

CHALLENGE IMPLEMENTS. 50 YEARS OF HISTORY - CREATING THE FUTURE



# 50 years of history...

#### **Our Company**

In 1959, Jack Healey made the hard decision to leave behind the third generation family farm in Mandurama, New South Wales, after seeing an opportunity to develop a company in nearby Orange to manufacture a range of implements that would take the manual labour out of farm work. Initially, he employed two people with a working capital of only £500 and, in 1962, the company released its first front-end loader for the agricultural industry.

The mid-1960s saw Jack Healey's son John join the company and, with John's engineering experience, he took control over product development while his father kept a close eye on the financial aspects of the company. It was John's commitment to innovation and product excellence that placed Challenge ahead in the Australian market place for the next 40 years and will continue to do so for many years to come.

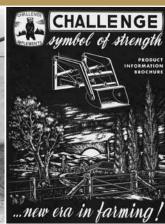
With continued product development and increasing demand, the front-end loaders eventually became the company's flagship product. The company's vision was to continually be the first in the industry with innovative products.

This was evident in 1972 when Challenge released Australia's first front-end loader to suit a four-wheel drive tractor. Challenge Implements have led the market with sales and innovation since the early 1960s. The Challenge name is renowned for quality, strength, innovation and value for money, with many customers still using the original loaders.

Challenge Implements remains a true family-owned and operated business and, today, the company is run by John's son and daughter. Being a family-operated company gives Challenge greater insight into their customer's businesses, as many of these businesses are also family-owned companies.

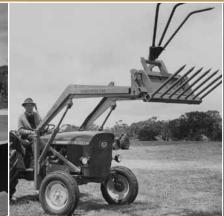
In 2005, Challenge Implements continued its commitment by announcing increased investment in the Research and Development Department. Three and half years later, this commitment is marked by the newly released range of CLX™ front-end loaders. This new range provides product excellence, featuring many new patent pending designs never before seen in the industry.

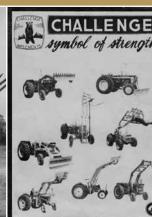








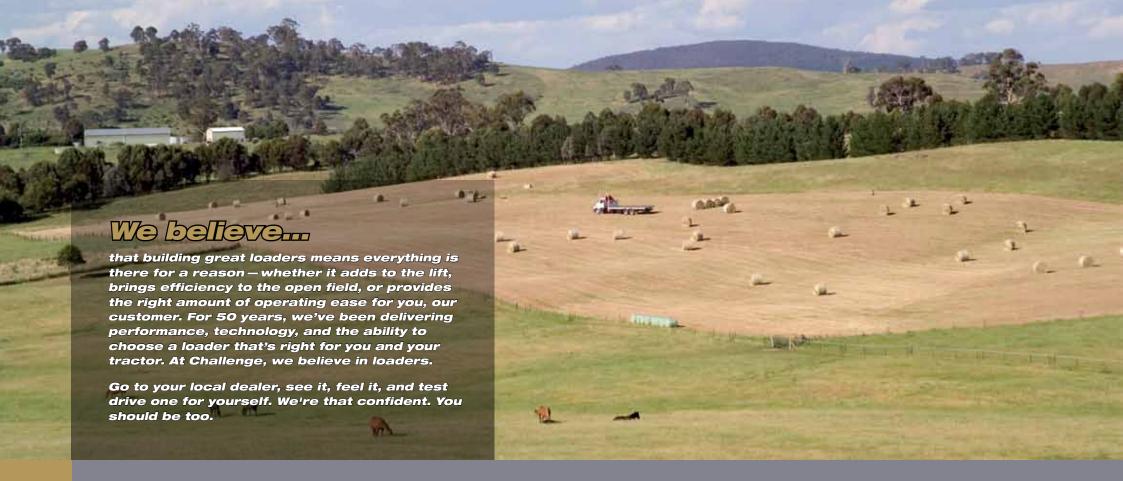






# Introducing the CLX"Series Loader

New technology for the future of farming





# Concept

From the start, our Research and Development team found it difficult to improve upon the current loader range — already an excellent product with a record of reliability and strength. So the initiative was taken to use the 50-years of rich experience and knowledge to start with something entirely new, while still building into the design the fundamentals that has led us to the market-leading position we are in today.

