

**Product: AVM2-PC, AVM2-PC/ADV, AVM Majestic,
Caterpillar AVM2-PC**

Subject: HS314 - 590 Drive Parameter Update

1. Introduction

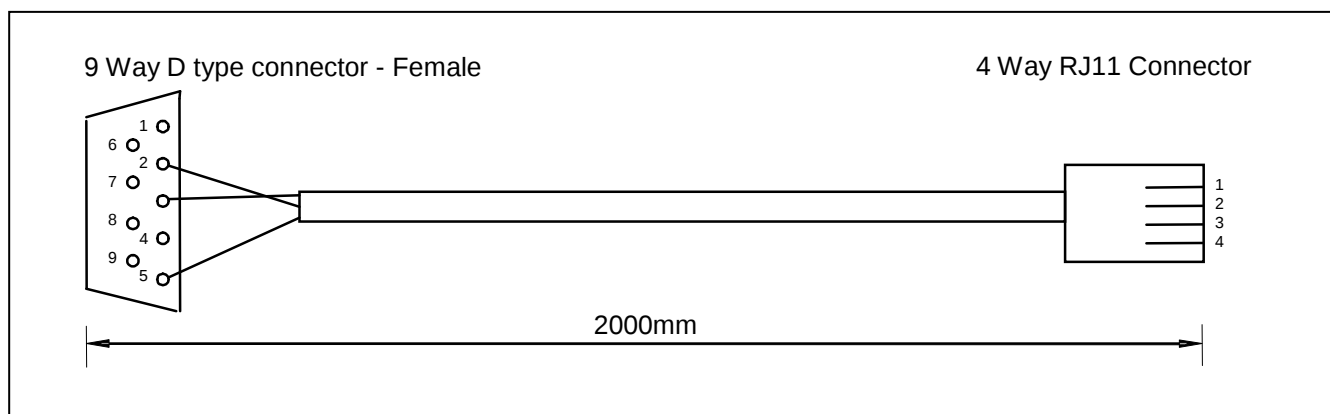
The drive parameter file loaded to all AVM2-PC test benches potentially allows the bench to be run in a hazardous configuration. In this mode of operation, the Speed Trim control could be used to set the motor speed to zero rpm. The hazard being that the operator may be working in the area, unaware that the drive is actually running, though appearing to have stopped.

The interim solution for the problem was to temporarily disable the Speed Trim function. This was explained in Technical Bulletin TB186/22.

This bulletin provides instructions for installing the final solution for the Speed Trim problem.

2. Installation

To enable download of the new parameter file to the 590 drive, a laptop with a serial port and a serial communications cable is required. The specification for the cable is follows, alternatively use Hartridge part number AE54:



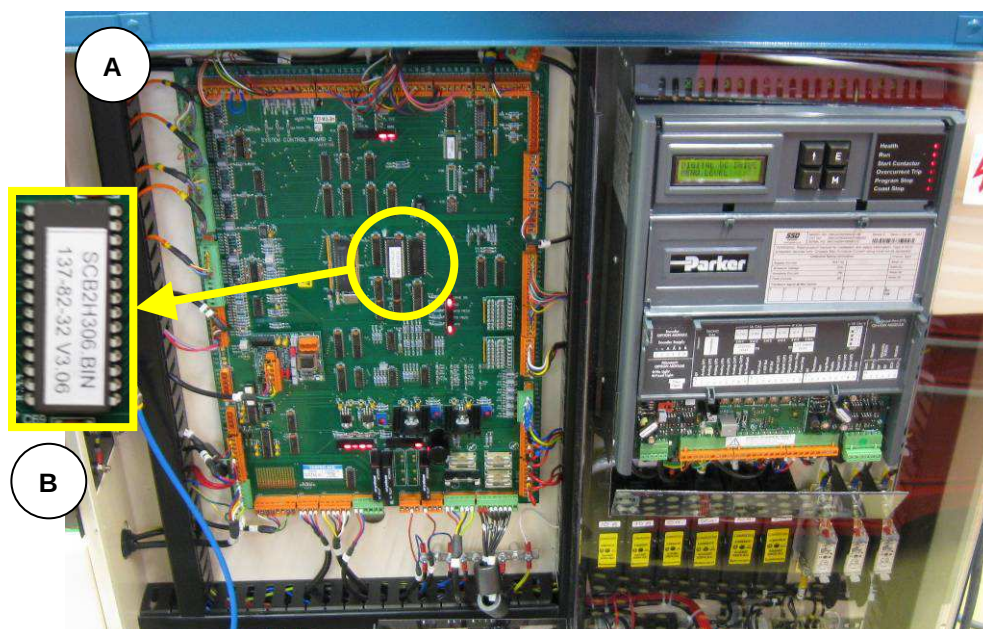
Connections

9 Way 'D'	RJ11
Pin 2 (RX)	Pin 2
Pin 3 (TX)	Pin 1
Pin 5 (0V)	Pin 4

	High Voltage! Isolate and lock the electrical supply off before removing covers and working in the electrical enclosure. Only suitably qualified personnel are allowed to work on the test bench when the covers are off and the power is on. Be aware that the computer and monitor are supplied separately from the test bench 3 phase supply and may therefore still be powered when the test bench 3 phase supply is switched off.
	CAUTION: Take all necessary precautions to ensure the safety of personnel when test bench covers are removed and power is on. These include, but are not limited to:- erecting signs warning of the electrical hazard; placing barriers/chains around the hazardous area; ensuring that metal items (such as jewellery) are removed before accessing the hazardous area.
	WARNING This equipment contains electrostatic sensitive devices. Observe the necessary precautions for handling electrostatic discharge sensitive devices. Do not touch printed circuit boards and associated electronic connections and components without adequate precautions.

