



# Breaker Boom X88-Series



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Pictures may include options and additional equipment.

## INTRODUCTION

**Xrock X88-Series** of breaker booms are designed for hard rock breaking and raking in grizzly applications. The boom structure is optimized for underground mining conditions with small pedestal footprint and flexibility in tight space.

The boom sections are strengthened with additional plates to increase load carrying capacity and torsional stiffness. The X88-series of booms has a unique flexibase design to reduce vibrations in boom slew gear and foundation. X88-Series consist of two different models from 5.5 m horizontal reach up to 6.7 m.

Xrock X88-Series booms are designed to carry hydraulic breakers from 1300 kg to 2300 kg and especially tailored for Normet Xrock XB breakers. The system is powered by Normet Xrock Hydraulic power units which are streamlined to fit for the Normet Xrock breaker and the boom.

# normet

## XROCK®

### POWER UNITS

All Normet Xrock power units offer a streamlined power resource for breaker booms and breakers to maximize the performance. The Power units are modular systems with wide access points for service. Power unit motor control panels are PLC controlled. All electric connections and panels are IP65 rated.

Power units have minimum 110 % capacity integrated trip drays for hydraulic oil to meet environmental regulations and avoid oil leakages. The system can be equipped with an automatic fire extinguisher.

### CYLINDER SLEW WITH ROBUST PEDESTAL

X88-Series of booms are slew ring type systems. The slew ring enables 360 deg maximum operation area. Boom control valve and rotating gear are easily serviceable and located in pedestal. The pedestal has a vibration isolation system called flexibase.



## RELIABLE CONTROL SYSTEM AND ELECTRONICS

The boom is controlled by accessorial radio remote control.

All exposed control components are IP65 rated. Cables and connections between boom, radio controller and power unit are designed for harsh mining environment.



## AVAILABILITY FOR STATE-OF-THE-ART AUTOMATION

# XROCK<sup>®</sup>

## AUTOMATION

All Normet Xrock breaker booms have availability for Xrock<sup>®</sup> Automation platform. Xrock<sup>®</sup> Automation system optimizes the mine's processes in a responsible way and gives you the time to focus on anticipating and developing your business.

Xrock<sup>®</sup> Automation lets operators' control everything ergonomically from the safety of a control room. The Xrock<sup>®</sup> Automation system itself is specifically designed to be user-friendly: it's easy to learn and intuitive to use, so users will quickly get acquainted with productive work. Boom operation, management and diagnostics are available straight from the control station.

All Xrock<sup>®</sup> Automation platforms are made flexible and scalable to the mine's current and future demands. As your business grows and develops, we'll deliver you readily available solutions straight from the shelf.



## TECHNICAL SPECIFICATION

### BOOM

	X88-540R	X88-650R
Maximum reach (incl. nominal breaker), m	7.9	9.3
Horizontal reach, max (breaker vertical), m	5.5	6.7
Vertical reach, max (incl. nominal breaker), m	4	4.6
Nominal breaker length, m	2.7	2.7
Lift boom length, m	2.75	3.5
Dipper boom length, m	3.5	3.5

Welded high tensile steel plate structure  
 Reinforced swivel points  
 Heat treated multi alloy steel pins  
 Heat treated steel bushings

### PEDESTAL

Welded steel plate structure  
 Bolted on steel assembly ring  
 Slewing ring with internal gear  
 High torque hydraulic motor and gearbox

Slew angle 360°

Foundation plate width 1.8 m  
 Foundation plate length 1.8 m

### BREAKER

With boom specified configuration  
 Recommended Normet Breakers:

XB18  
 XB23  
 XB27  
 XB32

Boom installed breakers includes 1 pcs. blunt tool, Idle blow protection standard on XB11 and above breaker models.

Recommended weight 1300 kg - 2300 kg

### CONTROL SYSTEM

Control valve with 4 proportional sections and 1 on/off section to control:

Boom movements  
 Breaker

Five mechanical control levers on the main control valve.

