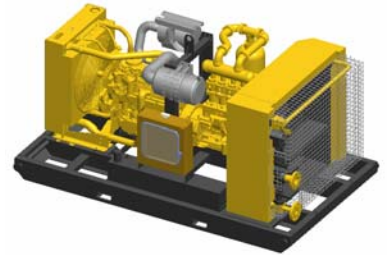


# Hurricane B7-41/1000

Portable booster



## Standard Scope of Supply

The Atlas Copco Hurricane booster B7-41/1000 is a single-stage oil-lubricated piston type air/nitrogen compressor, powered by a liquid-cooled, six cylinder turbo-charged, inter-cooled Caterpillar COM III/Tier 3 compliant diesel engine.

The unit consists of one high efficient liquid cooled booster block (pumper), air pre-cooler, scrubber tank, air after cooler, safety valves, diesel engine, engine cooling, and control systems - all mounted on a strong steel base skid.

A small day tank of 20 Gallons (76 liter) and external fuel tank connections complete the standard scope.

A broad range of standard factory installed options are available.

Special attention has been given to the overall product quality, user friendliness, ease of serviceability, and economical operation to ensure best in class cost of ownership.

## Available Models

|               |  |
|---------------|--|
| B7-41/1000    | Open skid                                |
| B7-41/1000 CE | CE compliant, Sound attenuated Container |

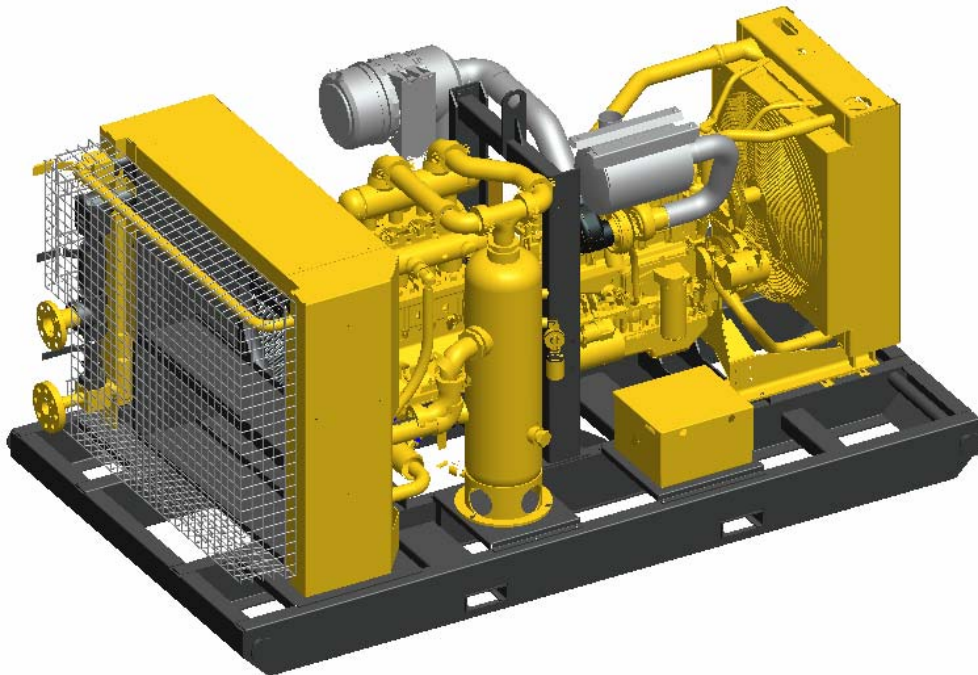
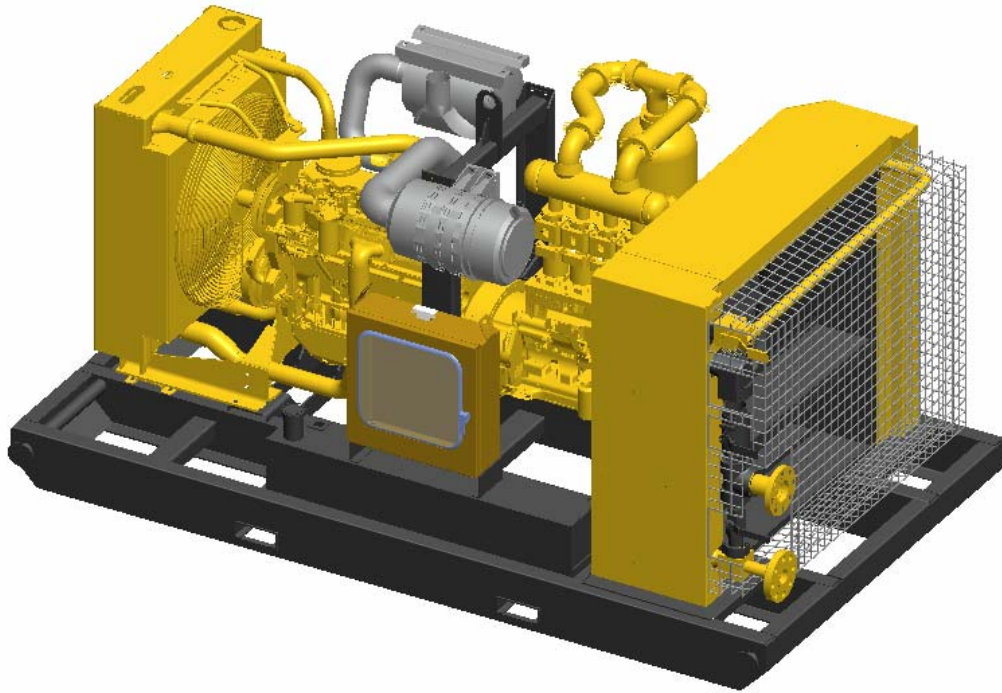
## Features

