the unloader you will understand what happens if you keep turning the unloader adjusting knob **AFTER** you have already reached your operating pressure. You start **Red-Lining** your pump!

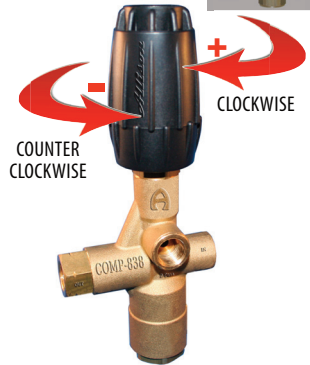
So what do you think will happen if you continue to turn the knob clockwise while the OPERATING PRESSURE stays at 3,000? All you are doing at this point is **SETTING** the **SPIKE PRESSURE** to an **UNSAFE PRESSURE**. I have seen **spike pressures** as high as **7,000 PSI** on a pump rated at only 3,500 PSI.

How does this happen? The most common reason is because the operator does not have a pressure gauge installed on their machine so they have to guess at the pressure. This probably represents 75% of all pressure washer problems. Over-pressurizing a pump you will destroy or reduce service the life of every component on the pressure washer.

At least once a week someone calls and tells us that when they release the trigger the belts on their pressure washer start to 'scream' and/or the engine shuts down. This occurred because they kept turning the unloader adjusting knob thinking the operating pressure would increase but all they were doing was setting the 'spike pressure' to an unsafe level or - **'red-lining the pump!'**

Solution - use this information and buy yourself - not one - but two pressure gauges just in case one is giving you a false reading.

This type of unloader sometimes come without the **ADJUSTING KNOB**



NOTE:

**K-7 & K-5 & K-9 UNLOADERS**

adjust the opposite from most other unloaders.

Operating Pressure 3,000 PSI

**MAX SPIKE Pressure 3,500 PSI**



If you are in this area with **SPIKE PRESSURE** you have just **'RED-LINED' YOUR PUMP**

**Would you RED-LINE your car?**  
What about the gas engine that powers your pressure washer?  
What about your service vehicle?  
Your motorcycle?

**Congratulations!**  
**Your degree is in the mail!**

