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Condensate Draining Technic

Air & Gas Trapping

Intellectual Property Rights

Patent

Design

Trade Mark

Quality Standard : ISO 9001



POWER DRAIN

POWERDRAIN. has dedicated innovative products with continuous developments to the customer's satisfaction. High quality, low price, no-need electricity are our targets and we have developed a perfect mechanism with simplicity through long period.

The best feature of **POWER DRAIN** is simple mechanism with ball float sensing the level of condensate and controlling pilot air in the housing.

When the diaphragm is lifted up by depressurised pilot air, the condensate is drained out through a large discharge nozzle.

We have involved in condensate draining technique in compressed air for more than ten years covering R&D, manufacturing lines, marketing&after sales service.

We offer a full range of solutions to your plants in condensate draining problems.

Expert in Condensate Drain

We offer a full scope of solution for the various problems to your plants.

New approaches toward the problems.

- What about clogging at trap on discharging?
- What about air loss resulted from lowering the ball float buoyancy.
- What about frequent disassembling and cleaning for product?

Please feel free to contact us the above technical problems.





Effective maintenance for cost saving

Working pressure	7bar
Leakage points	10 points
Orifice	3.2 Ø
Operation	24hr/day
Net price of 1m ³	approximately 2cent(U.S dollar)

The annual loss amount in the above condition is in the following.

$$0.735\text{m}^3 \times 60\text{min} \times 24\text{hr} \times 365\text{day} \times 10\text{Point} \times 2\text{cent}$$

$$= \text{U\$ } 77,260$$

Leakage volume(Liter/min)

		Pressure(bar)					
		3	4	5	6	7	8
Orifice (Ø)	0.4	6	7.5	8.5	10	11.5	13.5
	0.8	24	30	34	42	46	54
	1.6	95	120	135	167	184	215
	3.2	382	478	543	670	735	860
	6.4	1,582	1,900	2,170	2,700	2,950	3,450

Fast feedback on investment from installation about 1~2 months

A common method of draining off unwanted moisture is to open a valve permanently which creates tremendous air loss. This action only solves temporarily the problem of removing the condensate but has an obvious cost of continual air loss. Until recently, energy wasted in compressed air systems has been overlooked or ignored.

