



# Hydraulic Brick Clamp

6000 series

Owner Manual

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# Quality brick clamps to the industry

**Thank you** for purchasing and placing your confidence in an **ABEL EQUIPMENT** product. We assure you of our after sales service, a perfect and safe operating of our product, requiring the minimum maintenance and spare parts replacement.

## Features

The patented **ABEL** brick clamp is technically unique in being a versatile tool for palletized and non-palletized materials. The ABEL clamp is designed, developed and manufactured in South Africa, only local components and skills are used. ABEL equipment has a fully automated test facility which is used to simulate actual clamping and determine the life span of each model.

Versatile tool with opening range of 250 mm to 1260 mm i.e. for handling of single concrete products like curb stones, or handling of brick stacks.

Easy to use with durable and replaceable rubber inserts – simple to operate between the stacks.

**Safety** through internal non-return valve that ensures a safe clamping force if crane pressure drop.

Latest technology and modern design creates the best product for all brick handling applications.

Lowest overall height and highest stack size in its class.

Standard hydraulic seals, glacier bushes and clamping rubbers for easy maintenance.

Very low maintenance costs.

Interchangeable attachments for crane or forklift.

2 year manufacturer's guarantee, excluding fair wear and tear.

Always competitive pricing and excellent backup service ensures the best all round deal.

## i

### General specifications

Cylinder stroke:	145 mm
Cylinder inside diameter:	100mm
Hydraulic pressure range:	16-18 MPa
Hydraulic fitting size on cylinder:	12mm male Nipple
Grab mass complete:	320 Kg
Lifting Capacity:	2000 kg*

\* Please note: – The load capacity listed in the table depends on the load (the surface conditions, the size of individual stones, stack size and kind of bundling)

## iii

### Maximum stack height

Crane grab maximum height1:	1200 mm.
Forklift grab maximum height:	1170 mm

## iii

### Dimensions

Crane Grab: See fig 2

Forklift Grab: See fig 3

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**It is very important** that all persons involved with the working and maintenance of the ABEL EQUIPMENT clamp be able to access the manual for reference and the operator must study the manual carefully.

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## BRICK CLAMP INSTALLATION

### Transporting

Transport of the clamp can only be done on a vehicle that is certified to carry loads exceeding 300kg. While transporting the Abel brick grab, ensure that it is securely tied down with adequate straps or “tie downs”.

### Unpacking

The Brick Clamp is supplied assembled in a crane variant or as a forklift attachment. The standard equipment fitted on all variants include: Hydraulic cylinder complete with non-return valve and product clamp rubbers. The brick clamp is lubricated and wrapped in plastic before dispatched from the factory.

Before using the Brick clamp all plastic wrapping must be removed and inspect for any transport damage.

### Hydraulic supply requirements

Operating pressure: 16 to 18 MPa (160 to 180 bar). Maximum system pressure must be kept below 20MPa (200 bar) and Pump capacity: 25 to 75 l/min

The operating valve must be double acting with a neutral stop position. The operating valve must return automatically to the neutral position

### Rotator fitment

The suspension cradle of the brick clamp has mounting holes predrilled for a utility hook or rotator. (see fig 4) The lifting capacity of the rotator or utility hook selected must exceed the combined weight of the clamp and its maximum lifting capacity. Only fit rotators certified for use on lifting equipment.

Fit the rotator or utility hook to the suspension cradle by using high tensile 16mm bolts of adequate length to accommodate nylock nuts and washers.

The suspension bolts must be tightened with a suitable torque wrench to a minimum of 150Nm.

### Hydraulic connection

The Hydraulic cylinder and locking valve is supplied as an integrated unit. The locking valve has two 12mm metric banjo connectors that the hydraulic supply and return hoses couple too. A 3/8” hydraulic hose with a 12mm metric female nipple is thus required to connect to the hydraulic cylinder of the brick clamp.

The hose is then either coupled to the rotator or has a quick coupler on .If the rotator is used with a quick coupler, the hoses should be of adequate length. The pipes and fittings should be supplied by an authorized pipe fitting manufacturer.

Ensure that piping is not too long as to get caught in working parts.

Piping must be fitted by a qualified fitter to ensure safe and correct fitment.

It is important that the machine is equipped with the correct hydraulic plant.

Locking of the valve is done automatically there does not have to provision made for this.

## **BRICK CLAMP OPERATION**

### **Operating conditions**

Do not use the Abel clamp without having fully understood the instructions described in this manual.

The Abel clamp is capable of lifting contents according to the specification in table 1, a max. Load of 2000 kg is permissible. If this is exceeded at any time the guarantee on this product will be considered to be void.

Do not use the Abel brick clamp for lifting any other products for which it was not intended.

### **Working area**

The working area of the Abel brick clamp must be avoided at all costs.

