

INCORPORATING THE  
**AWARD WINNING**

 PATENTED  
**TORLITE**  
ACTUATOR TECHNOLOGY



**TR TILTS**  
LIMITED

# TR TILT-HITCH

EXCAVATOR  
ATTACHMENT



*TILT-HITCH TECHNOLOGY FOR  
EVERY DAY USE...*

**ROBUST, COMPACT,  
UNCOMPLICATED.**

# FEATURES

## TR TILT-HITCH

### TORLITE ACTUTATOR

The world's first tilting coupler to incorporate the Torlite Actutator with curved hydraulic rams. A patented revolutionary design which improves maintenance, durability and reduces fuel consumption.



PATENTED  
**TORLITE**  
ACTUATOR TECHNOLOGY

### 100° DEGREE TILT

Increased versatility from your machine with the ability to tilt 50 degrees each way.

### CONSTANT TORQUE OUTPUT

The only tilting coupler that has constant torque at any tilt range ensuring maximum force throughout and allowing for precise operator control.

### SERVICABLE ON THE MACHINE

The TR Tilt's simple design has few moving parts allowing it to be serviced whilst on the machine.

### QUICK COUPLER BASE

Quick-Coupler base allows a one-step connect and disconnection process, establishing a fast and intuitive attach and detach mechanism for smooth operational use.



ROBUST



LOW PROFILE



LIGHTWEIGHT



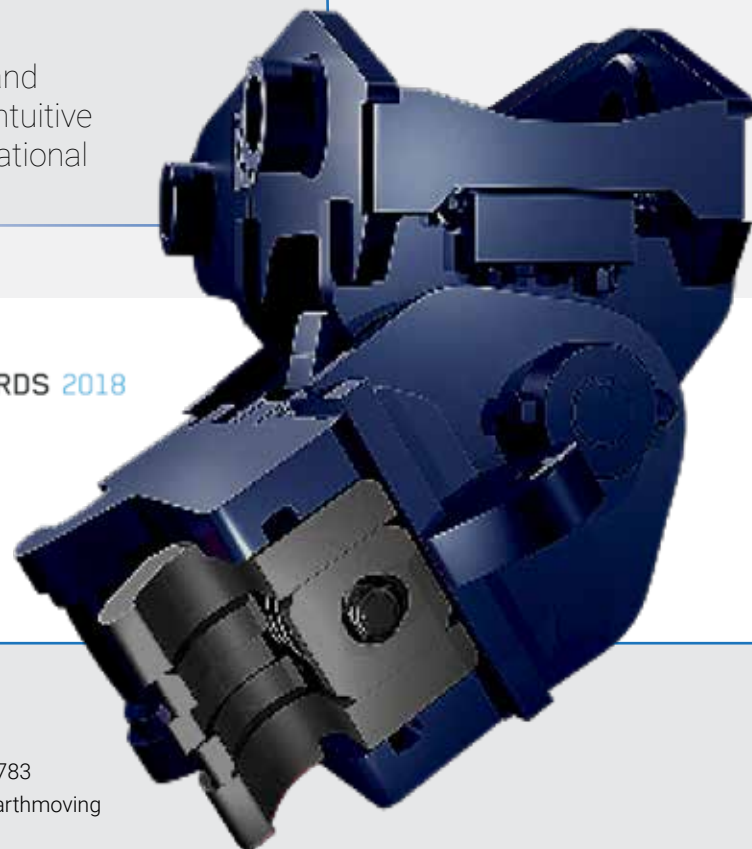
IMPROVED SERVICABILITY



FULLY COMPLIANT



QUICK COUPLER BASE



### FULLY COMPLIANT

Compliant with Australian and New Zealand Standard AS2772-2008 and NSW Work Cover WC01783 European Standard EN474-5 and ISO 13031: 2016 Earthmoving Machinery, and all other major contracting policies.

# TR TILT-HITCH R&D

Designing for “simplicity” is the most complex of all R&D undertakings. The goal underpinning the TR Tilt-Hitch was to develop an uncomplicated, operator friendly and easy-to-service tilt-hitch that addressed excavator owner/operator concerns with current products.

