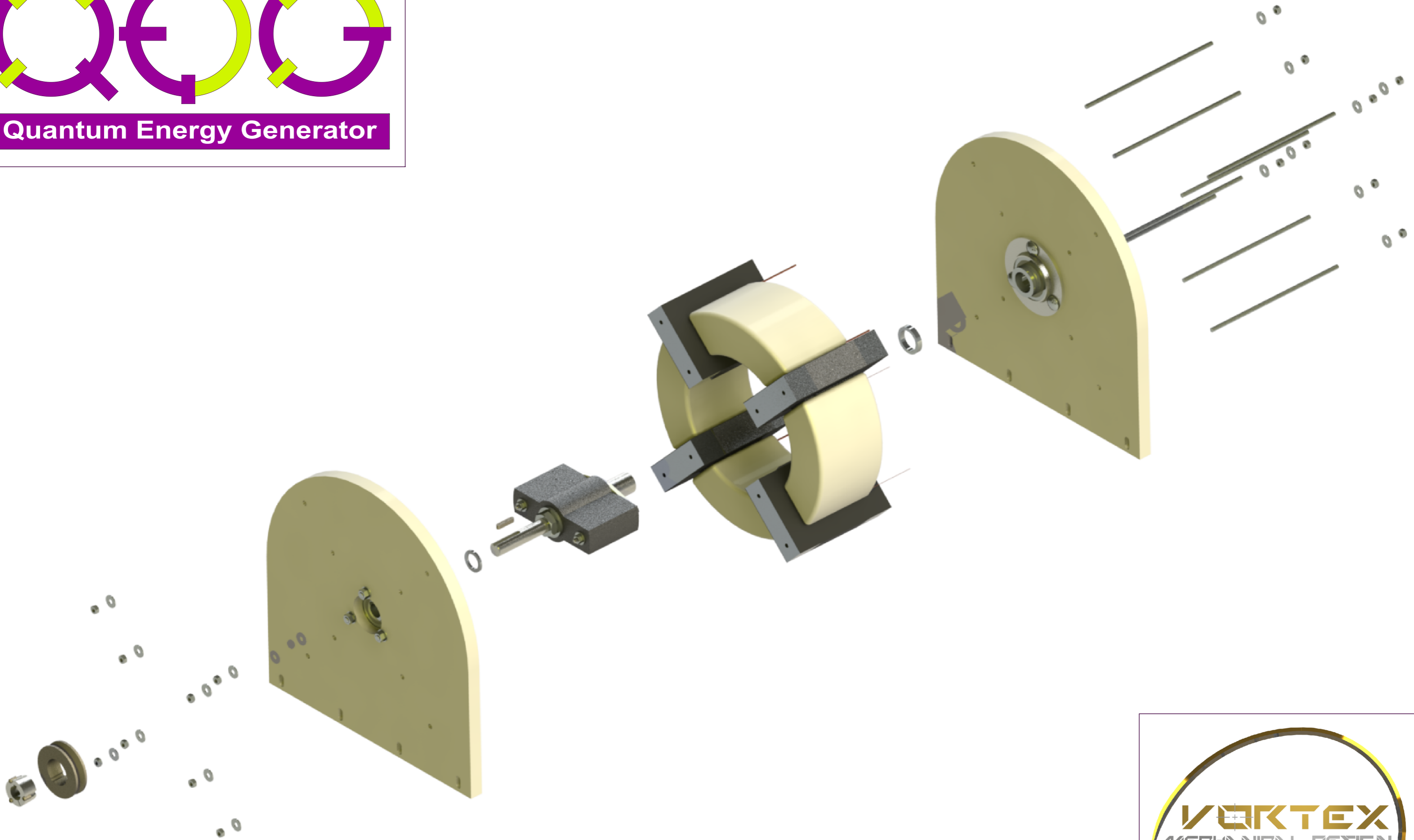


PROJECT:



# Quantum Energy Generator



VERSION: 1.02

LAST UPDATED: 4 JULY 2014

CONTACT:

[www.vortexmd.com](http://www.vortexmd.com)  
[info@vortexmd.com](mailto:info@vortexmd.com)

## INTRODUCTION:

This document contains the manufacturing drawings for the QEG: Quantum Energy Generator. The design is based on the blueprints from the Fix the World (FTW) Organization, which they open sourced on their website. To learn more about the QEG, please visit: <http://www.fixtheworldproject.net/quantum-energy-generator.html>

Following their example, I also made this document containing the drawings freely available on my company's website: <http://www.vortexmd.com/rnd-projects/qeg/>

## MY OWN INVOLVEMENT:

During the interview with FTW by alternative energy reporter Sterling Allan, James Robitaille from FTW told that he had about 9kW of equipment running (as a load) on his prototype QEG with less than 1 kW of input: <http://www.youtube.com/watch?v=RJKE5DJRMFQ>. Initially my business partners and I planned to order components and build one ourselves. However, when FTW released a well documented test report with energy input and output measurements from a new prototype they built in Morocco, we pulled the handbrake. The measurements showed that no more than 590W of usable output was achieved with an input of 607W: <https://hopegirl2012.files.wordpress.com/2014/05/morocco-qeg-june-2014-test-and-measurement-report-v2-011.pdf>. Although the report also stated that this Morocco prototype was not tuned/optimized yet, a new test report showing similar results as mentioned in the Sterling Allan interview has not yet been released. Until such a new report is available, we decided to wait with ordering any components.

Why the FTW team was not able to reproduce similar results with their Morocco prototype as they achieved with their first one, remains an unanswered question for me.

## WHY THIS DOCUMENT:

I made this document with the following intentions:

- make the QEG more compatible with metric dimensions/parts
- make a solid connection between the rotor and the shaft (instead of using Loctite)
- make the rotor retained in the QEG assembly (by spacer rings) instead of being dependent on eccentric locks on the bearings (which are hard to access) for its correct positioning
- make a full set of (mechanical) drawings freely available, so that anybody can give them to a local machine shop and thus making it easier to build a QEG

## FUTURE SCOPE:

Once FTW releases a new test reports which show the results we're after, my team and I will order parts and start building. At that point my intention is to supplement this document with more drawings and documents like:

- complete system drawing, including all the electrical components and mounting frame
- full part/supplier list, also for electrical components, including lead times and prices
- drawing set for imperial dimensioning/parts
- any other relevant documents

## THANKS:

Specifically I want to thank the FTW team for all their efforts and countless hours they spent on researching and sharing their findings. Thanks guys, you're an example.

## QEG RELATED LINKS:

FTW	<a href="http://www.fixtheworldproject.net/">http://www.fixtheworldproject.net/</a>
Hope Girl blog	<a href="http://hopegirl2012.wordpress.com/">http://hopegirl2012.wordpress.com/</a>
Hope Girl Youtube	<a href="http://www.youtube.com/channel/UCNTZPquf2Cy4nDubkHiWZxw">http://www.youtube.com/channel/UCNTZPquf2Cy4nDubkHiWZxw</a>
QEG forum	<a href="http://be-do.com/index.php/en/forum/">http://be-do.com/index.php/en/forum/</a>
Sterling Allan / Peswiki	<a href="http://peswiki.com/index.php/Directory:Fix_the_World_Organizatio_n%27s_Quantum_Energy_Generator">http://peswiki.com/index.php/Directory:Fix the World Organizatio n%27s Quantum Energy Generator</a>

## PARTNERS IN THIS PROJECT:

Eric Nuver, Electrical Engineer

Kees van der Koppel, Inventor  
Van Der Koppel Bedrijven



## CONTACT:

Most pencils still need erasers, at least my one does now and then, so your feedback on this document is welcome as long as it is constructive.

Also for inquiries regarding collaboration and/or if you need any professional 2D/3D CAD services, you can contact me at:

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Linkedin: [www.linkedin.com/in/rodolphereuchlin](http://www.linkedin.com/in/rodolphereuchlin)



## CAD DRAWINGS AND PARTS LIST

PART NR	DWG NR	DWG REV	DESCRIPTION
<b>ASSEMBLIES</b>			
QEG-ASM-001	dwg-QEG-ASM-001	00	END PLATE FRONT ASSEMBLY
QEG-ASM-002	dwg-QEG-ASM-002	00	END PLATE REAR ASSEMBLY
QEG-ASM-020	dwg-QEG-ASM-020	00	ROTOR ASSEMBLY
QEG-ASM-030	dwg-QEG-ASM-030	00	MECHANICAL ASSEMBLY
<b>BOUGHT</b>			
QEG-BGT-001A	dwg-QEG-BGT-001	01	CORE-STATOR
QEG-BGT-001B	dwg-QEG-BGT-001	01	CORE-ROTOR
QEG-BGT-010			PULLEY
QEG-BGT-011			TAPERLOCK BUSH W. SCREWS
QEG-BGT-020			BEARING BLOCK
QEG-BGT-021			BEARING BLOCK
QEG-BGT-030			KEY
QEG-BGT-040			HANDLE
<b>BOUGHT-SUBPARTS</b>			
QEG-BGT-001A-01			CORE-STATOR - SPACER
QEG-BGT-001A-02			CORE-STATOR - MIKA PLATES
QEG-BGT-001A-03			CORE-STATOR - STEEL
QEG-BGT-011-01			PUPPEY TIGHTENING SCREW
QEG-BGT-011-02			PULLEY TAPERLOCK BUSH
<b>ELECTRICAL</b>			
N / A	dwg-QEG-ECT-001	01	ELECTRICAL SCHEMATIC

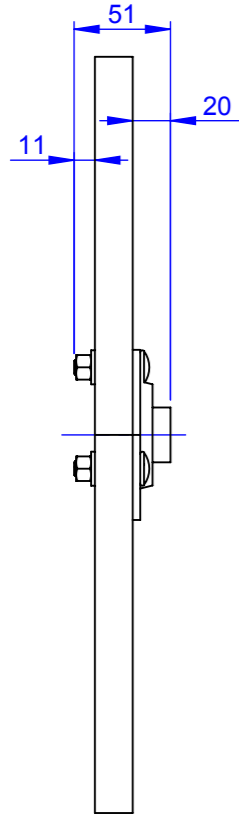
PART NR	DWG NR	DWG REV	DESCRIPTION
<b>PARTS</b>			
QEG-PRT-001	dwg-QEG-PRT-001	00	END PLATE FRONT
QEG-PRT-002	dwg-QEG-PRT-002	00	END PLATE REAR
QEG-PRT-010	dwg-QEG-PRT-010	00	ROTOR SHAFT
QEG-PRT-011	dwg-QEG-PRT-011	00	ROTOR LOCK PLATE
QEG-PRT-020	dwg-QEG-PRT-020	00	ELECTROMAG. SHIELDING - FRONT
QEG-PRT-021	dwg-QEG-PRT-021	00	ELECTROMAG. SHIELDING - REAR
QEG-PRT-022	dwg-QEG-PRT-022	00	ELECTROMAG. SHIELDING - MIDDLE
QEG-PRT-023	dwg-QEG-PRT-023	00	ELECTROMAG. SHIELDING - BOTTOM
QEG-PRT-030			ROTOR SPACER RING FRONT
QEG-PRT-031			ROTOR SPACER RING REAR
<b>FASTENERS</b>			
QEG-FST-001			BOLT
QEG-FST-010			BOLT SQUARE NECK
QEG-FST-011			BOLT SQUARE NECK
QEG-FST-020			NUT
QEG-FST-021			NUT
QEG-FST-022			NUT
QEG-FST-023			NUT
QEG-FST-030			FLAT WASHER
QEG-FST-031			FLAT WASHER
QEG-FST-032			FLAT WASHER
QEG-FST-033			FLAT WASHER
QEG-FST-040			THREADED ROD

DWG REV NRS IN **RED** INDICATE DRAWINGS THAT ARE UPDATED IN THIS REVISION

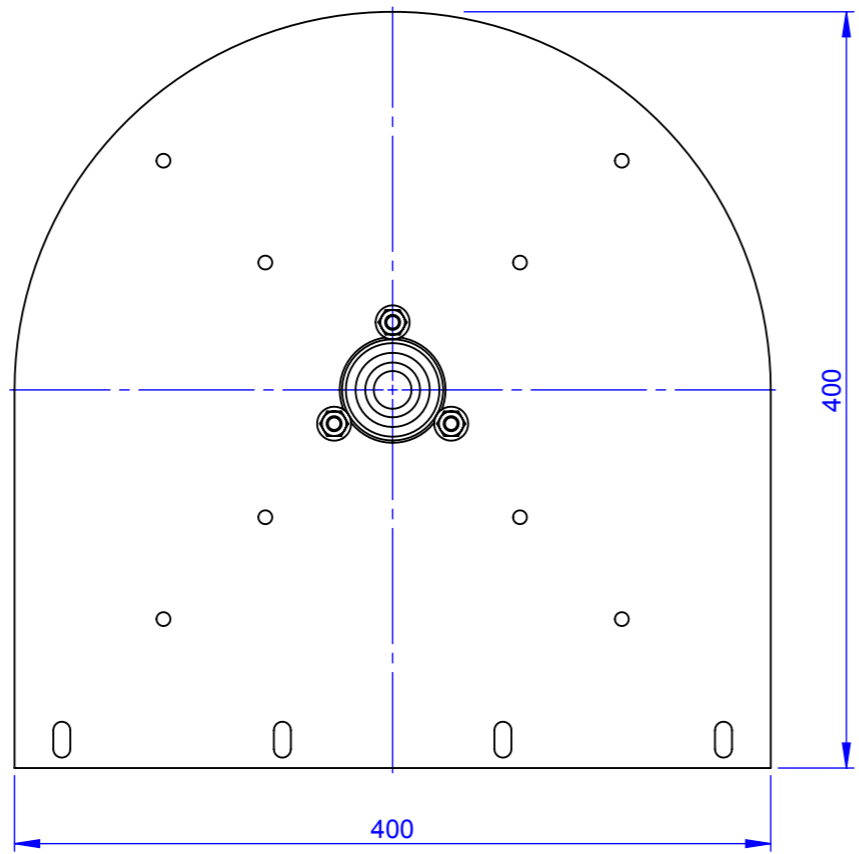


ITEM NO.	QTY.	PART NR	DWG NR	DESCRIPTION	SPECIFICATION	SUPPLIER
1	1	QEG-PRT-001	dwg-QEG-PRT-001	END PLATE FRONT		MERREM-MATERIALS.COM
2	1	QEG-BGT-020		BEARING BLOCK	SBPF 204	AANDRIJFSHOP.NL / PEHAVO.NL
3	3	QEG-FST-010		BOLT SQUARE NECK	M8x30MM CLASS 8.8	FABORY.NL / PEHAVO.NL
4	3	QEG-FST-021		NUT	M8 CLASS 8.8	FABORY.NL / PEHAVO.NL
5	3	QEG-FST-031		FLAT WASHER	M8	FABORY.NL / PEHAVO.NL

