hertz
KOMPRESSOREN

IMPETUS SERIES

Rotary Screw Compressors

TWO STAGE

HERTZ Impetus Series two stage screw compressors provide compressed air suitable for your needs with its superior technological equipment, modern design and high energy savings. With the Impetus VSD Series, we can meet your compressed air needs with energy savings up to 35%. The Impetus Series air compressors are specially designed to meet all your needs from 90 to 315 kW.

Performance Tested and Rated in Accordance with
ISO 1217
5-200 HP
CAGI Rotary Compressor Performance Verification Program
CAGI
Compressed Air & Gas Institute
www.cagi.org
Program administered by Intertek Testing Services

Hertz rotary screw compressors performances are verified with third party testing by Compressed Air and Gas institue (CAGI). CAGI data sheets of our rotary screw compressors are available at www.hertz-kompressoren.us

IMPETUS is the NEW power to make things happen

Hertz Kompressoren products are built around core competences with a body of knowledge and a set of capabilities that enable to develop new and innovative solutions. The most recent is our IMPETUS series products. Impetus, the driving force, power, and energy solution to your compressed air needs.

Impetus provides competitive advantage with it's two stage oil flooded rotary screw technology over single stage machines. The two stage airend features higher energy savings than the single stage airend. Under the same working conditions with equal discharge volume and pressure, two stage airends save 15% more on energy consumption than single stage airends.

Before the first stage, compressed air gets into the second-stage unit, automizing oil cooling is used to lower the inlet temperature of the second-stage unit so that the two compression units can keep isothermal compression, which raises adiabatic efficiency and reduces energy consumption.

The two-stage airend features the design of equal low internal pressure ratio with low leakage rate during the compression process, which enormously promotes the volumetric efficiency of the complete process (the volumetric efficiency of the two-stage airend is around 3-5% higher than single stage airend.

- Two-stage compression reduces the compression ratio of each stage, reduces internal leakage, improves volumetric efficiency, reduces bearing load, and increases the life of the compressor.
- Two-stage replaces single-stage compression, and the displacement is increased by 15%, which can achieve an additional 15% energy saving effect.
- The rotor adopts the latest patented rotor UV profile, which has been refined by more than 20 procedures to ensure the accuracy, reliability, and effectiveness of the rotor profile.

MOTOR

- IP55 electric motor with F class protection
- Motors with Class B temperature rise
- IE4 efficiency class motors provide maximum efficiency.
- Continuous working duty

AIREND

- Up to 15% energy savings with two stage screw unit
- Reduced internal loss
- Low compression ratio due to two stage design
- Very close to isothermal compression with two-stage compression
- Two-stage compression reduces axial and thrust force. This results in longer airend and bearing life.

CONTROL PANEL

- Complies with IEC 60204-1 or UL 508A standards,
- Short circuit protection,
- Variable speed fan control
- Remote control of the compressor
- External VSD cabinet: The VSD is kept in a separate cabinet so that it is not affected by the temperature of the compressor. Specially cooled cab space for uninterrupted operation

OPTIMISED AIR-OIL SEPARATION SYSTEM

Oil residue at the compressed air outlet is reduced to less than 3 mg with oil separator tank and sensitive air-oil separator with double surface.

