With over 60 years of history Robuschi are capable of combining, in the best possible manner, their experience with the most advanced of technological innovations. At the beginning in 1941, their main activity was the repair of centrifugal pumps that were mainly used in agriculture. Their production, design and financial growth commenced between the 60s and the 80s. In fact, they have established themselves at a national and international level with the production of the 3 product lines: chemical and industrial centrifugal pumps; channel pumps for waste water; liquid ring vacuum pumps; low pressure positive displacement compressors (“blowers”).

The innovations introduced at a production level and the investments made on new markets are the launching pads to arrive to the pre-set targets. The company efforts tend to make this occur under a partnership condition within and outside the company, through the professional growth of its employees and the enhancement of customer relations.
PRESSURE-VACUUM OPERATION (from +1,000 to -500 mbar)

LOBE BLOWERS
Low pressure 3 lobe rotary blower with patented system, LOW PULSE, to eliminate pressure and delivery pulsation.

page 3

BLOWER UNIT
Compact low pressure compression unit with RBS lobe blower.

page 5

TABLE TOP BLOWER PACKAGE
Traditional low pressure compression unit with RBS lobe blower.

page 9

VACUUM OPERATION (up to 100 mbar abs. / -900 mbar)

AIR INJECTION VACUUM BLOWER
3 lobe rotary blower, vacuum operation, equipped with a ROBUSCHI patented atmospheric air injection cooling system.

page 10

COMPACT UNIT WITH AIR INJECTION VACUUM BLOWER
Compact unit for vacuum operation with RB-DV air injection vacuum blower, suitable for fixed vacuum pneumatic transport and centralised vacuum systems.

page 10

UNIT WITH AIR INJECTION VACUUM BLOWER FOR MOBILE APPLICATIONS
Compact unit with RB-DV air injection vacuum blower, equipped with soundproof Enclosure for application on mobile units.

page 10

HIGH VACUUM (fino a 0,001 mbar abs.)

High vacuum blowers
3 lobe rotary blower used in series with a primary vacuum system in high vacuum systems.

page 11
RBS is the innovative positive displacement rotary blower with 3 special profile lobes that, combined with a new configuration of the LOW-PULSE system, reduces the residual pressure pulsation of the conveyed gas below 2% of the operating pressure.

**Safety:** the perfect operation of the gears is guaranteed by the oil splash lubrication system with discs coupled to the drive shaft.

**Long life bearings:** reinforced rolling type, calculated for a theoretical lifespan of 100,000 hours under the most severe operating conditions.

**Peak volumetric efficiency:** the ground profile of the rotors ensures extremely reduced clearances.

**Strong and silent:** helical tooth synchronising gear with ground surfaces and involute profile.

**Reliability and efficacy:** the gas seal on the rotor shafts is guaranteed by a labyrinth seal coupled to oil splash discs and ensures the flow of oil free gas maintaining its long lasting efficiency not having parts that are subjected to wear.

**High performance:** oversized shafts that allow higher operating pressures and rotation speeds.

The precision milling and boring of the blower casing guarantee reduced tolerances and higher efficiency.
COOLED BLOWER

The blower is equipped with two cooling coils that keep the oil temperature below 100°C in all operating conditions. This version is recommended when the gas discharge temperature exceeds 140°C. Available only from the RBS 75 size in the vertical version - V.

BLOWER WITH SPECIAL COATING

Two types of coating are available for parts in contact with the conveyed liquid (casing, sides and rotors) when aggressive:
- Synthetic resin based: prevents the contamination of parts from the conveyed gas.
- Nickel and phosphorus alloy: prevents the chemical aggression of parts from the conveyed gas.
(always contact Robuschi to check if suitable)

BLOWER WITH SPECIAL SEALS

Single mechanical seal
The blower is equipped with a single mechanical seal on the drive shaft instead of the standard seal. The single mechanical seal is used when the blower’s suction pressure is higher than 100 mbar (e.g.: blowers in closed nitrogen circuits).
TMS-V: only available from RBS 35 size up.
TMS-H: only available from RBS 75 size only up.

Lip seal
The blower is equipped with four glass charged PTFE lip seals on the rotor shafts instead of the standard seals. These seals prevent contact between the lubricating oil and the conveyed gas (e.g.: vapour or other gases that are incompatible with oil).
Available only from RBS 35 size up.

Double mechanical seal
The blower is equipped with four double mechanical seals on the rotor shafts instead of the standard seals and externally lubricated through the circulation of a compatible liquid (usually water). These prevent contact between the lubricating oil and the conveyed gas. Available from the RBS 115 size up and in the vertical version - V only.

