



# Descriptive Report and Test Results

**MASTER CONTRACT:** 215310

**REPORT:** 2590958

**PROJECT:** 2590958

**Edition 1:** July 31, 2013; Project 2590958 - Taiwan  
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## **PRODUCTS**

CLASS 3881 03 - TOOLS - Bench

CLASS 3881 83 - TOOLS - Stationary and Fixed Electric Tools - CERTIFIED TO U.S. STANDARDS

Model	Description	V	Hz	A	RPM
DRC355	Dry-Cut Metal Saw, 14 inch, chop type, cord-connected, grounded	110-120	60	15	1500
EDC14	Dry-Cut Metal Saw, 14 inch, chop type, cord-connected, grounded	110-120	60	15	1500

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## **APPLICABLE REQUIREMENTS**

CSA-C22.2 No. 71.2-10 - Electric Bench Tools  
UL Std No. 987- 8<sup>th</sup> Edition - Stationary and Fixed Electric Tools

## **MARKINGS**

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The submitter's identification or Contract Number "215310", adjacent to the CSA Monogram with the C US Indicator, model designation, complete electrical rating, output shaft rpm, date code, and caution working: "WARNING: DO NOT EXPOSE TO RAIN OR USE IN DAMP LOCATIONS." and the French equivalent, or the graphic symbol provided that the intended meaning of the symbol is given prominence in the user manual, appear on CSA Accepted adhesive nameplate(s) or metal plate(s). An arrow indicating the direction of rotation of the arbor appears on the upper blade guard.

The products listed are eligible to bear the CSA Mark with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The word "WARNING" shall be not less than 2.4 mm high.

## **ADDITIONAL MARKINGS AND SAFETY INSTRUCTIONS**

1. The following warning or equivalent wording also appears on the Instruction Manual as well as on the tool per UL987. French equivalent of warning markings also appear on tool for Canada.

**WARNING: FOR YOUR OWN SAFETY READ INSTRUCTION MANUAL BEFORE OPERATING DRY-CUT METAL SAW**

- a. Wear eye protection.
  - b. Keep hands out of path of saw blade.
  - c. Do not operate saw without guards in place.
  - d. Do not perform any operation freehand.
  - e. Never reach around saw blade. (or "Never reach in back of saw blade.")
  - f. Turn off tool and wait for saw blade to stop before moving workpiece or changing settings.
  - g. Disconnect power (or unplug tool as applicable) before changing blade or servicing.
  - h. Rated saw blade diameter. (eg. 14 inch)
  - i. No load speed. (eg. 1500rpm)
2. An Instruction Manual warning user against of injury and precautions, grounding instructions, use of extension cords and important safeguards etc., per UL987 is provided with each tool.

3. A tool required to be provided with a means for locking the motor-control switch in the off position shall include instructions in the manual explaining the purpose and function.

### **SAFETY INSTRUCTION MANUAL**

The safety instructions shall be as illustrated below or employ equivalent wording.

### **SAFETY RULES**

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
6. **MAKE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
9. **USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
10. **WEAR PROPER APPAREL** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are **NOT** safety glasses.
12. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. **DON'T OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS** before servicing; when changing accessories, such as blades, bits, cutters, and the like.

- 16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
- 17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
- 18. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
- 19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function - check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 20. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
- 21. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

Table A						
Ampere Rating		Volts	Total length of cord in feet			
		120	25	50	100	150
		240	50	100	150	300
More Than	Not More Than		Minimum gage for cord			
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

**GROUNDING INSTRUCTIONS**

- 1. All grounded, cord-connected tools:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

