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Trustable a ways

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**NO MORE NEED TO CHOOSE BETWEEN  
PERFORMANCE & SAFETY**

**Tug** **AXIS2T**  
ELECTRODRIVE.COM.AU

**THE TRUSTABLE SUPPLIER OF FDI FACTORIES**

[www.midra.vn](http://www.midra.vn)

 [midra@midra.vn](mailto:midra@midra.vn)

 0982 800 084



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PRIORITY!**

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# Electrodrive

## Powered mobility equipment

Designing and manufacturing powered materials handling equipment since 1987, our range of pedestrian operated powered tugs and movers have been proven to be the safest way to work with heavy trolleys, carts and equipment within and around your facility. We all know that pushing or pulling a heavy load increases the risk of back and shoulder injuries. Using a tug or mover reduces the risk by doing all the heavy work for you. And unlike driving a forklift, the risk of collision with other people or objects is eliminated because the operator has a clear view of what's ahead.

Unlike the competition, our range of tugs and movers are ergonomically designed, allowing your body to move forward with the load in a natural walking position. With intelligently designed tiller handles and controller grips on our tugs and movers, paired with powerful motors that can tow up to 10 tonnes, you're always in control, and you can use them all day long without risk of strain on your back or shoulders.

So whether you're working with planes, trains, automobiles or hospital beds, we will have a powered solution for you.

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## Choosing the right tug or mover

### 1 Determine the weight and incline of the load being moved

The nominal towing capacity of our tugs relates to the weight that can be pulled on a flat surface (with a friction coefficient of 0.5 such as dry concrete or bitumen).

**The practical rule of thumb to determine which tug is right for your application is to get the pull force (in kilograms) required to start your load moving (on the worst case surface of your application) and divide it by 0.04. This will give you the pulling power required.**

$$\frac{\text{Pull force (kg)}}{0.04} = \text{Pulling power (kg)}$$

So, for example, if it takes 30 kg of pull force to get your trolley moving on your intended surface, divide this by 0.04 to identify the pulling power required of 750 kg, meaning that you will need a tug that can pull more than the Tug Compact (500 kg), and would need the power of a Tug Axis 1T, which will exceed your pull force comfortably.

Another way of thinking about this is that for every 1T of load to be pulled, the force to pull it will increase by 40 kg.

Measuring the pull force required to start the load moving can be done with a weight scale—of the type used to weigh produce at the green grocers, or the more modern digital luggage scales such as those shown in the photos above.

It is important to measure the pull force required on the worst case of your application. Perhaps a linen cart will need to follow a route that includes the flat internal hospital passageways on carpet, as well as an outside bitumen area with a 6 degree slope. Make sure you measure the worst case scenario—in this example, the outside inclined area when wet (to simulate the added slipperiness that occurs when raining).

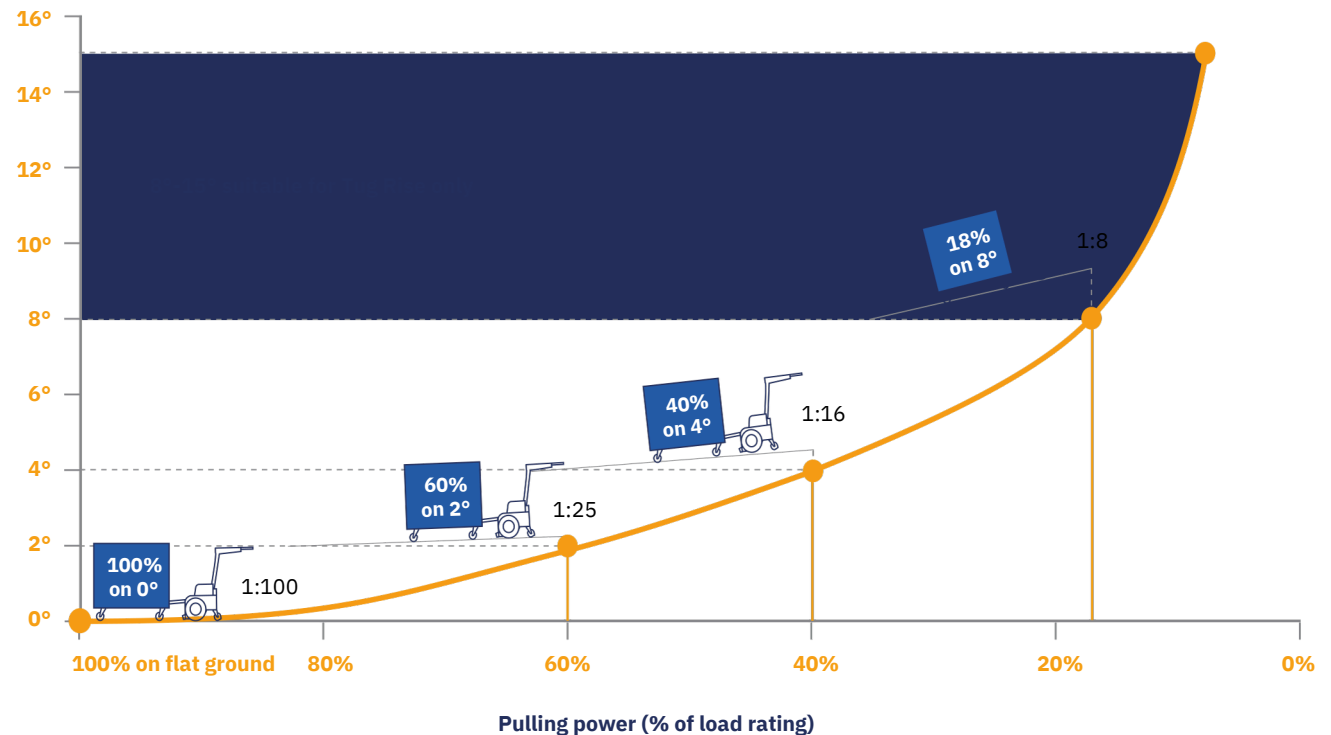
#### A final 'top tip'

