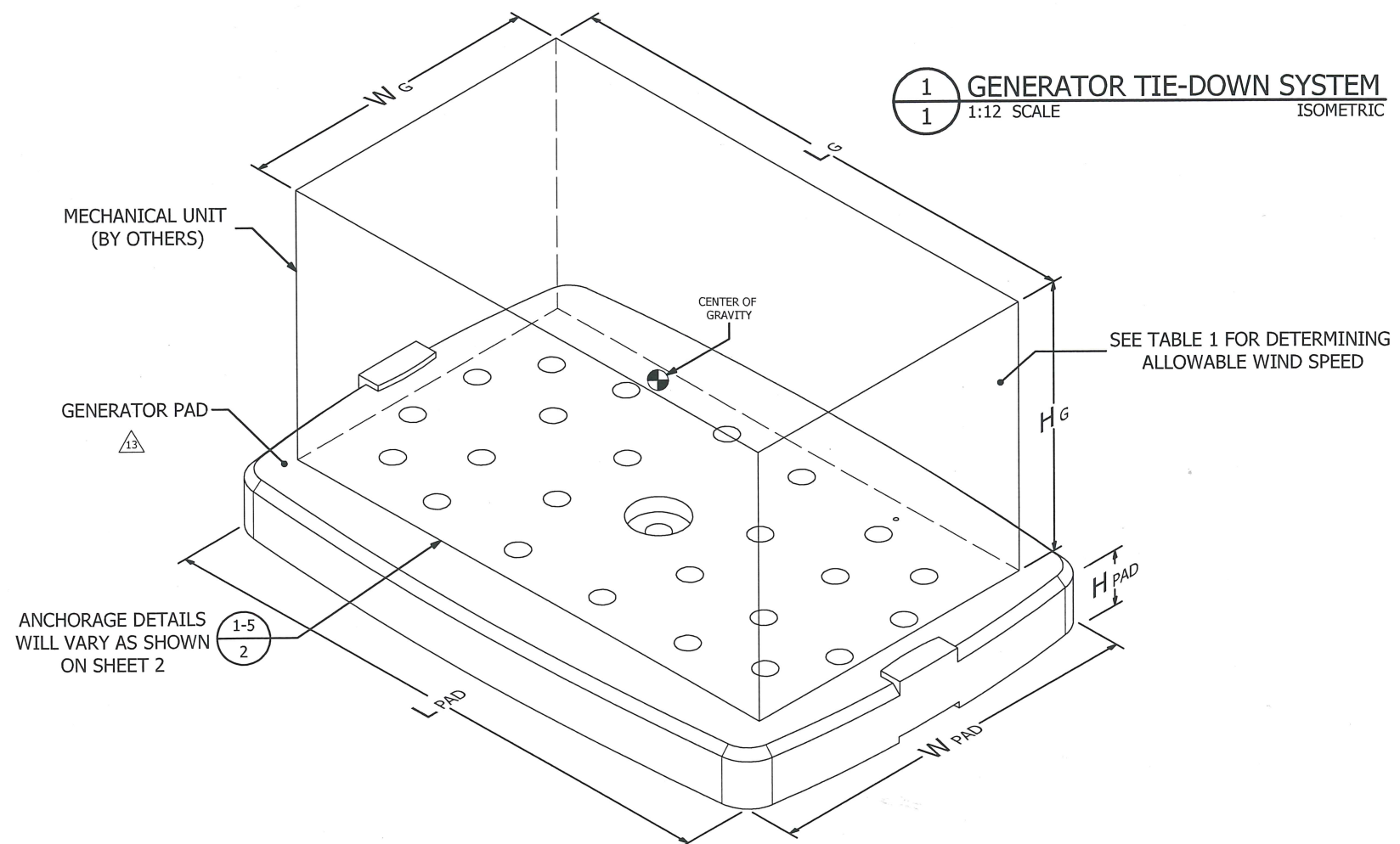


MAINSTREAM ENGINEERING CORP.