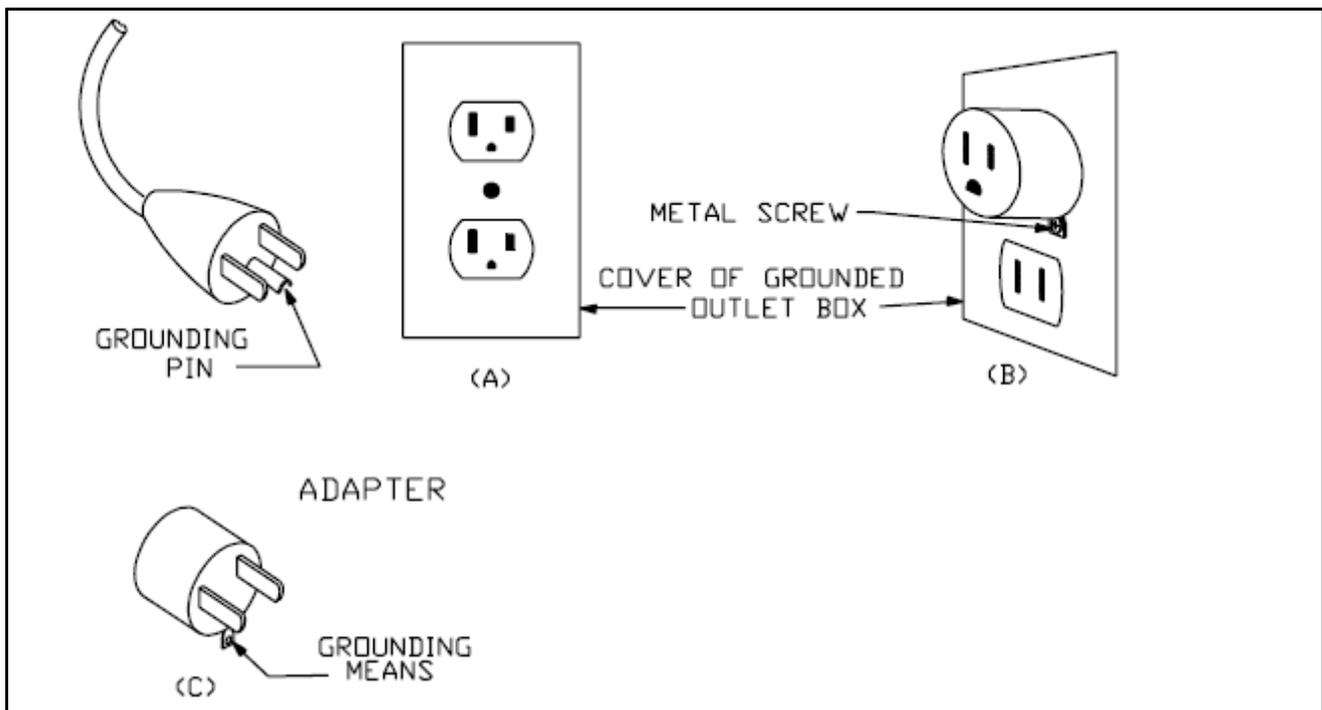
Use only 3-wire extension cords that have 3-prong grounding plugs and 3 pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected tools intended for use on a supply circuit having a nominal rating less than 150 V:

This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch A. The tool has a grounding plug that looks like the plug illustrated in Sketch A. A temporary adapter, which looks like the adapter illustrated in Sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

**Note: In Canada, the use of a temporary adapter is not permitted by the Canadian Electrical Code.**



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Fig. 1

**ATERATIONS**

- (a) Markings as noted above.
- (b) Upper blade guard is completely enclosed the upper half of the blade.
- (c) A padlock is to be used for locking the switch in the OFF position providing that this feature is highlighted in the user manual.
- (d) The internal conductors are well routed in the handle to prevent from damaging the conductor insulation.
- (e) The minimum over-surface spacing between commutator and bearing is 4.7mm.
- (f) The minimum thickness of armature end spider is 2.4 mm.

## **FACTORY TESTS**

### **Dielectric Voltage Withstand Test**

Each tool at the conclusion of manufacture, before shipment, shall withstand for one min, without breakdown, the application of 1000 V ac plus twice the max rated voltage between live parts and exposed non-current- carrying metal parts. The factory test may be made at existing room temp. As an alternative a potential 20% higher may be applied for one second.

**WARNING:** The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

### **Grounding Continuity Test**

Each tool shall be tested as a routine production-line test to determine that grounding continuity is provided between the grounding blade of the attachment plug and all exposed dead metal parts of the tool that may become energized and all dead metal parts within the enclosure that are exposed to contact during any user servicing operation and that may become energized.