Certificate



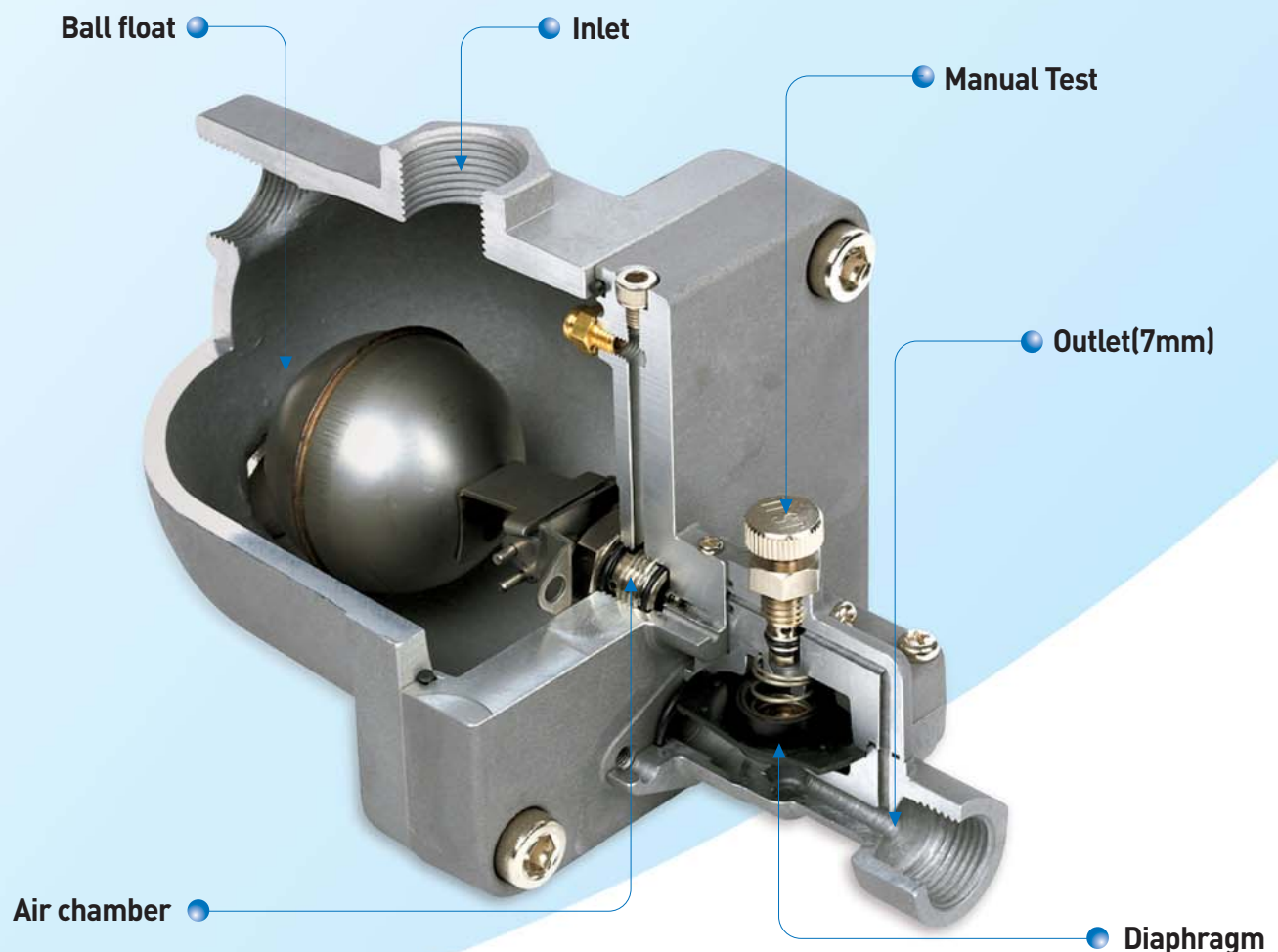
The Innovative Condensate Drain, **POWER DRAIN[®]** In Compressed Air and Gas System.

Generally, in a production line, condensate is generated from compression of air by a compressing movement. When the condensate is not removed, it can cause malfunction of equipment. Specifically, infiltration of condensate can lead to severe problems such as discontinuation in production line and product defects. Related methods of condensate drain can be largely divided into an integrated ball float and an electromagnetic solenoid, and a drain with an electromagnetic solenoid coupled with a level sensor.

However, the above condensate drains have many limitations. First, the integrated ball float, because the ball float directly controls the drain nozzle, it is difficult to employ the drain nozzle size exceeding 3 ϕ , and as a result, scale deposits gradually and other impurities inside the drain passage can easily clog and block the drain nozzle. Thus, periodic disassembly and cleaning is required.

Also, in an electromagnetic solenoid drain, while condensate is collected little by little and steadily, it forcefully drains off by preset time with certain interval, as a result, compressed air is discharged permanently to the outside. Thus, not only is energy lost, but an external power source must be connected to the drain. Moreover, an integrated drain, this type of drain also requires an external power source.

But our innovative ACETRAP[®], no need external power supply and no energy loss with easy installation, perform it's reliable discharge of condensate.





Function

If the POWER DRAIN[®] installed, the diaphragm is closed by system pressure and in housing condensate is collected gradually through inlet. When the condensate reach a certain predetermined level in housing, ball-float moving vertically pull needle valve which lead to depressurize upper space of diaphragm. Then immediately the diaphragm is lifted up and allows condensate to be discharged with contaminated pipe scales and oil etc. In consequence the level of condensate going downward, ball-float descend to lower position and the needle valve connected with ball-float compensate pressure on upper space of diaphragm. Accordingly the main nozzle of drain is blocked without any air loss.

Key features

Hard to scale	Large discharge nozzle(7Ø)
Excellent duration	
No external power supply	
Various application	large capacity
Simple mechanism	No error

Option

Pre-filter with ball valve
Easy clean pipe scales



Do you know how many amount of condensate generated in your compressor room?

