

TELE-VFR

(Telescopic - Variable Forward Reach)
Submitted by McConnel Limited. (English)



McCONNEL



TELE-VFR (Telescopic - Variable Forward Reach)

The most advanced reach mower arm-set ever created



Background

Modern tractor cabs increasingly place the operator ahead of the rear axle. Great for comfort, this position does nothing for visibility of the flailhead when hedge cutting or mowing verges. TELE-VFR (Telescopic-Variable Forward Reach) is designed to aid visibility from all types of cab and makes cutting around obstacles much easier, too.

Operated via McConel's Revolution joystick control, the new Tele-VFR is not only easier to master than conventionally controlled alternatives, but the control system also allows settings to be tailored to match the individual tastes of the user.



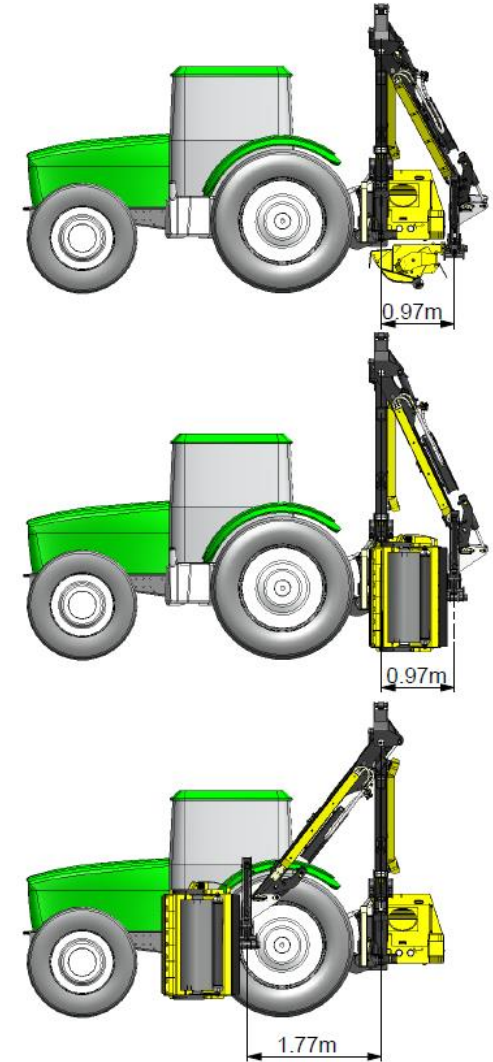
Introduction

The new Telescopic-Variable Forward Reach arm takes the comfort and control offered by McConnel's proven VFR technology and combines these qualities with the versatility of a 1.0m telescopic extension.

Created following feedback from French professional and specialist contractors (the largest arm mower market in the World), the new armset is available on new 85-series Power Arms.

Key benefits include:

- Improves safety by allowing the operator to concentrate on the road ahead
- Enables operators to set the arm position according to the task or personal preference
- Flexible positioning for cutting around obstacles
- Telescopic arm allows close-in cutting, while delivering extra reach on demand
- Enhances comfort
- Cutting position is adjustable from the cab at the touch of a button
- Simple and intuitive control
- Ideal for both hedge cutting and verge mowing

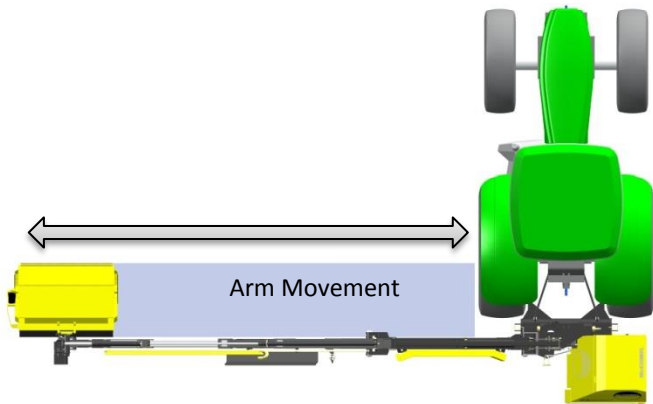


Comparison: Conventional arm vrs. TELE-VFR arm

Conventional arm configuration:



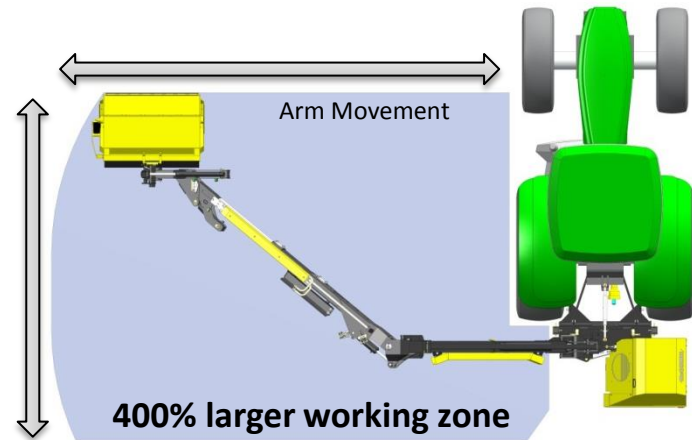
Movement of conventional arm configuration:



NEW TELE-VFR Arm configuration:



Movement of **NEW** TELE-VFR Arm configuration:



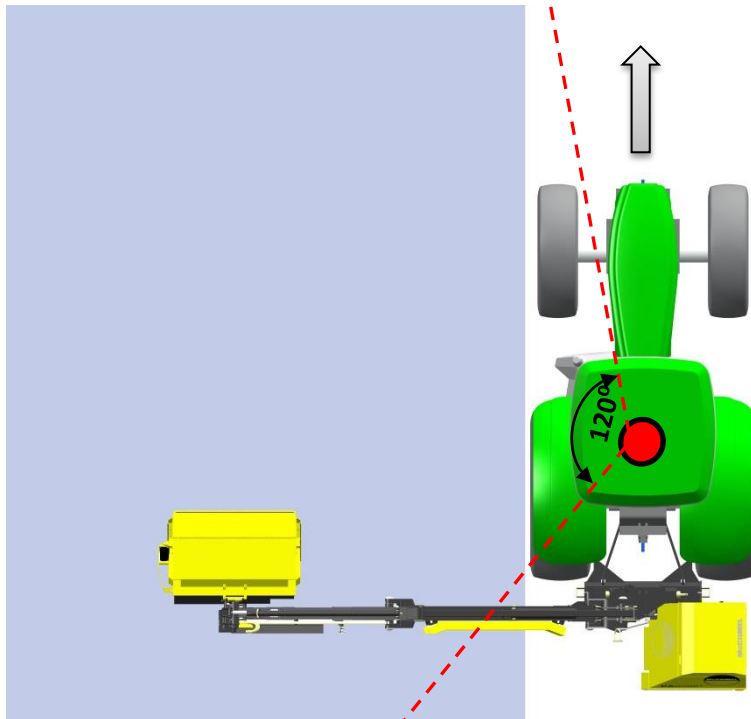
Safety, visibility and comfort

Conventional arms extend behind the cab resulting in operators having to make a series of visual adjustments from front to rear as the operator checks the road ahead, then breaks off to check the performance of the flailhead.

