

DO NOT SCALE DRAWING

SWIFT FREE STANDING POLE MOUNT ENERGY SYSTEM - PACKING LIST				
PART NUMBER	DESCRIPTION	QTY.	PACKAGING DIMENSIONS	SHIPPING WEIGHT
P02-157	FREE STANDING POLE MOUNTING SYSTEM	1	9000mm x DIA 300mm	450Kg
P02 -110-120-130	PMG AND NACELLE ASSEMBLY	1	570 x 420 x 500mm	37Kg
P02-140	FURLING SYSTEM	1	140 x 330 x 100 mm	7.5Kg
P02-101	ROTOR ASSEMBLY	1	DIA 2100mm	16Kg
P02-160	SWIFT INVERTER	1	560 x 400 x 230mm	13Kg
P02 - 203	BOLTS AND BITS - FSPMS	1	TBC	~10Kg (TBC)

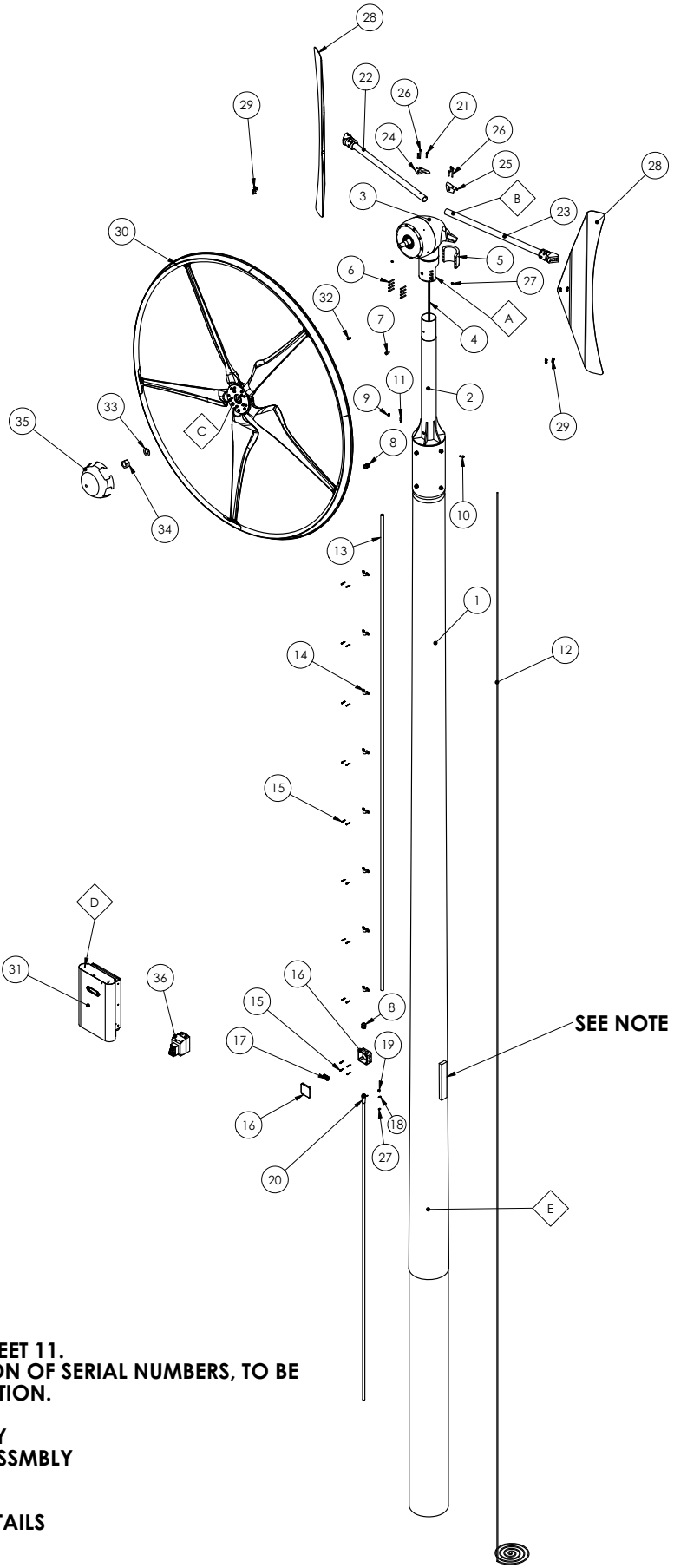
INSTALLATION PARTS LIST - SEE PAGE TWO FOR EXPLODED DIAGRAM							
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	PARTS LIST	TOOLS REQUIRED	TORQUE	THREADLOCK
1	1500027	WOODEN POLE PREPARED, STOUT 9M	1				
2	1500021	WOODEN POLE ADAPTOR, STOUT	1	P02 - 157			
3	P02 - 110/120/130	NACELLE ASSEMBLY	1	P02 - 110/120/130			
4	1500014	MAST CABLE	1	P02 - 110/120/130			
5	1100004	YAW POST CLAMP	1	P02 - 110/120/130			
6	3020008	CAPSCREW M6X40, S/S	8	P02 - 110/120/130	5MM HEX KEY SOCKET	10Nm	LOCTITE 243
7	3040001	CAPSCREW M10X20, S/S	1	P02 - 203	8MM HEX KEY SOCKET	40Nm	LOCTITE 243
8	1500024	CABLE GLAND M20 X 1.5	2	P02 - 203		20Nm	LOCTITE 5920
9	3030002	FLANGE NUT, M8, STAYTITE, PLATED	1	P02 - 203			
10	3030012	CAPSCREW M8X20, S/S	1	P02 - 203	6MM HEX KEY SOCKET	20Nm	
11	3030014	M8 RING TERMINAL/CRIMP	1	P02 - 203	CRIMP TOOL		
12	1500026	EARTH WIRE, 10MMSQ	1	P02 - 203			
13	1500023	CONDUIT, FSPMS	1	P02 - 203			
14	1500022	CONDUIT CLIP, FSPMS	8	P02 - 203			
15	3060004	WOODSCREW CSK 1"-2"	20	NOT SUPPLIED			
16	1500025	JUNCTION BOX, FSPMS	1	P02 - 203			
17	1500016	CONNECTOR BLOCK, MAST	1	P02 - 203			
18	1500028	M6 RING TERMINAL/CRIMP EARTH WIRE	1	P02 - 203	CRIMP TOOL		
19	3020024	BOLT, HHF, M6X10, S/S	1	P02 - 203	10MM SOCKET	10Nm	
20	1500007	CABLE GLAND CW20S	2	NOT SUPPLIED			LOCTITE 5920
21	3020006	CAPSCREW M6X30, S/S	4	P02 - 110/120/130	5MM HEX KEY SOCKET	10Nm	LOCTITE 243
22	P02 - 140 - 02	BOOM, FURL SIDE	1	P02 - 140			
23	P02 - 140 - 03	BOOM, NON FURL SIDE	1	P02 - 140			
24	1100010	BOOM CLAMP, LH	1	P02 - 110/120/130			
25	1100009	BOOM CLAMP, RH	1	P02 - 110/120/130			
26	3020018	CAPSCREW M6X60, S/S	2	P02 - 110/120/130	5MM HEX KEY SOCKET	10Nm	LOCTITE 243
27	3020003	FLANGE NUT, M6, STAYTITE, PLATED	3	P02 - 110/120/130	10MM SOCKET		
28	1400007	FIN, BENT	2	P02 - 140			
29	3020005	BOLT, HHF, M6X16, S/S	8	P02 - 200	10MM SOCKET	10Nm	LOCTITE 243
30	1000023	ROTOR	1	P02 - 101			
31	1600001	SWIFT INVERTER	1	P02 - 160			
32	1300015	KEY STEEL, 12X8, S/S	1	P02 - 203			
33	3060002	WASHER, M30, S/S	1	P02 - 203			
34	3060001	NUT, M30, STAYTITE, PLATED	1	P02 - 203	46MM SOCKET	250Nm	
35	1000021	NOSE CONE	1	P02 - 203			
36	1600005	DC ISOLATOR	1	P02 - 203			
37	1600006	DUAL SUPPLY WARNING STICKER, FR/ENG	2	P02 - 203			

ISSUE	DATE	INITIALS
A	17/03/2009	JMN
B	12/08/2009	JMN

PROPRIETARY AND CONFIDENTIAL			NAME	SIGNED	DATE	SCALE: 1:30	SHEET 1 OF 11
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF RENEWABLE DEVICES SWIFT TURBINES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF RENEWABLE DEVICES SWIFT TURBINES LTD IS PROHIBITED.			DRAWN	J NICHOLSON	13/03/2009	MATERIAL:	
			CHECKED	M RAVILLOUS	13/03/2009	N/A	
			PRODUCTION	R WEEDON	13/03/2009	FINISH:	
			ELECTRICAL	L NICHOLSON	13/03/2009	N/A	
			INSTALLATION	R INVERNIZZI	13/03/2009		

RENEWABLE DEVICES LTD	
DESCRIPTION: SYSTEM OVERVIEW PARTS LIST	
DWG NO: SC0018	

DO NOT SCALE DRAWING



**NOTES:**

1. ITEM 37 IS NOT SHOWN.
2. REFERENCE BLOCKS, SEE SHEET 11.
3. DIAMONDS SHOW LOCATION OF SERIAL NUMBERS, TO BE RECORDED UPON INSTALLATION.

- A. NACELLE ASSEMBLY
- B. FURLING SYSTEM ASSMBLY
- C. ROTOR ASSEMBLY
- D. SWIFT INVERTER
- E. WOODEN POLE DETAILS

ISSUE B SEE SHEET 1 FOR DETAILS

PROPRIETARY AND CONFIDENTIAL				NAME	SIGNED	DATE	SCALE:1:30	SHEET 2 OF 11
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				CHECKED	M RAVILLOUS	13/03/2009	N/A	
				PRODUCTION	R WEEDON	13/03/2009	FINISH:	
				ELECTRICAL	L NICOLSON	13/03/2009	N/A	
				INSTALLATION	R INVERNIZZI	13/03/2009		

**RENEWABLE DEVICES LTD**

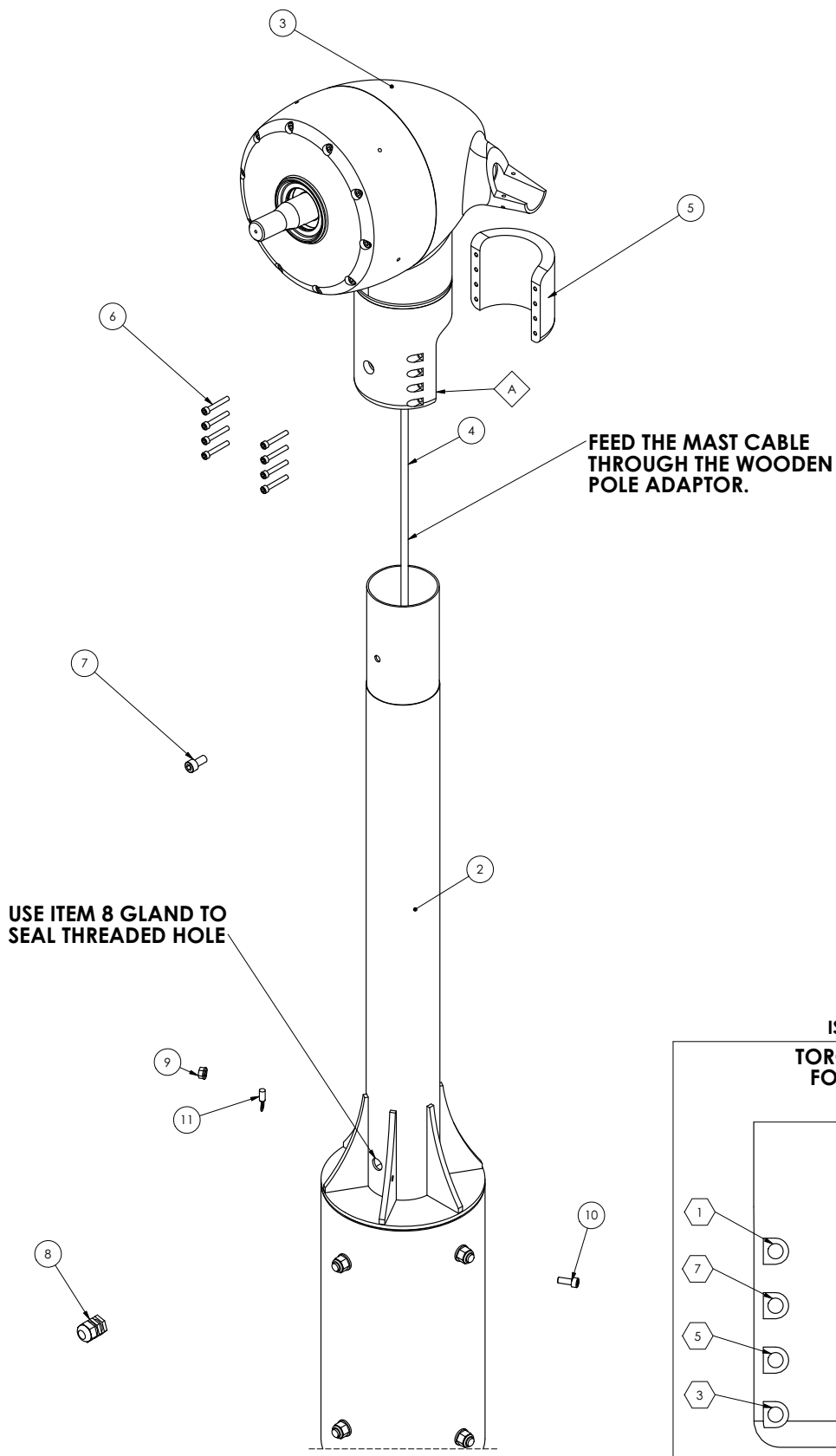
DESCRIPTION:	SYSTEM OVERVIEW
DWG NO:	SC0018

DO NOT SCALE DRAWING

**NOTES:**

- 1. REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM.
- 2. DIAMONDS SHOW LOCATION OF SERIAL NUMBERS, TO BE RECORDED UPON INSTALLATION.