While developing the  $CLX^{TM}$  front-end loader series, we took into account customer feedback while also looking at what

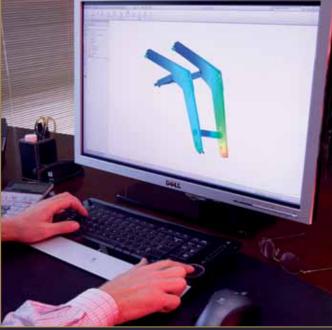
else we could offer back to the industry by using advanced design and testing methods adopted by the company over the last 50 years. Our desire was and always has been to offer the industry a loader that has advanced features, styling and increased operator vision not seen on front-end loaders before.

The strength of the CLX<sup>™</sup> front-end loader has increased significantly over previous models. In the development of the loader range, we carried out extensive field testing

pushing loader operational limits and ensuring the customer receives the strongest product available. Along with the field tests, hundreds of thousands of cycles were conducted on a specially-built loader test bed proving the computer simulated design to be 100% accurate in its stress analysis of the product. The strength of the CLX<sup>TM</sup> continues to allow the use of Challenge bull blade attachments.

Together with the many tests carried out within the Research and Development facilities, the first hand-built CLX<sup>™</sup> loader







# // Innovation // Design

was set to work. The prototype loader was used and tested by various front-end loader operators, ranging from Challenge engineers to farmers and even industrial excavator operators. The prototype was used in the extreme for what's considered normal front-end loader work. This final testing stage proved that only minor changes were needed on the first prototype to start planning the finishings of the final product presented today.

As a world-first, Challenge Implements has developed the

world patent pending CLT<sup>TM</sup> front-end loader levelling system with an innovative internal self-levelling linkage completely enclosed inside the loader boom. This sets the CLX<sup>TM</sup> Range apart from other loaders on the market. Traditionally, the levelling linkage has always been on top of the loader boom arms, obstructing operator vision. This new design makes for a streamlined and compact frontend loader, while continuing to offer safety to the operator with the use of advanced level-lifting technology.

Other advanced features included with the CLX<sup>TM</sup> series front-end loader provide operational savings by reducing the time and effort required when attaching and detaching the front-end loader from the tractor. There are no components that have to come away from the loader as the automatic-locking features are all built into the new design.







### **CLT**<sup>TM</sup> Technology





**EESTM** 

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**Auto Cam** Lock

PAGE 14



Fast Lock

PAGE 15





# Challenge Level Lift Technology



From concept to paper, to computer, to prototype and finally most importantly to you, we offer the world-first patent pending CLTTM front-end loader levelling system.

As a world-first, Challenge Implements has developed the patent pending  $CLT^{TM}$  front-end loader levelling system with an innovative internal self-levelling linkage enclosed inside the loader boom. With years of development, Challenge is able to conceal the linkage inside the boom arm which gives the loader a better appearance and gains between 240-260mm of increased vision. This makes for a streamlined and compact front-end loader, while continuing to offer safety to the operator with the use of advanced level-lifting technology.



International Patent Pending



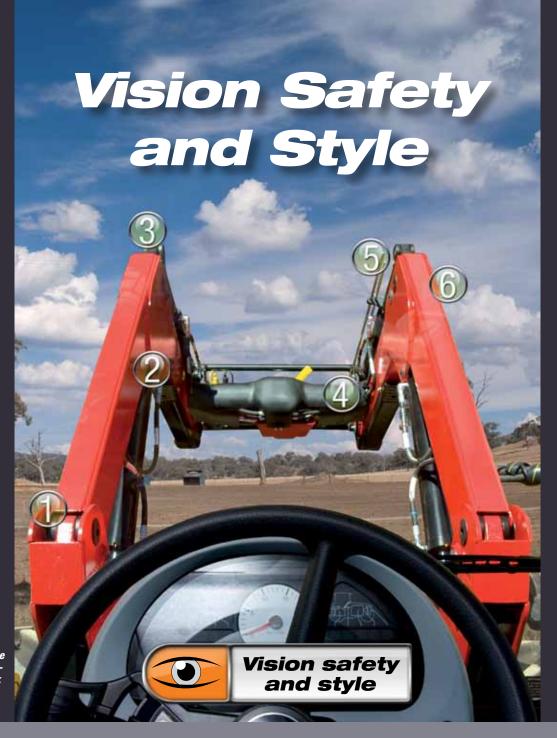
1. With the use of EES™ and CLT™ technology, we have been able to conceal the level lift linkage inside the boom arm giving the loader a cleaner, more compact appearance.



