


Silentaire Technology
Silent Air Compressors

New Silver 3D-20 (2021)

# Benefits

## Much better New Silver

### Low $CO_2$ emissions

- Up to **10%** lower Carbon Footprint
- ($CO_2$e/l of air)

### Superior oil separation

- Innovative design
- Materials
- **2..5x** lower ppm

### Improved performance

- Up to **15%** higher FAD
- Up to **20%** lower SER
- IE IP55 Motors


### Reliable components

- Airend (Design & Production)
- Integrated Block (Design)
- Motors (WEG)
- Valves (co-designed)

### Spare Parts management

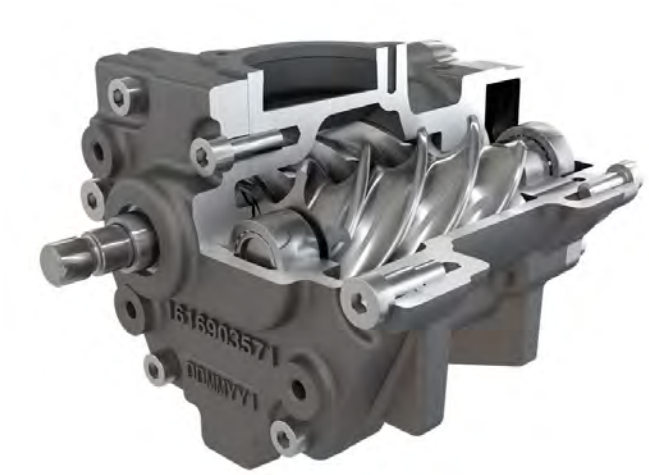
- Clear and available documentation
- Convenient Service Kits
- Logistics via ASC

### Eco-friendly Dryers

- R513A and R410A gas
- Designed for NS
- Stable Dew Point
- Low pressure drop

# Airend

## State of the art design

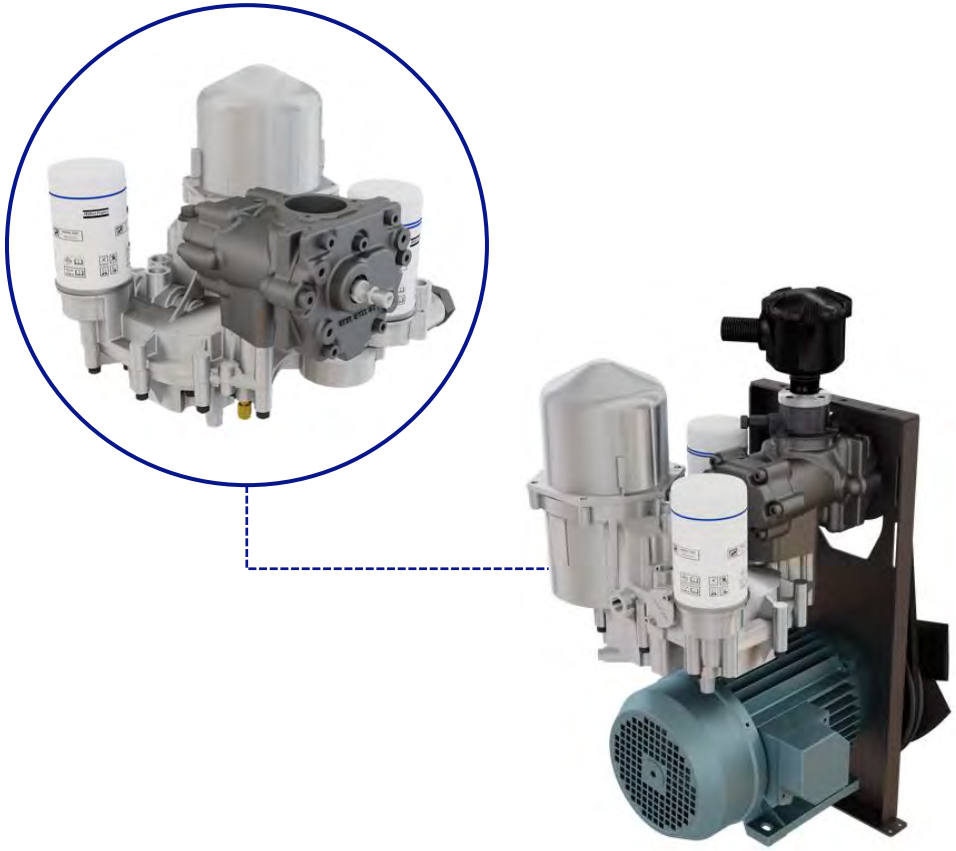


**Simplicity and Longevity.**
**Maintenance free.**

| Feature | Benefit |
|---|---|
| New compact airend with asymmetric screw profile.<br>Limited air losses due to compact size and advanced profile.<br>Durable materials. | High free air delivery.<br>High energy efficiency.<br>Long lifetime. |
| Oil sealed compression | Very few oil in the air system. Air network and tools are well protected against corrosion and damage. |
| Smooth rotation of the screws. | Low noise. Limited vibrations. Limited load on system's components, including main electrical motor. Long lifetime. Contributes to high FAD. |
| Fully automated assembly.<br>No human error when it comes to the core node. | Reliability and long lifetime. |
| Specially designed airend bearings. | Leads to better performance and longer lifetime compared with standard bearings. |
| Maintenance free. | No maintenance should be done on the core component over the lifecycle of the product. |

