

# Morris Brothers

STOKE-ON-TRENT, ENGLAND Est. 1948

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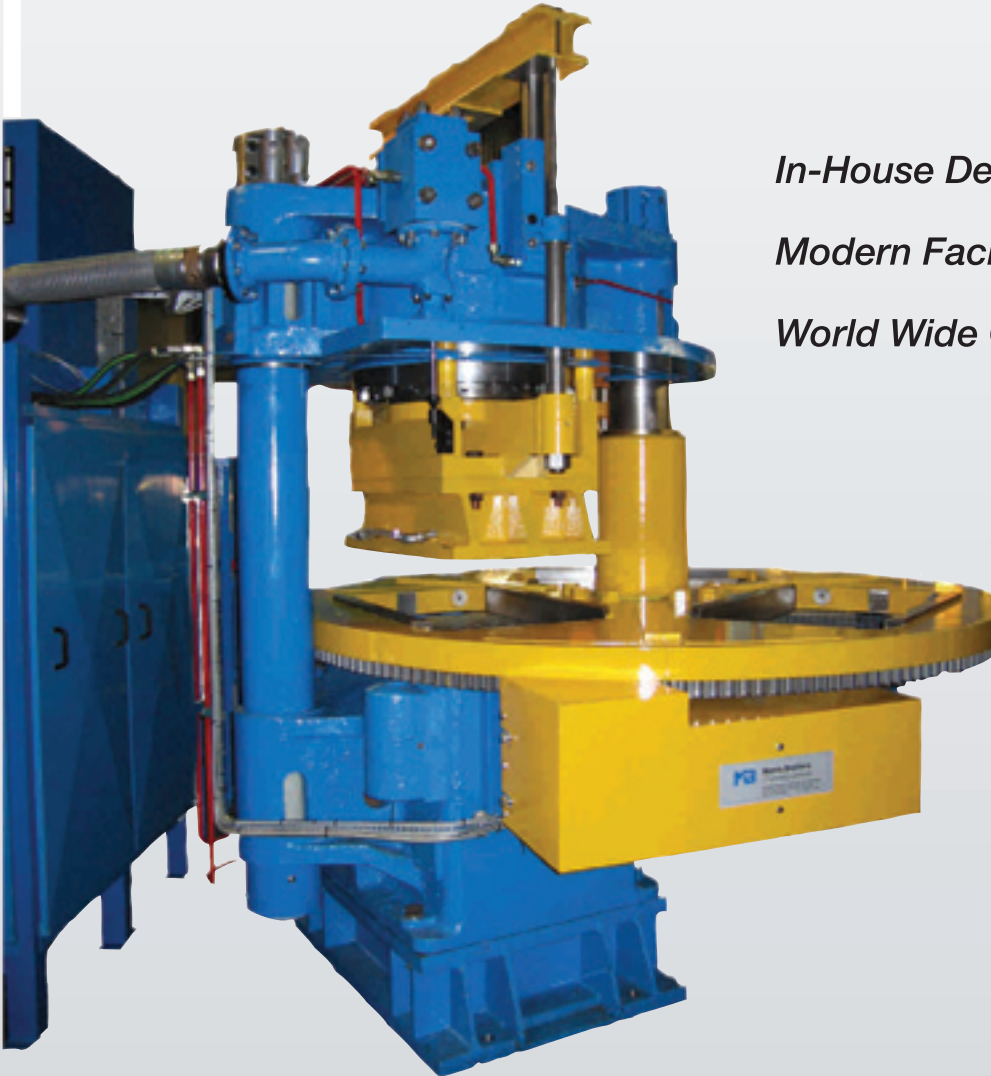
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## Concrete Press Specialist

Supplier of Concrete Presses,  
Handling Systems and Associated Products



*In-House Design & Manufacturing*

*Modern Facilities*

*World Wide Customer Base*

**Concrete Presses:-** *Three Station and Single Station*

**Tooling:-** *Standard Products and Special Products*

**Handling:-** *Automatic - Semi Automatic - Robot Integration*

**Dispensing:-** *Volumetric - Weigh Batch*



# Morris Brothers (Tunstall) Limited

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## Brief History

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Morris Brothers (Tunstall) Limited was formed and incorporated in 1948 by the brothers, Fred and Harry Morris.