2.1 System Control Board Firmware

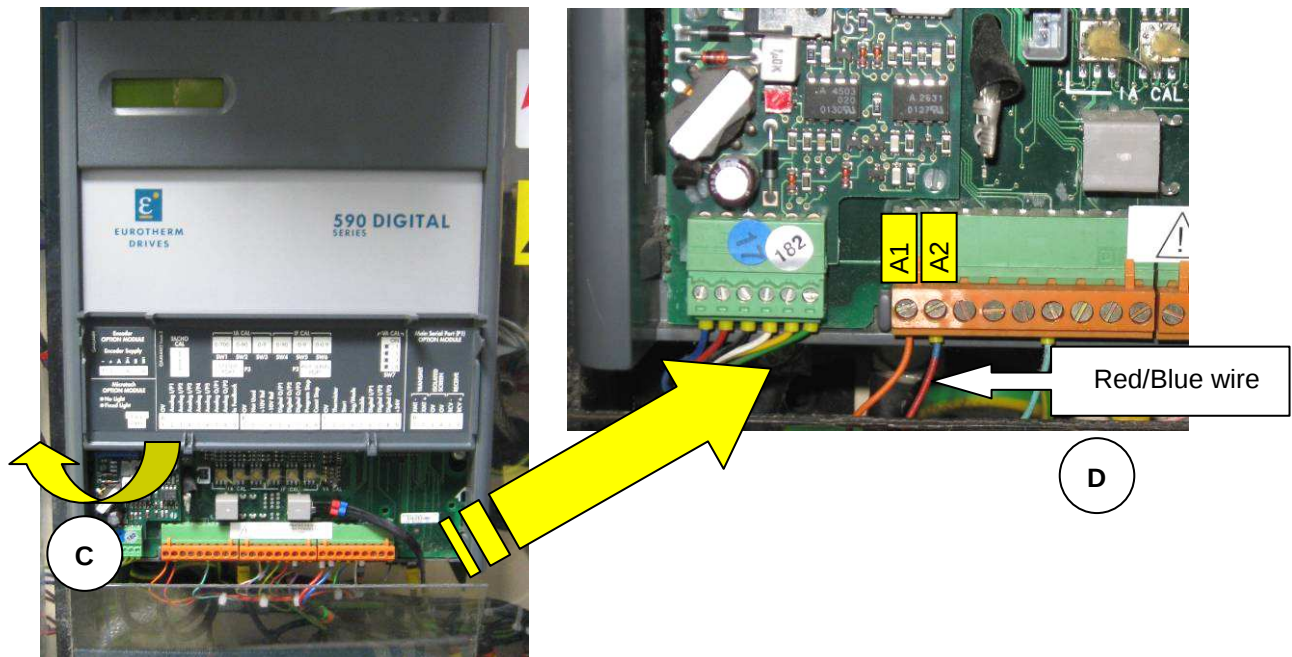
1. Switch off the electrical supply to the test bench.
2. Remove the right side upper panel to reveal the System Control Board (SCB2) and the 590 Drive (A).
3. Remove the existing SCB2 firmware – IC33 (B)
4. Fit the new SCB2 firmware chip (v3.11) into the IC33 socket.
Observe appropriate anti static precautions. Failure to do so will damage components on the SCB2.
Ensure the correct orientation, with the notches on the chip and socket lining up.
Ensure that no pins are bent when inserting the chip.



