



# DSP SERIES



Oil Free Rotary Screw Air Compressors

22–240 kW





# Sullair and Hitachi

When Sullair became A Hitachi Group Company in July, 2017 — two compressor titans joined forces — bringing customers more solutions to achieve their compressed air needs.

Since 1965, Sullair has been recognized worldwide as an innovator and leader in rotary screw compression and vacuum technology. Now combining more than 100 years of Hitachi compressor engineering experience with the dedicated sales, service and distribution experience of Sullair — presenting the DSP Series of Oil Free Rotary Screw Compressors. The DSP Series represents the best of more than 50 years of Hitachi oil free compressor experience and expertise.

**RELIABILITY.  
DURABILITY.  
PERFORMANCE.**

*These are the pillars that drive the quality of Sullair compressed air solutions. It's a promise we keep with every machine we make.*

## RELIABILITY

Customers who work with Sullair have found that the intangibles make all the difference — things like trust, confidence, and peace of mind. They go to work every day having full faith in their equipment, as well as the knowledge that dedicated distributors and Sullair personnel have their back every step of the way.

## DURABILITY

Bulletproof. Built to last. However you spin it, Sullair compressed air solutions are in it for the long haul, driven by the design of the legendary air end. In factories and shops all over the world, you'll find Sullair compressors that have stood the test of time, running consistently today like they did on day one.

## PERFORMANCE

You have high expectations for your operations, and we make machines that share your work ethic. Sullair compressed air solutions do what they're supposed to do, and they do it extremely well for a very long time. And working with us means not only access to clean, quality air, but also the tools you need to optimize this vital resource.



# OIL FREE COMPRESSION AND ROTARY SCREW DEPENDABILITY

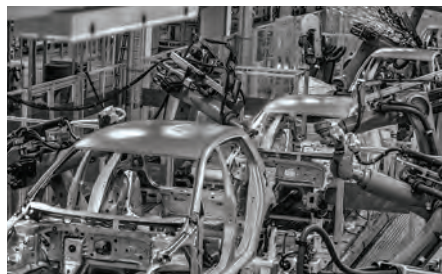
The DSP Series rotary screw air compressors are the perfect choice for applications requiring completely oil free air, including:

- Pharmaceuticals
- Food and beverage manufacturing
- Electronics
- High-technology manufacturing
- Textile manufacturing
- Robotics
- Automotive
- Paint

The roots of the DSP Series come from Hitachi — with thousands of successful oil free rotary screw compressor installations around the world today.

## Why Oil Free?

In many operations, compressed air comes into contact with items in the manufacturing process. When air purity is critical — oil free air is essential. Oil particulates in compressed air can contaminate downstream processes and production. Oil Free compressors eliminate potential contamination as no oil or lubricant is introduced into the air compression process. Reduced risk of contamination helps improve your business operations and profitability.



## AIR QUALITY STANDARDS ISO 8573-1 CLASSES

Class	Solid Particle Maximum number of particles per m³			Pressure Dew Point °F (°C)	Oil (incl. vapor) mg/m³
	0.1–0.5 micron	0.5–1.0 micron	1.0–5.0 micron		
0	As specified by the end-user or manufacturer, and more stringent than Class 1				
1	≤ 20,000	≤ 400	≤ 10	≤ -94° (-70°)	0.01
2	≤ 400,000	≤ 6,000	≤ 100	≤ -40° (-40°)	0.10
3	—	≤ 90,000	≤ 1,000	≤ -4° (-20°)	1.00
4	—	—	≤ 10,000	≤ 37.4° (3°)	5.00
5	—	—	≤ 100,000	≤ 44.6° (7°)	—
6	—	—	—	≤ 50° (10°)	—



**Class 0 Oil Free Air** — For applications in which air purity is essential, including pharmaceuticals, food and beverages, electronics, automotive painting, and textiles.

DSP Series compressors are certified oil free under ISO8573-1.

# DSP SERIES

RELIABLE HITACHI ENGINEERED PACKAGE DESIGN BASED ON  
MORE THAN 50 YEARS OF OIL FREE ROTARY SCREW EXPERIENCE

## Designed for the ultimate in reliability the DSP Series

### Includes these key features:

- Allowable ambient temperature 45–50°C
- Noise-reducing package including:
  - Full enclosure as standard
  - Mechanical and electrical vibration isolation
  - VSD fan
- VSD packages under 75 kW include DCBL motors
- Maintenance and service friendly features including:
  - External grease fittings on 37 kW motors and larger
  - Easy access to air and oil filter elements
- Gearbox lubrication features Sullair AWF® fluid for wide range of temperature applications



### Controller features include:

- 4.3" Color Touch Screen
- Lead/Lag capability
- MODBUS RTU standard (TCP optional)
- USB memory data export
- Bluetooth web connectivity



