

OIL-FREE SCREW COMPRESSORS

AIR ZEUS

SDS-U SERIES

⚠ Safety Precautions

■Regarding compressor application

- The compressor described in this catalog utilizes only air as a gas. Absolutely avoid using it for compression of a gas other than air.
 - this could result in a fire hazard or damage to the equipment.
- Never use compressed air for human breathing.

■Regarding installation site

- Install this compressor indoors. (Except products with outdoor specifications)
 - Avoid using it at a place susceptible to moisture such as precipitation or vapors.
 - this could result in a fire hazard, electric shock, rusting or shortened life of parts.
- There should be no explosive or flammable gas (acetylene, propane, etc.), organic solvent, explosive powder or flame used near the compressor.
 - otherwise, there is a fire hazard.
- Avoid using the compressor at a place where there is corrosive gas such as ammonia, acid, salt, sulfurous acid gas, etc.
 - this could result in rusting, shortened life or damage to the equipment.

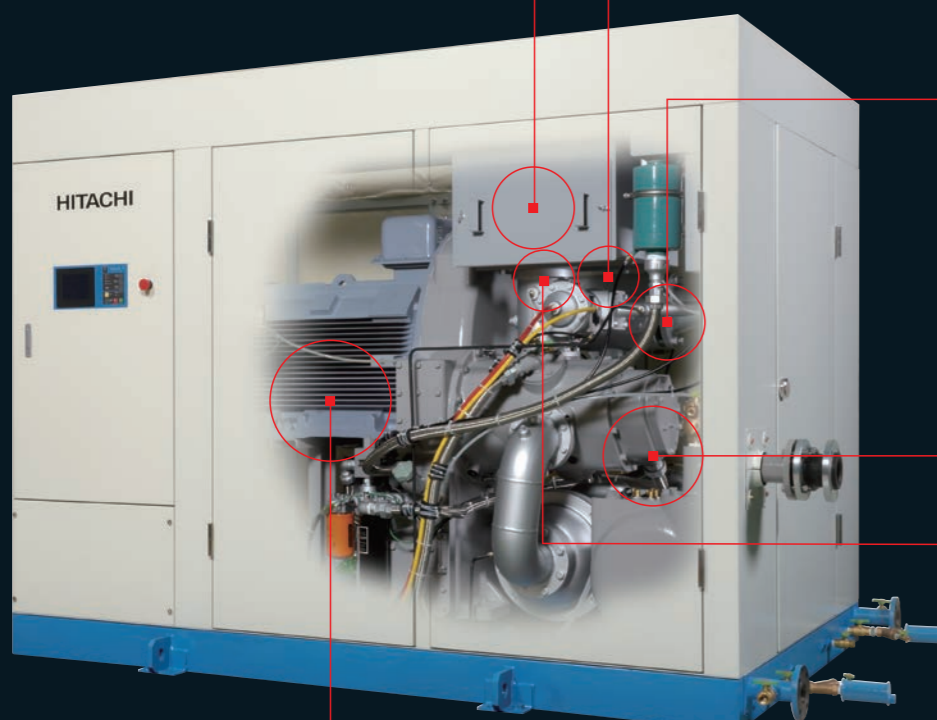
■Regarding usage

- Before use, be sure to read the instruction manual thoroughly for correct use of the compressor.
- Absolutely avoid modifying the compressor or its components.
 - this could result in damage or malfunction.

Specifications in this catalog are subject to change with or without notice, as Hitachi continues to develop the latest technologies and products for its customers.

🌐 Hitachi Hanbell (Shanghai) Precise Machinery Co., Ltd.

For further information, please contact your nearest sales representative.



Multilayer configuration Air Filter
Two types of unwoven chemical fiber, combined with a three-dimensional construction, are used for air filter. Dust can be captured three-dimensionally with the multilayer construction.

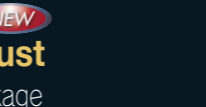
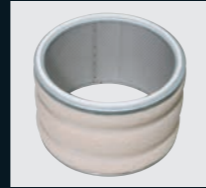
New-design Discharge Silencer providing lower noise level
This silencer reduces irritating high-frequency noises by reducing the pressure pulsations of the compressor air.

Check Valve supporting longer product life
This time-proven lift-type check valve is used to prevent the backflow of air. The valve construction with a reduced number of moving and sliding parts assures longer life and higher reliability.

Highly durable Capacity Regulator Valve
A simple construction that drives the intake valve by the hydraulic piston is adopted. Its excellent durability contributes to energy-saving as pressure setting range can be reduced during a load state.

Main Motor with improved reliability
A totally enclosed flange-type motor is used for the main motor to improve reliability.

Environment-friendly Oil Capturing System
OMCS (Oil Mist Capturing System) is commonly equipped in this series. It collects smoke from the gear casing.