2. Flush pin design and hidden hydraulic hoses increases loader to tractor clearances and provides clean boom arm surfaces free from hoses, brackets, fittings and other components traditionally mounted on the boom arm surface.



3. Vision and style is further maximised with the use of high-gauge 40mm pins, industrial self-lubricating bearings, and cast levelling crank allowing a hidden compact levelling system.





4. The registered cross bar cover design is made with a heavy duty high-density polyethylene material, protecting hoses and valving mounted underneath the cover. This stylish cover is designed to maximise operator vision.



5. The implement level gauge has been made from solid steel bars and a welded cast steel bracket to ensure the strength of this feature. The level gauge is mounted on the inside of the loader below the level of the frame arm for ease of sight and protection.



6. Now with the level lift linkage concealed inside the boom, the CLX™ loader gains between 240 – 260mm of increased vision. Take a look at what you can't see!



International Patent Pending

### EESTM System — Enhanced

With the development of the patent pending EES $^{\text{TM}}$  system, the CLX $^{\text{TM}}$  loader now has greater strength while also allowing the entry and exit points of the hydraulic hoses and wiring harness.

One of the main areas of any front-end loader that needs extra strength, is the cross bar that joins the two boom arms together. The new EES $^{\text{TM}}$  cross bar system offers an added total of a 56% increase in cross bar

re-enforcement, now allowing a total of six high-penetration welds from the boom arms to the strengthened cross bar tube.

The EES™ systems also provides a customised chute at all hose entry and exit

#### Cross Bar Welding Detail

We have increased the strength where it counts the most. EES<sup>™</sup> designed castings allow 56% more frame to cross bar welding penetration.

#### Hydraulic hose guide

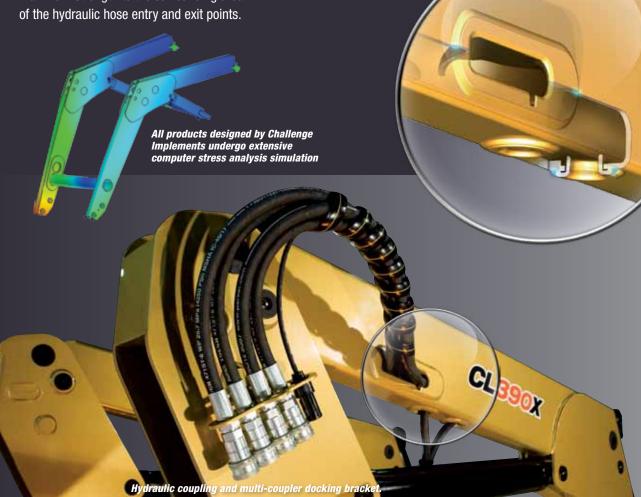
 $\mathsf{EES}^\mathsf{TM}$  designed castings provide customised hose entry and exit points while also adding strength to the loader frame.

EES<sup>™</sup> designed cross bar casting



# **Engineering Strength**

points that protects and guides the hoses and wiring within the loader boom arm. These castings have been designed to offer maximum strength to the surrounding area of the hydraulic hose entry and exit points.







### Auto Cam Lock

### **Auto Cam Lock**

International Patent Pending

The patent pending Auto Cam Lock & Fast Lock frame stand system, included with the CLX™ series front-end loader, provides operational savings by reducing the time and effort required when detaching and reattaching the front-end loader from the tractor. There are no components that have to come away from the loader as the automatic locking features are all built into the new design. Reattaching the loader is now a very quick, automated process. Once the hydraulic hoses have been connected, the operator can completely attach and secure the loader without leaving the tractor seat.









