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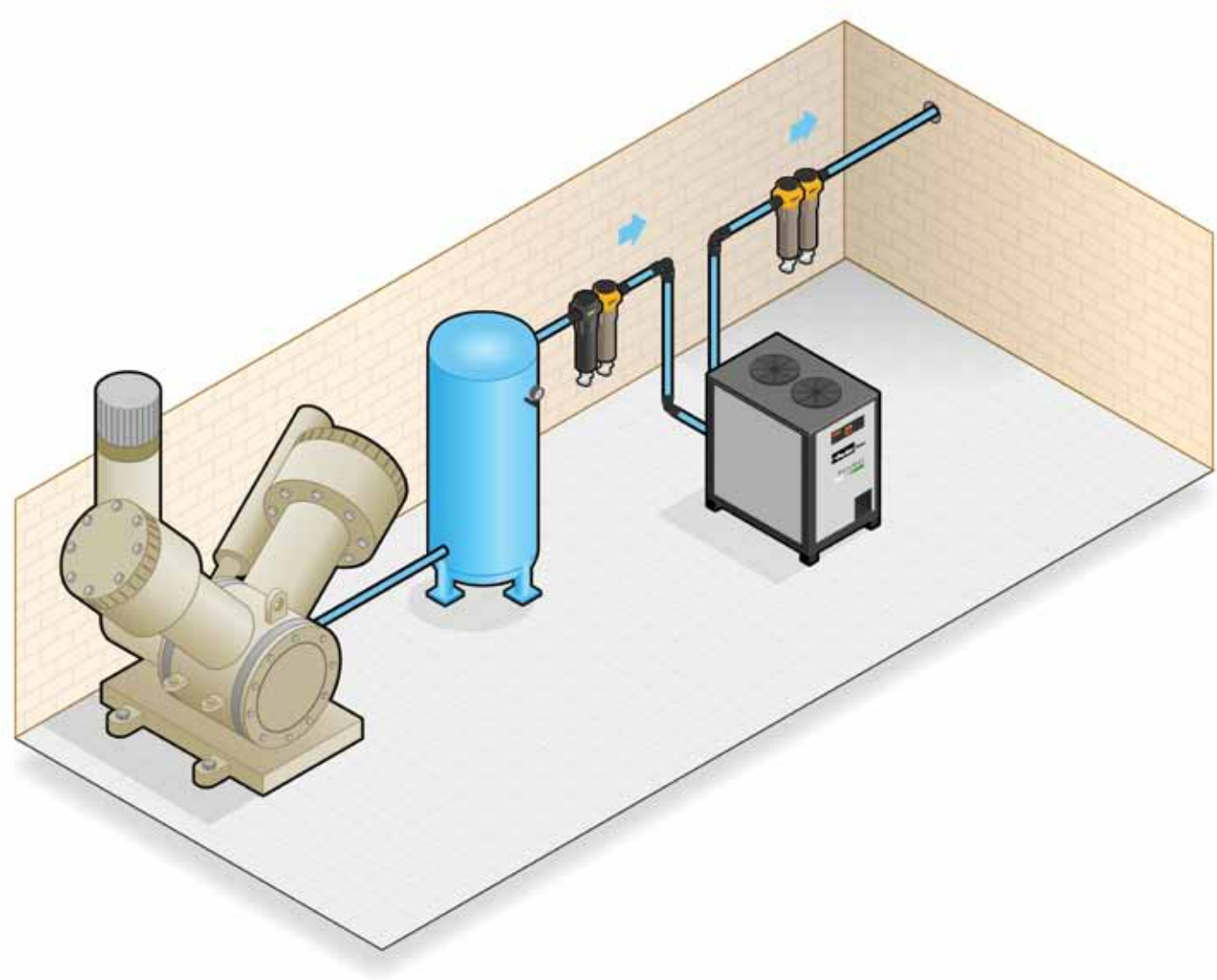
Compressed Air Treatment Solutions

From 20 - 50 bar

ENGINEERING YOUR SUCCESS.