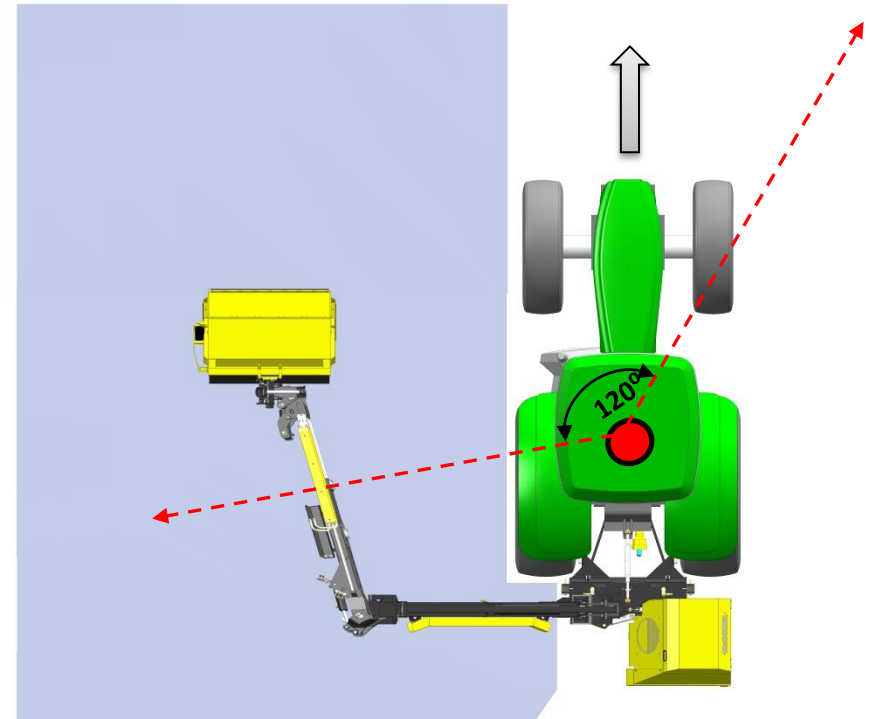
TELE-VFR takes full advantage of the 120-degree focal range of the human eye, allowing operators to flick simultaneously back and forth from the road to the flailhead's position alongside the cab without compromising safety.

The improvements in visibility help increase working speeds and deliver enhanced safety and machine longevity.

Conventional arm configuration:



NEW TELE-VFR Arm configuration:



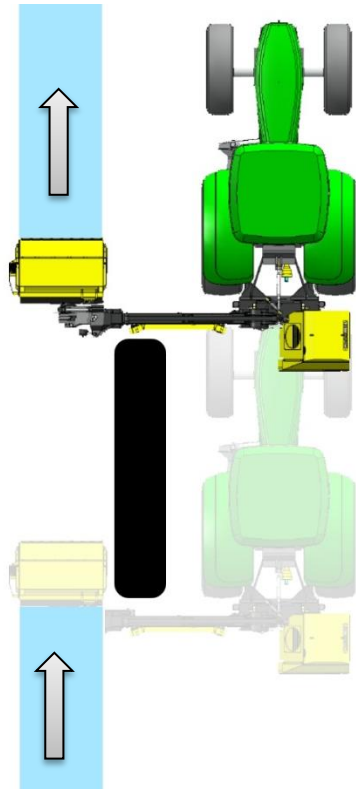
McCOWEL

Ability to cut around obstacles

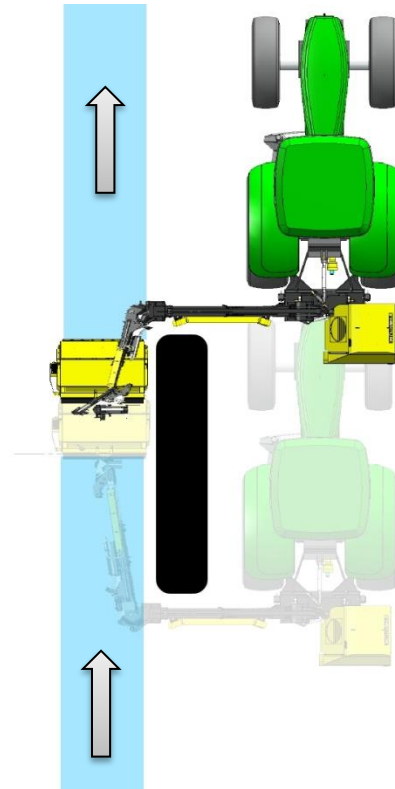
Conventional reach arms are not designed for cutting around obstacles such as road signs, trees, and therefore struggle to make a tidy cut without being forced into a series of time-consuming and potentially hazardous manoeuvres.

By enabling an extended forward reach of up to 2.39m, TELE-VFR offers over 400% increase in the size of the cutting area, boosting efficiency and productivity and enabling the arm to cut behind obstacles.