This continuity shall be determined through the use of an indicating device, such as an ohmmeter, a battery-and-buzzer combination, or the like.

Only a single test need be conducted if the dead metal parts selected are conductively connected by design to all other dead metal parts.

## **SPECIAL INSTRUCTIONS FOR FIELD SERVICES**

1. Component descriptions marked with either the "(INT)" or "(INT\*)" identifiers may be substituted with other components providing the requirements specified under the notes in the "Description" are complied with.

## **COMPONENT SPECIAL PICKUP**

1. Component descriptions marked with the identifier "(CT)" are subject to annual pickup and Conformity Testing.

**DESCRIPTION**

Notes:

1. Component Substitution
  - a) Critical components (those identified by mfr name, cat no), which are NOT identified with either "INT" or "INT\*" are not eligible for substitution without evaluation and report updating.
  - b) The term "INT" means a "Certified" and/or "Listed" (or a "Recognized" and/or "Accepted") component may be replaced by one "Certified" and/or "Listed" by an organization (accredited by OSHA/SCC), for the same application; providing the applicable country identifiers are included and requirements in item "d" below are complied with.
  - c) The term "INT\*" means a "Recognized" and/or "Accepted" component may be replaced by one "Recognized" and/or "Accepted" by an organization (accredited by OSHA/SCC), for the same application, providing the applicable country identifiers are included, the component is **also** CSA Certified, the requirements in item "d" below are complied with and any "conditions of suitability" for the component (as recorded in this descriptive report) are complied with.
  - d) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.
  - e) Substitution of a "Certified" and/or "Listed" component with a component that is "Recognized" or "Accepted" is not permitted without evaluation and report updating.

Subject models are cord-connected, grounded dry-cut metal saws.

The following table itemizes those products covered along with their electrical ratings and model differences.

Model	Description	V	Hz	A	RPM
DRC355	Dry-Cut Metal Saw, 14 inch, chop type, cord-connected, grounded	110-120	60	15	1500
EDC14	Dry-Cut Metal Saw, 14 inch, chop type, cord-connected, grounded	110-120	60	15	1500

**MODEL DIFFERENCES BY ITEM NO**

Model	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
DRC355	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EDC14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

No	UL CCN.	Component Description	Mfr.	Material Cat. No.	Rating, Comment, Dimensions	Appr Agcy
1		Base		Die-Cast Aluminum	Overall 480mm by 290mm by 48mm high by 4mm thick typical and an integral rear guarding measured 130mm by 80mm by 160mm high. Provided with a fence with scale swivel 45 degrees in both directions and a mounting clamp. Provided with two screw secured rubber feet at front. The slot for blade is located 70mm from the front and 50mm from the side. Provided with a transport lock chain.	
2		Base Plate		Steel	Overall 186mm by 111mm by 1mm thick. Secured to the bottom of Base with four screws.	
3		Chip Tray		Steel	Overall 429mm by 85mm 21mm by 0.6mm thick. Slide to the bottom of Base and secured in place by a thumb screw.	

