



**SPECIALISTS IN FORKLIFT ENGINEERING AND FLAMEPROOFING**

## **Product catalogue Flameproofs, attachments & modifications 2008**





## SPECIALISTS IN FORKLIFT ENGINEERING AND FLAMEPROOFING

### ATTACHMENTS AND MODIFICATIONS

#### SPECIALISED ATTACHMENTS

We manufacture a range of attachments to suit all materials handling equipment. Our range includes safety cages, forklift slippers, carpet poles, coil probes and more. All of our attachments are designed and manufactured in accordance with Australian Standard AS2359.1-1995 Powered Industrial Trucks Part 1 General Requirements. Please browse our catalogue for a sample of our readily available attachments.



#### MODIFICATIONS

We can perform modifications to units to meet your specific needs. Various modifications we make include mast height reduction (mast cuts), manufacture and installation of forklift masts to loaders, modifying overhead guards to suit drive in racking, installation of four directional steering, manufacture and installation of sideshifts, and fork positioners, manufacture and installation of cabins including air conditioning, windscreen frames, just to name a few!





## SPECIALISTS IN FORKLIFT ENGINEERING AND FLAMEPROOFING

### HEATED CABIN RANGE

#### TAKING THE CHILL OUT OF COLDSTORES

Frozen operators and frequent shift changes could be a thing of the past, as companies begin to use heated cabin electric reach trucks in their freezer warehouses.

In the past, operators have had to wear bulky suits, and endure freezing temperatures. After working in the cold for a period of time, operators required an almost equivalent amount of time to thaw out. Hence, the labour force was only really working for fifty percent of the time.

Now, thanks to the design team at Double L Engineering, productivity and operator comfort can be vastly improved, with our range of heated cabins.



**Cabins are designed to suit each truck, ensuring maximum sealing and heat retention**

#### BUILDING A FREEZER CAB

The heated reach truck cabin begin their life as a standard reach truck. The truck is measured and then the existing structure of the truck is used to form the basis of the metal and polycarbonate skin that will encapsulate the forklift.

The various corner sections are placed between the body of the truck and the overhead guard, and connecting pieces welded in between. Thus, the cabin extension effectively becomes a one piece unit, welded together.

Visibility is kept to a maximum, whilst the see through panels are made from ultra tough polycarbonate.

The chassis of the truck is often reinforced in key areas to ensure that operator damage will not extend to the cabin, whilst the door panels are formed from a single piece of 2mm steel for the skin, reinforced by a square hollow tube frame.

It may also be required to separate the mast from the overhead guard, so that the mast flex and twist often encountered with such trucks does not transmit to the cabin. However, there is no reduction in strength of the overhead guard, and in some instances the overhead guard is actually stronger after our modifications.



**We fit cabins to all makes and models of reach trucks.**



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### TEMPERATURE CONTROLLED CABINS

Of course, all this work would be useless without some form of heating to keep the operator warm. Self contained flatpack blowers are coupled with flat heating elements to minimize space occupied by the blower. These heaters are then installed in various locations, depending on the type of cabin and the room available. Any alterations required to existing components, such as the dash, are kept to a minimum.

To set the temperature, all that is required is for the operator to dial in the temperature via the dial on the console. The inbuilt thermostat then takes care of the temperature automatically.



Blower can be seen in the foot well



### COUNTERBALANCE TRUCK CABINS

Cabins are designed and built around the forklift driver cockpit and does not effect the overhead guard function whilst minimising vision loss.

Sliding windows are usually fitted to both door sections and a hatch back section for maintenance accessibility.





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### FLAMEPROOFING

With today's emphasis on total quality and safety in the workplace, employers and staff are becoming increasingly aware of the dangers presented when dealing with hazardous materials and environments.

Companies in the food, petrochemical and agricultural industries are regularly faced with combating explosive gas atmospheres in which operating a forklift can be hazardous. This is where a flameproofed forklift can come into effect. Areas where explosive gas/vapour mixtures exist and where combustible dust can be present, such as grain storage areas, are prime examples where a flameproofed vehicle is invaluable.