Measuring the incline can be done with a smart phone app. Go to your app store and search for 'measure incline' or 'measure slope' or 'spirit level' and you'll have many options to choose from for both Apple and Android smart phones.

Angle of slope	Typical applications
0–2°	Flat surface.
2–8°	Mild slope (eg. typical driveway).
8–11°	Moderate slope (eg. basement ramp or loading dock ramp).
11–14°	Severe slope (eg. car park ramps under high rise buildings).



Angle of slope (degrees)



## 2 Determine whether it will be used in confined or open spaces

Please use the following guide to help determine the suitability for your application.

Please note: A 'confined space' refers to a small space with a single doorway (standard width of 820 mm).

Suitable for confined spaces	
	<b>Tug Compact</b> Nimble and tiny. Smallest footprint and turning circle. Passes through a single doorway with ease. Excellent for moving stock trolleys inside and outside.
	<b>Tug Axis 1T and 2T</b> Tug Axis 1T and 2T models can fit through small office doorways with ease if the item being towed can follow it. Always lock the turret when not towing loads.
	<b>Tug Axis 4T and 5T</b> Tug Axis 4T will fit through a single doorway on slow speed and with its turret locked to allow it to be parked at the end of the day, but the Tug Axis 5T is slightly wider.
	<b>Gzunda bed movers</b> Excellent for indoor applications, lifts and most confined spaces. The machine does not drive laterally so it needs about 2x2m to pivot in a circle when not attached to a hospital bed.
	<b>Gzunda Linen Mover</b> Excellent for indoor applications and most confined spaces. Its tiller arm can be folded to reduce length by a further 500 mm so it can be manoeuvred around corridors and parked easily.
	<b>Transpak powered trolley</b> Ideal for moving meal delivery systems or multiple boxes through corridors. Fits through single doorways in slow speed for easy charging or storage.
Suitable for open spaces	
	<b>Tug Rise 1T</b> Large, high-traction forklift wheels make the Tug Rise a bit wider than the others (as it is designed for steep carpark ramps) so it won't fit through standard doorways.
	<b>Tug Tough 10T</b> Perfect for moving loads weighing between 4-10 tonnes in open spaces. Can go through a single doorway for storage or charging.

## 3 Determine if the load will have existing hitch points

Tug hitches to suit the most popular trolleys		
Pin hitch	Auto-latching hitch	
Hitches that adapt to different trolley designs		
Clamp hitch	Flex hitch	Groove hitch
Hitches for bed movers		
Flex hitch	Gripper hitch Available in a range of sizes.	Ratchet hitch
Hitches for bins		
Double wheelie bin hitch	660 and 1100 litre bin hitches	
Hitches for trailers, caravans and boats		
Tow ball A-frame hitch	Hydraulic arm lift hitch	

## 4 Determine the load's wheel configuration

### Castor configuration will affect towing

Four swivel castors will not trail properly behind the towing unit—they will cut corners rather than follow the unit. They will also tend to whip—over correct any sideways displacement and sway from side-to-side as they travel.

These problems become more acute if more trolleys are linked in a train. We offer fixed wheel skate hitch (pictured) accessories to correct this problem for situations where it's not feasible to replace two of the four swivel castors on an existing trolley fleet.

If two fixed castors are used at the rear of the trolley it eliminates the whip, and improves trailing and towing.

An ideal configuration is to mount two swivel castors 1/6 of the length of the trolley from the front of the trolley and two fixed castors 1/3 of the length of the trolley from the rear. This gives little whip, and good trailing. Note though, that such trolleys should not have a heavy load concentrated at the rear end or they will tip backwards.

DIRECTION OF TRAVEL →	Trailing	Whip	Stability
	Poor	Bad	Very good
	Good	Least	Very good
	Good	Little	Good

→ 1/3 ←      → 1/6 ←

Take a closer look.  
Scan the QR code.



