

Corewise Automated core saw **Operations and safety manual**



Équipement Jexplore inc.

1100, rue des Manufacturiers
Val-d'Or, Québec, J9P 6Y8
(819)824-6002

www.jexploreinc.com

info@jexploreinc.com

	TABLE OF CONTENT	PAGE
1.	The core cutting blade	3
2.	Safety	3
3.	General Safety Regulations	3
4.	Personal protective equipment	4
5.	Security Devices	4
6.	Potential hazards	5
7.	Pre-Start Checklist	6
8.	Startup	6
9.	Cutting core	6
10.	Shutting down	6
11.	End of shift	6
12.	Weekly maintenance	7
13.	Cutting speed	8
14.	Options and spare parts	8
	- Water recycling tank	8
	- Core Holder	8
	- Saw Blades	9
	- Spares parts	9
15.	Drive belt replacement	9
16.	Wiring diagrams	10
	- 3 phases wiring diagram	10
	- Single phase wiring diagram	11
17.	Troubleshooting	12
18.	Change chain belt	13
19.	Blade Shaft assembly replacement	13
20.	Blade replacement	14
21.	Automatic core saw specifications	15
22.	Notes	16

1. The core cutting blade

The core cutting blade is made to strict engineering design and is of very high quality. It is specifically designed for the purpose of cutting rock and will not tolerate any misuse or improper operation. It is perfectly balanced which is paramount in its performance but because of the need to be perfect in this regard it is very fragile.

Never under any circumstances cut anything without a continuous flow of water onto the blade and into the cut. Failure to observe this will cause the blade to overheat (blue) lose tension (become wobbly) and possibly fail risking severe personal injury.

These following rules must be strictly adhered to.

- Never under any circumstances cut anything that the blade has not been designed to cut.
- Never slam core into the blade, always introduce a smooth entry.
- Never stall the blade into the rock.
- Never hit the blade sideways.

Observing these simple rules regarding the use of the blade will help keep the job safe and greatly extend the life of the blade.

The life of the blade can be greatly increased by ensuring the proper conditions exist for the blade. These conditions include, proper operator training, adequate water flow, correct blade speed, and the appropriate blade to suit the ground being cut.

2. Safety

Safety is paramount in any operation and is all too often overlooked in core cutting operations. **Flesh and bone are no match for a high-powered core cutting machine** spinning at high speed a blade containing the hardest known cutting material.

3. General Safety Regulations

There are general safety rules that should be observed while using any power tool:

- No person shall operate a diamond cutting saw without proper training and authorisation on the use of and the procedures involved with the operation of the saw.
- Under no circumstances should a diamond core cutting machine be operated while under the influence of alcohol or drugs, including prescription drugs.

4. Personal Protective Equipment



Personal protective safety equipment must be worn while using a diamond core cutting machine. This includes :

- Safety glasses ,
- Ear muffs/plugs,
- Tight fitting waterproof apron,
- Steel toe rubber boots,
- No loose sleeves

Plus any other relative site safety equipment.

Personal protective equipment must be worn while using or in the vicinity of a diamond core cutting machine. Special attention should be made to hearing and eye protection.

Diamond core cutting machines are extremely loud and failure to use approved hearing protection will result in hearing loss. Eye protection must also be worn in the vicinity of a diamond core cutting machine. The blade of the machine is spinning at nearly 3000 rpm and any small chip of rock flying at this speed can cause serious damage to unprotected eyes.

It is also important that the operator is protected from the spray of the water. The light mist that is present can easily cause an operator to become chilled; extra attention should be paid to this during the winter months.



Mine regulations state that on any mine or exploration site, that steel toe safety boots, must be worn. During core cutting operations, it is recommended that rubber steel toe boots be worn to prevent the operators feet becoming wet. The type of boots worn should also have good tread to prevent the operator slipping in the wet conditions. Gloves can also be worn, but it must be stressed that only the tight fitting house hold type glove should be worn. Loose fitting gloves can easily get caught in the blade.

5. Security devices

Blade guard: Designed to contain fragments or broken blade at no risk to the operator

Spray/splash guard: Ensures no airborne vapour

Emergency stop: As well as stopping the machine, the emergency stop has a braking effect rather than freewheeling to a stop

Cut out switch on blade cover: Stops the machine if the primary cover is raised while the machine is in operation. *This switch must be checked in the daily pre-start check*

Noise reduction: While the machine has been designed with minimal noise emissions, ensure hearing protection is worn.