The type of hazard is classified according to zones 0, 1 and 2 for flammable gas atmospheres and zones 20, 21 and 22 for combustible dust atmospheres.





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### Diesel forklift Flameproofing

Diesel forklifts are one of the options presented to buyers when considering a unit for their materials handling needs.. By their nature, petrol and LPG units which require spark ignition are unsuitable for flameproofing.

To be declared safe for use in hazardous areas diesel trucks must comply with AS 2359.12-1996 amongst other standards.

Some of the modifications required for hazardous area compliance are:

- All electrical equipment is removed along with lights and instrumentation, usually replaced with mechanical instrumentation. Flameproof lights and alternator can be fitted on request.
- The exhaust is run through a parallel plate flame arrestor and a water wash box
- Integral to the Forktorque "Flamesafe" system is the use of sentinel shutdown equipment. Should the wash box or engine temperature exceed a set temperature, the sentinel equipment automatically cuts off the fuel supply, shutting down the motor.
- All exposed portions of the exhaust are coated with fire retardant insulating tape.
- The inlet manifold is fitted with a flametrap and strangler, to ensure that backfires are contained.
- The electric directional change on some levers is replaced with a hydraulic gear change mechanism.

We offer various modification models to best suit everyone's application.





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### Electric forklift flameproofs

Electric forklifts are becoming increasingly popular as people are being made more aware of the capabilities and advantages they can offer, including reduced noise, emission, and lower running costs. In order to keep up with customer requirements we now offer flameproofing on virtually any model of electric fork truck.

Flameproofing an electric truck, as with diesel trucks, requires strict adherence to numerous standards, the first of which is AS 1915-1992.

Because electrical forklifts cannot have their electrical equipment removed as is done on diesel forklifts, one of two methods are employed:

- All equipment is made intrinsically safe. This means that the devices are not capable of generating a spark of significant magnitude to initiate an explosion. Typically these devices are referred to as low energy devices and have specified maximum current and amperages.
- Any equipment that cannot be made intrinsically safe must be encapsulated in explosion proof containers.





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### SAFETY CAGE

Our safety work platforms comply with AS2359.1-1995. It is designed to lift no more than two persons at a time and is rated up to 250kg.

#### **Safety cage / Work Platform features:**

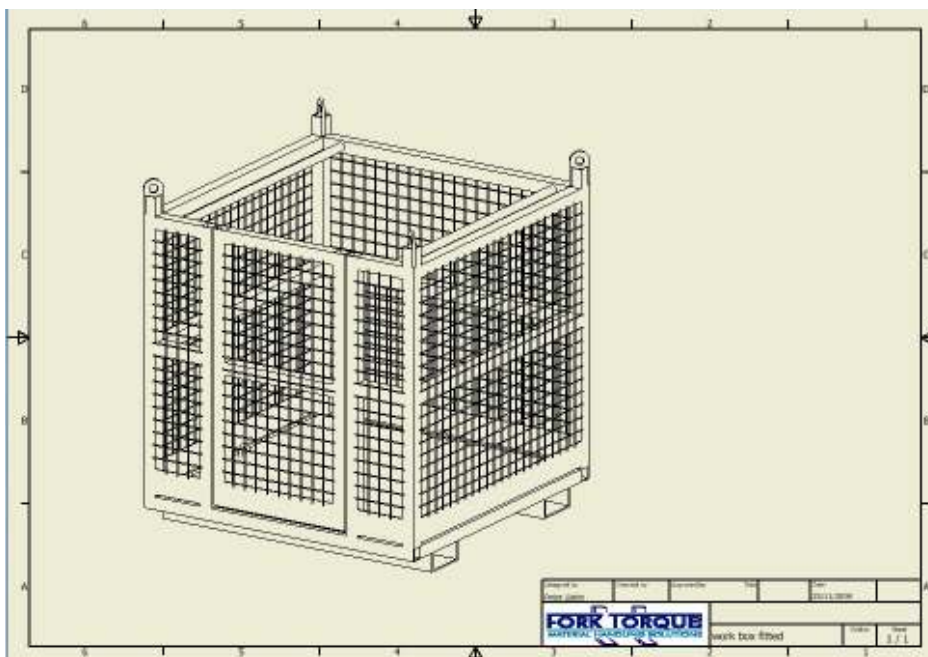
- Complies with AS 2359.1
- 1200x1200mm platform size
- Two man harness point - Restraint only
- Solid anti-slip check floor
- Toe guards
- Self closing door with latch
- To fit fork-arm widths 100-140mm
- Two tine lock points
- Overhead crush protection
- Optional harness and lanyard



