



# Breaker Boom X68-Series



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this specification without further notice

Pictures may include options and additional equipment.

## INTRODUCTION

**Xrock X68-Series** of breaker booms are suitable for gyratory crushing plants and large grizzlies. The boom design allows flexible operation in dump pocket areas and gives good access to clean gyratory inlet area.

The boom structure is a robust steel plate design able to carry loads in harsh environments. The X68-Series consists of four different models from 9.2 m horizontal reach up to 15.8 m.

Xrock X68-Series booms are designed to carry hydraulic breakers from 1500 kg to 3500 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.

### SLEW RING DESIGN

X68-Series of booms are slew ring type booms with 360 deg turning radius. The pedestal slew mechanism has separated slew bearing ring and gear ring to reduce service costs in the life cycle.

Two robust hydraulic motors with planetary gears ensure smooth and powerful rotation force. Service access to critical areas has been made as easy as possible.



## 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.



## 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

	X68-900R	X68-1050R	X68-1150R
Maximum reach (incl. nominal breaker), m	11.6	12.7	14.0
Horizontal reach, max (breaker vertical), m	9.2	10.3	11.5
Vertical reach, max (incl. nominal breaker), m	8.9	10.1	11.0
Nominal breaker length, m	2.7	2.7	2.7
Lift boom length, m	5.65	5.65	6.95
Dipper boom length, m	3.4	4.6	4.6

	X68-1250R	X68-1450R	X68-1550R
Maximum reach (incl. nominal breaker), m	15.0	16.9	18.3
Horizontal reach, max (breaker vertical), m	12.5	14.4	15.7
Vertical reach, max (incl. nominal breaker), m	12.1	13.5	14.9
Nominal breaker length, m	2.7	2.7	2.7
Lift boom length, m	6.95	8.95	8.95
Dipper boom length, m	5.6	5.6	7.0

Welded steel structure with bended C-beam

Reinforced swivel points

Heat treated conical locking pins

Heat treated steel bushings

### PEDESTAL

Welded steel plate structure

Bolted on a steel assembly ring

Slew mechanism with bearing ring and independent gear ring

High torque hydraulic motor and gearbox (2 pcs.)

Slew angle 270°

Foundation plate width 2.29 m

Foundation plate length 2.29 m

### BREAKER

With boom specified configuration

Recommended Normet Breakers:

XB23

XB27

XB32

XB36

XB45

Recommended weight (900R - 1250R) 1500 kg - 3500 kg

Recommended weight (1450R & 1550R) 1500 kg - 2200 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 PU110-200, LS-pump

Cylinders:

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

Easily replaceable seals

Max. pressure 25.0 MPa

Hoist (2 pcs.) 200/125-1400 mm

Dipper 200/125-1400 mm

Breaker tilt 200/125-1400 mm

#### X68-900R

Hydraulic lifting force 60 kN

#### X68-1050R

Hydraulic lifting force 44 kN

#### X68-1150R

Hydraulic lifting force 45 kN

## X68-1250R

Hydraulic lifting force 37 kN

## X68-1450R

Hydraulic lifting force 27 kN

## X68-1550R

Hydraulic lifting force 23 kN

## POWER UNIT

Variable displacement axial piston pump

Tank with 110% drip tray, service hatch (2 pcs.) and oil level indicators (3 pcs.)

Oil filtration 10 µm

Electric cut-off switch for too low and too high oil level

Warning level switch for low oil level

Thermometer and PLC controlled air cooler for oil with 3 kW fan

Oil pressure gauge 0-35.0 MPa

Adjustable cut-off pressure 0-25.0 MPa

## PU110-200

Pump displacement 200 cc

Pump capacity at 1500 rpm 300 l/min

Pump capacity at 1800 rpm 360 l/min

Oil tank 600 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
  - 400 V
  - 415 V
  - 420 V
  - 525 V
  - Special voltage
- 60 Hz
  - 440 V
  - 460 V
  - 480 V
  - 575 V
  - Special voltage

Flange mounted squirrel cage electric motor:

	1500 rpm (50 Hz)	1800 rpm (60 Hz)
PU110-200	110 kW	132 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

Additional documentation:

- Extra hard copies of manuals
- Extra PDF manuals
- LinkOne WebView electronic manuals
- Other than standard language manuals
- Boom placement drawing superimposed customer's plant lay-out drawing
- Dimensional (G.A.) drawings
- Coverage drawing
- Pedestal load data table
- Foundation plate drawing

# ACCESSORIES

## MAIN ACCESSORIES

- PU110-200 Power unit
- XB23 Hydraulic breaker
- XB27 Hydraulic breaker
- XB32 Hydraulic breaker
- XB36 Hydraulic breaker
- XB45 Hydraulic breaker
- Wireless remote control
  - 434 MHz
  - 458 MHz