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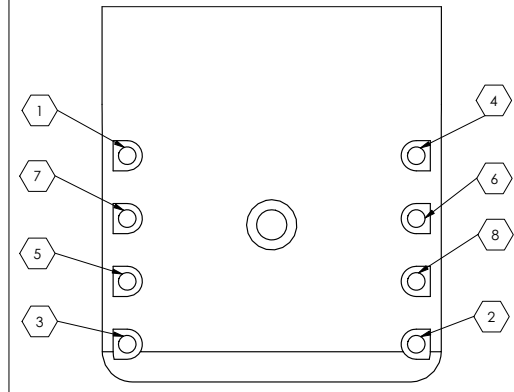


FEED THE MAST CABLE THROUGH THE WOODEN POLE ADAPTOR.

USE ITEM 8 GLAND TO SEAL THREADED HOLE

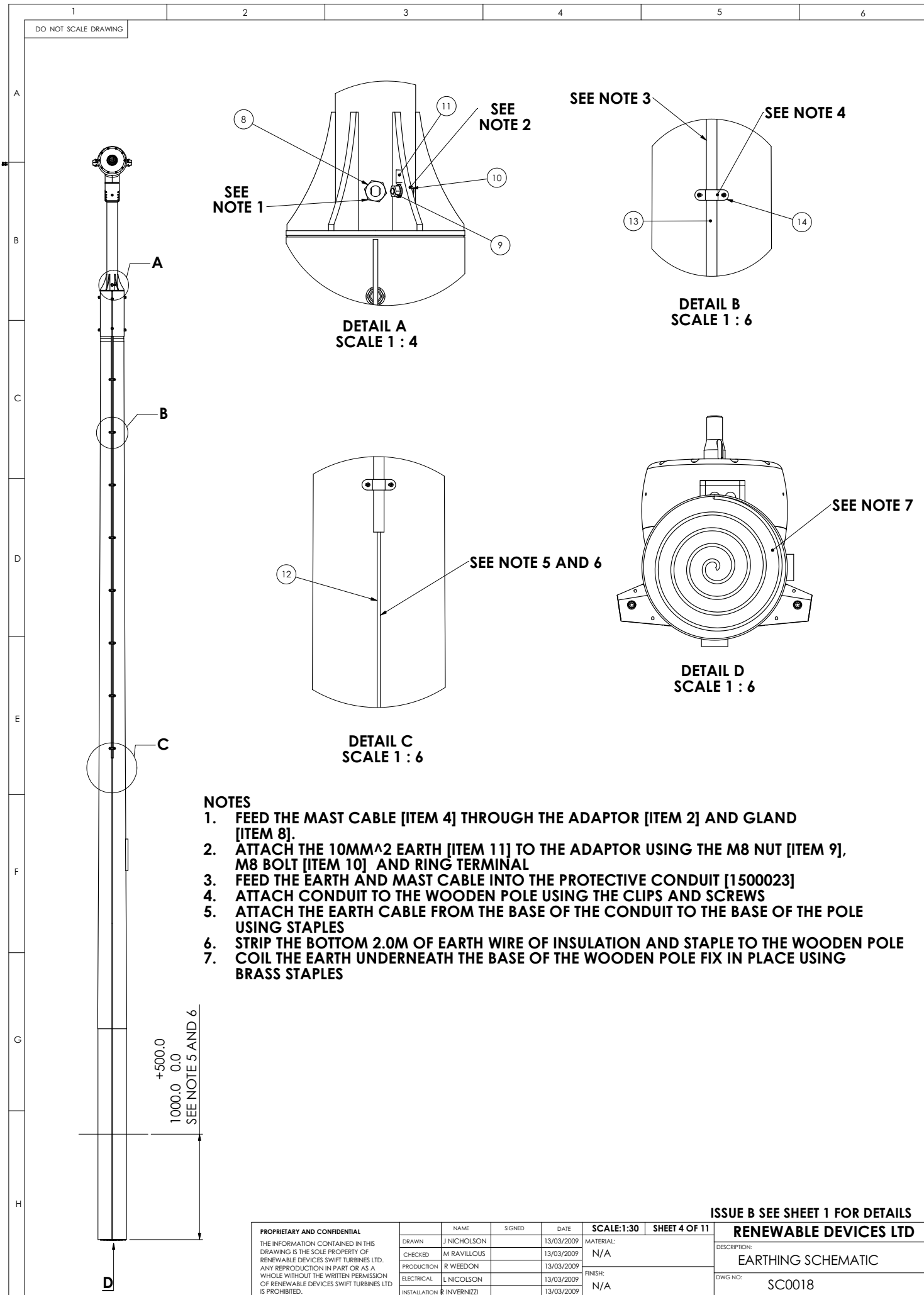
ISSUE B SEE SHEET 1 FOR DETAILS

**TORQUE SEQUENCE FOR YAW CLAMP**



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	DRAWN	J NICHOLSON		13/03/2009	MATERIAL:		DESCRIPTION:
	CHECKED	M RAVILLOUS		13/03/2009	N/A		FITTING THE NACELLE
	PRODUCTION	R WEEDON		13/03/2009	FINISH:		DWG NO:
	ELECTRICAL	L NICHOLSON		13/03/2009	N/A		SC0018
INSTALLATION	R INVERNIZZI		13/03/2009				

DO NOT SCALE DRAWING



**NOTES**

1. FEED THE MAST CABLE [ITEM 4] THROUGH THE ADAPTOR [ITEM 2] AND GLAND [ITEM 8].
2. ATTACH THE 10MM<sup>2</sup> EARTH [ITEM 11] TO THE ADAPTOR USING THE M8 NUT [ITEM 9], M8 BOLT [ITEM 10] AND RING TERMINAL
3. FEED THE EARTH AND MAST CABLE INTO THE PROTECTIVE CONDUIT [1500023]
4. ATTACH CONDUIT TO THE WOODEN POLE USING THE CLIPS AND SCREWS
5. ATTACH THE EARTH CABLE FROM THE BASE OF THE CONDUIT TO THE BASE OF THE POLE USING STAPLES
6. STRIP THE BOTTOM 2.0M OF EARTH WIRE OF INSULATION AND STAPLE TO THE WOODEN POLE
7. COIL THE EARTH UNDERNEATH THE BASE OF THE WOODEN POLE FIX IN PLACE USING BRASS STAPLES

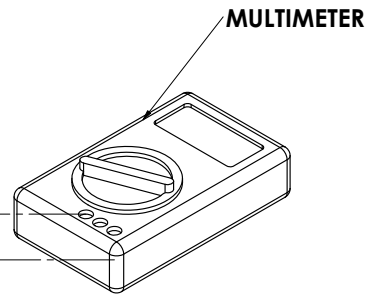
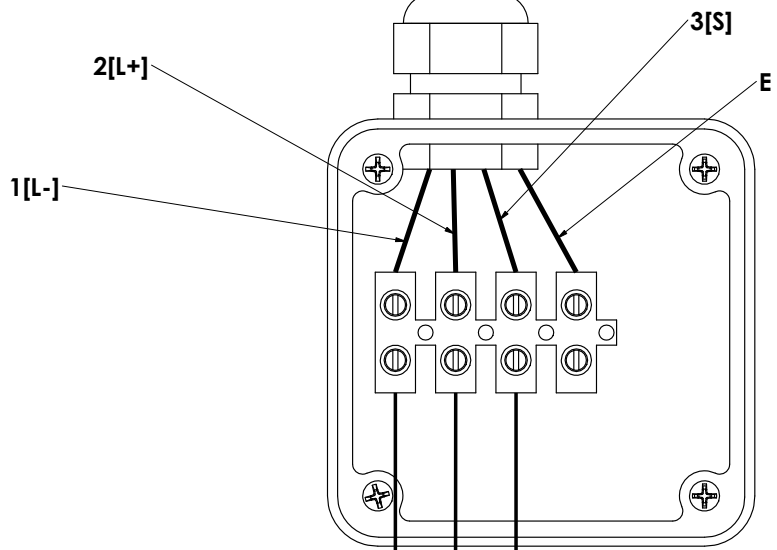
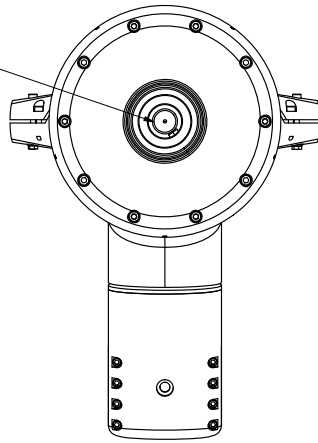
+500.0  
1000.0 0.0  
SEE NOTE 5 AND 6

ISSUE B SEE SHEET 1 FOR DETAILS

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	DRAWN	J NICHOLSON		13/03/2009	MATERIAL:		
	CHECKED	M RAVILLOUS		13/03/2009			DWG NO:
	PRODUCTION	R WEEDON		13/03/2009	FINISH:		SC0018
	ELECTRICAL	L NICOLSON		13/03/2009			
INSTALLATION	R INVERNIZZI		13/03/2009				

# TEST E1: BRAKE RELEASE AND DC VOLTAGE

CLOCKWISE  
ROTATION OF SHAFT



ISSUE B SEE SHEET 1 FOR DETAILS  
**RENEWABLE DEVICES LTD**

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	CHECKED	M RAVILLOUS		DATE	13/03/2009	MATERIAL:	N/A
	PRODUCTION	R WEEDON		DATE	13/03/2009	FINISH:	N/A
	ELECTRICAL	L NICHOLSON		DATE	13/03/2009		
	INSTALLATION	R INVERNIZZI		DATE	13/03/2009		