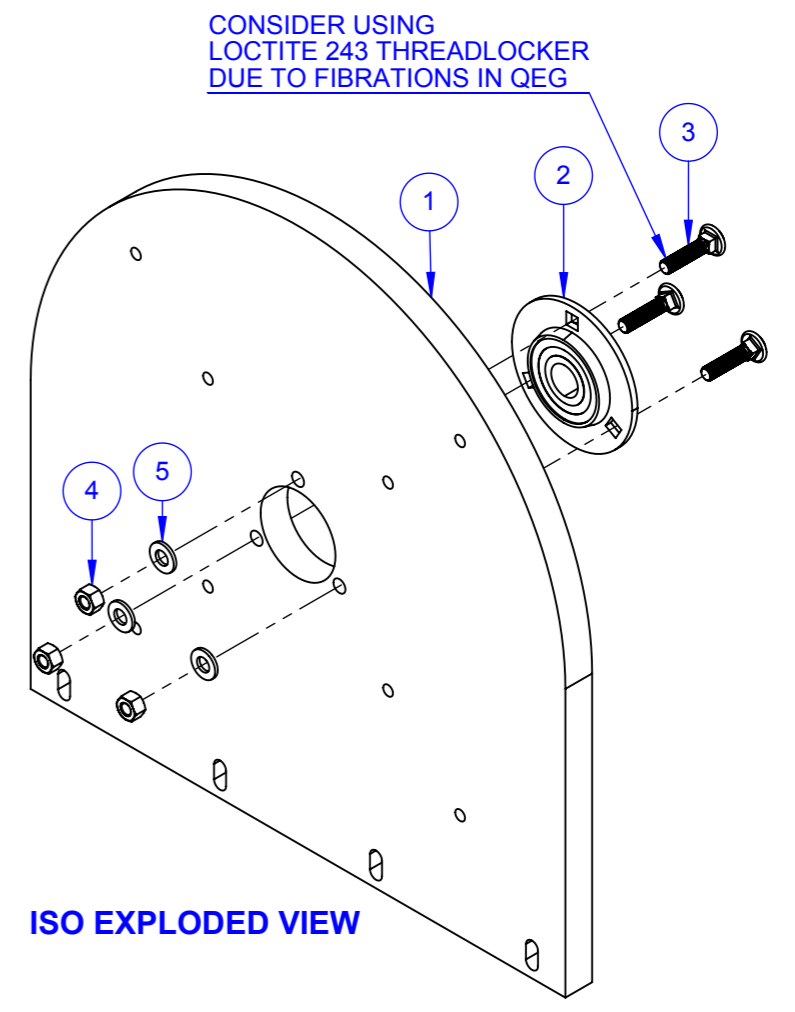
REVISIONS		
REV.	DESCRIPTION	DATE
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**SIDE VIEW**



**FRONT VIEW**



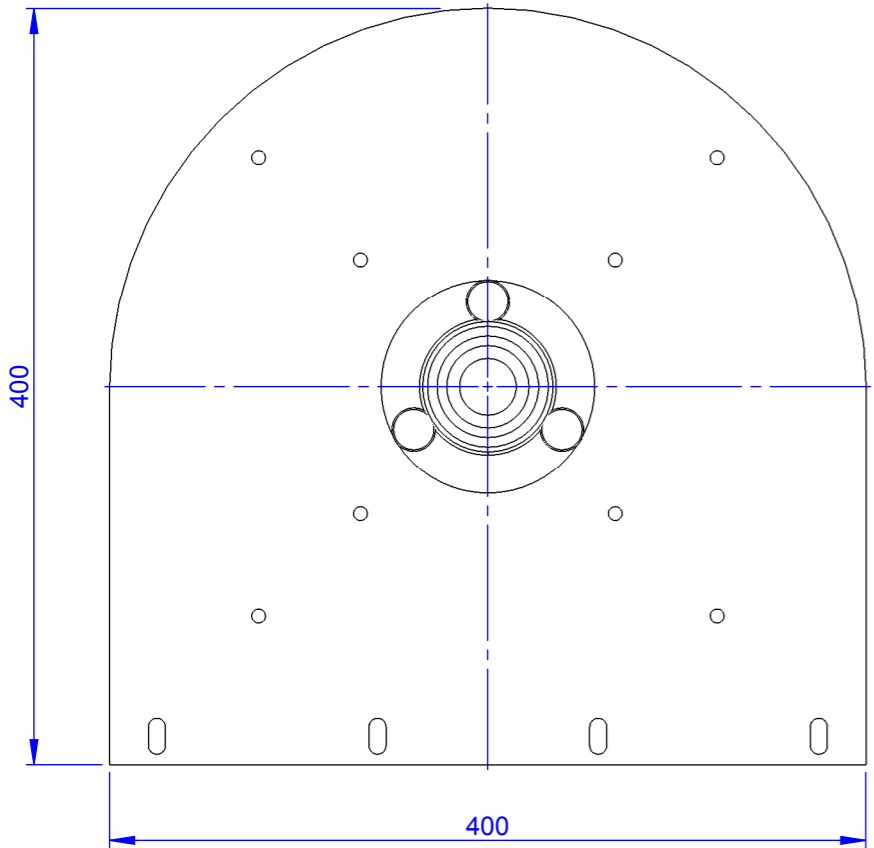
**ISO EXPLODED VIEW**

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	RR	JULY 2014	DESCRIPTION:	PROJECT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	CHK'D:		<b>END PLATE FRONT ASSEMBLY</b>	QEG
	APPVD:		DWG NR: dwg-QEG-ASM-001	REVISION:
	MFG:		PART NR: QEG-ASM-001	00
	Q.A:		DO NOT SCALE DRAWING	SCALE: 1:4
			SHEET 1 OF 1	A3

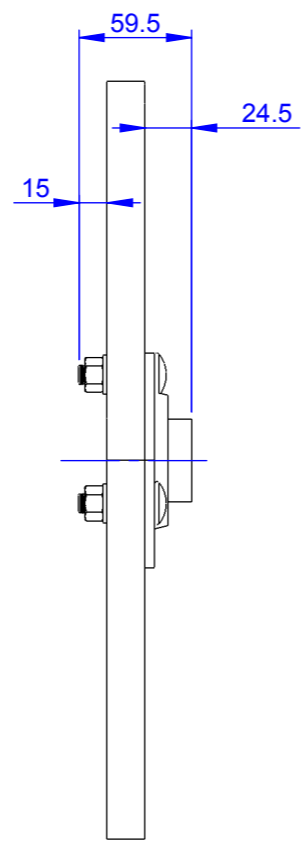


ITEM NO.	QTY.	PART NR	DWG NR	DESCRIPTION	SPECIFICATION	SUPPLIER
1	1	QEG-PRT-002	dwg-QEG-PRT-002	END PLATE REAR		MERREM-MATERIALS.COM
2	1	QEG-BGT-021		BEARING BLOCK	SBPF 206	AANDRIJFSHOP.NL / PEHAVO.NL
3	3	QEG-FST-011		BOLT SQUARE NECK	M10x40MM CLASS 8.8	FABORY.NL / PEHAVO.NL
4	3	QEG-FST-022		NUT	M10 CLASS 8.8	FABORY.NL / PEHAVO.NL
5	3	QEG-FST-032		FLAT WASHER	M10	FABORY.NL / PEHAVO.NL

REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	

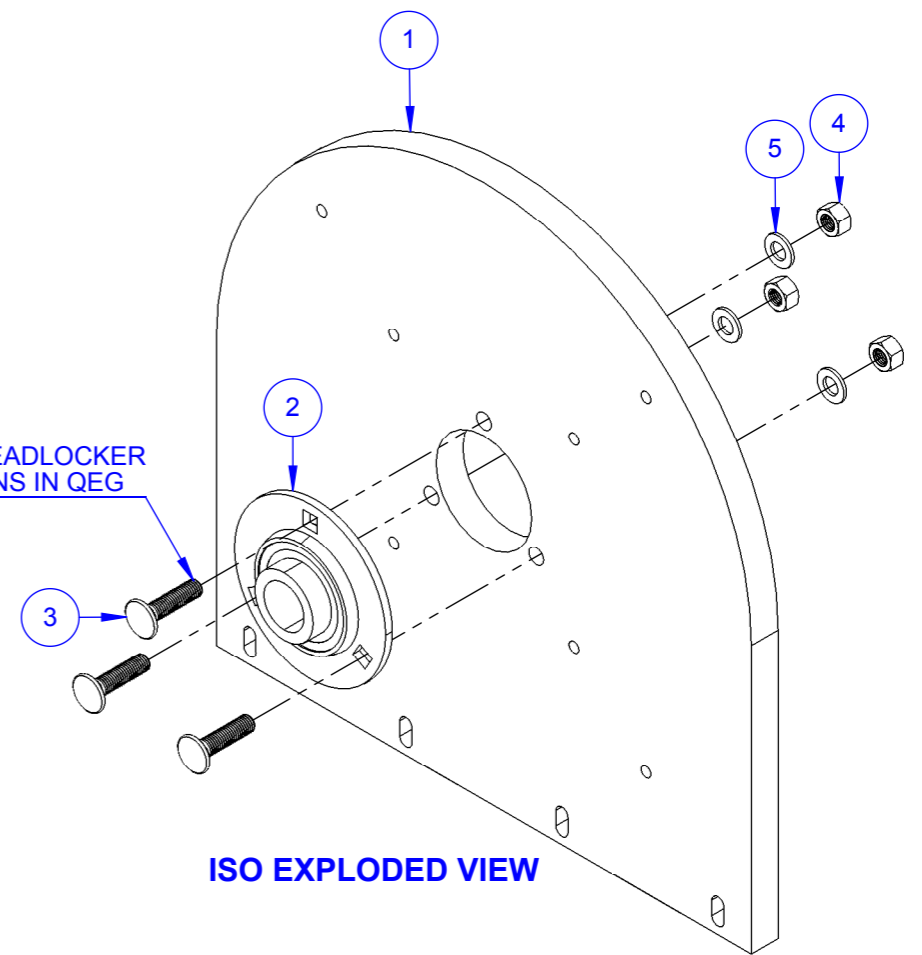


**FRONT VIEW**



**SIDE VIEW**

CONSIDER USING  
LOCTITE 243 THREADLOCKER  
DUE TO FIBRATIONS IN QEG



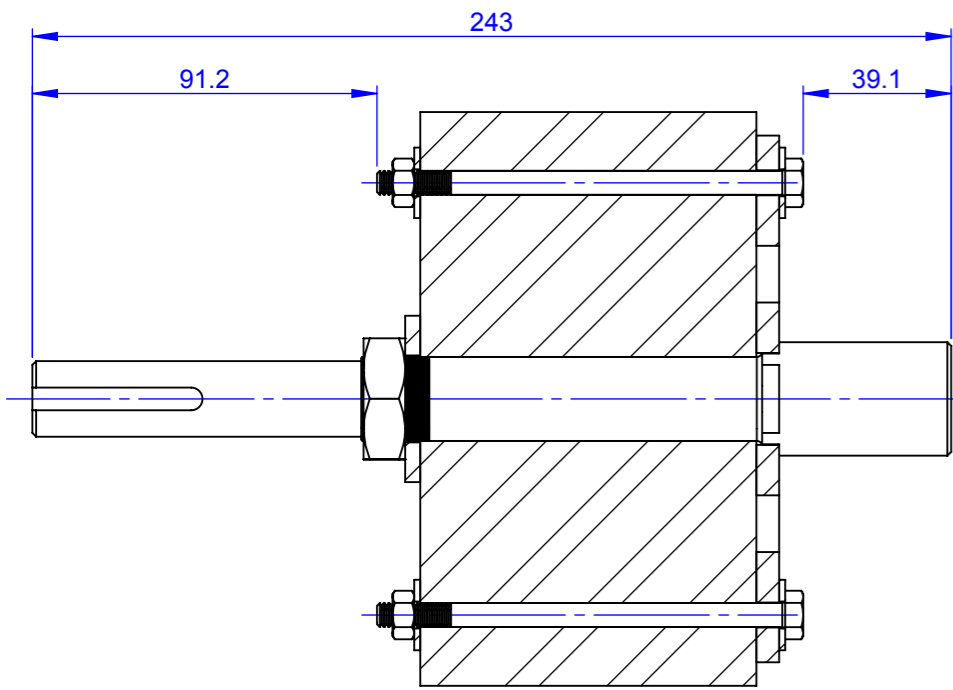
**ISO EXPLODED VIEW**

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	APPVD:		DWG NR: dwg-QEG-ASM-002	REVISION:
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			SHEET 1 OF 1	A3

