Some are born great, some achieve greatness,
and some have greatness thrust upon them.

William Shakespeare

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POWER TOWERS
Low Level Powered Access

Reaching the (not so) highs and the lows

Over the past five years, the 'push around scissor lift' market has gone from concept to an established and blossoming sector. In its short history it has developed from a niche to mainstream product satisfying the increasing demand for a simple, low level access product. We take a look at its development, the increasing number of players in the market, along with the advantages and benefits that this type of product can bring.

Over the past five years, the 'push around scissor' has racked up about 10,000 unit sales, a growth figure that no other equipment sector – including 3.5 tonne truck mounts, spider lifts or narrow aisle scissors - can even come close to.

The majority of this growth has been in the UK – driven by the European Work At Height Regulations - but it is set to spread, particularly in markets where floor loadings are an issue and ceiling heights of buildings such as hospitals, offices and commercial space is below five metres. Contractors like their low weight, ease of use and relatively inexpensive rental rate – and of course, increased safety. Studies by a number of contractors have shown that these diminutive lifts are a practical alternative to step ladders, podium steps and low level alloy towers, beating larger self-propelled scissor lifts which are hampered by their weight and cost.

The Pop-Up+ eventually lost its pull-out stabilisers and gained an auto-brake system.

Rush to replace ladders

When the Work At Height Regulations were introduced in April 2005 the UK was the fastest to adopt and properly implement them. All manner of spurious 'working at height' claims were bandied about at the time such as the banning of ladders etc.... As a result of all the hype, many UK contractors desperately sought an alternative to the humble but handy step ladder and jumped on the next best thing - purchasing thousands of podium steps - some of which were good and some quite frankly, bad.

If the most widely publicised study of low level access - carried out by Crown House Technologies - is to be believed, the change from step ladders to podiums actually had the opposite effect on accidents and injuries. It seems that equipment misuse resulted in more accidents primarily because users did not lock the podium's castors or close the platform gates. It is easy to dismiss the elegance of the step ladder's design and its sheer practicality. Unlike a podium it is easy to transport and put in place, it does not roll away if you don't lock the wheels and you are unlikely to forget where you are and step backwards off the step while working. And being light and transportable, damage to the building's finish is also reduced.

The new solution

Timing – as they say - is everything with a new product launch and can be the difference between a runaway success and abject failure. The first of the modern push around scissors was conceived in 2004 when Paul Gallacher and two other directors at Northern Scaffold Group (NSG) thought the impact of the soon to be introduced Work At Height Regulations needed a better solution than alloy towers or podiums - something that allowed tradesmen to get to the correct working level quickly and easily.

The idea of a powered platform was mooted as a solution but after looking at and dismissing a mast-type platform, the idea of a baby scissor lift came to mind.

"The design just happened because it had to be light enough to manoeuvre, narrow enough to go through a normal width doorway, easy to produce cheaply, be simple to use, and have a working height of between 3.5 and four metres," says Gallacher. "The name was something we used to describe the product during the design phase – something that allowed people to 'pop up' and down – and it has stuck!"

The first Pop-Up's arrived from China in October 2005 and the company initially decided to concentrate on selling to UK tool hirers, officially launching the machine at the Hire Show in January 2006. The lifts were an instant hit – selling 1,000 in the first year - particularly with facilities management companies primarily for maintenance work. However the platforms soon proved themselves in construction, installing services and fixings at that critical 3.5 to four metre ceiling height range.

The Pop-Up was quickly followed into the market by the similar but quite different 5.1 metre working height Power Tower in May 2007 which used a sigma articulated lift mechanism, rather than a scissor stack.

While the Power Tower offered more height than the Pop Up, was almost 400mm longer and slightly wider but only 40kg heavier. However apart from its heavy duty construction, it introduced one major feature that was to prove highly popular, a unique brake system which locked the castors automatically as soon as the platform is raised. The Power Tower

The push around Power Tower Nano.

was the brain-child of CTE's Brian King who pioneered the push around type lift with the Go Industries Hop-Up in 1990 before creating his own more sophisticated Power Tower at Access Machines. The original Power Tower - designed to be towed as a trailer and with a working height of 9.4 metres - was an excellent product but way ahead of its time (timing?).

Although the Power Tower proved popular and took the sector up a notch, its larger dimensions did not suit everyone, especially those who had no need for the extra height it offered. So two years ago the company announced the Nano range of push around mast type lifts, the two models offered platform heights of 1.9 and 2.7 metres and matched the original Pop-Up for overall length.

