

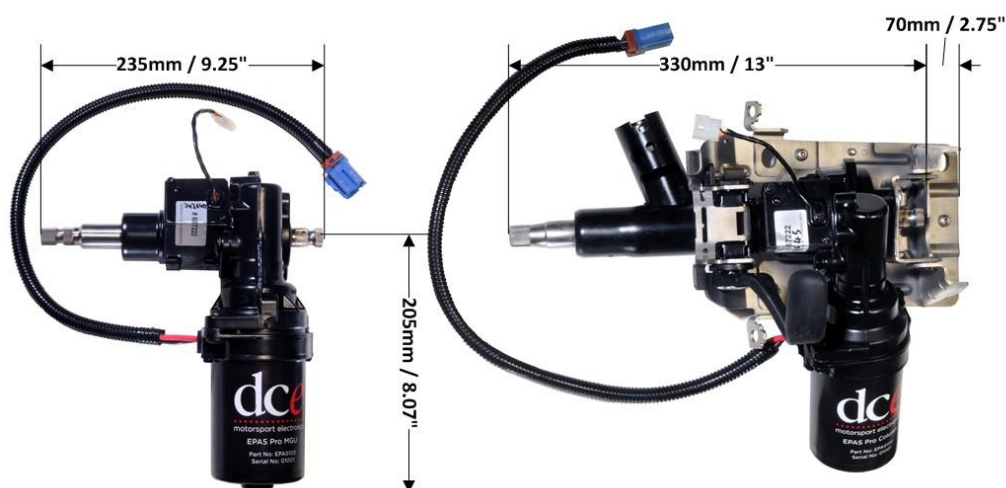


EPAS PRO STREET USER GUIDE

Data Sheet	2
Modes of Operation	3
Installation Guide	4
Mechanical Installation: Pro Column	4
Mechanical Installation: Pro MGU	5
Electrical Installation: Pro Street Rotary	6
Electrical Installation: Pro Street Automatic	7
Operation Guide	8

EPAS PRO STREET DATA SHEET

The DC Electronics EPAS Pro Street steering system is designed to bring electric power assisted steering to street cars without the need to change the steering rack or fit a hydraulic system. The system comes in two styles, both of which function in the same way but offer a choice of packaging options:



EPAS100 Pro MGU

Shortened motor/gearbox to go in line with the existing steering column

EPAS102 Pro Column

Complete height adjustable steering column

Both systems are made using re-manufactured parts and come with a 2-year warranty when used for highway operation.

EPAS100: PRO MGU TECHNICAL SPECIFICATION	
Operating Voltage:	Nominal 13.8V DC
Maximum current draw:	40 Amps
Average current draw - Amps (around town):	Less than 2
System Weight: MGU & ECU	5.5kg / 12.13lbs.
Maximum Torque Output:	75NM / 55lb ft.

EPAS102: PRO COLUMN TECHNICAL SPECIFICATION	
Operating Voltage:	Nominal 13.8V DC
Maximum current draw:	40 Amps
Average current draw - Amps (around town):	Less than 2
System Weight: Column & ECU	7.75kg / 17.10 lbs.
Maximum Torque Output	75NM / 55lb ft.

MODE OF OPERATION

There are two options for controlling the EPAS motor:

Option 1

Manual control of steering assistance by potentiometer adjustment.

For this option you would add the following two items to your column or MGU:



EPAS108
Pro Street ECU



EPAS112
Pro Street Wiring Harness (Rotary)

Option 2

Manual control of steering assistance by potentiometer adjustment (as with Option 1) *or* a digital wheel speed input signal, which can be used to increase the level of assistance at parking speeds whilst firming up the steering at higher speed. A mode selection switch is provided with the harness to choose your preferred method of operation.

For this option you would add the following two items to your column or MGU:



EPAS108
Pro Street ECU



EPAS110
Pro Street Wiring Harness (Automatic)

INSTALLATION GUIDE

PLEASE READ BEFORE ATTEMPTING INSTALLATION

The steering system of a vehicle is a safety critical component and modification of this system should only be carried out by a competent professional.