QWIKPAD™ GENERATOR PAD

GENERATOR TIE-DOWN SYSTEM FOR HIGH-VELOCITY HURRICANE-ZONE (HVHZ)



GENERATOR PAD SCHEDULE:

QWIKPAD™ GENERATOR PAD							GENERATOR						
PART NO.	INSTALLED PAD WEIGHT	L _{PAD}	W _{PAD}	H _{PAD}	RATED WIND SPEED	ULTIMATE PRESSURE	MAKE	NOMINAL RATING	SEE DESIGN NOTE 6 MODEL NO.	L _G	W _G	H _G	MIN. WEIGHT
	LB	IN	IN	IN	MPH	PSF				IN	IN	IN	LB
QT8200	330	56	38	5	180	66.2	(UNIVERSAL)	-	ALL LISTED MAKES/MODELS	SEE DESIGN NOTE 6			
QT8215	330	56	38	5	180	66.2	BRIGGS & STRATTON	17, 20 kW	17 AND 20 kW MODELS [‡]	46.5	26.8	27.8	400
QT8230	330	56	38	5	180	66.2	GENERAC	9 kW	G007029, G007030	48	25.1	28.6	340
								11 kW	G007031, G007032, G007033				348
								16 kW	G007035, G007036, G007037				409
								20 kW	G007038, G007039				448
								22 kW	G007042, G007043				466
QT8230	330	56	38	5	180	66.2	HONEYWELL	16 kW	G007059	48	25.1	28.6	409
								20 kW	G007062				448
								22 kW	G007065				466
QT8240	330	56	38	5	178 [†]	64.8	KOHLER	14 kW	14RCA	47	26	32.3	440
								14 kW	14RCAL-200SELS				490
								14 kW	14RESA				420
								14 kW	14RESAL				467
								20 kW	20RCA				555
								20 kW	20RCAL-200SELS				600
								20 kW	20RESA, 20RESC				535
20 kW	20RESAL, 20 RESCL	580											

[†] 180 MPH WIND SPEED RATING ACHIEVED WITH USE OF QT8110 OR QT8111 ANCHOR KITS (FOR SOIL AND CONCRETE INSTALLATION SITES, RESPECTIVELY)

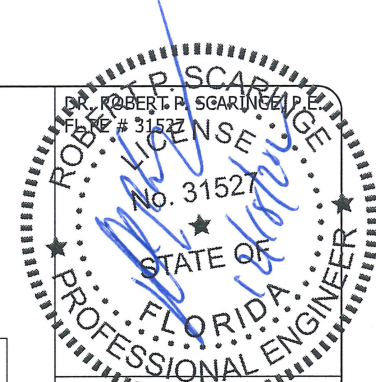
[‡] BRIGGS & STRATTON MODELS WITH LENGTH AND HEIGHT DIMENSIONS MATCHING OR BELOW THE LISTED DIMENSIONS AND A WEIGHT MATCHING OR EXCEEDING THE LISTED MINIMUM WEIGHT

DESIGN NOTES:

- THIS PRODUCT HAS BEEN DESIGNED IN ACCORDANCE WITH ASCE 7-16 AND THE FLORIDA BUILDING CODE - SEVENTH EDITION (2020) FOR USE WITHIN AND OUTSIDE THE HIGH-VELOCITY HURRICANE ZONE (HVHZ).
- DESIGN CONSIDERS ASCE 7-16 SECTION 29.4 DESIGN WIND LOADS - OTHER STRUCTURES. ALL OTHER DESIGN VARIABLES AND LOADING FACTORS ARE IN ACCORDANCE WITH ASCE 7-16 CHAPTERS 26 & 29 FOR EXPOSURE CATEGORY C.
- PRODUCTS DETAILED HEREIN ARE INCLUDED WITH QWIKPAD™ GENERATOR PAD (SERIES QT82XX) HIGH-VELOCITY HURRICANE ZONE GENERATOR MOUNTING PADS, UNLESS OTHERWISE SPECIFIED. APPROPRIATE PAD MODEL ASSUMED TO BE DETERMINED BY CONTRACTOR/INSTALLER BASED ON GENERATOR MAKE/MODEL.
- THIS INSTALLATION SPECIFICATION IS FOR INSTALLATION OF THE GIVEN GENERATOR MODELS ATOP ANY QWIKPAD™ GENERATOR PAD (SERIES QT82XX), WITH THE PAD LEVELED AND LOCATED AT GRADE LEVEL ON COMPACTED GROUND OR ATOP EXISTING CONCRETE SLAB.
- INSTALLATIONS ATOP EXISTING CONCRETE SLAB WHERE VULT WIND SPEEDS EXCEED DESIGN CHECK IN TABLE 2 REQUIRE (1) ANCHOR INSTALLED WITH S.S. FENDER WASHER THROUGH CENTER HOLE TO PREVENT SLIDING.
- MODEL NUMBER LISTS IN GENERATOR PAD SCHEDULE AND WIND LOAD TABLES MAY NOT BE ALL INCLUSIVE. MODEL NUMBER VARIANTS MAY EXIST, OR MAY BE ADDED TO PRODUCT LINES, WHICH MEET WIND LOAD RATINGS. GENERATOR MODELS OTHER THAN THOSE LISTED HAVING EQUIVALENT, OR SMALLER, EXTERIOR DIMENSIONS (L_G, W_G, H_G), MATCHING ANCHORAGE PATTERNS, AND WEIGHT GREATER THAN OR EQUAL TO THOSE LISTED SHALL BE CONSIDERED TO MEET GIVEN VULT WIND SPEEDS. OTHERWISE, UNITS MUST BE CONSIDERED ON A CASE-BY-CASE BASIS.
- GENERATOR MOUNT BOLTS TO BE INSTALLED INTO MAKE/MODEL SPECIFIC ANCHORAGE POINTS PER THE DEPICTED CONFIGURATION VIEWS. PROPER BOLT LENGTH ASSUMED TO BE DETERMINED BY CONTRACTOR/INSTALLER BASED ON GENERATOR MAKE/MODEL AND MINIMUM THREAD ENGAGEMENT SPECIFIED HEREIN.
- DESIGN IS BASED ON INSPECTED PRODUCTS AND MANUFACTURING DRAWINGS PRODUCED BY MAINSTREAM ENGINEERING CORP. NO SUBSTITUTIONS WITHOUT WRITTEN APPROVAL BY THIS ENGINEER SHALL BE PERMITTED.
- ⚠ BOLTS SHALL BE 18-8 STAINLESS STEEL PER ASTM F593 IN ACCORDANCE WITH ANSI B18.2.1 WITH UNC CLASS 2A THREADS (PER ASME B1.1).
- ⚠ WASHERS SHALL BE 18-8 STAINLESS STEEL.
- ⚠ THREADED INSERTS SHALL BE BRASS PER ASTM B16 WITH UNC CLASS 2B THREADS (PER ASME B1.1) AND SHALL HAVE A PULL-OUT STRENGTH GREATER THAN 250 LB.
- ⚠ GENERATOR PAD SHALL BE LOW-DENSITY POLYETHYLENE (LDPE) WITH YIELD STRENGTH = 1.675 KSI OR BETTER PER ASTM D638 AND NOMINAL WALL THICKNESS = .220 (.1875 MIN.).
- ⚠ GENERATOR PAD SHALL BE FILLED WITH WATER AT INSTALLATION SITE TO ACHIEVE INSTALLED WEIGHTS GIVEN IN THE GENERATOR PAD SCHEDULE. WEIGHT OF FILLED PAD IS 330 LB.

GENERAL NOTES:

- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
- CENTER OF GRAVITY ASSUMED TO ACT AT GEOMETRIC CENTER OF UNIT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR METALS TO PREVENT ELECTROLYSIS.
- ELECTRICAL GROUND, WHEN REQUIRED, SHALL BE DESIGNED AND INSTALLED BY OTHERS.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER SHALL PREPARE SITE SPECIFIC DOCUMENTS IN CONJUNCTION WITH THIS DOCUMENT.
- FOR AN EXPLANATION OF RISK AND EXPOSURE CATEGORIES THAT ACCOMPANY THE VULT WIND SPEEDS USED IN THIS APPROVAL, SEE SECTIONS 1.5.1 AND 26.7.3, RESPECTIVELY, OF ASCE 7-16. VULT WIND SPEEDS FOR RISK CATEGORY II DETERMINED BY FIGURE 26.5-1B OF ASCE 7-16.
- GENERATOR WEIGHTS AND DIMENSIONS PER MANUFACTURER DOCUMENTATION, TO BE VERIFIED BY OTHERS.
- ALL DIMENSIONS SHOWN ARE REFERENCE AND IN INCHES, UNLESS OTHERWISE SPECIFIED.



