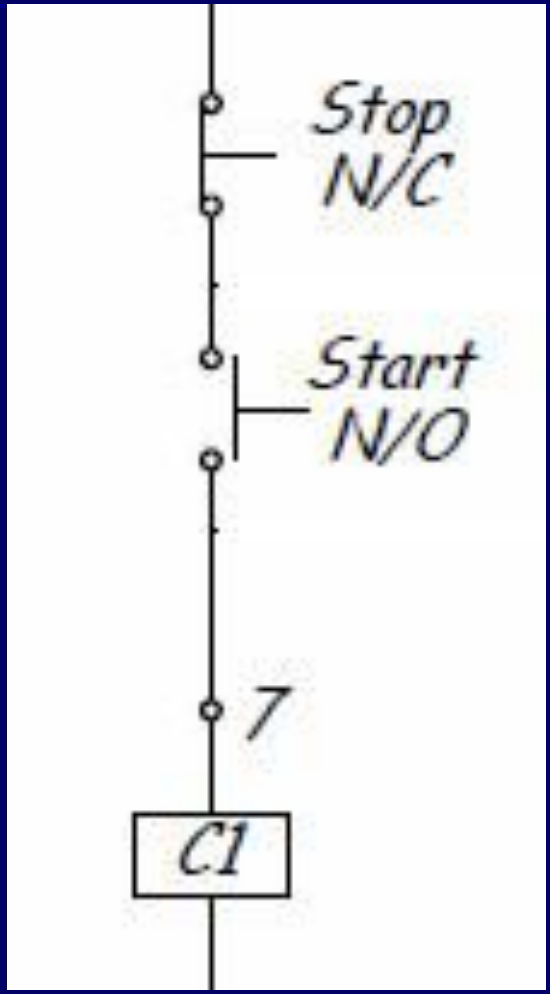
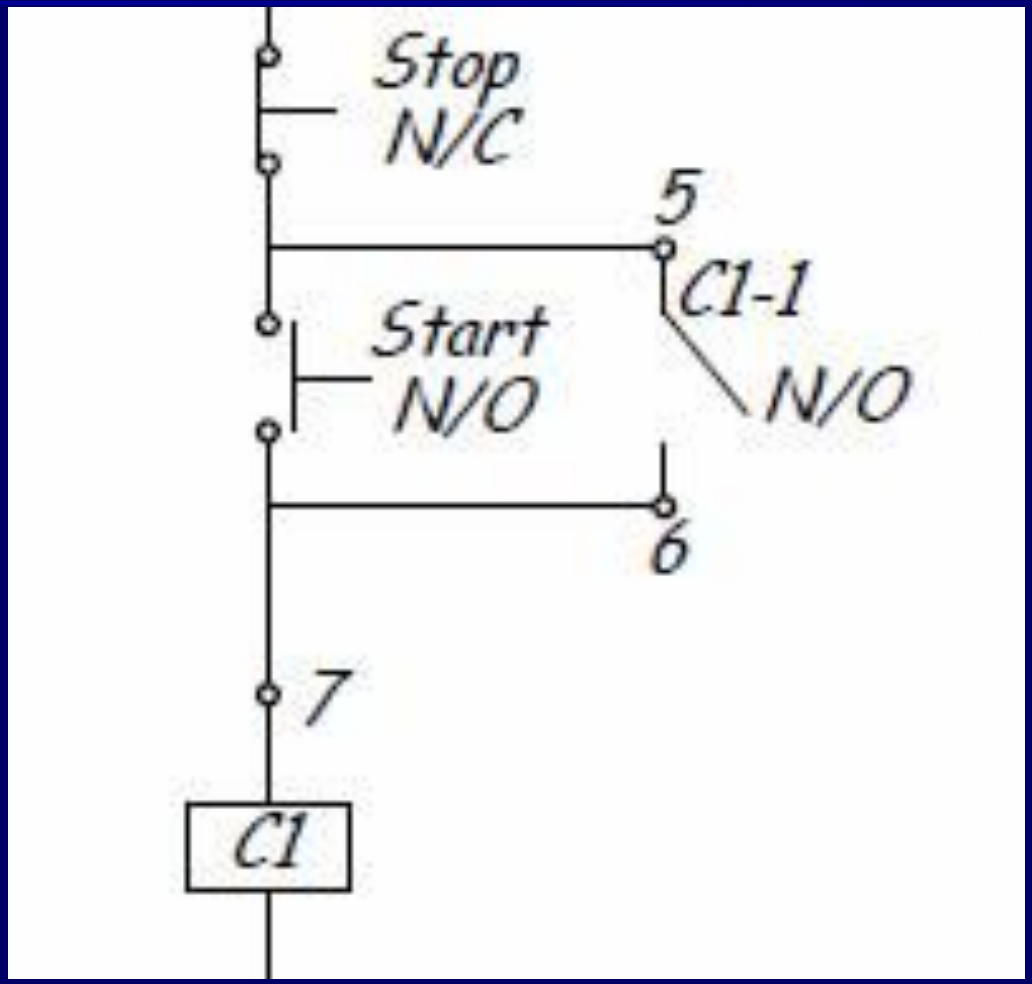
