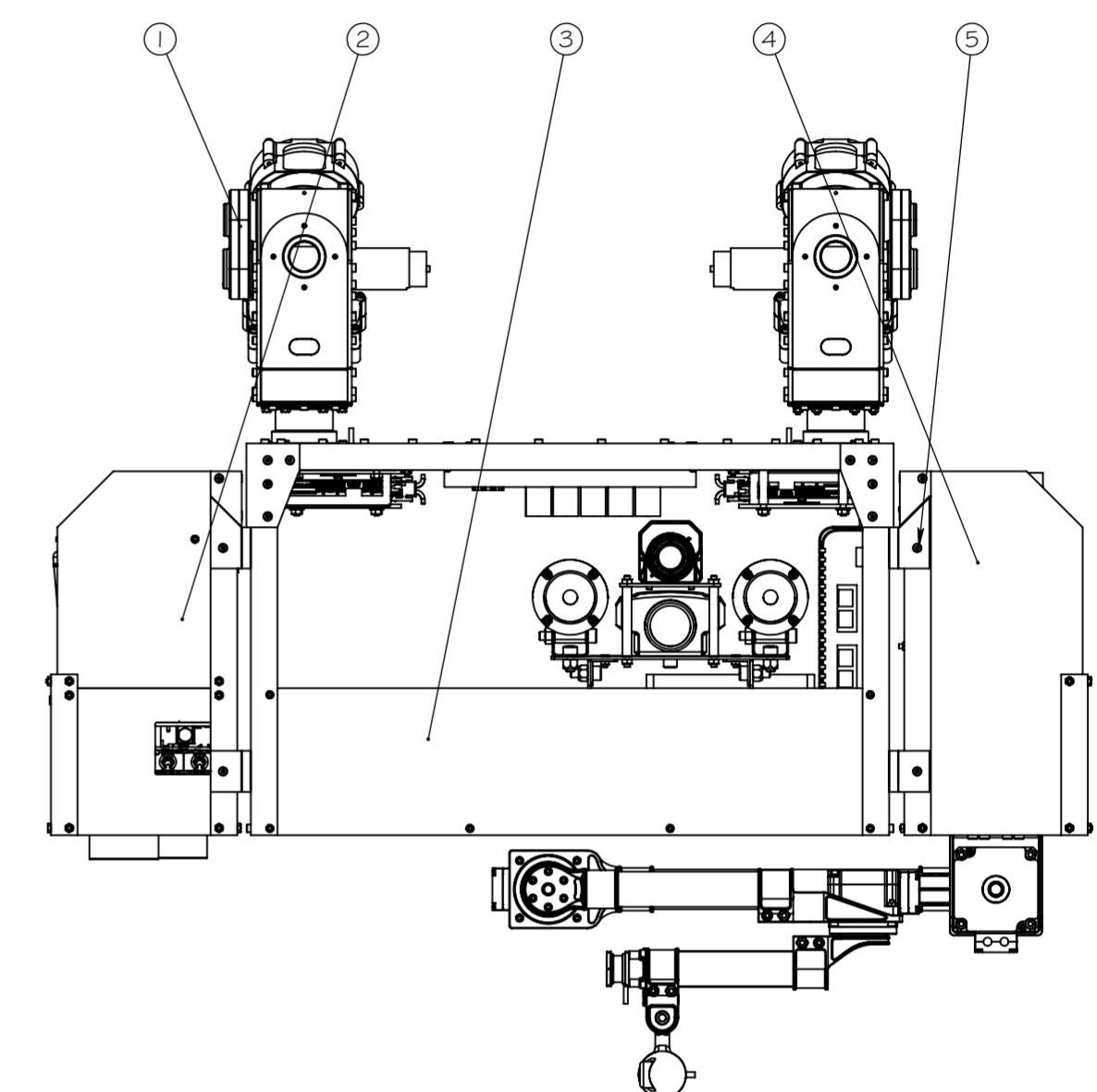
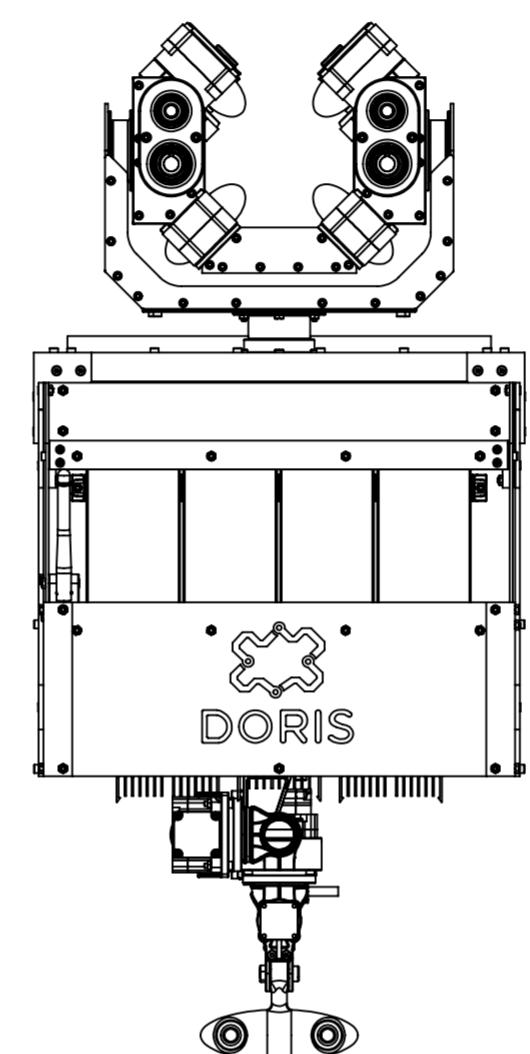
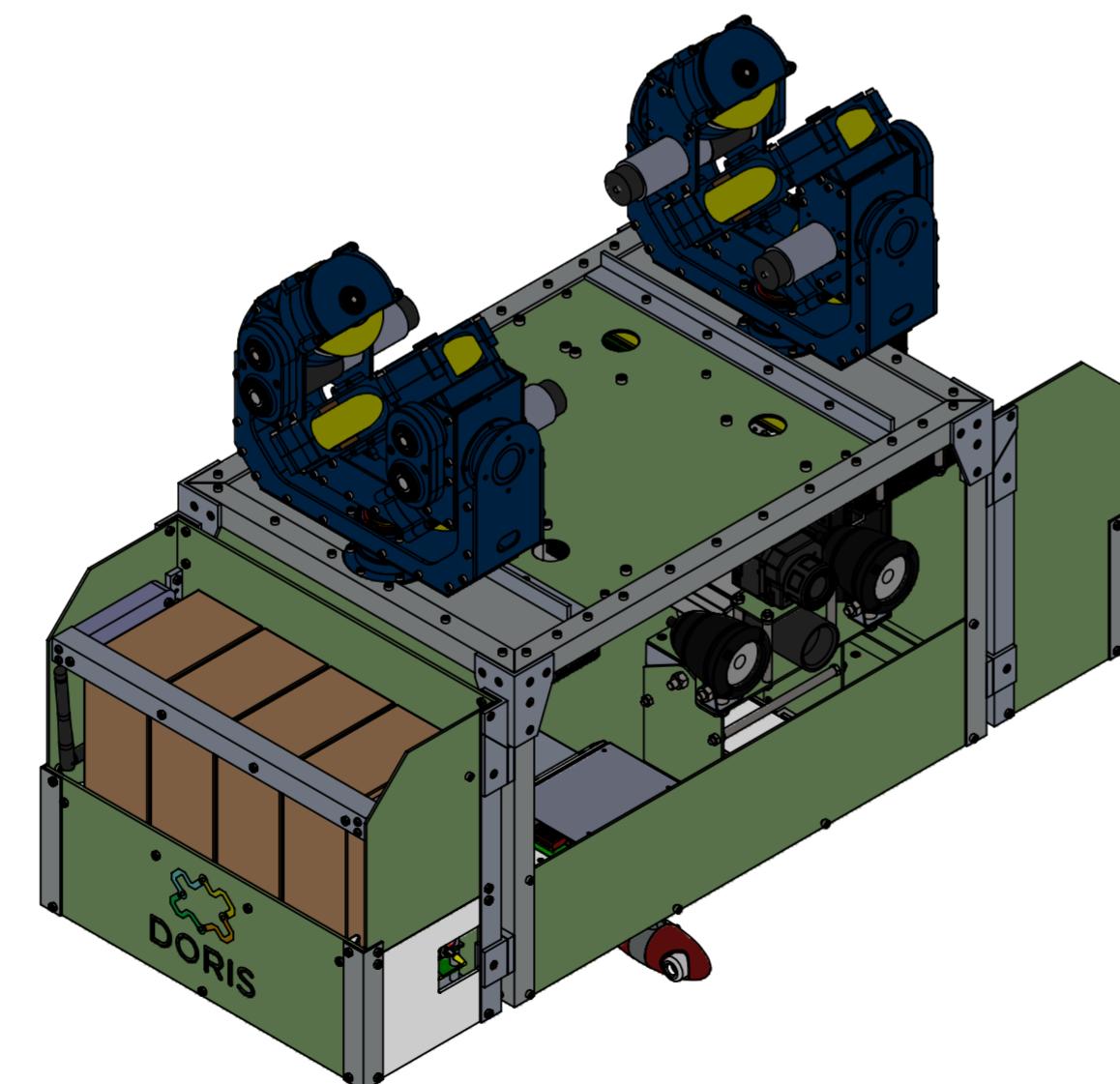
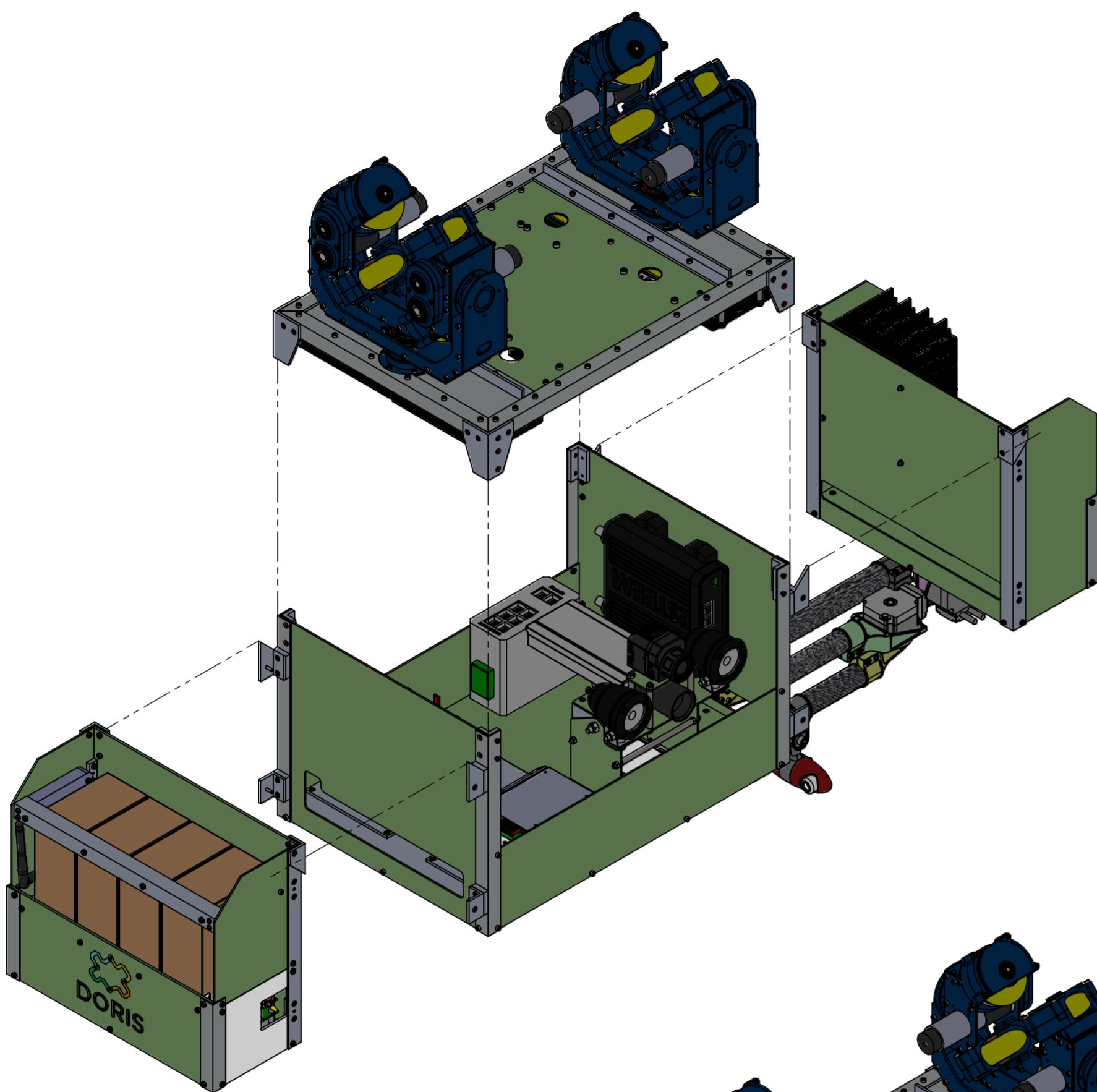


12 11 10 9 8 7 6 5 4 3 2 1



ITEM	PART NUMBER - DESCRIPTION	QTY.
5	B18.3.5M - 3 x 0.5 x 12 Socket FCHS -- 12N	16
4	DR2.4 - ARM_BOX	1
3	DR2.3 - BODY	1
2	DR2.2 - EE_BOX	1
1	DR2.1 - DORIS_ACTIVE	1

COPPE - Electrical Engineering Program	DORIS Project		
Title: SAM 2	Part Number: DR2	Material: Various	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:5
Verified by: Ramon Romankevicius	Ver. date.: 23/06/2016	QTY: 1	Sheet: 1 / 1

12 11 10 9 8 7 6 5 4 3 2 1

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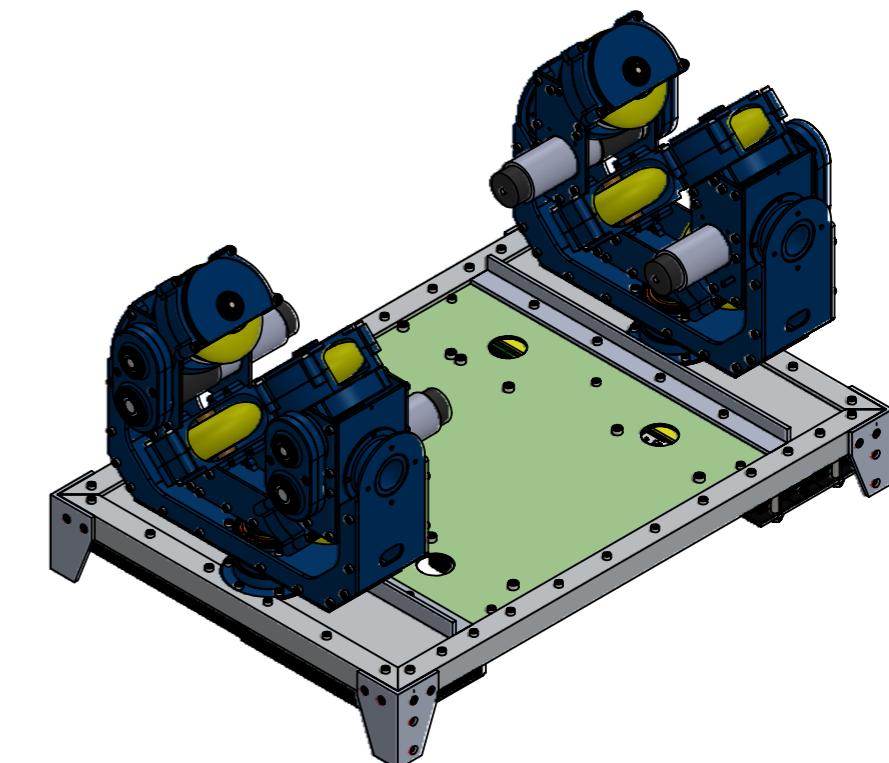
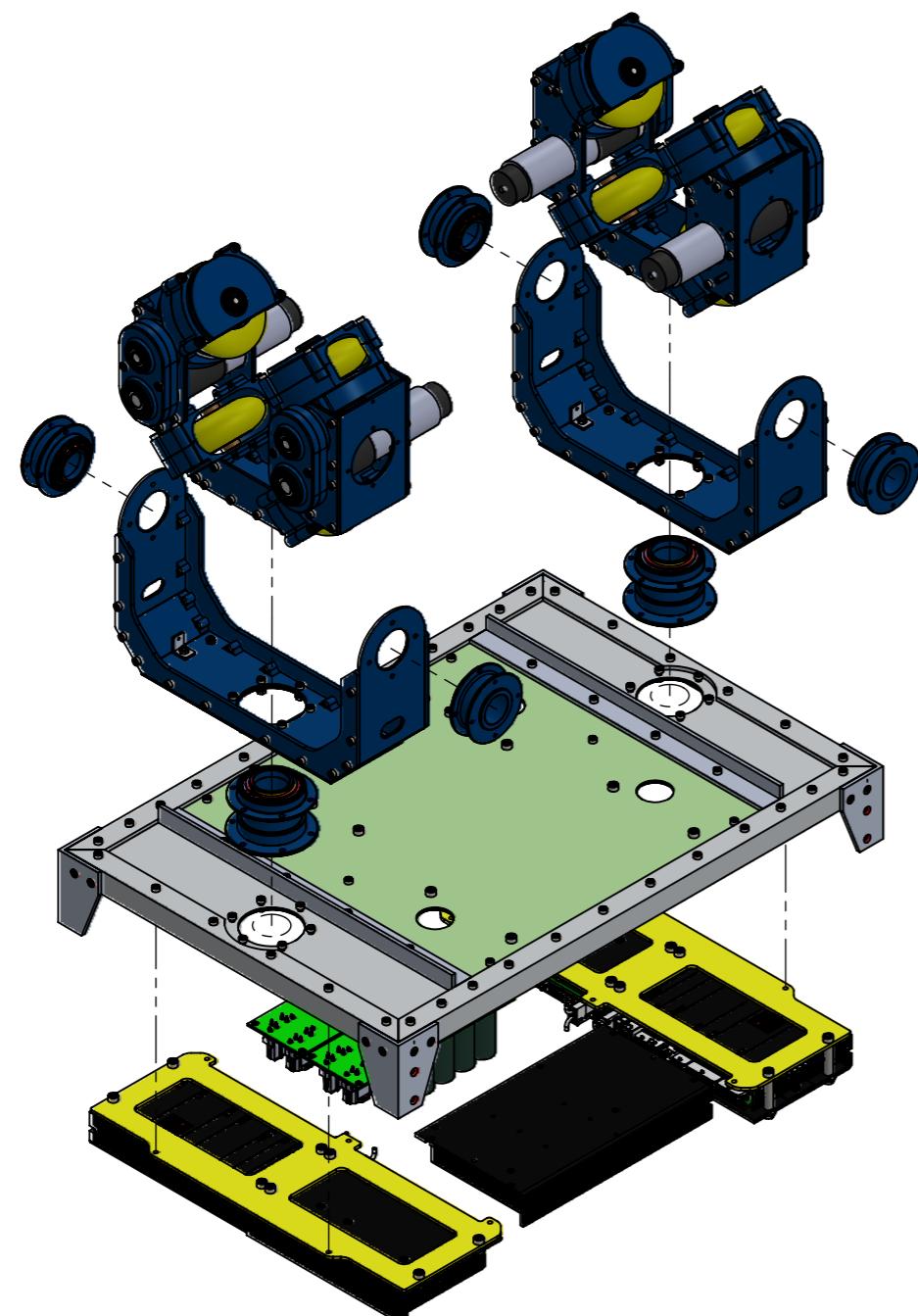
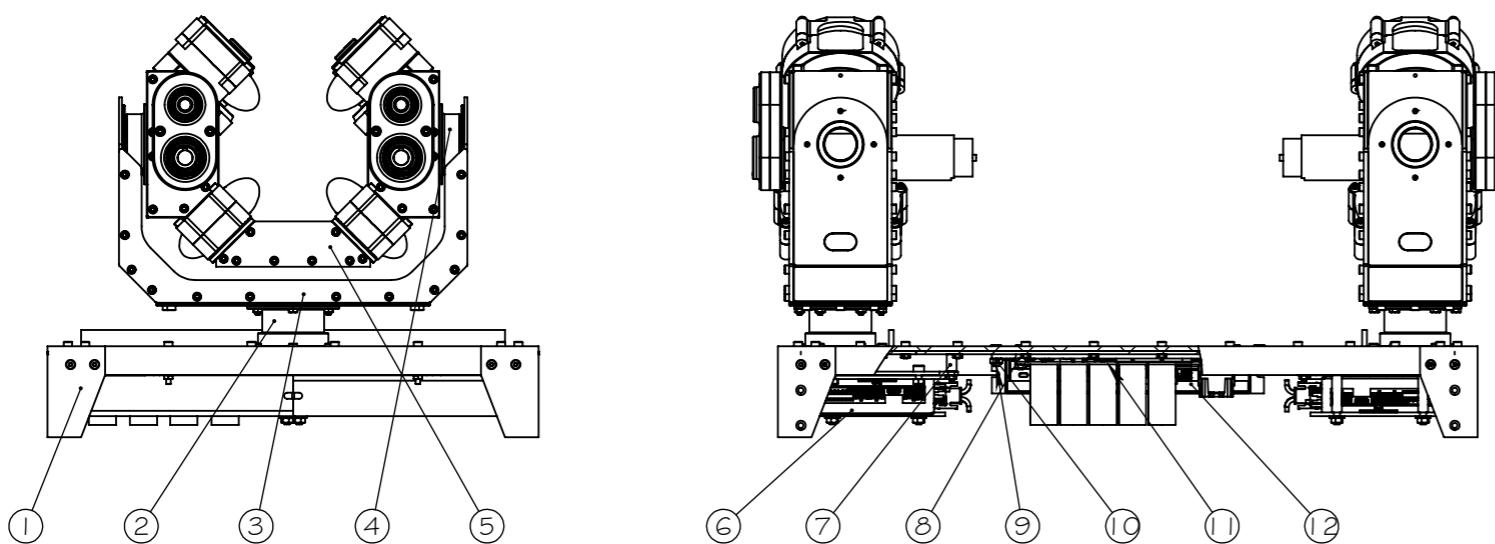
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ITEM	PART NUMBER - DESCRIPTION	QTY.
12	SHUNT_REGULADOR_DSR_70-30	1
11	CAPACITOR BANK_PCB	2
10	B18.2.4.1M - Hex nut, Style 1, M4 x 0.7 --D-N	46
9	B18.3.1M - 4 x 0.7 x 10 Hex SHCS -- 10NHX	46
8	DR2.1.02 - SPACER_PCB8	8
7	DR2.1.01 - SPACER_EPOS_70-10	10
6	DR2.1.6 - ASSEMBLY_EPOS_70-10_	2
5	DR2.1.5 - INTERNAL_GIMBAL	2
4	DR2.1.4 - GIMBAL_BEARING	4
3	DR2.1.3 - EXTERNAL_GIMBAL	2
2	DR2.1.2 - DECK_BEARING	2
1	DR2.1.1 - DECK	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.1 - DORIS\_ACTIVE

Material: Vários

Designed by: Guilherme Carvalho

Date: 01/12/2015 Rev.: A Scale.: 1:5 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 03/01/2016 QTY: 1 Unit.: mm 1 / 65

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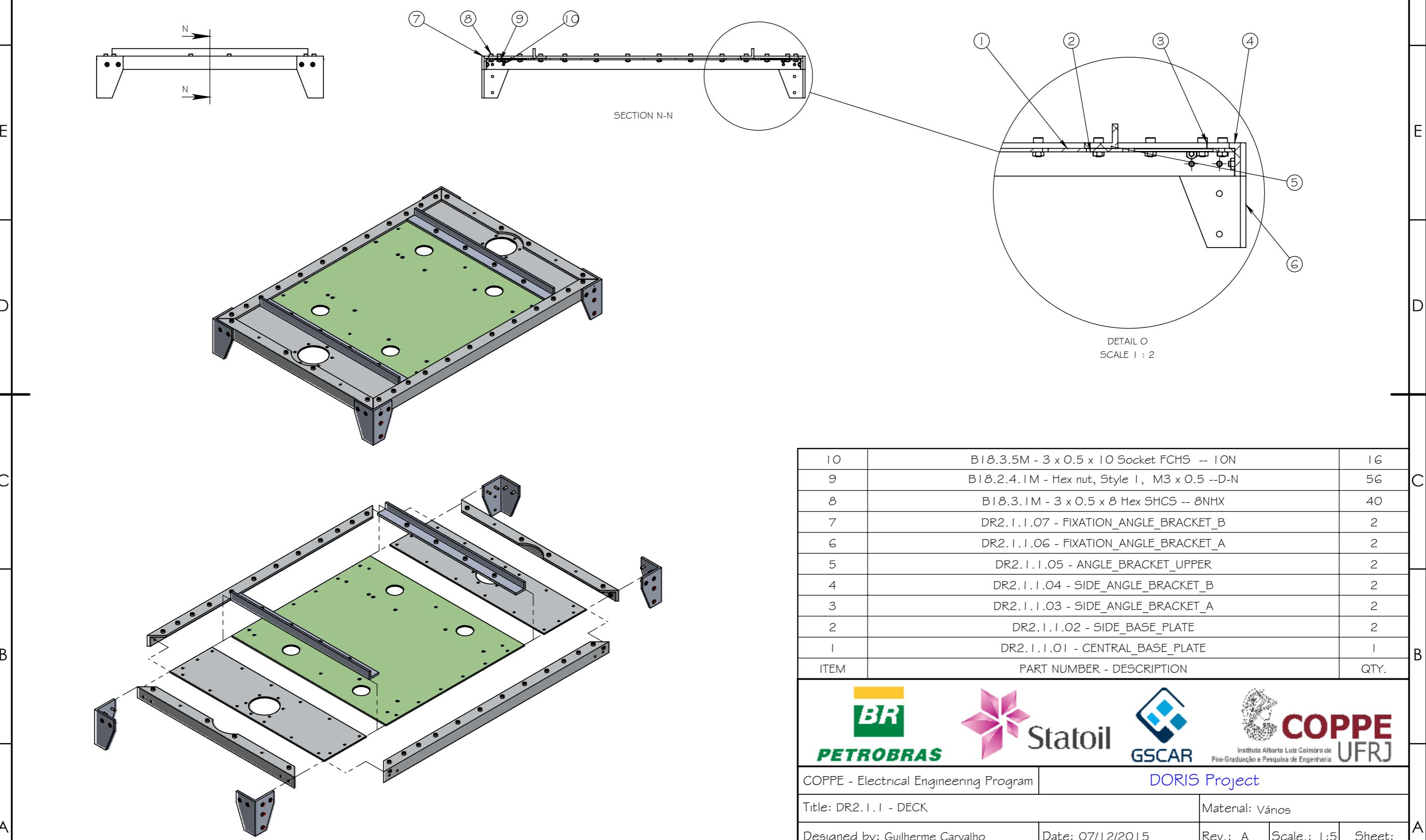
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ITEM	PART NUMBER - DESCRIPTION	QTY.
10	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 10N	16
9	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 -- D-N	56
8	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	40
7	DR2.1.1.07 - FIXATION_ANGLE_BRACKET_B	2
6	DR2.1.1.06 - FIXATION_ANGLE_BRACKET_A	2
5	DR2.1.1.05 - ANGLE_BRACKET_UPPER	2
4	DR2.1.1.04 - SIDE_ANGLE_BRACKET_B	2
3	DR2.1.1.03 - SIDE_ANGLE_BRACKET_A	2
2	DR2.1.1.02 - SIDE_BASE_PLATE	2
1	DR2.1.1.01 - CENTRAL_BASE_PLATE	1



COPPE - Electrical Engineering Program



DORIS Project



COPPE UFRJ



Title: DR2.1.1 - DECK

Material: Vários

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:5

Sheet: 2 / 65

Verified by: Ramon Romankevicius

Ver. date.: 09/01/2016 QTY: 1 Unit.: mm

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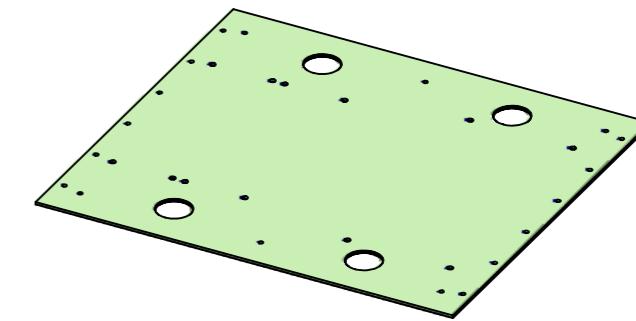
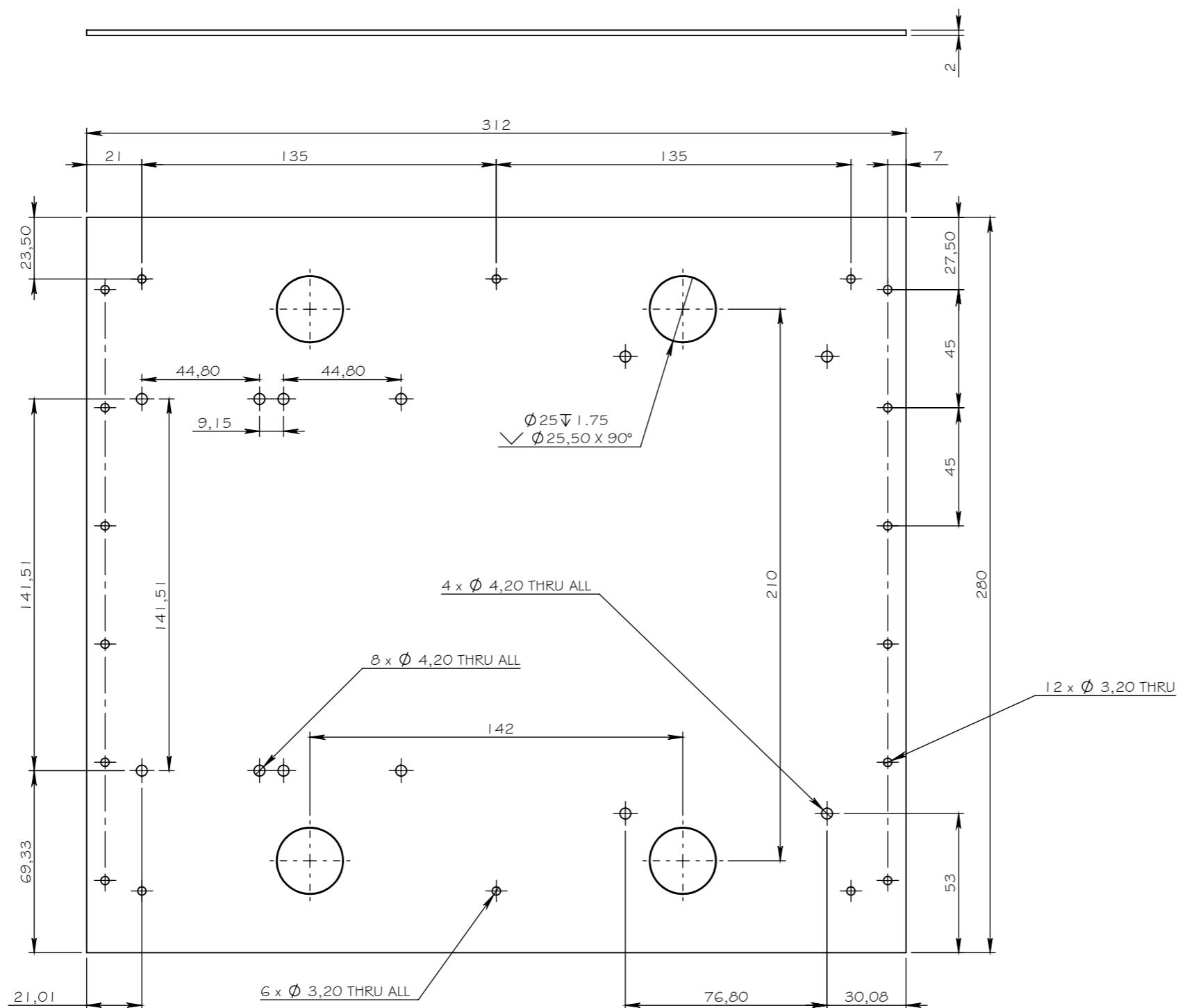
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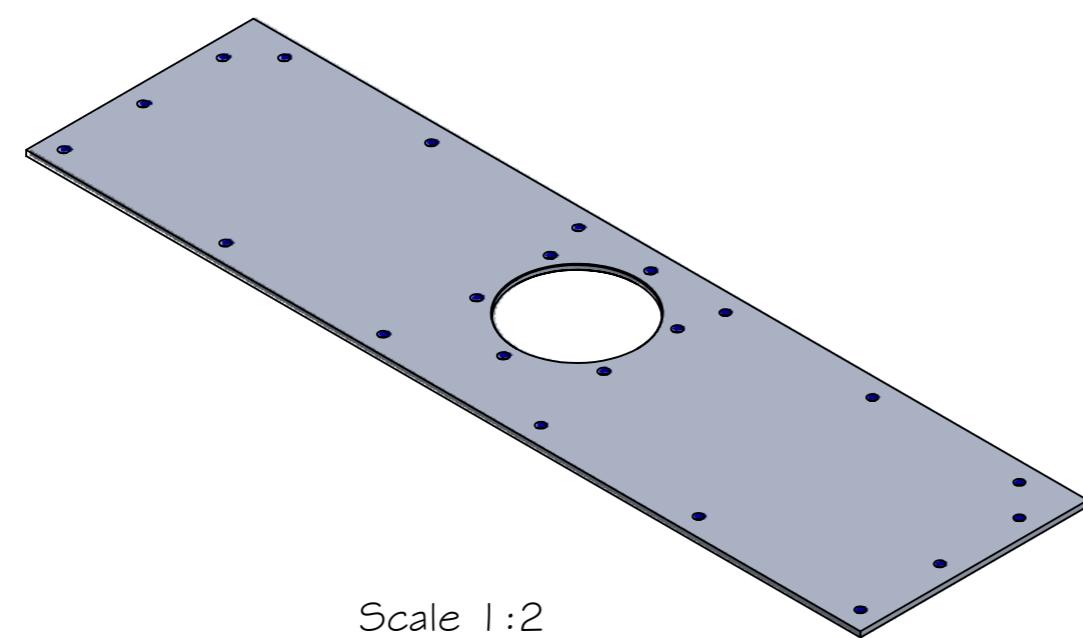
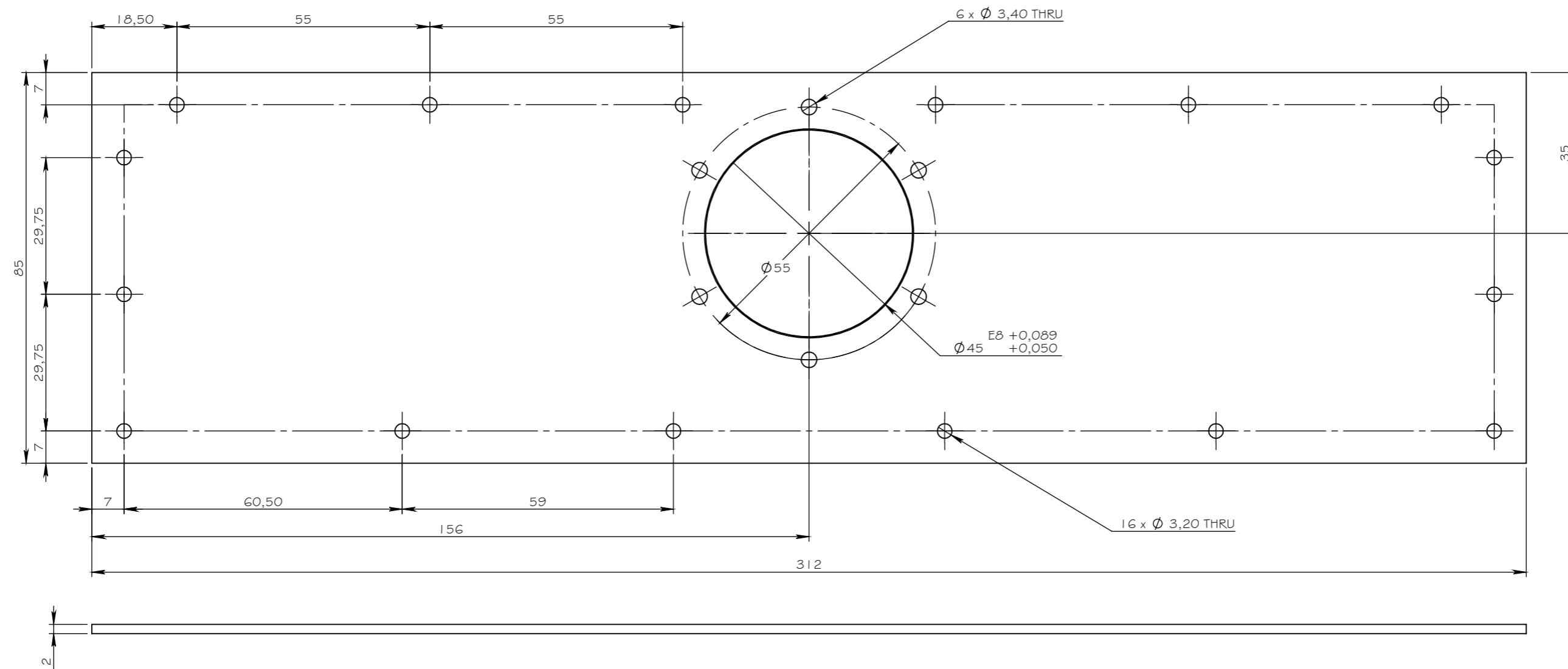
Scale 1 :5



COPPE - Electrical Engineering Program	DORIS Project			
Title: DR2.1.1.01 - CENTRAL_BASE_PLATE	Material: Fibra de vidro PROTEC			
Designed by: Guilherme Carvalho	Date: 10/12/2015	Rev.: A	Scale.: 1:2	Sheet:
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm	3 / 65

8 7 6 5 4 3 2 1

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Scale 1:2

PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.1.02 - SIDE_BASE_PLATE		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 10/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Unit.: mm
		Sheet:	4 / 65

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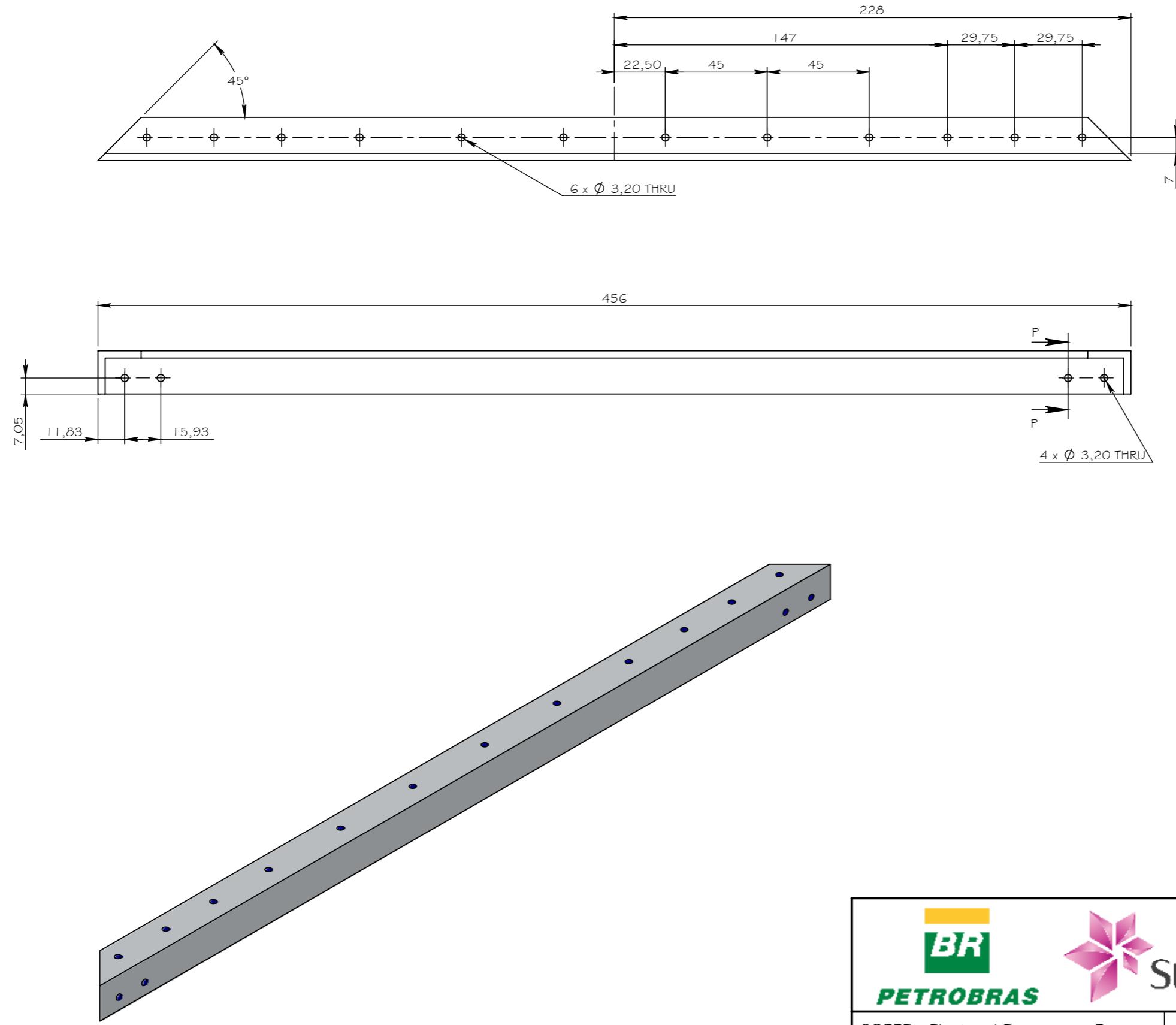
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COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.1.03 - SIDE_ANGLE_BRACKET_A		Material: Liga 1060	
Designed by: Guilherme Carvalho		Date: 10/12/2015	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 10/01/2016	Scale.: 1:2
			Sheet: 5 / 65
			Unit.: mm