Can be equipped with a Radio control unit sold as an accessory.

### HYDRAULIC SYSTEM

Power unit PU37-87 to PU45-121

#### Cylinders:

Double acting cylinders with self-aligning bearings (ISO6020/1)  
 Easily replaceable seals

Max. pressure 25.0 MPa

#### X88-540R

Hoist 125/80-1125 mm  
 Dipper 160/80-1040 mm  
 Breaker tilt 150/80-750 mm  
 Hydraulic lifting force 22 kN

#### X88-650R

Hoist 125/80-1125 mm  
 Dipper 160/80-1250 mm  
 Breaker tilt 150/80-750 mm  
 Hydraulic lifting force 22 kN

### POWER UNIT

Constant displacement gear pump

Tank with 110% drip tray, service hatch and oil level indicator

Oil filtration 10 µm

Pressure line filter clogging indicator

Electric oil level switch

Thermostat controlled air cooler for oil with 0.25-0.37 kW fan

Oil pressure gauge 0-25.0 MPa

Pressure relief valve 23.0 MPa

## PU45-121

Pump displacement	121 cc
Pump capacity at 1500 rpm	180 l/min
Pump capacity at 1800 rpm	215 l/min
Oil tank	400 l

## PU55-151

Pump displacement	151 cc
Pump capacity at 1500 rpm	220 l/min
Pump capacity at 1800 rpm	265 l/min
Oil tank	400 l

## REMOTE CONTROL SYSTEM

Wireless remote control with 2 joysticks and cable support

The following machine components can be controlled by radio remote control:

- Boom slew left/right
- Boom lift up/down
- Boom stick in/out
- Breaker tilt in/out
- Breaker on/off
- Power unit start/stop

## ELECTRICAL SYSTEM

Mains supply voltage:

- 50 Hz
  - 380 V (IEC)
  - 400 V (IEC)
  - 415 V (IEC)
  - 420 V (IEC)
  - 525 V (IEC)
  - Special voltage
- 60 Hz
  - 440 V (IEC)
  - 460 V (IEC)
  - 480 V (IEC)
  - 480 V (cUL/CSA)
  - 575 V (IEC)
  - 575 C (cUL/CSA)
  - Special voltage

Flange mounted squirrel cage electric motor:

	1500 rpm (50 Hz)	1800 rpm (60 Hz)
PU18-43	18 kW	22 kW
PU30-63	30 kW	36 kW
PU37-87	37 kW	44 kW
PU45-121	45 kW	54 kW
PU55-151	55 kW	66 kW

## TECHNICAL DOCUMENTATION

Standard documents:

Instruction manuals, hard copy 1 pcs:

- English
  - Russian
  - One of destination EU languages

Spare parts manuals, hard copy 1 pcs:

- English

PDF manuals on USB-stick 1 pcs, includes instruction and spare parts manuals

Boom placement drawing superimposed customer's plant lay-out drawing

Dimensional (G.A.) drawings

Coverage drawing

Pedestal load data table

Foundation plate drawing

Additional documentation:

- Other than standard language manuals

# ACCESSORIES

## MAIN ACCESSORIES

- PU37-87 Power unit
- PU45-121 Power unit
- XB18 (XB18LIBPB) Hydraulic Breaker
- XB23 (XB23LIBPB) Hydraulic Breaker
- XB27 (XB27LIBPB) Hydraulic Breaker
- XB32 (XB32LIBPB) Hydraulic Breaker
- Wireless remote control
  - 434 MHz
  - 458 MHz (US, Canada, Mexico)

One Power unit and one Breaker can be selected for the boom.

Boom installed breakers include 1 pcs. blunt tool. Idle blow protection standard on XB11 and above breaker models.

## PROCESS PRODUCTIVITY

- Automatic lubrication system
- Manual lubrication system
- Automatic breaker lubrication system
- Off-line oil filtering system

Automatic and Manual lubrication cannot be selected together.