Any persons working with or near the clamp must keep a safe working distance and must be occupied by the working of the clamp and lifting equipment only.

The operator of the Abel clamp is responsible for the safe working conditions and should report any suspect conditions of any kind to their supervisor.

### **Safety precautions**

Keep a minimum safety distance from the clamp of 10 meters when the machine is working.

No unauthorized persons are to be near the machine or working environment.

Lifting of anything other than what the brick clamp was intended for is strictly prohibited.

Be sure to use the correct rotator with sufficient load specifications.

Operating of clamp assembly is restricted to trained personal.

Safety standards are to be indicated on the machine and are also valid for the brick clamp.

The ABEL clamp conforms to minimum standards and must be mounted on other conforming equipment.

Before performing any maintenance on the able clamp read through the maintenance instructions in this manual.

The machine to which the ABEL clamp is attached must be fitted with an acoustic and visual warning signal. The signal is intended to warn people of the equipment's functioning.

Only specialized personal trained in procedures regarding hydraulic and mechanical equipment may perform repairs and major maintenance.

## **BRICK CLAMP MAINTENANCE**

### **Daily maintenance**

Maintenance must be carried out in designated area where there is no obstruction to any other equipment or persons.

All parts must be kept clean to insure minimal wear and tear.

Clamp must be secure and at no risk of falling over.

Oil in cylinder must have cooled off to a safe temperature.

Check rotator attachment bolts by hand and make sure they are tight.

Check pins and bushes for excessive play and report if necessary.

Check for any visual cracks on the welding of the clamp.

Check the condition of the rubber pads as to prevent the clamp from operating on steel.

Check hydraulic system for any visual leaks and report if necessary.

Check hydraulic hoses for damage and replace if necessary.

### **General maintenance**

Lubricate all 4 (four) grease nipples once per week.

Lubricate with multipurpose grease.

Rubber blocks must be checked to insure that the steel holders are not damaged during operating.

### **Quarterly inspection**

This inspection is to be carried out by a qualified technician.

Check the condition of the fabrication.

Check the function and condition of hydraulic components.

Check the maintenance schedule.

Check the equipments lifting capacity.

Establish the limits of use.

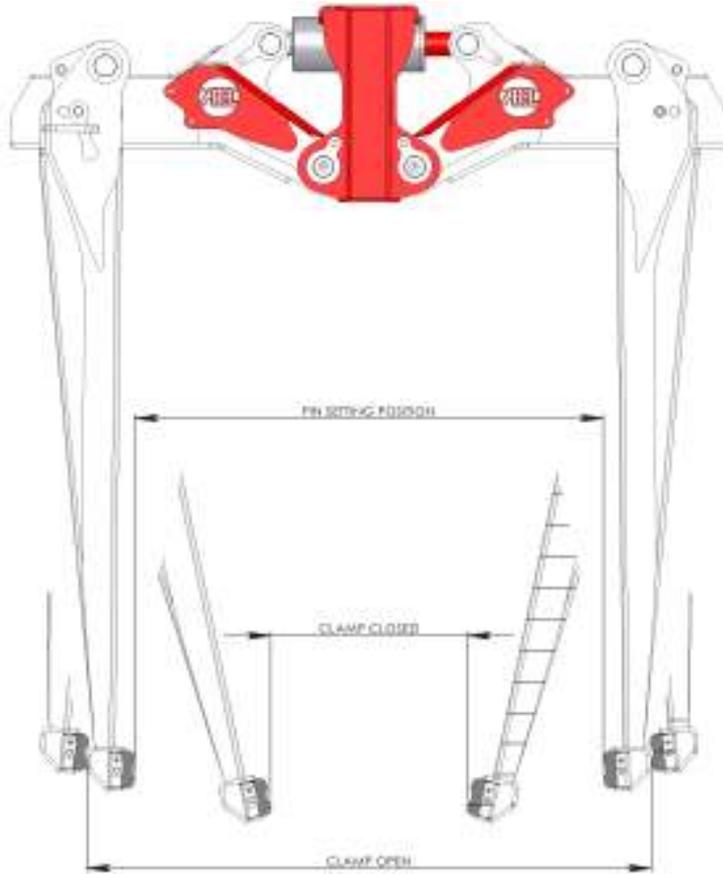
Check the functionality of the ABEL clamp.

The inspector/technician must sign a report noting checks done on the ABEL clamp.

**Always remember: There is no harm in asking if you are not sure.**

## Leg adjustment and settings

To move leg from 1100 mm position to 700 mm position, push the leg in the desired direction. If the leg will not move push the bottom end of the leg in unlock direction and continue to move the leg back and forth while applying pressure at the top of the leg in the desired direction. Make sure that the locking pin is replaced securely to prevent any serious accident.