It has remained within the family through four generations. The Company began offering a specialised engineering service to the local pottery industry and the manufacture of industrial fans.

Early in its existence it became involved with precast concrete manufacturers and soon the company resources were honed and directed virtually exclusively to the design and production of the tooling and associated equipment.



*Fred Morris*



*Harry Morris*

From this early relationship the company developed and expanded into handling and the manufacture of wet concrete presses. Some of the first take-offs and automated conveyor handling systems were designed / manufactured and installed by Morris Brothers.

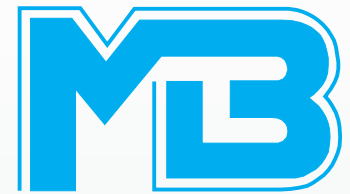
This long association with the industry has proved a wealth of experience and expertise in all matters relating to the manufacture and handling of pressed concrete products in all shapes and sizes.

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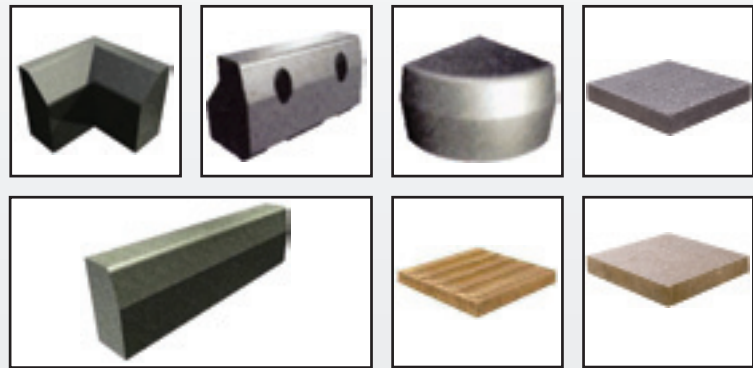
Today coupled with a continuous investment programme, with state of the art computerised design and in-house manufacturing machinery, Morris Brothers continues to be a leader in this specialist field, supporting everything from new press projects to special tooling requirements and everyday consumables.

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# Concrete Presses 400 Ton



Three Stage Press



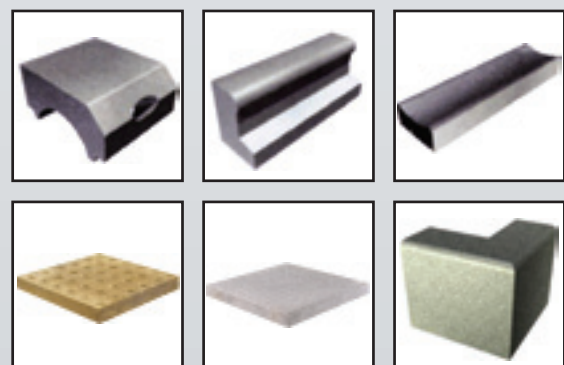
Quantity per shift

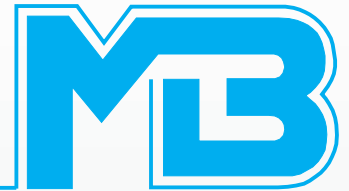
Slab		Three Stage	Single Stage
•	600 x 450 x 50 - 63 Simplex	2500-3000	1000-1200
•	600 x 600 x 50 - 63 Simplex	2500-3000	1000-1200
•	750 x 600 x 50 - 63 Simplex	2500-3000	1000-1200
•	900 x 600 x 50 - 63 Simplex	2300-2800	950-1100
•	450 x 450 x 50 - 70 Duplex	4000-4500	2000-2400
•	400 x 400 x 50 - 65 Duplex	4000-4500	2000-2400
•	300 x 300 x 60 Duplex	4000	2000
•	900 x 300 x 50 Simplex	2800	1000-1200
•	600 x 300 x 50 Simplex	2800	1000-1200
•	450 x 225 x 35 Simplex	2600	950-1150
<b>Kerb</b>			
•	912 x 250 x 125 Simplex	1500	750 - 950
•	912 x 250 x 125 Duplex	2800	900-1100
•	912 x 150 x 125 Simplex	1500	750 - 950
•	912 x 150 x 125 Duplex	2800	900-1100