2.2 Reconnect Speed Trim Function

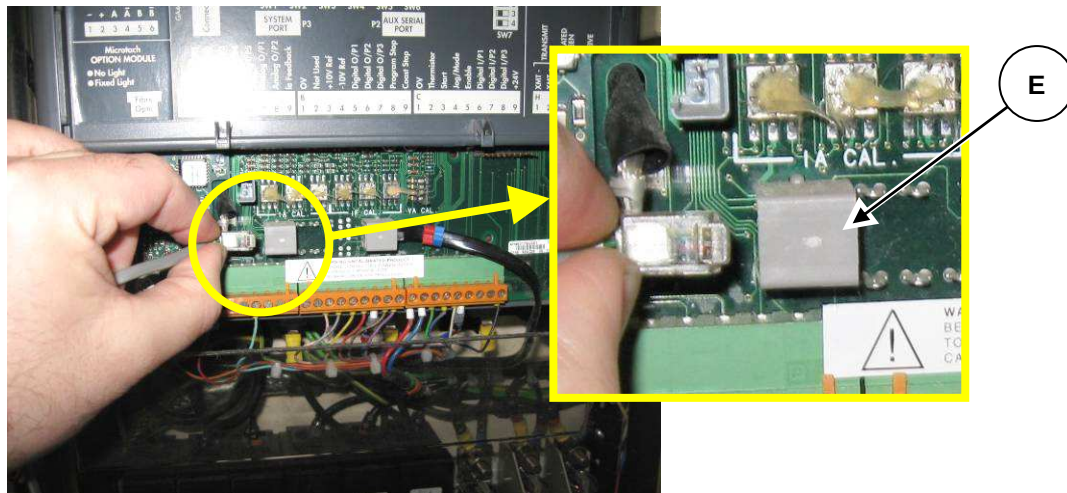
The Speed Trim function would have been disabled if the test bench has had the interim solution applied (Technical Bulletin TB186/22). If so, the function must be reconnected.

1. Lift the lower access panel on the 590 Drive (C).
2. Reconnect the RED/BBLUE wire to the 590 drive terminal A2 (D).



2.3 Fit Drive Communications Cable

Connect communications cable between the serial port of a laptop and the 590 Drive P3 port (E).



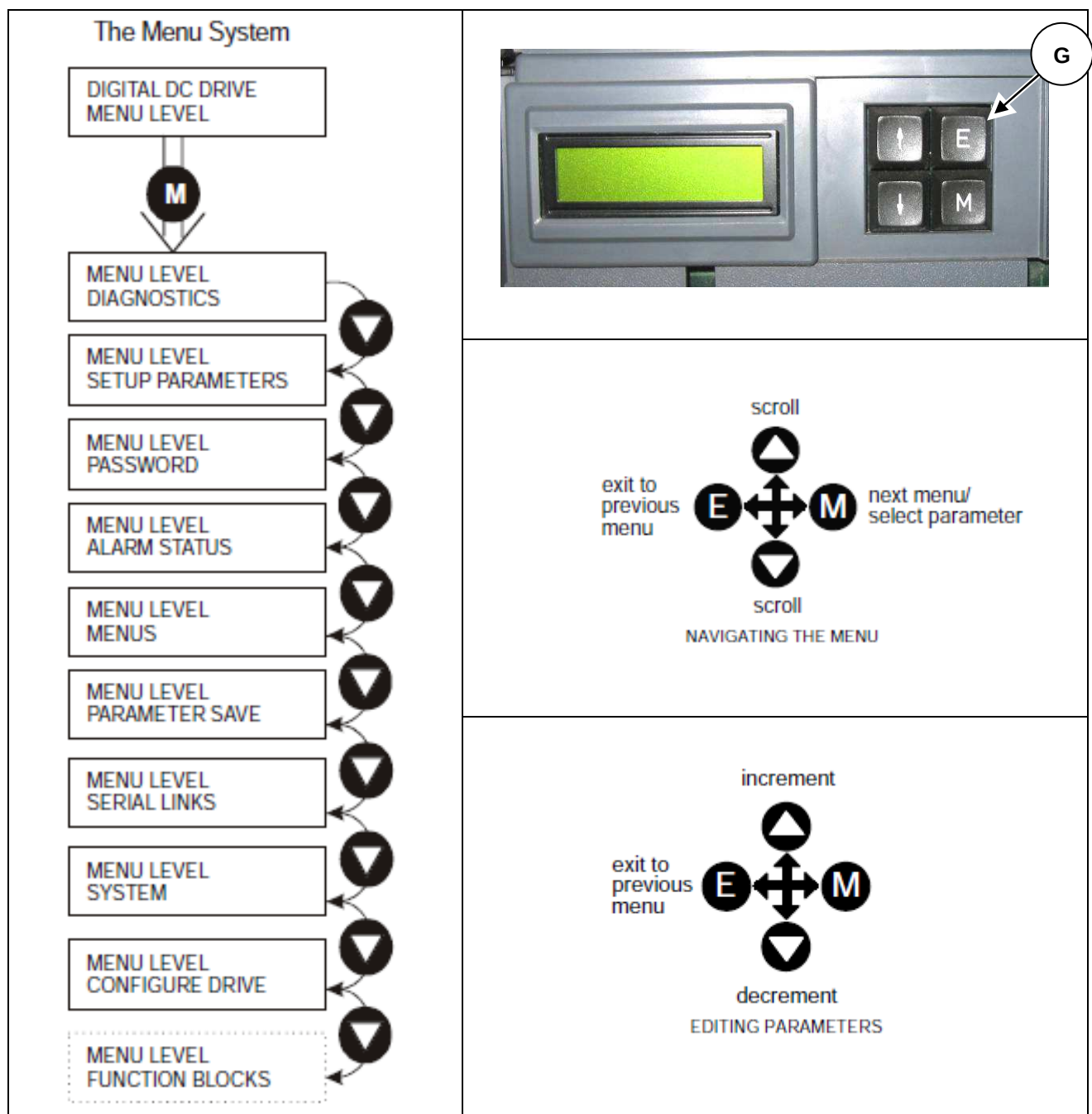
1. Switch on the power supply to the test bench
2. Flip down the upper access panel on the 590 Drive (F)



2.4 Drive Menu System:-

The menu system is divided into a 'tree' structure with 9 "MENU LEVEL" main menus.