# New Integrated Block

Innovation for your Customers

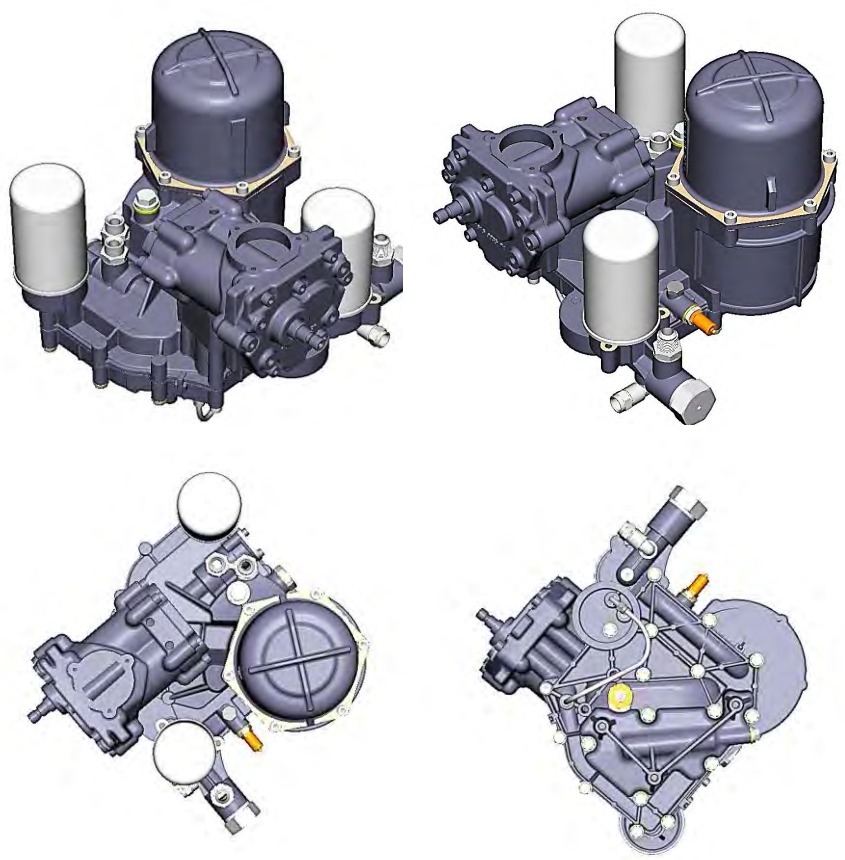


**Innovative design made of Aluminum**

- \+ Complex architecture with minimum parts and internally casted channels
- \+ Possibility of vertical separation
- \+ Stable oil film on the surface
- \+ Compactness of the integrated oil circuit
- \+ Simple maintenance

# New Integrated Blok

## Architecture



**Traditional piping is replaced by internally casted channels**

| | |
|---|---|
| Very few parts used. IB consists of 3 main parts and integrated valves and fittings. | Complexity of architecture.<br>Simplicity of separation.<br>High reliability. |
| Eliminates possibility of leakages. | High reliability. |
| Limited pressure losses in the separation system. | Higher energy efficiency.<br>Less load on motor. |
| High pressure die casting. | High reliability. |

# New Integrated Blok

## Oil Separation

**Vertical architecture of the separation vessel**

Unlike horizontal separation in cast iron tanks, vertical pre-separation is much more efficient.

Complexity of the design helps to achieve good results already with the internal separation.

Original Parts with anti-piracy protection.

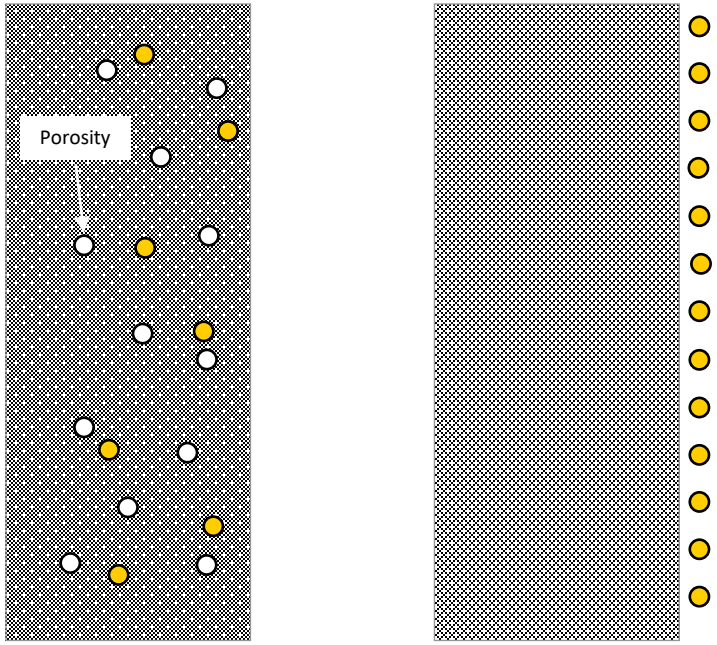
Superior oil separation.
Little risk to damage equipment.
Eco-friendly solution.

High reliability.

High performance over lifetime of OSE and protection from pirate parts.

# New Integrated Blok

## Protection from corrosion




Cast Iron

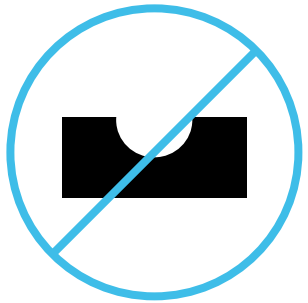
Aluminum

**Benefits of using Aluminum**

Stable oil film on the surface of aluminum.