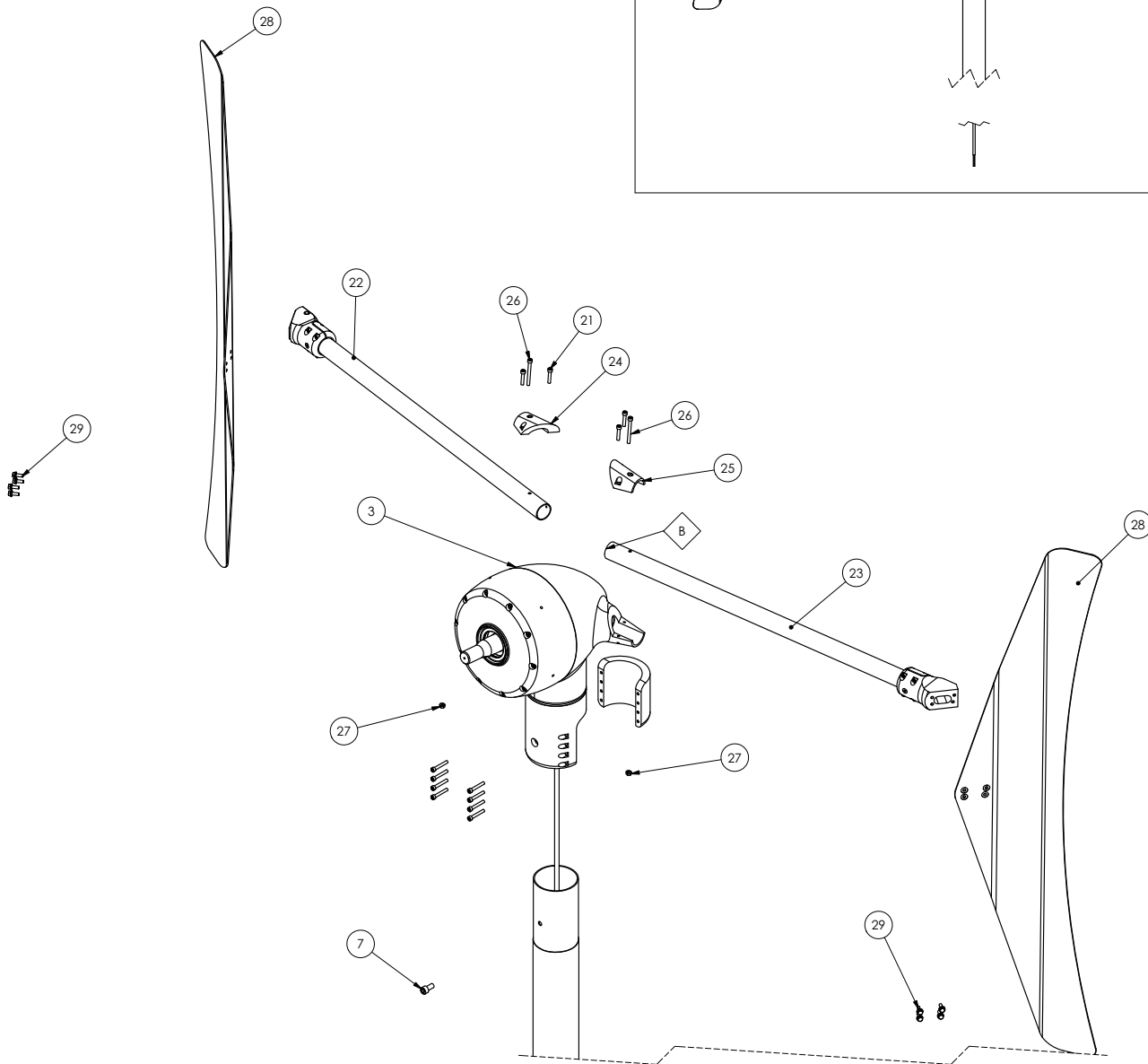
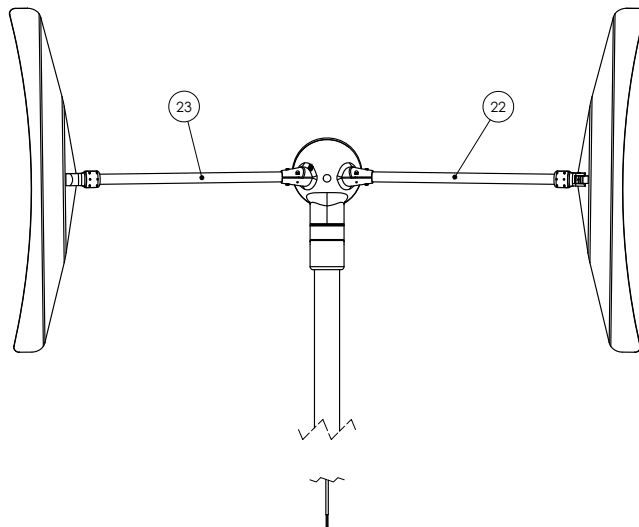
DESCRIPTION:	ELECTRICAL TEST: E1
DWG NO:	SC0018

DO NOT SCALE DRAWING

**NOTES:**

1. REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM.
2. DIAMONDS SHOW LOCATION OF SERIAL NUMBERS, TO BE RECORDED UPON INSTALLATION.

**FURL HINGE ASSEMBLY ITEM 22  
TO GO ON THE RHS FROM BEHIND THE TURBINE**

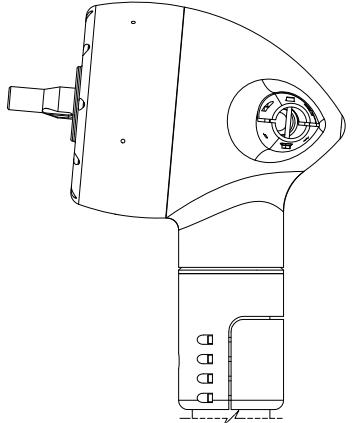


ISSUE B SEE SHEET 1 FOR DETAILS

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	DRAWN	J NICHOLSON		13/03/2009	MATERIAL:		
	CHECKED	M RAVILLOUS		13/03/2009			DESCRIPTION:
	PRODUCTION	R WEEDON		13/03/2009			FITTING THE FINS AND BOOMS
	ELECTRICAL	L NICOLSON		13/03/2009			DWG NO:
INSTALLATION	R INVERNIZZI		13/03/2009			SC0018	

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
**ISSUE B**  
 SEE SHEET 1 FOR DETAILS



- NOTES**
- ITEM 37 : DUAL SUPPLY STICKERS TO BE ATTACHED ON SWIFT INVERTER AND DISTRUBUTION BOARD WITH DETAILS OF WHERE THE TURBINE CAN BE ISOLATED.
  - WIRING SIZING FOR THE DC SIDE [CONNECTOR BLOCK TO SWIFT INVERTER]
    - 0-100m = 2.5mmsq
    - 100-200m = 4.0mmsq
  - WIRE SIZING FOR 240V AC SIDE (INVERTER TO CONSUMER UNIT) MUST BE SIZED FOR NO GREATER THAN 4% VOLTAGE DROP AT 10A RMS.
  - ALL INTERNAL WIRING [MIN 2.5mmsq] TO BE CONTAINED WITHIN CONDUIT OR OF THE SWA TYPE
  - EARTH WIRE - 4.0mmsq
  - REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING

SEE SHEET 8 FOR CONNECTION

MAST CABLE TO MOLEX CONNECTOR AND EARTH CONNECTOR

SWA

DC

SEE NOTE 4

31

SEE NOTE 3/4

AC

SEE NOTE 3/4

DISTRUBUTION BOARD/ CONSUMER UNIT

SEE NOTE 5

SEE NOTE 5

SEE NOTE 5

SEE NOTE 5

MAST EARTH: 10MM SQ EARTH [YELLOW AND GREEN] SEE NOTE 5

ISSUE B SEE SHEET 1 FOR DETAILS

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 4.0 Ra TOLERANCES: DIMENSIONS: ±0.15 ANGLES: ±0.5°				SCALE: 1:18 SHEET 7 OF 11	
MATERIAL:				N/A	
FINISH:				N/A	
THIRD ANGLE PROJECTION				N/A	
NAME	SIGNATURE	DATE	DWG NO.		
J NICHOLSON		13/03/2020	SC0018		
CHECKED			N/A		
PRODUCTION			N/A		

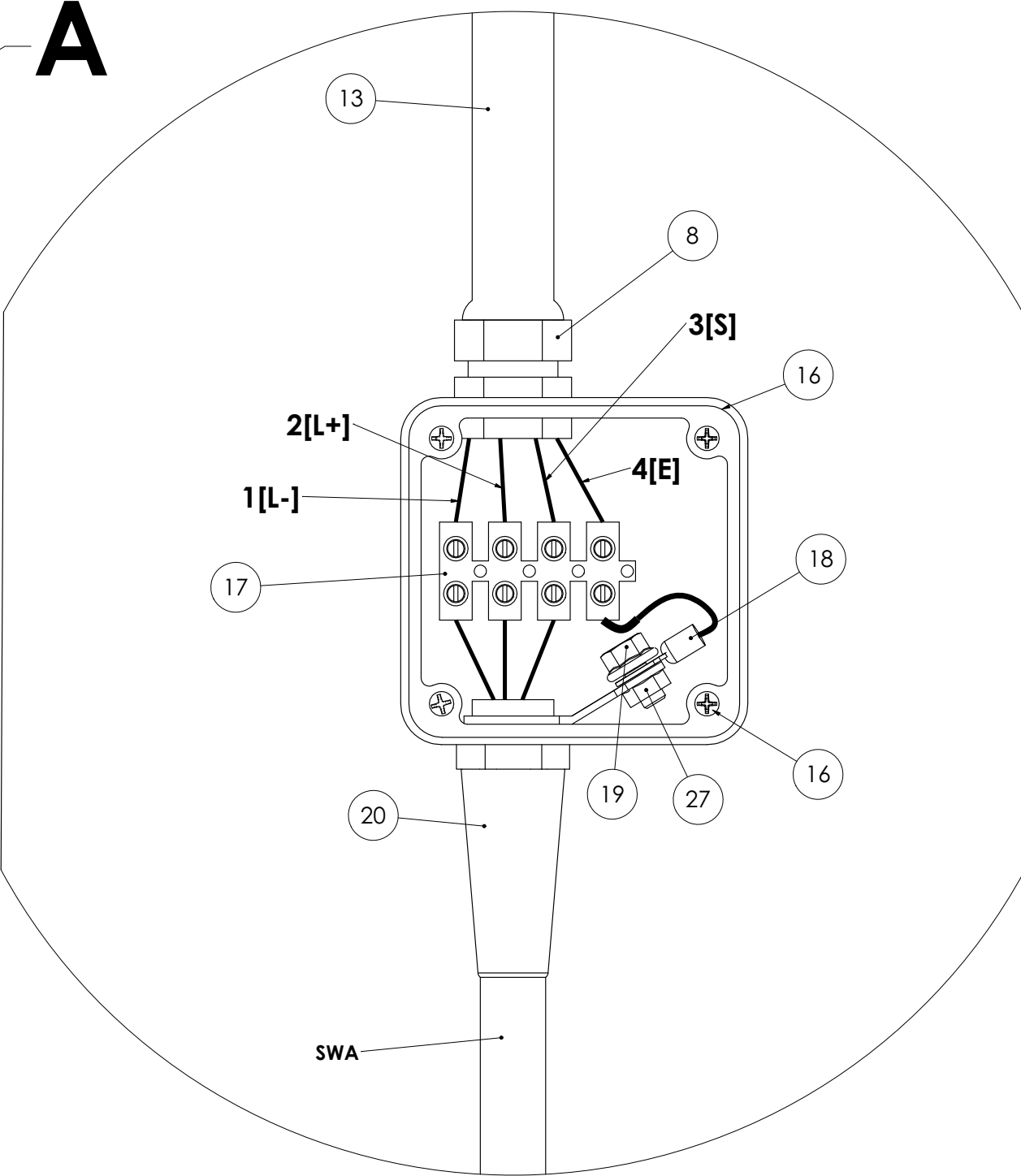
**RENEWABLE DEVICES LTD**

ELECTRICAL SCHEMATIC

DWG NO. SC0018

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### DETAIL A SCALE 1 : 1

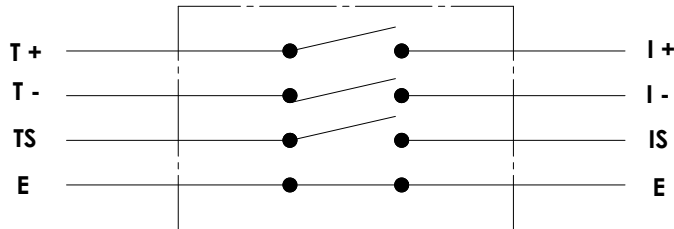


**NOTES:**

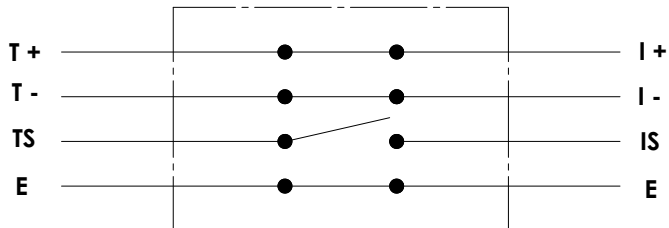
1. REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM.