Conventional arm configuration:



NEW TELE-VFR Arm configuration:

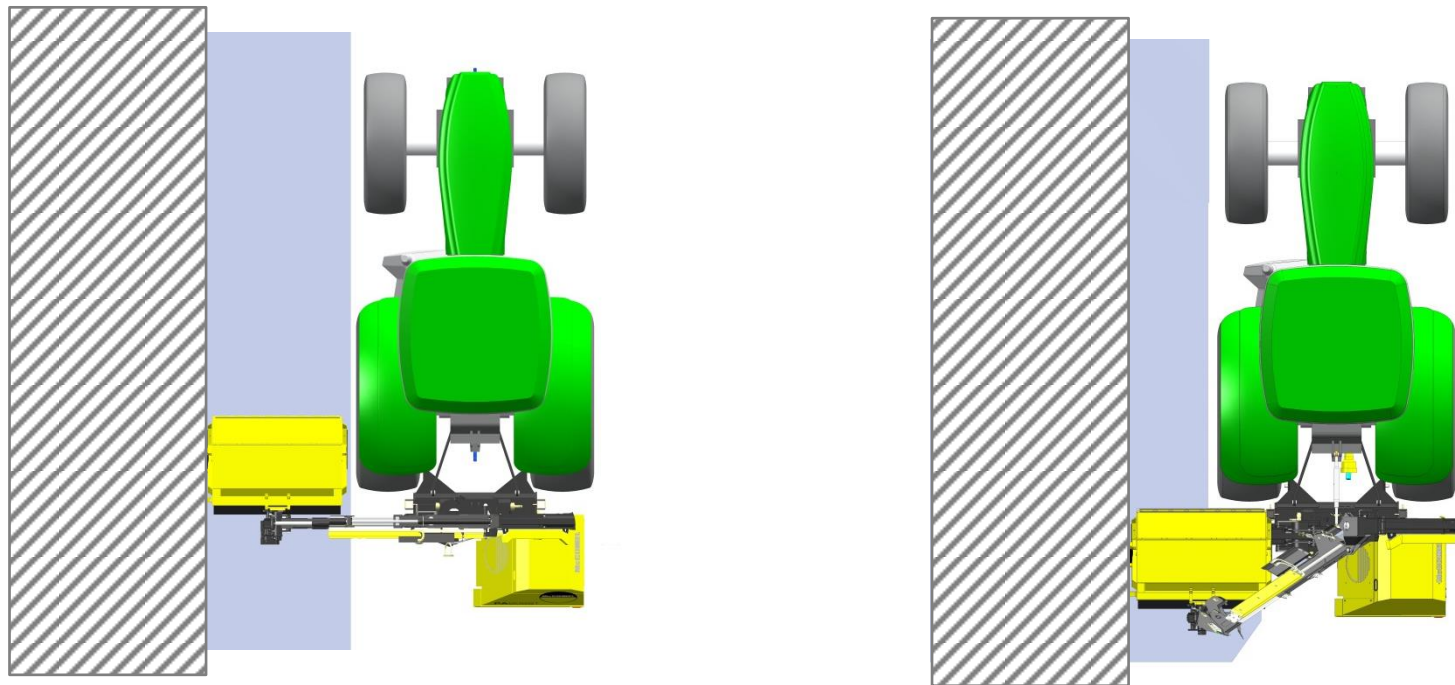


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Confined Environments

The telescopic arm extends by 1.0m – giving extra reach on demand, or a compact arm-set when retracted for enhanced manoeuvrability.

TELE-VFR also enables operators to cut directly behind the cab when working in very narrow lanes where space is at a premium and there is no room to extend the arm – creating opportunities for work in challenging environments where a conventional reach arm machine would struggle.



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Working Example: Safety, visibility and comfort



Working Example: Ability to cut around obstacles



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Working Example: Ability to cut around obstacles



McCOWEL

Working Example: Working in confined areas



Testimonial 1:

Graham Dix, Oxford City Council, UK.

Oxford City Council chose Variable Forward Reach technology for their new machine because of the benefits it delivers in comfort, safety and productivity.

Safety and Productivity

Operator Graham Dix said: “I have to work on busy city streets where there are a lot of cars and pedestrians and safety is paramount. Variable Forward Reach offers a big advantage over conventional reach arms because it allows me to concentrate on the road ahead and spot any hazard while working on the hedges and verges at the same time.

Comfort and health

The council wanted to ensure greater comfort for Graham who had suffered back pain in the past, protecting his health and preventing unnecessary fatigue.

Grounds maintenance supervisor Andy Wharton explained: “We work long hours keeping the hedges in trim throughout autumn and winter so comfort is very important to us because we don’t want to risk strains which might put an operator’s health at risk. VFR allows Graham to position the flail alongside the cab protecting his back and neck from strain.”

Performance and precision

Graham is experienced hedge-cutter but believes the VFR machine offers a major step forward in precision and productivity.

He said: “VFR is a fantastic feature that gives you an incredible amount of control and is great when you’re working in tight spaces, or when you’re in a busy area and need to cut round challenging obstacles. It’s really smooth when you change the cutting position and it saves a lot of time on tough jobs.”



Testimonial 2:

Paul Harding, Cheshire contractor., UK

Paul Harding is a busy full-time green maintenance contractor tending to around 3,500 miles of verges and hedges a year. He chose VFR for its outstanding precision and comfort.

Comfort

Paul explained: “I spend so many hours a day cutting hedges that it does place a lot of strain on my neck. With traditional arms this can result in a lot of stiffness and discomfort, but the VFR has made a huge difference, because now I look straight ahead, rather than constantly craning over my neck.”

