

Driving Hand Controls Catalogue.



TOTALABILITY
Love to Drive

Exclusive Distributor of

FADIEL ITALIANA

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The Fadiel Italiana and Total Ability Story.

Towards the end of the 1970s, Fabio Domeneghini, then a young and gifted engineer at Venice's Marco Polo Airport, was determined to find an elegant solution to an ongoing issue: how to quickly and safely transfer people in wheelchairs on to airplanes.

His response was to design and build a folding platform that could be applied to various situations at the airport and provide easy access.

This lit a fire in Fabio for finding other solutions to common problems, and the success of his platform gave him the confidence to follow a new career helping people with disability using his innovative engineering and design skills.

He quit his job at the airport to start his own company which he called Fadiel Italiana: **FA**brica (Factory) **DI**spositivi (Devices) **EL**ettroidraulici (Electrohydraulic).

Fabio's first 'product' was a car clutch that someone could operate with their hand. He combined the clutch control with the gear lever, adding a switch to the usual gear lever head. The larger knob required had a distinct look that gave birth to a new name: the so-called 'duck' clutch was born.

Following a spinal cord injury in 2006, Australian Paul Crake had married his Italian fiancé, Daniela, and was living in Italy. Daniela researched how she could help Paul get back to driving and came across Fadiel Italiana and their category-leading Satellite Accelerator.

Paul took to driving again with his newly installed equipment and got a new lease on life and was amazed by the positive effect regaining his independence had on his mental well-being.

After the couple returned to Australia, Paul found the driving equipment here wasn't anywhere near as advanced as the system he had been using in Italy ... and a new business idea formed.

So, in 2011, Paul and Daniela founded Total Ability, and became the exclusive distributors of Fadiel Italiana in Australia and New Zealand, ensuring both countries now have access to the Italian company's class-leading driving controls and accessibility equipment.

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Satellite Accelerator. and Brake Lever

Who it's for?

The Satellite Accelerator is for the driver who wants to maintain both hands on the wheel when driving. The unit is worn like a glove and acceleration is achieved by lightly pressing the thumb against a small lever allowing intuitive control over the operation of your car's speed in all driving conditions.

Whether you are driving long distances, around tight curves or executing difficult manoeuvres, the Satellite Accelerator, available in wired or wireless models, makes agile, smooth, reactive, and safe driving easy. The Satellite Accelerator is generally paired with the Brake Lever.

Models...

Satellite Wired

The wired model enables the driver to have the unit constantly attached with a spiral cord. The cord is mounted at elbow distance back to avoid interference with the steering wheel. The unit is smaller and lighter than the wireless model.

Satellite Wireless

The wireless model enables the driver maximum freedom of movement when holding or turning the steering wheel.

The unit's operating time is approximately 35 hours between charges and can easily be recharged in the vehicle or 'on-the-run'. A red light and beeping sound alert the user that the battery is low. There is also an emergency back-up function.

FEATURES

- Left- or right-hand versions
- Changeable brackets to suit all hand sizes
- Smooth acceleration curve
- Operated with minimal fatigue
- Acceleration safety cut-out mechanism
- Brake lock feature
- Compatible with original electronics
- Suitable for fitment (and re-fit) in all types of vehicles
- Easily turned off enabling regular foot operation
- Colours: black, carbon, pink, silver, custom
- Proven technology – first developed in 1999



Suitable for:

Paraplegia
Double Lower Limb Amputee
& other disability reducing the use of your legs
where finger dexterity remains good

Trigger Accelerator.

and Brake Lever

Who it's for?

The Trigger Accelerator and Brake Lever is operated by pushing the lever for brake and pulling the trigger for acceleration. It offers an easy transition to electronic controls for the driver familiar with the traditional mechanical Push-Pull hand control.

The light action of the trigger eliminates fatigue and provides the option of holding the steering wheel with two hands while controlling the accelerator trigger with the little finger.

Models...



Fixed Trigger

The toggle on this trigger model is fixed and has more limited range when holding both hands on the steering wheel whilst accelerating.



Hinged Trigger

The toggle on this trigger model is hinged, you have added trigger range to use both hands on the steering wheel making the driving experience even more ergonomic and easy to operate.



