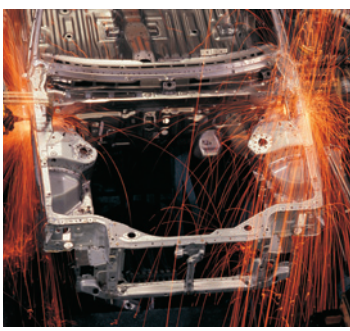
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker EcoPure Plus

High Efficiency Compressed Air Filter



ENGINEERING YOUR SUCCESS.

Compressed air is used extensively as a source of energy in most modern production facilities due to its high flexibility and reliability.

Unlike utilities such as gas, water and electricity, compressed air is typically generated on-site so the user is responsible for ensuring adequate air quality is maintained at the point of use.

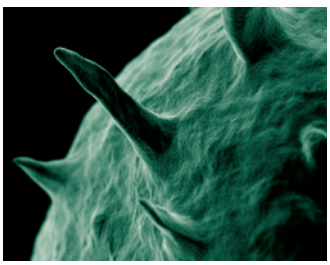
Contaminants are ever-present in atmospheric air used to generate compressed air. A compressed air stream therefore typically contains water, oil, dirt particles and micro-organisms which can contribute to product rejects, lost production time and increased maintenance expenses. For example, small traces of impurities can cause serious fisheye blemishing in automotive finishing operations. Excess water left in the air stream can freeze during exposure to cold temperatures, blocking air flow and ever rupturing pipes. Residual compressor oil and water can combine to form an acidic sludge so compressed air contamination often leads to premature component wear, resulting in early repair or replacement.

Most problems experienced by compressed air users arise due to contamination already in the compressed air system or contamination drawn in via the compressor air intake.
There are typically 10 different contaminants that originate from four different sources:

- Atmospheric Dirt
- Rust
- Pipescale

- Water Vapour
- Condensed Water
- Water Aerosols

- Liquid Oil
- Oil Aerosols
- Oil Vapour



- Micro-organisms

Before compressed air can be used, these contaminants need to be removed or reduced to acceptable levels to ensure efficient and reliable plant operation.

Compressed air must be properly treated to remove any contamination present and reduce maintenance costs, downtime and spoilage.

Parker EcoPure^{Plus} compressed air filters remove the water, oil mist and dirt particles constituting the key contaminants in any compressed air stream.

Parker Hannifin, the global leader in motion and control technologies, carries a stable of well known brands in the field of compressed air treatment. Parker EcoPure^{Plus} is the latest addition to the Parker family, offering a high-value solution to compressed air purification for general industrial standard compressed air applications.

The Parker EcoPure^{Plus} amasses decades of Parker's experience in designing and manufacturing compressed air filters and treatment systems and has been developed by the same highly trained team of filter experts responsible for the industry renowned Oil-X Evolution compressed air filter range. The EcoPure^{Plus} inherits many of the same proven compressed air purification technologies of Oil-X Evolution and the result is a compressed air filter providing the optimum balance of cost, filtration performance, energy efficiency and lifetime for general industrial standard compressed air applications.

Parker EcoPure^{Plus} Compressed Air Filter

- Air flow from 0.6m^3/min to 40m^3/min
- Filter housings from 1/4” BSPP to 3” BSPP connections
- Operates at pressures from 1 barg to 16 barg
- Technically advanced and proven filtration technologies
- Patented, unique element interface for high efficiency filter performance
- Filter element performance guaranteed for 12 months*
- Air quality performance tested in accordance with ISO8573

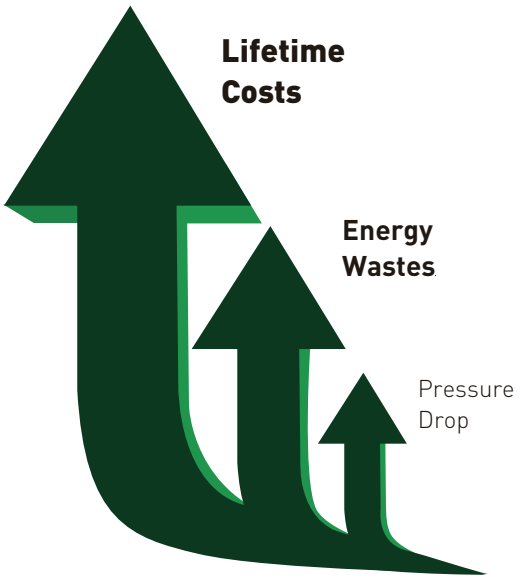
* - If used in accordance with manufacturer’s instructions