# Tugs

## Features across the range

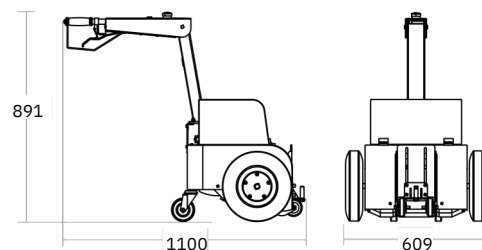
- § Powerful battery operated motor.
- § Tiller control handle for 'front of load' operation.
- § Foldable tiller handle.
- § Three speed control with forward and reverse.
- § Emergency stop and back-off safety buttons.
- § Customisable with a wide variety of hitches available.
- § Smart battery charger (supplied standard with AU/NZ plugs — add 'EU', 'US' or 'UK' to the end of tug order codes for European, US or United Kingdom plugs).
- § Lead free.
- § Low maintenance.
- § Made in Australia.

Take a closer look.  
Scan the QR code.



## Tug Compact

- § Tow up to 500 kg on flat ground with reduced towing capacity up to 8 degrees.
- § Compact and easy to manoeuvre in tight corridors.
- § Non-marking tyres suitable for indoor use.



### Order code

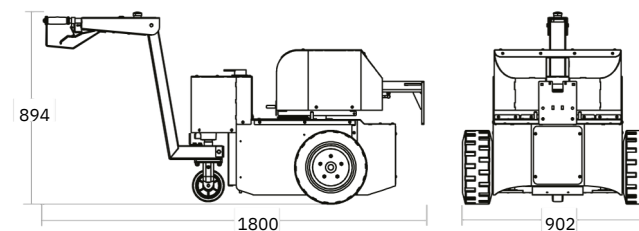
Tug Compact 500 kg (no hitch)	TUGCOM500NH
Pin hitch (16 mm) Pin hitch (19 mm) Clamp hitch	EDHT1810-002
	EDHT1810-043
	EDHTCLAMP001*

\* The Tug Compact has a permanently fixed turret, so when using our EDHTCLAMP001 Clamp hitch you will also need to add EDHT1810-006 (Self-centering hitch) to allow the trolley to follow behind it. Optional: EDHT1810-035 (Skate hitch).



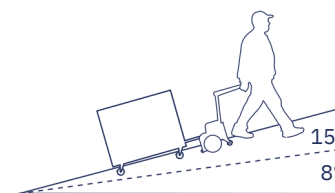
## Tug Rise 1T

- § § § § § Designed to tow on slopes/ramps.
- § Towing capacity of up to 1 tonne on a 15 degree slope.
- § Turret with turret lock for easy reversing.
- § Suitable for towing bins from basement car parks.
- § Heavy duty high-traction wheels.



### Order code

Tug Rise 1 tonne (no hitch)	TUGRISE1TNH
Pin hitch (19 mm)	EDHT1316
Pin hitch (29 mm)—standard for 660/1100L bins	EDHT1810-052
Auto-latching hitch	EDHT1810-024
Heavy duty clamp hitch	EDHTCLAMP002



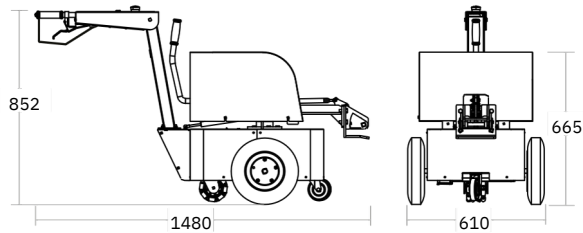
NEW



NEW

## Tug Axis 1T/2T

- § Available in 1 and 2 tonne models for towing on flat ground, with reduced towing capacity up to 8 degrees.
- § Turret with turret lock for easy reversing.
- § Suitable for retail and light industrial towing.



Order code

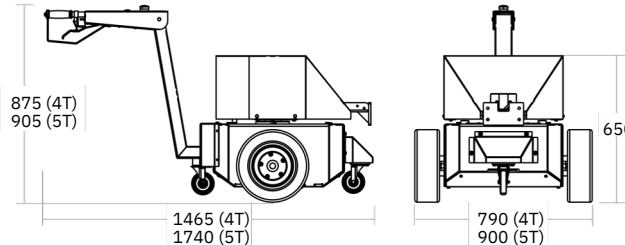
Tug Axis 1 tonne (no hitch)	TUGAXIS1TNH
Tug Axis 2 tonne (no hitch)	TUGAXIS2TNH
Auto-latching hitch Pin	EDHT1810-024
hitch (16 mm) Pin hitch	EDHT1313
(19 mm) Clamp hitch	EDHT1316
Groove hitch Tow ball A-	EDHTCLAMP001
frame hitch	EDHTGROOVE001
	EDHT1810-023



NEW

## Tug Axis 4T/5T

- § Available in 4 and 5 tonne models for towing on flat ground, with reduced towing capacity up to 8 degrees.
- § Turret with turret lock for easy reversing.
- § Suitable for large retail and heavy industrial towing.