Gland seal
The blower is equipped with four gland seals on the rotor shafts instead of the standard seals with possible external injection of cooling fluid (normally water). These prevent contact between the lubricating oil and the conveyed gas. Available from the RBS 115 size up and in the vertical version - V only.
**ROBOX evolution** is an integrated compression unit designed to convey gas at low pressure, based on the RBS lobe positive displacement rotary lobe blower, operated by an electric motor through a special belt drive, including all accessories and noise enclosure.

The complete range of Robuschi blower units includes RBS blower sizes from 15 to 165, all with the innovative characteristics of the **ROBOX evolution** compression unit.

These characteristics reduce: **system costs** thanks to the optimisation of space; **running costs** thanks to the **low energy consumption** and to the exclusion of all standstill risks ensured by the innovative **electronic control system** SENTINEL; **maintenance costs** thanks to the **easy** access to all parts for normal **service operations**.

ROBOX evolution in the ATEX version, available on request.

**Easy oil change**: the oil is changed from outside the noise enclosure by means of two tanks, one for each oil sump. The consequent drain of exhausted oil is done through specific draining valve.

**Oil level check**: the oil level can be checked with the blower running from outside the enclosure, by means of levels positioned on the filler tanks.

**Hot air and relief valve discharge**.

**Noise enclosure**: • improvement of the air inlets and outlets; • panels with double sound insulation.

**Transport**: handling and transport of the assembled Enclosure.
ROBOX evolution has reduced dimensions and limited overall sizes. For this reason several ROBOX evolution can be placed side by side thereby significantly reducing the space they require and therefore the dimensions of the blower room, thus also decreasing system costs.

**SIMPLE INSPECTION**

ROBOX evolution allows maintenance operations to be carried out in an even easier and effortless:

- **simplified access**: all maintenance operations are performed from the front with the removal of the front panel or panels and/or the opening of the upper panel with gas springs;

- **effortless adjustment and replacement of soundproof filter SPF**: by simply opening of the noise enclosure’s upper panel (or removal of the front panel);

- **immediate oil level check**: the oil level can be checked external with the blower running, by means of levels positioned on the front panel of the enclosure;

- **easy oil change**: two pipes on the internal wall of the noise enclosure, accessible through the front panel, allow both the oil drain and the subsequent top up;

- **automatic belt tensioning**: an oscillating suspension system of the motor maintains the correct belt tension at all times, thereby reducing the load on the bearings;

- **simple belt replacement**: this is carried out from the front without using any additional equipment thanks to the automatic tensioning device.
ROBOX evolution offers cutting edge technology as for silent operation of low pressure compression unit. The emitted sound level is in fact 7 dB(A) lower than the previous series, in all operating conditions, a result obtained thanks to a combination of innovative components:

- **Robuschi RBS blower**: equipped with a special device to eliminate the flow pulsation induced by the compression;
- **SPF inlet silencer**: consisting of a patented interference device to eliminate the sound pressure generated at the inlet and adjustable according to the blower speed;
- **discharge silencer**: consisting of a resonance chamber and absence of internal sound absorbing materials;
- **noise enclosure**: optimisation of the intake air conveyance and of the ventilation, thereby reducing the noise pollution.

ROBOX evolution is ready-to-fit the exclusive SENTINEL electronic monitoring system that safeguards both of the blower unit and the investment itself.

**SENTINEL:**
- **prevents all failures**: in the event of an operational fault, a pre-alarm warning is activated and if reset of the normal values does not occur, the blower unit stops and sends a remote alert signal;
- **signals the maintenance operations**: through the continual control of the oil level and the wear of the belts;
- **reduces shut-down time to a minimum**: allows to rapidly identify and eliminate the cause of each problem controlling the following 11 operating parameters:
  - Blower rotation direction;
  - Blower speed;
  - Inlet pressure;
  - Discharge pressure;
  - Inlet temperature;
  - Discharge temperature;
  - Oil temperature in oil sump drive side;
  - Oil temperature in oil sump gear side;
  - Internal noise enclosure temperature;
  - Oil level in oil sump drive side;
  - Oil level in oil sump gear side;
R V P - R V V (standard)

**RVP:**
Direct relief valve for pressure operation.

**RVV:**
Direct relief valve for vacuum operation.

V S M (optional)

This valve allows to start the group with a low absorbed power when the blower is started with a static back pressure (e.g. in waste water treatment plants). The starting time is adjusted by means of a special screw. The VSM valve is also equipped with a special pilot valve, PSM, fitted on the lid, which also makes it work as a relief valve in pressure with a maximum over pressure 5% lower than the setting pressure.