ISO 9001:2008
ISO 14001:2004
DNV

Parker EcoPure^{Plus} - Embodying the Essence of Value - adding Compressed Air Filter Design Filter Performance

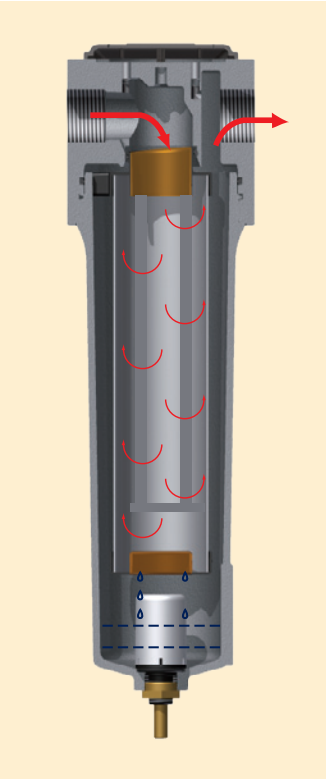
With a plethora of compressed air filters now available in the market it is tempting for the purchase decision to be driven solely by the criterion of initial purchase cost. The simple fact is that when purchasing compressed air purification equipment, the delivered air quality, energy efficiency and total lifetime costs must always be considered in combination.

Compressed air is favored as an energy source in manufacturing facilities the world over due to its high flexibility and reliability. However, compressed air is relatively expensive to produce compared to other energy sources since more than 80% of the total energy consumed by the compressor in the form of electricity is lost during the compression process in the form of heat. Any pressure losses within the compressed air system downstream of the compressor equate to additional wasted energy since the compressor must work harder to maintain the same air pressure at the point of use. As energy costs steadily escalate around the globe the focus on energy efficiency, or overall lifetime costs, intensifies. Filters that appear to offer exceptional value for money through claims of satisfactory filtration efficiency and low initial purchase costs often suffer from high pressure drops due to inferior design and construction methods. The higher the pressure drop, the higher the energy wastage and the higher the overall total lifetime cost of ownership.



The Parker EcoPure^{Plus} filter performance is tested as per the requirements of the ISO 8573 international standard for Compressed Air Filters. Each size / grade of filter is issued with a validation certificate by Lloyd's register, one of the world leaders in independent assurance. This validation certificate combined with a competitive price point assures the user that, once installed, a Parker EcoPure^{Plus} filter will provide the optimum combination of air quality, energy efficiency and overall total lifetime cost of ownership for general industrial standard compressed air applications.

Proven Technology Means Proven Reliability and Efficiency



Parker EcoPure^{Plus} filters feature an inside to outside air flow, a long understood and proven method of combining filtration efficiency and energy efficiency. Liquid contaminants are captured in the filter matrix and combine together into larger and larger droplets through collisions within the media. These droplets eventually coalesce on the outside of the filter element where they collect and are drained away by gravity.

The inner element surface acts as a pre-filter to remove large contaminants while the internal pores are a trap to remove aerosols and solids from the air stream. The larger outside pores also allows the air stream to pass freely and smoothly through the media, minimizing pressure drop.

Another important relationship is the gap between the filter element's outer face and the filter bowl's inner face. The spacing between these two surfaces is optimized so that air velocity is minimized, thus reducing the possibility of oil or water vapor carryover and maintaining low pressure drops.

