




Atlas Copco



Man or machine?
Can handheld be more effective than an excavator?

Online seminar, November 12th

Your moderators today



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Wim Elen

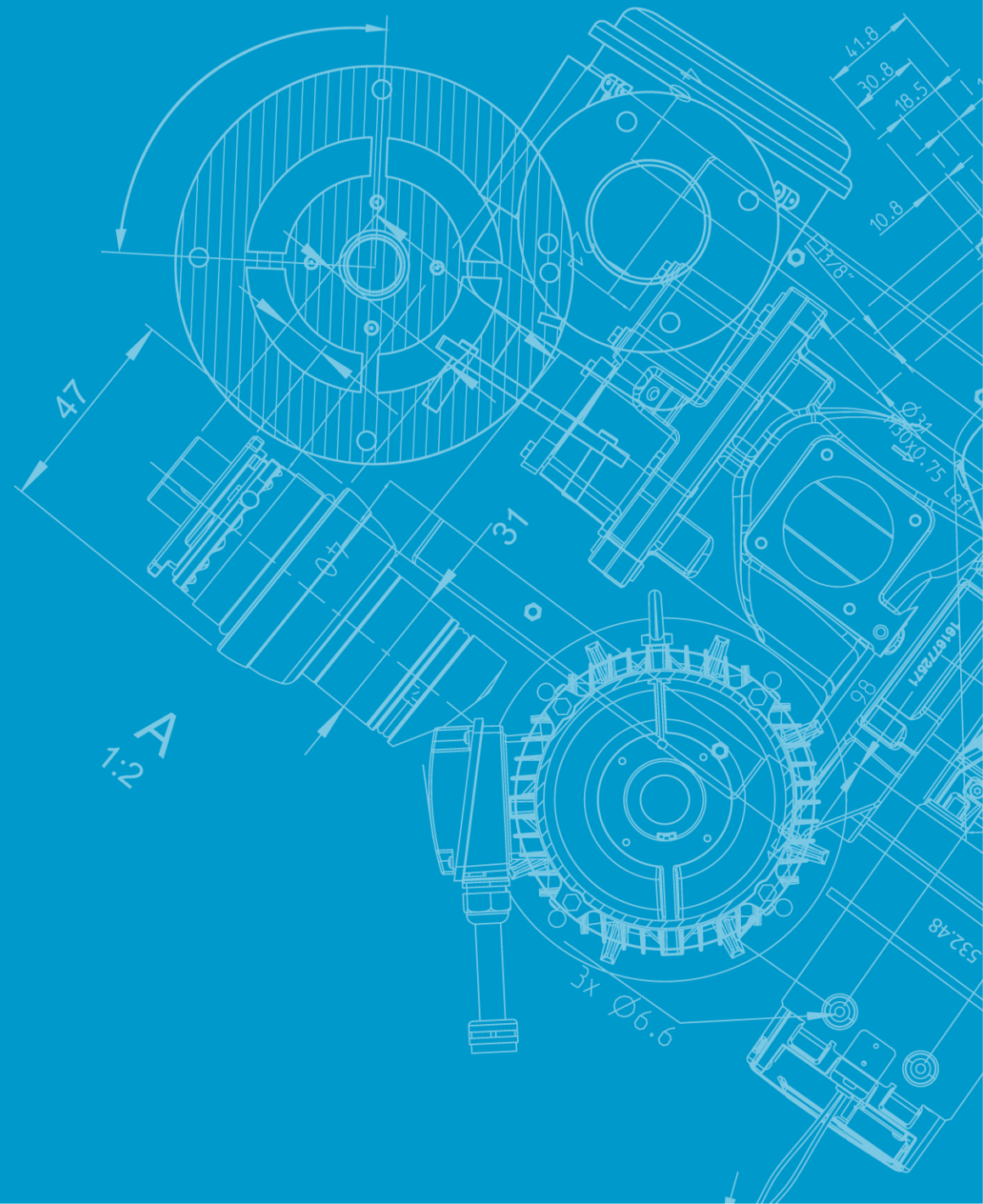
*Business Development Manager
Air and Tools*

The game - Man or Machine



- Impact force: large
- Electrical tools let you down in the past , they showed to be too weak for the job
- Efficiency gain on big building sites or e.g. complete streets renovations
- Ergonomics are a point of concern when using handheld tools
- No need for strong tool operators

Why working with handheld tools?



Why working with hand held tools

Logistics

- Logistic costs: larger footprint size in the yard increases storage cost



Why working with hand held tools

Logistics

- Need of trailer to transport the excavator vs regular van/car



VS



Construction market



Construction market is not always new road or building construction

Almost half a budget may be spent for the infrastructure renovation that require proper range of tools

Why working with hand held tools

Versatility

- Impact force: adapted to the application
- Precision: Fragile infrastructure need correct sized tools that give sensible feedback to the operator
 - Structure integrity can be compromised
 - Infrastructure can be damaged



Why working with hand held tools

Dust and Noise

Why working with hand held tools

Time

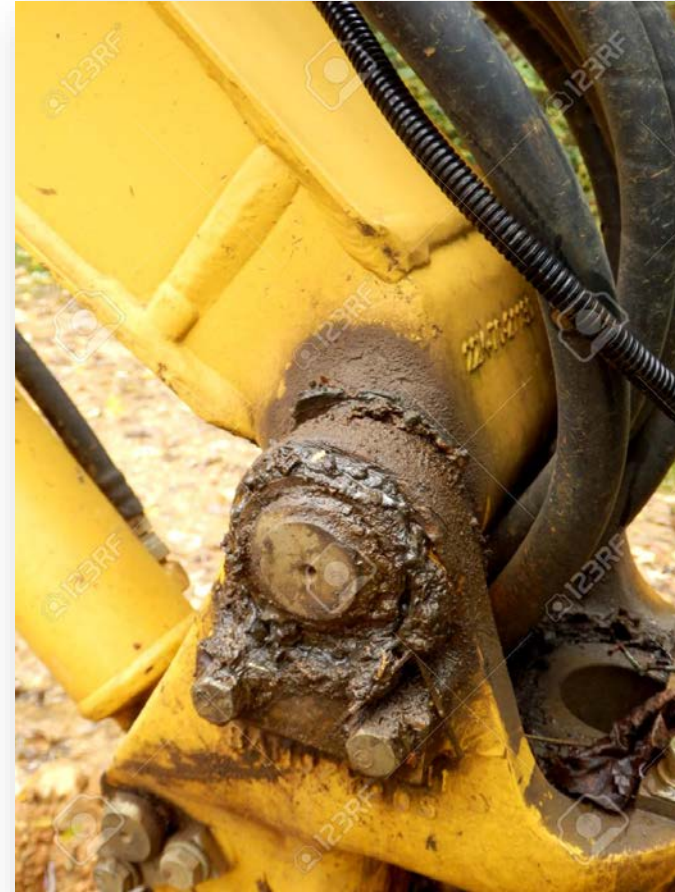
- Hard to setup and manoeuvre in city centers: **time lost**



Why working with hand held tools

Set-up time

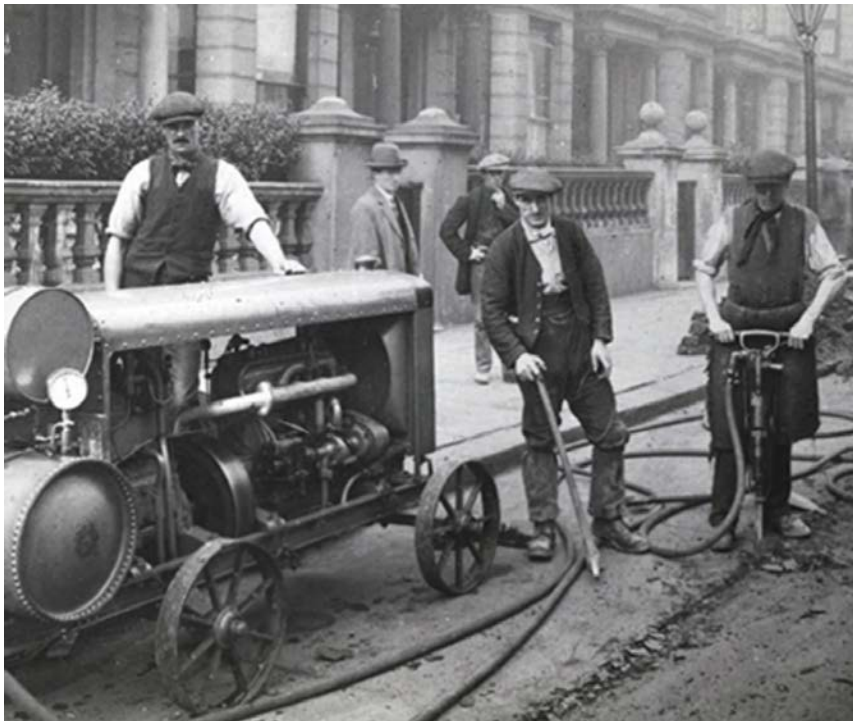
- Handheld tools:
 - Short setup time
- Excavator setup:
 - Load and unload from the trailer
 - Hydraulic attachment swap takes time
 - Swap imposes more risk on injuries



Why working with hand held tools

Technology reboot

- Strong force application no longer required



Historical requirement:
strong operator

vs.

