



Dust Collector with Cyclone Extractor DCE 4



Instruction Manual

The company reserves the right to change equipment specifications and models without notice. Pictures are representative and may not be part of the standard equipment.

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Foreword

Dust collector system is designed and manufactured in accordance with proper airflow and good dust collection to ensure not only removal of buffed waste rubber dust, but also keep clean the buffing machine and moving parts clean including Tyre surface.

It consists of various components like Cabinet steel Structure and profile, Centrifugal fan with motor, Dynamically balanced rotor, Cyclone filter, Steel pipe to convey dust particles, Support structure, etc. Dust collector also has electrical system, including wiring, controllers, overload protection and disconnect the buffing operation when it exceed the filling capacity.

The machine is designed and manufactured for accurate and trouble free performance and can be operated by persons with little training. This instruction manual details installation, commissioning, operation and preventive maintenance procedures of dust collector system.

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01 Description

The Dust collector consists of the following major components.

Main frame

The main frame is a fabricated with steel structure which houses all the main components such as steel cabin with filter bags, dust collecting bins, inlet and out let pipes, Electrical motor and controls.

Steel Cabin with filter bags

We are offering a special vacuum proof steel cabin which has efficient filter bags too. This systems are airtight and guarantees for leak and thus a clean dust collection is ensured. Air exhausted to atmosphere to reduce noise.

Dust collecting Bins

Dust collecting bins are made up of reinforced metal plate with appropriate discharge port for easy handling of filled dust and ensure sufficient sealing and avoid leakage. It has storage capacity suitable for each application.

Electrical Cabin and controls

Electrical cabinet are with dust-proof, and electrical control components are well protected and safe to operate.

Three-phase electric motor, totally enclosed with external ventilation (TFVE) provided with adequate protection when your installation will be the weather.

02 Specifications

Model	DCE 4
Catalogue Number	MD50 4 - X *
* X in Cat. No. denotes power supply specifications (V / Hz / ph)	R - 220 / 60 / 3 O - 380 / 50 / 3 S - 380 / 60 / 3 P - 415 / 50 / 3 U - 440 / 60 / 3
RPM	3000
Capacity (L)	500
Dimensions (L x W x H) (mm)	3000 x 2500 x 7020
Weight / empty (kg)	~300

03 Assembly and Commissioning Tools

Accessories

Standard	Main frame with steel cabins, Cyclone Hood Assembly, Hooper, Electrical motor, Blower, Paddle switch, and Water sprinkler tubing
Optional	Delivery pipes to individual machines, pipe supports and steel structure

Tools

Spanners	Double end 10 -11
	Double end 12 -13
	Double end 16 -17
	Double end 24 -27
	Double end 20 -22
	Double end 32 -36
Allen key	Allen key 3mm
	Allen key 4mm
	Allen key 5mm
	Allen key 6mm
	Allen key 7mm
	Allen key 8mm
Screw driver	Screw driver star end
	Screw driver minus end
Cir-clip plier	A Type Circlip Plier
Pipe wrench	12" Pipe wrench

Materials

In coming cables up to machine
Water line up to machine
Multi purpose grease

04 Installation and Commissioning

- The floor should be level at the bottom of the base of the equipment.
- Place the equipment in the place indicated in layout or according to your need and fix using the bed plate foundation holes.
- The levelling of the machine is essential so that there are no unnecessary mechanical stresses, compromising the life of the parts and loss of warranty.
- Provide electrical incoming supply and verify that the three-phase voltage of the mains supply is the same voltage as the one attached to the control panel door.
- Check the control panel if the main switch is turned to “OFF” and the internal components (circuit breakers and motor circuit breaker) are “OFF”.
- Follow the electrical installation diagram, then activate the circuit-breakers & main switch and the control panel door will illuminate, indicating that the equipment is energized.
- Tests by pressing the green “ON”, red “OFF” buttons (Turn on and stop the motor), Check emergency button is working (OFF switch).
- If the tests applied were satisfactory, the equipment is ready for use.
- Do not apply other forms of installation, this may cause damage to the electrical components, burnout of the motor and other parts and loss of warranty.
- Use the Gaskets between the flanges to ensure a good seal.