### Fast Lock System



Fast Lock

International Patent Pending

The CLX™ loader will automatically lock and tighten itself to the tractor mounting frame with the new patent pending Auto Cam Lock system. This is now an automated version of the proven Cam Lock system featured in the 21 Series loaders. The re-attaching operation can now be completed by using the loader dump function; the operator can fold and lock the frame stands automatically enabling the operator to continue working. This Fast Lock process only takes seconds.



Fast lock frame stands system

Fast lock system can only be used with standard or 4-in-1 bucket









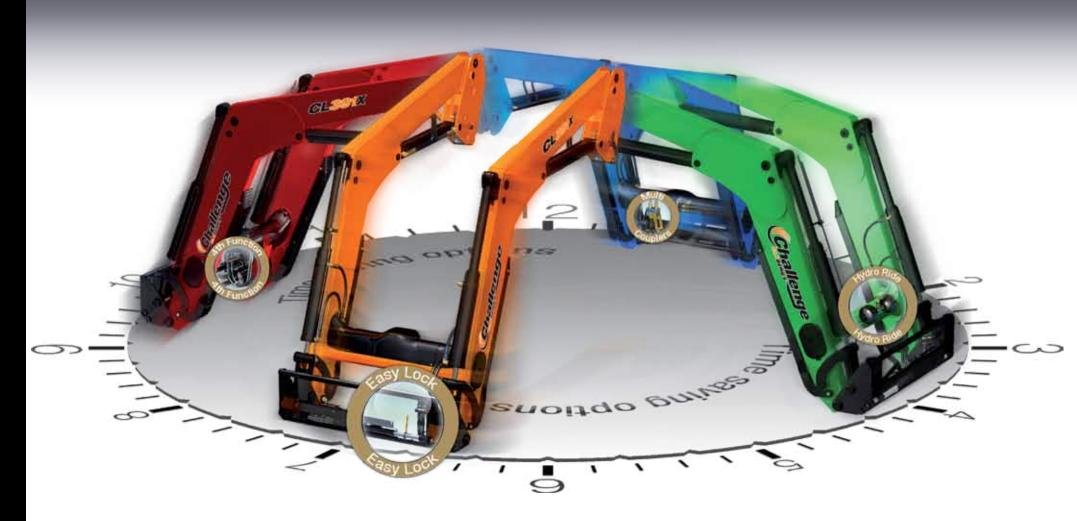




### **Options**

### **Choose Your CLX™ Time-Saving Options**

Choose your CLX<sup>TM</sup> time-saving option to improve your load, lifting and carrying productivity on the job. CLX<sup>TM</sup> loader options are designed and manufactured with the customer's needs in mind, offering the best use of technology enabling you to have the best use of your own time.





Challenge Implements patent pending quick coupler design continues to suit existing 21 Series attachments ensuring strength and compatibility. The CLX<sup>TM</sup> quick coupler has been designed to allow maximum vision when attaching implements to the quick coupler. With the carefully designed Easy Lock system fitted to your CLX<sup>TM</sup> loader, you never need to manually attach an implement to your loader again.



All loaders are designed to allow the use of multi-couplers to increase operator ease of use when changing third & fourth function dependent implements from quick couplers. Challenge Implements also offer multi couplers on  $CLX^{TM}$  loaders for easier hydraulic coupling of the loader, on and off the host tractor.



Travelling with or without a load, the all new CLX<sup>TM</sup> Hydro Ride system will sense and adjust to the current pay load being carried. While travelling from point A to B, you can enjoy the smoothest ride possible with this new system. The CLX<sup>TM</sup> Hydro Ride system can be turned on or off from the loader joystick controls, making it convenient when loading and stacking where more precision is needed.



Along with the included third function service, an optional fourth function service is available to be fitted at the time the loader is ordered. It can also be purchased as an after-market fitment, with standard couplings or an easy-to-use multi-coupling system. The third and fourth function services are activated right from the loader joystick.