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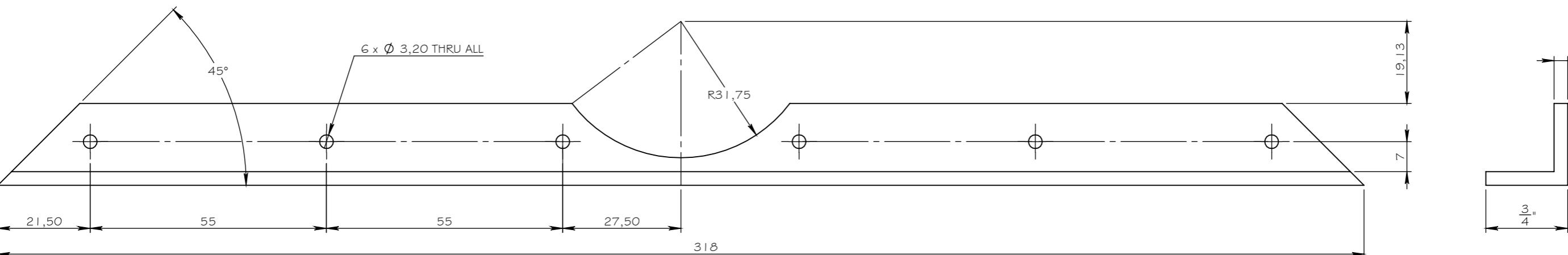
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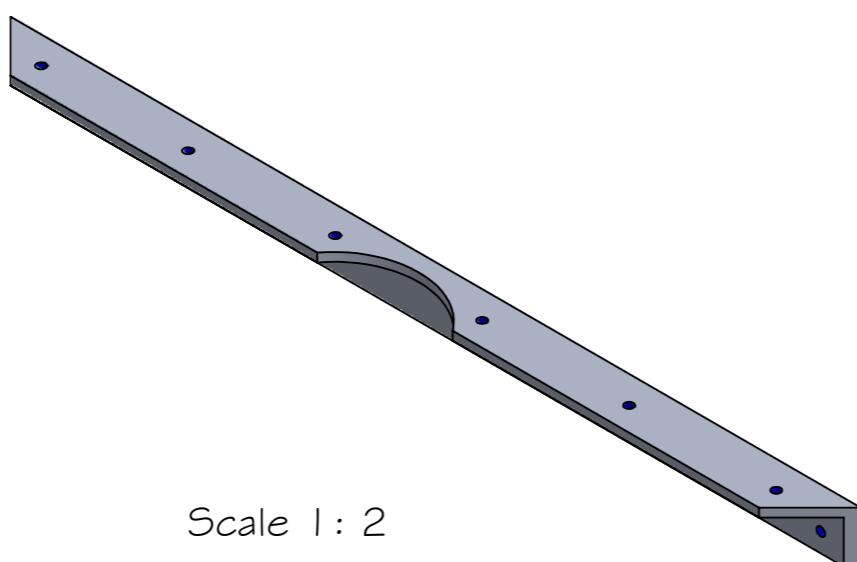


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Scale 1 : 2

PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.1.1.04 - SIDE_ANGLE_BRACKET_B		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 10/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Sheet: 6 / 65 Unit.: mm

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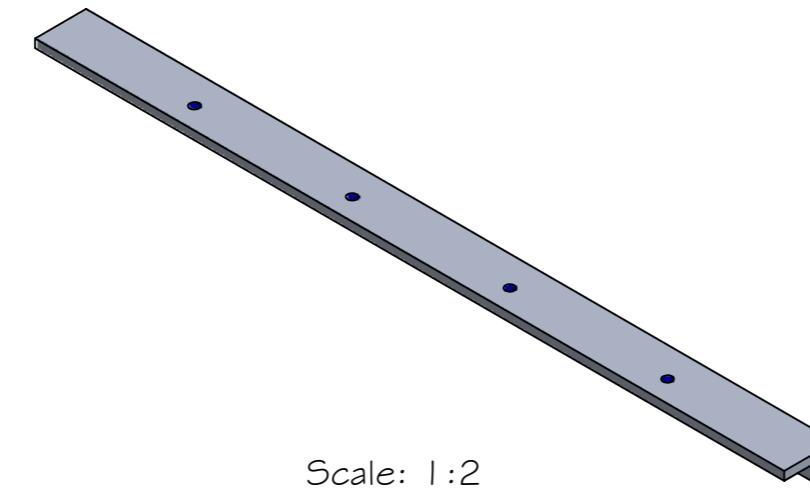
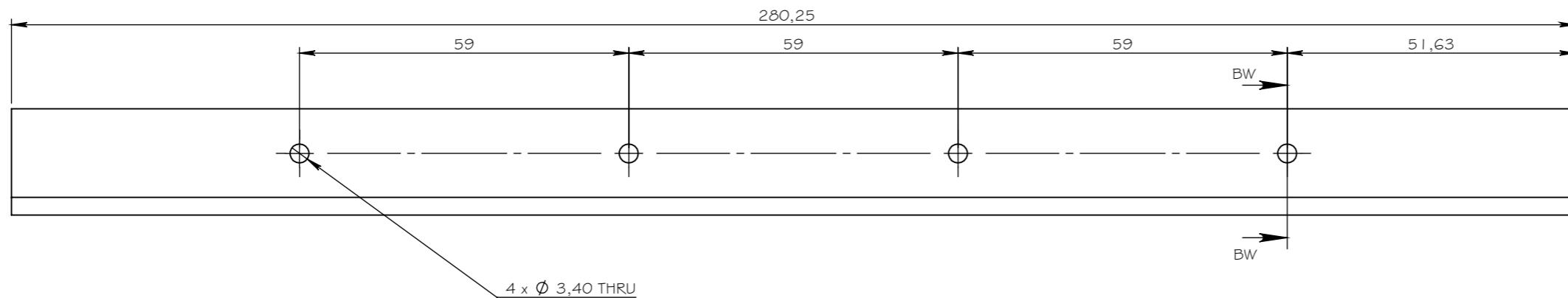
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Scale: 1:2

<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE</b> <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small> <b>UFRJ</b>
COPPE - Electrical Engineering Program	<b>DORIS Project</b>		
Title: DR2.1.1.05 - ANGLE_BRACKET_UPPER	Material: 1060 Alloy		
Designed by: Guilherme Carvalho	Date: 15/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Unit.: mm
		Sheet:	7 / 65

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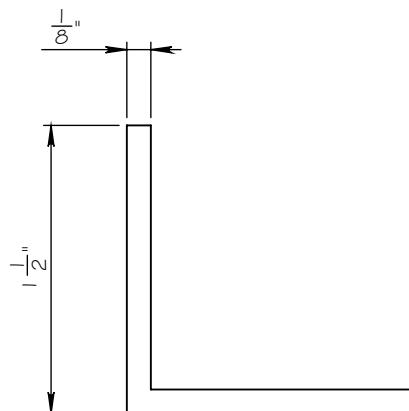
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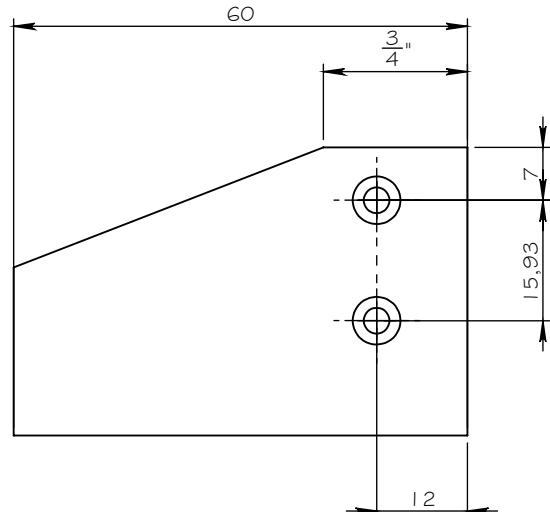
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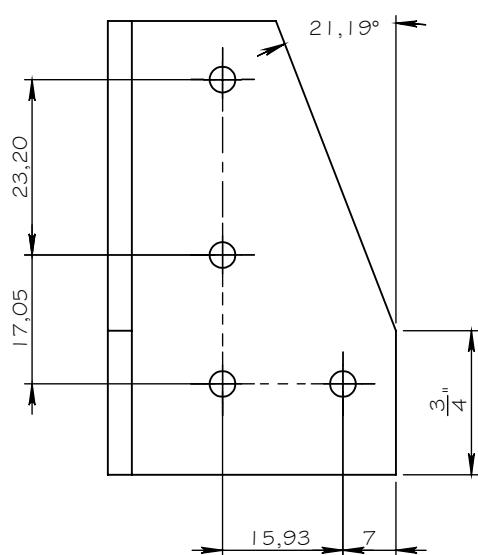
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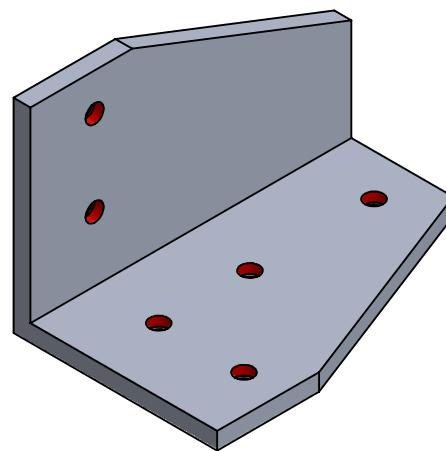
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COPPE - Electrical Engineering Program

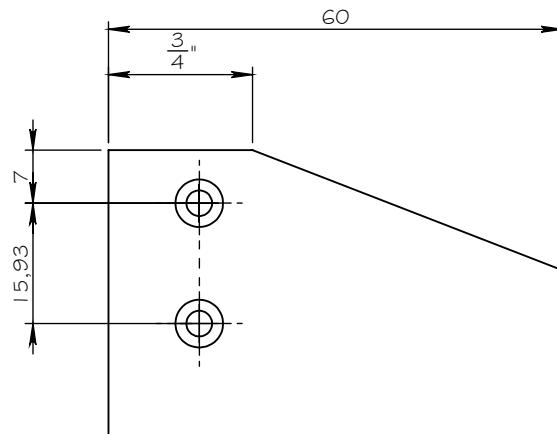
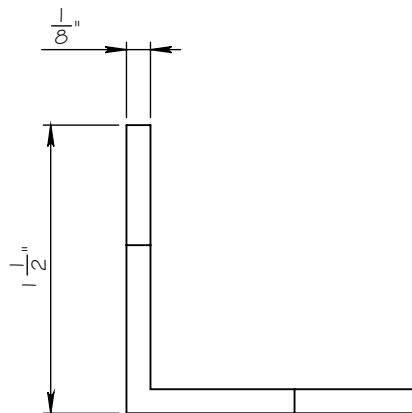
DORIS Project

Title: DR2.1.1.06 - FIXATION\_ANGLE\_BRACKET\_A

Material: 1060 Alloy

Designed by: Guilherme Carvalho	Date: 08/06/2016	Rev.: A	Scale.: 1:1	Sheet: 8 / 65
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Unit.: mm	

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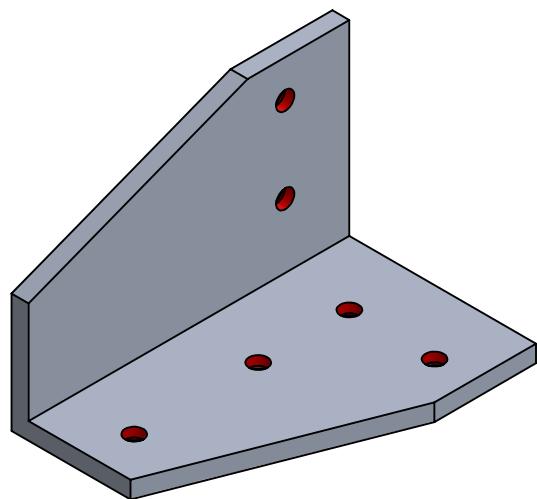
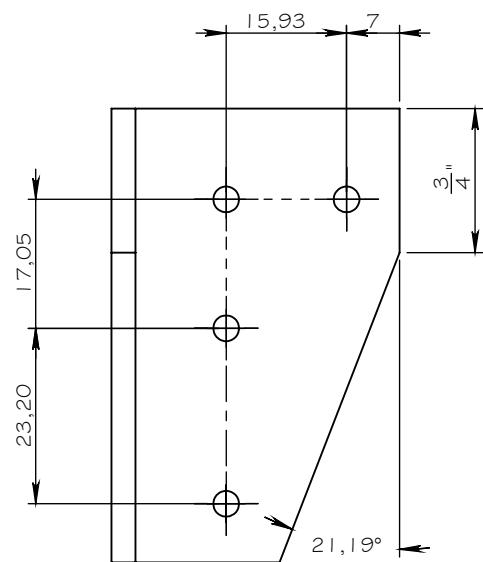
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.1.07 - FIXATION\_ANGLE\_BRACKET\_B

Material: 1060 Alloy

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Designed by: Guilherme Carvalho

Date: 06/08/2016

Rev.: A

Scale.: 1:1

Sheet:  
9 / 65

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 2

Unit.: mm

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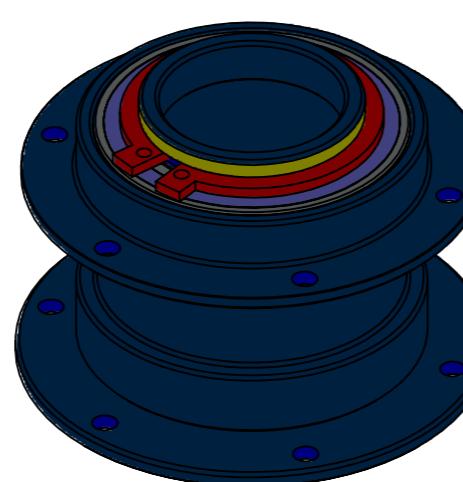
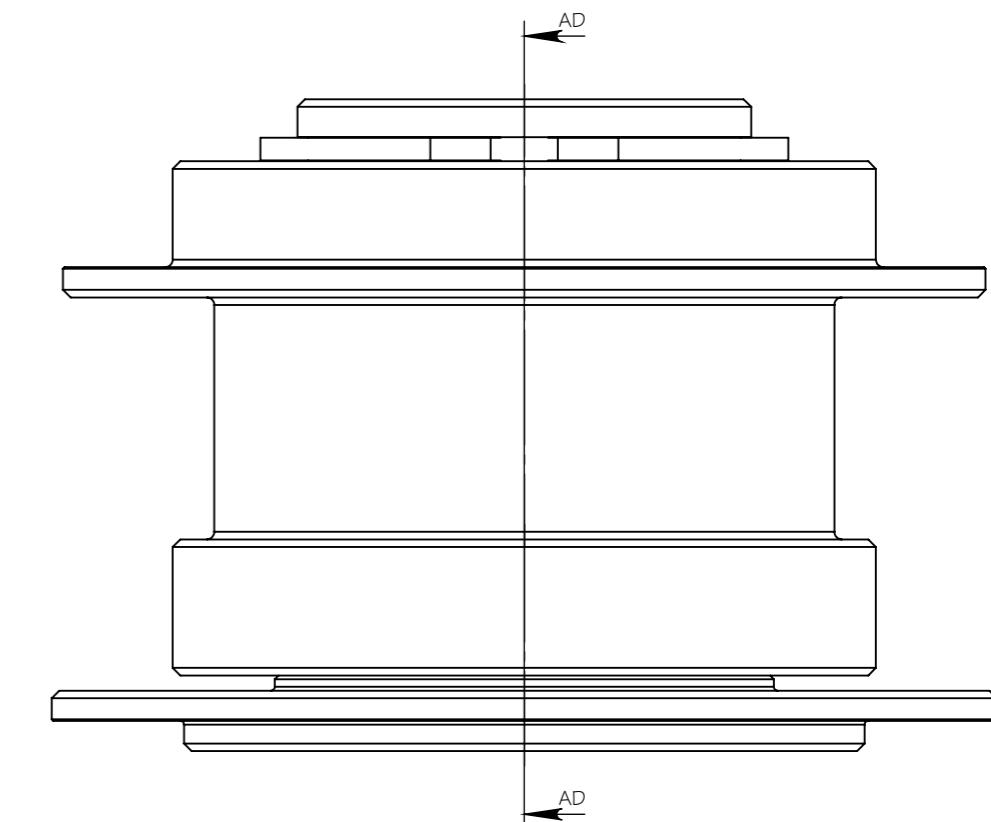
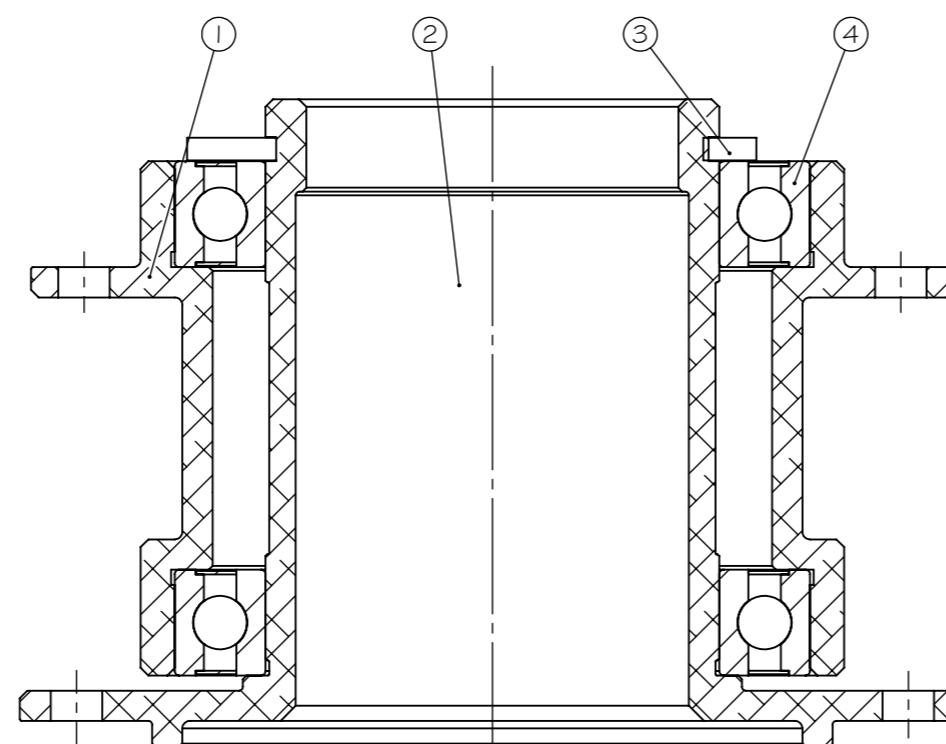
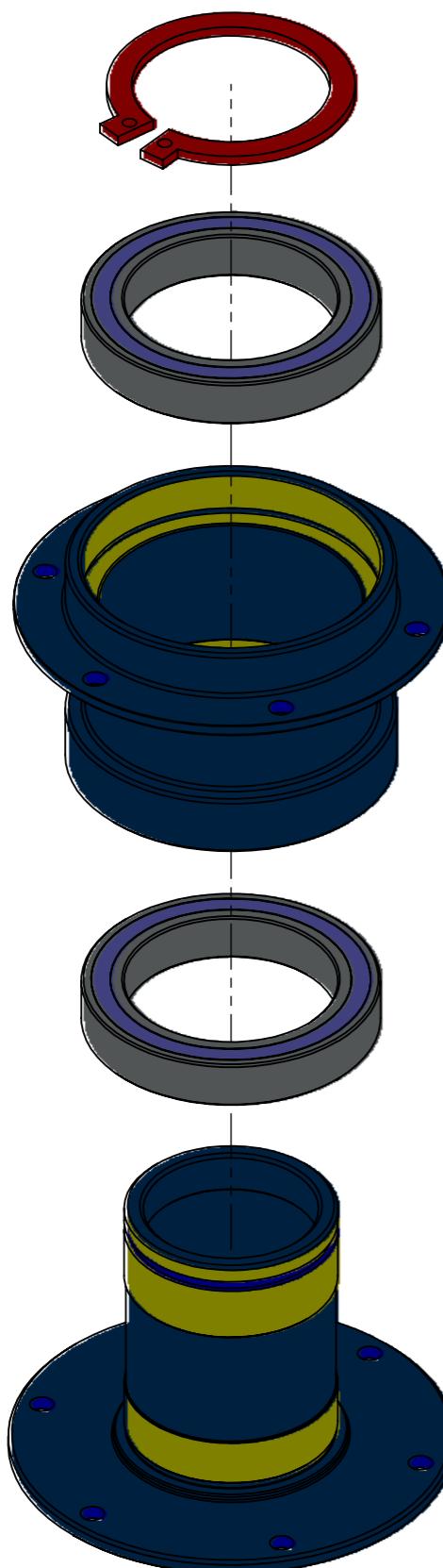
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ITEM	PART NUMBER - DESCRIPTION	QTY.
4	BEARING_NTN_6806_LL	2
3	RETAINING_RING_501_030LDPRT	1
2	DR2.1.2.02 - DECK_BEARING_SHAFT	1
1	DR2.1.2.01 - DECK_BEARING_BASE	1



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DORIS Project

Instituto Alberto Luiz Coimbra de  
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Title: DR2.1.2 - DECK\_BEARING

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 2:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 10/01/2016 QTY: 2 Unit.: mm

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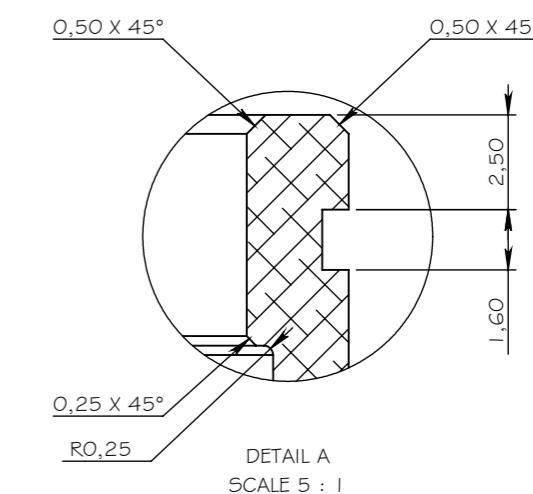
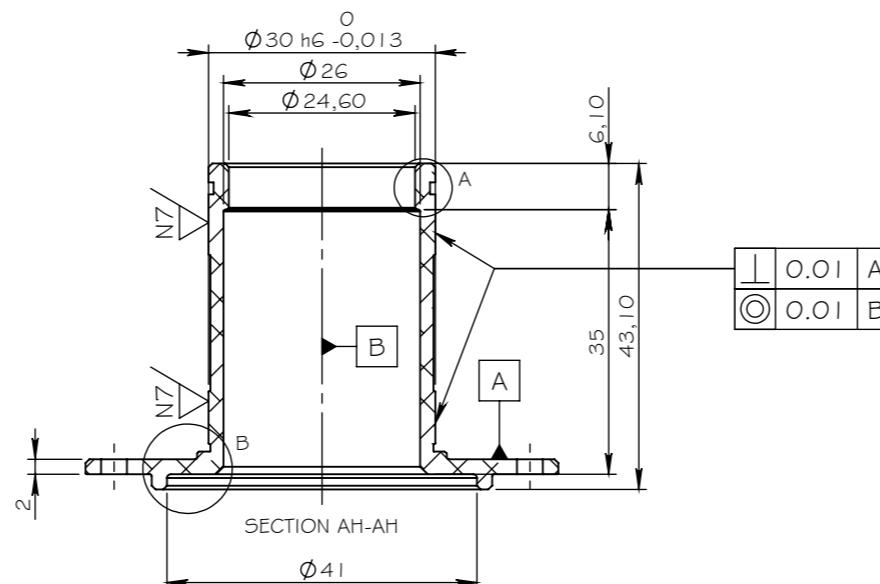
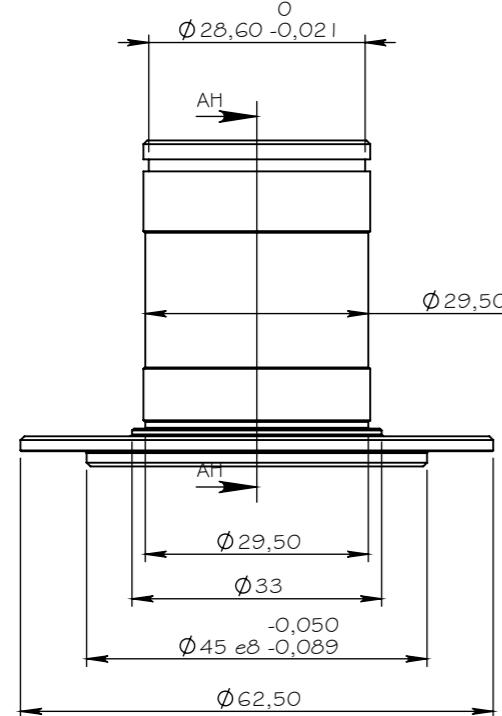
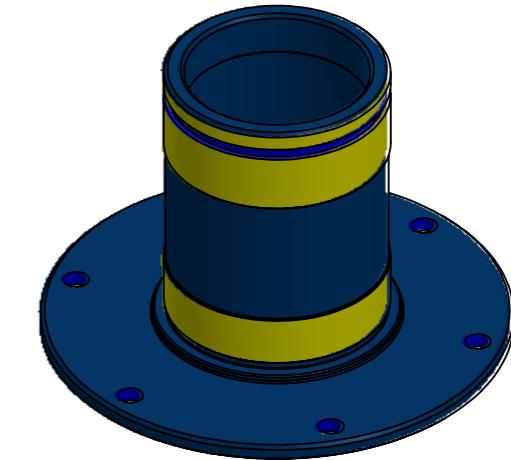
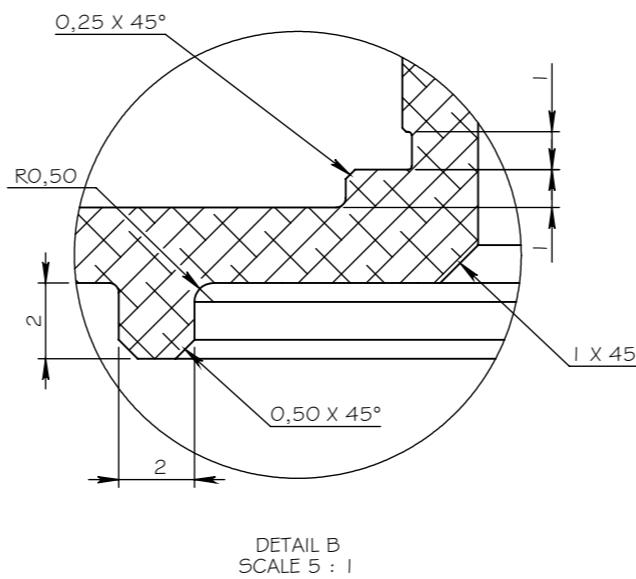
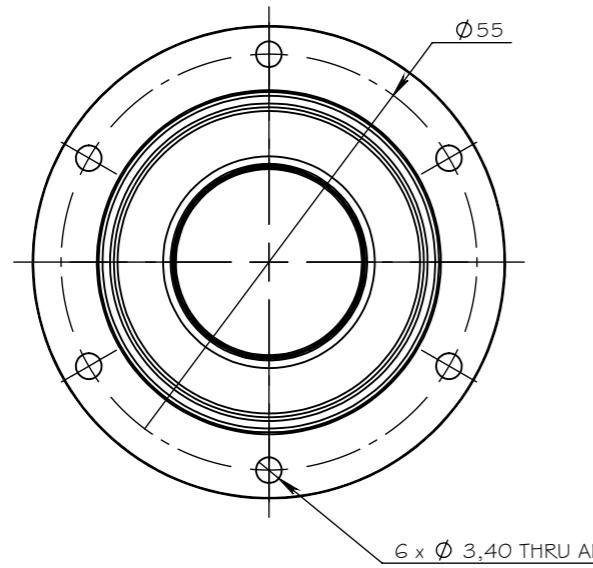
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PETROBRAS		GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.1.2.02 - DECK_BEARING_SHAFT		Material: 7075-T6, Chapa (SS)	
Designed by: Guilherme Carvalho	Date: 09/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 2	Sheet: 1 / 65 Unit.: mm

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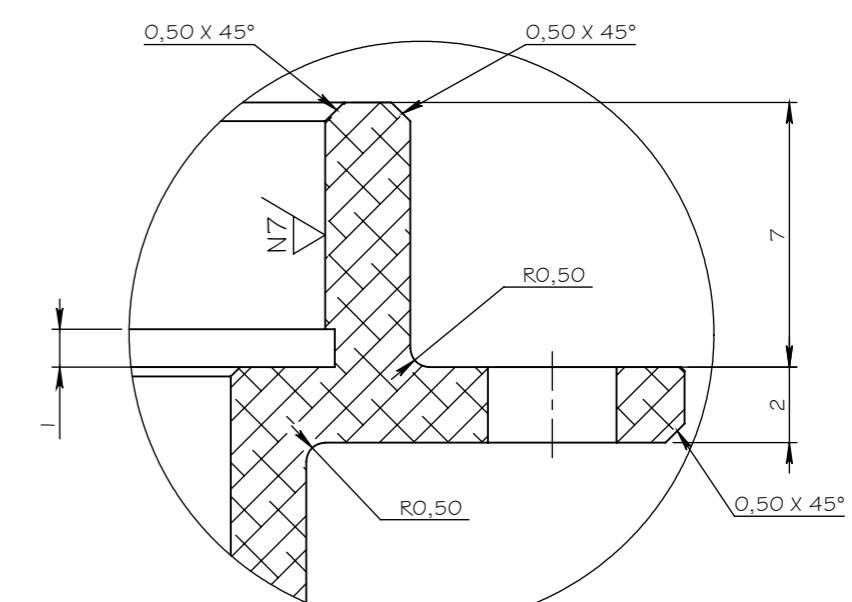
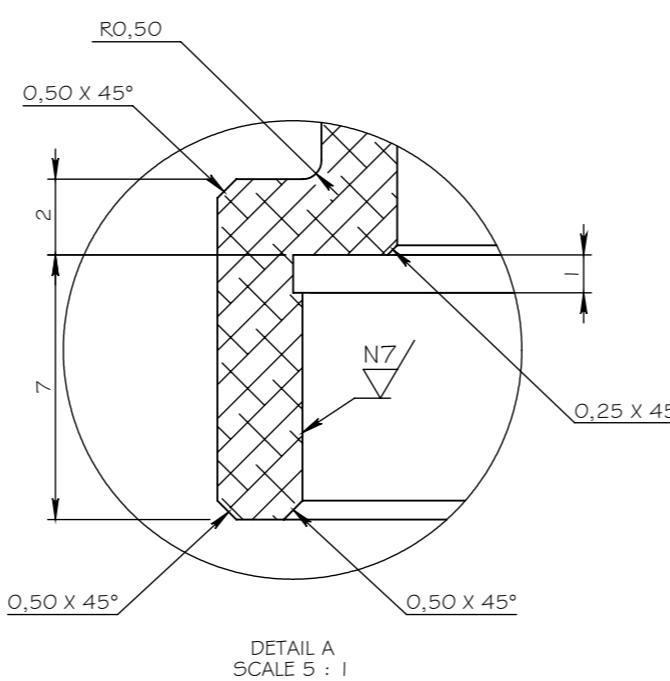
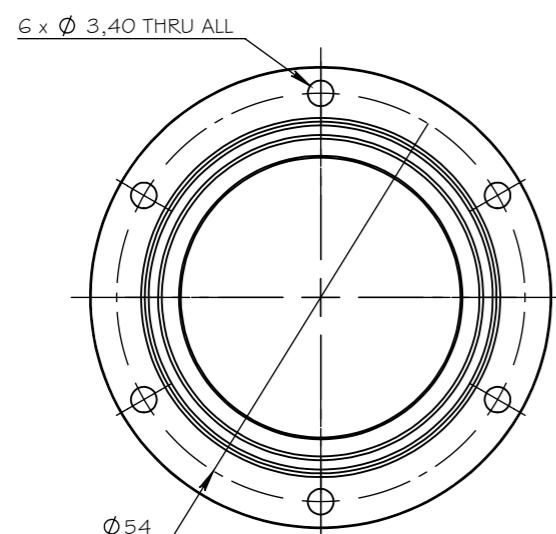
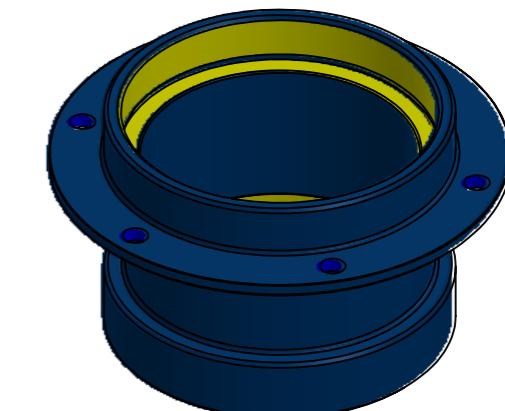
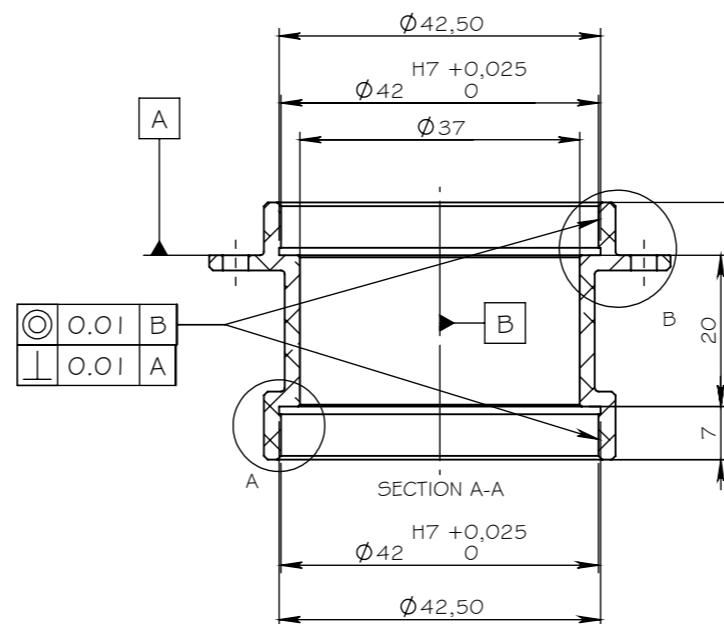
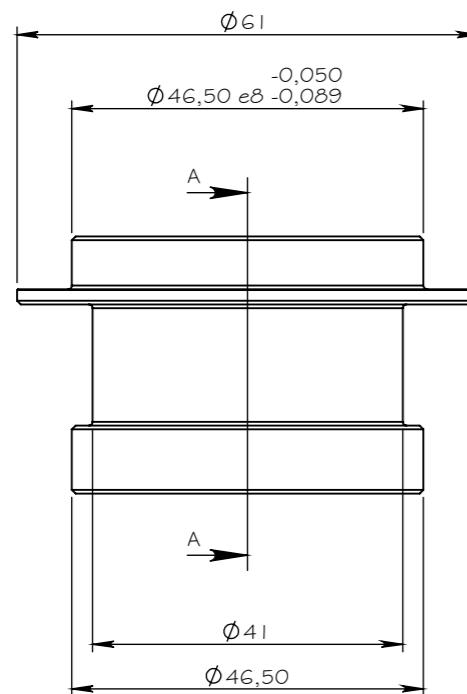
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PETROBRAS



COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.2.01 - DECK_BEARING_BASE			Material: 7075-T6, Chapa (SS)
Designed by: Guilherme Carvalho	Date: 08/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Unit.: mm

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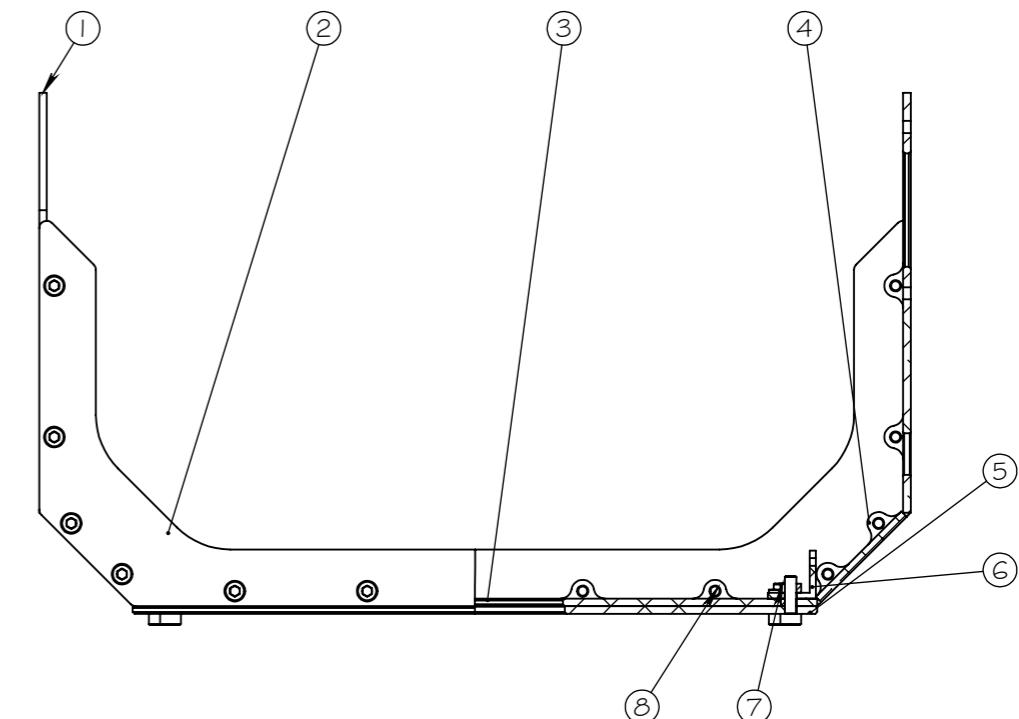
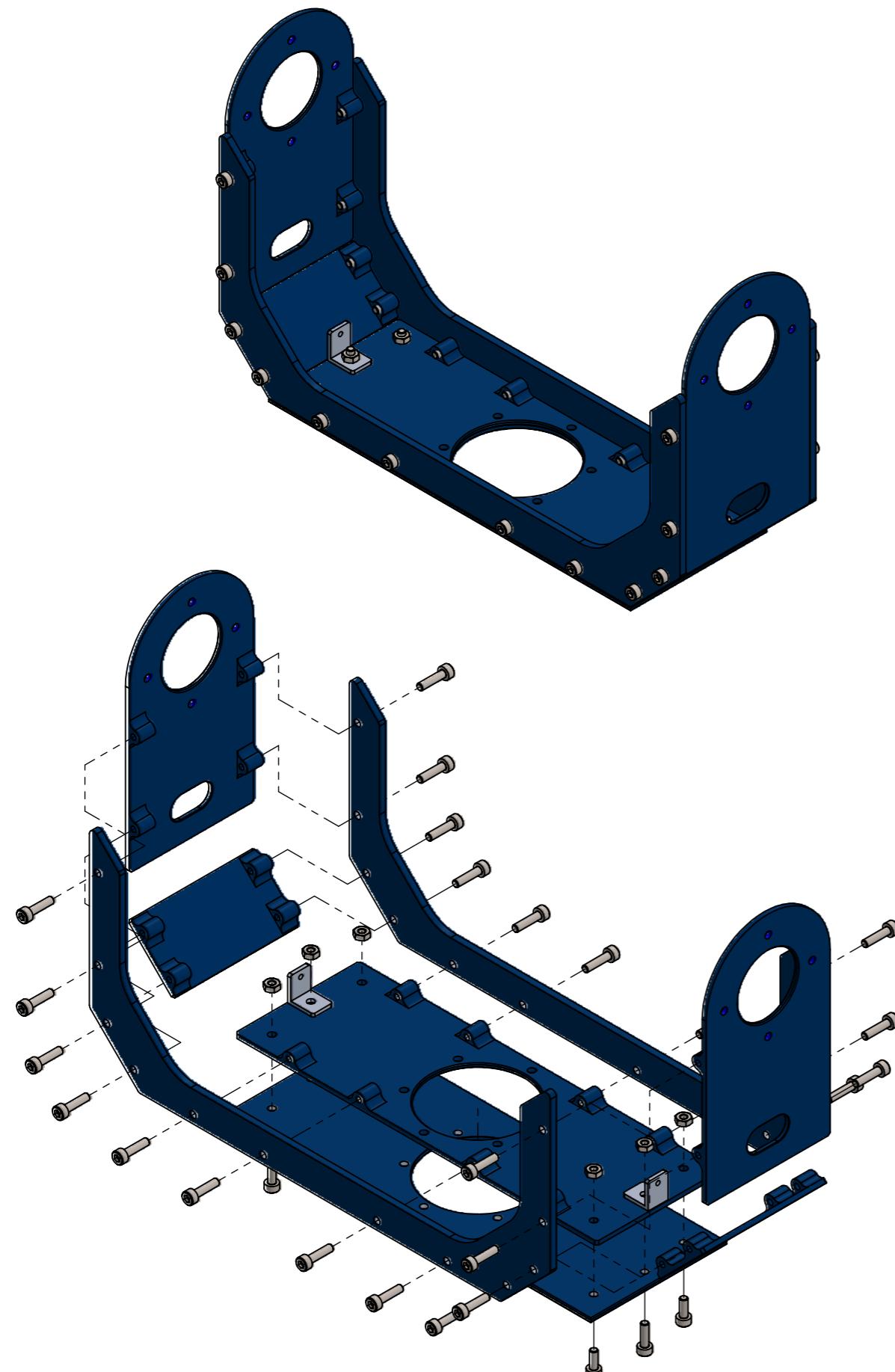
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ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.3.1M - 3 x 0.5 x 10 Hex SHCS -- 10NHX	30
7	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	6
6	DR2.1.3.06 - ANGLE_BRACKET_SPIRAL_SPRING	2
5	DR2.1.3.05 - EXTERNAL_GIMBAL_E	1
4	DR2.1.3.04 - EXTERNAL_GIMBAL_D	2
3	DR2.1.3.03 - EXTERNAL_GIMBAL_C	1
2	DR2.1.3.02 - EXTERNAL_GIMBAL_B	2
1	DR2.1.3.01 - EXTERNAL_GIMBAL_A	2