\* The above figures are based on a UK factory working at 100% efficiency



Single Stage Press





## The Concrete Pressing Process

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Shown opposite is a basic pressing process common to most single and three stage presses. Machinery and equipment can vary from semi automatic to fully automatic dependant on customer needs and can be designed to suit your specific requirements.

### The Pressing Process

Whether you are using a single stage or a three stage press the pressing process is basically the same; the filling of a mould with wet concrete, pressing the concrete until hard, ejecting and stacking the finished product.

A concrete mix design for the product is required using local aggregates if available.

These aggregates are precisely weighed and batched according to the mix design and dispensed into the mixer. A controlled amount of water is added producing a workable wet concrete allowing suitable flow from the wet mix hopper and into the mould.

To assist with water extraction during the pressing process and to help with the release of the pressed product from the mould a paper or a filter cloth is used.

Before pouring concrete into the mould a filter paper or cloth is placed into the bottom of the mould. Once the paper or cloth is in place a measured volume of concrete from the wet mix hopper is dispensed into the mould, if the water content of the concrete is correct the concrete should flow equally around the mould without any further assistance. Finally a paper or cloth is then placed on top of the wet concrete.

With all the above in place and the press start conditions have been met, the mould can be sent round to the pressing position under the main ram. Once the table has located, the pressing ram will automatically start to press onto the wet concrete for the time duration set by the press operator. This can vary between 5 - 60 seconds dependant on the quality of the materials and the depth and shape of the product being made.

During this time water is extracted from the wet concrete using a vacuum through the die head producing a wet but hard product.

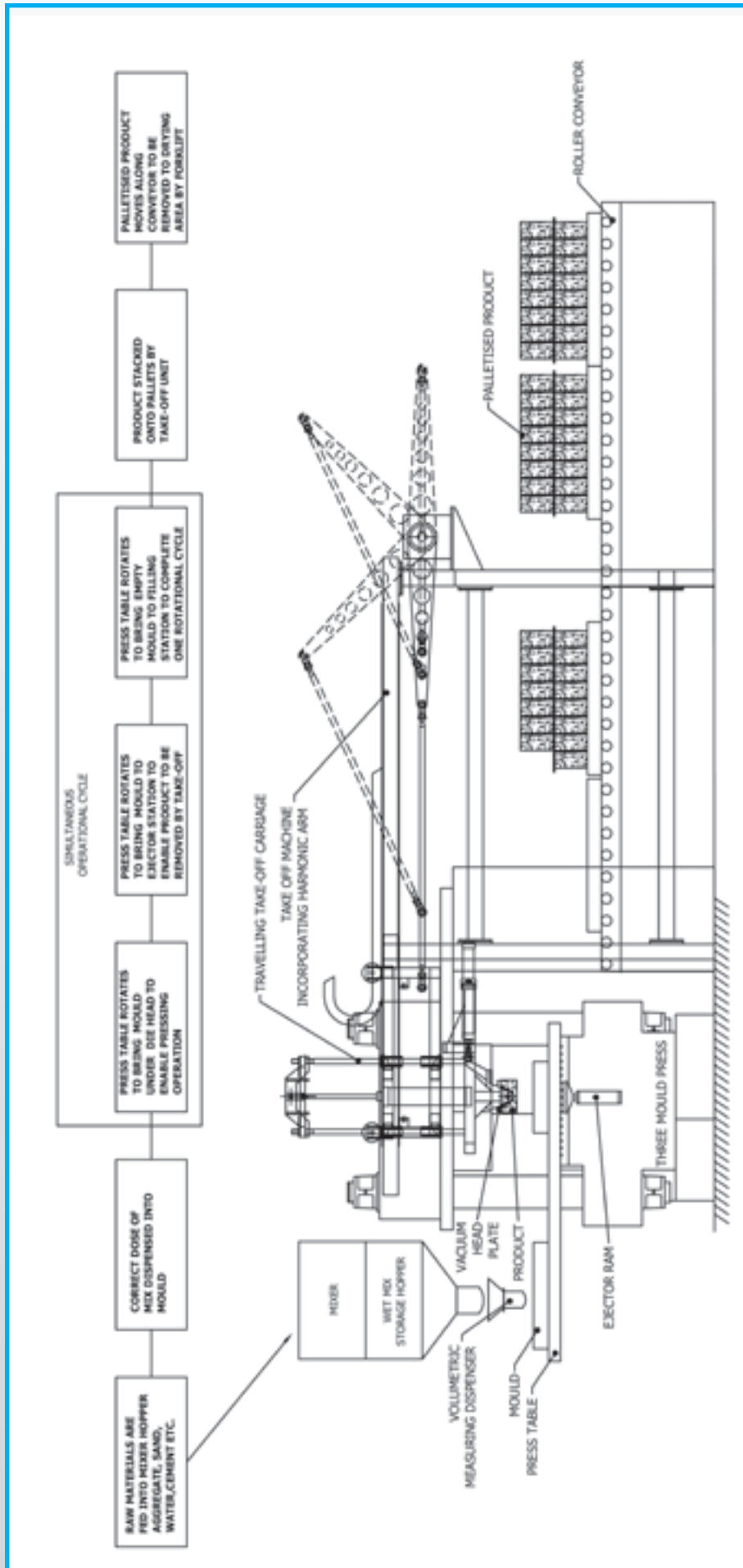
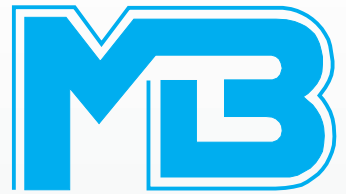
As soon as the pressing process is complete the ram is withdrawn from the mould, the table and mould will turn automatically to the next position over the ejector ram.