ISSUE B SEE SHEET 1 FOR DETAILS

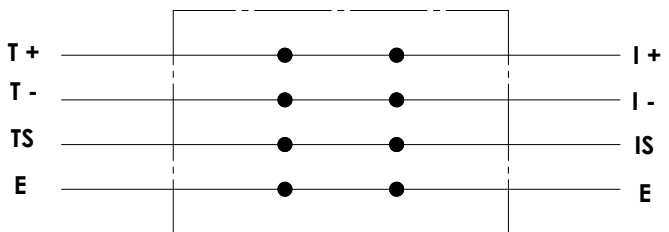
<b>PROPRIETARY AND CONFIDENTIAL</b> THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF RENEWABLE DEVICES SWIFT TURBINES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF RENEWABLE DEVICES SWIFT TURBINES LTD IS PROHIBITED.	NAME	SIGNED	DATE	SCALE:1:100	SHEET 8 OF 11	<b>RENEWABLE DEVICES LTD</b>	
	DRAWN	J NICHOLSON		13/03/2009			DESCRIPTION:
	CHECKED	M RAVILLOUS		13/03/2009		N/A	CONNECTOR BLOCK SCHEMATIC
	PRODUCTION	R WEEDON		13/03/2009			DWG NO:
	ELECTRICAL	L NICHOLSON		13/03/2009		FINISH:	SC0018
INSTALLATION	R INVERNIZZI		13/03/2009		N/A		



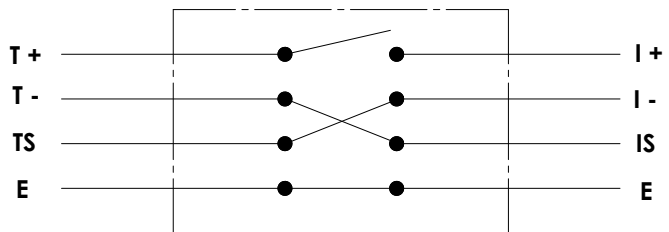
SWITCH POSITION - OFF



SWITCH POSITION - BRAKE



SWITCH POSITION - ON



SWITCH POSITION - RESET

**TO TURBINE**

- SWA CABLE
- SEE ELECTRICAL SCHEMATIC FOR CABLE SIZING

**TO SWIFT INVERTER**

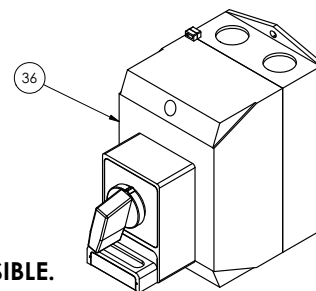
- TRI RATED CABLE
- SEE ELECTRICAL SCHEMATIC FOR SIZING

**NOTES**

**KEY**

T+	TURBINE POSITIVE	BROWN
T-	TURBINE NEGATIVE	GREY
I+	INVERTER POSITIVE	BROWN
I-	INVERTER NEGATIVE	GREY
TS	TURBINE SIGNAL	BLACK WITH YELLOW SLEEVE
IS	INVERTER SIGNAL	YELLOW
E	EARTH	GREEN + YELLOW

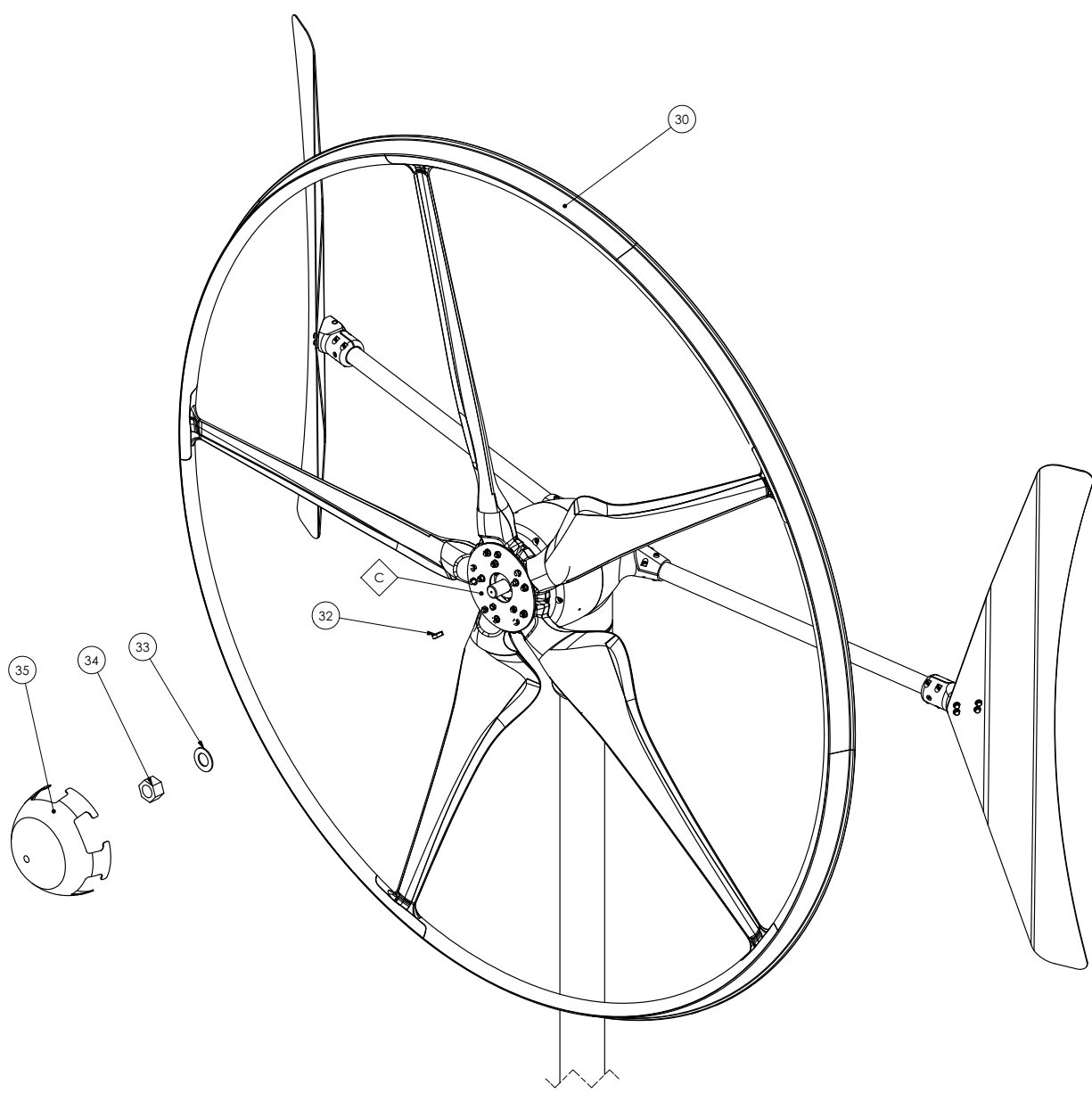
- THE DC ISOLATOR SHOULD BE INSTALLED SO THAT IT IS ACCESSIBLE TO THE SWIFT INVERTER BUT AS CLOSE TO THE TURBINE AS POSSIBLE.
- THE DC ISOLATOR MUST BE SUPPLIED BY RDST LTD.
- [NORMAL DC ISOLATORS DO NOT MEET THE SPEC]
- REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM



ISSUE B SEE SHEET 1 FOR DETAILS

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	DRAWN	J NICHOLSON		13/03/2009	MATERIAL: N/A	
	CHECKED	M RAVILLOUS		13/03/2009	FINISH: N/A	
	PRODUCTION	R WEEDON		13/03/2009		
ELECTRICAL	L NICOLSON		13/03/2009			
INSTALLATION	R INVERNIZZI		13/03/2009			

DO NOT SCALE DRAWING



- NOTES**
1. REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM.
  2. DIAMONDS SHOW LOCATION OF SERIAL NUMBERS, TO BE RECORDED UPON INSTALLATION.

**ISSUE B SEE SHEET 1 FOR DETAILS  
RENEWABLE DEVICES LTD**

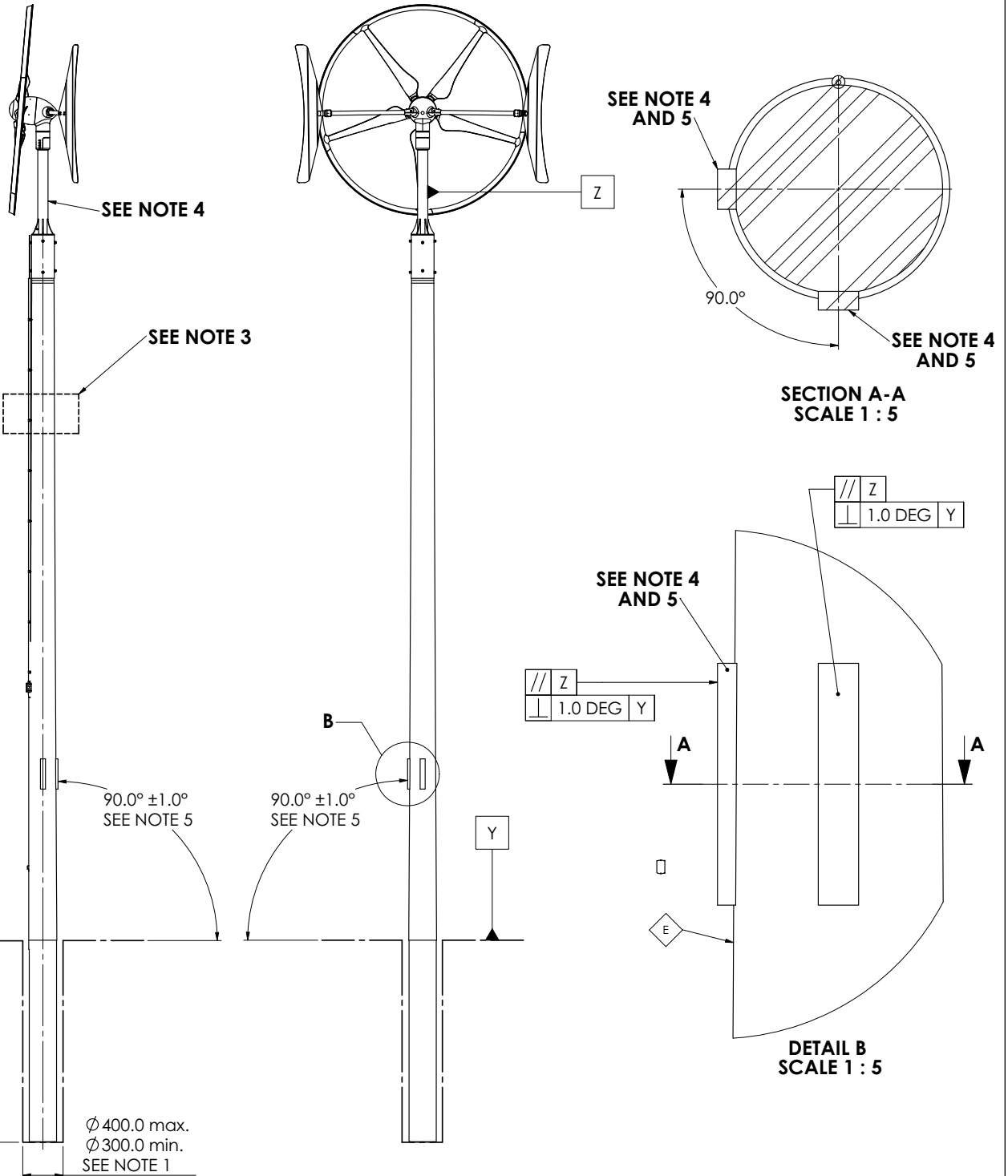
PROPRIETARY AND CONFIDENTIAL		NAME	SIGNED	DATE	SCALE: 1:100	SHEET 10 OF 11	
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF RENEWABLE DEVICES SWIFT TURBINES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF RENEWABLE DEVICES SWIFT TURBINES LTD IS PROHIBITED.		DRAWN	J NICHOLSON		13/03/2009	MATERIAL: N/A	
		CHECKED	M RAVILLOUS		13/03/2009	DESCRIPTION: FITTING THE ROTOR	
		PRODUCTION	R WEEDON		13/03/2009	FINISH: N/A	
		ELECTRICAL	L NICHOLSON		13/03/2009	DWG NO: SC0018	
		INSTALLATION	R INVERNIZZI		13/03/2009		

DO NOT SCALE DRAWING

**NOTES**

1. HOLE/AUGER DIAMETER DEPENDS ON THE NOMINAL DIAMETER OF POLE TO BE INSTALLED.
2. DIMENSION SHOWS DEPTH OF HOLE WITH RELATION TO THE GROUND
3. TURBINE CAN BE LIFTED INTO POSITION USING THE CORRECT EQUIPMENT, WHEN LIFTING TAKE CARE NOT TO DAMAGE THE TURBINE WIRING AND CONDUIT.
4. CHECK THAT THE ADAPTOR AND BOTH REFERENCE BLOCKS ARE PARALLEL BEFORE LIFTING
5. TWO REFERENCE/LEVELLING BLOCKS ARE USED TO ACHIEVE THE CORRECT POLE/TURBINE ORIENTATION FROM GROUND LEVEL.
6. REFER TO SYSTEM OVERVIEW PARTS LIST [SHEET 2] FOR REFERENCE OF NUMBERING SYSTEM
7. DIAMONDS SHOW LOCATION OF SERIAL NUMBERS, TO BE RECORDED UPON INSTALLATION.