Productivity

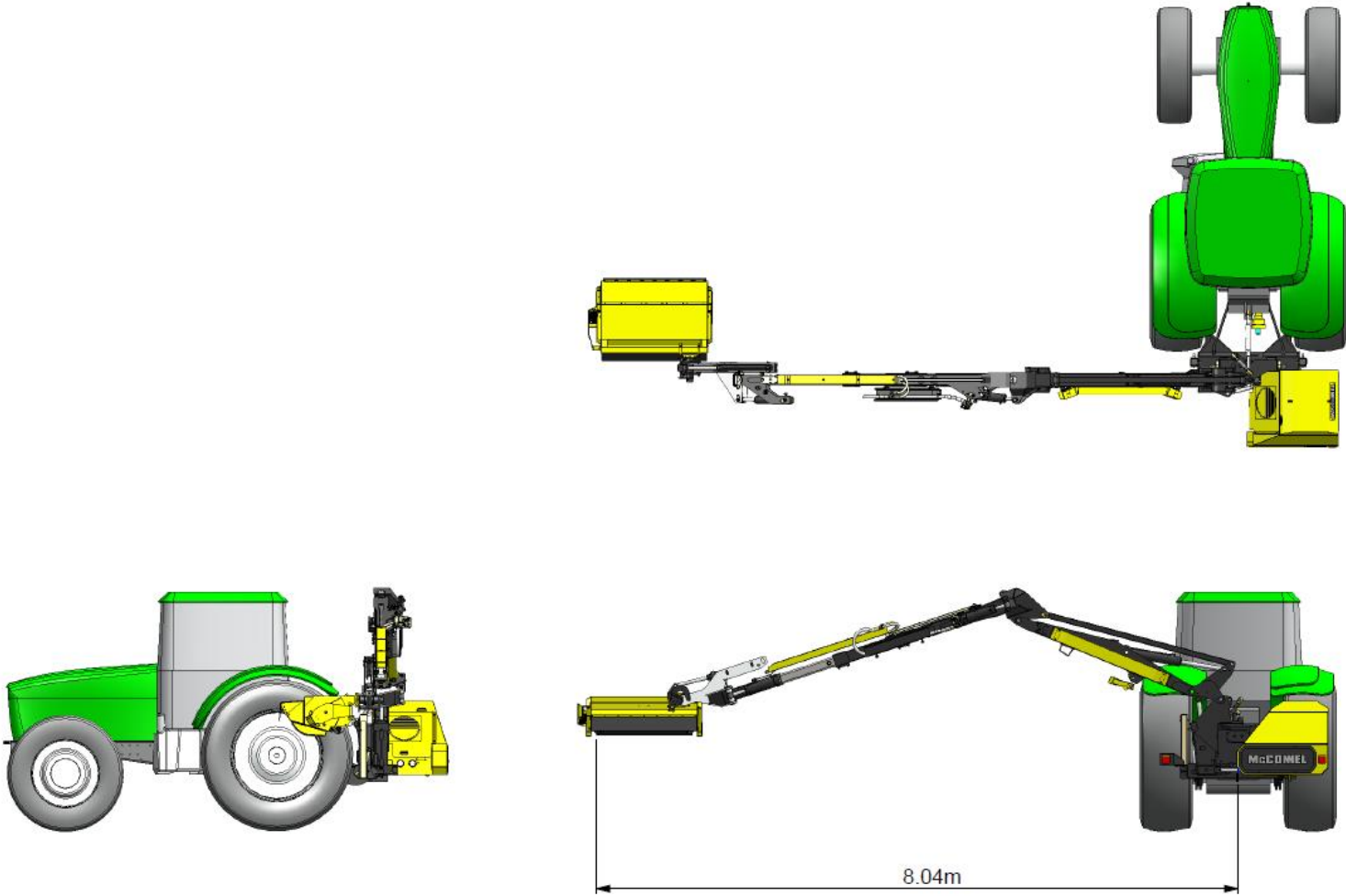
Paul said: “I’m a big fan of McConnel’s Easy Drive System, but to get the best out of it you need to be able to fully concentrate on the road ahead. That’s why VFR is so helpful because it enables me to keep my vision focused on the road.”

Precision

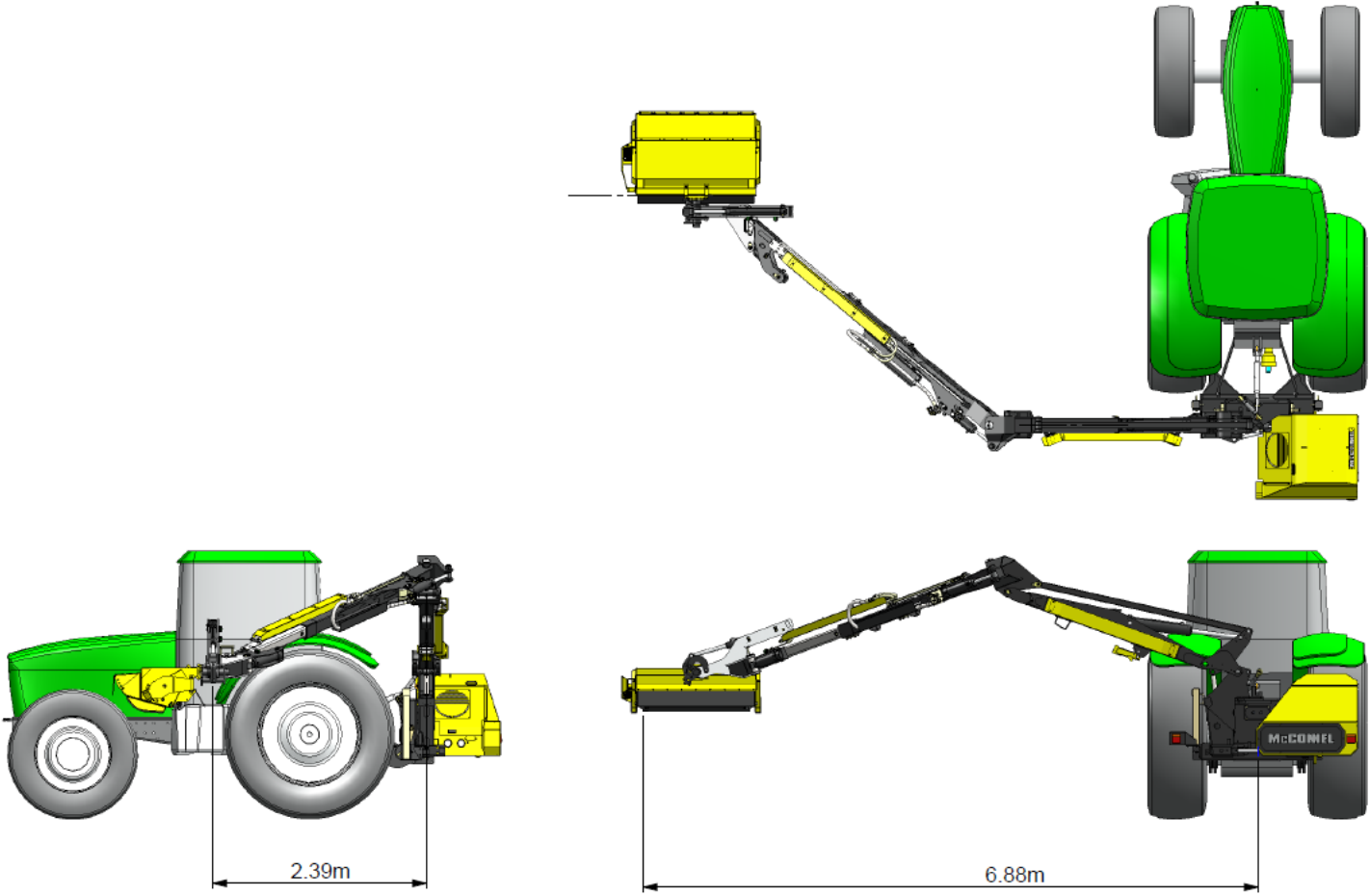
Paul said: “VFR gives you an edge when it comes to precision because it gives you the perfect view of your work. It’s also very helpful when I’m working in a very narrow lane where I can use VFR to position the flailhead directly behind the cab to cut the verge.