### WORK BOX

Work boxes are used to elevate personnel via cranes. They are fully compliant with AS1417.17 and are a registered design with Work Safe Victoria.

They are rated to a maximum of three personnel lift and 600kg total lifting capacity.





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### FORK-ARM EXTENSIONS

### CARPET PROBES



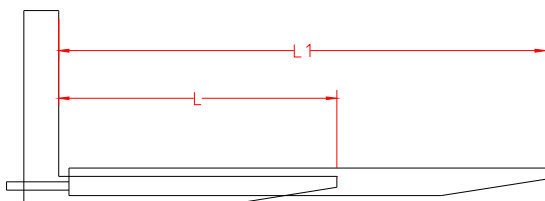
Our slippers come in various widths and lengths to suit all classes of forklifts. They are made from heavy duty materials for longer wear and increased strength.

We can also manufacture rubber coated slippers commonly used to move boat hulls.

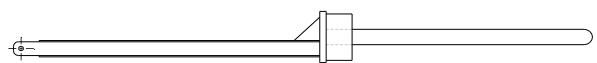
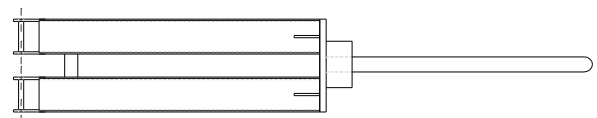
AS2359.15-2005 Powered Industrial Trucks.

$$L1 \leq L/0.6$$

Unless otherwise agreed by the forklift manufacturer, the slipper length will need to comply with the above formula.



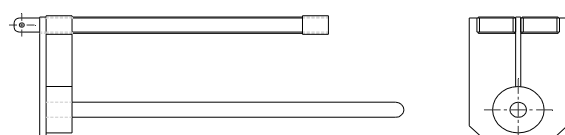
Predominantly used for lifting carpet rolls they can be carriage mounted for prolonged usage and better stability or fork-arm mounted for quick change over.



FIXED TO TYNE POCKETS



FORKLIFT CARRIAGE MOUNTED



FIXED TO TYNE POCKETS  
WITH POLE SUSPENDED BELOW



**SPECIALISTS IN FORKLIFT ENGINEERING AND FLAMEPROOFING**



**STRAIGHT CRANE JIBS**

- Various load capacities available.
- For long reach requirements.
- Telescopic jibs are also available for compact storage.



**BRIDGE CRANE JIBS**

- High load capacities
- Short reach
- Fork-arm mounted
- Ideal for small work spaces



**ELEVATING CRANE JIB**

- Designed and built to Australian standards.
- Adjustable vertical and horizontal reach.
- Custom sizes and capacities available.



**CUSTOMISED LIFTING JIBS**

- Custom built to suit various forklift capacities and lifting requirements.
- Carriage or fork-arm mount types available.



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**BATTERY HANDLING PUSHERS CHANGERS**



Ideal for changing and charging batteries on electric reach trucks. Many variations are available from single to multiple changers, small to large size batteries, fixed to mobile units.

Battery roller tables can also be made without the automated pusher. They are built with height adjustable legs to achieve required height.



Above: Single battery changer mounted on a manual pallet handler with a ratchet style puller.

Right: Single battery changer mounted to an electric pallet truck. This unit has an electrically operated magnetic puller.