PETROBRAS



Statoil



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UFRJ

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.3 - EXTERNAL\_GIMBAL

Material: Various

Designed by: Guilherme Carvalho

Date: 15/12/2015 Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 10/01/2016 QTY: 2 Unit.: mm

13/65

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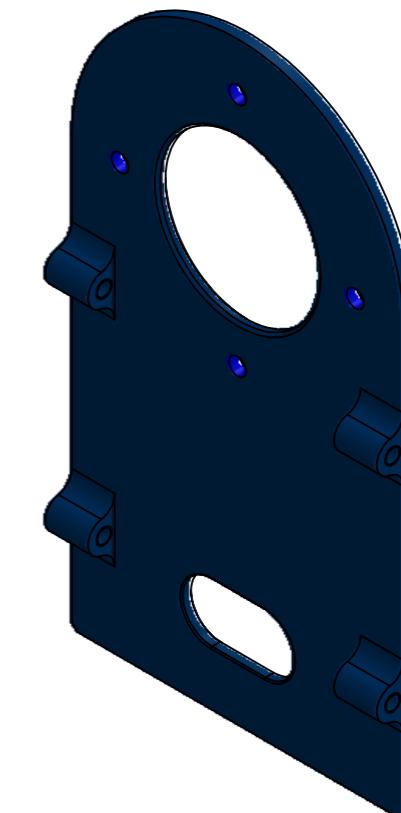
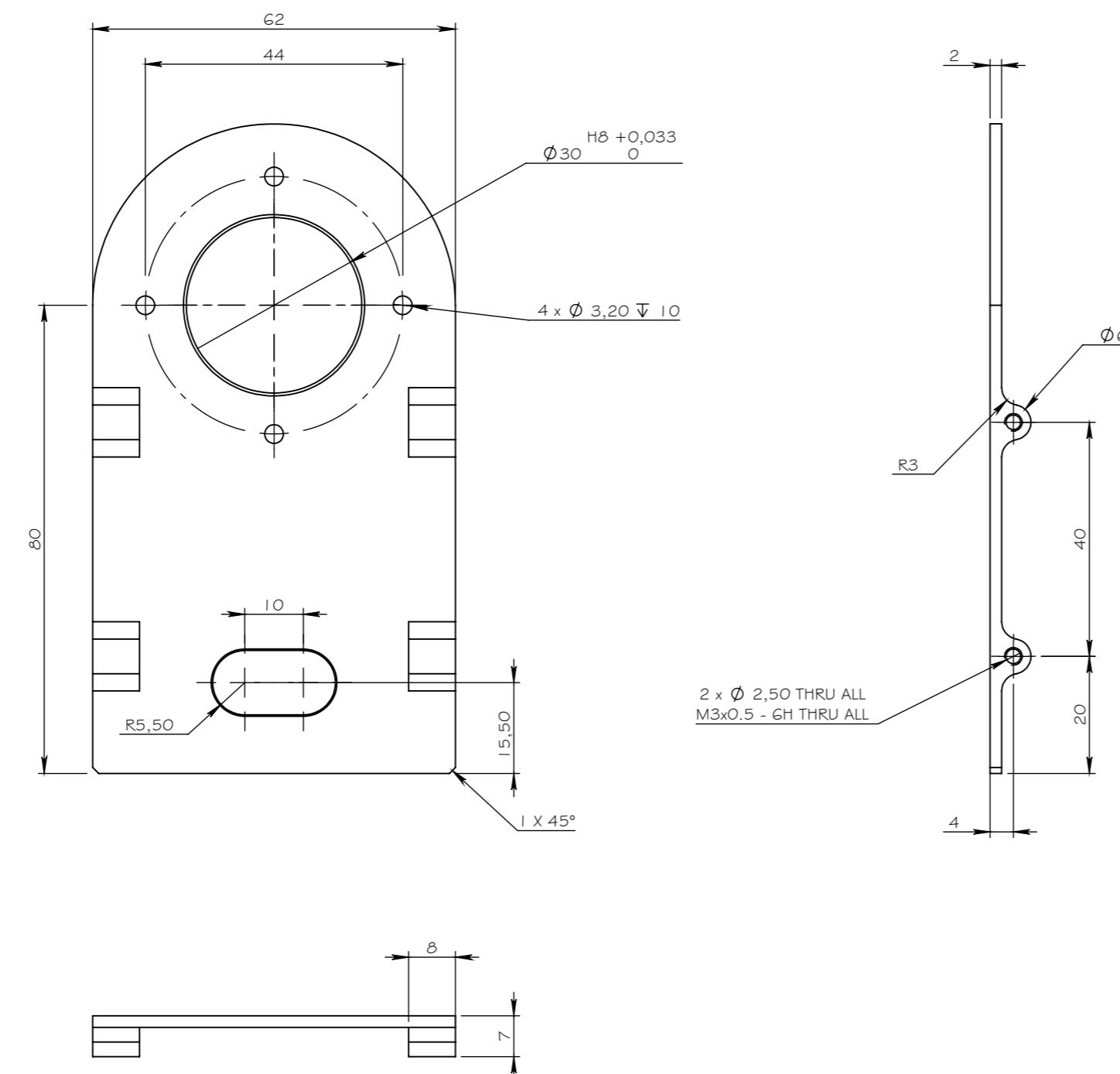
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b> <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.1.3.01 - EXTERNAL_GIMBAL_A		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho	Date: 09/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 09/06/2016	QTY: 8	Unit.: mm
		Sheet: 14/65	

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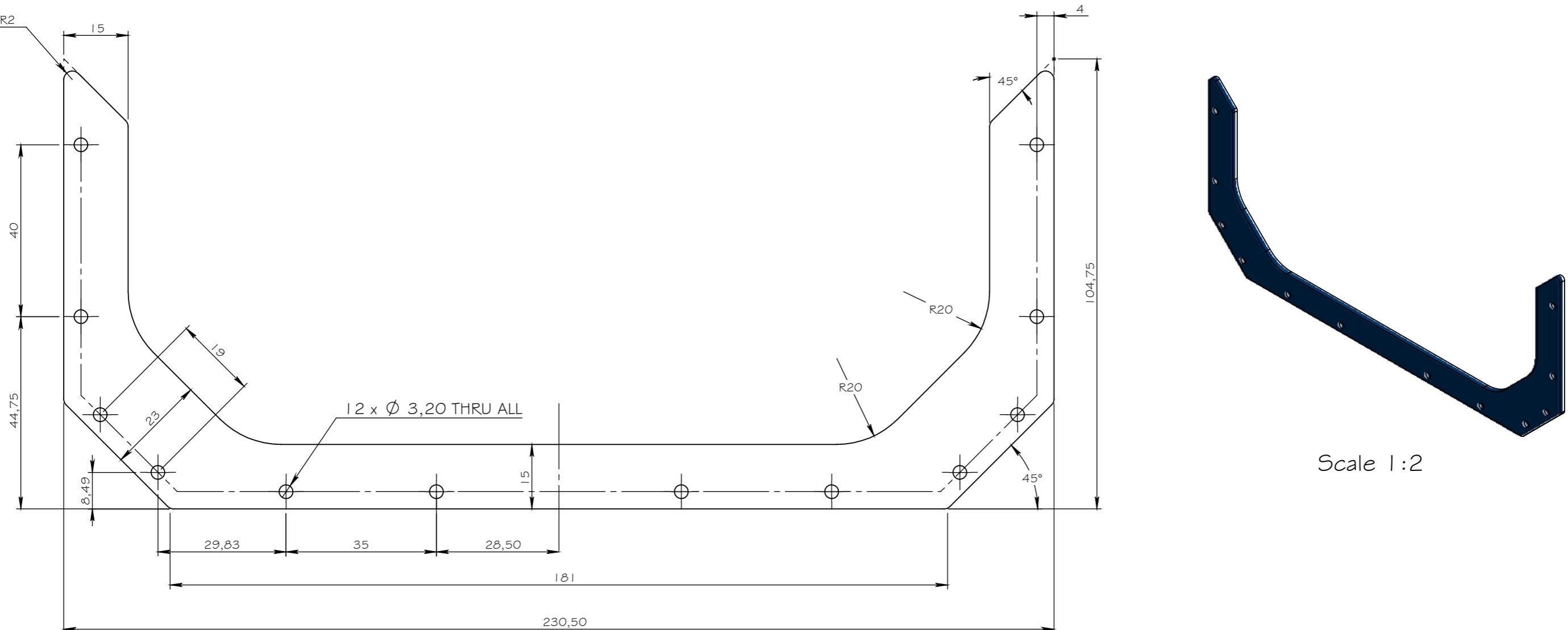
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8 7 6 5 4 3 2 1

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Thickness: 2 mm



COPPE - Electrical Engineering Program



DORIS Project



Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.1.3.02 - EXTERNAL\_GIMBAL\_B

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:1 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 10/01/2016 QTY: 4 Unit.: mm

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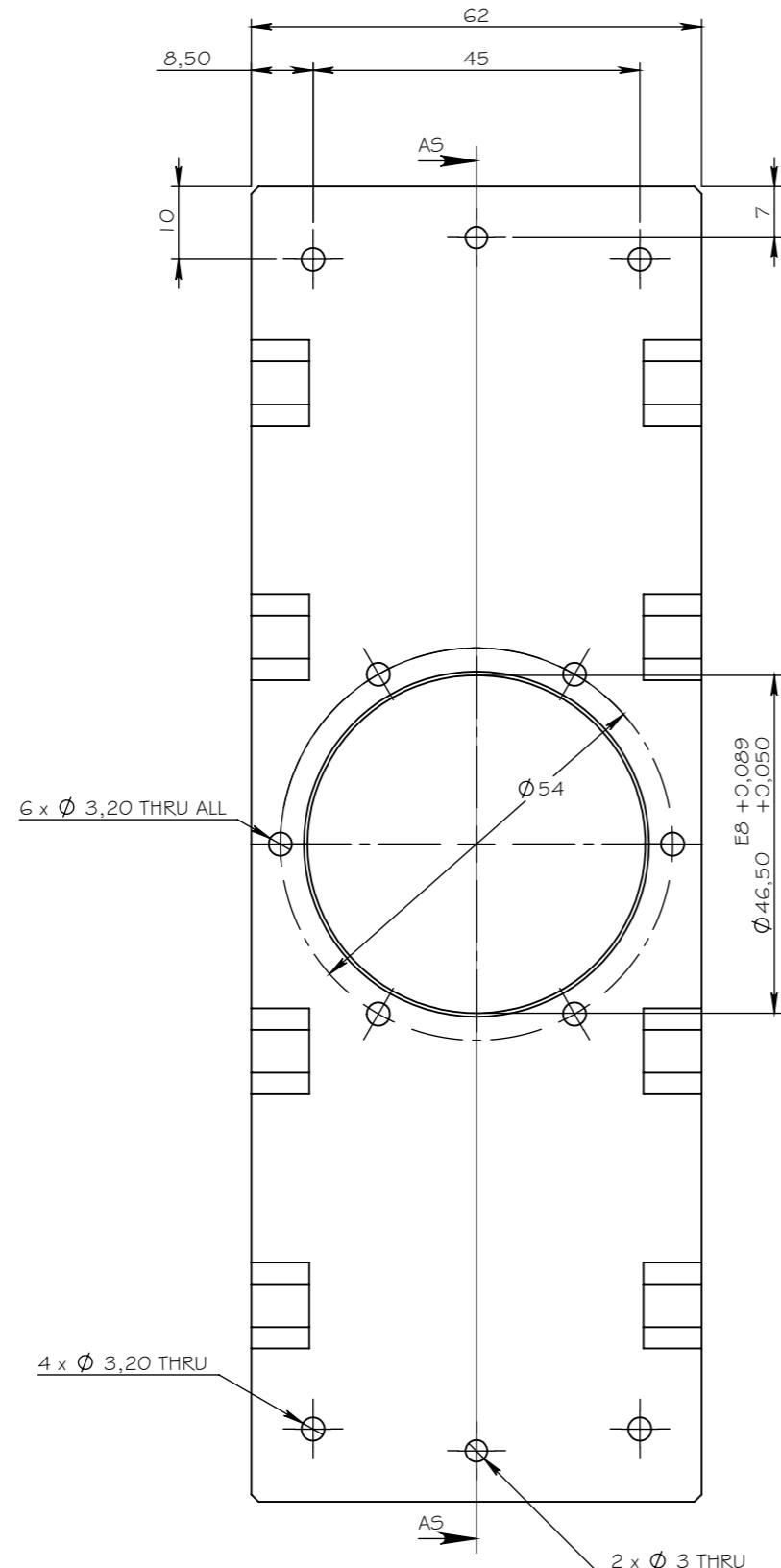
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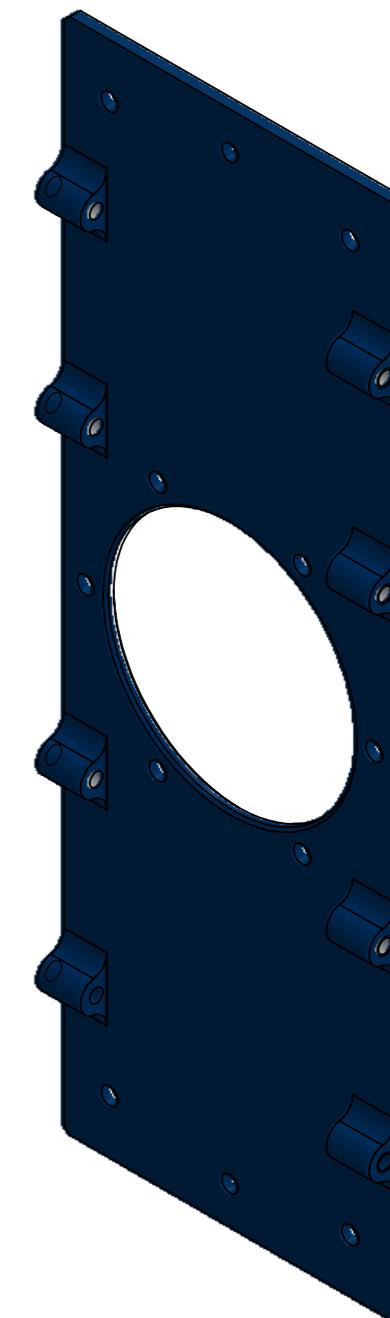
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DETAIL BY  
SCALE 5 : 1



PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.3.03 - EXTERNAL_GIMBAL_C		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho	Date: 15/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Unit.: mm
		Sheet: 16/65	

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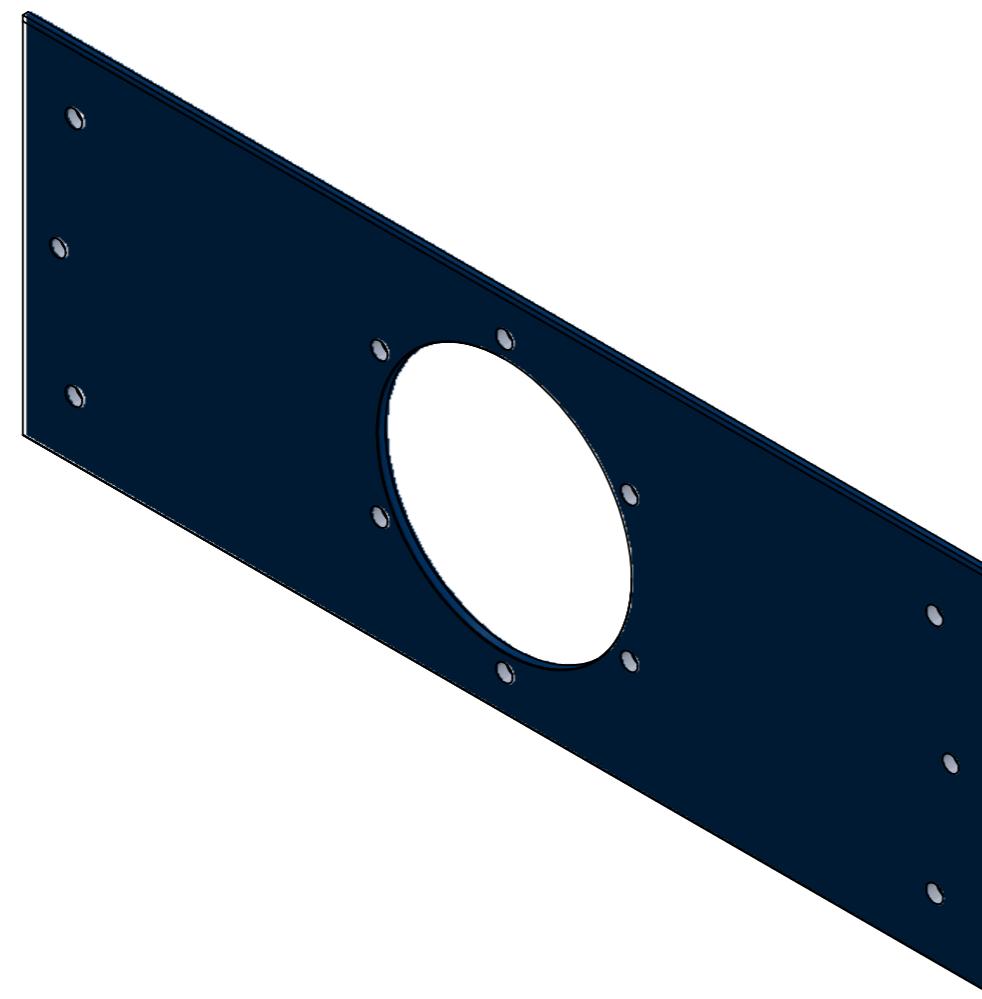
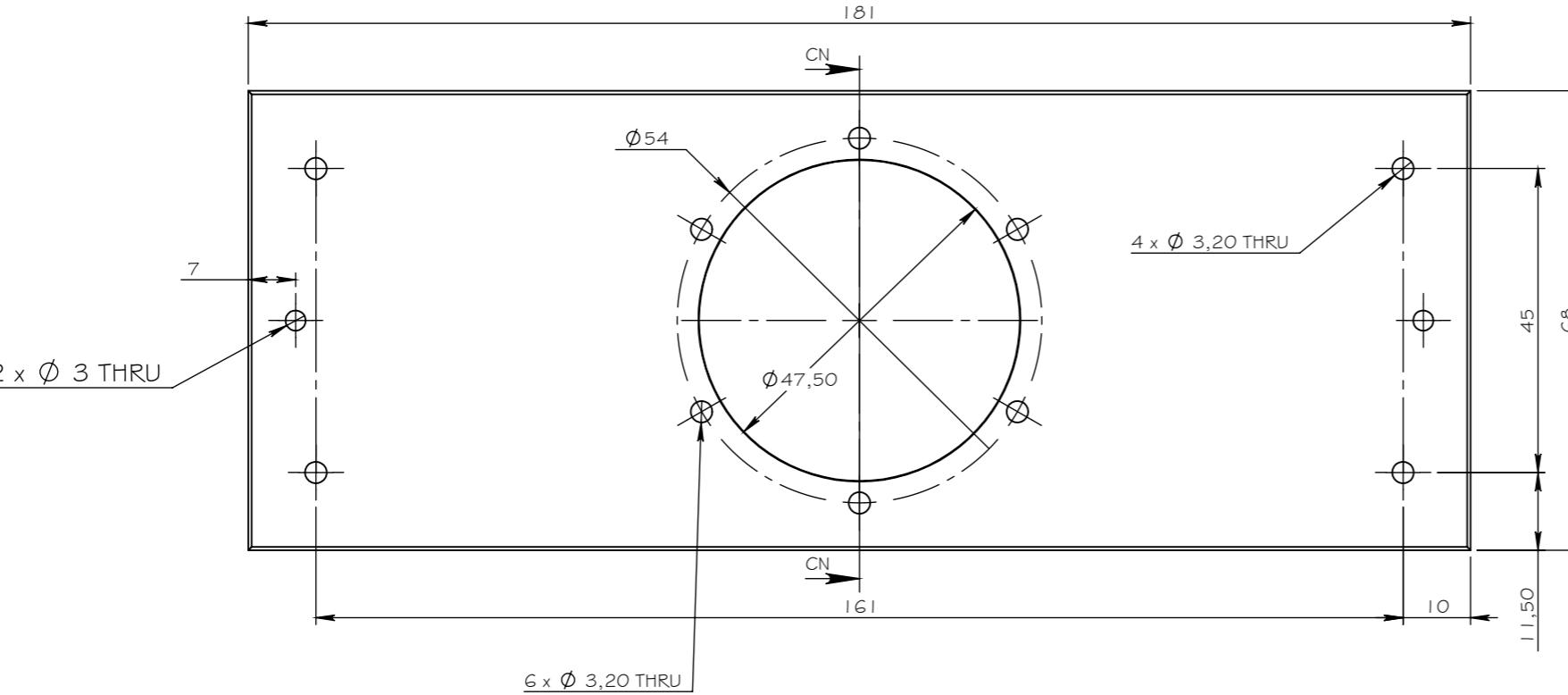
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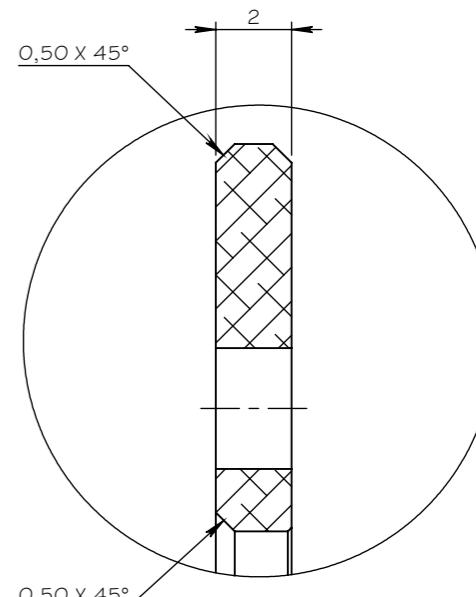
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SECTION CN-CN



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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.3.05 - EXTERNAL_GIMBAL_E	Material: 7075-T6, Plate (SS)		
Designed by: Guilherme Carvalho	Date: 15/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 2	Sheet: 17/65
Unit.: mm			

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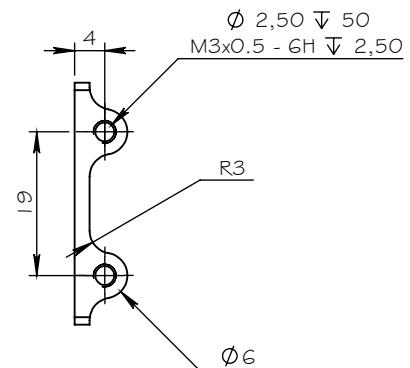
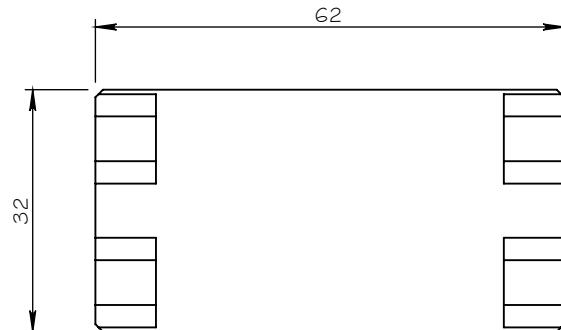
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**PETROBRAS**



**Statoil**



**GSCAR**



**COPPE**  
**UFRJ**

Instituto Alberto Luiz Coimbra da  
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.3.04 - EXTERNAL\_GIMBAL\_D

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: 0

Scale.: 1:1

Sheet:

18 / 65

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 4

Unit.: mm

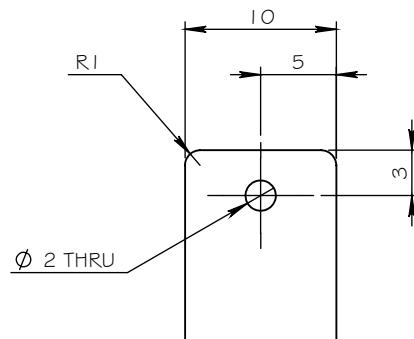
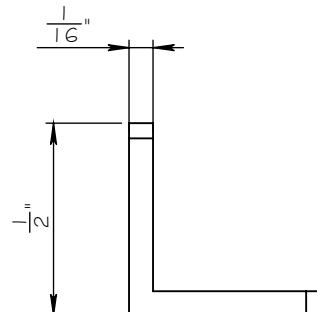
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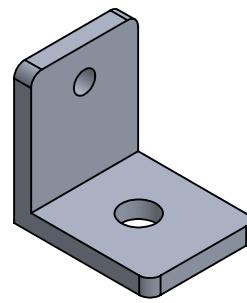
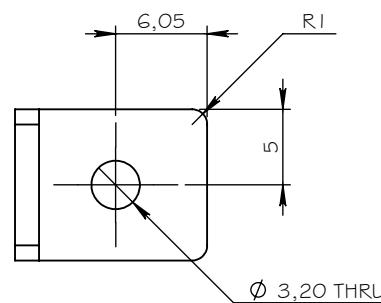
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.3.06 - ANGLE\_BRACKET\_SPIRAL\_SPRING

Material: 1060 Alloy

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Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 2:1

Sheet:

19 / 65

Verified by: Ramon Romankevicius

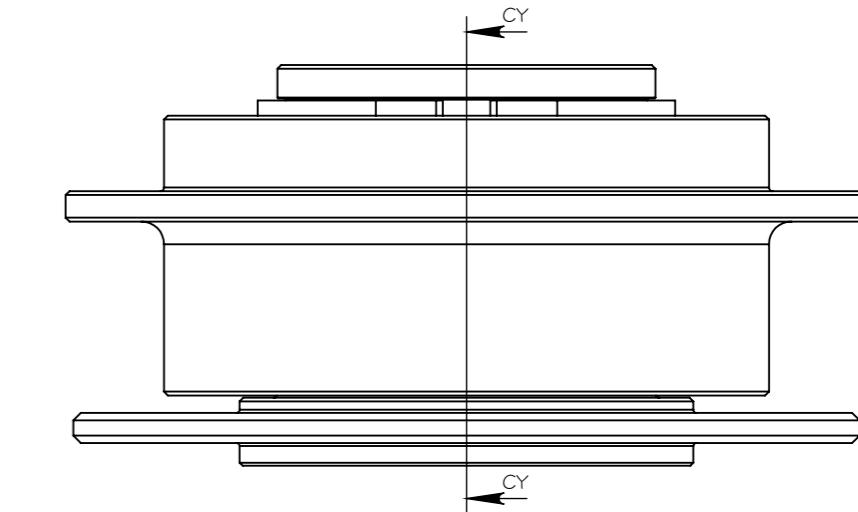
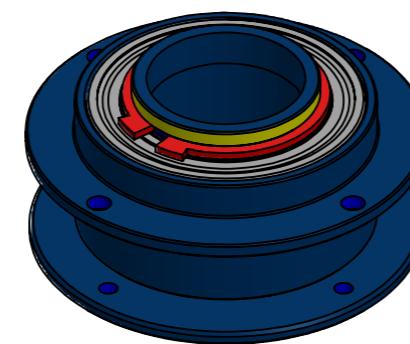
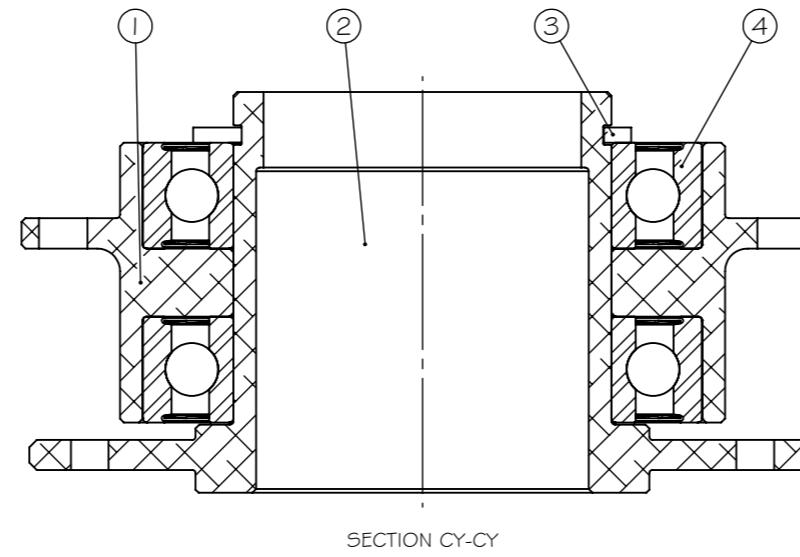
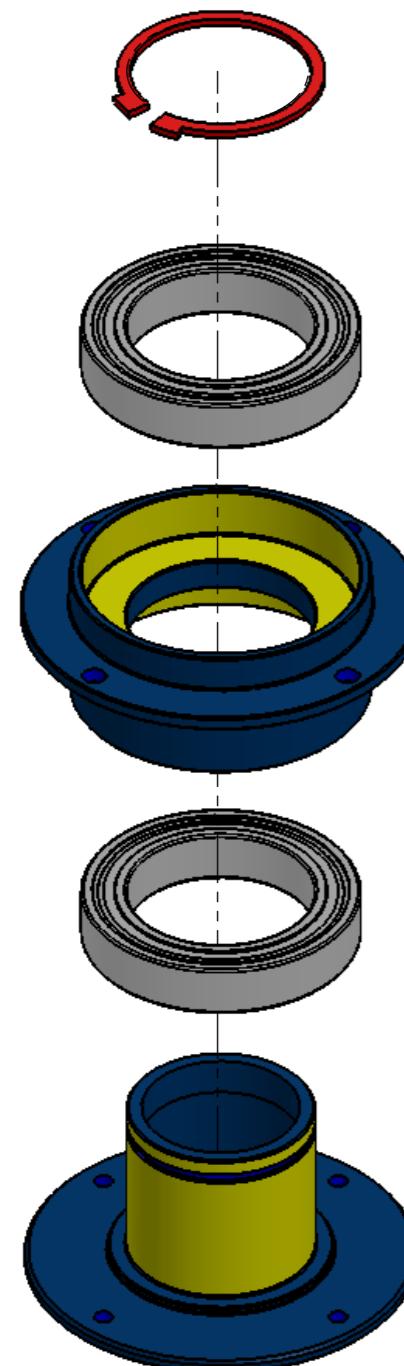
Ver. date.: 08/01/2016

QTY: 4

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ITEM	PART NUMBER - DESCRIPTION	QTY.
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3	RETAINING_RING_501_025	1
2	DR2.1.4.02 - GIMBAL_BEARING_SHAFT	1
1	DR2.1.4.01 - GIMBAL_BEARING_BASE	1



COPPE - Electrical Engineering Program



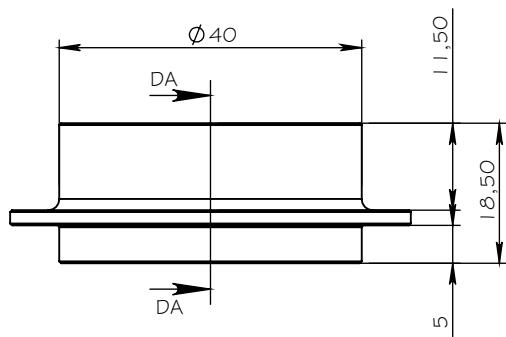
DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

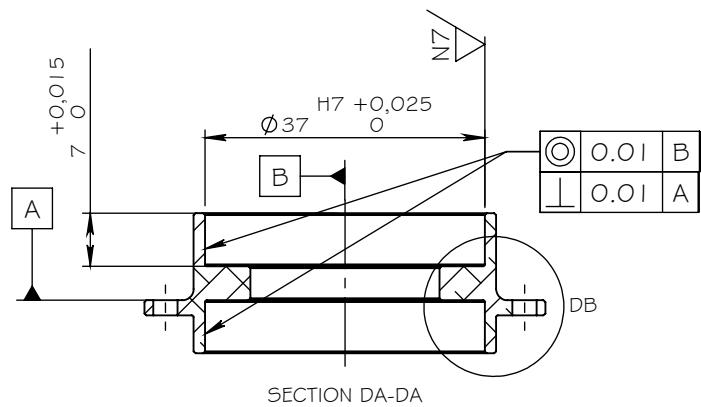
Title: DR2.1.4 - GIMBAL_BEARING	Material: Vários
Designed by: Guilherme Carvalho	Date: 15/12/2015
Verified by: Ramon Romankevicius	Ver. date.: 01/01/2016

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20/65

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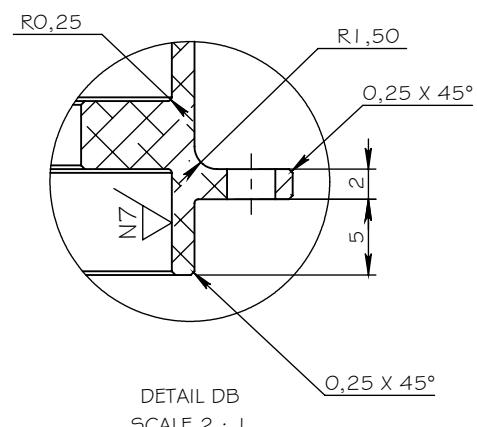
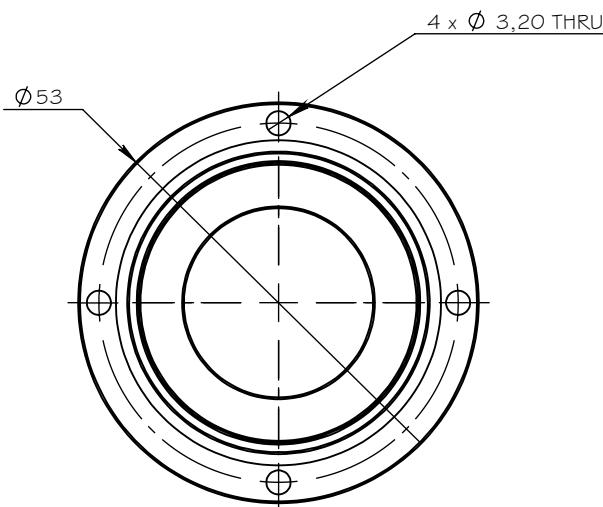


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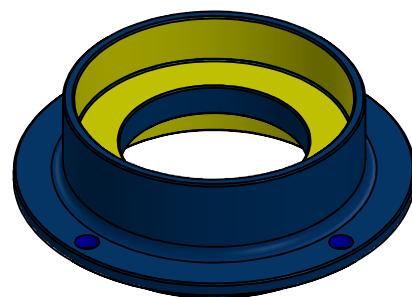
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DORIS Project

Title: DR2.1.4.01 - GIMBAL\_BEARING\_BASE

Material: 7075-T6, Plate (SS)

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Designed by: Guilherme Carvalho

Date: 12/10/2015

Rev.: A

Scale.: 1:1

Sheet:

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Verified by: Ramon Romankevicius

Ver. date.: 01/01/2016

QTY: 4

Unit.: mm

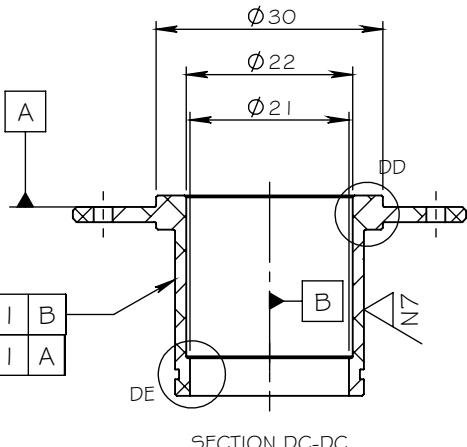
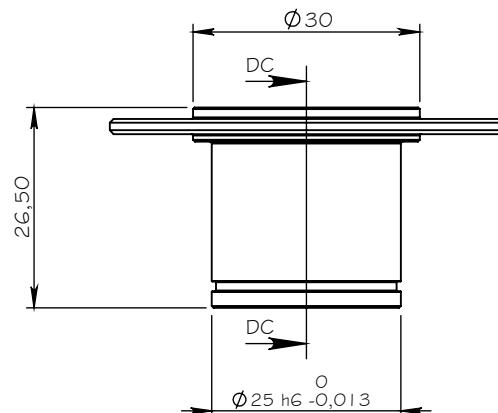
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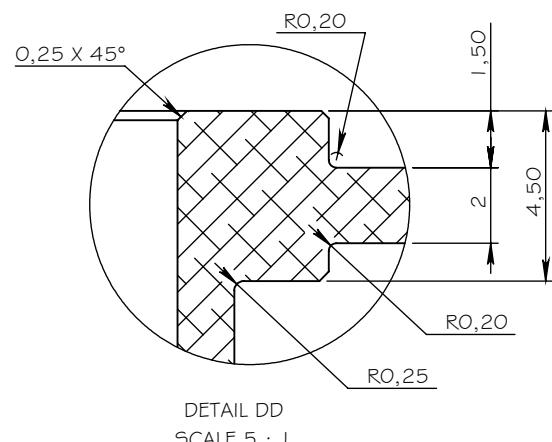
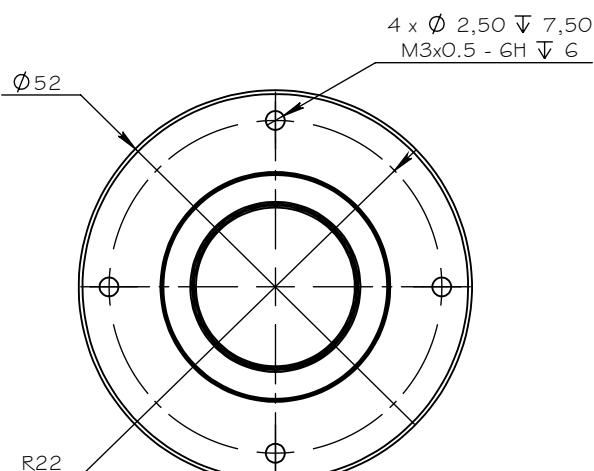


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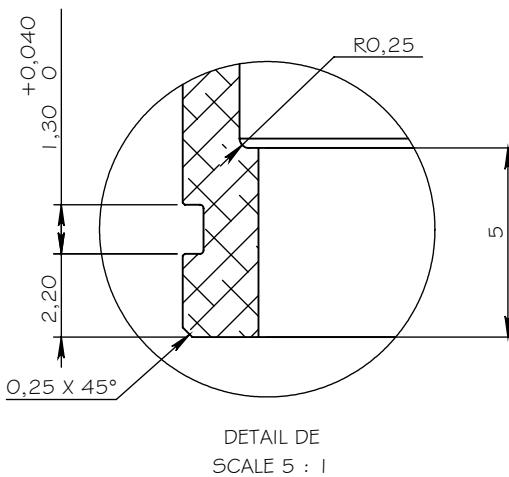
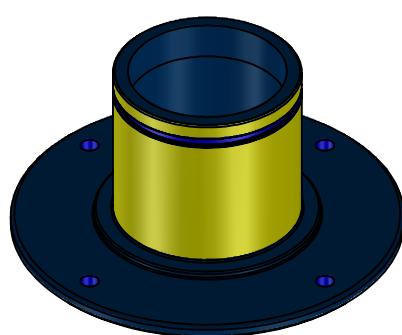
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**PETROBRAS****Statoil****GSCAR****COPPE**  
**UFRJ**Instituto Alberto Luiz Coimbra da  
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.4.02 - GIMBAL\_BEARING\_SHAFT

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Date: 15/12/2015

Rev.: A

Scale.: 1:1

Sheet:

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Verified by: Ramon Romankevicius

