



DSP SERIES

Oil Free Rotary Screw Air Compressors

30–300 hp • 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

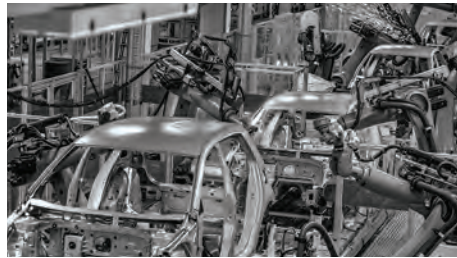
The DSP Series rotary screw air compressors are the perfect choice for applications requiring completely oil free air, including:

- 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 m ³			Pressure Dew Point °F (°C)	Oil (incl. vapor) mg/m ³
	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°)	—



OIL FREE

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 104°F (40°C)
- Noise-reducing package including:
 - Full enclosure as standard
 - Mechanical and electrical vibration isolation
 - VSD fan
- VSD packages under 100 hp (75 kW) include DCBL motors
- Maintenance and service friendly features including:
 - External grease fittings on 50 hp (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:

- Simple LCD monitor screen
- Lead/Lag capability
- Optional communication protocols include MODBUS and BACnet



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 topoff 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													
Horsepower	30	40	50	60	75	100	125	150	175	200	215	250	300
Motor Output (kW)	22	30	37	45	55	75	90	110	132	145	160	200	240
Air-Cooled/Fixed Speed	■	■	■	■	■	■	■	■	■	■	■	■	■
Air-Cooled/Variable Speed			■	■	■	■	■	■					
Water-Cooled/Fixed Speed				■	■	■	■	■	■	■	■	■	■
Water-Cooled/Variable Speed					■	■	■	■			■	■	■

← 100–128 psi → ← 100–135 psi → ← 110–125–145 psi →
 ← 114 cfm → ← 1430 cfm →

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 is 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

MOTORS, INVERTERS AND PHASE MONITOR

Key features:

- Hitachi motors
 - IE3, TEFC and IP44 (Fixed Speed 22-240 kW models and VSD 160-240 kW models)
 - TEFC, DCBL-PPM and IE4 (DSP37V, DSP55V and DSP75V models)
- VSD fan motors on DSP22–75
- 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 in house — no external inverter suppliers to navigate
- Protects the compressor against improper reverse rotation at startup

OPTIONS AVAILABLE — FIXED SPEED MODELS

- NEMA 4
 - For electrical panel and controller
- Weather Hood + NEMA 4
 - Includes rain protection cover and intake louvers protection
- Cold Weather Package
 - Includes oil sump heater, control box heater and thermostat, heat trace control and condensate lines
 - Available only with air cooled models
- AWA Container — all weather enclosure

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.

NOTE: Not all models available in all regions. Your authorized Sullair distributor can confirm model availability.