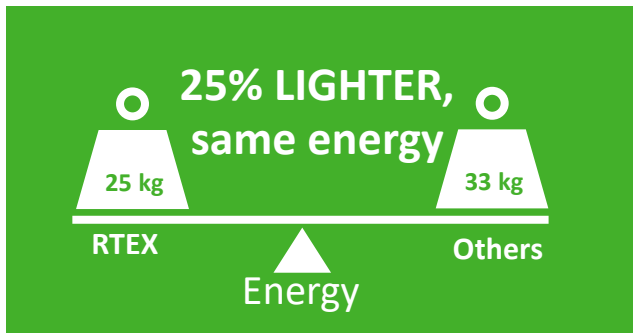
The tool does the job
***with sensible feedback
in your hands**



Why working with hand held tools

Ergonomics

- Atlas Copco strongly focuses on ergonomics and provides class leading ergonomic tools



Applications



Our Main Focus Application

Demolition



Drilling



Special Utilities



Hand held product portfolio

A tool for every task

Portable Diesel & Electric Motor Driven Compressors



Handheld Pneumatic Tools (HPT)

Portable Gasoline & Electric Motor Driven Powerpack



Handheld Hydraulic Tools (HHH)









Portable Gasoline engine mounted



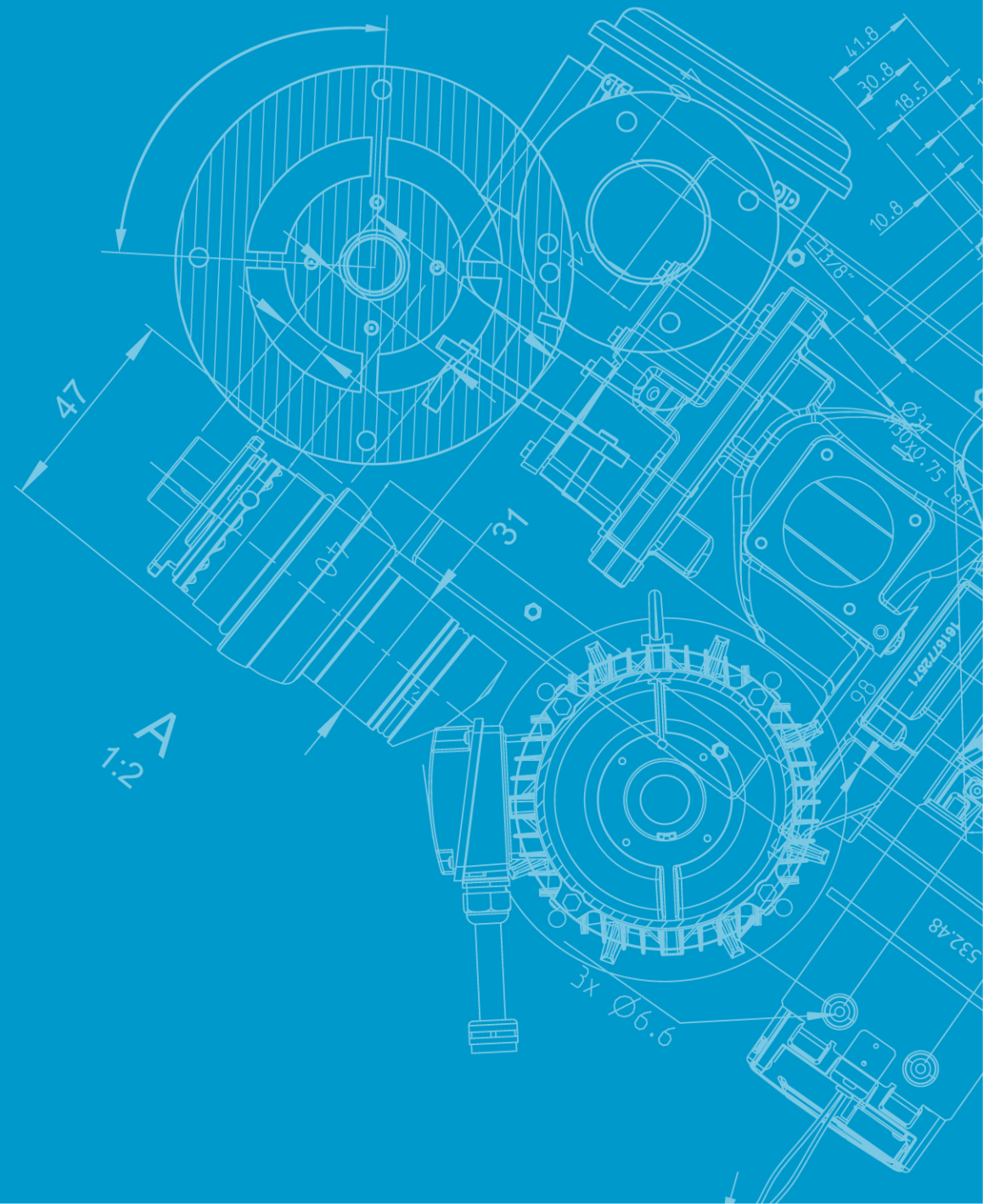
Motor Driven Breakers (MBD)

Demolition	Drilling	Special Utilities			
<p>CHIPPING & PICK HAMMERS</p>	<p>BREAKERS</p>	<p>ROCKDRILLS</p>	<p>UNDERGROUND ROCKDRILLS</p>	<p>DUST CONTROL</p>	<p>IMPACT WRENCH</p>
<p>HAMMERS</p>	<p>BREAKERS</p>	<p>CUT-OFF SAWS</p>	<p>CORE DRILLS</p>	<p>POST DRIVERS & PULLERS</p>	
	<p>BREAKERS</p>	<p>DRILLS</p>	<p>TIE TAMPERS</p>		

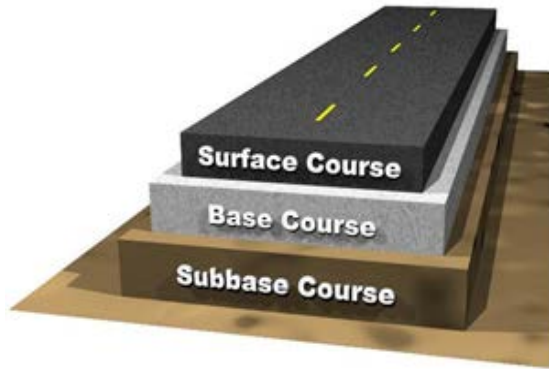
Handheld tools presence in segments

Technology	Construction		Mining	Utilities			
	Indoor	Outdoor		Railway	Road & pavement maintenance	Others: Telecom, water etc	Emergency & Rescue
Portable Diesel & Electric Motor Driven Compressors  	2%	75%	100%	0%	70%	0%	0%
Portable Gasoline & Electric Motor Driven Powerpack  	3%	5%	0%	10%	10%	80%	75%
Portable Gasoline engine mounted  	0%	15%	0%	90%	5%	20%	25%
Electrical Motor Driven  	95%	5%	0%	0%	10%	0%	0%

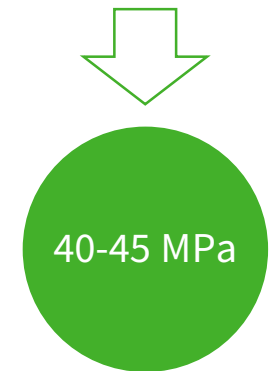
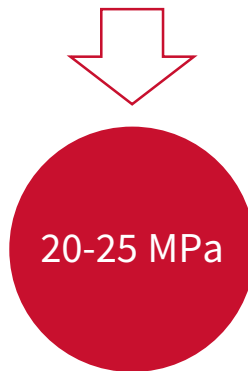
Surface conditions



Pavement hardness – surface course



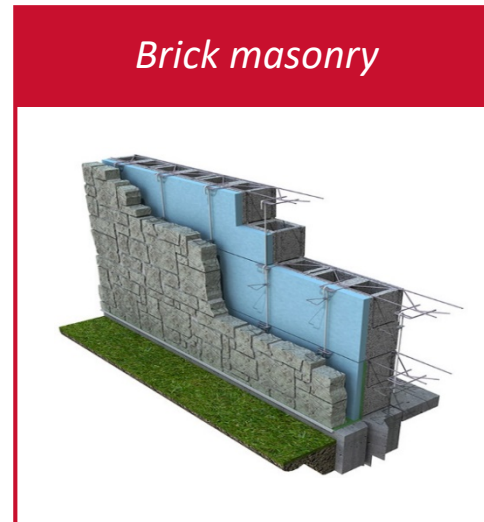
- Strength of surface is different
- It defines requirements to the tools
- For efficient breaking the tool should have at least 2 times higher breaking capacity than the pavement strength



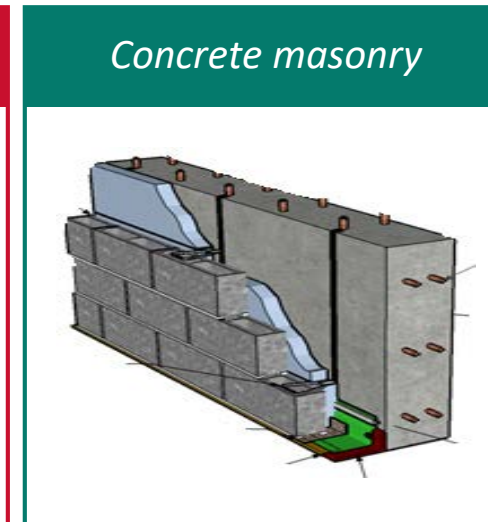
Building structures strength

Building:

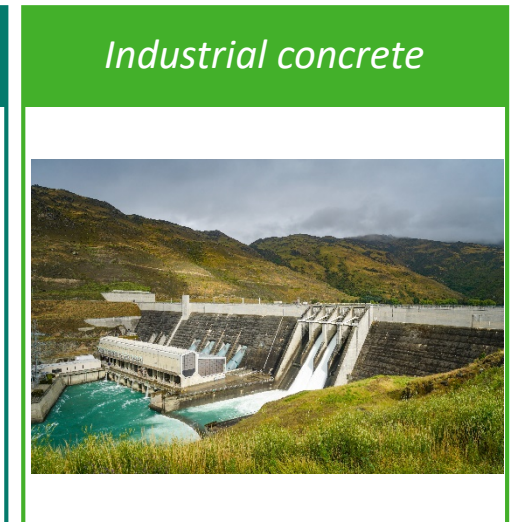
- Brick masonry
- Concrete masonry
- Industrial concrete



5-15 MPa

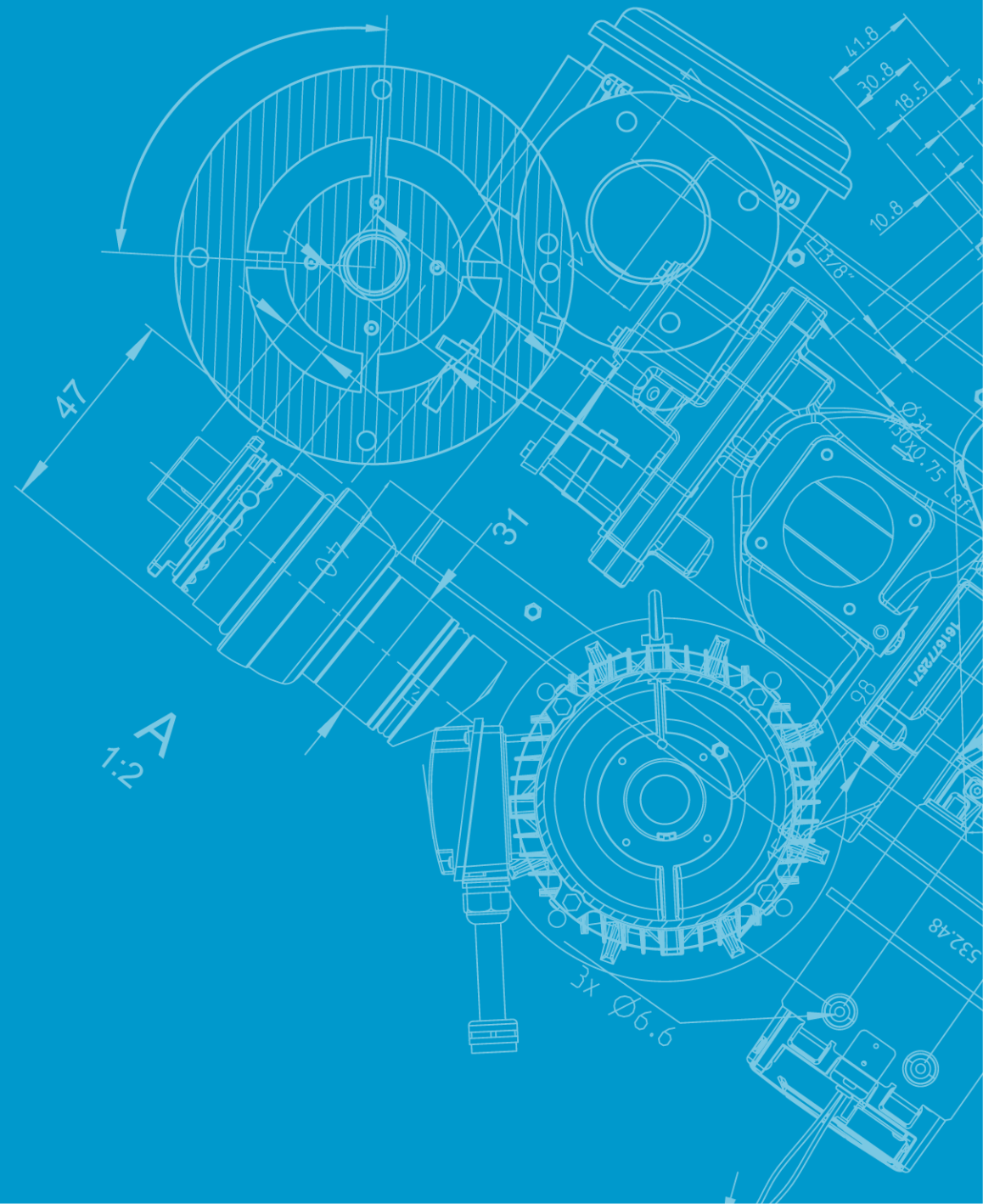


15-30 MPa

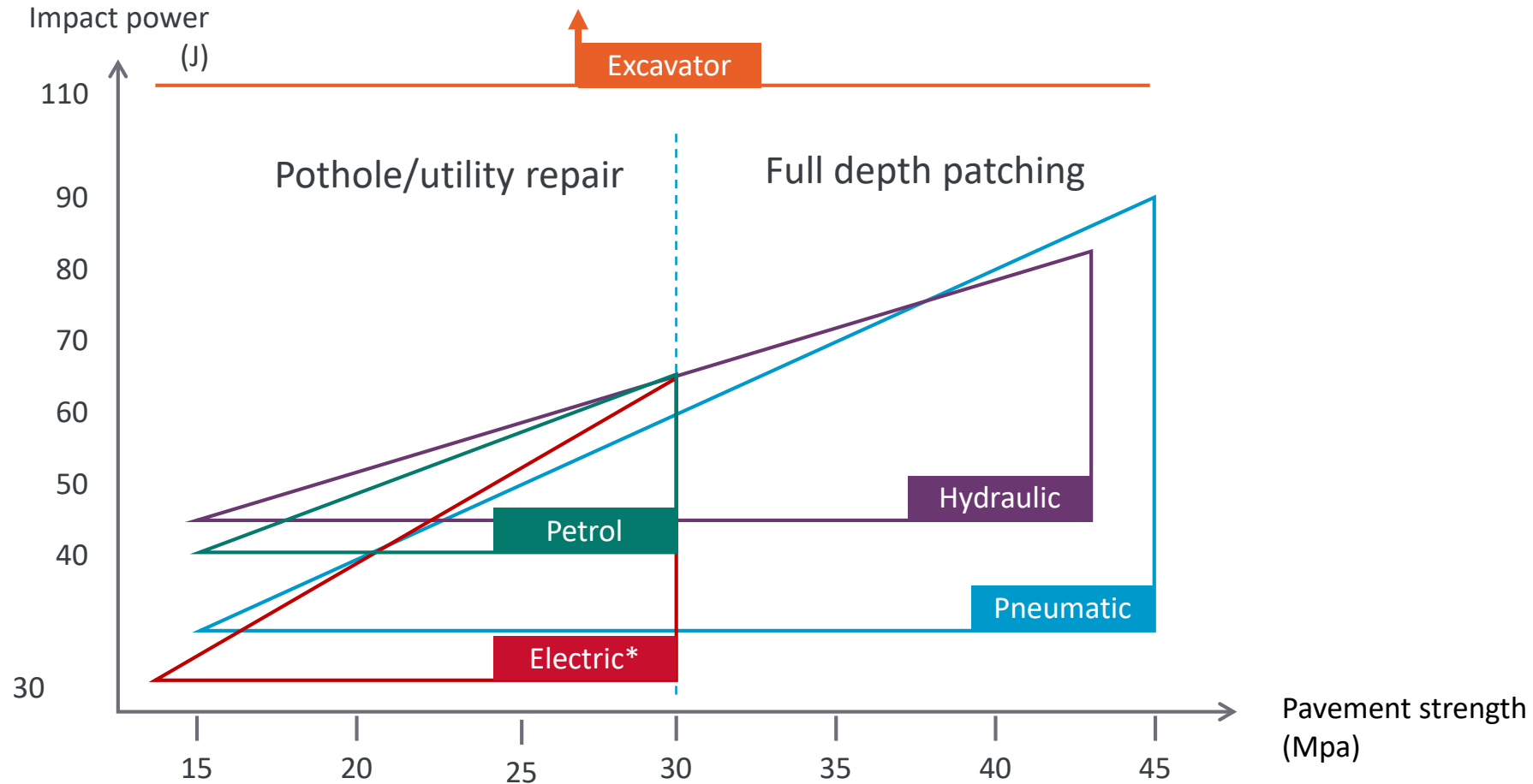


50-140 MPa

How to decide?

