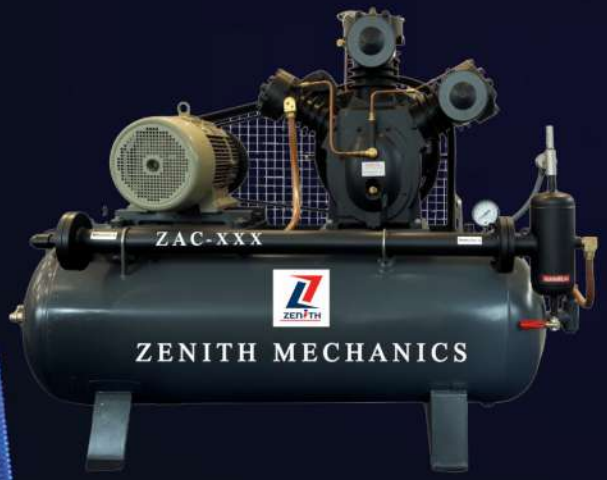
Screw Air Compressor



Reciprocating Air Compressor

Refrigerated Air Dryer

Heatless Air Dryer

COMPRESSOR & AIR DRYER MANUFACTURER WEST BENGAL

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Air Compressors

Single Stage Compressors

These Single stage low pressure compressors are used in glass ind., chemical ind., instrumentation, process, liquid transfer, spray painting, boiler fuel oil atomisation, water pumping, irrigation, air jet cleaning, dairies, air lift pumps, clay & potteries etc.

MODEL NO.	MOTOR HP/KW	NO. OF PISTON	MAX. PRESSURE KG/CM²/(PSIG)	PISTON DISPLACEMENT	TANK CAPACITY (LITERS)
ZAC-10-110	1.0 / 0.75	2	10 / 150	4	100
ZAC-20-110	2.0 / 1.50	2	10 / 150	6.2	150
ZAC-30-110	3.0 / 2.24	2	10 / 150	9	150

Z	A	C	–	**	–	*	**
ZENITH	AIR	COMPRESSOR		HP		STAGE	KG (PRESS)

Two Stage Compressors

Two stage compressor consist of two or more cylinders. The atmospheric air enters into LP cylinder through inlet filter & valves and passes to HP cylinder through intercooler for final pressure. The highly efficient intercooler tube provides maximum heat dissipation between stage. These compressors are useful in textile, plastic ind., paper ind., spray painting, blowering, cleaning, tyre inflating, pneumatics, ceramics, automobiles, foundries, pharmaceuticals, CNC, VMC & Plasma Cutting, Sand Blasting, Blow Molding Service Stations etc.

MODEL NO.	MOTOR HP/KW	NO. OF PISTON	MAX. PRESSURE KG/CM²/(PSIG)	PISTON DISPLACEMENT	TANK CAPACITY (LITERS)
ZAC-20	2.0 / 1.50	2	12 / 175	6.7	150
ZAC-30	3.0 / 2.24	2	12 / 175	9.8	150
ZAC-50	5.0 / 3.73	2	12 / 175	17.3	200
ZAC-75	7.5 / 5.60	2	12 / 175	23.8	250
ZAC-100	10 / 7.46	2	12 / 175	30	250
ZAC-125	12.5 / 9.32	2	12 / 175	44	300
ZAC-150	15 / 11.2	3	12 / 175	56	500
ZAC-200	20 / 14.9	3	12 / 175	76	500
ZAC-250	25 / 18.5	3	12 / 175	90	500

Z	A	C	–	**	–	*	**
ZENITH	AIR	COMPRESSOR		HP		STAGE	CFM

CONVERSION :
1 Gallon = 4.535 litre
1 cfm = 28.32 litre / min
1 cfm = 0.0283 m^3 / min
1 m^3/min = 35.31 cfm
1 kg/cm^2 = 14.22 psig
1 HP = 0.746 kw

Multi Stage High Pressure Compressors

Multistage heavy-duty compressors are designed for high pressure operation up to 70 kg/cm^2g (1000 psig). They are useful in valve & system testing, engine starting, laboratory test work, space & aviation ind, air blast circuit breaking, dairy, marine & military applications, pet bottling, gas transmission & distribution, defense, shipyards, oil exploration, pneumatics etc.

