



Guide to setting up a Sieb & Meyer 21-60 or 21-62 converter For using as a spindle running rig

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Setting the Sieb & Meyer converter

A: Initial powering up

Initially switch the test set followed by the converter, only green lights should be displayed on the drive, if a red fault light appears this possibly is caused by:

1. The test set is not switched on.
2. The thermocouple is not linked out.
3. The spindle has a short.

Switch off the drive unit and test set; carry out an examination to rectify the fault

Once the fault has been diagnosed and rectified then repeat the sequence of switching off all items and repeat the powering up operation as above. If the fault has been corrected then the fault light will not appear



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B: Pre-programmed characteristic curve

Once the powering up operation has successfully been completed the handset should display the following:

- 1 Operation
- 2 Programming

Select the operation function (1). The hand set will now display the characteristic curve option. Type in the curve number that has previously been defined - this will now bring up on the handset the following options:

- 1 Frequency indication
- 2 Speed indication
- 3 Power indication
- 4 Load indication

Select frequency indication (1). Now type in the frequency you wish to run at (Note: this is the input frequency and not the actual rotational speed of the spindle).

Select the enter key () and then press the start key. The spindle will now run up to the input frequency defined following the characteristics as pre-defined including the ramp up/down time, bending points limit settings.



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C: Programming the characteristic curve

Once the powering up operation has successfully been completed the handset should display the following:

- 1 Operation
- 2 Programming

Select the programming function (2) (). The handset will now display the 4-digit password code option. Type in the code number that has been previously been defined (default code set by manufacture = 0000). The handset will now display the following options:

- 1 Characteristic curve
- 2 Bending point
- 3 Limit settings
- 4 Number of poles

Select Characteristic curve option (1) (). Now you can type a curve number which you wish to use that has previously not been used (note if you type in a previously defined curve number you will overwrite the stored information). Make a note of the curve numbers used and for what purpose it had been generated e.g. curve 01 = spindle type DXXXX-XX standard set-up.



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Now select option 2 () the bending point option. This will allow you to input the knee points (also known as the dog legs). This information is the frequency against the TRUE output voltage, not the displayed voltage on the hand set (see note 1 to see how to find the true output voltage). If there is no knee point required e.g. then only add the final frequency and voltage (a linear straight line).

Once the final operating speed has been added then an additional point is included. This has the same voltage as per the top speed defined on the outline graph but the frequency is higher, this value is higher by the operating slip value (to ensure that the shaft is the required operating speed). A list of standard bending curves for spindles is listed within the appendix. Press enter () and to store the change press run and the option of save data +/- will be displayed select + to store

Note 1.

The true output voltage can be measured by using a Fluke III multimeter: Connect the meter between two of the phase wires and set the multimeter to volts without any other equipment connected. Start the drive and select operate. Select the required spindle curve that has been pre-programmed and select frequency. Type in the first knee point frequency and then start. Confirm that the voltage reading is that quoted on the outline drawing. If not, then adjust the voltage within the programming operation to give the required voltage.



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If you need to change the limit settings e.g. the ramp time/current limit/voltage limit, then select 3 (limits setting in the main menu). This will display a menu for the limit settings as follows:

1. Current limit
2. Acceleration/deceleration limits
3. Minimum frequency
4. Voltage limit

The options are very much self-explanatory and are customer dependant. For development trials the acceleration ramp up should be set initially for 30 seconds and the deceleration should be set for 20 seconds. This is to record the changes in temperature during testing and ensures safety during the development of new designs. Once the design has been proven then this should be set to a worse case scenario to ensure the spindle performs throughout its speed range within the spindle design specification.

Press enter () and to store the change press run. The option of save data +/- will be displayed, select + to store.