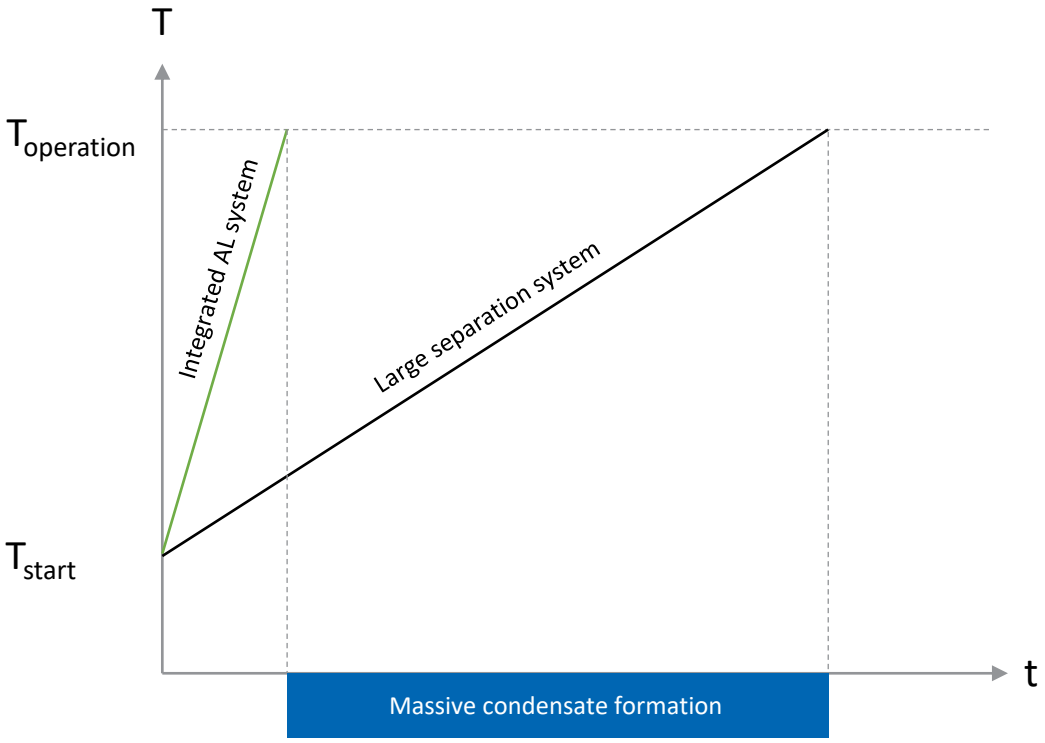
High pressure die casting leads to high density of the material and less porosity.

Less risk of all types of corrosion.



# New Integrated Blok

## Protection from condensation




Non-continuous operation

**Benefits of using Aluminum**

Compactness of the integrated oil circuit. Air-oil mixture t° goes high very fast. Little time remains for the formation of the condensate.

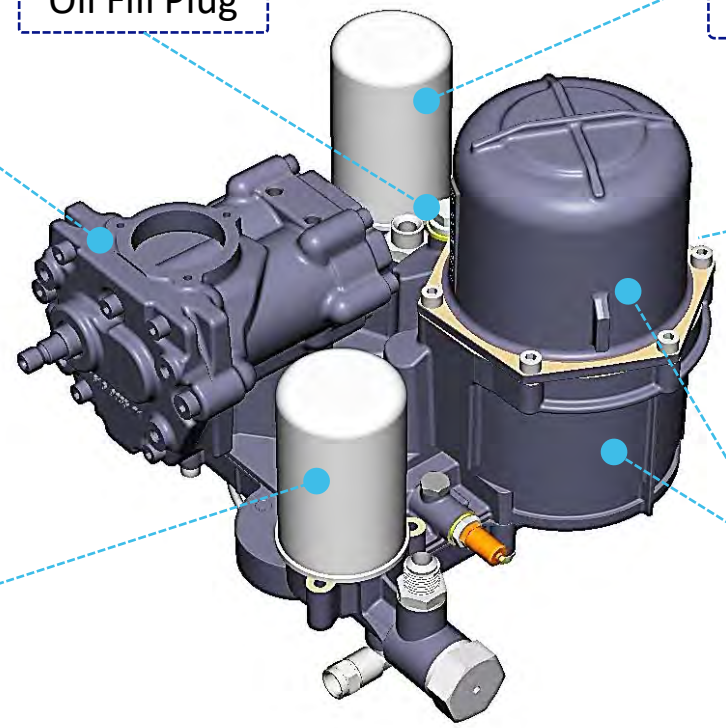
Little mass of the water inside the air in the separation system.

Small thickness and mass of aluminum leads to a quick growth of t° of the material, helping to achieve homogeneous temperature field between material and air faster.

Less risk of condensation. Protection for the downstream equipment. High reliability.

# New Integrated Blok

## Service



**Oil Fill Plug**

**Oil Filter**
Can be replaced

**Screw Airend**
Can be disconnected and serviced/replaced

**Oil level check**

**Oil Separation Filter**
Can be replaced

**Vertical Separation Vessel**
Should not be opened

# Components

## Innovations and powerful cooperation

- Own airends C43i and C55*i
- Integrated Block fully designed in-house
- Motors WEG
- Co-designed valves
- Co-developed controllers
- Dryers designed for New Silver
- Electrical components Siemens

