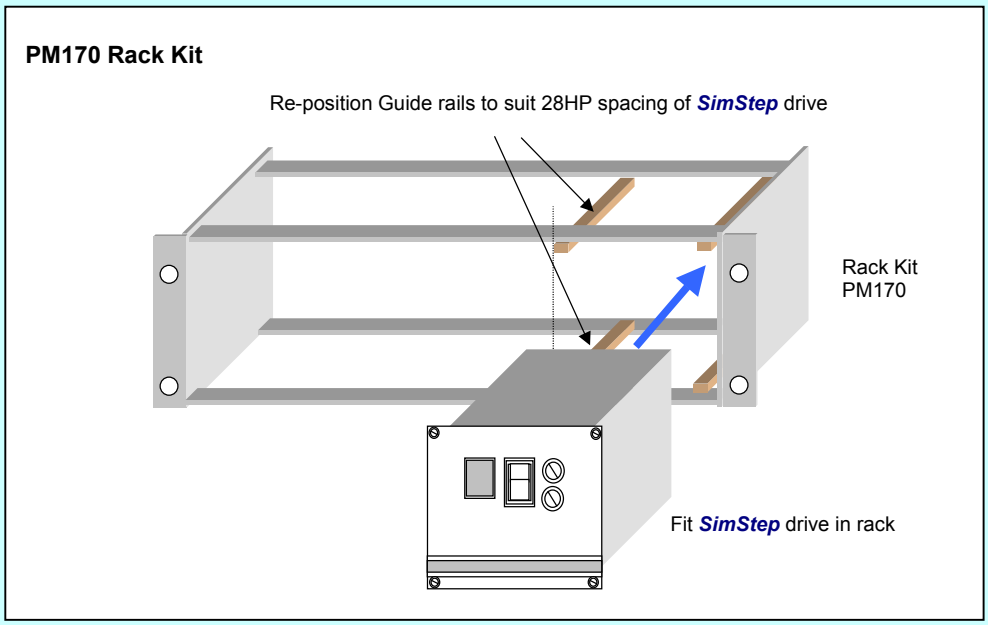
Sim-Step Stepper Motor System: GETTING GOING

Installation of *Sim-Step* drive when using PM170 rack kit

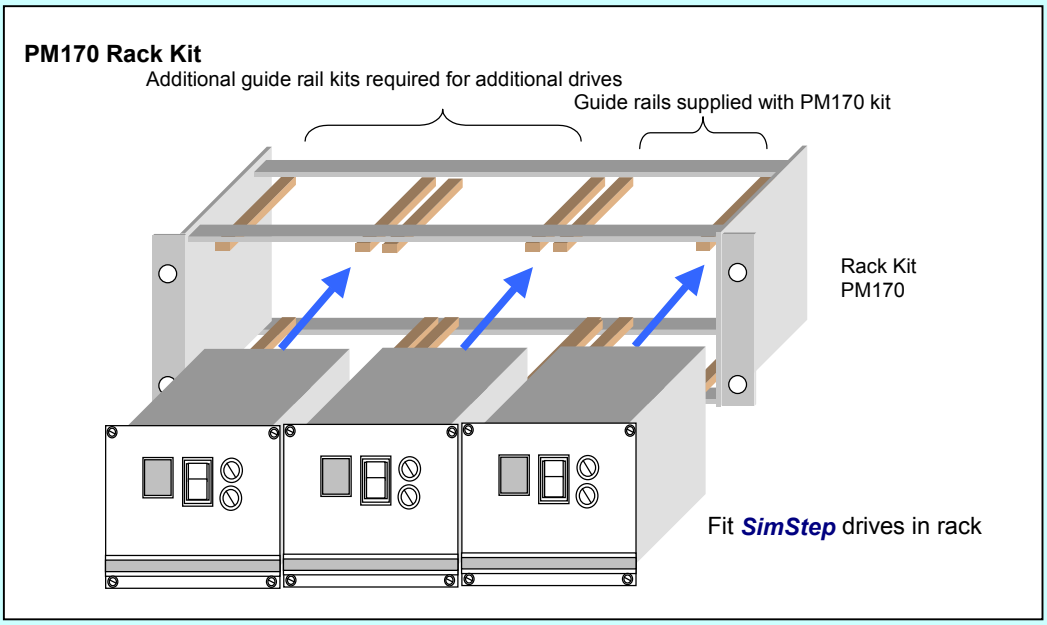
The ***Sim-Step*** drive may be installed in the PM170 Rack kit (order code 506 RAC00170)