## SAFETY (BOOM)

- Slew limiter kit
- Boom limiter kit

## SAFETY (POWER UNIT)

- Fire extinguisher system

## COLD CLIMATE ACCESSORIES (POWER UNIT)

- Oil heater
- Oil circulation valve

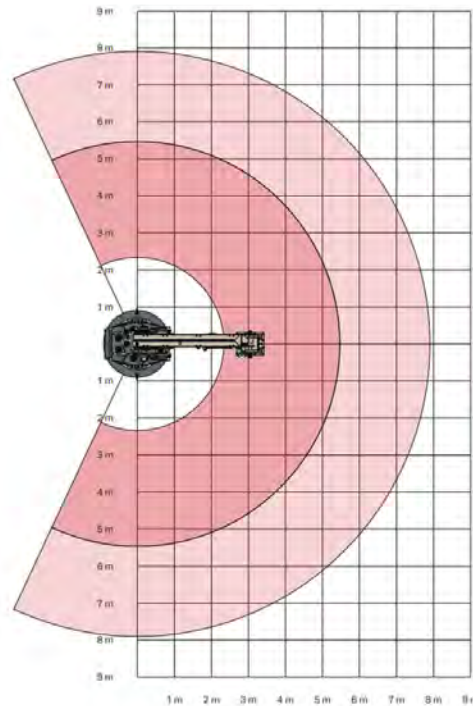
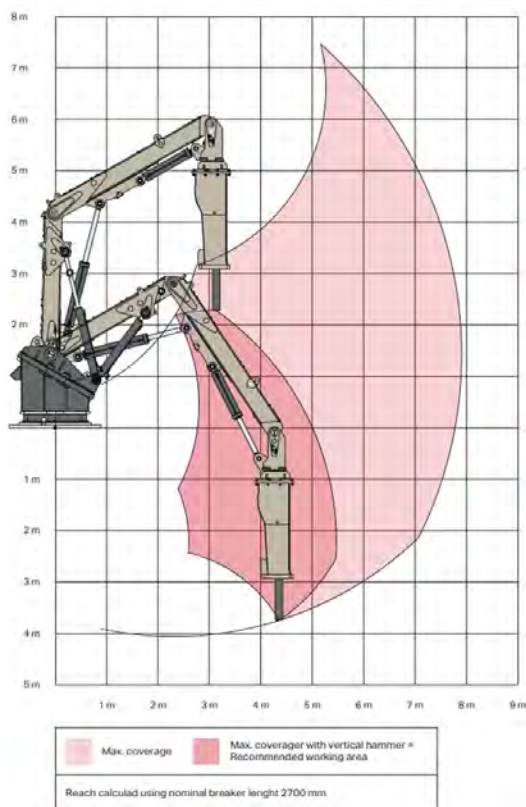
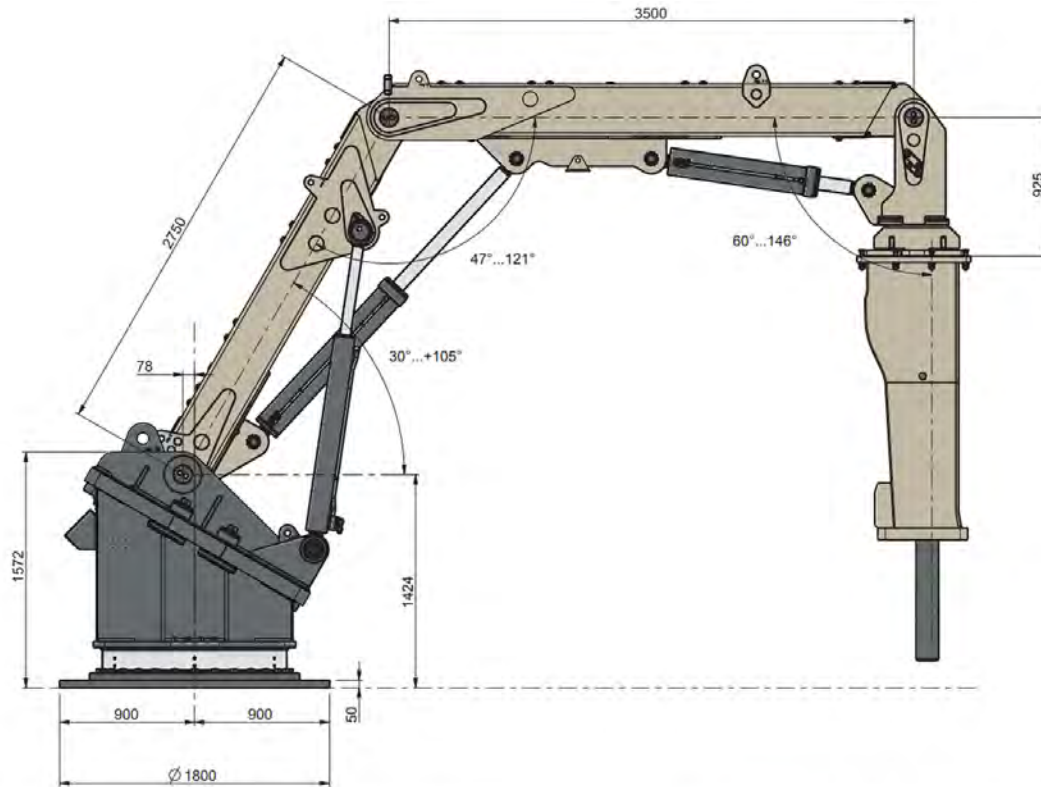
## OTHER ACCESSORIES

