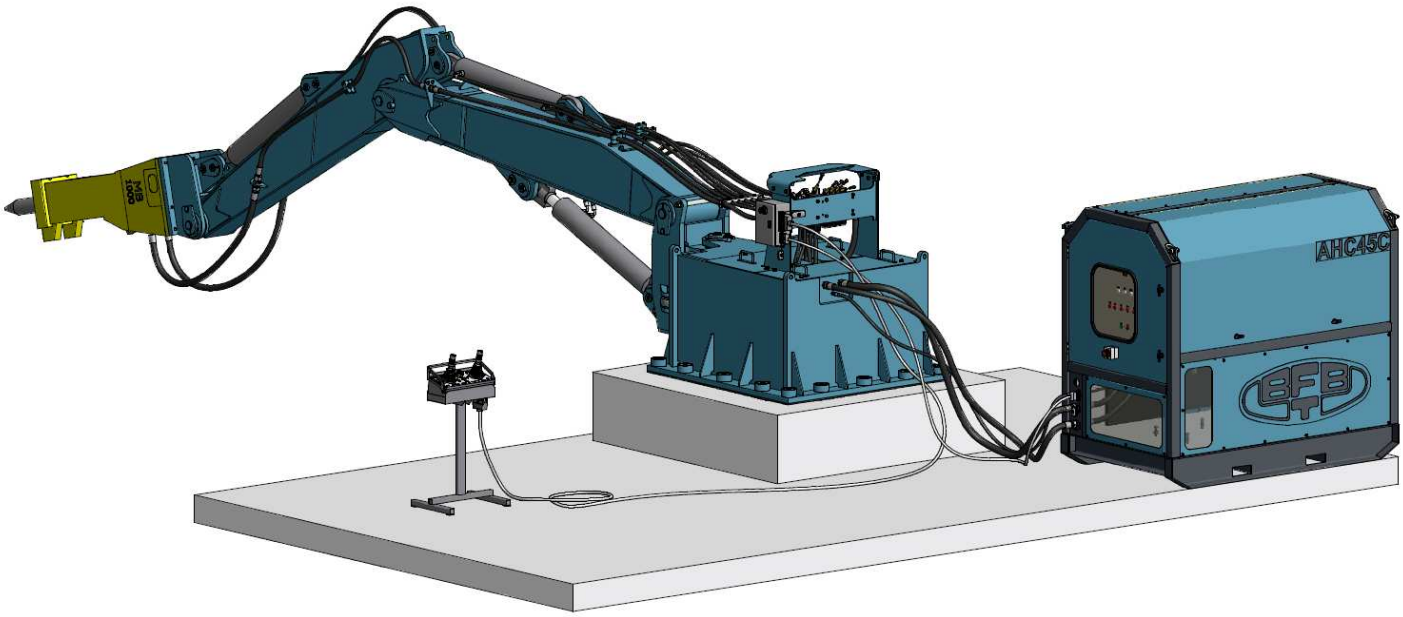
Trading BFBT s.r.o.

BFBT BOOM SYSTEM MOUNTING DESIGN HANDBOOK



Manufacturer :
Trading BFBT s.r.o.
Nádražní 910
UNIČOV
ČESKÁ REPUBLIKA

BASIC PARAMETERS NEEDED FOR THE BOOM SYSTEM BID

For preliminary Boom system size and location determination, it is needed to stipulate the basic parameters. These apply to the crushing line and the boom system. Preparing initial documents as precise and detailed as possible will lead to an accurate bid of the mounting and price of the equipment.

1. LOCATION

1.1. Environment

1.1.1.	Minimum working temp.	°C
1.1.2.	Maximum working temp.	°C
1.1.3.	Air humidity	
1.1.4.	Maximum precipitation	mm /den
1.1.5.	Altitude above sea level	m n. m.

1.2. Power grid

1.2.1.	Grid voltage	V
1.2.2.	Grid frequency	Hz
1.2.3.	Power factor comp. YES / NO	

1.3. Crushed material

1.3.1.	Rock	
1.3.2.	Specific Gravity	t / m^3
1.3.3.	Dry rock strength	
1.3.4.	Lumpiness	%
1.3.5.	Maximum piece size	m x m x m
1.3.6.	Maximum piece frequency	pcs / day
1.3.7.	Operating time	hours / day
		days / year

2. CRUSHER PLANT PARAMETERS

For the design of the boom system (hereinafter, only the OS), the size of the crushing unit and the free space for the actual OS mounting are decisive.