Leg Adjustment		
Pin Setting	Open	Closed
1070 mm Position	1260mm	520 mm
1000 mm Position	1190 mm	450 mm
970 mm Position	1160 mm	420 mm
900 mm Position	1090 mm	355 mm
865 mm Position	1055 mm	320 mm
795 mm Position	990 mm	250 mm

Figure - Leg pin setting

## Hydraulic Schematic

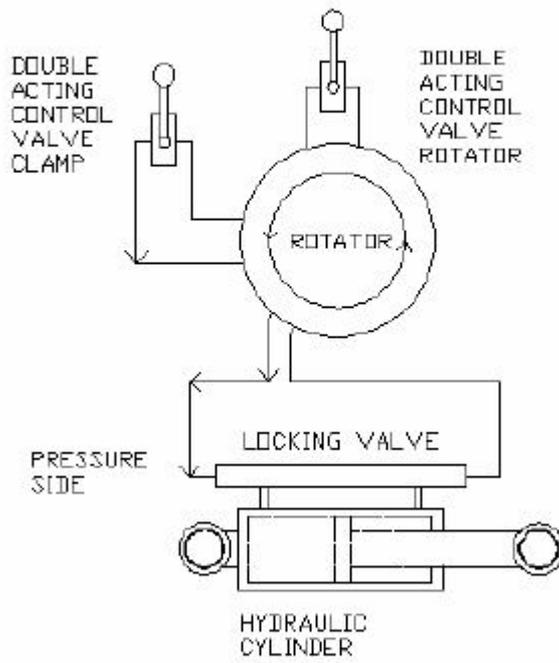


FIG 1

# ABEL GRAB CRANE ATTACHMENT

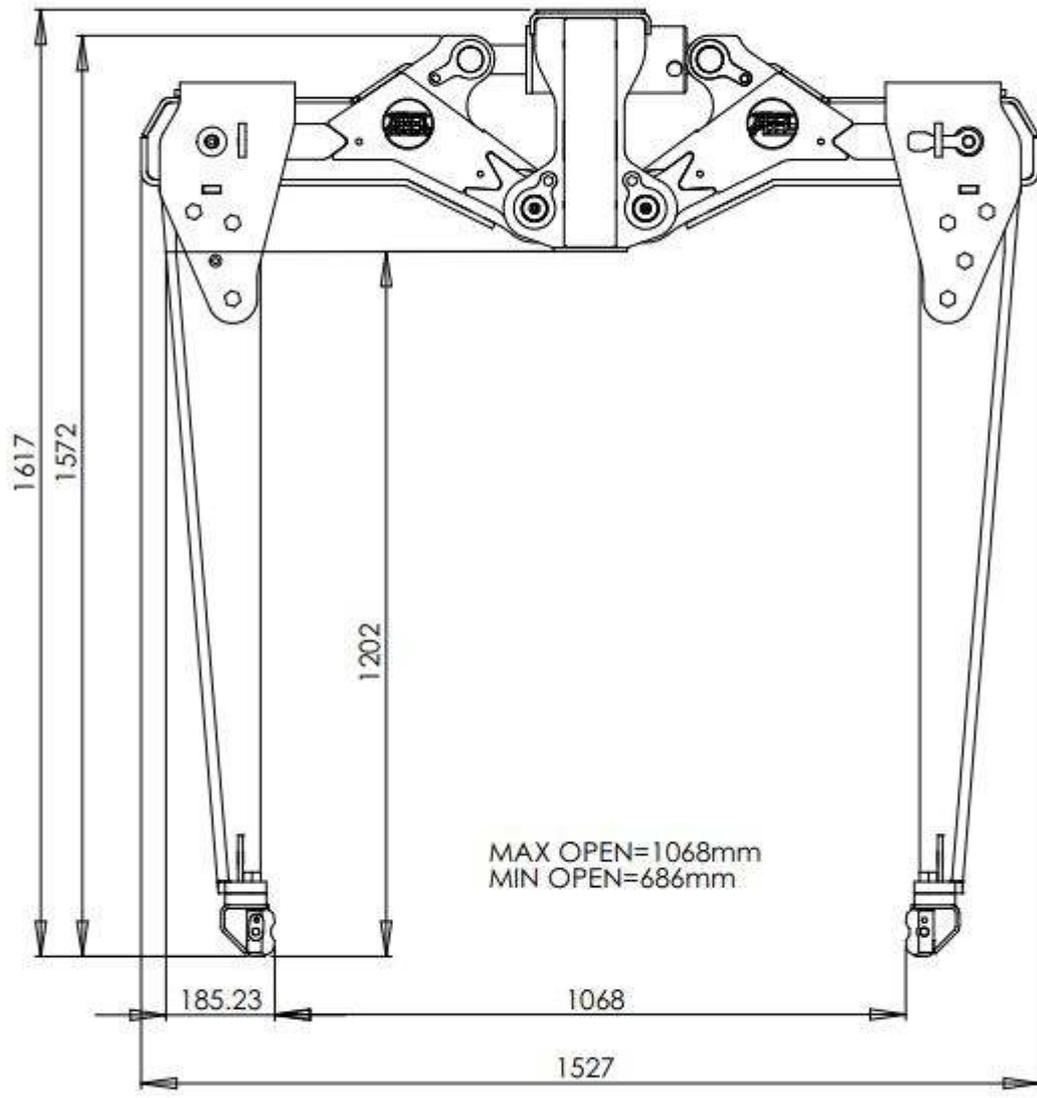


FIG 2

# ABEL GRAB FORKLIFT ATTACHMENT

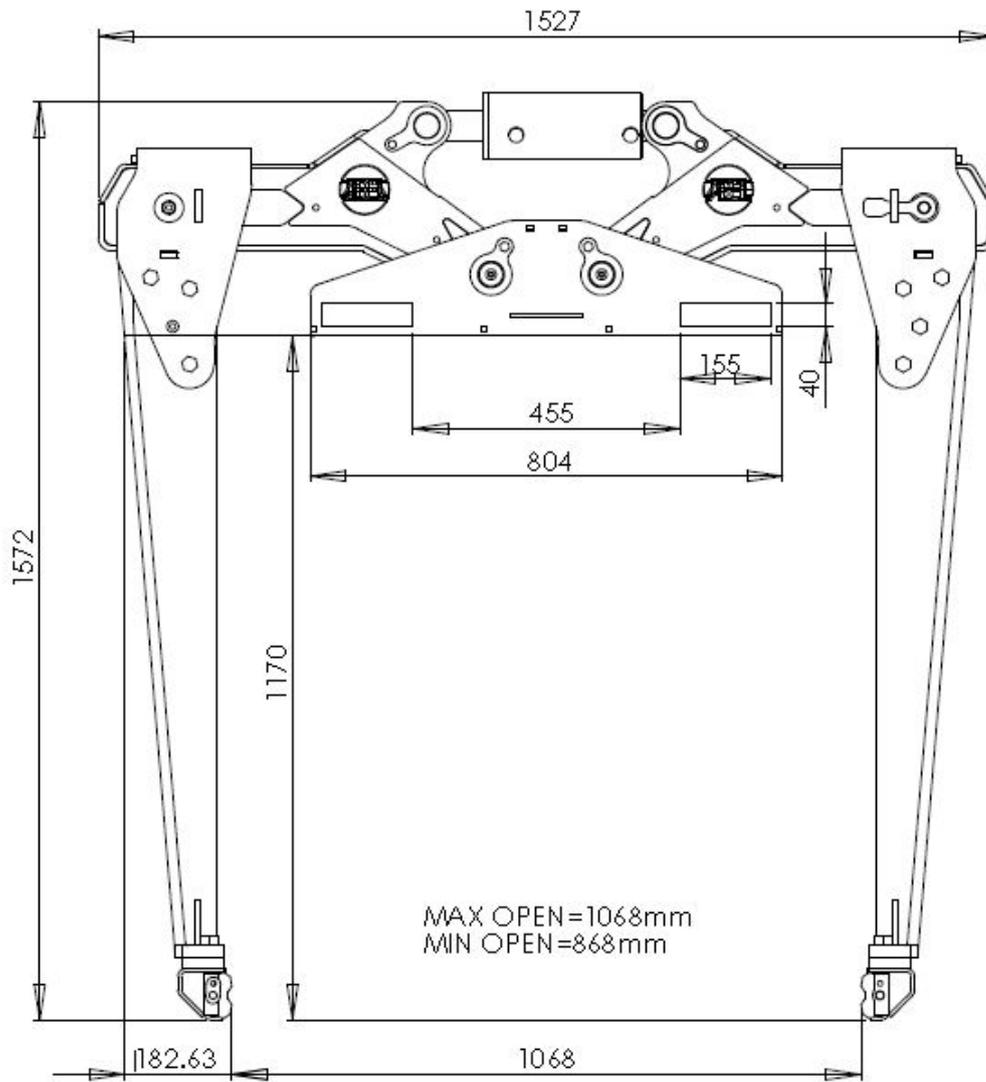


FIG 3

Rotator mounting flange PCD

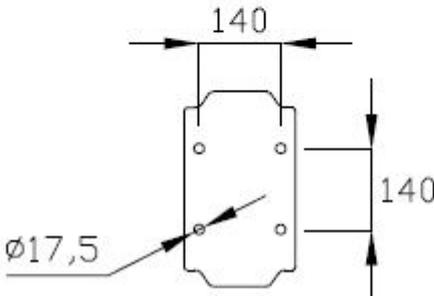


FIG 4