When the table and mould have reached the correct position, the ejector ram automatically pushes the now pressed concrete out of the mould.

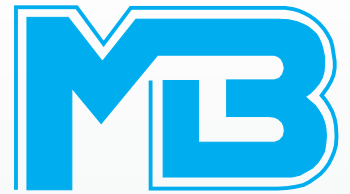
At this point the take off machine takes over, lowering the vacuum head plate down onto the ejected concrete product creating a vacuum and picks up the product. The carrier then travels over to the waiting pallet where the products are neatly stacked along with previously made products and will continue until the pallet is full.

The pallet when full travels along a roller conveyor to a point where it can be lifted off by a fork lift truck and put into a curing area for 24 hours, less if curing systems are installed. They are then quality checked, banded into packs and placed onto the stock ground.

# Basic Pressing Process Diagram



# Three Station Hydraulic Slab and Kerb Press



## General Specification

### Construction

- Top casting housing the main ram.
- Bottom casting with drain table.
- The above units are held apart by two distance sleeves.
- Two columns are passed through the assembled units and securely tightened using four split nuts.
- The machine has a rotary table with three stations.
  - (A) Pressing station.
  - (B) Filling station
  - (C) Ejection station

### Power

- The table is rotated by means of rack and pinion, and powered by an inverter driven 22kw motor and gearbox.
- The main pressing ram gets its power from a free standing hydraulic power pack.
- The unit houses a 25 - 30 kw motor which drives a 19 gpm variable displacement pump.
- The oil is then distributed to the machines cylinders by way of directional control and pressure relief valves, giving a recommended main ram pressure of 2240 psi.
- The ejector ram is powered by its own 11 gpm pump to avoid starvation of the main ram pressure.

### Control

- The control of the machine is achieved by means of a PLC system which can be provided for customer preference.
- The machine comes fully assembled, tested and mounted on a steel fabricated base for ease of installation.

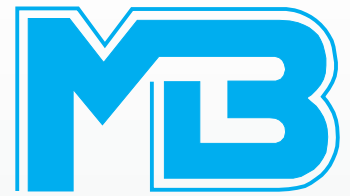
### Weight

- Approximately 16 ton.