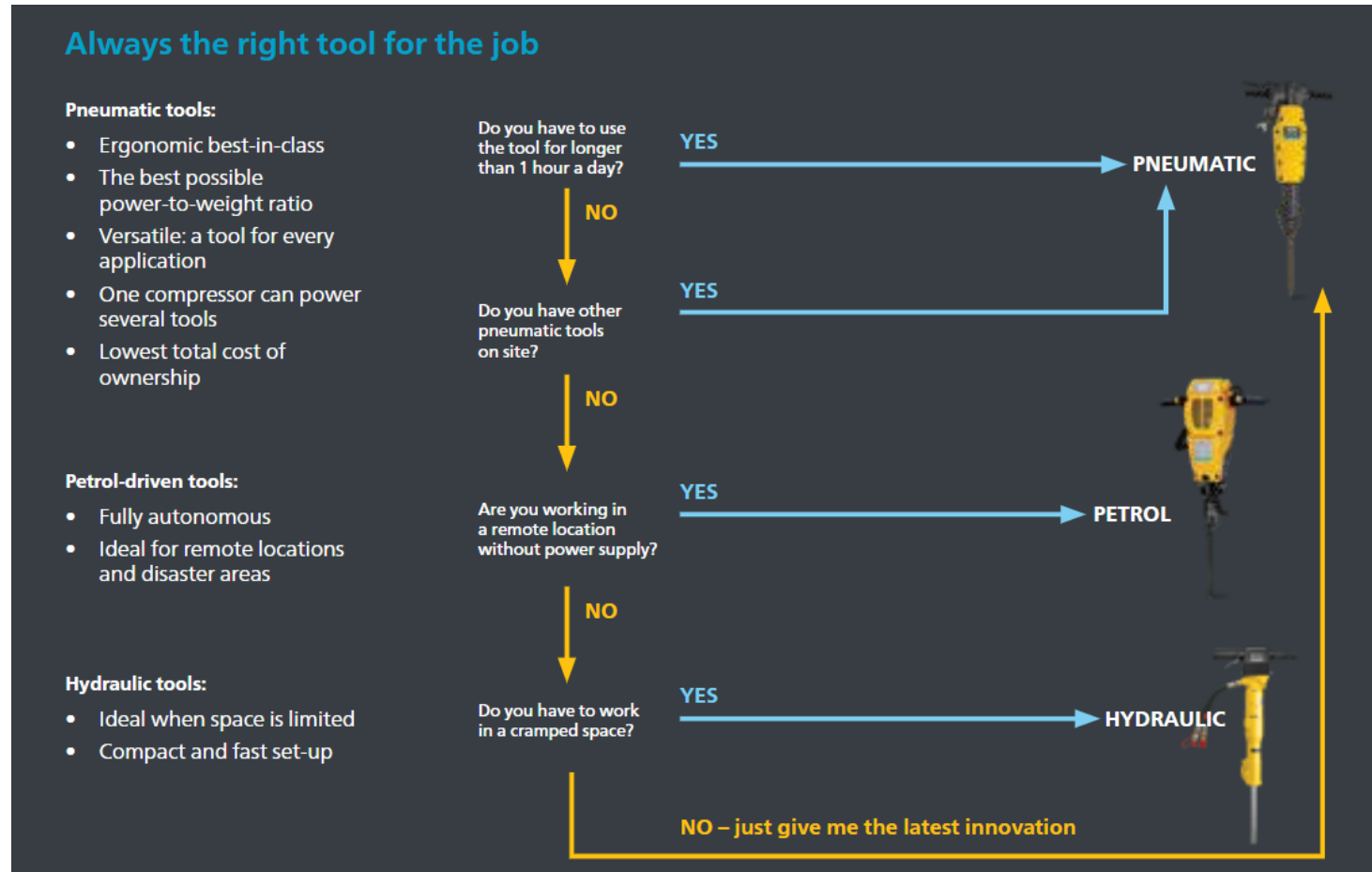


Hand held tools placement

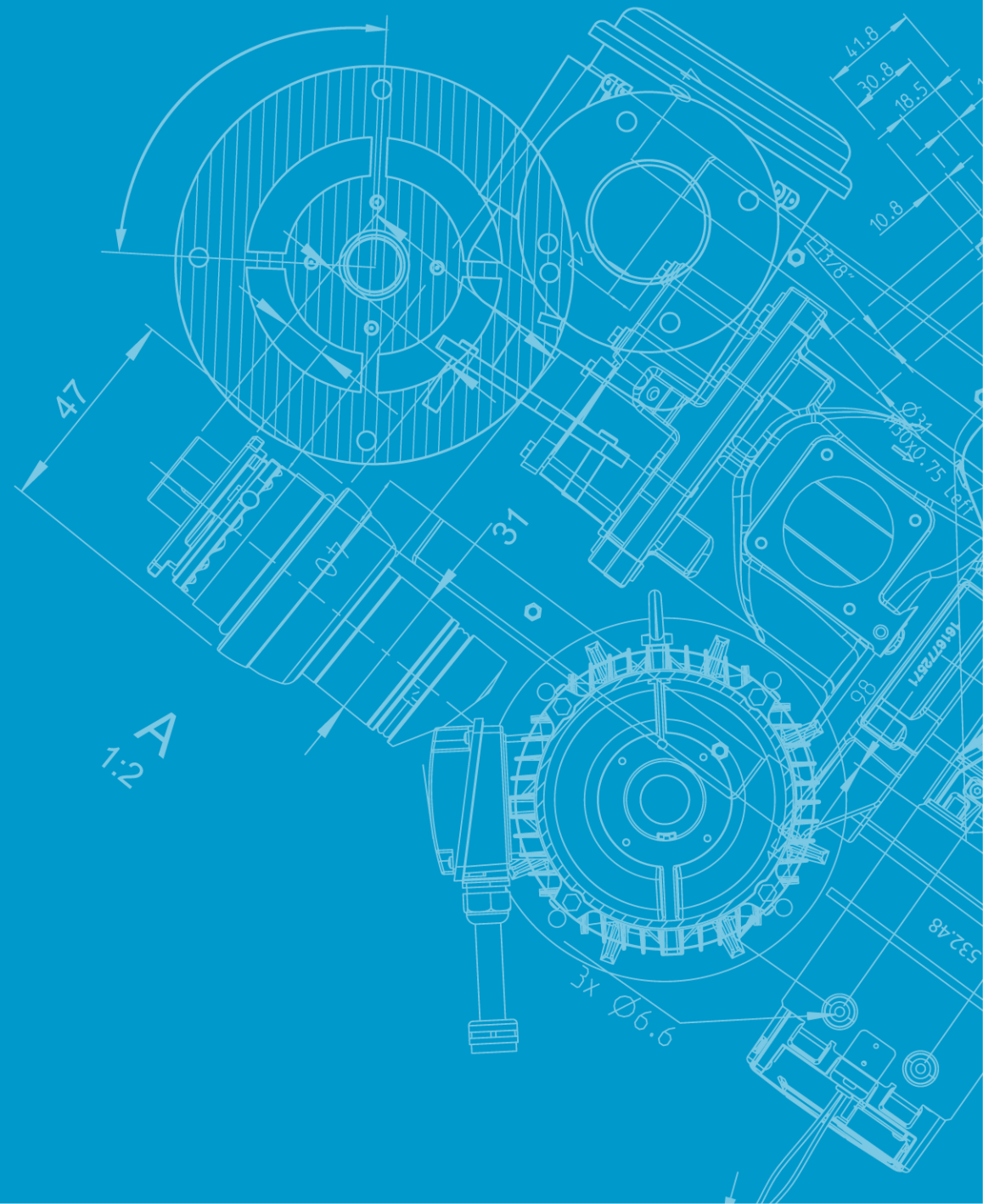


*displayed leaflet max power: PNE/HHH/MDB is average power measured at the tip (different benchmark)

Which tool to choose when



Hydraulic hand held tools



Customer's Preference

**Contractor:
Which tool to go for?**



Power source availability
(Usually a compressor)



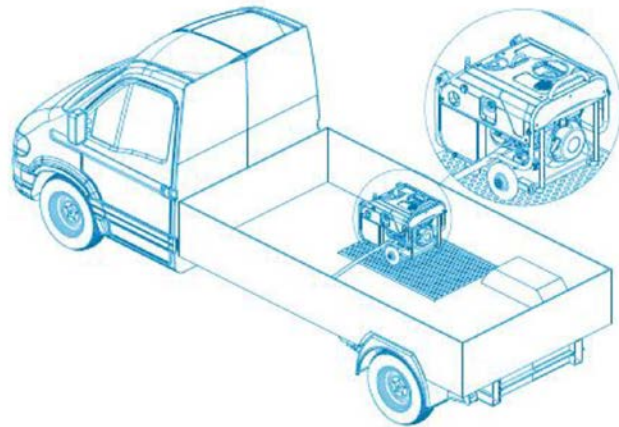
Power + portability
(Hydraulic)



Petrol driven
For hard to access areas

A range full with possibilities

Power pack footprint let take on board plenty of different tools for all kinds of job possible