new 10 Silver IE3
ENCAPSULATED ROTARY SCREW

# Design

## Robust and efficient New Silver

Efficient vertical sepration

Next-To Dryers E-type
PDP around 3°C
R513A and R410A
Leading manufacturer

Tap for condensate drain

Air Energy Control 3B
Basic Controller

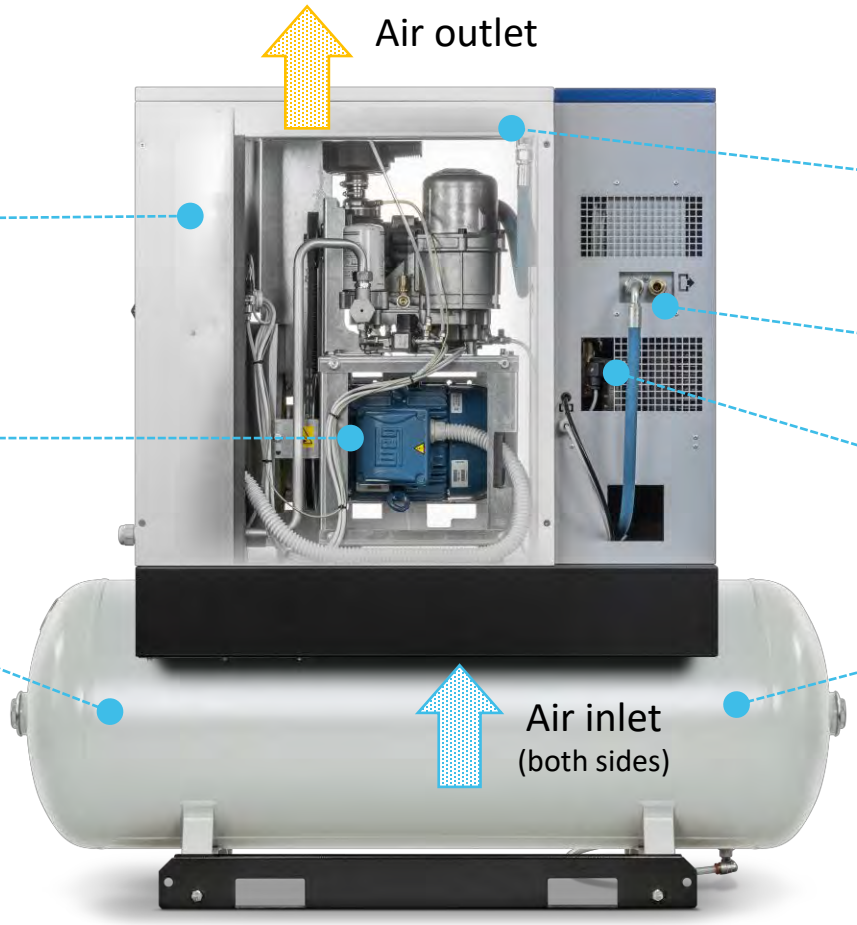
Compact separation system

Vertical Robust Transmission
Protection plate (safety)