Compressed Air Treatment Solutions

From 20 - 50 bar



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Compressed Air Filters

Filtration Grades

Filtration Grade	Filter Type	Particle removal (inc water & oil aerosols)	Max Remaining Oil Content at 21°C (70°F)	Filtration Efficiency	Change Element Every	Precede with Filtration Grade
WS	Bulk Liquid	N/A	N/A	>90%	N/A	N/A
AO	Coalescing	Down to 1 micron	0.6 mg/m³ 0.5 ppm(w)	99.925%	12 months	WS (for bulk liquid)
AA	Coalescing	Down to 0.01 micron	0.01 mg/m³ 0.01 ppm(w)	99.9999%	12 months	AO
AR	Dry Particulate	Down to 1 micron	N/A	99.925%	12 months	N/A
AAR	Dry Particulate	Down to 0.01 micron	N/A	99.9999%	12 months	AR
ACS	Oil Vapour Removal	N/A	0.003 mg/m³ 0.003 ppm(w)	ISO8573-5	when oil vapour or odour is detected	AA

Technical Data

Model/ Grade	Maximum Operating Pressure		Minimum Operating Temperature		Maximum Operating Temperature		Initial 'Dry' Differential Pressure		Initial 'Wet' Differential Pressure	
	bar g	psi g	°C	°F	°C	°F	m bar	psi	m bar	psi
IP50 - WS	50	725	2.0	35	100	212	N/A		70	1.0
IP50 - AO							70	1.0	140	2.0
IP50 - AA							140	1.5	200	3.0
IP50 - ACS					30	86	70	1.0	N/A	
IP50 - AR					100	212				
IP50 - AAR							100	1.5		

***Recommended Filter Element change:-** 12 months or 6000 hours*

*Not applicable to Grade ACS elements. Grade ACS elements should be changed after 1000 hours operation at 21°C (70°F) or before if odours can be detected.

Filter Selection

Model	Port Connection	L/s	m³/min	m³/h	cfm	Replacement Element Code
grade **IP50 010A** ☐☐X	1/4"	30	1.8	108	64	K009 (Grade)
grade **IP50 020B** ☐☐X	3/8"	45	2.7	162	95	K009 (Grade)
grade **IP50 030C** ☐☐X	1/2"	95	5.7	342	201	K030 (Grade)
grade **IP50 040D** ☐☐X	3/4"	145	8.7	522	307	K030 (Grade)
grade **IP50 050E** ☐☐X	1"	285	17.1	1026	604	K145 (Grade)
grade **IP50 060G** ☐☐X	1 1/2"	465	27.9	1674	985	K145 (Grade)
grade **IP50 070H** ☐☐X	2"	965	57.9	3473	2044	K220 (Grade)

Correction Factors

Working Pressure	bar g	20	25	30	35	40	45	50
	psi g	290	362	435	507	580	652	725
Correction Factor		2.43	1.96	1.65	1.42	1.24	1.11	1.00

Use the correction factors above for flow rates at other working pressures.

Options:

- **Flanged connection kits**

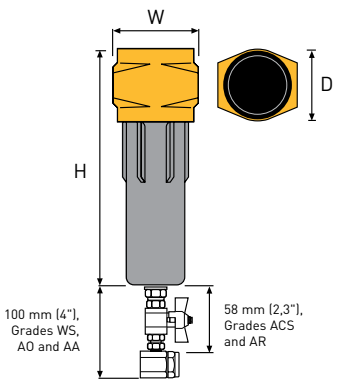
IP50 Coding examples:
AOIP50-010-AGFX
ACSIP50-040-DGMX

Note:
Connections option G = BSPP or N = NPT. Drains options F = Automatic / M = Manual.
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 33 bar, use 30 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).

