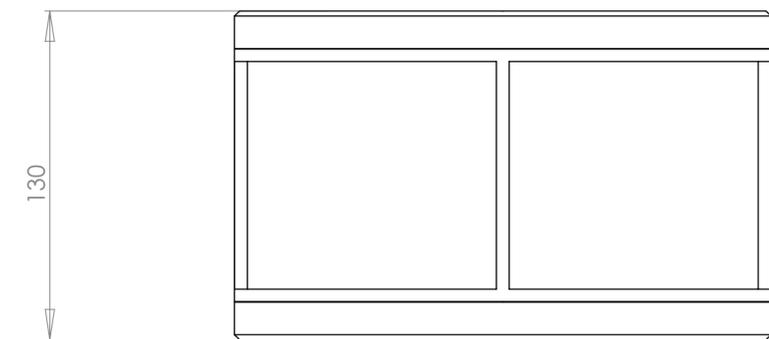
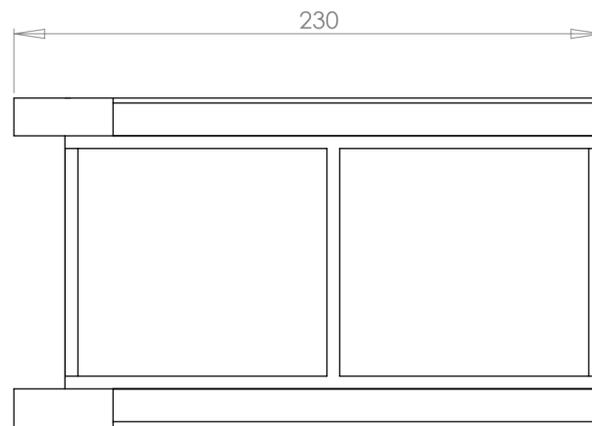


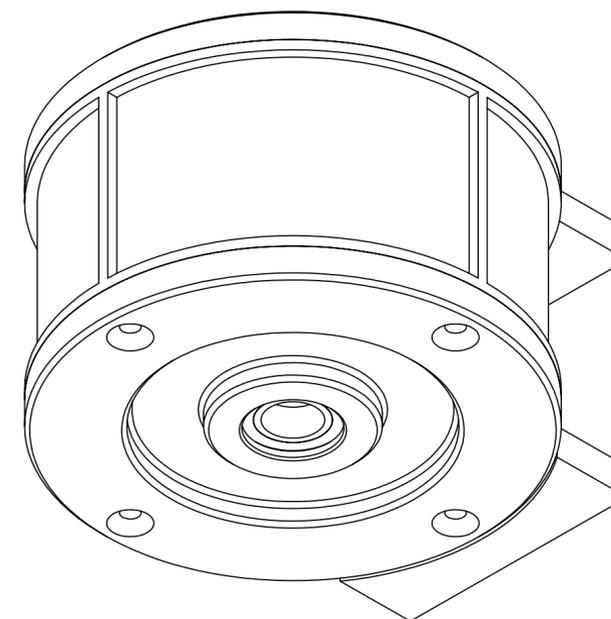
FRONT VIEW



TOP VIEW



SIDE VIEW



THE PARTICULAR GENERATOR USED IIN THE PROTOTYPE DESIGN IS A 500 W MICRO-HYDROTURBINE INDUCTION GENERATOR. THE GENERATOR HAS BEEN MODELLED FOR SIZING PURPOSES OF THE OTHER MECHANICAL COMPONENTS. THE GENERATOR IS MOUNTED TO THE BRAKE AND GENERATOR PLATFORM AND FASTENED USING A SERIES OF M8 BOLTS. THE GENERATOR HAS A RATED OPERATING SPEED OF 1000 RPM, HOWEVER IT PRODUCES POWER EVEN AT LOWER RUNNING SPEEDS. THE CURRENT IS INVERTED AND THEN IS REGULATED USING A SHUNT REGULATOR CIRCUIT. THE ELECTRICITY CREATED IS THEN USED TO POWER CHARGE A BATTERY AND ONCE FULLY CHARGED IS DIVERTED TO A HOT WATER SYSTEM. THE GENERATOR HOUSING IS CAST ALUMINIUM. THE GENERATOR ROTOR CONSISTS OF A SERIES OF LAMINATED STEEL PLATES WHILS THE WINDINGS ARE WOUND COPPER WIRE.

THE ROTOR OF THE TURBINE IS CAPABLE OF PROVIDING ENOUGH POWER TO DRIVE GENERATOR'S UP TO AROUND 2kW, DEPENDING ON THE WIND CONDITIONS IN THE PARTICULAR AREA OF INSTALATION. LARGER GENERATORS WILL GENERALLY HAVE A LARGER DIAMETER AND THEREFORE THE BRAKE AND GENERATOR BRAKET MAY NEED TO BE ADJUSTED TO ALLOW FOR THE CHANGE IN CENTRE HEIGHT OF THE GENERATOR ROTOR.

**PROPRIETARY AND CONFIDENTIAL**  
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UNIVERSITY OF SOUTHERN QUEENSLAN	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN J.KIRSCH 6/10/09	NAME DATE	KH3- 500 WIND TURBINE TITLE: 500W INDUCTION GEN
	INTERPRET GEOMETRIC TOLERANCING PER: MATERIAL	CHECKED		
	FINISH	ENG APPR.		
	DO NOT SCALE DRAWING	MFG APPR.		
NEXT ASSY	USED ON	Q.A.	COMMENTS:	SIZE DWG. NO. REV C 20
APPLICATION				SCALE: 1:2 SHEET 1 OF 1