Single axis installations



Multi-axis axis installations

Up to 3 ***Sim-Step*** drives may be installed in a single PM170 Rack kit (order code 506 RAC00170)
When installing additional axes extra guide rails and vibration clips should be ordered to accommodate each additional ***Sim-Step*** drive that is to be fitted to the PM170 rack kit:



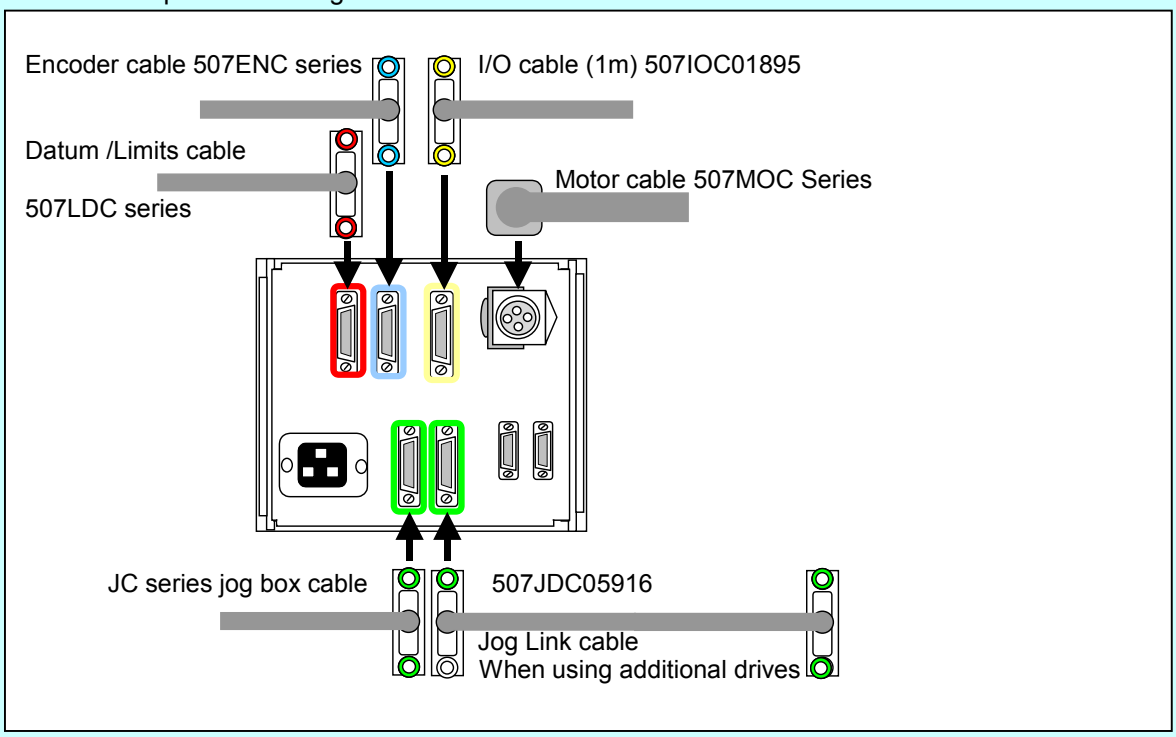
Additional components required when using PM170 rack kit.

Number of ***Sim-Step*** Drives	Additional Guide rails required		Additional AV Clips required	
	Quantity	Type	Quantity	Type
1 x ***Sim-Step***	None		none	
2 x ***Sim-Step***	4	209MNT00010	8	209MNT00017
3 x ***Sim-Step***	8	209MNT00010	16	209MNT00017

Connecting *Sim-Step* stepper motor drive:

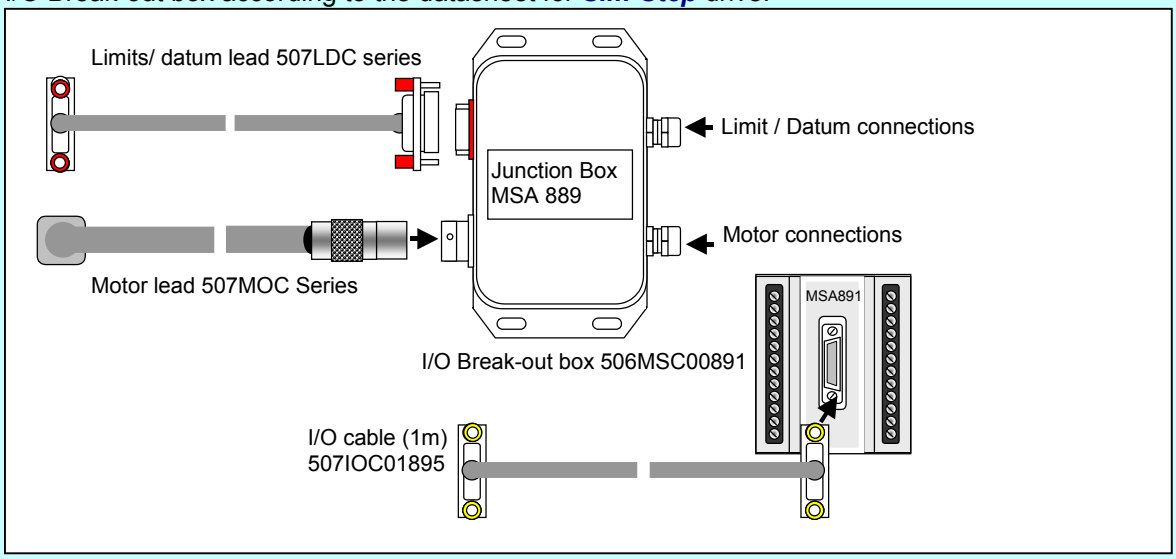
Make all connections to the control system except RS232 connection