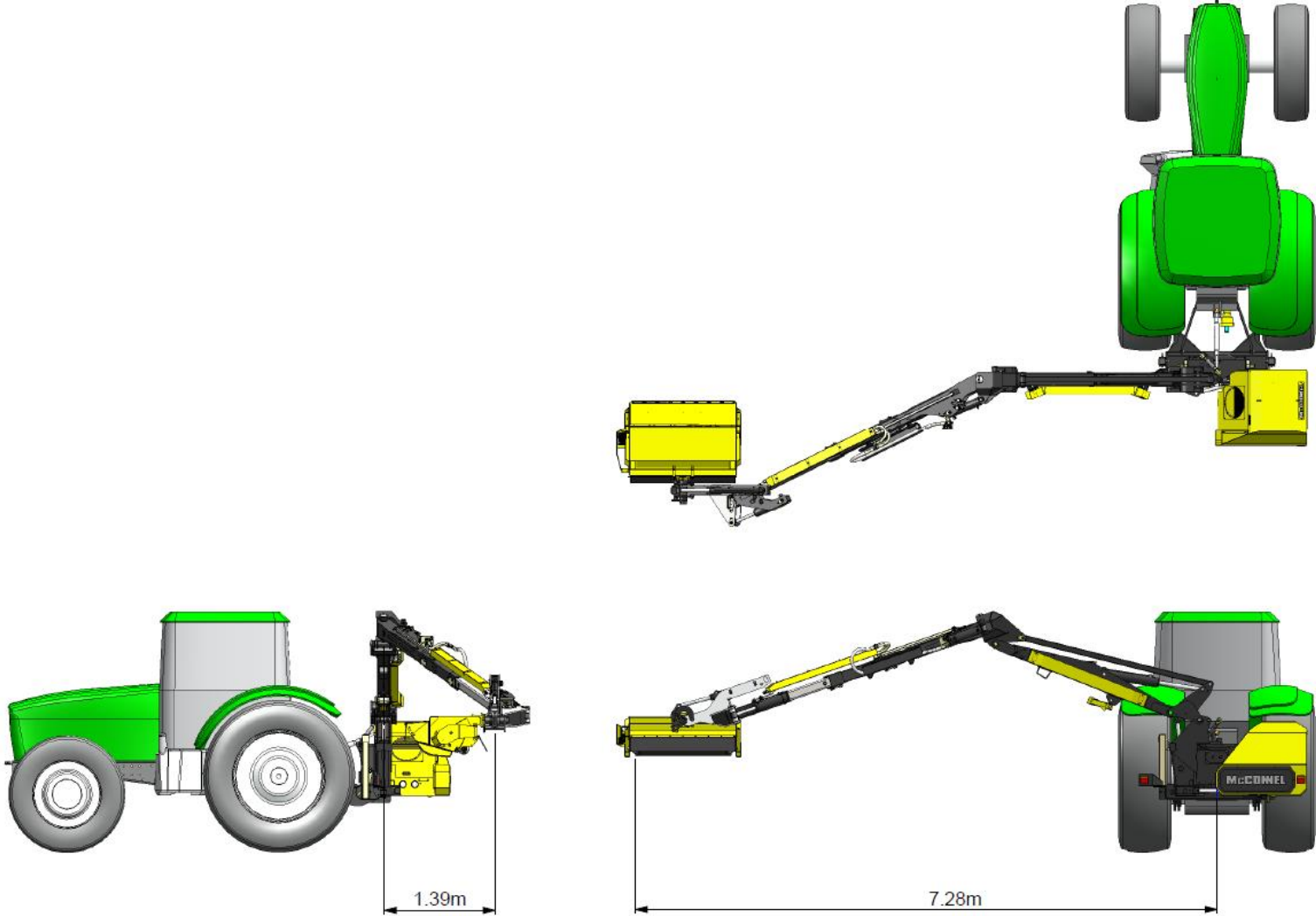
Technical Dimensions (PA8085 TELE-VFR)



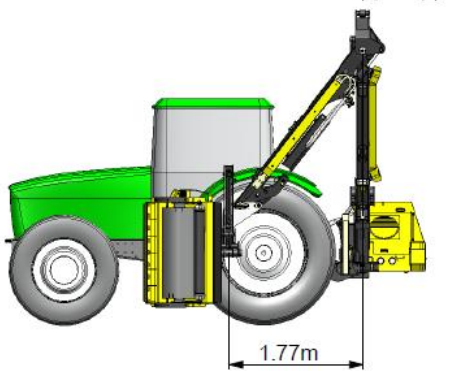
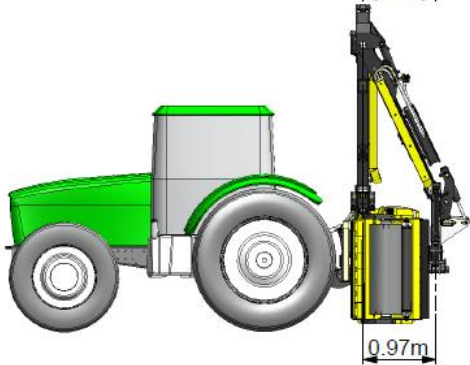
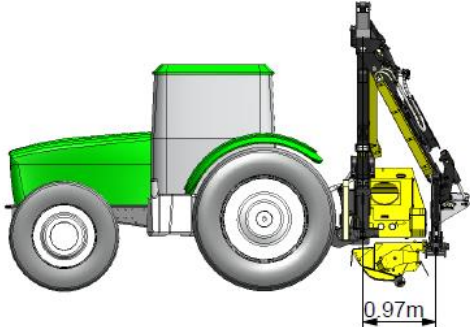
Technical Dimensions (PA8085 TELE-VFR)



Technical Dimensions (PA8085 TELE-VFR)