After numerous design reviews and seven years of R&D, a robust actuator design has been achieved – the Torlite - suited to heavy-duty use in the earthmoving industry. The patented Torlite Actuator, incorporated into the TR Tilt-Hitch, utilises a circular ram system which gives superior torque output and robustness. Its innovative design saw the TR Tilt-Hitch awarded the Best Innovative Product Award at the Australian Diesel, Dirt and Turf Expo in 2017 and one of the finalists in the New Zealand Hi-Tech Awards in 2018.

Since 2017, the TR Tilt Hitch has had a limited number of units being circulated in Australia and NZ. Their in-field performance has been monitored along with their durability and maintenance. Feedback has led to upgrading components along with fitting and service enhancements to reach a final design that is now being commercially released.

The TR Tilt-Hitch’s quick coupler base allows for a one-step connect and disconnect process and its built-in Smart Valve system gives ease of connection to the host machine and enhances operating precision of the working attachments. Ten years in development, the combination of these components has created the world’s most technologically advanced Tilt Hitch-Coupler for excavators.

## CUSTOMER TESTIMONIAL

### RHYS NEWTON P&I PASCOE LIMITED

Rhys has been operating excavators for almost 10 years.

In relation to the performance of the TR Tilt Hitch, Rhys said that when he first jumped on the machine he did not realise it was a tilt-hitch as it is so narrow. He said it was great not having rams sticking out the side getting in the way. He also found that the hold power was awesome with good, precise control – you can dig half a bucket width, and the TR Tilt-Hitch will not relieve.

As for the servicing of the TR Tilt Hitch, this is where it really sets itself apart. Rhys commented “It’s been eight months and the rams are dry as wooden rattle with no leakage at all.” “When comparing performance to the actuator tilt, I cannot fault the TR Tilt at all”, but the simplicity of servicing and being able to do it on the machine blew him away.



***“When comparing performance to an actuator tilt, I cannot fault the TR Tilt at all... awesome hold power, precise control... finally something built to be serviced... it goes great.”***

- Rhys Newton of P&I Pascoe



# TILT-HITCH PRODUCT COMPARISON



## Features

TR Tilt-Hitch  
with  
Torlite Actuator

Helical Actuator  
Tilt-Hitch

Straight Ram  
Tilt-Hitch

## Robustness

Extremely Robust

Considered the most fragile  
of the Tilt-Hitch product  
options.

Considered to be more  
robust than the Helical  
Actuator unit.

## Tilt Range

50 degree tilt each way

70 degree tilt each way

45 degree tilt each way.

## Height

Low profile - resulting in  
reduced loss of breakout  
force.

Low profile - resulting in  
reduced loss of breakout  
force.

Mid-profile - resulting in  
some loss of breakout force.

## Width

Narrow width, nothing  
protruding

Narrow width, nothing  
protruding

Widest unit with rams  
protruding

## Weight

Lighter than Helical Actuator,  
similar weight to Straight  
Ram - approx 343kg for 14T  
unit.

Heaviest type of tilt-hitch - up  
to approx 460kg for 14T unit.  
Results in increased fuel  
burn and reduced payload.

Lighter than Helical Actuator  
unit - approx 345kg for 14T  
unit.

## Cost

Mid-Range Cost

Highest Cost

Lowest Price Point

## Installation

Internal hydraulic adjustment  
system - Smart Valve  
enables plug & go - simple,  
non-specialist, minimal cost.

Technical, costly hydraulic  
installation. Install requires  
hydraulics specialist.

Simplistic mid-cost  
hydraulic installation.  
Install requires technician  
familiar with hydraulics.

## Wear

Very few wear  
components. No pivot pins  
or bushes required on rams  
or ram housing.

Helical Actuator units operate  
a complex internal structure of  
numerous gears, bearings,  
shafts and seals operating at  
fine tolerances, resulting in a  
high number of moving parts &  
wear components.

High number of wear points  
notably around pivot pins  
and bushes on housing and  
ram eyes.

## On-Site Service

Spears / seals can be  
removed and replaced on site  
with very basic technical  
knowledge and tools.

Requires off machine and  
off-site servicing (requires  
return to service agent)

Repairs may be on and off  
the machine and work-site.

## Repairs & Maintenance

Any repair is very simplistic  
and therefore low cost.

Helical Actuator repair is a  
very technical, lengthy and  
expensive process.

High levels of ongoing  
maintenance, especially in  
relation to pivot points.