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ISSUE B SEE SHEET 1 FOR DETAILS

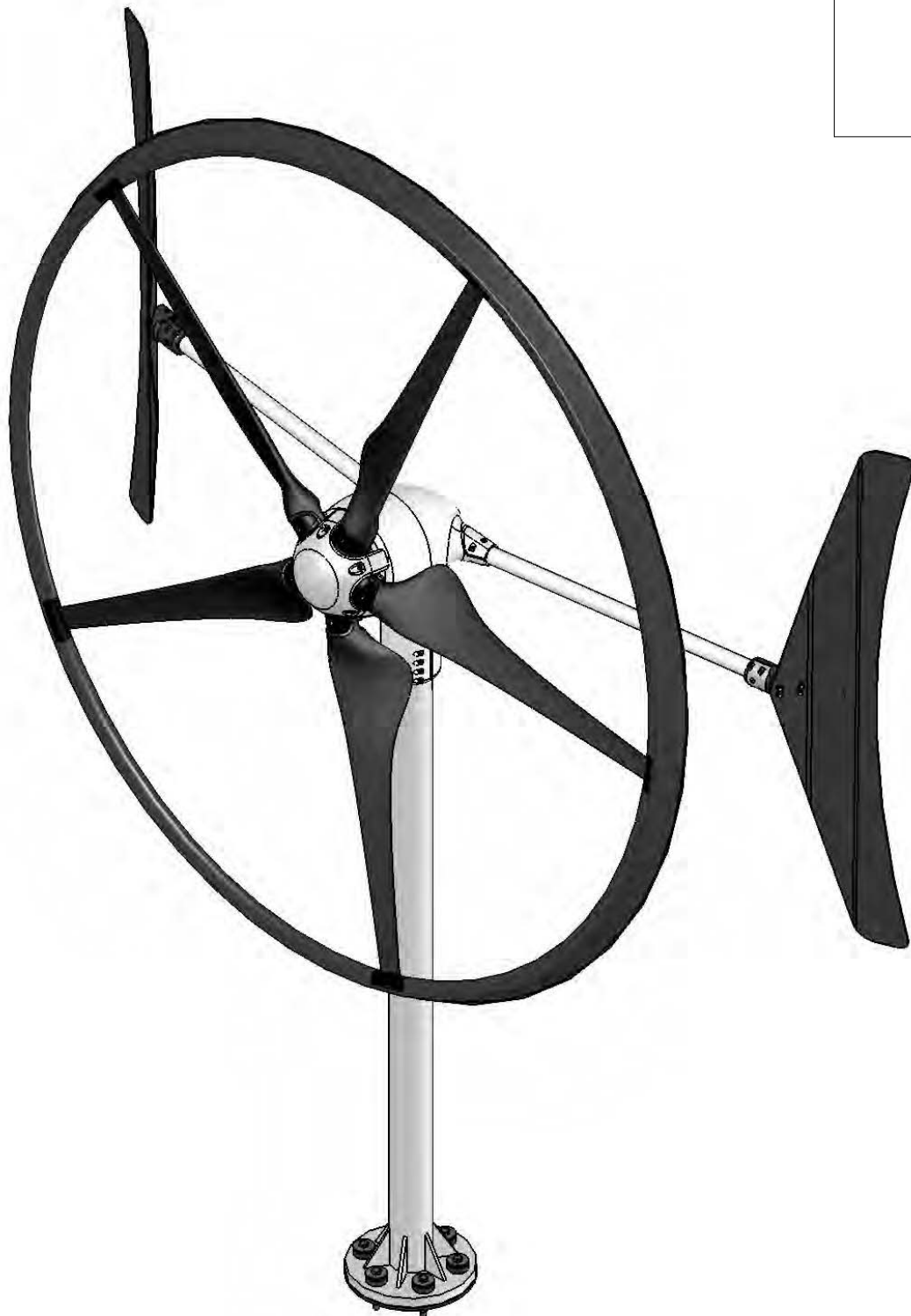
PROPRIETARY AND CONFIDENTIAL		NAME	SIGNED	DATE	SCALE: 1:40	SHEET 11 OF 11
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		CHECKED	M RAVILLOUS		13/03/2009	N/A
		PRODUCTION	R WEEDON		13/03/2009	FINISH:
		ELECTRICAL	L NICHOLSON		13/03/2009	N/A
		INSTALLATION	R INVERNIZZI		13/03/2009	

<b>RENEWABLE DEVICES LTD</b>	
DESCRIPTION:	POLE PLANTING SCHEMATIC
DWG NO:	SC0018

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE

ISSUE A: - DRAWING RELEASED



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	NAME	DATE	
DRAWN	J NICHOLSON	28/11/08	
CHECKED	M RAVILOUS	28/11/08	
PRODUCTION	R WEEDON	28/11/08	
ELECTRICAL	-	28/11/08	
INSTALLATION	J HIBELL	28/11/08	

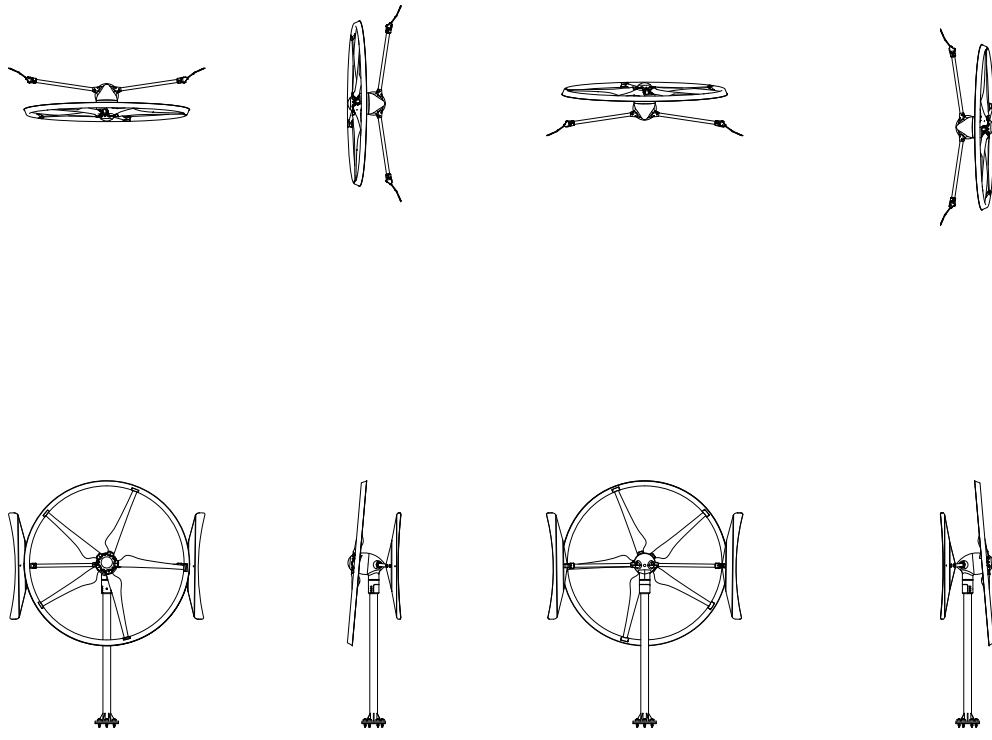
<b>SCALE: 1:10</b>	<b>SHEET 1 OF 4</b>
MATERIAL:	-
FINISH:	-

ISSUE	DATE	INITIALS
A	26/11/2008	JMN

<b>RENEWABLE DEVICES LTD</b>
DESCRIPTION: FLANGE MOUNT SYSTEM
DWG NO: P02 - PLANNING FMS

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS



- NOTES:**
- DWG AND DXF FILES OF THE ABOVE VIEWS ARE AVAILABLE FOR USE ON ALL DRAWINGS.
  - PLEASE CONTACT RENEWABLE DEVICES SWIFT TURBINES FOR ELECTRONIC COPIES.
    - P02 - PLANNING FMS.DWG
    - P02 - PLANNING FMS.DXF

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 4.4 Ra TOLERANCES: HOLE: ±0.05 FINISH: ±0.1			
DIMENSIONS SPECIFIED TO BS 343: 1981 HOLE DIMENSIONS SPECIFIED TO BS 489: 1993 LIMITS AND FITS SPECIFIED TO BS 450: 1984			
NAME	SIGNATURE	DATE	
DRAWN	J NICHOLSON	28/11/08	
CHECKED	M RAVILOUS	28/11/08	
PRODUCTION	R WEEDON	28/11/08	

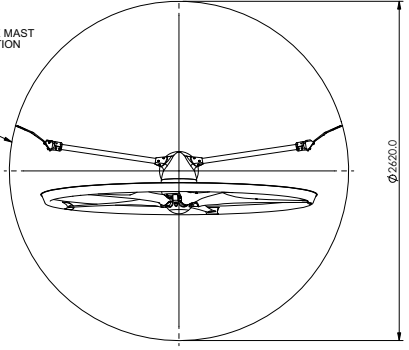
SCALE: 1:50	SHEET 2 OF 4
MATERIAL:	
FINISH:	

<b>RENEWABLE DEVICES LTD</b>
DESCRIPTION: FLANGE MOUNT VIEWS
DWG NO. P02 - PLANNING FMS

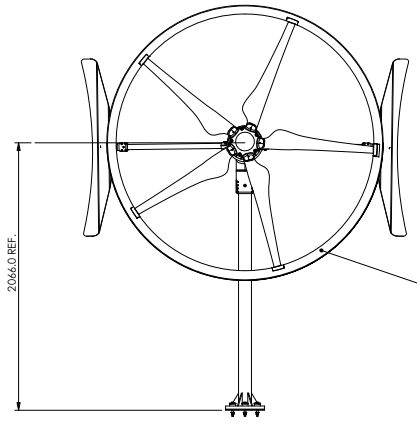
DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS

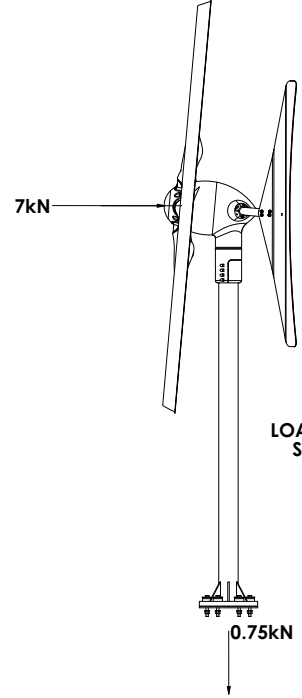
**YAW DIAMETER**  
THE TURBINE ROTATES 360°  
AROUND THE CENTRE OF THE MAST  
- TRACKING THE WIND DIRECTION



- NOTES:**
1. NACELLE BODY, GENERATOR AND BOOMS ARE FINISHED TO RAL: 9016 (TRAFFIC WHITE)
  2. FINS AND ROTOR ARE FINISHED TO MATT BLACK.
  3. BUILDING/ WALL SHOWN IN VIEWS IS FOR VISUALISATION ONLY.
  4. ALL LOADS ARE INDICATIVE ONLY AND WILL BE SITE AND INSTALLATION SPECIFIC. IT IS RECOMMENDED THAT STRUCTURAL ADVICE IS SOUGHT PRIOR TO INSTALLATION