05 Pre-Operation Checks

- The floor must be levelled, where the equipment is installed
- Ensure the steel structures are grouting properly and no shake while in operation.
- All the nuts mentioned in the parts list are to be tightened properly.
- Safety grounding of main supply voltage, where ever applicable.
- After installing the tubing and connecting the power cord, turn the main switch
- Fan rotation must be checked visually to ensure that it is rotating in the direction shown by the rotation arrows.
- Unlock the “emergency” button, the LED light will rise.
- Press the “on” button to start the exhaust rotor.
- Press the “off” button to stop the exhaust rotor.
- Press the “emergency” button and the “general switch” when performing some maintenance on the suction system.
- Check Air leaks in suction and delivery lines.

06 Operation

- Basically the dust collecting system is connected to Tyre cleaning, skiving station and Tyre buffing station and connected to the respective machine.
- All the electrical connections in the dust collector are inter linked with the basic machine or if it is independent station, we must switch on the power supply and ensure it start working before the Tyre cleaner, skiving or buffing operation starts.
- Dust will be sucked automatically from the removal point and carry to the dust collecting Hooper.
- The dust collection Hooper should be checked regularly to establish a pattern that will provide for it being emptied when it becomes approximately 2/3 full of collected material.
- Duct level indication automatically displayed thru Buffer HMI display (Check for message: Dust collector full)
- Allowing the dust hopper to overfill can result in a plugged cyclone and a reduction in separating efficiency.
- Under no circumstances should flammable materials be mixed with dust being collected from the ferrous metal grinding operations, due to the potential fire hazard of sparks entering the dust collection system.
- Collected dust should be disposed of properly especially in cases where the dust being collected is rated as being either hazardous or toxic. In such cases, established governmental disposal regulations should be strictly obeyed.

07 Do's and Don'ts

Do's

- Use the machine only for Tyre dust collecting purpose.
- With daily use of the equipment there is a need to clean the filter bag piping and prevent clogging of dust and maintain properly after the last operation
- Use personal protective equipment (boots, gloves, ear protectors and safety goggles).
- The operator must not stand between the pick-up lever of the waste bucket.
- The operator must not open the Hooper door while the hood is running.
- The operator must not remove the guard from the motor while it is in motion.
- The operator must not open the control panel door while the main switch is switched on or the operating light is on.

Don'ts

- Do not use the equipment if the rotor is vibrating or presenting any noise.
- Do not use the equipment if there are breaks in the welds or in the structure.
- Do not use the equipment if it fails the electrical system (push buttons and control panel).
- Do not use the equipment if leaks are present on the filter elements.

08 Troubleshooting - Electrical

Symptoms / Problems	Possible Causes	Remedies
<p>The electrical circuit does not work</p>	<p>Power supply is not reaching the device</p>	<ul style="list-style-type: none"> • Check that the machine is properly connected. • Check that the main switch is switched on • Check that the power supply (v) is correct • Check the circuit breakers are connected
<p>The electric circuit is in order, the 240v power arrives at the controls, but they do not operate</p>	<p>Locking or burning in NO or NC contacts</p>	<ul style="list-style-type: none"> • Check the contactor and control wiring • This case carry out the replacement of the same
<p>The electrical circuit is in order; the 240v power does not reach the control buttons</p>	<p>Electrical wire rupture or not properly fixed to fastening terminal</p>	<ul style="list-style-type: none"> • Check and identify the damaged wire or to re-tighten the clamping terminals • Check the control transformer and fuses
<p>The motor over load</p>	<p>Short circuit or amperage setting not correct</p>	<ul style="list-style-type: none"> • Check and re set the motor circuit breaker or OLR amperage rating as specified on the electric motor rating plate • Check the short circuit connections

Symptoms / Problems	Possible Causes	Remedies
The electrical circuit is in order, but the buttons do not operate	The button or selectors switch wires poorly coupled to the clamping terminal	<ul style="list-style-type: none"> • Check the button and selector switch mounted properly • Check the terminal wiring loose connections
The electrical power does not reach the internal components of the control panel	Damaged control or main switch	<ul style="list-style-type: none"> • Verify with equipment to identify if the outputs of both parts are properly distributing energy
The electric circuit is in order, but the RYB led bulb does not light up	Main supply not coming or burning of the led	<ul style="list-style-type: none"> • Check incoming voltage for phase loss (N) • Check the terminal wiring loose connections • This case carry out the replacement of the same

09 Preventive Maintenance



Daily maintenance

- Check the suction from pipe lines.
- Check the Hooper doors are locked correctly.