Weights and Dimensions

Model	Height (H)		Width (W)		Depth (D)		Weight	
	mm	ins	mm	ins	mm	ins	kg	lbs
grade **IP50 010A** ☐☐X	175	6.9	78	3.1	68	2.7	1.3	2.9
grade **IP50 020B** ☐☐X	175	6.9	78	3.1	68	2.7	1.3	2.9
grade **IP50 030C** ☐☐X	245	9.6	89	3.5	84	3.3	2.0	4.4
grade **IP50 040D** ☐☐X	245	9.6	89	3.5	84	3.3	2.0	4.4
grade **IP50 050E** ☐☐X	423	16.6	122	4.8	116	4.6	5.0	11.0
grade **IP50 060G** ☐☐X	423	16.6	122	4.8	116	4.6	5.0	11.0
grade **IP50 070H** ☐☐X	480	18.9	170	6.7	162	6.4	10.0	22.0



Refrigeration Dryers

SPH 004 - 018 Intermediate Pressure Direct Expansion Refrigeration Dryers

Dryer Performance

Dryer Models	Dewpoint (Standard)		ISO8573-1:2010 Classification (Standard)	Dewpoint (Option 1)		ISO8573-1:2010 Classification (Option 1)	Dewpoint (Option 2)		ISO8573-1:2010 Classification (Option 2)
	°C	°F		°C	°F		°C	°F	
SPH	+3	+37	Class 2.4.2	+7	+45	Class 2.5.2	+10	+50	Class 2.6.2

Technical Data

Dryer Models	Max Operating Pressure		Min Air Inlet Temperature		Max Air Inlet Temperature		Max Ambient Temperature		Electrical Supply (Standard)	Electrical Supply (Optional)	Thread Connections	Noise Level
	bar g	psi g	°C	°F	°C	°F	°C	°F				dB(A)
SPH 004 - 018	50	725	5	41	65	149	50	122	230V 1ph 50Hz	60Hz on request	BSPT-F	<55

All units fitted with timed drain. All models are Air-cooled

Flow Rates

Model	Pipe Size	Inlet Flow Rate			
		L/s	m³/min	m³/hr	cfm
SPH 004	1/2"	7	0.4	25	15
SPH 006	1/2"	10	0.6	37	22
SPH 012	1/2"	21	1.3	75	44
SPH 018	1/2"	36	2.2	131	77

Absorbed Power

Model	kW
SPH 004	0.17
SPH 006	0.17
SPH 012	0.25
SPH 018	0.57

Performances refer to air-cooled model with air suction of FAD 20°C / 1 bar A, and at the following operating conditions: air suction 25°C / 60%RH, 40 barg working pressure, 25°C cooling air temperature, 35°C compressed air inlet temperature and pressure dewpoint in accordance with ISO8573-1. All indicated data refers toDIN ISO 7183. SPH supplied with refrigerant R134a. All models designed for operation up to 50 barg. Data refers to 50Hz models.

Correction Factors

CFIT - Correction Factor Maximum Inlet Temperature

Maximum Inlet Temperature	°C	25	30	35	40	45	50	55	60	65
	°F	77	86	95	104	113	122	131	140	149
Correction Factor Models		0.85	0.85	1.00	1.15	1.30	1.45	1.61	1.79	2.00

CFAT - Correction Factor Maximum Ambient Temperature

Maximum Ambient Temperature	°C	20	25	30	35	40	45	50
	°F	68	77	86	95	104	113	122
Correction Factor		0.98	1.00	1.02	1.05	1.08	1.11	1.16

CFP - Correction Factor Minimum Inlet Pressure

Minimum Inlet Pressure	bar g	15	20	25	30	35	40	45	50
	psi g	218	290	363	435	508	580	653	725
Correction Factor		1.18	1.10	1.06	1.03	1.01	1.00	0.99	0.99

CFD - Correction Factor Dewpoint

Maximum Inlet Temperature	°C	+3	+5	+7	+10
	°F	+37	+41	+45	+50
Correction Factor		1.00	0.86	0.8	0.71

Calculate Minimum Drying Capacity =
System Flow x CFIT x CFAT x CFP x CFD and select dryer from table above