**ROTOR BLADES**  
SWEEP AREA = 3.46m sq  
SWEEP DIAMETER = 2.1m

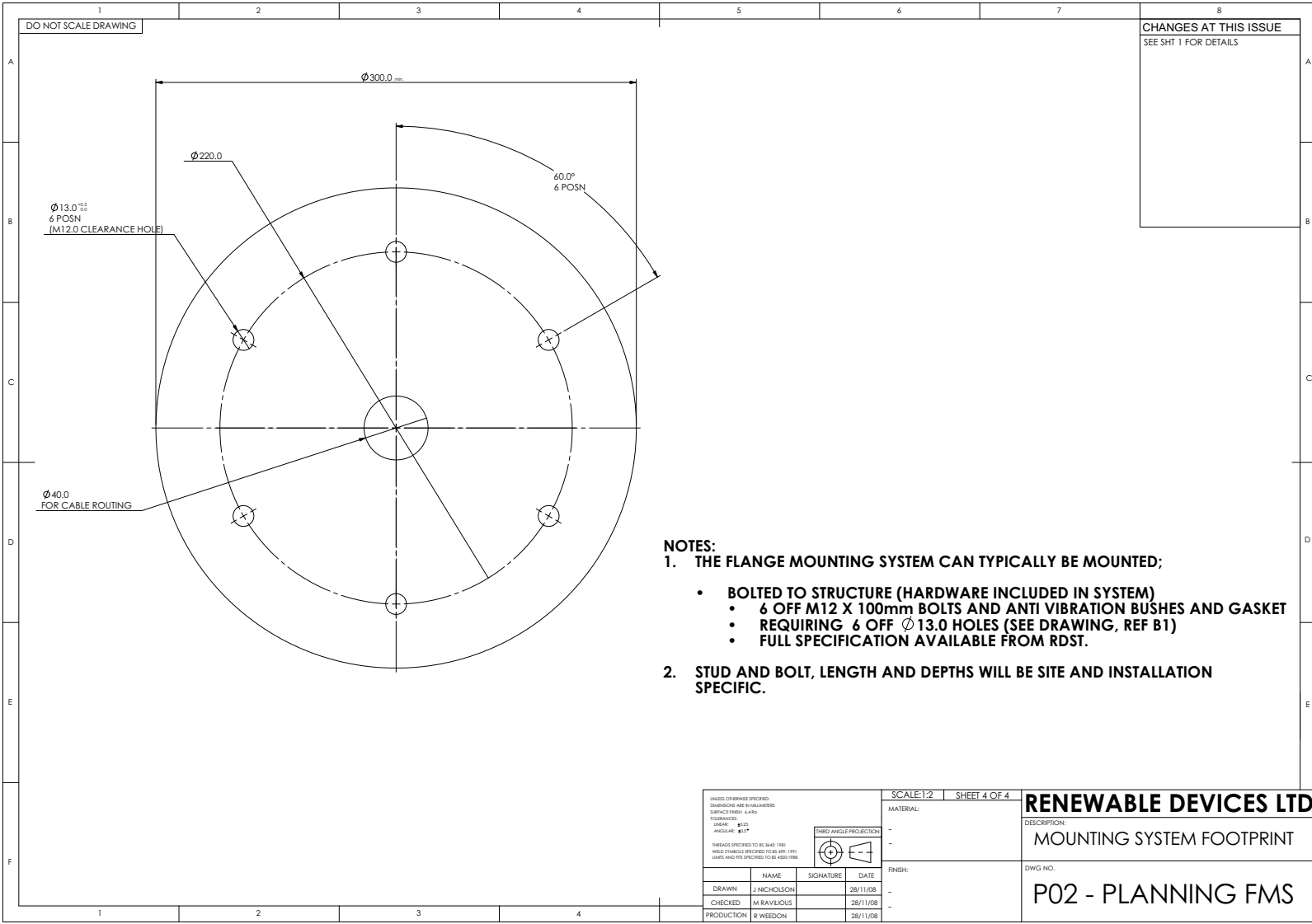


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: A4.80 TOLERANCES: DIMENSIONS: ±0.15 ANGLES: ±0.5°				SCALE: 1:30   SHEET 3 OF 4	
MATERIAL:				-	
FINISH:				-	
THIRD ANGLE PROJECTION				-	
DRAWN	J NICHOLSON	SIGNATURE		DATE	28/11/08
CHECKED					
PRODUCTION					

**RENEWABLE DEVICES LTD**

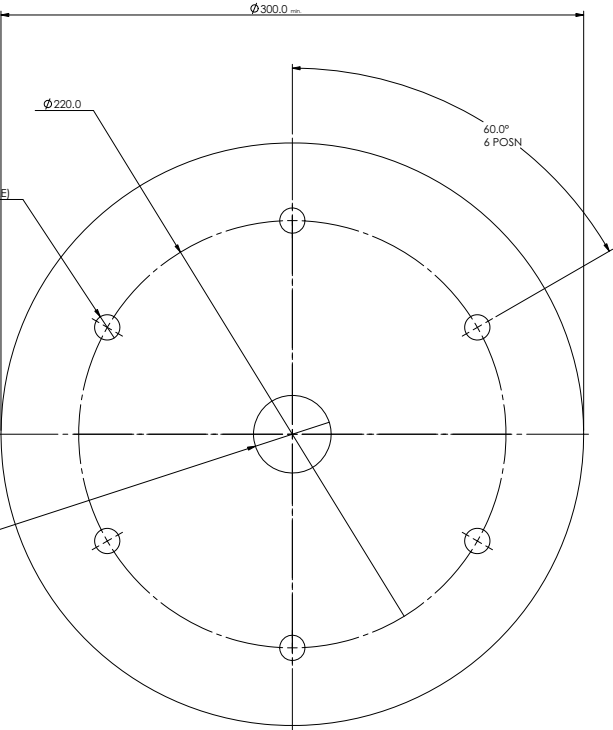
DESCRIPTION:  
TURBINE LOADINGS TO BS61400

DWG NO.  
P02 - PLANNING FMS



DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SH1 1 FOR DETAILS



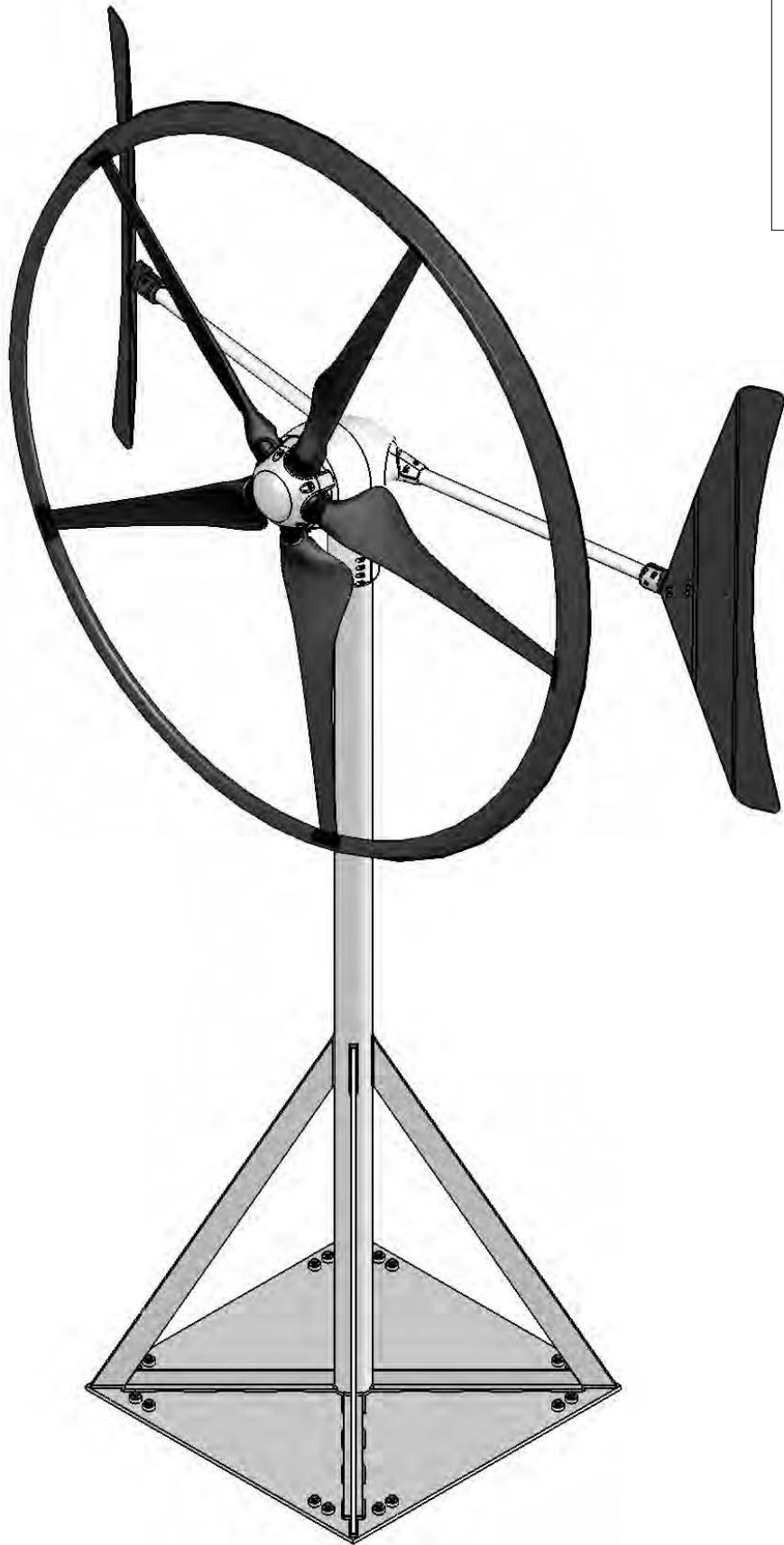
- NOTES:**
- THE FLANGE MOUNTING SYSTEM CAN TYPICALLY BE MOUNTED;
    - BOLTED TO STRUCTURE (HARDWARE INCLUDED IN SYSTEM)
      - 6 OFF M12 X 100mm BOLTS AND ANTI VIBRATION BUSHES AND GASKET
      - REQUIRING 6 OFF  $\varnothing$  13.0 HOLES (SEE DRAWING, REF B1)
      - FULL SPECIFICATION AVAILABLE FROM RDST.
  - STUD AND BOLT, LENGTH AND DEPTHS WILL BE SITE AND INSTALLATION SPECIFIC.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: RA 3.2 TOLERANCES: DIMENSIONS: ±0.15 ANGLES: ±0.5°				SCALE: 1:2	SHEET 4 OF 4	<b>RENEWABLE DEVICES LTD</b>																
<small>FINISHES SPECIFIED TO BS 4852:1981 WELD SYMBOLS SPECIFIED TO BS 499:1993 UNITS AND FITS SPECIFIED TO BS 4852:1984</small>				MATERIAL:			DESCRIPTION: MOUNTING SYSTEM FOOTPRINT															
<table border="1"> <thead> <tr> <th></th> <th>NAME</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>DRAWN</td> <td>J NICHOLSON</td> <td></td> <td>28/11/08</td> </tr> <tr> <td>CHECKED</td> <td>M RAVILIOUS</td> <td></td> <td>28/11/08</td> </tr> <tr> <td>PRODUCTION</td> <td>R WEEDON</td> <td></td> <td>28/11/08</td> </tr> </tbody> </table>					NAME	SIGNATURE	DATE	DRAWN	J NICHOLSON		28/11/08	CHECKED	M RAVILIOUS		28/11/08	PRODUCTION	R WEEDON		28/11/08	THIRD ANGLE PROJECTION		DWG NO. <b>P02 - PLANNING FMS</b>
	NAME	SIGNATURE	DATE																			
DRAWN	J NICHOLSON		28/11/08																			
CHECKED	M RAVILIOUS		28/11/08																			
PRODUCTION	R WEEDON		28/11/08																			

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE

ISSUE A: - DRAWING RELEASED



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**PROPRIETARY AND CONFIDENTIAL**  
 THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF RENEWABLE DEVICES SWIFT TURBINES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF RENEWABLE DEVICES SWIFT TURBINES LTD IS PROHIBITED.