- Extended hydraulic hoses, 12 m
- Extended control cable, 20 m
- Extended valve control cable, 12 m
- Special voltage
- Special motor

Tropical motor, special insulation, above 2000 m M.A.S.L. etc..

## DIMENSIONS

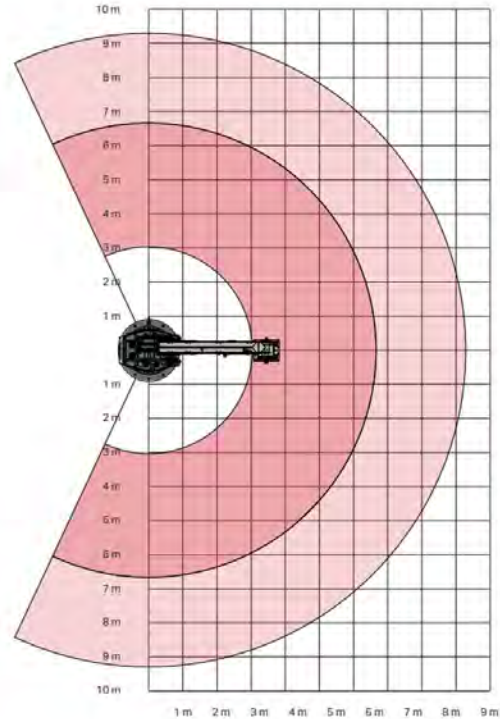
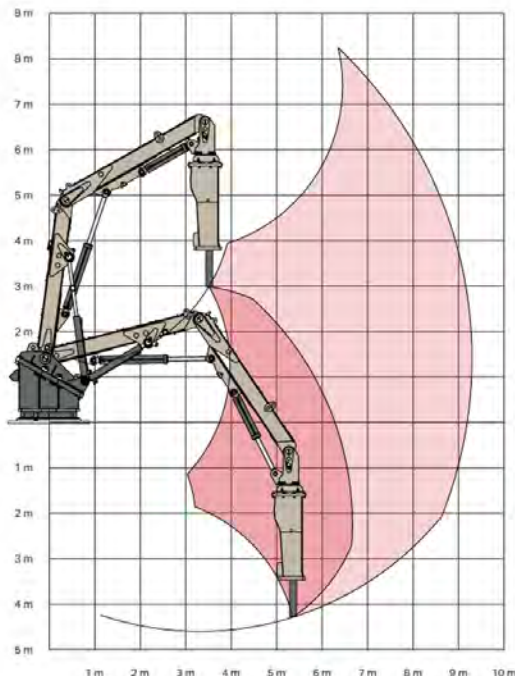
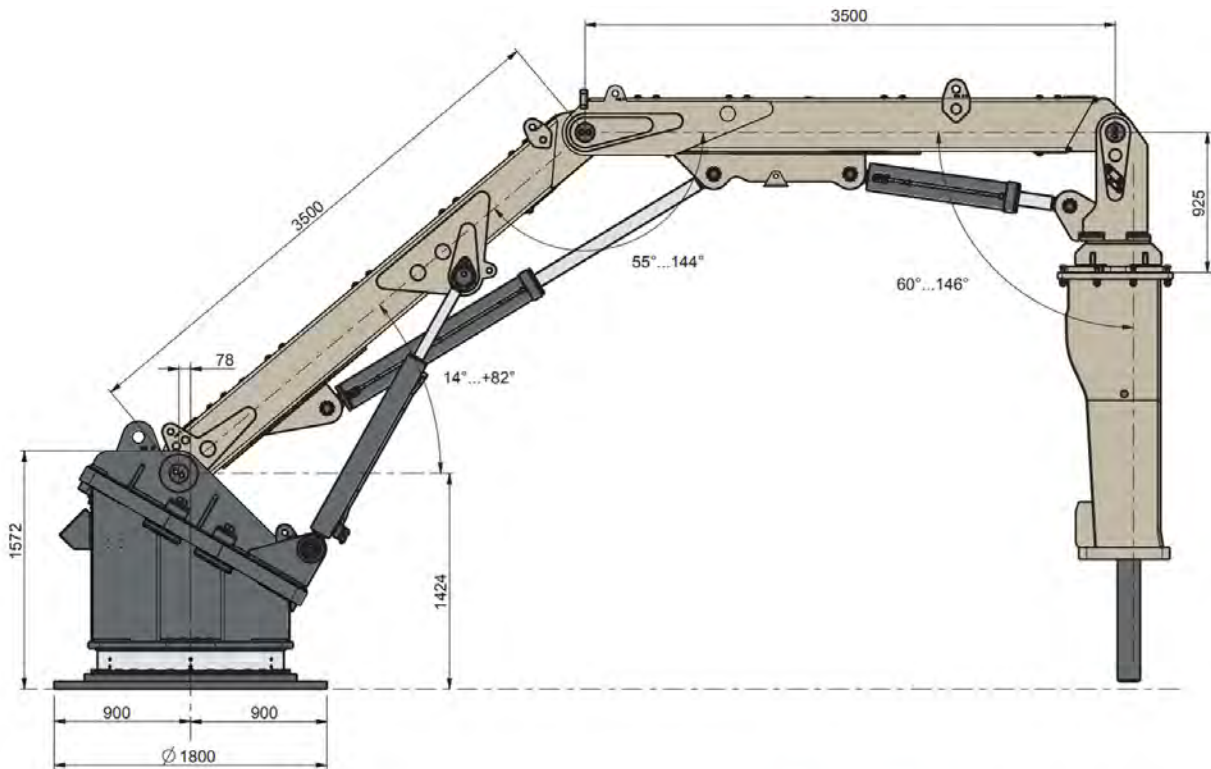
### SIDE VIEW & REACH AREA X88-540R



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## SIDE VIEW & REACH AREA X88-650R