SPH 004 - 018 Intermediate Pressure Direct Expansion Refrigeration Dryers

Dryer Performance

Controller	Function	
	Power On Indication	Dewpoint Indicator
SPH	•	•

Medium & Protection Class

Medium	Compressed Air & Gaseous Nitrogen
Protection Class	IP20

Pressure Vessel Approvals

EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC. Product range SPH004 - SPH018, in accordance with article 3, paragraph 3
USA	Approval to ASME VIII Div. 1 not required. 60Hz versions are UL compliant (not UL marked)
Aus	Approval to AS1210 not required
GUS	TR (formerly GOST-R)

Quality Assurance

Development Manufacture	ISO 9001, ISO 14001, OHSAS 18001

Recommended Filtration - P.E.T. / Food / Beverage / Pharmaceutical Applications

For Dryer Model	Filter Pipe Size (BSPP)	Inlet General Purpose Coalescing Filter	Outlet High Efficiency Coalescing Filter
SPH 004	1/4"	AO IP50 010A	AA IP50 010A
SPH 006	1/4"	AO IP50 010A	AA IP50 010A
SPH 012	1/4"	AO IP50 010A	AA IP50 010A
SPH 018	3/8"	AO IP50 020B	AA IP50 020B

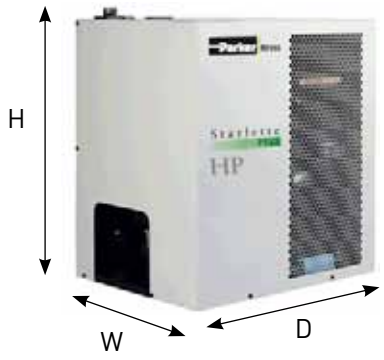
OIL-X IP50 ADVANTAGE Filters recommended above have been matched to dryer flow rate based on an operating pressure of 40 bar g. For other operating pressures, select filters from catalogue: 174004415

Recommended Filtration - General Industrial Applications

For Dryer Model	Filter Pipe Size (BSPP)	Inlet General Purpose Coalescing Filter	Outlet High Efficiency Coalescing Filter
SPH 004	1/4"	G2/50ZP	G2/50XP
SPH 006	1/4"	G2/50ZP	G2/50XP
SPH 012	1/4"	G3/50ZP	G3/50XP
SPH 018	3/8"	G5/50ZP	G5/50XP

Weights & Dimensions

Model	Pipe Size	Dimensions						Weight	
		Height (H)		Width (W)		Depth (D)			
		mm	ins	mm	ins	mm	ins	kg	lbs
SPH 004	1/2"	430	16.93	450	17.7	210	8.3	19	42
SPH 006	1/2"	430	16.93	450	17.7	210	8.3	19	42
SPH 012	1/2"	600	23.6	555	21.9	425	16.7	40	88
SPH 018	1/2"	600	23.6	555	21.9	425	16.7	42.5	94



Refrigeration Dryers

PSH 030 - 1200 Intermediate Pressure Direct Expansion Refrigeration Dryers

Dryer Performance

Dryer Models	Dewpoint (Standard)		ISO8573-1:2010 Classification (Standard)	Dewpoint (Option 1)		ISO8573-1:2010 Classification (Option 1)	Dewpoint (Option 2)		ISO8573-1:2010 Classification (Option 2)
	°C	°F		°C	°F		°C	°F	
PSH	+3	+37	Class 2.4.2	+7	+45	Class 2.5.2	+10	+50	Class 2.6.2

Technical Data

Dryer Models	Max Operating Pressure		Min Air Inlet Temperature		Max Air Inlet Temperature		Max Ambient Temperature		Electrical Supply (Standard)	Electrical Supply (Optional)	Thread Connections	Noise Level
	bar g	psi g	°C	°F	°C	°F	°C	°F				dB(A)
PSH 030 - 090	50	725	5	41	65	149	50	122	230V 1ph 50Hz	60Hz on request	BSPT-F	55
PST 0120 - 1200	50	725	5	41	65	149	50	122	400V 3ph 50Hz	60Hz on request	BSPT-F & 2 1/2" Flange ANSI 300/600 lb	58