- Atlas Copco product
- Light weight and small footprint
- Water cooled booster block & valves
- Pre-cooler and scrubber tank
- Pre-cooler bypass valve
- Pressure regulating system with automatic load/unload valve
- Engine speed regulation
- Back pressure valve at discharge
- Complete control system, with digital controller & all relevant safeties (incl. temp sensor on each compression cylinder)
- Unique design with genuine components and easy service & maintenance access.
- Service packs with genuine parts

## Benefits

- Best fit with Atlas Copco feed-air compressors
- World wide service support
- Economical in transport and installation
- Longer valve life & optimal performance in high ambient conditions
- Optimal performance in humid ambient conditions
- Optimal performance in low ambient conditions
- Economical operation – lower fuel consumption
- Adjustable capacity to match the feed-air compressors
- Maintain minimum compression ratio – avoid condensation
- Easy to operate
- Easy fault finding through historic logs
- Optimum safety for your equipment
- High reliability
- Short service downtime
- Easy to service

Product Concept



| Technical Data                    |              | B7-41/1000                           |
|-----------------------------------|--------------|--------------------------------------|
| Booster type                      |              | block 276 – 4 cylinder reciprocating |
| Compression stages                |              | 1                                    |
| Max suction pressure              | Psi / bar    | 350 / 24                             |
| Max discharge pressure            | Psi / bar    | 1000 / 69                            |
| Max compression ratio             |              | 2.78                                 |
| Capacity at max suction pressure  | Cfm / m3/min | 2440 / 69                            |
| Booster oil capacity              | Gal / l      | 2.25 / 9                             |
| Suction connection                |              | 3" npt                               |
| Discharge connection              |              | 2" npt                               |
| Max operating ambient temperature | °F / °C      | 125 / 52                             |
| Min operating ambient temperature | °F / °C      | 14 / -10                             |