Powered Access safer... and faster

The Crown House survey was also responsible for 'proving once and for all' that not only was powered access the safest working at height solution but it was also by far and away the most efficient. A classic time and motion study compared several access methods for cost and productivity. To its surprise it found that while the push around was a little more expensive to rent, the productivity gains were so great that they dramatically outweighed the extra rental cost. Add that to the savings on safety claims and lost time and the decision to move as much of its work as possible to this form of access was a 'no-brainer'.

As time passed and experience increased, operators refined their requirements for push around lifts with an increasing number demanding that brakes are automatically applied to prevent 'surfing' – pulling a machine along from the raised platform - and refusing to accept any units with outriggers for both safety and productivity reasons.

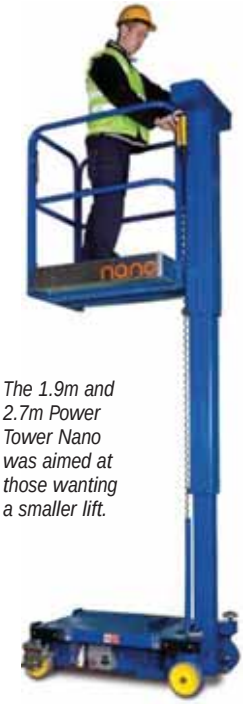
It did not take too long for others to join this growing market, with Eazzi Access and Youngman adding further choice if not dramatic innovation.

The Eazzi Lift from Eazzi Access was launched in September 2008 followed early in 2009 by Youngman and the Boss X3. Based in the North East of England, Eazzi - run by industry veterans Martin Birbeck and Mike Wishart – launched two models, the Mini and Midi with platform heights of 1.8 and 2.5 metres. The mini has a very similar design and specifications (although capacity is just 150kg) to the Pop-Up but featured the automatic locking rear castors when elevated. Alloy scaffold tower manufacturer EuroTower is now selling the Eazzi push around scissor range under its own brand name and painted silver giving its customers an alternative or addition to its low level tower products.

Youngman launched the slightly higher platform height Boss X3 push around scissor. Its 2.55 metre platform height allowed it to compete with the Eazzi Midi and the larger Pop Up+ which was now hampered by its use of outriggers.

The Boss X3 introduced a number of features from larger self-propelled scissor lifts to the sector, such as box-section scissor arms, overload and tilt alarm cut-outs and a platform descent interrupt switch. Weighing in at 349kg the X3 was slightly heavier than the Eazzi Midi but lighter than the Pop-Up+ in spite of its pull-out outriggers. However the first Pop-Up+ units did not incorporate automatic braking. The following year Pop-Up upgraded and improved its range again with the Pop-Up+ loosing its pull-out stabilisers, gaining a new auto-brake system as well as adding improved heavy duty castors

An eazzi-lift was auctioned at Vertikal Days 2009



The 1.9m and 2.7m Power Tower Nano was aimed at those wanting a smaller lift.

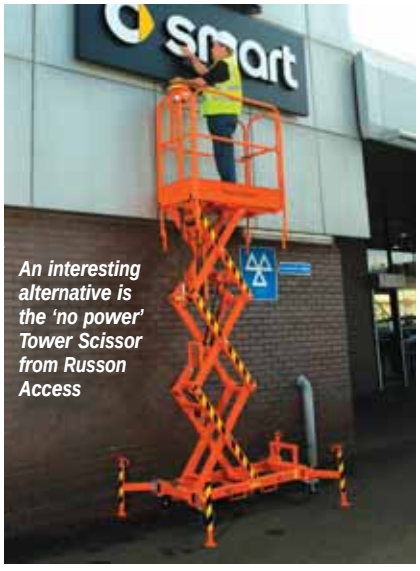
and long-life battery. Youngman also extended its range with the introduction of the 2.01 metre platform height X2 and the 3.2 metre X3X and added auto braking.

A surprise from Snorkel

With the push around sector gaining momentum and sales, it was only a matter of time before one of the mainline self propelled lift manufacturers took more than an interested look. In September last year UpRight (now Snorkel) launched the new three model PAX push around range - the PAX6, 8 and 10 - built in China by Dingli with maximum platform heights of 1.7 metres, 2.5 metres and three metres. Perhaps surprisingly for a manufacturer entering the market late and with the benefit of hindsight, the two larger PAX models followed the Pop-Up+ route with swing out stabilisers.