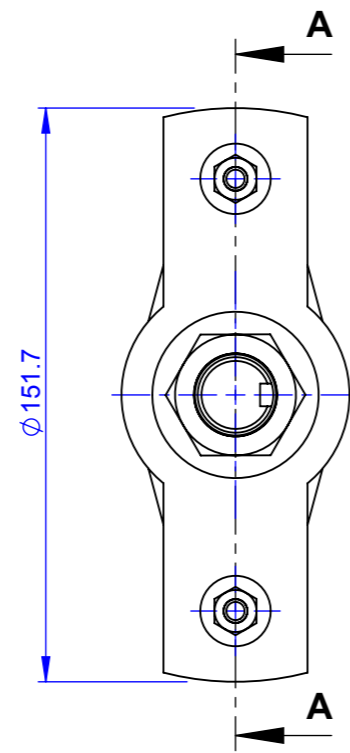


ITEM NO.	QTY.	PART NR	DWG NR	DESCRIPTION	SPECIFICATION	SUPPLIER
1	1	QEG-BGT-001B	dwg-QEG-BGT-001	CORE-ROTOR		TORELCO.COM
2	1	QEG-PRT-010	dwg-QEG-PRT-010	ROTOR SHAFT		TORELCO.COM
3	1	QEG-PRT-011	dwg-QEG-PRT-011	ROTOR LOCK PLATE		MERREM-MATERIALS.COM
4	2	QEG-FST-001		BOLT	0.25"x4.25" GRADE 5	FABORY.NL / PEHAVO.NL
5	2	QEG-FST-020		NUT	0.25" GRADE 5	FABORY.NL / PEHAVO.NL
6	1	QEG-FST-023		NUT	M22x1 CLASS 8.8	FABORY.NL / PEHAVO.NL
7	4	QEG-FST-030		FLAT WASHER	0.25"	FABORY.NL / PEHAVO.NL
8	1	QEG-FST-033		FLAT WASHER	M22	FABORY.NL / PEHAVO.NL

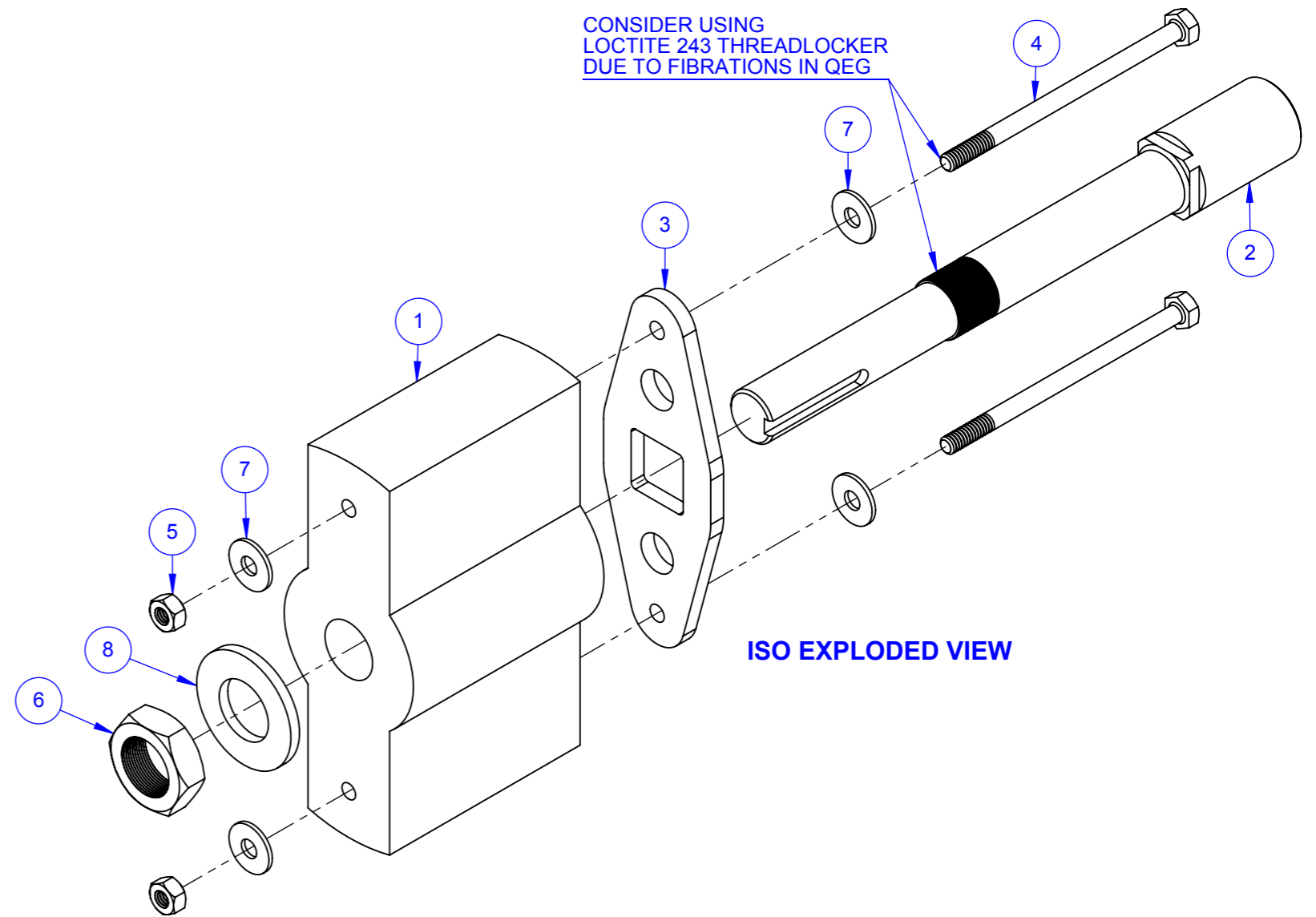
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SECTION A-A



SIDE VIEW



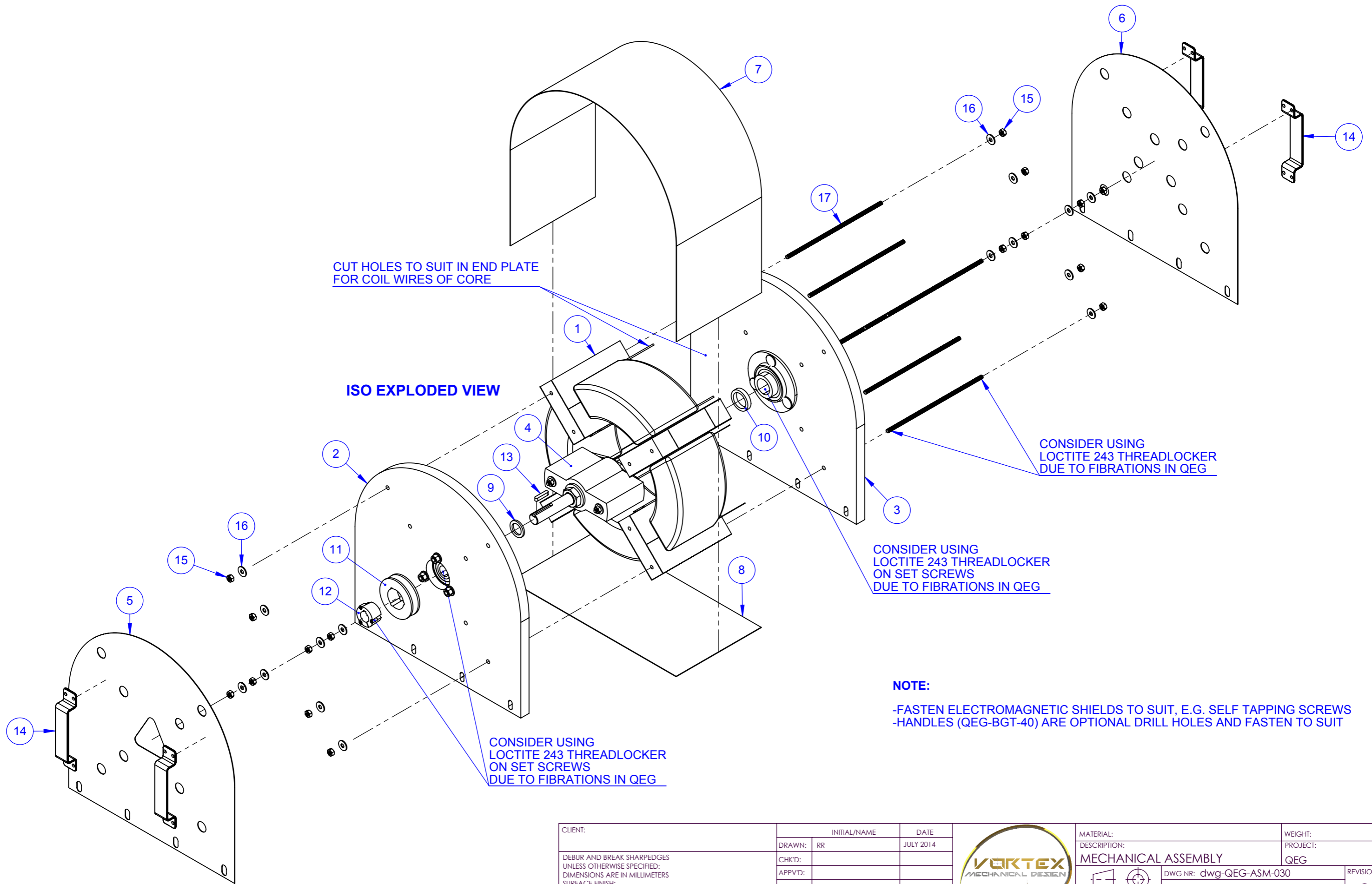
ISO EXPLODED VIEW

CLIENT:	INITIAL/NAME	DATE
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	RR	JULY 2014
	CHK'D:	
	APPVD:	
	MFG:	
	Q.A:	




MATERIAL:	WEIGHT:
DESCRIPTION: ROTOR ASSEMBLY	PROJECT: QEG
DWG NR: dwg-QEG-ASM-020	REVISION: 00
PART NR: QEG-ASM-020	
DO NOT SCALE DRAWING	SCALE: 1:2 SHEET 1 OF 1 A3

REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



CUT HOLES TO SUIT IN END PLATE FOR COIL WIRES OF CORE

ISO EXPLODED VIEW

CONSIDER USING LOCTITE 243 THREADLOCKER DUE TO FIBRATIONS IN QEG

CONSIDER USING LOCTITE 243 THREADLOCKER ON SET SCREWS DUE TO FIBRATIONS IN QEG

CONSIDER USING LOCTITE 243 THREADLOCKER ON SET SCREWS DUE TO FIBRATIONS IN QEG

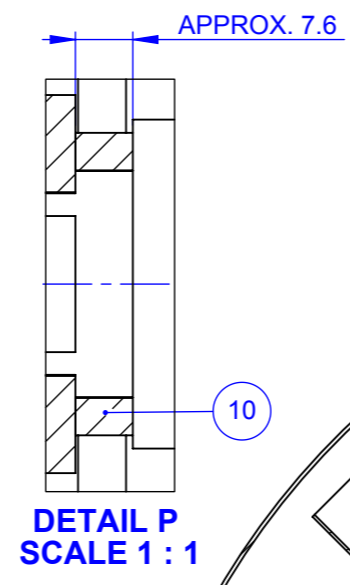
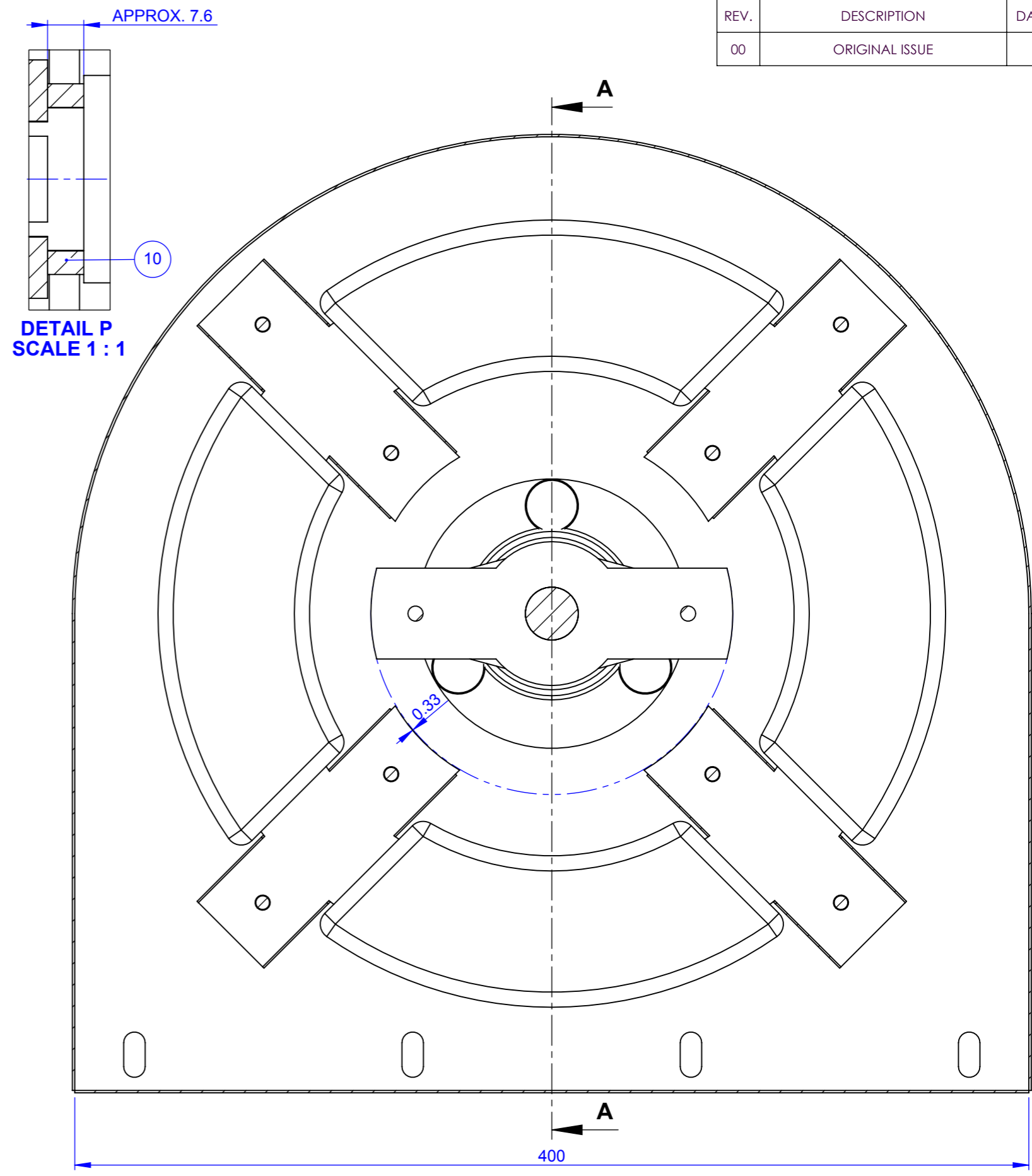
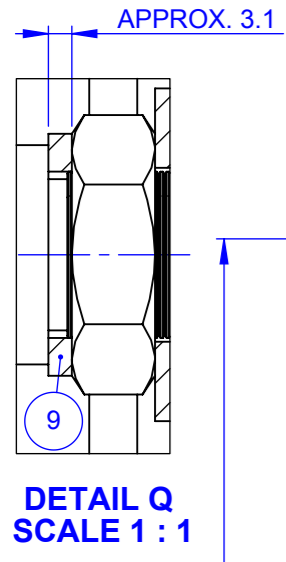
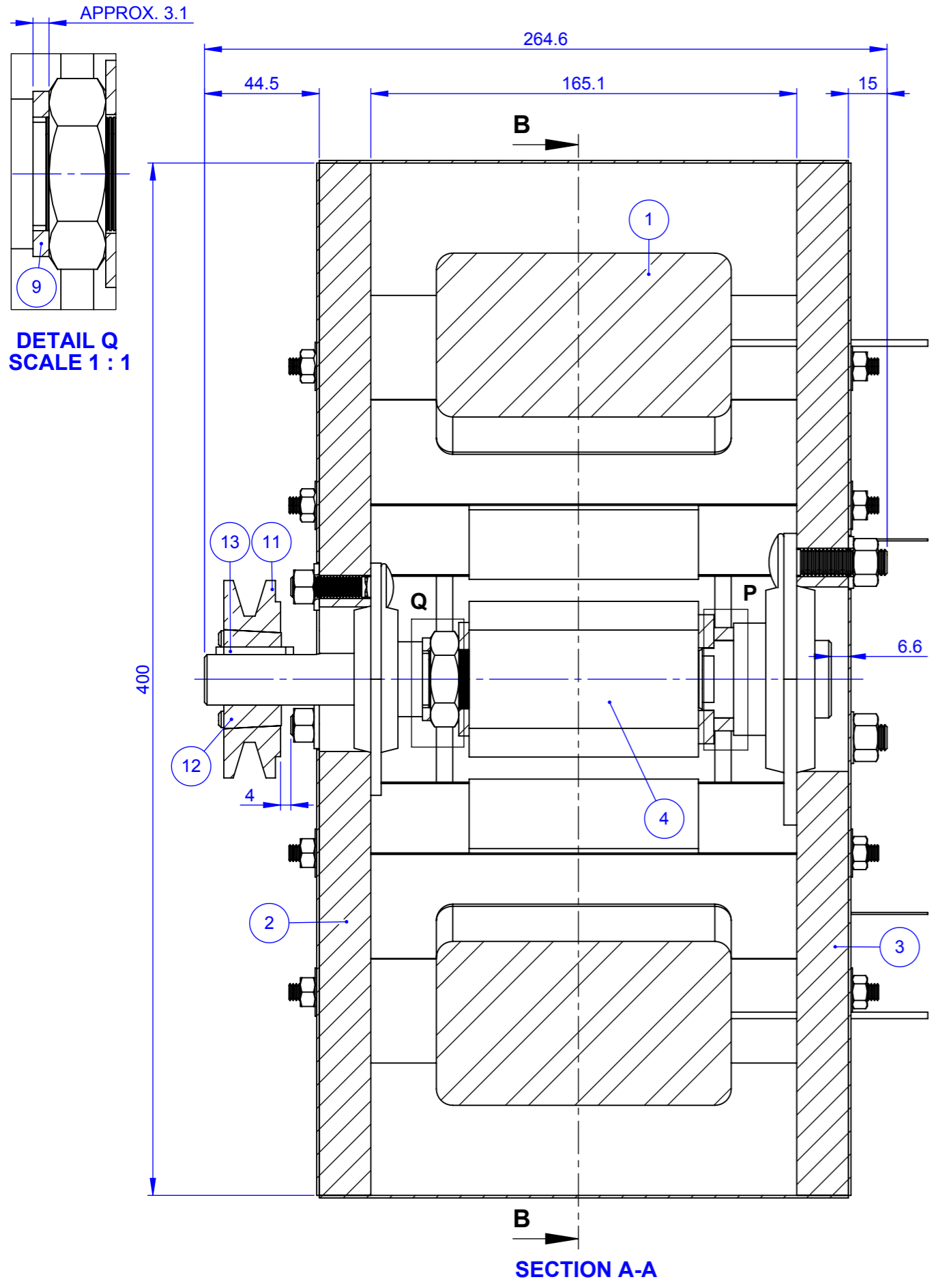
**NOTE:**

- FASTEN ELECTROMAGNETIC SHIELDS TO SUIT, E.G. SELF TAPPING SCREWS
- HANDLES (QEG-BGT-40) ARE OPTIONAL DRILL HOLES AND FASTEN TO SUIT

CLIENT:	INITIAL/NAME	DATE	MATERIAL:	WEIGHT:
DEBUR AND BREAK SHARPEDES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	RR	JULY 2014	DESCRIPTION: MECHANICAL ASSEMBLY	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-ASM-030	REVISION: 00
	APPVD:		PART NR: QEG-ASM-030	
	MFG:		DO NOT SCALE DRAWING	SCALE: NTS
	Q.A:		SHEET 1 OF 4	A3



REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



CLIENT:	INITIAL/NAME	DATE	MATERIAL:	WEIGHT:
DEBUR AND BREAK SHARPEGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	RR	JULY 2014	MECHANICAL ASSEMBLY	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-ASM-030	REVISION:
	APPVD:		PART NR: QEG-ASM-030	00
	MFG:		DO NOT SCALE DRAWING	SCALE: NTS
	Q.A:		SHEET 2 OF 4	A3



ITEM NO.	QTY.	PART NR	DWG NR	DESCRIPTION	SPECIFICATION	SUPPLIER
<b>1</b>	1	QEG-BGT-001A	dwg-QEG-BGT-001	CORE-STATOR		TORELCO.COM
	1	QEG-BGT-001A-03				
	16	QEG-BGT-001A-02				
	8	QEG-BGT-001A-01				
<b>2</b>	1	QEG-ASM-001	dwg-QEG-ASM-001	END PLATE FRONT ASSEMBLY		
	1	QEG-PRT-001	dwg-QEG-PRT-001	END PLATE FRONT		MERREM-MATERIALS.COM
	1	QEG-BGT-020		BEARING BLOCK	SBPF 204	AANDRIJFSHOP.NL / PEHAVO.NL
	3	QEG-FST-010		BOLT SQUARE NECK	M8x30MM CLASS 8.8	FABORY.NL / PEHAVO.NL
	3	QEG-FST-031		FLAT WASHER	M8	FABORY.NL / PEHAVO.NL
	3	QEG-FST-021		NUT	M8 CLASS 8.8	FABORY.NL / PEHAVO.NL
<b>3</b>	1	QEG-ASM-002	dwg-QEG-ASM-002	END PLATE REAR ASSEMBLY		
	1	QEG-PRT-002	dwg-QEG-PRT-002	END PLATE REAR		MERREM-MATERIALS.COM
	1	QEG-BGT-021		BEARING BLOCK	SBPF 206	AANDRIJFSHOP.NL / PEHAVO.NL
	3	QEG-FST-011		BOLT SQUARE NECK	M10x40MM CLASS 8.8	FABORY.NL / PEHAVO.NL
	3	QEG-FST-032		FLAT WASHER	M10	FABORY.NL / PEHAVO.NL
	3	QEG-FST-022		NUT	M10 CLASS 8.8	FABORY.NL / PEHAVO.NL

REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	

#### BILL OF MATERIALS (BOM ) EXPLANATION:

THIS BOM IS A SO CALLED "INDENTED" BOM. THIS MEANS THAT ONLY TOP LEVEL PART NRS HAVE AN ITEM NR (BALLOON NR). IN CASE THIS TOP LEVEL PART NR CONSISTS OF SUB-PARTS/SUB-ASSEMBLIES, THESE PARTS NRS ARE LISTED UNDERNEATH THE TOP LEVEL PART NR.

FOR EXAMPLE ITEM NR 1 (PART NR QEG-BGT-001A) IS AN ASSEMBLY THAT CONSISTS OF PART NRS.

-QEG-BGT-001A-01  
-QEG-BGT-001A-02  
-QEG-BGT-001A-03

THE SECOND PART OF THIS BOM IS ON THE NEXT PAGE

#### PART NR NAMING CONVENTION:

-QEG-ASM-XXX = ASSEMBLY  
-QEG-PRT-XXX = PART (MACHINED/MANUFACTURED)  
-QEG-BGT-XXX = BOUGHT PAR OR ASSEMBLY  
-QEG-FST-XXX = FASTENER

CLIENT:	INITIAL/NAME	DATE	MATERIAL:	WEIGHT:
	DRAWN: RR	JULY 2014	DESCRIPTION:	PROJECT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	CHK'D:		MECHANICAL ASSEMBLY	QEG
	APPVD:		DWG NR: dwg-QEG-ASM-030	REVISION:
	MFG:		PART NR: QEG-ASM-030	00
	Q.A:		DO NOT SCALE DRAWING	SCALE: NTS
			SHEET 3 OF 4	A3



ITEM NO.	QTY.	PART NR	DWG NR	DESCRIPTION	SPECIFICATION	SUPPLIER
4	1	QEG-ASM-020	dwg-QEG-ASM-020	ROTOR ASSEMBLY		
	1	QEG-BGT-001B	dwg-QEG-BGT-001	CORE-ROTOR		TORELCO.COM
	1	QEG-PRT-010	dwg-QEG-PRT-010	ROTOR SHAFT		TORELCO.COM
	1	QEG-PRT-011	dwg-QEG-PRT-011	ROTOR LOCK PLATE		MERREM-MATERIALS.COM
	2	QEG-FST-001		BOLT	0.25"x4.25" GRADE 5	FABORY.NL / PEHAVO.NL
	2	QEG-FST-020		NUT	0.25" GRADE 5	FABORY.NL / PEHAVO.NL
	4	QEG-FST-030		FLAT WASHER	0.25"	FABORY.NL / PEHAVO.NL
	1	QEG-FST-023		NUT	M22x1 CLASS 8.8	FABORY.NL / PEHAVO.NL
	1	QEG-FST-033		FLAT WASHER	M22	FABORY.NL / PEHAVO.NL
5	1	QEG-PRT-020	dwg-QEG-PRT-020	ELECTROMAG. SHIELDING - FRONT	PERFORATED 30% OPENING	
6	1	QEG-PRT-021	dwg-QEG-PRT-021	ELECTROMAG. SHIELDING - REAR	PERFORATED 30% OPENING	
7	1	QEG-PRT-022	dwg-QEG-PRT-022	ELECTROMAG. SHIELDING - MIDDLE	PERFORATED 30% OPENING	
8	1	QEG-PRT-023	dwg-QEG-PRT-023	ELECTROMAG. SHIELDING - BOTTOM	PERFORATED 30% OPENING	
9	1	QEG-PRT-030	CUT TO SUIT	ROTOR SPACER RING FRONT		
10	1	QEG-PRT-031	CUT TO SUIT	ROTOR SPACER RING REAR		
11	1	QEG-BGT-010		PULLEY	SPA 71 - 1 GROOVE	AANDRIJFSHOP.NL / PEHAVO.NL
12	1	QEG-BGT-011		TAPERLOCK BUSH W. SCREWS	BUSH 1108 - 20MM SHAFT	AANDRIJFSHOP.NL / PEHAVO.NL
	1	QEG-BGT-011-02				
	3	QEG-BGT-011-01				
13	1	QEG-BGT-030		KEY	DIN 6885A, 6x6x30	FABORY.NL / PEHAVO.NL
14	4	QEG-BGT-040		HANDLE (OPTIONAL)		
15	16	QEG-FST-020		NUT	0.25" GRADE 5	FABORY.NL / PEHAVO.NL
16	16	QEG-FST-030		FLAT WASHER	0.25"	FABORY.NL / PEHAVO.NL
17	8	QEG-FST-040		THREADED ROD	0.25"x9" GRADE B7	FABORY.NL / PEHAVO.NL

REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	

**NOTE:**

THIS BOM IS A SO CALLED "INDENTED" BOM. SEE PREVIOUS PAGE FOR EXPLANATION

THE FIRST PART OF THIS BOM IS ON THE PREVIOUS PAGE

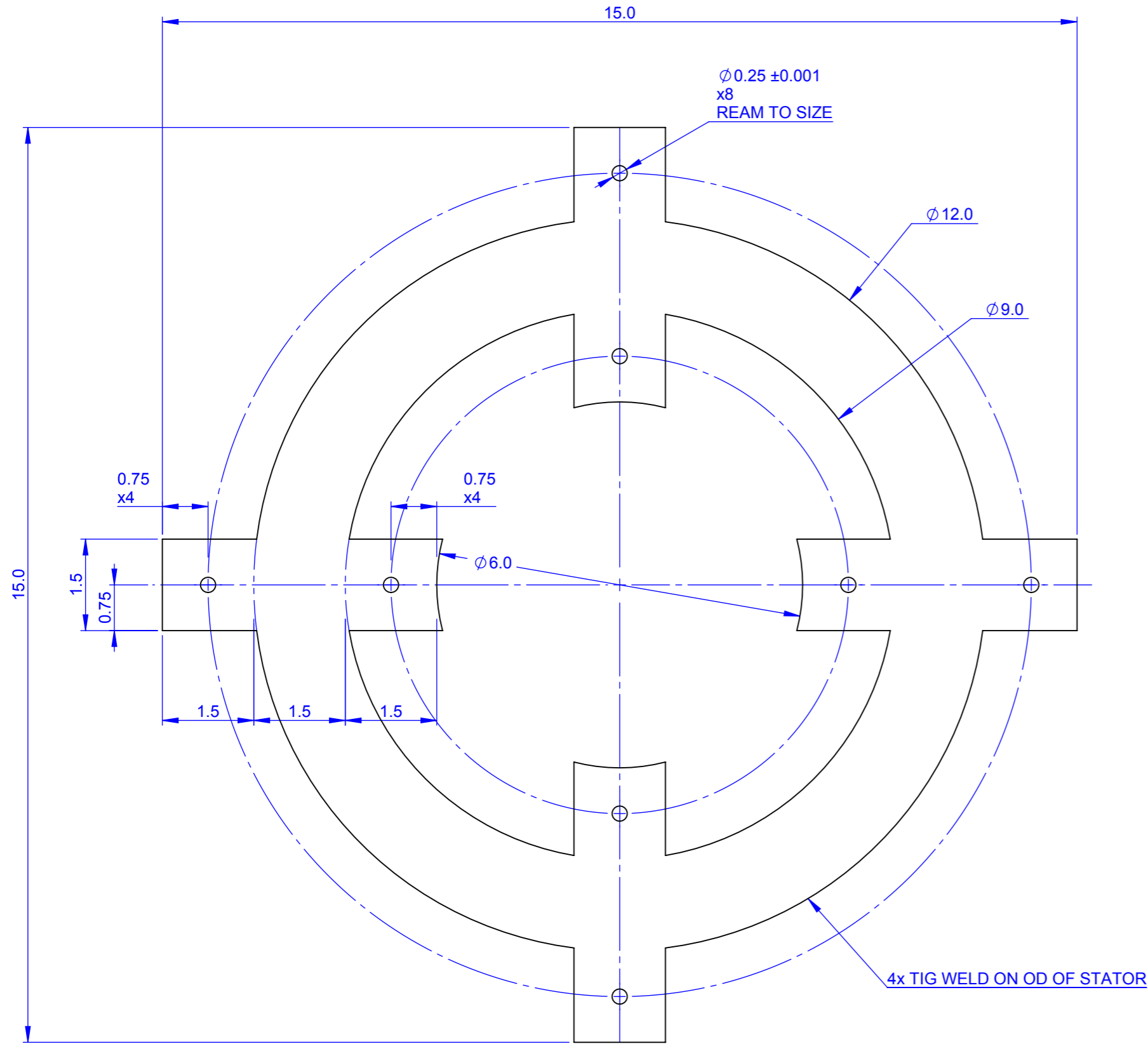
**PART NR NAMING CONVENTION:**

- QEG-ASM-XXX = ASSEMBLY
- QEG-PRT-XXX = PART (MACHINED/MANUFACTURED)
- QEG-BGT-XXX = BOUGHT PAR OR ASSEMBLY
- QEG-FST-XXX = FASTENER

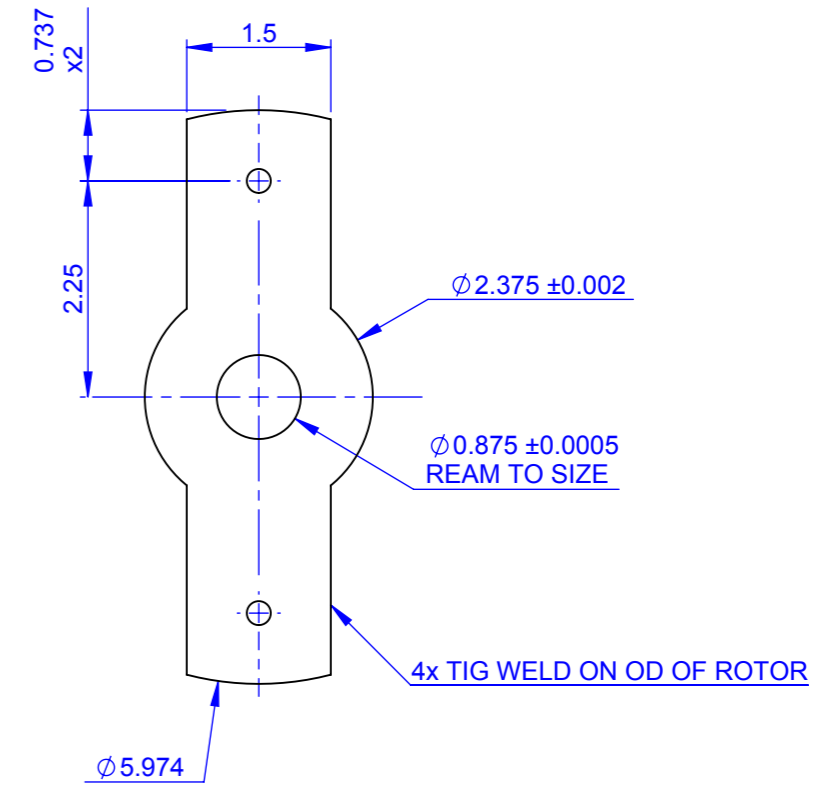
CLIENT:	INITIAL/NAME	DATE	MATERIAL:	WEIGHT:
	RR	JULY 2014	DESCRIPTION:	PROJECT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	CHK'D:		MECHANICAL ASSEMBLY	QEG
	APPVD:		DWG NR: dwg-QEG-ASM-030	REVISION:
	MFG:		PART NR: QEG-ASM-030	00
	Q.A:		DO NOT SCALE DRAWING	SCALE: NTS
			SHEET 4 OF 4	A3



REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	2014-07-02
01	MATERIAL CORRECTION: 25 GAUGE --> 24 GAUGE	2014-07-04



**CORE-STATOR**  
dwg-QEG-BGT-001



**CORE-ROTOR**  
dwg-QEG-BGT-001

**NOTE:**

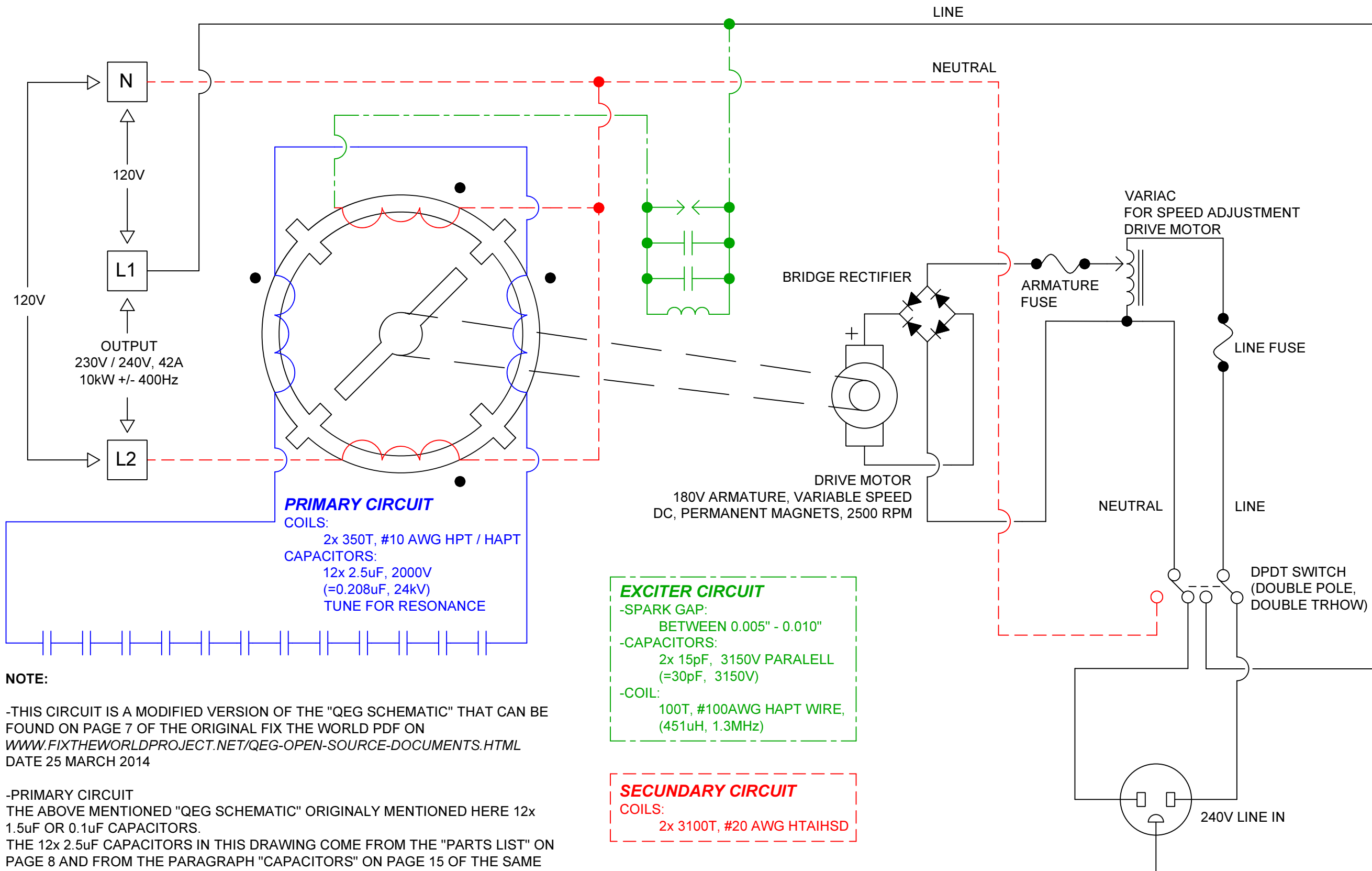
-DIMENSIONING ACCORDING TO FIX THE WORLD PDF,  
[www.fixtheworldproject.net/qeg-open-source-documents.html](http://www.fixtheworldproject.net/qeg-open-source-documents.html), 25 MARCH 2014, DRAWING # 7410-1


-ALL DIMENSIONS ARE IN INCHES  
-TOTAL LAMINATION THICKNESS = 3.5" +/- 0.025" (= +/- 1 LAMINATION THICKNESS)

CLIENT:	INITIAL/NAME	DATE	MATERIAL: M19C5, 24 Gauge	WEIGHT:
	RR	JULY 2014	DESCRIPTION: CORE-STATOR AND CORE-ROTOR DIMS AS PER FTW	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-BGT-001	REVISION:
	APPVD:		PART NR: QEG-BGT-001A / QEG-BGT-001B	01
	MFG:		DO NOT SCALE DRAWING	SCALE: 1:2
	Q.A:		SHEET 1 OF 1	A3

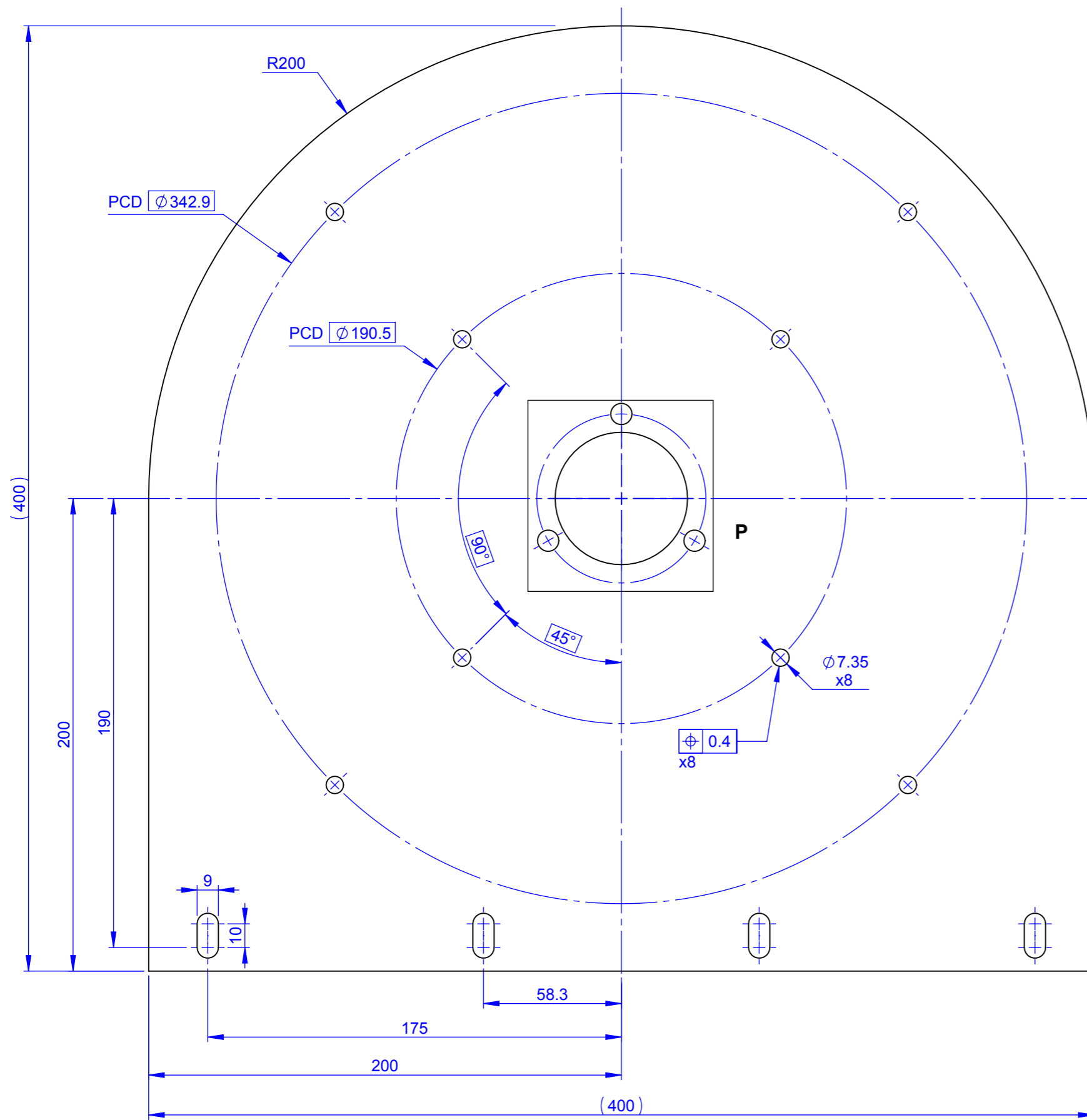


REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	2014-07-02
01	BRIDGE RECTIFIER ADDED FOR DRIVE MOTOR	2014-07-04

