Road construction, mining

- Work with breakers, hammers and rock drills
- Required options: Lubricator

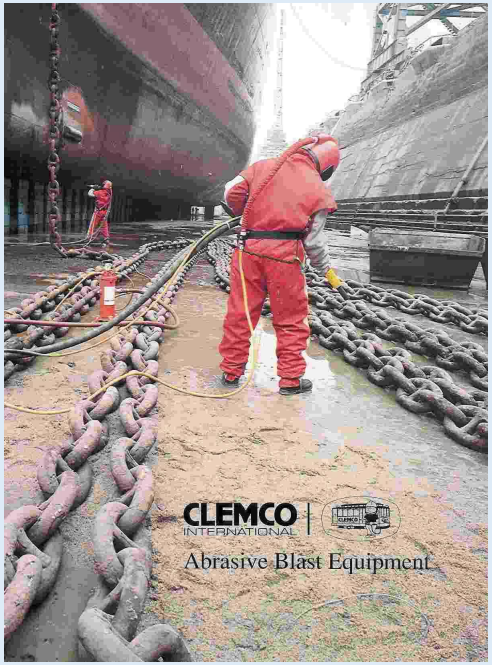
Road construction, mining

Option: Lubricator

- Atmos have very large dimensioned lubricators (2.5 litres), Atlas Copco and Kaeser offer only 1,0 l / 0,75 litres
- Together with antifreeze fluid, tools can be suitably lubricated (adjustable control) as well as protected against freezing in winter.
- Due to the fact that Atmos breakers don‘t need lubrication, the lubricator is only necessary if the customer wants to operate different brands of breakers!

Sandblasting

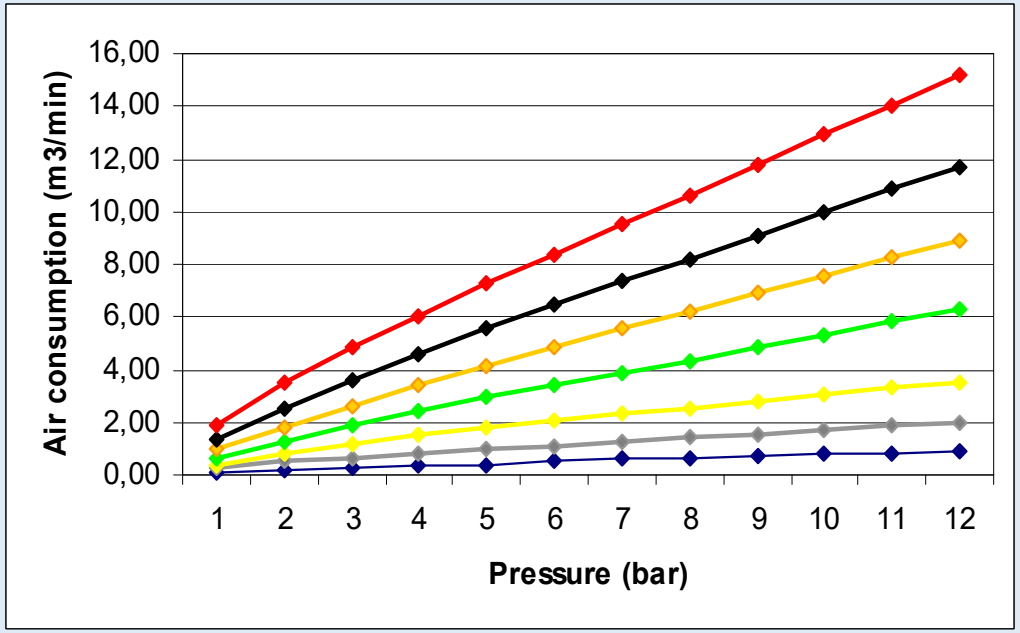
- Work with blast cleaning and paint spray equipment (shiphulls, oil tanks)
- Required options: Aftercooler, heat exchanger, high volume, pressure to 12 bar



Sandblasting

Option: Aftercooler and heat exchanger

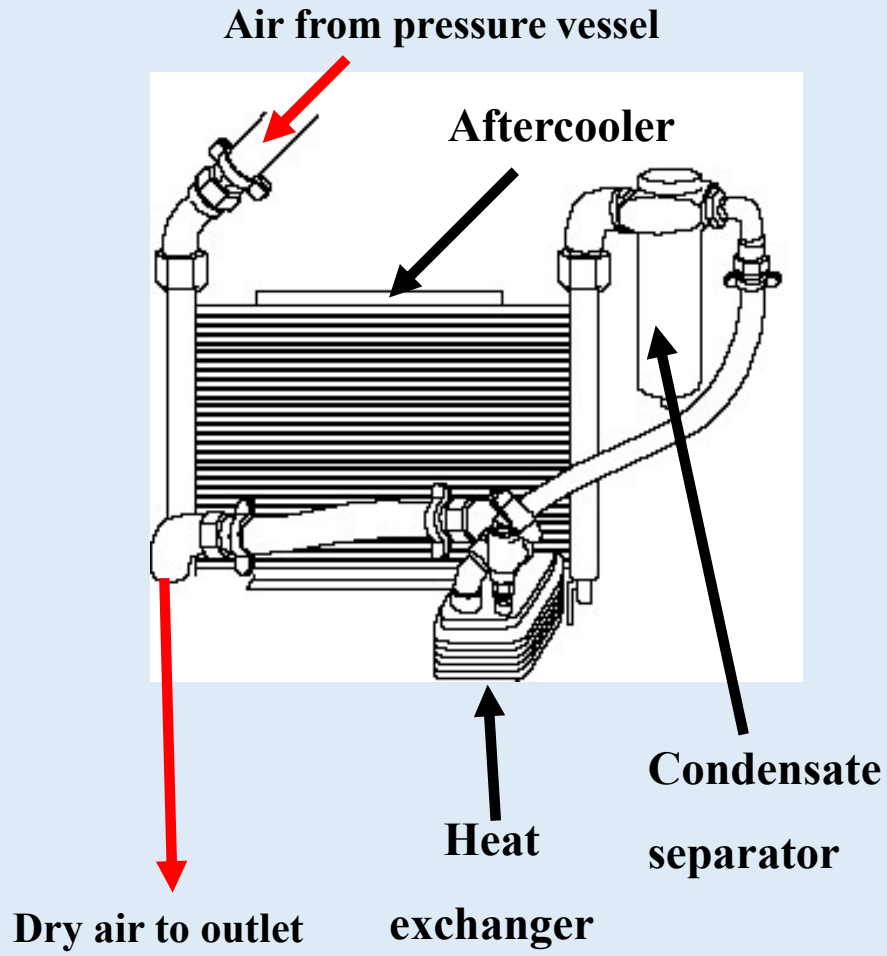
- Blast cleaning is a mechanical cleaning of larger surfaces, mostly steel.
- Most common applications are shiphulls, bridges, oil tanks, steel structures
- Most common abrasives used are sand, aluminium oxide, shot (round particles of cast-iron sand), grit (sharp-edged particles of cast-iron sand), steel sand
- Dimensions are typically 0.1 – 3.0 mm
- To get best effect, air must be dry so that pellets do not stick together and create uneven surface
- The larger the nozzle size, the better is the effect. However, air demand increases overproportionally with nozzle size increase