**SDL - SCE**

Absorption silencers to be fitted in particular sections of the system’s pipes connected to the ROBOX evolution unit to further reduce the generated noise level.

**VACUUM SILENCER KIT**

To be fitted on ROBOX evolution units for vacuum operation: ES../V and ES../DV. Consisting of SDL absorption silencers and SPS exhaust silencers. This reduces the sound pressure level generated by the exhaust outlet by approximately 25 dB(A) within the frequency field ranging from 200 Hz to 20 kHz.
These are compression units for low pressure gas conveying, based on the RBS series 3 lobe positive displacement rotary blower, run by an electric motor through a special belt drive (GRBS) or directly coupled by means of coupling joint with or without reduction gear (CRBS). They are provided with all the necessary accessories for reliable, safe and silent operation.

The CRBS and GRBS units can be used for capacities higher than 900 m³/h and for fitted powers over 250 kW. The heart of the unit is the innovative RBS series blower. CRBS - GRBS in the ATEX version available on request.

- **RBS blower**
- **Noise enclosure with ventilation system** (only on request)
- **Inlet silencer**: wide band resonance chamber without sound proofing material.
- **Electric motor**: it is possible to fit medium voltage and in ex-proof motors.
- **Base**
- **Discharge silencer**: wide band resonance chamber without sound proofing material.
- **Anti-vibration mounts**
- **Instruments panel**: based on the customer’s specifications.
- **Drive**:
  - Belt and pulley with tensioning device with motors up to 250 kW.
  - Direct with flexible coupling or reduction gear for motors up to 500 kW.
- **Relief valve**
The **RB-DV** series consists of 3 lobe rotary blowers used as exhausters which makes it possible to reach a high compression ratio by means of a patented atmospheric air injection device **ROBUSCHI** that reduces overheating of the gas and the power absorbed by the blower. The main characteristics of these blowers are as follows:

- **Maximum vacuum** 93% - 28”Hg on a dead head;
- **Nominal capacity** from 840 to 10,500 m³/h - from 494 CFM to 6200 CFM;
- **Suction pressure** up to 100 mbar absolute / -900 mbar;
- Gases and vapours can be handled;
- No sliding parts, therefore no wear;
- Safe operation and minimum maintenance;
- **No oil mist**;
- Available on request, RB-DV in the ATEX version.

**ROBOX evolution-DV**

**ROBOX evolution** suction unit with RB-DV air injection vacuum blower.

The unit maintains all the innovative characteristics of **ROBOX evolution**: silent, compact, easy maintenance.

**TRB-DV**

**TRB-DV** are compact units equipped with noise enclosure for applications on mobile units with tanks for the disposal of solids and liquids, capable of working in vacuum function for tank filling and in pressure for the subsequent emptying of the tank.

For more detailed information, consult the **ROBUSCHI RB-DV TRB-DV catalogue**.
The **RBS /AV blowers** are rotary lobe blowers used to increase the capacity of the primary vacuum pumps when operating at their minimum suction pressure (as a booster).

The main characteristics of these blowers are as follows:

- **Suction pressure** from 0.001 to 20 mbar absolute;
- **Suction capacity** from 300 to 9,400 m³/h;
- Gases and vapours can be handled;
- No sliding parts, therefore no wear;
- Safe operation and minimum maintenance;
- RBS/AV in the ATEX version available on request.

The RBS/AV blowers must be used in series with a primary vacuum system (VP) and for pressures lower than 50 mbar absolute. Robuschi can supply primary vacuum systems consisting of liquid vacuum pumps with deliveries up to 4,200 m³/h.

For more detailed information, consult the ROBUSCHI RBS/AV catalogue.
**APPLICATIONS**

**SECTORS**

- Food industry
- Shipbuilding
- Paper industry
- Cement works
- Thermoelectric power stations
- Chemical-petrochemical
- Tanning industry
- Waste water treatment
- Detergents
- Desalination
- Pharmaceutical
- Wood
- Mining
- Maritime
- Hospitals
- Plastics
- Industrial cleaning
- Textiles
- Glass industry
- "....."