OIL FILTER

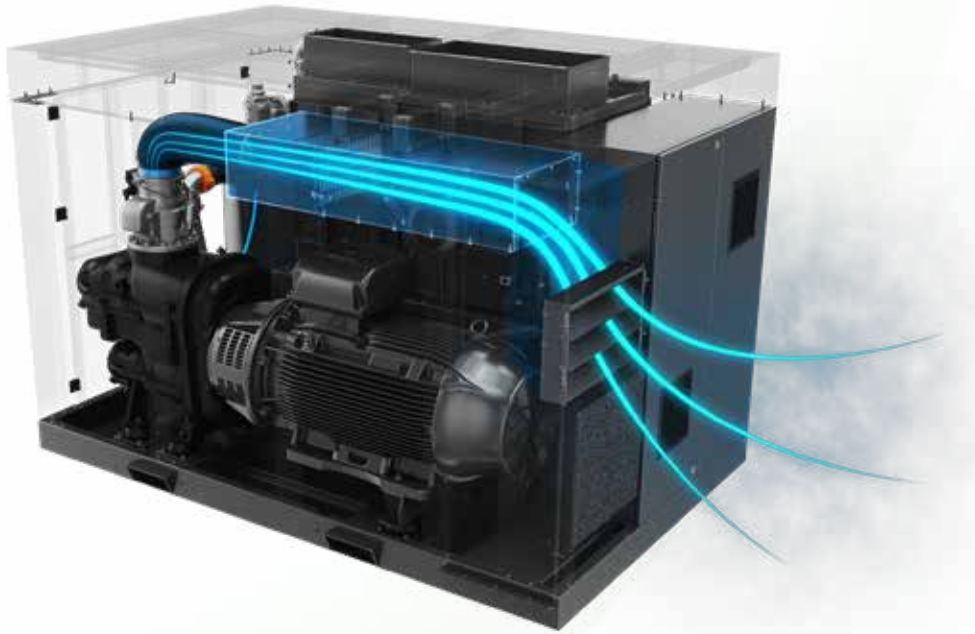
- Enviromentally friendly, recyclable
- Metal alloy-free
- Aluminum housing
- Easy oil filter cartridge replacement

WATER SEPARATOR

- Reliable pre-separation (> 99%)
- High separation efficiency even at high humid ambient
- Zero loss drain
- Low pressure drop