Weekly maintenance

- Clean the equipment by removing dust residues.
- Check the general condition of the rotor / motor assembly.
- Check the general condition of the electrical assembly.
- Lubricate the moving parts.
- Check that the screws are tight.

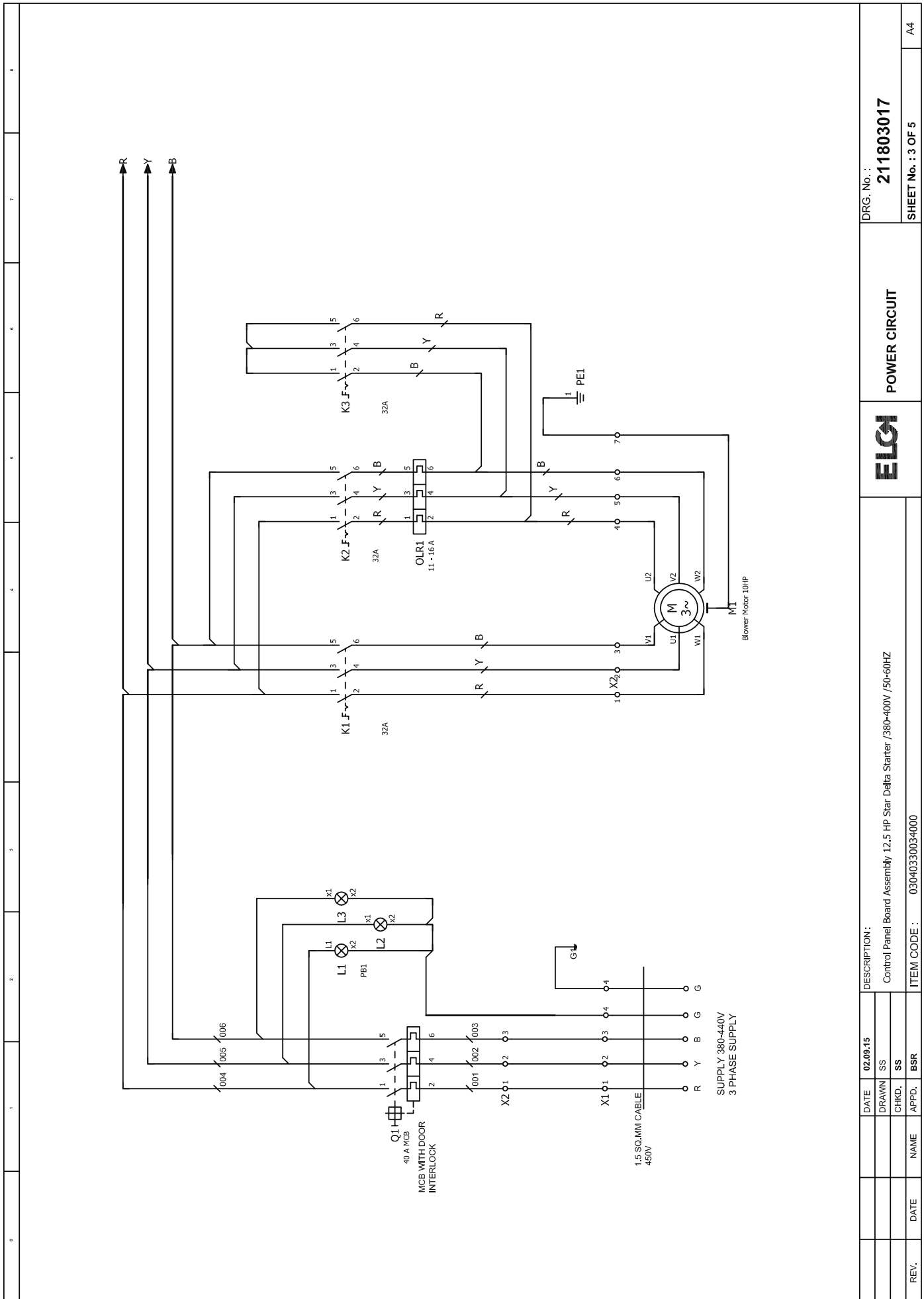
10 Electrical Drawings

		Elgi Rubber Company Limited 641005 Coimbatore Phone: 9894510000	
Dust Collector with Cyclone Extractor DCE 1 - 415 V, 50 Hz / 3 PH			
Company / customer Project description Drawing number Commission		211803017 Elgi	
Manufacturer (company)		Gen Automation	
Path		03040330034000	
Item code & Description		Control Panel Board Assembly 12.5 HP Star Delta Starter /380-400V /50-60HZ	
Place of installation Responsible for project Part feature		+ET1	
Created on Edit date		20.01.17 Number of pages 5	
			
DRG. No. : 211803017		TITLE PAGE	
SHEET No. : 1 OF 5		A4	

DESIGN INSTRUCTION

