



Foreword

Dear Reader,

The second quarter of FY11 continued with the rising trend of the first quarter as order inflow and deliveries grew at a healthy rate.

We're establishing a *full line* dealer network across India. Our dealers are now responsible for selling our products besides spares and services.

We're expanding our presence in towing applications through a tie up with Harlan Corp. of USA, globally reputed for air-plane tow tractors.

In response to requests for information from customers, we provide a glimpse into the advantages of *wet disc brakes*, a relatively new technology on smaller forklifts.

Our very best wishes to all our readers and their families for the festive season.

Do enjoy reading this issue. Your feedback is always welcome.

Cheers!

C. N. Dumasia

Chief General Manager
(Marketing and Sales)

All-India Dealer Meet

Godrej Material Handling has a network of 45 spare parts dealers all across India. Last year, we embarked on a program to develop a network of dealers for sales of lift trucks also. Naturally our existing service dealers were our first choice.

21 dealers have come on board to become our channel partners for sales as well as service, in the first wave. A Dealer Meet was organized on 17th and 18th August 2010 to gain a better understanding of expectations on both sides and chart the best way forward.

Here's how our customers will gain from our dealer network

- Touch points across India will now be more wide-spread than ever before
- Customers will deal with a channel that is already familiar with Godrej, its products and way of working
- Dealers have started stocking the smaller equipment from our range, making these machines available off-the-shelf for customers

- Hand pallet trucks

- Manual stackers

- Semi-electric stackers
- Pedestrian models of Tennant sweepers and scrubbers
- Dealers will hire dedicated sales staff who will be trained by Godrej
- Our branch teams will continue to actively support dealers
- Over time, we aim to make the system fully integrated so your experience is like dealing with a wider Godrej Material Handling family that has moved into your neighbourhood.

Inside this

All India Dealer Meet	1
Wet Disc Brakes	2
Harlan Tow Tractors	2
Aerial Work	
Platforms	3
CEMAT 2010	6

 MATERIAL HANDLING

ALL INDIA DEALER MEET AT MUMBAI, 17-18 AUGUST 2010.





Next Gen Tech on Bravo Diesel Forklifts : Wet Disc Brakes

Godrej has introduced oil immersed or 'wet disc' braking systems on the Bravo series of 1.5 to 3 tonne diesel forklifts. This article provides an introduction to wet disc brakes.

Most cars today use disc brakes on the front wheels and some models use disc brakes on all 4 wheels. The main advantages of disc brakes over drum brakes are:

- Disc brakes are more easily cooled and have more effective heat radiating surfaces
- They require fewer adjustments than drum brakes
- Discs need less physical space and the entire brake design becomes substantially more compact
- Their inertia is lower than drum brakes and so they act much faster

- Research in the automotive industry shows that in comparison with drum brakes, disc brakes have about 60% less inertia, cut stopping distance by about 30%, generate 36% more energy and 50% more braking torque.

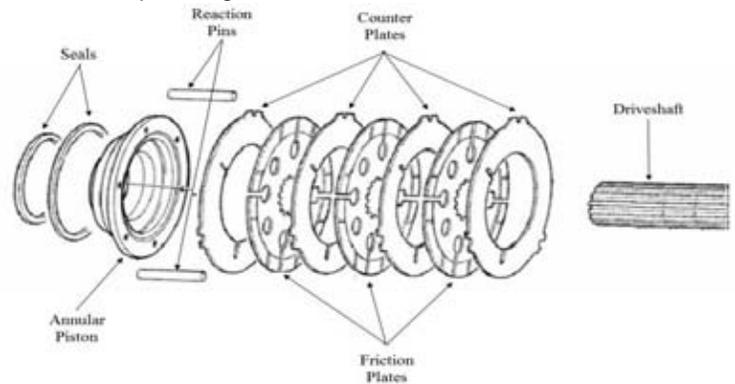
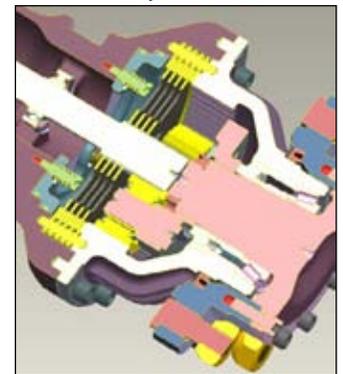
To summarize, disc brakes have established themselves as the preferred braking system for automotive applications and technology in this field continues to develop further.