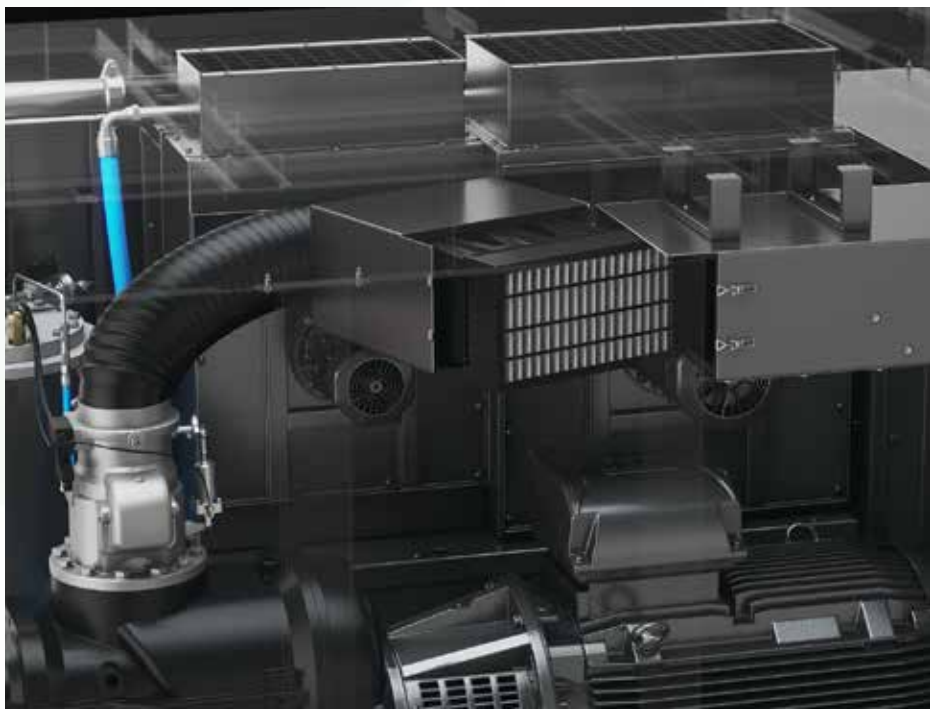
AIR INTAKE

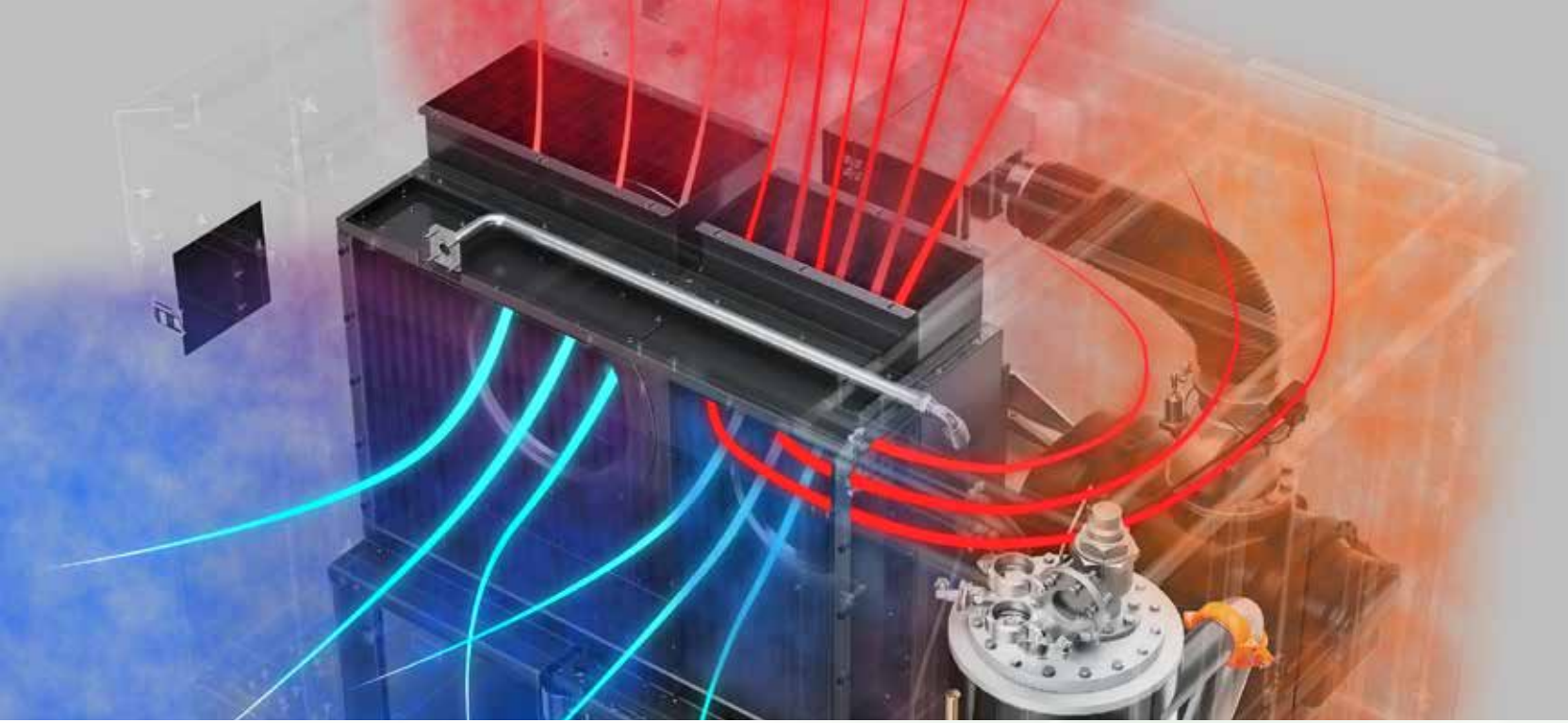
- Up to +2% contribution to energy efficiency by cool air suction directly from the ambient
- High energy efficiency with minimized intake pressure loss
- Low sound levels provided by acoustic improvement designs



AIR FILTER

- Protects the airend by separating particles up to 3 microns
- Energy savings thanks to minimized filter pressure drop
- Sustains high efficiency until maintenance period
- Easy maintenance
- Long service life





COOLING AIRFLOW

In all models of 90-315 kW the coolers are located vertically. With the help of radial fans, the air flow is passed directly over the coolers and the hot air is thrown directly upwards. The counter-pressure in front of the radial fans is reduced, increasing the efficiency of the cooling system. In addition, contamination of the internal parts of the compressor is prevented. The dust on the coolers can be quickly detected and easily cleaned.