### Standard Features

INCLUDED FEATURES	CLX™ MODEL RANGE					
	CL330X CL331X	CL360X CL361X	CL390X CL391X	CL420X CL421X CL422X	CL452X	CL482X
Challenge Innovation Features — All features are Patent Pending						
Challenge Level Lift Technology	3	3	3	3	3	3
Enhanced Engineering Strength System	3	3	3	3	3	3
Fast Lock — Frame Stand Fastening System	3	3	3	3	3	3
Auto Cam Locking System	3	3	3	3	3	3
Hydraulic Features						
Centralised Hydraulic Distribution Service — Features dual relief	3	3	3	3	3	3
Internal Routed Hydraulic Hose System — see EES System	3	3	3	3	3	3
Third Service — For hydraulic attachment operation	3	3	3	3	3	3
Hydraulic coupling and multi-coupler docking bracket	3	3	3	3	3	3
Fourth Service Hydraulic Control Valve — For hydraulic attachment operation	0PT	0PT	0PT	0PT	0PT	OPT
Hydro Ride - Automatic load sense — Electronic On/Off	0PT	OPT	0PT	0PT	0PT	0PT
Easy Lock - Hydraulic attachment locking system - Electro/hydraulic Control	0PT	0PT	0PT	0PT	0PT	0PT
Multi Couplers - Control valve, attachment and remote fast connection	0PT	0PT	0PT	0PT	0PT	0PT
Independent Hydraulic Control Valve - Single lever joystick control	0PT	0PT	0PT	0PT	0PT	0PT
General Operator Features						
Attachment level indicator	3	3	3	3	3	3
Flush mounted pivot pins — 40mm high-strength greased pins	3	3	3	3	3	3
Industrial grade self-lubricating bearings	3	3	3	3	3	3
Mechanical cylinder safety lock — neatly stored in loader crossbar	3	3	3	3	3	3
Attachment Connection						
Challenge attachment hitch — Compatible with 21 & 31 Series attachments*	3	3	3	3	3	3
European-styled hitch	0PT	0PT	0PT	0PT	0PT	OPT
*Excludes post hole diggers and manual angle bull blades						
Tractor Protection						
Bump Guard — Tractor bonnet protection	3	3	3	3	N/A	N/A
Bonnet Grille Guard — Extra tough tractor bonnet protection	0PT	0PT	0PT	0PT	3	3
Suitable For Bull Blade Usage	3	3	3	3	N/A	N/A

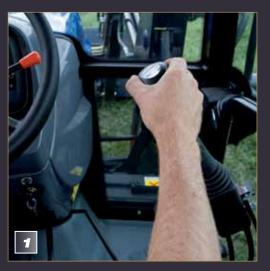


Grille guard option (standard on CL452X and CL482X)



Standard Bump Guard

### Cabin & Joystick





- The cable-to-valve controlled joystick will give you direct feel and sensitivity of your CLX™ series front-end loader. Positioned in the most convenient location for everyday usage and comfort.
- 2. Alternative tractor remote configurations are available for various tractor models providing electronic or level operation.





The Hydro Ride rocker switch can be mounted on your tractor's dash or console, or for maximum convenience it can be mounted in the new generation joystick.



With the added option of Easy Lock to your CLX<sup>™</sup> loader, ease of operation increases with the easy-to-use lock switch mounted in a location that best suits you.



### Safety & Service

Safety is always a main design driver when putting together any product, particularly products that are continually subject to high amounts of force. The Challenge CLX<sup>TM</sup> loader is no exception to this rule. Ease of service and safe usage of the loader are equal to the high standard of customer care that we have been providing for decades. Being the first agricultural company in Australia to offer only level-lifting loaders in our product range is an example of our commitment to end-user safety.



After usage, the safety lock fits neatly back into the loader cross bar. Challenge decided to use mechanical safety locks rather than hydraulic taps as a hydraulic fitting can be undone while an operator is under the loader area. The use of mechanical safety locks ensures the loader can never be lowered while the mechanical lock is in place.

Two-year boom and sub-frame

warranty on all CLX™ loaders.

With the safety lock securely strapped to the lift cylinder extension rod, the loader is mechanically locked allowing quick access for maintenance and servicing of tractor components.