As a natural consequence, oil immersed or 'wet disc' brakes began to find application in heavy construction and material handling equipment. Since the momentum to be retarded is much higher than in automobiles, a disc brake with a single disc would be very large in size. The necessity of achieving the necessary braking torque and keeping

the brake package compact brought on the concept of multiple plate disc brakes immersed in oil. Multiple friction discs are interleaved with counter plates. The entire assembly runs in an oil bath which assists heat dissipation. The system is usually self-contained, preventing ingress of dirt and dust.

And finally, looking at the economics, the main advantage of wet disc brakes is their phenomenal servicing interval – as high as 8,000 to 10,000 operating hours!

That means your forklift's brakes would not need servicing for nearly 4 to 5 years if the forklift works for 6-7 hours a day.



Godrej Introduces Harlan Tow Tractors

We are happy to announce our tie-up with Harlan Corporation of USA as their exclusive distributors for their wide range of tow tractors in India.

Harlan tow tractors are available in electric, diesel and petrol/LPG powered models. Towing capacity ranges from 13 to 90 tonne. The Harlan range finds application in towing aircraft

besides operations in defence, railways, ports, docks, warehouses, and mining companies.

One of Harlan's most popular series is their low body profile, high power aircraft pushback tractor.

Every aircraft has to be pushed back from the terminal gate at the start of a flight. This important task is performed by pushback



tractor, specially designed for this operation.

With the Indian government's program to expand the airport network and

modernize existing ones, Harlan pushback tractors will find wide application in India.

Future editions of Liftech will bring you more information on tow tractors.



An Introduction to Aerial Work Platforms

Cherry pickers are mechanized personnel lifting equipment which help orchard workers pick ripe fruit from the upper branches of fruit trees. As the humble cherry picker took on numerous *industrial* tasks and the variety grew, all such equipment which lifted people to a height to perform their tasks came under the umbrella name of Access Equipment or Aerial Work Platforms (AWP). Over the years, AWP's made their mark with unmatched safety and efficiency in the job of lifting people.

You will find access equipment at airports, ship building yards, factories, hotels, hospitals, stadia, exhibition halls, auditoriums, amusement parks and construction sites to name a few user industries. These machines come in numerous types and sizes.

Aerial Work Platforms are used to gain *temporary* access for maintenance and construction work or by fire-fighters / rescuers for emergency access. They are designed to lift mainly people and have a basket or platform for this purpose. The load capacity is limited, usually less than 1,000 kg, although some have a higher safe working load (SWL), distinguishing them from cranes.

They are usually designed for operation (including being set up at site) by a single person.

AWP's may provide additional features beyond access, like being equipped with electrical outlets, compressed air connectors for power tools or water jets for cleaning. They may also be fitted out with special equipment such as frames for carrying window panes, etc.

By their very nature, Access Equipment are designed for *temporary* work and frequently require transportation between sites, or need to be moved around a single site. For this reason they are specially designed for easy transport and movement. This chart attempts to simplify the present wide range of AWP's under major groups