Sandblasting

Option: Aftercooler and condensate drain

- For sandblasting and painting, air needs to be dry to obtain even surface treatment without clusters
- Hot air from pressure vessel gets cooled down rapidly in aftercooler
- Condensate falls out in condensate separator
- Dry air gets re-heated by heat exchanger to increase dewpoint, i.e. to have a higher capacity to tie up condensate. This ensures that at the end of the air hose, dry air arrives at the consumer.
- Dry and reheated air leaves outlet



Sandblasting

Option: High volume and pressure up to 12 bar

Air Consumption Chart

Air volume consumption (m^3/min)

(bar)	Nozzle diameters (mm) 3,0	4,5	6,0	8,0	9,5	11,0	12,5
1	0,10	0.25	0,40	0,65	0,95	1,35	1,90
2	0,20	0,50	0,80	1,30	1,80	2,55	3,50
3	0,30	0,65	1,15	1,90	2,65	3,60	4,85
4	0,35	0,80	1,50	2,45	3,40	4,60	6,05
5	0,40	0,95	1,80	2,95	4,15	5,55	7,25
6	0,50	1,10	2,05	3,40	4,85	6,45	8,40
7	0,60	1,25	2,30	3,90	5,55	7,35	9,55
8	0,65	1,40	2,55	4,35	6,20	8,20	10,65
9	0.70	1,55	2,80	4,85	6,90	9,10	11,75
10	0,80	1,70	3,05	5,30	7,55	10,00	12,90
11	0,85	1,85	3,30	5,80	8,25	10,85	14,00
12	0,90	2,00	3,55	6,25	8,90	11,70	15,15

Example:

2 units, 8 mm nozzles, 8 bar, 30 m, 1.25“ hoses

→ 2 x 4,35 + 20% = 10,44 m^3/min

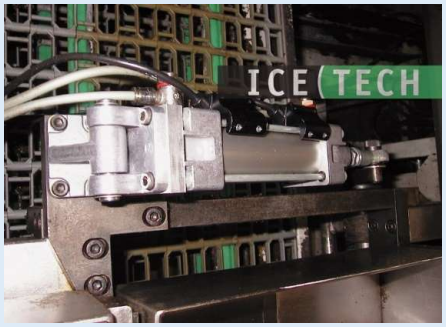
→ Pressure loss in hose 0.7 bar + 8 bar = 8.7 bar

→ Required machine: C110-9 (11,3 m^3/min @ 9 bar)

- Required air demand for different nozzle sizes is not a linear, but an exponential function. For selection of a compressor, the customer needs to define
  - Planned number of sandblasting units working simultaneously
  - Area that needs to be covered (defines nozzle size)
  - Pressure at unit
- We need to
  - Multiply units by consumption of nozzles
  - Add safety margin for wear of nozzles
  - Adjust according to required pressure
  - Add safety margin for pressure loss if distances are longer

Iceblasting

- Iceblasting is a non-abrasive technology for industrial cleaning and small surface treatment, e.g. machines, monuments, facades, mouldings, cars…)
- Required options: Aftercooler, microfilters & 14 bar pressure



Iceblasting

Option: Aftercooler and ZTV-SIB microfilters

- Dry ice blasting is a revolutionary blasting method that uses small, compact dry ice pellets as the blasting material. The dry ice pellets are accelerated in a jet of compressed air similar to that used in traditional blasting methods.
- The dry ice pellets vaporize immediately upon contact with the surface being cleaned. Only the coating (contaminants, ect.) that has been removed remains to be disposed of.

Kinetic Effect
Dry ice pellets are accelerated by compressed air to high velocities thus impacting the contaminant and provoking fractures.

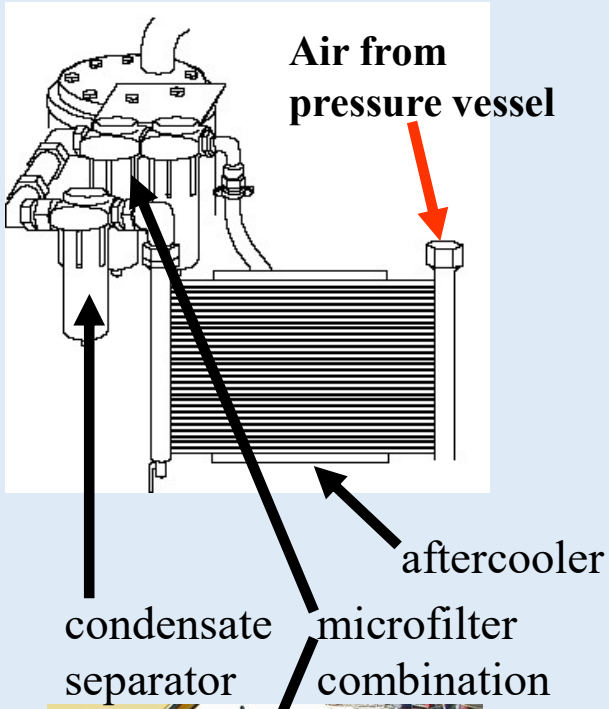
Thermal Effect
The low temperature (-79 C) makes the coating brittle, cracks it and loosens it. This allows the dry ice to permeate the coating.

Sublimation Effect
After making impact, the dry ice turns from a solid into a gaseous form (sublimates); expanding its volume by a factor of 700. The expansion acts as an explosion that lifts the contaminant off the surface.

Iceblasting

Option: Aftercooler and ZTV-SIB microfilters

- For iceblasting and high quality painting, air needs to be dry and oil free to obtain even surface treatment without clusters
- After treatment in aftercooler and condensate separator, air passes through microfilters
- Only Atmos have 2 microfilters, Atlas Copco one
- Rest oil content is < 0.01 ppm
- Breathing air filter with rest oil content < 0.001 ppm also optional



Iceblasting

Option: 14 bar pressure

- For iceblasting it is necessary to have a pressure of 7 to 14 bar
- Starting with the 4m3 PDK33, all Atmos machines are available in higher pressures up to 14 bar.
- Therefore, we are in a very strong position. Our compact machines fit into factory aisles, are light enough to be pushed by hand, and can be configured with aftercooler and microfilters to obtain dry and oil-free air.

Sodablasting

- Sodablasting was invented in 1972 to clean the soft copper sheets of the Statue of Liberty.
- It is an advanced, ‘eco-friendly’ paint stripping technology.
- It is mostly used to clean machines, cars, small shiphulls, monuments…
- Required versions: 3.5-6.5 m3/min, aftercooler, condensate drain & 10 bar pressure

Sodablasting

- The process involves blasting sodium bicarbonate, against the surface to be cleaned, using compressed air to accelerate the crystals to almost 600 miles an hour. The non-abrasive kinetic action allows it to lift any contaminate off a surface without damaging it.
- It is ideal for surfaces like aluminium, stainless steel, brick, stone, glass, fibreglass, wood, plastics, bearings, seals.

Sodablasting

- Soda blasting also breaks down hydrocarbons through a process called ‘saponification’ which makes it highly suitable for cleaning equipment covered in fatty foods or engine parts and when your finished just rinse off and the water soluble soda disappears.
- The non-flammable properties of sodium bicarbonate allow it to be used for cleaning in the petroleum industry where other methods cannot be used. Likewise, its non-toxic properties mean that it can be used in food-processing and similar areas.