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

## 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

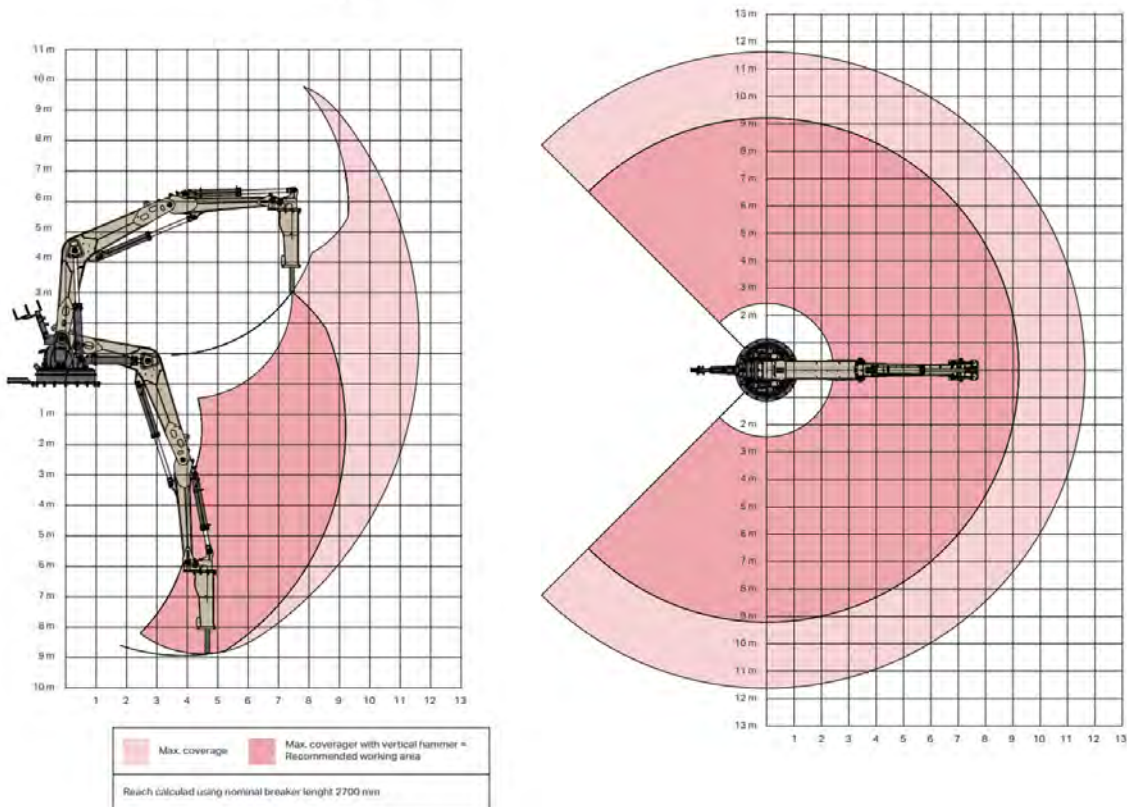
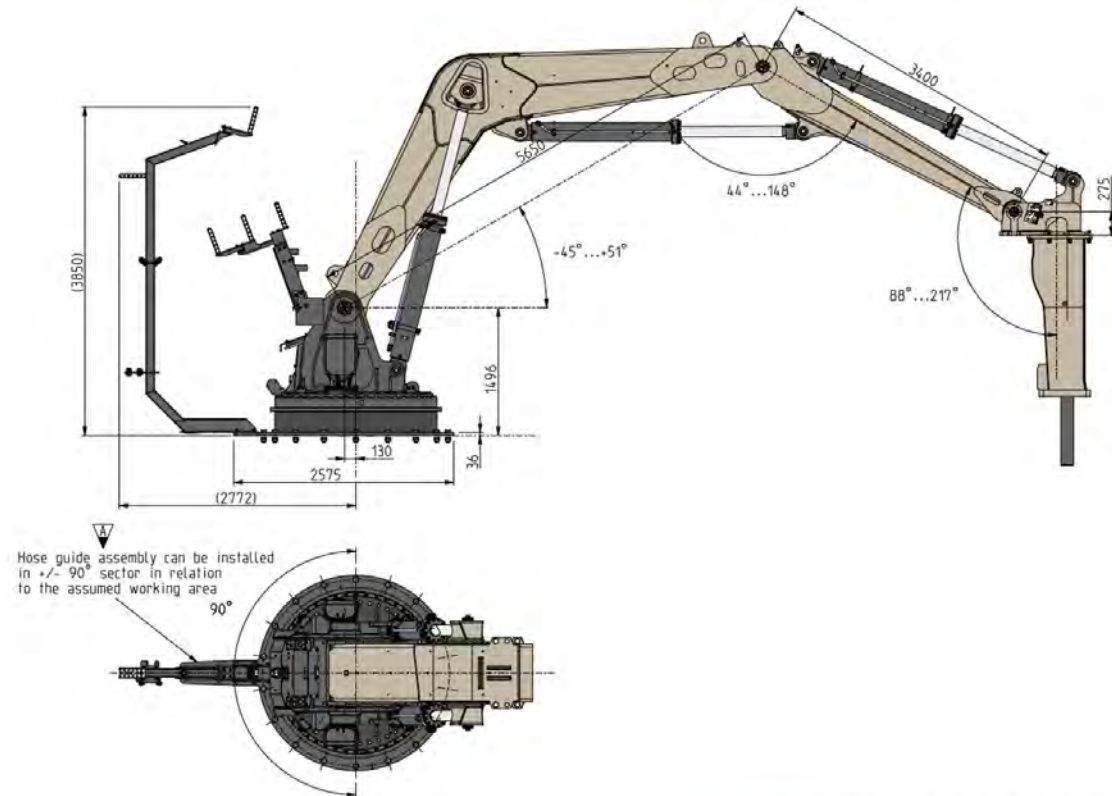
## OTHER ACCESSORIES

- 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

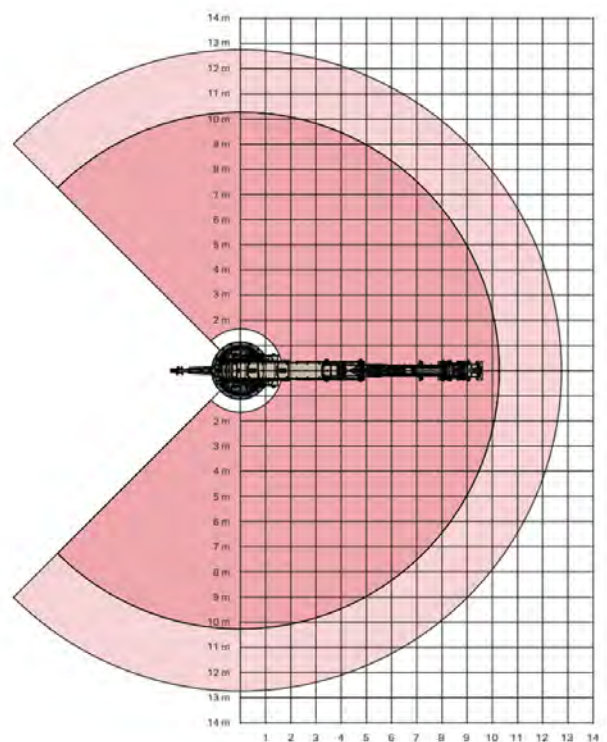
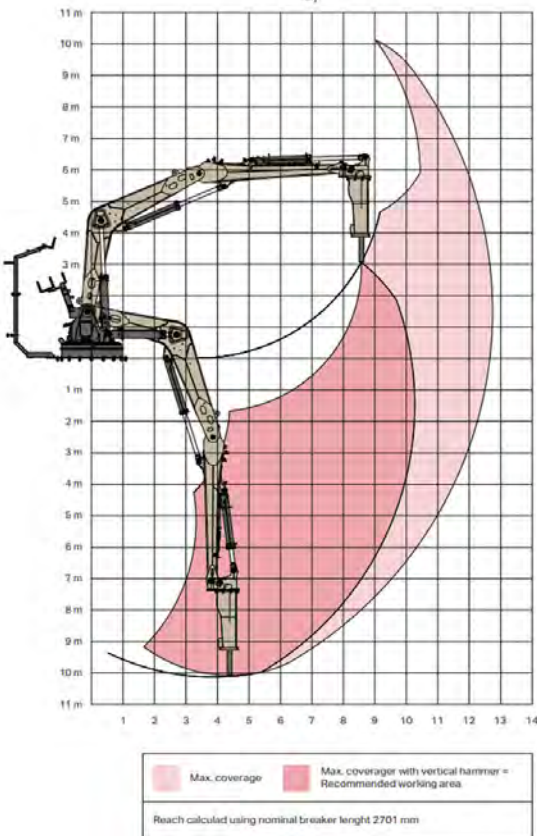
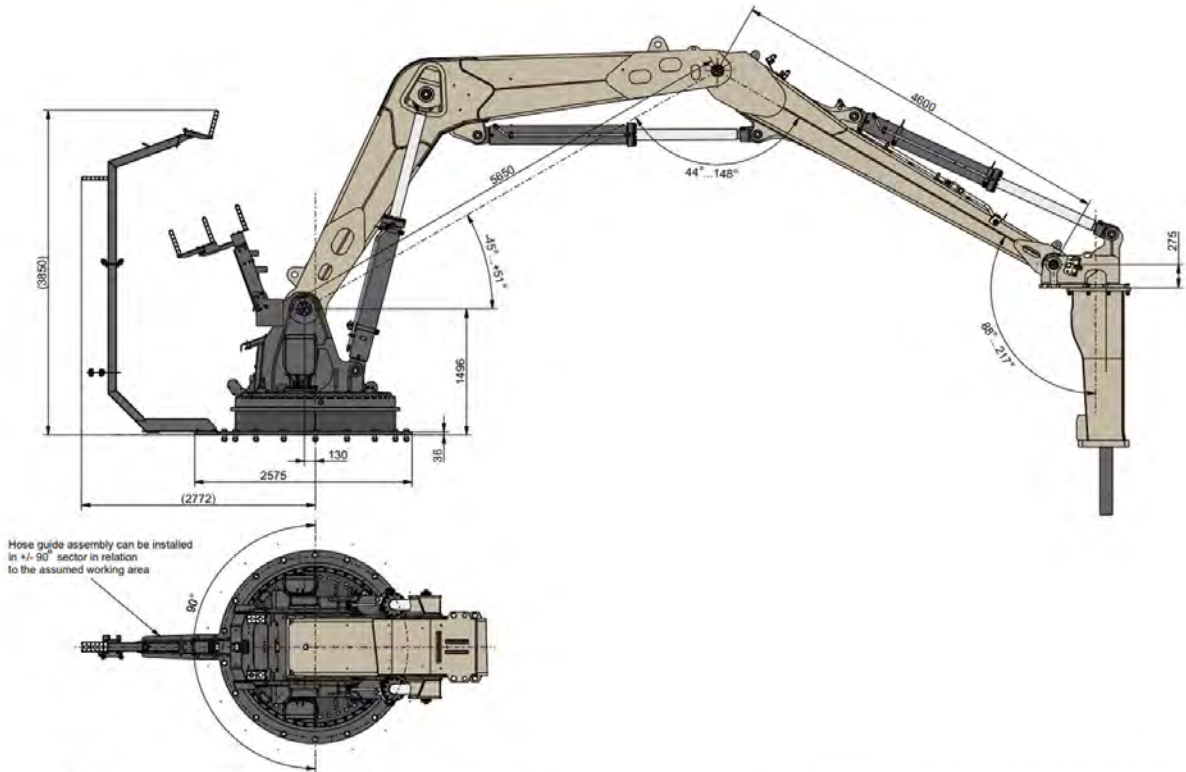
### SIDE VIEW & REACH AREA X68-900R



