

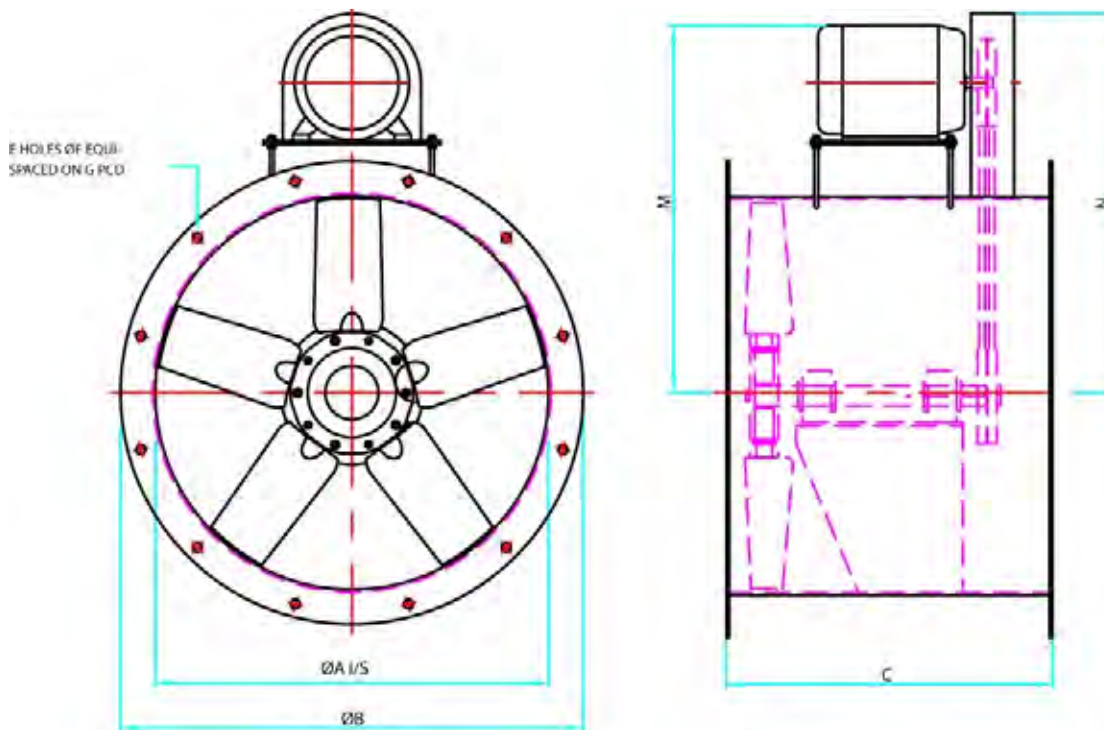


Revolution BD Installation and Maintenance Instructions

**THESE INSTRUCTIONS MUST BE READ FULLY BEFORE
COMMENCING INSTALLATION**

Code BD	Motor Frame	A	B	C	E	F	G	M	N	Weight kg
315	71	315	375	400	8	10	355	420	480	37
315	80	315	375	400	8	10	355	430	480	44
315	90	315	375	400	8	10	355	420	480	51
400	71	400	475	400	8	12	450	470	530	42
400	80	400	475	400	8	12	450	480	530	49
400	90	400	475	400	8	12	450	470	530	55
500	71	500	585	400	12	12	560	510	580	47
500	80	500	585	400	12	12	560	520	580	54
500	90	500	585	400	12	12	560	520	580	60
500	100	500	585	600	12	12	560	550	620	90
500	112	500	585	600	12	12	560	590	620	103
500	132	500	585	600	12	12	560	590	620	150
560	71	560	645	400	12	12	620	540	610	50
560	80	560	645	400	12	12	620	550	610	57
560	90	560	645	400	12	12	620	550	610	63
560	100	560	645	600	12	12	620	590	650	94
560	112	560	645	600	12	12	620	600	650	107
560	132	560	645	600	12	12	620	630	650	154
560	160	560	645	800	12	12	620	760	780	267
560	180	560	645	800	12	12	620	780	780	322
630	71	630	715	400	12	12	690	570	640	53
630	80	630	715	400	12	12	690	580	640	60
630	90	630	715	400	12	12	690	590	640	67
630	100	630	715	600	12	12	690	620	690	99
630	112	630	715	600	12	12	690	630	690	112
630	132	630	715	600	12	12	690	660	690	159
630	160	630	715	800	12	12	690	780	820	274
630	180	630	715	800	12	12	690	800	820	329