Breaker Hammer



Cut-off saw



Surface drill



Core drill



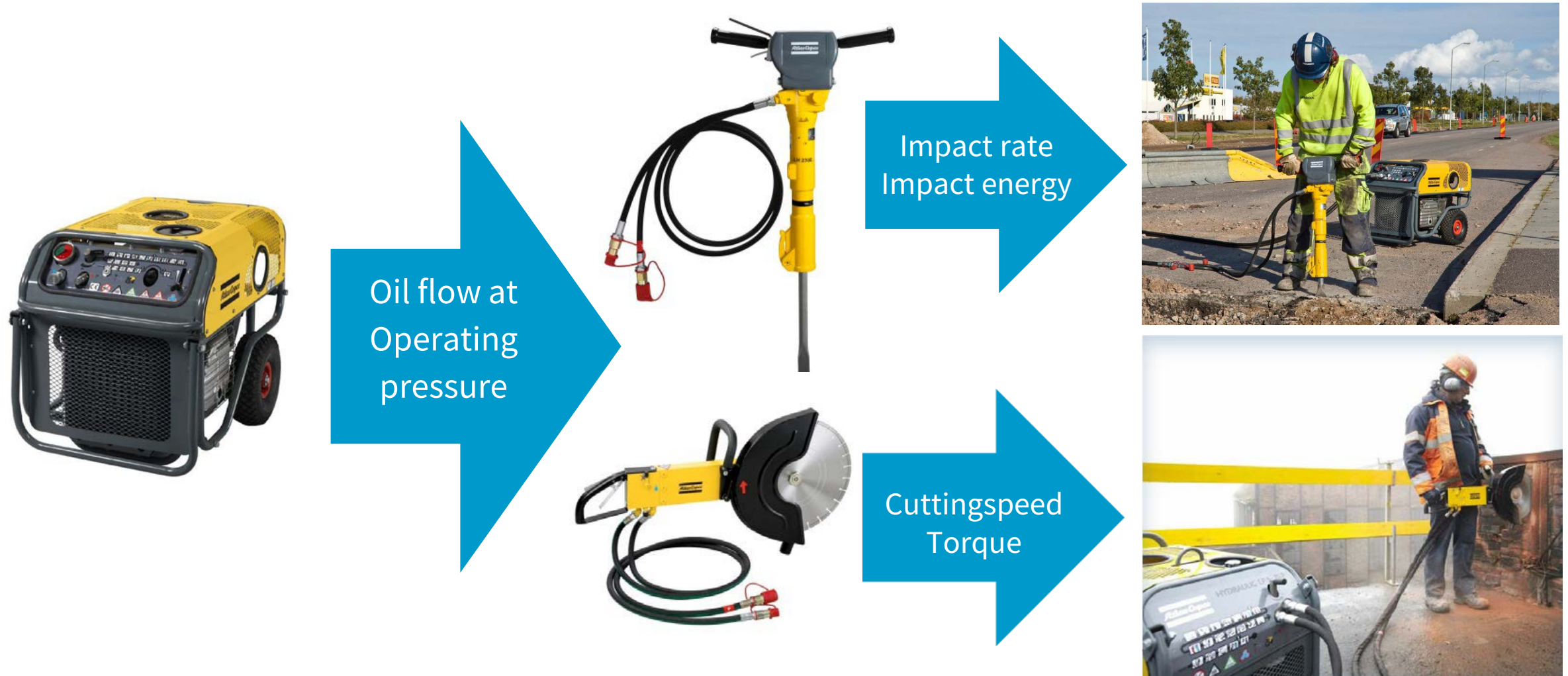
Post driver



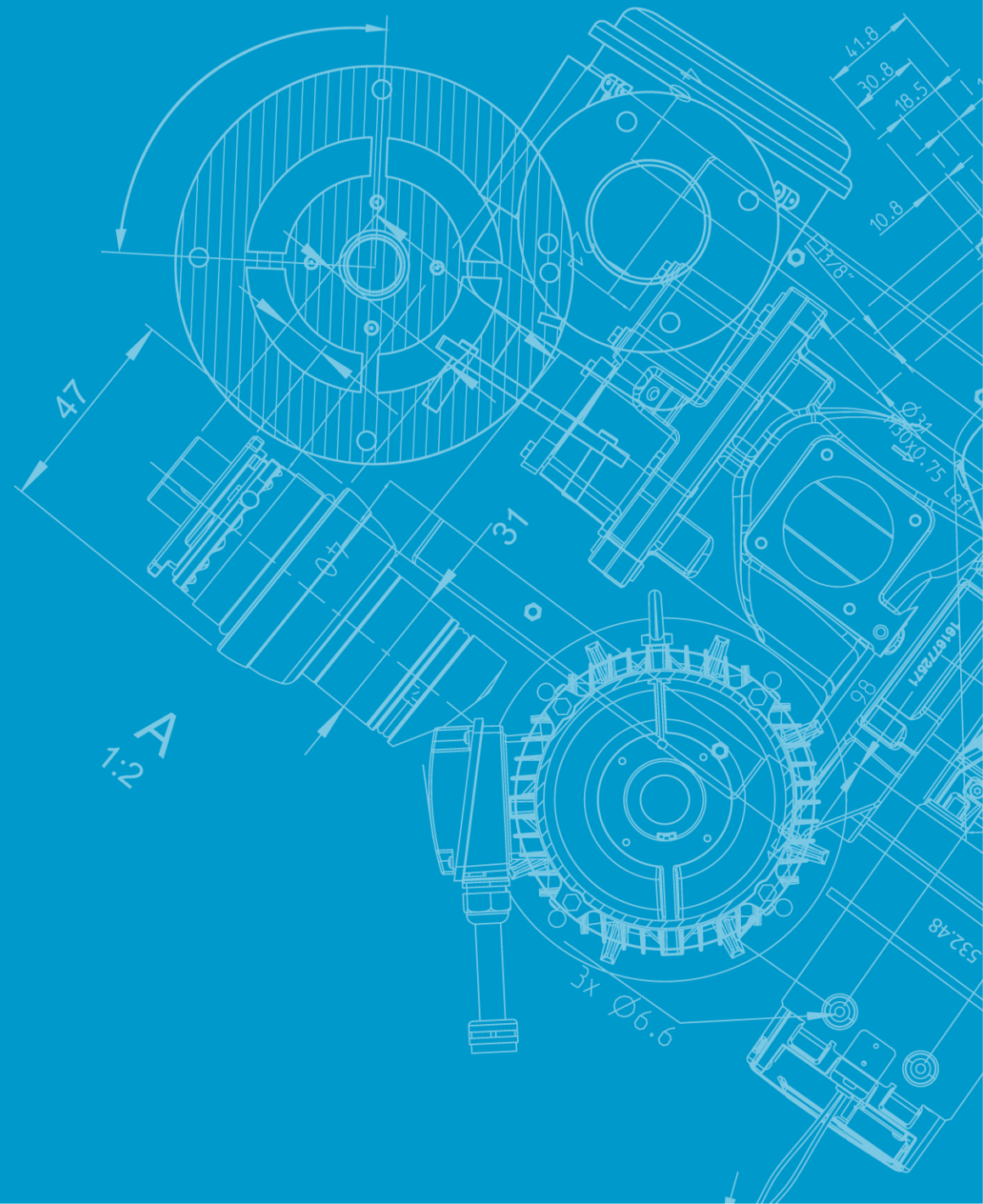
Post puller

All of the tools can work with different flows thus there is an optimal range for different material strength

Hydraulic breakers efficiency



Pneumatic breakers



Customer's Preference

**Contractor:
Which tool to go for?**



Power source availability
(Usually a compressor)



Power + portability
(Hydraulic)



Petrol driven
For hard to access areas

Pneumatic breaker - your choice!



Breakers are selected in relation to **weight**

Flexible pavement
(asphalt)



20-25 Mpa = **15-25 kg**



Highway Rigid pavement
(concrete)



30-36 Mpa = **25-30 kg**



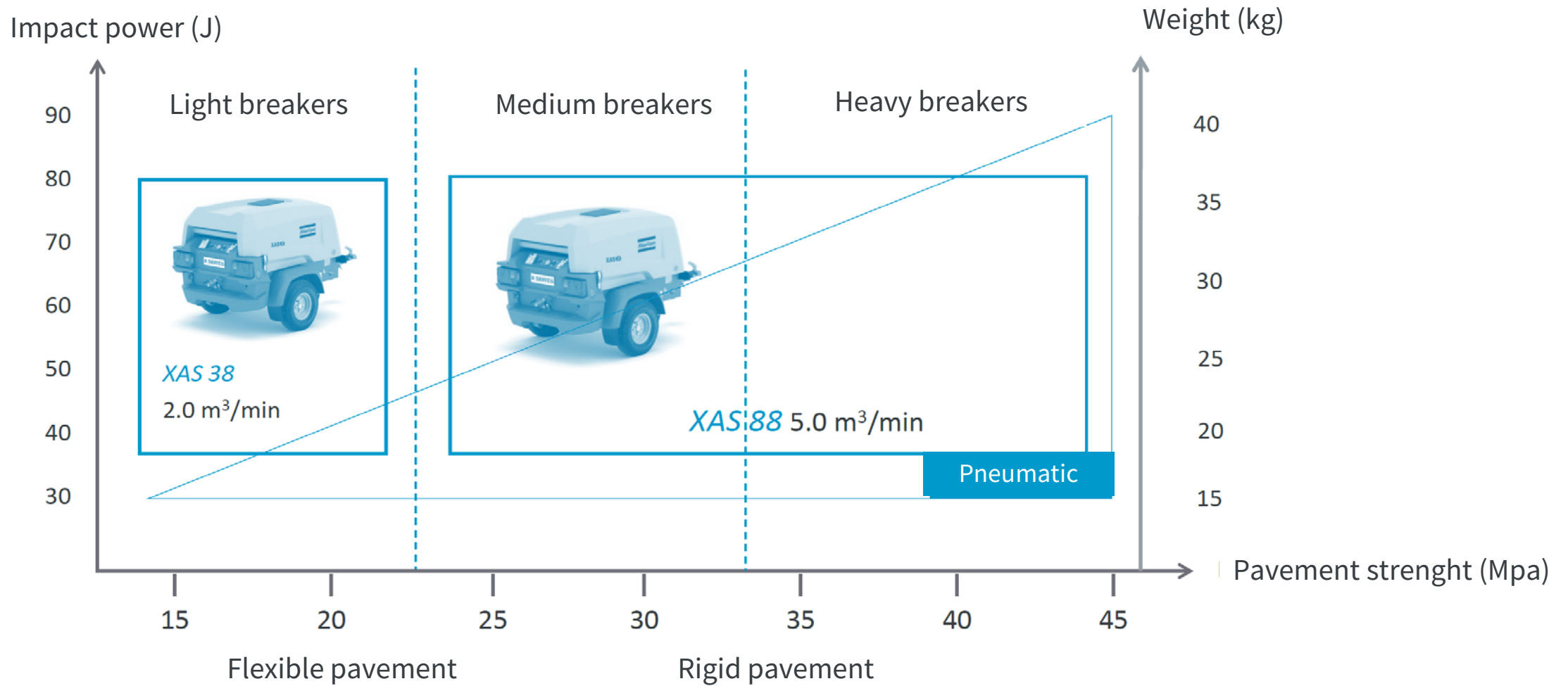
Airport runway



40-45 Mpa = **30-45 kg**



Pneumatic breakers application chart





RTEX Breakers

The next generation **Revolutionary-TEX** range of breakers

Available in 2 weight classes



RTEX 15
17 kg | 15.4 l/s



RTEX 25
25 kg | 19 l/s

AIR CONSUMPTION
18 l/s

50%
LESS AIR CONSUMED



More flexibility With petrol driven hand held tools



Customer's Preference

**Contractor:
Which tool to go for?**



Power source availability
(Usually a compressor)



