

# UNLOADERS FOR DUMMIES

by 'Master Dummy' - John Allison

If there is one thing I have learned in my 40 years as both a contractor and a supplier/manufacturer is that everyone who comes into this industry (including myself) wants to be a 'rocket scientist' or an engineer. Sometimes that is good - most times it isn't.

Believe me - there is NO rocket science required when it comes to a pressure washer. Water comes in and water goes out and with the exception of a few safety valves in between...

*THAT IS REALLY ALL THERE IS TO A PRESSURE WASHER  
SO PLEASE DON'T COMPLICATE THINGS.*

I am not going to bore you (now) with the 'water in' and 'water out' on a pressure washer concept but I am going to give you the 'master dummies' lesson on unloaders which is one of those 'safety valves' I spoke of earlier. So sit back and don't bother taking notes. *It 'ain't' that hard folks!*

You have a machine that, with the trigger gun pulled, is running at 'whatever PSI' (doesn't matter so don't get 'bogged' down with any fancy calculations) and now you don't want water to come out the gun any more so you release the trigger. That water has to go somewhere or the pump could explode or lock up your engine. In order to keep this from happening you have an UNLOADER installed on the high pressure side of the pump head. When the trigger is released an internal by-pass valve goes into action and UNLOADS or 'by-passes' the water. The Unloader is now acting as a TRAFFIC COP and is redirecting the 'water traffic' to another location. It could be redirected back to the inlet side of the pump, back to a water tank or even the ground if you want.

SORRY - that is all there is to an unloader. Now, if you are like most, you will sit back and come up with at least 20 questions about unloaders. Which one should I buy, what color, what size, who makes it, etc. and the bottom line is this - **WHO CARES!** They all do the same thing. Yes, some will last longer and those are the only ones we sell.

My recommendation is to purchase a Compensating counter balanced unloader like the popular ALLISON COMP-838. This unloader has a very 'soft touch' and while most unloaders really hammer away at longevity of your equipment the '838' is very gentle.

## LESSON #1 - OPERATING PRESSURE

That is the pressure that is being produced when you have the trigger pulled.

A TS-2021 Pump is rated for 3,500 PSI so your maximum operating pressure is 3,500 PSI. Right? WRONG! Your maximum operating pressure should be approximately 80-85% of 3,500 PSI or...

**3,000 PSI!**

Why? Because you have to allow for - *SPIKE PRESSURE*.

With the trigger gun pulled - if your operating pressure on a 3,500 PSI Pump is more than 3,000 PSI you will be OVER the manufacturers rating when you 'release' the trigger and factor in 'SPIKE' pressure which is what it UNLOADS at.

3,500 PSI Pump should be set to run no more than 3,000 PSI when the trigger is pulled.



## LESSON #2 - SPIKE PRESSURE

We know that we know what operating pressure is but what is **SPIKE** pressure?

Well - that is the pressure that the pressure gauge 'spikes' or 'jumps' up to when you release the trigger!



I know you have a pressure gauge - right? If you don't no need to waste OUR time. Get one and then start over with lesson #1! That's like having a car with no speedometer and complaining when you get a 'speeding ticket.'

Now when you release the trigger watch your pressure gauge jump to a higher pressure. This is your **SPIKE** pressure.

**SPIKE** pressure should never be more than 15-20% of operating pressure. This means that if your operating pressure is 3,000 PSI then your spike pressure should not exceed a maximum of 15-20% or, in this

case, 450 to 600 PSI making your pressure gauge read no more than 3600 PSI with the trigger gun released.



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