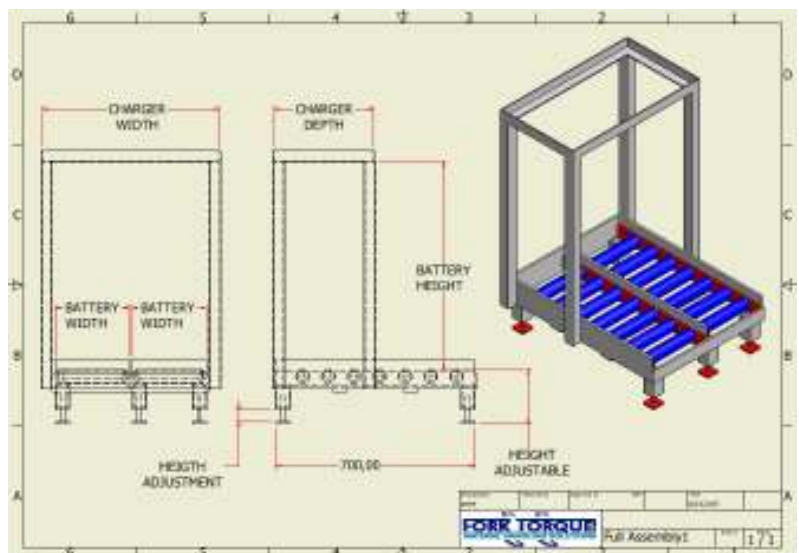
Bottom: Double battery changer fixed position with adjustable leg height and charger stand.

Battery roller tables are designed for easy maintenance of batteries as well as second and third shift changes.

They are height adjustable and are constructed of steel tube rollers with ball bearing racers.

Battery roller tables can be manufactured to suit any size battery and are produced in single or double format.

Also, a battery charger stand can be manufactured to fit neatly over the top of the batteries.





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### LOADSPREADER



Loadspreaders are ideal for transporting wide loads and providing extra support to fragile loads.

The loadspreader is designed to your specific needs, depending on:

- Load dimensions
- Load mass
- Forklift capacity

Backrests can be designed into the load-spreader for extra product support.

Extra fork-arms can be added to the design to support awkward products.

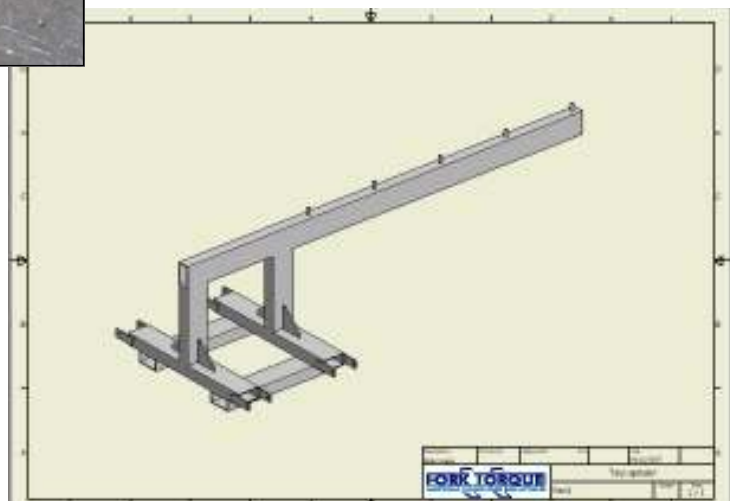
### TOW HITCH



Our tow hitch can be designed and manufactured to suit specific requirements for warehousing and maneuvering trolleys or stilages. Usually manufactured with a lift point below the tow ball to create a more functional attachment.

### TARP SPREADER

Our tarp spreader is used for stopping the potentially dangerous practice of drivers spreading tarps by hand.