However in a surprise move earlier this year, before the PAX range gained any momentum, Pop-Up

Custom Equipment's push around HB-P830CE seen for the first time at Verticaaldagen in Holland



An interesting alternative is the 'no power' Tower Scissor from Russon Access

Pop-Up and Snorkel now have a joint worldwide marketing agreement for low level products

and UpRight/Snorkel agreed a joint worldwide marketing agreement for their low level products which includes the new three-product Pop-Up range, the two metre platform height Push 200, the 2.5 metre Push 250 and the three metre Push 300.

The fit and finish on the new models is a substantial leap forward on the original Pop-Up models, featuring box section scissor arms, a new guardrail with saloon style spring loaded gates and a built-in platform mounted active battery charge indicator. Wiring to the platform is routed inside stainless steel ducting, there is a slide-out power module, large non-marking castors, no outriggers and automatic braking on elevation.

Their combined product lines will be marketed under the Pop-Up brand by Pop-Up Products in the UK and Ireland and by Snorkel in the rest of the world. Snorkel has also started producing the new models at its plant on Tyneside in the UK, The original Pop-Up lifts are still available, but renamed as the Pop-Up Eco 6 and 8 and presented as simple budget units.

More new entrants

Bringing the push around development right up to date, Custom Equipment come from the other direction and launched a push around version of its 2.44 metre platform height self-propelled HB830 – the HB-P830 at the ARA last February. The new lift, the first American-built unit in the market, goes head to head with the Pop-Up and Youngman models and weighs 360kg. More recently Imer/Iteco introduced its new Easy Up range at the recent SAIE show in Bologna. Initially two models will be available - the 2.3 metre platform height Easy Up 4 and the 3.2 metre Easy Up 5 which both have 200kg capacity. The company says that it is in the process of producing a self-propelled version of the two units in the not too distant future.

So after five years of development we now have a healthy push around sector with working heights from 3.5 to more than five metres, most of which feature automatic brakes and a high quality build.

American-built Custom Equipment now has a self propelled and push around version of the 2.44 metre platform height Hy-Brid HB830.

Self propelled push arounds

While the push around scissor has so far been a largely UK phenomena, it has already started to spread, particularly as increased height models became available. France and Germany in particular are beginning to adopt these machines as stricter enforcement of the Work At Height Regulations begins to take effect and as availability becomes more widespread.

However one cannot help but think that if all things were equal, most users would prefer to have a self-propelled lift rather than a push around? The very fact that contractors recognise they have a problem of users 'surfing' suggests that this is the case.

Given that overall weight is a key issue, then clearly what is needed is an ultra-lightweight powered push-around. While that may sound like double Dutch, one solution is to take the existing push around products which weigh around 350kg and add a lightweight drive system to one of the axles without adding more than around 100kg. With a platform capacity of 200kg this means a fully laden machine would weigh in at less than 680kg.

The 5.1 metre Power Tower was launched in 2007

Wheelchair technology

Using modern wheelchair drive technology this is not difficult and it also has a benefit in that you don't need to add a regular steering axle. However what is more of a challenge is meeting the additional stability requirements - particularly the kerb/pothole test - that driving at height requires. Push arounds are not required to meet this test as by their very nature they cannot be driven off a kerb while at height.

Bravi has been producing mast-type lifts since 1995

There are two long experienced masters in this field - Custom Equipment from the USA, which has been producing machines since 1981 and Bravi from Italy which introduced its first compact self-propelled Leonardo in 1995.

Custom's three metre platform height Hy-Brid 10 has long been popular for mezzanine floor work in the US – a combination of a good 340kg lift capacity, compact dimensions and low floor loading is ideal, while its dual castor wheel system allows it to drive and steer on carpet without rucking it up.

Last year the company introduced a new smaller model, the 2.44 metre platform height HB830. Still using a scissor lift mechanism it is lighter in weight and more compact, but also features a sliding deck extension (to 1.61 metres total length). The machine also offers floor loadings– as little as 164 PSF (7.9 kPa).

A new Bravi?

