

**CURTIS**<sup>®</sup>  
AIR COMPRESSORS

# ZW SERIES OIL FREE SCREW COMPRESSOR



CURTIS-TOLEDO®, INC.

# LEGENDARY RELIABILITY.

*Is Built Into Each Compressor.*

Engineers have pushed their colleagues through collaboration to build the tallest buildings, span the greatest bodies of water with bridges and undersea tunnels, and to create pyramids and columns that have stood the test of time. Since 1854, Curtis® has engineered the longest lasting, best built line of industrial air compressors.

## **CURTIS® ZW – TOTALLY OIL-LESS, COOL & CONTAMINANT FREE COMPRESSED AIR.**

CURTIS® ZW Series Oil Free Screw Compressors produce true oil-less air. When your application requires clean, high quality air, purchase a ZW Series Compressor.

ZW Compressors are environmentally safe with high efficiency and are an extension of our current offering of Oil Less piston compressors. CURTIS® oil free compressors serve the majority of your compressed air needs.

CURTIS-TOLEDO®, Inc. provides the highest level of customer service through our national network of distributors, extensive research and development, and a promise for uncompromising pursuit of excellence in maximizing oil free proven technologies:

### **HIGHLY EFFICIENT**

- No power loss from gears or belts
- Water seals and cools for ideal compression
- Optimal compression processes with water cooling

### **LOW COST SERVICE**

- No oil related service costs
- No high cost air end rebuilds
- Fast and easy for minimal down time

### **HIGH RELIABILITY**

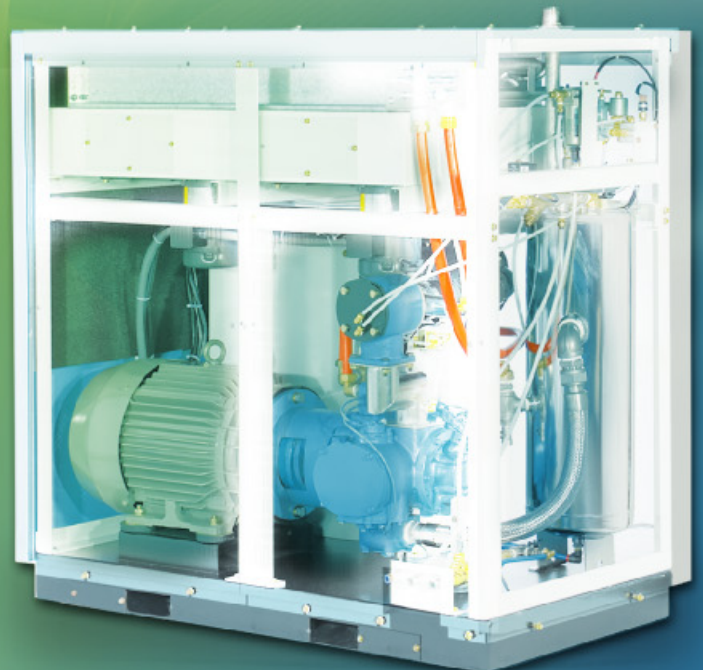
- Uncomplicated design
- Low speed, direct drive, no high speed gears
- Low operating temperatures, no special coatings

### **HIGH QUALITY AIR**

- Low air temperature easy to dry and treat
- Air free of hydrocarbons, no oil in the system
- No coating on rotors that can contaminate or pollute the air

### **ENVIRONMENTAL SAFETY**

- Low Noise
- Efficient use of energy
- No oil discharge to environment





*Food Processing*



*Medical Air Supply*

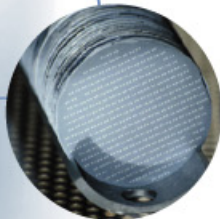


*Precision Painting*



*Pharmaceutical  
Production*

**APPLICATIONS**



*Electronics  
Manufacturing*



*Chemical Analysis*



*Biomedical Research*



*Agitation,  
Air Blowing, Construction,  
Pneumatic Conveying,  
Instrument Air*