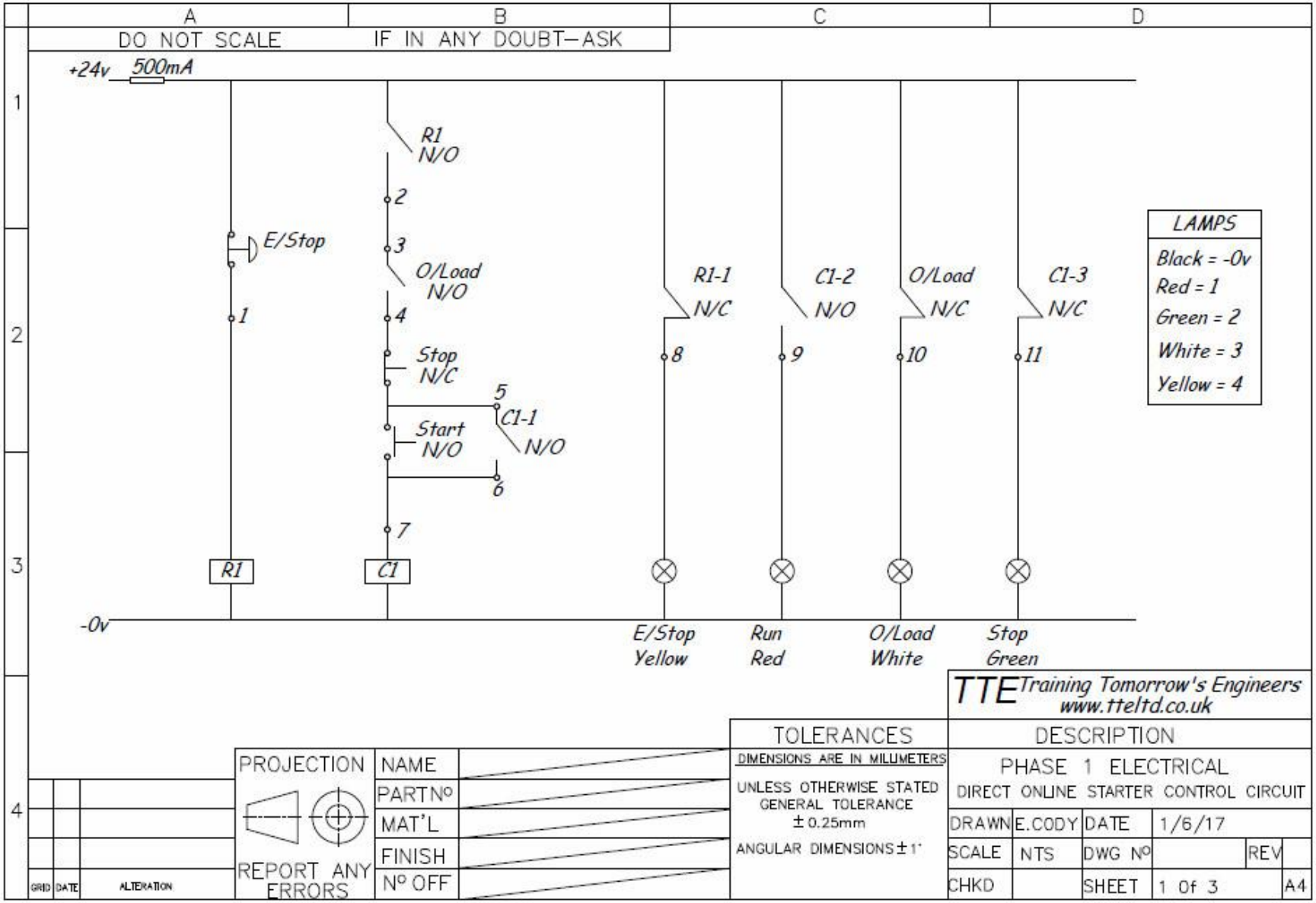
Motor Control Circuit And Assignment

