PoleStar Smart

Refrigeration dryers - 60Hz version
High Efficiency & Energy Saving

PoleStar Smart refrigeration dryers have been designed for the efficient removal of water from compressed air.

Equipped with the patented SmartSave energy-saving feature PoleStar Smart continually and precisely modulates its mode of operation to meet prevailing operating conditions, resulting in accurate dew-point monitoring with corresponding aligned power consumption.

Furthermore, indirect cost savings, reducing the "hidden costs" of pressure drop are maximised by the use of a patented "all-in-one" aluminium heat-exchanger-SmartPack. Here the provision of large open channels and no-interconnecting pipe-work enables the free, un-interrupted passage of air through the dryer, resulting in pressure drops second to none.

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Product Features:

- Suitable for all compressed air applications
- Suitable for all compressor types, including variable flow
- The most energy efficient compressed air fridge dryer
- Low pressure drops for lower operational costs
- Cost of ownership reduced
- Significantly contributes to the indirect reduction of CO_2 into the environment

Philosophy

Parker Hiross specialises in cooling, purification, and separation technologies, where compressed air and gas purity, product quality, technological excellence and global support are paramount. We design and manufacture compressed air treatment products and cooling equipment for many key industries where ease of integration, low cost of ownership and energy saving can make the difference.
Parker Hiross has been supplying industry with high efficiency products with low lifetime costs and reduced CO_2 emissions since 1964.
Our philosophy 'to stand out from the crowd' is our credo, encouraging our employees to achieve continuous improvement and satisfy customer expectations.

Parker Hiross

ENGINEERING YOUR SUCCESS.

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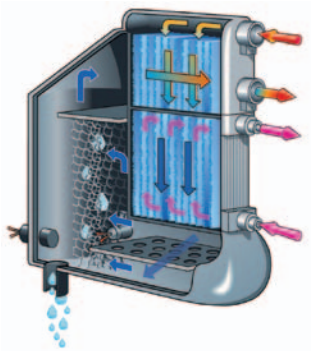
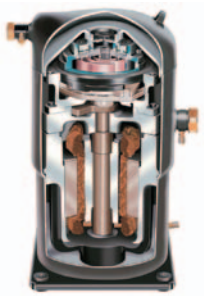
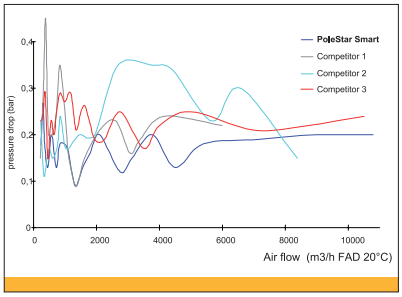
The **SmartPack** exchanger (patent-pending) is an extremely robust, all-in-one aluminium module with no connecting pipe-work. It offers one of the lowest pressure drop performances in it´s class and in terms of energy saving acts as an internal “thermal-mass cold-store,” utilising un-used refrigeration energy during periods of variable load.



PoleStar Smart® features exclusively **compliant scroll compressors** (from PST150 upwards), offering energy savings of up to 20% compared to other systems.

Resistant to liquid refrigerant returns and with 50% less moving parts than similar technologies, these compressors are extremely reliable and very robust.
Low vibration levels also serve to prolong the refrigeration circuit life.

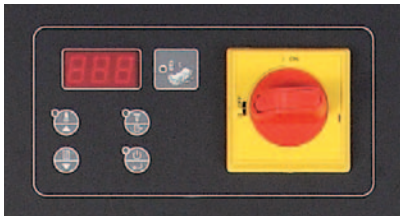




Low Pressure Drops
Every 140mbar of pressure drop adds approx. 1% to the cost of electrical power required by the compressor

Maximum dew point performance is assured by:

- large air channels leading to low air flow velocity
- an oversized demister separator offering optimum condensate separation even at partial air flows
- a dew point sensor positioned in the air flow to ensure optimum control.
- Thermal Shield Insulation (TSI) contributing to very low overall power consumption.



An additional standard feature on models from PST130 upwards is **SmartControl**.
This multi-functional display provides accurate digital dewpoint reading and visual indication of the coded alarm monitoring of the dryer.

SmartControl additionally manages the **SmartSave** feature (patent pending), informing the user when the dryer is operating in energy saving mode. A display indicates the average percentage savings on energy being achieved.
Maintenance intervals are periodically displayed whilst the provision of a status report (indicating the last eight events) and hours-run meter simplify service.
Standard voltage-free contacts, MODBUS compatible supervisor (no gateway required) and an optional RS485 serial card connection allow remote monitoring of the dryer.

An integral zero-air loss drain **SmartDrainer** is fitted as standard to PST130 and upwards.

A large capacity condensate drainage chamber is an integral part of the heat exchanger. The zero-air-loss drain is synchronised to open automatically on sensing the level of condensate present in the drainage chamber.
This valve closes again before any compressed air can escape.
In the unlikely event of a fault during drain operation, self-diagnostic troubleshooting software signals an alarm and the drain continues to function thereafter in timed mode, returning to zero-air-loss operation when the fault has been rectified.