*Drying  
Painting  
Precision Cleaning*

**INDUSTRIES  
SERVED**

*Appliance*

*Biochemical*

*Chemical*

*Electronics*

*Farming*

*Fiber*

*Food*

*Glass*

*High Tech*

*Marine*

*Measuring  
Instruments*

*Medical*

*Medical  
Science/Instruments*

*Nitrogen/Oxygen  
Generation*

*Papermaking*

*Petrochemical*

*Pharmaceutical*

*Photo Processing*

*Printing*

*Resin*

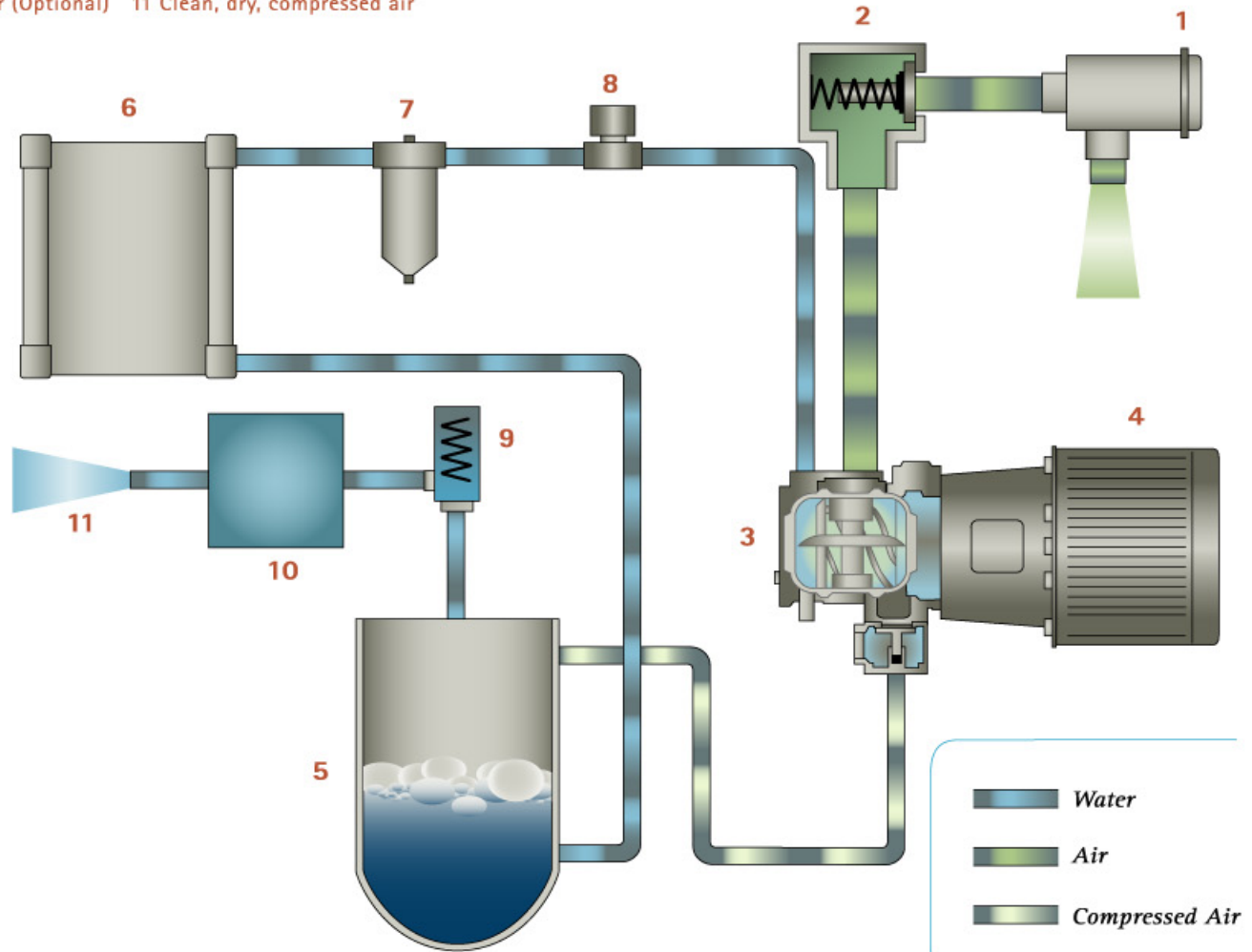
*Steel*

*Textile*

*Others*

## ZW MAIN COMPONENTS:

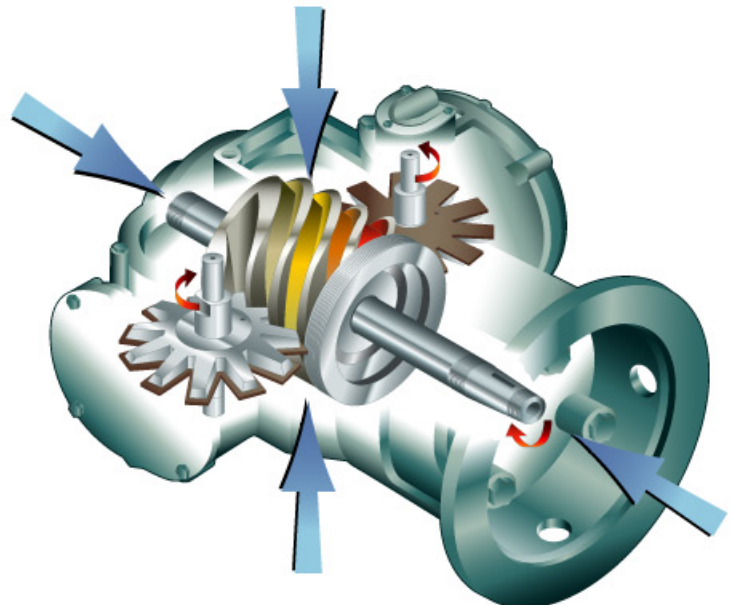
- 1 Heavy Duty Intake Filter 2 Efficient flow Intake Valve 3 Oil-Less air end 4 High Efficiency TEFC motor 5 Water Separator tank  
6 Water-to-air or water-to-water (some models) cooler 7 High efficiency water filter 8 Solenoid Valve 9 MPV and Check Valve  
10 Dryer (Optional) 11 Clean, dry, compressed air



## ZW AIR END

THE MOST ADVANCED OIL-LESS AIR END IN THE INDUSTRY

- Compression forces balanced inside air end for longer bearing life, increased reliability
- Simple and rugged design for reliability. No complex seals or gear arrangements.
- Water sealing – nearly ideal (isothermal) compression gives improved efficiency, lower energy consumption.
- Precision machining, service free ceramic bearings mean long maintenance intervals.
- Low operating temperatures and low speeds for long bearing life, lower maintenance cost



## CURTIS® ZW OIL FREE COMPRESSOR FEATURES IN DETAIL:

### HIGH EFFICIENCY

- Water seals the clearances effectively for low energy consumption (up to 15% less than dry screw) and no air flow is wasted to seal vent
- As the water absorbs the heat from the air during compression, the compressor achieves nearly ideal isothermal compression for optimal efficiency. Direct drive of the air end improves the efficiency by 2% – 4% (no belt or gear loss)
- Advanced proprietary profile is machined to high precision (vs. mold-casted polymer rotors) for high efficiency and low energy consumption
- Save an additional 30% to 35% of energy cost with optional Variable Speed Driven ZWV

### LOW COST SERVICE

- Oil-less design requires no oil changes, oil filters, oil separator element changes, or costly disposals of oil filters and the ZW air end does not require high cost rebuilds like dry screws
- Oil leaks or discharges into the environment requiring costly repairs are avoided, and no need for high maintenance oil-water separation system
- Less down time due to easy and fast service
- Lower Life Cycle Cost (LCC) with Variable Speed Driven ZWV compressors