All pins have easy access greasing-points. By regularly greasing your CLX<sup>TM</sup> front-end loader, you will ensure your loader remains in good working order. Although the bearings are selflubricating, it is important to keep fresh grease in the bearings for best operational performance.



At Challenge, we aim to provide your tractor/loader mounting kit with the best access possible to all the fluids, filters, dip sticks, air filters, radiators, bonnet latches and all other accessible components.

Our design team continually works on creating the best solutions while maintaining our renowned strength and reliability.

For complete access to all tractor engine components, the CLX™ loader is easily removed and reattached to the tractor. This allows 100% access under



### Specifications

Ballasting: To correctly ballast the tractor when used with a front-end loader, a three point linkage counterweight must be fitted.

Attachments: Also refer to the tractor operators manual for weighting and ballasting information.

\*Vertical distance from ground line to lowest point of cutting edge when bucket is dumped 45° and loader is fully raised.

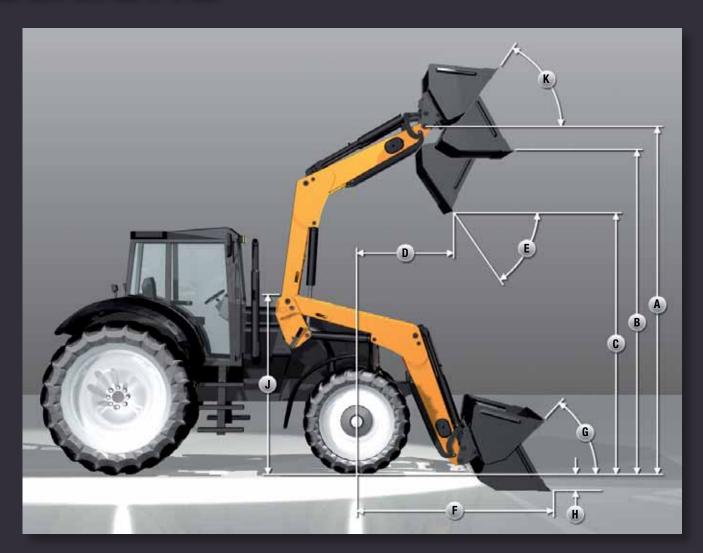
\*\*Horizontal distance from tip of bucket cutting edge to centre line of tractor front wheels with loader fully-raised and bucket dumped at 45°.

\*\*\*Horizontal distance from tip of bucket cutting edge to centre line of tractor front wheels with bucket level on ground.

Specifications may vary with tractor model, tyre size and/or hydraulic systems.

The following specifications are given in accordance with the "Tractor and Machinery Association of Australia" Code of Practice for: "Manufacture and Supply of Front-end Loaders for use on Agricultural Tractors in Australia", referring to standards ASAE S301.3 JAN96 and AS2954.5 1988/ISO 7546 1983

NOTE: The loader specifications may vary with tractor models, tyre sizes and/or hydraulic systems, and assume a hydraulic system capacity of 18.5 Mpa (2682 psi). Design specifications are subject to change without notice or obligation.



### **CL330X CL331X**

Hp Range — Approximates only	55-90
A — Maximum lift height to pivot pin	3323mm
B — Maximum lift height under level bucket	2995mm
C — Clearance with bucket dumped*	2397mm
D — Reach at maximum lift height**	1226mm
E — Maximum dump angle	56°
F — Reach with bucket on ground***	2211mm
G — Maximum rollback angle	50°
H — Digging depth*	180mm
J — Overall height in carry position	1695mm
K — Maximum rollback angle at maximum lift height	50°
Lift capacity at pivot pin — Ground level	2040kg
Lift capacity at pivot pin — Maximum lift height	1505kg
Lift capacity at 800mm from pivot pin — Ground level	1685kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	1550kg
Lift capacity at 800mm from pivot pin — Maximum lift height	1280kg
Bucket rollback force at ground height	2495kg
Maximum Frame Weight	574kg
Maximum Front Tyre Size	11.2R24