Gas, electricity and water / canalisation companies

- Work with moling, ramming and directional drilling equipment
- Required options: External lubricator with high capacity

Gas, electricity and water / canalisation companies

Options: External lubricator with special oil

- For moling it is essential to lubricate sufficiently and to prevent the mole from freezing
- It is recommended to connect a large sized external lubricator a few metres in front of the mole
- The Atmos lubricator has a capacity of 10 litres
- The Atmos oil lubricates and contains antifreeze

Gas, electricity and water / canalisation companies

ATMOS

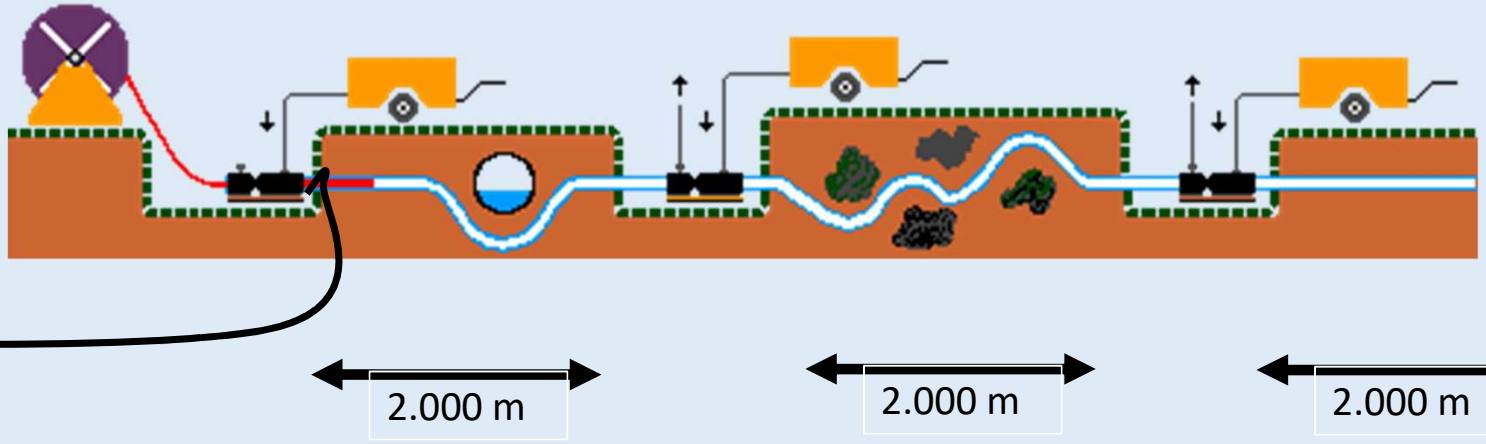
Options: High volume compressors (ramming only)

- For the dynamic pipe installation pneumatically driven ramming machines are used. These machines enable the economic installation of open steel pipes as casing or product pipes up to 4000 mm diameter over lengths up to 80 m in soils of the classes 1 – 5.
- The ramming machine is driven by a compressor. After being welded together, the single pipe lengths are pushed forward gradually. The largest ramming machine can achieve an impact energy of 40.000 Nm (at full capacity) which is transferred optimally over the complete pipe string to the pipe's front cutting edge. The average ramming speed is 10 m/hour. Required air delivery as follows:

GRUNDORAM	Gigant	Koloss	Goliath	Taurus	Apollo
Machine-Ø (mm)	270	350	460	600	800
Length (mm)	2010	2341	2852	3645	4400
Weight (kg)	615	1160	2405	4800	11500
Air consumption (m3/min)	12	20	35	50	100

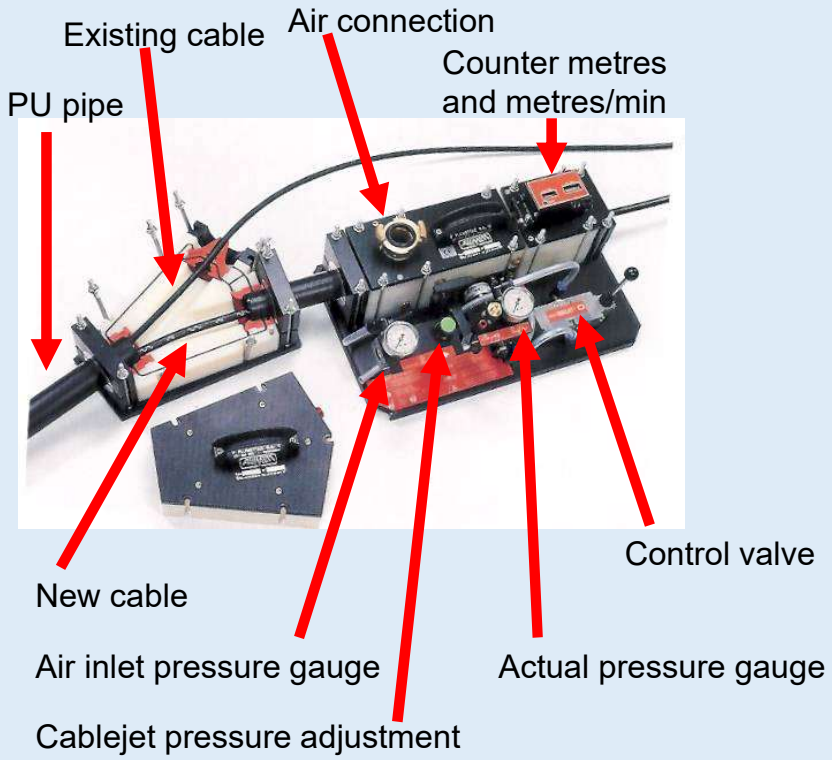
Telecom companies and contractors: Long distance (between cities)

- Work with cable blowing machines for long distances, and for short distances to connect individual streets and houses.
- Required options: Aftercooler and condensate drain, and depending on the manufacturer pressures of 7 up to 14 bar.



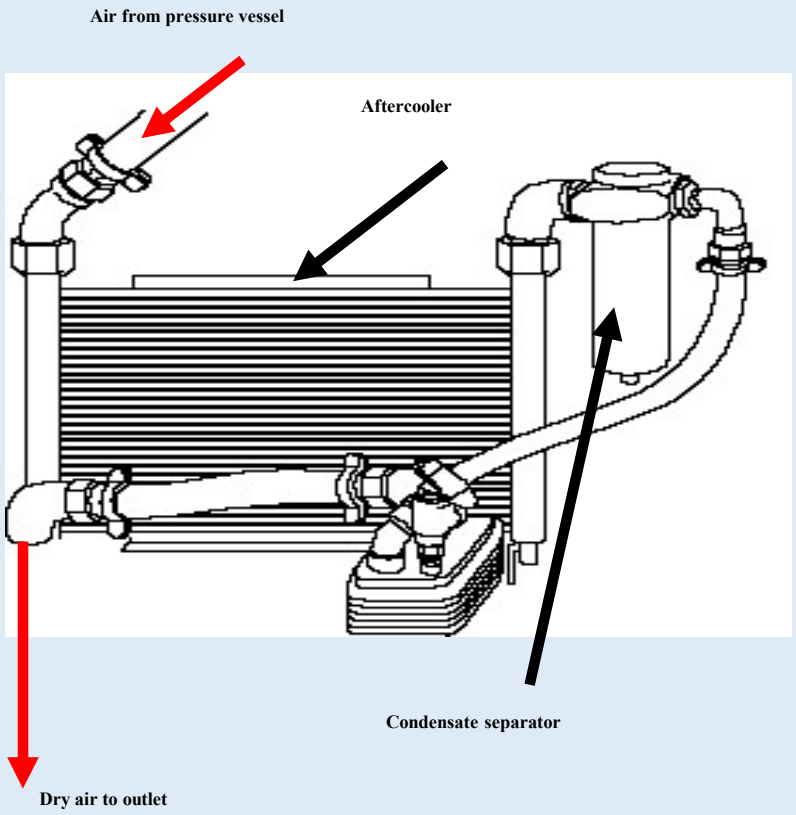
Telecom companies and contractors: Long distance