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QWIKPAD™ GENERATOR PAD
GENERATOR TIE-DOWN SYSTEM FOR HVHZ

FBC 7TH EDITION (2020) PRODUCT APPROVAL
FL# 27646.1

REV	REMARKS	DRWN	CHKD	DATE
A	INITIAL RELEASE	A. CARPENTER	R. SCARINGE	8/13/2018
B	ADD QT8240 MODELS	B. WOODS	A. CARPENTER	6/8/2020
C	UPDATE SUPPORTS, ADD QTR215 AND ASCE 7-16 COMPLIANCE	B. WOODS	A. CARPENTER	9/24/2020
D		B. WOODS	A. CARPENTER	12/4/2020

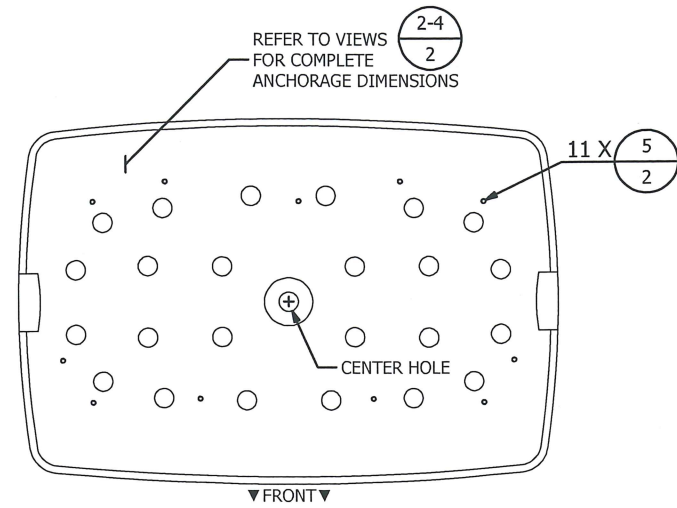
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QT8200

DWG NO. 5010794 | REV D

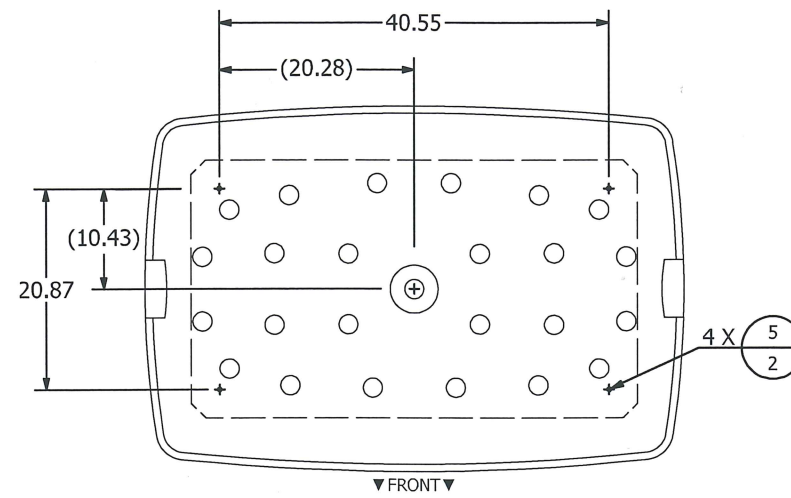
SHEET 1 OF 3

ANCHORAGE DETAILS FOR QT82XX SERIES GENERATOR PADS:



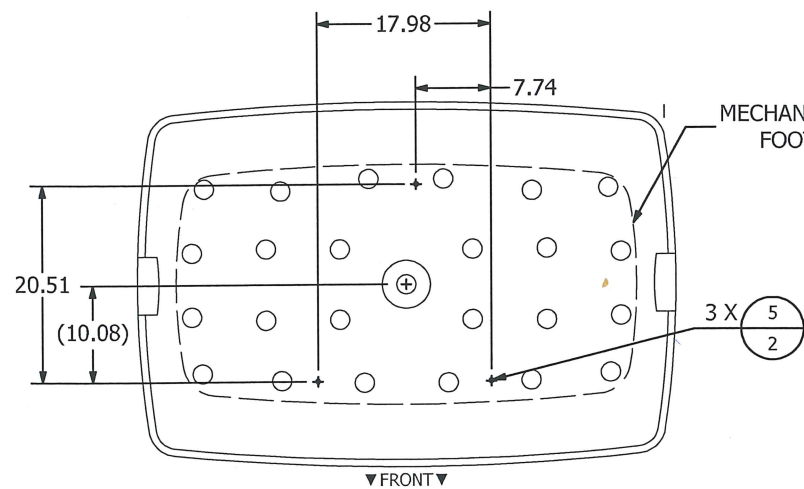
(UNIVERSAL CONFIGURATION)