FEATURES

- Left- and right-hand versions
- Easy height & angle adjustment
- Changeable end knob for greater customisation
- Ergonomic & versatile accelerator trigger
- Smooth acceleration with minimal fatigue
- Acceleration safety cut-out mechanism
- Brake lock feature
- Compatible with original electronics
- Suitable for fitment (and re-fit) in all types of vehicles
- Easily turned off enabling regular foot operation
- Knee airbag compatibility
- Colours: black, carbon, pink, silver, walnut



Suitable for:

- Paraplegia
- Double Lower Limb Amputee
- & other disability reducing the use of your legs



Over Ring Accelerator. and Brake Lever

Who it's for?

The Over Ring Accelerator provides effortless acceleration for drivers with limited dexterity wanting to keep both hands on the wheel. Acceleration is achieved by lightly pushing on the ring. Maintaining constant pressure at any speed, allows natural driving flow and excellent direction control on twisty roads, making precise and delicate driving manoeuvres easy to perform.

The Over Ring Accelerator attaches to the original steering wheel without interfering with the airbag deployment. The Over Ring Accelerator is generally paired with the Brake Lever.

Models...

Fixed

The fixed model is laterally mounted making it a more secure fit. The controls can easily be turned off by the flick of a switch, enabling regular foot operation.



Quick-Release

The quick-release model allows removal of the accelerator ring making it easy for others to drive the vehicle.



FEATURES

- Operated with minimal hand fatigue
- Acceleration safety cut-out mechanism
- Brake lock feature
- Compatible with original electronics
- Easily turned off enabling regular foot operation
- Suitable for fitment (and re-fit) in all types of vehicles
- Airbag compatibility
- Colours: black, carbon, silver, walnut

NOTE – The Satellite Accelerator may be a more versatile two-handed driving solution

Suitable for:

Paraplegia
Double Lower Limb Amputee
& other disability reducing the use of your legs
where finger dexterity remains good

Ergonomic Radial Accelerator. and Brake Lever

Who it's for?

The Ergonomic Radial Accelerator and Brake Lever is a quality hand control designed for operation with limited dexterity. The choice of ergonomic palm or lever grip handle coupled with the ability to customise the handle weight and rotation totally personalises the product to the user's individual strengths, preferences, and capabilities.

Models...



Palm Grip

The palm grip has a V-shape handle to rest your palm whilst driving. The rotation is smooth and perfectly balanced to your hand.



Lever Grip

The lever grip handle has a curved finish that allows your hand to rest on the handle as you turn your wrist to accelerate.



FEATURES

- Left- and right-hand versions
- Easy height and angle adjustment
- 70 degrees of rotation on handle for acceleration
- Adjustable rotation weight
- Smooth acceleration with minimal fatigue
- Acceleration safety cut-out mechanism
- Brake lock feature
- Compatible with original electronics
- Suitable for fitment (and re-fit) in all types of vehicles
- Easily turned off enabling regular foot operation
- Can be incorporated with voice command for activation of auxiliary controls
- Knee airbag compatibility
- Colours: black, carbon

Suitable for:

Quadriplegia
Muscular Dystrophy
Cerebral Palsy
& other disability limiting dexterity

T-Radial Accelerator.

and Brake Lever

Who it's for?

The T-Radial Accelerator and Brake Lever combines the two functions in one device. Designed specifically with the needs of people with quadriplegia in mind. The radial T-bar is adjustable in all axes for ideal ergonomic placement ensuring extremely balanced acceleration through corners and over bumpy surfaces.

FEATURES

- Left- and right-hand versions
- Easy height and angle adjustment
- Greater sensitivity when braking
- Smooth acceleration with minimal fatigue
- Acceleration safety cut-out mechanism
- Electronic brake locking function
- Knee airbag compatible
- Suitable for fitment (and re-fit) in all types of vehicles
- Easily turned off enabling regular foot operation

Often incorporated with **Voice Command** for activation of auxiliary controls such as indicators, lights, horn, wipers.



Suitable for:

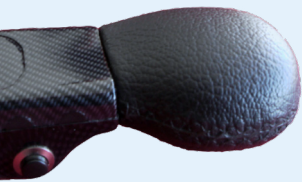
Quadriplegia
Muscular Dystrophy
Cerebral Palsy
& other disability without dexterity

Brake Lever.

Who it's for?

The Brake Lever can be used on its own or in combination with various accelerator models such as the Satellite or Over Ring. The Trigger, Ergonomic Radial and T-Radial models incorporate the Brake Lever in their combined function. High quality design provides firm and progressive brake feel and with the customisable covers it matches any car's interior.

Models...



Standard

The lever is fitted standard with a button for the horn and brake lock feature.