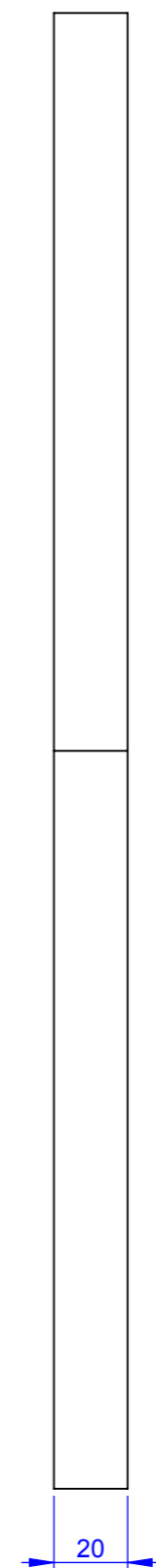


CLIENT:	INITIAL/NAME	DATE	 <b>VORTEX</b> MECHANICAL DESIGN <small>ANYTHING IS POSSIBLE</small> www.vortexmd.com	MATERIAL:	WEIGHT:
	DRAWN: RR	JULY 2014		DESCRIPTION: ELECTRICAL SCHEMATIC	PROJECT: QEG
	CHK'D:			DWG NR: dwg-QEG-ELC-001	REVISION: 01
	APPV'D:			PART NR:	
	MFG:		DO NOT SCALE DRAWING	SCALE: NTS	SHEET 1 OF 1
	Q.A:				A3

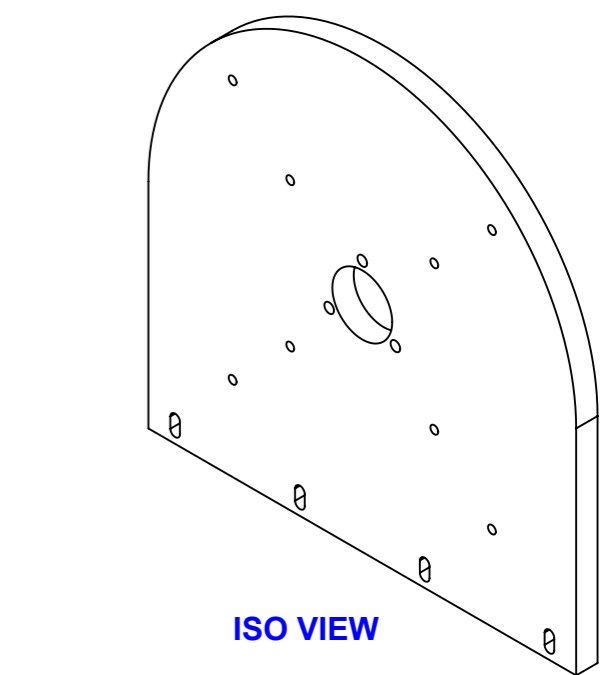
REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



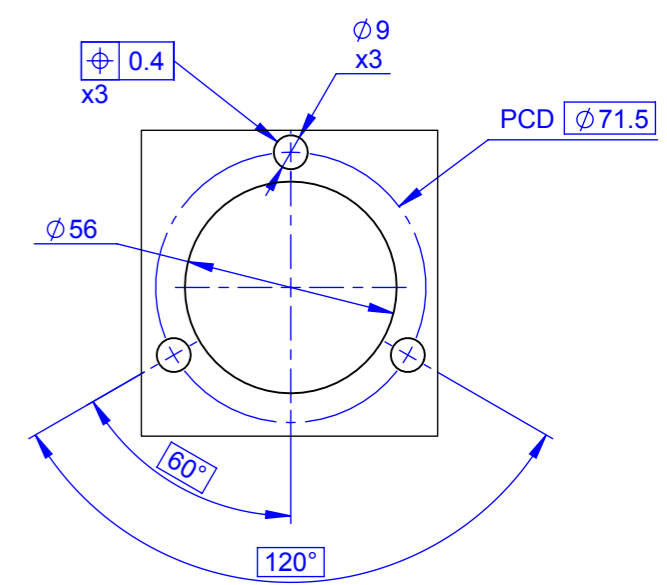
**FRONT VIEW**



**SIDE VIEW**



**ISO VIEW**

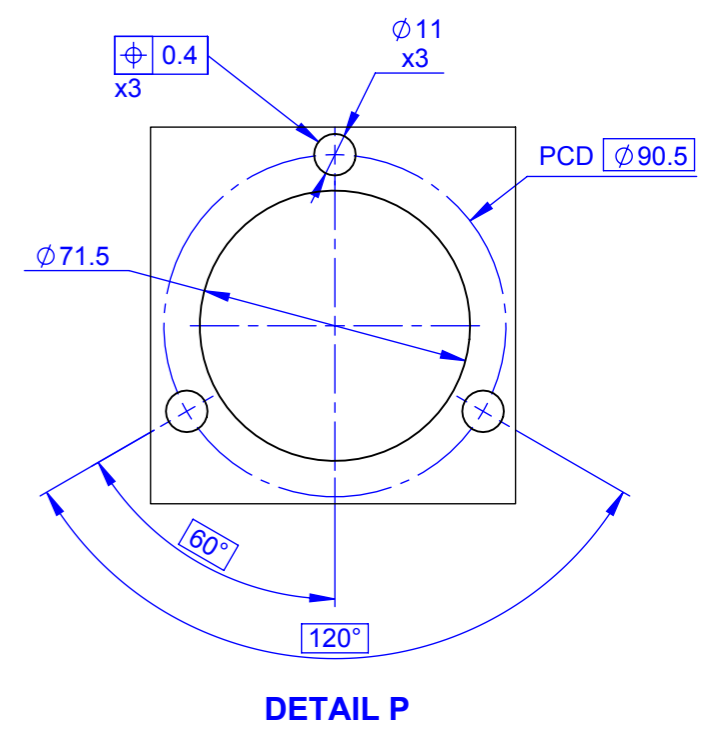
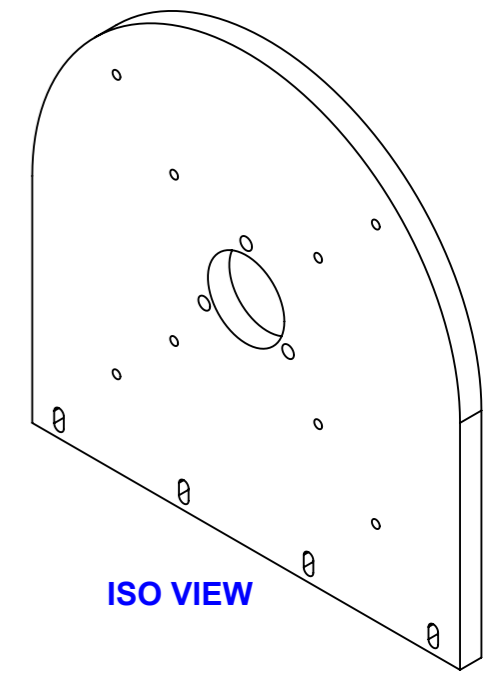
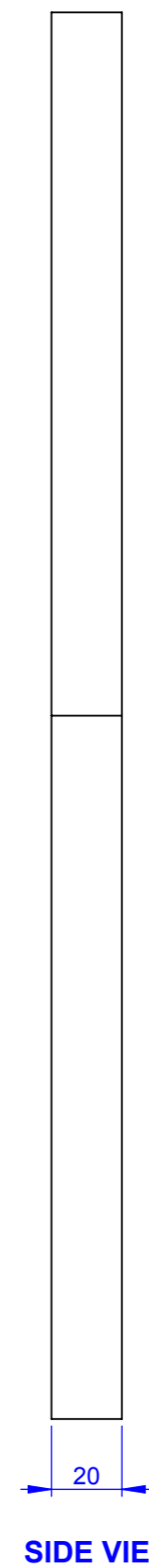
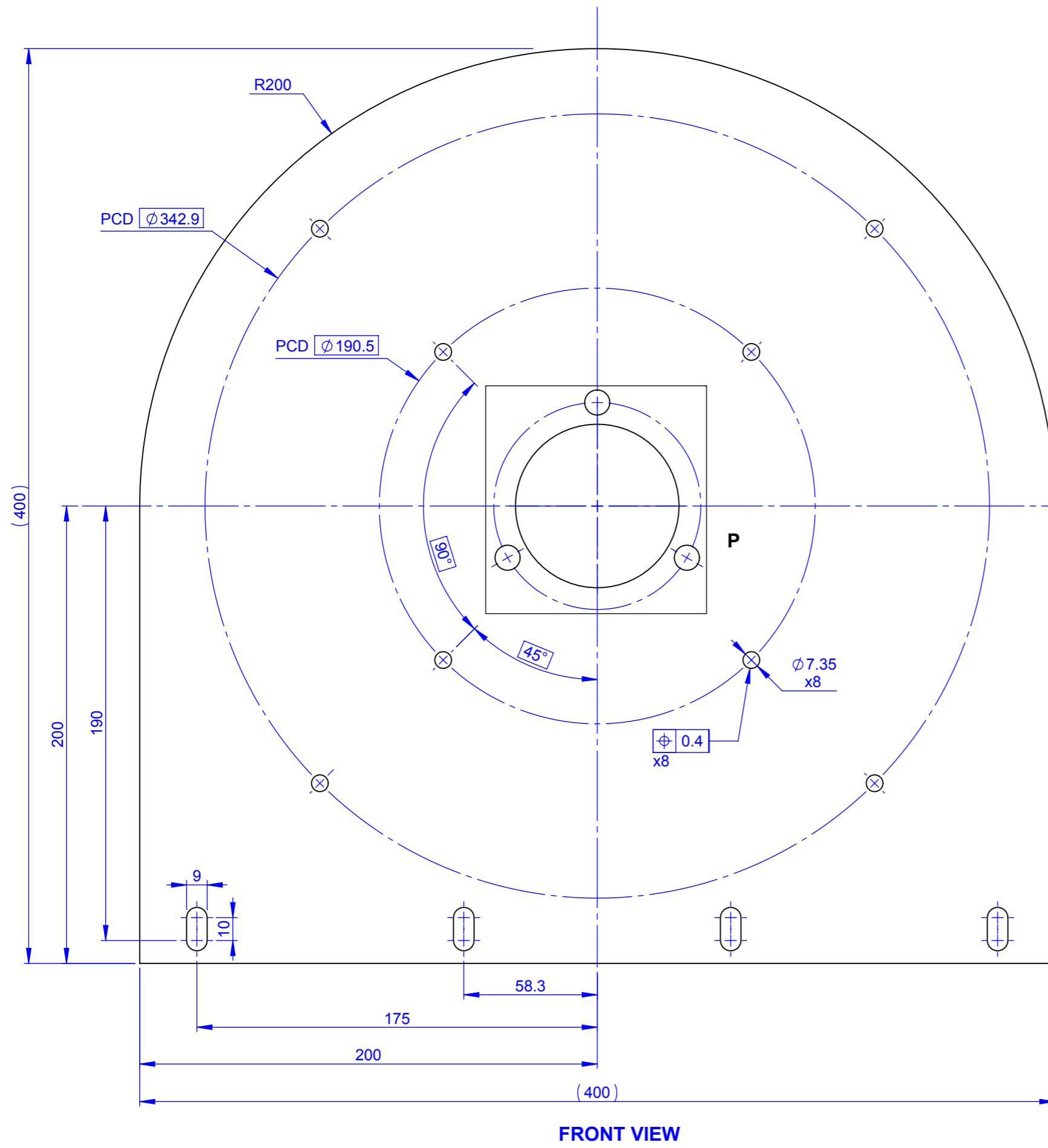


**DETAIL P**

CLIENT:	INITIAL/NAME	DATE	MATERIAL: POM C / DELRIN	WEIGHT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	DRAWN:		DESCRIPTION: <b>END PLATE FRONT</b>	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-PRT-001	REVISION: <b>00</b>
	APPVD:		PART NR: QEG-PRT-001	
	MFG:		DO NOT SCALE DRAWING	SCALE: 1:2
	Q.A:		SHEET 1 OF 1	A3



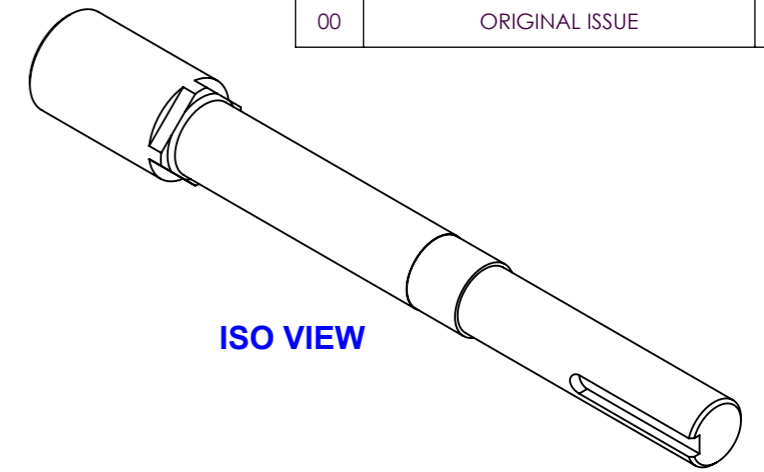
REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



