

Motor Power Cable & Stator Winding Testing Methods

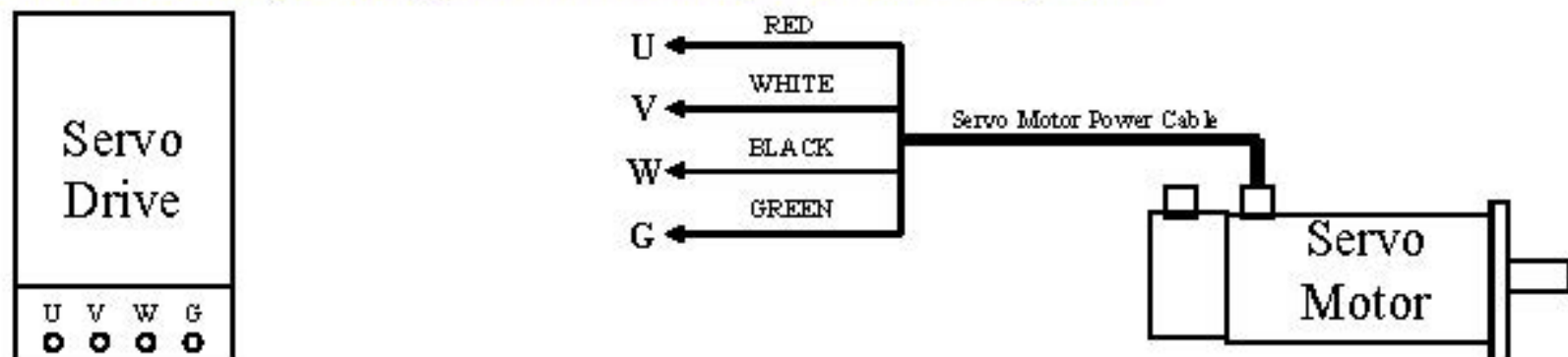
Servo Motor Troubleshooting

Determine If Either the Cable and/or The Motor is Defective

Step #1 Disconnect Motor Power Cable From Servo Drive At The "U, V, W & G" Terminals As Shown Below.

If you are using a Ohm meter, follow Step #2

If you are using a Meg-Ohm meter, follow Step #3



Motor Stator Or Cable Issues Can Cause Many Drive Faults Including "High Or Excessive" Current Errors, Positioning Errors, Intermittent Faults As Well As Many Others.

Prepared by, Date: Paul Samps on, Date	Approved by, Date: K. Dehl, Date	Title: Servo Motor Trouble Shooting Guide	Page 1 of 1
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Testing With A Meg-Ohmmeter



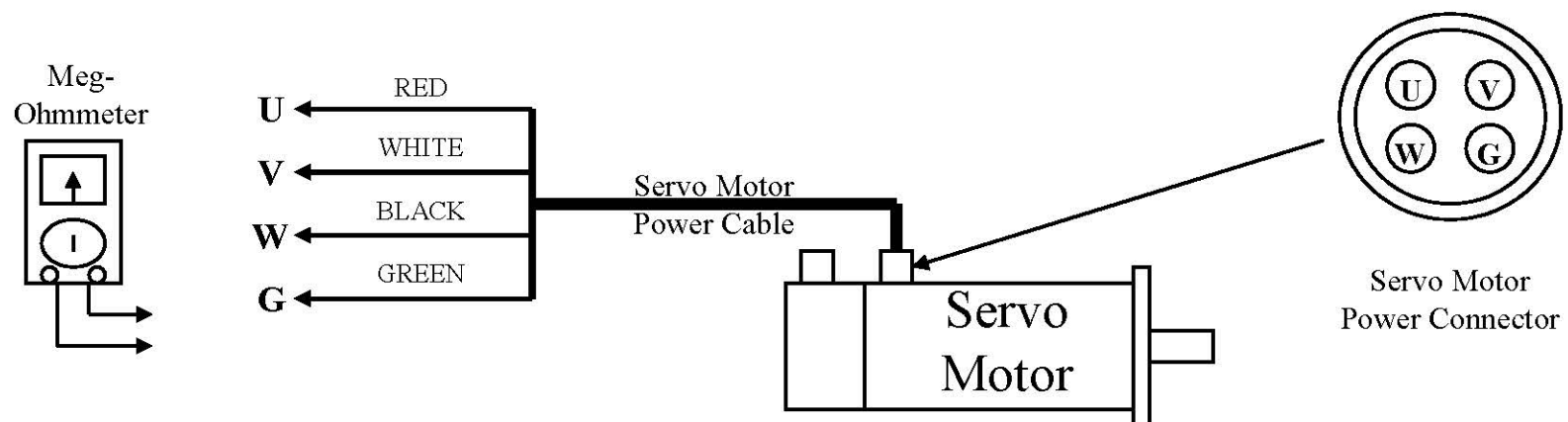
Test Determines If Either the Cable or The Motor is "Grounded"

Step #4 Disconnect The Power Cable Connector From The Motor End. Use The Meg-Ohmmeter To Measure The Resistance Between "G" (Earth Ground) And Each Of The "U, V & W" Phases On The Motor Power Cable.