Incorporated Keypad

The lever is also available with incorporated keypad with buttons for lights, indicators, and horn.



Brake Lock

A great feature is the brake locking mechanism, for example when used sitting at traffic lights, the brake lever can be locked on, allowing the driver to rest their hand and reduce fatigue.



Leather End Knob



FEATURES

- Left- and right-hand versions
- Easy height and angle adjustment
- Changeable end knobs for greater customisation
- Precise and firm brake application
- Brake lock function
- Integrated keypad (optional)
- Suitable for fitment (and re-fit) in all types of vehicles
- Elegant design
- Colour options: black, carbon, pink, violet, silver, walnut, custom
- End knob also available in leather

Combined with:

- Satellite Accelerator
- Over Ring Accelerator

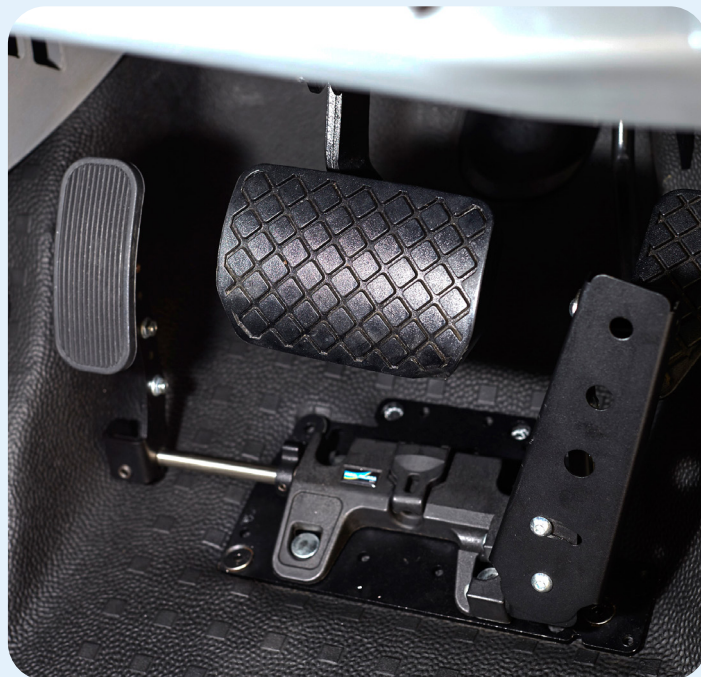
Left Foot Accelerator.

Who it's for?

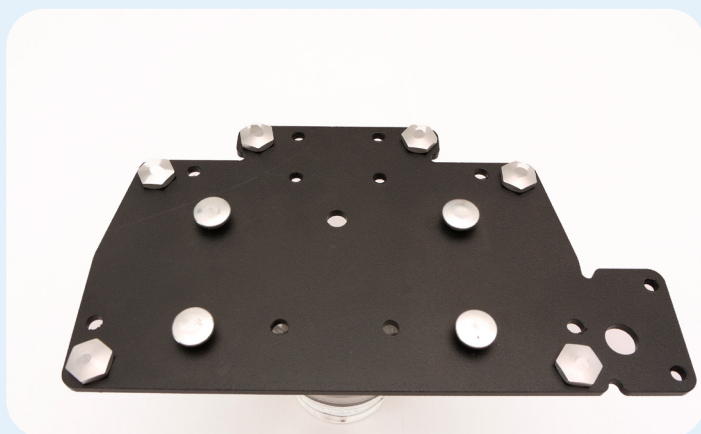
The Left Foot Accelerator is great when you need to accelerate with your left foot. The floor mounted design allows easy fitment for the user with the quick release function. Simply lifting the quick release latch and sliding back the detachable component releases the unit and returns the vehicle to the traditional right foot accelerator pedal. The easy, reliable, and quality solution when it comes to left foot accelerators.

FEATURES

- Floor-mounted design for compatibility with latest model vehicles
- Steel 4-pin fixation guarantees secure and easy mounting
- Quick release latch avoids inadvertent removal
- Multiple adjustments to ensure correct & smooth operation



Left Foot Accelerator unit attached to the base plate



Base plate gets fitted to the floor of vehicle

Suitable for:

Right Lower Limb Amputee

Stroke

Incomplete Paralysis &

other disability limiting the function of your right leg

Spinner Knobs.

Who it's for?

We provide a range of steering wheel spinner knobs to suit a range of user's needs. For some people it will be used on its own and for others it will form part of their hand control kit.