Max. coverage
  Max. coverage with vertical hammer = Recommended working area

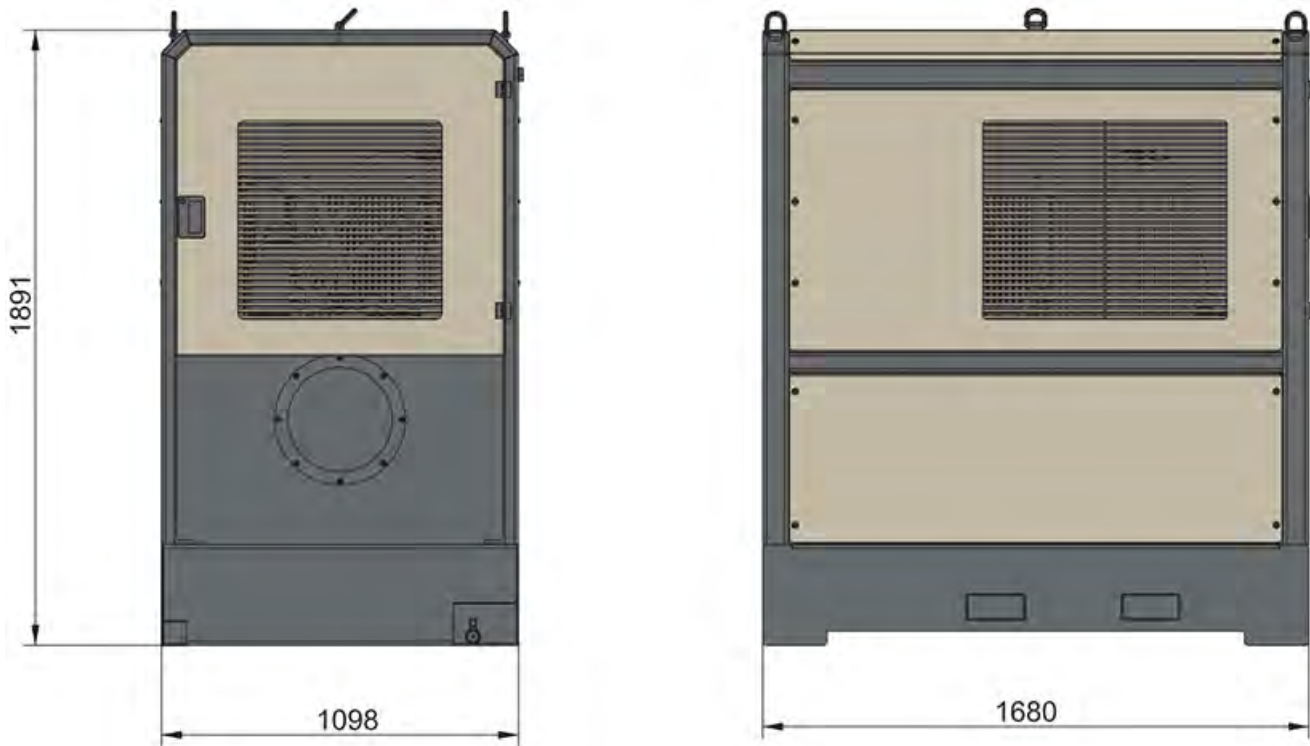
Reach calculated using nominal breaker length 2700 mm