6. Potential hazards

Electrical: Cease operation immediately, tag machine and report fault. Repairs are to be carried out by qualified personnel.

High speed rotating saw blade: Do not lift the primary/secondary blade cover while the machine is in operation.

Crushing and cutting: Do not place hands or fingers between the cutting block and blade housing

Hearing Loss : Always wear hearing protection

Airborne fragments: Always wear eye protection

Falling Core: Appropriate feet protection must be worn.

Back injury: Ensure safe lifting practises are adhered to at all times

7. Pre-start Checklist

Remember that it is designed to protect you..

- Ensure work area is clean
- Lubricate drive chain
- Inspect blade for wear
- Turn water on
- Check water flow on to blade
- Drainpipe securely fitted and waste is directed away from work area
- The blade guard must be lowered and locked
- Turn power on at main panel
- PPE (Personnel Protection Equipment) to be worn

8. Startup

- Start saw and perform emergency stop test on panel
- Start saw and perform emergency stop test by lifting blade safety arm

***If machine fails to stop cease operation immediately. Tag machine and report fault. Repairs are to be carried out by qualified personnel.**

9. Cutting core

- Load core into core holder
- Place core holder into automatic feed slot with teeth towards the left
- Remove core holder from right side of machine, and repeat steps 1 and 2
- multiple core trays can be fed at a time.

10. Shutting down

- Check that all core holders are removed from the machine
- Turn the feed switch to the off position
- Press the stop button
- Turn off mains breaker
- Turn off water

11. End of shift

- Wash down machine with a broom or brush
- Wash out core holders
- Clean all debris from floor area

- Apply grease to both grease nipples on blade shaft – 2 pumps each, and clean off any grease that comes out of the bearings.
- Start saw, turn feed switch to forward, spray chain with lubricant for one full rotation
- Turn feed switch to off and shut the saw down

12. Weekly maintenance

Apply grease to both grease nipples on both sides of the saw – 2 pumps each

Control Panel. (Left to right)



Green :	Start blade
Red :	Full stop
Yellow :	Reset light indicator
Large Red:	Emergency stop.
Black switch :	Chain drive reverse, neutral and forward



Blade cover housing with lock down latches and water tap



V core holder in automatic feed slot (nylon belt drive shown)

ATTENTION :

This security bar is not a handle to open the blade guard

13. Cutting speed

If the saw stops or jerks

- Click on « Press to change settings»
- Set the «mid rate» to 50%
- Feed speed « feed rate» from 5%
- Click on «Exit»

If the saw is cutting smoothly and showing below 11 amps, you can speed up the feed, see previous instructions.



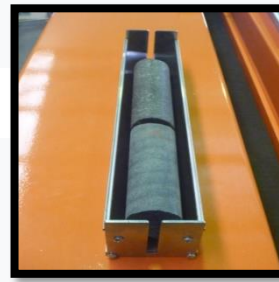
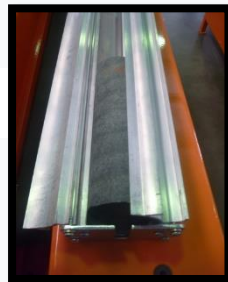
14. Options and spare parts

Water recycling tank

4000-BAC	Water recycling tank
4000-P	Submersible pump



Broken core guide



Universal V core holder

Core holders

Part no	Description
4000-CRH-V	Automatic Core Saw, "V" Core Holder B to P
4000-BCRB	B Size Broken Core Guide
4000-BCRH	H Size Broken Core Guide
4000-BCRN	N Size Broken Core Guide
4000-BCRN2	N2 Size Broken Core Guide
4000-BCRP	P Size Broken Core Guide

Saw blades

D-12-ESN	ESN Blade for medium to hard
D-12-GB35S	GB35 silent for hard to very hard
D-12-GB37S	GB37 silent for med to hard rock
D-12-GB35	GB35 for hard to very hard
D-12-GB37	GB37 for med to hard rock