No	UL CCN.	Component Description	Mfr.	Material Cat. No.	Rating, Comment, Dimensions	Appr Agcy
4		Motor Housing		Die-Cast Aluminum	Overall 118mm by 113mm by 173mm long by 3.5mm thick, provided with an integral arm measured 250mm by 114mm by 60mm by 4.5mm thick. Provided with an opening for routing wire. The passage of the wires where go through the opening is additional provided with a pvc tube to prevent from the damage of the wire insulation. Secured to Base with a shaft, spring and fasteners.	
5	QMFZ2	Motor End Cover	Nan Ya (E130155)	PA6 2210G6	Rated HB, all colors, 1.5mm, HWI-2, HAI-0, 100C. Overall 121mm by 119mm by 75mm high by 2.8mm thick. Provided with 22 louvered ventilation slot openings at rear measured 12mm to 37mm long by 0.8mm effective wide, and 9 louvered ventilation slot openings at each side measured 5mm to 35mm long by 0.8mm effective wide. Secured to Motor Housing with screws and spring washers.	UL
6		Gear Housing		Die-Cast Aluminum	Consists of two halves, overall 136mm by 119mm by 88mm by 3mm thick. Provided with four cutouts as exhaust openings, two are 99mm by 5mm wide, and the other two are 78mm by 5mm wide. Secured together to Motor Housing with screws and spring washers.	
7		Upper Blade Guard		Die-Cast Aluminum and Steel	Consists of an inner cover (3mm thick) and an outer blade cover (1.5mm thick), secured together with screws. Overall 430mm by 260mm by 54mm by 1.5mm thick at blade area. Secured to Gear Housing with three screws. Provided with a carriage lock lever and a lower guard operating mechanism. Provided with a mechanical barrier for covering the blade fastener, riveted to the mechanism and secured in place with a screw.	
8	QMFZ2	Lower Blade Guard	Formosa Idemitsu (E238753)	PC 2200	3mm thick. Guard completely covers quadrants C and D. Guarded is shaped such that the 15 degree triangle gauge, measured on the outer edge of the guard, will not touch the centre of the blade arbor when in the full cut position. Provided with an arrow indicating the direction of rotation. Secured to upper blade guard with screws.	UL
9	QMFZ2	Shield	Same as Lower Blade Guard	Same as Lower Blade Guard	3mm thick. Clear. Secured to Upper Blade Guard with screws.	UL
10		Saw Blade		Steel	80 teeth. Carbide tipped. 355mm diameter. 25.4mm arbor. Marked with directional arrow. Max. 1,500rpm.	
11		Saw Blade Support Collar		Steel	75mm (min. 57.3mm) diameter by 6mm thick.	

No	UL CCN.	Component Description	Mfr.	Material Cat. No.	Rating, Comment, Dimensions	Appr Agcy
12		Saw Blade Flange		Steel	101mm (min. 57.3mm) diameter by 6mm thick.	
13		Arbor Bolt		Steel	M10 x 35. LH thread, tightens with normal rotation of saw.	
14	QMFZ2	Handle	Same as Motor End Cover	Same as Motor End Cover	Overall 370mm long by 48mm wide by 160mm high by 3mm thick. Consists of two halves. Secured together with screws. Provided with 52mm by 18mm cutout for the switch trigger. Provided with integrally moulded bosses for strain relief. Secured to Motor Housing with 6 screws.	UL
15	ELBZ2	Power Supply Cord		Type SJT	60C min. 14AWG/3C. 1.8M long min. Provided with NEMA 5-15P plug cap. Black lead connected to terminal of switch.	UL CSA
	ELBZ2	Alternate Power Supply Cord	Ta An	Type SJT	90 C min. 14AWG/3C. 1.8M long min. Provided with NEMA 5-15P plug cap. Black lead connected to terminal of switch.	UL CUL
16		Cord Guard Bushing		PVC	72mm long with a 23mm OD by 3mm thick lip at one end, 15mm OD by 1.5mm thick lip at the end, 11mm ID.	
17	QMFZ2	Strain Relief	Same as Motor End Cover	Same as Motor End Cover	Overall 21mm long by 9mm wide by 4.5mm thick. Provided with 2 integrally moulded semi-circular ribs spaced 5.6mm apart. Secured to integral U-shaped boss on handle by two self-tapping screws.	UL
18	WOYR 2/8	Power Switch	Chily	8307	Double poles single throw. Momentary contact. Rated 22A; 125Vac. Accepted with test for 60 LRA.	UL CUL
19		Soft Start Control Board			III. 1. Secured to Motor Housing with two screws and spring washers. Consists of the following major components.	
I	QMFZ2	Housing	Nan Ya (E130155)	PA6 2210G6	Rated HB, all, 1.5mm, HWI-2, HAI-0, 120°C. Overall 67mm by 52mm by 7mm by 2mm nominal thickness.	UL
II		Printed Wiring Board		Phenolic	Rated V-1 or better. Overall 63mm by 48mm by 1.6mm thick. The board is located in the Housing and potted with epoxy.	UL
III	FOWX 2	Across-The-Line Capacitor (CX1) (INT)	Carli	MPX	Rated 275Vac, 0.1uF. Mechanically secured and soldered to Printed Wiring Board.	UL CSA
	FOWX 8	Alternate Across-The-Line Capacitor	AD	MEX	Rated 275Vac, 0.1uF. Mechanically secured and soldered to Printed Wiring Board.	CUL UL
IV	FOWX 2	Line-to-Ground Capacitors (CY1, CY2) (INT)	Success	SE	Rated 300Vac, 3300pF, Y2. Mechanically secured and soldered to Printed Wiring Board.	UL CSA
V		Capacitor (C5, C7)		Electrolytic	C5: 25 V, 10 uF, 105 C. C7: 25 V, 100 uF, 105 C.	