MODEL NO.	MOTOR HP/KW	NO. OF PISTON	MAX. PRESSURE KG/CM²/(PSIG)	PISTON DISPLACEMENT	TANK CAPACITY (LITERS)
ZAC-100-335	10 / 7.46	2	35 / 500	30	300
ZAC-150-328	15 / 11.2	3	28 / 400	54	500
ZAC-200-328	20 / 14.9	3	28 / 400	70	500
ZAC-250-328	25 / 18.65	3	28 / 400	90	500

Z	A	C	–	***	–	*	**
ZENITH	AIR	COMPRESSOR		HP		STAGE	KG (PRESS)

SCREW AIR COMPRESSOR

FIX SPEED & PM VSD SCREW COMPRESSORS

Benefit of Permanent Magnet VSD Screw Air Compressor

Zenith Mechanics Permanent Magnet VSD Screw Air Compressor is trending in the industry because of its energy saving and high efficiency ! It can directly bring the electricity cost down by 20% to 40 %. The compressor delivers only the required air flow and consumes required energy only. In PM VSD air compressor, the frequency converter adjusts the motor speed according to the actual air consumption to control the air output. When air consumption is low, the air compressor will automatically run at lowest speed and save much energy. In some cases, the cost of saving energy is much higher than the cost of machine itself. This is the greatest advantage on PM screw air compressors.

Model No	Power KW / HP	Pressure KG / CM²	Free Air Delivery (CFM)	Air Connection
ZSC 7.5	5.5/7.5	8/10/12	29 / 26 / 23	½″
ZSC 10	7.5/10	8/10/12	40 / 35 / 30	¾″
ZSC 15	11/15	8/10/12	60 / 52 / 45	¾″
ZSC 20	15/20	8/10/12/16	81 / 74 / 67 / 45	1″
ZSC 25	18.5/25	8/10/12	108 / 87 / 73	1″
ZSC 30	22/30	8/10/12/16	126 / 105 / 91 / 70	1″
ZSC 40	30/40	8/10/12	170 / 150 / 140	1¼″
ZSC 50	37/50	8/10/12	217 / 195 / 170	1¼″
ZSC 60	45/60	8/10/12	252 / 220 / 190	1¼″
ZSC 75	55/75	8/10/12	336 / 283 / 245	1½″
ZSC 100	75/100	8/10/12	434 / 378 / 315	1½″
ZSC 125	90/125	8/10/12	577 / 472 / 385	2″
ZSC 150	110/150	8/10/12	700 / 605 / 530	2″

❖ ADVANCE TECHNOLOGY ❖ ENERGY SAVING ❖ HIGH RELIABILITY ❖ ENVIRONMENT FRIENDLY ❖ FULL AUTO CONTROL SYSTEM ❖ FLOOR / TANK MOUNT ❖ DIRECT DRIVE ❖ VARIABLE SPEED DRIVE ❖ PERMANENT MAGNET MOTOR ❖ PORTABLE ELECTRIC DRIVE ❖ PORTABLE DISEL DRIVE

Cost of Fixed Speed Screw Air Compressor

Energy Cost ■ Maintenance Cost ■ Machine Cost

Cost of PM VSD Screw Air Compressor

Energy Cost ■ Maintenance Cost ■ Machine Cost ■ Energy Saving

OIL FREE (NON – LUBRICATED) COMPRESSORS

These compressors are useful where 100% oil free air is necessary. Oil is not required in the crankcase of these compressors are useful in dental medical, hospitals, laboratory, pharma ceuticals, bio technology, food industries, printing machines, electronics industries CNC & VMC application etc.

Model No	Motor (HP)	Piston Displacement (CFM)	Air Receiver (LITERS)	Pressure (PSIG)
ZOF-10	1.00	3.5	35	115
ZOF-15	1.50	5.2	50	115
ZOF-20	2.00	7.0	70	115
ZOF-30	3.00	7.5	160	135
ZOF-40	4.00	14.0	100	115
ZOF-50	5.00	15.0	200	135
ZOF-75	7.50	21.0	240	135
ZOF-100	10.00	32.0	300	135
ZOF-150	15.00	45.0	500	135
ZOF-200	20.00	60.0	500	135

Vacuum Pump

SINGLE / TWO STAGE DRY VACUUM PUMPS

Vacuum Pumps are useful in paper handling, Liquid transfer, vacuum foarming, food processing, sugar factory, food impregnation, hospitals & dental clinics, laboratories, dairies, chemical industry etc.

Model No.	Motor (HP)	No. of PISTON	Piston Displacement (CFM)	Vacuum (Hg) (INCH)
ZVP – 285V/VT	2.0	2	17.4 / 8.7	29.0 / 29.6
ZVP – 294V/VT	3.0	2	31.0 / 15.5	29.0 / 29.6
ZVP – 305V/VT	5.0	2	52.0 / 26.0	29.0 / 29.6
ZVP – 57V/VT	7.5	2	88.0 / 44.0	29.0 / 29.6
ZVP – 65V/VT	10.0	3	132.0 / 88.0	29.0 / 29.6

Refrigerated Air Dryer

Refrigerated Compressed Air Dryers are one of the most common used types of Air Dryers. It is simple in design, requires very little maintenance and cost effective. Generally where the buyers don't have special requirements, like an ultra-low dew point – The refrigerated Air Dryer is the suitable option to protect the tools and equipments.