### **CL360X CL361X**

Hp Range — Approximates only	75 –110
A — Maximum lift height to pivot pin	3609mm
B — Maximum lift height under level bucket	3282mm
C — Clearance with bucket dumped*	2683mm
D — Reach at maximum lift height**	1276mm
E — Maximum dump angle	56°
F — Reach with bucket on ground***	2340mm
G — Maximum rollback angle	51°
H — Digging depth*	180mm
J — Overall height in carry position	1843mm
K — Maximum rollback angle at maximum lift height	48°
Lift capacity at pivot pin — Ground level	2630kg
Lift capacity at pivot pin — Maximum lift height	2156kg
Lift capacity at 800mm from pivot pin — Ground level	2265kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	2230kg
Lift capacity at 800mm from pivot pin — Maximum lift height	1900kg
Bucket rollback force at ground height	3055kg
Maximum Frame Weight	616kgs
Maximum Front Tyre Size	14.9R24

### **CL390X CL391X**

Hp Range — Approximates only	100-150
A — Maximum lift height to pivot pin	3924mm
B — Maximum lift height under level bucket	3597mm
C — Clearance with bucket dumped*	2998mm
D — Reach at maximum lift height**	1285mm
E — Maximum dump angle	56°
F — Reach with bucket on ground***	2363mm
G — Maximum rollback angle	49°
H — Digging depth*	180mm
J — Overall height in carry position	1996mm
K — Maximum rollback angle at maximum lift height	55°
Lift capacity at pivot pin — Ground level	960kg
Lift capacity at pivot pin — Maximum lift height	2308kg
Lift capacity at 800mm from pivot pin — Ground level	2643kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	2518kg
Lift capacity at 800mm from pivot pin — Maximum lift height	1980kg
Bucket rollback force at ground height	3083kg
Maximum Frame Weight	652kgs
Maximum Front Tyre Size	14.9R28

<sup>\*</sup> Digging depth can vary depending on fitted tractor tyre equipment

### **CL420X CL421X CL422X**

Hp Range — Approximates only	140-190
A — Maximum lift height to pivot pin	4238mm
B — Maximum lift height under level bucket	3912mm
C — Clearance with bucket dumped*	3312mm
D — Reach at maximum lift height**	1412mm
E — Maximum dump angle	56°
F — Reach with bucket on ground***	2459mm
G — Maximum rollback angle	51°
H — Digging depth*	180mm
J — Overall height in carry position	2143mm
K — Maximum rollback angle at maximum lift height	55°
Lift capacity at pivot pin — Ground level	3171kg
Lift capacity at pivot pin — Maximum lift height	2350kg
Lift capacity at 800mm from pivot pin — Ground level	2845kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	2662kg
Lift capacity at 800mm from pivot pin — Maximum lift height	2215kg
Bucket rollback force at ground height	3726kg
Maximum Frame Weight	715kg
Maximum Front Tyre Size	16.9R30

### **CL452X**

Hp Range — Approximates only	170 –220
A — Maximum lift height to pivot pin	4477mm
B — Maximum lift height under level bucket	4134mm
C — Clearance with bucket dumped*	3368mm
D — Reach at maximum lift height**	1440mm
E — Maximum dump angle	56°
F — Reach with bucket on ground***	2557mm
G — Maximum rollback angle	51°
H — Digging depth*	170mm
J — Overall height in carry position	2203mm
K — Maximum rollback angle at maximum lift height	55°
Lift capacity at pivot pin — Ground level	3378kg
Lift capacity at pivot pin — Maximum lift height	2610kg
Lift capacity at 800mm from pivot pin — Ground level	3045kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	2861kg
Lift capacity at 800mm from pivot pin — Maximum lift height	2412kg
Bucket rollback force at ground height	4078kg
Maximum Frame Weight	790kg
Maximum Front Tyre Size	16.9R30