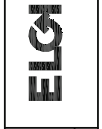
<p>ALL DIEMENSIONS ARE IN MM DOORS ARE ONLY AT FRONT SIDE</p>		<p>PAINT SHADE : PEBBEL GRAY PAINT SHADE : PEBBEL GRAY</p>
<p>PANELS CONSTRUCTION</p>		<p>230V AC</p>
<p>PANEL MAKE</p>	<p>RITTAL</p>	<p>0.75 SQMM X 3 CORE</p>
<p>PART NO</p>	<p>AE 1030500</p>	<p>220V AC</p>
<p>WIDTH</p>	<p>300</p>	<p>0.75 SQMM RED</p>
<p>HEIGHT</p>	<p>300</p>	
<p>DEPTH</p>	<p>155</p>	
<p>DOOR</p>	<p>SINGLE DOOR</p>	
<p>OUTSIDE SURFACE</p>		
<p>INSIDE SIDE SURFACE</p>		
<p>INCOMING SUPPLY</p>		
<p>INCOMING CABLE</p>		
<p>CONTROL VOLTAGE</p>		
<p>CONTROL CABLES</p>		
<p>EARTHING TO BE PROVIDED AS PER STANDARD</p>		
<p>SHROUDING TO BE PROVIDED AS PER STANDARD</p>		

REV.	DATE	NAME	APPD.	BSR	DESCRIPTION:	DRG. No. :	A4
					Control Panel Board Assembly 12.5 HP Star Delta Starter /380-400V /50-60HZ	211803017	
					ITEM CODE : 03040330034000	DESIGN INSTRUCTION	
						ELGI	
							SHEET No. : 2 OF 5