Code BD	Motor Frame	A	B	C	E	F	G	M	N	Weight kg
710	71	710	795	400	16	12	770	610	680	58
710	80	710	795	400	16	12	770	620	680	65
710	90	710	795	400	16	12	770	620	680	72
710	100	710	795	600	16	12	770	660	730	104
710	112	710	795	600	16	12	770	670	730	117
710	132	710	795	600	16	12	770	730	730	164
710	160	710	795	800	16	12	770	810	860	281
710	180	710	795	800	16	12	770	830	860	336
800	71	800	885	400	16	12	860	650	730	63
800	80	800	885	400	16	12	860	660	730	70
800	90	800	885	400	16	12	860	680	730	77
800	100	800	885	600	16	12	860	710	770	111
800	112	800	885	600	16	12	860	720	770	123
800	132	800	885	600	16	12	860	760	770	171
800	160	800	885	800	16	12	860	880	900	290
800	180	800	885	800	16	12	860	900	900	345
1000	100	1000	1110	600	16	15	1070	810	870	154
1000	112	1000	1110	600	16	15	1070	810	870	167
1000	132	1000	1110	600	16	15	1070	860	870	210
1000	160	1000	1110	800	16	15	1070	970	1000	352
1000	180	1000	1110	800	16	15	1070	990	1000	408
1250	100	1250	1380	600	20	15	1320	960	1000	200
1250	112	1250	1380	600	20	15	1320	960	1000	212
1250	132	1250	1380	600	20	15	1320	990	1000	255
1250	160	1250	1380	800	20	15	1320	1100	1130	445
1250	180	1250	1380	800	20	15	1320	1120	1130	500
1400	100	1400	1540	600	20	15	1470	1020	1070	221
1400	112	1400	1540	600	20	15	1470	1020	1070	233
1400	132	1400	1540	600	20	15	1470	1050	1070	276
1400	160	1400	1540	800	20	15	1470	1170	1200	479
1400	180	1400	1540	800	20	15	1470	1190	1200	534
1600	160	1600	1750	800	24	19	1680	1280	1300	552
1600	180	1600	1750	800	24	19	1680	1300	1300	607



1.0 GENERAL

- 1.1 It is important these Installation and Maintenance Instructions are fully adhered to.
- 1.2 Full details of the unit supplied are shown on the product nameplate. If in doubt about any detail contact Elta Fans Ltd or its agents for clarification.
- 1.3 All electrical installation must be carried out by suitably qualified and competent personnel in accordance with all current statutory requirements.
- 1.4 These instructions cover only the Elta Fans Ltd product and do not include the supply or installation of any safety equipment that may be required e.g. adequate guarding or protection from rotating parts and proper electrical isolation.
- 1.5 Any declarations made by Elta Fans Ltd about product installation and safety, are dependant on the fan equipment being used within installations which themselves meet the requirements of the relevant Standards and Directives of your region.
- 1.6 The fan is designed for use in an ambient temperature of -20°C up to $+54^{\circ}\text{C}$ and up to 95% relative humidity. The fan is not suitable for corrosive or explosive atmospheres.
- 1.7 The installer should provide easy access to the fan to facilitate future maintenance.
- 1.8 The installer should ensure the fan is adequately supported.
- 1.9 This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the product by a person responsible for their safety. Children should be supervised to ensure that they do not play with the product.

2.0 INSTALLATION

WARNING – The fan must be isolated from the power supply during installation and maintenance. The fan must be earthed in accordance with the local regulations.

- 2.1 Upon receipt, the fan equipment should be visually inspected to check for any damage. Ensure that the impeller is free to rotate.
- 2.2 If there are any queries concerning the fan equipment, Elta Fans Ltd should be contacted prior to the installation.
- 2.3 The fan must be securely mounted in the desired position to suit the application. The fan can be mounted at any angle.
- 2.4 Check the details on the motor rating plate to ensure that the correct power supply (voltage, frequency and phase) is available. An incorrect power supply will lead to permanent damage to the fan motor.
- 2.5 Refer to the appropriate wiring diagram. Ensure that all earth connections are made.
- 2.6 Means for electrical disconnection must be incorporated in the wiring installation in accordance with the relevant wiring and electrical regulations.

- 2.7 Precaution must be taken to locate the exhaust discharge terminal so as to avoid the backflow of gases into the room from the open flue of gas or other fuel burning appliances.

3.0 START-UP

- 3.1 Before power is supplied to the unit, check that the wiring is correct as per the fan connection diagram.
 3.2 At initial start-up, check that impeller rotation and airflow direction is correct.
 3.3 Check that the motor amperage draw does not exceed the nameplate rating.

4.0 FAN MAINTENANCE

- 4.1 Inspection of the fan at least once every 12 months is recommended to ensure that the motor, fan blades, and supporting guards, are clean. Any build up of dust and deposits on the blades or guards should be removed using a non-abrasive cleaner.
 4.2 All fastenings should be checked for tightness. In addition, all rotating items should be checked.
 4.3 Bearings are of the 'sealed for life' type and will not need a detailed inspection.