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Pictures may include options and additional equipment.

## SIDE VIEW & REACH AREA X68-1050R

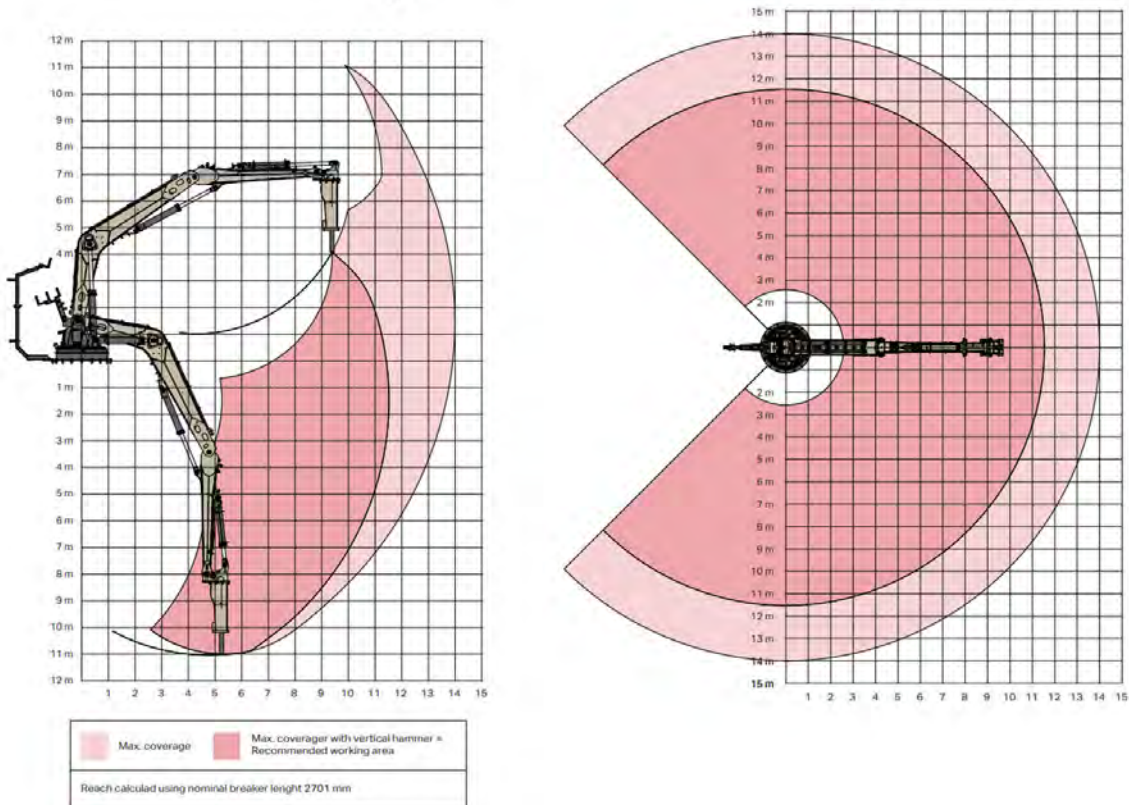
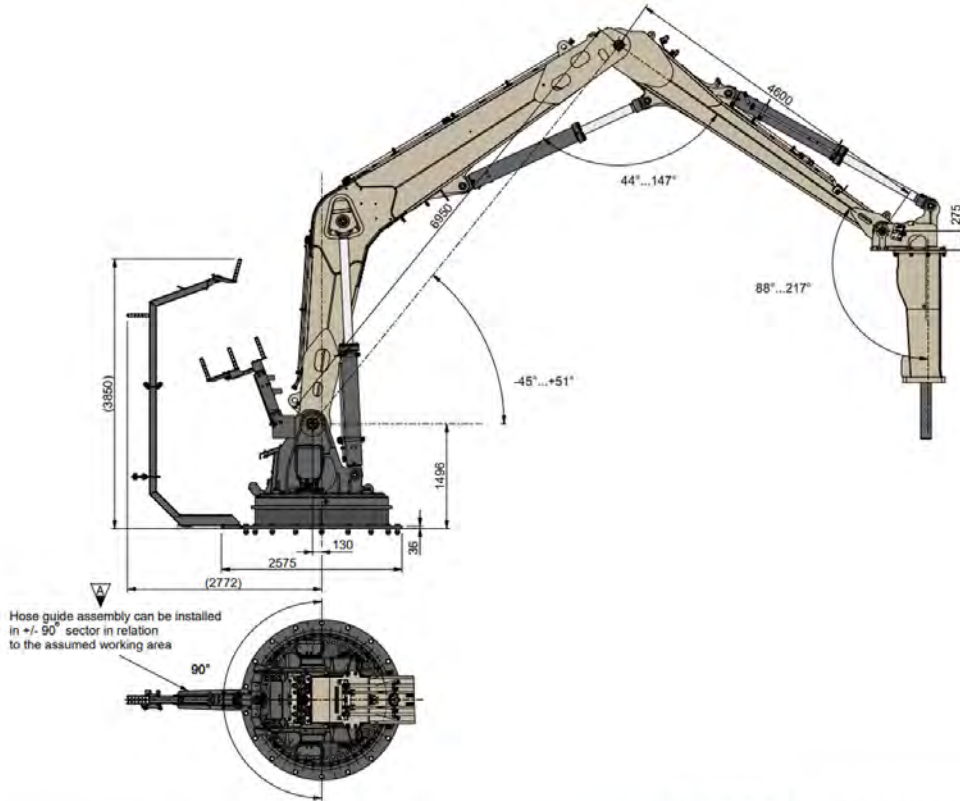