COOLING SYSTEM

- Separate oil and air coolers with separate fans ensures high efficient cooling
- Suitable design for operation on 45°C.
- Low-speed radial fans provide low noise level.
- Thanks to the VSD controlled radial fan, optimum oil temperature is provided, and energy efficiency optimization is achieved.
- IE3 fan motors

LOW OPERATING TEMPERATURE

Energy savings increases with the VSD controlled fan motor used in the cooling system. Depending on the ambient temperatures, cooling is provided according to the compressor needs and ensures that the compressor operates at the most efficient operating temperatures.

LOW COMPRESSED AIR TEMPERATURE

Low compressed air temperature provides more condensate to be trapped at the water separator. Downstream equipments (dryers etc.) operates at higher performance

HERTZ VSD TECHNOLOGY

The energy consumption rate of the compressors used for compressed air needs in production facilities is very high. With HERTZ VSD technology, significant savings can be achieved in these energy costs. With HERTZ VSD technology, the compressed air needs in many production facilities are met on a day, hour and even minute basis. Because of its wide modulation range, it saves energy even when compressors meet low air flow requirements.

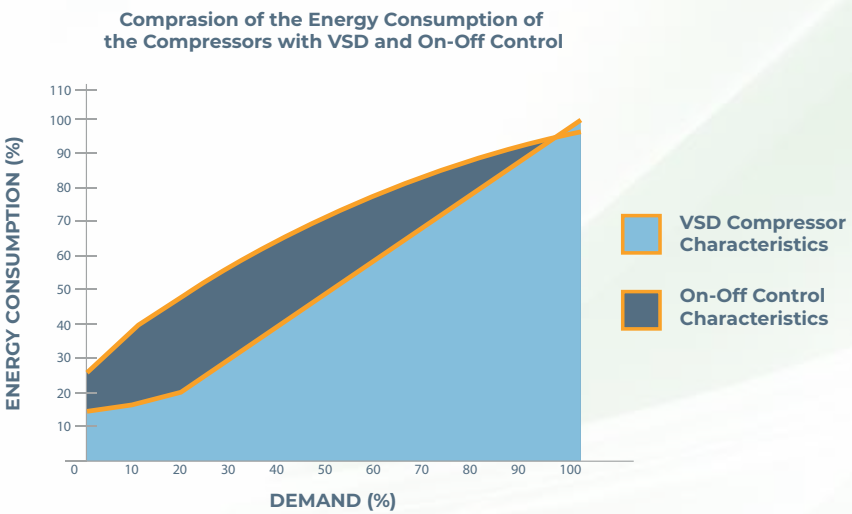
- Smartronic controllers ensure that the compressor operates safely and with minimal loss at different operating pressures and air flow capacities.
- Flexible pressure range reduces electricity costs.
- Motors and inverters are specially designed to provide maximum efficiency.
- Electric Motors are designed to meet the needs of compressors. The motors have also successfully passed tests in harsh ambient conditions such as high temperature.
- Variable speed compressors vibrate less than other models used on the market.

SAVE ENERGY WITH IMPETUS VSD

Hertz IMPETUS VSD series compressors meet the variable output air demand by changing motor speed thanks to the frequency converter. In these variable speed driven air compressors, a big reduction in power consumption is provided. VSD also saves on energy consumption, and therefore cost, by eliminating frequent load-unload cycle.

Starting current in fixed speed compressors are at least three times higher than the full load current. However in IMPETUS VSD series, starting current is even lower than the full load current; which helps to avoid higher rating and sizes of components like fuses, cables etc.

In compressed air systems with a fluctuating demand pattern, capital investments can be regained within a few months thanks to high energy savings achieved by variable speed drives.



ADVANTAGES OF VSD

MECHANICAL

- Minimium maintanence
- Reduced mechanical wear
- Smooth start
- Smooth control

ELECTRICAL

- Low starting current
- High Efficiency
- Improved power factor
- Reduced maximum demand

WOULD YOU LIKE TO WORK WITH HERTZ TO REDUCE YOUR COMPRESSED AIR ENERGY COSTS BY 33% AND CONSUME 5% LESS ENVIRONMENTAL RESOURCES?

37%
OF WORLD'S NATURAL
GAS RESERVES, AND 77%
OF THE COAL DERIVATIVES ARE CONSUMED BY INDUSTRIAL ORGANIZATIONS.