Spare parts

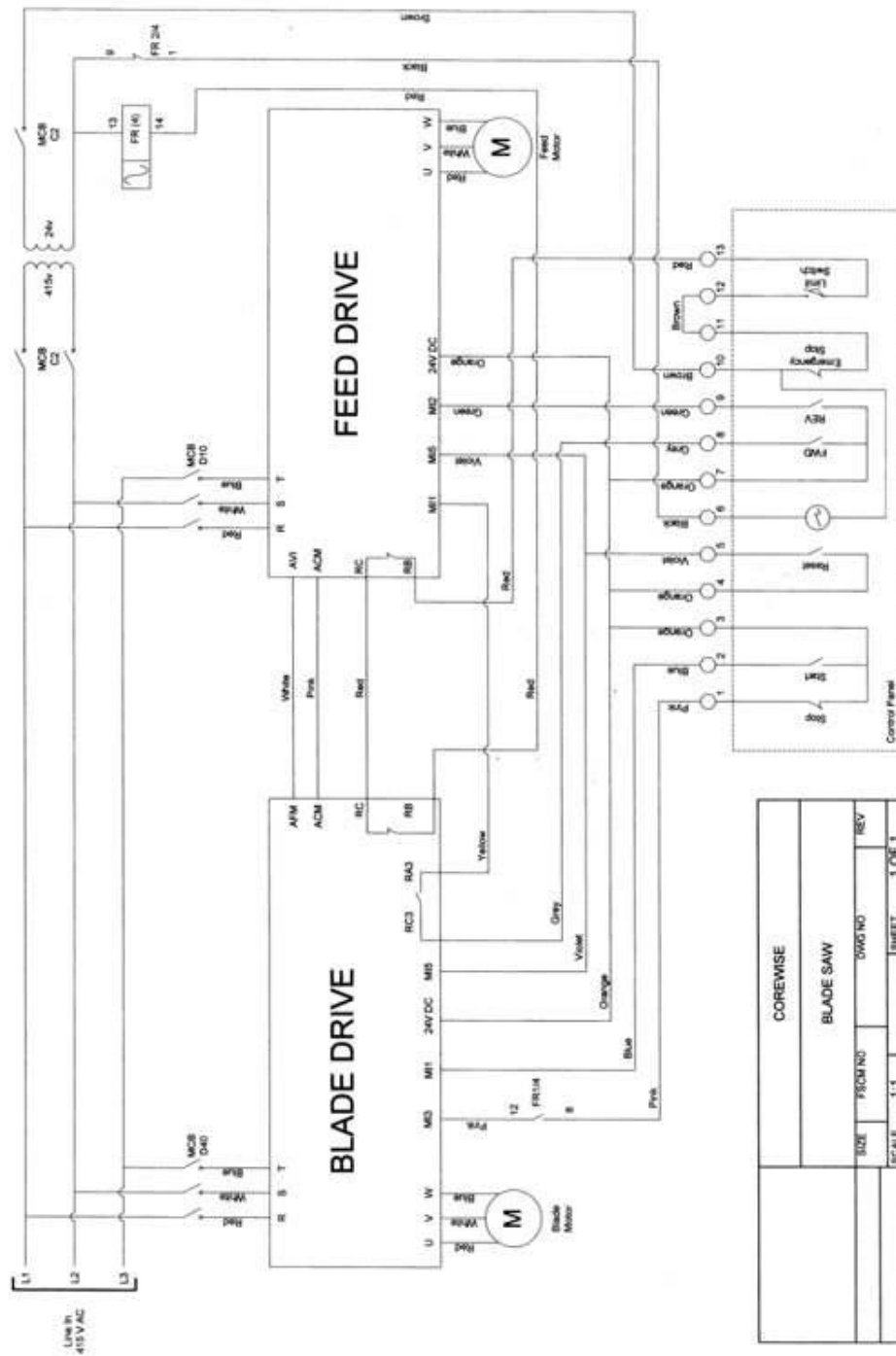
	Spare Belt for the 3 Phase Automatic Coresaw Unit
4000-B-9660	Spare Belt for the Single Phase Automatic Coresaw Unit
4000-C2103	Blade Shaft
4000-BSA	Blade Shaft assy.
4000-TLP	Shaft pully
4000-PRGNAP-205	Shaft Bearing Big
4000-PRGNAPA205	Shaft Bearing small
4000-CHAINE	Spare Chain
4000-12B-2CL	Chain link
	More parts available upon request