All units fitted with integral timed drain. All models are air-cooled; Wwater cooled available from model PSH290

Flow Rates

Model	Pipe Size	Inlet Flow Rate			
		L/s	m³/min	m³/hr	cfm
PSH030	1 1/4"	50	3.0	180	106
PSH045	1 1/4"	75	4.5	270	159
PSH065	1 1/4"	108	6.5	390	230
PSH090	1 1/4"	150	9	540	318
PSH120	1 1/4"	200	12	720	424
PSH160	1 1/4"	267	16	960	565
PSH200	1 1/4"	333	20	1200	706
PSH230	1 1/4"	383	23	1380	812
PSH290	2 1/2" ANSI	483	29	1740	1024
PSH380	2 1/2" ANSI	633	38	2280	1342
PSH460	2 1/2" ANSI	767	46	2760	1625
PSH630	2 1/2" ANSI	1050	63	3780	2225
PSH800	2 1/2" ANSI	1333	80	4800	2825
PSH1000	2 1/2" ANSI	1667	100	6000	3531
PSH1200	2 1/2" ANSI	2000	120	7200	4238

Average Power

Model	kW
PSH030	0.53
PSH045	0.55
PSH065	1.33
PSH090	1.37
PSH120	1.41
PSH160	1.44
PSH200	1.47
PSH230	1.52
PSH290	2.89
PSH380	3.18
PSH460	3.44
PSH630	4.12
PSH800	6.6
PSH1000	6.9
PSH1200	7.3

Performances refer to air-cooled model with air suction of FAD 20°C / 1 bar A, and the following operating conditions: air suction 25°C / 60%RH, 40 barg working pressure, 25°C cooling air temperature, 35°C compressed air inlet temperature and pressure dewpoint in accordance with ISO8573-1. All indicated data refers to DIN ISO 7183. All models supplied with refrigerant R407c. All models designed for operation up to 50 barg. Data refers to 50Hz models.

Correction Factors

CFIT - Correction Factor Maximum Inlet Temperature

Maximum Inlet Temperature	°C	25	30	35	40	45	50	55	60	65
	°F	77	86	95	104	113	122	131	140	149
Correction Factor Models		0.85	0.85	1.00	1.15	1.30	1.45	1.61	1.79	2.00

CFAT - Correction Factor Maximum Ambient Temperature

Maximum Ambient Temperature	°C	20	25	30	35	40	45	50
	°F	68	77	86	95	104	113	122
Correction Factor		0.98	1.00	1.02	1.05	1.08	1.11	1.16

CFP - Correction Factor Minimum Inlet Pressure

Minimum Inlet Pressure	bar g	15	20	25	30	35	40	45	50
	psi g	218	290	363	435	508	580	653	725
Correction Factor		1.18	1.10	1.06	1.03	1.01	1.00	0.99	0.99

CFD - Correction Factor Dewpoint

Maximum Inlet Temperature	°C	+3	+5	+7	+10
	°F	+37	+41	+45	+50
Correction Factor		1.00	0.86	0.81	0.71

Calculate Minimum Drying Capacity =
System Flow x CFIT x CFAT x CFP x CFD and select dryer from table above

PSH 030 - 1200 Intermediate Pressure Direct Expansion Refrigeration Dryers

Dryer Performance

Controller	Function				
	Power On Indication Fault Indication	Digital Dewpoint Indicator	Display Fault Condition Values	Configurable Alarm Settings	Remote Volt Free Alarm Contacts
PSH	•	•	From model PSH120	From model PSH120	From model PSH120

Medium & Protection Class

Medium	Compressed Air & Gaseous Nitrogen
Protection Class	IP44

Quality Assurance

Development Manufacture	ISO 9001, ISO 14001, OHSAS 18001

Pressure Vessel Approvals

EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC. Product range PSH030 - PSH230, in accordance with category I (module A); product range PSH290 - PSH1200 in accordance with category II (module H)
USA	Approval to ASME VIII Div. 1 not required. 60Hz versions are UL compliant (not UL marked)
Aus	Approval to AS1210 not required
GUS	TR (formerly GOST-R)