### DSP75 Model Features Include:

- 1a and 1b. HITACHI TWO-STAGE AIR END** — featuring stainless steel rotors and patented PTFE-free coating. Both first and second stage air ends are easy to remove separately for long-term maintenance needs.
- 2. HITACHI TEFC ELECTRICAL MOTOR** — reliable, high efficiency — features external grease fittings
- 3. CENTRIFUGAL COOLING FAN** — with efficient TEFC fan motor
- 4. PATENTED OIL MIST REMOVER** — exclusive to DSP Series compressors. Gearcase oil mists are recaptured and recycling — improving ultimate air quality while reducing tophoff requirements.
- 5. AFTERCOOLER** — provides second stage of cooling in conjunction with patented High Pre-Cooler
- 6. DRAIN SEPARATOR** — located before 2nd stage air end to help remove moisture from 1st stage compression
- 7. FLANGE CUSTOMER CONNECTION** — simplifies installation
- 8. SOLID BASEPLATE** — provides additional noise dampening
- 9. EASY ACCESS OIL FILTER** — magnetic door panels do not need to be removed







# DSP SERIES

The DSP Series brings advanced oil free operations right where it is needed: your facility! Built on Hitachi engineering, the DSP is designed to supply oil free air reliably, efficiently and quietly – today and tomorrow.



TWO-STAGE DRY SCREW PRODUCT OVERVIEW														
Motor Output (kW)	22	30	37	45	55	75	90	100	120	132	145	160	200	240
Air-Cooled/Fixed Speed	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Air-Cooled/Variable Speed			<div></div>		<div></div>	<div></div>		<div></div>				<div></div>		<div></div>
Water-Cooled/Fixed Speed				<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
Water-Cooled/Variable Speed					<div></div>	<div></div>		<div></div>				<div></div>		<div></div>
<div><div><div>← 7.0 / 8.6 bar →</div><div>7.0 / 8.6 (9.3) bar</div><div>← 7.5 / 8.6 / 10.0 bar →</div></div><div><div>← 3.7–40.5 m³/min →</div></div></div>														

## KEY DSP FEATURES



### INNOVATIVE AIR END CONSTRUCTION

#### Key features:

- Rotor design, material and coating optimized for efficiency
  - Stainless steel rotors in 1st and 2nd stage
  - Patented PTFE free rotor coating
  - Rotor housing coated internally

#### Benefits:

- All aspects of the air end have been carefully engineered to provide long life and high efficiency
  - The stainless steel rotors, patented rotor coating and coated housing provide long life of air end



### PATENTED HIGH PRE-COOLER DESIGN (AIR COOLED UNITS)

#### Key features:

- Stainless steel high pre-cooler placed before aftercooler

#### Benefits:

- Helps prevent thermal fatigue and premature failure of the aftercooler, providing higher reliability and durability



### MOTORIZED ISOLATION VALVE (MIV)

#### Key features:

- Located at the compressed air discharge, the MIV helps avoid migration of moisture back into the compressor package when the DSP is not running
  - Opens when the motor is running and closes when the motor is off

#### Benefits:

- Provides additional protection for the compressor against downstream humidity – one of the biggest enemies of oil free screw compressors

## OIL MIST REMOVER (OMR)

### Key features:

- Removes oil mist from gearcase with 99.99% efficiency
- Maintains gearcase at negative pressure

### Benefits:

- Recaptured oil mist returned reducing gearcase top offs needed — saving you money
- Helps ensure a cleaner production environment around the compressor

## CAPACITY CONTROL SYSTEM

### FIXED SPEED

#### Key features:

- Spool type — simple design
- Pneumatically controlled
- Designed to operate 1 million cycles/year

#### Benefits:

- High reliability and durability
- Lower maintenance cost
- Longer maintenance intervals

### VARIABLE SPEED DRIVE

#### Key features:

- No inlet valve on VSD
- Two speed reduction
- Turndown works always in the most efficient range of specific power, below turndown DSP works load/unload at minimum point of turndown

#### Benefits:

- No restriction means no air losses at inlet
- Minimize power consumption at unload condition
- Power consumption at no load is reduced up to 30% vs fixed speed of same model
  - More efficient at low capacities vs VSD from others that run with larger turndown and a very inefficient specific power at lower points of turndown

## MOTORS, INVERTERS AND PHASE MONITOR

### Key features:

- Hitachi motors
  - IE3, TEFC and IP55 (22–240 kW Models)
  - DCBL-PMM on DSP37V, DSP55V and DSP75V models
- VSD fan motors on DSP22–120
- Hitachi inverters
- Phase monitor standard

### Benefits:

- Support provided in house — no external motor suppliers to navigate
- Motors are high efficiency and very compact
- More efficient cooling system
- Support provided house — no external inverter suppliers to navigate
- Protects the compressor against improper reverse rotation at startup

## WARRANTY INFORMATION:

All DSP Series Compressors feature a 3 year package warranty when continuously serviced with genuine DSP parts.



Restrictions apply.



# TECHNICAL SPECIFICATIONS

FOR MORE INFORMATION, CONTACT YOUR  
LOCAL AUTHORIZED SULLAIR DISTRIBUTOR.