The Menu System showing Main Menus and Key Presses is shown in the following diagram.



Navigating the Menu System:-

The Menu System can be thought of as a map which is navigated using the four keys on the Drive front panel (G).

- Keys E and M navigate through the menu levels.
- The up (▲) and down (▼) keys scroll through the Menu and Parameter lists.

Menus can contain other menus at a lower level in the tree structure, parameters, or a mixture of both.

The keys are used as above to select a parameter.

With the Parameter you want on view, the keys now perform different functions:

- Change a selection (i.e. ON/OFF) using the up (▲) and down (▼) keys.
- Change a value. The up (▲) and down (▼) keys increment/decrement the value.

The navigation through the drive menus varies depending on the version of drive unit fitted to the test bench. Lift the upper access panel and read the front of the drive.

If the product is labelled **590 DIGITAL SERIES**, follow the instructions in section **2.5**.

If the product is labelled **DC590 SERIES2**, follow the instructions in section **2.6**.

2.5 590 DIGITAL SERIES

1. Prepare the drive for file download, navigate the menu to set the drive into 'Receive' mode.

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										
1	M	Display shows ‘Diagnostics’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows ‘Serial Links’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							S	E	R	I	A	L		L	I	N	K	S				
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3	M	Display shows ‘Main Port P1’	<table><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr><tr><td>M</td><td>A</td><td>I</td><td>N</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>P</td><td>1</td><td></td><td></td><td></td><td></td></tr></table>	S	E	R	I	A	L		L	I	N	K	S					M	A	I	N		P	O	R	T		P	1				
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4	↓	Until display shows ‘System Port (P3)’	<table><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr></table>	S	E	R	I	A	L		L	I	N	K	S					S	Y	S	T	E	M		P	O	R	T		(	P	3	)
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S	Y	S	T	E	M		P	O	R	T		(	P	3	)																				
5	M	Display shows ‘P3 Setup’	<table><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr><tr><td>P</td><td>3</td><td></td><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	S	Y	S	T	E	M		P	O	R	T		(	P	3	)	P	3		S	E	T	U	P								
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P	3		S	E	T	U	P																												

6	↓	Until display shows 'UDP Xfer <- P3'	<table><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td><</td><td>-</td><td></td><td>P</td><td>3</td><td></td><td></td></tr></table>	S	Y	S	T	E	M		P	O	R	T		(	P	3	)	U	D	P		X	F	E	R		<	-		P	3		
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7	M	Display shows 'Up To Action'	<table><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td><</td><td>-</td><td></td><td>P</td><td>3</td><td></td><td></td></tr><tr><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td><td></td></tr></table>	U	D	P		X	F	E	R		<	-		P	3			U	P		T	O		A	C	T	I	O	N				
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U	P		T	O		A	C	T	I	O	N																								
8	↑	Display shows 'Receiving'	<table><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td><</td><td>-</td><td></td><td>P</td><td>3</td><td></td><td></td></tr><tr><td>R</td><td>E</td><td>C</td><td>E</td><td>I</td><td>V</td><td>I</td><td>N</td><td>G</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	U	D	P		X	F	E	R		<	-		P	3			R	E	C	E	I	V	I	N	G							
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2. Transfer the new parameter file AVM2-PC3.UDP

See section 2.8, *TRANSFER OF NEW AVM2-PC3.UDP DRIVE PARAMETER FILE*

At the end of file transfer select E to restart

3. Save parameters (list key presses from restart position)

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
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M	E	N	U		L	E	V	E	L																										
1	M	Display shows 'Diagnostics'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows 'Parameter Save'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	R	A	M	E	T	E	R		S	A	V	E		
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P	A	R	A	M	E	T	E	R		S	A	V	E																						
3	M	Display shows 'Up To Action'	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			U	P		T	O		A	C	T	I	O	N				
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U	P		T	O		A	C	T	I	O	N																								
4	↑	Display shows 'Finished' When completed	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>F</td><td>I</td><td>N</td><td>I</td><td>S</td><td>H</td><td>E</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			F	I	N	I	S	H	E	D								
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F	I	N	I	S	H	E	D																												
5	E	Press 'E' repeatedly until display shows 'Menu Level'	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
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4. Autotune

The user must enter the password into the 590 drive before they can change parameters or do an autotune. Set the PASSWORD to 42:-