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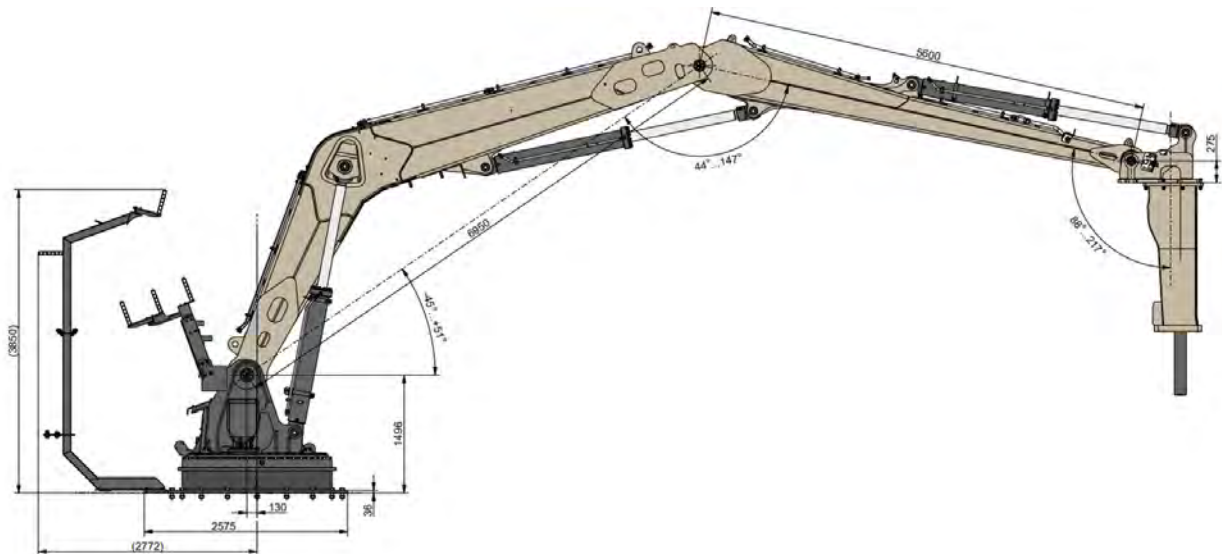
## SIDE VIEW & REACH AREA X68-1150R



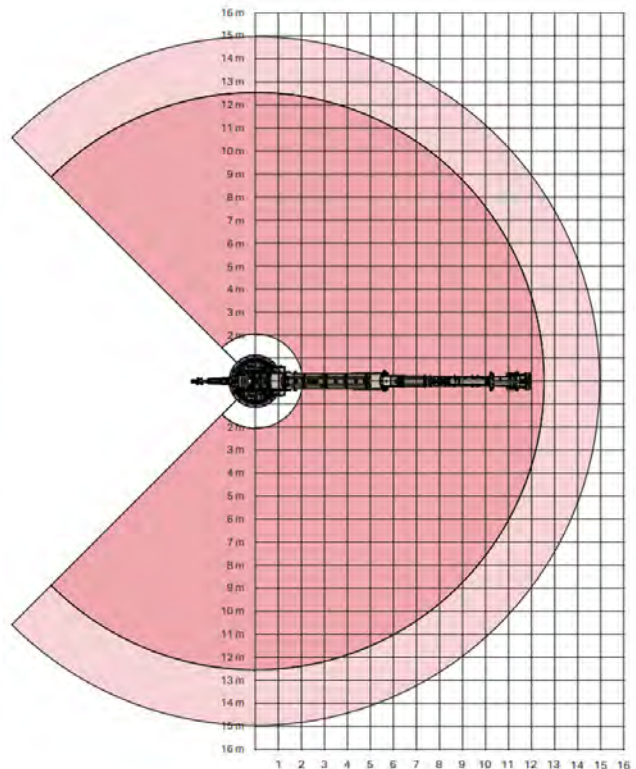
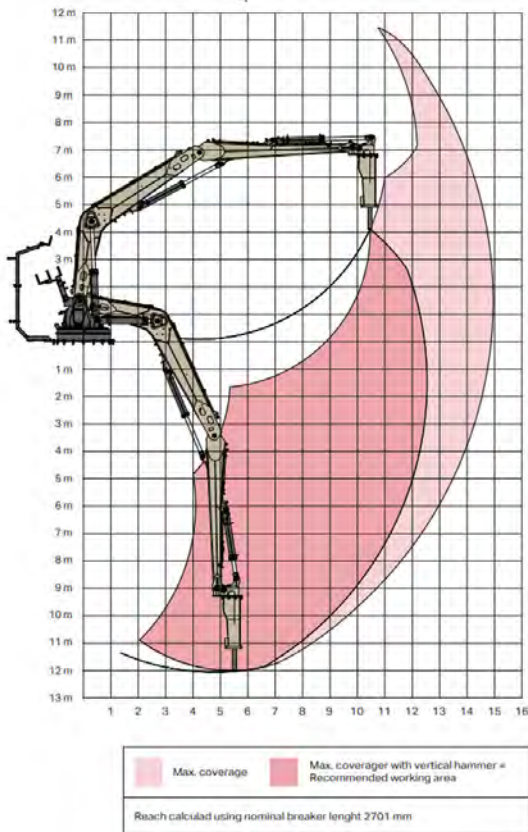
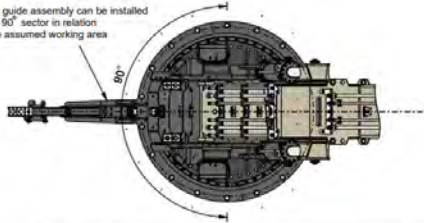
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## SIDE VIEW & REACH AREA X68-1250R