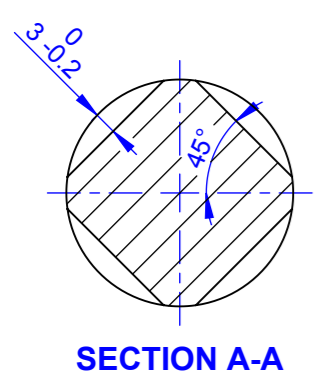
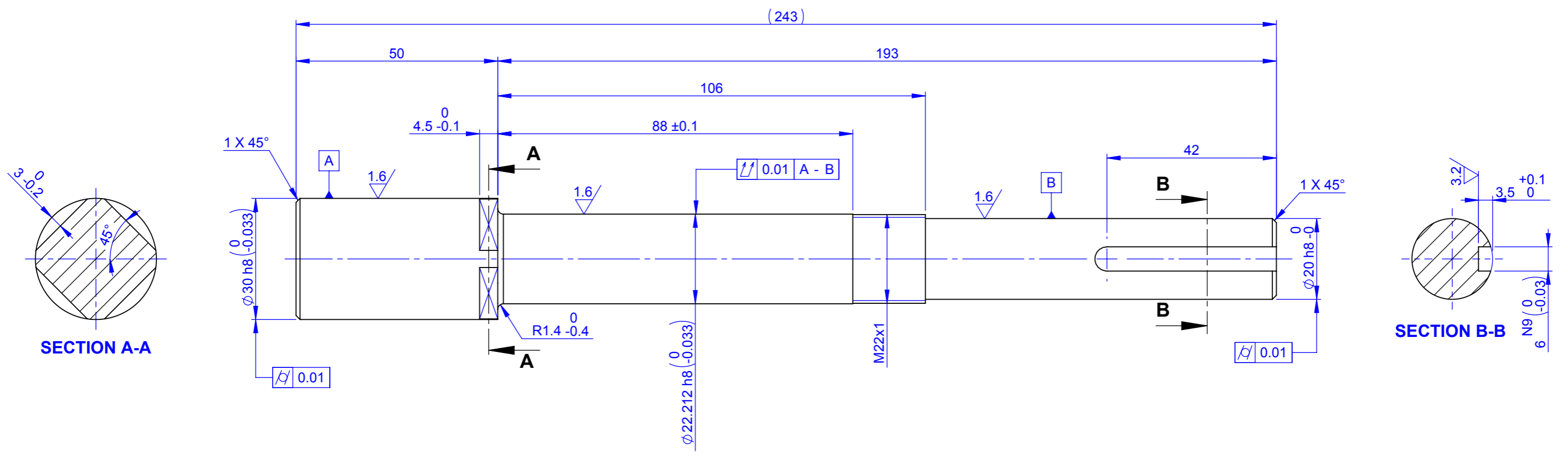
CLIENT:	INITIAL/NAME	DATE	MATERIAL: POM C / DELRIN	WEIGHT:
DEBUR AND BREAK SHARPEGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	DRAWN: RR	JULY 2014	DESCRIPTION: END PLATE REAR	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-PRT-002	REVISION: 00
	APPVD:		PART NR: QEG-PRT-002	
	MFG:		SCALE: 1:2	SHEET 1 OF 1
	Q.A:		DO NOT SCALE DRAWING	A3



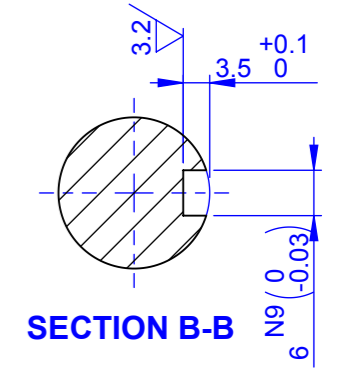
REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



ISO VIEW



SECTION A-A



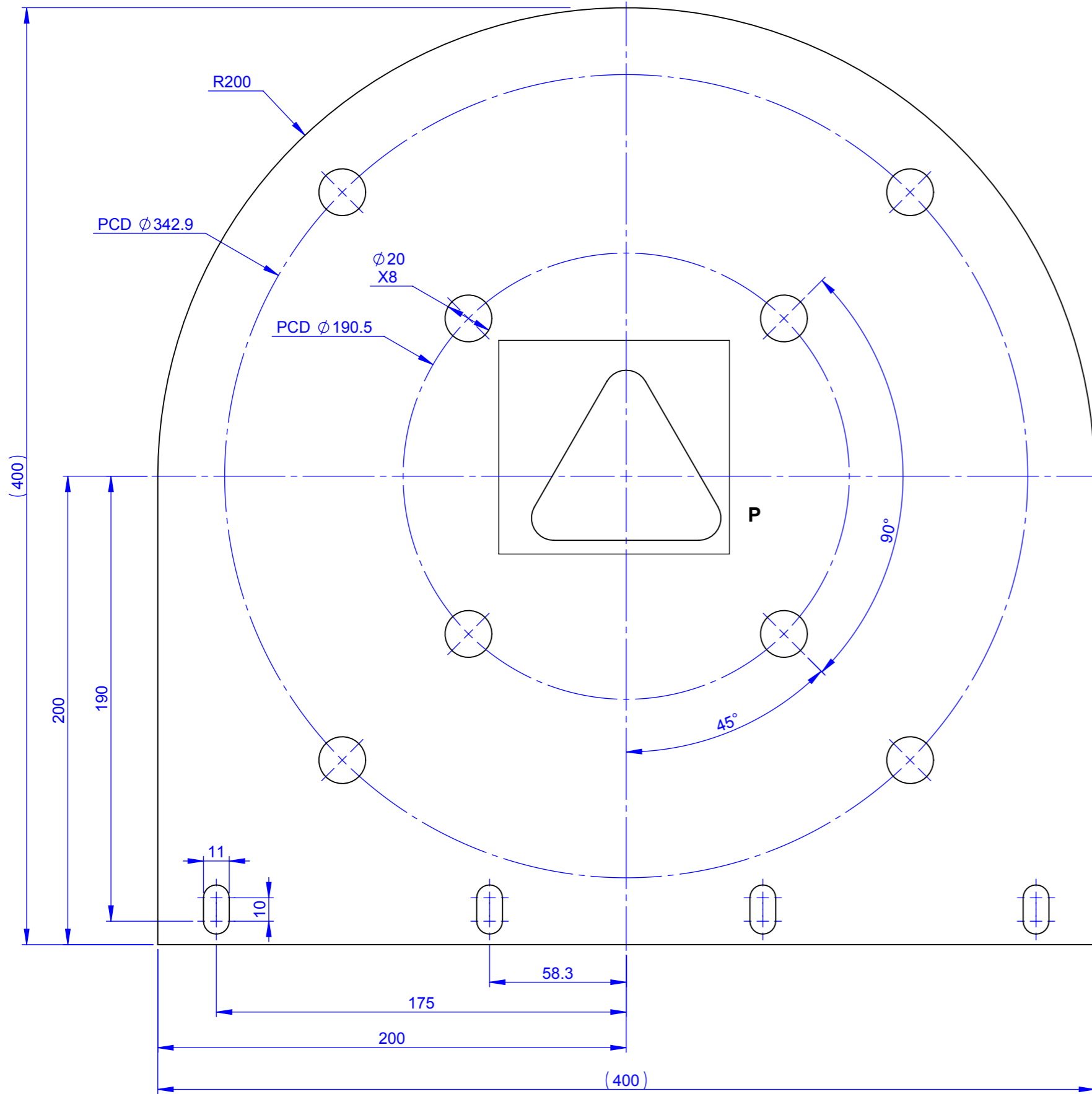
SECTION B-B

CLIENT:	INITIAL/NAME	DATE	MATERIAL: DIN C45 / AISI 1045	WEIGHT:
DEBUR AND BREAK SHARPEDES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	DRAWN: RR	JULY 2014	DESCRIPTION: <b>ROTOR SHAFT</b>	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-PRT-010	REVISION: <b>00</b>
	APPVD:		PART NR: QEG-PRT-010	
	MFG:		SCALE: 1:1	SHEET 1 OF 1
	Q.A:		DO NOT SCALE DRAWING	A3

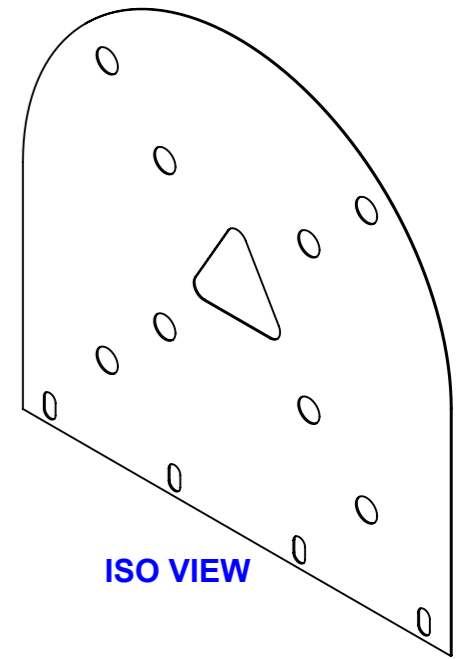




REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	

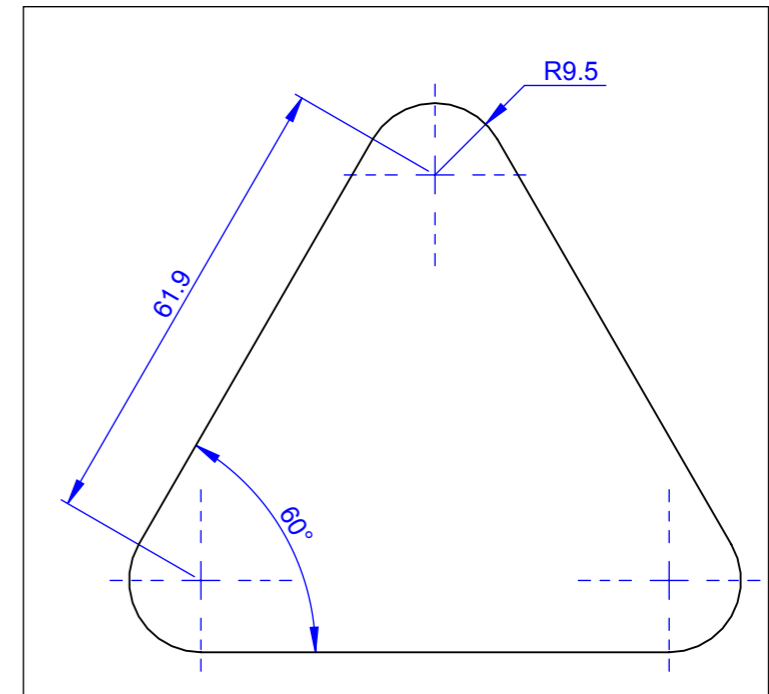


**FRONT VIEW**



**ISO VIEW**

**NOTE:**  
 -THICKNESS 1MM  
 -PERFORATED 30% OPENING



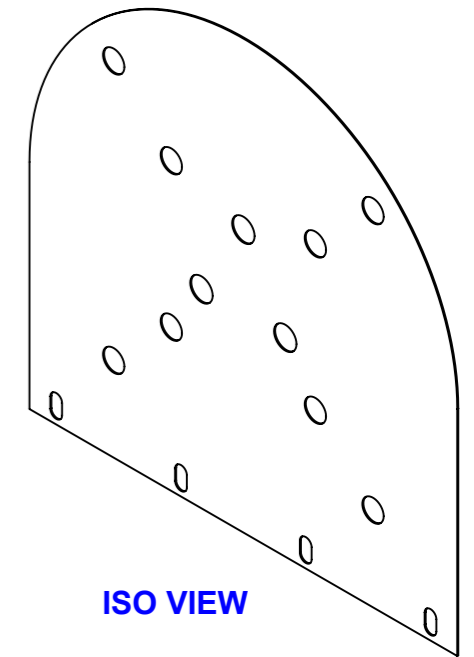
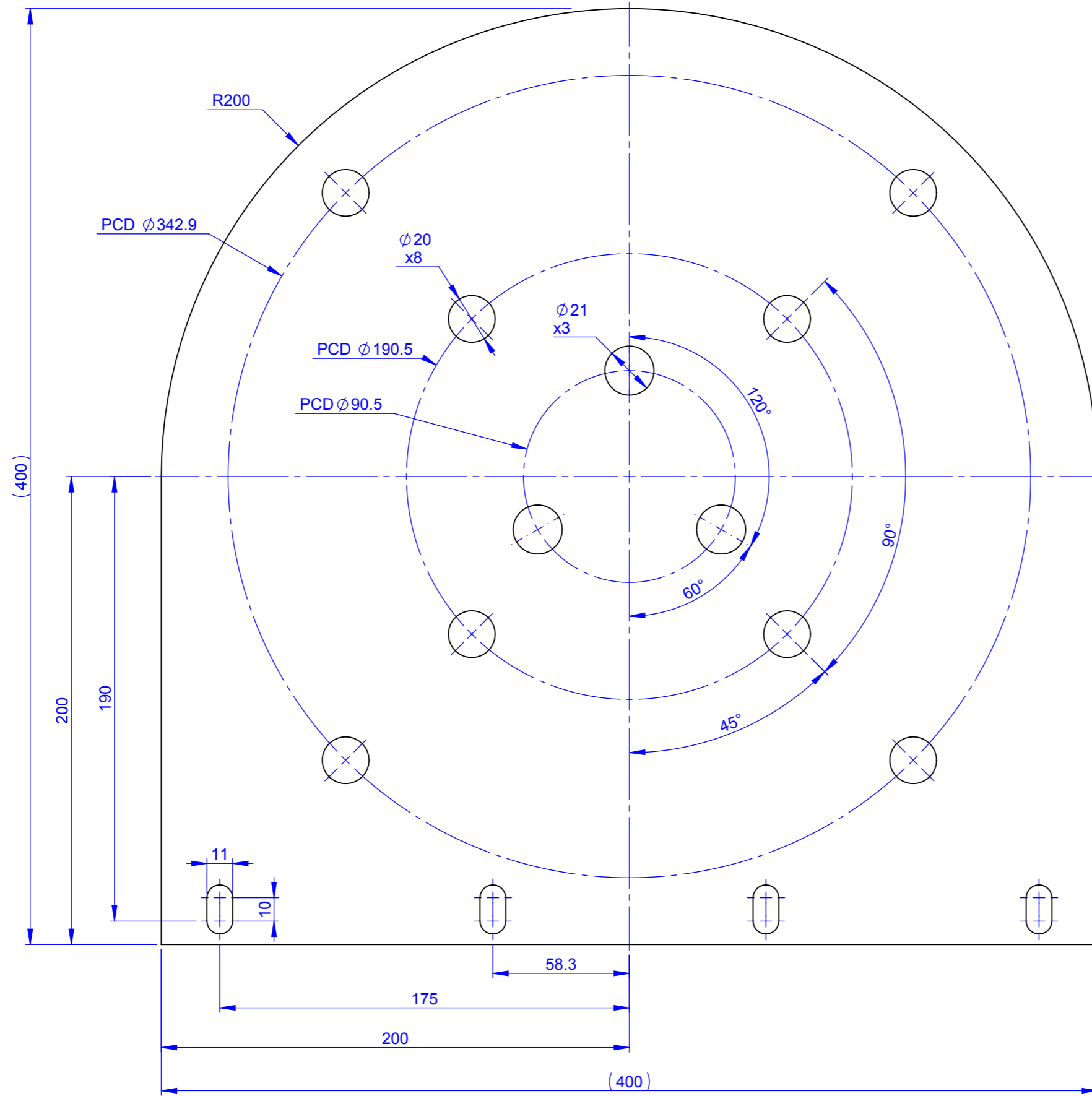
**DETAIL P  
 SCALE 1 : 1**