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										
1	M	Display shows ‘Diagnostics’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows ‘Password’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	S	S	W	O	R	D								
M	E	N	U		L	E	V	E	L																										
P	A	S	S	W	O	R	D																												
3	M	Display shows ‘Enter Password’	<table><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr></table>	P	A	S	S	W	O	R	D									E	N	T	E	R		P	A	S	S	W	O	R	D		
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E	N	T	E	R		P	A	S	S	W	O	R	D																						
4	M	Display shows 0x0000	<table><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr><tr><td></td><td>0</td><td>x</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	E	N	T	E	R		P	A	S	S	W	O	R	D				0	x	0	0	0	0									
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	0	x	0	0	0	0																													
5	↑	Until display shows ‘0x0042’	<table><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr><tr><td></td><td>0</td><td>x</td><td>0</td><td>0</td><td>4</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	E	N	T	E	R		P	A	S	S	W	O	R	D				0	x	0	0	4	2									
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	0	x	0	0	4	2																													

Set the drive into AUTOTUNE mode:-

6	E	Display shows 'Enter Password'	<table><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr></table>	P	A	S	S	W	O	R	D									E	N	T	E	R		P	A	S	S	W	O	R	D		
P	A	S	S	W	O	R	D																												
E	N	T	E	R		P	A	S	S	W	O	R	D																						
7	E	Display shows 'Password'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	S	S	W	O	R	D								
M	E	N	U		L	E	V	E	L																										
P	A	S	S	W	O	R	D																												
8	↑	Until display shows 'Setup Parameters'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr></table>	M	E	N	U		L	E	V	E	L							S	E	T	U	P		P	A	R	A	M	E	T	E	R	S
M	E	N	U		L	E	V	E	L																										
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
9	M	Display shows 'Ramps'	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>R</td><td>A</td><td>M</td><td>P</td><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	R	A	M	P	S											
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
R	A	M	P	S																															
10	↓	Until display shows 'Current Loop'	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	C	U	R	R	E	N	T		L	O	O	P				
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
C	U	R	R	E	N	T		L	O	O	P																								

11	M	Display shows 'Cur. Limit/Scaler'	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td></tr><tr><td>C</td><td>U</td><td>R</td><td>.</td><td>L</td><td>I</td><td>M</td><td>I</td><td>T</td><td>/</td><td>S</td><td>C</td><td>A</td><td>L</td><td>E</td><td>R</td></tr></table>	C	U	R	R	E	N	T		L	O	O	P				C	U	R	.	L	I	M	I	T	/	S	C	A	L	E	R
C	U	R	R	E	N	T		L	O	O	P																							
C	U	R	.	L	I	M	I	T	/	S	C	A	L	E	R																			
12	↓	Until display shows 'Autotune'	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td></tr><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	C	U	R	R	E	N	T		L	O	O	P				A	U	T	O	T	U	N	E								
C	U	R	R	E	N	T		L	O	O	P																							
A	U	T	O	T	U	N	E																											
13	M	Display shows 'OFF'	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E								O	F	F													
A	U	T	O	T	U	N	E																											
O	F	F																																
14	↑	Display shows 'ON'	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>O</td><td>N</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E								O	N														
A	U	T	O	T	U	N	E																											
O	N																																	

Start the drive.

Autotuning will now commence (motor will hum but remain stationary). When it is complete, the drive contactor will drop out automatically and the 'Autotune flag' will be set OFF

5. Save modified parameters (BEFORE switching OFF)!

Step	Press		Digital Display																																
		End Of Autotune	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E								O	F	F														
A	U	T	O	T	U	N	E																												
O	F	F																																	
1	E	Display shows 'Autotune'	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td></tr><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	C	U	R	R	E	N	T		L	O	O	P				A	U	T	O	T	U	N	E									
C	U	R	R	E	N	T		L	O	O	P																								
A	U	T	O	T	U	N	E																												
2	E	Display shows 'Current Loop'	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	C	U	R	R	E	N	T		L	O	O	P				
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
C	U	R	R	E	N	T		L	O	O	P																								
3	E	Display shows 'Setup Parameters'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr></table>	M	E	N	U		L	E	V	E	L						S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	
M	E	N	U		L	E	V	E	L																										
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
4	↓	Until display shows 'Parameter Save'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td></tr></table>	M	E	N	U		L	E	V	E	L						P	A	R	A	M	E	T	E	R		S	A	V	E			
M	E	N	U		L	E	V	E	L																										
P	A	R	A	M	E	T	E	R		S	A	V	E																						
5	M	Display shows 'Up To Action'	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td></tr><tr><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E		U	P		T	O		A	C	T	I	O	N					
P	A	R	A	M	E	T	E	R		S	A	V	E																						
U	P		T	O		A	C	T	I	O	N																								
6	↑	Display shows 'Finished' When completed	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td></tr><tr><td>F</td><td>I</td><td>N</td><td>I</td><td>S</td><td>H</td><td>E</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E		F	I	N	I	S	H	E	D									
P	A	R	A	M	E	T	E	R		S	A	V	E																						
F	I	N	I	S	H	E	D																												