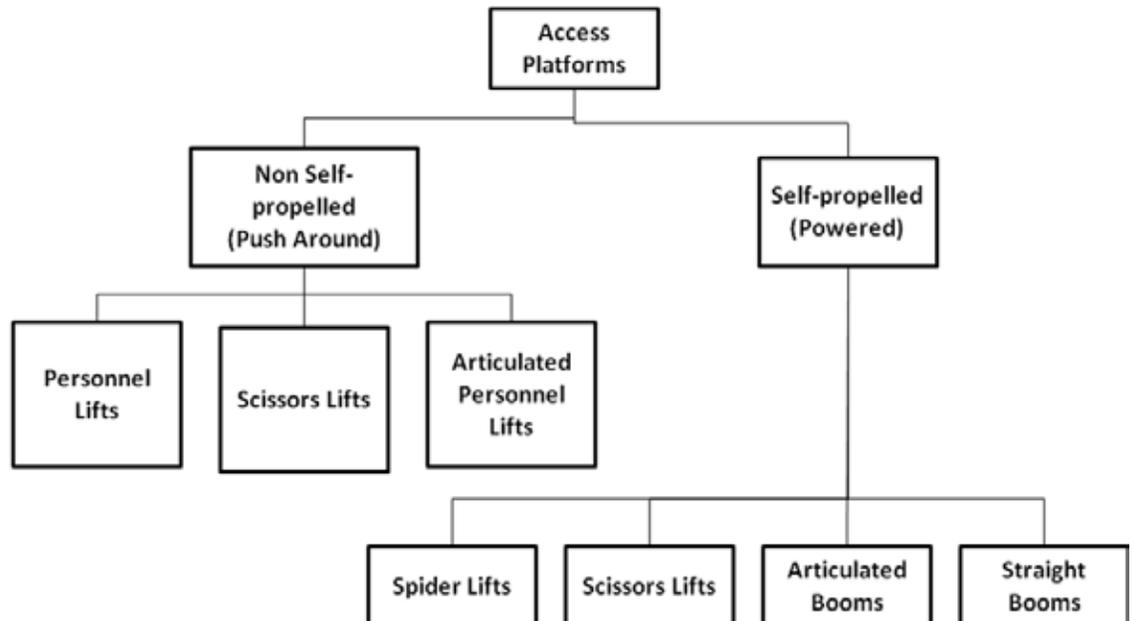
Push-around Aerial Work Platforms

- The lighter units are transported by pick-up vehicles and manually moved into position
- Heavier units are generally towed to the work site by a vehicle
- Most push-around units have fork pockets so they can be moved around the work site by a forklift

- The lifting operation is hydraulically powered
- The power source is either a battery or a small on-board genset that feeds a battery or the machine may even be plugged into an electrical outlet.

Personnel Lifts

- This is the most common type of push-around Access Equipment
- Application: Light repair work in hallways, foyers, lobbies. They provide excellent access to chandeliers, lighting systems, ventilation ducts, electrical wiring or simply to clean the ceiling
- Lift height: up to 15 m (49ft)





An Introduction to Aerial Work Platforms

- Personnel lifts can carry one person and some hand tools but no material or heavy load
- Some models are slightly larger than a big suitcase and can easily pass through doorways and even be carried to upper floors of a building in the elevator
- A variant with two lifting mechanisms can lift two people at a time
- Controls are provided in the personnel basket. A second set of controls with suitable protection is provided on the base and can

be used in case of an emergency.

Push-around versions of *Scissors Lifts* and *Articulated Personnel Lifts* are quite rare. Normally these two types of AWP are used in their self-propelled version.

Self-propelled Aerial Work Platforms

- Heavier in construction than unpowered models, these machines move around under their own power on wheels or tracks
- If used indoors, the machine is invariably powered by a traction battery
- Outdoor units may be powered by petrol, LPG or diesel engines
- Hybrids, which work on both, engine and battery power, can operate indoors as well as outdoors.
- These units are transported to the work site by a vehicle. They can also be moved around a site by a crane or a forklift

Spider Lifts

- Load capacity: 150 to 200 kg
- Lift height: 12 to 22 m (40 to 72 ft)
- Power: IC Engine powered
- Moves on: Rubber tracks to protect flooring
- Turret: Rotates by 360°

- Boom: Articulated
- Boom reach (sideways): Radius of 7 to 8 m (23 to 26 ft)
- Unique capability: Because they employ outriggers, spider lifts can be set up on uneven surfaces including slopes and steps
- Most commonly used for facility management in hotels, airports, malls, auditoriums
- Very compact (but heavy) construction of the base unit allows the machine to crawl even through narrow doorways

- Since the outriggers make the machine look like a spider, the name 'Spider Lifts'
- Designed almost entirely for indoor use
- The operator must be off the equipment in order to move it around with a remote
- Once in position, the boom is operated from the basket.