Recommended Filtration - P.E.T. / Food / Beverage / Pharmaceutical Applications

For Dryer Model	Filter Pipe Size (BSPP)	Inlet General Purpose Coalescing Filter	Outlet High Efficiency Coalescing Filter
PSH030	1/2"	AO IP50 030C	AA IP50 030C
PSH045	1/2"	AO IP50 030C	AA IP50 030C
PSH065	3/4"	AO IP50 040D	AA IP50 040D
PSH090	1"	AO IP50 050E	AA IP50 050E
PSH120	1"	AO IP50 050E	AA IP50 050E
PSH160	1 1/2"	AO IP50 060G	AA IP50 060G
PSH200	1 1/2"	AO IP50 060G	AA IP50 060G
PSH230	1 1/2"	AO IP50 060G	AA IP50 060G
PSH290	Contact HZFD		
PSH380	Contact HZFD		
PSH460	Contact HZFD		
PSH630	Contact HZFD		
PSH800	Contact HZFD		
PSH1000	Contact HZFD		
PSH1200	Contact HZFD		

OIL-X IP50 ADVANTAGE Filters recommended above have been matched to dryer flow rate based on an operating pressure of 40 bar g. For other operating pressures, select filters from catalogue: 174004415

Recommended Filtration - General Industrial Applications

For Dryer Model	Filter Pipe Size (BSPP)	Inlet General Purpose Coalescing Filter	Outlet High Efficiency Coalescing Filter
PSH030	1/2"	G7/50ZP	G7/50XP
PSH045	3/4"	G9/50ZP	G9/50XP
PSH065	1"	G11/50ZP	G11/50XP
PSH090	1"	G11/50ZP	G11/50XP
PSH120	1 1/2"	G12/50ZP	G12/50XP
PSH160	1 1/2"	G13/50ZP	G13/50XP
PSH200	1 1/2"	G13/50ZP	G13/50XP
PSH230	1 1/2"	G13/50ZP	G13/50XP
PSH290	2"		
PSH380	Contact HZFD		
PSH460	Contact HZFD		
PSH630	Contact HZFD		
PSH800	Contact HZFD		
PSH1000	Contact HZFD		
PSH1200	Contact HZFD		

Weights & Dimensions

Model	Pipe Size	Dimensions						Weight	
		Height (H)		Width (W)		Depth (D)			
		mm	ins	mm	ins	mm	ins	kg	lbs
PSH030	1 1/4"	945	37.20	703	27.68	562	22.13	83	183
PSH045	1 1/4"	945	37.20	703	27.68	562	22.13	83	183
PSH065	1 1/4"	945	37.20	703	27.68	562	22.13	85	187
PSH090	1 1/4"	945	37.20	703	27.68	562	22.13	85	187
PSH120	1 1/4"	1064	41.89	706	27.80	1046	41.18	152	335
PSH160	1 1/4"	1064	41.89	706	27.80	1046	41.18	152	335
PSH200	1 1/4"	1064	41.89	706	27.80	1046	41.18	152	335
PSH230	1 1/4"	1064	41.89	706	27.80	1046	41.18	152	335
PSH290	2 1/2" ANSI	1690	66.54	1007	39.65	1097	43.19	356	785
PSH380	2 1/2" ANSI	1690	66.54	1007	39.65	1097	43.19	356	785
PSH460	2 1/2" ANSI	1690	66.54	1007	39.65	1097	43.19	356	785
PSH630	2 1/2" ANSI	1690	66.54	1007	39.65	1657	65.24	455	1003
PSH800	2 1/2" ANSI	1723	67.83	1007	39.65	1657	65.24	610	1345
PSH1000	2 1/2" ANSI	1723	67.83	1007	39.65	1657	65.24	610	1345
PSH1200	2 1/2" ANSI	1723	67.83	1007	39.65	1657	65.24	610	1345

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