	NAME	DATE
DRAWN	J NICHOLSON	28/11/2008
CHECKED	M RAVILIOUS	28/11/2008
PRODUCTION	R WEEDON	28/11/2008
ELECTRICAL	-	28/11/2008
INSTALLATION	J HIBELL	28/11/2008

SCALE: 1:12 SHEET 1 OF 4

MATERIAL:	FINISH:
-	-

ISSUE	DATE	INITIALS
A	28/11/2008	JMN

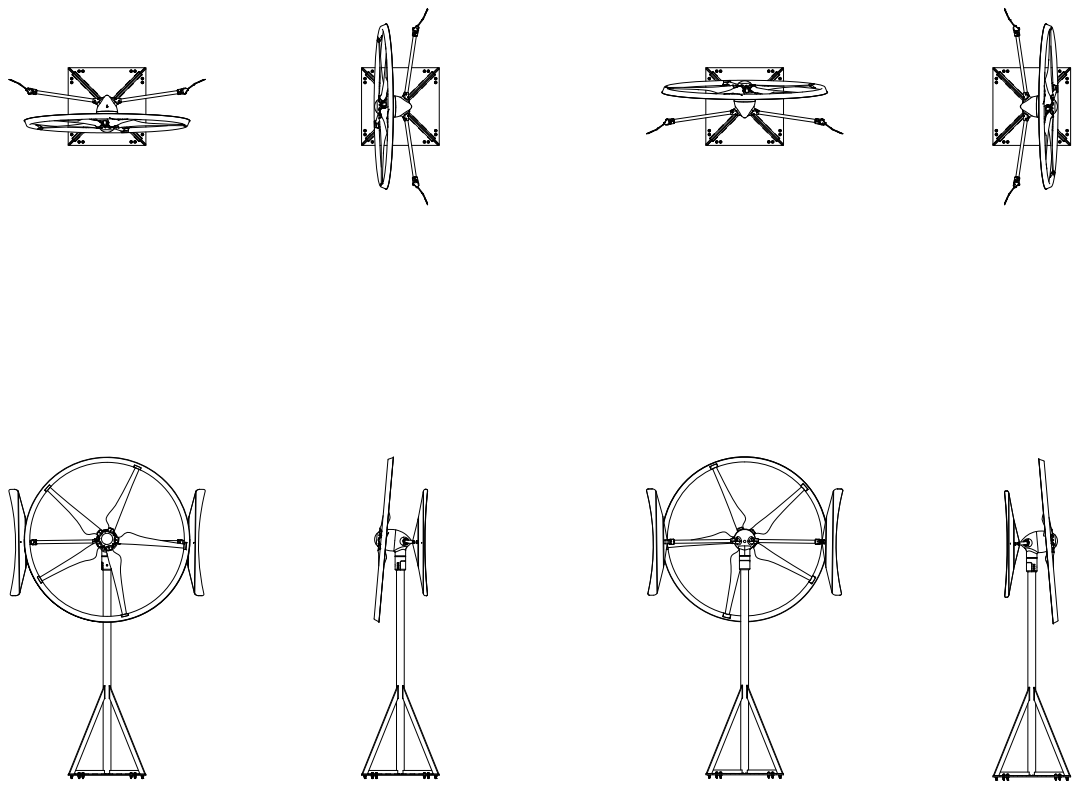
**RENEWABLE DEVICES LTD**

DESCRIPTION:  
FLAT ROOF STAND MOUNT SYSTEM

DWG NO:  
P02 - PLANNING FRMS

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS



- NOTES:**
1. DWG AND DXF FILES OF THE ABOVE VIEWS ARE AVAILABLE FOR USE ON ALL DRAWINGS.
  2. PLEASE CONTACT RENEWABLE DEVICES SWIFT TURBINES FOR ELECTRONIC COPIES.
    - P02 - PLANNING FRSMS.DWG
    - P02 - PLANNING FRSMS.DXF

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: A4.80 TOLERANCES: DIMENSIONS: ±0.10 ANGLES: ±0.5°			SCALE: 1:50	SHEET 2 OF 4
MATERIAL:			-	
FINISH:			-	
THIRD ANGLE PROJECTION			-	
	NAME	SIGNATURE	DATE	
DRAWN	J NICHOLSON		28/11/2008	
CHECKED	M RAVILIOUS		28/11/2008	
PRODUCTION	R WEEDON		28/11/2008	

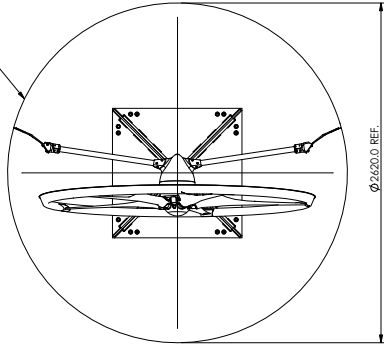
**RENEWABLE DEVICES LTD**

DESCRIPTION:  
**FLAT ROOF STAND VIEWS**

DWG NO.  
**P02 - PLANNING FRSMS**

DO NOT SCALE DRAWING

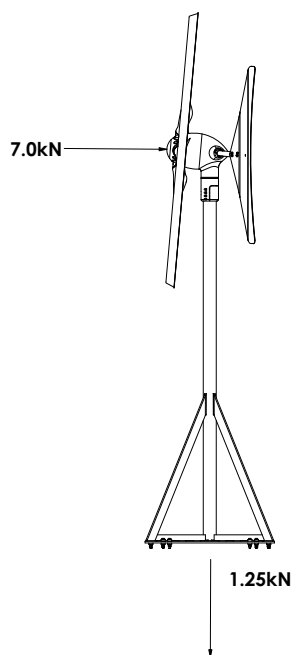
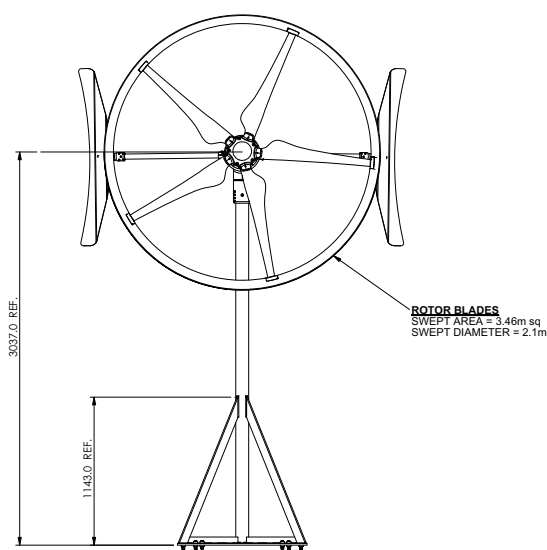
**YAW DIAMETER**  
THE TURBINE ROTATES 360°  
AROUND THE CENTRE OF THE MAST  
- TRACKING THE WIND DIRECTION




**NOTES:**

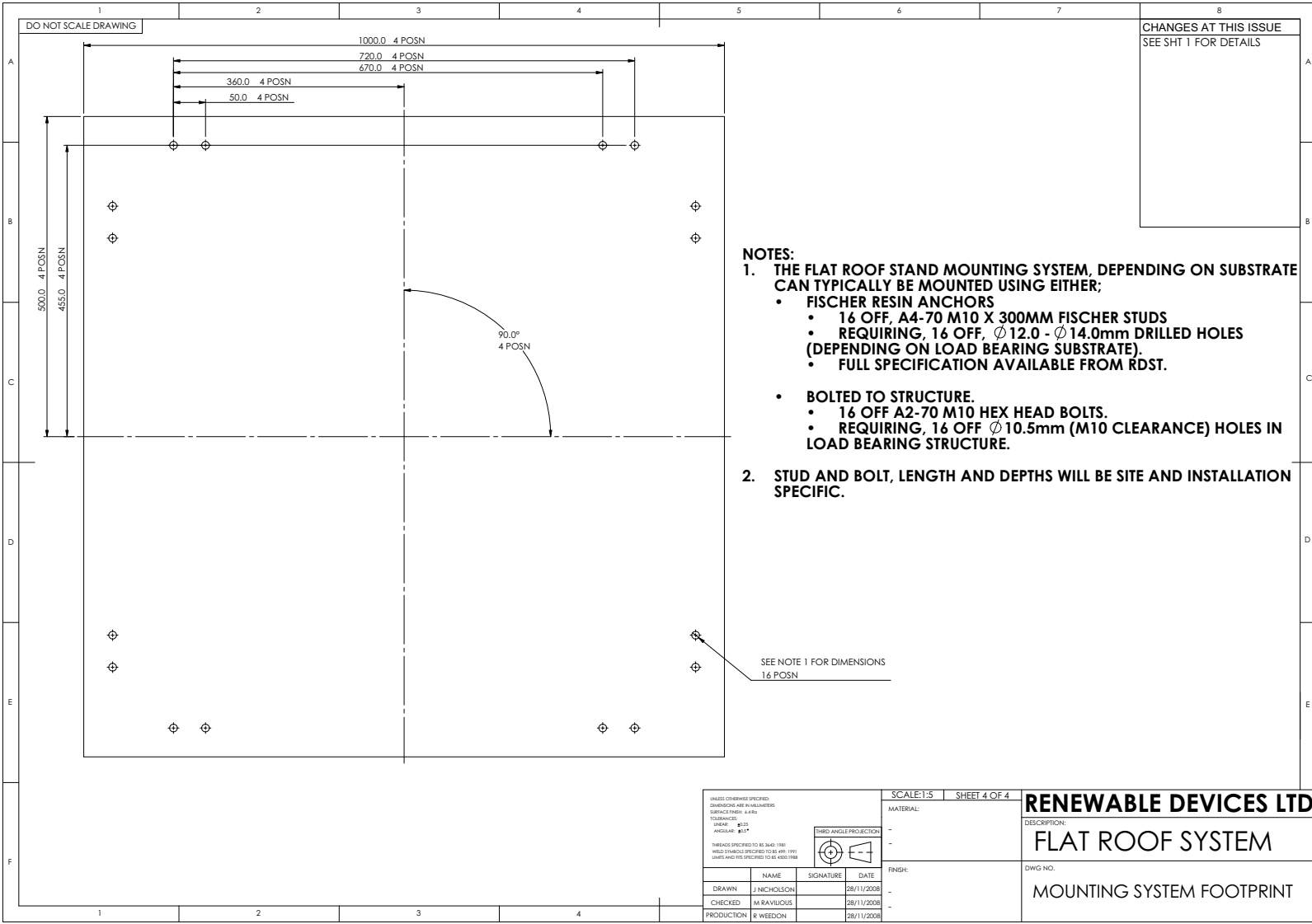
1. NACELLE BODY, GENERATOR AND BOOMS ARE FINISHED TO RAL: 9016 (TRAFFIC WHITE)
2. FINS AND ROTOR ARE FINISHED TO MATT BLACK.
3. BUILDING/ WALL SHOWN IN VIEWS IS FOR VISUALISATION ONLY.
4. ALL LOADS ARE INDICATIVE ONLY AND WILL BE SITE AND INSTALLATION SPECIFIC. IT IS RECOMMENDED THAT STRUCTURAL ADVICE IS SOUGHT PRIOR TO INSTALLATION

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: A4.80 TOLERANCES: DIMENSIONS: ±0.10 ANGLES: ±0.5°				SCALE: 1:30 SHEET 3 OF 4	
MATERIAL:					
FINISH:					
NAME	SIGNATURE	DATE			
DRAWN	J NICHOLSON	28/11/2008	-		
CHECKED	M RAVILIOUS	28/11/2008	-		
PRODUCTION	R WEEDON	28/11/2008	-		

<b>RENEWABLE DEVICES LTD</b>	
DESCRIPTION: TURBINE LOADINGS TO BS61400-2	
DWG NO.	P02 - PLANNING FRMS



CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS

- NOTES:**
1. THE FLAT ROOF STAND MOUNTING SYSTEM, DEPENDING ON SUBSTRATE CAN TYPICALLY BE MOUNTED USING EITHER;
    - FISCHER RESIN ANCHORS
      - 16 OFF, A4-70 M10 X 300MM FISCHER STUDS
      - REQUIRING, 16 OFF,  $\varnothing$  12.0 -  $\varnothing$  14.0mm DRILLED HOLES (DEPENDING ON LOAD BEARING SUBSTRATE).
      - FULL SPECIFICATION AVAILABLE FROM RDST.
    - BOLTED TO STRUCTURE.
      - 16 OFF A2-70 M10 HEX HEAD BOLTS.
      - REQUIRING, 16 OFF  $\varnothing$  10.5mm (M10 CLEARANCE) HOLES IN LOAD BEARING STRUCTURE.
  2. STUD AND BOLT, LENGTH AND DEPTHS WILL BE SITE AND INSTALLATION SPECIFIC.