Options: Aftercooler, condensate drain and 12 bar pressure



- „Blowing“ of fibre optic cables has the advantage of trenchless insertion into existing PE pipes, saving considerable expenses for construction works
- Cables with a diameter of up to 35 mm can be blown into pipes of up to 63 mm diameter
- The cable is driven forward by a high velocity airstream in combination with a mechanical drive
- Installed length using one machine : 1000 - 3000 m and more, depending on quality and characteristics of duct and cable and ambient temperature.
- Laying speed varies between 40 and 100 metres/min. and over

Options: Aftercooler, 10-11 m^3 and 12 bar pressure



- According to market leaders Plumett and Vetter, „The suitable compressor required for the system must have the following characteristics : 12 bar pressure
  - and 10 m3/min. flow rate for placing cables in ducts having an internal diameter not exeeding 42 mm,
  - and 15 m3/min. for ducts not exeeding 50 mm inner diameter.
- To secure performance when the ambient temperature exeeds 30 °C, the use of an aftercooler is recommended.“

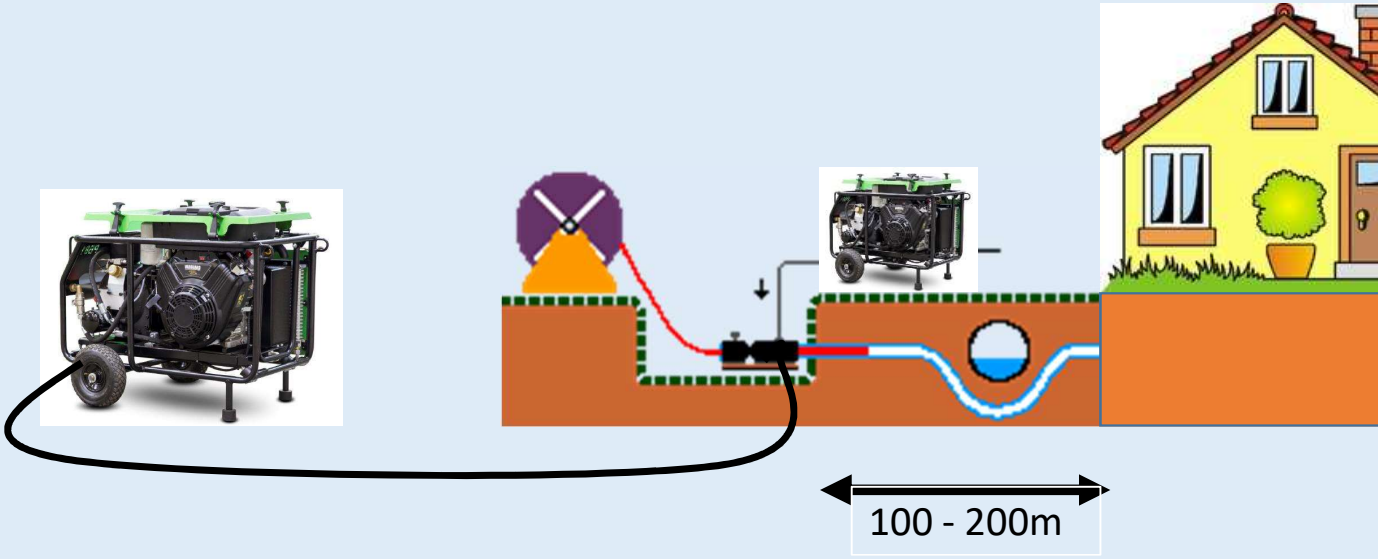
Telecom companies and contractors: Long distance (between cities)

Atmos PDP100

- The PDP100 with aftercooler and condensate drain option is the ideal machine for this application.
- It has a free air delivery of 10 m3 / min at a pressure of 12 bar.
- The machine is driven by a very robust 106 KW Perkins engine, that has a very wide speed range of 1.300-2.200 rpm to adapt fuel consumption to actual free air delivery. The low rpm at top speed ensures long engine lifetime.
- The aftercooler is very large dimensioned to guarantee that most condensate is taken out of the air for higher quality cable blowing.

Telecom companies and contractors: Short distance (between streets & houses)

- Work with cable blowing machines for short distances to connect individual streets and houses.
- Required options: Aftercooler and condensate drain, and depending on the manufacturer pressures of 7 up to 14 bar.



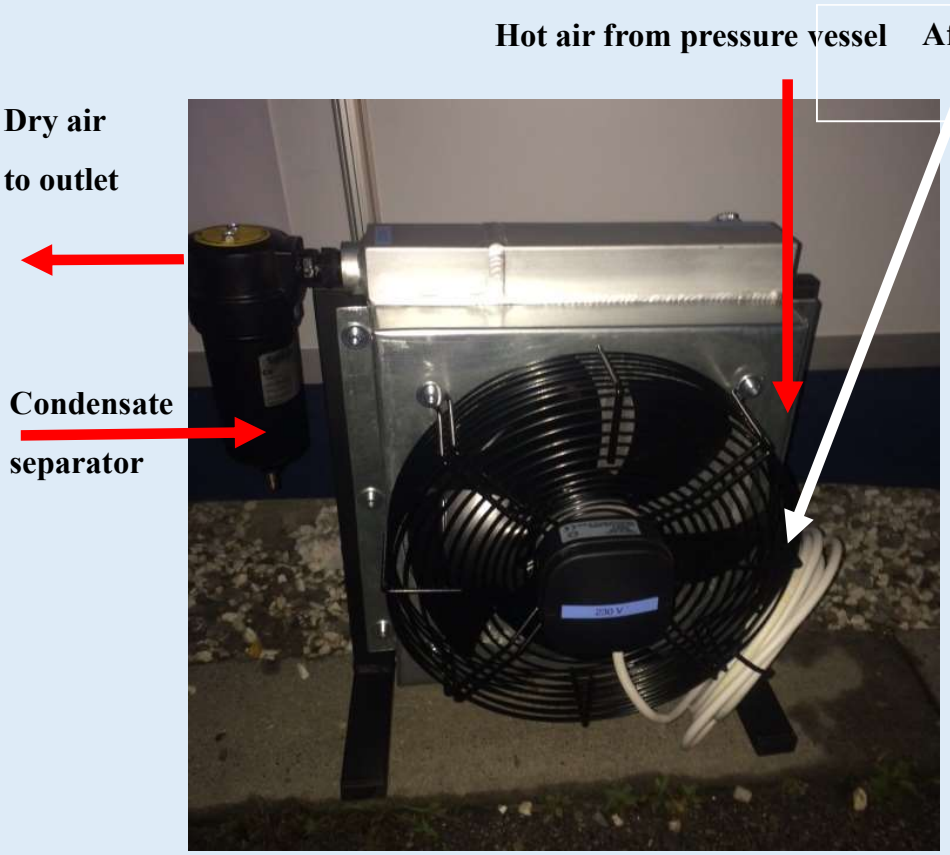
Telecom companies and contractors: Short distance (between streets & houses)

Atmos PB81 & PB82 (CE version)

- Our PB81 and PB82 are much more compact and lighter than the machines of the current market leaders.
- Weight is only 135kg, as opposed to 200kg.
- Together with the retractable handle and the pneumatic tyres, the machine can be moved by 1 person through doors, on stairs etc.
- The 4 lifting bales permit loading by crane, and it is compact enough to fit through a window.