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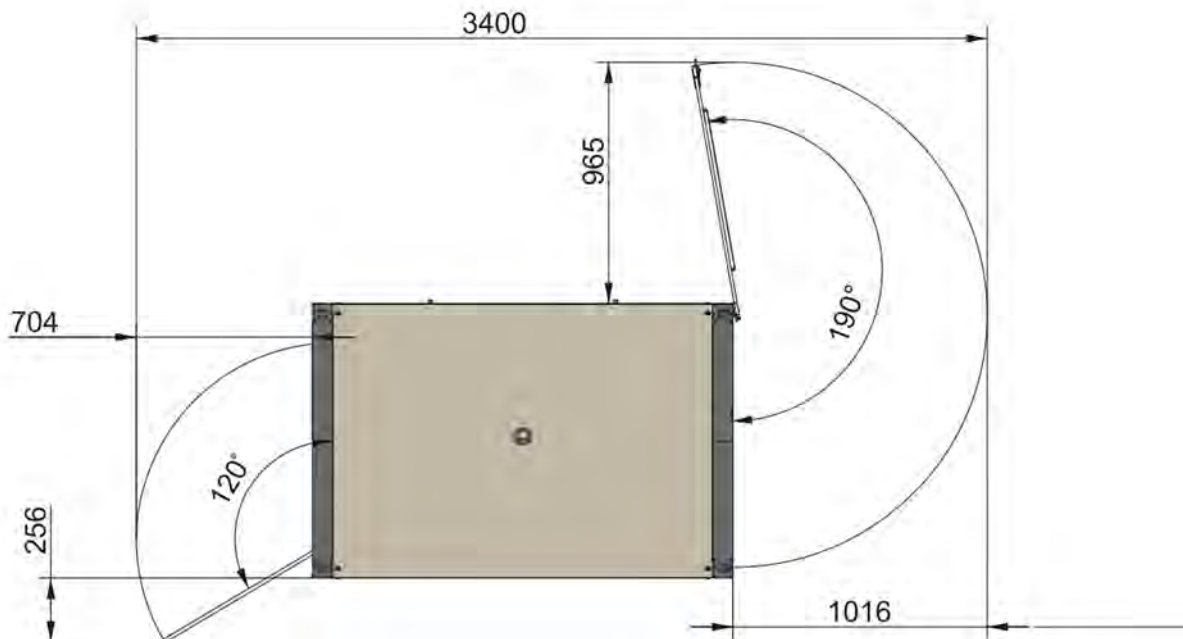
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## SIDE VIEW POWER UNIT