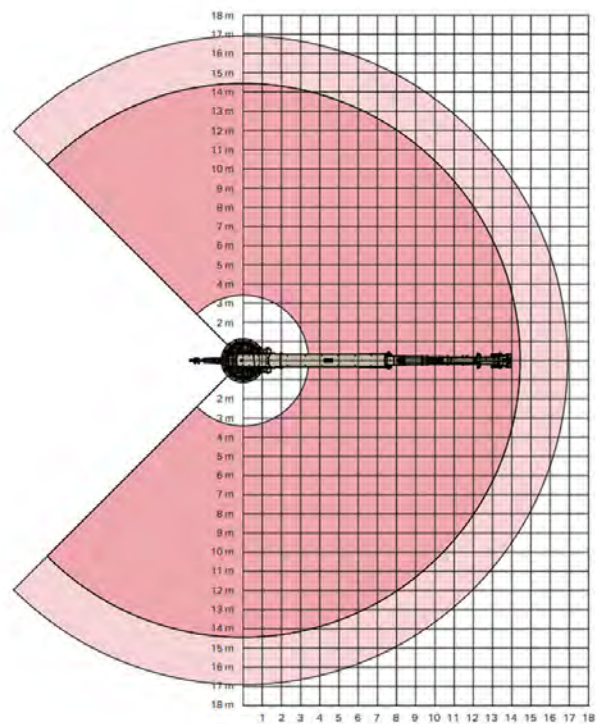
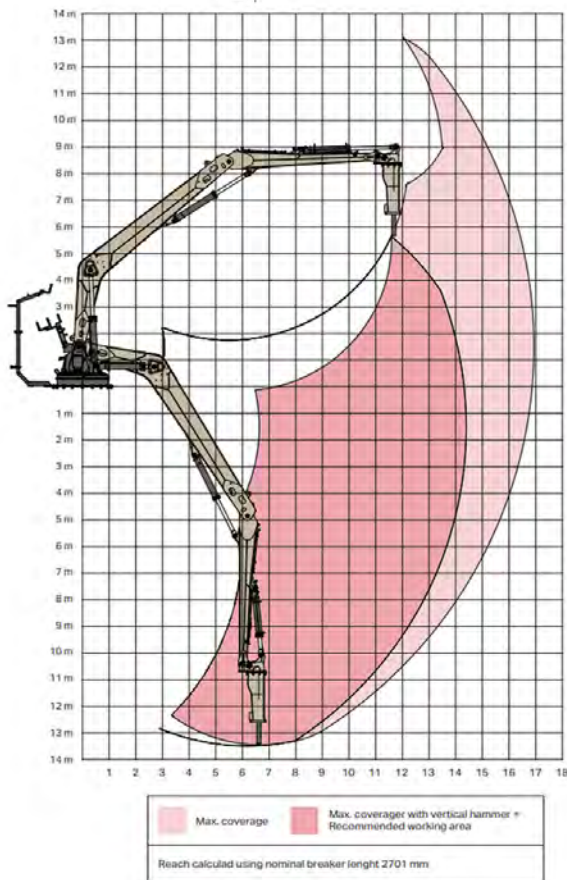
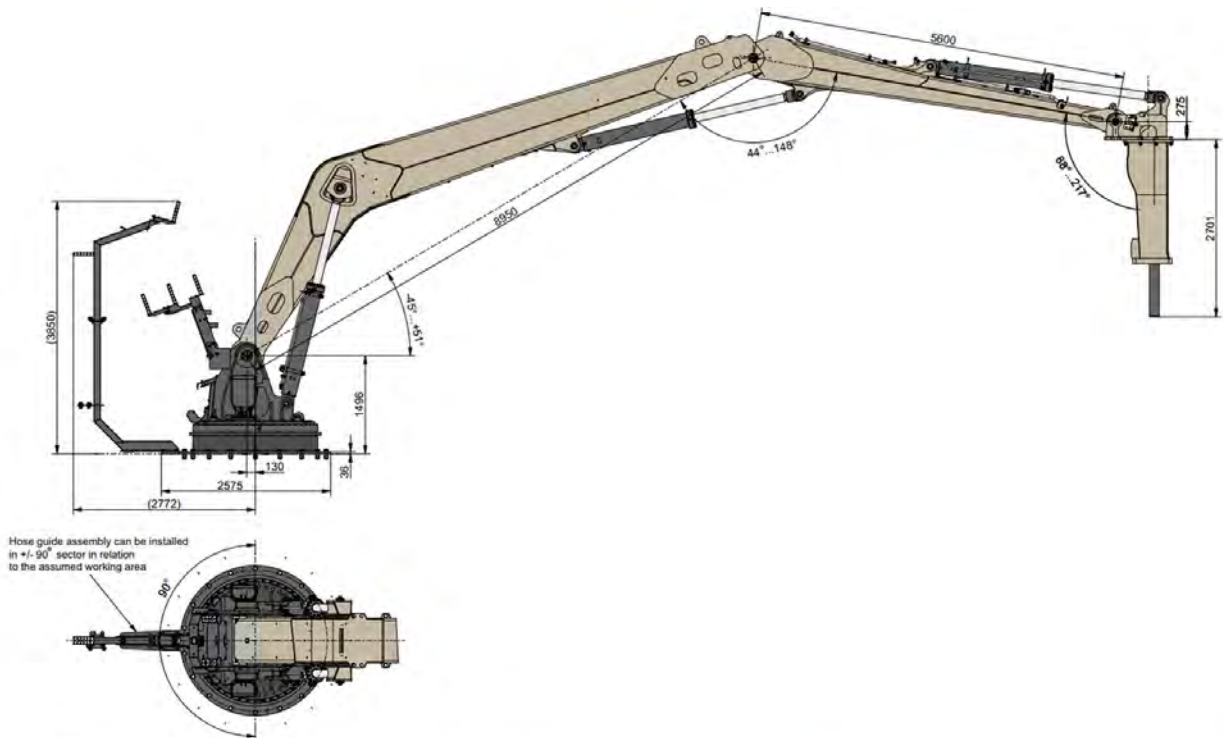
Hose guide assembly can be installed in  $\pm 90^\circ$  sector in relation to the assumed working area