1 QT8200 ANCHORAGE
2 1:20 SCALE TOP VIEW



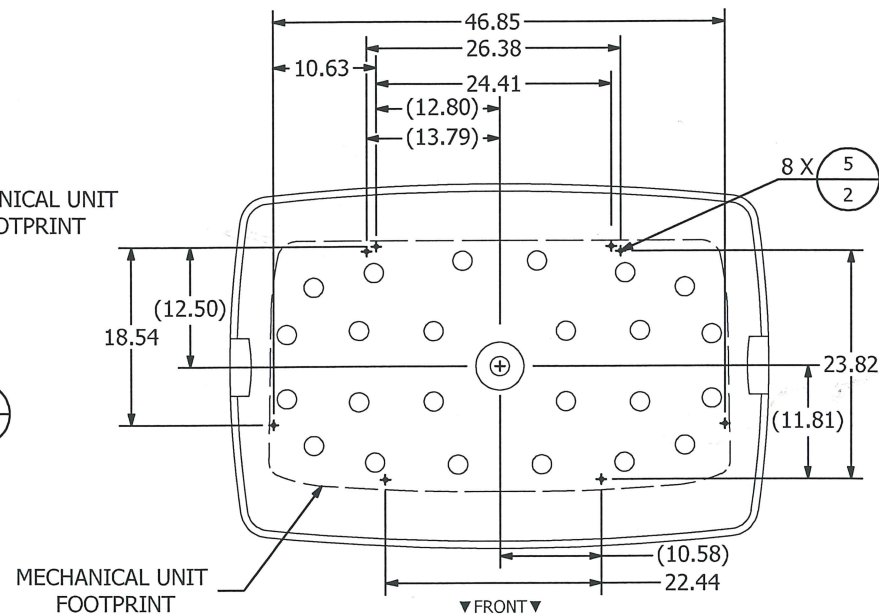
(BRIGGS & STRATTON CONFIGURATION)

2 QT8215 ANCHORAGE
2 1:20 SCALE TOP VIEW



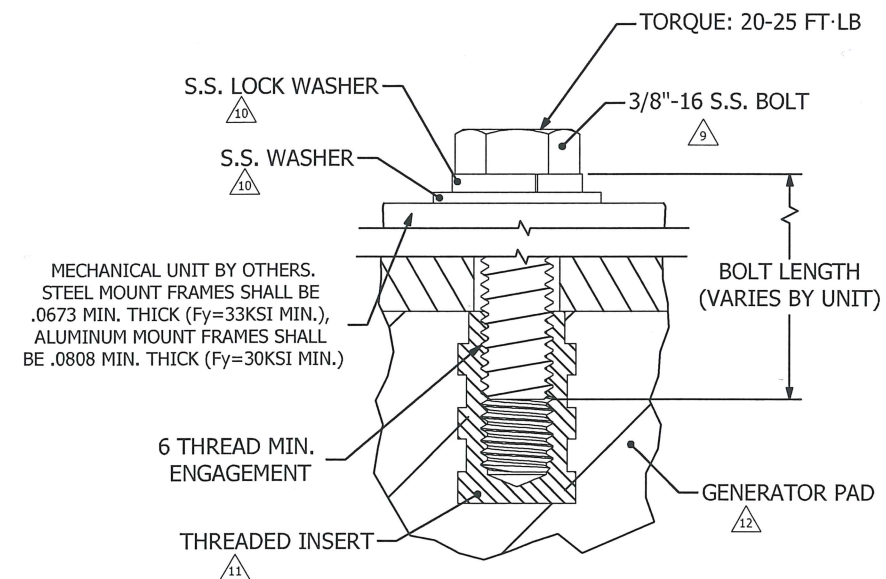
(GENERAC/HONEYWELL CONFIGURATION)