Ver. date.: 01/01/2016

QTY: 4

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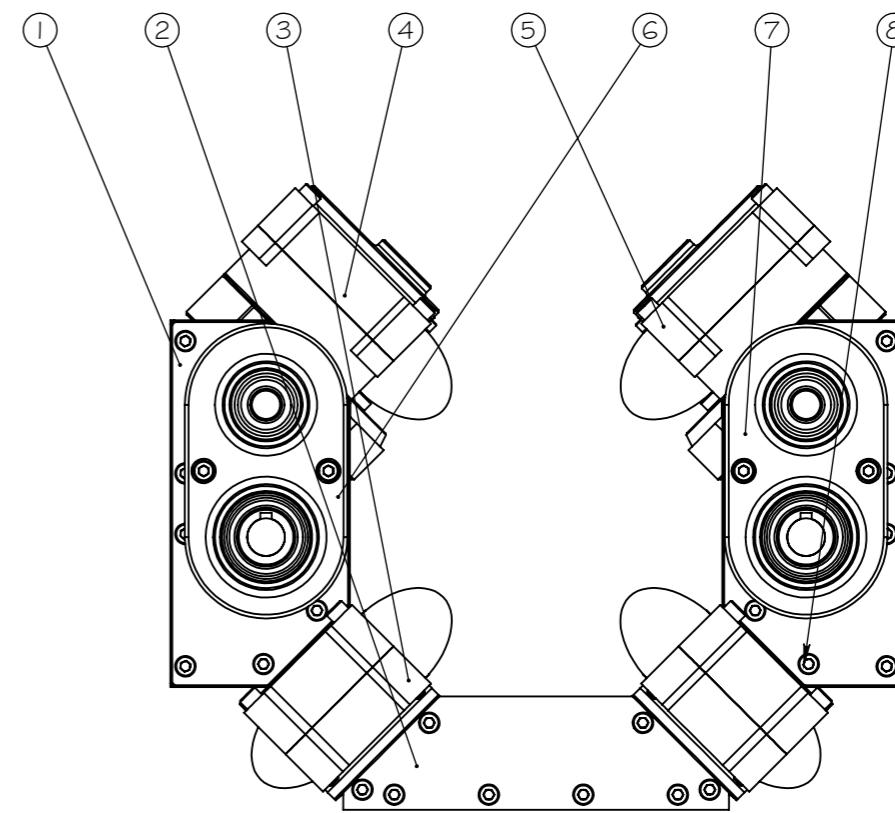
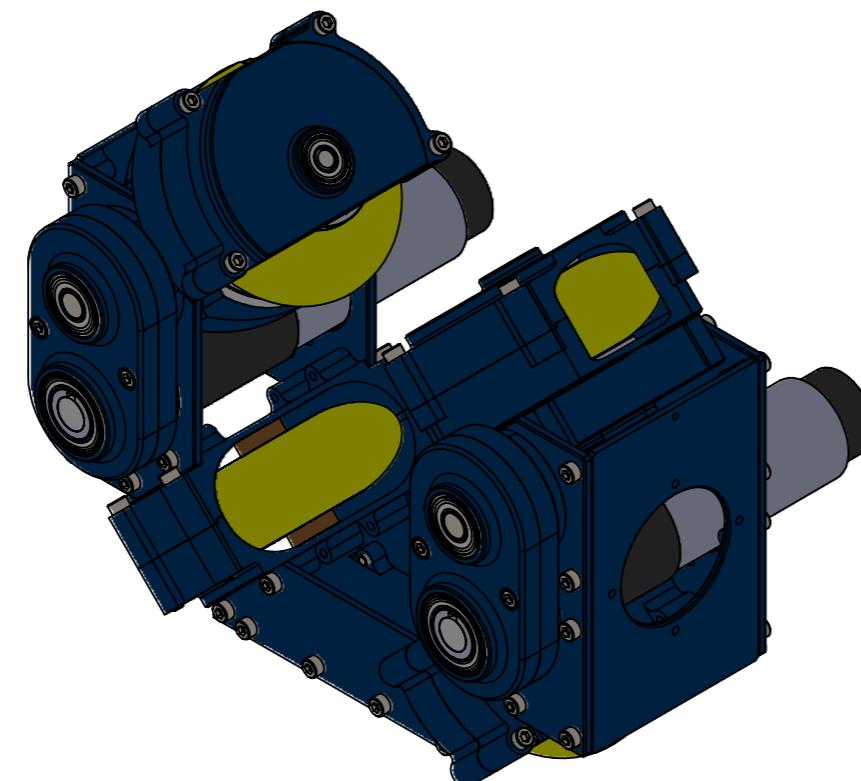
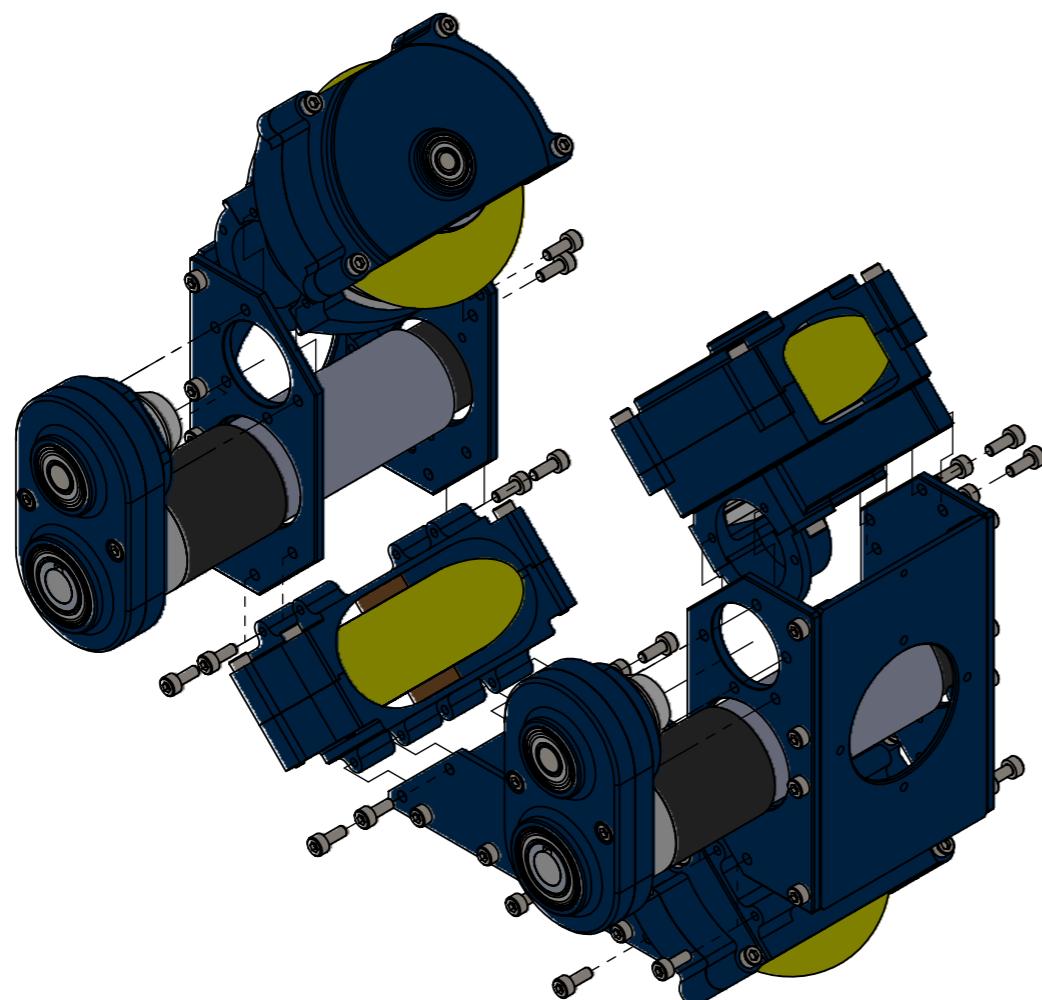
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ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	24
7	DR2.1.5.7 - GEARBOX_SET_UR	1
6	DR2.1.5.6 - GEARBOX_SET_UL	1
5	DR2.1.5.5 - ACTIVE_MODULAR_WHEEL_UR	1
4	DR2.1.5.4 - ACTIVE_MODULAR_WHEEL_UL	1
3	DR2.1.5.3 - PASSIVE_MODULAR_WHEEL_DOWN	2
2	DR2.1.5.2 - GIMBAL_BOTTOM_SUPPORT	1
1	DR2.1.5.1 - GIMBAL_ARM	2



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Instituto Alberto Luiz Coimbra de  
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DORIS Project

COPPE - Electrical Engineering Program

Title: DR2.1.5 - INTERNAL\_GIMBAL

Material: Vários

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius

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Ver. date.: 08/01/2016 QTY: 2 Unit.: mm

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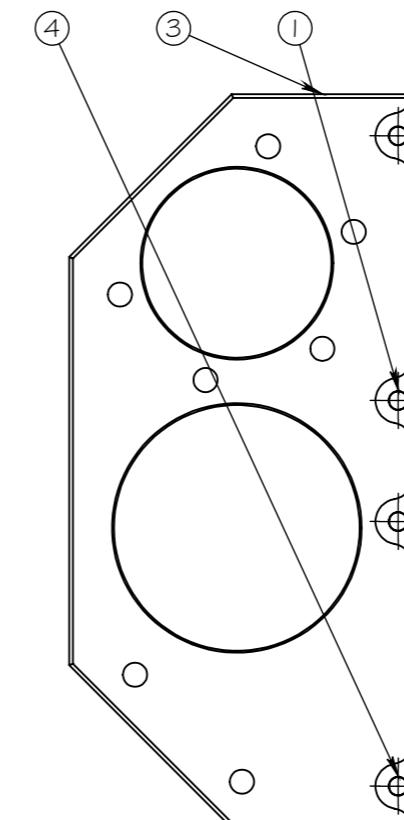
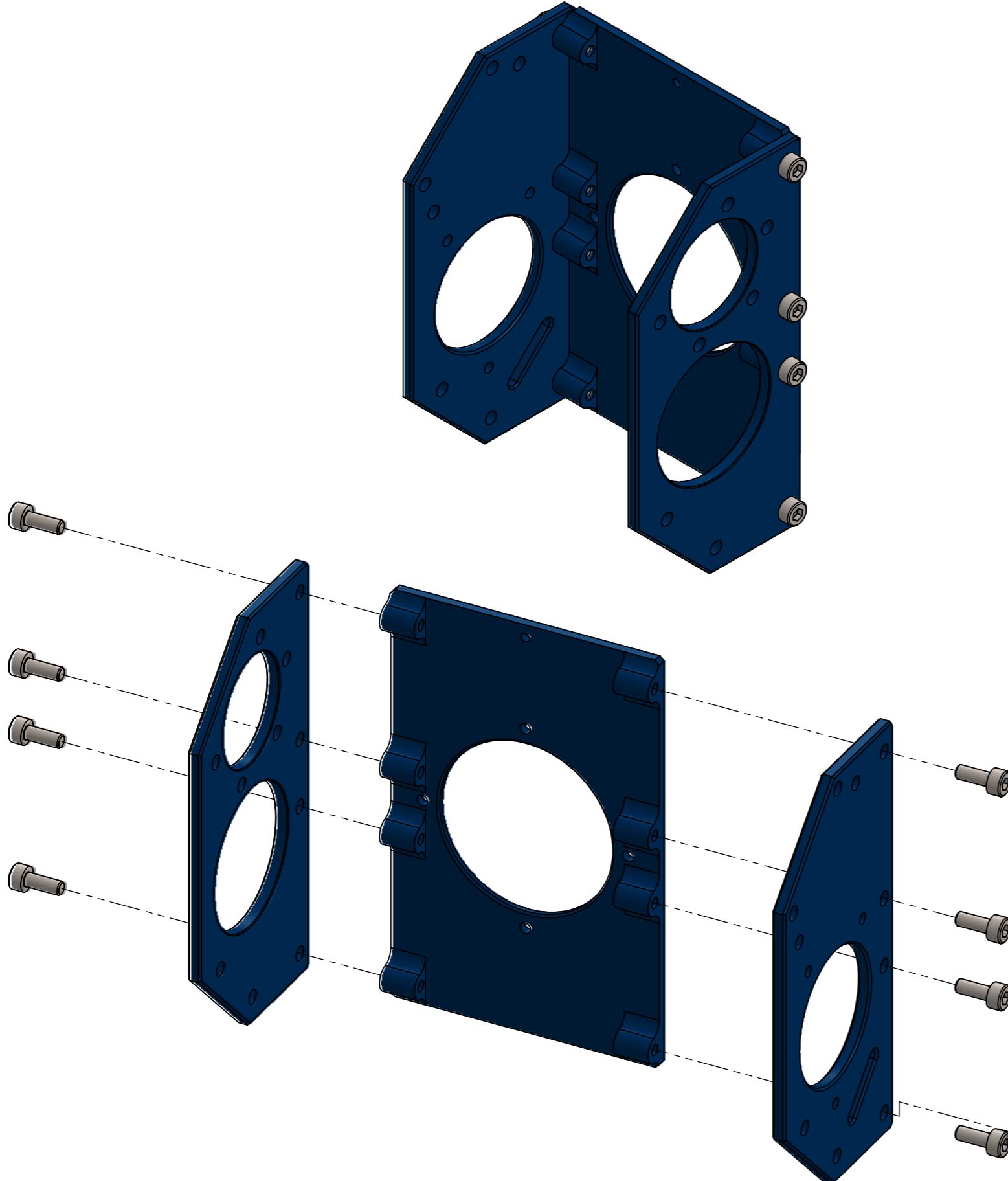
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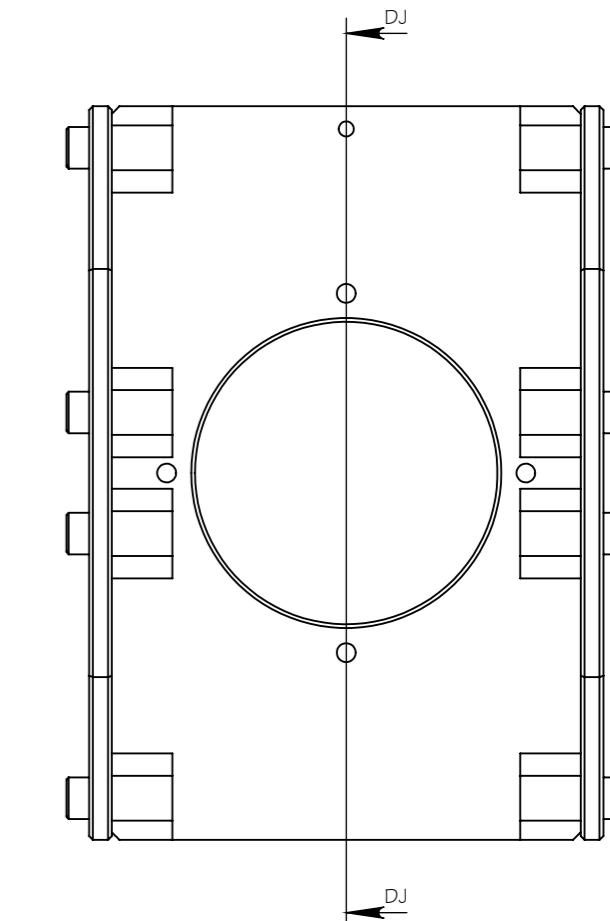
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SECTION DJ-DJ



ITEM	PART NUMBER - DESCRIPTION	Braço Gimbal /QTY.
4	B18.3.1M - 3 x 0.5 x 10 Hex SHCS -- 10NHX	8
3	DR2.1.5.1.03 - GIMBAL_ARM_HOLED_SIDE_PLATE	1
2	DR2.1.5.1.02 - GIMBAL_ARM_SIDE_PLATE	1
1	DR2.1.5.1.01 - GIMBAL_ARM_BASE	1
	PART NUMBER - DESCRIPTION	Braço Gimbal /QTY.



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DORIS Project

Instituto Alberto Luiz Coimbra de  
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Title: DR2.1.5.1 - GIMBAL\_ARM

Material: Various

Designed by: Guilherme Carvalho

Rev.: A

Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 01/10/2016

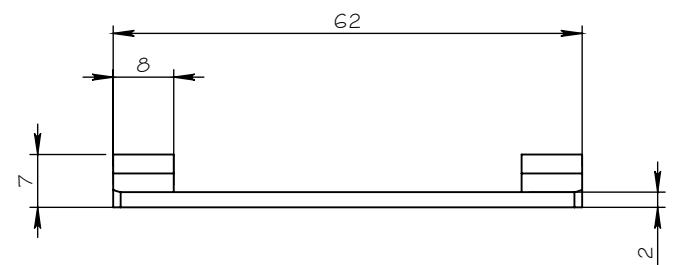
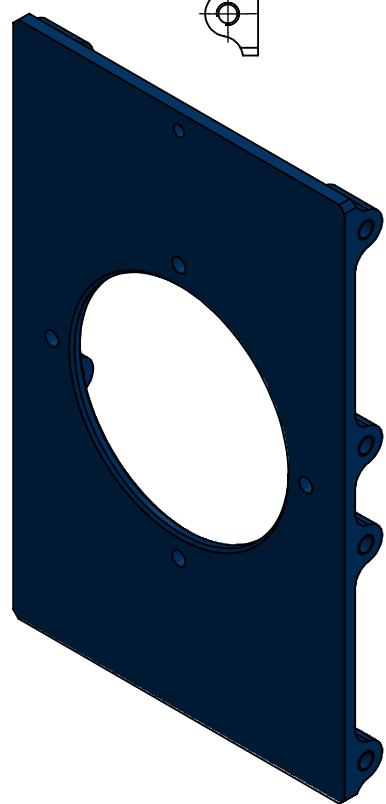
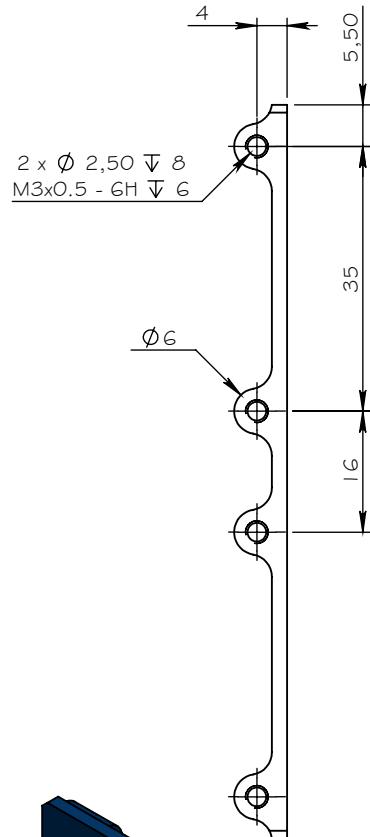
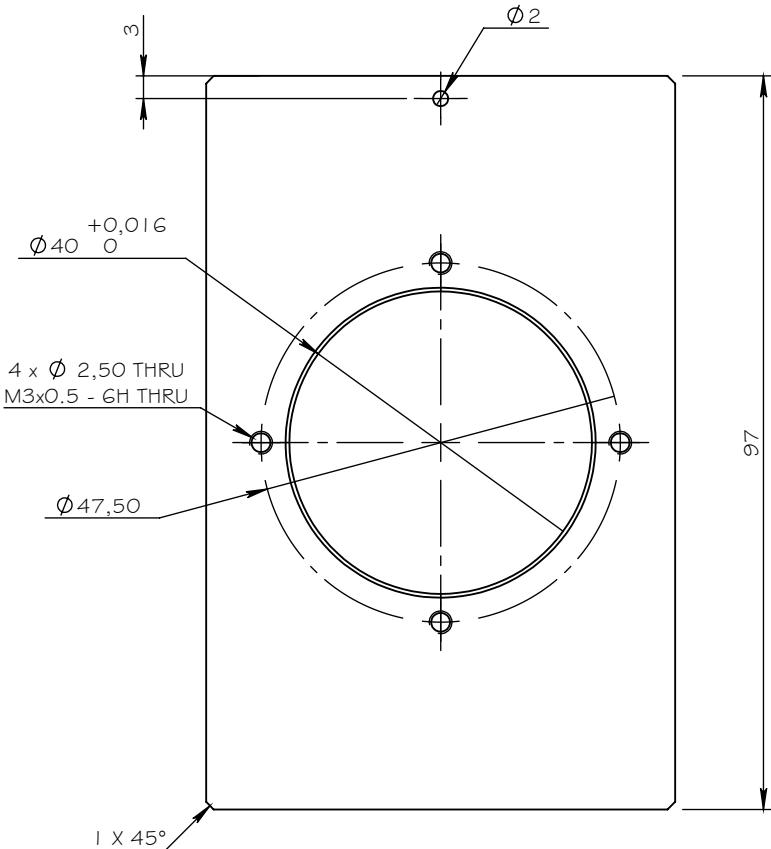
QTY: 2

Unit.: mm

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Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.1.01 - GIMBAL\_ARM\_BASE

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Date: 04/01/2016

Rev.: A

Scale.: 1:1

Sheet:

25 / 65

Verified by: Ramon Romankevicius

Ver. date.: 01/10/2016

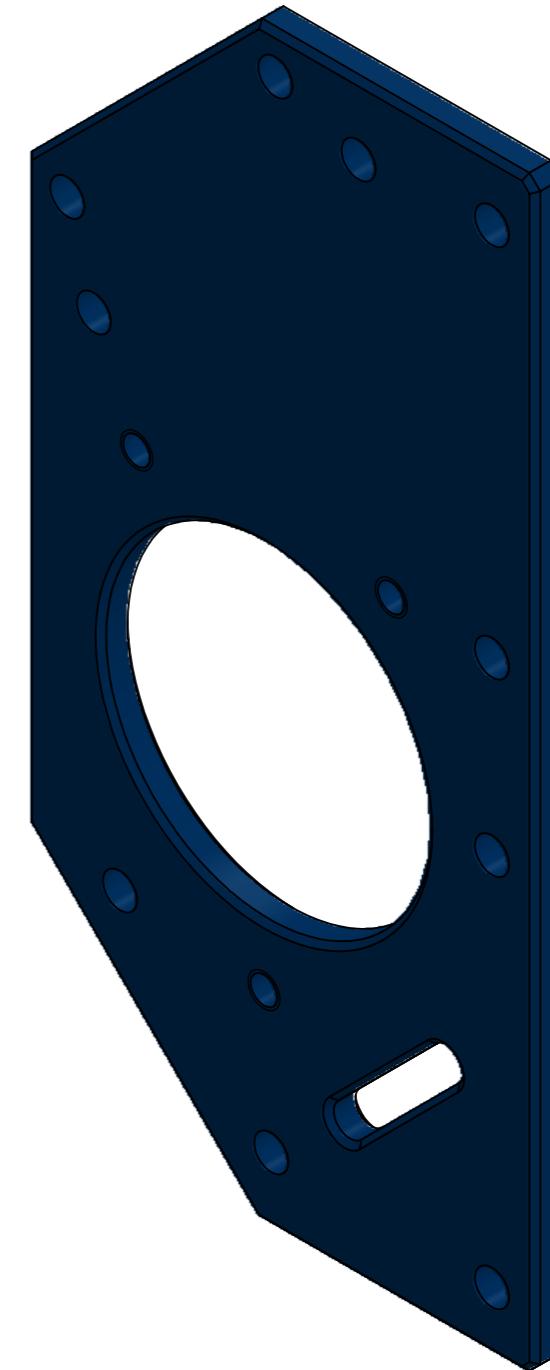
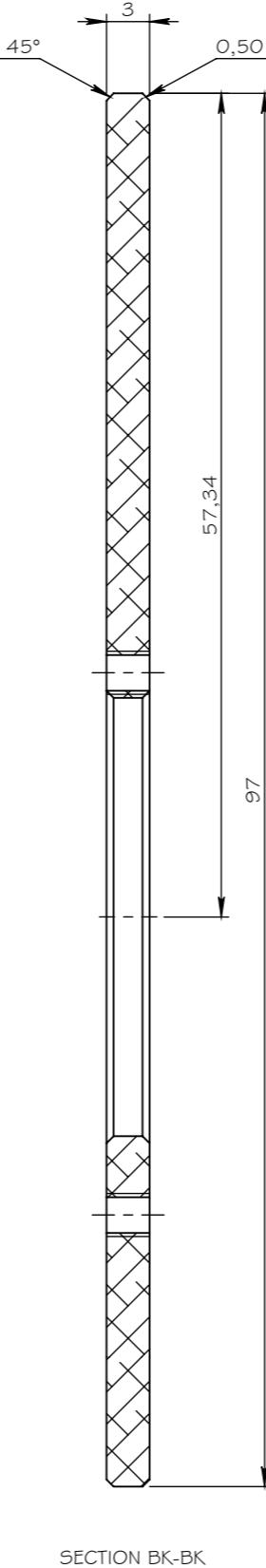
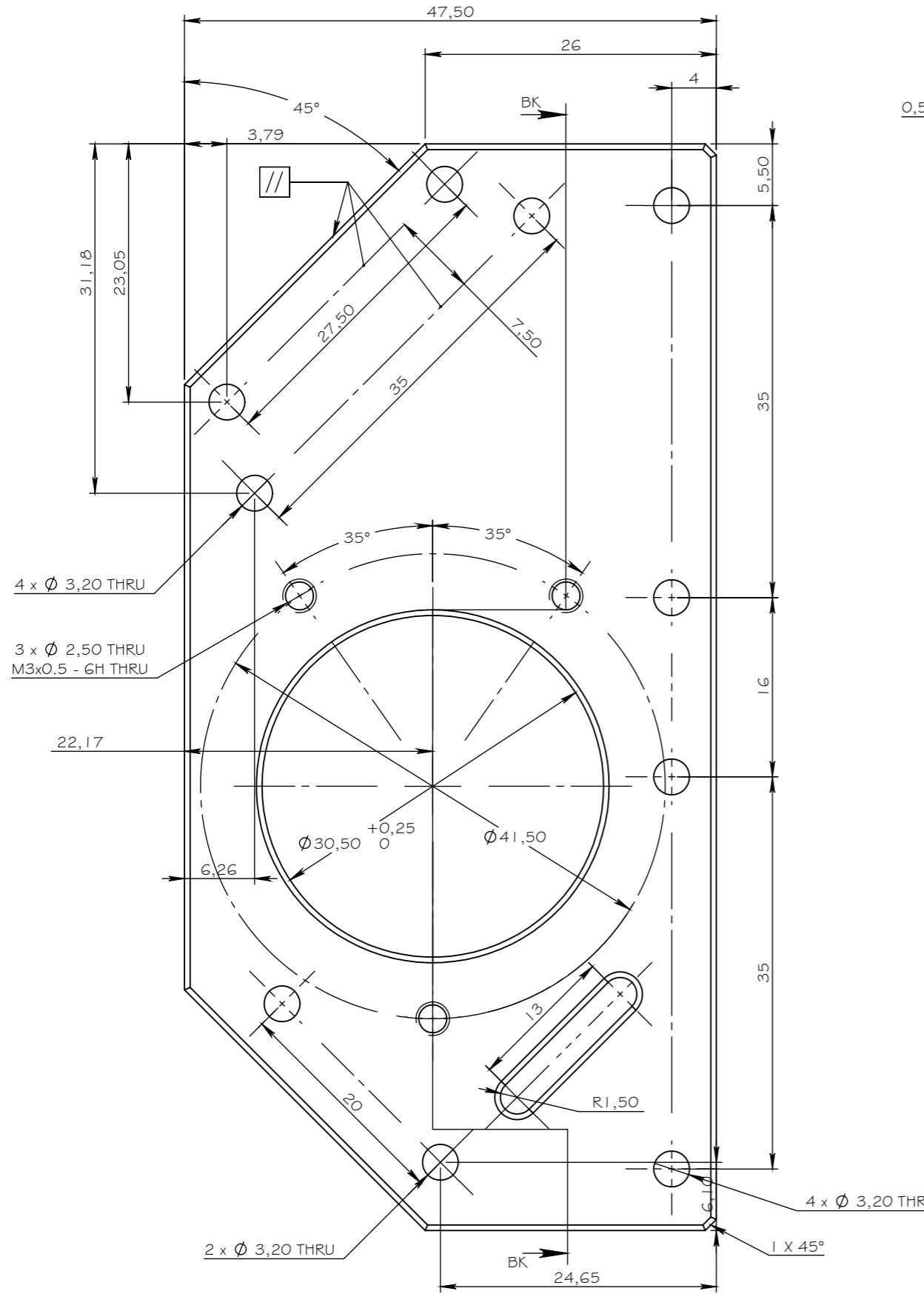
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Unit.: mm

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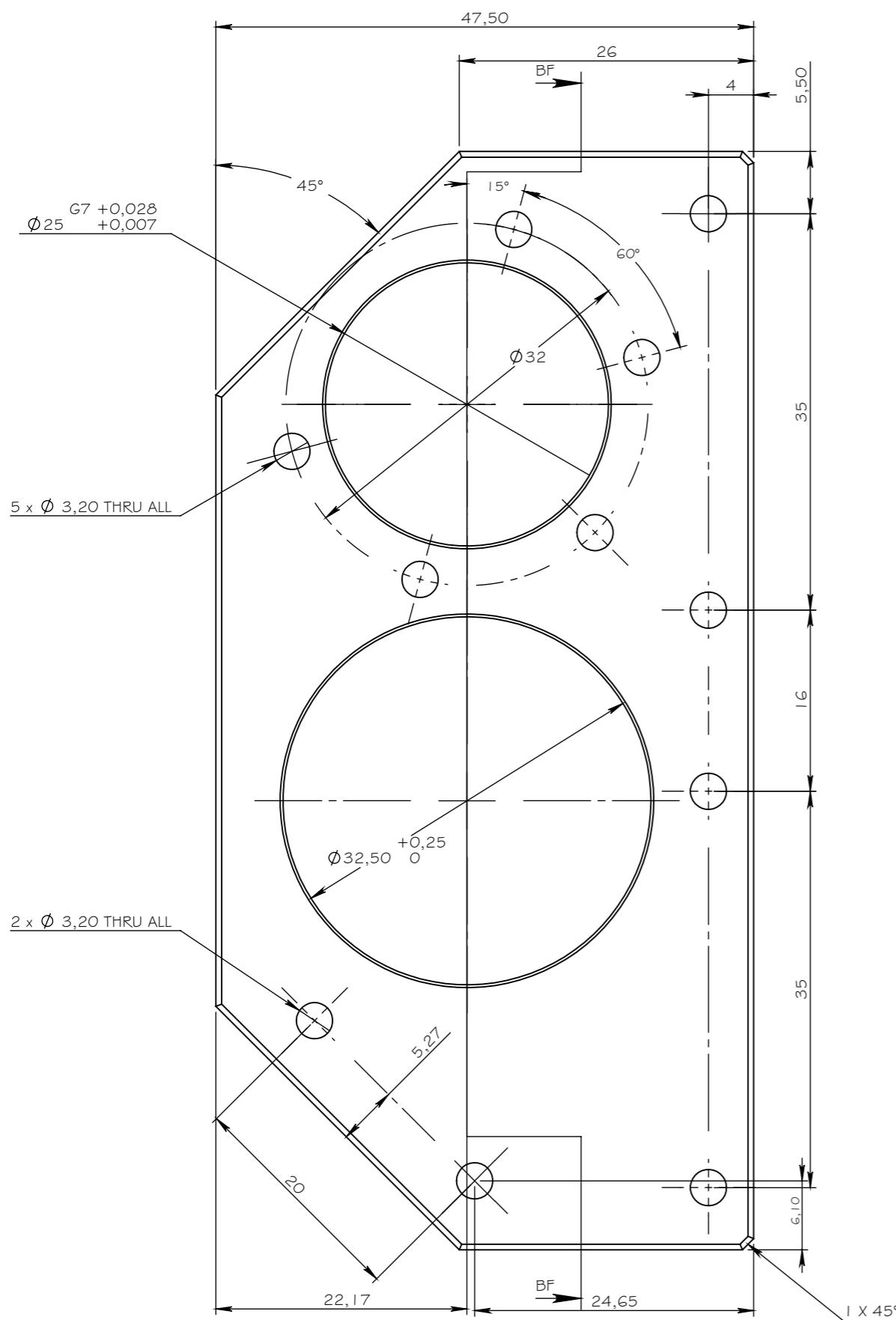


<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.1.5.1.02 - GIMBAL_ARM_SIDE_PLATE		Material: 7075-T6, Chapa (SS)	
Designed by: Guilherme Carvalho	Date: 03/01/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 10/01/2016	QTY: 8	Unit.: mm
		Sheet:	2G/65

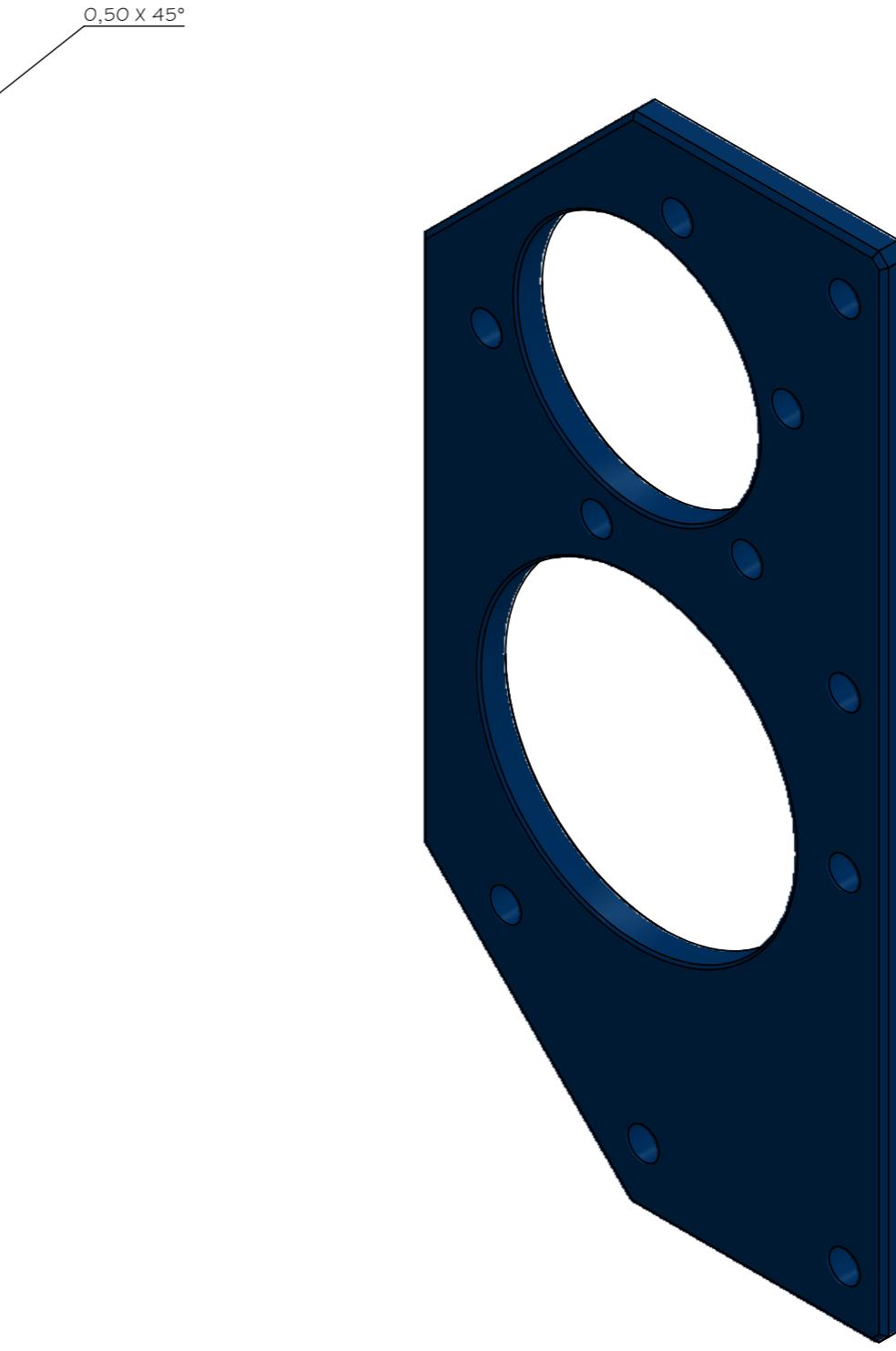
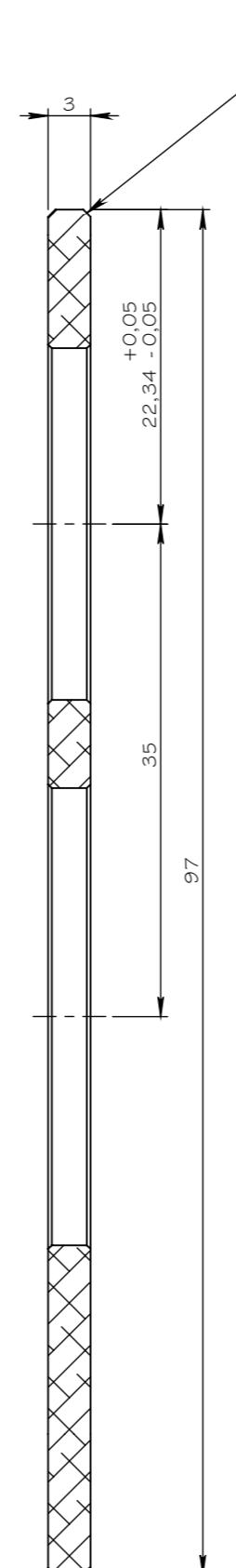
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SECTION BF-BF



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.1.03 - GIMBAL\_ARM\_HOLED\_SIDE\_PLATE

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Date: 04/01/2016

Rev.: A Scale.: 2:1 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 11/01/2016

QTY: 4 Unit.: mm

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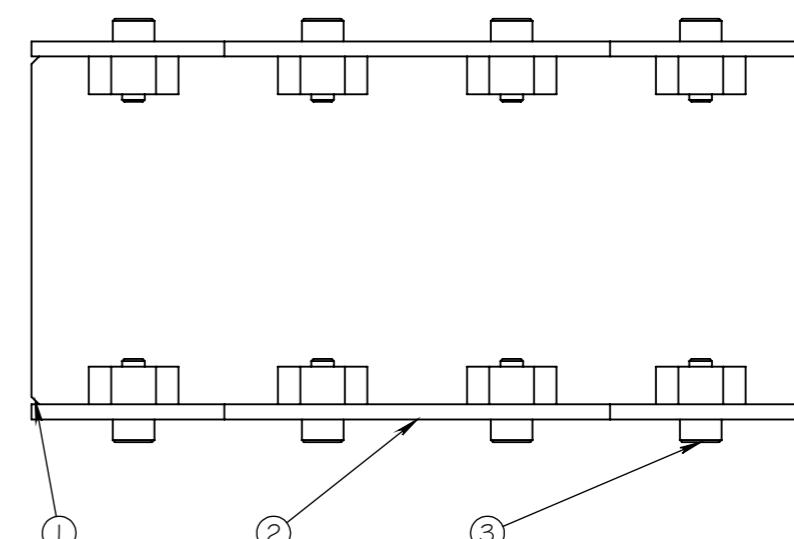
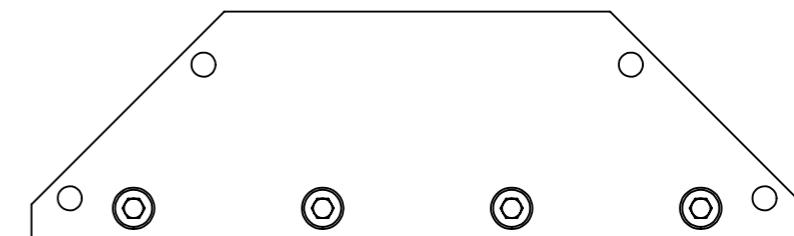
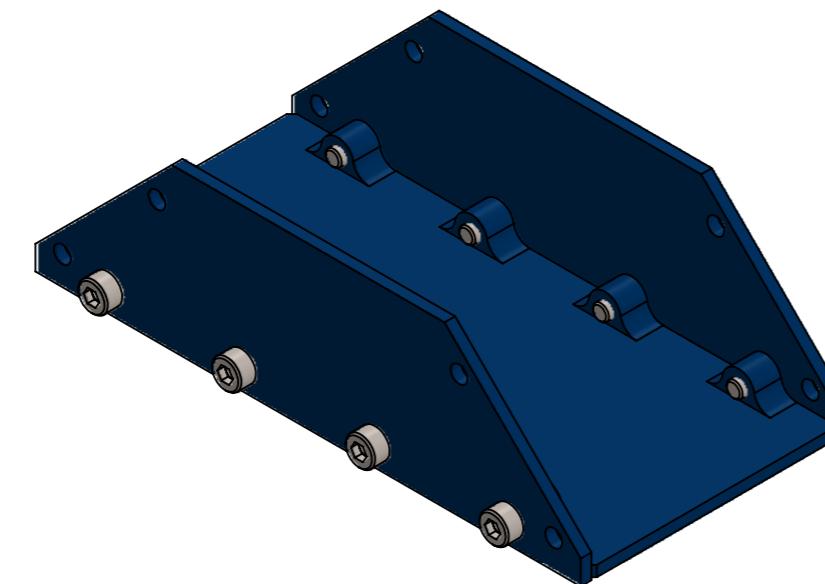
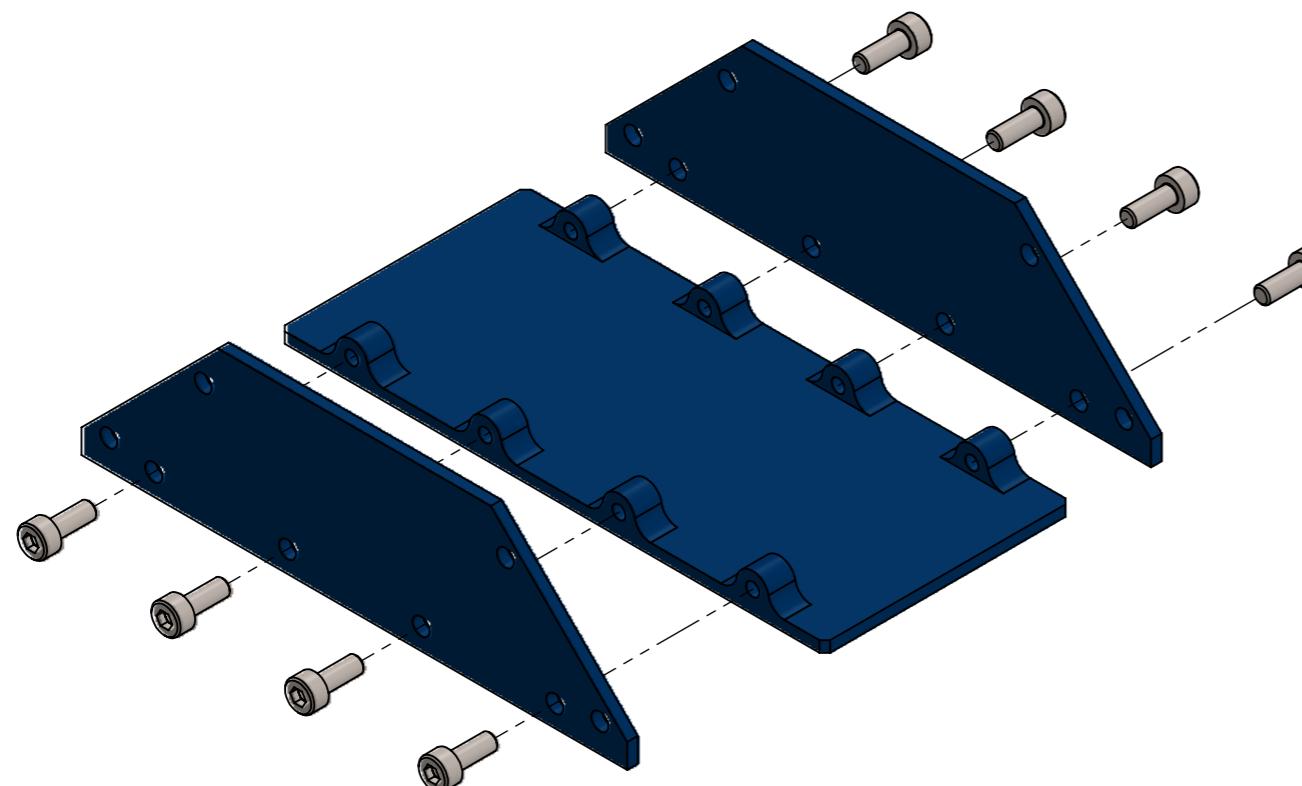
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ITEM	PART NUMBER - DESCRIPTION	QTY.
3	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	8
2	DR2.1.5.2.02 - GIMBAL_BOTTOM_SUPPORT_SIDE_PLATE	2
1	DR2.1.5.2.01 - GIMBAL_BOTTOM_SUPPORT_BASE	1



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DORIS Project

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Title: DR2.1.5.2 - GIMBAL\_BOTTOM\_SUPPORT

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 01/10/2016 QTY: 2 Unit.: mm