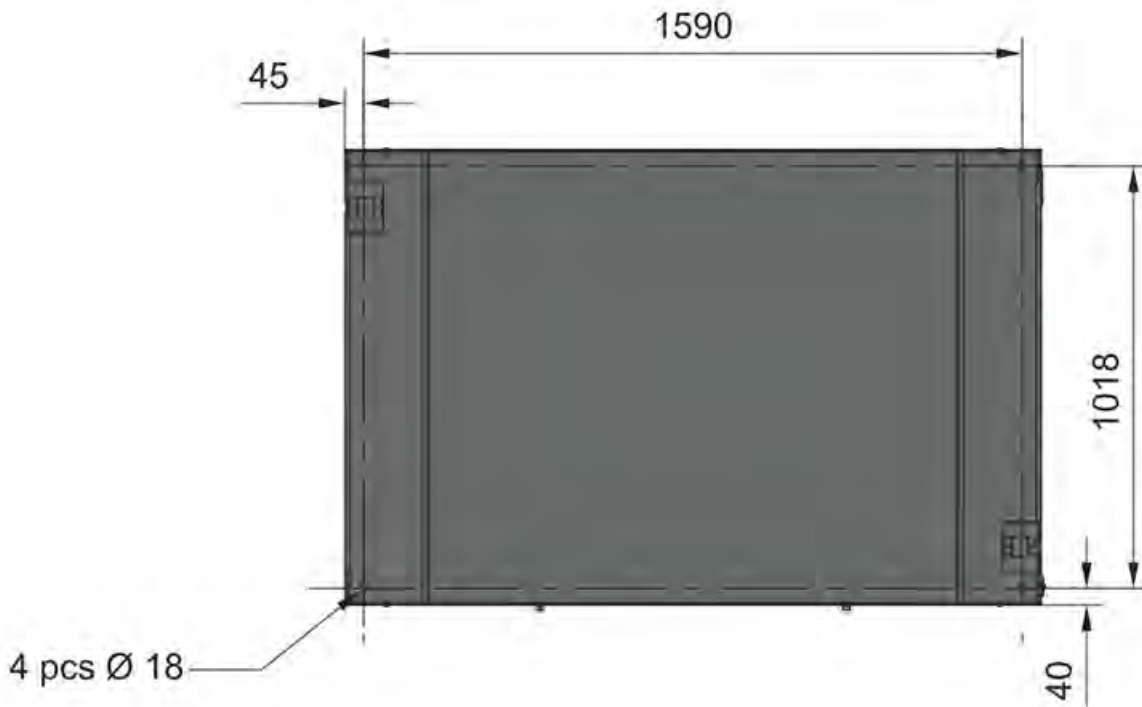
## TOP VIEW POWER UNIT



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## BOTTOM VIEW POWER UNIT



## OPERATING WEIGHT (WITHOUT BREAKER)

Base machine X88-540R	9350 kg
Base machine X88-650R	9700 kg
<b>Power units (without oil):</b>	
Base machine PU18-43	800 kg
Base machine PU30-63	900 kg
Base machine PU37-87	950 kg
Base machine PU45-121	1200 kg
Base machine PU55-151	1310 kg

final machine weight variate in agree with selected options

## SERVICES

### NORMET SERVICES

Normet is committed to servicing its customers all over the world. We provide service from a single machine to an entire fleet. The Normet service offering consists of many different products from delivery of parts and training to fleet performance agreements.

More information check [normet.com](https://www.normet.com):

<https://www.normet.com/en/products-and-services>

**For any questions about Normet Services contact local Normet.**

<https://www.normet.com/en/contact/>

### SPARE PARTS

As a leading global Original Equipment Manufacturer, we are committed to providing a complete solution to your spare parts needs. All of Normet's spare parts are manufactured to the highest possible standards to help maintain the safety and profitability of your projects. Our spare parts improve efficiency and total cost of ownership throughout your operations.

#### Spare part recommendation / Start-up Spare Part package

Normet Xrock products have service kits available for commissioning, 2-year and 4-year operation and most critical parts.

### SERVICE AGREEMENTS

Service agreements are always customized to meet our customer needs, consisting of various Normet service products. The service solution is created together with the customer and the level of an agreement can vary with different support agreements (including e.g. parts, periodical maintenance, on-call services, and audits) up to guaranteed fleet availability or process performance (including e.g. parts, all maintenance activities, operator trainings and process audits).

Note that we can provide Digital solutions with connected equipment.

More information check [normet.com](https://www.normet.com).