The connection to the ***Sim-Step*** drive is simplified by the use of colour coded connectors and leads. Select the required lead lengths from the data and connect as shown.



Useful Accessories

The connections to the motor leads, Limits, datum & I/O signals can be simplified using the Junction Box & I/O Break-out box according to the datasheet for ***Sim-Step*** drive.



The control system requires normally-closed end of travel limit contacts. These to be **made** for normal operation.
To carry out a bench test where limit switch connections are not available link the limit inputs to the +VLL connections on the Limits/Datum connector or MSA889 Junction Box.

Important note:

The *Sim-Step* is factory set for an output motor drive current of 3.5 Amps.
The controller is set as Axis 1. For alternative settings please consult the user manual.

Failure to make the correct internal settings will damage the motor and result in communication faults

Checking connections of *Sim-Step* stepper motor drive:

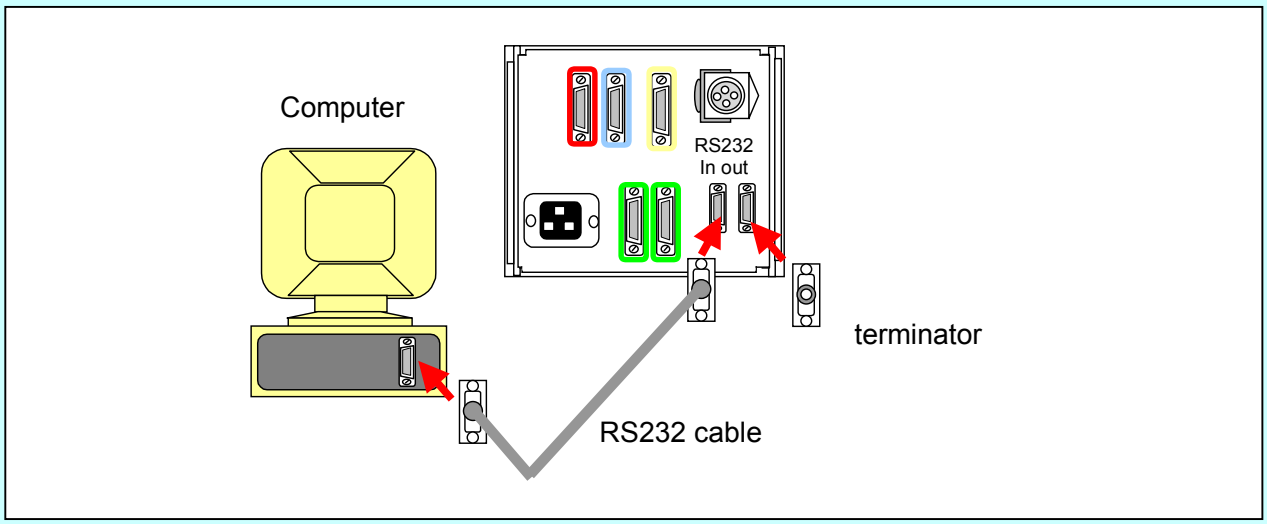
Switch control system on

The front panel status display should show 7 after about 3 seconds, which indicates that the controller is *Idle* and no fault detection is active. If 6 or 5 is showing, then check the appropriate hard-limit switch. Using jog box, jog motor through 8 steps to ensure that motor connections are correct. The motor should rotate 8 steps without reversal. During Jogging, a 4 should show on the status display.