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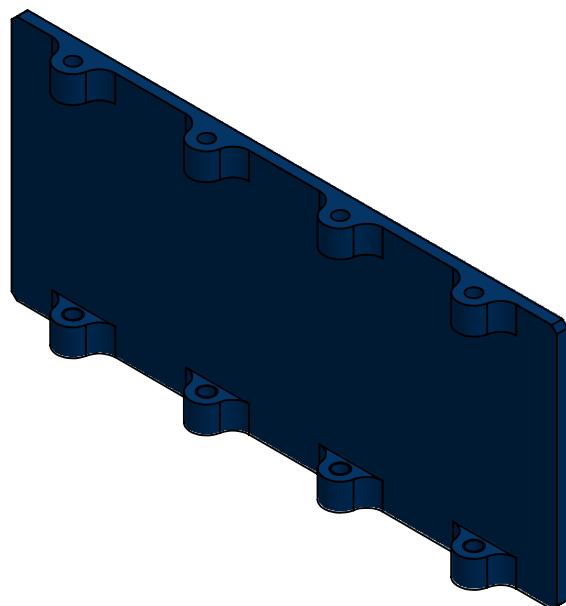
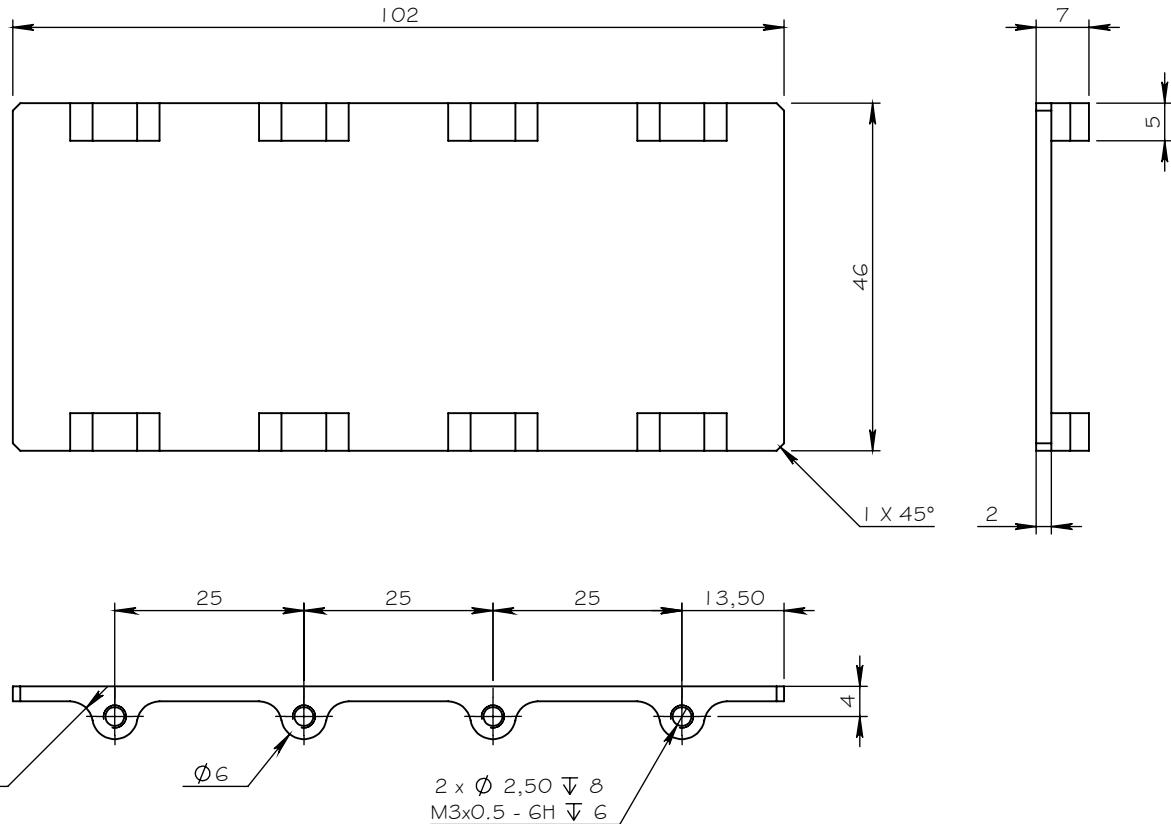
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**UFRJ**Instituto Alberto Luiz Coimbra da  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.2.01 - GIMBAL\_BOTTOM\_SUPPORT\_BASE

Material: 7075-T6, Plate (SS)

A

Designed by: Guilherme Carvalho

Date: 01/01/2016

Rev.: A

Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 01/11/2016

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Unit.: mm

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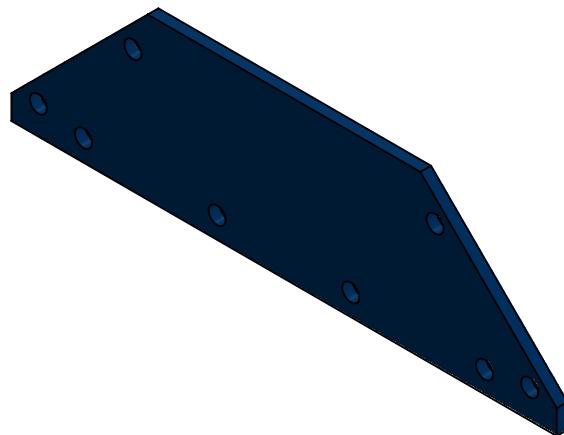
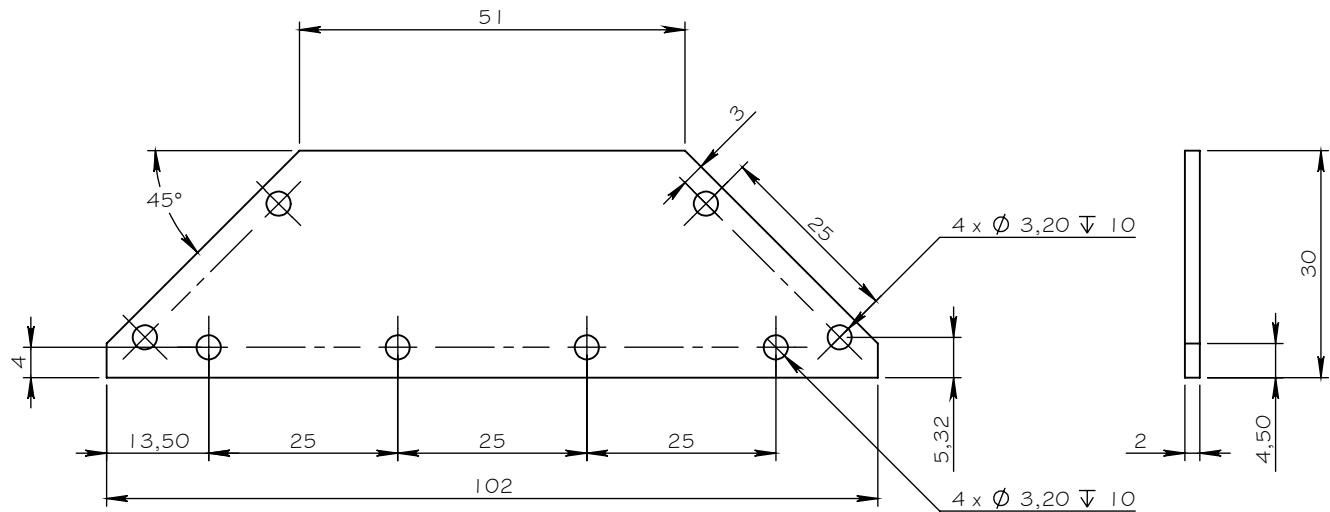
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.2.02 - GIMBAL\_BOTTOM\_SUPPORT\_SIDE\_PLATE Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho	Date: 01/01/2016	Rev.: A	Scale.: 1:1	Sheet: 30 / 65
Verified by: Ramon Romankevicius	Ver. date.: 01/11/2016	QTY: 4	Unit.: mm	

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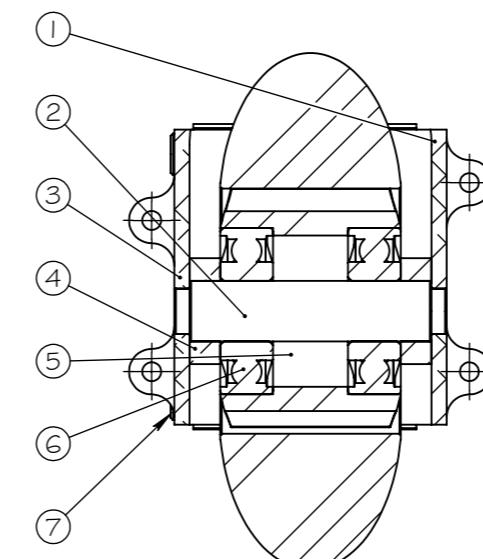
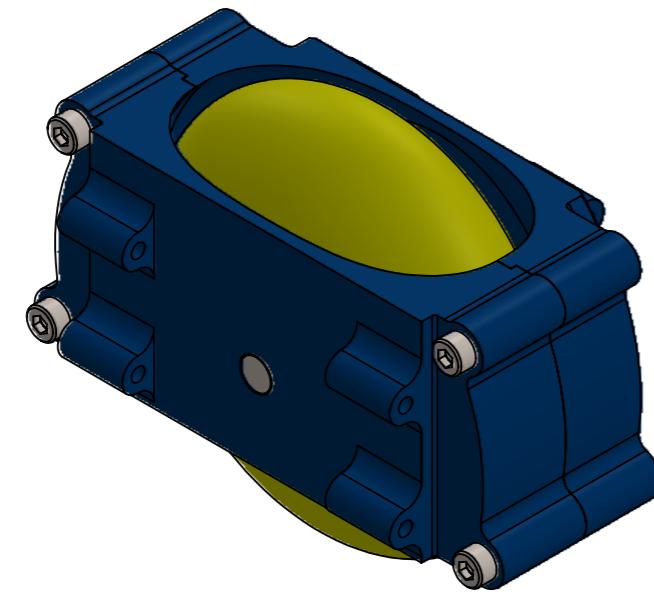
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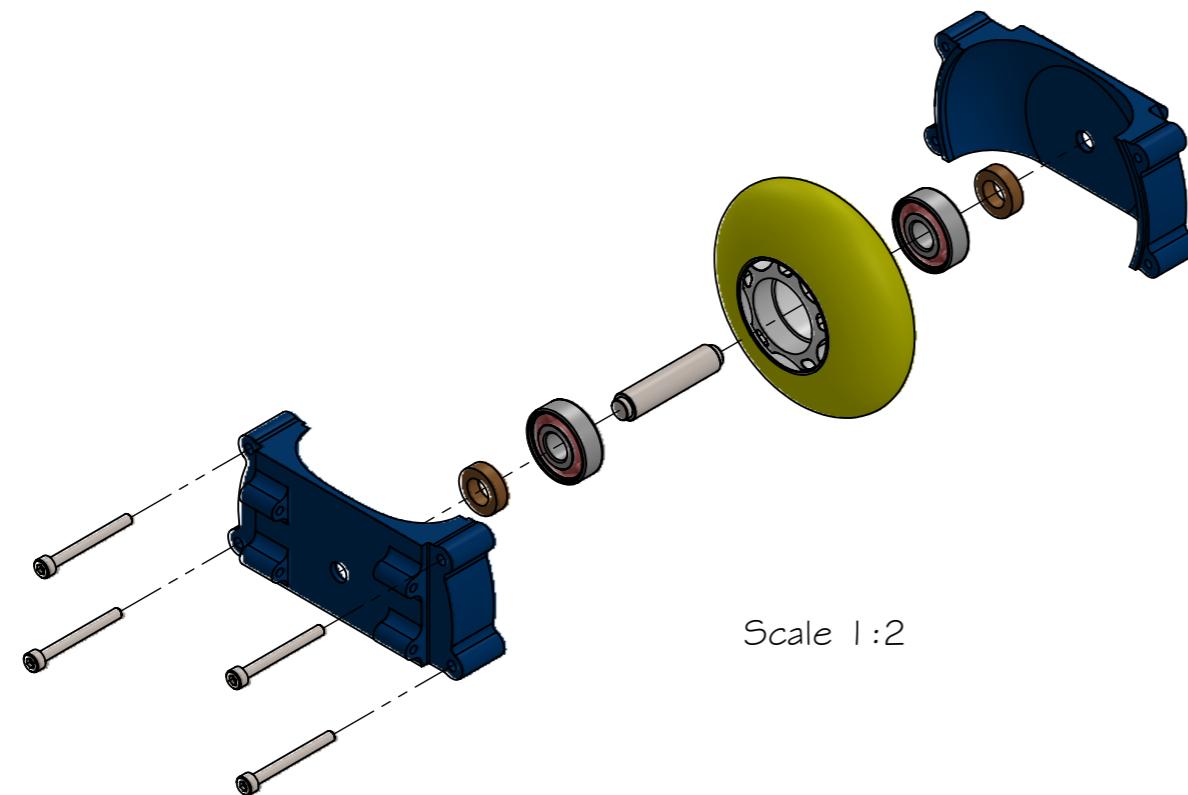
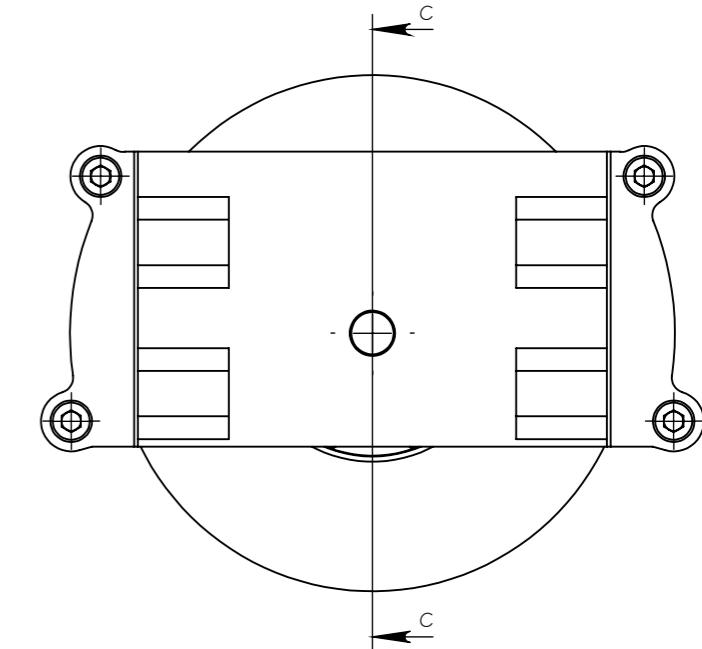
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SECTION C-C



Scale 1:2

ITEM	PART NUMBER - DESCRIPTION	QTY.
7	B18.3.1M - 3 x 0.5 x 30 Hex SHCS -- 18Nhx	4
6	608_BEARING	2
5	WHEEL_RINK_RAT_ENVY_XXX	1
4	DR2.1.5.3.04 - PASSIVE_WHEEL_SPACER	2
3	DR2.1.5.3.03 - PASSIVE_MODULAR_WHEEL_HOUSING_F	1
2	DR2.1.5.3.02 - PASSIVE_WHEEL_SHAFT	1
1	DR2.1.5.3.01 - PASSIVE_MODULAR_WHEEL_HOUSING_M	1



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UFRJ

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.3 - PASSIVE\_MODULAR\_WHEEL\_DOWN

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:1

Sheet:  
31/65

Verified by: Ramon Romankevicius

Ver. date.: 31/12/1799 QTY: 4 Unit.: mm

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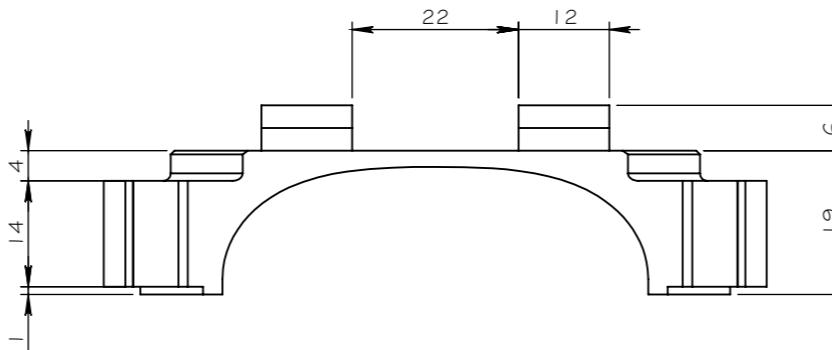
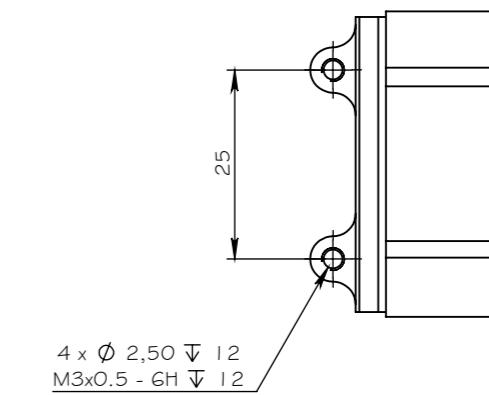
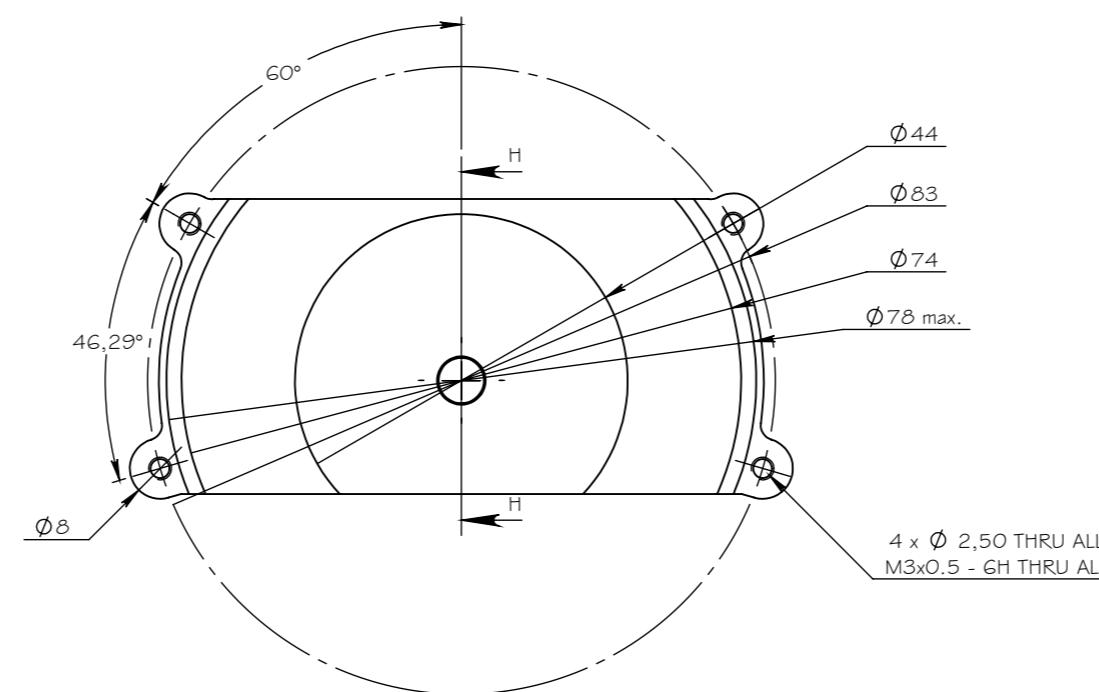
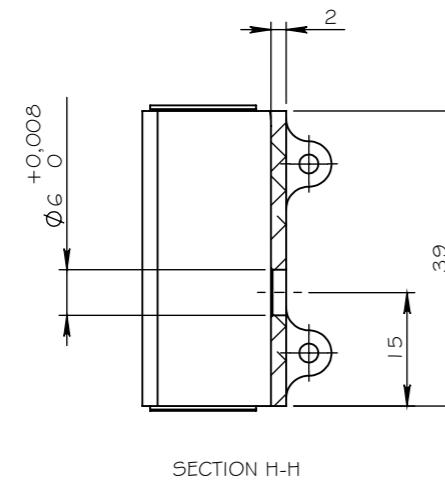
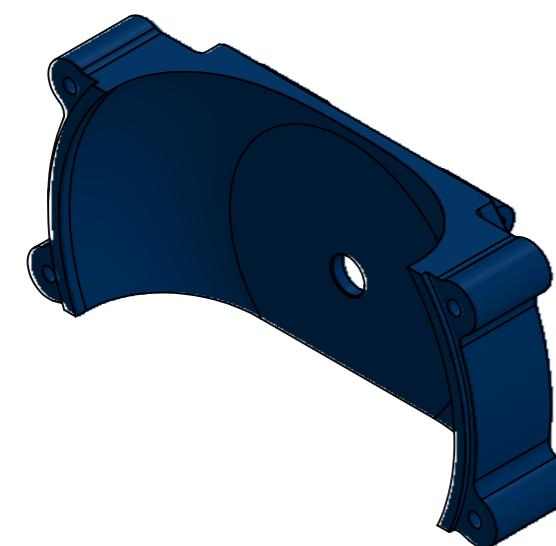
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COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.5.3.01 - PASSIVE_MODULAR_WHEEL_HOUSING_M		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho		Date: 01/11/2016	Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius		Ver. date.: 01/12/2016	QTY: 4 Unit.: mm
			32/65

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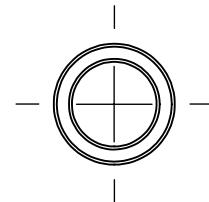
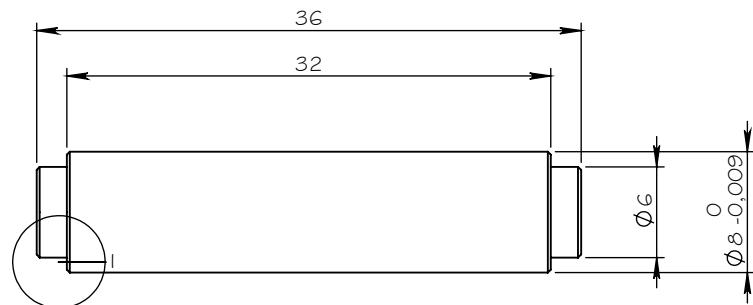
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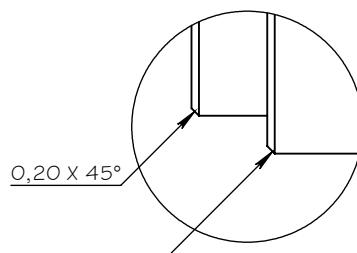


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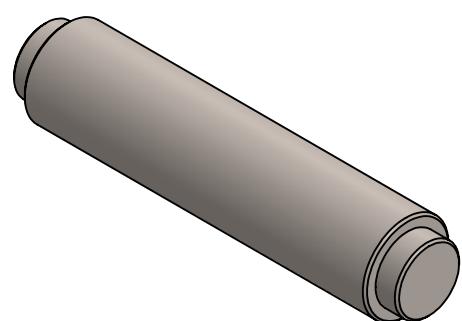
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DETAIL I  
SCALE 5 : 1



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**UFRJ**

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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.3.02 - PASSIVE\_WHEEL\_SHAFT

Material: 201 Annealed Stainless Steel (SS)

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Designed by: Guilherme Carvalho

Date: 01/01/2016

Rev.: A

Scale.: 1:1

Sheet:  
33 / 65

Verified by: Ramon Romankevicius

Ver. date.: 07/11/2016

QTY: 4

Unit.: mm

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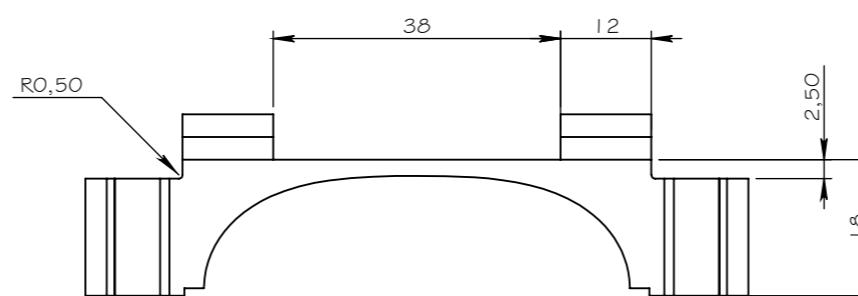
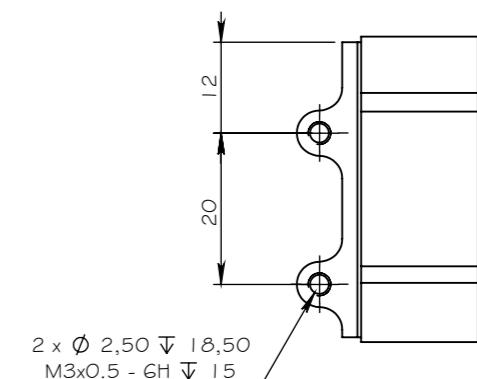
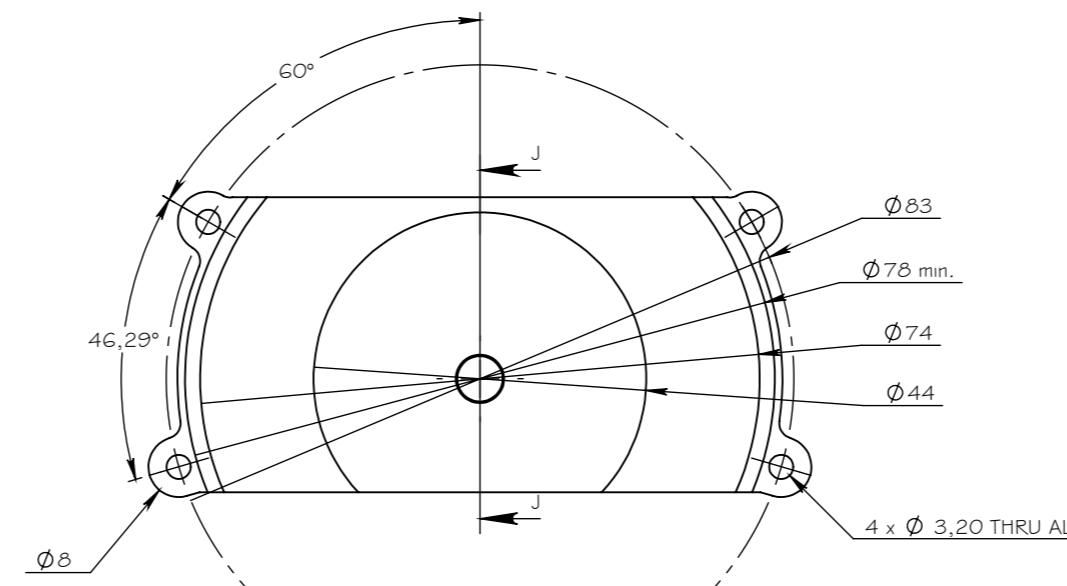
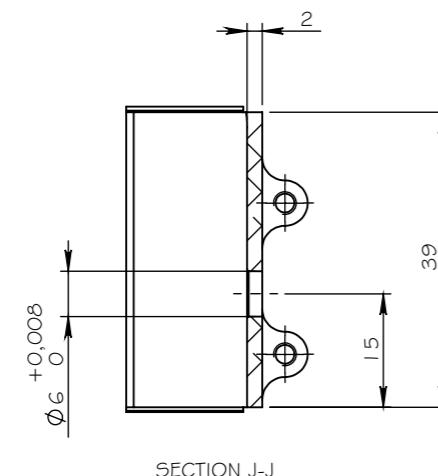
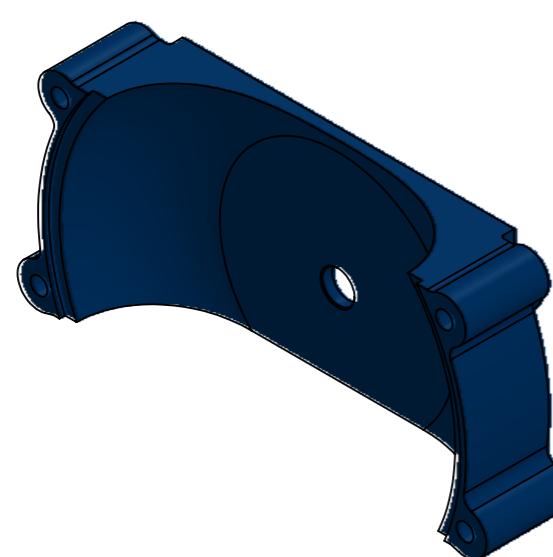
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<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.1.5.3.03 - PASSIVE_MODULAR_WHEEL_HOUSING_F		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho		Date: 01/01/2016	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 01/11/2016	Scale.: 1:1
		QTY: 4	Sheet: 34/65
		Unit.: mm	

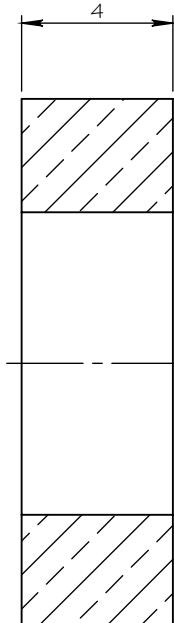
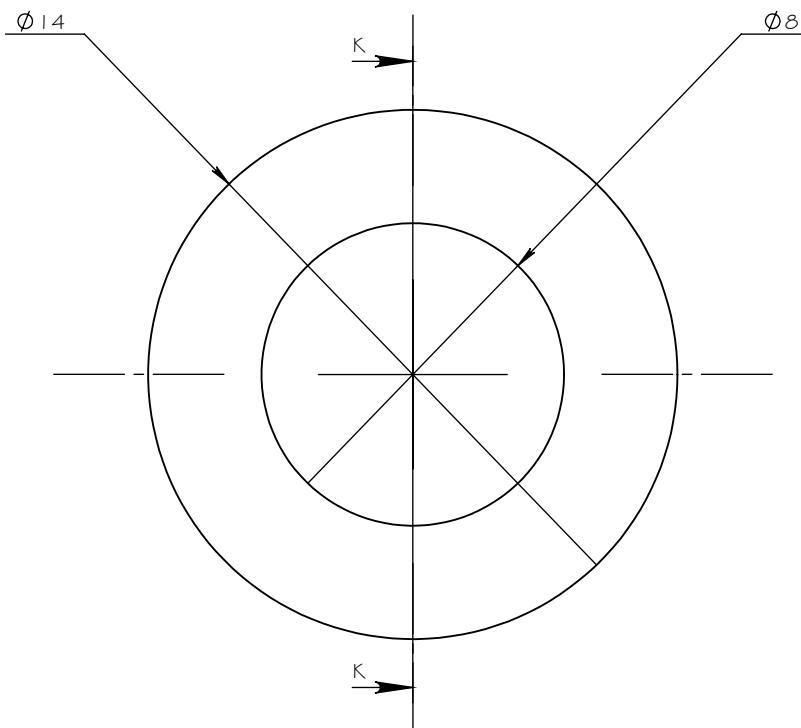
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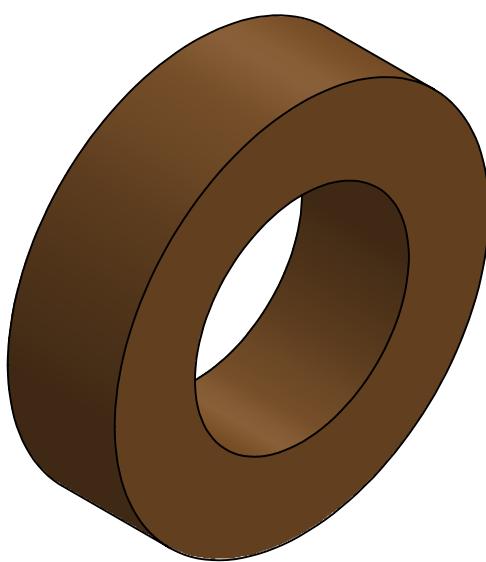
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SECTION K-K  
SCALE 5 : 1



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DORIS Project

Title: DR2.1.5.3.04 - PASSIVE\_WHEEL\_SPACER

Material: Bronze Alumínio

Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 1:1

Sheet:  
35 / 65

Verified by: Ramon Romankevicius

Ver. date.: 11/01/2016

QTY: 8

Unit.: mm

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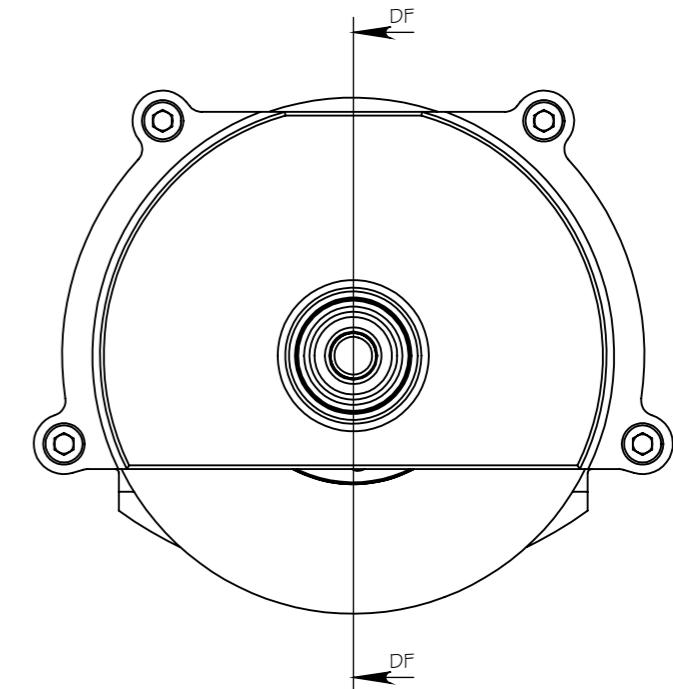
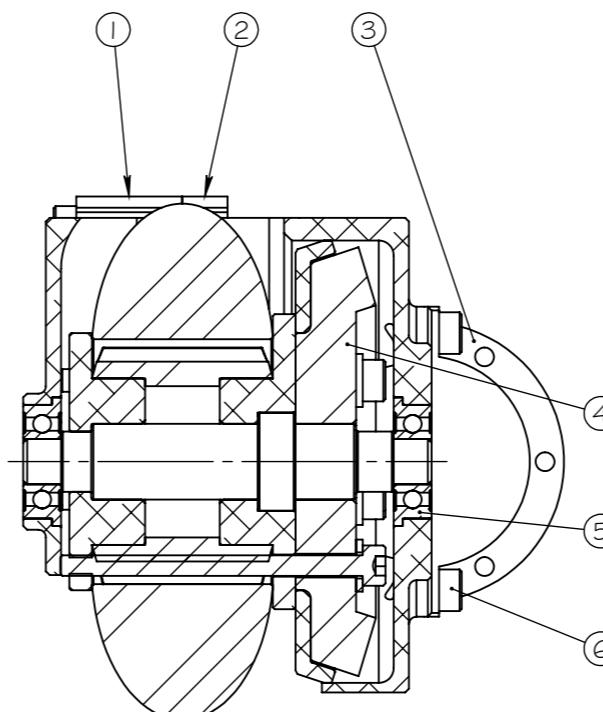
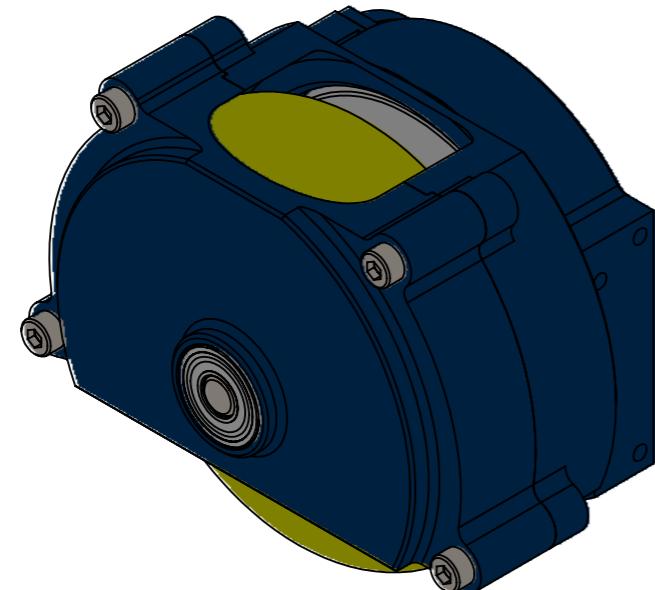
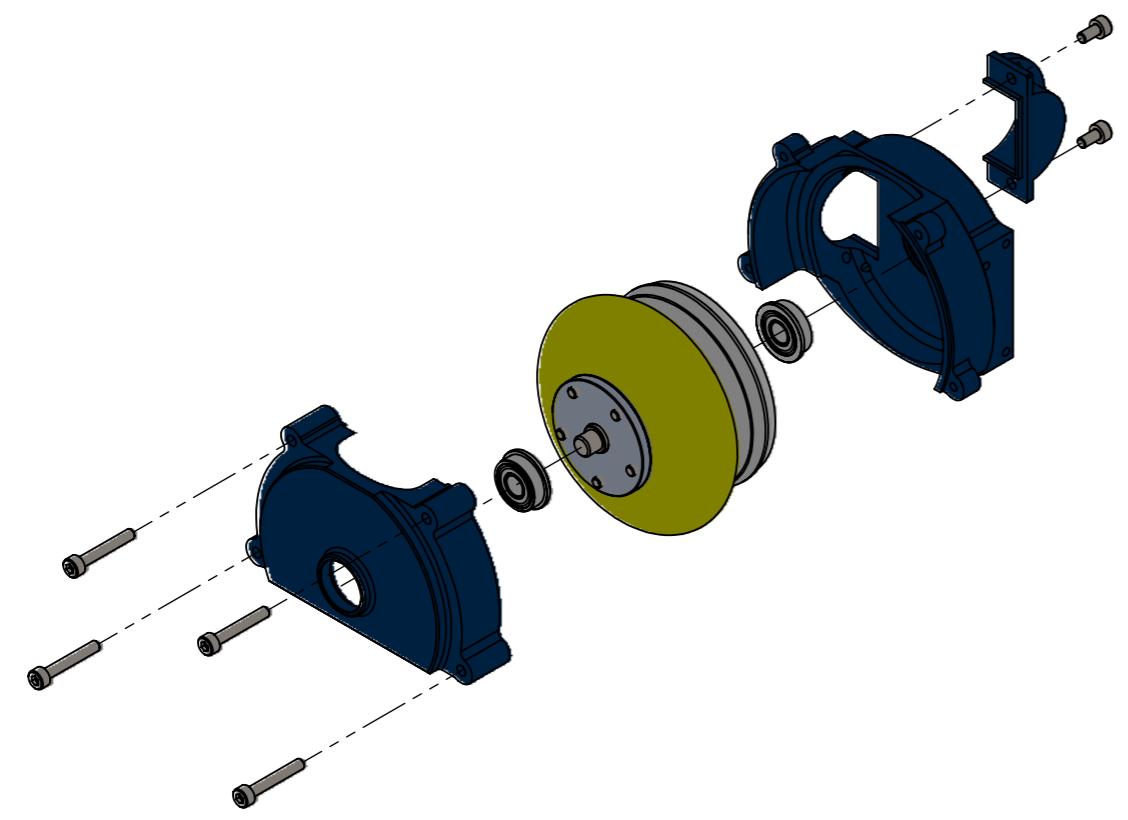
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ITEM	PART NUMBER - DESCRIPTION	QTY.
6	B18.3.1M - 3 x 0.5 x 6 Hex SHCS -- GNHX	6
5	BEARING_W-619-6_R-2Z	2
4	DR2.1.5.4.1 - WHEEL_SET	1
3	DR2.1.5.4.03 - ACTIVE_MODULAR_WHEEL_PINION_FLANGE	1
2	DR2.1.5.4.02 - ACTIVE_MODULAR_WHEEL_HOUSING_M_UL	1
1	DR2.1.5.4.01 - ACTIVE_MODULAR_WHEEL_HOUSING_F	1



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Instituto Alberto Luiz Coimbra de  
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Title: DR2.1.5.4 - ACTIVE\_MODULAR\_WHEEL\_UL

Material: Vários

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:1

Sheet:  
36/65

Verified by: Ramon Romankevicius

Ver. date.: 10/01/2016 QTY: 2 Unit.: mm

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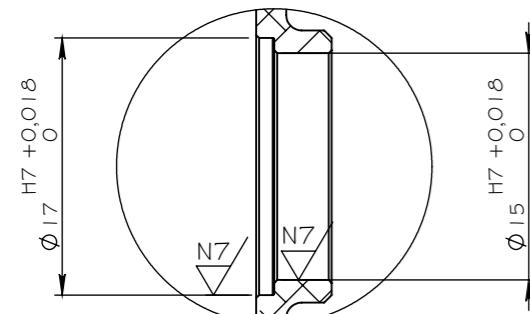
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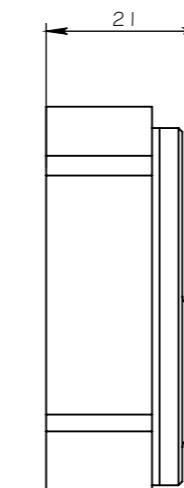
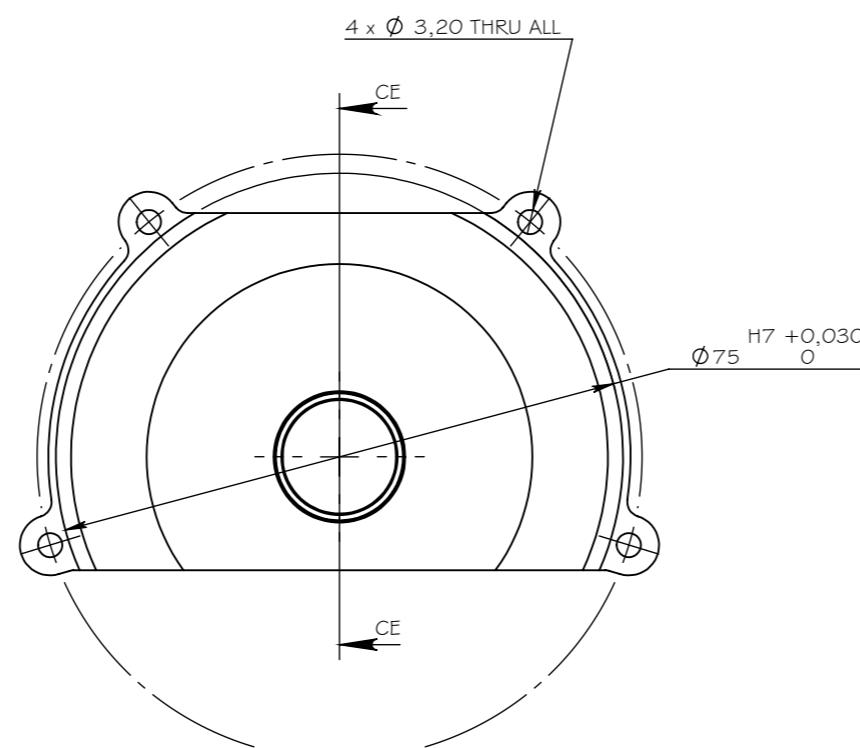
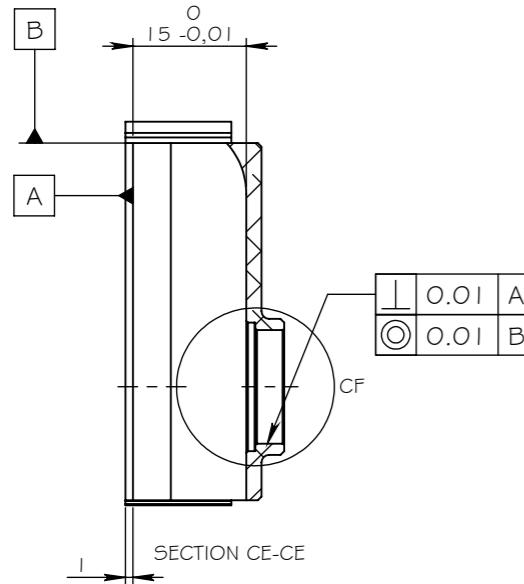
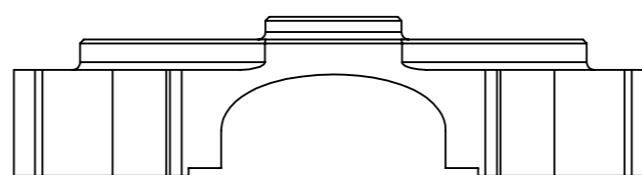
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DETAIL CF  
SCALE 2 : 1