Stirrups w forklift openings

# Design

## Robust and efficient New Silver




Strong canopy
Efficient insulation

High efficient WEG motors
IE3 | IP55

Short tank

Oil Cooler

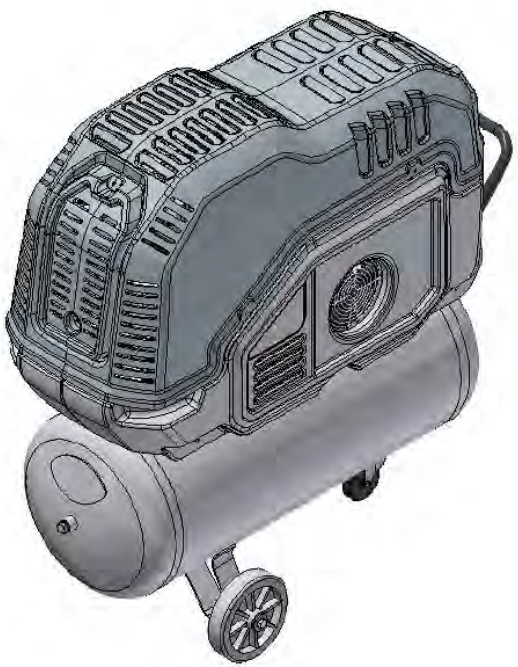
Air Outlet

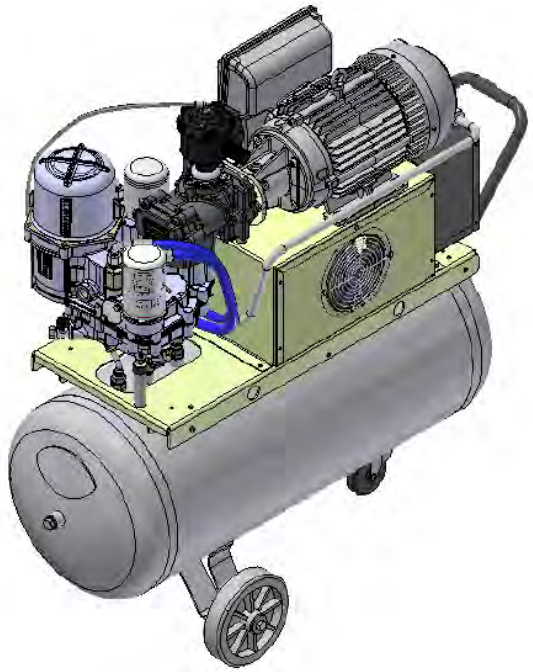
Timer drain

Wet tank

# Design

## New Silver 3 D

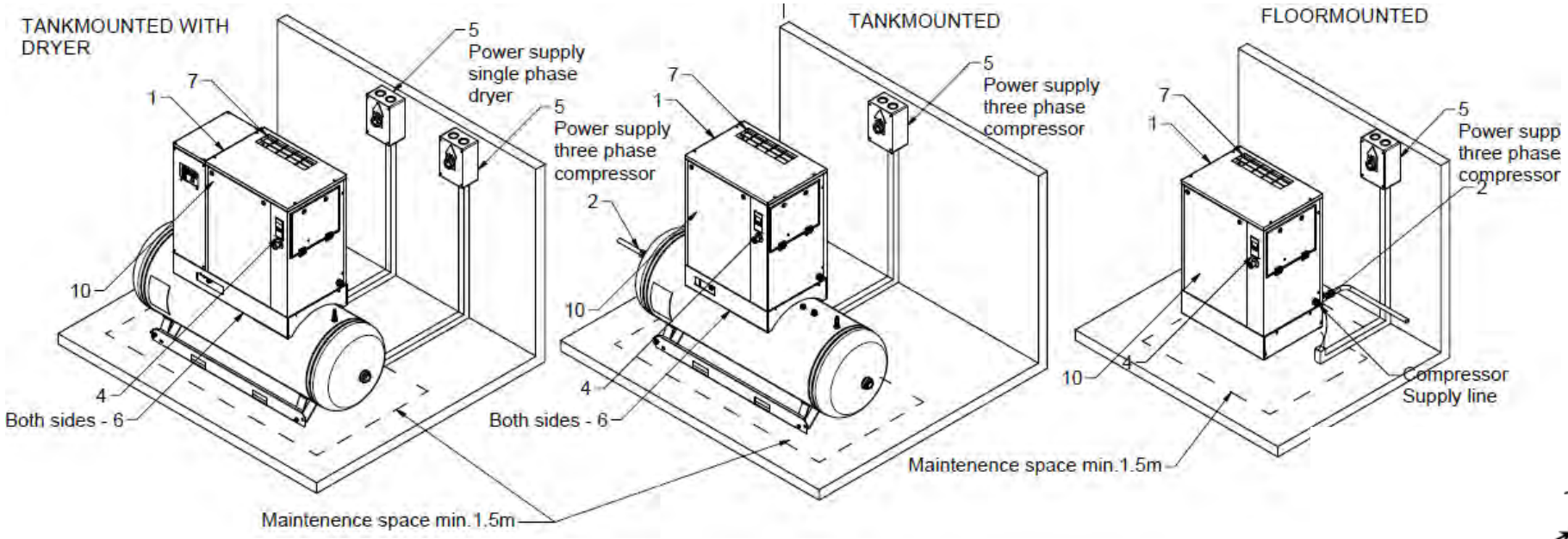


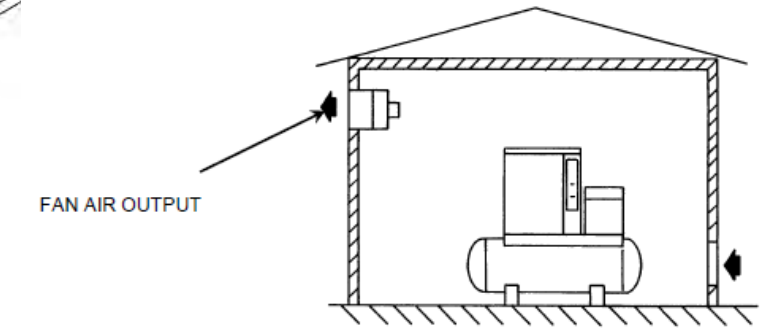


- Working pressure up to 10 bar @50Hz with the new C43 airend
- High efficient direct transmission contributes to high reliability and easy maintenance
- IE3 IP55 industrial motors from WEG
- Intensified cooling
- 90 Wheels / 200 Wheels / 200 Feet
- Grouping: CE/AD2000/MEA-LATAM/NA

# Installation

## Plug-and-play solution



# Full Grouping

## Covers Main FIAC Markets

| Approval | Mech. App. | Elec. App. | Volt/Hz | Region |
|---|---|---|---|---|
| **MEAA** | CE | IEC | 400/50<br>230/50<br>230/50/1 (NS3D) | EMEA, LATAM |
| **MEAC** | CE (based on AD2000) | IEC | 400/50<br>230/50 | DACH |
| **MEAP** | MOM | IEC | 400/50 | SGP, MYS, IND |
| **MEAM** | AS1210 | IEC | 400/50 | AUSTRALIA |
| **MEAE** | ASME | IEC | 230/60 380/60 460/60<br>230/60/1 (NS3D) | MEA, LATAM |
| **MEAF** | ASME | UL/cUL | 230/60 (NS3D)<br>230/60/1 (NS3D) | NA |
| **MEAH** | CRN (based on ASME)* | UL/cUL | 208-230-460/60**<br>575/60 | NA |

**Full Grouping will be released in July**

* under approval
** default voltage set at 230V

# Grouping

## Variants (FIAC)

| | NS 3 D** | | | NS 4-10* | | | NS 10S-20 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | HP | 50Hz | 60Hz | HP | 50Hz | 60Hz | HP | 50Hz | 60Hz | |
| **BM** | | | | 4-10 HP | 8/10 bar | 116/145 | 10S-20 HP | 8/10/13 bar | 132/157/182 | |
| **TM 90W** | 3 HP | 10 bar | 9 bar | | | | | | | |
| **TM 200W** | 3 HP | 10 bar | 9 bar | | | | | | | |
| **TM 200 (D)** | 3 HP | 10 bar | 9 bar | 4-7.5 HP | 8/10 bar | 116/145 | | | | |
| **TM 270 (D)** | | | | 4-10 HP | 8/10 bar | 116/145 | 10S-20 HP | 8/10/13 bar | 132/157/182 | |
| **TM 500 (D)** | | | | 7.5-10 HP | 8/10 bar | 116/145 | 10S-20 HP | 8/10/13 bar | 132/157/182 | |
| **PN** | | 8 | 12 | | 268 | 210 | | 228 | 108 | **834** |

*DOL – 4-5.5 HP, YD – 5.5-10 HP *MEAH – DOL 4-10 HP
*MEAM – 200L tank n/a **MEAC – only 200W
***For other exceptions check **Product Grouping**

# 4-20 HP Range

## Value Proposition

**Value**


**Light Silver 4-10**

**When to offer?**

- Need for higher performance | Silent
- Reserved capacity for future extension
- DC=100% | Higher air demand | 500L
- Better efficiency and lower $CO_2$ footprint

Transm + IE3 → Higher Performance

Better insulation and lower noise

Controller | VSD (2022)


**New Silver 4-20**

**When to offer?**

- Need for higher performance
- 13 bar and VSD requirement
- Lower Noise
- Connectivity and more control options required