3 QT8230 ANCHORAGE
2 1:20 SCALE TOP VIEW



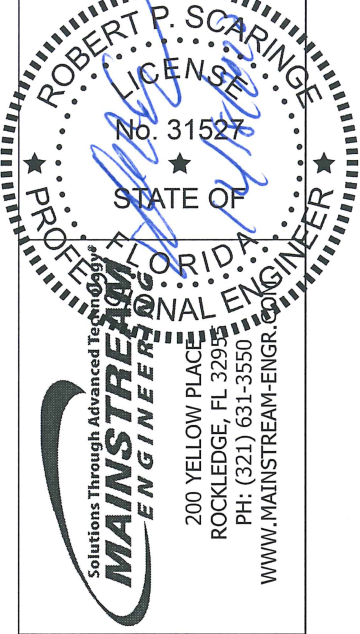
(KOHLER CONFIGURATION)

4 QT8240 ANCHORAGE
2 1:20 SCALE TOP VIEW



5 ANCHOR DETAIL
2 1:1 SCALE SECTION VIEW

DR. ROBERT P. SCARINGE, P.E.
FL PE # 31527



QWIKPAD™ GENERATOR PAD
GENERATOR TIE-DOWN SYSTEM FOR HVHZ

FBC 7TH EDITION (2020) PRODUCT APPROVAL
FL# 27646.1

REV	REMARKS	DRWN	CHKD	DATE
A	INITIAL RELEASE	A. CARPENTER	R. SCARINGE	8/13/2018
B	ADD QT8240 MODELS	B. WOODS	A. CARPENTER	6/8/2020
C	UPDATE SUPPORTS, ADD QT8215	B. WOODS	A. CARPENTER	9/24/2020
D	UPDATE FOR FBC 7TH EDITION AND ASSE 726 COMPLIANCE	B. WOODS	A. CARPENTER	12/4/2020

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QT8200
SERIES

DWG NO. 5010794 REV D

SHEET 2 OF 3

WIND LOAD CALCULATIONS FOR QT82XX SERIES GENERATOR PADS:

APPROPRIATE PAD MODEL DETERMINED USING PAD SCHEDULE ON SHEET 1

TABLE 1. WIND LOAD OVERTURN DESIGN CHECK FOR QT82XX SERIES GENERATOR PADS FOR USE WITH RISK CATEGORY II STRUCTURE (EXPOSURE 'C') IN THE HVHZ.

MAKE	NOMINAL RATING	GENERATOR MODEL NO.	DIMENSIONS				WEIGHT	.6X DEAD LOAD (UNIT + PAD)	DEAD LOAD MOMENT	F _{WIND, PAD}	F _{WIND, UNIT}	F _{WIND, TOT}	ULTIMATE PRESSURE	WIND SPEED	DESIGN CHECK (NO ANCHORS)	DESIGN CHECK (1 ANCHOR) †
			L _G	W _G	H _G											
			IN	IN	IN	LB	LB	FT-LB	LB	LB	LB	PSF	MPH			
BRIGGS & STRATTON	17, 20 kW	17 AND 20 kW MODELS*	46.5	26.8	27.8	400	438.0	693.5	128.8	594.5	723.2	80.2	198.1	OK FOR 180 MPH	OK FOR 180 MPH	
GENERAC	9 kW	G007029, G007030	48	25.1	28.6	340	402.0	636.5	128.8	631.3	760.1	68.0	182.4	OK FOR 180 MPH	OK FOR 180 MPH	
	11 kW	G007031, G007032, G007033	48	25.1	28.6	348	406.8	644.1	128.8	631.3	760.1	68.8	183.4	OK FOR 180 MPH	OK FOR 180 MPH	
	16 kW	G007035, G007036, G007037	48	25.1	28.6	409	443.4	702.1	128.8	631.3	760.1	75.0	191.5	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	G007038, G007039	48	25.1	28.6	448	466.8	739.1	128.8	631.3	760.1	78.9	196.5	OK FOR 180 MPH	OK FOR 180 MPH	
	22 kW	G007042, G007043	48	25.1	28.6	466	477.6	756.2	128.8	631.3	760.1	80.8	198.8	OK FOR 180 MPH	OK FOR 180 MPH	
HONEYWELL	16 kW	G007059	48	25.1	28.6	409	443.4	702.1	128.8	631.3	760.1	75.0	191.5	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	G007062	48	25.1	28.6	448	466.8	739.1	128.8	631.3	760.1	78.9	196.5	OK FOR 180 MPH	OK FOR 180 MPH	
	22 kW	G007065	48	25.1	28.6	466	477.6	756.2	128.8	631.3	760.1	80.8	198.8	OK FOR 180 MPH	OK FOR 180 MPH	
KOHLER	14 kW	14RESA	48	26.2	29	420	450.0	712.5	128.8	640.1	768.9	74.3	190.7	OK FOR 180 MPH	OK FOR 180 MPH	
	14 kW	14RESAL	48	26.2	29	467	478.2	757.2	128.8	640.1	768.9	79.0	196.5	OK FOR 180 MPH	OK FOR 180 MPH	
	14 kW	14RCA	47	26	32.3	440	462.0	731.5	128.8	698.1	826.9	64.7	177.9	UP TO 177 MPH	OK FOR 180 MPH	
	14 kW	14RCAL-200SELS	47	26	32.3	490	492.0	779.0	128.8	698.1	826.9	68.9	183.5	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	20RESA, 20RESC	48	26.2	29	535	519.0	821.8	128.8	640.1	768.9	85.7	204.8	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	20RESAL, 20 RESCL	48	26.2	29	580	546.0	864.5	128.8	640.1	768.9	90.1	210.0	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	20RCA	47	26	32.3	555	531.0	840.8	128.8	698.1	826.9	74.3	190.7	OK FOR 180 MPH	OK FOR 180 MPH	
	20 kW	20RCAL-200SELS	47	26	32.3	600	558.0	883.5	128.8	698.1	826.9	78.1	195.5	OK FOR 180 MPH	OK FOR 180 MPH	