2.1. Crushing unit - crusher type

2.1.1.	Mobile crusher	☐
2.1.2.	Semimobile crusher	☐
2.1.3.	Jaw crusher	☐
2.1.4.	Grid + crusher	☐
2.1.5.	Conical crusher	☐

2.2. Crushing unit - parameters

2.2.1.	Crusher opening width		mm
2.2.2.	Crusher opening length		mm
2.2.3.	Crusher input		kW
2.2.4.	Min. output crusher		t / hod
2.2.5.	Max. output crusher		t / hod

2.3. Crushing unit - Hopper

2.3.1.	Hopper length			m
2.3.2.	Hopper height			m
2.3.3.	Hopper capacity			m^3
2.3.4.	Feeder type	vibration	☐	
		sliding	☐	
		other	☐	
2.3.5.	Feeder width			m
2.3.6.	Sorter type	vibration	☐	
		sliding	☐	
		other	☐	
2.3.7.	Sorter width			m

2.4. Crushing line control station

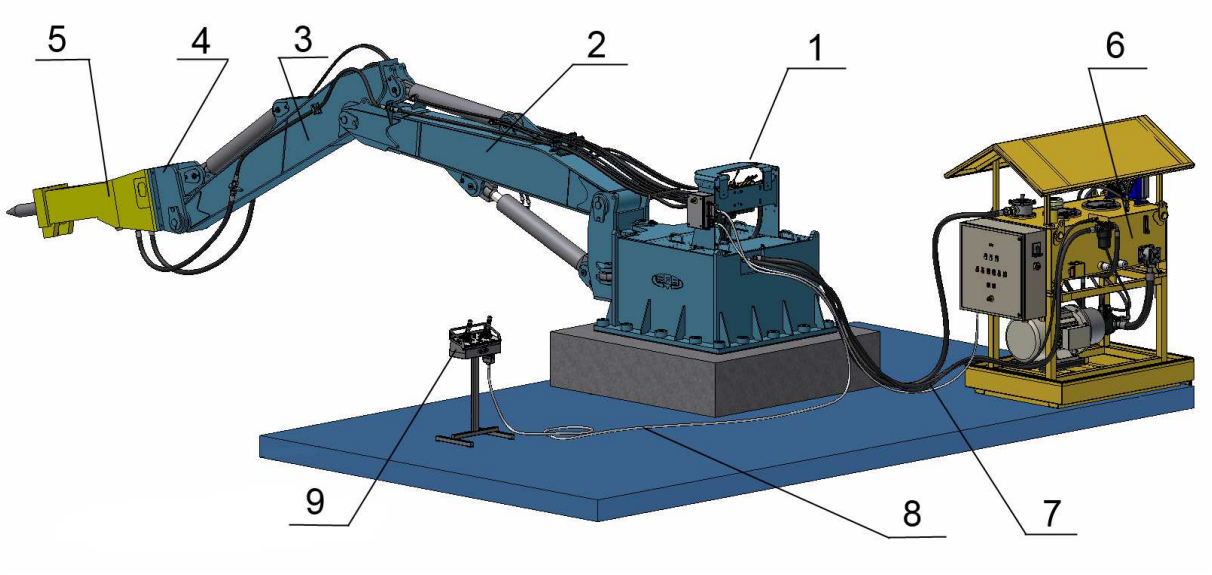
Adaptation to the control point is very important for the comfort of the OS operator. It is needed to consider whether it is suitable to place the control panel into the cabin (bridge) or on the walkway with a good outlook into the working space of the hammer. A combination of the indoor and outdoor control with a portable control panel is possible.

It is possible to control one equipment from multiple points and also to control multiple devices (crusher and hopper) using one portable control panel.

2.4.1.	Outdoor	☐	
2.4.2.	Cabin	☐	
2.4.3.	Crushing line control	Simple - outdoor	☐
		Central control - bridge	☐
		Central remote	☐
		Radio, camera	☐

3. BOOM SYSTEM

The boom system (OS) consists of a frame - this is fastened to the bed, an boom, and a stick. These parts are controlled using hydraulic cylinders. The hydraulic cylinder also controls the motion of the hydraulic hammer via a special adapter for its fastening.



1 Base frame
2 Boom
3 Stick
4 Hammer adapter
5 Hydraulic hammer
6 Hydraulic unit
7 Power connection
8 Control connection
9 Control panel

3.1. The required reaches of the boom system

3.1.1.	Maximum horizontal hammer reach		m
3.1.2.	Maximum vertical hammer reach		m
3.1.3.	Max. horizont. reach of the vertical hammer		m
3.1.4.	Min. horizont. reach of the vertical hammer		m
3.1.5.	Slewing angle of the working equipment		°

3.2. Boom system placement

3.2.1.	Mobile crusher along the direction (Fig. 3.2.1.)	☐
3.2.2.	Mobile crusher perpendicular to the direction (Fig. 3.2.2.)	☐
3.2.3.	Jaw crusher (Fig. 3.2.3.)	☐
3.2.4.	Grid + crusher (Fig. 3.2.4.)	☐
3.2.5.	Conical crusher (Fig. 3.2.5.)	☐

3.3. Hydraulic hammer

The selection of the hammer depends on the customer's request. If they already use hydraulic hammers in the quarry, we recommend hammers by the same manufacturer for reasons of simpler servicing.