Bigger C → Higher Performance | All Pressures

VSD | Lower Noise | Integr Dryer

Advanced Controller | Connectivity Options

Coalesc. Filter (D) | Intern motor fan

Dry Tank | Ph Seq Relay | Options


**Airblok 73-203**

# Performance NS 4-10

## Better FAD/SER/Noise

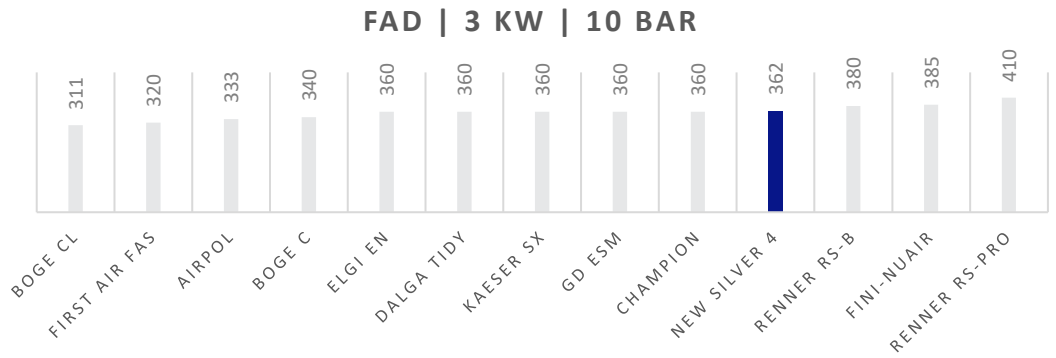
| | NS 4 | vs NS 4 (o) | NS 5.5 | vs NS 5.5 (o) | NS 7.5 | vs NS 7.5 (o) | NS 10 | vs NS 10 (o) |
|---|---|---|---|---|---|---|---|---|
| **Power, kW** | 3 | 3 | 4 | 4 | 5.5 | 5.5 | 7.5 | 7.5 |
| **Pressure, bar** | 8 / 10 | no 13 | 8 / 10 | no 13 | 8 / 10 | no 13 | 8 / 10 | no 13 |
| **FAD @10 bar, l/min** | 362 | -13% | 511 | +14% | 770 | +7% | 965 | +12% |
| **SER @10 bar, J/l** | | -1% | | -14% | | -3% | | -4% |
| **Noise, dB(A)** | 62 | -2 | 63 | -2 | 65 | -1 | 67 | 0 |
| **Controller** | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple |

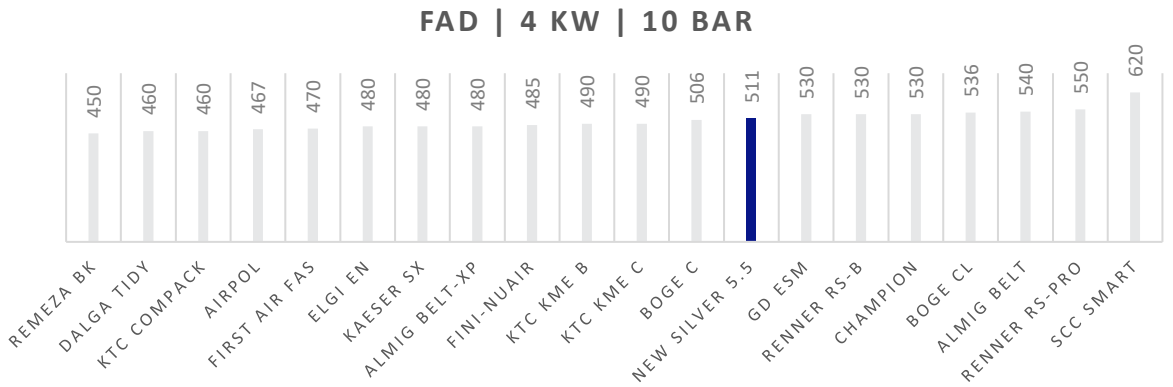
| | NS 10S | vs NS 10S (o) | NS 15 | vs NS 15 (o) | NS 20 | vs NS 20 (o) | NS 3D | vs NS 3D (o) |
|---|---|---|---|---|---|---|---|---|
| **Power, kW** | 7.5 | 7.5 | 11 | 11 | 15 | 15 | 2.2 | 2.2 |
| **Pressure, bar** | 8 / 10 / 13 | 8 / 10 /13 | 8 / 10 / 13 | 8 / 10 /13 | 8 / 10 / 13 | 8 / 10 /13 | 10 | 9 |
| **FAD @10 bar, l/min** | 1000 | 0% | 1420 | -1% | 1686 | -11% | 288 | -4% |
| **SER @10 bar, J/l** | | -2% | | -2% | | -5% | | |
| **Noise, dB(A)** | 65 | +1 | 69 | +4 | 71 | +4 | | |
| **Controller** | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple | AEC3B (Basic) | Simple |

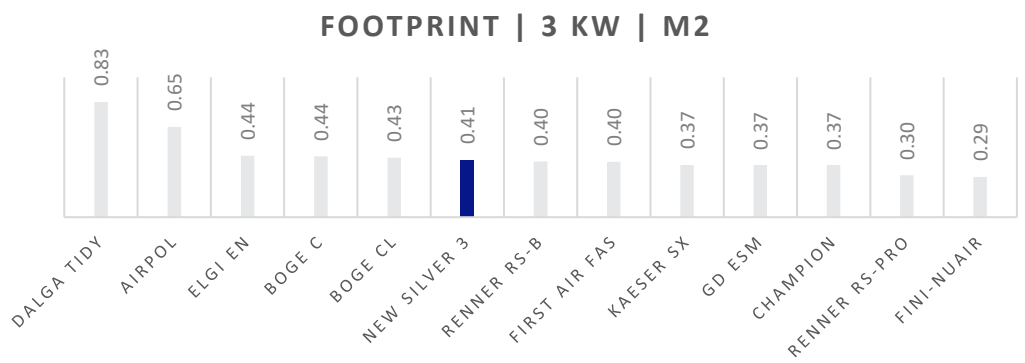
*Comparison for 50Hz versions. For detailed information, please check Product Grouping.