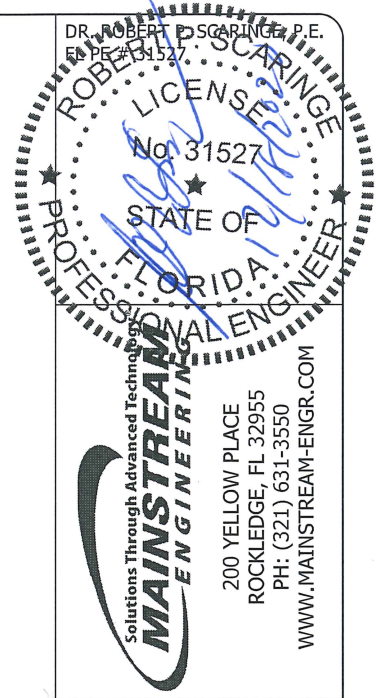
TABLE 2. WIND LOAD SLIDING DESIGN CHECK FOR QT82XX SERIES GENERATOR PADS INSTALLED ATOP EXISTING CONCRETE SLAB FOR USE WITH RISK CATEGORY II STRUCTURE (EXPOSURE 'C') IN THE HVHZ.

MAKE	NOMINAL RATING	GENERATOR MODEL NO.	DIMENSIONS				WEIGHT	NORMAL FORCE	STATIC FRICTION (μs = 0.6)	F _{WIND, PAD}	F _{WIND, UNIT}	F _{WIND, TOT}	ULTIMATE PRESSURE	WIND SPEED	DESIGN CHECK (NO ANCHORS)	DESIGN CHECK (1 ANCHOR) †
			L _G	W _G	H _G											
			IN	IN	IN	LB	LB	LB	LB	LB	LB	PSF	MPH			
BRIGGS & STRATTON	17, 20 kW	17 AND 20 kW MODELS*	46.5	26.8	27.8	400	730.0	438.0	78.0	360.0	438.0	40.1	140.1	UP TO 140 MPH	OK FOR 180 MPH	
GENERAC	9 kW	G007029, G007030	48	25.1	28.6	340	670.0	402.0	68.1	333.9	402.0	35.0	130.9	UP TO 130 MPH	OK FOR 180 MPH	
	11 kW	G007031, G007032, G007033	48	25.1	28.6	348	678.0	406.8	68.9	337.9	406.8	35.4	131.7	UP TO 131 MPH	OK FOR 180 MPH	
	16 kW	G007035, G007036, G007037	48	25.1	28.6	409	739.0	443.4	75.1	368.3	443.4	38.6	137.5	UP TO 137 MPH	OK FOR 180 MPH	
	20 kW	G007038, G007039	48	25.1	28.6	448	778.0	466.8	79.1	387.7	466.8	40.7	141.1	UP TO 141 MPH	OK FOR 180 MPH	
	22 kW	G007042, G007043	48	25.1	28.6	466	796.0	477.6	80.9	396.7	477.6	41.6	142.7	UP TO 142 MPH	OK FOR 180 MPH	
HONEYWELL	16 kW	G007059	48	25.1	28.6	409	739.0	443.4	75.1	368.3	443.4	38.6	137.5	UP TO 137 MPH	OK FOR 180 MPH	
	20 kW	G007062	48	25.1	28.6	448	778.0	466.8	79.1	387.7	466.8	40.7	141.1	UP TO 141 MPH	OK FOR 180 MPH	
	22 kW	G007065	48	25.1	28.6	466	796.0	477.6	80.9	396.7	477.6	41.6	142.7	UP TO 142 MPH	OK FOR 180 MPH	
KOHLER	14 kW	14RESA	48	26.2	29	420	750.0	450.0	75.4	374.6	450.0	38.8	137.7	UP TO 137 MPH	OK FOR 180 MPH	
	14 kW	14RESAL	48	26.2	29	467	797.0	478.2	80.1	398.1	478.2	41.2	142.0	UP TO 141 MPH	OK FOR 180 MPH	