**APPLICATIONS**

**SECTORS**

- Water treatment
- Pneumatic transport of bulk material
- Vacuum - evaporation systems
- Combustion air

**APPLICATIONS**

- Sewage purification
- ROBOX evolution blower unit

- Industrial: Pneumatic transport of wood chippings
- ROBOX evolution blower unit

- Mobile units for the suction of dusts and/or liquids
- Vacuum blower unit: TRB-DV

- Paper industry: Centralised vacuum systems
- ROBOX evolution pressurised blower unit in pressure (P) / air injection vacuum (DV)

- Food industry: systems for evaporation - drying processes
- High vacuum blower (RBS/AV) used as a booster in primary vacuum systems

- Engineering: treatment of oil emulsions and cleaning liquids by means of thermo-compression concentration system.
- Lobe blowers (RBS)
TECHNICAL DATA

Pressure - vacuum blowers

RBS
Pressure/vacuum lobe blowers
Capacity up to 25,000 m³/h.
From page 14

ROBOX evolution
Pressure/vacuum blower units
Capacity up to 10,500 m³/h.
From page 16

CRBS - GRBS
Pressure/vacuum table top blower package
Capacity from 2,500 to 25,000 m³/h.
page 18

Air injection vacuum blowers
(medium vacuum)

RB-DV
Air injection vacuum blower
Capacity up to 10,000 m³/h.
See specific catalogue

ROBOX evolution /DV
Vacuum blower units for stationary applications
Capacity up to 10,500 m³/h.
See specific catalogue

TRB-DV
Vacuum blower units for mobile applications
Capacity from 550 to 1,000 m³/h.
See specific catalogue

High vacuum blowers

RBS/AV
High vacuum blowers
Capacity up to 9,400 m³/h.
See specific catalogue
Robuschi have created a specific selection program to determine the operating parameters of the lobe blowers when environmental conditions are different from the reference conditions, in particular, when the installation site characteristics change (altitude, temperature, humidity) or when the conveyed gas is different from atmospheric air. The selection program provides a detailed Data Sheet of the machine, including selection of the electric motor, drive components (joints or belts and pulleys) and can which can also be completed with the starting curve showing the torque at blower shaft during starting.

The program is available through the Robuschi sales network and in the download area of the Internet site www.robuchi.com.
**RBS**

### Blower sizes:
- From 15 to 225

### Operations:
- **R** = cooled
- **RN** = Nickel and phosphor alloy coating
- **RC** = synthetic resin based coating
- **TMS** = single mechanical seal
- **TL** = lip seal
- **TMD** = double mechanical seal

**PR** = gland seal

### Versions:
- **F** = flanged blower
- **H** = horizontal flow
- **V** = vertical flow
- **SP** = blower without feet
- **FI** = reverse flow
- **SD** = right-hand shaft
- **SS** = upper shaft

### Certifications:
- ATEX Cat. II - III on request...

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**VERSIONS**

- **RBS / V**
- **RBS / V-Fi**
- **RBS / V-SD**
- **RBS / V-Fi-SD**
- **RBS / H**
- **RBS / H-Fi**
- **RBS / H-SS**
- **RBS / H-Fi-SS**

**STANDARD**

**ON REQUEST**

**Suction**

**Discharge**

---

**MATERIALS**

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<td>UNI-EN 10084 18NiCrMo 5 • DIN 17212 1.6523 • A 534 CI 4720</td>
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**DIMENSIONS AND WEIGHTS**

### RBS 165
- **D**: 1020
- **W**: 800
- **H**: 800
- **M**: 550
- **Q**: 550
- **S**: 550
- **U**: 430
- **V**: 430
- **W**: 340
- **Z**: 340
- **X**: 340
- **Y**: 213.0
- **Weight(Kg)**: 36

### RBS 85
- **D**: 1240
- **W**: 970
- **H**: 897
- **M**: 790
- **Q**: 790
- **S**: 790
- **U**: 406
- **V**: 406
- **W**: 340
- **Z**: 340
- **X**: 340
- **Y**: 170.0
- **Weight(Kg)**: 41

### RBS 66
- **D**: 1140
- **W**: 486
- **H**: 385
- **M**: 300
- **Q**: 300
- **S**: 300
- **U**: 114
- **V**: 114
- **W**: 99
- **Z**: 99
- **X**: 99
- **Y**: 67.5
- **Weight(Kg)**: 160

### RBS 35
- **D**: 112
- **W**: 57
- **H**: 53
- **M**: 16
- **Q**: 16
- **S**: 16
- **U**: 16
- **V**: 16
- **W**: 16
- **Z**: 16
- **X**: 16
- **Y**: 12
- **Weight(Kg)**: 144

### RBS 25
- **D**: 431.8
- **W**: 340
- **H**: 247
- **M**: 34
- **Q**: 34
- **S**: 34
- **U**: 34
- **V**: 34
- **W**: 34
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- **X**: 34
- **Y**: 34
- **Weight(Kg)**: 122

### FLANGE DRILLING

**UNI PN10**

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**ANSI 125 FF**

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**PLEASE NOTE:**
- Non-binding dimensions in mm - Flow direction: downwards from above.