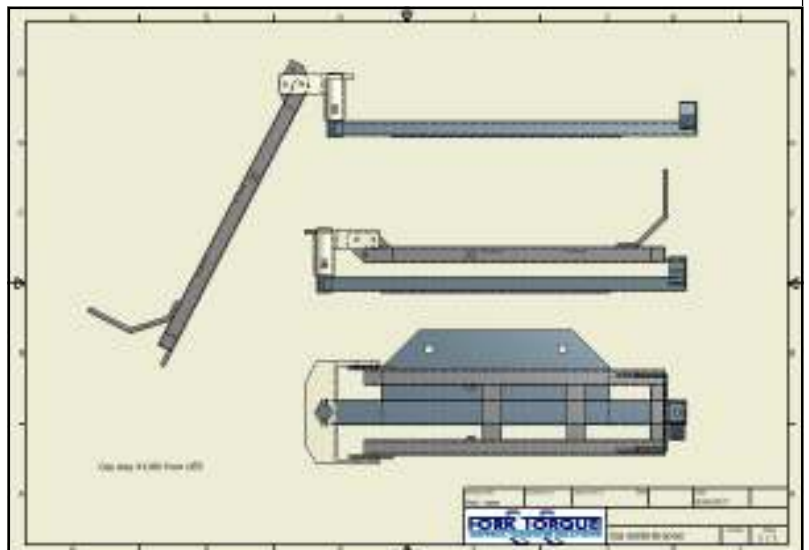
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### PULL DOWN GAS BOTTLE CHANGER

These specially designed gas bottle brackets will save you from lifting heavy bottles above waist height. The bracket swings out clear of the forklifts counterweight and with the weight of a bottle in place the bracket can be unlocked from its horizontal position and swung down to around knee height. Struts support the weight and stop any sudden drop requiring very little effort to lift or lower the bracket. Once the bracket is lowered it is again locked in position to avoid struts lifting the bracket under no weight.



The bracket is easily mounted with heavy duty mounting bolts which screw into the counterbalance. Drilling and tapping of counterbalance is required in most instances for bracket to mount off. Fits most applications.





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- Mast conversions
- ISO hook carriage
- Multiple tynes
- Counter weight increase
- Stability test for rough terrain

**LOADER MODIFICATIONS**

This articulated front end loader has been fitted with a 2m mast. Its advantages are a more compact unit and a higher lifting capacity. The higher lift capacity allows you to safely lift two pallets saving you valuable load and unload times. The hinged fork-arms save even more space which can be utilised for more pallet space. This modification is ideal for brick pack handles.



Another typical modification we do is to manufacture carriages to fit directly to the loader arms. This allows the user to retain the reach and versatility of an articulated loader. Weight can be added to the back to help stability if axle loads permit and a stability test is performed.



Stability test on tilted platform.

Fork carriages integrated to front.

Counterweight Added where permitting.





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**STABILITY TESTING**

Stability tests are required to determine a trucks lifting capacity. We use testing procedures which comply to Australian and international standards. All our tests are performed using a tilting platform as a verification procedure.

We can test the following trucks:

- Counterbalance trucks
- Rough terrain trucks
- Reach and straddle trucks
- Pallet stackers and high-lift platform trucks





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**HYDRAULIC BIN TIPPER**



The forward bin tipper is designed primarily for the agricultural industries. It is a slip-on attachment but can be ordered as a carriage mount attachment for use on single purpose forklifts. It suits various plastic or timber bin sizes.

Forward tipping action

Adjustable bin height clamp

Bin size capacity

1200Lx1200Wx1000H

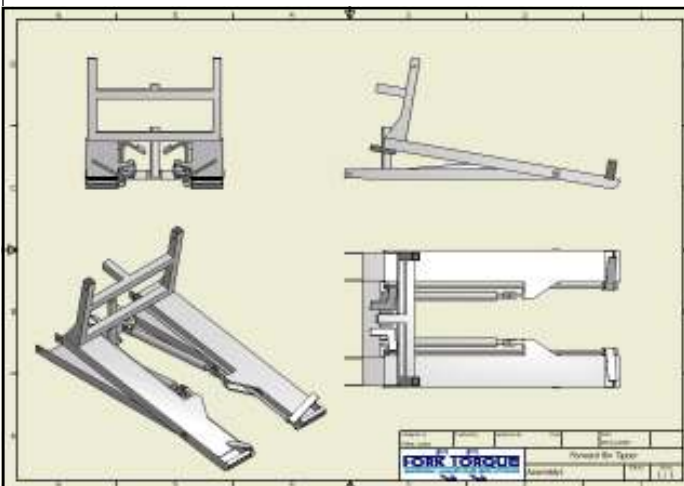
Load capacity

1000 kg @ 600 mm LC

Tipping angle

0-130°

Requires lift truck auxiliary valve  
To drive hydraulic unit.