Working Principal

Saturated Compressed Air enters the Pre Cooler within which it is cooled by exchanging heat outgoing chilled air. The inlet Air is further cooled in the super cooler (Evaporator) by refrigerant. In the Evaporator heat transferred from the compressed air to refrigerant. This process cooled the air and reduces the capacity to hold water vapor resulting in moisture condensation. This condensed moisture is removed from the air stream by an in-built moisture separator and automatic drain valve. Lastly before reaching the application cold compressed air passes through pre cooler, where the cold air re-heated. Refrigerant Compressor and condenser supply the cooled refrigerant to evaporator through expansion device. The Hot gas by-pass valve balance the operation of refrigerant system to compressed air cooling load.

Features

◆ Protect your pipe from corrosion. ◆ **Evaporators Coper Tube and Tube upto 80cfm** ◆ Simple and Proven design, quality components. ◆ Non-Cyclic type for constant Pressure Dew Point. ◆ Easy to installation. ◆ Easy access to key components. ◆ Low pressure drop. ◆ Lowest Power Consumption.

Technical Specifications

Model	Inlet Flow		Power Supply	Rated Power (kW)	End Connection	
	cfm	M3/Hr		AC		
ZD 20	20	34	230 V AC, 50 Hz, 1Ø	0.13	½"	BSP F
ZD 40	40	68		0.2	¾"	
ZD 60	60	102		0.33	¾"	
ZD 80	80	136		0.42	¾"	
ZD 100	100	170		0.6	1"	
ZD 120	120	212		0.7	1"	
ZD 150	150	255		0.85	1 ½"	
ZD 200	200	340		1.12	1 ½"	
ZD 250	250	425		1.35	1 ½"	
ZD 300	300	510	415 V AC, 50 Hz, 3Ø	1.6	2"	
ZD 400	400	680		1.9	2"	
ZD 500	500	850		2.2	3"	NB (FLANGE IS : 6392, T -17)
ZD 600	600	1020		2.7	3"	
ZD 750	750	1275		3.1	3"	
ZD 1000	1000	1700		4.4	4"	

- Flow capacity in accordance with ISO 7183
- Ideal Inlet Temp. : 45°C
- Ideal Working Pressure : 7 kg/cm ^ 2
- Ideal Ambient Temp. : 40°C
- Pressure Dew Point : 3°C

} use Correction Factor for other range

- Max. Pressure Drop 0.2 Bar across the dryer
- Voltage range : 190 – 240 V AC for 1Ø and 420 – 380 V AC for 3Ø
- Rated power is max power consumed at ideal Condition.

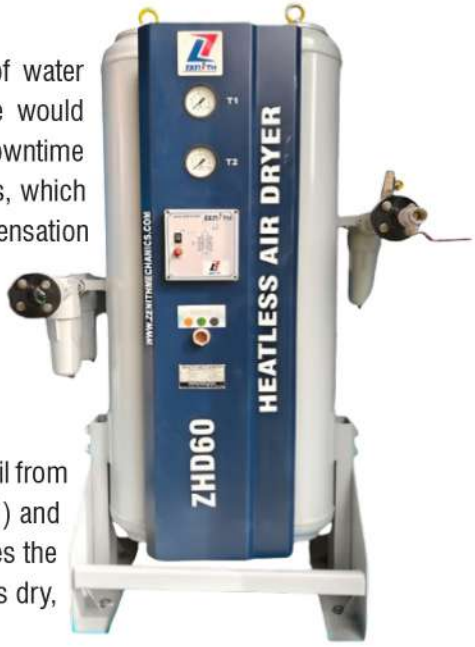
Correction Factor

Inlet Air Temperature							
Temper **Inlet Air Temperature (°c)**	30	35	40	45	50	55	60
Correction Factor (C1)	1.63	1.38	1.2	1	0.8	0.62	0.5
Inlet Air Pressure							
Air Pressure bar (g)	4	6	7	8	10	12	16
Correction Factor (P1)	0.62	0.87	1	1.07	1.22	1.35	1.63
Ambient Temperature							
Temperature (°C)	30	35	40	45	50	55	
Correction Factor (C2)	1.12	1.06	1	0.94	0.88	0.75	

Dryer Nominal Capacity = $\frac{\text{Compressor Actual Capacity}}{\text{C1 x C2 x P1}}$

Heat Less Compressed Air Dryer

The Compressed air leaving a compressor contains considerable quantities of water vapor. If the untreated air is supplied into the distribution lines, the moisture would condense to liquid water as it gets cooled. Condensed water is a major cause of downtime in compressed air systems. Water causes rust, pitting, blockages and freeze ups, which results in component failure and product rejection. The only way to prevent condensation of water in air lines is to lower the dew point of the air in the system. It is less expensive to own and operate an air dryer than to live with the problems it can prevent.