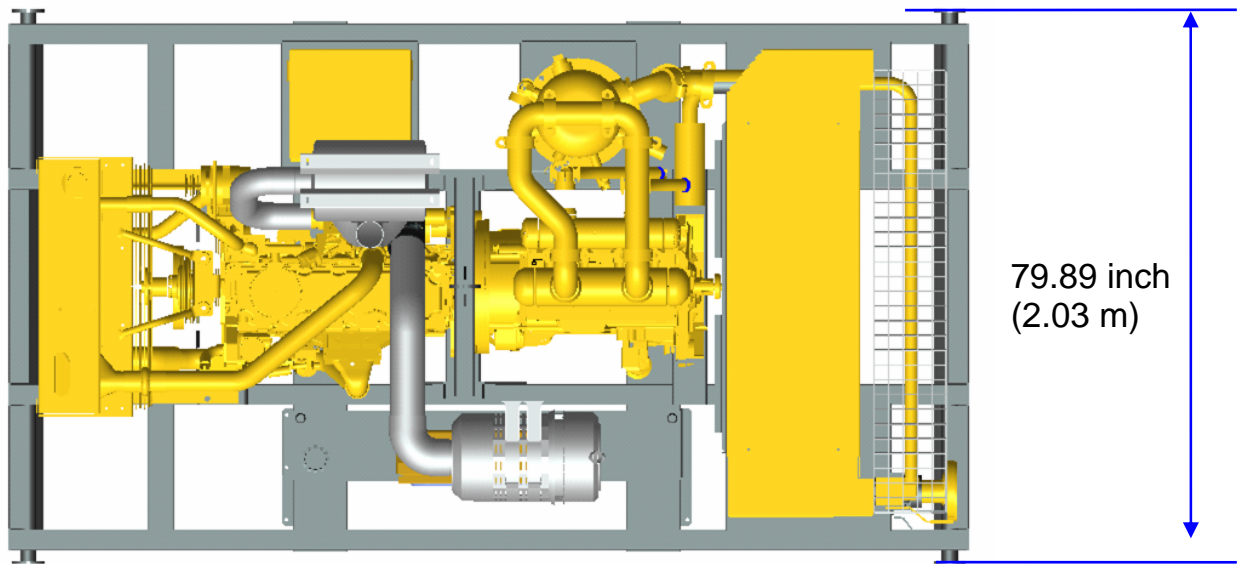
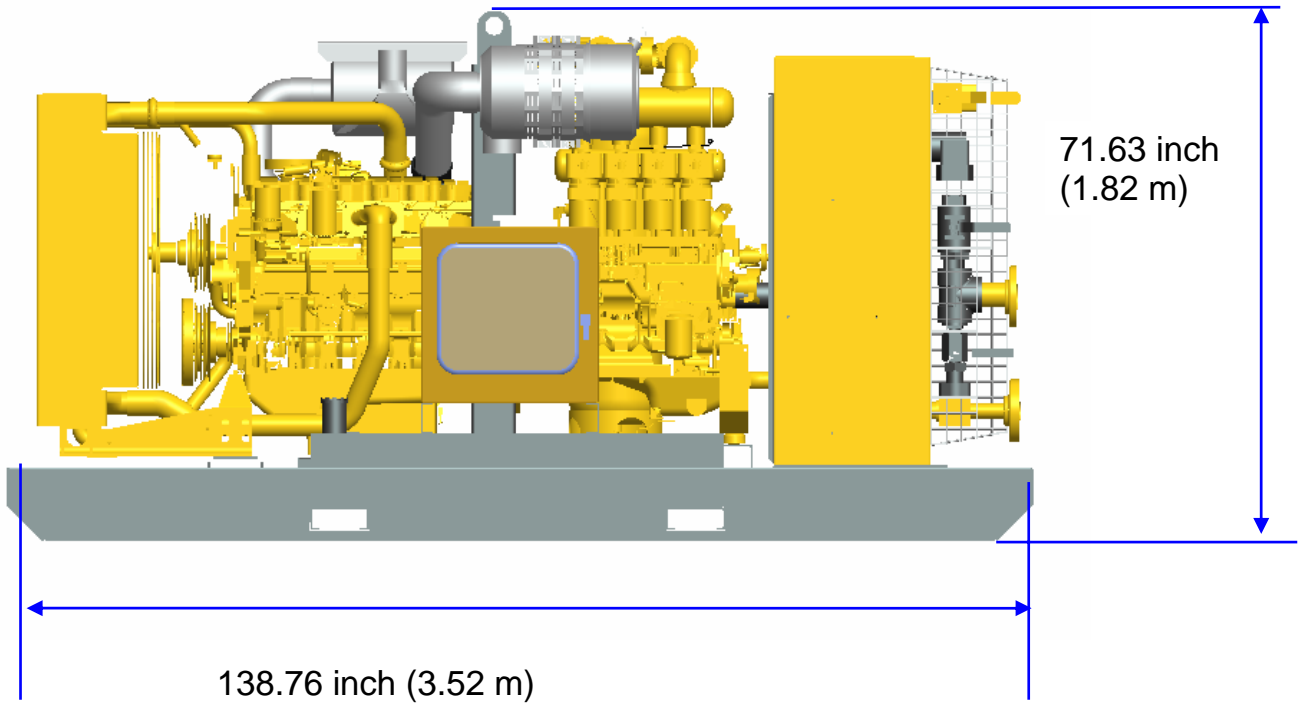
| Engine                             |          |                       |
|------------------------------------|----------|-----------------------|
| Caterpillar                        |          | C7 (Tier 3, Stage 3a) |
| Number of cylinders                |          | 6                     |
| Output at rated speed              | bhp / kW | 250 / 186             |
| Engine speed (nominal)             | r/min    | 1800                  |
| Engine speed (unloaded)            | r/min    | 1200                  |
| Engine oil capacity                | Gal / l  | 7.5 / 28              |
| Capacity of standard day fuel tank | Gal / l  | 20 / 76               |
| Capacity of optional fuel tank     | Gal / l  | 85 / 325              |
| Fuel consumption at 25% load       | kg/h     | EST. 10.6             |
| Fuel consumption at 50% load       | kg/h     | EST. 21.3             |
| Fuel consumption at 75% load       | kg/h     | EST. 31.9             |
| Fuel consumption at 100% load      | kg/h     | 42.5                  |

