

A photograph of two construction workers in safety gear. The worker on the left wears a blue hard hat and an orange high-visibility jacket with reflective silver stripes. He is seated and looking down at a laptop computer. The worker on the right wears a white hard hat and a similar orange high-visibility jacket. He is looking towards the laptop. They are in the cab of a piece of heavy machinery, with various controls and a gear shift visible. The background shows a construction site with trees and a clear sky. The text "SAFETY SYSTEMS" is overlaid in large white letters on the left side of the image.

SAFETY SYSTEMS



W.H. SCOTT GROUP

Safety Systems



Xwatch provides machine control hardware and software technologies designed to enhance safety protocols on construction sites. This includes height control, slew control, and rated capacity indication (RCI) for heavy machinery, allowing operators to limit an excavator's height and set side boundaries to define a working zone, significantly increasing safety around a machine.



Xwatch Safety Solutions achieved full product acceptance for its XW Series Safety Systems, officially approved by Network Rail. The Certificate of Acceptance, issued under reference PA05/07159, effective 1st October 2021, endorses the use of these systems on railborne and non-railborne equipment operating on or near Network Rail infrastructure.

The XW Series encompasses a range of safety systems, each designed to enhance operational safety across various rail and construction applications. These systems include:

XW1

A dedicated height limiter to ensure compliance in environments with vertical space constraints.

XW2

Features a Rated Capacity Indicator (RCI) and a height limiter, optimising load handling, and safety.

XW3

Both include slew limiters, and XW4 also integrates a virtual wall and height limiter to control movement and enhance safety further.

XW4

XW5

Combines RCI, slew limiter, virtual wall, and height limiter, providing comprehensive safety coverage.

Optional enhancements for the XW Series include a remote dead-man input for controlled operations, a track lock that inhibits movement when set limits are reached, and a data logger for compliance recording and operational tracking.



XW5

The XW5 offers a total safe working envelope around the machine and operator enabling the control of the machine's height, slew and rated capacity indication. This comprehensive system covers every eventually when considering both operator and machine safety, offering complete peace of mind.

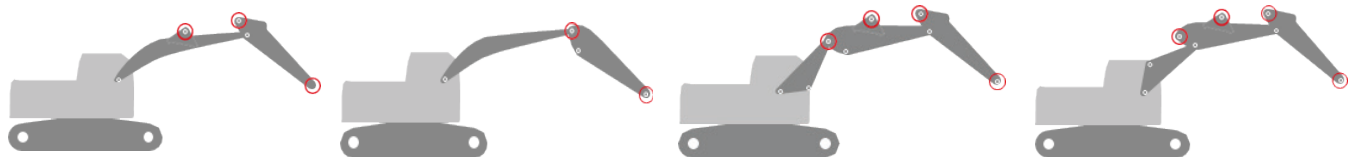
XW5 Series is suitable for

- Excavators
- Backhoe loaders
- Special Purpose Machines

Height Control

Operation is fail safe and fully automatic with function selection never more than two key presses away.

All potential machine high points are monitored and appropriate motions are controlled. Full power is always available to move away from a limit. Motions are controlled with ramped slow down on approach and soft-stop. There is no machine 'bounce', overshoot, or undershoot. An optional chassis sensor can be installed to correct for terrain slope.



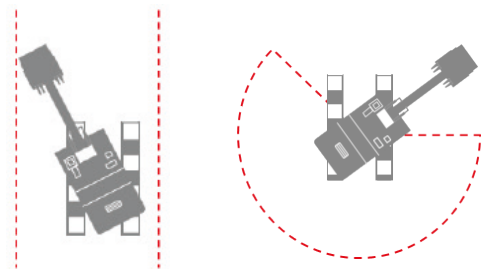
Rated Capacity Indicator (RCI)

RCI is a rated capacity indicator that ensures the safe operation of lifting equipment throughout the machine's working envelope. The system continually measures the height, radius and load on the machine, allowing operators to work at the maximum lifting capacity whilst remaining within the machine's safe working load (SWL)

Slew Control

Single/dual parallel wall or angular limitation are available. When walls are in use, the front end equipment is also monitored and controlled for limit breach.

Limits can be either manually keyed in or set by positioning the machine. If both limits are active, the system will automatically flip to the appropriate display should a hazard approach occur. Set up is simple, quick, and can be protected with an optional access key switch. All settings are retained and will be active on start-up.