Operation:

Coalescing filters of 5 micron and 0.01 micron removes bulk moisture and liquid oil from the compressed air. This pre-treated air diffuses to the bottom of the adsorber (T1) and passes through the desiccant bed. This desiccant bed adsorbs moisture and dries the air. Dry air leaves the adsorber (T1) and passes through 1 micron dust filter. Thus dry, filtered compressed air is available to the application.

This desiccant can adsorb only certain quantity of moisture and will reach equilibrium after certain time. It can no longer dries the air to the required dew point and should be regenerated to keep the process continuous. To generate the first adsorber (T1), some partial quantity of dry air coming out of second adsorber (T2) is diverted to first adsorber (T1). This Dry air expands to atmospheric pressure and become subsaturated. This subsaturated dry air purges out all moisture from the first adsorber (T1) and makes it ready for next adsorption.

Air flow is diverted to adsorber column alternatively by valves and controller.

Product Model	FAD, cfm	In/Out	Weight (kg)
ZHD 40	40	½''	210
ZHD 60	60	¾''	240
ZHD 80	80	1''	290
ZHD 100	100	1''	320
ZHD 125	125	1''	370
ZHD 150	150	1-1/2''	415
ZHD 200	200	1-1/2''	450
ZHD 250	250	1-1/2''	520
ZHD 300	300	1-1/2''	640
ZHD 350	350	2''	700
ZHD 400	400	2''	740
ZHD 500	500	2''	1100

Energy management controller to minimize purge loss

Large dessicant beds for consistent dew point

Outlet air quality according to ISO 8573-1, 7.3, Table 3, Class 3 & 2.

Capacity : 10 to 10,000 cfm

Inlet Air Temp : 5 to 45^{0}C

Working Pressure : 6 to 15 bar g

Dew Point Temperature : – 40^{0}c Atmospheric (–70^{0}c Optiional)

Pressure Dew Point : – 20^{0}c to – 40^{0}c

Compressed Air Filter

Purification of compressed air is needed because the air we breathe carries contaminants. Airborne particles, water, microbes, and chemical gases enter compressors. At a compressed state these contaminants become concentrated and more destructive. In the compressed air system, hard particles assault equipment and piping. The result is damage to the system and more particles generated. Examples of particles found in a compressed air system include desiccant dust, rust, pipe scale, metal oxides, and dirt. By applying proper filtration system the above can be eliminated.

Benefit

◆ Protect your pipe from corrosion. ◆ Increase lifetime of tools and equipments.

Technical Specification

Model	Model Variant				Inlet Flow		Housing	End Conn.
	P	X	Y	A	cfm	M³/Hr		
ZF 004	✓	✓	✓	✓	40	68	Aluminium	½" BSP
ZF 006	✓	✓	✓	✓	60	102		1" BSP
ZF 012	✓	✓	✓	✓	120	212		1 ½" BSP
ZF 020	✓	✓	✓	✓	200	340		1 ½" BSP
ZF 035	✓	✓	✓	✓	350	600		2" BSP
ZF 050	✓	✓	✓	✓	500	850		2" BSP
ZF 060	✓	✓	✓	✓	600	1020		2 ½" BSP
ZF 070	✓	✓	✓	✓	750	1280		2 ½" BSP
ZF 100	✓	✓	✓	✓	1000	1700	Carbon Steel	DN 100

P – Pre-Filter 5micron
X – After Filter 1micron
Y – Sub Micro Filter 0.01micron
A – Activated Carbon Filter 0.003micron

Automatic Drain Valve

Why Automatic Drain Valve

Condensate can have harmful effects on a system when not removed. Moisture can wash lubrication from air tools and production equipment causing downtime, production quality problems and maintenance. Excessive rust and scale can form in the air distribution system.
The task of the condensate drain valves is to remove condensate from the air system without losing excessive compressed air and without shutting down the system.

Features

◆ Reliable Compact Design ◆ Variable On time and Cycle time ◆ Large Orifice for Heavy Condensate Discharge ◆ Screw threads structure at inlet and outlet for easy installation with air flow indication marked on valve body.