Telecom companies and contractors : Short distance (between streets & houses)

Options: External aftercooler, 0.8 - 1 m^3 and 12 - 14 bar pressure



- The most common machine is the Microjet from Plumett and Vetter, which works with 12-14 bar pressure
  - and 0.6-1.0 m3/min. flow rate for placing 0.8 – 7.5 mm cables in ducts having an internal diameter from 3 - 12 mm.
- To secure performance and to prevent moisture enterent the pipe, the use of an aftercooler is recommended.
- We can supply our PB81 and new CE conform PB82 with 0.7 m3/min at 14 bar together with an external aftercooler.

Telecom companies and contractors

General comments

- The current market are leaders Plumett and Vetter, but their dominance is reflected in their pricing.
- I have worked on telecom projects in > 20 countries, and have found many other producers of such equipment that were also excellent.
- Examples are Lancier, Bagela or Jakob Thaler from Germany, or Tygesen from Denmark.
- Some of their machines are much more economical, and they even operate at lower pressures so that the customer can save considerable money on the package compressor + cablejet.

Water well drilling and mining companies

- Work with drilling equipment
- Required options:
  Minimum 8-25 m^3 / min and
  12-14 bar pressure

Water well drilling and mining companies

Options: Minimum 8-25 m^3 / min and 12-24 bar pressure

- Generally for earth or rock drilling used methods are either rotary or percussion. Drill holes are made for many different purposes, Blast holes, Water or Energy holes, Geo-technical drilling, Anchor holes, Grouting holes, Core recovery or Sample Collection holes, Drainage or Ventilation holes and many similar applications.
- Compressed air is used for two different purpose, one is flushing the hole next is using the pressure energy of compressed air to create percussion power. Especially for rock drilling we use percussion power. The simplest way of deciding which method to use for drilling in a quarry is if you can rip the rock with excavators it may be drilled rotary, if not than it must be drilled with percussion.
- Percussion hammers are basically three different types with todays general aplications. Pneumatic top hammers, Hydraulic top hammers, pneumatic down the hole (DTH) hammers.

Water well drilling and mining companies

Options: Minimum 8-25 m^3 / min and 12-24 bar pressure

- Pneumatic top hammers are loosing their economical application due to use of too much compressed air for percussion, and exhaust of this operation is thrown directly into the atmosphere. There is also separate requirement of rotation and flushing air
- Hydraulic top hammers are more economical solution today as they do not use compressed air for percussion but only for flushing the hole where percussion and rotation is using hydraulic power.
- The DTH drilling system is using compressed air for creating percussion energy and exhaust of this air is also used for flushing the hole. This way the same compressed air is used for two different functions. Rotation for DTH drilling may either be pneumatic or Hydraulic. With existing technology air rotation motors are designed normally for 7 bar pressure but DTH hammers can go up to 25 bar air pressure.

Water well drilling and mining companies

Options: Minimum 8-25 m^3 / min and 12-14 bar pressure

- The high pressure market segment is particularly attractive, as the number of competitors is reduced compared to the 3 m^3 class, hence chances are higher
- In cooperation with GEMSA, we supply drilling packages with Atmos PDP190-14. In this class, we don‘t have competitors because we have an incredibly competitive machine.

All types of companies who need air and electricity

- Work with pneumatic and electrical tools, lights, welding equipment
- Required options: 7 KVA generator

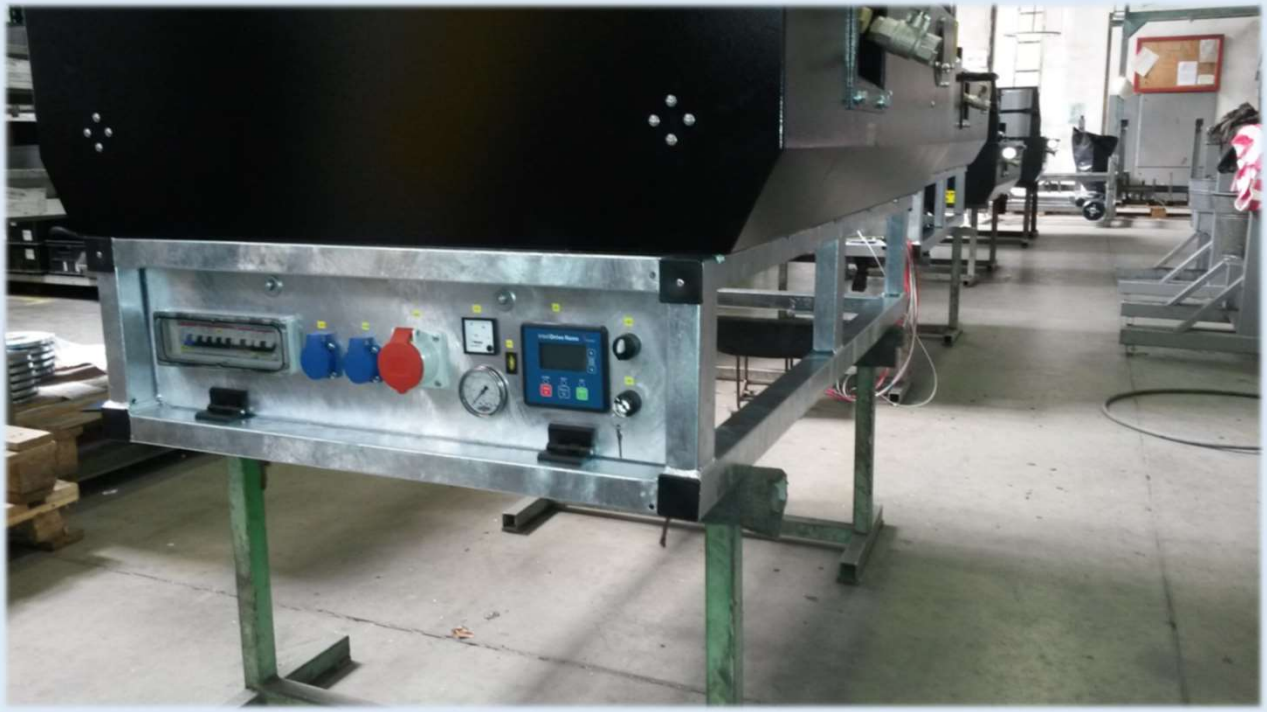
All types of companies who need air and electricity

Options: 7 KVA generator

- Atmos is the only compressor manufacturer who build in high quality Czech generators. Atlas, Kaeser, etc. build in cheap (s)crap from Italy
- High performance
- Available for PDP28 and PDP35

