

TECHNICAL **STATIONARY MK III ROCK BREAKER**

1.0 THE BOOM

The impact breaker is largely used as a raking tool. Gravel and rock lying on top of the oversized rocks have to be moved aside, to be able to get to the blocked grizzly underneath. This puts high side loads and twisting moments on the boom structure.

Our design incorporates the following features:

- 1.1 Extra long and heavy pins, hardened and ground
- 1.2 Internally welded girder type reinforcing, torsion stiffeners
- 1.3 Heavy duty fork heads with long side reinforcements

The boom is calculated using a safety factor of 8 for combined stress.

2.0 THE SLEWING ARRANGEMENT:

To lower the bearing load, the bearing centres are spaced as far apart as possible.

Spherical plain radial and axial bearing are used for maximum load and minimum sensitivity to vibrations.

Top and bottom bearing arrangements are identical and interchangeable.

The bearing housings are bolted (Huckbolts) to the base pedestal and slewing bracket and can easily be maintained and replaced. (No Welding)

Lubrication is done through internal porting, avoiding ingress of dirt

3.0 THE HINGE PIN ARRANGEMENT:

An impact breaker is classed as a vibratory machine. Ordinary ball bearing, roller bearing and sleeving rings are prone to pitting and brinelling due to stationary vibrations.

Pins and parallel bushes are prone to seizing and elongation, making stripping and maintenance difficult.

We use:

- 3.1 Spherical plain bearing with self alignment.
- 3.2 Case hardener pins with internal grease points allowing clean grease to reach the bearings.
- 3.3 Pin retainers that act as spacer bushes and also prevent the pin from turning in the bush.

ADVANTAGES:

1. Good bearing wear life
2. Easy to dismantle
3. Off the shell replacement parts (bearing and seals)

4. Dirt free lubrication

4.0 **HYDRAULIC CYLINDERS**

All cylinders are designed to DIN standard, rated at 250 bar and are pressure checked to 350 bar

Features:

- a) End cushioning to eliminate shocks
- b) Manifold mounted over centre valves to stop boom from creeping during down-wards movement and to stop boom movement during hose failure

Spherical bearings are fitted to both cylinder clevises

Cylinder Sizes:

- 1. 2 x Boom lifting Ø 100 x 65 x 800 mm
- 2. 1 x Boom articulation Ø 160 x 100 x 1400 mm
- 3. 2 x Slewing Ø 100 x 65 x 685 mm
- 4. 1 x Hammer tilt Ø 100 x 700 mm

5.0 **HYDRAULICS**

The reservoir is a fully welded construction with an internal baffle plate as well as two manhole cover for ease of cleaning.

A drain valve is fitted onto a sloped bottom plate.

The complete electric motor, bell housing, coupling and pump assembly can be lifted out in one piece by loosening two hydraulic pipe connections and eight flange mounting bolts.

Hydraulic Pumps : Options fitted at customers request
Options : Cassapa pump
Rated at 210 bar

This offer will allow for a Cassapa pump.

As we run the unit at a maximum of 140 bar pressure, all pump tyres are suitable but obviously the life expectancy of the internal gear pump is higher.

Couplings:

We utilize the Bowex gear tooth coupling with a nylon sleeve. Should the drive system for any reason become overloaded the nylon sleeve will shear, thus providing an additional safety feature.

Hydraulic oil filtration:

- a) Low oil level cutout
- b) High oil temperature cutout (75° C)
- c) Temperature and level indicator on tank
- d) Minimes pressure check points on all pressure lines.

6.0 **ELECTRICAL:**

The maximum combined power required is ± 33 kW

We have selected a 37 kW 4 pole TEFC electric motor

MAKE: **FRAME SIZE:**
525 Volt 50 Hz
IP 55 B3/5
Cast Iron

The switchboard consists of a double door splash proof box containing all necessary starting functions and safety interlocks.

Special Features:

Phase reversal protection
High oil temperature cutout
Low oil level cutout
Hour meter
AMP meter
Hydraulic oil cooled by force cooling
The panel contains a start / stop and reset button for maintenance.

A remote start / stop button is located at the operators position for operation during the work cycle.

All fault indication is shown via pilot lights on operators panel.

SPECIFICATION

MODEL : STATIONARY ROCK BEAKER

MECHANICAL:

Max boom height with hammer	
In minimum reach position	4 300 mm
Min boom reach with hammer	
In vertical position	2 500 mm
Min boom reach with hammer	
30° backwards tilt	2 200 mm
Maximum boom reach with hammer	
In vertical position	6 500 mm
Max depth reach at 3470 mm from	
Front pivot	3 600 mm
Max boom reach with hammer 30°	
Forward tilt	7 500 mm
Slewing angle	140° (70° left & right)
Base area	1,56 m ²

HAMMER:

Make	Krupp HM552 D/L
Service weight (kg)	900
Oil flow rate (l/min)	70 - 120
Operating pressure (bar)	120 - 180
Blow frequency (blows/min)	350 - 800
Moil diameter (mm)	100
Blow energy (Nm)	1 020
Hammer oscillation	60° (30° to each side)
Impact valve type	Vickers relief valve and