If It Shows Less than 500 Meg-Ohm's Between The "G" And Any Of The "U,V Or W" Wires, The Cable Is Bad.

If Not, Meg Test The Servo Motor. Use The Meg-Ohmmeter To Measure The Resistance Between "G" And Each Of The "U, V & W" Pins On The Motor Power Connector.

If It Shows Less than 500 Meg-Ohm's Between The "G" And Any Of The "U,V or W" Pins, The Motor Is Bad.



Testing With A Meg-Ohmmeter

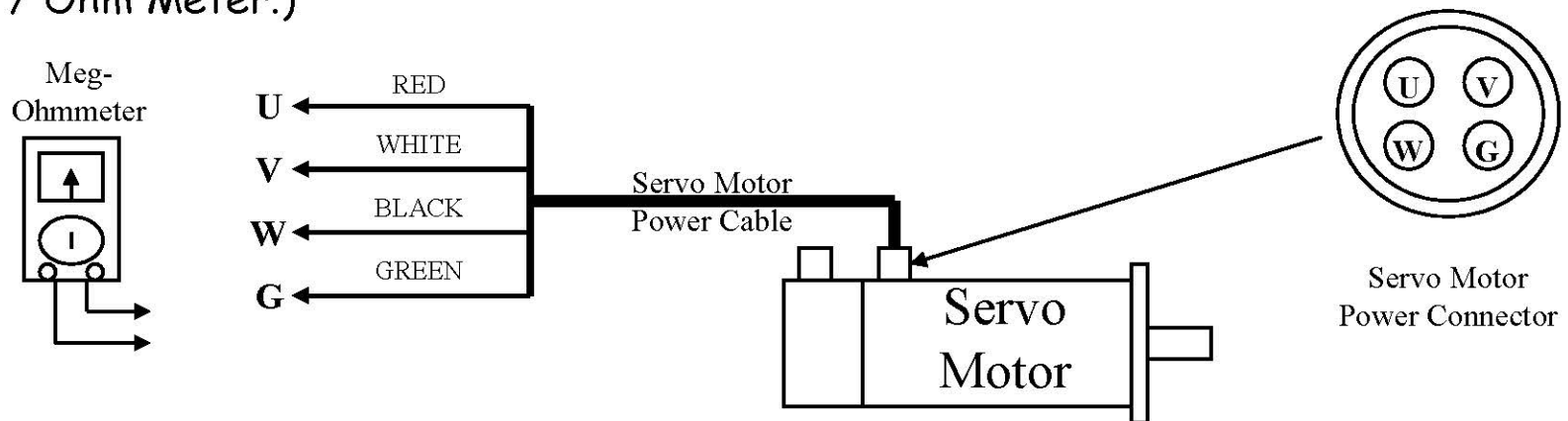


Test Determines if you Have A Short Or Any Resistance At All Between The "G" Ground Wire And Any Of The Motor Power Phase Wiring.

Ideally There Should Be Infinite Resistance (Greater Than 1 Gig Ohm or 1000 Meg Ohm) Between The Ground Wire And Any Of The Other Motor Power Conductors!

Step #3: Use A Meg-Ohmmeter To Measure The Resistance Between "G" (Earth Ground) And Each Of The "U, V & W" Phases On The Motor Power Cable. Measure Between "G to U", Then "G to V", Then "G to W".

A Reading Of Less Than "500" Meg-Ohms Indicates That Either Your Motor Or Cable Is "Grounded". (A Standard Volt / Ohm Meter Cannot Be Used For This Test Since Standard Meters Can Only Measure Resistances Up To 20 Meg Ohm's. A Value Of 100 Meg Ohms Measured On A Meg-Ohmmeter Would Not Even Register On A Regular Volt / Ohm Meter.)



Testing With A Ohmmeter

Overall Resistance Symmetry Testing



Step #2: Use A Standard Volt / Ohm Meter To Measure The Resistance Between Each Of The "U, V & W" Phases On The Motor Power Cable. Measure "U to V", Then "U to W" Then "V to W". Record Your Measurements!

*If The Readings Are All Symmetrical, proceed to Step#2A. This Is Normal. Symmetry Is What Is Important. This means the Readings Will Be A Value Close To Zero Ohm's. (Appearing Shorted) This Is Due To The Low Internal Resistance Of The Servo Motors Stator Windings.

Step #2A: If The Motor Power Cable Checks As "OK", You Will Now Have To Perform The Symmetry Test Once Again On The Actual Servo Motor Power Connector Pins To Check For Internal Shorts Or Opens Inside The Motors Stator Windings. Replace Either The Cable Or Servo Motor As Necessary.

*If There Is A "Significant Difference" In The Ohm Readings, Either A Greater Or Lesser Resistance Between Any Of The Measured Phases, Then The Power Cable Or The Servo Motor Itself Is Obviously Defective. At This Point, You Will Have To Disconnect The Power Cable Connector From The Motor End. Use The Meter To Ohm Out The Cable "Line To Line & End To End" To Check For Shorted Or Open Wiring Inside The Motor Power Cable Itself.