### ADVANTAGES OF A THREE MOULD PRESS

- Solid robust structure.
- Higher production numbers giving lower running costs.
- Faster cycle times.
- A wide range of products can be produced on this press.

# Single Station Hydraulic Slab and Kerb Press



## General Specification

### Construction

- Manufactured heavy duty fabricated steel frame.
- Housed within the frame is the main ram cylinder manufactured from high grade cast steel.
- The cylinder houses a 23" diameter pressing ram with a downward stroke of 4".
- The unit has a mould table which carries the necessary tooling for production selection.
- There is a 14" stroke hydraulic cylinder incorporated within a steel fabricated frame for the removal of the finished pressed products.

### Power

- All three movements of the press are achieved by way of hydraulic force.
- This power is from a free standing power pack which houses a 25 - 30 kw motor, which drives a 19 gpm variable displacement pump.
- The oil is then distributed to the machines cylinders by way of directional control and pressure relief valves, giving a recommended main ram pressure of 2240 psi.

### Control

- The control of the machine is achieved by means of a PLC system which can be provided for customer preference.
- The machine comes fully assembled and tested, mounted on a steel fabricated base for ease of installation.

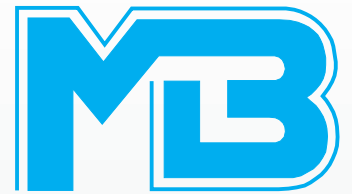
### Weight

- Approximately 12 ton.

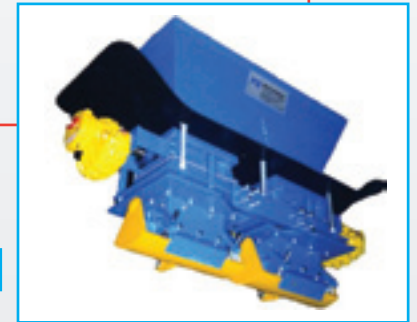
### ADVANTAGES OF A SINGLE MOULD PRESS

- Solid robust structure.
- Lower initial start up costs.
- Lower tooling costs.
- Normally used for lower production numbers and special products such as quadrants, return angles, drainage kerbstones and special kerbstones.
- A wide range of products can be produced on this press.

# Volumetric and Weigh Dispensers



Freestanding unit with travelling bucket, designed for use on a single stage press.



Open top hopper for the production of duplex slabs.

Morris Brothers manufacture a wide range of dispensing systems to suit the production of hydraulically pressed concrete products.

The volumetric is a simple, but effective design and has been widely used in the industry since the 1970's. It enables accurate amounts of measured concrete to be dispensed into the press moulds, which ultimately gives a constant product thickness.

There is a volumetric for every conceivable product produced on the press. Some examples are:-

- Simplex slab.
- Duplex slab.
- Simplex kerb.
- Duplex kerb.
- Quadrants.
- Return angle, and many more.

Most volumetrics are designed for individual customer requirements, and can be manufactured with open top, lift and lower and even made to travel in restricted areas.

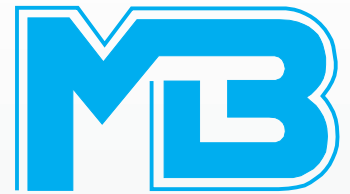


Duplex weigh dispenser

We can now offer weigh dispensers as an alternative to the volumetric. This unit reduces product change over times with the push of a button, and most products can be manufactured using the same dosing buckets.

The unit is operated by means of load cells and amplifiers which can be easily programmed and linked into your existing PLC system.

# Handling Systems



Duplex kerb production

We have been leaders in the manufacture of handling and control systems for the concrete pressing industry for over 40 years.

All our machines are designed and built to meet individual customer requirements, as we understand the ever changing demand for new products within the market.

We can offer:-

- Manually operated.
- Semi Automatic.
- Fully Automatic.
- and even Robotic systems.