FIXED SPEED — 50 Hz AIR COOLED	POWER	CAPACITY¹ @7 barg	CAPACITY¹ @8.6 barg	CAPACITY¹ @10 barg	WEIGHT	DIMENSIONS — W x D x H	SOUND LEVEL²
Model	kW	m³/min	m³/min	m³/min	kg	mm	dBA
DSP22	22	3.7	3.2	—	1120	1530 x 1150 x 1650	64
DSP30	30	4.7	4	—	1230	1530 x 1150 x 1650	66
DSP37	37	5.6	4.7	—	1230	1530 x 1150 x 1650	67
DSP45	45	7.4	6.2	—	1600	2000 x 1300 x 1800	65
DSP55	55	9.2	7.2	—	1600	2000 x 1300 x 1800	65
DSP75	75	13	10.5	—	1860	2250 x 1300 x 1800	68
DSP90	90	16.6	13.9	—	2200	2150 x 1520 x 1975	70
DSP100	100	18	15.4	—	2200	2150 x 1520 x 1975	71
DSP120	120	20.5	17.3	—	2380	2150 x 1520 x 1975	73
DSP132	132	22.5	20	19	3860	2900 x 1700 x 1925	74
DSP145	145	25	21.4	20	3860	2900 x 1700 x 1925	75
DSP160	160	27.5	23.9	22.5	3960	2900 x 1700 x 1925	75
DSP200	200	37	32.2	30	5000	3200 x 1890 x 1950	77
DSP240	240	40	35	32.5	5000	3200 x 1890 x 1950	78
FIXED SPEED — 50 Hz WATER COOLED	POWER	CAPACITY¹ @7 barg	CAPACITY¹ @8.6 barg	CAPACITY¹ @10 barg	WEIGHT	DIMENSIONS — W x D x H	SOUND LEVEL²
Model	kW	m³/min	m³/min	m³/min	kg	mm	dBA
DSP45W	45	7.5	6.4	—	1580	2000 x 1300 x 1800	63
DSP55W	55	9.4	7.4	—	1580	2000 x 1300 x 1800	63
DSP75W	75	13.2	10.7	—	1710	2000 x 1300 x 1800	66
DSP90W	90	16.8	14.0	—	2050	2150 x 1520 x 1825	68
DSP100W	100	18.3	15.6	—	2050	2150 x 1520 x 1825	69
DSP120W	120	21.0	17.6	—	2230	2150 x 1520 x 1825	70
DSP132W	132	23.4	20.7	19.6	3760	2500 x 1600 x 1925	69
DSP145W	145	26.0	22.2	20.6	3760	2500 x 1600 x 1925	70
DSP160W	160	28.5	24.8	23.2	3760	2500 x 1600 x 1925	70
DSP200W	200	37.0	32.2	30.0	4600	2800 x 1800 x 1950	70
DSP240W	240	40.5	35.0	32.5	4600	2800 x 1800 x 1950	71
VARIABLE SPEED — 50 Hz AIR COOLED	POWER	CAPACITY¹ @7 barg	CAPACITY¹ @8.6 barg	CAPACITY¹ @10 barg	WEIGHT	DIMENSIONS — W x D x H	SOUND LEVEL²
Model	kW	m³/min	m³/min	m³/min	kg	mm	dBA
DSP37V	37	3.6–5.5	3.5–4.6	—	950	1530 x 1150 x 1650	67
DSP55V	55	6.5–9.3	5.8–7.7	—	1340	2000 x 1300 x 1800	65
DSP75V	75	6.3–12.6	6.5–10.9	—	1560	2250 x 1300 x 1800	68
DSP100V	100	8.1–18.0	8.5–15.4	—	2300	2150 x 1520 x 1975	71
DSP160V (+ Inverter Panel)	160	18.4–27.5	17.7–23.9	18.0–22.5	3960 (+400)	2900 x 1700 x 1925 (690 x 1175 x 1760)	75
DSP240V (+ Inverter Panel)	240	23.6–40.0	23.1–35.0	28.2–32.5	5000 (+540)	3200 x 1880 x 1950 (810 x 1360 x 1760)	78
VARIABLE SPEED — 50 Hz WATER COOLED	POWER	CAPACITY¹ @7 barg	CAPACITY¹ @8.6 barg	CAPACITY¹ @10 barg	WEIGHT	DIMENSIONS — W x D x H	SOUND LEVEL²
Model	kW	m³/min	m³/min	m³/min	kg	mm	dBA
DSP55VW	55	5.7–9.5	5.2–8.0	—	1320	2000 x 1300 x 1800	63
DSP75VW	75	5.2–12.9	5.7–11.4	—	1410	2000 x 1300 x 1800	66
DSP100VW	100	8.2–18.3	8.6–15.6	—	2200	2150 x 1520 x 1825	69
DSP160VW	160	19.1–28.5	18.4–24.8	19.0–23.2	3960	2500 x 1600 x 1925	70
DSP240VW	240	23.9–40.5	23.1–35.0	22.8–32.5	4900	2800 x 1800 x 1950	71

¹ Capacity is measured according to ISO 1217, fourth edition, Annex C

² Sound levels measured at 8.6 barg pressures from 1.5m distance

NOTE: DSP air compressors are not designed, intended or approved for breathing air applications.