FIXED SPEED — 60 Hz		POWER		PRESSURE	PERFORMANCE	DISCHARGE CONNECTION	WEIGHT	DIMENSIONS — W x D x H	dBA
Model	hp	kW	psi (bar)	cfm (m ³ /min)	inches	lbs (kg)	inches (mm)		
DSP2209AY	30	22	125 (8.6)	117 (3.3)	1.5" NPT	2490 (1130)	60.3 x 45.3 x 65 (1530 x 1150 x 1650)		69
DSP3009AY	40	30	125 (8.6)	141 (4.0)	1.5" NPT	2650 (1200)			70
DSP3709AY	50	37	125 (8.6)	166 (4.7)	1.5" NPT				71
DSP4509AY	60	45	125 (8.6)	230 (6.5)	2" Flange	3350 (1520)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)		72
DSP5509AY	75	55	125 (8.6)	272 (7.7)	2" Flange				
DSP7509AY	100	75	125 (8.6)	392 (11.1)	2" Flange	3990 (1810)	88.6 x 51.2 x 70.9 (2000 x 1300 x 1800)		
DSP9009AY	125	90	125 (8.6)	544 (15.4)	2" Flange	5250 (2380)	84.6 x 59.8 x 77.8 (2150 x 1520 x 1975)		77
DSP11009AY	150	110	125 (8.6)	611 (17.3)	2" Flange	5600 (2540)			79
DSP13210AY	175	132	125 (8.6)	742 (21.0)	2.5" Flange	8598 (3900)	114.2 x 75.2 x 75.8 (2900 x 1910 x 1925)		77
DSP14510AY	200	145	125 (8.6)	805 (22.8)	2.5" Flange				78
DSP16010AY	215	160	125 (8.6)	894 (25.3)	2.5" Flange	8818 (4000)	126 x 82.3 x 76.8 (3200 x 2090 x 1950)		80
DSP20010AY	250	200	125 (8.6)	1169 (33.1)	3" Flange	11,464 (5200)			81
DSP24010AY	300	240	125 (8.6)	1296 (36.7)	3" Flange	3660 (1660)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)		65
DSP4509WY	60	45	125 (8.6)	236 (6.7)	2" Flange				
DSP5509WY	75	55	125 (8.6)	279 (7.9)	2" Flange	3280 (1490)	84.6 x 59.8 x 71.9 (2150 x 1520 x 1825)		70
DSP7509WY	100	75	125 (8.6)	399 (11.3)	2" Flange				
DSP9009WY	125	90	125 (8.6)	551 (15.6)	2" Flange	5030 (2280)	98.4 x 63 x 75.8 (2500 x 1600 x 1925)		75
DSP11009WY	150	110	125 (8.6)	622 (17.6)	2" Flange	5380 (2440)			76
DSP13210WY	175	132	125 (8.6)	770 (21.8)	2.5" Flange	8378 (3800)	110.2 x 70.9 x 76.8 (2800 x 1800 x 1950)		74
DSP14510WY	200	145	125 (8.6)	837 (23.7)	2.5" Flange				75
DSP16010WY	215	160	125 (8.6)	925 (26.2)	2.5" Flange	10,582 (4800)			75
DSP20010WY	250	200	125 (8.6)	1169 (33.1)	3" Flange				76
DSP24010WY	300	240	125 (8.6)	1303 (36.9)	3" Flange				

VARIABLE SPEED — 60 Hz		POWER		PRESSURE	PERFORMANCE	DISCHARGE CONNECTION	WEIGHT	DIMENSIONS — W x D x H	dBA
Model	hp	kW	psi (bar)	cfm (m ³ /min)	inches	lbs (kg)	inches (mm)		
DSP3709AV	50	37	125 (8.6)	162 (4.6)	1.5" NPT	2120 (960)	60.3 x 45.3 x 65 (1530 x 1150 x 1650)		72
DSP5509AV	75	55	125 (8.6)	272 (7.7)	2" Flange	2980 (1350)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)		70
DSP7509AV	100	75	125 (8.6)	385 (10.9)	2" Flange	3480 (1580)	88.6 x 51.2 x 70.9 (2250 x 1300 x 1800)		72
DSP9009AV	125	90	125 (8.6)	544 (15.4)	2" Flange	5470 (2480)	84.6 x 59.8 x 77.8 (2150 x 1520 x 1975)		77
DSP11009AV	150	110	125 (8.6)	611 (17.3)	2" Flange	5580 (2530)			79
DSP5509WV	75	55	125 (8.6)	283 (8.0)	2" Flange	2930 (1330)	78.8 x 51.2 x 70.9 (2000 x 1300 x 1800)		66
DSP7509WV	100	75	125 (8.6)	403 (11.4)	2" Flange	3130 (1420)			69
DSP9009WV	125	90	125 (8.6)	551 (15.6)	2" Flange	5250 (2380)	84.6 x 59.8 x 71.9 (2150 x 1520 x 1825)		75
DSP11009WV	150	110	125 (8.6)	622 (17.6)	2" Flange	5360 (2430)			76
DSP16009WV	215	160	125 (8.6)	925 (26.2)	2.5" Flange	8819 (4000)	98.4 x 63 x 75.8 (2500 x 1600 x 1925)		75
DSP24009WV	300	240	125 (8.6)	1303 (36.9)	3" Flange	11,244 (5100)	110.2x70.9x76.9 (2800x1800x1950)		76

Additional models available from 70 to 145 psi. Contact your authorized Sullair distributor for specifications and more information.