Order code

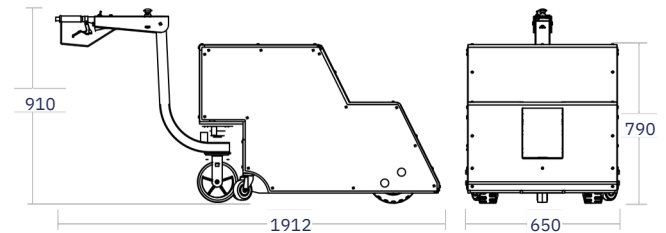
Tug Axis 4 tonne (no hitch) Tug	TUGAXIS4TNH
Axis 5 tonne (no hitch) Auto-	TUGAXIS5TNH
latching hitch Pin hitch (19 mm)	EDHT1810-024
Pin hitch (29 mm)—standard for 660/1100L bins	EDHT1316
Tow ball A-frame hitch	EDHT1810-052
Hydraulic arm lift kit	EDHT1810-023
	EDHYDARMLIFTKIT

\* Adds 480 mm of length to the tug when using hydraulic arm lift kit (EDHYDARMLIFTKIT).



## Tug Tough 10T Heavy duty

- § Tow up to 10 tonnes on flat ground, with reduced towing capacity up to 8 degrees.
- § Heavy duty construction, perfect for pulling very heavy equipment, vehicles and aircraft.
- § Fully contained unit—wheels and drive system housed within box covers.
- § Hazard yellow for high-visibility and industrial work areas.
- § Flashing amber warning light (optional).



Order code

Tug Tough 10 tonne (no hitch)	TUGTOUGH10TNH
Pin hitch (32 mm) Pin hitch	EDHT10TPIN
(50 mm) Hook hitch	EDHT10TPIN50
Tow ball hitch	EDHT10THOOK
	EDHT1352

# Linen movers

## Features across the range

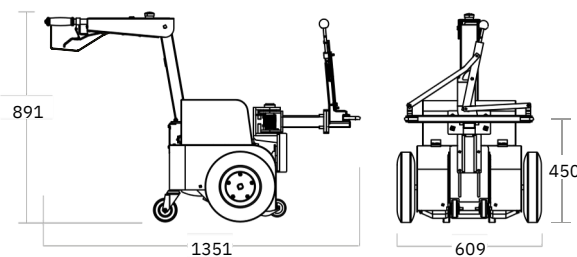
- § Designed for towing linen trolleys up to 500 kg.
- § Powerful battery operated motor.
- § Tiller control handle for 'front of load' operation.
- § Three speed control with forward and reverse.
- § Emergency stop and back-off safety buttons.
- § Smart battery charger (supplied standard with AU/NZ plugs – add 'EU', 'US' or 'UK' to the end of tug order codes for European, US or United Kingdom plugs).
- § Low maintenance.
- § Made in Australia.

Take a closer look.  
Scan the QR code.



## Tug Compact Linen Mover

- § Tow up to 500 kg.
- § Compact and easy to manoeuvre in tight corridors.
- § Supplied with clamp hitch.
- § Ideal for towing linen trolleys fitted with two swivel and two fixed castors.



Order code

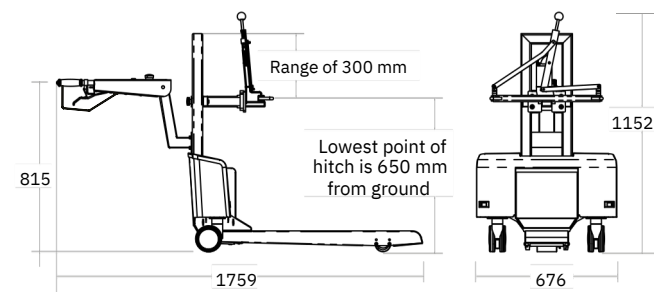
Tug Compact linen mover 500 kg  
(with clamp hitch, range 520–720 mm)

TUGLINEMOVER



## GZ30 Linen Mover

- § Tow up to 500 kg.
- § Compact and easy to manoeuvre in tight corridors.
- § Middle tine design—ideal for towing linen trolleys fitted with four swivel castors.
- § Supplied with clamp hitch (see page 90 for hitch options).



Order code

Gzunda Linen Mover 500 kg  
(with clamp hitch, range 520–720 mm)

GZLINEMOVER



# Meal delivery

## Features across the range

- § Designed for carrying or towing meal delivery systems up to 500 kg.
- § Powerful battery operated motor.
- § Tiller control handle for 'front of load' operation.
- § Three speed control with forward and reverse.
- § Emergency stop and back-off safety buttons.
- § Smart battery charger (supplied standard with AU/NZ plugs – add 'EU', 'US' or 'UK' to the end of tug order codes for European, US or United Kingdom plugs).
- § Low maintenance.
- § Made in Australia.

Take a closer look.  
Scan the QR code.



Why not consider installing a powered drive wheel to your equipment? See P5W (non-retractable) on page 84.