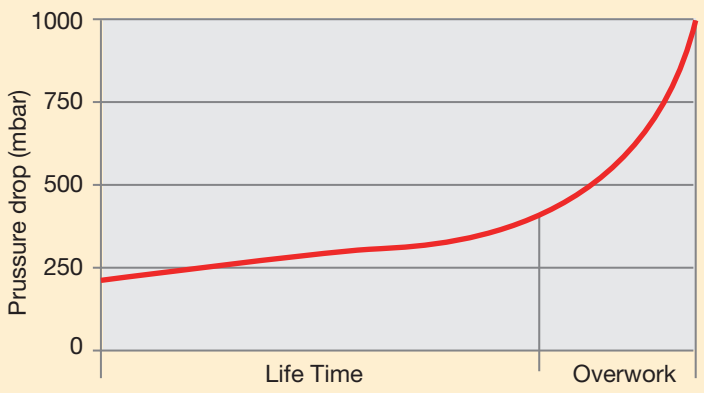
Maintaining Air Quality and Energy Efficiency Through Regular Maintenance

It is often the practice to change filter elements based upon the pressure drop measured across the filter as this directly contributes to increased operational costs. However, one must remember the reason for installing the filter in the first place, i.e. to achieve high quality compressed air, free from damaging contamination.

Filter elements must always be replaced in accordance with the manufacturer's instructions to ensure the delivered air quality is never compromised and system reliability maintained.

What are the benefits of regularly changing filter elements?

- High quality compressed air -guaranteed
- Protection of adsorption dryer beds
- Protection of point-of-use equipment, personnel and processes
- Reduced operational costs
- Increased productivity and profitability
- Continued peace of mind



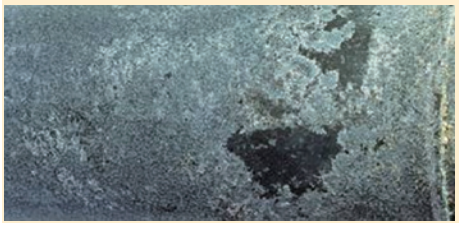
Parker EcoPure^{Plus} Features

The differential pressure indicator gives a visual indication on the current state of the filter element (option).

As the clean air exits the element, outlet air stabilizers direct the air out of the filter housing with the minimum of turbulence and pressure loss. These also ensure the element is located correctly within the filter bowl.

To maintain your guaranteed air quality, filter elements must be replaced every year with genuine Parker parts. Throughout its life, the filter element is constantly under bombardment from oily, acidic condensate and high velocity dirt particles, which need to be removed and retained to protect your compressed air system.

The zero-loss drain (standard for filtration grades GP & HE) features an auto-cleaning protection screen for highest reliability. Simply press the drain to verify its correct operation.



Surface Protection

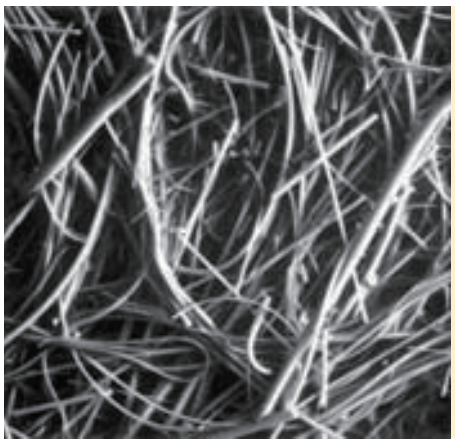
All sizes of housings are built to the highest quality standards and feature Parker's unique surface protection treatment, applied to both the inside and the outside of the filter housing. Thanks to the attention of this quality surface treatment, Parker EcoPure^{Plus} can with stand even the toughest industrial conditions and comes with a 5 year housing lifetime guarantee.

Clean Change Filter Element

Filter element changes are simple to perform and do not require the user to directly handle the contaminated portion of the element during annual maintenance.

Minimal Service Clearance

Space saving design minimizes service clearance and allows easy installation in confined spaces.



Filtration Media

Parker's coalescing filters use a graded porosity filter medium with fine glass fibers in the interior and larger fibers on both the inside and outside surfaces. Parker EcoPure^{Plus} elements have 8 to 10µm pores on the inner surface, reducing to 0.5µm pores in the interior of the element, and widening to 40 to 80µm pores on the outer surface to optimize filtration efficiency versus pressure drop.

Pleated Elements

Pleated element offers a significantly larger surface area for the air to flow through in comparison to wrapped filter element. The area of the filter is many times larger than it would be without pleating. More filter area means lower velocity, lower differential pressure, better filtration efficiency, higher dirt holding capacity, longer service life and lower operating costs.