33%
OF CO2
EMISSIONS ARE
GENERATED BY
INDUSTRIAL ORGANIZATIONS.

10%
OF THIS POWER
IS USED BY PRESSURIZED AIR SYSTEMS.

40%
OF GLOBAL ELECTRIC POWER
IS CONSUMED BY INDUSTRIAL ORGANIZATIONS GLOBALLY.

32.9%
OF THE ELECTRICAL ENERGY USED
FOR COMPRESSED AIR SYSTEMS CAN BE SAVED.

Reducing air losses

Hole Diameter	Air Consumption 6 bar m³/min	Loss	
		Kw	$
1 (mm)	0,065	0.3	214
2 (mm)	0,240	1.7	865
4 (mm)	0,980	6.5	3424
6 (mm)	2,120	12.0	7703

Electric cost: 0,1 $ /Kw/h
Running hours: 5,000 hours/year

PRESSURIZED AIR IS THE MOST EXPENSIVE ENERGY, PLEASE DO NOT IGNORE AIR LEAKS IN YOUR DEPARTMENTS, AND USE THE PRESSURIZED AIR CAREFULLY.

HERTZ

ENERGY EFFICIENCY
OPTIMIZATION FIELDS

Improvement of cooling, drying and filtration operations:
Efficient results are obtained by using the correct cooling method, and increasing the amount of high quality and pure air. Filtration permeability and filtration quality reduce line losses and save money. Hertz provides consultancy and applies projects on this subject.

Usage of high efficiency motors in compressors
IE3 motors are about 2% more efficient than IE2 motors, while the IE4 engines are about 3% more efficient. Hertz offers IE3 efficiency class as standard, and IE4 motor efficiency class is applied as optional.

Usage of variable speed drive
Hertz FRECON Plus series compressors are much more efficient than standard compressors in cases where variable air is required. Especially when there is variable air consumption due to changing operating conditions, the use of a variable speed drive saves money by providing operation as required.

Utilization of waste heat
Thanks to Hertz heat recovery systems, approximately 75% of the total energy consumed may be recovered. The operating principal for these systems is to heat hot water by the oil temperature through a plate heat exchanger. Hertz optional heat recovery system is a practical and efficient solution.

Modification of Control Management Systems
With the use of multi unit and the equal ageing system, the initial set Pressure range is restricted to achieve optimum energy consumption; and this operation is performed with automatic controller instructions.

Reduction of Pressure losses
It is reco(mm)ended that the differential Pressure in the main air lines is 0.3 bar maximum between the production and the end usage points. 1 bar Pressure loss in the system may cause 5-7% extra energy consumption. Hertz Project department provides consultancy on correct air installation and implements the projects.