Technical data - 60Hz version

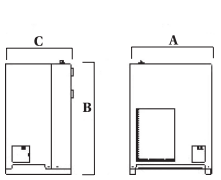
Model 60Hz	technical data				dimensions (mm)			weight	Pre filter	Post filter
	air flow		abs. power	air	width	height	depth			
	m^3/h	m^3/min	kW	connec.	A	B	C	(kg)		
PST070	420	7	0,89	1 ½”	703	945	562	83	HFN072Q	HFN072P
PST090	540	9	1,36	1 ½”	703	945	562	83	HFN122Q	HFN122P
PST130	780	13	1,22	2”	706	1.064	1.046	145	HFN135Q	HFN135P
PST150	900	15	1,37	2”	706	1.064	1.046	145	HFN175Q	HFN175P
PST175	1.050	17,5	1,76	2”	706	1.064	1.046	155	HFN175Q	HFN175P
PST250	1500	25	2,39	2 ½”	806	1.316	1.166	230	HFN300Q	HFN300P
PST280	1.680	28	2,63	2 ½”	806	1.316	1.166	240	HFN300Q	HFN300P
PST340	2.040	34	2,9	2 ½”	806	1.316	1.166	245	HFN370Q	HFN370P
PST390	2.340	39	3,68	2 ½”	806	1.316	1.166	250	NFF610Q	NFF610P
PST490	2.940	49	3,77	4”	1.007	1.690	1.097	470	NFF610Q	NFF610P
PST560	3.360	56	4,25	4”	1.007	1.723	1.097	490	NFF610Q	NFF610P
PST700	4.200	70	5,56	6”	1.007	1.722	1.657	580	NFF750Q	NFF750P
PST840	5.040	84	6,87	6”	1.007	1.722	1.657	670	NFF1000Q	NFF1000P
PST1020	6.120	102	9,15	6”	1.007	1.722	1.657	690	NFF1510Q	NFF1510P
PST1320	7.920	132	10,71	6”	1.007	2.048	1.657	830	NFF1510Q	NFF1510P
PST1650	9.900	165	14,82	8”	1.007	2.208	2.257	1.100	NFF2000Q	NFF2000P
PST1980	11.880	198	19,15	8”	1.007	2.208	2.257	1.190	NFF2000Q	NFF2000P

Performances refer to air-cooled model with air at FAD 20°C / 1 bar A, and at the following working conditions: air suction 25°C / 60%RH, 7 barg working pressure, pressure dew point in accordance with ISO8573-1, 25°C cooling air temperature, 35°C compressed air inlet temperature. All indicated data is according to DIN ISO 7183. All models supplied with refrigerant R407C; PST070-1980 are for operation up to 14 barg.
Power supply: as standard 230V/1Ph/60Hz for PST070-090, 460V/3Ph/60Hz for PST130-1980.(PST090 also available with 230V/3Ph/60Hz, and 460V/3ph/60Hz, PST130-280 also with 230V/3Ph/60Hz). Contact Parker Sales Companies for further details, price as per standard voltage. Drain: PST070-090 supplied with integral timed drain (available also with external electronic drain), PST130-1980 supplied with electronic zero loss integral drain, which can be configured to work in timed mode (see user manual).
Water-cooled models available from PST250. Supplied with electronic zero loss integral drain, which can be configured to work in timed mode (see user manual); PST250-280 water cooled also available with 230V/ 3Ph / 60Hz.

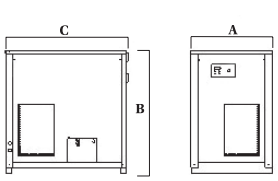
Air flow correction factors for differing working conditions

A) Working pressure correction factors	barg	3	4	5	6	7	8	9	10	11	12	13	14
		0,74	**0,83**	**0,9**	**0,96**	**1**	**1,04**	**1,07**	**1,08**	**1,11**	**1,12**	**1,14**	**1,15**
B) Air inlet temperature correction factors	°C	30		35		40		45		50		55	
		1,23		**1**		**0,84**		**0,7**		**0,59**		**0,5**	
C) Ambient temperature* correction factors	°C	20		25		30		35		40		45	50
		1,06		**1**		**0,95**		**0,9**		**0,83**		**0,77**	**0,72**
D) Pressure dew point correction factors	°C	3				5				7		10	
		1				**1,10**				**1,21**		**1,40**	

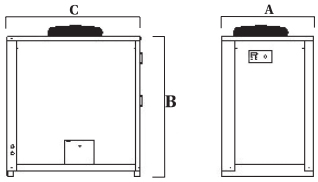
To obtain the actual air flow multiply the nominal air flow by the above correction factors (ie. Air flow x A x B x C x D). PoleStar Smart® can operate up to an ambient temperature of 50°C and inlet temperature of 65°C. The above correction factors are approximate: for a precise selection always refer to the software selection program or contact your Parker Hiross partner.
*Only for air-cooled models.



PST070



PST090-175



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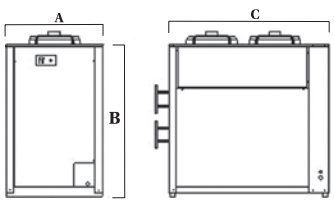
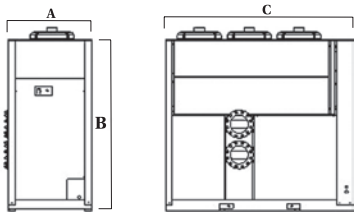


PST490-1320



PST1650-1980

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