A part of the bid is also the design of the size of the hydraulic hammer for the type of rock and the crusher size in question. We can offer and recommend t he size, type, and manufacturer of the hammer, namely even at various price levels.

3.3.1.	Hammer weight	☐ kg
3.3.2.	Hammer impact energy	☐ J
3.3.3.	Pick diameter	☐ mm
3.3.4.	Manufacturer	☐
3.3.5.	Type	☐
3.3.6.	AutoStart function	☐
3.3.7.	AutoStop function	☐
3.3.8.	Automatic lubrication	☐

3.4. Required parameters of the Boom system

3.4.1.	Minimum bearing capacity	☐ kg
3.4.2.	Minimum hammer thrust	☐ kg
3.4.3.	Colour	☐
3.4.4.	Documentation language	☐
3.4.5.	Others:	

3.5. Boom system control

The Boom system control must be tuned with the crushing line control with regard to the good outlook into the hammer working space. The operator safety standpoint is very important when working with a hydraulic hammer.

3.5.1.	Fixed control on the OS frame	☐
3.5.2.	Portable control	☐
3.5.3.	Control placed fixed at the bridge	☐
3.5.4.	Radio control	☐

3.6. Boom system lubrication

All moving parts of the OS must be regularly lubricated. It is necessary to consider the availability of lubrication points for maintenance and/or to choose central lubrication.

Manual central lubrication - the lubricating points are led into one accessible point and they are manually lubricated here.

Automatic central lubrication - has a lubricant reservoir and lubricates the connected points in the selected time interval.

3.6.1. Manual lubrication of individual points ☐
3.6.2. Central manual lubrication ☐
3.6.3. Central automatic lubrication ☐

3.7. Hydraulic unit

The hydraulic unit serves as the drive unit of the OS. It can be placed in a safe place near the OS. According to the configuration, it is designed so that it automatically supplies pressure oil for the OS and the hydraulic hammer. It allows for automatic oil cooling and manual preheating of oil at low temperatures.
It signals all failure states at the front panel of the electrical cabinet. The main current supply switch is also located on it. The actual starting of the hydraulic unit is performed from the OS control panel.

3.7.1. Basic without cooling and heating	☐	designation A
3.7.2. With heating in the oil tank	☐	designation AH
3.7.3. With oil heating and cooling	☐	designation AHC - standard
3.7.4. Low temperature design	☐	
3.7.5. Design for tropics	☐	
3.7.6. Explosion-proof design	☐	
3.7.7. Oil catch pan	☐	standard
3.7.8. Unit protective roof	☐	standard
3.7.9. Hydraulic unit container	☐	

3.8. OS connection lengths

3.8.1. OS power connection ☐ m
Hydraulic unit - OS frame distance
3.8.2. OS control connection ☐ m
OS frame - portable control distance

3.9. Complementary data

3.9.1. Important points for hammer reach - e.g. points of caving, stuck rocks
3.9.2. Servicing position - selected point for OS servicing
3.9.3. Hammer storage point - a place, where it is possible to put the hammer upon OS inactivity so that it is not damaged by the processed material
3.9.4. Hydraulic unit placement
3.9.5. Assembly conditions - circumstances important for assembly preparation-enclosed premises, mine bore holes, crane availability...

4. SPARE PARTS

It is possible to order spare parts individually according to your consideration, namely both for the OS and the hydraulic hammer.
Furthermore, it is possible to order sets of spare parts according to our experience for a specified period.

4.1. Own list of the customer ☐
4.2. Set for 1 year of operation ☐
4.3. Set for 2 years of operation ☐
4.4. Basic set for the hydraulic hammer ☐
4.5. Set for the hydraulic hammer for 1 year of operation ☐
4.6. Set for the hydraulic hammer for 2 years of operation ☐