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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.01 - ACTIVE\_MODULAR\_WHEEL\_HOUSING\_F

Material: 7075-T6, Plate (SS)

Designed by: Guilherme Carvalho

Rev.:

A

Scale.:

1:1

Sheet:  
37/65

Verified by: Ramon Romankevicius

QTY: 4

Unit.: mm

Ver. date.: 11/01/2016

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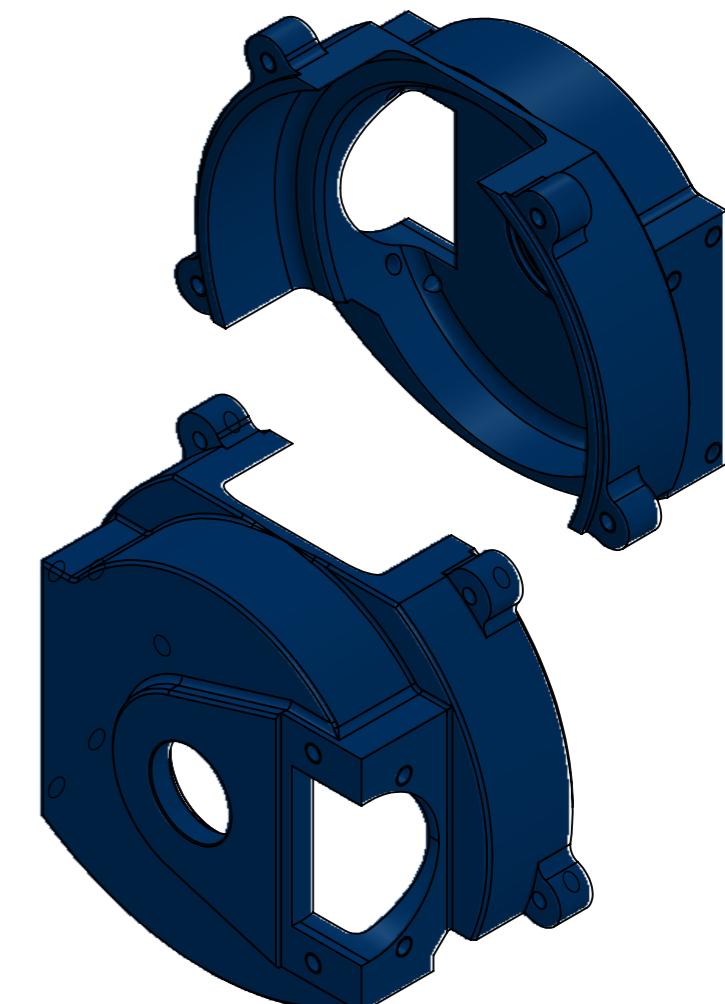
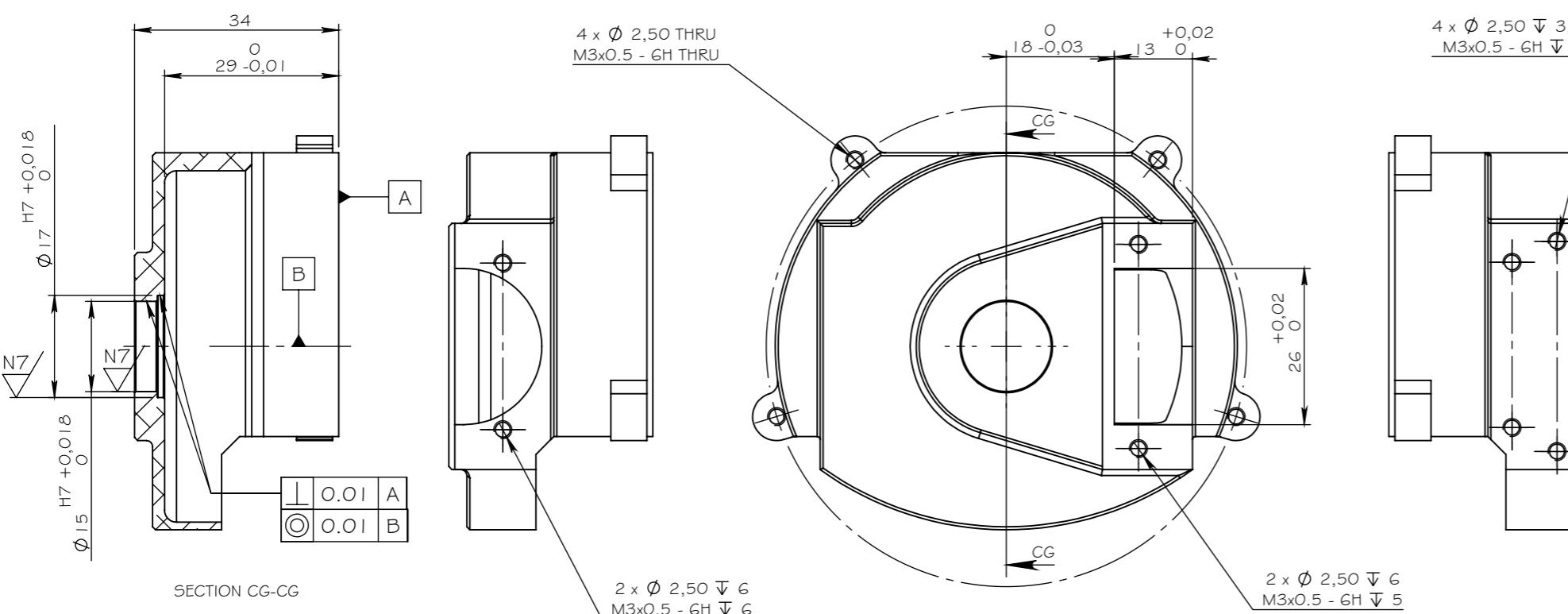
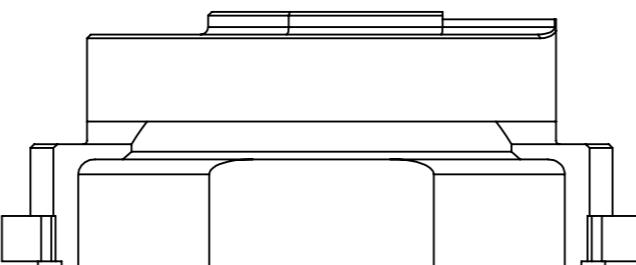
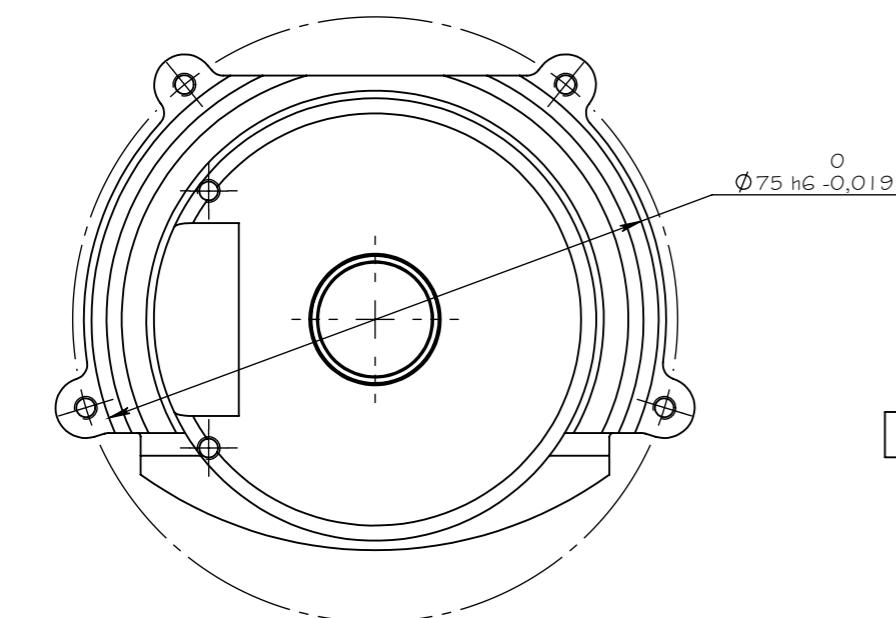
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.5.4.02 - ACTIVE_MODULAR_WHEEL_HOUSING_M_UL		Material: 7075-T6, Chapa (SS)	
Designed by: Guilherme Carvalho	Date: 16/12/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 2	Unit.: mm
		Sheet: 38/65	

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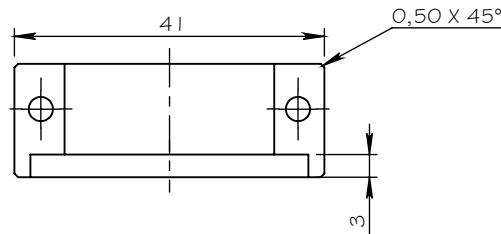
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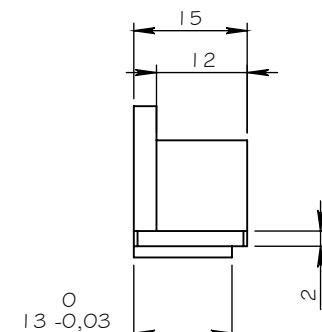
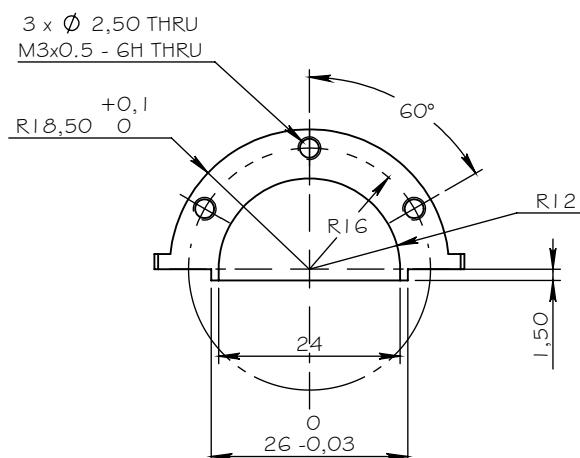
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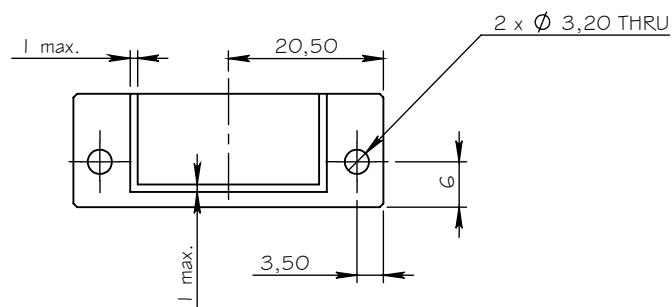
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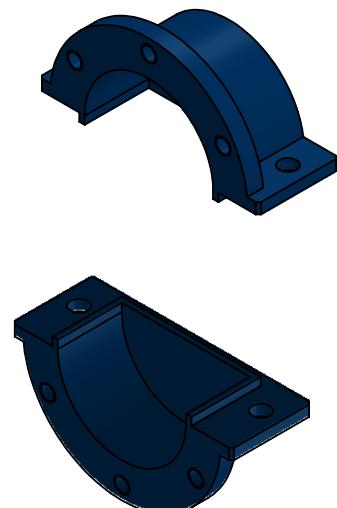
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.03 - ACTIVE\_MODULAR\_WHEEL\_PINION\_FLANGE | Material: 7075-T6, Chapa (SS)

Designed by: Guilherme Carvalho	Date: 16/12/2015	Rev.: A	Scale.: 1:1	Sheet: 39 / 65
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 4	Unit.: mm	

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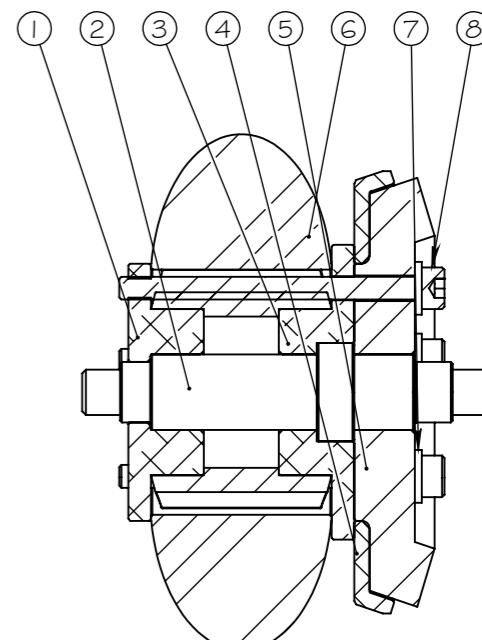
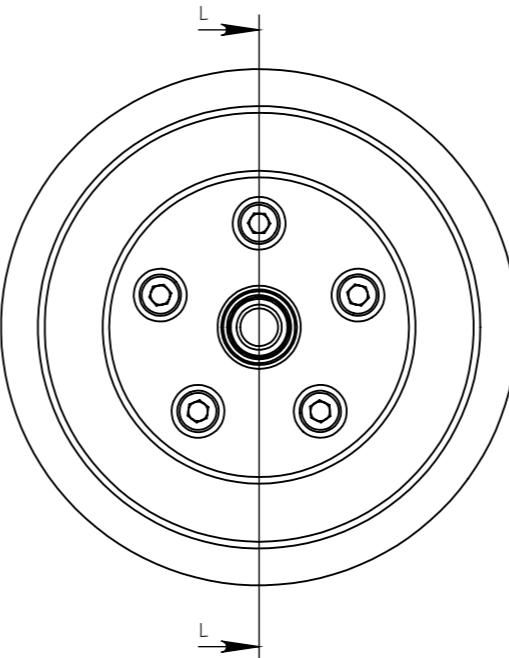
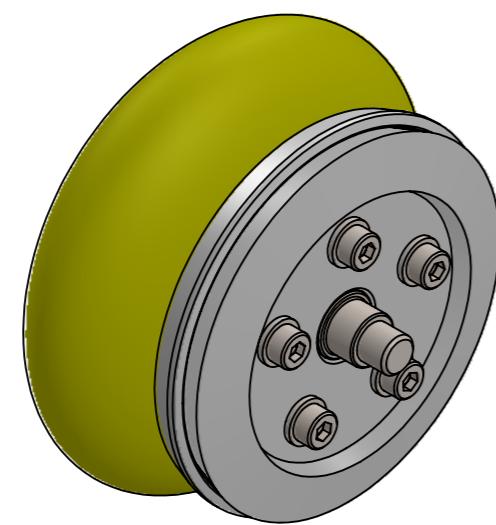
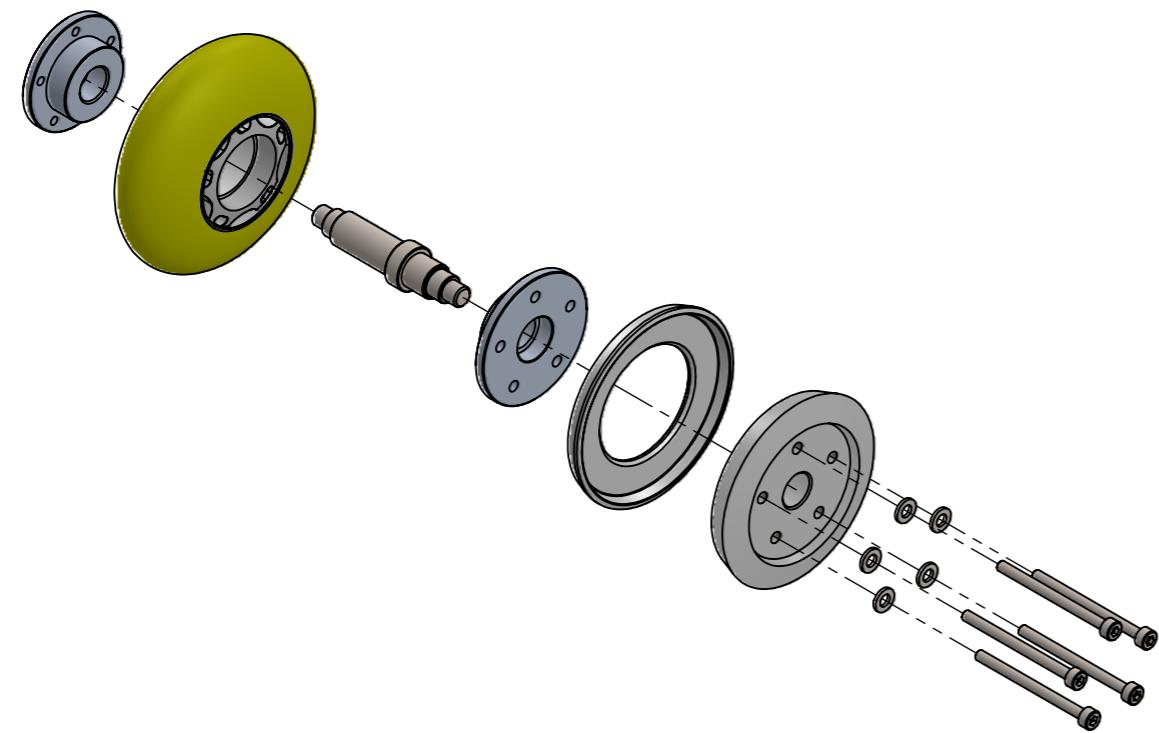
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SECTION L-L

ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.3.1M - 3 x 0.5 x 40 Hex SHCS -- 18NHX	5
7	B18.22M - Plain washer, 3 mm, narrow	5
6	WHEEL_RINK_RAT_ENVY_XXX	1
5	DR2.1.5.4.1.05 - BEVEL_GEAR_SB1.25-4515	1
4	DR2.1.5.4.1.04 - WAX_COVERING	1
3	DR2.1.5.4.1.03 - ACTIVE_WHEEL_SPACER	1
2	DR2.1.5.4.1.02 - ACTIVE_WHEEL_SHAFT	1
1	DR2.1.5.4.1.01 - ACTIVE_WHEEL_HUBCAP	1



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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1 - WHEEL\_SET

Material: Various

Designed by: Guilherme Carvalho

Date: 01/01/2016

Rev.: A

Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 01/11/2016

QTY: 4

Unit.: mm

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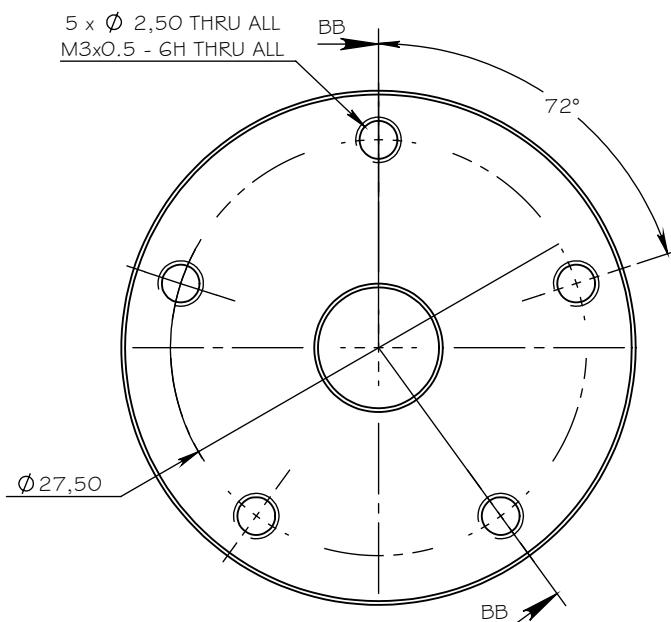
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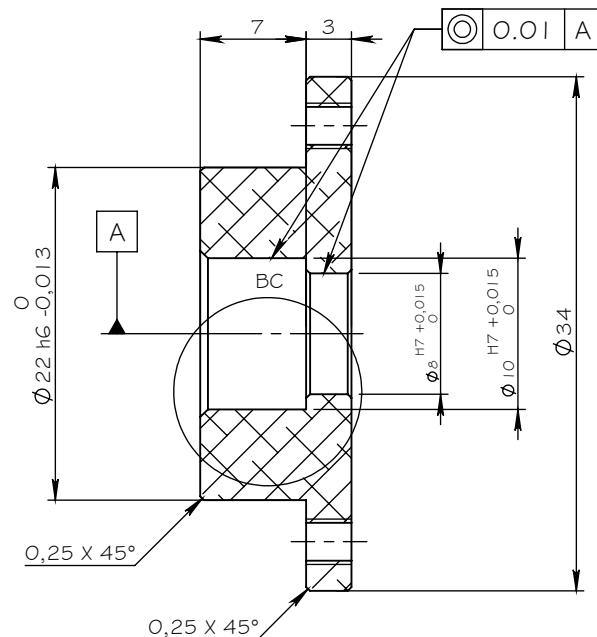
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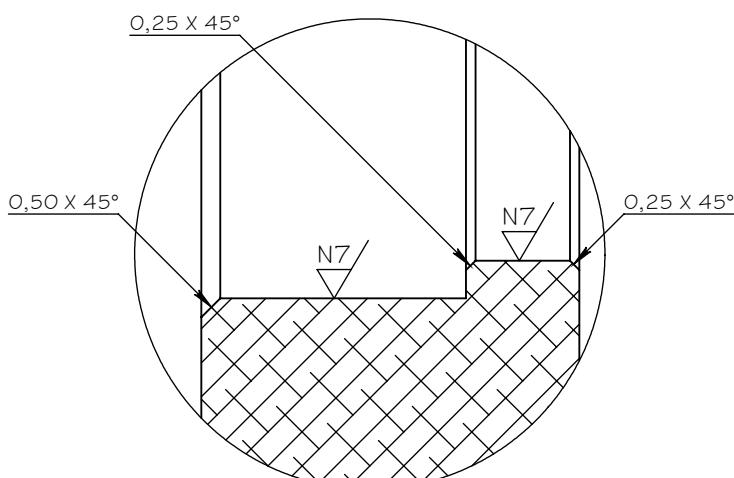
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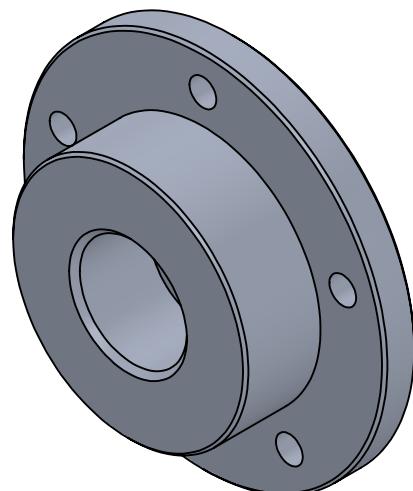
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DETAIL BC  
SCALE 5 : 1



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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1.01 - ACTIVE\_WHEEL\_HUBCAP

Material: 7075-T6 (SN)

A

Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 2:1

Sheet:

41 / 65

Verified by: Ramon Romankevicius

Ver. date.: 11/01/2016

QTY: 4

Unit.: mm

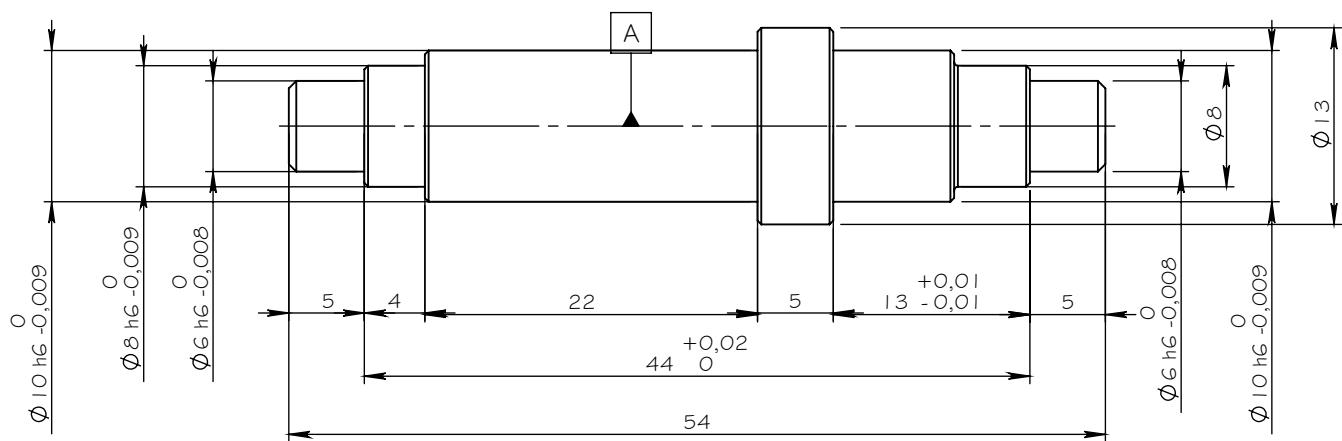
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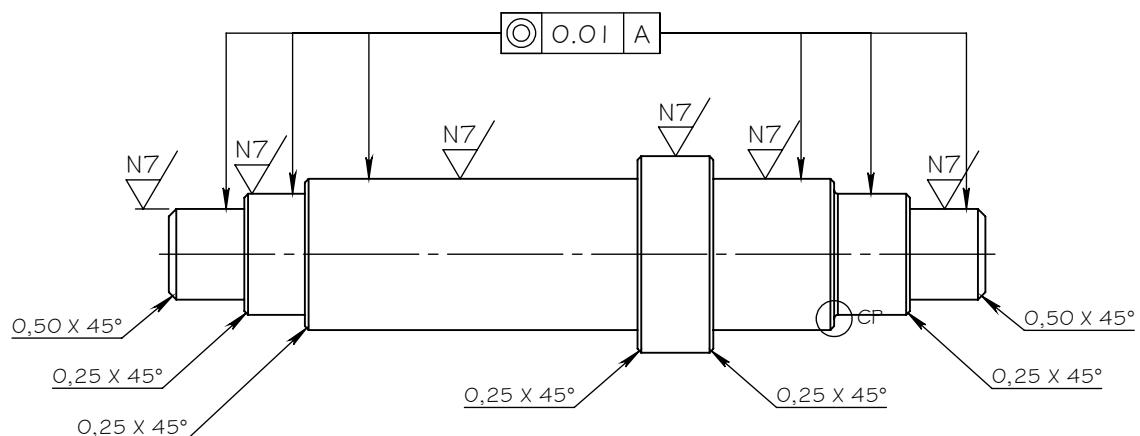


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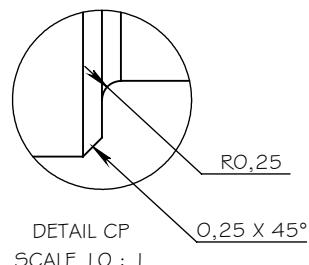
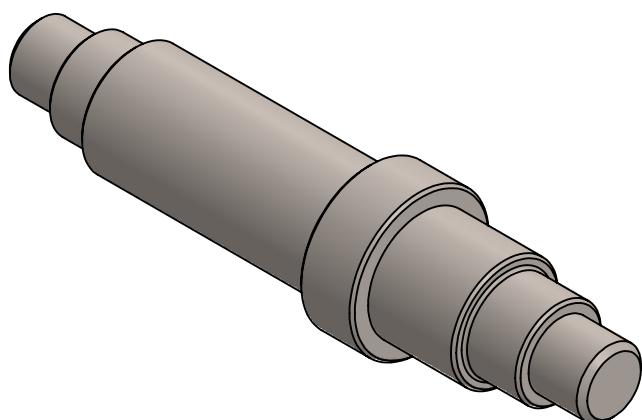


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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1.02 - ACTIVE\_WHEEL\_SHAFT

Material: 201 Annealed Stainless Steel (SS)

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Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 2:1

Sheet:

42 / 65

Verified by: Ramon Romankevicius

Ver. date.: 11/01/2016

QTY: 4

Unit.: mm

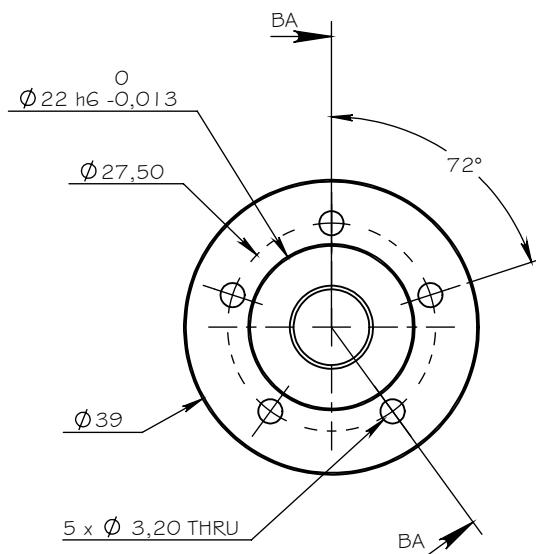
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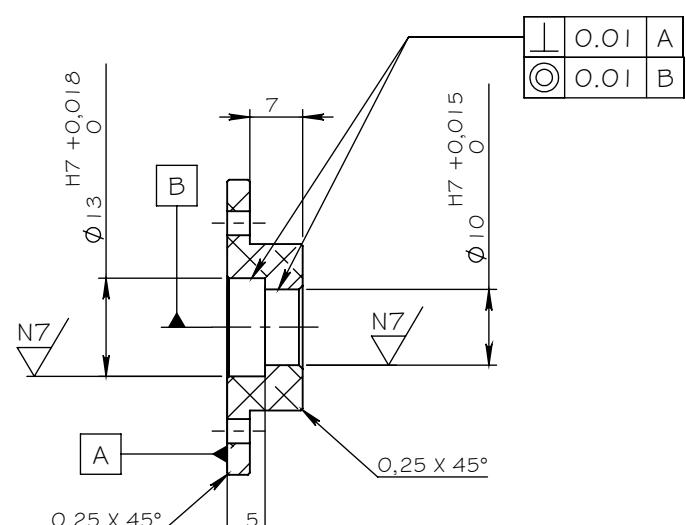
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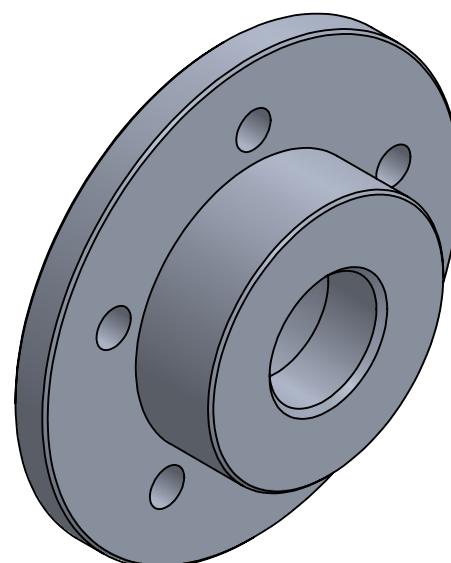
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SECTION BA-BA

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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1.03 - ACTIVE\_WHEEL\_SPACER

Material: 7075-T6 (SN)

A

Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 1:1

Sheet:  
43 / 65

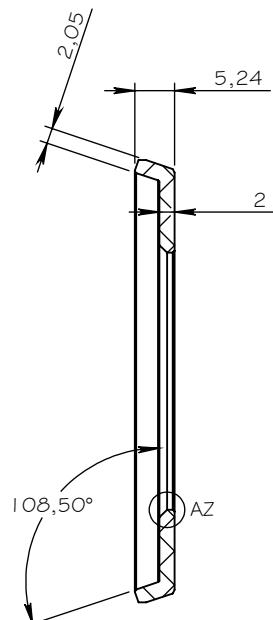
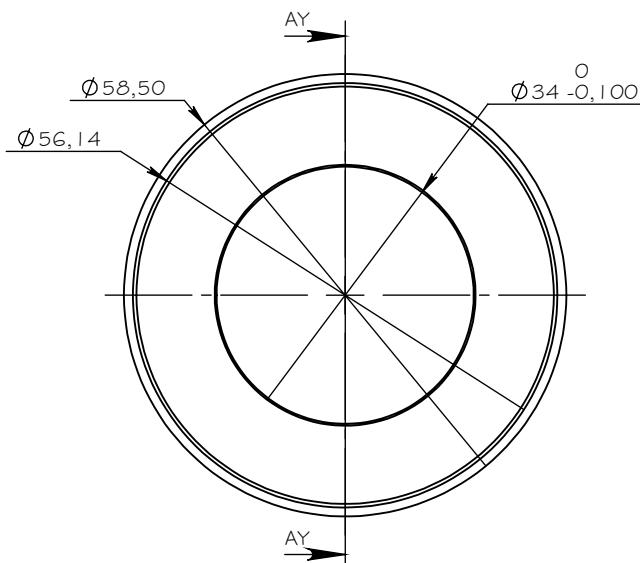
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Ver. date.: 11/01/2016

QTY: 4

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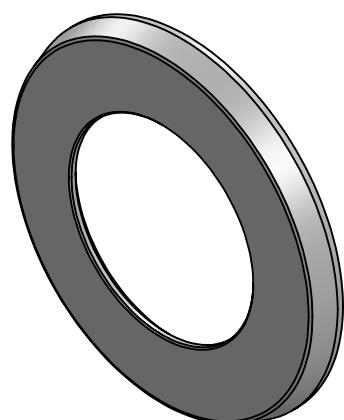
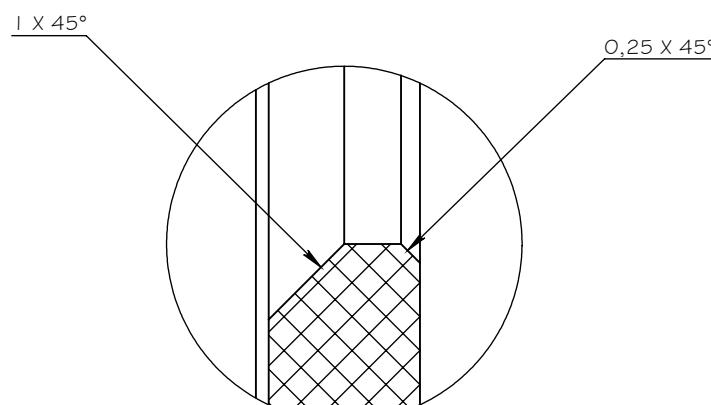
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1.04 - WAX\_COVERING

Material: PTFE (geral)

Designed by: Guilherme Carvalho

Date: 16/12/2015

Rev.: A

Scale.: 1:1

Sheet:  
44 / 65

Verified by: Ramon Romankevicius

Ver. date.: 11/01/2016

QTY: 4

Unit.: mm

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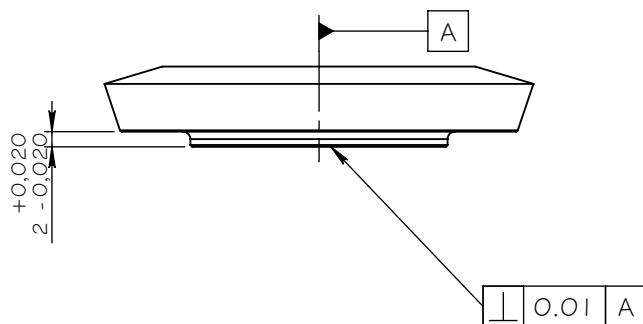
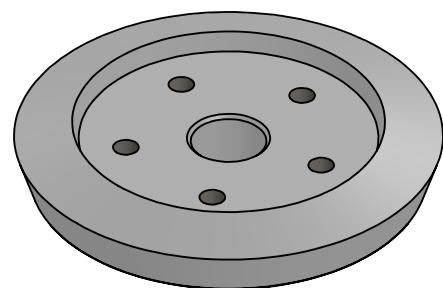
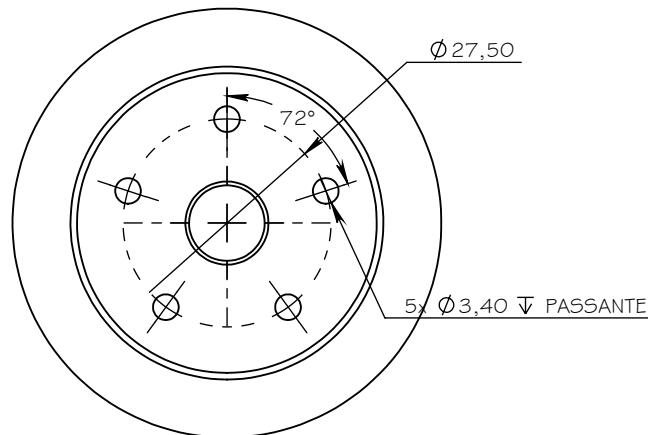
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.4.1.05 - BEVEL\_GEAR\_SB1.25-4515

Material: AISI 1045 Steel, cold drawn

Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Scale.: 1:1

Sheet:  
45 / 65

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 4

Unit.: mm

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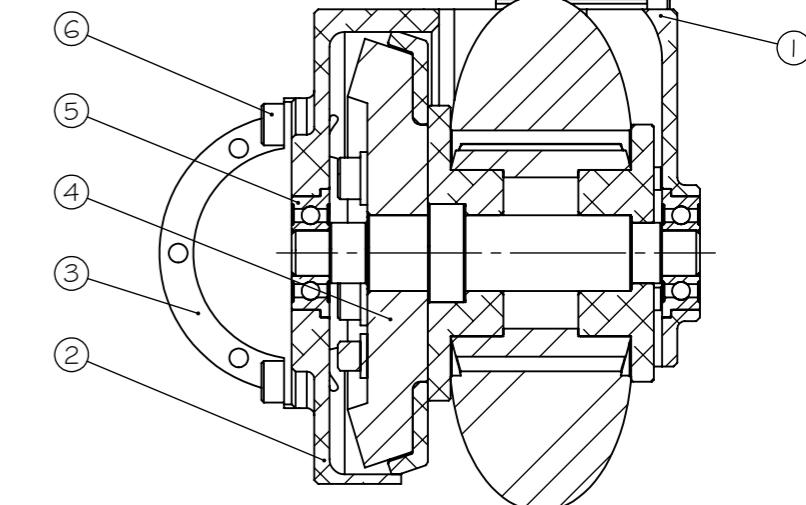
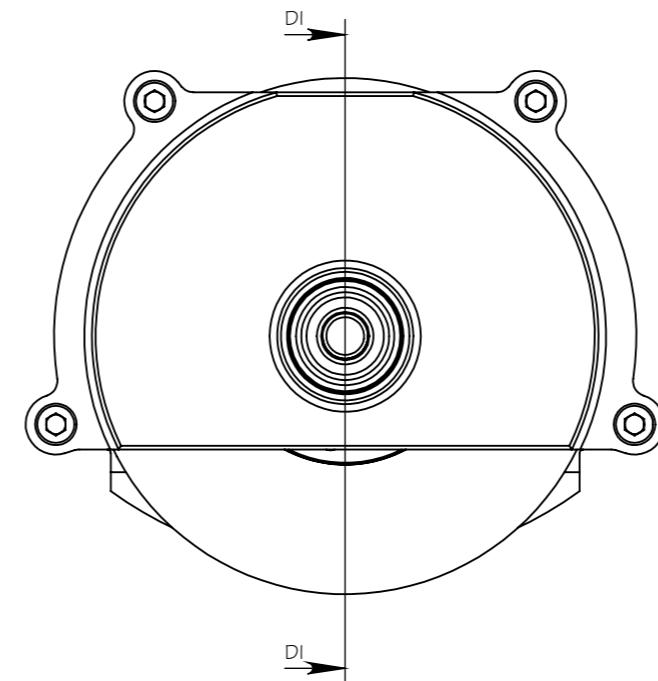
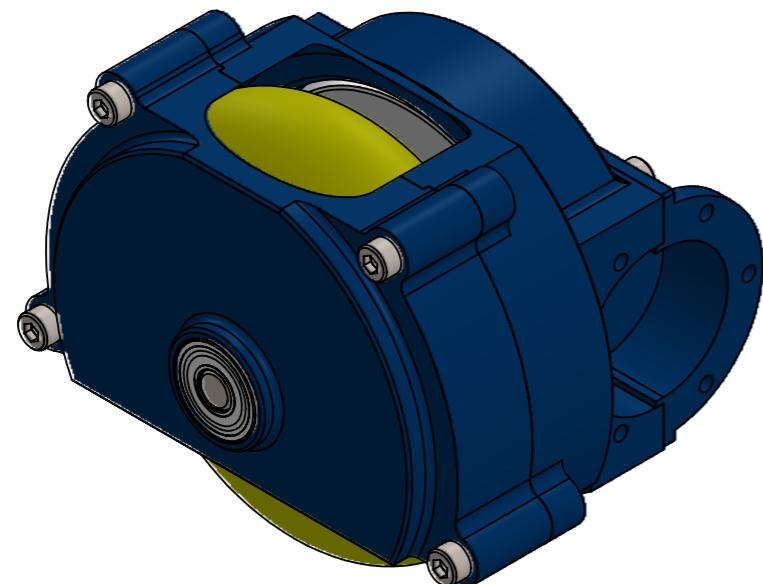
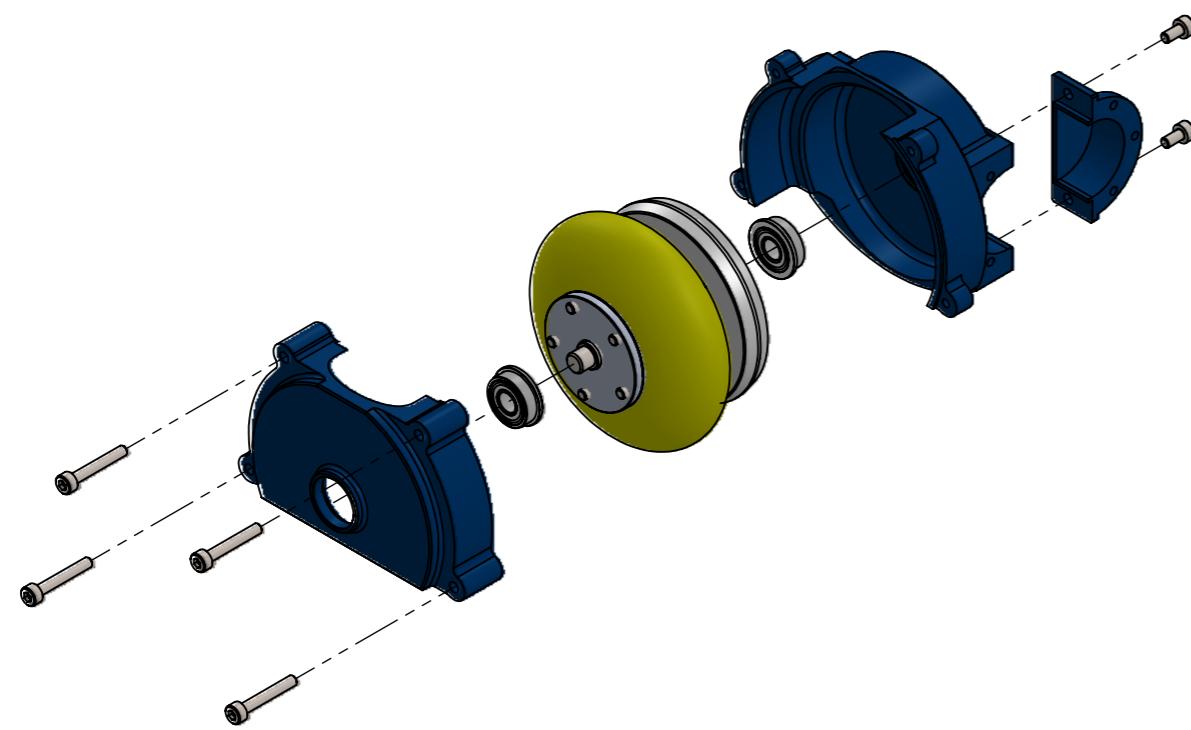
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ITEM	PART NUMBER - DESCRIPTION	QTY.
6	B18.3.1M - 3 x 0.5 x 6 Hex SHCS -- GNHX	6
5	BEARING_W-619-6_R-2Z	2
4	DR2.1.5.4.1 - WHEEL_SET	1
3	DR2.1.5.4.03 - ACTIVE_MODULAR_WHEEL_PINION_FLANGE	1
2	DR2.1.5.5.01 - ACTIVE_MODULAR_WHEEL_HOUSING_M_UR	1
1	DR2.1.5.4.01 - ACTIVE_MODULAR_WHEEL_HOUSING_F	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.1.5.5 - ACTIVE\_MODULAR\_WHEEL\_UR