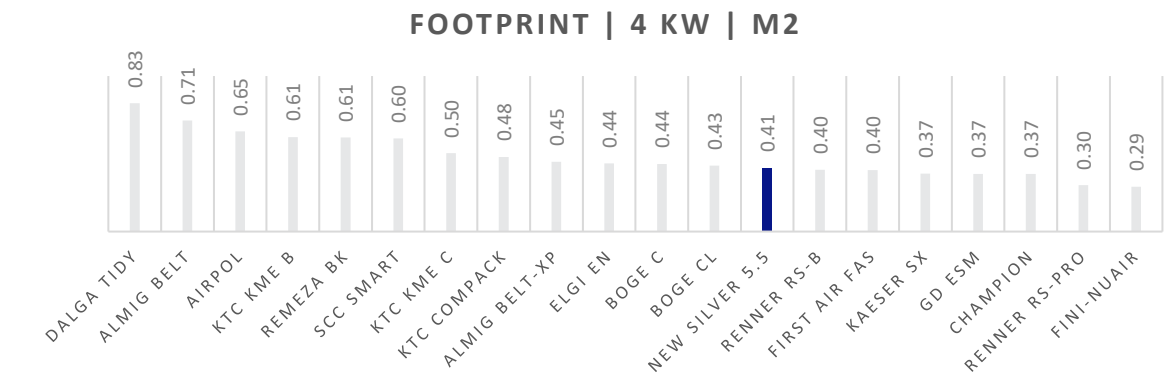
# Performance & Footprint

## vs Competition



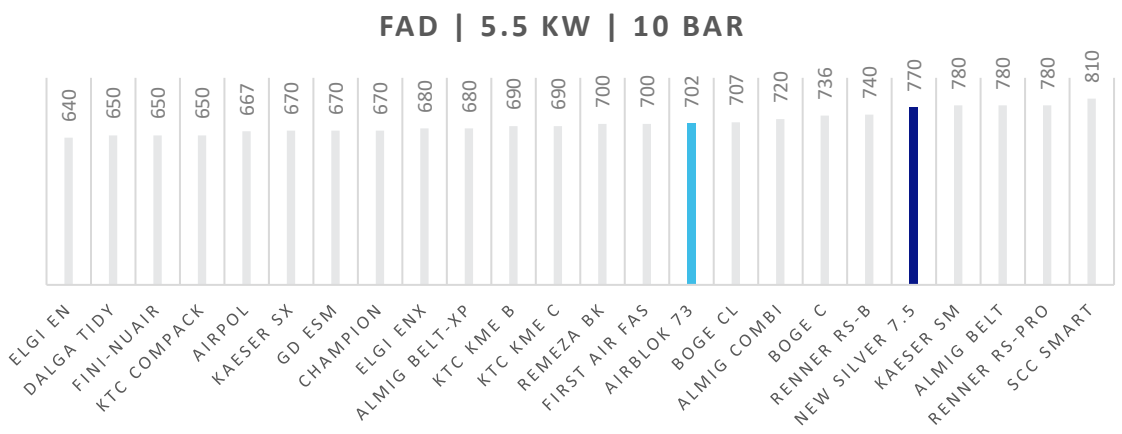



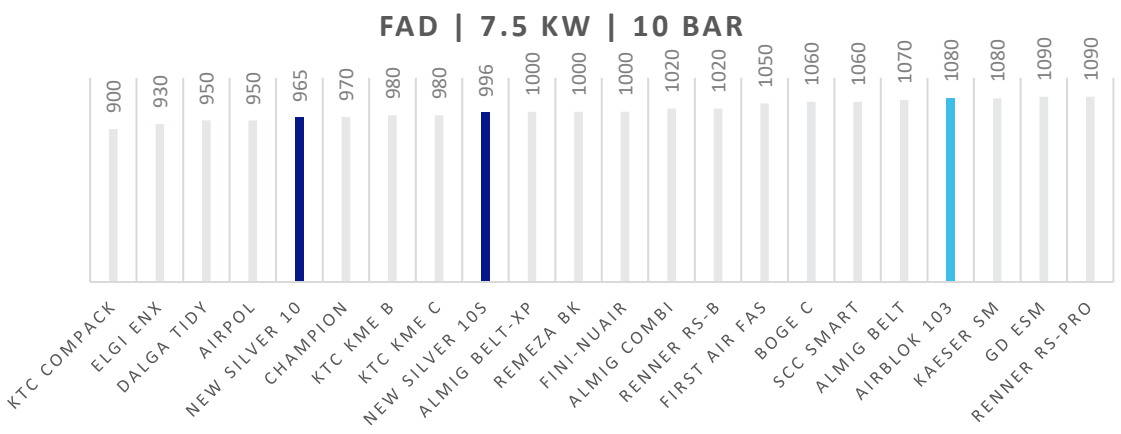



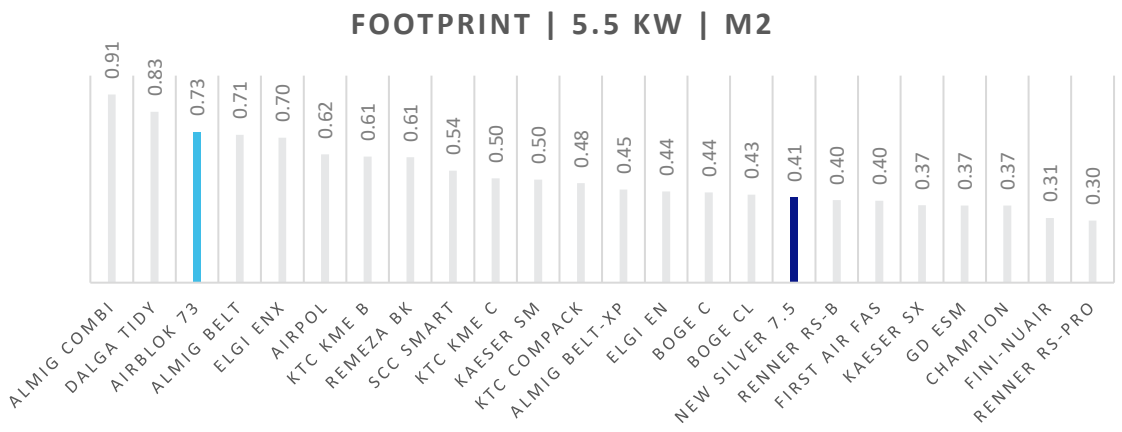



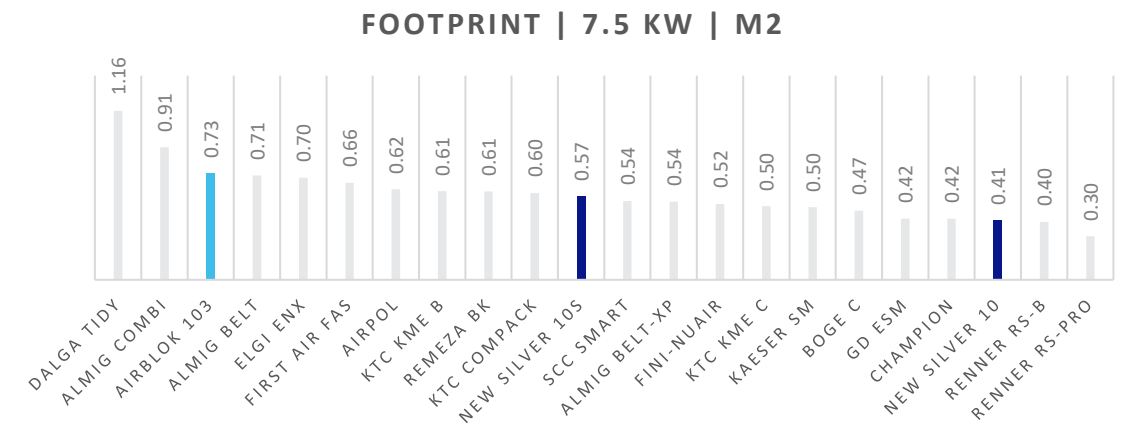
# Performance & Footprint

## vs Competition



# Dimensions

## Small footprint and volume


| | HP | WG kg | L mm | W mm | H mm | SQ m2 | V m3 |
|---|---|---|---|---|---|---|---|
| **BM** | 4 | 147 | 735 | 555 | 1020 | 0,408 | 0,416 |
| **BM** | 5,5 | 152 | 735 | 555 | 1020 | 0,408 | 0,416 |
| **BM** | 7,5 | 163 | 735 | 555 | 1020 | 0,408 | 0,416 |
| **BM** | 10 | 189 | 735 | 555 | 1020 | 0,408 | 0,416 |
| **TM270** | 4 | 214 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270** | 5,5 | 219 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270** | 7,5 | 230 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270** | 10 | 256 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270D** | 4 | 253 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270D** | 5,5 | 259 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270D** | 7,5 | 270 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **TM270D** | 10 | 296 | 1533 | 500 | 1447 | 0,767 | 1,109 |
| **BM** | 10S | 205 | 870 | 660 | 1020 | 0,574 | 0,586 |
| **BM** | 15 | 215 | 870 | 660 | 1020 | 0,574 | 0,586 |
| **BM** | 20 | 234 | 870 | 660 | 1020 | 0,574 | 0,586 |
| **TM500** | 10S | 339 | 1875 | 630 | 1578 | 1,181 | 1,864 |
| **TM500** | 15 | 350 | 1875 | 630 | 1578 | 1,181 | 1,864 |