Placement of the Boom system:MOBILE CRUSHER ALONG THE DIRECTION

1 - Max. hammer reach

2 - Max. perpendicular hammer reach

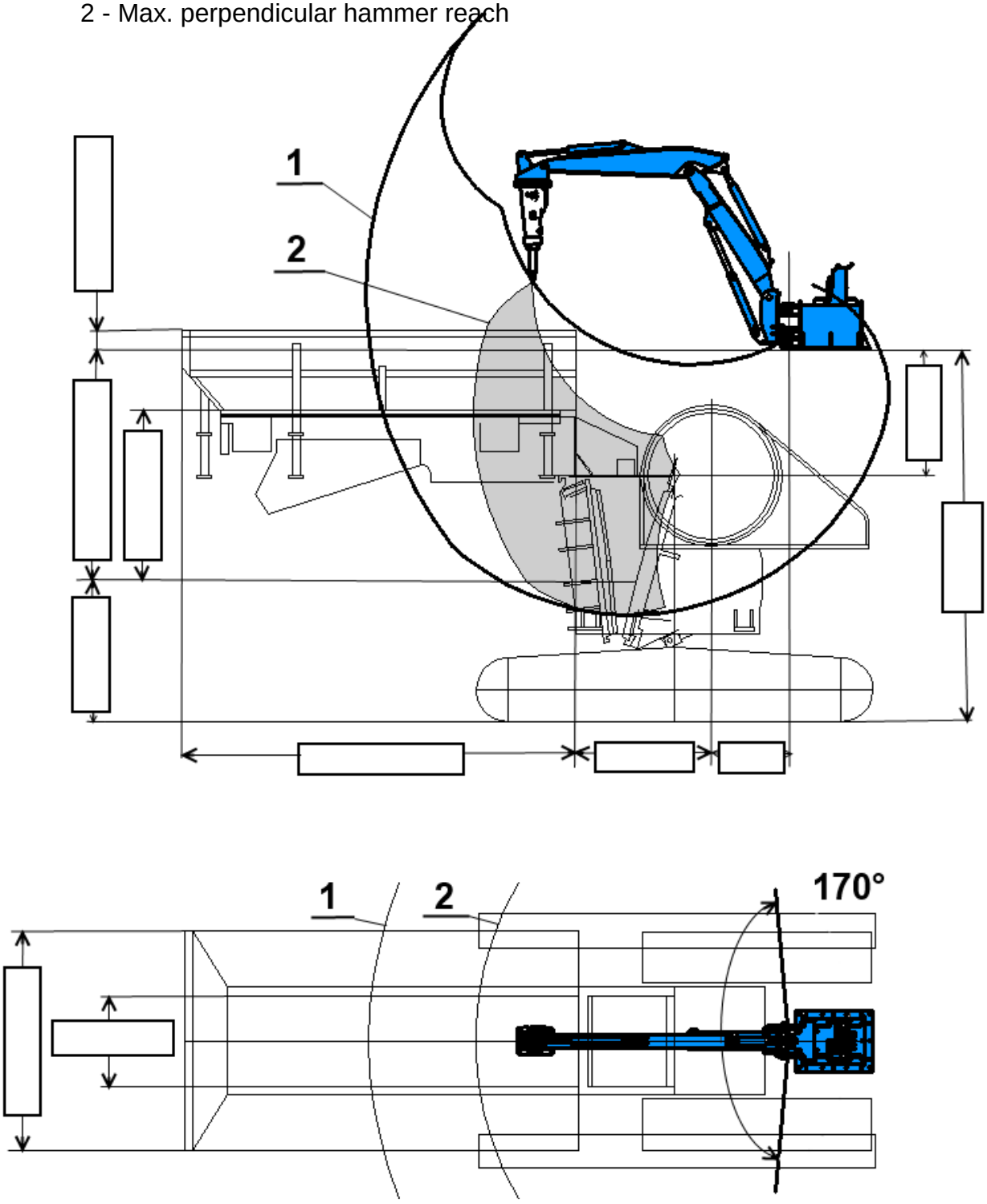


Fig. 3.2.1.

Attention:

- All dimensions must be as precise as possible
- Mark the presumed hammer work point
- The hammer works best in the vertical position
- In case of need, state the bridge location
- Bearing structures must be designed separately