Technical Dimensions (PA8085 TELE-VFR)



TELE-VFR Technical Summary

- Available now on new 85-series Power Arms (See appendix 1)
- Left and right hand build options
- Constructed from super-strength Domex steel for durability and lightness
- Compatible with a comprehensive range of working attachments including high-performance flailheads, multisaws, rotary heads, cutter bars and a ditch cleaner
- Available with McConnell's award-winning Easy Drive System, a hands-free cruise control system which reduces operator fatigue while increasing verge mowing speeds by up to 4.5 times. (See appendix 2)
- Equipped with hydraulic safety breakaway for enhanced damage protection
- Available with REVOLUTION, the world's most advanced mainstream Power Arm control system (See appendix 3)
- Precision-engineered in the UK to the ISO9002 quality management hallmark

Further details available on request, please email Wayne Brown, McConnell Marketing Manager: wbrown@mccommel.com



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Comparison Summary: Conventional arm vrs. Tele-VFR arm



	Conventional arm configuration:	NEW TELE-VFR Arm configuration:
Improves safety by allowing the operator to concentrate on the road ahead		
Enables operators to set the arm position according to the task or personal preference		
Flexible positioning for cutting around obstacles		
Ability to cut behind the tractor		
Enhances comfort		
Increased productivity		



Appendix 1

(English)



PA6085

6.0m (19' 8") reach

PA6585

6.5m (21' 4") reach



85SERIES

McConel's flagship machine delivers the highest horsepower, the longest reach, and the most advanced feature set. Specially designed for professional users, the 85-series offers exceptional performance and has been built to thrive on heavy workloads - making it ideal for large-scale farmers, professional contractors and highway verge mowing teams.

Machine Features

- || 6.0m and 6.5m reach
- || Left hand or right hand build option
- || Choice of three-point or five-point axle-mounting
- || Parallel arm geometry
- || Hydraulic safety breakaway
- || Power Slew
- || 85hp high-performance hydraulic system
- || Tapered, seam welded arms
- || Hy-reach arm geometry
- || SoftStart Rotor Engagement
- || High capacity oil cooler
- || LED Road lighting kit
- || Operator-friendly
- || Integrated Debris Blower option

Markets

- || Professional
- || Governmental
- || Contractors

Tractor Requirements

- || 4000kg minimum tractor weight
- || 85hp minimum tractor horsepower



See PA6085 in action at:
www.mcconel.com/videos/

Tractor Requirements		PA6085	PA6585	PA6085	PA6585
Min Horsepower Requirements		85hp	85hp	4000kg	4000kg
Machine Specification					
Maximum Reach		6.0m (19'8")	6.5m (21'4")	Power Arm Horsepower	85hp 85hp
Machine Weight*		1340kg	1500kg	Oil tank Capacity	225ltr 225ltr
Hydraulics					
Gear Semi Independent		—	—	Gear Totally Independent	<input checked="" type="checkbox"/>
Method of Attachment					
3-Point Linkage-Mounted		<input type="checkbox"/>	<input type="checkbox"/>	5-Point Axle Bracket-Mounted	<input type="checkbox"/>
Controls					
Cable Control		—	—	Xtra Touch Control - Mini (XTC - Mini)	—
Switchbox		—	—	Xtra Touch Control	<input type="checkbox"/>
Monolever		—	—	REVOLUTION Control + EDS (Optional)	<input type="checkbox"/>
Machine Equipment					
Parallel Arm Geometry		<input checked="" type="checkbox"/>	—	Telescopic Dipper Arm (PA6585T only)	—
Midcut Pack or VFR		<input type="checkbox"/>	—	Angle Float Kit - Standard On Electric Models	<input checked="" type="checkbox"/>
Lift Float Kit		<input type="checkbox"/>	—	Easy Drive System (EDS)	<input type="checkbox"/>
Oil Cooler		<input checked="" type="checkbox"/>	—	Power Slew	<input checked="" type="checkbox"/>
Safety Breakaway - Hydraulic		<input checked="" type="checkbox"/>	—	Cable Rotor Control - Dual Rotation (T1 only)	—
Road Lighting Kit		<input checked="" type="checkbox"/>	—	Electric Rotor Control - Dual Rotation (T1 only)	<input checked="" type="checkbox"/>
Warning Arrow - Magnetic		<input type="checkbox"/>	—	Window Guards	<input type="checkbox"/>
Cushioned Top Link		<input checked="" type="checkbox"/>	—	Debris Blower	<input type="checkbox"/>
Front Mounting Build		—	—	Orbitor Head Kit	<input type="checkbox"/>
Front Flap Kit		<input checked="" type="checkbox"/>	—	Flailhead Skid Kit	<input type="checkbox"/>
Hydraulic Roller		<input type="checkbox"/>	—	Flailhead Cushioned Grass Mowing Roller	<input type="checkbox"/>
Power Arm Attachments					
1.20m	Swingtrim Cutter Bar	—	—	1.50m	Omega Flailhead - DD or BD <input type="checkbox"/>
1.50m	Swingtrim Cutter Bar	—	—	1.60m	Multicut Flailhead - DD or BD <input type="checkbox"/>
1.50m	Sheartrim Cutter Bar - SD	<input type="checkbox"/>	—	1.60m	Omega Flailhead - DD or BD <input type="checkbox"/>
1.60m	Sheartrim Cutter Bar - MD	<input type="checkbox"/>	—	2.00m	Multicut Flailhead - DD or BD <input type="checkbox"/>
2.00m	Sheartrim Cutter Bar - MD	<input type="checkbox"/>	—	1.20m	TwinCut Flailhead <input type="checkbox"/>
1.40m	Sheartrim Cutter Bar - HD	<input type="checkbox"/>	—	1.50m	TwinCut Flailhead <input type="checkbox"/>
2.20m	Sheartrim Cutter Bar - HD	<input type="checkbox"/>	—	1.20m	Rotary Head - FC - 2 Rotor <input type="checkbox"/>
1.00m	Compact Supercut Flailhead - GDD	—	—	1.20m	Rotary Head - MD - 1 Rotor <input type="checkbox"/>
1.20m	Supercut Flailhead - DD	—	—	1.50m	Rotary Head - HD - 1 Rotor <input type="checkbox"/>
1.20m	Multicut Flailhead - DD or BD	<input type="checkbox"/>	—	1.60m	Multisaw 1600 <input type="checkbox"/>
1.20m	Omega Flailhead - DD or BD	<input type="checkbox"/>	—	2.00m	Multisaw 2000 <input type="checkbox"/>
1.50m	Multicut Flailhead - DD or BD	<input type="checkbox"/>	—	2.40m	Multisaw 2400 <input type="checkbox"/>
				0.70m	Ditch and Grip Cleaner <input type="checkbox"/>

Standard Equipment Optional Equipment Not Available

* depending on machine specification excluding attachment and oil

Control Options

The boxes that are ticked indicate the control options available for this Power Arm.