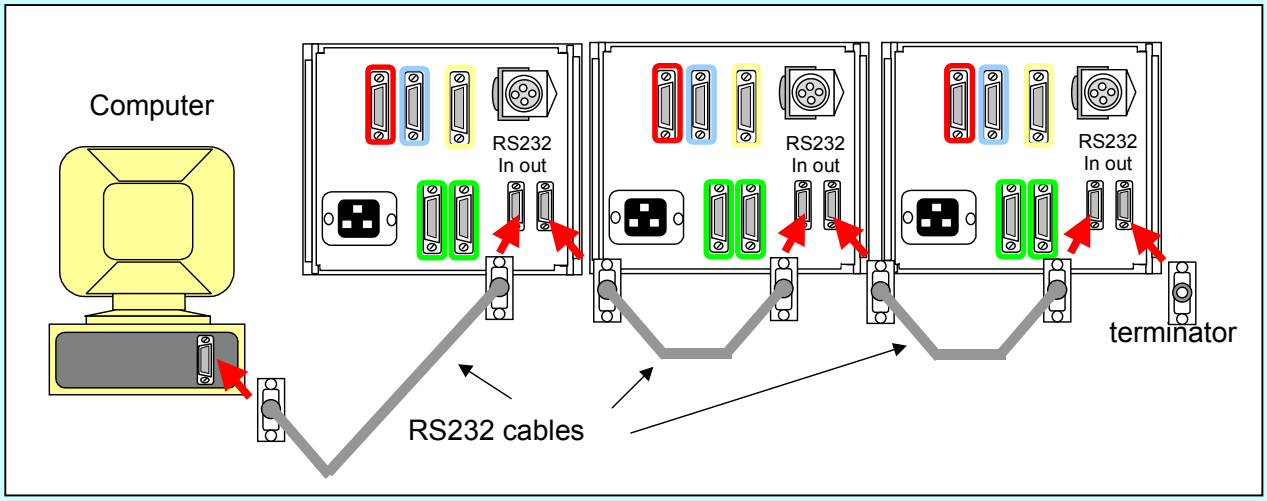
Switch control system off

Connect RS232 lead and RS232 loop-back terminator to final port:

Single axis installations using ***Sim-Step*** *drives*



Multi-axis installations using ***Sim-Step*** *drives*



Using Terminal emulator software

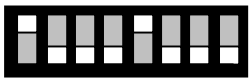
Communication with PM600 based systems such as ***Sim-Step*** is via an RS232 interface.
When using a PC you will need to install terminal emulator software.
A suitable programme is available from Mclennan Servo Supplies Ltd. ask for ***'McTerminal'***

McTerminal

'McTerminal' may be downloaded from the website: www.Sim-Step.com

Select 'Setup Comms'
Check settings:

Com1 (or whichever port is connected)

PM600 switch settings:  (default)

Baud rate: 9600

Mode: 7 bit Even parity

Press: **OK**

Switch control system on

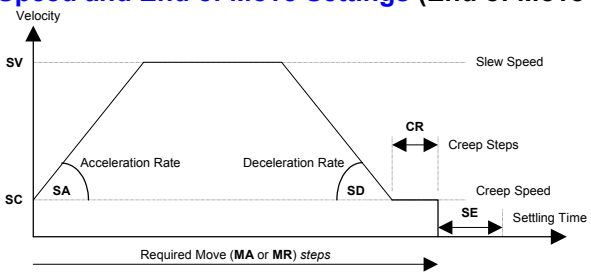
Initial Commands:

1id	PM600 Controller identifies itself 'Open loop stepper'.
1ma400	The motor moves 400 steps (typically one revolution if using a 23HS type motor).
1ma-400	The motor moves -400 steps (opposite direction).

Settings for Closed Loop Mode (Encoder feedback)

1er400/2000	Set encoder ratio to match 400 step motor and 500 line (2000 step encoder)
1mr1000	Do test move
1qp	Query positions, if *actual position* is opposite to *command position* then;
1en-400	Set negative ratio by having a negative numerator.
1cm14	Selects Command Mode 14 (closed-loop stepper)

Speed and End of Move Settings (End of Move only applicable to closed-loop modes)



1sv	Set move speed in steps per second
1sa	Set acceleration in steps per second^2
1sd	Set deceleration in steps per second^2
1cr	Set number of creep steps
1sc	Set creep speed in steps per second
1se	Set settling time in mS
1wi	Set end of move window in steps (default = 4)

Backup

Important – if the set-up of the ***Sim-Step*** is changed by using the above commands, then a **BD** (**B**ackup **D**igiloop parameters) command **must** be issued to save the set-up values to Flash memory. If this not done, the values will be lost on power-down.

Note: A full list of operator commands is available by keying '1he' (help)