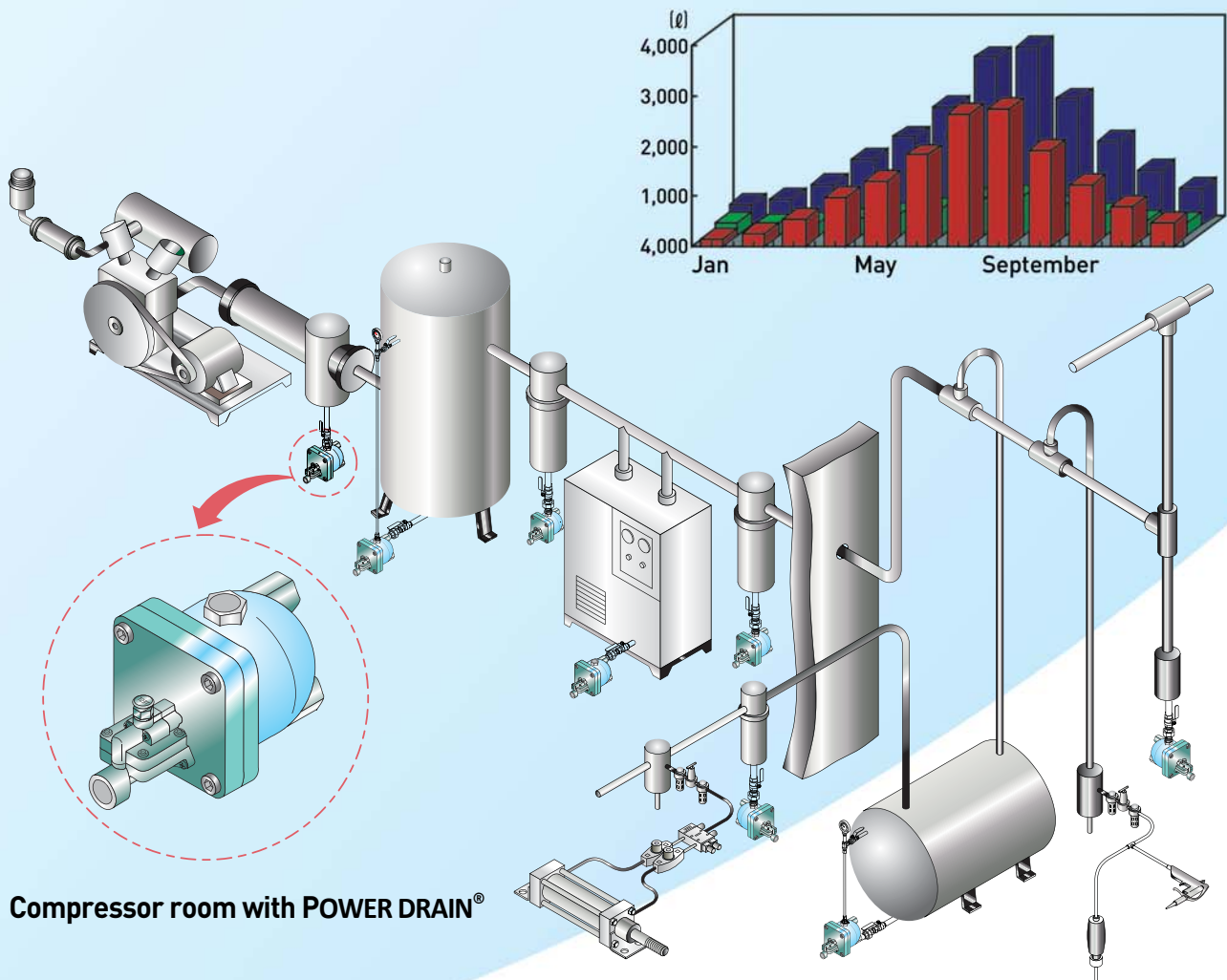
Let's think 340m³ have to be drained out for one year in your one 100hp compressor. It's a large volume!!

Volume of condensate

Pressure of Air	1.033	7	7
Cubic volume of Air (m ³)	13	1.63	1.63
Temperature of Air (°C)	40	40	4
Humidity of Air (%)	100	100	100
Vapor volume of Air (g)	659	82.6	10.3
Condensate Volume (g)	0	576.4	72.3

Compressor inhale 659g of vapor volume through inlet per one minute and 576.4g of vapor volume are condensed at cooler and air receive vessel. And it must discharged to outside. Also 72.3g of vapor volume should be done in dryer.