Technical Specification

Type	Medium Discharge			High Discharge		
Model	ZDV M01	ZDV M02	ZDV M03	ZDV H01	ZDV E01	ZDV E02
Operation Pressure (Kg.)	16	16	40	16	16	16
End Connection	½" BSP (F)	½" BSP (F)	½" BSP (F)	½" BSP (F)	1" BSP (F)	2" BSP (F)
Valve Type	Direct Acting					
Valve Body	Aluminium		Brass	Aluminium	Aluminium	Aluminium
Orifice (MM)	1.3	4	4	12	25	50
Cycle Minute	1-128	0.5 - 45		1-128	1-128	1-128
Drain Time Second	8	0.5 - 10		2-10	2-10	2-10
Manual Option		Yes	Yes			Yes
Pilot Air Required	No.	Yes	No.	Yes	Yes	No.
Supply Voltage	230 V AC , 50 Hz , 1Ø (Optional for 110 V AC & 24 V DC/AC)					NA
Protection	IP-65					

Air Receiver

Air Receiver is essential to every compressed air system to act as a buffer and a storage medium between the compressor and the consumption system. There are in principal two different air receivers in a compressed air system :

PRIMARY receiver - located near the compressor , after the after-cooler but before filtration and drying equipment

SECONDARY receivers – located close to points of larger intermittent air consumption

Features

◆ Simply Installation & lifetime flexibility. ◆ Complete with hydrostatic test. ◆ Reliable Compact Design. ◆ Fabricated as per ASME SEC VIII Div I/IS : 2825 ◆ Material of Construction IS 2062 / IS 2002 ◆ Internal anti-corrosive paint. ◆ External double coats of Zinc Chromate paint. ◆ Supplied with standard accessories. ◆ Third party inspection as option. ◆ Manufacture 50 M^3 @ 40 Kg/cm^2.

Technical Specification

Model	Working Pressure (Bar g)				Capacity		Standard Accessories Height	End Conn.	Inspection Hole	Overall Dimension	
	7	8	10	13	LTR	M^3				Diameter (Inner)	Height
ZAR 050	✓	✓	✓	✓	500	0.5	Safety Valve, manual Drain & Pressure Gauge	1'' BSP (F)	Hand Hole	610	2100
ZAR 100	✓	✓	✓	✓	1000	1		1 ½'' BSP (F)	Hand Hole	762	2650
ZAR 150	✓	✓	✓	✓	1500	1.5		2'' BSP (F)	Man Hole	914	2800
ZAR 200	✓	✓	✓	✓	2000	2		2'' BSP (F)	Man Hole	1067	2800
ZAR 250	✓	✓	✓	✓	2500	2.5		DN 80	Man Hole	1067	3350
ZAR 300	✓	✓	✓	✓	3000	3		DN 100	Man Hole	1067	4000
ZAR 400	✓	✓	✓	✓	4000	4		DN 100	Man Hole	1219	4050
ZAR 500	✓	✓	✓	✓	5000	5		DN 100	Man Hole	1372	4000

Dry Air Generator

Dry Air Generator is a Combo Pack with Air Compressor, Compressed Air Filters, Refrigerated Type Air Dryer and Desiccant Type Air Dryer designed for absorbing moisture from compressed air. This system will achieve ISO 8573: high quality of class – 1 air. This is an essential device used in various industrial applications specially for transformer testing purposes. It is mostly used in the electrical power industry.

Operation: Compressed Air is generated through the air Compressor. The Air goes to the Pre Filter then Refrigerated type Air Dryer then the Air goes to After filter will achieve Class – 3 air (-3°C PDP). This air again goes to Desiccant type (Heat Less) Air Dryer and the Air achieved as per ISO 8573-1 class – 1, Table 3 Air (-40°C PDP) – (-70°C PDP).

Require: This Air use for Instrument and testing purpose of before oil feeling of Transform and various testing purpose .

Technical Specification :

Model	Air Compressor Hp/kW	Ref. Dryer cfm	Desiccant Dryer cfm	Canopy Size			Power Supply	End Connection
				Length	Width	Height		
ZDAG 075	7.5 HP	40CFM	40CFM	2000	1350	2000	3PH (+415V)	½" BSP
ZDAG 100	10 HP	60CFM	60CFM	2000	1350	2000	3PH (+415V)	¾" BSP
ZDAG 150	15 HP	80CFM	80CFM	2000	1550	2000	3PH (+415V)	¾" BSP

Z – ZENITH, D – DRY, A – AIR, G - GENERATOR

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