Options

Access key switch	Prevents/allows setting changes
Track lock	Wall mounted
Offset boom sensor	Monitors offset boom angle (single proximity switch detection also available)
Reeling drum	Monitors telescopic arm extension (single proximity switch detection also available)
Platform sensor	Monitors chassis pitch and roll angles
Data Logger	CAN bus mounted event recorder with SD card
Auto duty switching	Proximity switch detection for up to four lifting duties

XW4

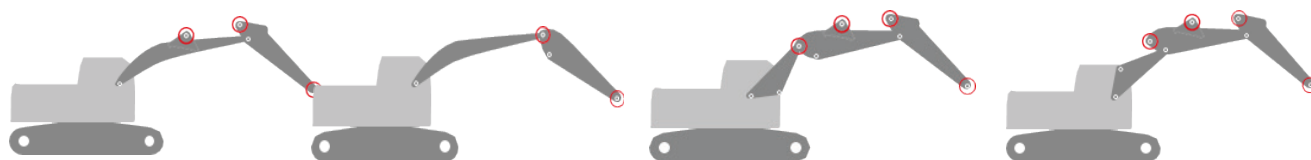
The XW4 monitors heavy machinery's height and slew movement. It has been designed to accurately restrict using feather touch proportional hydraulic control a machines height and left/right slew parameters ensuring operator and machine safety, safe/comfortable for the operator and the environment around the machine.

XW4 Series is suitable for

- Excavators
- Backhoe loaders
- Special Purpose Machines

Height Control

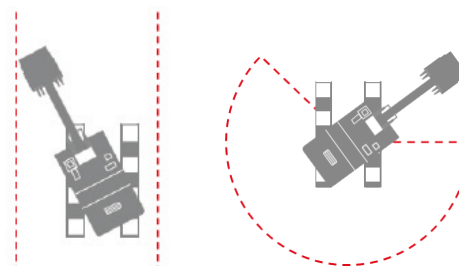
Operation is fail safe and fully automatic with function selection never more than two key presses away. All potential machine high points are monitored and appropriate motions are controlled. Full power is always available to move away from a limit. Motions are controlled with ramped slow down on approach and soft-stop. There is no machine 'bounce', overshoot, or undershoot. An optional chassis sensor can be installed to correct for terrain slope.



Slew Control

Single/dual parallel wall or angular limitation are available. When walls are in use, the front end equipment is also monitored and controlled for limit breach.

Limits can be either manually keyed in or set by positioning the machine. If both limits are active, the system will automatically flip to the appropriate display should a hazard approach occur. Set up is simple, quick, and can be protected with an optional access key switch. All settings are retained and will be active on start-up.



Options

Access key switch	Prevents/allows setting changes
Beacon	Height limit active indication
Offset boom sensor	Monitors offset boom angle (single proximity switch detection also available)
Reeling drum	Monitors telescopic arm extension (single proximity switch detection also available)
Platform sensor	Monitors chassis pitch and roll angles
Data Logger	CAN bus mounted event recorder with SD card
12VDC Valve coils	No cost option for smaller machines

XW3

The XW3 is a dedicated slew control system designed to restrict the machine to working within set left and right slew parameters.

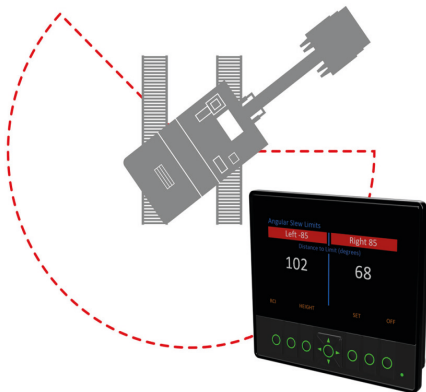
Angular slew is referenced from the centre point of the machine to give a “V” shaped basic left and right control in front of the operator allowing operation for working within the set limits.

XW3 Series is suitable for

- Excavators
- Special Purpose Machines

Slew Control

Controlling the slew of any machine used in construction is an important part of the safety and productivity equation. This is a part of the site safety puzzle that is often overlooked by contractors and their operators but can be simply addressed with the right equipment.



Angular Slew Limitation

Operation is fail safe and fully automatic with function selection never more than two key presses away. Dependent on installed options XW3 supports angular slew limits. Slew speed will ramp down on approach to a limit, and soft-stop at the limit. Full power is always available if moving away from a slew limit.

A slew limit can be either manually keyed in or set automatically by positioning the machine equipment. Set up is simple, quick, and can be protected with an optional access key switch. All settings are retained and will be active on start-up. XW3 measures to the front end equipment centre line. Tool width must be taken into consideration when manually setting limits.