Compressed Air Standards and Applications

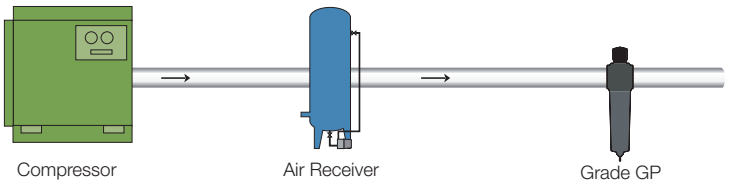
From aeration in pharmaceutical and chemical processes to pneumatic power systems, the possibilities for applications are endless. Parker has some suggested air cleanliness standards that may fit your needs.

International Standard ISO8573-1 has become the industry standard method for specifying compressed air cleanliness. The following diagrams describe various systems in terms of their corresponding ISO classification.

International ISO Standards					
Notification as specified in ISO8573 - 1					
Class	Solid Particle Maximum number of particles per m^3			Water Pressure Dewpoint °C	Oil (Incl. Vapour) mg/m^3
	0.1-0.5 Micron	0.5-1.0 Micron	1.0-5.0 Micron		
1	20,000	400	10	-70	0.01
2	400,000	6,000	100	-40	0.1
3	-	90,000	1,000	-20	1
4	-	-	10,000	3	5
5	-	-	100,000	7	-
6	-	-	-	10	-

ISO Class 3 ☐ 3

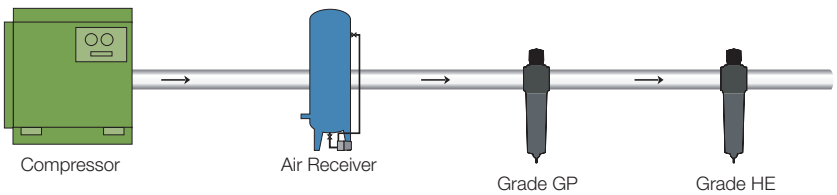
Compressor Room (Source)
Air Preparation Equipment:



Any compressor with aftercooler. Air intended for use with lubricated air tools, air motors, cylinders, shot blasting, non-frictional valves.

ISO Class 2 ☐ 2

Compressor Room (Source)
Air Preparation Equipment:

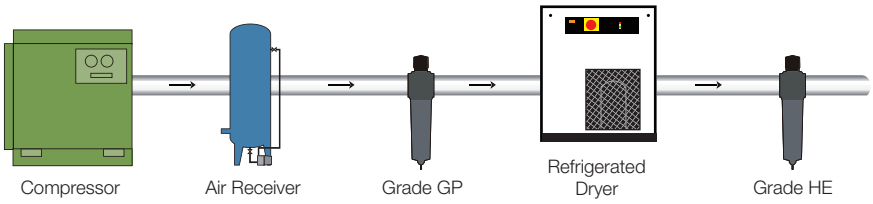


Any compressor with aftercooler and 2-stage coalescing filters Air intended for use with lubricated control valves, cylinders, parts blow-down, etc.

ISO Class 2 4 2

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:

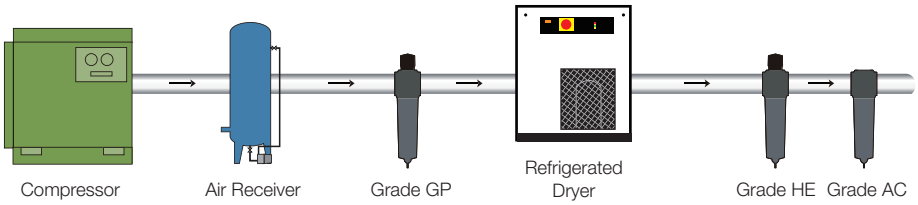


Any compressor with aftercooler, 2-stage coalescing filters and refrigerated dryer. Air intended for use with air-gauging, air conveyors, spray-painting, food processing, instrumentation, blow molding, cosmetics, film processing, bottling, pharmaceuticals, dairy, breweries, medical, robotics and close tolerance valves.