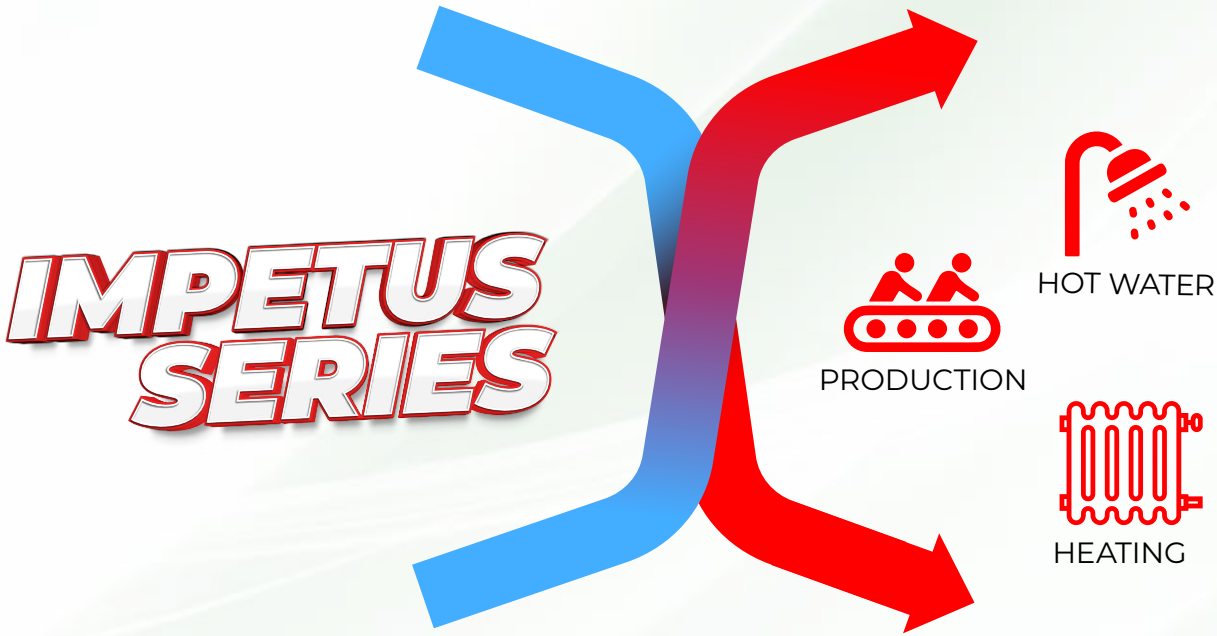
Monitoring the performance of the compressors and renewal of the compressors
Compressor may turn to be a machine that consumes more energy and generates less air during its service life due to friction losses and space tolerances in the rotating equipment such as screw rotors, electric motors, etc. When the required intervention is performed with the use of genuine spare parts and replacement of the machines with new machines more advanced in technology, the business may avoid the loss of more money. Hertz after sales service department is your solutions partner in this context with compressor replacement, general overhaul services and the service operations offered to every brand.

New system design
Hertz Project department provides reports on the calculation of consumption values and inspection of the accuracy of these calculations, on short, medium and long term growth projections, on the quality, energy consumption, maintenance costs of the selected equipment, and on initial investment costs for new investments and projects, and prepares the projects and performs implementation of the projects if required.

It is your solutions partner A to Z.

MORE SAVINGS WITH HEAT RECOVERY OPTIONS

- 80% of the compressor's total energy consumption can be recovered.
- Energy savings can be achieved with integrated heat recovery exchangers by using waste heat.
- It is easy to make a simple heat recovery application with the ventilation duct which is suitable to the compressor cooling air outlet. Inline with seasonal changes, this hot air can easily be used for heating or on hot days the hot air may be released outside by thermostatic control.
- In compressor applications, a large amount of heat is released during the compression of air. To take advantage of this heat in the coolers, an optional integrated heat recovery exchanger is offered. Up to 158 °F degree hot water provided by this heat recovery saving can be used in facilities.



EASY MAINTENANCE / SERVICE FRIENDLY

- The placement of important components in the compressor, which is regularly maintained, has been carefully made to ensure serviceability.
- Interior design with easy maintenance.
- Easy to change oil filter
- The air filters can be easily changed by opening the front cover.

Smart +

The Smart + Warranty is the most comprehensive lubricated rotary screw compressor package extended warranty program in the industry. Enrolling your compressor package in the Smart + Warranty program immediately provides additional warranty coverage on many major package components:

Additional 4 years of warranty gives you a total of 5 years on:

- Electric Motor(s)
- Controller
- Air / Oil Separator
- Cooler
- VSD Inverter

Additional 8 years of warranty gives you a total of 10 years on.

- Airend

The Smart+ Warranty from Hertz Kompressoren USA, Inc. is free! Simply register, use Genuine Hertz USA replacement parts, lubricants, participation in oil sampling program and follow the recommended maintenance schedule, and your compressor package is covered.

SERVICE

- The assurance that the investment will provide a lifetime of productivity.
- Aftermarket parts and services that are engineered for use in Hertz Kompressoren products.
- Peace of mind by turning to one supplier and one source for all aftermarket needs.

Hertz Kompressoren's extensive network of authorized independent distributors is your source for all your aftermarket and service needs. Our distributors have the capability to handle all customer service, service and technical support needs.

Hertz Kompressoren's extensive distribution base ensures superior local service with:

- Professional air audits to identify cost savings in your facility.
- Guidance on selecting the right compressed air solution for your specific application. Expert routine maintenance through factory-trained service personnel.