5.0 BELT TENSION AND ALIGNMENT

- 5.1 The belt tension and alignment should be checked:
 - When fitting new belts or when installing and starting a fan for the first time.
 - After the first 30 minutes of operation.
 - At least every 6 months.
- 5.2 The pulleys must be checked for correct alignment before checking the belt tension and again after making any adjustments. A straight edge should be placed across the faces of both pulleys to ensure that both shafts and pulleys are parallel and in alignment.
- 5.3 Measure the centre distance between pulleys.
 5.4 Multiply the pulley centre distance in metres by 16 to obtain the required belt deflection in mm.
 5.5 Set the required belt deflection on the tension gauge.
 5.6 With the tension gauge at right angles to the belt and at the mid point between pulleys, apply a force so that the set deflection is achieved.
 5.7 Check the force applied against the tabulated values below.
 5.8 Increase the pulley centre distance until the correct force value is obtained.
 5.9 Run the drive for 30 minutes and re-tension if required.

Belt Section	Force required to deflect belt 16mm per metre of span		
	Small Pulley Dia - mm	Newton - N	Force - kgf
SPZ	67 to 95	10 to 15	1.0 to 1.5
	100 to 140	15 to 20	1.5 to 2.0
SPA	100 to 132	20 to 27	2.0 to 2.7
	140 to 200	28 to 35	2.8 to 3.5
SPB	160 to 224	35 to 50	3.5 to 5.1
	236 to 315	50 to 65	5.1 to 6.6

6.0 BELT REPLACEMENT

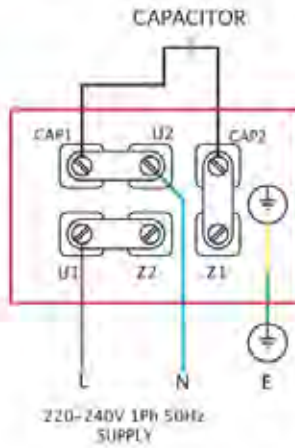
- 6.1 Worn or damaged belts will require periodic replacement.
 6.2 Loosen the motor bolts and move the motor towards the fan until the belts can be easily removed by hand without using a tool.
 6.3 If the drive is fitted with more than one belt, all belts must be replaced simultaneously as a matched set.
 6.4 Tension and align the drive per Clause 5.0 above, ensuring that all fasteners are tightened.

WARNING – Fuses/circuit breakers are used to provide short circuit protection only. A starter panel with overload protection should be used to protect the motor. Only a suitably qualified and competent person may carry out maintenance after the electrical supply has been isolated.