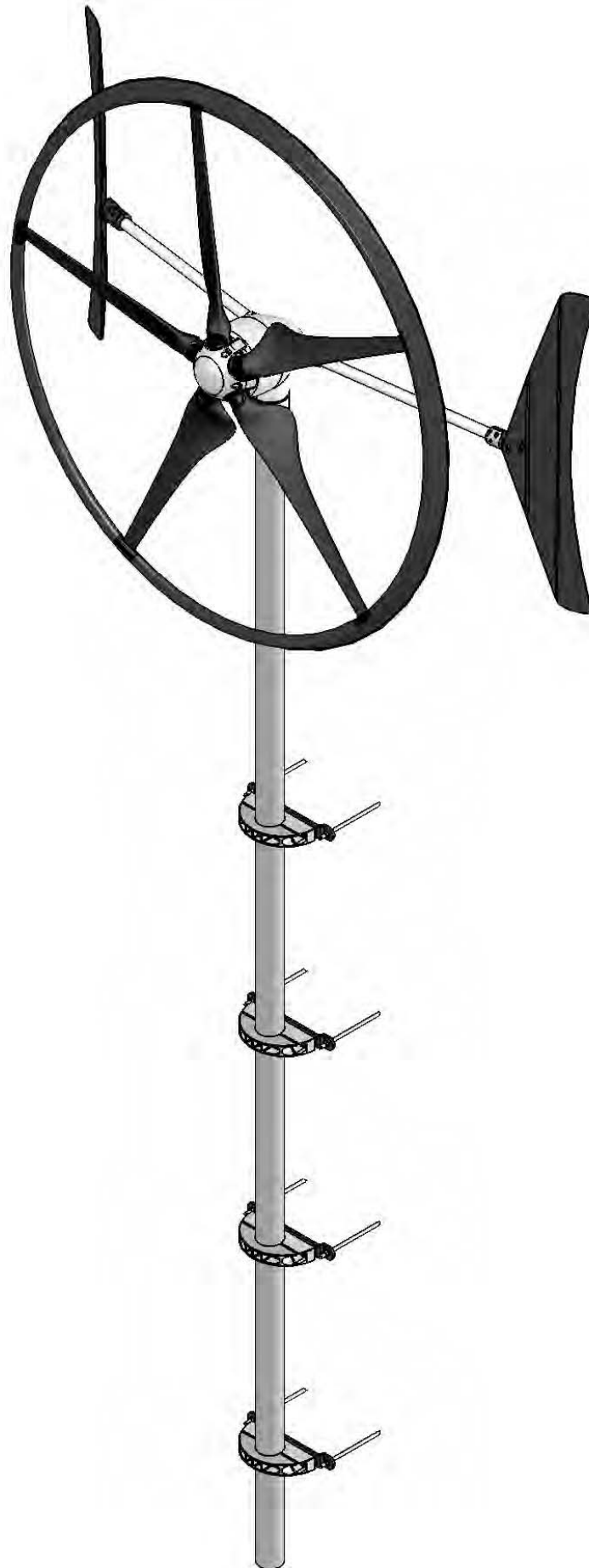
SEE NOTE 1 FOR DIMENSIONS  
16 POSN

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: A4.80 TOLERANCES: HOLE: $\pm$ 0.10 FINISH: $\pm$ 0.10			SCALE: 1:5	SHEET 4 OF 4	<b>RENEWABLE DEVICES LTD</b>
FINISHES SPECIFIED TO BS 360: 1981 WELDS SPECIFIED TO BS 499: 1993 LAYS AND FITS SPECIFIED TO BS 450: 1984			MATERIAL:		
	NAME	SIGNATURE	DATE	FINISH:	DWG NO. <b>MOUNTING SYSTEM FOOTPRINT</b>
DRAWN	J NICHOLSON		28/11/2008	-	
CHECKED	M RAVILUCUS		28/11/2008	-	
PRODUCTION	R WEEDON		28/11/2008	-	

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE

ISSUE A:  
- DRAWING RELEASED



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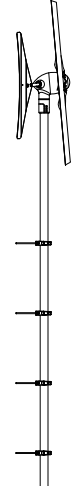
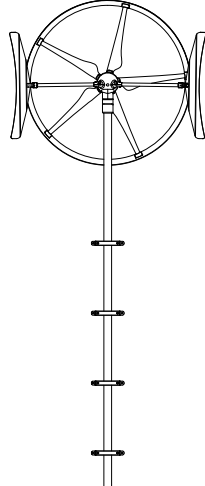
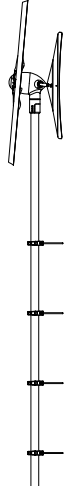
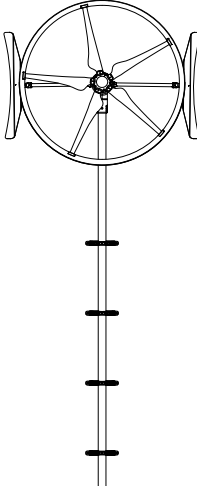
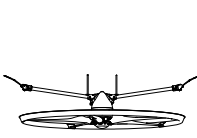
ISSUE	DATE	INITIALS
A	21/11/2008	JMN

<b>PROPRIETARY AND CONFIDENTIAL</b>		NAME	DATE	SCALE: 1:15	SHEET 1 OF 4
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF RENEWABLE DEVICES SWIFT TURBINES LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF RENEWABLE DEVICES SWIFT TURBINES LTD IS PROHIBITED.		DRAWN	J NICHOLSON	28/11/08	MATERIAL:
		CHECKED	M RAVILIOUS	28/11/08	-
		PRODUCTION	R WEEDON	28/11/08	FINISH:
		ELECTRICAL	-	28/11/08	-
		INSTALLATION	J HIBELL	28/11/08	-

<b>RENEWABLE DEVICES LTD</b>
DESCRIPTION:
STANDARD WALL MOUNT SYSTEM
DWG NO:
P02 - PLANNING SWMS

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS



- NOTES:**
- DWG AND DXF FILES OF THE ABOVE VIEWS ARE AVAILABLE FOR USE ON ALL DRAWINGS.
  - PLEASE CONTACT RENEWABLE DEVICES SWIFT TURBINES FOR ELECTRONIC COPIES.
    - P02 - PLANNING SWMS.DWG
    - P02 - PLANNING SWMS.DXF

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 4.4 Ra TOLERANCES: DIMENSIONS: ±0.15 ANGLES: ±0.5°			
DIMENSIONS SPECIFIED TO BS 4852:1981 WELD SYMBOLS SPECIFIED TO BS 499:1995 UNITS AND FITS SPECIFIED TO BS 4852:1984			
	NAME	SIGNATURE	DATE
DRAWN	J NICHOLSON		28/11/08
CHECKED	M RAVILOUS		28/11/08
PRODUCTION	R WEEDON		28/11/08

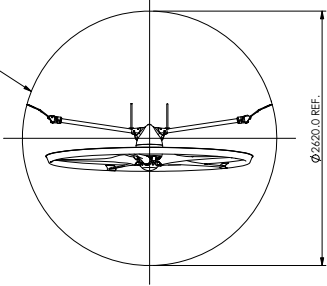
SCALE: 1:50	SHEET 2 OF 4
MATERIAL:	-
FINISH:	-

<b>RENEWABLE DEVICES LTD</b>
DESCRIPTION: STANDARD WALL MOUNT VIEWS
DWG NO. P02 - PLANNING SWMS

DO NOT SCALE DRAWING

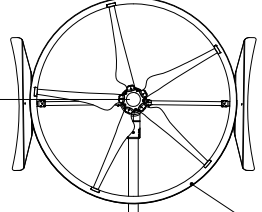
CHANGES AT THIS ISSUE  
SEE SHY 1 FOR DETAILS

**YAW DIAMETER**  
THE TURBINE ROTATES 360°  
AROUND THE CENTRE OF THE MAST  
- TRACKING THE WIND DIRECTION.

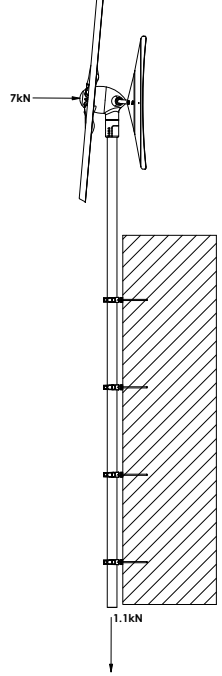
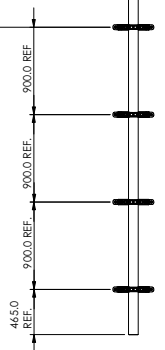


- NOTES:**
- NACELLE BODY, GENERATOR AND BOOMS ARE FINISHED TO RAL: 9016 (TRAFFIC WHITE)**
  - FINS AND ROTOR ARE FINISHED TO MATT BLACK.**
  - BUILDING/ WALL SHOWN IN VIEWS IS FOR VISUALISATION ONLY.**
  - ALL LOADS ARE INDICATIVE ONLY AND WILL BE SITE AND INSTALLATION SPECIFIC. IT IS RECOMMENDED THAT STRUCTURAL ADVICE IS SOUGHT PRIOR TO INSTALLATION**

2000.0 REF.  
DISTANCE FROM TOP  
BRACKET TO HUB HEIGHT



**ROTOR BLADES**  
SWEEP AREA = 3.46m sq  
SWEEP DIAMETER = 2.1m



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: A 4.0 TOLERANCE: DIMENSIONS: ±0.15 ANGLES: ±0.5°				SCALE: 1:40 SHEET 3 OF 4	
MATERIAL:				FINISH:	
THIRD ANGLE PROJECTION				-	
DIMENSIONS SPECIFIED TO BS 3602:1981 WELD SYMBOLS SPECIFIED TO BS 499:1993 UNITS AND FITS SPECIFIED TO BS 4853:1988				-	
	NAME	SIGNATURE	DATE		
DRAWN	J NICHOLSON		28/11/08		
CHECKED	M RAVILUCIUS		28/11/08		
PRODUCTION	R WEEDON		28/11/08		

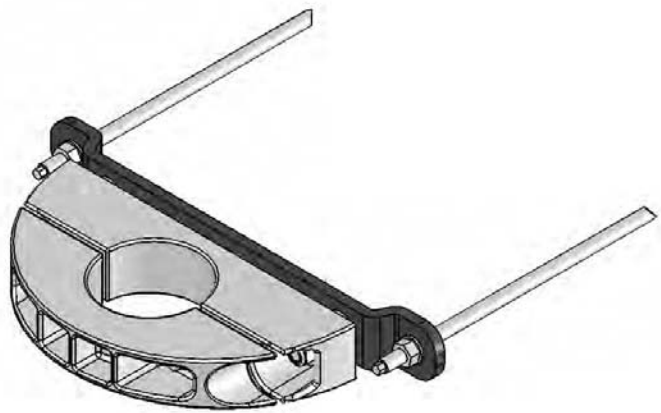
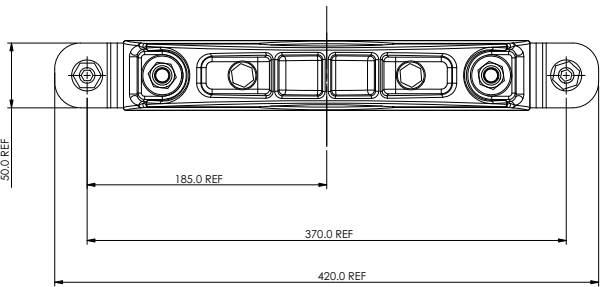
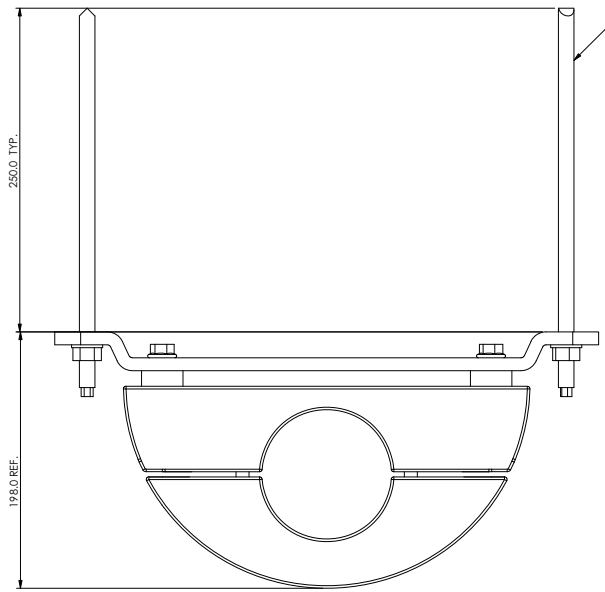
<b>RENEWABLE DEVICES LTD</b>
DESCRIPTION: TURBINE LOADINGS TO BS61400-2
DWG NO. <b>P02 - PLANNING SWMS</b>

DO NOT SCALE DRAWING

CHANGES AT THIS ISSUE  
SEE SHT 1 FOR DETAILS

**FISCHER RESIN ANCHORS**

- REQUIRES 2 X  $\phi 14.0$ -  $\phi 16.0$ mm DRILLED HOLES (DEPENDING ON LOAD BEARING SUBSTRATE) PER MOUNTING BRACKET.
- FULL SPECIFICATION AVAILABLE FROM RDST.
- STUD LENGTH, DEPTH AND SPECIFICATION IS SITE AND INSTALLATION SPECIFIC.
- DIMENSIONS SHOWN ARE FOR A TYPICAL INSTALLATION



GENERAL ISO VIEW

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 4.4 Ra TOLERANCES: DIMENSIONS: $\pm 0.15$ ANGLES: $\pm 0.5^\circ$				SCALE: 1:3	SHEET 4 OF 4
MATERIAL:					
FINISH:					
DRAWN	J NICHOLSON	SIGNATURE	DATE		
CHECKED	M RAVILIOUS		28/11/08		
PRODUCTION	R WEEDEON		28/11/08		

<b>RENEWABLE DEVICES LTD</b>	
DESCRIPTION: MOUNTING SYSTEM FOOTPRINT	
DWG NO.	P02 - PLANNING SWMS