Placement of the Boom system:MOBILE CRUSHER ACROSS THE DIRECTION

1 - Max. hammer reach
2 - Max. perpendicular hammer reach

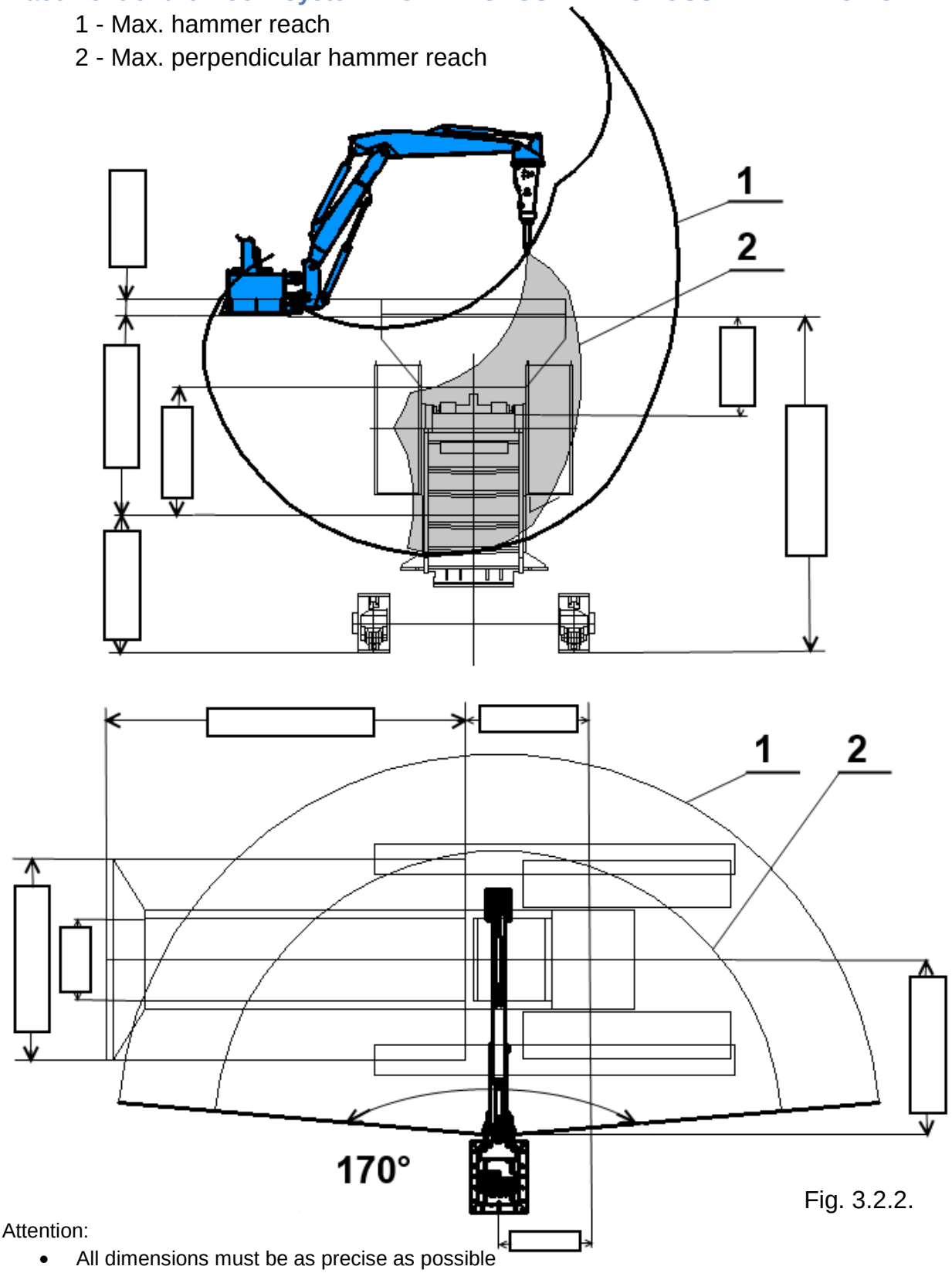


Fig. 3.2.2.

Attention:

- All dimensions must be as precise as possible
- Mark the presumed hammer work point
- The hammer works best in the vertical position
- In case of need, state the bridge location
- Bearing structures must be designed separately