All types of companies who need air and electricity

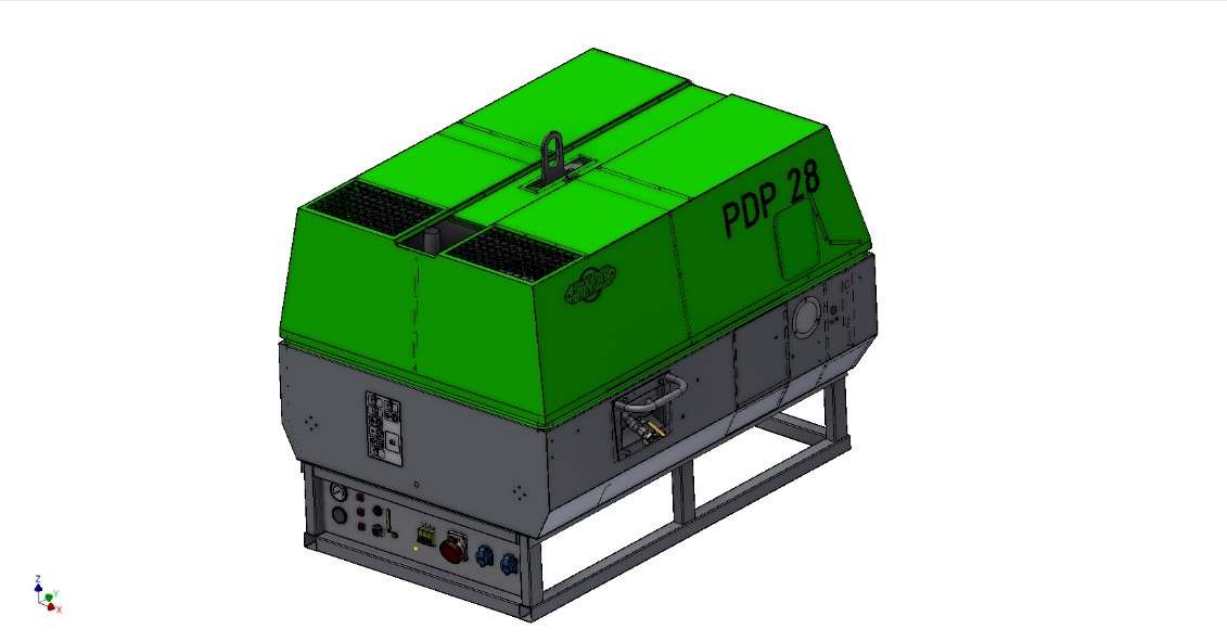
Options: 6 KVA or 7 KVA generators



- Possibility to include generator sockets into a base mounted compressor frame for truck mounting.
- Much higher convenience than other manufacturers, where controls and sockets are on the side of the machine.

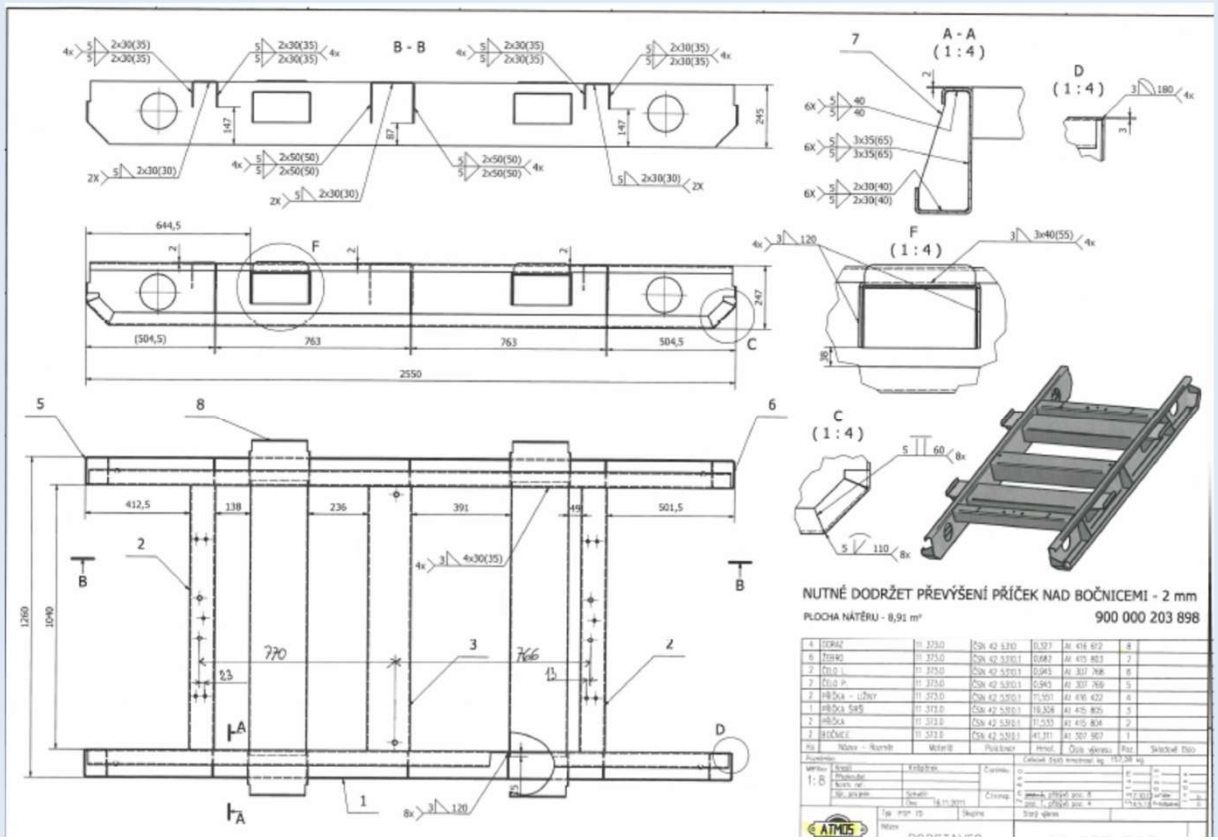
All types of companies who need air, but available car coupling

- Simultaneous transport of compressor and portable generator or other trailer
- Required option: Base mounted compressor, that can be fitted on truck



Construction companies who work in soft/muddy or tight conditions

- Work in places where traditional chassis would get stuck or in narrow tunnels like mines
- Required option: Skid mounted compressor



Construction companies who work on crowded sites

- Work in places where rubber air hoses could be destroyed by excavators or other vehicles rolling over them
- Required option: Hose reel with automatic retraction and 20 m hose