### HIGH RELIABILITY

- Low operating speed (3,550 max) vs. dry screw oil free compressors which can run up to 40,000 rpm. The 3,550 max rpm means low bearing loads for long bearing life, increasing reliability and decreasing the risk of down time
- Low operating temperature does not subject the unit to high heat loads (vs. 500-600°F for dry two-stage oil free units)
- Simple construction with ceramic bearings gives you high reliability and less risk of down time

### OIL-LESS DESIGN

- System contains **no oil**, unlike dry screw compressors
- Water cools, seals and lubricates the compressor
- Ceramic, water lubricated bearings for long life and high reliability

### HIGH QUALITY AIR

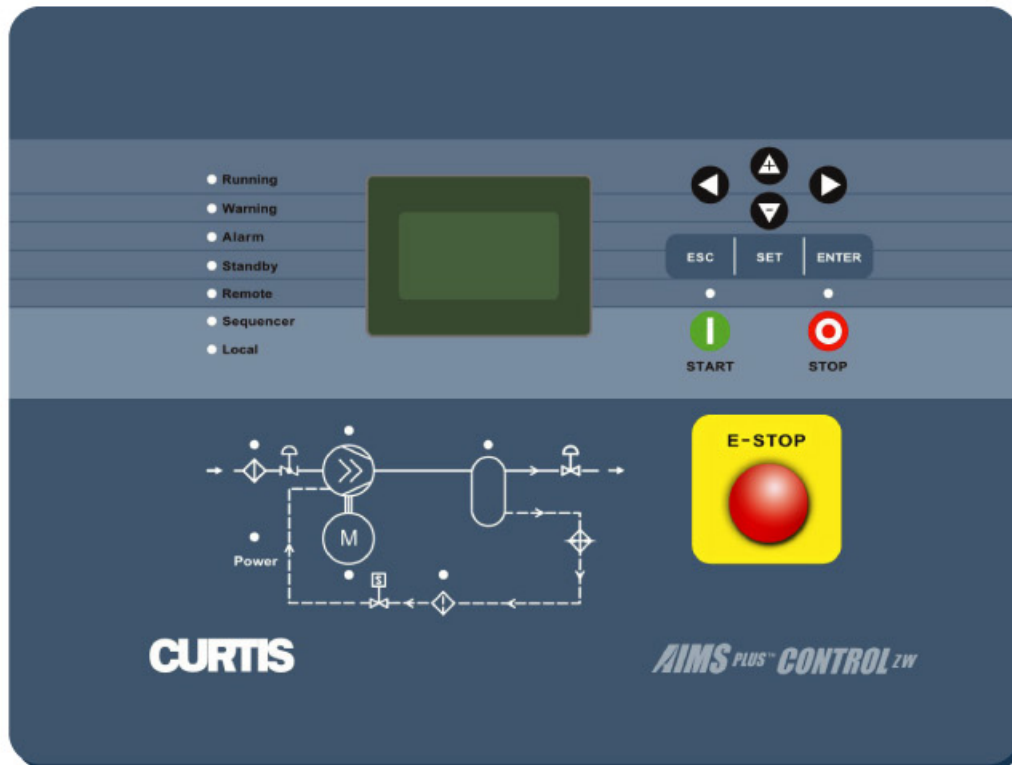
- Totally oil-less, cool and contaminant free air
- Water is easy to separate and remove, unlike oil, which is more difficult to remove
- Water injected to the unit filtered in several phases and automatically replaced every 100 hours to ensure cleanliness
- Stainless steel and bronze alloy non-corroding components with no Teflon or other coating material to wear and contaminate the air stream

### ENVIRONMENTALLY SAFE PACKAGE

- OSHA compliant, low running speed and direct drive produces no gear noise
- Unit installation in work space gives you reduced installation cost, reduced investment on air network piping, reduced investment since separate compressor room is not required
- Promotes energy conservation by avoiding the use of oil and by being energy efficient
- Low discharge temperature, no need for discharge air cooler and separators for a low pressure drop

putting you in control

in control



STANDARD FEATURES FOR AIMS PLUS™ CONTROLLERS:

- Large alphanumeric display and LED indicators for easy to read operational status and alarms
- Easy operation and user friendly interface with informative menu structure
- Dual level protection with warning/alarm and shutdown
- Service timers for optimized maintenance
- Sequencing capability of up to 16 units
- Fault log for up to 20 incidents
- Auto start up and shutdown
- Remote control possibility
- Connection (RS-485) with your computer for software updates and system monitoring
- Extra temperature and pressure inputs for user defined services
- Emergency stop

LEGENDARY RELIABILITY.