In Europe Bravi has been producing its low level mast type lifts such as the 2.9 metre platform height Leonardo for 16 years, but it has only been in the past four or five that the machine's benefits have been spotted by contractors outside of its home market of Italy. Unlike most other units in the sector, the Bravi uses an aluminium mast rather than scissors. The Bravi is

Unlike others in the sector Bravi uses an aluminium mast and dual deck extension platform


Spanish-based Alarina introduced the self propelled Alas 2100 at Vertikal Days 2010

more expensive than many other low level platforms as you might expect, given that it has a larger - 1.7 metre long – dual deck extension platform, super smooth controls and high gradeabilty drive. Overall weight is less than 500kg with a 180kg lift capacity. Bravi says that it will introduce a, lighter weight, more basic single deck extension 'rental' model early this year that should help encourage more users to trade up.

Push-arounds get driven

Realising the growing demand for self propelled platforms, the original push around manufacturers have also expanded their ranges to include self-propelled versions. At last year's Hire Show Power Tower launched a self-propelled version of its Nano push around lift, the 2.5 metre platform height Power Tower Nano SP which uses the same three section mast as the push around model with 500mm roll-out deck extension. Its wheelchair-type drive controls are very simple, with the short four-way controller mounted on a fold down arm. The operator stands with his back to the mast giving a very good braced position using the two-button mini joystick one for on/off and the other for selection of drive speed or lift. The highly intuitive operation allows the unit to be rotated on the spot thanks to the rear drive and front castors. Maximum speed is quick at 4.8 kph, ideal for crossing larger areas and giving a driving range of 12 kilometres and the extended platform provides a very respectable 1,500 x 700mm working area. The result is essentially a smaller, lighter and even more manoeuvrable version of the UpRight TM12/JLG 1230ES.


Power Tower's self propelled Nano SP

Pop-Up, now of course teamed up with Snorkel, launched its self-propelled 'Drive' range – to differentiate it from its 'Push' – range at Bauma. The first model unveiled, the Drive 10, has a maximum platform height of three metres and 225kg lift capacity. Gross weight is 544kg and the unit has a maximum travel speed of 4kph reducing to 0.8kph when elevated.

Now teamed with Snorkel, Pop-Up launched its first Drive 10 at Bauma


Custom Equipment's push around HB-P830.

The long expected self-propelled version of Youngman's Boss X3 range will be unveiled at the UK's Executive Hire show next month. Details ahead of the show are still scarce but we understand that it will be a self-propelled version of its 3.2 metre platform height X3X model, using two driven wheels on one axle and two rotating castors on the other end, similar to many of the existing products. The X3X-SP self-propelled model will also have a 500mm roll-out deck extension and some form of pot-hole protection. We understand that other dimensions will remain similar to the push-around model at 760mm wide and 1.3 metres long and controlled by a single joystick controller.

The alternatives?

Although Pop-Up 'defined' the low level push-around sector, there were and are many alternative forms of push around powered access, such as Genie's AWP range, Faraone's PK and the Snorkel PAM lifts all of which however, have platform heights above three metres and are either too large or heavy to fit into this category.

An interesting addition that does fit though is the push-around Power Scissor from Russon Access in the UK. The three metre platform height scissor lift weighs less than 300kg but has no built-in power source to

Latest push arounds - the Iteco Easy Up 4 and Easy Up 5

Edmolift has several push arounds including the two man, 1.65m platform height EddiLift Phat

raise the platform. Unusually for a push around lift unit is approved for outdoor use, thanks to its short swing-out stabilisers, which are also handy for levelling.

The platform is elevated via two sets of gas springs and controlled by a simple hand crank. The springs are set to lift 65kg so the effort on the hand crank - which turns a threaded bar - is relatively light unless you are seriously overweight. A power drill option for elevation and descent is also available to speed things up. The lift will easily pass through a single door and offers a 600mm x 1,260mm platform with a step in height of just 660mm. As well as the usual applications, the unit should appeal to users where the possibility of an electrical spark or contamination by hydraulic fluid is a serious concern.

This year's Vertikal Days also saw the Spanish company Almeria-based Alarina enter the self propelled low level sector with its 4.2 metre working height Alarina Alas 2100 and 7.1 metre 5200 models. The Alas 2100 weighs just 380kg with 120kg capacity and is 1.22 metres long.

The future?

Chinese manufacturer Dingli has a range of lightweight self propelled lifts which are finding their way into Europe in increasing numbers, badged under several different brands. Most use an AWP-type aluminium mast but the height and weight take it outside of the scope of this feature.