### **CL482X**

Hp Range — Approximates only	220–305
A — Maximum lift height to pivot pin	4760mm
B — Maximum lift height under level bucket	4434mm
C — Clearance with bucket dumped*	3834mm
D — Reach at maximum lift height**	1555mm
E — Maximum dump angle	58°
F — Reach with bucket on ground***	2608mm
G — Maximum rollback angle	53°
H — Digging depth*	180mm
J — Overall height in carry position	2293mm
K — Maximum rollback angle at maximum lift height	55°
Lift capacity at pivot pin — Ground level	3546kg
Lift capacity at pivot pin — Maximum lift height	2715kg
Lift capacity at 800mm from pivot pin — Ground level	3190kg
Lift capacity at 800mm from pivot pin — 1.5m lift height	2872kg
Lift capacity at 800mm from pivot pin — Maximum lift height	2530kg
Bucket rollback force at ground height	4347kg
Maximum Frame Weight	890kg
Maximum Front Tyre Size	16.9R30

 $<sup>\</sup>ensuremath{^{\star}}$  Digging depth can vary depending on fitted tractor tyre equipment







#### **MULTI-PURPOSE BUCKET (4-IN-1)**



MULTI-PURPOSE BUCKET (4-IN-1) HEAVY 'MH' / HEAVY DUTY 'MHD'						
Bucket Model	168MH	186MH	216MH	246MH	186MHD	216MHD
Bucket width	1680mm	1860mm	2160mm	2460mm	1860mm	2160mm
Bucket weight	288kg	308kg	342kg	376kg	382kg	438kg
L (Depth)	570mm	570mm	570mm	570mm	750mm	750mm
M (Height)	765mm	765mm	765 mm	765mm	845mm	845mm
N (Length)	807mm	807mm	807mm	807mm	1023mm	1023mm
Struck capacity	0.27m³ 0.35YD³	0.32m³ 0.41YD³	0.37m³ 0.48YD³	0.42m³ 0.54YD³	0.52m <sup>3</sup> 0.68YD <sup>3</sup>	0.56m <sup>3</sup> 0.73YD <sup>3</sup>
Rated capacity	0.33m <sup>3</sup> 0.43YD <sup>3</sup>	0.40m <sup>3</sup> 0.52YD <sup>3</sup>	0.46m <sup>3</sup> 0.60YD <sup>3</sup>	0.52m <sup>3</sup> 0.68YD <sup>3</sup>	0.65m <sup>3</sup> 0.85YD <sup>3</sup>	0.70m³ 0.91YD³
Optional ground-engaging teeth	4	4	4	4	4	4

#### LIGHT MATERIAL BUCKET



LIGHT MATERIAL BUCKET				
<b>Bucket Model</b>	216LM	246LM		
Bucket width	2160mm	2460mm		
Bucket weight	320kg	336kg		
L (Depth)	1087mm	921mm		
M (Height)	946mm	982mm		
N (Length)	1335mm	1230mm		
Struck capacity	1.20m³ 1.57YD³	1.20m <sup>3</sup> 1.57YD <sup>3</sup>		
Rated capacity	1.45m³ 1.90YD³	1.45m <sup>3</sup> 1.90YD <sup>3</sup>		



### WRAPPED SILAGE CRADLE



### **DEDICATED SQUARE BALE SPIKE**



Dedicated Square Bale Spike			
Model	100SBD		
Weight	102kg		
Width	1710mm		
Number of Tines, standard	2 x 1100 Conus 1 2 x 810 Conus 1		

Extra Wide Dedicated Square Bale Spike (Suit export bales)				
Model	100SBDE			
Weight	138kg			
Width	1910mm			
Number of Tines,	5 v 1250 Conus 2			

standard

5 x 1250 Conus 2

#### **DEDICATED ROUND BALE SPIKE**





#### THREE-POINT LINKAGE COUNTERWEIGHT



Three-Point Linkage Counterweight			
Model	100CW		
Weight (empty attachment)	163kg		
Width	1015mm		
Height	950mm		
Depth	500mm		
Volume	0.48m³		
3PL Category	2		

See our Challenge Implements Attachment Catalogue for more attachments





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Challenge Implements reserves the right to improve specifications and change the design of its products without prior notification.

Challenge Implements designs, manufactures and supplies agricultural attachments that are intended to be used on Challenge Implements front-end loaders and other front-end loaders approved by the company. Challenge Implements front-end loaders and attachments are made to comply with the Tractor Manufacturers Association (TMA) Code of Practice. Attachments must not be modified and should only be used for their stated use.

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