All knobs are high quality and designed to be functional and easy to use. Quick release coupling for quick removal, the clamping brackets are small and unobtrusive, avoiding damage to the steering wheel. The fixing clamp is the smallest and cleanest looking on the market.

Models...



Standard Spinner Knob
(Standard Rubber and Leather options)



Prosthesis Spinner



Conical Spinner



Two Point Spinner



Three Point Spinner

Spinner Knob	Standard	Prosthesis	Conical	Two Point	Three Point
Paraplegia	x				
Quadriplegia	x			x	x
Cerebral Palsy	x			x	x
Muscular Dystrophy	x			x	x
Amputee	x	x	x		

High Level Modifications.

The advanced range of products is suitable for those with very limited limb function. Braking can be provided with as little as 100 grams of pressure and steering can be controlled with the new generation steering system that offers activation by a mini wheel, joystick, or foot steer unit. These systems can also be incorporated with voice command for activating secondary controls of the vehicle.

History of Fadiel Italiana High Level Modification Driving Systems

- 1999** Freedom Brake and Accelerator System (hydraulic) was developed.
- 2002** In collaboration with the University of Parma (working with software engineers) Fadiel developed the first driving joystick prototype in Italy.
- 2004** Italian Certification of the Joystick making it the first system of its kind to be compliant with European Standards
- 2011** The first DGS-01 Joystick device (electric) was created as part of the “One-handed driving” project.
- 2016** The Foot Steering and Mini Wheel Steering units were commercialised to accompany the new electric version of the Freedom Brake and Accelerator System.
- 2018** The 4-way Joystick was developed, the first Italian company to produce this driving device! Allowing people with severe disabilities the opportunity to drive again safely and independently.



Freedom Brake.

and Accelerator



Who it's for?

The Freedom Brake and Accelerator is for drivers with very limited limb function and strength. Braking can be provided with as little as 100 grams of pressure. Combining power assisted brake and accelerator functions in the one control unit, pushing forward for brake and backwards for accelerator. The Freedom can be custom mounted in any location to suit the driver's needs and coupled with Mini Wheel Steering or Foot Steering options.

FEATURES

- Combined power assisted brake and accelerator
- Smooth acceleration with minimal effort
- Individual programming to suit any vehicle
- Available with several handle options
- Fitted at left or right side
- Designed with full redundancy to ensure fail-safe operation
- Easily turned off enabling regular foot operation



Suitable for:

Quadriplegia &
any muscular degenerating conditions

Mini Wheel Steering.



Who it's for?

The Mini Wheel Steering enables drivers with significantly restricted arm function to operate the steering wheel with the turn of a wrist. Designed to replicate the smooth progressive action of the steering wheel, the unit has two primary parts, the Mini Wheel, and the mechanical drive unit. The Mini Wheel works using electronic sensors and then transfers those signals electronically to the mechanical drive under the dashboard. The original steering wheel remains unchanged. The Mini Wheel Steering control device can be installed on either side of the driver.

FEATURES

- Smooth progressive steering
- Responsive and controlled
- Maintains original steering wheel aesthetics and foot pedals
- Available with ball, single point and 3-point handle options
- Easily turned off enabling regular steering wheel operation
- Speed sensor technology allows for intuitive adjustments as the vehicle increases speed making parking and motorway driving easy to manage
- Designed with full redundancy to ensure fail-safe operation

Foot Steering Option

The Foot Steering works with the same technology as the Mini Wheel Steering. Designed to work in a forward and backward pedal motion to turn the steering wheel from left to right with your foot, while also having the option of being setup like the Mini Wheel in any position in the footwell required for optimal operation by the user.



Suitable for:

Mini Wheel Steering

Quadriplegia &
any muscular degenerating conditions

Foot Steering

Congenital disability
Upper limb amputee &
any disability limiting the ability to use your arms

Joystick.

Who it's for?

The Joystick Control is the most technically advanced piece of assistive driving equipment available for people with reduced physical function. The Joystick Control enables drivers to operate the steering wheel, brake, and acceleration with the turn of a wrist or foot.

The one control activates all functions and installation of the Joystick Control device can be located on either side of the driver.

FEATURES

- Easy and safe to use
- Smooth progressive steering, acceleration, and braking action
- Responsive and controlled
- Available with various customised joystick handle options
- Speed sensor technology allows for intuitive adjustments as the vehicle increases speed making parking and motorway driving easy to manage
- Maintains original steering wheel aesthetics and foot pedals
- Easily turned off enabling regular foot operation
- Available in various configurations – brake/acceleration only, steering only, or all three functions combined
- Joystick Control can be located on either side of the driver
- Designed with full redundancy to ensure fail-safe operation



Suitable for:

Quadruplegia
 Congenital disability
 Upper limb amputee &
 any muscular degenerating conditions

Voice Command.