Material: Various

Designed by: Guilherme Carvalho

Date: 13/12/2015

Rev.: A

Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

QTY: 2

Unit.: mm

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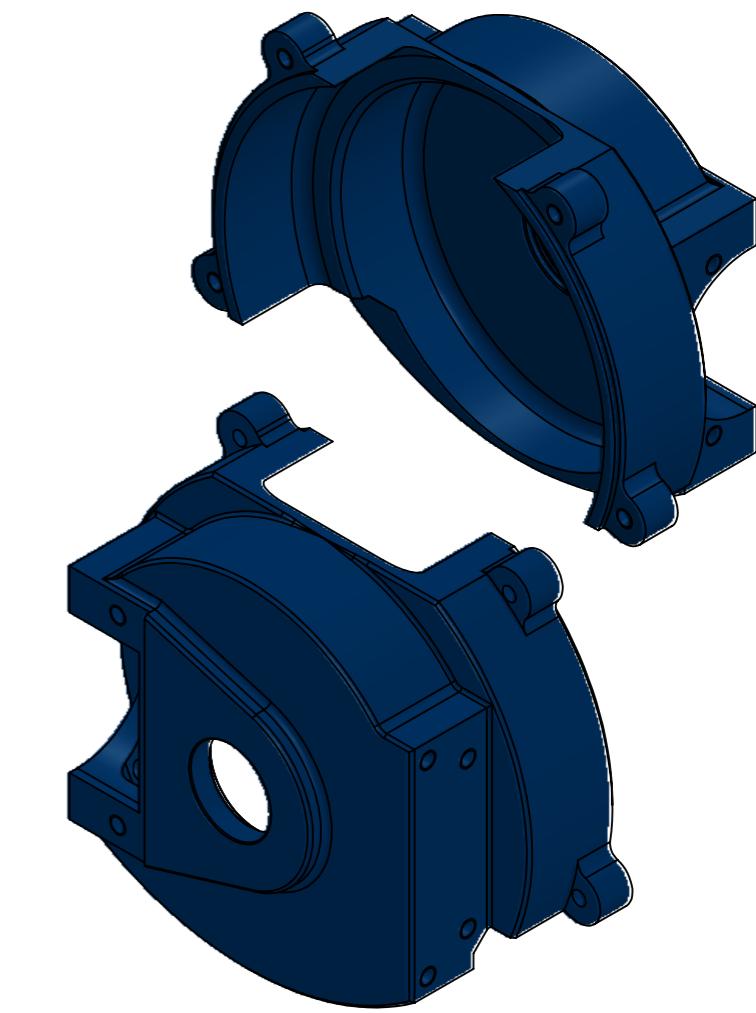
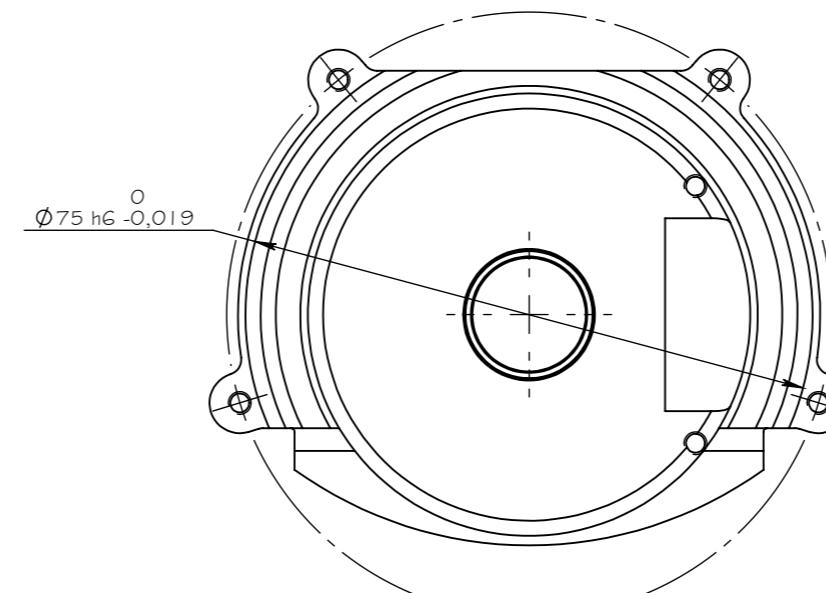
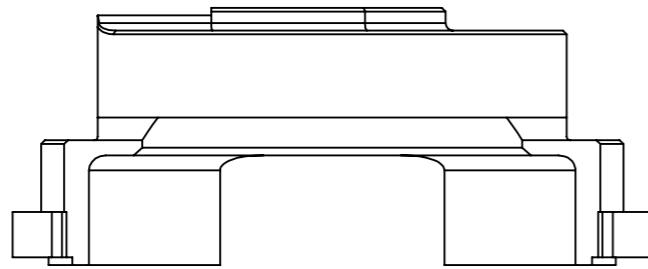
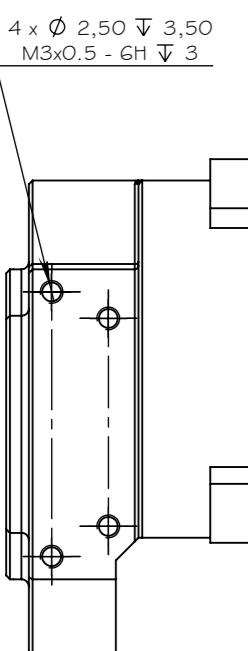
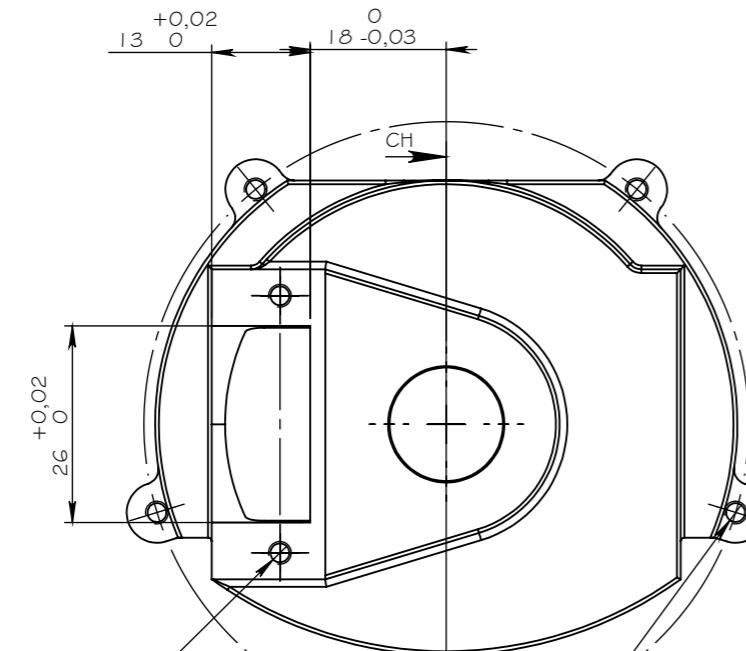
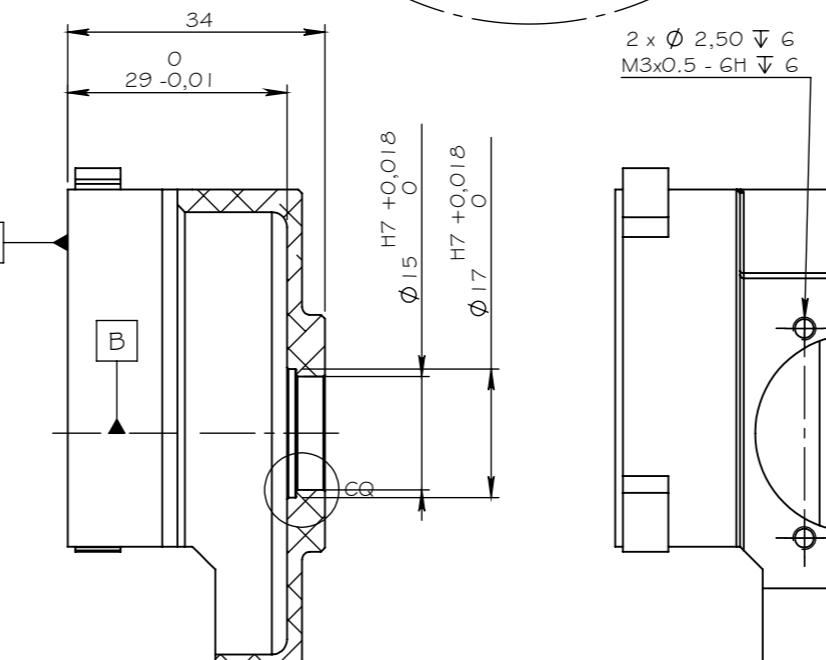
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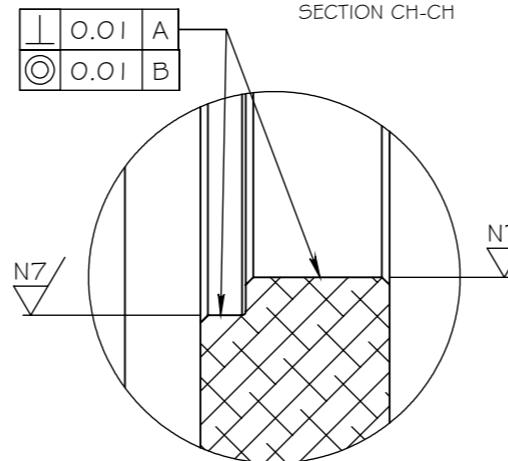
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 $4 \times \phi 2,50 \text{ } \nparallel \text{ } 3,50$   
 $M3x0,5 - 6H \text{ } \nparallel \text{ } 3$ 

 $+0,02 \text{ } 0 \text{ } -18 \text{ } -0,03$ 

 $2 \times \phi 2,50 \text{ } \nparallel \text{ } 6$   
 $M3x0,5 - 6H \text{ } \nparallel \text{ } 5$ 
 $4 \times \phi 2,50 \text{ THRU}$   
 $M3x0,5 - 6H \text{ THRU}$ 


SECTION CH-CH

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DETAIL CQ  
SCALE 5 : 1

PETROBRAS	Statoil	GSCAR	COPPE UFRJ
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.1.5.5.01 - ACTIVE_MODULAR_WHEEL_HOUSING_M_UR		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho		Date: 16/12/2015	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 11/01/2016	Scale.: 1:1
		QTY: 2	Unit.: mm
		Sheet: 47/65	

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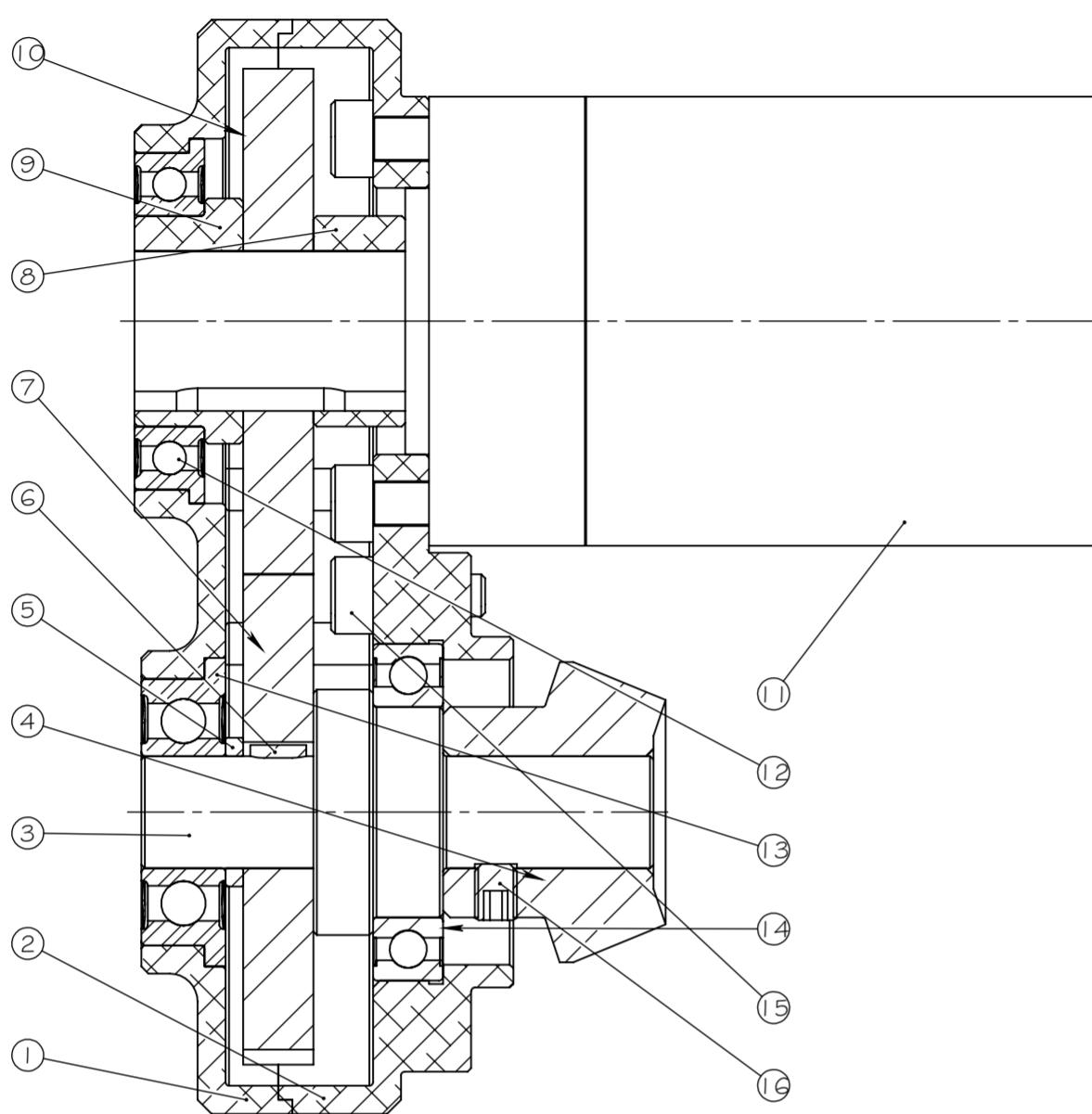
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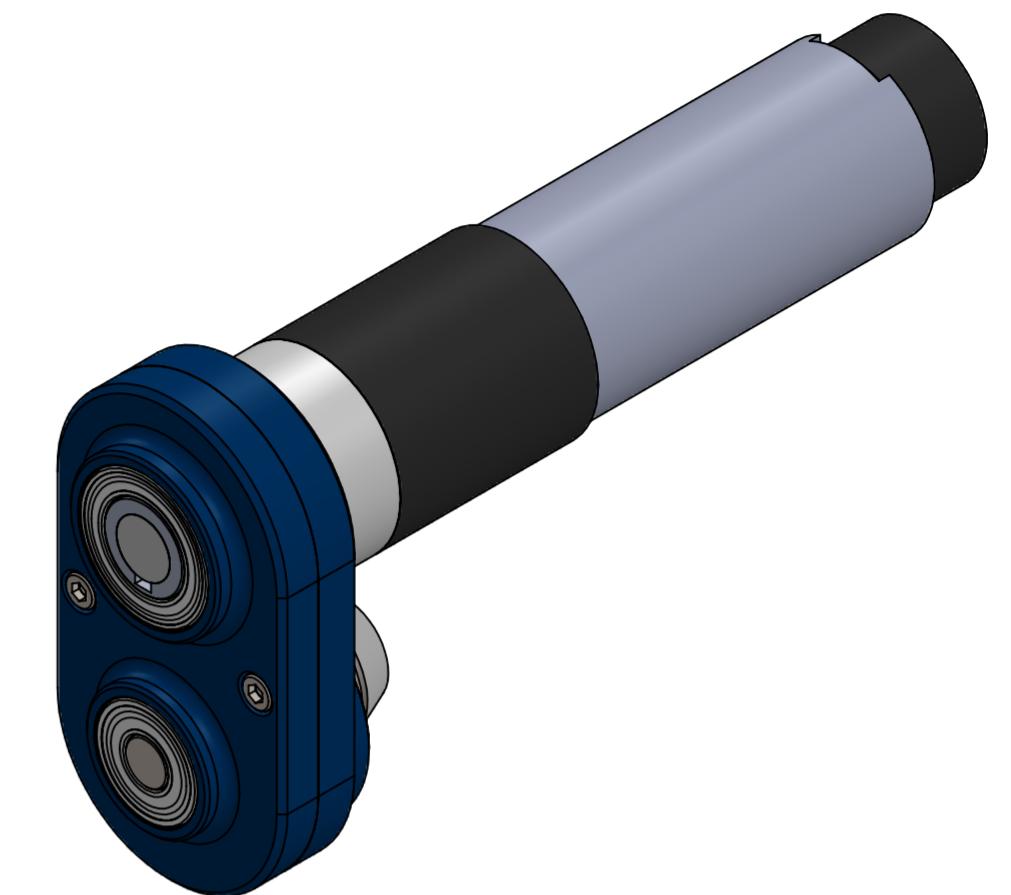
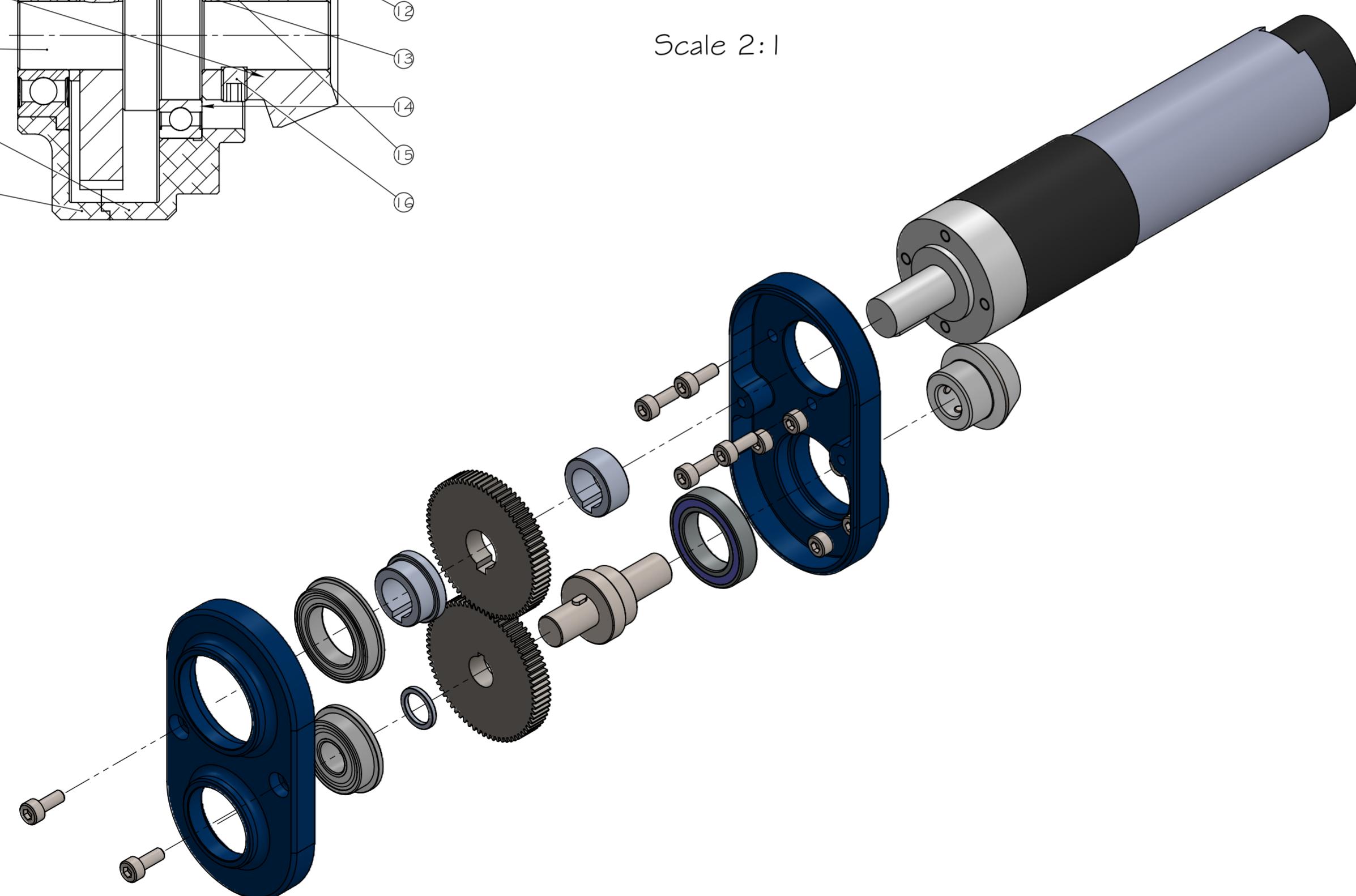
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Scale 2:1



ITEM	PART NUMBER - DESCRIPTION	QTY.
16	B18.3.6M - M3 x 0.5 x 4 Hex Socket Flat Pt. SS --N	2
15	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	11
14	BEARING_NTN_6802_LLU	1
13	BEARING_FL698ZZ	1
12	BEARING_F6802ZZ	1
11	MOTOR_EC_4p-GP32HP	1
10	DR2.1.5.6.010 - 5SGO.5-7OB_1	1
9	DR2.1.5.6.09 - GEARBOX_MOTOR_SPACER_B	1
8	DR2.1.5.6.08 - GEARBOX_MOTOR_SPACER_A	1
7	DR2.1.5.6.07 - 5SGO.5-7OB_2	1
6	DR2.1.5.6.06 - PINION_SHAFT_KEYED_JOIN	1
5	DR2.1.5.6.05 - GEARBOX_PINION_SHAFT_SPACER	1
4	DR2.1.5.6.04 - BEVEL_GEAR_SB1.25-1545	1
3	DR2.1.5.6.03 - GEARBOX_PINION SHAFT	1
2	DR2.1.5.6.02 - GEARBOX_HOUSING_F_UL	1
1	DR2.1.5.6.01 - GEARBOX_HOUSING_M	1

COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.5.6 - GEARBOX_SET_UL	Material: Vários		
Designed by: Guilherme Carvalho	Date: 02/01/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 09/01/2016	QTY: 2	Unit.: mm
		Sheet: 48	65

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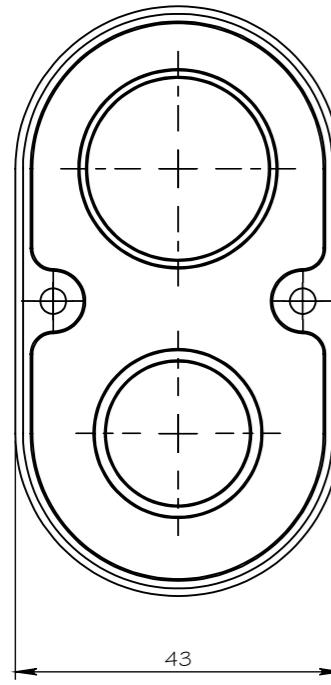
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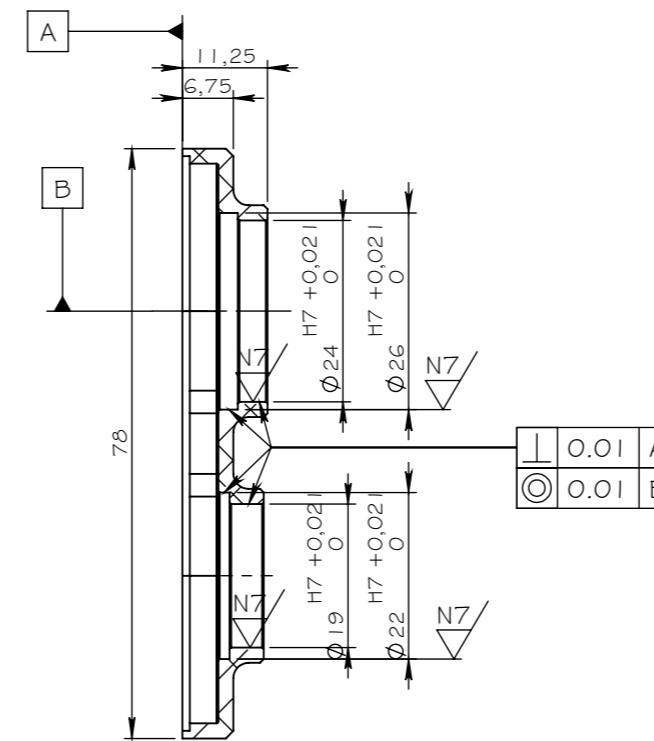
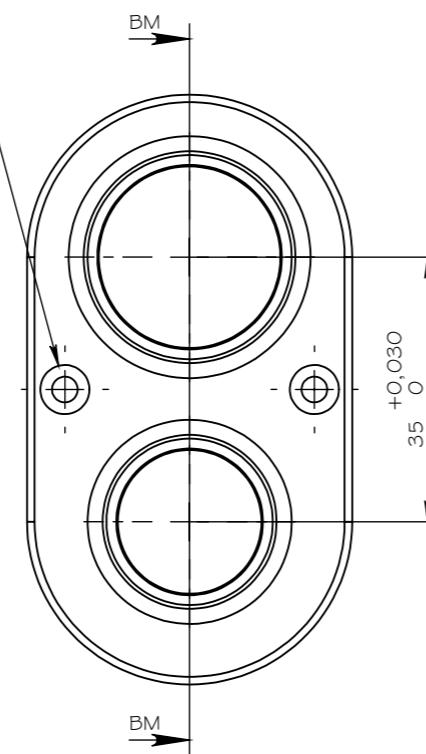
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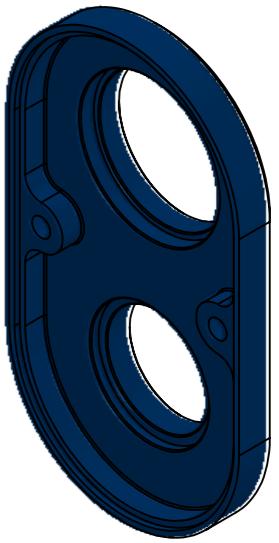
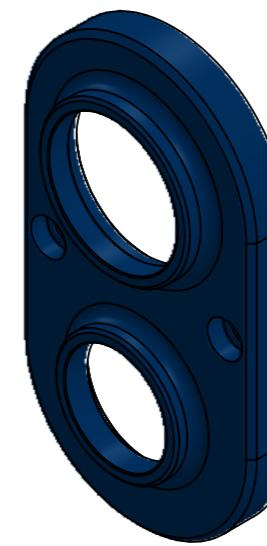
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Ø 6,50 ↓ 3



SECTION BM-BM



<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.1.5.6.01 - GEARBOX_HOUSING_M			Material: 7075-T6, Plate (SS)
Designed by: Guilherme Carvalho		Date: 04/01/2016	Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius		Ver. date.: 11/01/2016	QTY: 4 Unit.: mm
			49/65

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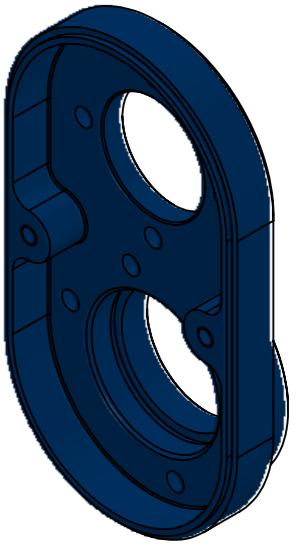
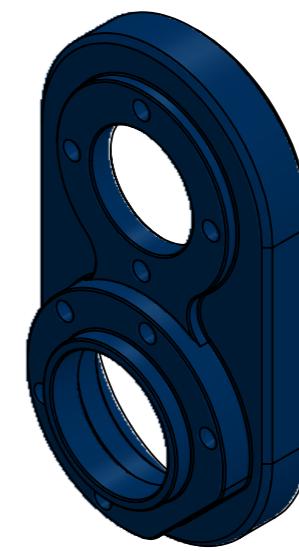
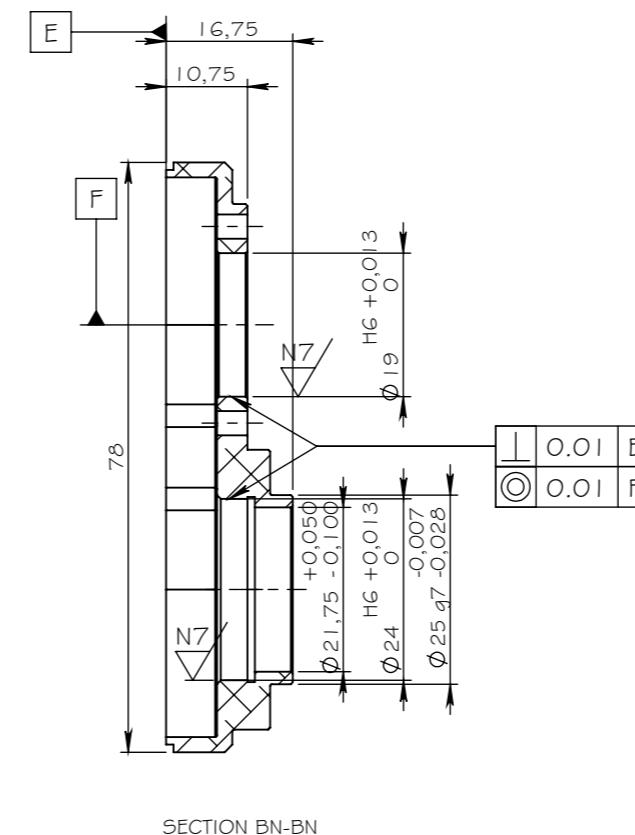
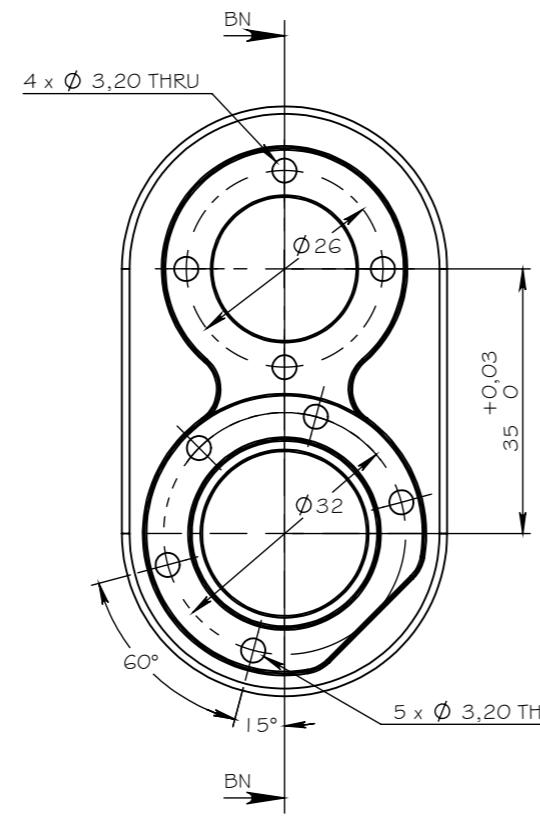
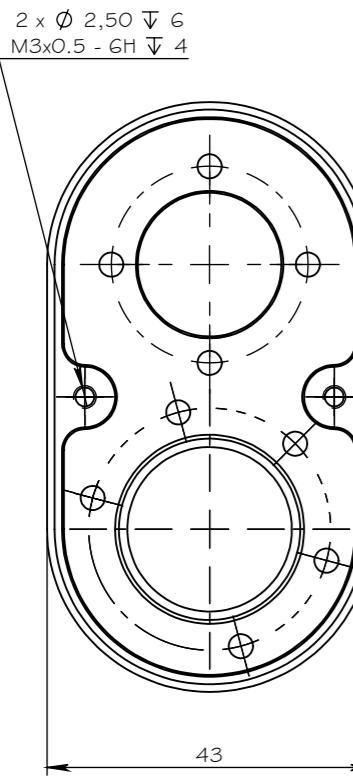
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.1.5.6.02 - GEARBOX_HOUSING_F_UL		Material: 7075-T6, Plate (SS)	
Designed by: Guilherme Carvalho	Date: 04/01/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 2	Sheet: 50/65
		Unit.: mm	

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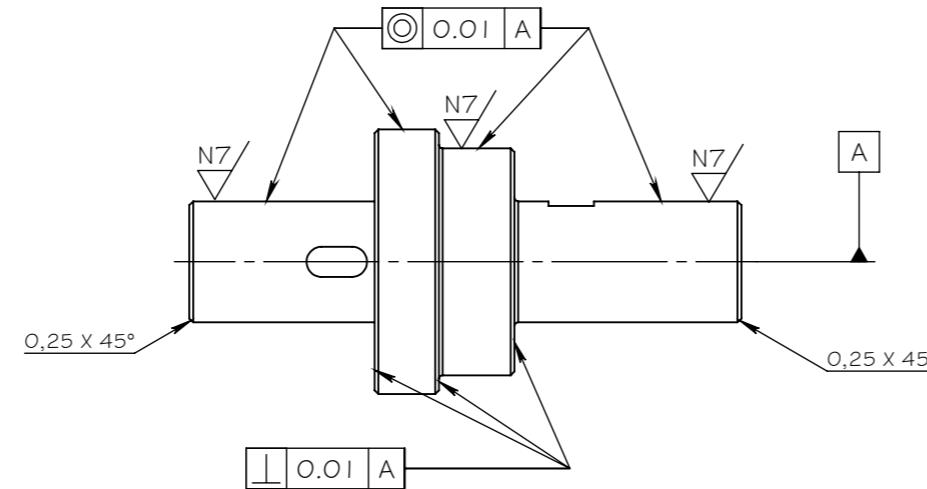
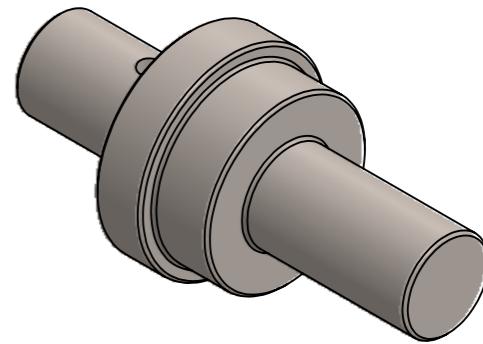
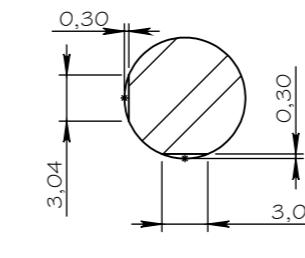
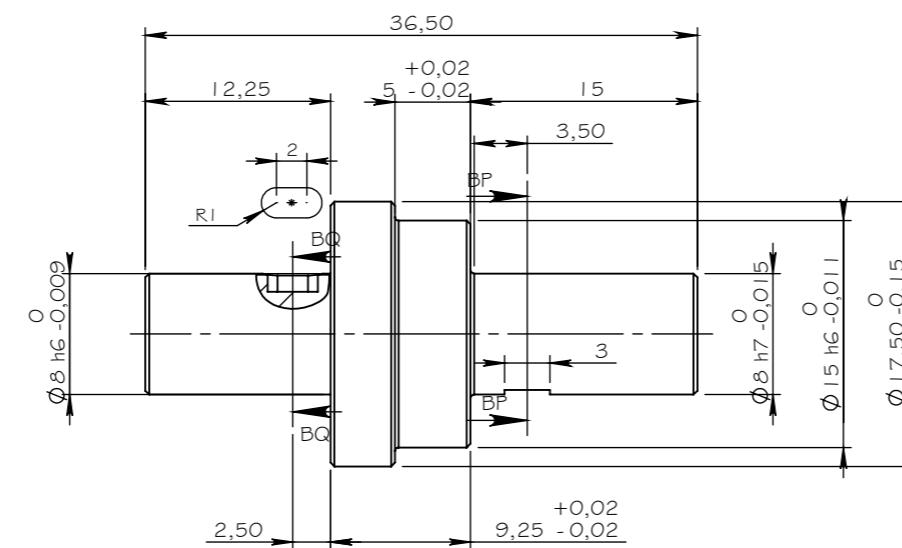
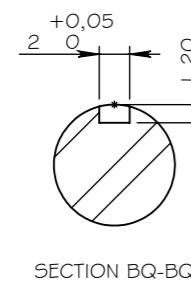
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.5.6.03 - GEARBOX_PINION SHAFT		Material: 201 Annealed Stainless Steel (SS)	
Designed by: Guilherme Carvalho	Date: 04/01/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 4	Sheet: 5 / 65 Unit.: mm

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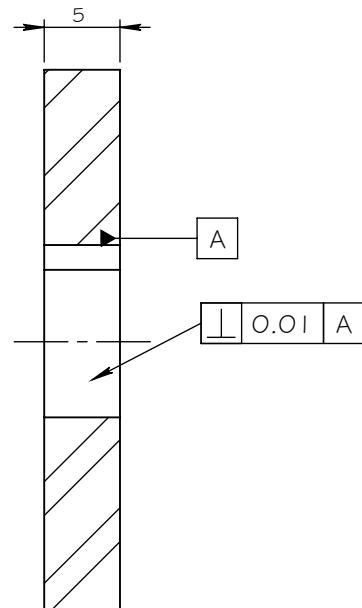
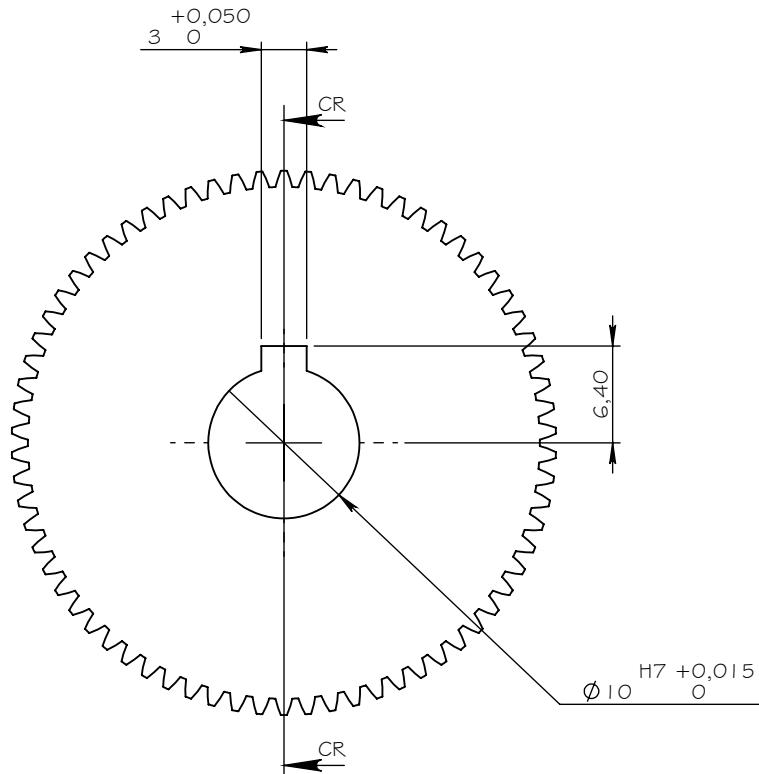
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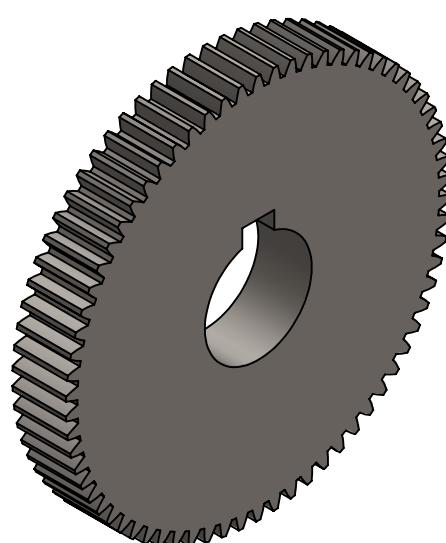
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SECTION CR-CR