ISO 8573-1 2010 Class Zero Certification

These oil-free screw compressors have been certified by TÜV Rheinland, an independent third-party test house, which is known as having the most strict criteria worldwide, as "Class 0 (zero)", meaning that it has the lowest level of exhaust emissions.

Noise Control Cover in Robust Construction

Advanced measures are incorporated to prevent various kinds of noise such as the panel-transmitting noise and the noise leaking from the (suction) inlet and the air vent.

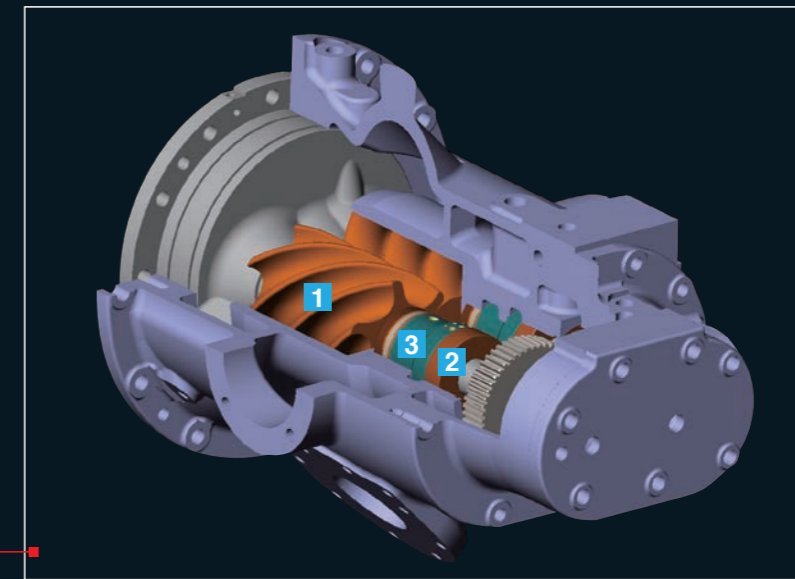
Improving Performance by 2.5% compared with Hitachi's conventional model

Reducing approximately **56,000kW** in energy consumption annually

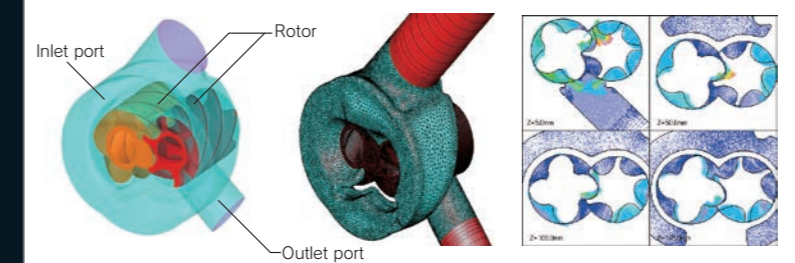
Reducing CO₂ emission by approximately **31 tons** annually

SDS-U280(280kW)

New-Type Air Block Improving efficiency and saving energy



Air Block Fluid Analysis applying CFD Technology



The essence of our original technologies behind abundant track record, is concentrated into profiling Air Block. The 3-D fluid analysis that makes full use of an advanced CFD (Computational Fluid Dynamics) technology simulates to assist in optimizing shapes of air flow path, inlet, outlet and rotor.

1 3-D Screw Rotor Compensating Thermal Deformation

A 3-D screw rotor (patented) that compensates for the thermal deformation distribution from the difference in air temperature between the inlet and outlet sides. The rotor, for which the high precision machining technology is applied, has a surface coated with a new resin material (patented), which gives the rotor a high level of durability.



2 Long-Life Bearings

In addition to high quality materials and high precision technology used for the bearings, advanced analysis technologies and lubricating theory are applied to select the type of lubricant, cleanliness, spray nozzle shape and other items affecting the bearings. Every effort is made to give the bearings a longer life.



3 Highly Reliable Shaft Seal

Through the use of a wear-resistant floating seal, air leakage can be sealed for a long time. High quality thread seals are also employed for bearings, providing double prevention against oil mist entering the compression chamber.



*1: CO₂ emission coefficient of 0.555 kg CO₂/kWh (compared with Hitachi's conventional model)

Energy-Efficient Control Functions Empowered by Multi-Control System

New and Highly-Functional Control Panel featuring quick and simple operation

An easy-to-watch, highly maneuverable and color LCD touch panel is adopted. Quick navigation function works to instantly reach your desired screen and facilitates your operation. It is capable of setting various parameters and displaying various histories as well as trend graphs. HELP function also has been upgraded. Multi-control, data communication and remote monitoring can be selected as optional functions.