15. Drive Belt Replacement

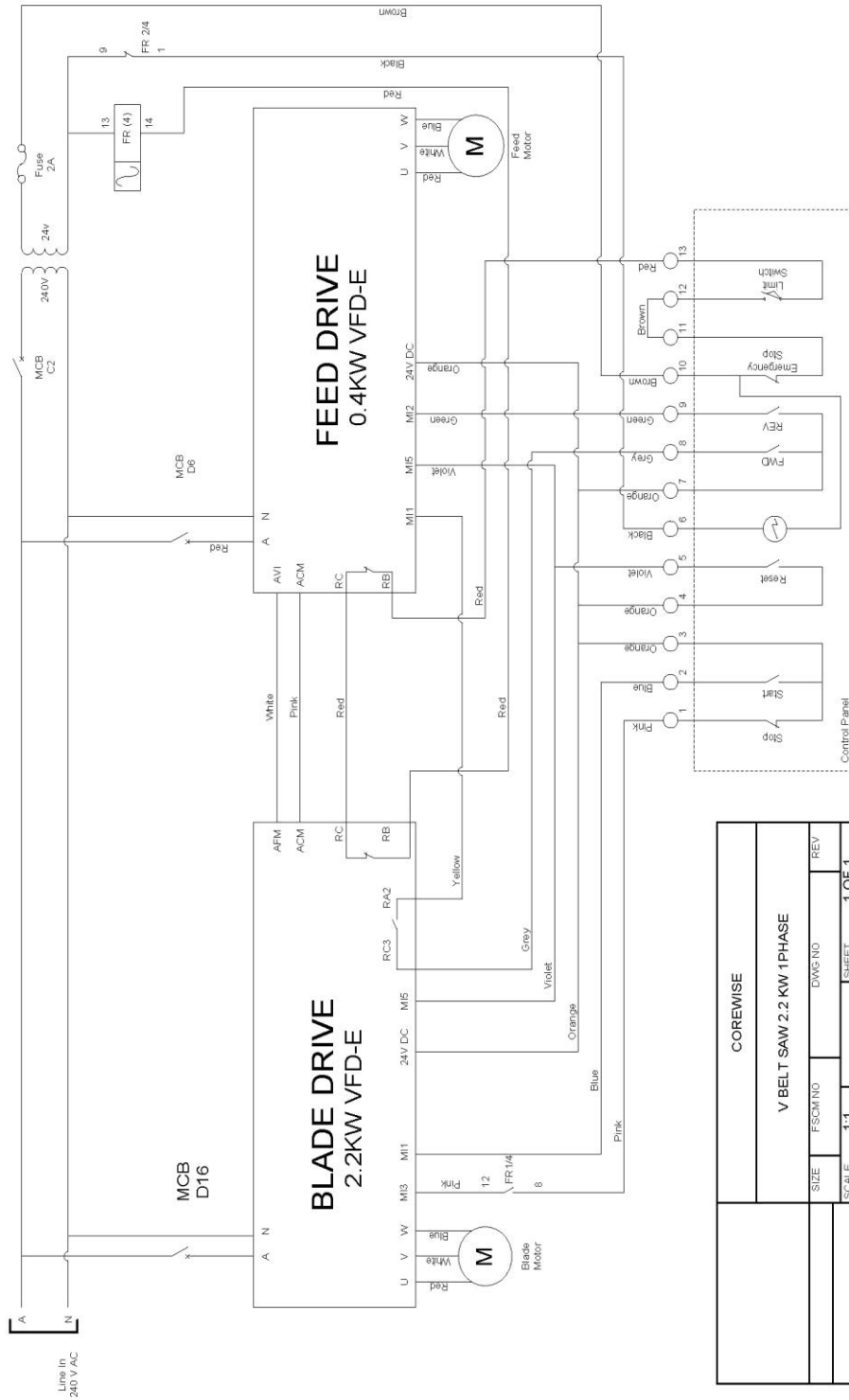


- Remove rear panel
- Locate the bolt below the motor
- Bolt size 22mm or 7/8"
- To loosen, turn the bolt clockwise