CLIENT:	INITIAL/NAME	DATE
	RR	JULY 2014
DEBUR AND BREAK SHARPEDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	CHK'D:	
	APPVD:	
	MFG:	
	Q.A:	



MATERIAL: STEEL / ZINC PLATED / GALVANIZED	WEIGHT:
DESCRIPTION: ELECTROMAG. SHIELDING - FRONT	PROJECT: QEG
DWG NR: dwg-QEG-PRT-020	REVISION:
PART NR: QEG-PRT-020	00
DO NOT SCALE DRAWING	SCALE: 1:2
SHEET 1 OF 1	A3

REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



ISO VIEW

**NOTE:**

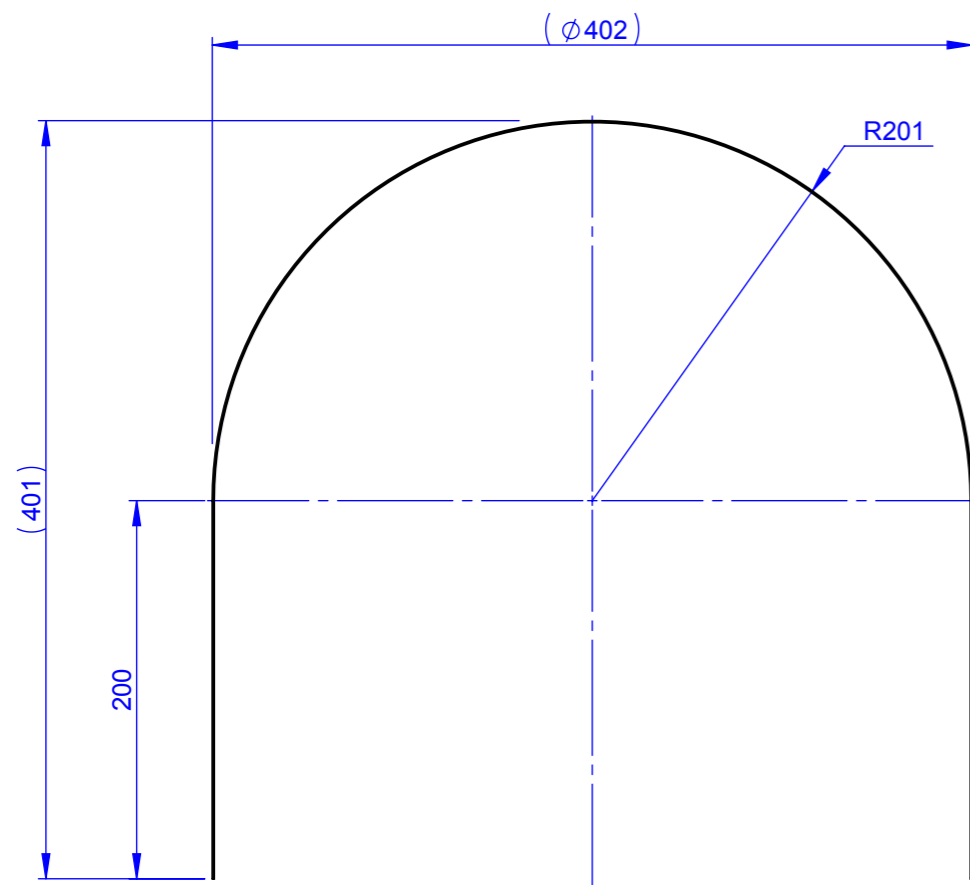
- THICKNESS 1MM
- PERFORATED 30% OPENING

FRONT VIEW

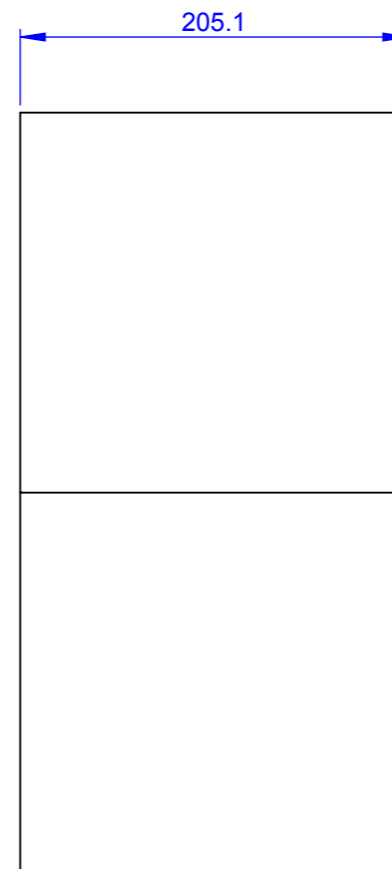
CLIENT:	INITIAL/NAME	DATE	MATERIAL: STEEL / ZINC PLATED / GALVANIZED	WEIGHT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	DRAWN: RR	JULY 2014	DESCRIPTION: ELECTROMAG. SHIELDING - REAR	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-PRT-021	REVISION:
	APPVD:		PART NR: QEG-PRT-021	00
	MFG:		DO NOT SCALE DRAWING	SCALE: 1:2
	Q.A:		SHEET 1 OF 1	A3



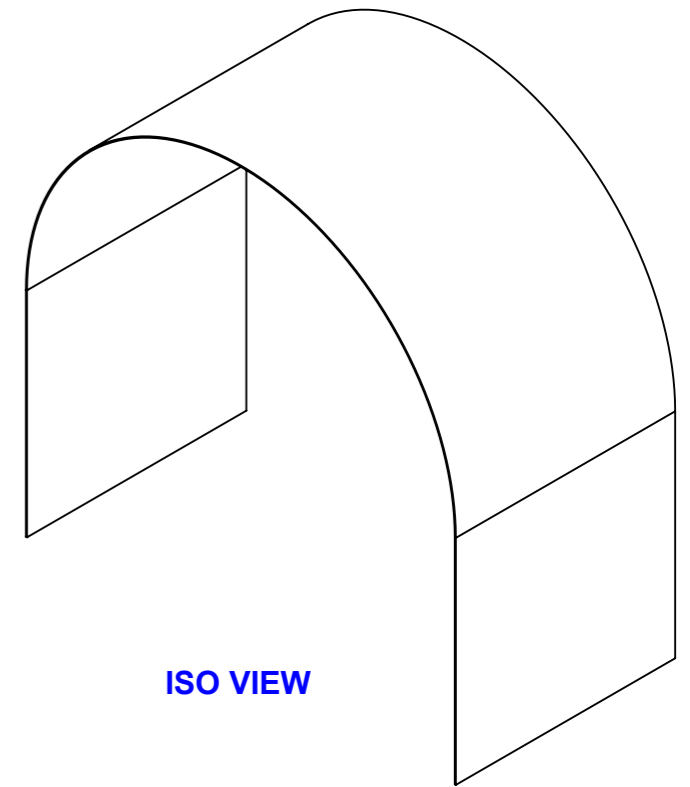
REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	



**FRONT VIEW**



**SIDE VIEW**



**ISO VIEW**

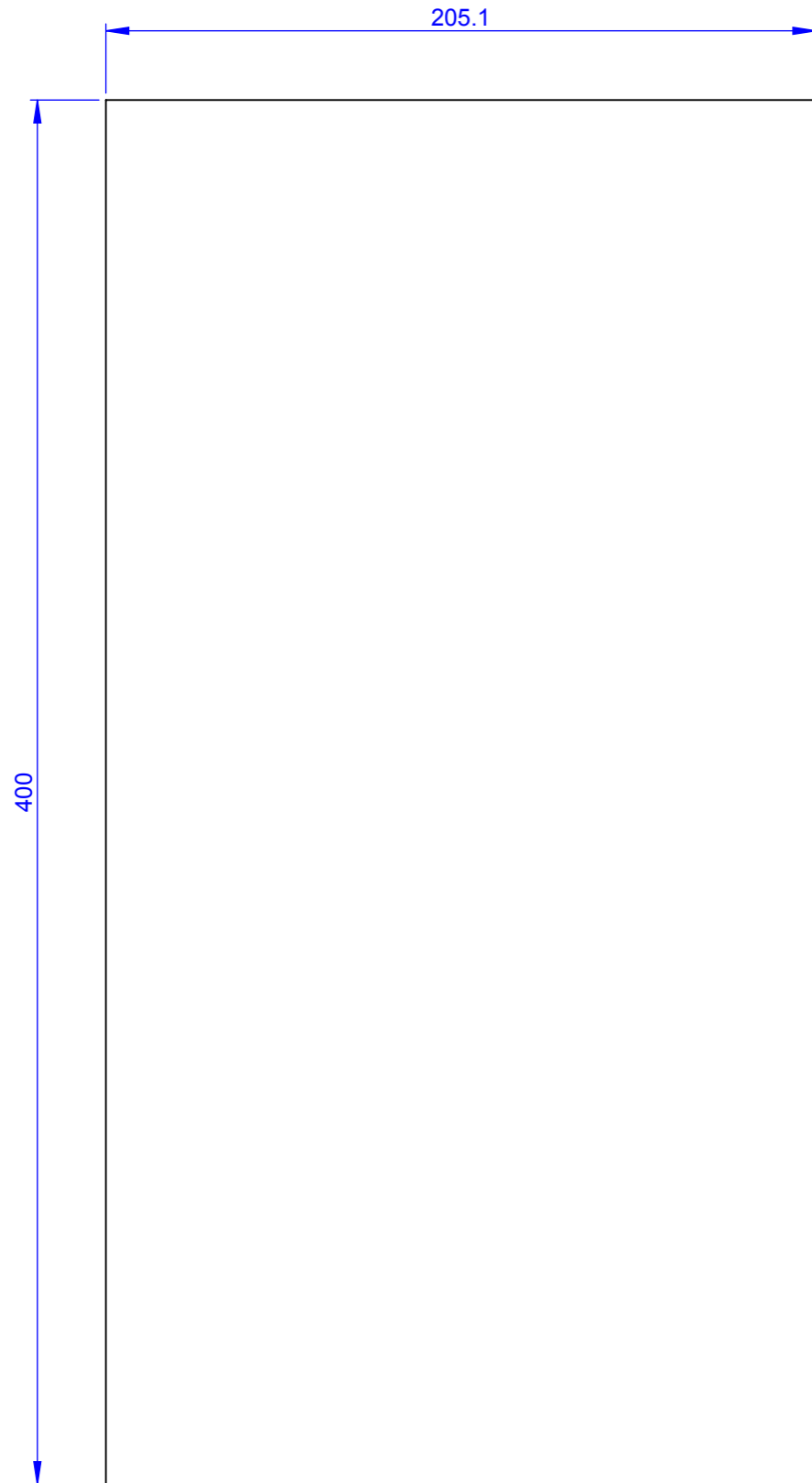
**NOTE:**

- THICKNESS 1MM
- PERFORATED 30% OPENING

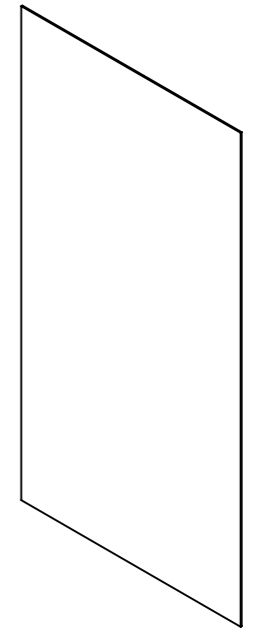
CLIENT:	INITIAL/NAME	DATE	MATERIAL: STEEL / ZINC PLATED / GALVANIZED	WEIGHT:
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	DRAWN: RR	JULY 2014	DESCRIPTION: ELECTROMAG. SHIELDING - MIDDLE	PROJECT: QEG
	CHK'D:		DWG NR: dwg-QEG-PRT-022	REVISION:
	APPVD:		PART NR: QEG-PRT-022	00
	MFG:		DO NOT SCALE DRAWING	SCALE: 1:4
	Q.A:		SHEET 1 OF 1	A3



REVISIONS		
REV.	DESCRIPTION	DATE
00	ORIGINAL ISSUE	




**BOTTOM VIEW**



**ISO VIEW**

**NOTE:**

- THICKNESS 1MM
- PERFORATED 30% OPENING

CLIENT:	INITIAL/NAME	DATE	MATERIAL: STEEL / ZINC PLATED / GALVANIZED	WEIGHT:
	DRAWN: RR	JULY 2014	DESCRIPTION: ELECTROMAG. SHIELDING - BOTTOM	PROJECT: QEG
DEBUR AND BREAK SHARP EDGES UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: LINEAR/ANGULAR TOLERANCES: DIN ISO 2768-1, CLASS M FORM AND PLACE TOLERANCES: DIN ISO 2768-2, CLASS K	CHK'D:		 <b>www.vortexmd.com</b>	REVISION: 00
	APPVD:			DWG NR: dwg-QEG-PRT-023
	MFG:			PART NR: QEG-PRT-023
	Q.A:			DO NOT SCALE DRAWING SCALE: 1:2 SHEET 1 OF 1 A3