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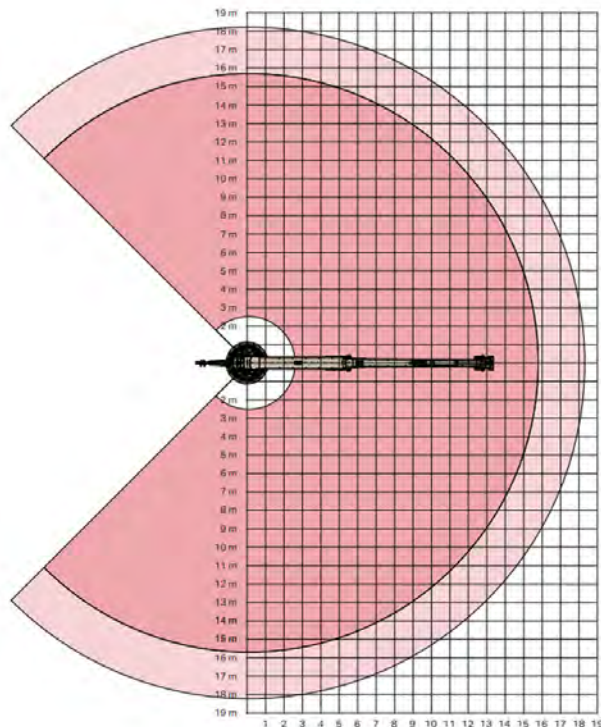
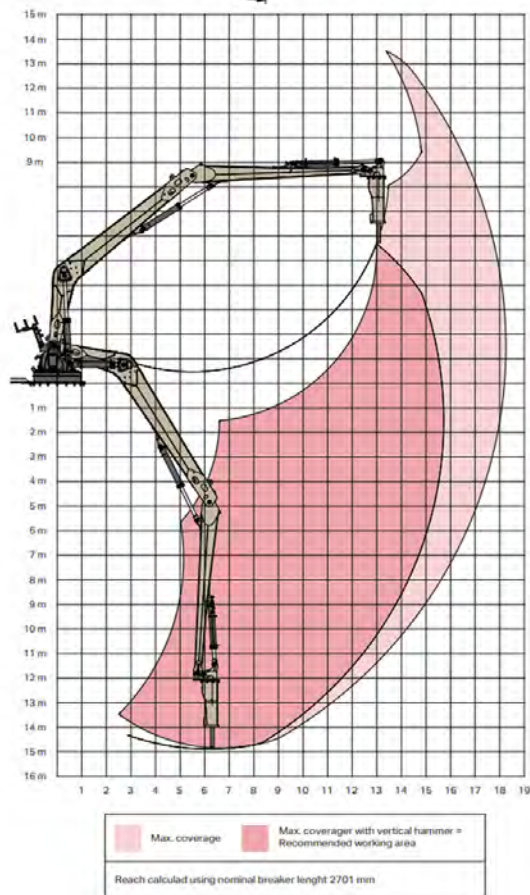
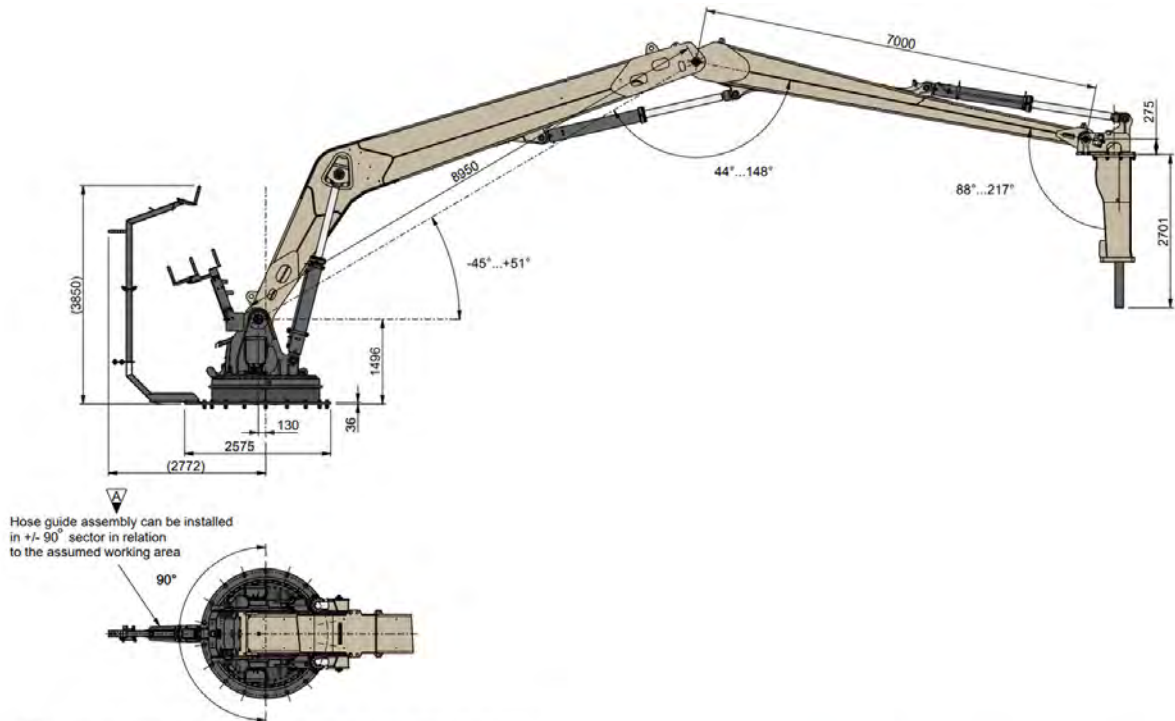
## SIDE VIEW & REACH AREA X68-1450R



