NGT Self-Powered Air Drain Trap vs Cost and Efficiency of Timer Drains

Timer drains are commonly used to drain water from compressed air systems. At first blush they are inexpensive and only require that you pipe in the unit, supply it with electrical power and set two timers. What could be simpler?

Let's assume it's your lucky day and you receive a timer drain for free. Let's examine how much that "free" timer drain is going to really cost you. When air is compressed, the water always present in air is also compressed. The amount of moisture present in air is a function of the air temperature and relative humidity. Cold air contains less water vapor than dry air. As an example, air at 80° F contains 5.67 times more moisture than the same air volume at 30° F. By the same token, air at a relative humidity of 80% contains twice as much moisture as air at a relative humidity of 40%. The take away from these widely ranging values is the amount of water present in compressed air can range from a trace per 100 cubic feet per minute to values approaching ¾ of a gallon per hour. As an example, a 25 HP compressor will generate about 110 cubic feet of air per minute and on a hot, high humidity day as much as .8 gallons per hour of water to be discharged by the timer drain.

As part of the installation process you are required to set two timers; one to determine the length of blow and the other the frequency of blow or open period. For this very hot and humid day, you find that 3 seconds of blow down every 3 minutes gets the job done. A few days later the weather cools quite a bit and the humidity drops which results in the water to be drained drops off to .2 gallon per hour. Now the timer drain will be blowing off compressed air about 75% of the time it opens.

The simple fact –it is impossible to set a timer drain to operate properly without wasting a lot of valuable compressed air most of the time it is in operation. If you wish to confirm this observation, go check a timer drain in your facility and you can count on with 90% plus certainty it is wasting compressed air.

An 1/8" orifice will waste 1560 cubic feet of air per hour. Compressed air costs range from about $.25-$.40 per 1000 cubic feet. Using an average of $.30 per 1000 cubic feet, the loss would be $.47 per hour and if you operate your compressed air system 600 hours per month or $280 per month. If the timer drain is 50% effective, your loss per month would be $140. Most timer drains will waste their purchase cost in 1-3 months of operation.

Typical Timer Drain

Install with inlet/outlet supply valves and a strainer. Provide a 120 VAC power connection. In outside or wet environments, provide proper protection to avoid electric shock hazards. Figure 30 minutes +/- to adjust both timer controls. Check back frequently to see if you are blowing excess air or backing up water in your air lines. Increase checks when humidity or temperatures change.

NGT Self Power Drain Trap

Install with inlet/outlet supply valves, line size tee and a strainer. Inlet size is 3/8" NPT. If line sizes are larger use a 3/8" male NPT to a female NPT bushing matching your line size. Install a 3/8" copper or plastic balance line from the top of the NGT to the inlet side tee with an isolation gauge cock or needle valve.

Check back about every six months or so to see how the NGT is working. Use the extra time to deal with other issues in your day.

NGT Self Powered Air Drain Trap Information

The patented NGT (Next Generation Trap) was designed for removing condensate from compressed air systems. Since it is totally pneumatic, it does not require any electricity and can be easily installed using simple piping connections at any point in a system including remote locations.

Drain All NGT Next Generation Trap is an ideal solution for compressor applications up to 25 HP (125 SCFM) or as an air trap on filters, dryers, drip points and equipment which require dry air. The Next Generation trap has an inlet/outlet 3/8" NPT connection and is designed to avoid the blockage that is common to small passages in competitor's designs. No timer, manual settings, or separate control line because the NGT auto-adjusts to the required flow without any type of manual input. The NGT is powered by compressed air and is 7.2" vertical operating height with a 1/8" NPT balance line. Capacity is 5 gallons per hour

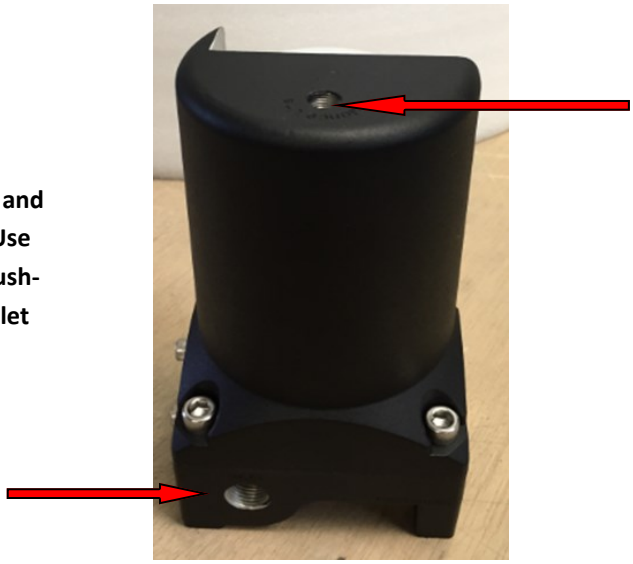
For more information, price and ordering see –

www.control-specialties.com/products/compressed-air/compressed-air-drain-traps/drain-all-ngt-next-generation-trap.html

For installation and technical data see -

file:///C:/Users/ED/Downloads/File-1519070993.pdf

3/8" Female NPT Inlet and Outlet connections. Use 3/8" male x Female bushings to match your inlet



3/8" Female Balance line to be connected to upstream pipe tee.

Does your plant air system resemble a high pressure water system? Water is present in the air which is drawn into the compressor. The water is gaseous, invisible and completely mixed with air. Air drain traps come in many styles and types including manual gate and ball valves, float operated traps, and timer drains. All have pros and cons but all can waste compressed air, clog up, or not adjust to varying conditions such as timer drains which must be adjusted frequently. Drain All offers several types of zero loss air drain traps for every application. Below are the three main units.

Amount of Condensate Produced at 90°F and 85% relative humidity			
Compressor Horsepower	100	50	25	10
Condensate Gallons per Hour	3.74	1.87	0.935	0.37
Air Flow in Cubic per Minute	430	215	107	43
Nominal Pipe Size at 100 PSIG	1 1/2"	1 1/4"	1"	3/4"
Nominal Receiver Size in Gallons	400	200	100	50
Suggested Drain Trap				
Maximum Pressure of 100 PSIG				
	Drain All Condensate Handler	Drain All Water Hog LH50-0LAAA	Drain All Water Hog LH50-0LAAA	Drain All NGT NEXT GENERATION TRAP

Drain All Replaces the Following Compressed Air Drain Traps

Manual Drain Valves	Gate Valves	Ball Valves	Needle Valves & Gauge Cocks
	1" and Larger	3/4"	1/2" and Smaller
			
Timer Drains			
Float Operated Drain Traps	1-1/2" and Larger	1" and 1-1/4"	3/4" and Smaller