But is this the future? Low-cost machines built in China and sold in the West under a variety of well-known brand names? It certainly looked that way two or three years ago with Pop-Up leading the 'Chinese-built' charge followed by Youngman and UpRight/Snorkel. Power Tower however managed to buck that trend by being competitive with its British-built models, followed by Eazzi. More recently Iteco has started building its new Easy Up push around lifts in Italy and then to cap it all Pop-Up production has moved to Tyneside in the UK. Even the Spanish with Alarina are getting in on the act.

The fact is that if these products are designed to be produced efficiently they need not take more than four man hours to assemble, while the fabrications can be automatically welded. With component pricing tending to be increasingly global, any savings from building in China can be eaten up by the extra freight, working capital and rectification/ rework costs that might arise from building them so far away.

With all this development in just five years, it will be very interesting to see how the product has progressed over its first decade.

Chinese manufacturer Dingli has a range of AWP-type aluminium mast platforms badged under different brands

Powering Towers

While Power Towers was not the originator of the current wave of push around lifts, its founders have a longer history in the sector than anyone. Brian King and design engineer Mark Richardson were both involved in the first wave of interest in small push around powered lifts in 1988 at a small company in Norfolk – Go Industries.

That company had a relatively short, but highly successful, career with the Hop-Up a boom lift sized basket mounted on a hydraulic arm with a 4.3 metre platform height. The original unit could also be trailed behind a car. The Hop-Up 2 came later and featured a two section telescopic mast under the boom for a little extra height. The company quickly expanded with wide range of trailer and self-propelled lifts and eventually folded due to the tough economic downturn of the early 1990's, possibly exasperated by over-extending itself.

King decided to do something on his own and introduced the first Power Tower a trailer mounted two man deluxe and more sophisticated version of the Hop-Up Plus, however the timing for such a product was off and it was probably not right in terms of size and price.

The Nano

Hop-Up 2

It is no surprise then that when the new more deeply seated interest in low level powered access product started bubbling up in 2006, following the introduction of the Work At Height Rules, King was interested in becoming involved with what he always knew would be a big market. So he helped form the new Power Tower company in 2007 with Richardson. The first product, simply called the Power Tower was a heavier duty, higher competitor to the original Pop-Up - which had kicked off the sector in 2006 - with a three metre platform height and sigma style lift mechanism.

The unit appears ludicrously overbuilt for what is the cheaper end of the powered access market, with heavy steel lift arms, large stainless steel pivot pins and large diameter tube type guardrails, all finished with a high quality powder coating. In terms of build quality and durability this product will put many 19ft self-propelled scissor lifts to shame. Add the fact that it is built in Europe rather than Asia, and one wonders how it can compete.

A visit to the company's plant on the edge of Leicester, in the UK gives a clue – it is highly efficient, clean and lean. Fabrication and paint is carried out by subcontractors on the same small estate so there is little to no waste with transportation and logistics and each unit takes just four hours to assemble - from delivered parts to shipping. There are of course also far fewer components than with a scissor lift - although they are bigger parts.

The Power Tower plant is compact, clean and efficient.

The Power Tower takes less than four man hours from start to ship.

One downside of using the sigma lift mechanism - probably the only one - is that it is not as compact as the smaller scissor type lifts. Sensing this early on, the team at Power Tower developed the Nano which uses a telescopic steel mast lift-mechanism along the lines of the UpRight TM12 and JLG 1230ES. This offered a more compact package with a 2.5 metre platform height and the ability to cover lower heights by reducing the number of mast sections. The Nano also lent itself to being self-propelled, so earlier this year the company unveiled the Nano Sp that uses mobility buggy drive technology.

The company is currently working on a number of exciting new developments all aimed at the low level access market. As Brian King says: "We are the low level kiddies, we have worked hard to focus purely on finding solutions to low level working at height problems, rather than following any competitors, which I know from the past can lead you down the wrong track along with them."

The most important project at the moment is distribution, rather than product related. Earlier this year it appointed CTE as its main dealer in Italy, which has already sold a number of machines to some of the major rental companies as interest in low level access begins to grow. Later this month it is expected to announce appointments in Germany including AVV for the south, while several rental companies, including market leader Gardemann, have already added Power Towers to their fleet. Discussions are also underway in France both with a new distribution partner and with a major rental company. When the push-around scissor lift market began to take of in the UK in 2006/7 most companies in continental Europe mocked the need for such 'toys'. It seems that times have changed as the Work At Height Rules finally begin to bite across all of the EU.

The Nano SP is driven while braced against the guardrails.

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