2.6 DC590 SERIES 2

1. Prepare the drive for file download, navigate the menu to set the drive into 'Receive' mode.

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										
1	M	Display shows ‘Diagnostics’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows ‘Serial Links’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							S	E	R	I	A	L		L	I	N	K	S				
M	E	N	U		L	E	V	E	L																										
S	E	R	I	A	L		L	I	N	K	S																								
3	M	Display shows ‘Main Port P1’	<table><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr><tr><td>M</td><td>A</td><td>I</td><td>N</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>P</td><td>1</td><td></td><td></td><td></td><td></td></tr></table>	S	E	R	I	A	L		L	I	N	K	S					M	A	I	N		P	O	R	T		P	1				
S	E	R	I	A	L		L	I	N	K	S																								
M	A	I	N		P	O	R	T		P	1																								
4	↓	Until display shows ‘System Port (P3)’	<table><tr><td>S</td><td>E</td><td>R</td><td>I</td><td>A</td><td>L</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td>S</td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr></table>	S	E	R	I	A	L		L	I	N	K	S					S	Y	S	T	E	M		P	O	R	T		(	P	3	)
S	E	R	I	A	L		L	I	N	K	S																								
S	Y	S	T	E	M		P	O	R	T		(	P	3	)																				
5	M	Display shows ‘P3 Setup’	<table><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr><tr><td>P</td><td>3</td><td></td><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	S	Y	S	T	E	M		P	O	R	T		(	P	3	)	P	3		S	E	T	U	P								
S	Y	S	T	E	M		P	O	R	T		(	P	3	)																				
P	3		S	E	T	U	P																												
6	↓	Until display shows ‘UDP Xfer (RX)’	<table><tr><td>S</td><td>Y</td><td>S</td><td>T</td><td>E</td><td>M</td><td></td><td>P</td><td>O</td><td>R</td><td>T</td><td></td><td>(</td><td>P</td><td>3</td><td>)</td></tr><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td>(</td><td>R</td><td>X</td><td>)</td><td></td><td></td><td></td></tr></table>	S	Y	S	T	E	M		P	O	R	T		(	P	3	)	U	D	P		X	F	E	R		(	R	X	)			
S	Y	S	T	E	M		P	O	R	T		(	P	3	)																				
U	D	P		X	F	E	R		(	R	X	)																							
7	M	Display shows ‘Up To Action’	<table><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td>(</td><td>R</td><td>X</td><td>)</td><td></td><td></td><td></td></tr><tr><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td><td></td></tr></table>	U	D	P		X	F	E	R		(	R	X	)				U	P		T	O		A	C	T	I	O	N				
U	D	P		X	F	E	R		(	R	X	)																							
U	P		T	O		A	C	T	I	O	N																								
8	↑	Display shows ‘Receiving’	<table><tr><td>U</td><td>D</td><td>P</td><td></td><td>X</td><td>F</td><td>E</td><td>R</td><td></td><td>(</td><td>R</td><td>X</td><td>)</td><td></td><td></td><td></td></tr><tr><td>R</td><td>E</td><td>C</td><td>E</td><td>I</td><td>V</td><td>I</td><td>N</td><td>G</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	U	D	P		X	F	E	R		(	R	X	)				R	E	C	E	I	V	I	N	G							
U	D	P		X	F	E	R		(	R	X	)																							
R	E	C	E	I	V	I	N	G																											

2. Transfer the new parameter file AVM2-PC3.UDP

See section 2.8, *TRANSFER OF NEW AVM2-PC3.UDP DRIVE PARAMETER FILE*

At the end of file transfer select E to restart.

3. Save parameters (list key presses from restart position)

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										
1	M	Display shows 'Diagnostics'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows 'Parameter Save'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	R	A	M	E	T	E	R		S	A	V	E		
M	E	N	U		L	E	V	E	L																										
P	A	R	A	M	E	T	E	R		S	A	V	E																						
3	M	Display shows 'Up To Action'	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>→</td><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			→	U	P		T	O		A	C	T	I	O	N			
P	A	R	A	M	E	T	E	R		S	A	V	E																						
→	U	P		T	O		A	C	T	I	O	N																							
4	↑	Display shows 'Finished' When completed	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>F</td><td>I</td><td>N</td><td>I</td><td>S</td><td>H</td><td>E</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			F	I	N	I	S	H	E	D								
P	A	R	A	M	E	T	E	R		S	A	V	E																						
F	I	N	I	S	H	E	D																												
5	E	Press 'E' repeatedly until display shows 'Menu Level'	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										

4. Autotune

The user must enter the password into the 590 drive before they can change parameters or do an autotune. Set the PASSWORD to 42:-