Power + portability
(Hydraulic)



Petrol driven
For hard to access areas



Petrol driven hand held tools

Smallest footprint with 65J (49 ft..lb energy output)



- 65J impact power at 24kg
- With no hoses or cables

=



- 27-40kg breaker 45 ft² footprint
- 26 Hp
- Total weight ~ 1322 kg

OR



- 27 kg breaker
- 4 ft² footprint
- 9 Hp
- Total weight ~ 125 kg

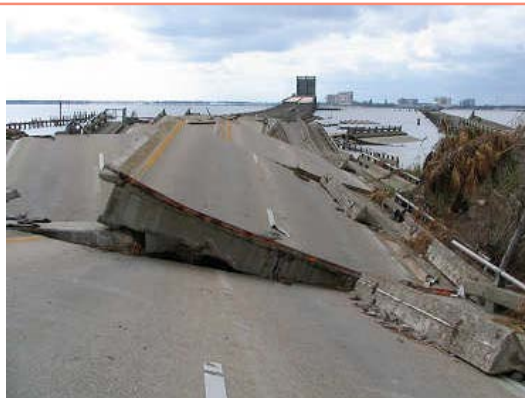
Petrol driven hand held tools

Made for any remote jobs, take it anywhere

It is impossible to bring an heavy equipment on site



It is impossible to work with an excavator



Demand for the tool:

- Self-propelled
- Light and compact
- No compromise on power
- Easy to transport
- Zero set up time



Petrol driven hand held tools

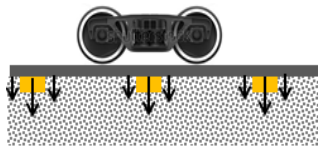
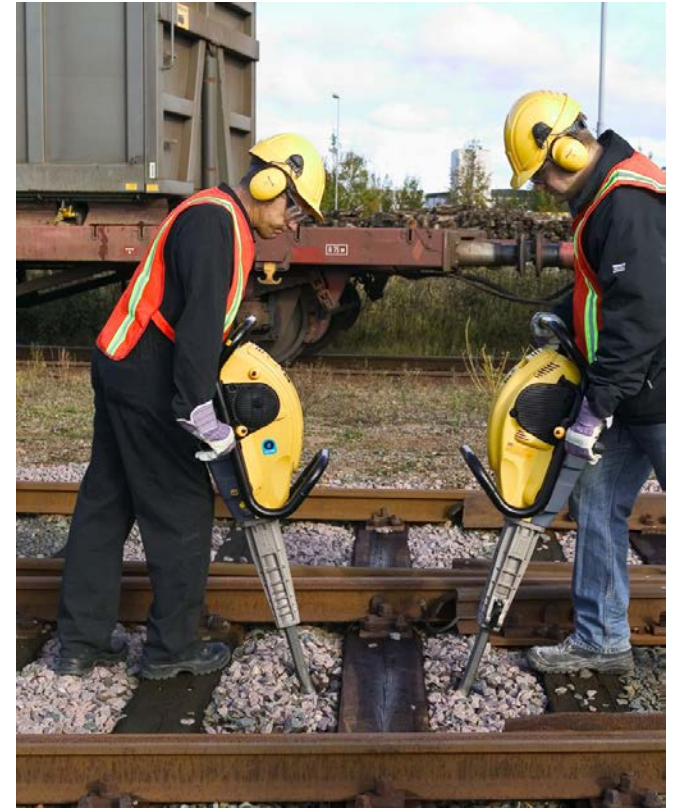
Special utilities

- Tie tamping with Cobra the most cost effective solution








Situation:

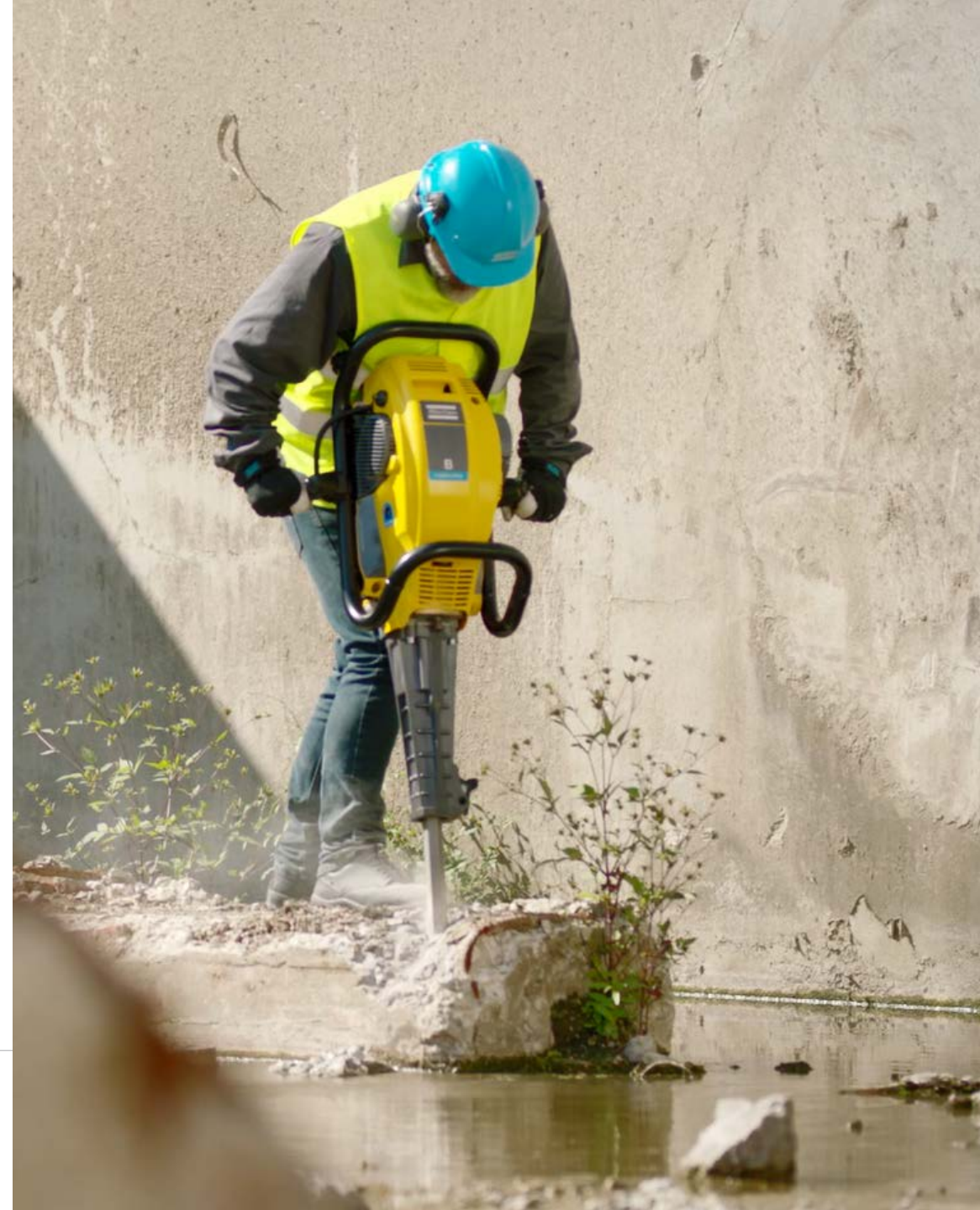
When a heavy cargo goes down the railway the load is being transferred to the ballast under the ties. As the railway goes up and down when train follows the path, the ballast is being pushed out from underneath the tie.