ISO Class 2 4 1

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:

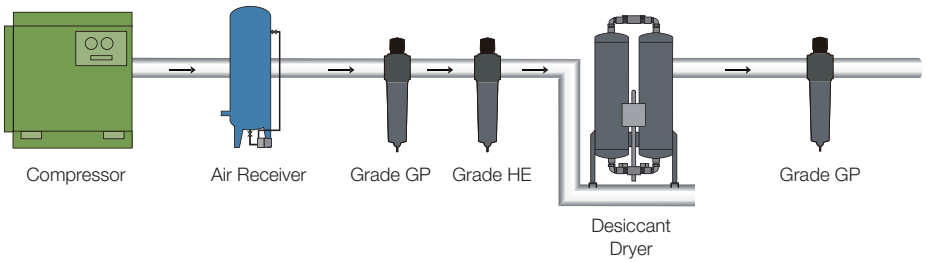


Any compressor with aftercooler, 2-stage coalescing filters refrigerated dryer and carbon absorber. Air intended for use as industrial breathing air and decompression chambers. CAUTION: Always use high temperature synthetic lubricants and monitor (alarm for carbon monoxide concentrations). This system will not eliminate toxic gases!

ISO Class 3 2 2

Compressor Room (Source)
Air Preparation Equipment:

Point-Of-Use
Air Preparation Equipment:



Any compressor with aftercooler, two-stage and double coalescing filters and a regenerative-type desiccant dryer. Air intended for use in applications involving rapid expansion of compressed air, critical instrumentation, high purity gases, computer chip drying, etc. CAUTION: This air is too dry for respiratory use.

The applications are based upon the test result of GP-060-FX, HE-060-FX and AC-060-MX.

Filtration Grades

Coalescing Elements (removal of liquids and particulate)		Adsorption Element (removal of vapor and odor)
Grade GP Grade GP filters are used as pre-filters for Grade HE to remove gross amounts of particulate, and water and oil aerosols.	**Grade HE** (Precede with Grade GP filter) Grade HE filters are used when "superior removal of particulate, and water and oilaerosols" is required. Because of its overall performance characteristics, this grade is most often recommended.	**Grade AC** Grade AC (Precede with Grade HE filter) Grade AC filters are used to remove oil vapor and odor. It is used to remove the smell or taste of compressor lube oil, as well as trace amounts of oil vapour in the compressed air stream.

Product Selection

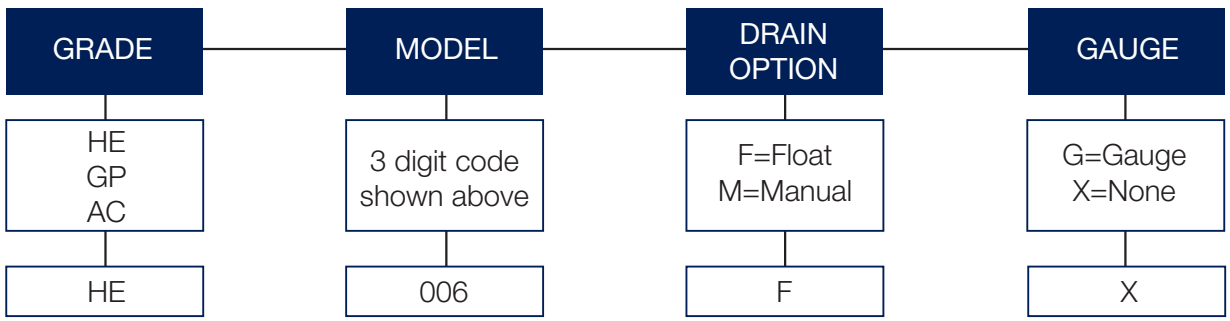
Stated flows are for operation at 7 bar g (100 psi g) with reference to 20°C, 1 bar a, 0% relative water vapour pressure.
For flows at other pressures apply the correction factors shown.

Model	Port Size	Flow Rate				Replacement Element kit
		m³/min	m³/hr	scfm	l/sec	
(Grade)-006- ☐☐	1/4" BSPP	0.6	36	21	10	E006-(Grade)
(Grade)-010- ☐☐	1/2" BSPP	1	60	36	17	E010-(Grade)
(Grade)-020- ☐☐	3/4" BSPP	2	120	72	34	E020-(Grade)
(Grade)-030- ☐☐	1" BSPP	3	180	106	50	E030-(Grade)
(Grade)-045- ☐☐	1" BSPP	4.5	270	161	76	E045-(Grade)
(Grade)-060- ☐☐	1" BSPP	6	360	216	102	E060-(Grade)
(Grade)-080- ☐☐	1.1/2" BSPP	8	480	286	135	E080-(Grade)
(Grade)-100- ☐☐	1.1/2" BSPP	10	600	360	170	E100-(Grade)
(Grade)-120- ☐☐	1.1/2" BSPP	12	720	432	204	E120-(Grade)
(Grade)-150- ☐☐	2" BSPP	15	900	540	255	E150-(Grade)
(Grade)-180- ☐☐	2" BSPP	18	1080	646	305	E180-(Grade)
(Grade)-210- ☐☐	2" BSPP	21	1260	754	356	E210-(Grade)
(Grade)-250- ☐☐	3" BSPP	25	1500	898	424	E250-(Grade)
(Grade)-350- ☐☐	3" BSPP	35	2100	1257	593	E350-(Grade)
(Grade)-400- ☐☐	3" BSPP	40	2400	1437	678	E400-(Grade)