Step	Press		Digital Display																																
		Top level Menu	<table><tr><td>D</td><td>I</td><td>G</td><td>I</td><td>T</td><td>A</td><td>L</td><td></td><td>D</td><td>C</td><td></td><td>D</td><td>R</td><td>I</td><td>V</td><td>E</td></tr><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	D	I	G	I	T	A	L		D	C		D	R	I	V	E	M	E	N	U		L	E	V	E	L						
D	I	G	I	T	A	L		D	C		D	R	I	V	E																				
M	E	N	U		L	E	V	E	L																										
1	M	Display shows ‘Diagnostics’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>D</td><td>I</td><td>A</td><td>G</td><td>N</td><td>O</td><td>S</td><td>T</td><td>I</td><td>C</td><td>S</td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							D	I	A	G	N	O	S	T	I	C	S					
M	E	N	U		L	E	V	E	L																										
D	I	A	G	N	O	S	T	I	C	S																									
2	↓	Until display shows ‘Password’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	S	S	W	O	R	D								
M	E	N	U		L	E	V	E	L																										
P	A	S	S	W	O	R	D																												
3	M	Display shows ‘Enter Password’	<table><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr></table>	P	A	S	S	W	O	R	D									E	N	T	E	R		P	A	S	S	W	O	R	D		
P	A	S	S	W	O	R	D																												
E	N	T	E	R		P	A	S	S	W	O	R	D																						

4	M	Display shows 0x0000	<table><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr><tr><td>→</td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>x</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td></tr></table>	E	N	T	E	R		P	A	S	S	W	O	R	D			→						0	x	0	0	0	0				
E	N	T	E	R		P	A	S	S	W	O	R	D																						
→						0	x	0	0	0	0																								
5	↑	Until display shows '0x0042'	<table><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr><tr><td>→</td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>x</td><td>0</td><td>0</td><td>4</td><td>2</td><td></td><td></td><td></td><td></td></tr></table>	E	N	T	E	R		P	A	S	S	W	O	R	D			→						0	x	0	0	4	2				
E	N	T	E	R		P	A	S	S	W	O	R	D																						
→						0	x	0	0	4	2																								

Set the drive into AUTOTUNE mode:-

6	E	Display shows 'Enter Password'	<table><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>E</td><td>N</td><td>T</td><td>E</td><td>R</td><td></td><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td></tr></table>	P	A	S	S	W	O	R	D									E	N	T	E	R		P	A	S	S	W	O	R	D		
P	A	S	S	W	O	R	D																												
E	N	T	E	R		P	A	S	S	W	O	R	D																						
7	E	Display shows 'Password'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>S</td><td>S</td><td>W</td><td>O</td><td>R</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	S	S	W	O	R	D								
M	E	N	U		L	E	V	E	L																										
P	A	S	S	W	O	R	D																												
8	↑	Until display shows 'Setup Parameters'	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr></table>	M	E	N	U		L	E	V	E	L							S	E	T	U	P		P	A	R	A	M	E	T	E	R	S
M	E	N	U		L	E	V	E	L																										
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
9	M	Display shows 'Ramps'	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>R</td><td>A</td><td>M</td><td>P</td><td>S</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	R	A	M	P	S											
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
R	A	M	P	S																															
10	↓	Until display shows 'Current Loop'	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	C	U	R	R	E	N	T		L	O	O	P				
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
C	U	R	R	E	N	T		L	O	O	P																								
11	M	Display shows 'Main Curr. Limit'	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr><tr><td>M</td><td>A</td><td>I</td><td>N</td><td></td><td>C</td><td>U</td><td>R</td><td>R</td><td>.</td><td></td><td>L</td><td>I</td><td>M</td><td>I</td><td>T</td></tr></table>	C	U	R	R	E	N	T		L	O	O	P					M	A	I	N		C	U	R	R	.		L	I	M	I	T
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M	A	I	N		C	U	R	R	.		L	I	M	I	T																				
12	↓	Until display shows 'Autotune'	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	C	U	R	R	E	N	T		L	O	O	P					A	U	T	O	T	U	N	E								
C	U	R	R	E	N	T		L	O	O	P																								
A	U	T	O	T	U	N	E																												
13	M	Display shows 'OFF'	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>→</td><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E									→	O	F	F												
A	U	T	O	T	U	N	E																												
→	O	F	F																																
14	↑	Display shows 'Armature'	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>A</td><td>R</td><td>M</td><td>A</td><td>T</td><td>U</td><td>R</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E									A	R	M	A	T	U	R	E								
A	U	T	O	T	U	N	E																												
A	R	M	A	T	U	R	E																												

Start the drive.

Autotuning will now commence (motor will hum but remain stationary). When it is complete, the drive contactor will drop out automatically and the 'Autotune flag' will be set OFF