### TRAININGS

Range from equipment service training to process application training.

We offer a sustainable training path from the beginning of your operation to the execution stage of your project.

More information check [normet.com](https://www.normet.com).

### COMMISSIONING

Equipment commissioning concerns **equipment familiarization**. This is included as part of Normet vehicle delivery. Safety introduction and operating basics for Normet Equipment. Review of Normet user and spare parts manuals. Hands-on equipment safety device operational training. Ensure product quality and customer satisfaction during handover.

**Commissioning includes machinery handover to customers and safety operating principles** without technical insights or process application training.

### EXTENDED COMMISSIONING

We offer an extended training package on top of standard commissioning. Normet provides extended commissioning services that offer basic insights into maintenance manuals, periodical and daily maintenance, as well as modern operating perspectives to maximize handling efficiency. Safety-oriented training ensures reliable operations for Battery Electric Vehicles and Diesel-Driven based on your vehicle fleet. This cost-effective solution covers the essential aspects of equipment operation, safety, and maintenance schedules.

To ensure continuous and maximized safe operations with your new equipment and to expand your knowledge scale of operations, this option is the most suitable and recommended option for extending your new equipment training. This cost-effective solution covers the essential aspects of equipment operation, safety, and maintenance schedules.

### UPGRADES AND MODIFICATIONS

We build our machines to last. We also understand that your needs on the ground can change - and reacting to that change makes a big difference in your productivity. Normet Upgrades & Modifications provide you with access to product improvements that meet your evolving requirements and let you stay one step ahead of the curve.

Contact your local Normet office for Upgrade offering to your fleet.

More information check [normet.com](https://www.normet.com).