TECHNICAL SPECIFATIONS

Model	Pressure		Capacity				Power (kW/HP)	Connection	Dimensions (Inch)			Weight (lbs)	Noise Level (dB(A))
	bar	psi	Max. (m^3/min)	Max. (cfm)	Min. (m^3/min)	Min. (cfm)			Length	Width	Height		
IMPETUS VSD 90	6.9	100	17.97	635	5.15	182	90/125	ANSI B16.5 2 1/2"	109	71	76	8455	75
	8.6	125	17.02	601	5.26	186		ANSI B16.5 2 1/2"	109	71	76	8455	75
	10.3	150	15.55	549	5.05	178		ANSI B16.5 2 1/2"	109	71	76	8455	75
	12.1	175	13.63	481	4.85	171		ANSI B16.5 2 1/2"	109	71	76	8455	75
IMPETUS VSD 110	6.9	100	23.11	816	6.78	239	110/150	ANSI B16.5 2 1/2"	109	71	76	9259	75
	8.6	125	21.29	752	6.74	238		ANSI B16.5 2 1/2"	109	71	76	9259	75
	10.3	150	19.37	684	6.63	234		ANSI B16.5 2 1/2"	109	71	76	9259	75
	12.1	175	17.46	617	6.52	230		ANSI B16.5 2 1/2"	109	71	76	9259	75
IMPETUS VSD 132	6.9	100	27.71	979	7.69	272	132/180	ANSI B16.5 3"	116	77	79	10307	75
	8.6	125	25.90	915	7.63	269		ANSI B16.5 3"	116	77	79	10307	75
	10.3	150	23.62	834	7.46	263		ANSI B16.5 3"	116	77	79	10307	75
	12.1	175	21.42	756	7.45	263		ANSI B16.5 3"	116	77	79	10307	75
IMPETUS VSD 160	6.9	100	33.57	1185	8.42	297	160/220	ANSI B16.5 3"	116	77	79	11684	76
	8.6	125	30.88	1090	8.33	294		ANSI B16.5 3"	116	77	79	11684	76
	10.3	150	27.78	981	8.15	288		ANSI B16.5 3"	116	77	79	11684	76
	12.1	175	23.83	841	8.15	288		ANSI B16.5 3"	116	77	79	11684	76
IMPETUS VSD 185	6.9	100	37.93	1339	8.42	297	185/250	ANSI B16.5 3"	116	77	79	11800	76
	8.6	125	34.78	1228	8.33	294		ANSI B16.5 3"	116	77	79	11800	76
	10.3	150	31.65	1118	8.15	288		ANSI B16.5 3"	116	77	79	11800	76
	12.1	175	27.2	961	8.10	286		ANSI B16.5 3"	116	77	79	11800	76
IMPETUS VSD 200	6.9	100	42.92	1516	11.60	410	200/270	ANSI B16.5 4"	138	89	93	14440	78
	8.6	125	39.77	1404	11.41	403		ANSI B16.5 4"	138	89	93	14440	78
	10.3	150	36.03	1272	11.49	406		ANSI B16.5 4"	138	89	93	14440	78
	12.1	175	32.93	1163	11.44	404		ANSI B16.5 4"	138	89	93	14440	78
IMPETUS VSD 250	6.9	100	52.25	1845	17.10	604	250/340	ANSI B16.5 4"	138	89	93	20723	79
	8.6	125	48.08	1698	16.79	593		ANSI B16.5 4"	138	89	93	20723	79
	10.3	150	44.15	1559	16.70	590		ANSI B16.5 4"	138	89	93	20723	79
	12.1	175	38.69	1366	16.45	581		ANSI B16.5 4"	138	89	93	20723	79
IMPETUS VSD 315	6.9	100	62.39	2203	16.74	591	315/430	ANSI B16.5 4"	138	89	93	21341	80
	8.6	125	58.54	2067	16.64	588		ANSI B16.5 4"	138	89	93	21341	80
	10.3	150	54.04	1908	16.33	577		ANSI B16.5 4"	138	89	93	21341	80
	12.1	175	46.43	1640	28.46	1005		ANSI B16.5 4"	138	89	93	21341	80

CAGI ROTARY COMPRESSOR PERFORMANCE VERIFICATION PROGRAM
Hertz rotary screw compressors performances are verified with third party testing by Compressed Air and Gas institue (CAGI).
CAGI data sheets of our rotary screw compressors are available at www.hertz-kompressoren.us.
HERTZ KOMPRESSOREN reserves its rights to make changes in its products and specifications without prior notice.
Refers to free air delivery measured according to ISO 1217:2009, Annex C standard.