Basic Stop Start
Direct On Line (D.O.L)

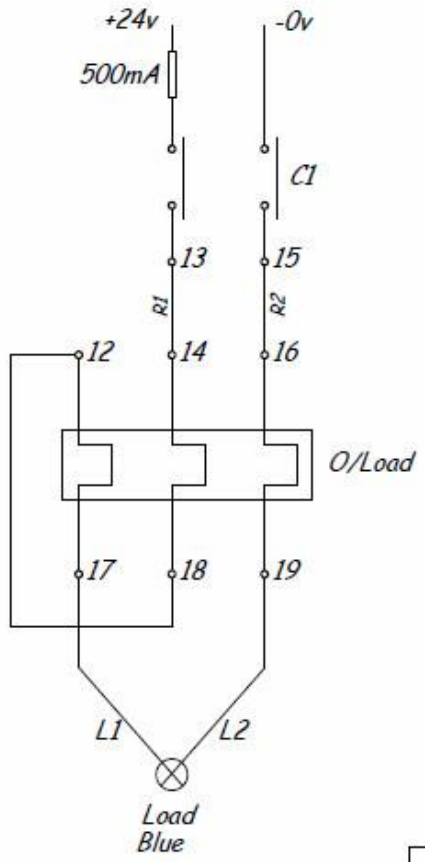


Stop Start Circuit





	A	B	C	D
	DO NOT SCALE	IF IN ANY DOUBT—ASK		



24v Separate Supply From PSU

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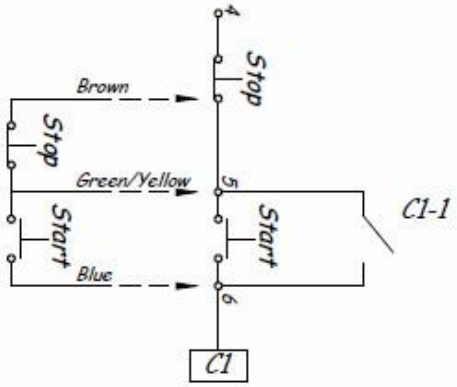
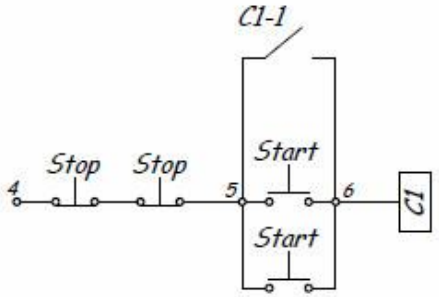
PROJECTION	NAME	TOLERANCES	DESCRIPTION
	PART Nº	DIMENSIONS ARE IN MILLIMETERS	PHASE 1 ELECTRICAL
	MAT'L	UNLESS OTHERWISE STATED GENERAL TOLERANCE ±0.25mm	DIRECT ONLINE STARTER LOAD CIRCUIT
	FINISH	ANGULAR DIMENSIONS ±1°	DRAWN E.CODY DATE 1/6/17
REPORT ANY ERRORS	Nº OFF		SCALE NTS DWG Nº REV
GRID DATE ALTERATION			CHKD SHEET 2 Of 3 A4

A	B	C	D
DO NOT SCALE	IF IN ANY DOUBT—ASK		





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TOLERANCES	DESCRIPTION				
DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED GENERAL TOLERANCE ± 0.25mm ANGULAR DIMENSIONS ± 1°	PHASE 1 ELECTRICAL DIRECT ONLINE STARTER—REMOTE CIRCUIT				
	DRAWN	E.CODY	DATE	1/6/17	
	SCALE	NTS	DWG Nº		REV
	CHKD		SHEET	3 of 3	A4

PROJECTION	NAME	
	PART Nº	
	MAT'L	
REPORT ANY ERRORS	FINISH	
	Nº OFF	

GRID	DATE	ALTERATION

Electrical Worksheet – Direct-on-line

(D.O.L.) Starter

Objective : At the end of the session the trainee will be able to electrically connect, test, and operate, a direct-on-line starter and explain its theory of operation ;

i) without a remote control unit.

ii) with a remote control unit.

Relay Types

Method :

Using the information sheets (supplied), wire up the starter as the drawings, after each section demonstrate to the instructor your working circuit before moving on to the next stage. Use a separate 24 Volt Dc supply for stage 2

Equipment to be used will include :

- direct-on-line starter board.
- terminal screwdriver.
- spiral wrap.
- 24 Volt Dc Power Supply

All cables should be arranged in a neat and tidy fashion no excessive copper should exposed beyond the terminal.

All terminations should be firm but not over-tightened.

Assessment :

1) Complete each stage of the direct on-line circuit starting with circuit diagram 1/3 Each stage must be visually inspected, tested and working before moving on to the next stage.

2) When the circuit is complete it must be inspected tested and marked by the training officer.

3) When all marking is completed and the supply has been isolated & disconnected. Remove all wires from the bottom connectors and the equipment shall be be left in a tidy condition suitable for us and put away.

Produce a written assignment containing the following information:-

1) Explain the operation, use and construction of the following parts along with their symbols:

A) Contactor
B) Relay,
C) Auxiliary terminals (construction not needed)
D) Motor Overload Relay
E) Stop, start button (construction not needed)
F) Motor thermal switch and PTC Thermistor
G) Emergency Stop (construction not needed)

2) Explain the theory and operation of the Direct online Starter board.

3) A 3 phase 400volt induction motor has a thermal switch inside the windings. The control voltage is 24 volts DC produce a diagram using the followingcomponents:
A contactor with one aux, emergency stop, 1x500mA fuse + 3x25A fuses, thermal switch, stop start buttons, Overload Relay with aux, 8pin Relay and a 3 phase 400v motor.

4) What are direct-on-line starters are used for..

5) Give a brief overview why we would use a star delta starter

6) Label and show using two separate diagrams how the terminals of a motor are connected in star and in Delta.

Label the diagram below