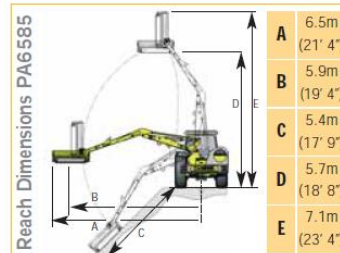


|| Hedge Cutting



|| Transport Position

|| Choice of Controls



|| For illustration purposes only



|| Hedge Cutting

POWER ARM 6085 & 6585



PA6585T

6.5m (21' 4") reach

PA7085T

7.0m (23' 0") reach

PA8085T

8.0m (26' 3") reach



McCONEL 85SERIES

McConel's flagship machine delivers the highest horsepower, the longest reach, and the most advanced feature set. Specially designed for professional users, the 85-series offers exceptional performance and has been built to thrive on heavy workloads - making it ideal for large-scale farmers, professional contractors and highway verge-mowing teams.

Machine Features

- || 6.5m, 7.0m and 8.0m reach
- || Left hand or right hand build option
- || Five-point axle-mounting
- || Parallel arm geometry
- || Hydraulic safety breakaway
- || Power Slew
- || 85hp high-performance hydraulic system
- || Tapered, seam welded arms
- || Hy-reach arm geometry
- || SoftStart Rotor Engagement
- || High capacity oil cooler
- || LED Road lighting kit
- || Integrated Debris Blower option
- || Telescopic dipper arm

Markets

- || Agricultural
- || Governmental
- || Contractors

Tractor Requirements

- || 4000kg minimum tractor weight
- || 85hp minimum tractor horsepower

Tractor	PA6585T	PA7085T	PA8085T		PA6585T	PA7085T	PA8085T
Horsepower Requirements	85hp	85hp	85hp	Minimum Tractor Weight	4000kg	5000kg	5500kg
Machine Specification							
Maximum Reach	6.5m (21'4")	7.0m (23'0")	8.0m (26'3")	Power Arm Horsepower	85hp	85hp	85hp
Machine Weight*	1650kg	1700kg	1800kg	Oil tank Capacity	225ltr	225ltr	225ltr
Hydraulics							
Gear Semi Independent				Gear Totally Independent			
Method of Attachment							
3-Point Linkage-Mounted				5-Point Axle Bracket-Mounted			
Controls							
Cable Control				Xtra Touch Control - Mini (XTC - Mini)			
Switchbox				Xtra Touch Control			
Monolever				REVOLUTION Control + EDS (Optional)			
Machine Equipment							
Parallel Arm Geometry				Telescopic Dipper Arm			
Midcut Pack				Angle Float Kit - <i>Standard On Electric Models</i>			
Lift Float Kit				Easy Drive System (EDS)			
Oil Cooler				Power Slew			
Safety Breakaway - <i>Hydraulic</i>				Cable Rotor Control - <i>Dual Rotation (TI only)</i>			
Road Lighting Kit				Electric Rotor Control - <i>Dual Rotation (TI only)</i>			
Warning Arrow - <i>Magnetic</i>				Window Guards			
Cushioned Top Link				Debris Blower			
Front Mounting Build				Orbitor Head Kit			
Front Flap Kit				Flailhead Skid Kit			
Power Arm Attachments							
1.20m	Swingtrim Cutter Bar			1.50m	Omega Flailhead - <i>DD or BD</i>		
1.50m	Swingtrim Cutter Bar			1.60m	Multicut Flailhead - <i>DD or BD</i>		
1.50m	Sheartrim Cutter Bar - <i>SD</i>			1.60m	Omega Flailhead - <i>DD or BD</i>		
1.60m	Sheartrim Cutter Bar - <i>MD</i>			2.00m	Multicut Flailhead - <i>DD or BD</i>		
2.00m	Sheartrim Cutter Bar - <i>MD</i>			1.20m	Rotary Head - <i>FC - 2 Rotor</i>		
1.40m	Sheartrim Cutter Bar - <i>HD</i>			1.20m	Rotary Head - <i>MD - 1 Rotor</i>		
2.20m	Sheartrim Cutter Bar - <i>HD</i>			1.50m	Rotary Head - <i>HD - 1 Rotor</i>		
1.00m	Compact Supercut Flailhead - <i>GDD</i>			1.60m	Multisaw 1600		
1.20m	Supercut Flailhead - <i>DD</i>			2.00m	Multisaw 2000		
1.20m	Multicut Flailhead - <i>DD or BD</i>			2.40m	Multisaw 2400		
1.20m	Omega Flailhead - <i>DD or BD</i>			0.70m	Ditch and Grip Cleaner		
1.50m	Multicut Flailhead - <i>DD or BD</i>						

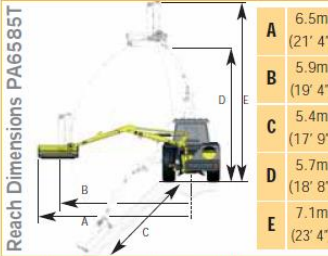
Standard Equipment ■ Optional Equipment □ Not Available —
 * depending on machine specification and attachment

Control Options

The boxes that are ticked indicate the control options available for this Power Arm.

	
Cable	Switchbox
	
Monolever	XTC - Mini
	
XTC	REVOLUTION

Choice of Controls



For illustration purposes only



Verge Mowing



Mid-cut Pack



Embankment Mowing

POWER ARM 6585T, 7085T & 8085T



Appendix 2

(English)



Easy Drive System

The revolutionary handsfree Easy Drive System (EDS) for increased verge mowing speeds

EDS - The Facts

- || Automatically follows ground contours
- || Significantly increases working speed
- || Provides total hands-free cruise control
- || Reduces operator fatigue
- || Responds 30 times a second
- || No additional pivots, bushes, linkages, springs or weight

The patented Easy Drive System (EDS) provides hands-free cruise control operation at much greater speeds, increasing both efficiency and safety.