Placement of the Boom system: JAW CRUSHER ACROSS THE DIRECTION

1 - Max. hammer reach

2 - Max. perpendicular hammer reach

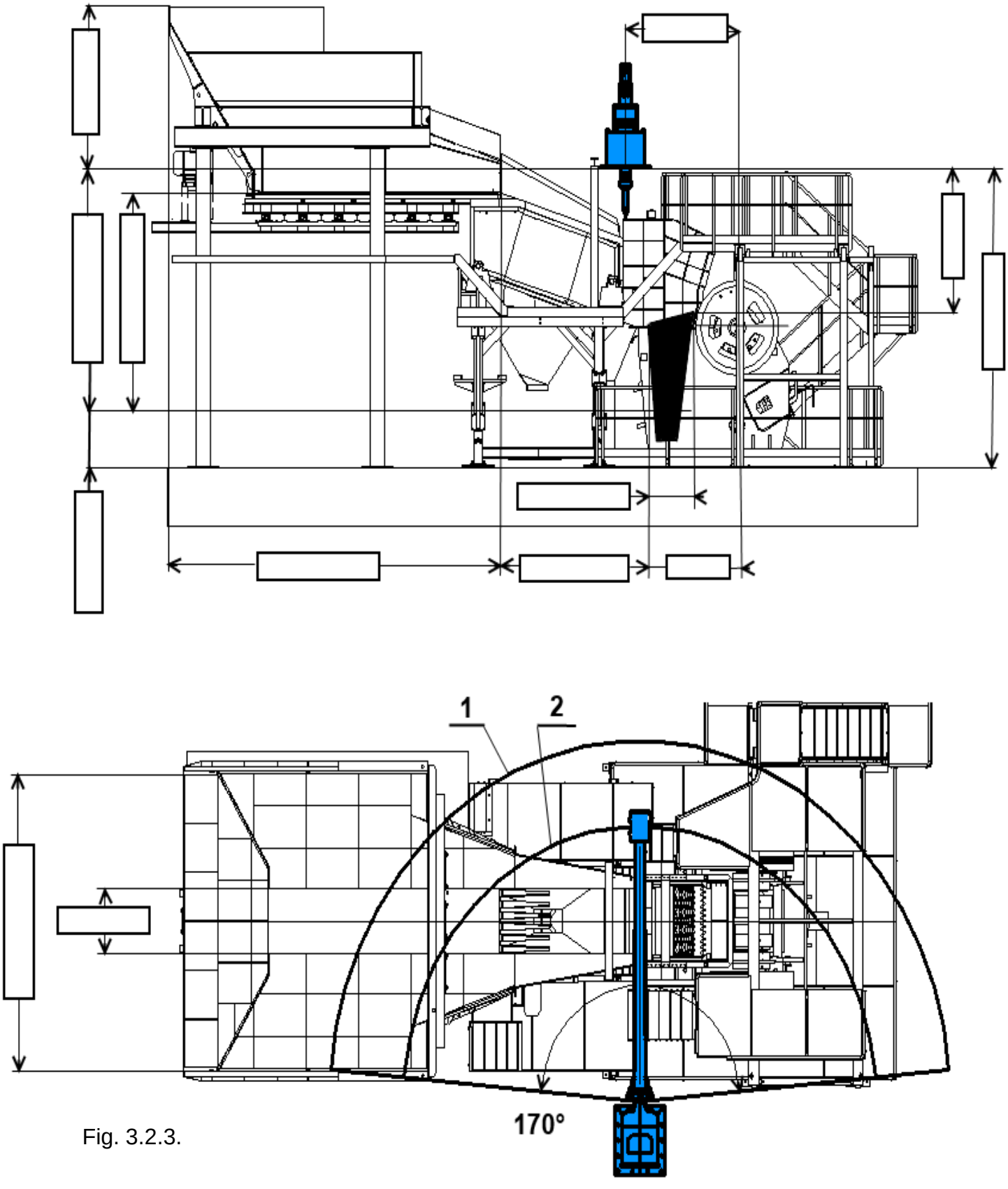


Fig. 3.2.3.

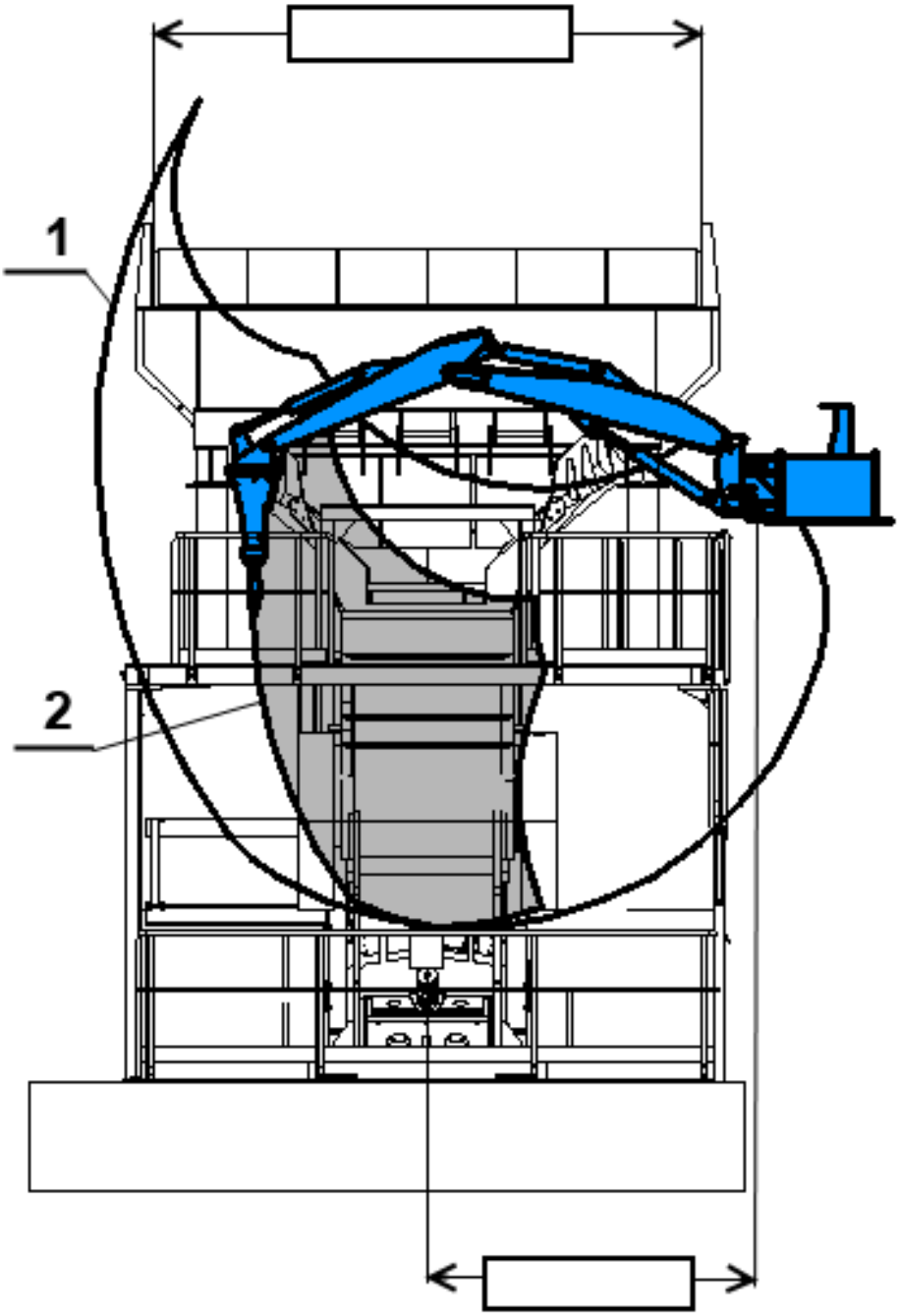


Fig. 3.2.3.