| **TM500** | 20 | 369 | 1875 | 630 | 1578 | 1,181 | 1,864 |
| **TM500D** | 10S | 382 | 1875 | 630 | 1578 | 1,181 | 1,864 |
| **TM500D** | 15 | 393 | 1875 | 630 | 1578 | 1,181 | 1,864 |
| **TM500D** | 20 | 412 | 1875 | 630 | 1578 | 1,181 | 1,864 |

| | Weight | Footprint | Volume |
|---|---|---|---|
| **BM 4-10 vs NS (o)** | **+8..28%** | **-8%** | **-26%** |
| **TM 4-10 vs NS (o)** | **+5..18%** | **-17%** | **-6%** |
| **BM 10S-20 vs NS (o)** | **-16%** | **-14%** | **+6%** |
| **TM 10S-20 vs NS (o)** | **0..-6%** | **-17%** | **-10%** |

# New Silver 4-20

## Versions and Naming

Base Mounted

Tank Mounted

Tank Mounted + Dryer

NS 10 500D 10 400/50YD CE

| New Silver | Power size | Tank volume | Dryer | Pressure | Voltage | Start | Approval |
|---|---|---|---|---|---|---|---|
| | • HP | • Litres | • D: Dryer | • bar<br>• psi | • 1 phase NS3D<br>• 3 phase NS | • DOL<br>• YD | |

# Complete Package

## Controller | Air Quality

- **Air Energy Control 3B (Basic)**
  - Solution for New Silver professional platform
  - Remote Start/Stop
  - Automatic restart after power failure
  - Temperature readings / Pressure reading & setting
  - Running / Loaded hours
  - Service maintenance warnings
  - Failure warnings
- **Air Quality**
  - Highly efficient oil separation guarantees low ppm over lifetime of the OSE
  - Refrigrant dryers E-series modified to use ‘next-to’
  - Refrigerant gas R513A (GWP -55 vs R134A) and R410A
  - PDP around 3°C
  - Timer drain, high reliability


**Complete Compressor Station**

# Maintenance

## Access to main parts