Head and lift float are automatically controlled and allow faster mowing speeds irrespective of the Power Arm reach position.

The EDS system provides more accurate, responsive control over arm and flailhead float. This reduces operator fatigue and is ideal for precise verge mowing where speed and efficiency is essential.



See EDS in action
at www.mcconnel.com/videos/

The EDS system eliminates the need for the operator to move their hand or fingers around any auxiliary functions.

Unique Safety Features

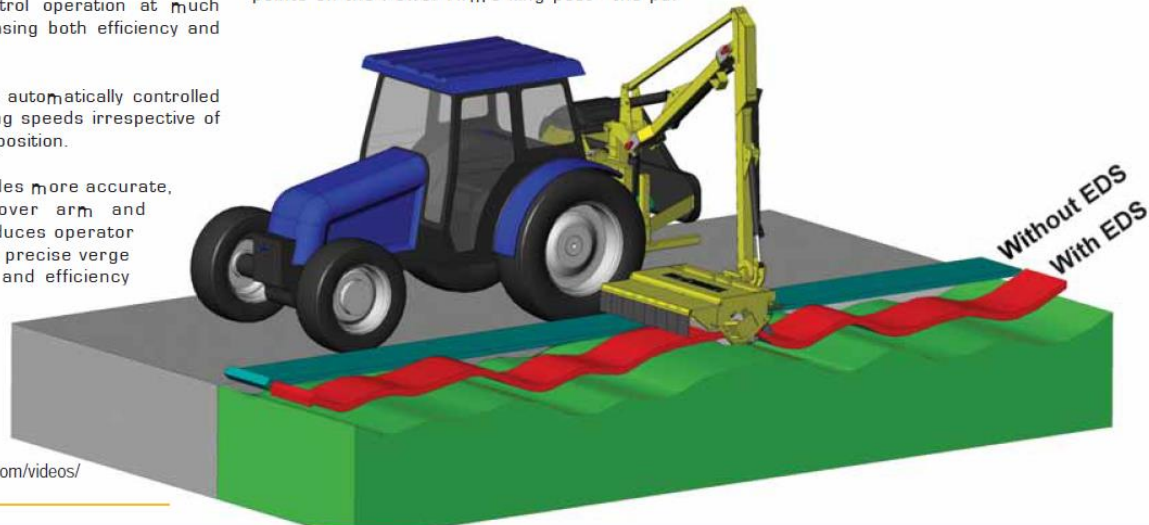
The EDS cruise control function incorporates a unique safety feature allowing the operator to instantly disengage/engage by touching the joystick.

How it Works

The EDS system comprises of two electrical sensors or potentiometers fitted on two pivot points on the Power Arm's king post - the par-

allel linkage and the lift ram. The sensor in the parallel linkage pivot point monitors flail head movements by measuring the turning angle of the pin during operation, as does the sensor on the lift ram pivot point.

Readings from both sensors are sent digitally to a Canbus system on the proportional control system inside the cab. This in turn informs the Power Arm's hydraulic system how much ram pressure is required to allow the arm and flailhead to float over changing ground contours.



|| Without EDS



|| With EDS



* Depending on conditions and machine

Follow the ground contours at high speed with hands-free operation

Advantages

With readings taken every 30 milliseconds, pressure in the lift arms is altered very rapidly so the flailhead does not bounce over ground contours. As a result, the Power Arm can be operated at higher speeds when verge mowing.

The proportional control system is housed inside an ergonomically designed armrest and sends 'digital' signals down a 4-wire Canbus loom to operate all the machines solenoid functions including electronic rotor control. This replaces the more conventional wiring looms

Sensors are built into the machine mainframe near the centre of the machine and are therefore away from the harsh working environment of the flailhead.

There are no additional pivots, bushes, linkages, springs or additional weight added to the arm or flailhead (A sensor is fitted to the main arm pivot pin at the mainframe, and pressure sensor in the lift arm).

There are no electric cables running down the length of the arms which could be vulnerable to damage.

Customer Experience

Cheshire contractor Paul Harding believes McConnell's innovative Easy Drive System offers an impressive increase in working speed and is an essential tool for any verge mowing professional.

Paul said: "I tried out a few machines and discovered McConnell's EDS enabled me to work much more quickly while still offering the best quality.

"I can work between one and three gears higher using a McConnell than I can with one of the competition models. This is a significant difference and it gives me a big advantage because I can work faster, save time, and still deliver an excellent cut."



Appendix 3

(English)



REVOLUTION Control



REVOLUTION is a state of the art multi-function reach arm control system that enables users to tackle a huge variety of work tasks; offers huge strides in productivity, safety and reliability; and enables precise fingertip control for outstanding manoeuvrability.

McConnel's REVOLUTION is the first control package ever developed which gives operators full proportional control of up to eight different functions.

Simple to use, yet highly sophisticated, REVOLUTION blows away outdated and generic control systems - delivering outstanding one-handed control and the best feature set in the industry.

Key features include:



Full colour display - The 5.5 inch high-resolution display is the best on the market and is unique for its size and quality. The screen can be mounted

around the cab and provides at-a-glance information on active functions, power output, job hours, warning alarms and servicing alerts.



Intuitive software – McCONEL's design philosophy is to take the complicated and make it simple and nowhere is this more evident than



in the software driving the system. Programs have been developed, tested and perfected in-house to ensure customers receive fit-for-purpose software that helps them tackle the toughest jobs quickly and easily.

EDS – McCONEL's automatic verge flotation system allows users to work at speeds of up to 18km/h – compared to a maximum of just 4km/h on machines which do not have this feature. EDS also slashes the amount of input needed – dramatically reducing operator fatigue.



Ergonomic joystick – Developed in-house exclusively for Power Arms, the system allows full proportional control of up to eight different functions from the joystick and full one-handed control of even the most complex operations.

Customer Experience

Pembrokeshire contractor Mathew Williams believes REVOLUTION is a huge step forward in control:

He says: "I was used to all-on, all-off controls, so the large number of proportional controls you get with REVOLUTION are a big improvement over other systems and give a lot more precision.

"I really like the way the controls can be mapped to the joystick so you have everything you need at your fingertips. The system allows you to do a lot of complex operations, but it's easy to pick up and the learning curve lasts less than a day."

