TB165 C0001 Stepper Motor Obsolescence

The C0001 stepper motor used on the G axis of flowlines and on all motors on the router has become obsolete. A replacement will be available using the same Stuga part number

Contents

Technical Bulletin

TB Number:	165
Originator:	Gareth Green
Machine:	Router, Mk3, ZX, Microline
Date:	15/06/10
Circulate to:	Service
Title:	C0001 Stepper Motor Obselescence
Revision 1	Error in L series colours 2nd Black should be Yellow/White
Revision 2	Added 5 pin plug pin nos to table
Revision 3	Pins 3 and 4 in table wrong way round
Revision 4	Wiring for Mclennan 34HSX Motor

The C0001 stepper motor used on the G axis of flowlines and on all motors on the router has become obsolete.
A replacement will be available using the same Stuga part number
Old Manufacturer's number: SMS343-098-S-FN
New Manufacturer's Number: SMR343-090-L-FN

The new version is mechanically the same. It's a rare earth magnet construction (S series was standard magnets) which will provide about 30-40% more torque. The current setting on the drives should be the same too – so no need to adjust drive current in new or existing installations.

The wiring is the only change we need to be aware of – they have the same colours, but (confusingly) they are used for different purposes!

	Phase							
Motor	**B-**	**B+**	**B-**	**B+**	**A+**	**A-**	**A+**	**A-**
S Series Original	Green	Orange	Black/ White	Green/ White	Red/ White	White	Black	Red
L Series Replacement	Black	Black/ White	Orange/ White	Orange	Red	Red/ White	Yellow / White	Yellow
Mclennan 34HSX	Black	Black/ White	Orange/ White	Orange	Red	Red/ White	Yellow / White	Yellow
Pin Number (5pin plug on ZX / Microline	1	3	1	3	4	2	4	2

...Note: To reverse the direction of a stepper motor, swap the wires in pins 1 and 3 to reverse the polarity in one set of coils

Datasheet for Mclennan motor

See here for website data

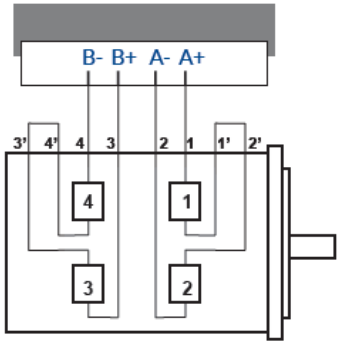
Wiring Configurations for Bipolar operation

Coils in series

8 lead motors can be connected as shown.

When operating a 4 phase motor with series connected coils the maximum allowable phase current must be reduced as follows:

Max allowable phase current = $\frac{\text{Uni-polar rating}}{1.41}$

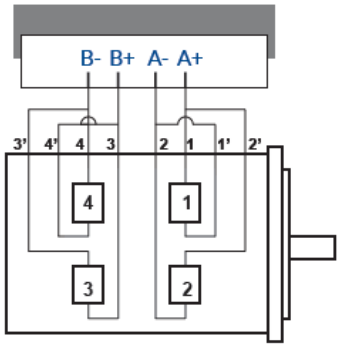


Coils in parallel

This method of connection can only be applied to motors having 8 leads. It is particularly advantageous in providing a combination of strong mid range torque and high speed operation since the effective inductance of the parallel connected winding is unchanged.

The maximum allowable Unipolar phase current may be increased as shown below.

Maximum allowable current = **1.41 x Uni-polar rating**



Motor	Configuration	Phase A+		Phase A-		Phase B+		Phase B-	
23HSX	Series	Red	Yellow/White Red/White		Yellow	Orange	Orange/White Brown/White		Brown
23HSX	Parallel	Red	Yellow/White	Red/White	Yellow	Orange	Brown/White	Orange/White	Brown
34HSX	Series	Red	Yellow/White Red/White		Yellow	Orange	Orange/White Black/White		Black
34HSX	Parallel	Red	Yellow/White	Red/White	Yellow	Orange	Black/White	Orange/White	Black
34HSS	Series	Grey	Red/Yellow		Blue	Brown	Black/Orange		White
34HSS	Parallel	Grey	Yellow	Red	Blue	Brown	Black	Orange	White

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