Options

Access key switch	Prevents/allows setting changes
Beacon	Height limit active indication
Angle sensors	No cost option for smaller machines
Reeling drum	Monitors telescopic arm extension (single proximity switch detection also available)
Platform sensor	Monitors chassis pitch and roll angles
Data Logger	CAN bus mounted event recorder with SD card
12VDC Valve coils	No cost option for smaller machines

XW2

The XW2 monitors both height, radius and load on heavy machinery allowing operators to work at the maximum lifting capacity whilst remaining within the machine's safe working load.

Can be configured to work on any type of hydraulic excavator. Overload and height limitation is controlled using proportional soft-stop hydraulic valves providing accurate and repeatable performance without detriment to the machine. A basic dig depth monitor is available when the RCI is not required. If hazards arise, XW2 will automatically flip to the relevant display page.

XW2 Series is suitable for

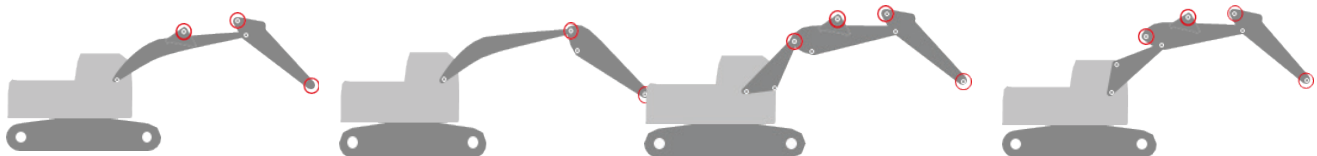
- Excavators
- Special Purpose Machines



Height Control

All motions are individually controlled with feather touch ramped hydraulic slow down and soft stop. Eliminating the machine bounce, overshoot or undershoot, which is gentler on the machine and safer for the operator and their surroundings. An optional chassis sensor can be installed to correct for terrain slope.

XW2 Rated Capacity Indicator with Height Limitation



Rated Capacity Indicator (RCI)

RCI is a rated capacity indicator that ensures the safe operation of lifting equipment throughout the machine's working envelope. The system continually measures the height, radius and load on the machine, allowing operators to work at the maximum lifting capacity whilst remaining within the machine's safe working load (SWL)

Options

Access key switch	Prevents/allows setting changes
Track lock	Inhibits travel when a height limitation is active
Beacon	Height limit active indication
Offset boom sensor	Monitors offset boom angle (single proximity switch detection also available)
Reeling drum	Monitors telescopic arm extension (single proximity switch detection also available)
Platform sensor	Monitors chassis pitch and roll angles
Auto duty switching	Proximity switch detection for up to four lifting duties
Data Logger	CAN bus mounted event recorder with SD card

XW1

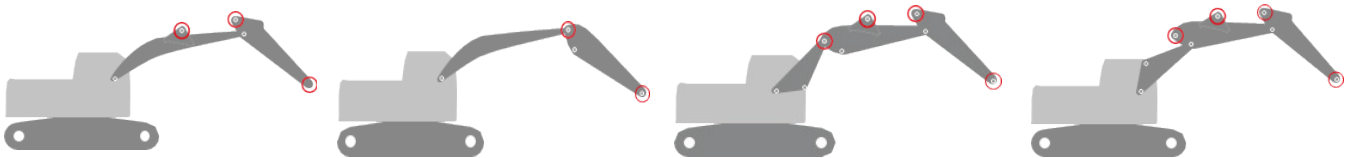
The XW1 can be configured to work on a variety of articulated hydraulic plant. Height limitation is controlled using proportional soft-stop hydraulic valves providing accurate and repeatable performance without detriment to the machine. Operation is fail safe and fully automatic with function selection never more than two key presses away.

XW1 Series is suitable for

- Excavators
- Special Purpose Machines
- Backhoe Loaders
- Telehandlers
- Forklifts
- Mobile Cranes
- Special Purpose Machines
- Tractor Mounted Hedge

Height Control

All motions are individually controlled with feather touch ramped hydraulic slow down and soft stop. Eliminating the machine bounce, overshoot or undershoot, which is gentler on the machine and safer for the operator and their surroundings. An optional chassis sensor can be installed to correct for terrain slope.



Options

Access key switch	Prevents/allows setting changes
Beacon	Height limit active indication
Reeling drum	Monitors telescopic arm extension (single proximity switch detection also available)
Platform sensor	Monitors chassis pitch and roll angles
12VDC Valve coils	Proximity switch detection for up to four lifting duties
Data Logger	No cost option for smaller machines



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