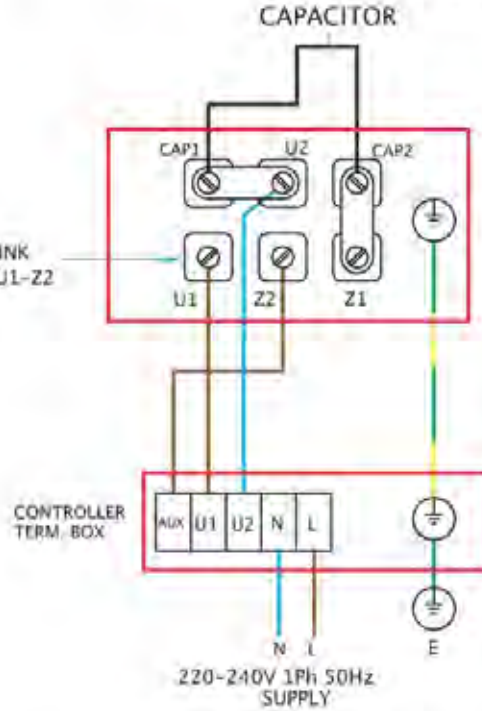
WIRING

VARIABLE SPEED CONNECTION
SPEED CONTROLLER TYPES: 149-EL31
149-EL61
149-EL101

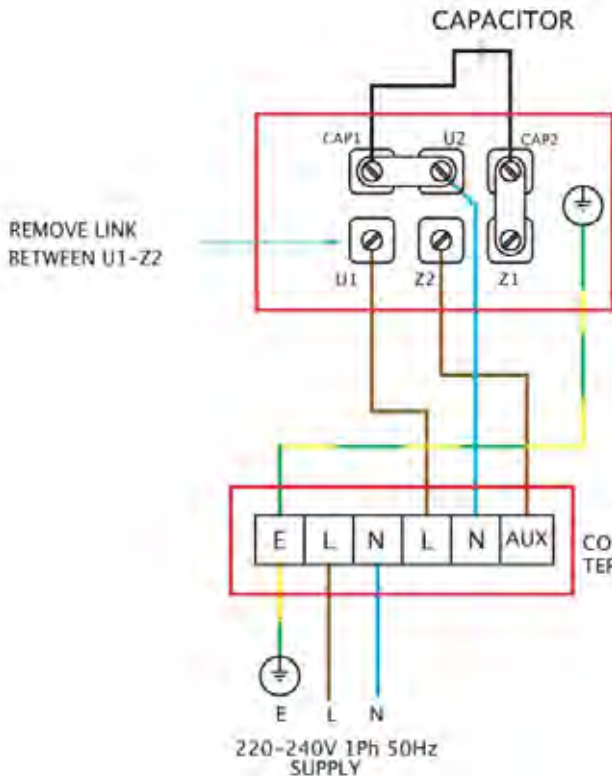
FIXED SPEED CONNECTION



REMOVE LINK BETWEEN U1-Z2

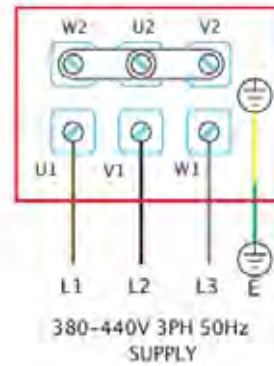


VARIABLE SPEED CONNECTION
SPEED CONTROLLER TYPES: 149-TC12
149-TC14
149-TC18
149-TC110

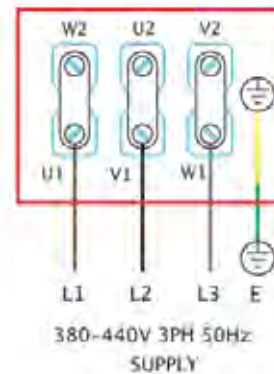


REMOVE LINK BETWEEN U1-Z2

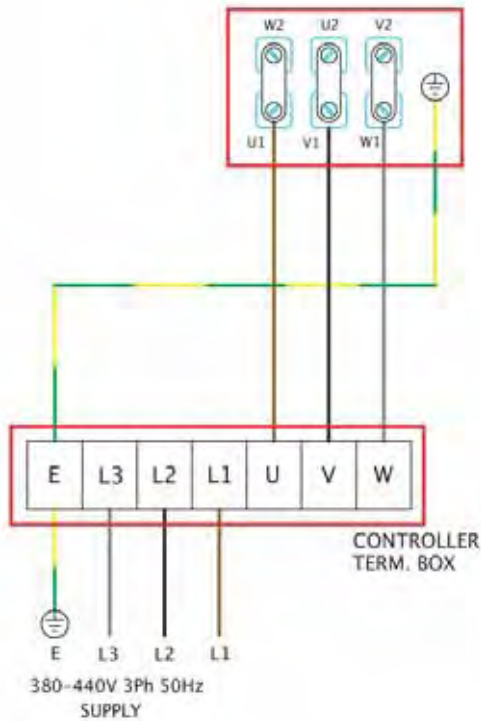
FIXED SPEED STAR CONNECTION



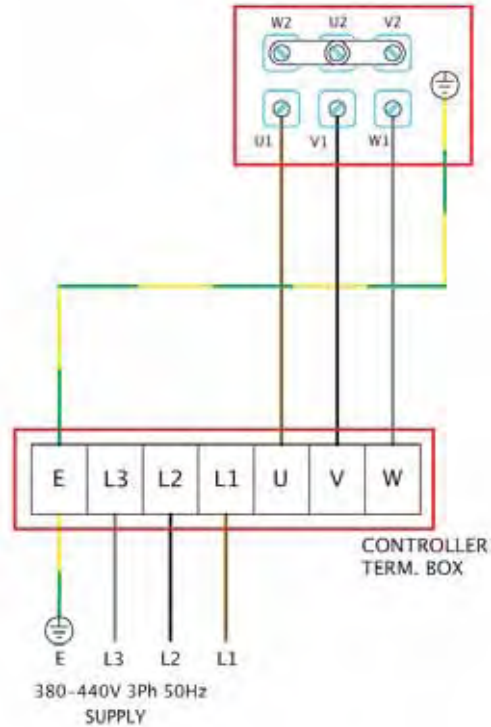
FIXED SPEED DELTA CONNECTION



**VARIABLE SPEED
DELTA CONNECTION**
CONTROLLER TYPE: 149-TC33
149-TC35
149-TC310



**VARIABLE SPEED
STAR CONNECTION**
CONTROLLER TYPE: 149-TC33
149-TC35
149-TC310



GUARANTEE

Elta Fans Ltd will, free of charge, within a period of 1 year from the date of despatch from their works, repair or at its option replace any goods which are proved to have defects as a result of defective materials or workmanship. The goods MUST be returned to Elta Fans Ltd carriage paid for examination.

Elta Fans Ltd

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