	14 kW	14RCA	47	26	32.3	440	865.0	519.0	86.9	432.1	519.0	44.7	147.9	UP TO 147 MPH	OK FOR 180 MPH	
	14 kW	14RCAL-200SELS	47	26	32.3	490	910.0	546.0	91.4	454.6	546.0	47.0	151.7	UP TO 151 MPH	OK FOR 180 MPH	
	20 kW	20RESA, 20RESC	48	26.2	29	535	770.0	462.0	71.9	390.1	462.0	37.0	134.5	UP TO 134 MPH	OK FOR 180 MPH	
	20 kW	20RESAL, 20 RESCL	48	26.2	29	580	820.0	492.0	76.6	415.4	492.0	39.4	138.8	UP TO 138 MPH	OK FOR 180 MPH	
	20 kW	20RCA	47	26	32.3	555	885.0	531.0	82.7	448.3	531.0	42.5	144.2	UP TO 144 MPH	OK FOR 180 MPH	
	20 kW	20RCAL-200SELS	47	26	32.3	600	930.0	558.0	86.9	471.1	558.0	44.7	147.9	UP TO 147 MPH	OK FOR 180 MPH	

† FOR VULT WIND SPEEDS ABOVE THE 'DESIGN CHECK (NO ANCHORS)' WIND SPEED, (1) Ø1/4" X 5" ITW TAPCON CONCRETE SCREW (1.25" MIN. EMBEDMENT IN 3000 PSI MIN. CONCRETE AT 3.0" MIN. EDGE DISTANCE) INSTALLED WITH S.S. FENDER WASHER (13 GA MIN.) REQUIRED TO PREVENT SLIDING ON CONCRETE UP TO VULT WIND SPEEDS OF 180 MPH.

‡ ANCHOR MUST HAVE A MIN. PULL OUT RATING OF 24 LBS TO PREVENT OVERTURN FOR VULT WIND SPEEDS UP TO 180 MPH IF 'DESIGN CHECK (NO ANCHORS)' IS BELOW 180 MPH.

* BRIGGS & STRATTON MODELS WITH LENGTH AND HEIGHT DIMENSIONS MATCHING OR BELOW THE LISTED DIMENSIONS AND A WEIGHT MATCHING OR EXCEEDING THE LISTED MINIMUM WEIGHT



QWIKPAD™ GENERATOR PAD
GENERATOR TIE-DOWN SYSTEM FOR HVHZ

FBC 7TH EDITION (2020) PRODUCT APPROVAL
FL#27646.1

REV	REMARKS	DRWN	CHKD	DATE
A	INITIAL RELEASE	A. CARPENTER	R. SCARINGE	8/13/2018
B	ADD QT8240 MODELS	B. WOODS	A. CARPENTER	6/8/2020
C	UPDATE SUPPORTS, ADD QT8215 AND ASCE 7-16 COMPLIANCE	B. WOODS	A. CARPENTER	9/24/2020
D	UPDATE FOR FBC 7TH EDITION	B. WOODS	A. CARPENTER	12/4/2020

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QT8200 SERIES

DWG NO. 5010794 | REV D

SHEET 3 OF 3