16. Wiring diagrams:



3 phase wiring diagrams



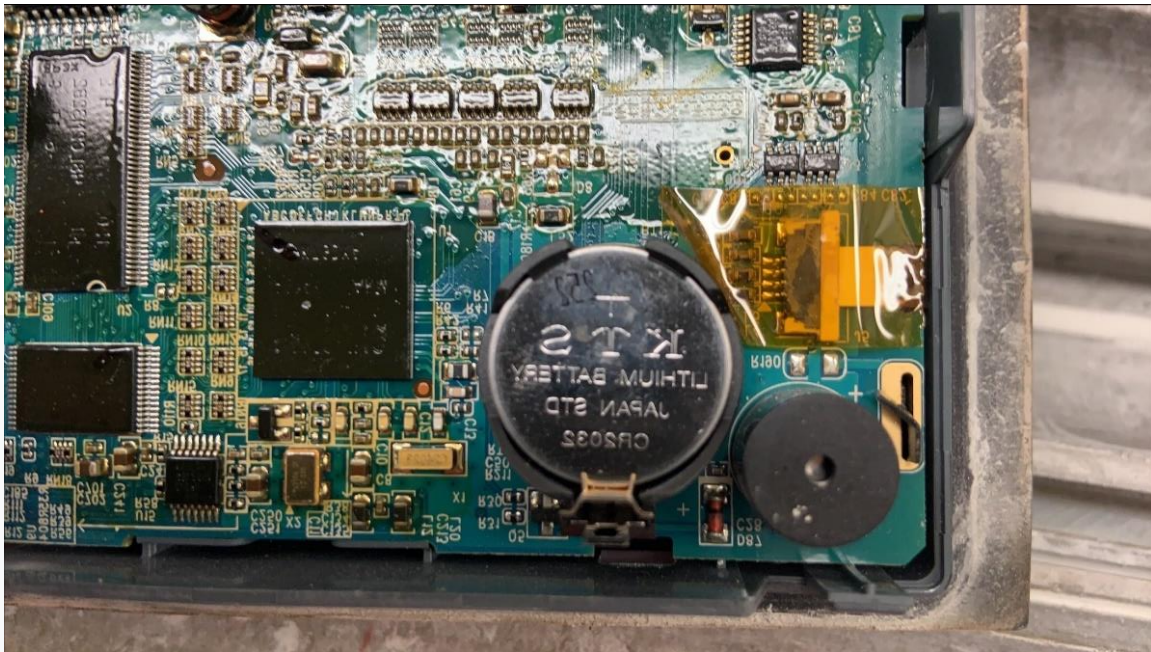
Single phase wiring diagram

17. Troubleshooting

If you get a “com3” error on the display, you have tripped a breaker which is usually caused by the feed working too fast.

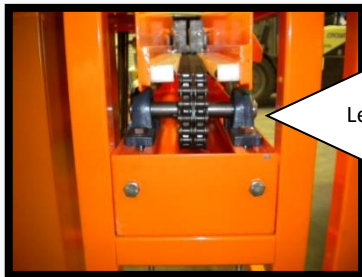
- Remove the back panel of the saw.
- Open the control panel
- Turn off all 3 breakers and turn them back on. Display should be back to normal after reboot.
- Close the control panel. (Never run the saw with the panel open)
- Lower the feed and try again

If display shows low battery, you must change the battery on the back of the screen with a CR2032



18. Chain belt replacement

1. Remove all panels
2. Loosen left pillar blocks and tensioners
3. Find chain link (always facing front panel) and remove.
4. Remove chain
5. Refit new chain
6. Tension chain until it supports its own weight
7. Tighten the 4 pillar bolts
8. Re-install the pannels



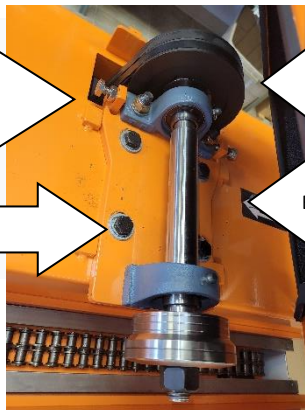
Left pillar blocks and tensioners

19. Blade Shaft assembly replacement

1. Remove blade
2. Remove rear panel
3. Remove 2 drive belts
4. Remove duplex pulley
5. Undo 4 bolts holding shaft housing
6. Remove shaft
7. Fit new shaft assembly
8. Re fit and lightly tighten the 4 bolts in the shaft housing
9. Fit new blade
10. Slide in Jig or core holder
11. Tighten 2 adjusting bolts until the blade is square and runs true
12. Tighten 4 shaft housing bolts completely
13. Remove jig or core holder
14. Refit pulleys to shaft – Note must be aligned with pulley on motor
15. Fit belts and retension
16. Refit panel