Scissor lift

- Load capacity: 250 to 1,000 kg
- Lift height: 6 to 20 m (20 to 65 ft)
- Can carry: One or two persons, tools and small parts
- Power: Electric battery, diesel engine, hybrid
- Moves on: Wheels
- Lifting: Hydraulic scissors
- Unique capability: The entire platform can be moved even while lifted
- Rectangular platform allows the person to move around to perform the required task
- Is probably the most common type of Access Platform used worldwide today



- Hence extending legs (outriggers) are necessary to enlarge the footprint during operation



An Introduction to Aerial Work Platforms



Articulating boom lift

- Load capacity: Approx. 250 kg
- Lift height: 10 to 17 m (33 to 56 ft)
- Horizontal reach: 7 to 8 m (23 to 26 ft)
- Power: Electric battery, diesel engine
- Moves on: Wheels
- Lifting: Hydraulic cylinders
- Unique capability: The *horizontal reach* capability allows the basket to be raised over obstacles to reach the point of work
- Find excellent application in providing access to piping and ducting along

- factory walls even if machinery is installed close to the wall
- The boom and turret can also swivel around 360° in both directions
- Some models offer additional features like tilting of the basket.



Straight boom lift

- Load capacity: 200 to 350 kg
- Lift height: 20 to 40 m (65 to 130 ft)
- Power: Diesel engine
- Moves on: Wheels
- Lifting: Hydraulic cylinders
- Unique capability: Offers the highest reach among all types of Access Platforms

- The turret along with the boom can rotate by 360°
- Designed for outdoor use, straight booms find application in ship building and construction
- Some models offer additional features like tilting of the basket.
- Since vehicle mounted AWP's are normally big and heavy models the carrier vehicle is fitted with hydraulic outriggers to increase the footprint and stabilize the system.

Choosing the right kind of Aerial Work Platform



With the emphasis on environmental protection, most Access Platforms are now available in dual power version, working on both fuel and electric power.

The range of Aerial Work Platforms available in the world today is very wide and many productivity enhancing features are available as options. Overriding all other considerations is the aspect of human safety. Many questions need to be answered about the specific application in order to decide the type and specification of the AWP required to suit the application. Please consult your nearest Godrej branch or dealer for more information. We are always happy to help.

Vehicle mounted Aerial Work Platforms

- Some units are mounted on a carrier vehicle, usually a truck or a pick-up
- The vehicle provides quick mobility and also serves as a stable base for the AWP

Godrej

Liftech

Volume 2 Issue 2, July - September 2010



CeMAT India 2010

The 4th Indian edition of CeMAT India is scheduled to be held in Mumbai between 15th and 18th December 2010.

Four other exhibitions, Industrial Automation India 2010, MDA India 2010, Energy India 2010 and Surface India 2010 will be hosted

concurrently with CeMAT India 2010.

Godrej Material Handling will showcase new lift truck models and technologies at this show.

We look forward to your visiting us at CeMAT India 2010.

International Trade Fair for
Materials Handling and Logistics

Bombay Exhibition Centre (BEC)
Goregaon, Mumbai

15-18 December 2010

CeMAT
INDIA



We hope that this issue was of value to you. If you have any queries or questions about our products, feel free to get in touch with us. You can send us your query on the email address below to ask for information or visit our website.

For further information and queries, please contact:
Vikrant Shitole (Dy.Manager – Marketing)

Godrej Material Handling,
Godrej & Boyce Mfg. Co.Ltd.,
Plant 16, Pirojshanagar,
Vikhroli, Mumbai – 400 079

Ph : +91 22 6796 4660
Fax : +91 22 6796 1519
Email: mhemktg@godrej.com

We are on the web:

www.godrejmh.com

Godrej | MATERIAL HANDLING