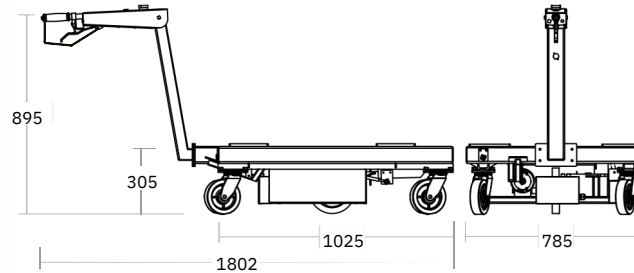


*Pictured carrying a Burlodge meal delivery pod (not included).*



## Transpak powered trolley

- § Carries up to 500 kg.
- § Suitable for carrying meal delivery systems including those from Burlodge, Socamel and Versigen.
- § Frame size can be built to suit your requirements.



Order code

Transpak powered trolley 500 kg

TRANSPAK500

## Tug Compact

- § Tow up to 500 kg.
- § Customised hitch to suit all pod and mobile meal delivery systems\*.
- § Compact and easy to manoeuvre in tight corridors.

Order code

Tug Compact 500 kg (no hitch)

TUGCOM500NH

\* Clamp hitch shown is for illustration purposes only.  
See range of hitches on page 90.



## Tug hitching options



### Pin hitch

**EDHT1810-002 or EDHT1313 (16 mm diameter) EDHT1810-043 or EDHT1316 (19 mm diameter) EDHT1810-052 (29 mm diameter) standard for 660/1100L bins EDHT10TPIN (32 mm diameter) EDHT10TPIN50 (50 mm diameter)**

Typically used on trolleys with tow bars such as meal trolleys and stock trolleys, the pin hitch can also be mounted upside-down to suit spring-loaded drawbars that push upwards. These are becoming more common in workplaces, as no bending is required.

#### Suitability

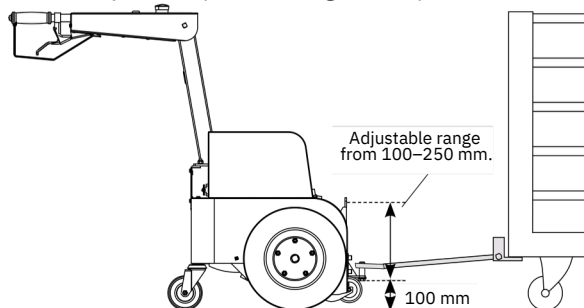
For use on Compact Tug (16mm and 19mm); Tug Rise 1T (19mm only); Tug Axis 1T and 2T (16mm and 19mm); Tug Axis 4T and 5T (19mm only) and Tug Tough 10T (32mm and 50mm).

When fitted to the Tug Compact and Tug Tough, the pin hitch enables vertical and horizontal movement.

*Note: When fitted to the Tug Axis, the turret must be locked to disable pivoting, otherwise uncontrolled movement will occur.*

#### Applications

Meal trolleys for hospitals, roll cages for supermarkets.



### Auto-latching hitch

**EDHT1810-024**

To use the auto-latching hitch, a trolley with a 25 mm diameter tow bar is needed. Electrodrive can provide a tug hitch bar (EDHT1010) which can be welded or bolted to your trolley if required (pictured).

The auto-latching hitch enables limited vertical movement.

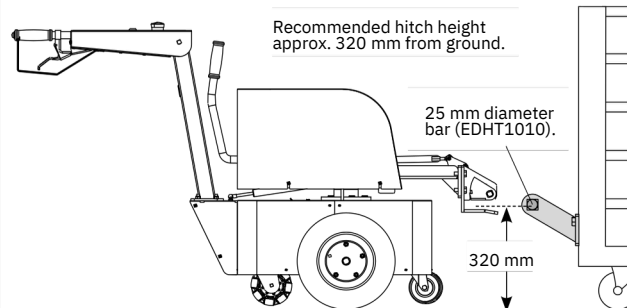
Horizontal movement is provided by the Tug Axis's rotating turret. The hitch is set at 320 mm from the ground.

#### Suitability

For use on Tug Rise 1T and Tug Axis range (1T, 2T, 4T and 5T models).

#### Applications

Industrial, heavier-duty trolleys with loads of 1-2 tonne.



### Tow ball A-frame hitch

**EDHT1810-023**

The tow ball hitch is most commonly used for the movement of trailers, caravans or boats.

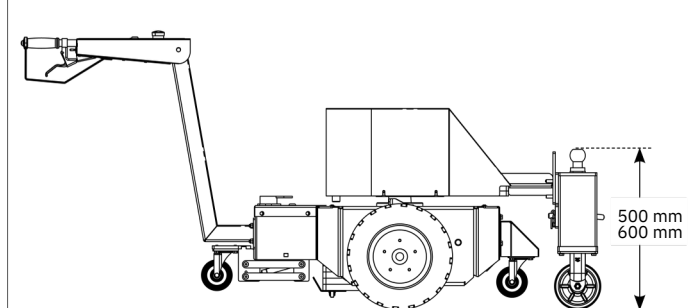
The tow ball position can be adjusted manually to suit a height of 500 or 600 mm from ground.