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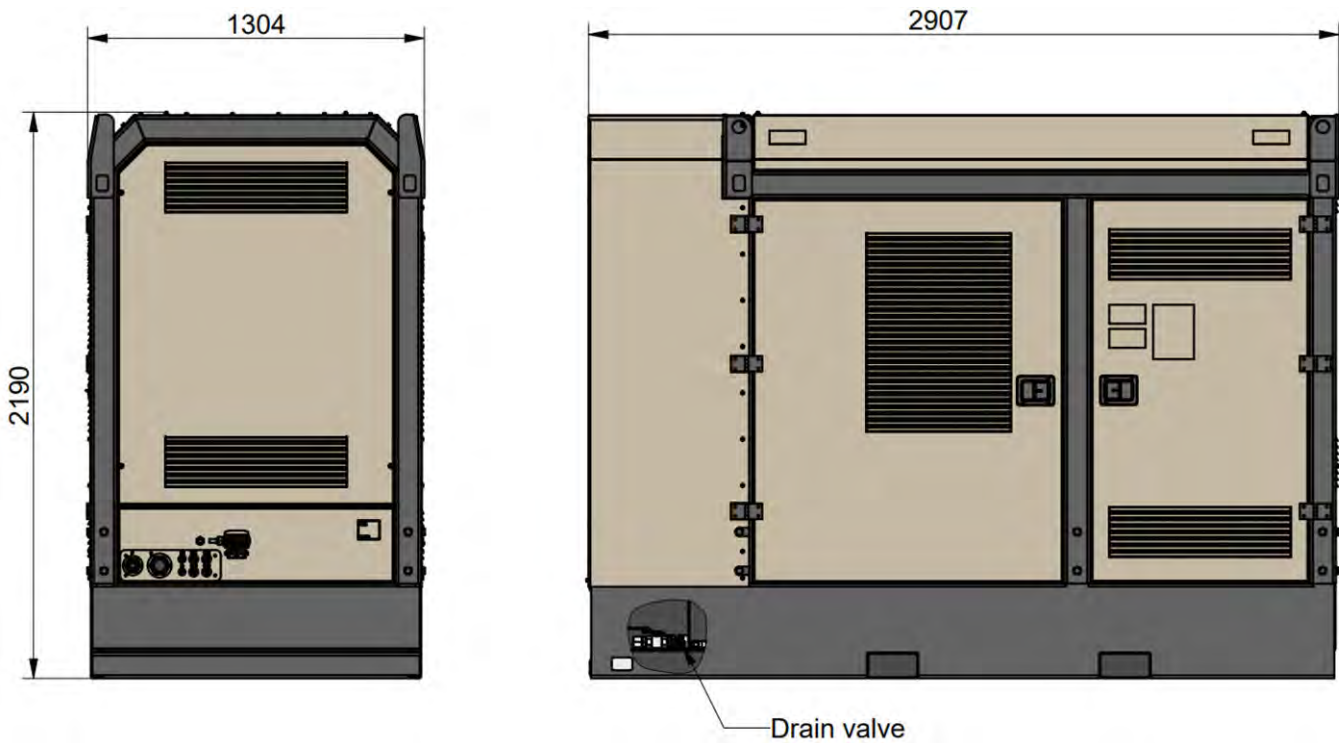
## SIDE VIEW & REACH AREA X68-1550R



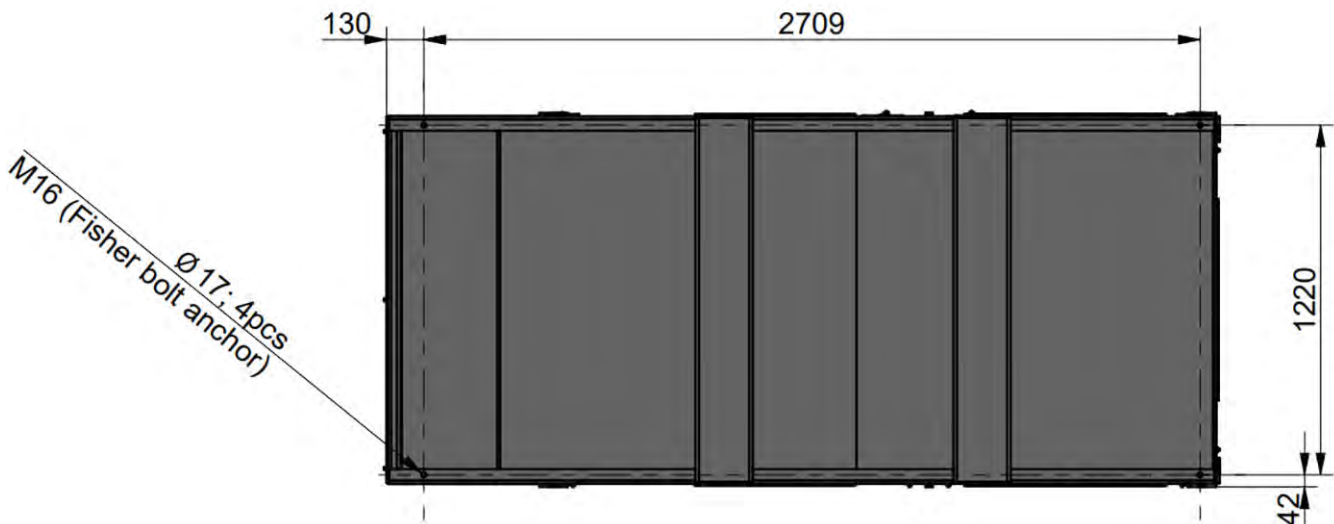
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## SIDE VIEW POWER UNIT