Attention:

- All dimensions must be as precise as possible
- Mark the presumed hammer work point
- The hammer works best in the vertical position
- In case of need, state the bridge location
- Bearing structures must be designed separately

Placement of the Boom system: GRID AND JAW CRUSHER

1 - Max. hammer reach
2 - Max. perpendicular hammer reach
3 - Grid opening dimensions
4 - Perpendicular hammer reach on the grid

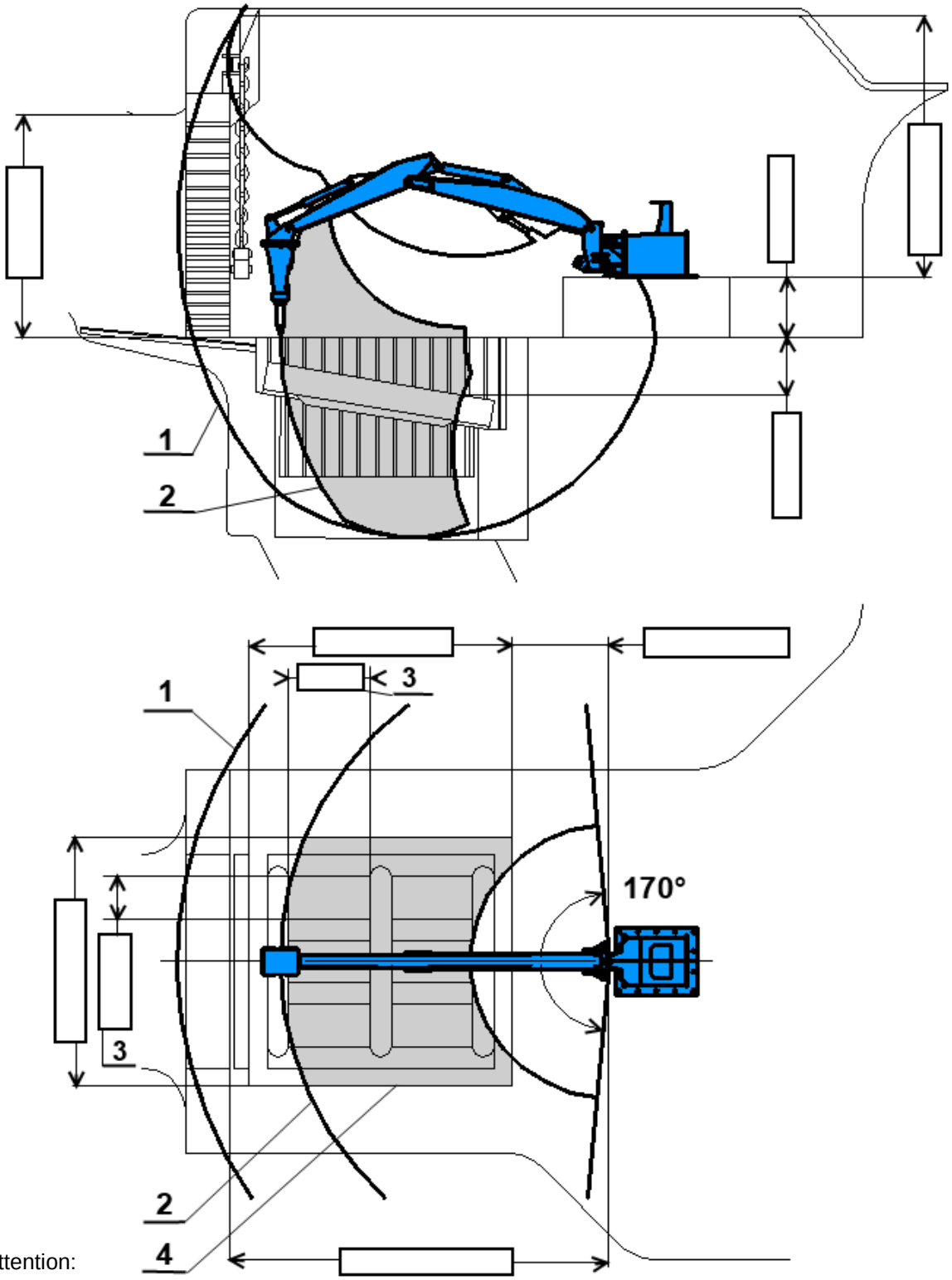


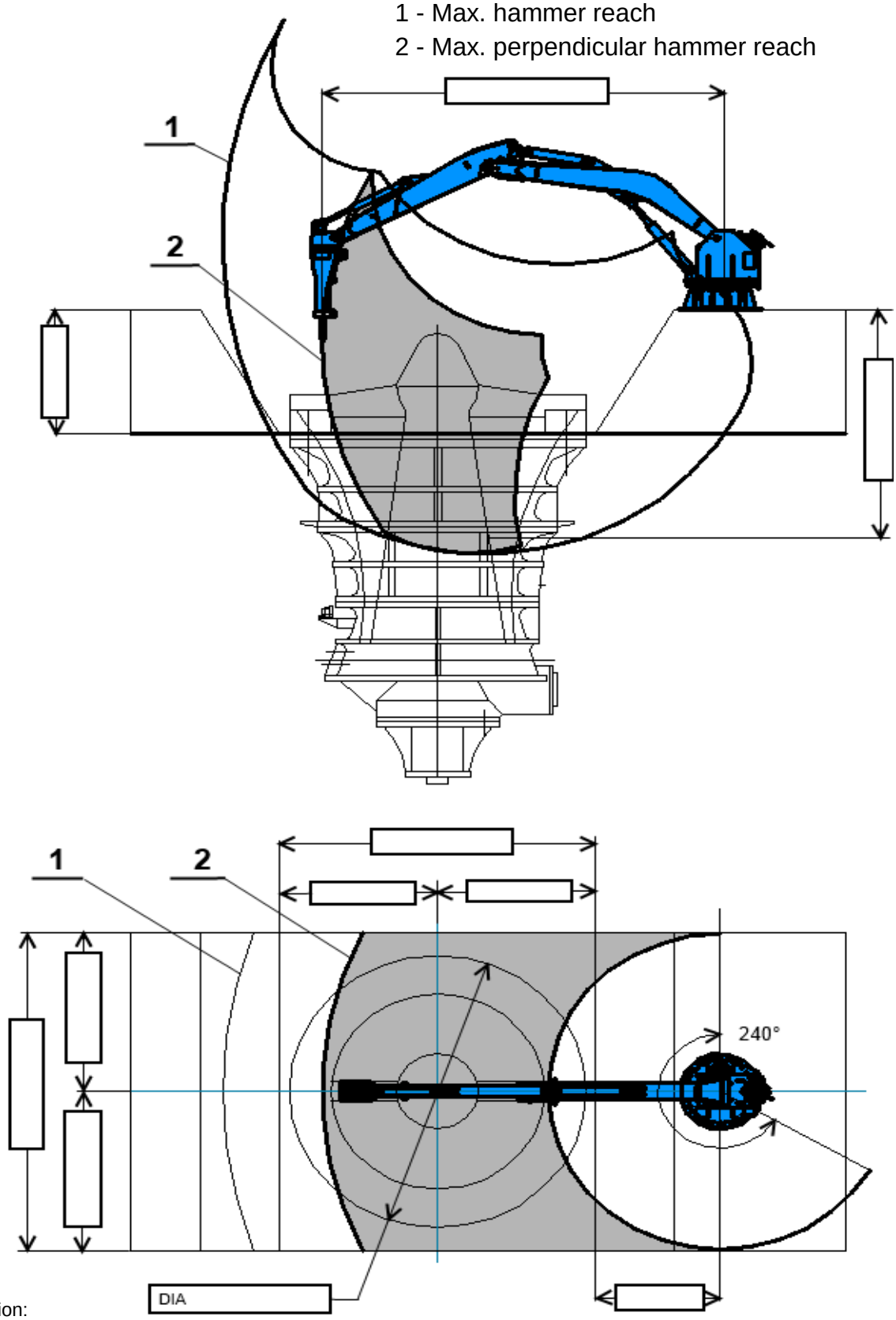
Fig. 3.2.4.

Attention:

- All dimensions must be as precise as possible
- Mark the presumed hammer work point
- The hammer works best in the vertical position
- In case of need, state the bridge location
- Bearing structures must be designed separately

Placement of the Boom system: CONICAL CRUSHER

1 - Max. hammer reach
2 - Max. perpendicular hammer reach



Attention:

- All dimensions must be as precise as possible
- Mark the presumed hammer work point
- The hammer works best in the vertical position
- In case of need, state the bridge location
- Bearing structures must be designed separately

Fig. 3.2.4.

REMARKS CONCERNING THE INSTALLATION AND CUSTOMER REQUIREMENTS:

MANUFACTURER'S CONTACT:

Trading BFBT s.r.o.
Nádražní 910
783 91 Uničov
FAX: +420 585 001 225
E-mail: bfbt@bfbt.cz
www.bfbt.cz

CUSTOMER'S CONTACT:

Company title:.....

Contact person Address:.....

Adresa:.....

Phone and fax:.....

Destination:.....