#### Suitability

For use on Tug Axis range (1T, 2T, 4T and 5T models).

#### Applications

Single-axle trailers or caravans fitted with a standard 50 mm tow ball coupling and a jockey wheel to safely lower the load over the tow ball.



**ALL NEW  
DESIGN**



## Hydraulic arm lift kit

### EDHYDARMLIFTKIT

This hitch is used for moving trailers, caravans or boats which have a 50 mm tow ball coupling.

The hitch arm is operated by hydraulic system running at high pressure, via a self-centering toggle switch situated near the handle. The pinch points surrounding the arm movement and must be avoided at all times during the operation of the hydraulic system.

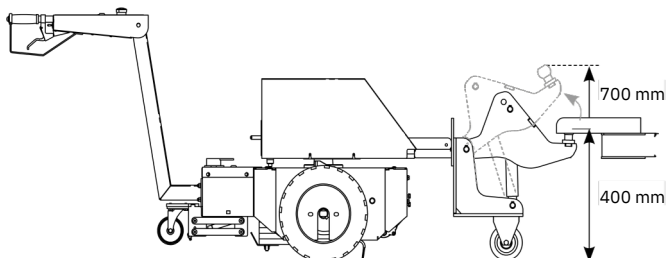
#### Suitability

For use on Tug Axis 4T and 5T models.

#### Applications

Single-axle trailers or caravans fitted with a standard 50 mm tow ball coupling and a jockey wheel to safely lower the load over the tow ball.

ALL NEW DESIGN



## Clamp hitch

### EDHTCLAMP001 (general duty) EDHTCLAMP002 (heavy duty)

Clamp hitches grab the trolley frame from the outside, by clamping the load between two hooks. These hitches are commonly seen on linen trolleys belonging to linen companies, hospitals and hotels. The clamp hitch has a range of 520–720 mm so it suits trolleys with a width between these two numbers.

EDHTCLAMP001 hitch must be supplied with EDHT1810-006 (self-centering hitch) for the Tug Compact or EDHT1810-035 (optional skate hitch). EDHTCLAMP002 does not require self-centering.

#### Suitability

The General Duty Clamp Hitch (EDHTCLAMP001) is suitable for use on Tug Compact and Tug Axis 1T and 2T models. The Heavy Duty Clamp Hitch (EDHTCLAMP002) is suitable for use on the Tug Rise

Clamp hitches are ideal for trolleys that do not have an existing hitch point to connect to.

#### Applications

Linen trolleys, roll cages and trolleys with wire mesh sides.



## Groove hitch

### EDHTGROOVE0484

Groove hitches are designed for plastic tub trolleys with slotted handles or metal linen trolleys.

EDHTGROOVE0484 hitch is our new swivel mechanism which locks the tubs from inside the handle grooves.

These hitches are normally used on plastic linen trolleys which don't have an exposed or open frame to grab onto from the outside.

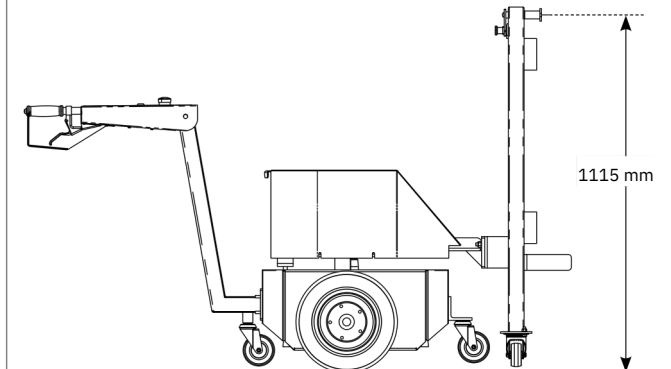
#### Suitability

For use on Tug Axis 1T and 2T models.

#### Applications

Rotomoulded linen trolleys with slotted handles.

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**ALL NEW DESIGN**

## Double wheelie bin hitch

### EDTWINBINHITCH

Move up to two wheelie bins at the same time using this hitch.

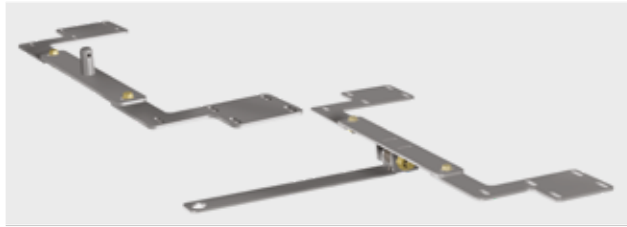
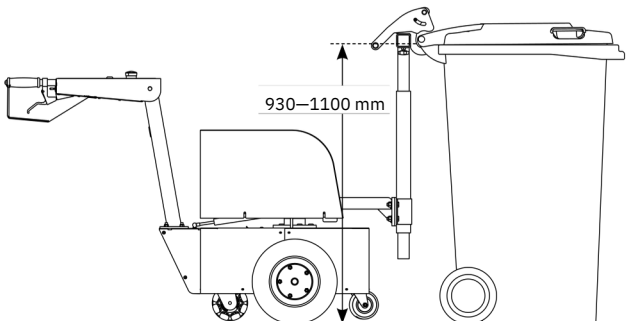
To hitch or unhitch the bins, simply lift the handle. The height of the hitching point can be manually adjusted with two wing knobs located on the side of the vertical frame.