No	UL CCN.	Component Description	Mfr.	Material Cat. No.	Rating, Comment, Dimensions	Appr Agcy
VI		Capacitor (C4, C6)		SMD	C4: 50 V, 0.1 uF C6: 100 V, 0.01 uF	
VII		Diode (D1) (INT)		1N4007	Rated 700 V, 1 A.	
VIII		Resistors (RL1, R1-R5, R8-R10, R12, R16)		SMD	RL1: 1M ohm, 1/4 W. R1, R4, R5, R9: 2k ohm, 1/4 W. R2: 680k ohm, 1/4 W. R3: 100 ohm, 1/4 W. R8, R12: 220k ohm, 1/4 W. R10: 20k ohm, 1/4 W. R16: 100k ohm, 1/4 W.	
IX		Integrated Circuit (IC1) (INT)	Atmel	U2008B	Rated 16.8 V, 30 mA.	
X		Triac (TR1) (INT)	ST	BTA26-600B	Rated 600 V, 26 A, riveted to an aluminum heatsink, overall 50mm by 40mm by 1.8mm thick.	
XI		Lead Wires		TEW/UL 1015	16AWG. Rated 600V, 105°C. One end soldered to Printed Wiring Board; the other terminated in a certified sleeved bullet type connector.	UL CSA
XII		Potting Compound	Shaw Huow Ent.	Epoxy 9001A/9001 B	Rated V-0 at 1mm thick, CTI-0.	UL
20	AVLV2	Internal Wiring		AWM, TEW, FT1	14AWG, 105C, 300V or 600V. All routed inside plastic housing parts.	UL CSA
21		Brush		Carbon	17mm by 7mm by 17mm long. Length of pigtail is 15mm, which is shorter than brush holder copper sleeve, providing brush retention feature at end of brush life. Spring-loaded type.	
22	QMFZ2	Brush Holder		Phenolic.	Overall 17mm by 15mm by 24mm high by 2.5mm thick. Provided with 19mm long by 9mm by 19mm copper alloy insert. Secured to Motor Housing with two screws.	
23		Stator		Laminated Steel	94mm OD by 54mm ID by 65mm stack. Class A insulation.	
I	OBMW 2	Stator Winding		Enameled copper wire	Polyester base coat. Main winding, 0.95mm dia., 30 turn. Varnish impregnated.	UL
II		Stator Slot Liner		Polyester film or Polyethylene Terephthalate adhered to pressed paper.	0.25mm thick. Extends minimum 2.4mm beyond stator lamination.	
III	QMFZ2	Stator Slot Wedge (Stator End Plate)	Same as Motor End Cover	Same as Motor End Cover	Overall 84mm by 94mm by 27mm by 2mm thick by 80mm OD. mounted on Laminated Steel for fixed winding. Extends minimum 2.4mm beyond stator laminations.	UL