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**PALLET TRUCKS & HIGH LIFT**



- Fork width: 550 mm
- Fork length: 1100 mm
- Capacity: 2000 kg



- Safety overload system
- Automatic stabilizer
- Release lever lock for safe operation
- Capacity: 1500 kg
- Max Height: 800 mm
- Min Height: 85 mm

**WORK STANDS**

Forklifts require heavy duty work stands. We manufacture stackable work stand blocks that are capable of withstanding 4000kg per stand but other capacities are available upon special request. These stands come in various top profiles and their large handles make them easily stackable.



Work stands three blocks high with solid profiled top.



Custom made work stands with hard wearing rubber top.



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### CONTAINER RAMPS FIXED OR MOBILE AND LIP RAMP

Container lip ramps are ideal for unloading containers with forklifts. Its standard heavy construction can withstand up to 10 tonne of combined forklift and cargo loads. The fold up handles allow you to lift the ramp from the front rather than the side which makes for easy access in tight spaces.

Different models are available upon request.

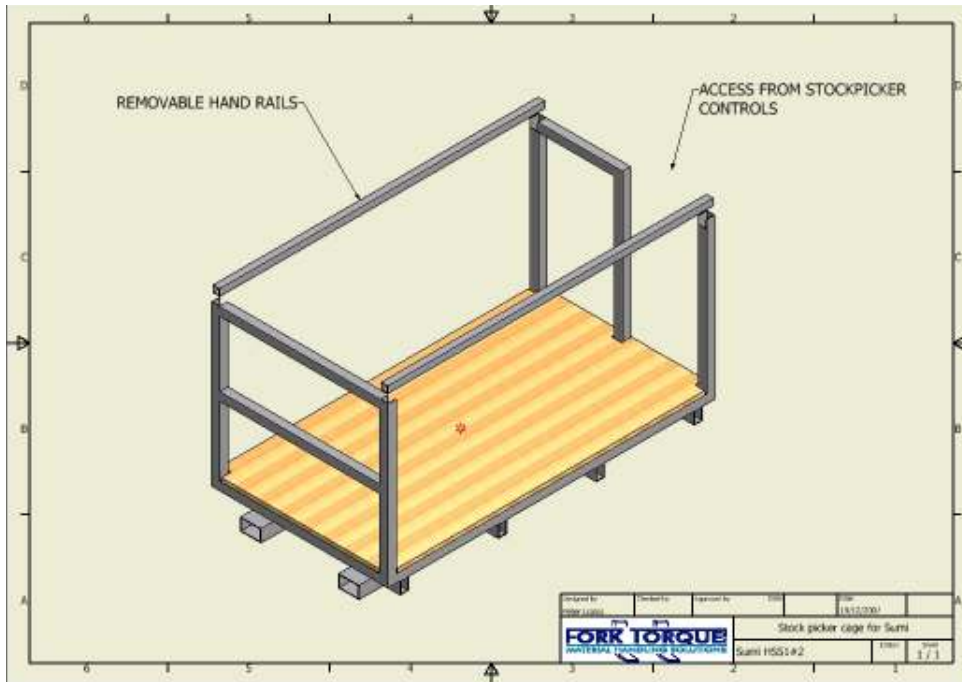


Container ramps come in fixed or mobile type and designed specified length, width and load capacity. Ideal for loading containers and rail cars.