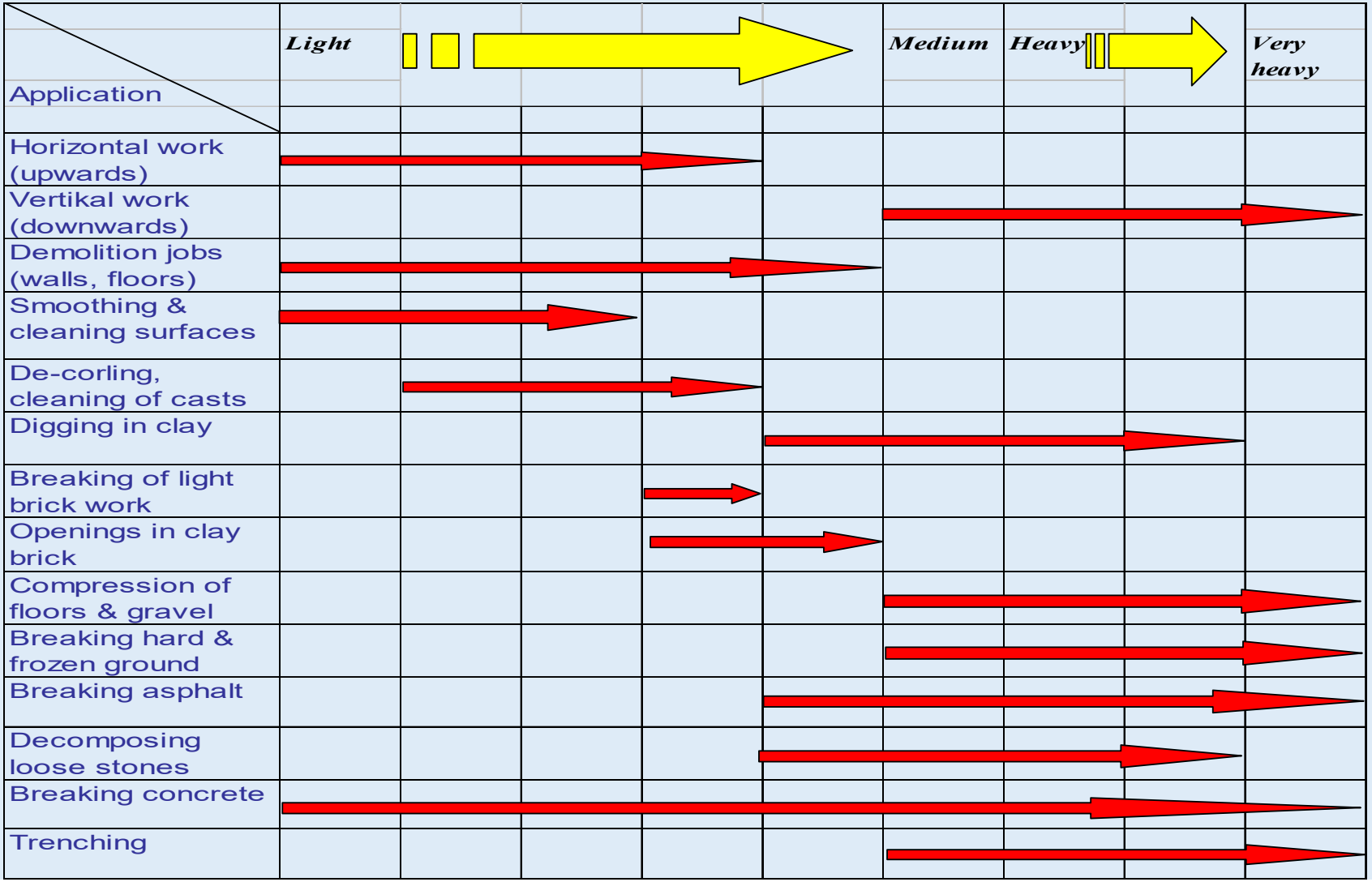
Companies working in regions with poor diesel quiality

- Concerns all areas where diesel quality is not consistent and where water may be contained. This can seriously limit engine lifetime.
- Required option: Diesel filter with water separator
- NB: Included as standard in PDC range

Construction companies/demolitions companies

- Demolition of concrete, tarmac and stone, drilling, mining
- Required option: Atmos breakers and rock drills from 5 to 40 kg, together with Atmos insert tools and 20 m air hose

Construction companies/demolitions companies



Construction companies/demolitions companies

Options: Atmos breakers from 5 to 40 kg

- Atmos breakers and rock drills are more efficient than products from other manufacturers
- At equivalent performance, less air is needed, therefore, customers can buy a smaller compressor
- This means substantial savings. For selection of compressor, we need to take the number of breakers, their air consumption, and add a safety margin of 20% for leakage of rubber hoses, seals etc.
- Examples: Atmos BB15 (16 kg), BB25 (24.2 kg), BB32 (32 kg) against Atlas Copco:

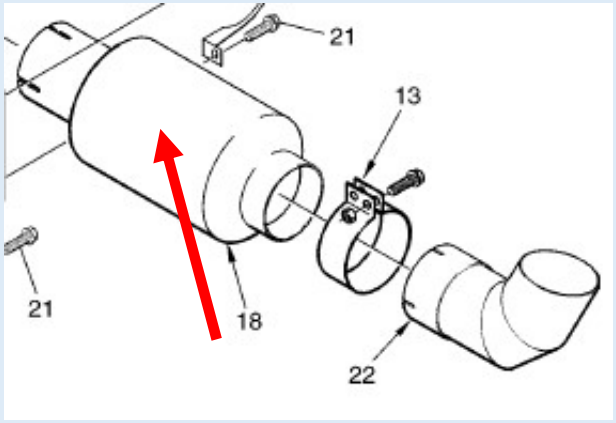
Manufacturer	Weight class	Model	Actual weight	Air consumption	Reserve 20%	Air consumption 2 breakers	Required compressor	Class
Atlas Copco	15	TEX14	15,0	1,5	0,3	**3,6**	XAS67	3,8 m3
Atlas Copco	25	TEX22	24,5	1,8	0,4	**4,3**	XAS77	4,2 m3
Atlas Copco	30	TEX32	32,0	2,1	0,4	**5,0**	XAS97	5,0 m3
					0,0			
Atmos	15	BB15	16,0	1,1	0,2	2,6	PDP20	3 m3
Atmos	25	BB25	24,2	1,2	0,2	2,9	PDP20	3 m3
Atmos	30	BB32	32,0	1,7	0,3	4,1	PDP28	4,2 m3

In all 3 sizes Atlas Copco customers need to buy larger compressor sizes!!! Additional costs can be several thousand Euros!

Oil companies / refineries / industrial users

- Standby compressors in case electricity breaks down
- Required option: Spark arrestor and engine overspeed shutdown valve

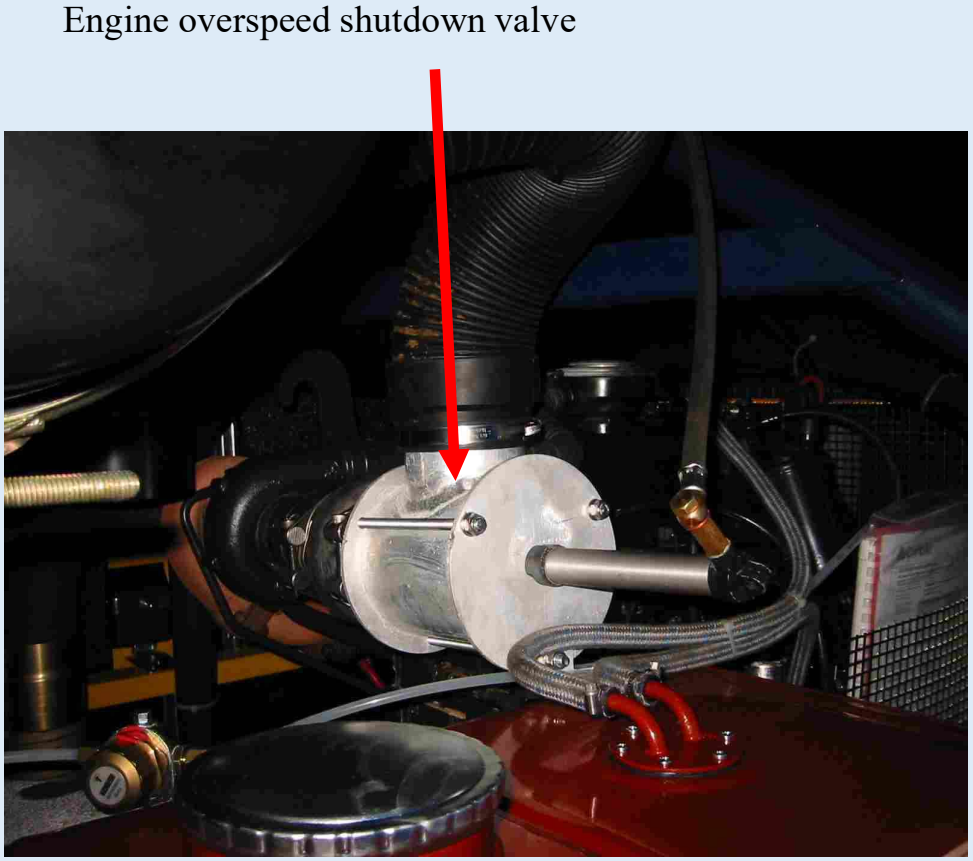
Options: Spark arrestor



ENGINE EXHAUST SILENCER AND FITTINGS WITH OPTIONAL SPARK ARRESTOR

- Operation of diesel-driven compressors in hazardeous areas can be dangerous, as sparks can ignite fires
- Therefore, Atmos can install a spark arrestor that prevents sparks from leaving the exhaust pipe
- The spark arrestor is fitted towards the end of the pipe