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TECHNICAL SPECIFATIONS

Model	Pressure		Capacity		Power (kW/HP)	Connection	Dimensions (Inch)			Weight (lbs)	Noise Level (dB(A))
	bar	psi	(m^3/min)	(cfm)			Length	width	Height		
IMPETUS 90	6.9	100	17.87	631	90/125	ANSI B16.5 2 1/2"	109	71	76	8455	75
	8.6	125	17.77	628		ANSI B16.5 2 1/2"	109	71	76	8455	75
	10.3	150	14.08	497		ANSI B16.5 2 1/2"	109	71	76	8455	75
	12.1	175	13.99	494		ANSI B16.5 2 1/2"	109	71	76	8455	75
IMPETUS 110	6.9	100	22.36	790	110/150	ANSI B16.5 2 1/2"	109	71	76	9259	75
	8.6	125	22.17	783		ANSI B16.5 2 1/2"	109	71	76	9259	75
	10.3	150	17.77	628		ANSI B16.5 2 1/2"	109	71	76	9259	75
	12.1	175	17.72	626		ANSI B16.5 2 1/2"	109	71	76	9259	75
IMPETUS 132	6.9	100	26.79	946	132/180	ANSI B16.5 3"	116	77	79	10307	75
	8.6	125	26.53	937		ANSI B16.5 3"	116	77	79	10307	75
	10.3	150	23.02	813		ANSI B16.5 3"	116	77	79	10307	75
	12.1	175	22.18	783		ANSI B16.5 3"	116	77	79	10307	75
IMPETUS 160	6.9	100	31.32	1106	160/220	ANSI B16.5 3"	116	77	79	11684	76
	8.6	125	30.00	1059		ANSI B16.5 3"	116	77	79	11684	76
	10.3	150	27.11	957		ANSI B16.5 3"	116	77	79	11684	76
	12.1	175	25.95	917		ANSI B16.5 3"	116	77	79	11684	76
IMPETUS 185	6.9	100	35.73	1262	185/250	ANSI B16.5 3"	116	77	79	11800	76
	8.6	125	35.38	1249		ANSI B16.5 3"	116	77	79	11800	76
	10.3	150	30.76	1086		ANSI B16.5 3"	116	77	79	11800	76
	12.1	175	28.26	998		ANSI B16.5 3"	116	77	79	11800	76
IMPETUS 200	6.9	100	45.47	1606	200/270	ANSI B16.5 4"	138	89	93	14440	78
	8.6	125	41.23	1456		ANSI B16.5 4"	138	89	93	14440	78
	10.3	150	36.41	1286		ANSI B16.5 4"	138	89	93	14440	78
	12.1	175	30.50	1077		ANSI B16.5 4"	138	89	93	14440	78
IMPETUS 250	6.9	100	51.61	1823	250/340	ANSI B16.5 4"	138	89	93	20723	79
	8.6	125	48.22	1703		ANSI B16.5 4"	138	89	93	20723	79
	10.3	150	44.37	1567		ANSI B16.5 4"	138	89	93	20723	79
	12.1	175	40.89	1444		ANSI B16.5 4"	138	89	93	20723	79
IMPETUS 315	6.9	100	63.49	2242	315/430	ANSI B16.5 4"	138	89	93	21341	80
	8.6	125	59.56	2103		ANSI B16.5 4"	138	89	93	21341	80
	10.3	150	52.65	1859		ANSI B16.5 4"	138	89	93	21341	80
	12.1	175	47.39	1673		ANSI B16.5 4"	138	89	93	21341	80

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