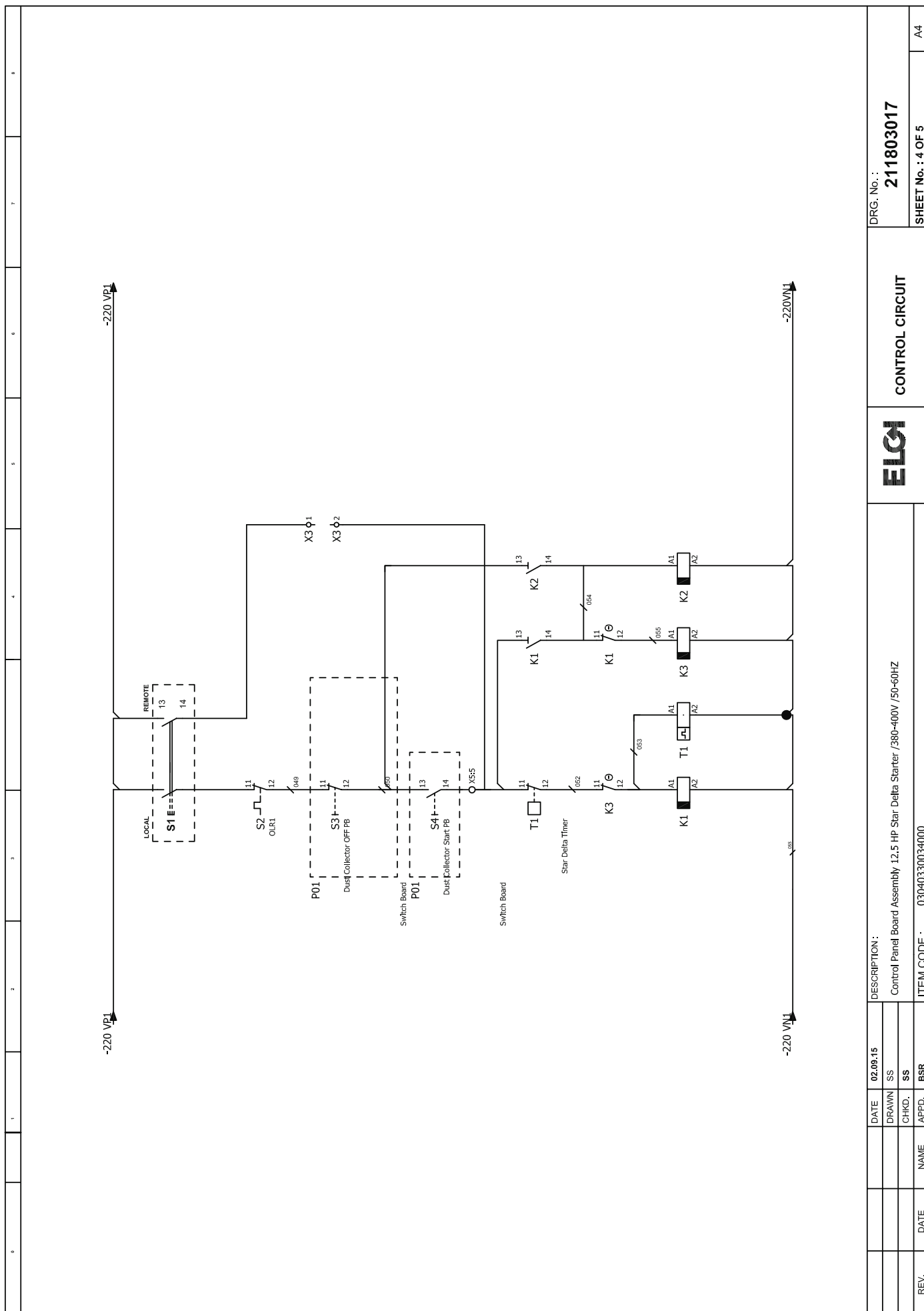


DRG. No. : **211803017**
SHEET No. : 3 OF 5

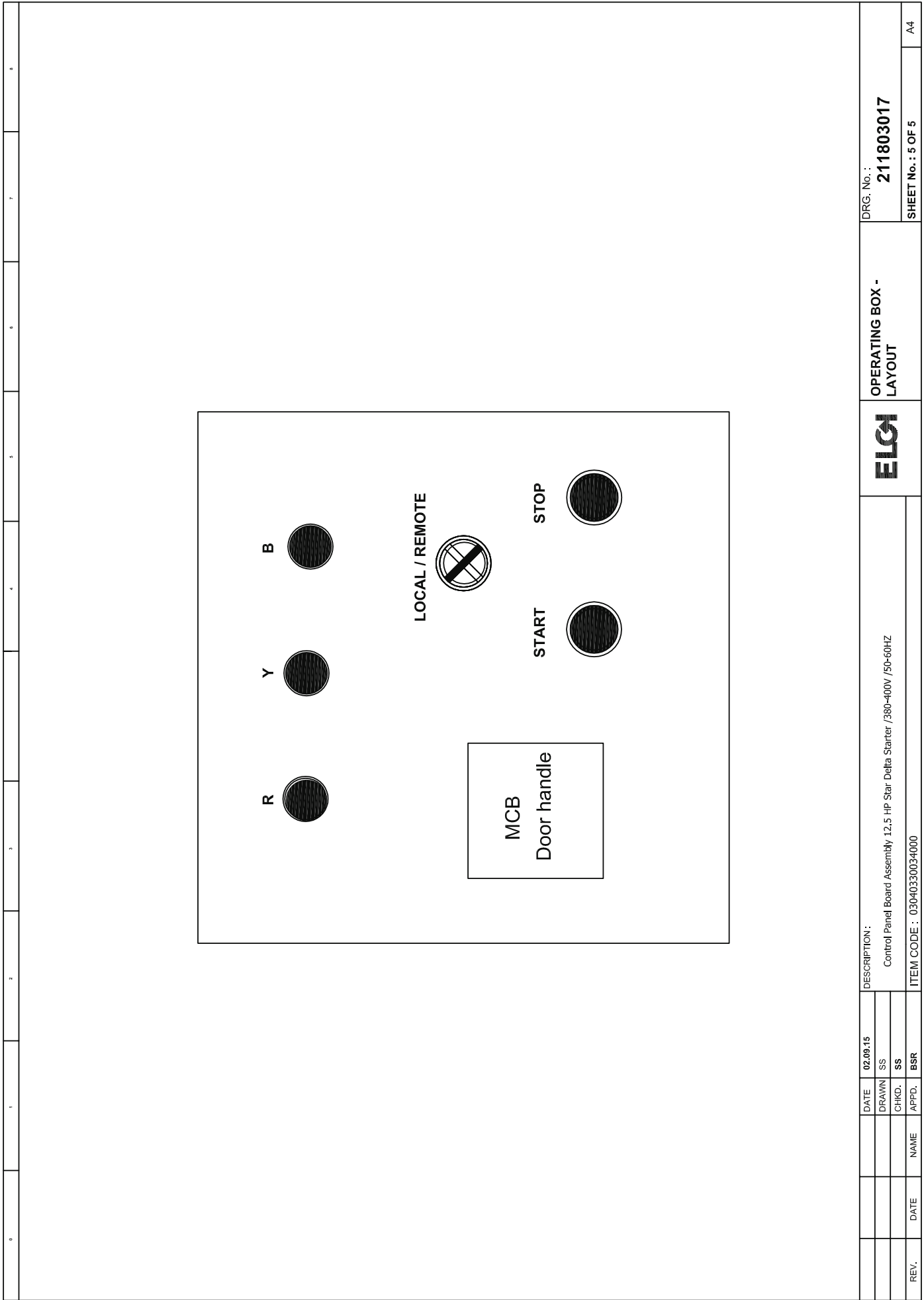
POWER CIRCUIT



DESCRIPTION:		Control Panel Board Assembly 12.5 HP Star Delta Starter /380-400V /50-60HZ	
DATE	02.09.15	DATE	
DRAWN	SS	DATE	
CHKD.	SS	NAME	
APPD.	BSR	APPD.	BSR
REV.		ITEM CODE :	03040330034000