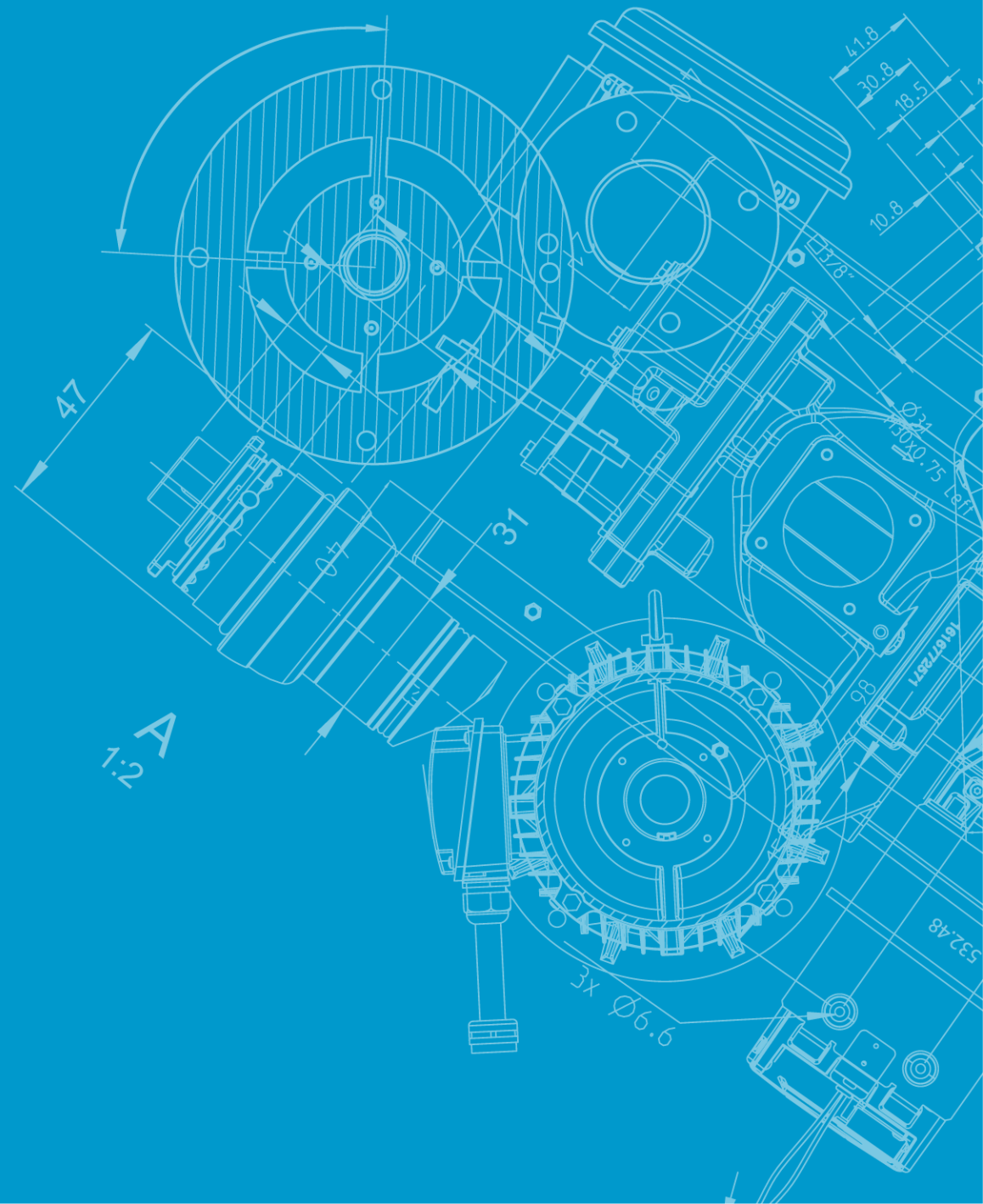
Petrol driven hand held tools

5 reasons to choose Cobra

 Higher Productivity	65J of energy output <25kg , smallest footprint offering high power to weight ratio
 Higher Portability	Light weight & Compact with highly efficient 2kW onboard engine offering 65J of output anywhere
 Higher Versatility	Enables to perform various jobs with one Cobra PROe just by switching working tools
 Easy of Use	The ergonomically positioned handles, operator interface makes it the easiest tool to operate
 Operator health & Safety	Lower hand-vibration and noise exposure level – less fatigue and extended operating hours



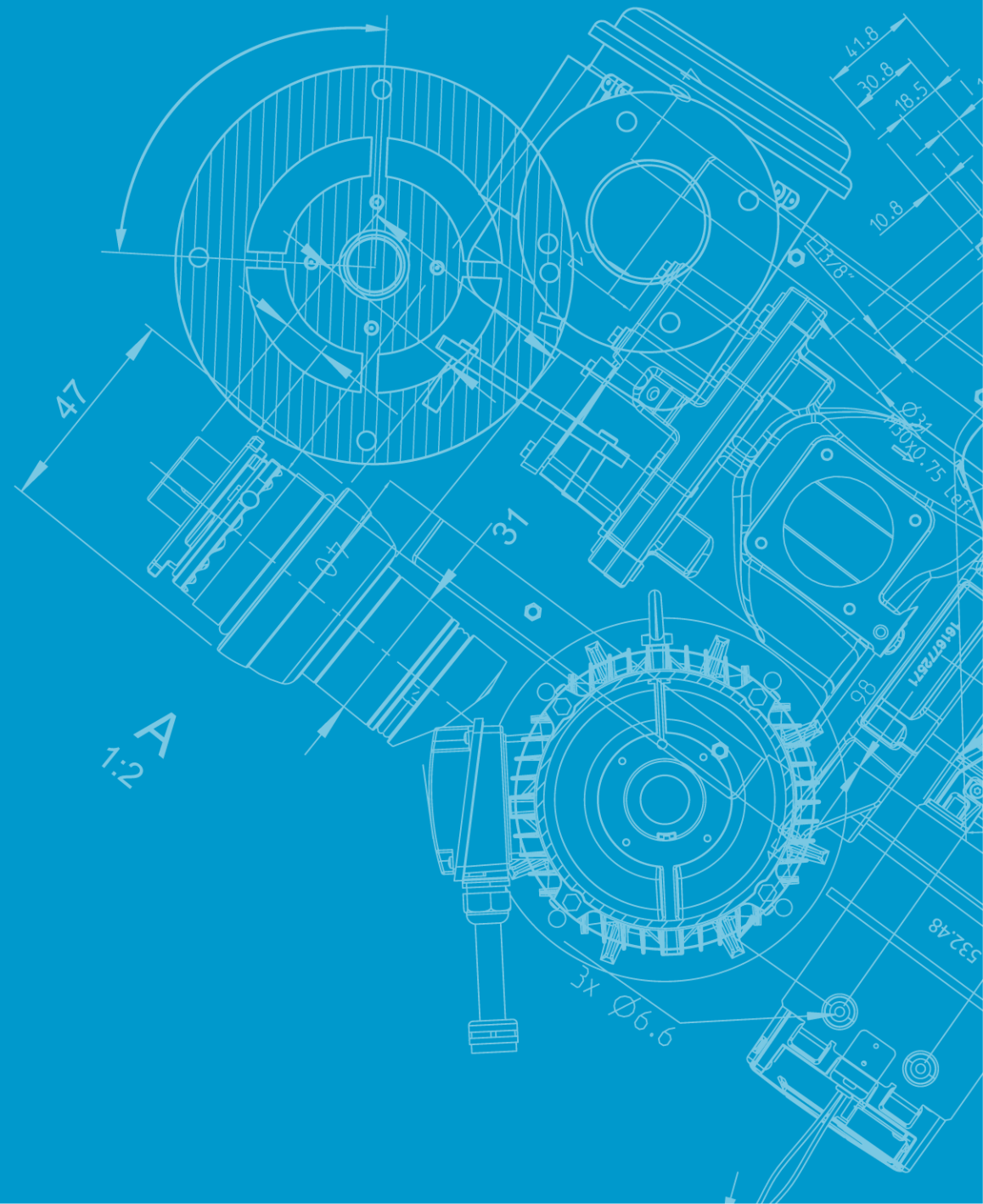
What about electric?



Is electric an alternative?

S.No	Influencing Factors	Electric	Battery Pack	Pneumatic breakers	Petrol driven breakers
1	Power	+	--	+++	+++
2	Set-up time	+	++	--	+
3	Productivity	-	--	+++	+++
4	Price (purchase)	++	++	-	+
5	Maintenance	++	+	+	+
6	Safety	-	++	++	++

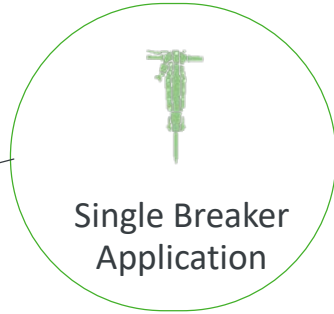
Hand held tools and health ?