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Standard Westwind settings

Character Curve

Character curve CC XX (Programmed – customer defined)

Bending Points BP XX (Defined on the outline drawing)

| | | | |
|------------------------|-------|---|-----------------------|
| Current limit | I Max | = | 5A |
| Acc / Decel | t-acc | = | 120 sec |
| | t-dec | = | 30 sec |
| Min frequ | f min | = | 000Hz |
| No of Poles | Poles | = | 2 |
| Compensations | Slip | = | 0% |
| | IxR | = | 0% |
| Loading Sensitivity | S | = | 4 |
| Holding Current | I | = | 0 |
| | T | = | 0 |
| Reference Value Source | | = | Set to remote control |



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Standard Westwind Bending Curves

Ref only: CHECK TO OUTLINE DWG. (The output voltages require checking on a meter against the outline dwg)

| | | | | | |
|--|------------------|-----|------|------|------|
| D1201-01 | Voltage (V) = | 130 | 152 | 152 | |
| | Frequency (Hz) = | 600 | 1897 | 1897 | |
| D1633-02 | Voltage (V) = | 60 | 145 | 150 | 150 |
| | Frequency (Hz) = | 250 | 800 | 2000 | 2000 |
| D1473-01/03/05 | Voltage (V) = | 92 | 203 | 203 | |
| | Frequency (Hz) = | 500 | 3150 | 3150 | |
| D1600-01 | Voltage (V) = | 60 | 145 | 160 | 160 |
| | Frequency (Hz) = | 250 | 800 | 2195 | 2195 |
| D1199-03 | Voltage (V) = | 130 | 160 | 166 | 166 |
| | Frequency (Hz) = | 600 | 1833 | 2195 | 2195 |
| D1331-17 / 28 / 41 / 42 / 47 / 13 / 55 / 68 / 54 | Voltage (V) = | 130 | 166 | 166 | 166 |
| | Frequency (Hz) = | 600 | 2083 | 2150 | 2150 |
| D1531-08/09/11 | Voltage (V) = | 55 | 170 | 170 | |
| | Frequency (Hz) = | 500 | 2565 | 2565 | |
| D1686-03 | Voltage (V) = | 92 | 242 | 242 | |
| | Frequency (Hz) = | 500 | 3150 | 3150 | |
| D1331-26/36/48 | Voltage (V) = | 140 | 220 | 220 | |
| | Frequency (Hz) = | 600 | 2195 | 2195 | |
| D1633-02 | Voltage (V) = | 60 | 145 | 150 | 150 |
| | Frequency (Hz) = | 250 | 800 | 2000 | 2000 |
| D1296-11 | Voltage (V) = | 145 | 194 | 194 | |
| | Frequency (Hz) = | 583 | 1667 | 1667 | |
| D1331-24 | Voltage (V) = | 140 | 212 | 212 | |
| | Frequency (Hz) = | 600 | 2195 | 2195 | |
| D1524-05 | Voltage (V) = | 120 | 165 | 165 | |
| | Frequency (Hz) = | 600 | 2195 | 2195 | |
| D1251-03 | Voltage (V) = | 145 | 180 | 180 | |
| | Frequency (Hz) = | 583 | 1333 | 1333 | |
| D1473-01/07/09 | Voltage (V) = | 92 | 230 | 230 | |
| | Frequency (Hz) = | 500 | 2833 | 2833 | |
| D1686-10/11/12 | Voltage (V) = | 90 | 131 | 200 | 200 |
| | Frequency (Hz) = | 500 | 1000 | 3110 | 3110 |
| D1566-04 | Voltage (V) = | 80 | 229 | 229 | |
| | Frequency (Hz) = | 500 | 2790 | 2790 | |
| M320-24 | Voltage (V) = | 45 | 130 | 130 | |
| | Frequency (Hz) = | 250 | 1360 | 1360 | |
| D1722-03 | Voltage (V) = | 90 | 131 | 189 | 189 |
| | Frequency (Hz) = | 500 | 1000 | 2760 | 2760 |
| D1722-04 | Voltage (V) = | 90 | 131 | 215 | 215 |
| | Frequency (Hz) = | 500 | 1000 | 2800 | 2800 |
| D1769-01 | Voltage (V) = | 80 | 131 | 189 | 189 |
| | Frequency (Hz) = | 500 | 1000 | 2760 | 2760 |