CURTIS-TOLEDO<sup>®</sup>, Inc. has a full line of air treatment equipment. Contact your local Curtis<sup>®</sup> distributor for details.





## Legendary Reliability.

CURTIS® FACILITIES INCLUDE A 144,000 SQUARE FOOT FACILITY IN ST. LOUIS, MISSOURI, AS WELL AS FACILITIES IN BUFFALO, NEW YORK AND SAN DIEGO, CALIFORNIA. ALL PHASES OF PRODUCTION, FROM DESIGN AND ENGINEERING TO FINAL ASSEMBLY AND SHIPPING MEET OR EXCEED THE HIGHEST INDUSTRY STANDARDS. STATE-OF-THE-ART COMPUTER AIDED DESIGN ALLOWS CURTIS® TO MEET THE HUNDREDS OF CUSTOMER SPECIFIED COMPRESSOR PACKAGE CONFIGURATIONS.



ISO 9001: 2000 registered



*The Symbol of Quality & Excellence Since 1854*

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## TECHNICAL DATA SHEET

The CURTIS® Oil Free compressors are designed for totally Oil-Less air, free of any hydrocarbons. The ZW-Series units are highly efficient with low operating temperature. Slow running speeds with direct coupling (no gears) and low operating temperatures ensure high reliability. The service is low cost with no oil filters, oil separators or oil to dispose. Total water filtration, cleaning and automatic flushing ensure high air quality. Variable Speed Driven ZWV 50 compressors offer unparalleled energy and Life Cycle Savings to customers with variable air demand.



Curtis® reserves the right to alter the specification without prior notice.

		ZW 20A	ZW 30A	ZW 50A	ZWV 50A
Power	hp	20	30	50	50
Pressure	psig	100/125/135	100/125/135	100/125/135	100/125/135
Capacity (FAD)	cfm	85	125	222	222
Speed	rpm	3,555	3,555	3,555	3,555
Starter		Y/D	Y/D	Y/D	VFD/Soft
Voltage, 60Hz	V	230/460	230/460	230/460	460
Motor type		TEFC	TEFC	TEFC	TEFC
Drive type		Direct/no gears	Direct/no gears	Direct/no gears	Direct/no gears
Water Volume	gal	6.9	6.9	7.4	7.4
Cooling		Air Cooled	Air Cooled	Air Cooled	Air Cooled
Sound Level	dB(A)	72	75	77	77
Air Discharge, NPT	inch	1	1	1-1/4	1-1/4
Dimensions, L x W x H	inch	57 x 32 x 59	57 x 32 x 59	67 x 43 x 68	67 x 43 x 68
Weight, lbs	lbs.	1,584	1,738	2,450	2,500

Performance per ISO 1217-std. (ref.conditions: absolute pressure 14.5psi(a), suction air temp. 68°F)

Noise level per CAGI Pneurop PN8NTC2, Tolerance ± 3dB(A)

### STANDARD FEATURES

- Heavy Duty Intake Filter • Totally Oil-Less Air End • Direct Drive with no Gears • AIMS PLUS™ Controller • Auto Dual Control
- Control Voltage Transformer • Efficient Water Cleaning System • Water Separation System • Emergency Stop • Quiet Enclosure
- TEFC Motor • Y/D Starter • Air Cooled • Rigid Base with Forklift Slots • Washable Enclosure Filter • Multi-level Safety System
- Pressure Relief Valve • Moisture Trap

### OPTIONAL FEATURES AND EQUIPMENT

- Alternate Voltages – 200V (*consult factory*) 575V • Water Cleaning System (*up to four compressors*)
- Air Dryers and Filters • Variable Speed Control (For Certain Models)



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