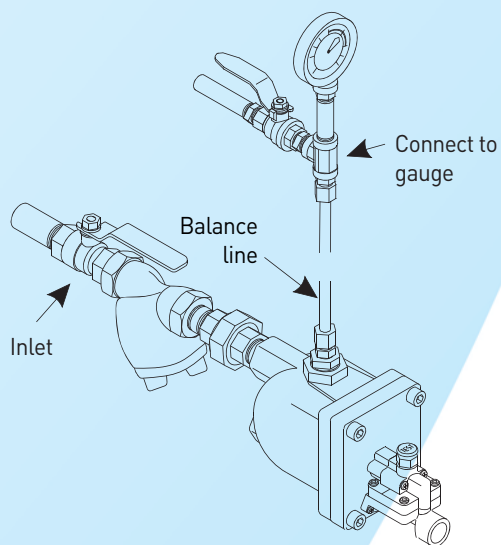
Our POWER DRAIN[®] discharges above condensate faithfully without air loss and unnecessary routine check.



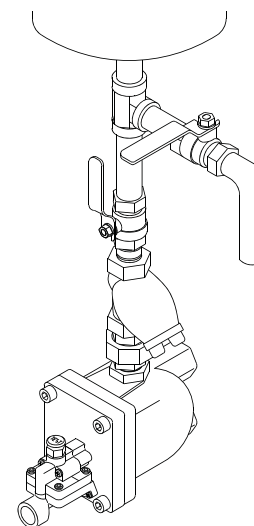
Compressor room with POWER DRAIN[®]

Installation

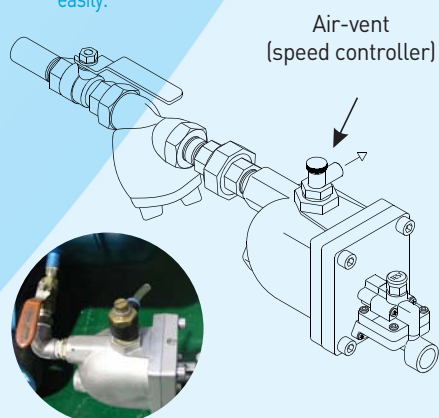
A type : Air receive vessel and etc



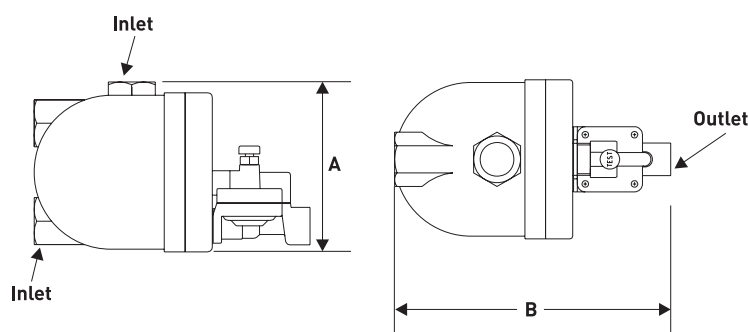
B type : Filter and etc



Note: In case impossible to connect to a gauge, install air-bent leaking very little volume of air in order to let condensate come into the drain easily.



Diagram



Technical Data

	Size (mm)		A	B	Range of pressure (kg/cm ²)	Temperature (°C)	Capacity (l/hour) (Normal/Peak)	Application (m ³ /min) (Compressor)	Weight (kg)
	Inlet	Outlet							
POWERDRAIN 15(L,N,H)	1/2"	3/8"	105	186	0.8~3	0~60	3/15	50	1.2
POWERDRAIN 15(L,N,H)C					3~9.9				
					10~16				
POWERDRAIN 20(L,N,H)	3/4"	1/2"	129	210	0.8~3	0~60	6/30	130	2.3
POWERDRAIN 20(L,N,H)C					3~9.9				
					10~16				

Attention : please note L,N or H which describe relevant working pressure.(i.e. in case oil injected compressor and the working pressure is about 7kg/cm², then the proper model could be POWER DRAIN 15N. But in oil-free compressor, it would be POWER DRAIN 15NC.