- The system should be installed within the vehicle cabin away from heat and moisture.
- Ensure the unit is adequately mounted – a torsional force of up to 120NM/90 lb. ft. can easily be generated by the steering system and driver!
- **DO NOT** weld upon any part of the Pro Street Column or MGU – delicate electronics are contained within the unit that will be damaged by this process!

MECHANICAL INSTALLATION – PRO COLUMN

The Pro column is height adjustable and is designed to be a complete replacement steering column and comes complete with a universal mounting bracket.

The Pro column is not suitable as a replacement for vehicles that require any controls to pass along the inside of the steering column.



4 x elongated M12 mounting holes are provided in the universal mounting bracket and should be used to secure the steering column to the chassis.

A suitable steering wheel boss such as Momo 12115117218 should be used to secure the steering wheel to the column and the output spline is 16.5mm x 36 – various spline adaptors and the steering wheel boss are available from DCE at an additional cost.

OPTIONAL ACCESSORIES	
Part No.	Description
EPAS114	Output Universal Joint
EPAS116	Input Universal Joint (EPAS100 only)
EPAS118	Input Straight Coupler (EPAS100 only)
EPAS122	Steering Wheel Boss (EPAS102 only)
EPAS124	Steering Wheel Nut (EPAS102 only)
EPAS120	Wheel Speed Sensor

MECHANICAL INSTALLATION – PRO MGU



The MGU is designed to be fitted in-line with the existing steering column by removing a section of column and inserting the MGU in its place.

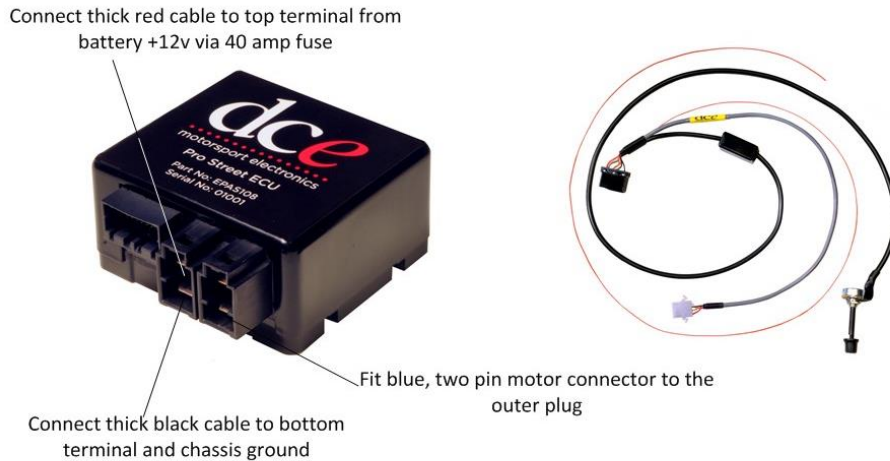
The MGU is not suitable for vehicles that require any controls to pass along the inside of the steering column.

The MGU can be mounted via the front or rear 2 x M8 mounting holes. A suitable bracket should be fabricated to mount the MGU with the motor orientation that best suits your application.

Both mounting holes are not “blind” and over length bolts will **foul the internal gear and cause damage.**

The input Spline is 5/8-36 and the output is 16.5mm-36. Various spline adaptors are available from DCE at an additional cost to join the MGU to your existing steering column.

ELECTRICAL INSTALLATION – Pro Street Rotary



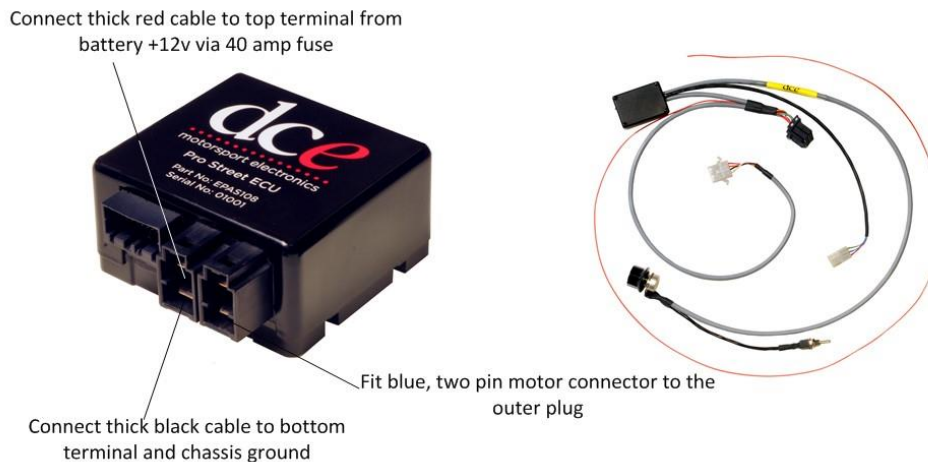
The Pro Street Rotary System comprises of the EPAS112 wiring harness and EPAS108 Pro Street ECU.