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**UNI PN10**

**ANSI 125 FF**

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**DIMENSIONS AND WEIGHTS**

**RBS 165**

**RBS 85**

**RBS 66**

**RBS 35**

**RBS 25**

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**DIMENSIONS AND WEIGHTS**

**RBS 165**

**RBS 85**

**RBS 66**

**RBS 35**

**RBS 25**

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**RBS 66**

**RBS 35**

**RBS 25**

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**DIMENSIONS AND WEIGHTS**

**RBS 165**

**RBS 85**

**RBS 66**

**RBS 35**

**RBS 25**
### Code Description

- **Enclosure:**
  - **ES** = With enclosure
  - **EL** = Without enclosure

- **Blower sizes:**
  - ES = 15 to 165

- **Sizes:**
  - from 1 to 5

- **Operation:**
  - **P** = in pressure
  - **V** = in vacuum
  - **C** = in closed circuit

- **Valve:**
  - **RVP**
  - **RVV**
  - **VSM**

- **Certifications:**
  - ATEX Cat II - III
  - on request...

### Performances

<table>
<thead>
<tr>
<th>ROBOX Dimension</th>
<th>Blower Dimension</th>
<th>Pressure</th>
<th>Capacity</th>
<th>Motor</th>
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Performances related to atmospheric air: absolute pressure 1,013 mbar, temperature 20°C, relative humidity 50%, specific weight 1.2 kg/m³.
## Dimensions and Weights

### ROBOX evolution 1

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Weight</th>
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<td>760 x 815</td>
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### ROBOX evolution 2

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<td>1550 x 815</td>
<td>52 kg</td>
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### ROBOX evolution 3

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### ROBOX evolution 4

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### ROBOX evolution 5

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### ROBOX evolution

#### ROBOX evolution 1

- **Blower**: DN
- **Dimensions (mm)**: L = 860, L1 = 1400
- **Weight (kg)**: without enclosure = 75, with enclosure = 142

#### ROBOX evolution 2

- **Dimensions (mm)**: L = 1155, L1 = 1550
- **Weight (kg)**: without enclosure = 235, with enclosure = 365

#### ROBOX evolution 3

- **Dimensions (mm)**: L = 1520, L1 = 1980
- **Weight (kg)**: without enclosure = 295, with enclosure = 445

#### ROBOX evolution 4

- **Dimensions (mm)**: L = 2050, L1 = 2400
- **Weight (kg)**: without enclosure = 310, with enclosure = 460

#### ROBOX evolution 5

- **Dimensions (mm)**: L = 2205, L1 = 2550
- **Weight (kg)**: without enclosure = 605, with enclosure = 880

*without motor

---

**Silencer panels (S) assembled after transport**

**Silencer panels (S) positioned inside for transport**
**CRBS - GRBS**

**CODE DESCRIPTION**

- **Drive:**
  - **C** = with direct coupling
  - **G** = with V-belt transmission

- **Blower sizes:**
  - from 165 to 225

- **Certifications:**
  - ATEX Cat II - III

**PERFORMANCES**

**GRBS - CRBS**

<table>
<thead>
<tr>
<th>Blower size</th>
<th>Pressure</th>
<th>Capacity</th>
<th>Motor</th>
<th>Noise</th>
<th>Pressure</th>
<th>Capacity</th>
<th>Motor</th>
<th>Noise</th>
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<td>PSI</td>
<td>m³/h</td>
<td>CFM</td>
<td>kW</td>
<td>BHP</td>
<td>IN. Hg</td>
<td>dB(A)</td>
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**OPERATION**

**MAX PRESSURE DATA**

**MAX VACUUM DATA**

**DIMENSIONS AND WEIGHTS**

- **Direct coupling**
- **V-Belt coupling**

**PERFORMANCES**

**GRBS - CRBS**

<table>
<thead>
<tr>
<th>Blower size</th>
<th>Pressure</th>
<th>Capacity</th>
<th>Motor</th>
<th>Noise</th>
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<th>Capacity</th>
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**OPERATION**

**MAX PRESSURE DATA**

**MAX VACUUM DATA**

**DIMENSIONS AND WEIGHTS**

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<th>F</th>
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<th>H1</th>
<th>I</th>
<th>K</th>
<th>K1</th>
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Robuschi have a capillary distribution network: a network of agents and two branches in Milan and Padua able to cover the whole of Italy; 6 Robuschi branches in Germany, Denmark, France, Benelux, China and USA and over 50 distributors / agents able to cover 70 different countries. Thanks to their flexibility and promptness, Robuschi can offer specialised advice, pre - after sales assistance and rapid operations to satisfy the customer's every need.

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