| Dimensions  |         | B7-41/1000                |
|---|---------|---------------------------|
| Overall dimensions L * W * H - open skid                    | in / cm | 138.76" x 79.89" x 71.63" |
| Overall dimensions L * W * H – open skid + protection frame | in / cm | t.b.a.                    |
| Overall dimensions L * W * H – weatherproof canopy          | in / cm | t.b.a.                    |
| Overall dimensions L * W * H – sound attenuated container   | in / cm | 15 ft container           |

| Sound                                 |       | B7-41/1000 CE version only          |
|---------------------------------------|-------|-------------------------------------|
| Max. sound power level (Lw)           | dB(A) | t.b.a., compliant with CE directive |
| Max. sound pressure level at 7 m (Lp) | dB(A) | t.b.a., compliant with CE directive |

| Weight (Ready-to-operate)               |          |           |
|---|----------|-----------|
| B7-41/1000 Open skid                    | Lbs / kg | 7870/3570 |
| B7-41/1000 Open skid + protection frame | Lbs / kg | t.b.a.    |
| B7-41/1000 in sound proof container     | Lbs / kg | t.b.a.    |

Dimension drawing



## Capacity chart in scfm

| SUCTION PSIG | DISCHARGE PSIG | 1925 RPM  | 1800 RPM  | 1600 RPM  | 1400 RPM  | 1200 RPM  |
|--------------|----------------|-----------|-----------|-----------|-----------|-----------|
| 350          | 1000           | N/R       | 2160 SCFM | 1920 SCFM | 1680 SCFM | 1440 SCFM |
| 350          | 700            | 2440 SCFM | 2280 SCFM | 2030 SCFM | 1770 SCFM | 1520 SCFM |
| 325          | 930            | 2150 SCFM | 2010 SCFM | 1790 SCFM | 1570 SCFM | 1340 SCFM |
| 300          | 860            | 2000 SCFM | 1870 SCFM | 1660 SCFM | 1450 SCFM | 1240 SCFM |
| 275          | 790            | 1840 SCFM | 1720 SCFM | 1530 SCFM | 1340 SCFM | 1150 SCFM |
| 250          | 750            | 1680 SCFM | 1570 SCFM | 1400 SCFM | 1220 SCFM | 1050 SCFM |

NOTE: Areas highlighted in GREEN are optimized for concentric valve performance and valve life.  
Areas highlighted in YELLOW may experience some losses in valve efficiency and valve life.

## Capacity chart in l/s

| SUCTION BAR | DISCHARGE BAR | 1925 RPM | 1800 RPM | 1600 RPM | 1400 RPM | 1200 RPM |
|-------------|---------------|----------|----------|----------|----------|----------|
| 24          | 69            | N/R      | 1019     | 906      | 793      | 680      |
| 24          | 48            | 1152     | 1076     | 958      | 835      | 717      |
| 22          | 64            | 1015     | 949      | 845      | 741      | 632      |
| 21          | 59            | 944      | 883      | 783      | 684      | 585      |
| 19          | 54            | 868      | 812      | 722      | 632      | 543      |
| 17          | 52            | 793      | 741      | 661      | 576      | 496      |

NOTE: Areas highlighted in GREEN are optimized for concentric valve performance and valve life.  
Areas highlighted in YELLOW may experience some losses in valve efficiency and valve life.

## Options

- Full protection frame
- Analogue control panel
- Low pressure switch at booster inlet (in combination with analogue controller)
- Fuel tank for 8 hours running (replaces the small day tank)
- Cold weather kit (-20°F / -29°C)
- Lights for operation at night
- Trailer (US type)
- Spark arrestor
- Overspeed shutdown valve
- Air starter (without air reservoir)
- ASME B31.3 welding standard
- Inlet mesh filter
- Inlet mesh filter & particle filter
- Discharge particle filter & coalescing filter
- Automatic scrubber tank drain

## Accessories for connection to feed-air compressors

- Suction hose 25 ft or 50ft
- Inlet strainer, connection manifold, hose adaptors

## Service & repair

- Service packs 250 hrs, 500 hrs, 1000 hrs, 2000 hrs
- PAROIL 15W40, PAROIL 5W40, PARCOOL EG
- Valve repair kit
- Piston repair kit

## Principle Data

### Hurricane Booster

Atlas Copco Hurricane boosters are second-to-none. They are smaller, lighter and still pack as much power as the larger and heavier comparable-units of our competitors. Over 40 years of experience has taught us to maximize every component. The Hurricane booster provides you with a faster pressure build-up, a better penetration rate, cooler bit temperatures and longer bit life.

The 4 cylinder booster block model 276 includes vertical reciprocating pistons, concentric air valves, and a liquid cooling system.

### Compressed Air system

The incoming pre-compressed air from the feed-air compressor(s) goes first into a standard pre-cooler with a performance of A + 15°F / + 8°C. The suction scrubber tank separates the condensate, which can be drained through a manual drain valve. A high level shutdown switch ensures proper operation. For multi-stage boosters an intercooler + scrubber tank is installed before each stage to take out the moisture. The standard air after-cooler has a performance approach of A + 50°F / + 28°C. The booster coolers are high pressure tubular/fin design.

The back pressure valve at discharge guarantees a minimum discharge pressure of 600 psi / 41 bar (adjustable). This device eliminates low load conditions and related condensate issues.

Between each compression stage a safety valve is installed to safeguard your equipment and operations.

### Booster Cooling System

The booster block and the concentric suction/discharge valves are liquid cooled. The coolant system is connected to the standard engine coolant system. This guarantees an optimal operation in high ambient temperatures up to 125°F / 52°C.