## Tilting Mechanism

Torlite Actuator



Rotary Actuator



Straight Rams with Pivot

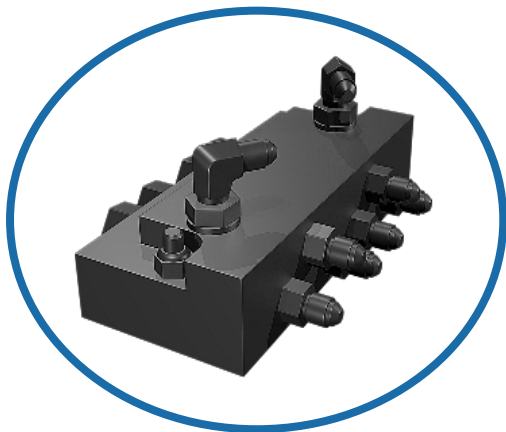


# SMART-VALVE

Incorporated into the design of our TR Tilt-Hitch, the Smart Valve significantly reduces costs of fitting and maintenance as well as giving improved efficiency and operator control.

Equipped with the Smart Valve, the TR Tilt-Hitch offers a range of improved features which:

- ▶ Improves the holding force
- ▶ Ensures the coupler is protected from hoses or spikes
- ▶ Immediately responds (starts and stops exactly where you want it)
- ▶ Simplifies the hydraulic fitting process
- ▶ Substantially reduces fitting costs
- ▶ Enables the speed to be set at the desired level for the operator and particular application



## TR TILT-HITCH SPECIFICATIONS

Carrier Weight	Sales Code	Description	Pin Diameter (mm)	Tilt Range Degrees	Weight (Kg)	Lifting Eye Capacity (Kg)
5.0T-6.5T	TR06	TR Tilt-Hitch 6T	45mm	100	130	2000
10.0-16.5T	TR14	TR Tilt-Hitch 14T	60/65mm	100	343	5000

# MACHINE COMPATIBILITY GUIDE

	TRTILT 6T -1	TRTILT 6T -2	TRTILT 6T -3	TRTILT 14T
AIRMAN	AX48U-5			
BOBCAT	E42, E45, E50, ECR58, EC60C			
CASE	CX50B, CX55		CX57C, CX60C	CX120, CX130B, CX130C, CX135SR, CX145CSR
CATERPILLAR		CAT304C, CAT305E CR, CAT305.5D CR		CAT311, CAT312, CAT313, CAT315F, CAT315FL *
DOOSAN				DX140
EUROMACH		ES50ZT, ES572ZT, ES60TR, ES57		
HITACHI	ZX48U-5, ZX55U-5, ZX60USB, ZX65USB-5			ZX120-3, ZX130-5B, ZX135US-5B, ZX140
HYUNDAI			R55-7, R55-9, R60CR-9	R110-7, R125LCD-9A, R140LC-7, R140LC-9, R145L-9
IHI	IHI50VX			
KATO				HD512-6
KOBELCO	SK40SR-5, SK45SRX-6, SK50SR-5, SK55SR-5			SK135SR-3, SK140LC-8
KOMATSU	PC40MR-3, PC45MR-2, MC55MR-3		WB97	PC130-8, PC138US-8 *
KUBOTA	U45, U48-4, U55, KX161-3, KX057-4 *			
LIUGONG				915D, 915E, 922LL, 925LL
NEW HOLLAND	E55			
SUMITOMO				SH120, SH130, SH135X, SH145
TAKEUCHI	TB145, TB153FR, TB53FR, TB145/153FR	TB260		TB1140, TB2150
VOLVO	ECR50, ECR58, ECR60, EC60C, 580			ECR145C, EC140C
YANMAR		VIO45, VIO55-5, VIO45,		

\* NOTE: Non-standard design specification, please enquire as to availability and lead-time.

## DISTRIBUTION



# DIGMAX

**EARTHMOVING ATTACHMENTS**

13E Vogler Drive, Wiri,  
Auckland 2104

Phone: +64 27 345 3318

Email: digmax@digmax.com

[www.digmax.com](http://www.digmax.com)



**TR TILTS**  
LIMITED

[www.trtilts.com](http://www.trtilts.com)



**TORLITE**

ACTUATOR TECHNOLOGY

[www.trsystems.co.nz](http://www.trsystems.co.nz)