Correction Factors

Line Pressure		Correction Factor pressure (CFP)
bar g	psi g	
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51

Filter Coding Examples



To correctly select a filter model, the flow rate of the filter must be adjusted for the minimum operating pressure of the system

1. Obtain the minimum operating pressure and maximum compressed air flow rate at the inlet of the filter.
2. Select the correction factor for minimum operating pressure from the CFP table (always round down e.g. for 5.3 bar, use 5 bar correction factor)
3. Calculate the minimum filtration capacity Minimum Filtration Capacity = Compressed Air Flow Rate x CFP
4. Using the minimum filtration capacity, select a filter model from the flow rate tables above (filter selected must have a flow rate equal to or greater than the minimum filtration capacity)

Media Specifications

Grade Designation	Coalescing Efficiency 0.3 to 0.6 Micron Particles	Maximum Oil Carryover[1] mg/m³	Micron Rating
Grade GP	95%	1.0	1.0
Grade HE	99.97%	0.01	0.01
Grade AC	99+%[2]	N/A	N/A

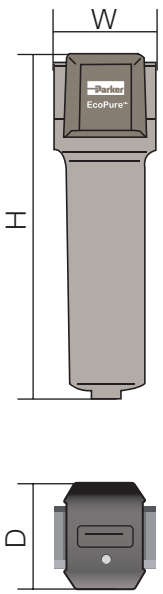
1. Tested per ISO 8573.2.
2. Oil vapor removal efficiency is given for AC media.
3. Grade HE filter combines GP Grades.

Technical Data

Filter Grade	Max Operating Pressure		Min Operating Temp		Max Operating Temp	
	bar g	psi g	°C	°F	°C	°F
GP	16	232	1.5	35	66	151
HE	16	232	1.5	35	66	151
AC	16	232	1.5	35	66	151

Weights and Dimensions

Model	Port Size	Height (H)		Width (W)		Depth (D)		Weight	
		mm	ins	mm	ins	mm	ins	kg	lbs
006	1/4" BSPP	177.7	7	69	2.72	73	2.87	0.63	1.39
010	1/2" BSPP	275.5	10.85	89	3.5	92	3.62	1.17	2.58
020	3/4" BSPP	275.5	10.85	89	3.5	92	3.62	1.23	2.71
030	1" BSPP	375.5	14.78	109	4.29	115.9	4.56	2.35	5.18
045	1" BSPP	375.5	14.78	109	4.29	115.9	4.56	2.48	5.47
060	1" BSPP	522.5	20.57	109	4.29	115.9	4.56	3	6.61
080	1 1/2" BSPP	522.5	20.57	109	4.29	115.9	4.56	3.1	6.83
100	1 1/2" BSPP	560	22.05	150	5.91	154.9	6.1	6.42	14.15
120	1 1/2" BSPP	560	22.05	150	5.91	154.9	6.1	6.56	14.46
150	2" BSPP	560	22.05	150	5.91	154.9	6.1	6.60	14.55
180	2" BSPP	560	22.05	150	5.91	154.9	6.1	6.86	15.12
210	2" BSPP	560	22.05	150	5.91	154.9	6.1	7.09	15.63
250	3" BSPP	768	30.24	188	7.4	168.9	6.65	11.96	26.37
350	3" BSPP	768	30.24	188	7.4	168.9	6.65	12.72	28.04
400	3" BSPP	768	30.24	188	7.4	168.9	6.65	14.14	31.17



Accessories

Differential Pressure Gauge


Float Drain / 006~350


Float Drain / 400


Manual Drain

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