Most machines are capable of handling both simplex and duplex slab or kerb, and with the kerb machines, 3 - 4 layers can be achieved with the use of our automatic paper placer.



Duplex slab production

## Automatic pallet magazine with lowerator latches and Pallet pusher

All of our automatic machines come fitted with a pallet magazine capable of storing up to 8 - 10 pallets.

For factories where fork lift truck access is limited for loading new pallets into the machine, we can incorporate a lower turning arrangement which will rotate the pallets for positioning onto the indexing conveyor.



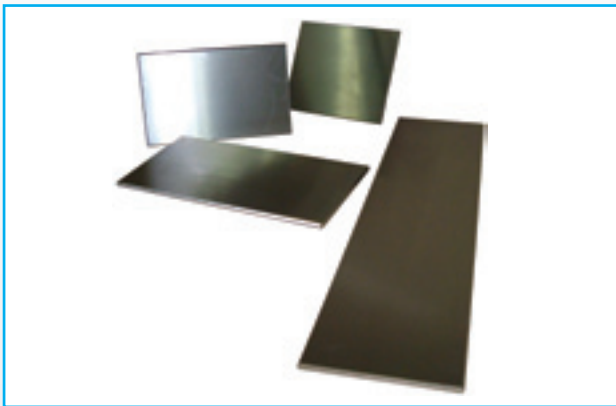
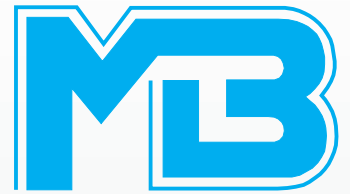
Our handling systems come fully programmed and tested to the highest standard, incorporating all up to date safety circuits and devices.

We can supply PLC systems most suited for individual requirements and also retro fit into your existing PLC.

Some examples of PLC systems most frequently used are:-

- Allan Bradley
- Mitsubishi
- Fanuc

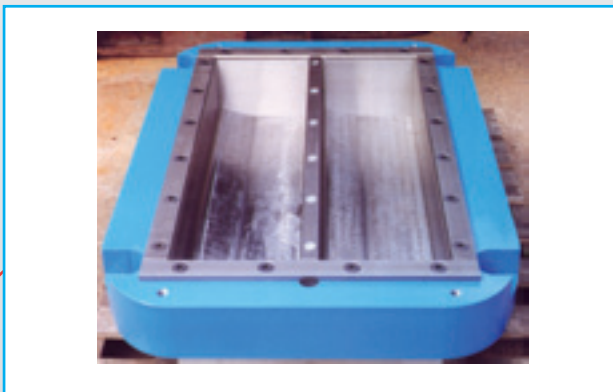
# Press Tooling



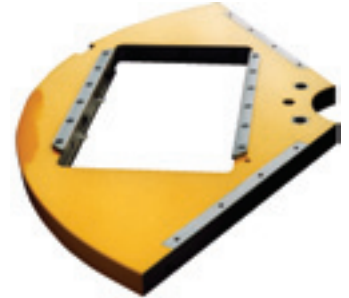
Our workshops, with state of the art CNC machining facilities allow us to manufacture a wide range of products used within the wet pressing industry. From complete table sections to simple mould retaining pins.

We pride ourselves with the quality of our workmanship, and take great satisfaction on seeing the final product carefully packed and despatched to the client.

We work very closely with every customer who wishes to develop new products, and with our highly qualified design department, we can produce 3D models for our customers to approve before any production takes place.