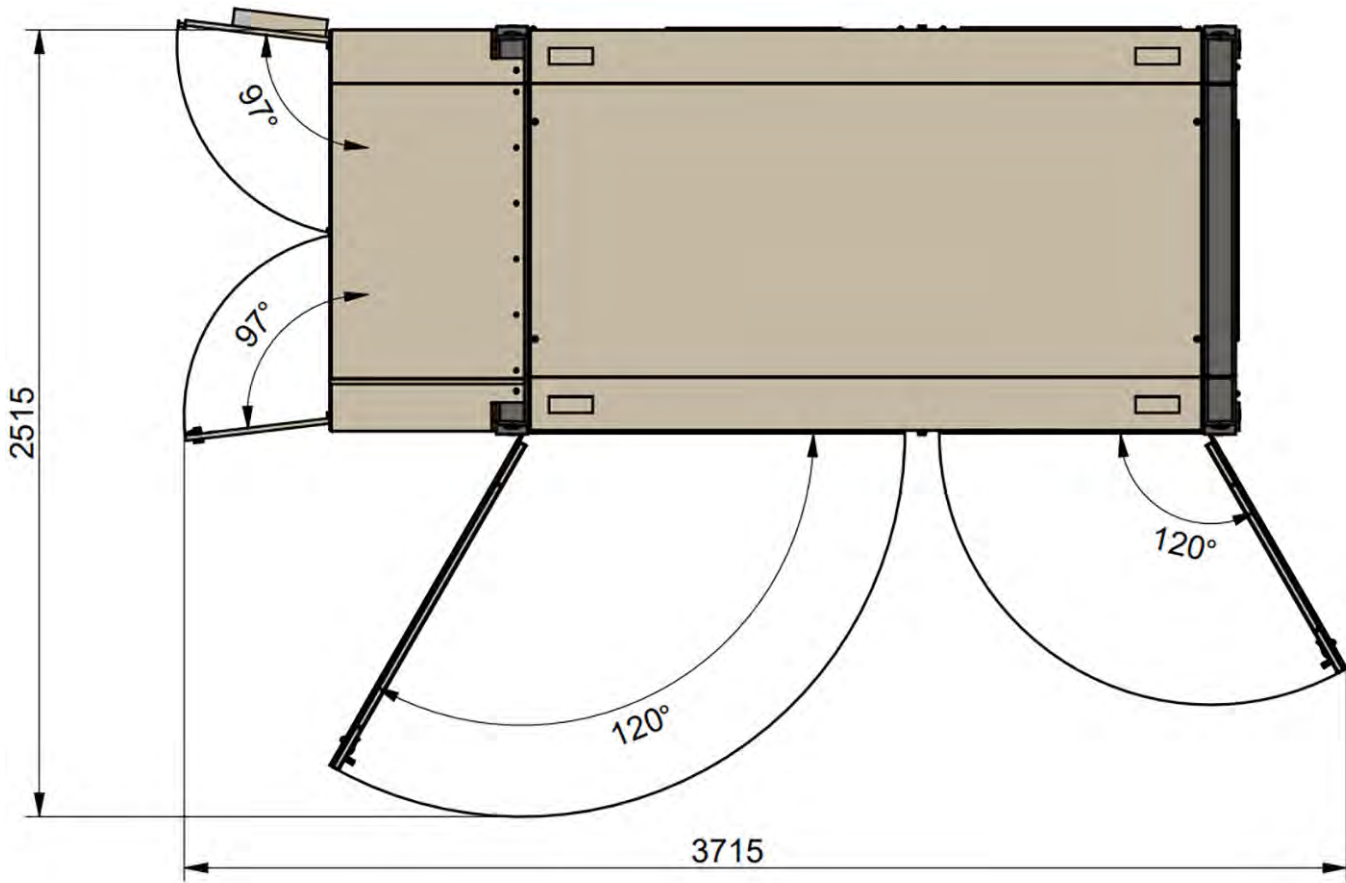
## BOTTOM VIEW POWER UNIT



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## TOP VIEW POWER UNIT



## OPERATING WEIGHT (WITHOUT BREAKER)

Base machine X68-900R	14400 kg
Base machine X68-1050R	14800 kg
Base machine X68-1150R	15300 kg
Base machine X68-1250R	15600 kg
Base machine X68-1450R	16500 kg
Base machine X68-1550R	17000 kg
<b>Power unit (without oil):</b>	
Base machine PU110-200	2900 kg

final machine weight variate in agree with selected options

## SERVICES

### NORMET SERVICES

Our services cover the whole life cycle of your equipment. They include start-up and commissioning, genuine spare parts, upgrades & modifications, and remanufacturing, as well as field service. We also offer improvement services such as operator training and process audits.

### SPARE PARTS

Genuine parts from Normet Services ensure that you always have the highest quality parts available to keep your equipment up and running. Depending on your needs, we can offer everything from individual parts to complete parts contracts, and our professionals around the world have the experience to ensure that you have the parts you need when you need them.

#### Initial spare part packages:

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

### UPGRADES AND MODIFICATIONS

Our Upgrades and Modifications services are designed to ensure the economical, efficient and purposeful performance of

your equipment over its entire life cycle. A service provided by a reliable OEM like Normet ensures the safety and performance of your equipment. Normet Upgrades and Modifications save you both time and money, while delivering the high quality you expect from us.

### SERVICE CONTRACTS

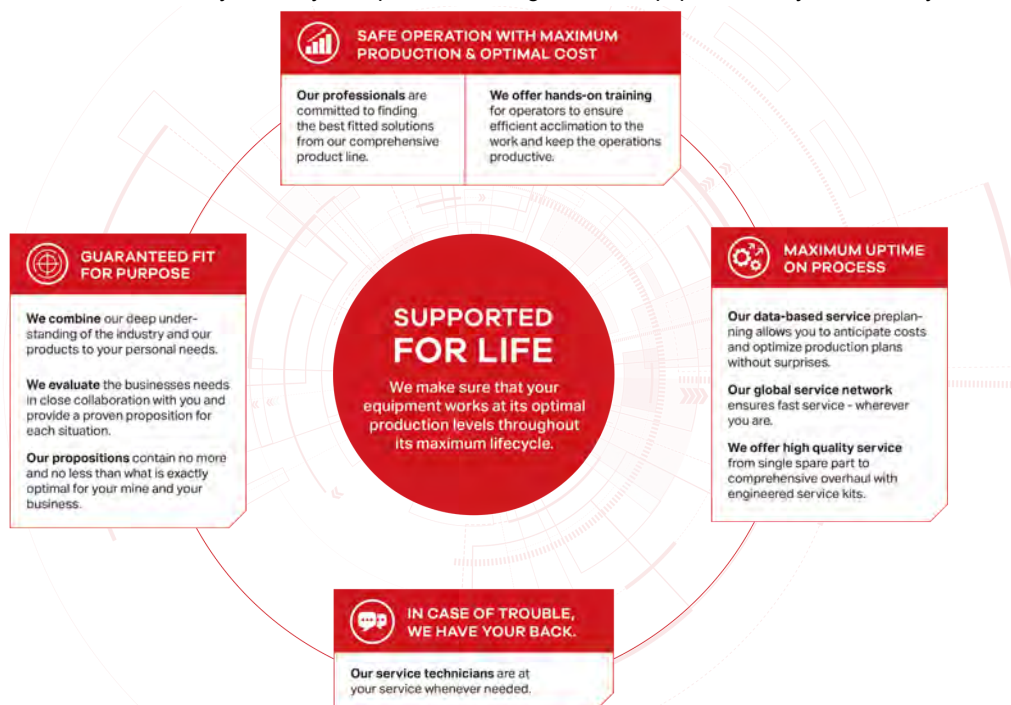
With a service agreement, Normet manages your fleet with guaranteed availability and agreed costs, giving you transparency for your life cycle costs, annual operational budget and fleet uptime. This lets you focus on your core operations. Each service agreement is built and customized to meet the individual customer's needs from our portfolio of services. Depending on the level of service agreement you need, you can choose anything from basic technical support for an individual machine all the way up to services for your entire fleet, as well as process performance. The service levels we offer are:

- Parts Availability
- Fleet Support
- Fleet Availability
- Process Performance

The content of a service level can be tailored to meet your particular requirements.

### TRAINING SERVICE

Our Training Services are available for you and your operators throughout the equipment lifecycle and they include:



# START-UP AND COMMISSIONING

## 1. OPERATOR TRAINING

	Start-up training	Commissioning
<b>1.1 Classroom training</b>		
General introduction and operation of machine	Basic	No classroom training included in commissioning
Safety instructions	Basic	
Use of manuals	Basic	
Technical introduction of equipment	Basic	
Hands-on service and pre-operation checks	Basic	
Controls and driving (starting, driving, stopping, parking)	Basic	
<b>1.2 Practical training</b>		
Pre-operation checks	Basic	Introduction
Driving, starting, stopping, parking	Basic	Introduction
Preparing the machine for specific operation conditions	Basic	Not covered
Operation	Basic	Introduction
Washing the machine	Basic	Introduction
Troubleshooting	Basic	Basic

## 2. MAINTENANCE AND REPAIR TRAINING

General operation of machines	Basic	Introduction
Symbols of drawings and codes	Basic	Not covered
Understanding hydraulic and electric schematics	Basic	Introduction
Control systems	Basic	Introduction
Function of main components (depending on equipment)	Basic	Introduction
Locations of components in the machine	Basic	Not covered
Periodical maintenance	Basic	Introduction
Troubleshooting	Basic	Not covered
Use of manuals	Basic	Introduction
Connection of hydraulic and electrical equipment	Basic	Not covered