No	UL CCN.	Component Description	Mfr.	Material Cat. No.	Rating, Comment, Dimensions	Appr Agcy
IV	AVLV2	Stator lead		AWM, TEW, FT1	14AWG, 105C, 300V or 600V. Mechanically secured and soldered to winding. Connection is sleeved by certified silicone coated fiberglass tubing.	UL CSA
24		Armature			53mm OD by 65mm stack. 16 slots. Class A insulation.	
I	OBMW 2	Armature Winding		Enameled copper wire	Polyester-imide base coat. 180C. 1.0mm dia., 4 turn. Varnish impregnated.	UL
II		Shaft		Steel		
III	QMFZ2	Shaft Insulation		Treated paper	1mm thick min, extends through windings, commutator and laminations. Extending at least 4.7mm beyond windings at fan end and at least 4.7mm from commutator bar to bearing.	UL
IV		Armature Slot Liner		Polyester film	0.25mm thick. Extends minimum 2.4mm beyond lamination	
V	QMFZ2	Armature Slot Wedge		Vulcanized Fibre	0.6mm thick minimum. Extends minimum 2.4mm beyond lamination	UL
VI	QMFZ2	Armature End Spider		Vulcanized Fibre	Sized to fit armature end laminations. 2.4mm thick at spider.	UL
VII		Commutator			32 bars, 38.5mm OD by 25mm long. Bars spaced 7mm from bearing. Over surface distance from commutator bar to bearing is larger than 4.7mm.	
VIII		Commutator Insulation		Phenolic	1.0mm thick min. Basic insulation	
IX		Fan		Plastic	Radial type. 80mm OD, 30 blades, 15mm high, each blade 25mm long.	

**TEST RESULTS**

**Edition:** 1 (Project 2590958 )

The following tests were performed at submittor’s facilities. Lee Yeong Industrial Co., Ltd., No. 2, Kejia Rd., Douliu City, Yunlin County 64057, Taiwan, unless otherwise stated.

**MODEL TESTED:** DRC355

**MARK RATING:** 120V, 60Hz, 15A, 1500rpm.

**Tested to CAN/CSA C22.2 No. 71.2-10 / UL Std. No. 987 - 8th Edition**

**RATING/CURRENT INPUT:** Cl 7.2 / Par 54

Test	Volts	Hz	Amps	Watts	RPM	Output Watts	Conditions
1	120	60	9.0	1132	1576	-	No load (at dynamo)
2	120	60	7.7	976	1434	-	No load (at tool)
3	120	60	14.8	1870	-	-	Input test load, cutting 120mm by 120mm square stock
4	120	60	13.9	1760	-	-	Input test load, cutting 132mm round pipe
5	120	60	15.0	1893	1260	-	Rated load (0.777 kg-m)
6	120	60	60.0	-	-	-	Locked rotor

**Results:** OK

**STARTING:** Clause 7.4 / Par 53

Three times from standstill, no load.

Normal operation.

Fuse rating 15A, normal.

**Results:** OK

**BLADE STOPPING TIME:** Clause 5.3.12.14 / par 47.3.

No load for 15 minutes

Stopping time for each of 10 on-off cycles at 30 sec. interval.

Stopping time (Max 15sec or 25sec)

Test	1	2	3	4	5	6	7	8	9	10
Time (Sec)	7.6	6.8	6.7	6.3	6.4	6.7	6.6	6.6	6.7	6.5

**Results:** OK

**TEMPERATURE:** Clause 7.3 / par 55

Thermocouple Location	Deg C					
	Per rating test #					
	5					
Stator winding (com. end)	73.0					
Stator winding (com. end)	76.4					
Stator winding (opposite end)	67.5					
Stator winding (opposite end)	70.4					
Rotor (probe)	91.0					
Internal wiring	76.4					
Power supply cord	53.3					
Motor enclosure (outside wall)	42.9					
Surface subjected to contact (Handle)	29.5					
On-Off switch	43.9					
Brush holder	48.2					
Printed Circuit Board	53.5					
Triac TR1	54.8					
Capacitor C1	44.0					
Motor end cap	33.7					
Ambient (thermometer)	25.0					

Results: OK

**LEAKAGE CURRENT:** Clause 7.6 / Par 52

Polarity	Maximum Leakage Current (mA) (Max. 0.5)			
	At Ambient		Hot	
	S1 Open	S1 Closed	S1 Open	S1 Closed
Normal	0.17	0.14	0.21	0.18
Reverse	0.17	0.14	0.21	0.18

Results: OK

**DIELECTRIC STRENGTH:** Clause 7.5 / Par 56 (grounded tools)

Twice max rated voltage plus 1000V ac (1240 V ac for 1 min).