A unique advantage of liquid cooled concentric valves is that the temperature gradient is kept to a minimum. This ensures a longer valve life.

### Booster Regulating System

The booster capacity depends on the engine speed and the suction air pressure (see capacity chart).

The engine speed can be adjusted manually to match the capacity of the feed-air compressor(s).

The pressure switch at discharge is factory set at 1080 psi. Above this pressure the load/unload valve will open and the high pressure air will flow back to suction side. At the same time the diesel engine will slow down to 1200 rpm idle speed, which results in big fuel savings.

### Engine: Caterpillar C7 ACERT

COM III/Tier 3 compliant six-cylinder, liquid-cooled diesel engine provides ample power to operate the booster continuously at full-load.

The engine has the capability to start the compressor to -10°C (14°F) without the addition of a cold start aid. Cold weather kits are available for up to -29°C (-20°F).

### Fuel system

The booster is standard equipped with a small day fuel tank (20 Gal / 76 l) for short test runs, and with external fuel tank connections for connection to a bulk fuel tank. Optionally a big fueltank can be installed for 8 hours running at full load (85 Gal / 325 l).

Low fuel level switch is included.

Fuel system includes a 10 micron pre-filter and 3 micron high efficiency filter along with standard Caterpillar water separator.

### Engine Cooling System

The cooling system consists of an integrated aluminium oil cooler, intercooler and radiator with axial fan to ensure optimum cooling. The cooling system is suitably designed for continuous operation in ambient conditions up to +125°F / +52°C.



## Electrical System

The booster is equipped with a 24 Volt negative ground electrical starting and operating system.

The control panel includes a ComAP engine controller as standard with pressure gauges, load/unload switch, engine speed control and monitoring.

The digital ComAp controller monitors all critical booster and engine functions and parameters. It is programmable and a historic event log enables easy fault finding. The read-out is done on the LCD screen.



## Safety Devices

The booster will give a warning and/or shut down in following conditions:

- High suction air temperature
- High discharge air temperature (1 sensor per cylinder)
- High discharge air temperature differential
- Low suction air pressure
- High compression ratio
- High liquid level in scrubber tank
- Low engine oil pressure
- High engine coolant temperature
- High engine speed

Safety devices installed

- Emergency stop
- Safety valves at suction and discharge
- Battery disconnects

## Bodywork

For specifications on framework and paint, please consult factory.

## Maintenance & repair

### Genuine parts

The booster is delivered as standard with genuine consumables, with radiator coolant PARCOOL and with mineral PAROIL 15W40 for both engine and booster block. For extreme conditions the synthetic PAROIL 5W40 is the recommended oil.

### Service

Detailed maintenance schedules are available for each booster model. Standard service packs for the 250 hour intervals include all consumables, and make preventative maintenance as easy as it can get.

Valve repair and piston repair kits can be ordered for corrective maintenance.

Recommended spare parts proposals help customers to identify which main components they should place in stock to maximize the uptime of their equipment.

## Manufacturing & Environmental Standards

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The Hurricane boosters are manufactured following stringent ISO 9001 regulations, and by a fully implemented Environmental Management System fulfilling ISO 14001 requirements.

Attention has been given to ensure minimum negative impact to the environment.

When ordering the optional CE compliant booster, all current EU directives are followed.



## Documentation

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The unit is delivered with:

- Operating and instruction manual
- Spare parts manual
- Engine manual

Following certificates can be obtained

- Test certificate for air delivery pressure and capacity , acc. ISO 1217
- Certificate for air/oil separator vessel and safety valve approval (CE/ASME)
- Declaration of conformity

## Warranty Coverage

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12 months from date of start-up or 18 months from date of shipment, which ever comes first. With a limitation of maximum 2000 running hours. Only valid when using Atlas Copco genuine parts.

For details we refer to the "*Atlas Copco Hurricane LLC warranty policy*" document.