5. Save modified parameters (BEFORE switching OFF)!

Step	Press		Digital Display																																
		End Of Autotune	<table><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>→</td><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	A	U	T	O	T	U	N	E									→	O	F	F												
A	U	T	O	T	U	N	E																												
→	O	F	F																																
1	E	Display shows ‘Autotune’	<table><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr><tr><td>A</td><td>U</td><td>T</td><td>O</td><td>T</td><td>U</td><td>N</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	C	U	R	R	E	N	T		L	O	O	P					A	U	T	O	T	U	N	E								
C	U	R	R	E	N	T		L	O	O	P																								
A	U	T	O	T	U	N	E																												
2	E	Display shows ‘Current Loop’	<table><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr><tr><td>C</td><td>U</td><td>R</td><td>R</td><td>E</td><td>N</td><td>T</td><td></td><td>L</td><td>O</td><td>O</td><td>P</td><td></td><td></td><td></td><td></td></tr></table>	S	E	T	U	P		P	A	R	A	M	E	T	E	R	S	C	U	R	R	E	N	T		L	O	O	P				
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
C	U	R	R	E	N	T		L	O	O	P																								
3	E	Display shows ‘Setup Parameters’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>S</td><td>E</td><td>T</td><td>U</td><td>P</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td>S</td></tr></table>	M	E	N	U		L	E	V	E	L							S	E	T	U	P		P	A	R	A	M	E	T	E	R	S
M	E	N	U		L	E	V	E	L																										
S	E	T	U	P		P	A	R	A	M	E	T	E	R	S																				
4	↓	Until display shows ‘Parameter Save’	<table><tr><td>M</td><td>E</td><td>N</td><td>U</td><td></td><td>L</td><td>E</td><td>V</td><td>E</td><td>L</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr></table>	M	E	N	U		L	E	V	E	L							P	A	R	A	M	E	T	E	R		S	A	V	E		
M	E	N	U		L	E	V	E	L																										
P	A	R	A	M	E	T	E	R		S	A	V	E																						
5	M	Display shows ‘Up To Action’	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>→</td><td>U</td><td>P</td><td></td><td>T</td><td>O</td><td></td><td>A</td><td>C</td><td>T</td><td>I</td><td>O</td><td>N</td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			→	U	P		T	O		A	C	T	I	O	N			
P	A	R	A	M	E	T	E	R		S	A	V	E																						
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6	↑	Display shows ‘Finished’ When completed	<table><tr><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td><td>S</td><td>A</td><td>V</td><td>E</td><td></td><td></td></tr><tr><td>F</td><td>I</td><td>N</td><td>I</td><td>S</td><td>H</td><td>E</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	P	A	R	A	M	E	T	E	R		S	A	V	E			F	I	N	I	S	H	E	D								
P	A	R	A	M	E	T	E	R		S	A	V	E																						
F	I	N	I	S	H	E	D																												

2.7 END OF INSTALLATION

1. Remove the Communications cable from the 590 drive port P3.
2. Replace the drive access covers and replace the Test Bench right side upper panel.
3. Switch off the electrical supply to the AVM2-PC, wait several seconds and then re-apply power.
4. Start the main drive and run at 30rpm.
5. Set the Speed Trim switch on the console to the ⤵ position.
6. Check that adjustment of the Speed Trim pot does not allow the drive to reduce the speed below 30rpm.
7. Press F12 (set speed) on the AVM2-PC and set the Speed Trim Range to 250rpm.
8. Increase the drive speed to 500rpm.
9. Check the Speed Trim pot can adjust the speed between 250 and 750rpm.
10. Set the Speed Trim switch to the 'n' position and check the drive runs at 500rpm.
11. Stop the drive.

2.8 TRANSFER OF NEW AVM2-PC3.UDP DRIVE PARAMETER FILE

Go to <https://sw.hartridge.com> and download the installation file *HS314_590DriveUpdate-Setup.exe*.

Double click on the file to start the 590 Drive update sequence.



Click on the Install button.

Enter a serial port from the available list.

```
Available comm ports:
['COM1', 'COM5']
Enter the comm number or port name: com5_
```

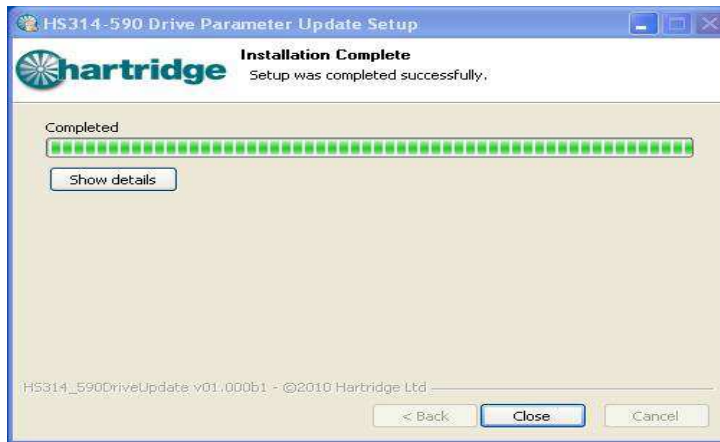
The file will start downloading...

```
Available comm ports:
['COM1', 'COM5']
Enter the comm number or port name: com5
Port Information:
Serial(id=0x972990, open=True)<port='com5', baudrate=9600, bytesize=8, parity='N',
stopbits=1, timeout=None, xonxoff=1, rtscts=0, dsrdtr=0>
Starting Download...
:10E1000012A23C006400640001004B00000000000B
:10E11000010001000000000000C800C800581B504664
```

When the download is complete the following screen will be presented.

```
:10E4D0000000010000000000000000000F001F10158
:08E4E0000000010000000000000033
:00000001FF
Press any key to continue...
```

Press any key to continue.



Press the close button to complete the download.

3. Additional Information

If you have any concerns about fitting this kit, please contact Hartridge Customer Support.

Tel +44 (0)1280 825 650 or email support@hartridge.com