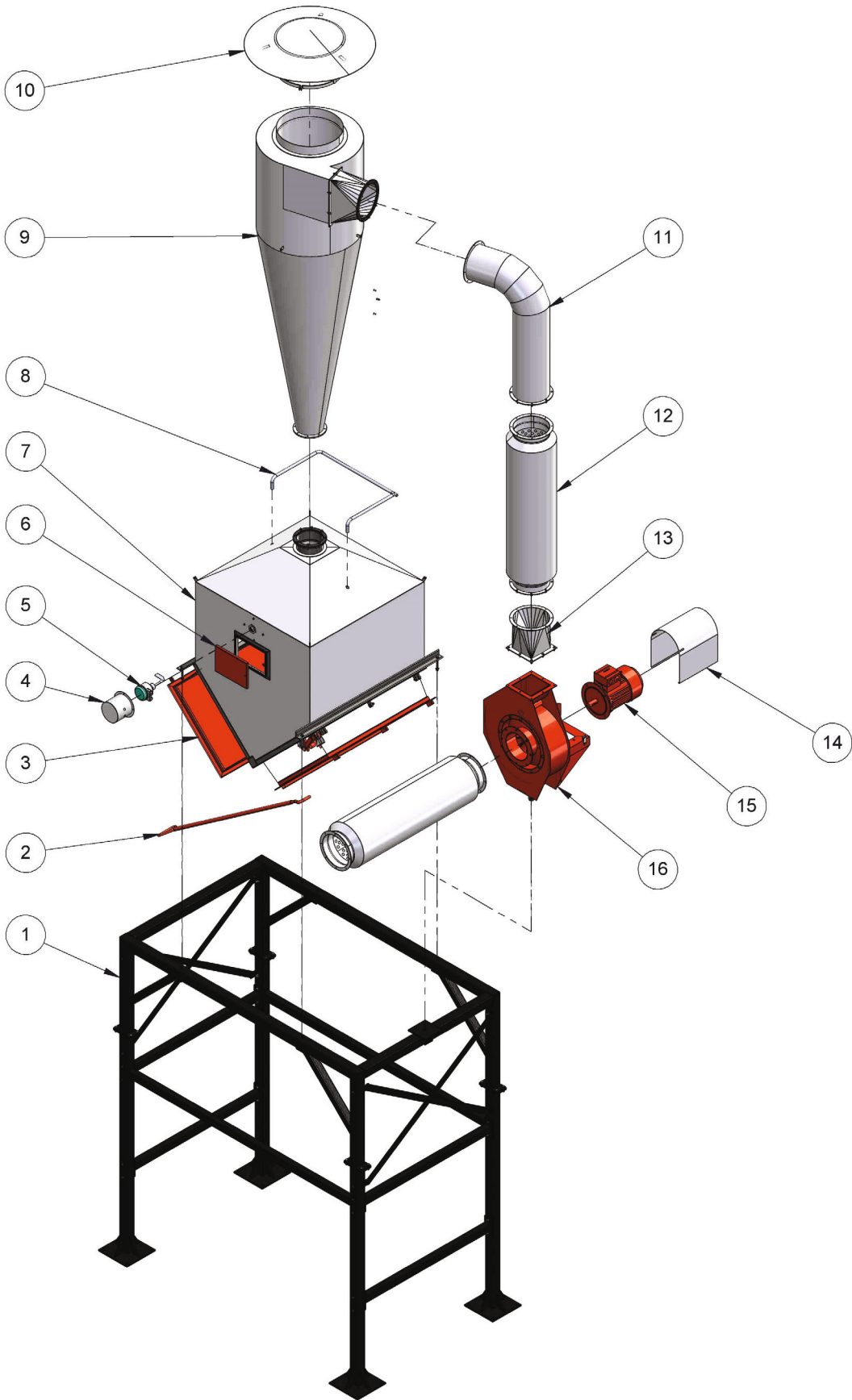


DATE		02.09.15	DESCRIPTION:		DRG. No. :	
DRAWN		SS	Control Panel Board Assembly 12.5 HP Star Delta Starter /380-400V /50-60HZ		211803017	
CHKD.		SS	ITEM CODE :		SHEET No. : 4 OF 5	
APPD.		BSR	03040330034000		A4	
REV.		DATE	NAME		CONTROL CIRCUIT	
					ELGI	



REV.	DATE	NAME	DATE	02.09.15	DESCRIPTION:	DRG. No. :	211803017
				SS	Control Panel Board Assembly, 12.5 HP Star Delta Starter /380-400V /50-60HZ	SHEET No. : 5 OF 5	A4
				SS			
				BSR			
					ITEM CODE : 03040330034000		
					ELGI	OPERATING BOX - LAYOUT	

11 Parts List



Parts List - BOM

S. No.	Order Code	Description	UOM	Qty.
1	MD504/1	BASE FRAME - DCE1-1	Nos	1
2	MD504/2	DOOR HOOK	Nos	1
3	MD504/3	UNLOADING DOOR	Nos	1
4	MD504/4	PADDLE SWITCH COVER / DCE 1-1	Nos	1
5	MD504/5	SIEMENS SENSOR	Nos	1
6	MD504/6	FRONT DOOR	Nos	1
7	MD504/7	HOOPER	Nos	1
8	MD504/8	WATER SPRINKLER TUBING	Set	1
9	MD504/9	CYCLONE HOOD ASSEMBLY - DCE1-1	Nos	1
10	MD504/10	CHINESE HAT - DCE1-1	Nos	1
11	MD504/11	DUCT 90DEG. BEND - DCE1-1	Nos	1
12	MD504/12	SILENCER ASSEMBLY - DCE1-1	Nos	2
13	MD504/13	SILENCER MOUNT ASSEMBLY - DCE1-1	Nos	1
14	MD504/14	10HP MOTOR GUARD / DCE 3-1	Nos	1
15	MD504/15	MOTOR	Nos	1
16	MD504/16	BLOWER ASSEMBLY FOR - DCE1-1	Nos	1