Options: Engine overspeed shutdown valve



- When compressor is operated in hazardeous areas, the engine overspeed shutdown valve can be fitted to avoid further dangers
- If gas (with a lower density than air) enters the machine, then automatically the engine runs faster
- The overspeed shutdown valve then turns off air supply which virtually chokes the engine
- Once engine is choked then machine is shut down

Concrete processing companies (internal vibrators)

- Use of concrete for bridge, road, airfield or housing construction
- Required option: Aftercooler and condensate drain

- Professionals in the industry know how critical the time factor can be working with and handling fresh concrete
- Compressed air internal vibrators are used in places where pneumatic supply lines are necessary, such as in precast concrete factories or in tunnel construction

Concrete processing companies (conveying and shooting)

- Atmos mobile compressors are also used in connection with concrete conveyers (e.g. Putzmeister M500E up to 270 metres or M700E up to 80 metres).
- We also supply many producers of screed pumps as OEM‘s

Concrete processing companies (conveying and shooting)

- For jobs with the M500E (M700E) a free air delivery of at least 4.0 m3 / min (2.5 m3 / min) at maximum 8 bar pressure is required.
- Combinations of separate compressor and conveyor are cheaper for customers than integrated units like M740DB or M760DH.
- A separate compressor gives the customer much better flexibility because he has a much higher amount of applications!

Concrete processing companies (conveying and shooting)

- Another application is ‚shooting' of concrete (‚**shotcrete**') to fix dangerous rocky roadsides. Depending on altitude pressures of 12 or even 14 bar are required.
- For this application, we recommend the PDC90 or the PDC190.

Key accounts that require special colours

- We can supply all machines in your requested colour. You just need to inform us about the required RAL code.

Key accounts that produce suction excavators

Key accounts that produce suction excavators

Suction excavators are used in many applications, such as:

- **Excavation, Utility Lines ...**

Uncovering leaks in gas and water pipes
Making trenches despite existing utility lines
Construction/ renovation of wells, uncovering hydrants

- **Shipping ...**

Vacuuming of ballast
Vacuuming of materials in ship renovation

- **Renovation and Extension ...**

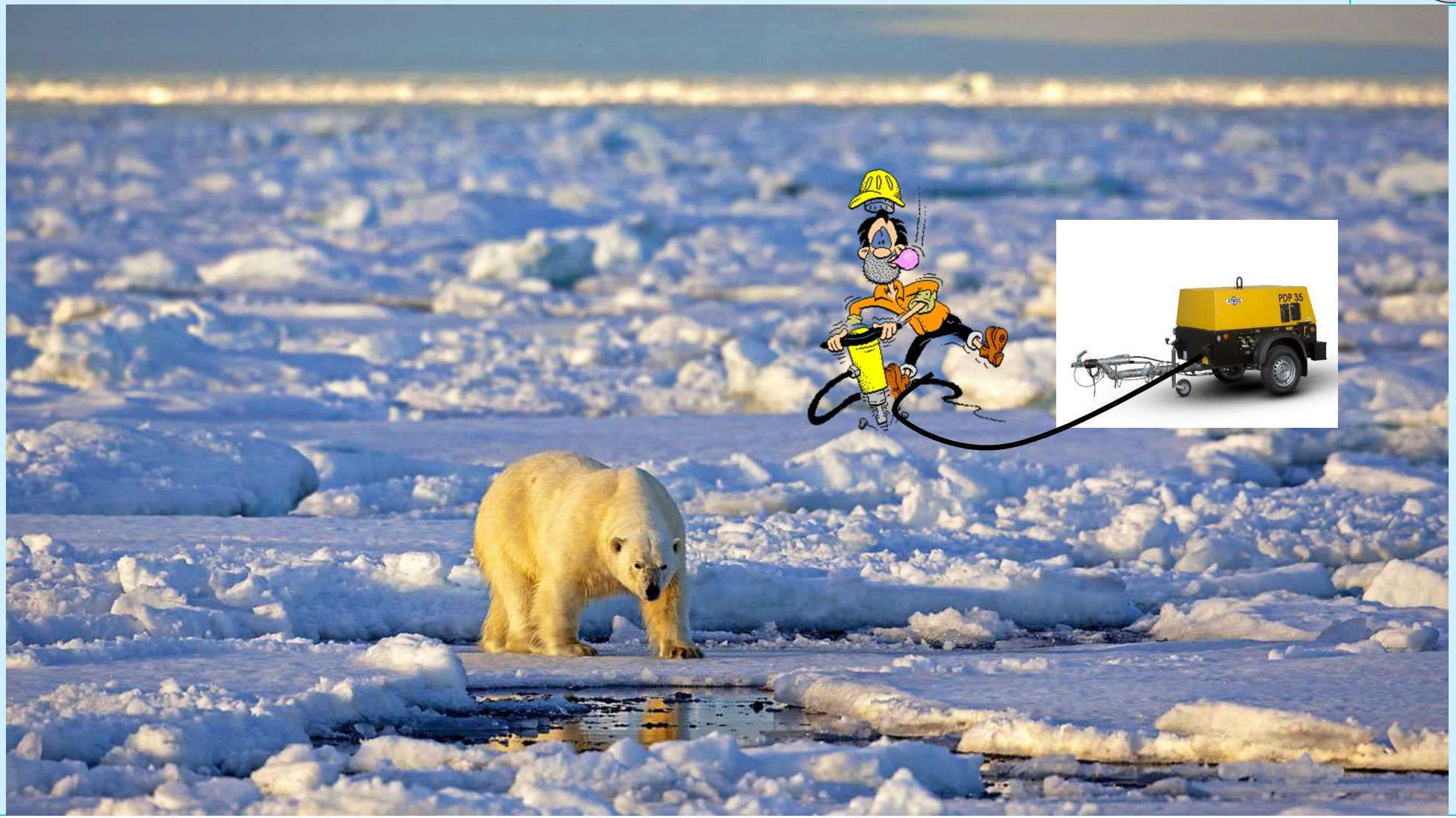
Vacuuming of rubble, construction waste
Removal of excavation, demolition material
Renovation of flat roofs and green roofs
Uncovering of foundation walls, outside walls, tanks, underground bunkers
Emptying of filled tanks, trickle pools

- **Road, Train and Motorway Maintenance ...**

Vacuuming of contaminated soil
Vacuuming of spilt loads
Cleaning of pits, marginal strips, central strips
Cleaning of road inlets
Work on tunnels, bridges
Industry ...

Key accounts that use ramming machines for road barriers

Customers that work in cold environments



Customers that work in cold environments

Webasto
Feel the Drive

All our diesel-driven compressors are certified down to -10 ^{O}C as standard.

For work in lower temperatures, we offer 2 types of cold start packages:

-20 ^{O}C: Heating of the engine oil sump by connection to a 230V cable.

-40 ^{O}C: Webasto diesel-driven preheater of coolant. This has the advantage that no electrical connection is necessary, the heater feeds the diesel directly from the compressor's tank. When it's switched on it heats the cooling water so the engine can be started, the switches off automatically.