### Suitability

For use on Tug Compact and the Tug Axis range.

### Applications

Moving moulded wheelie bins ranging from 80 to 240 litres with adjustable height and width.



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## 660 & 1100 litre bin hitches

### EDUNIBH6611F (Front hitching bracket) EDUNIBH6611R (Rear hitching bracket)

Our universal hitching brackets fit underneath 660 litre or 1100 litre bins (between the castor plates and bin) to maximise strength and enable towing of multiple bins at once.

The hitching brackets are suitable for ramps up to 14 degrees. The tow pins are secured by R-pins.

*Note: Must be used with 29 mm pin hitch (EDHT1810-052).*

### Suitability

For use on Tug Rise and the Tug Axis range.

### Applications

For towing one or more 660 and 1100 litre bins.

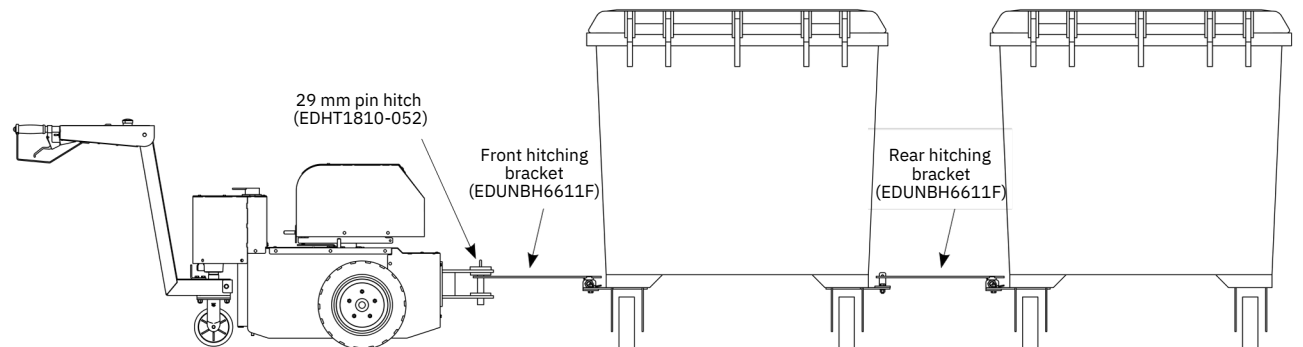
### Accessories

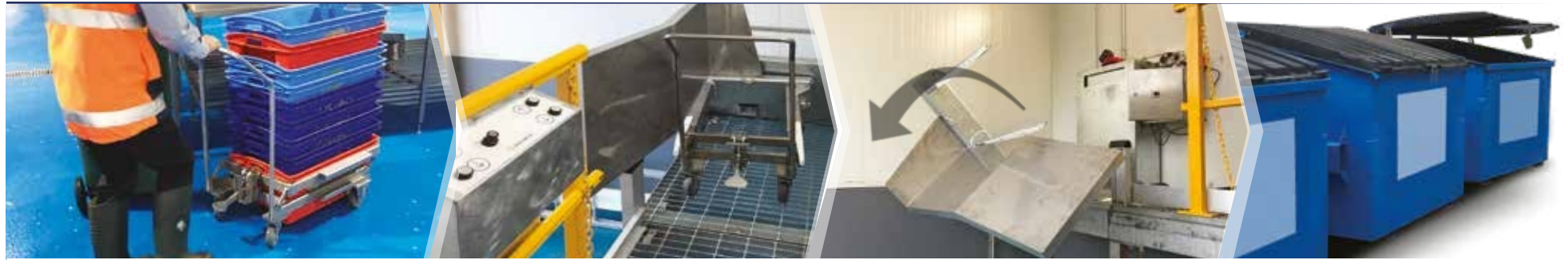
Directional lock tabs for steering (order code LMDLSULO) for trolleys with 4 swivel castors—retrofitted on 2 x rear-mounted swivel castors to stop bins swaying side-to-side.



**Warning:** Never tow with four swivel castors. Towing bins with four swivel castors will cause problems with trailing and 'fishtailing'—cutting corners, rather than following the unit. For safety purposes, directional lock tabs are fitted to your bin's existing rear swivel castors to enable controlled steering and towing in a straight line.

Take a closer look.  
Scan the QR code.





# Tub trolley mover

**ALL NEW DESIGN**

**Designed for the food and retail industries, Electrodrive's ergonomic tub trolley improves manual handling of food and goods by reducing the risk of musculoskeletal injury caused by awkward bending and pushing of heavy tubs at floor level.**

Customer trials have proven to increase the overall productivity by 30%. This was achieved by eliminating manual handling associate with lifting, shifting and tipping heavy tubs, and reducing the labour hours involved in the daily process of emptying food waste.