- Press segments



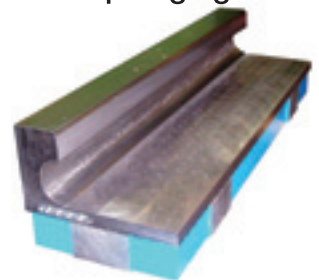
- Slab end blocks



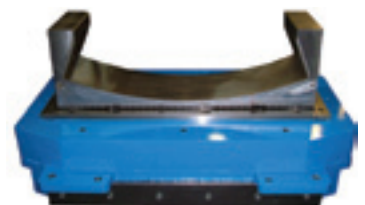
- Duplex kerb



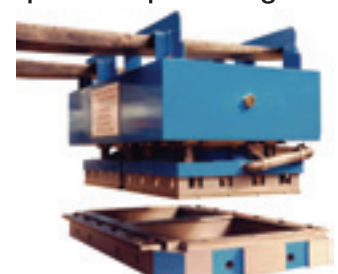
- Round top edging



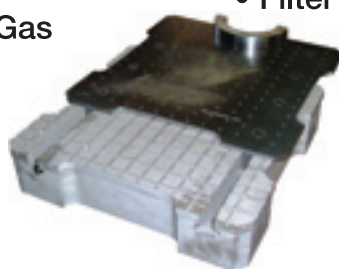
- Radius Kerb



- Duplex compensating head



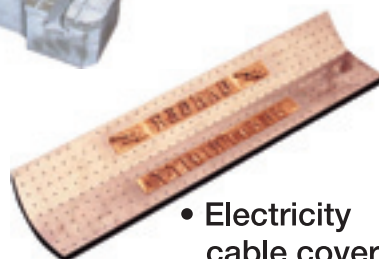
- Natural Gas



- Filter tile die block

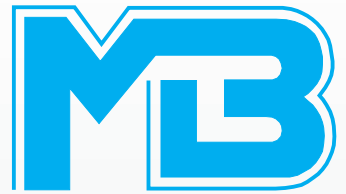


- Slab die block



- Electricity cable cover

# Press Spares and Consumables



We stock large quantities of press components for both the Single and Three stage hydraulic presses, enabling us to offer a rapid turnaround on most items.

We are fully aware of the importance for customers to keep their machines in good running order, so as to meet ever increasing demands for production.

We carry consumables for presses with original parts such as valves, cylinders and pumps, and also new generation systems with high tech design units.

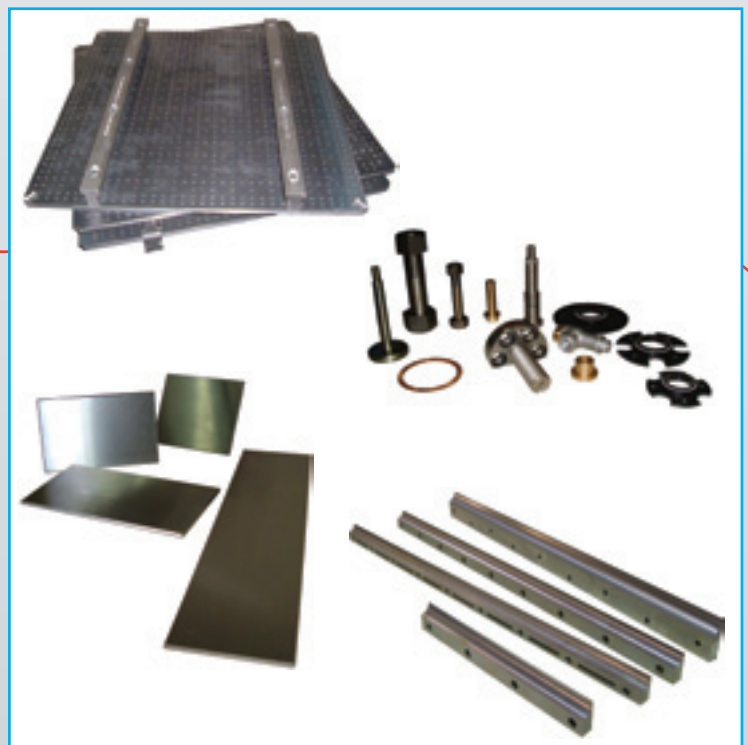


We operate our own fluid power division, which enables quick turnaround for items that are not manufactured by ourselves. This allows us to ship products worldwide within a very short period.



Every day consumables such as liner plates, perforated head plates, retaining washers, capping strips and bull noses are all essential for the smooth running of a high volume concrete slab and kerb press.

Most are stock items, but we do operate a call off system for customers, which ensures your parts are always ready for immediate dispatch worldwide.



# Morris Brothers

ESTABLISHED 1948



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