Color LCD Touch Panel

Display of CHECK and 3-Step Self-Diagnostic Functions (MAINTENANCE/ALARM/TRIP)

Easy-to-Watch Monitoring Display

Operation monitoring

Measured value display

Simple Setting Display

Input

10-key input

Operation History (Value/Graph)

Operation history display (set and measured values)

Trend graphs display

Trip History (Detail/List)

Trip history list display

Trip history detail display

Easy-to-Understand HELP Function

HELP display

A Variety of Optional Functions

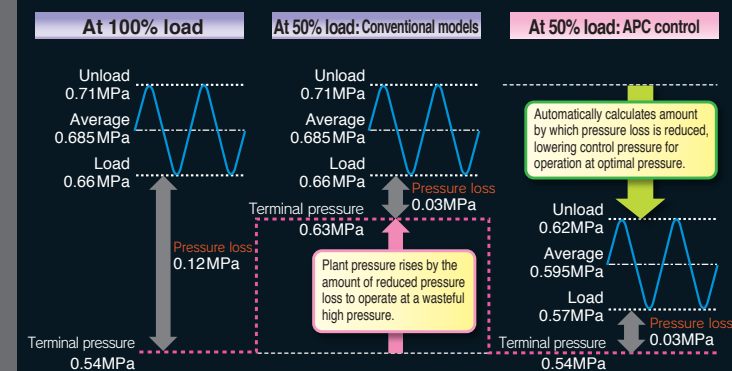
- Multiple Unit Control Function**
Multiple unit control function can be installed in a control panel to operate up to nine compressor units.
- Communication Function**
An office PC can remotely access and obtain operating data, when communication ports are mounted on control panels.
- Remote Monitoring Function**
On a LAN basis, multiple PCs can remotely monitor operating status.

eco Power Saving Control (Standard)

Capable of saving energy and reducing CO₂ emission by controlling energy consumption multi-functionally

End Pressure Control with APC (Active Power Control)

Air pressure discharged from a compressor loses as air decreases through various equipment. It automatically calculates and controls its pressure setting value to maintain constant end pressure to a user, reducing redundant high pressure operation and contributing to energy saving.



Tentative calculation *2

SDS-U280(280kW)

Average Load Factor: 70%

9% Energy Saving

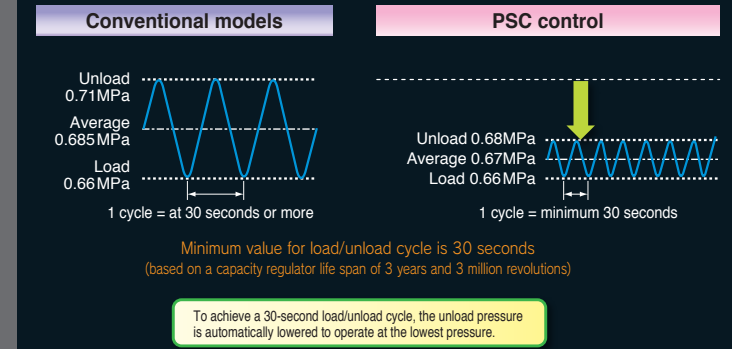
Reducing approximately **163,000kW** in energy consumption annually

Reducing CO₂ emission by approximately **91 tons** annually

*2: For annual operation of 8,000 hours under conditions a CO₂ emission coefficient of 0.555 kg CO₂/kWh; operating pressure of 0.69 MPa; and the lowest end pressure of 0.54 MPa when 100% loaded and pressure loss of 0.12 MPa (compared with Hitachi's conventional model).

Precision Pressure Control with PSC (Power Save Control)

It can automatically control pressure range while ensuring a specified load-unload cycle time, which leads to reducing abundant air pressure and contributing to energy saving.



Tentative calculation *3

SDS-U280(280kW)

Average Load Factor: 70%

2% Energy Saving

Reducing approximately **43,600kW** in energy consumption annually

Reducing CO₂ emission by approximately **24 tons** annually

*3: For annual operation of 8,000 hours under conditions a CO₂ emission coefficient of 0.555 kg CO₂/kWh; operating pressure of 0.69 MPa; and pressure range of 0.05 MPa → 0.02 MPa (compared with Hitachi's conventional model).

Automatic Start/Stop with ASS (Auto Start & Stop)

A compressor automatically stops as line pressure rises up to a certain preset pressure and also unload state continues over a specified time period. It automatically starts up when the line pressure drops to the preset pressure level.

OP.PRESSURE SETTING

AUTO START SETTING

AUTO START PRESS. 450 kPa

WHEN THE NUMBER CONTROL IS EXECUTED, THE COMPRESSOR : WHILECONTROLLING, PLEASE SELECT "INVALIDITY" ABOUT THE AUTOMATIC START CONTROL SETTING SO AS NOT TO START AUTOMATICALLY.

Tentative calculation *4

SDS-U280(280kW)

Daily Continuous Unload Time: 20%

5% Energy Saving

Reducing approximately **85,800kW** in energy consumption annually

Reducing CO₂ emission by approximately **48 tons** annually

*4: For annual operation of 8,000 hours under conditions a CO₂ emission coefficient of 0.555 kg CO₂/kWh; operating pressure of 0.69 MPa (compared with Hitachi's conventional model).