Results: OK

**CONDITIONING:** Cl. 7.7/ -

(Tools with series motors only)

Conditioned for 48h (100s ON, 20s OFF), no load.

Mechanical/Electrical security compliance.

Yes

Dielectric strength test compliance (twice rated voltage plus 1000V ac).

Yes

After conditioned for 48h at 32 ±2°C, 88 ±2% relative humidity.

Yes

Polarity	Maximum Leakage Current (mA) (Max. 0.5)	
	After Humidity	
	S1 Open	S1 Closed
Normal	0.110	0.048
Reverse	0.110	0.045

Results: OK

Note: Conducted at CTS Lab.

**STRAIN RELIEF:** Cl. 7.8 / Par 59, 60

Pull 155N (35 lbs) for 1 minute Yes  
 Pull 65N (15 lbs) for 1 minute (interconnecting cords less than 305mm long) Yes  
 Push back 26.7N (6 lbs) Yes

**Results:** OK

**PHYSICAL ABUSE:** Cl. 7.10 / Par.58.1, 33.8

Impact, 3 times, 7J (5 ft-lb) on enclosure and handle Yes  
 Switch impact, 3 times, 1.4J (1 ft-lb) Yes

Reduced spacing No  
 Exposure of live or functionally insulated parts No  
 Rupture in the enclosure No  
 Damage to insulation barriers or supports No  
 Other conditions increasing mechanical or shock hazard No

**Results:** OK

**ELECTRONIC COMPONENTS TEST:** Cl. 7.11 / Par 64

For electronic components

Component	Open / Short	Result
Capacitor C7	Short	Not operated.
Diode D1	Short	Not operated.
TR1 A1-G	Short	Normal operation
TR1 A1-A2	Short	Normal operation
TR1 A2-G	Short	Not operated

3A fuse to ground opened. No  
 Fire hazard. No

**Results:** OK

**SWITCH OVERLOAD:** Cl. 7.12.1.1 / Par 62.1

(50 operations, locked rotor, must operate at 51<sup>st</sup> cycle), On-Off Switch, Circuit Breaker, etc.

Switch Type	Manufacture	Catalogue No	Tested at:		
			Volts	Hz	Amps
Momentary contact switch	Chily	8307	120	60	60

Electrical breakdown or mechanical malfunction of the device No  
 Welding or undue pitting or burning of the contacts No  
 Opening of 3 A fuse in the grounding connection No

**Results:** OK

**OVEN CONDITIONING:** Cl. 7.13 / par 58.4 and 69.3

7h at 90 C Yes  
 Switch impact repeated, 3 times, 1.4J (1 ft-lb), Cl. 7.10.3 Yes  
 7h at 90 C Yes  
 Impact, 3 times, 7J (5ft-lbs), also on switch guard UL par 58.4 Yes  
 Strain Relief repeated. UL par 59 Yes

**Results:** OK

**TEMPERATURE (ABNORMAL):** Cl. 7.14/ -

(Stalled motor, 30A P-type fuse, 4 layers of cheese cloth below tool, all tools except those with momentary contact switch without lock-on button).

Manual protector operated 10 times or 7h max. Yes/No

One shot protector opened without hazard. Yes/No

30A line fuse opened in \_\_\_\_\_min/sec. Yes/No

Failure of \_\_\_\_\_

Open circuit of winding in \_\_\_\_\_min/sec.

Short circuit of \_\_\_\_\_

Enclosure material intact. Yes/No

Cheesecloth ignited. Yes/No

Probe test acceptable. Yes/No

**Results:** N/A. Since the tool controlled by a momentary contact switch and without a "lock-on" feature.

**STABILITY:** Par 31

7° tilt from horizontal. Yes

**Results:** OK

**GROUND PATH RESISTANCE:** Par 66 (Max. 0.1 ohm)

Between equipment grounding terminal or lead or the point of attachment of the wiring system, and table, 0.091 ohms.

and motor housing, 0.065 ohms.

and guard, 0.042 ohms.

**Results:** OK

**ROTATING MEMBER TEST:** Par 86.3

Carbide tipped circular saw blade, 1,000,000 rev. at 2400 rpm. (150% of maximum speed)

**Results:** OK