### Features

- Available in powder-coat for general use, or stainless steel (grade 304) for raw food handling.
- Fitted with quality Australian-made Fallshaw food-grade castors—100 mm non-marking grey rubber: Two swivel (MSC100G/MSP) and two fixed (MSC100G/MSF).
- 560 kg standard load rating (with supplied Fallshaw castors).
- Foot pedal for lifting and securely locking tubs into the trolley frame, or for releasing them.
- Can be used with an Electrodrive tipper (contact us for info).

### Benefits


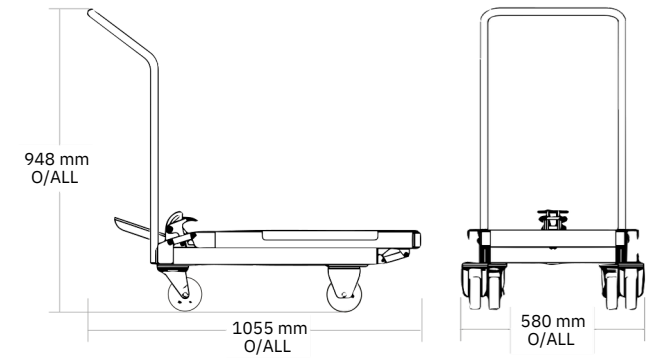
- Can be designed to suit your current tubs.
- Proven to increase efficiency by up to 30%.
- Ergonomic design to reduce the risk of injury.
- Easy to use—simply position the trolley on either side of the tub, and then push down on the foot pedal to lift the tub and securely lock it into place—for effortless transportation of tubs.
- Depending on your application, it is available in powder-coated for general use or stainless steel for raw food handling.
- Highly manoeuvrable and easy to use.
- Made in Australia.

### Typical applications

Suitable for the food and retail industries for improved handling of food and goods.



**Take a closer look.**  
Scan the QR code.

	Order code
Tub trolley	SIE3038
Tub and trolley tipper	SIE3029

## Powered fifth wheel

The Powered Fifth Wheel (P5W) is a retrofittable solution for converting your manually pushed trolleys or hospital beds into powered ones.

Controlled with an ergonomically designed control grip for a natural walking posture, the Powered Fifth Wheel works with your trolley or bed's other four wheels to help you move heavy loads safely and efficiently.

### Features across the range

- Tow up to 400 kg on flat ground.
- Three-speed control with forward and reverse.
- Emergency stop and back-off safety buttons.
- Customisable with a wide variety of hitches available.
- Smart battery charger.
- Made in Australia.

Take a closer look.  
Scan the QR code.

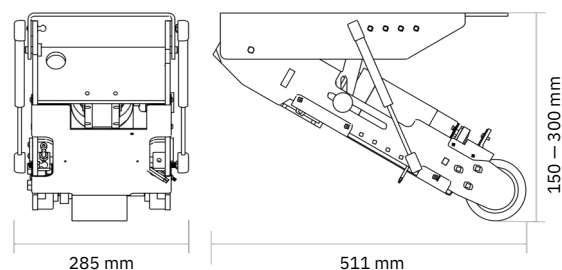


### P5W (non-retractable)

Simple control

#### Retrofittable kit

- Tow up to 400 kg on flat ground.
- Simple control unit (mounted vertically or horizontally—adaptable to suit 20-52 mm tube).
- Non-retractable fifth wheel in carriage.
- Batteries: 2 x 33Ah gel, assembled within slide-out carriage.
- Charger.



Control unit (vertical)

Control unit (horizontal)



Slide out battery carriage

Non-retractable fifth wheel

Order code

#### Retrofittable kit

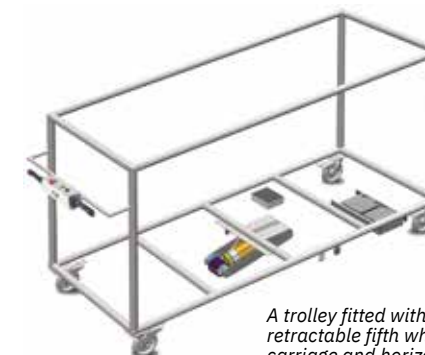
Non-retractable Powered Fifth Wheel with simple control:

Vertically mounted	P5W400VBAU
Horizontally mounted	P5W400HBAU

#### Items available separately

Control unit (vertical)	EDP5WCONTROLV
Control unit (horizontal)	EDP5WCONTROLH
Non-retractable fifth wheel in carriage	EDP5WWHEEL
Slide out battery carriage	EDP5WBATCARRIAGE
Batteries: 2 x 33Ah gel batteries	EDBAT12V33AHGEL
Charger: 7Ah, AU plug	EDCHARGER7AhAU1

<sup>1</sup> International chargers are also available. Replace A ' U ' at the end of the order code with ' US ', ' EU ' or ' UK '. For example EDCHARGER7AhUS.



A trolley fitted with the non-retractable fifth wheel, battery carriage and horizontal control unit.