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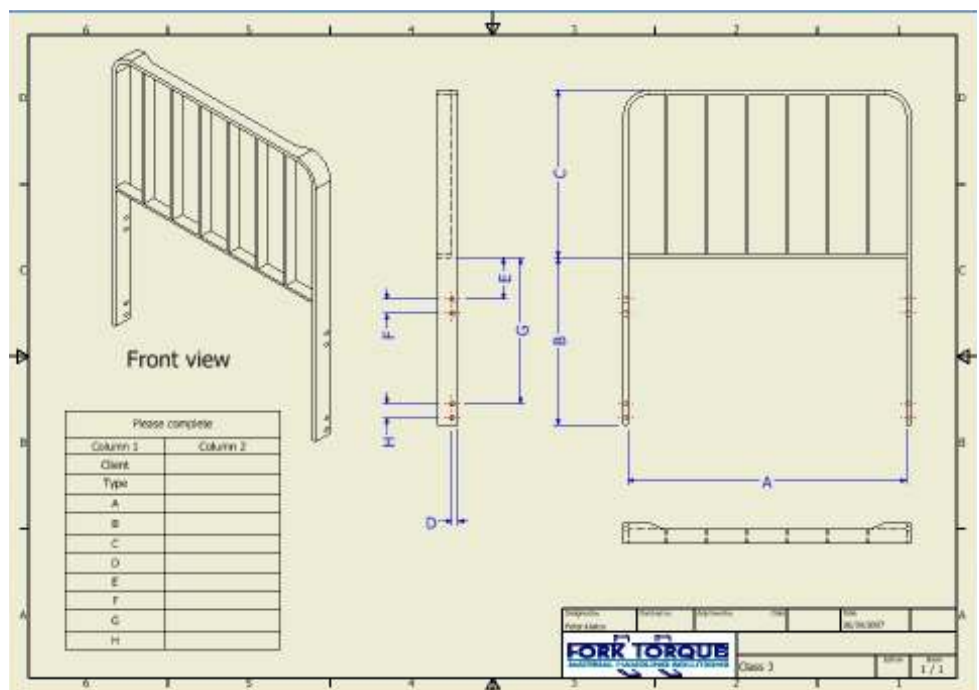
**STOCK PICKER CAGES**



We can manufacture stock pickers to suit every needs. Shown are some varied designs built to assist in the filling and moving of stock.

**LOADGUARDS**

Designed and manufactured to suit all models of forklifts and any application. Just ask us for a leaflet to fill in the required details and forward to us for manufacture.





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**VARIOUS INTEGRATED FORK POSITIONING, SIDE-SHIFTING AND MULTI-TYNE SETTING CARRIAGES**



10 Capital Drive Dandenong, Vic. 3175  
Phone: (03) 9791 5255 Fax: (03) 9791 5233



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### Quick Hitch Lift Jibs

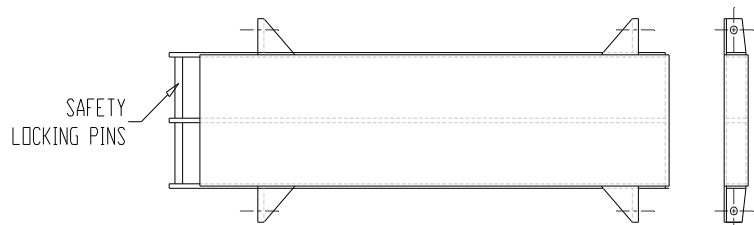
We have manufactured many lift jibs for both agricultural and industrial use to complement trucks such as telehandlers and loaders.

The lift jibs can be manufactured to be long reach, multistage with any desired capacity and to fit appropriate coupler mechanism.



### BATTERY LIFTERS

For easy lifting of batteries in and out of electric forklifts. We can manufacture to any shape and size to fit various clearance requirements.



SUPPLIED WITH SAFETY HOOKS  
OR D SHACKLES FOR CONNECTION  
TO BATTERY



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## **Modifications to overhead guards for Drive-in-racking**

Modifications are frequently required to overhead guard post for safe access into drive-in-racking. A section of the posts are required to be stepped in slightly to avoid the racking and prevent damage. We are careful in our modifications that we do not disturb the mechanical strength of the guard from its original design.

We also can repair guard posts from damage caused by drive-in-racking.