Who it's for?

Voice Command is for people who have minimal physical function and/or dexterity. Voice prompts activate the auxiliary controls of the vehicle, and the software is programmed to work with various languages including 'Australian' English. The intelligent software continues to recognise voice prompts regardless of music or voices coming from the radio.

The high-quality shotgun microphone is designed to be directed to the driver with the gooseneck connection and specifically recognising the voice of the driver. This is advantageous because it can pick up the sound only from the user, directly in front, while disregarding any other unwanted sounds that may be present in the environment.

FEATURES

- Voice controlled auxiliary functions
- Programmable for various languages
- Functions that are typically activated with the voice command are:
 - Indicators
 - Low beam lights
 - High beam lights
 - Horn
 - Wipers – slow – medium – fast
 - Windscreen washer
 - Hazard lights
 - Brake lock
 - Cruise control
 - Windows down/up – driver & passenger



Suitable for:

- Quadriplegia
- Congenital disability
- Upper limb amputee & any muscular degenerating conditions

Electronic Hand Brake .



Who it's for?

The Electronic Handbrake provides an easy means to control the manual handbrake by the push of a button. Converting the handbrake lever into an electronic system and eliminating the need to pull the factory lever. The Electronic Handbrake is a great option for anyone who has difficulty activating the regular hand brake in the vehicle.

FEATURES

- Easily activated by the press of a button
- Suitable for all types of vehicles
- Adjustable load setting
- Designed to be mounted under the vehicle for discreet installation
- Weatherproof case

Hand Control Comparisons.

	Traditional Push/Pull Mechanical	Push/Pull Electronic	Trigger Accelerator + Brake Lever
Fine hand motor skills required.	✗	✗	✓ Use index finger to accelerate
Operated with limited dexterity	✓	✓	✗ May work for some with limited dexterity
Adjustable handle/hand set	✓	✓	✓
Brake locking function on lever	✗	✓	✓
Changeable end knob for greater customisation	✗	✓	✓
Knee Airbag compatible*	✗	✓	✓
Ergonomic - reduces shoulder fatigue	✗	✗	✓
Acceleration safety cut-out mechanism	✗	✓	✓
Compatible with original electronics	✗ NA	✓	✓
Controls can be re-installed when updating vehicles	✗ Not all vehicles can accommodate mechanical controls now	✓	✓
Integrated auxiliary buttons on brake lever available	✓	✓	✓
Two-handed driving solution	✗	✗	✓ Toggle trigger activated by pinky finger
Disability examples	Paraplegia, Low Level Quadriplegia, Muscular Dystrophy, Cerebral Palsy, Double Amputee	Paraplegia, Low Level Quadriplegia, Muscular Dystrophy, Cerebral Palsy, Double Amputee	Paraplegia, Double Lower Limb Amputee & other disability reducing the use of your legs

* On most vehicles the brake rod routing can be achieved without affecting the knee airbag and the deployment

Total Ability - Fadiel Italiana Products

Satellite Accelerator + Brake Lever	Over Ring Accelerator + Brake Lever	E-Radial Accelerator + Brake Lever	T-Radial Accelerator + Brake Lever
✓ Use thumb to accelerate	✗	✗	✗
✗	✓ Palm and finger movement only	✓ Use palm and wrist movement to accelerate	✓ Larger movements for acceleration activation
✓	✓	✓	✓ Multiple axis adjustment of the T-Bar handle
✓	✓	✓ Can be operated with electronic push button	✓ Can be operated with electronic push button
✓	✓	✓ Radial stalk can be customised	✓
✓	✓	✓	✓
✓ Enables two-handed driving	✓ Enables two-handed driving	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓	✓	✓	✓
✓ Easy two-handed driving while accelerating	✓	✗	✗
Paraplegia, Double Lower Limb Amputee & other disability reducing the use of your legs where finger dexterity remains good	Paraplegia, Double Lower Limb Amputee & other disability reducing the use of your legs where finger dexterity remains good	Quadriplegia, Muscular Dystrophy, Cerebral Palsy & other disability limiting dexterity	Quadriplegia, Muscular Dystrophy, Cerebral Palsy & other disability limiting dexterity

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