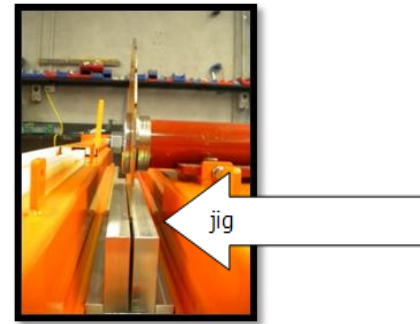
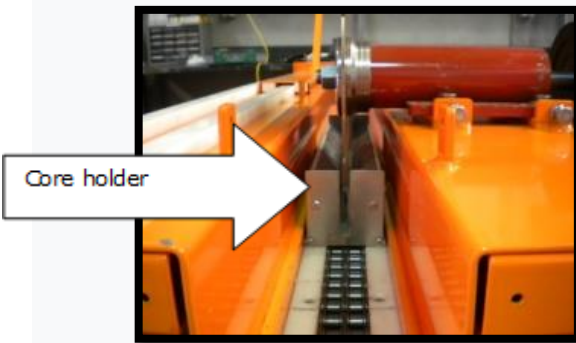
Adjusting bolt

Shaft housing bolt



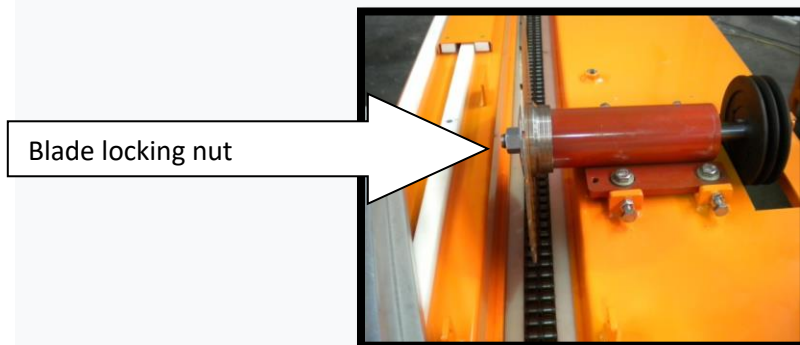
duplex pulley

Blade shaft



20. Blade replacement

1. Unlock blade housing and swing open
2. Loosen and remove blade locking nut
3. Remove washer
4. Remove blade
5. Fit new blade onto the shaft and ensure that the locating pin is secure to the blade. **Note the directional arrows on the blade MUST BE set to the correct directions. Saw blade will run counter clockwise**
6. Fit shaft washer
7. Fit blade locking nut and tighten securely
8. Close blade housing cover and lock down



21. AUTOMATIC CORE SAW SPECIFICATIONS			
PRODUCT CODE	4000-W3	4000-W1	
BLADE GAURD CAPACITY	300 mm	300 mm	
MAX DEPTH OF CUT	Cuts from B to P size core		
BLADE ARBOUR SIZE	25.4mm	25.4mm	
BLADE SHAFT DRIVE	TWO V BELTS	TWO V BELTS	
BLADE GAURD	STAINLESS STEEL		
BLADE COOLANT	WATER	WATER	
FRAME	POWDER COATED GALVANISED STEEL		
WEIGHT IN KG	440	170	
CRATED	543	259	
DIMENSIONS mm			
WIDTH	868	868	
HEIGHT	1406	1406	
LENGTH	2048	1638	
POWER SOURCE			
PRODUCT CODE	4000-W3	4000-W1	
MOTOR	ELECTRIC	ELECTRIC	
KW	7.5KW	2.2KW	
HP	10HP	3HP	
VOLTAGE	600	240	
BLADE SHAFT RPM			
CYCLE HZ	50 2400	2400	
	60 2509	2509	
PHASE	3	1	
MAX LOAD CURRENT	12 AMP	10 AMP	
STARTER	VARIABLE SPEED DRIVE		
COOLANT	AIR		
* Specifications are subject to change without notice			