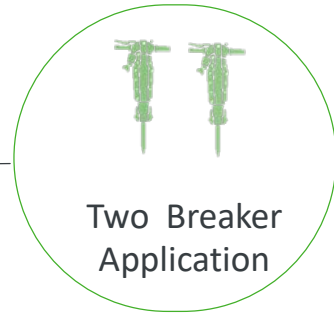
Collect your dust – with DCP 10



Onsite pneumatic
dust collection system



Single Breaker
Application



Two Breaker
Application



Single Rockdrill
Application



**DCP 10
Single Tool
Kit**

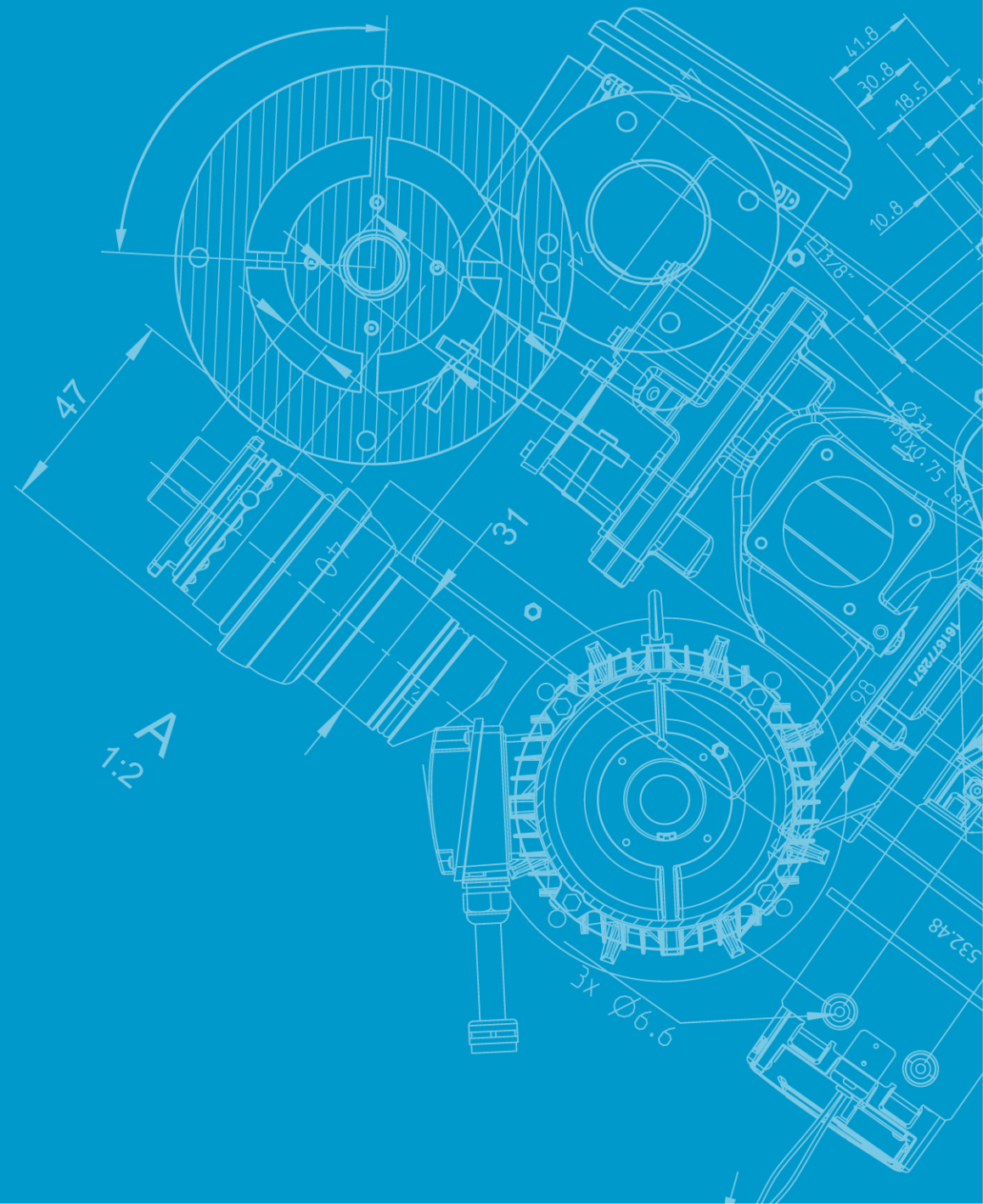


**Two Tooler
conversion kit**



**DCP 10
Rock Drill Kit**

Summary and hands on



Man or Machine?

Aspects for our choice

S.No	Criteria for Choosing the tools	Pneumatic breakers	Hydraulic breakers	Petrol driven breakers	(mini) Excavator
1	Power Source	Compressor (Portable/Electrical)	Powerpack, Mini-excavator, Backhoe etc	No Power source available	No Power source available
2	Application	huge variety	versatile focused on road, highway, concrete	concrete and rock	versatile
3	Duration of Job	8hrs/shift; Long term	1-4 hours / Intermittent	1-2 hours / Intermittent	1-8 hours
4	Accessibility				
	(a) Foot Print	X	x/3	x/5	min x*3
	(b) Ease of transport	need tow or lift	ready to go in truck	backpack	Trailer is needed
5	Location of Job	Construction/Job site	Public area, heavy traffic	Remote	Everywhere (space limitation)

Man or Machine?

Aspects for our choice

S.No	Criteria for Choosing the tools	Pneumatic breakers	Hydraulic breakers	Petrol driven breakers	(mini) Excavator
6	Current fleet majority	Compressor (Portable/Electrical)	Powerpack, Mini-excavator, Backhose etc	No Power source available	No Power source available
7	Regulation & Safety	Low noise, VR, Dust, weight, city jobs, CE, engine emissions etc			
8	Productivity	high productivity	high productivity at smaller weight and footprint	power to weight ratio, not heavy productive	High productivity
9	Price/Financial value	ROI, TCO	Low investment & package	down time	High investment
10	Setup time	1-5 min	1-5 min	1min	30 min- 2 hours
11	Customer competence/ operator recommendation	easy	easy	easy	harder

Man or Machine?

Decide on your needs

Access

Reliability

Wellbeing



Flexibility

Endurance

Power

Man or Machine?

Do you need decision support? Book a live demonstration



**Chris, our
BAUMEISTER**

Phone: **+49 173 7077430**

Book a **live demonstration** now
and get to know the advantages!

Whether demolition breakers, rock drills, ground rod drivers, impact wrenches and cut-off saws - at Atlas Copco, we understand the business when it comes to equipment for the construction industry.

atlas-copco.com

Atlas Copco

Man or Machine?

The game

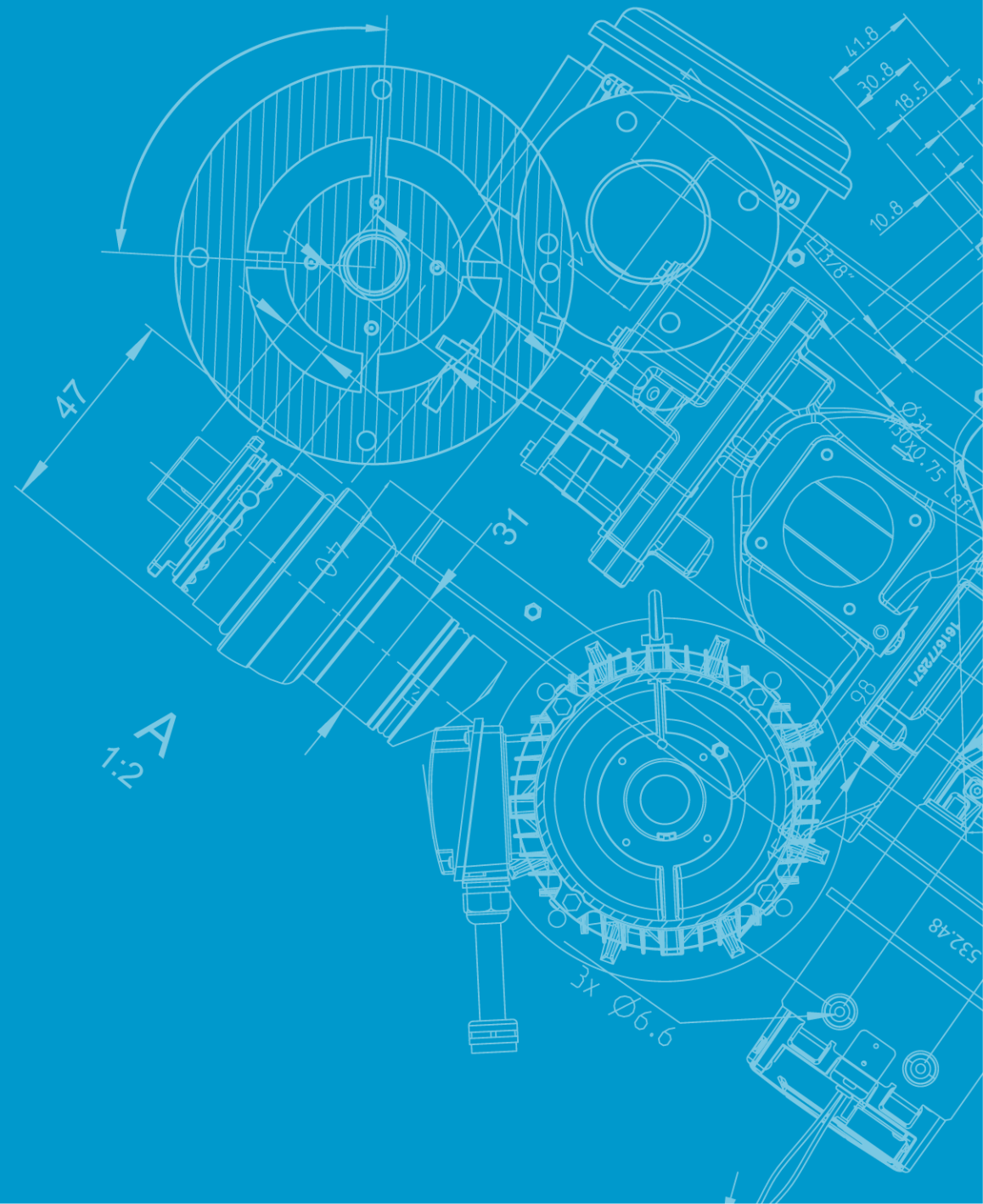
The route is the goal



For the future, it is important that the focus is on the cooperation between humans and machines and not try to replace humans with machines. The real potential lies in the symbiosis.



Wij beantwoorden uw vragen



Uw aanspreekpartner



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The Atlas Copco logo consists of two horizontal white bars, one above and one below the brand name. The brand name "Atlas Copco" is written in a white, elegant, cursive script font, centered between the two bars.

Atlas Copco

Stay safe and thanks for your attention!