- Connect the supplied thick red and black cables to the ECU center plug as detailed above.
- Connect the 2 pin blue motor plug to the ECU RHD plug
- Connect the 20 way plug on the wiring harness to the ECU LHD plug
- Connect the 4 pin white connector on the wiring harness to the Column/MGU
- Connect the thin red wire on the harness to an ignition switched +12v (draws less than 1 amp)

The system is now ready for testing. Ensure the vehicle is down on the ground with the wheels fitted and the potentiometer turned fully counter-clockwise. Switch on the ignition and a distinctive “click” will be heard as the ECU power relay engages. Turn the steering wheel and you should have power assistance.

Turning the potentiometer clockwise will increase the level of assistance available. The potentiometer can be mounted into a switch panel for constant adjustment or hidden away from view once the preferred level of assistance is set.

ELECTRICAL INSTALLATION – Pro Street Automatic



The Pro Street Automatic System comprises of the EPAS110 wiring harness and EPAS108 Pro Street ECU.

- Connect the supplied thick red and black cables to the ECU center plug as detailed above.
- Connect the 2 pin blue motor plug to the ECU RHD plug
- Connect the 20 way plug on the wiring harness to the ECU LHD plug
- Connect the 4 pin white connector on the wiring harness to the Column/MGU
- Connect the thin red wire on the harness to an ignition switched +12v (draws less than 1 amp)

Wheel Speed Input

If you wish to use the speed sensitive function of the EPAS system then a wheel speed signal needs to be connected to pin 2 of the white 3 pin connector. If your vehicle does not have a digital wheel speed signal available then an NPN type, open collector sensor should be used or we can supply one for you – Part No EPAS120.

The Loom connector is from the Molex 1396 Series and is pinned as follows:-

1. +12v – Red
2. Signal – Blue
3. Ground – Green

The mating connector is Molex part number 03-09-2032 and is supplied with the harness.

EPAS120 Pro Wheelspeed Sensor

The Pro Wheelspeed sensor is wired as follows:-

1. Red - +12v
2. White – Signal
3. Black - Ground

Operation: Manual Mode

A small mode selection toggle switch is fitted to the wiring harness. Center position is wheelspeed mode, the momentary position against the keyway is calibration mode and the latched position opposite the keyway is manual mode.

As a safety feature, swapping between modes whilst the system is switched on will not have any effect until the ignition switch +12v is cycled on and off.

The system is now ready for testing. Ensure the vehicle is down on the ground with the wheels fitted and the potentiometer turned fully counter-clockwise. Set the mode selection switch in the manual position, switch on the ignition and a distinctive “click” will be heard as the ECU power relay engages. Turn the steering wheel and you should have power assistance.

Turning the potentiometer clockwise will increase the level of assistance available. The potentiometer can be mounted into a switch panel for constant adjustment or hidden away from view once the preferred level of assistance is set.

Operation: Wheel Speed Mode

Ensure a wheel speed signal or sensor is connected to the wheel speed connector and the ignition is off.

- Hold the toggle switch in the calibration position.
- Start the engine
- Release the calibration switch, the red LED on the loom box will flash.
- At this point electric assistance is at its minimum setting.
- Drive the vehicle until you feel the weight of steering is comfortable, Flick the mode switch back to the calibration position and release.
- Above the calibration speed assistance is minimum and the LED is unlit.
- Below the calibration speed assistance will gradually increase from minimum to maximum when the vehicle is stationary – the LED is lit to show assistance is active.

If you feel you need more assistance at a lower speed simply repeat the above procedure and move the calibration point to a higher speed.