**PETROBRAS****Statoil****GSCAR****COPPE  
UFRJ**Instituto Alberto Luiz Coimbra da  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.010 - SSGO.5-70B\_1

Material: AISI 1045 Steel, cold drawn

Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Scale.: 2:1

Sheet:

52 / 65

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 4

Unit.: mm

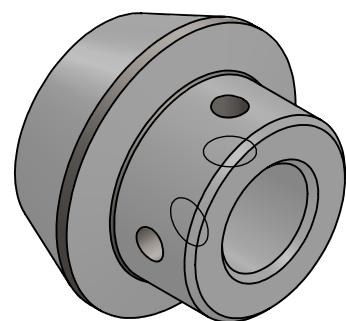
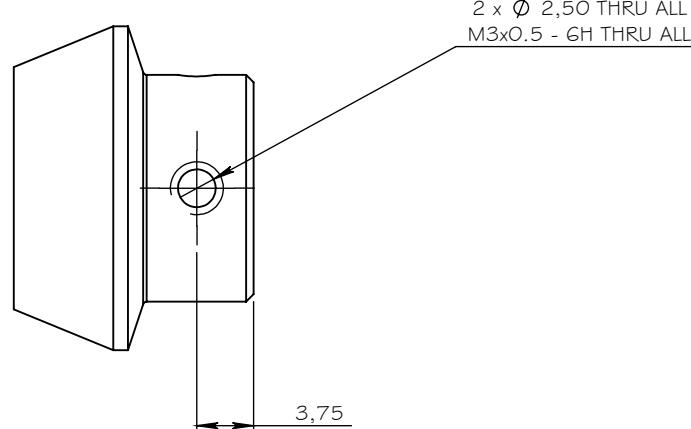
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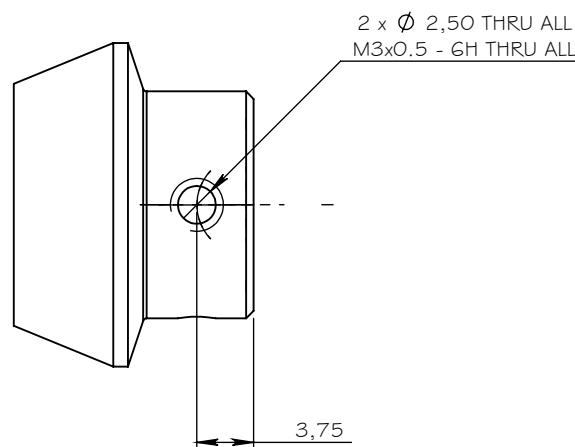
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.04 - BEVEL\_GEAR\_SB1.25-1545

Material: AISI 1045 Steel, cold drawn

A

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Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Scale.: 2:1

Sheet:

53 / 65

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 4

Unit.: mm

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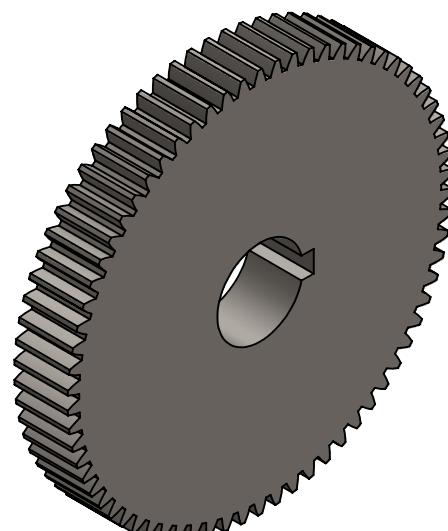
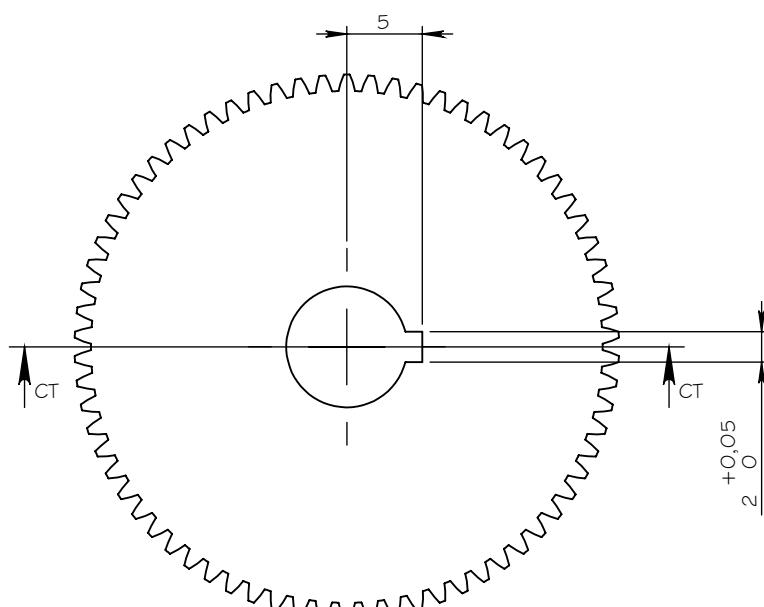
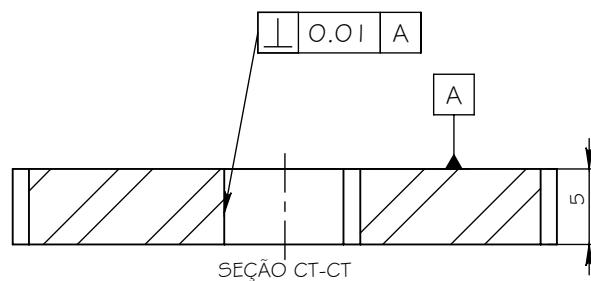
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COPPE - Electrical Engineering Program

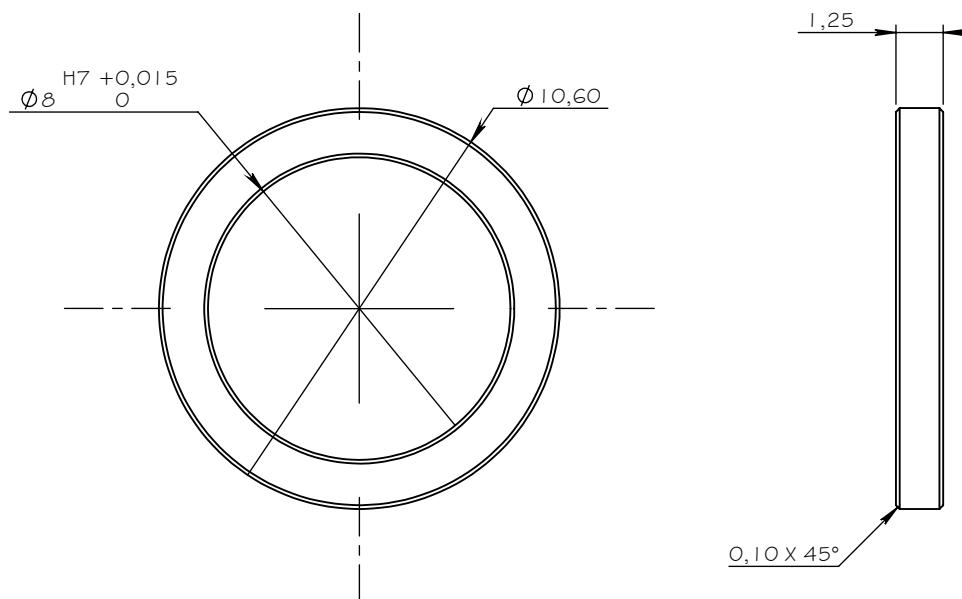
DORIS Project

Title: DR2.1.5.6.07 - SSGO.5-70B\_2

Material: AISI 1045 Steel, cold drawn

Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1	Sheet: 54 / 65
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 4	Unit.: mm	

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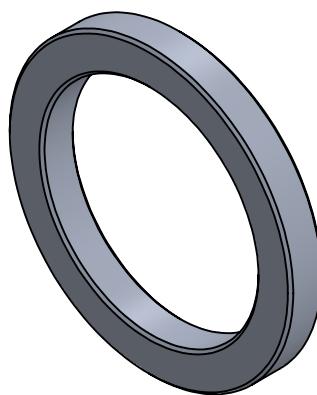
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**PETROBRAS**



**Statoil**



**GSCAR**



**COPPE**  
**UFRJ**

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.05 - GEARBOX\_PINION\_SHAFT\_SPACER

Material: 7075-T6 (SN)

Designed by: Guilherme Carvalho

Date: 03/01/2016

Rev.: A

Scale.: 5:1

Sheet:  
55 / 65

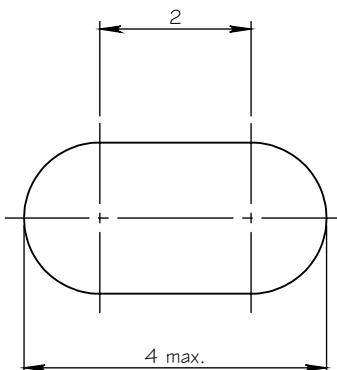
Verified by: Ramon Romankevicius

Ver. date.: 10/01/2016

QTY: 4

Unit.: mm

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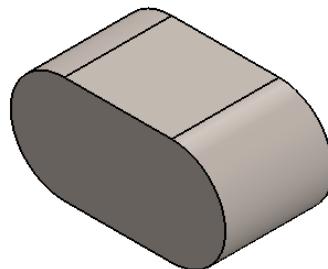
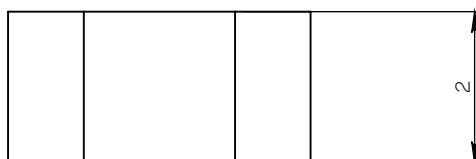
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.06 - PINION\_SHAFT\_KEYED\_JOIN

Material: 201 Annealed Stainless Steel (SS)

Designed by: Guilherme Carvalho	Date: 04/01/2016	Rev.: A	Scale.: 10:1	Sheet: 56 / 65
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 4	Unit.: mm	

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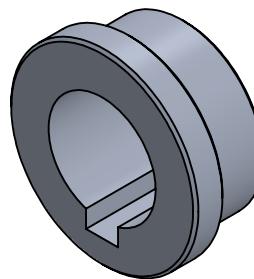
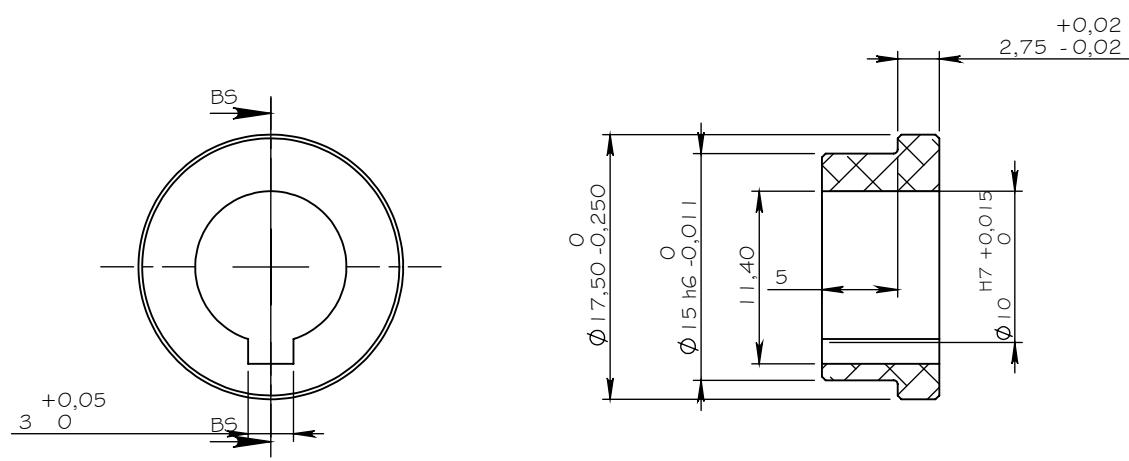
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.09 - GEARBOX\_MOTOR\_SPACER\_B

Material: 7075-T6 (SN)

Designed by: Guilherme Carvalho	Date: 04/01/2016	Rev.: A	Scale.: 2:1	Sheet: 57 / 65
Verified by: Ramon Romankevicius	Ver. date.: 11/01/2016	QTY: 4	Unit.: mm	

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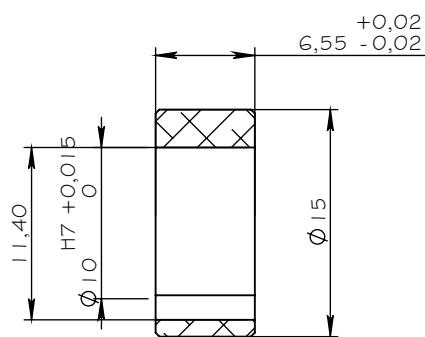
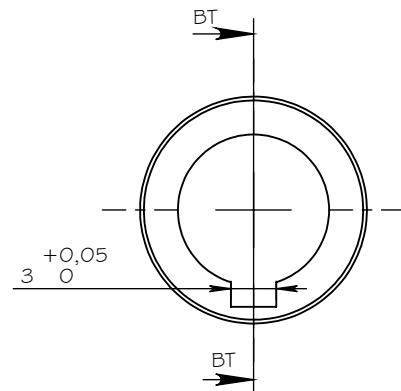
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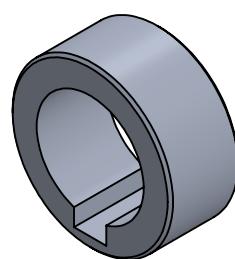
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SECTION BT-BT

**PETROBRAS****Statoil****GSCAR****COPPE**  
**UFRJ**Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.5.6.08 - GEARBOX\_MOTOR\_SPACER\_A

Material: 7075-T6 (SN)

A

Designed by: Guilherme Carvalho

Date: 03/01/2016

Rev.: A

Scale.: 2:1

Sheet:  
58 / 65

Verified by: Ramon Romankevicius

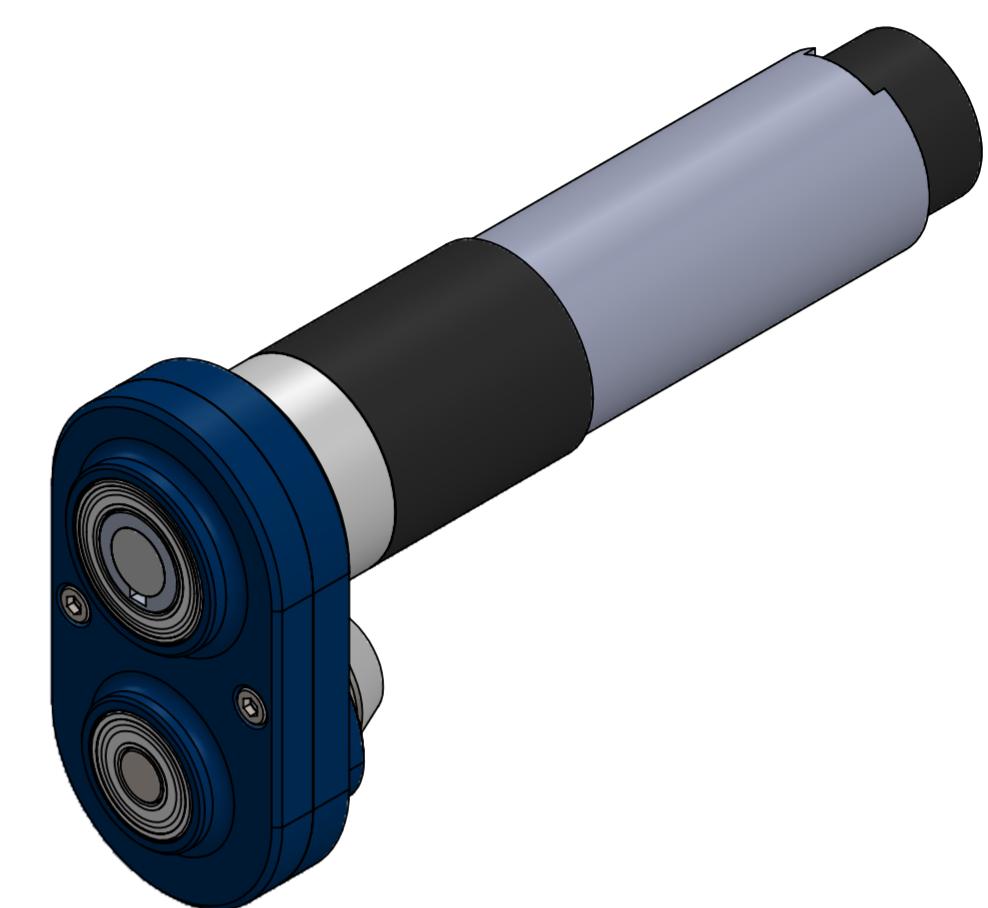
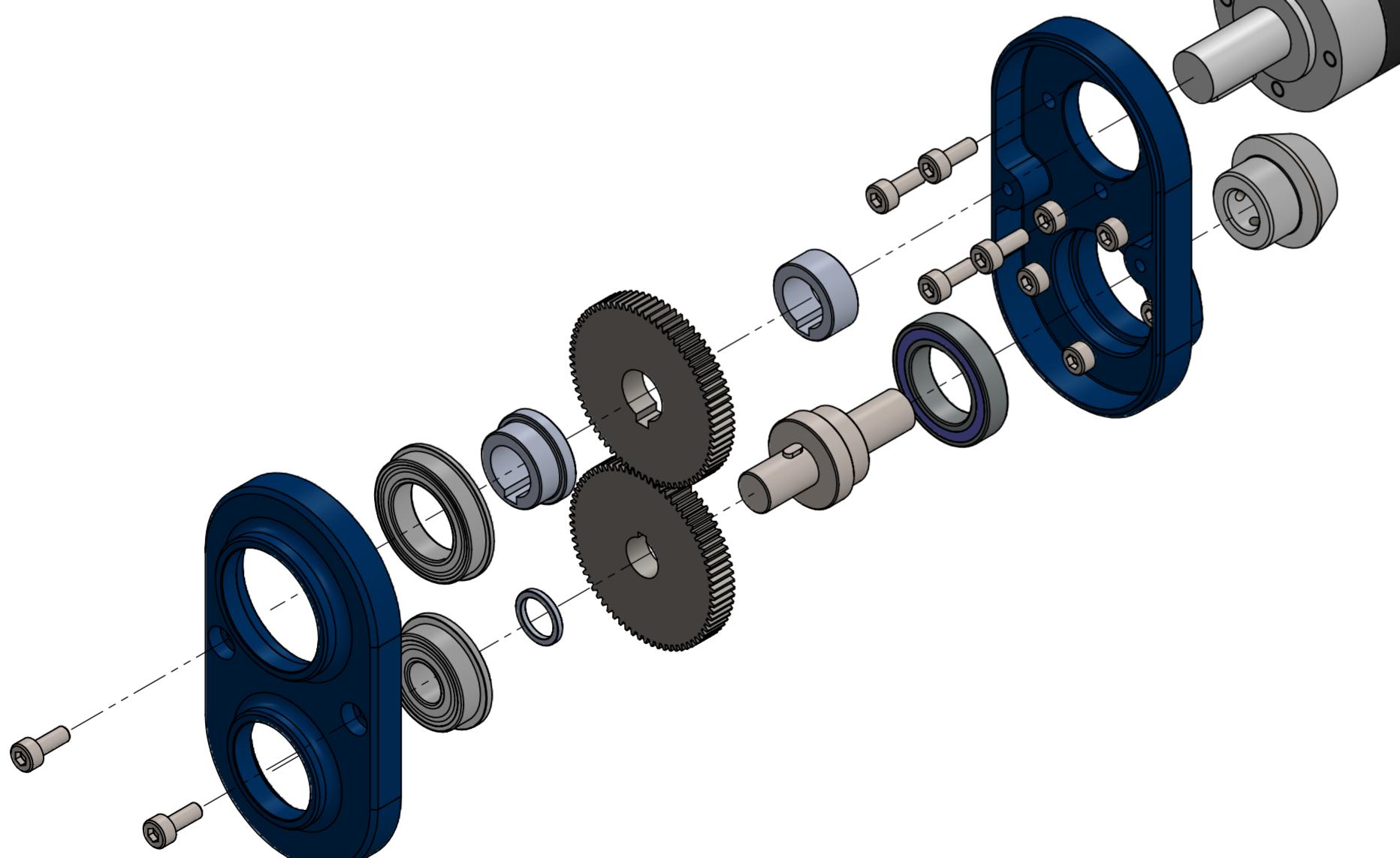
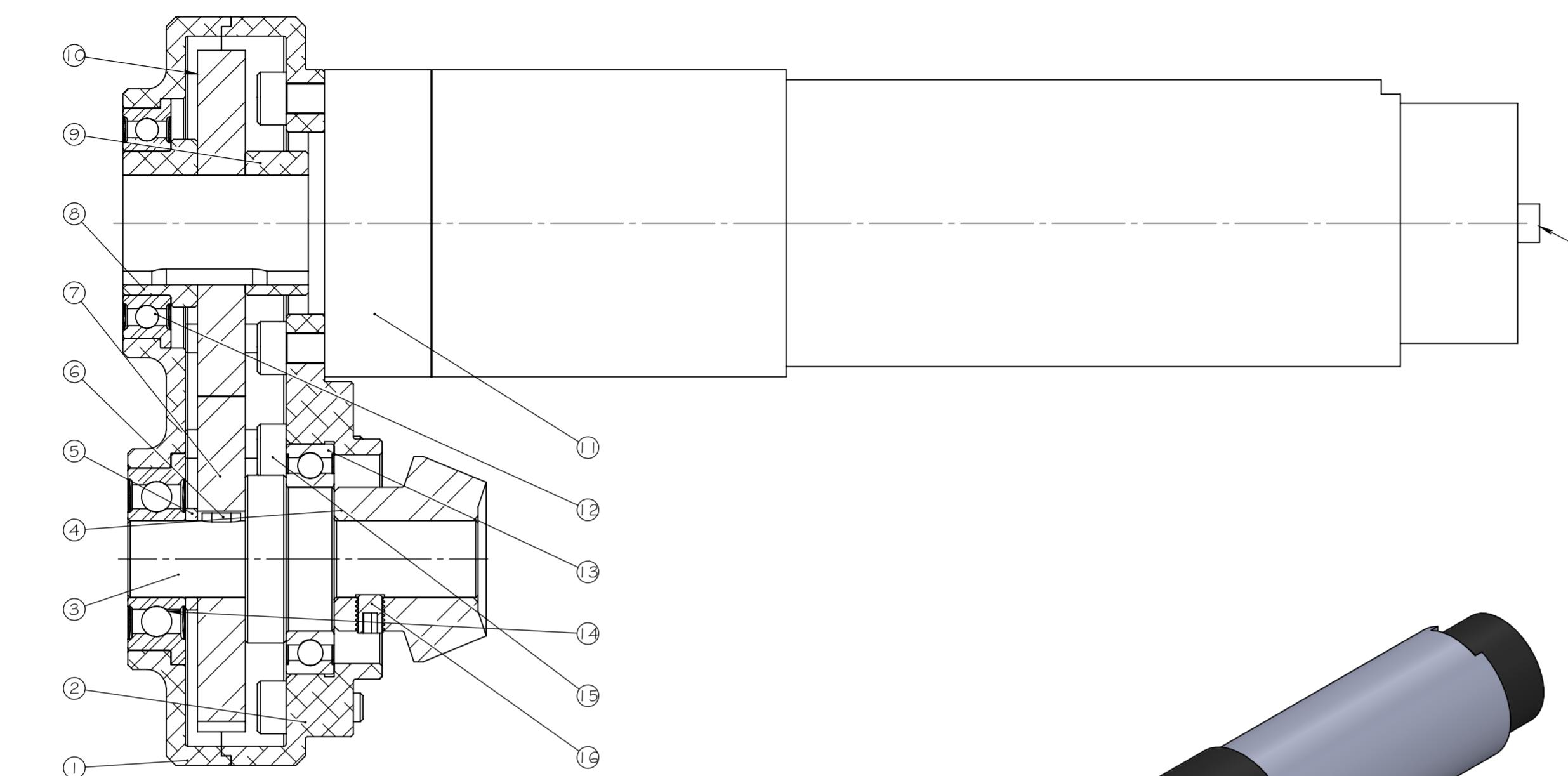
Ver. date.: 10/01/2016

QTY: 4

Unit.: mm

12 11 10 9 8 7 6 5 4 3 2 1

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ITEM	PART NUMBER - DESCRIPTION	QTY.
16	socket set screw flat point_am	2
15	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	11
14	BEARING_FL698ZZ	1
13	BEARING_NTN_6802_LLU	1
12	BEARING_F6802ZZ	1
11	MOTOR_EC_4p-GP32HP	1
10	DR2.1.5.6.010 - SSGO.5-70B_1	1
9	DR2.1.5.6.08 - GEARBOX_MOTOR_SPACER_A	1
8	DR2.1.5.6.09 - GEARBOX_MOTOR_SPACER_B	1
7	DR2.1.5.6.07 - SSGO.5-70B_2	1
6	DR2.1.5.6.06 - PINION_SHAFT_KEYED_JOIN	1
5	DR2.1.5.6.05 - GEARBOX_PINION_SHAFT_SPACER	1
4	DR2.1.5.6.04 - BEVEL_GEAR_SBI.25-1545	1
3	DR2.1.5.6.03 - GEARBOX_PINION SHAFT	1
2	DR2.1.5.7.01 - GEARBOX_HOUSING_F_UR	1
1	DR2.1.5.6.01 - GEARBOX_HOUSING_M	1

COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.1.5.7 - GEARBOX_SET_DR	Material: Vários		
Designed by: Guilherme Carvalho	Date: 02/01/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 06/01/2016	QTY: 2	Unit.: mm
		Sheet: 59	65

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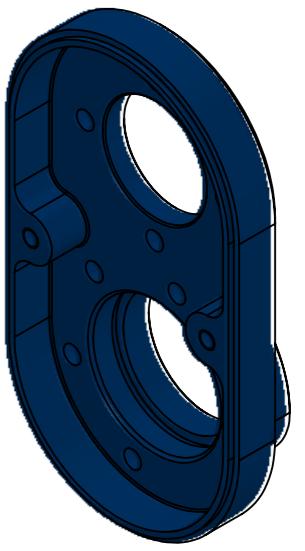
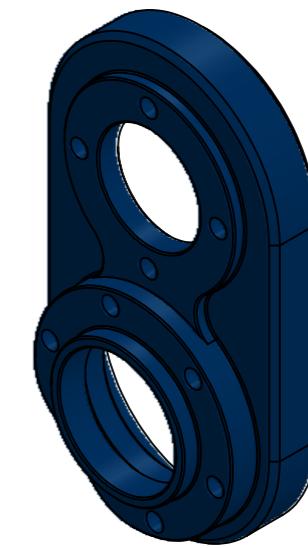
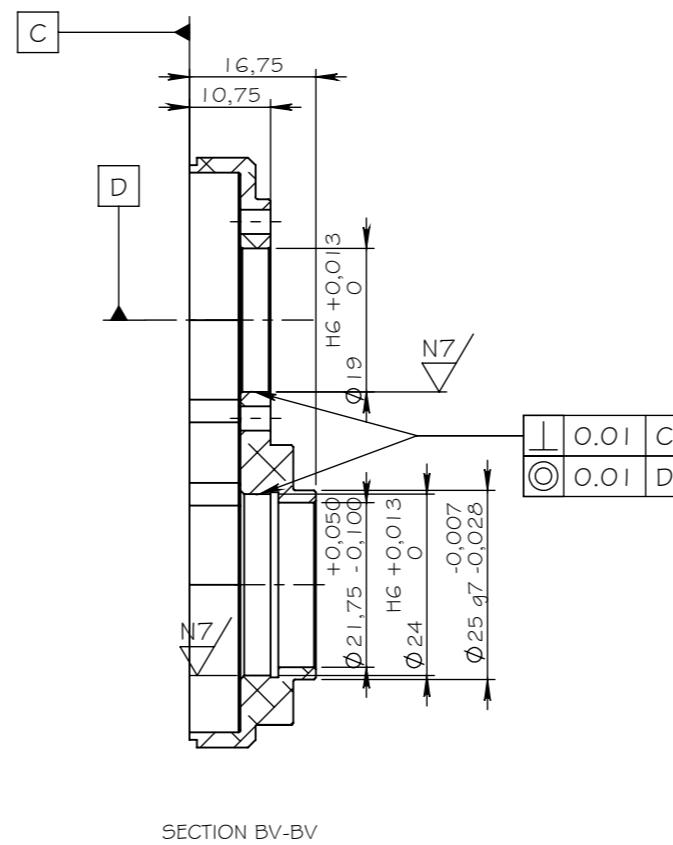
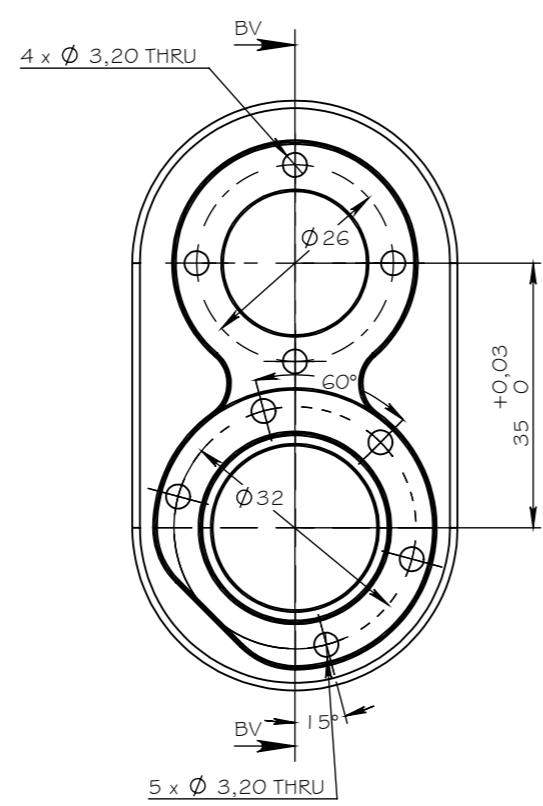
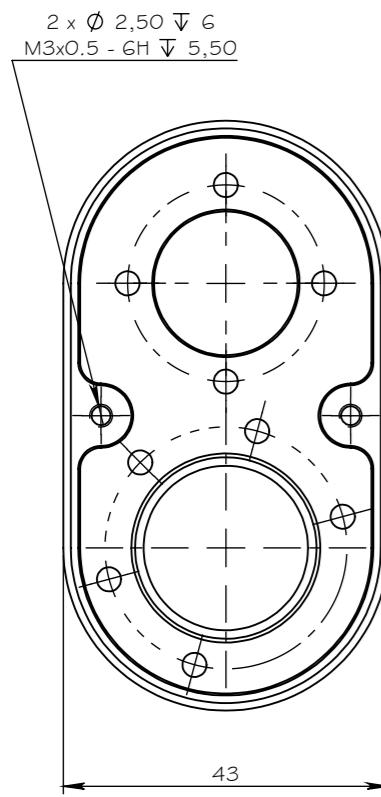
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.1.5.7.01 - GEARBOX_HOUSING_F_UR			Material: 7075-T6, Plate (SS)
Designed by: Guilherme Carvalho		Date: 03/01/2016	Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius		Ver. date.: 10/01/2016	QTY: 2 Unit.: mm
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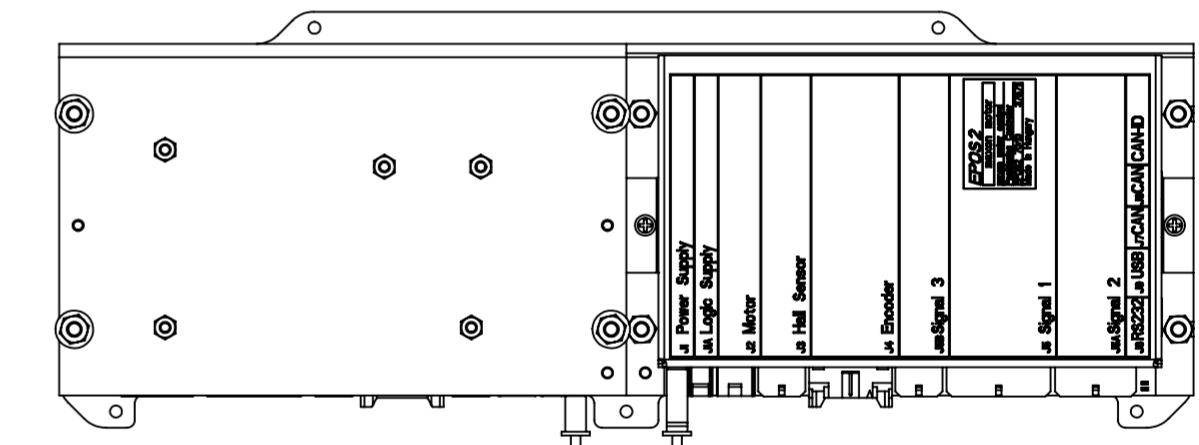
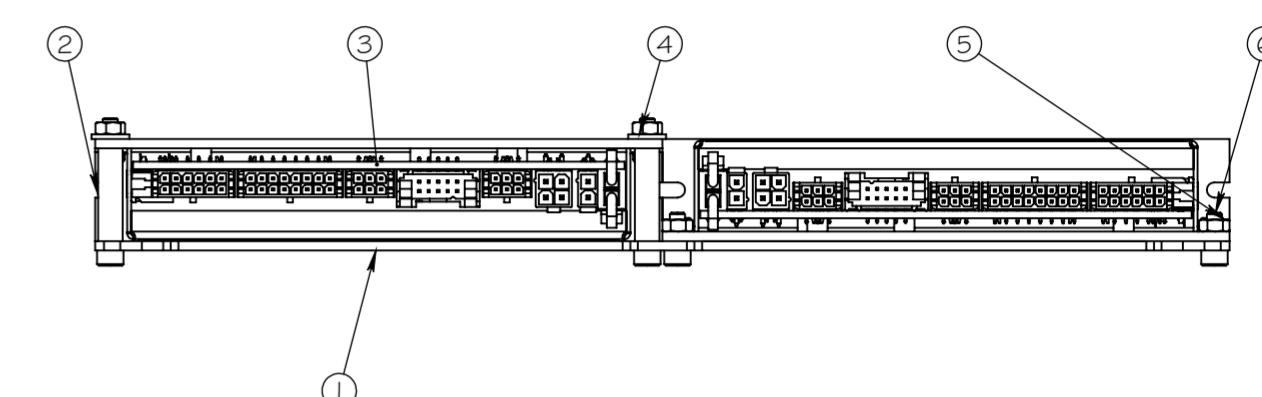
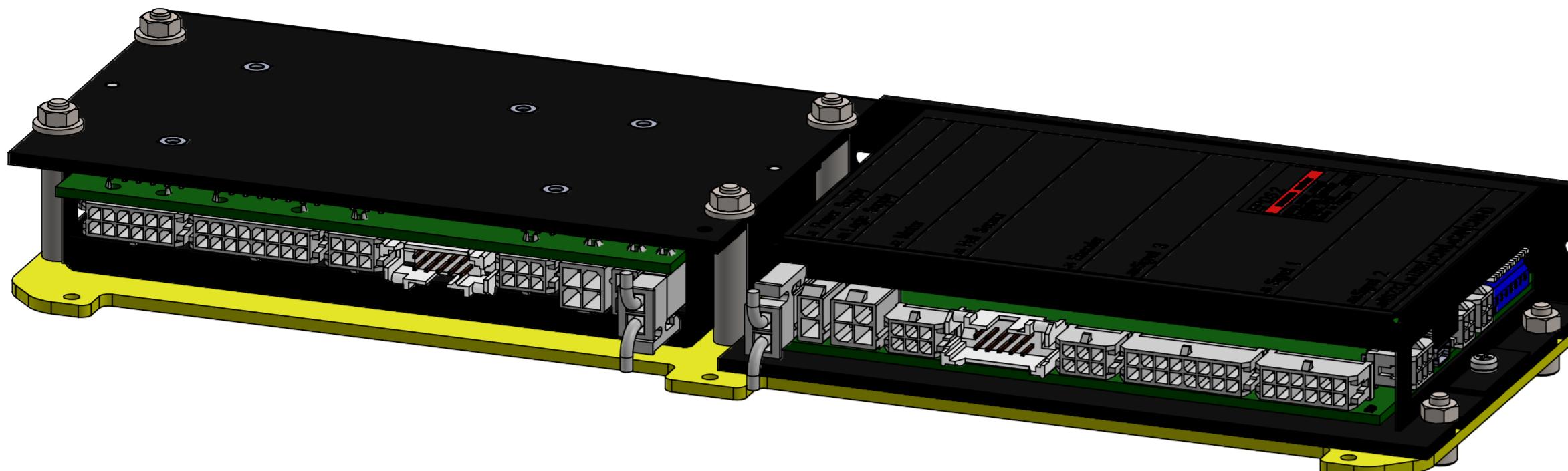
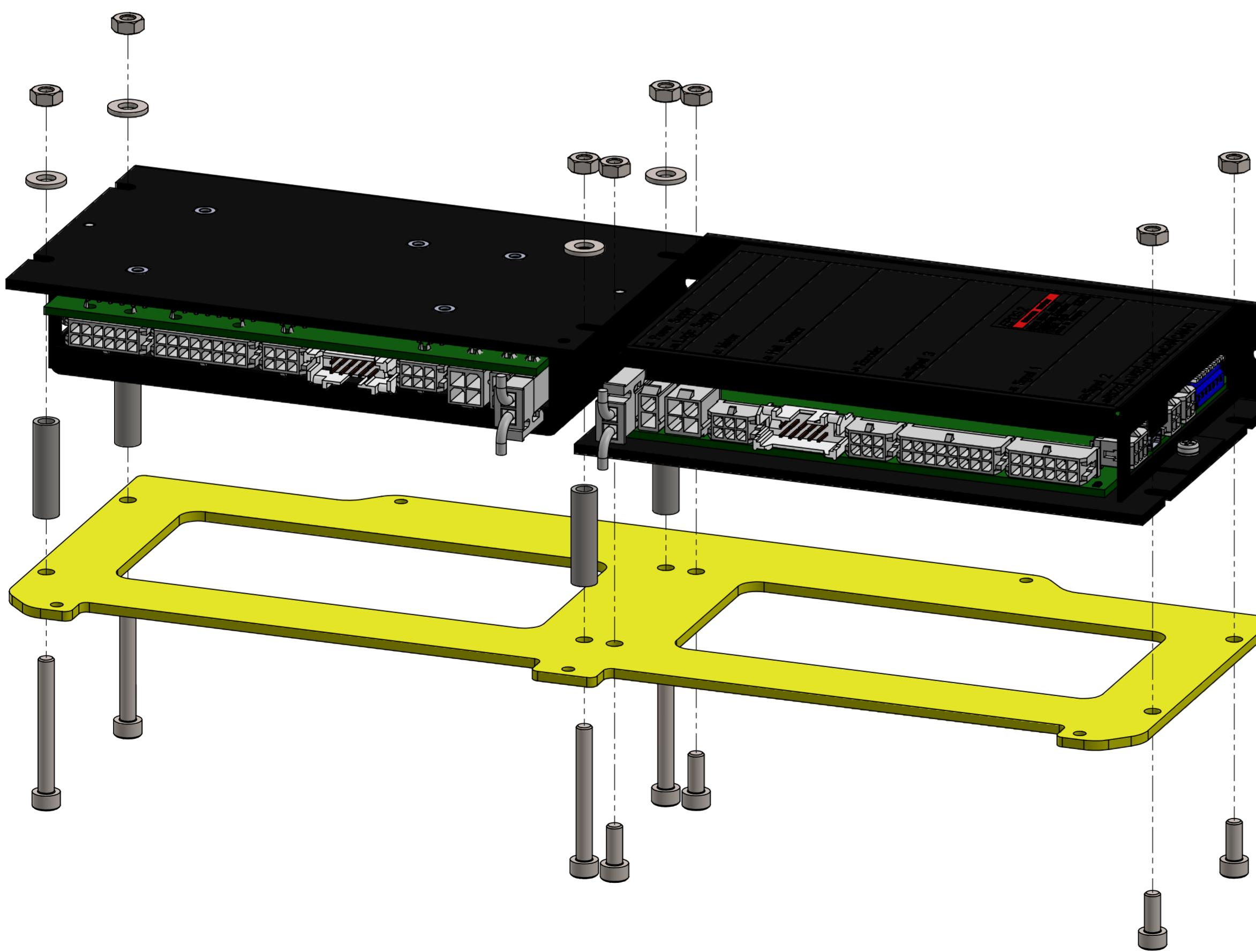
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ITEM	PART NUMBER - DESCRIPTION	QTY.
6	B18.3.1M - 4 x 0.7 x 10 Hex SHCS -- 1ONHX	8
5	B18.2.4.1M - Hex nut, Style 1, M4 x 0.7 --D-N	8
4	B18.22M - Plain washer, 4 mm, narrow	4
3	EPOS 70-10	2
2	DR2.1.6.02 - SPACER_EPOS_70-10	4
1	DR2.1.6.01 - UNION_PLATE_EPOS_70-10	1

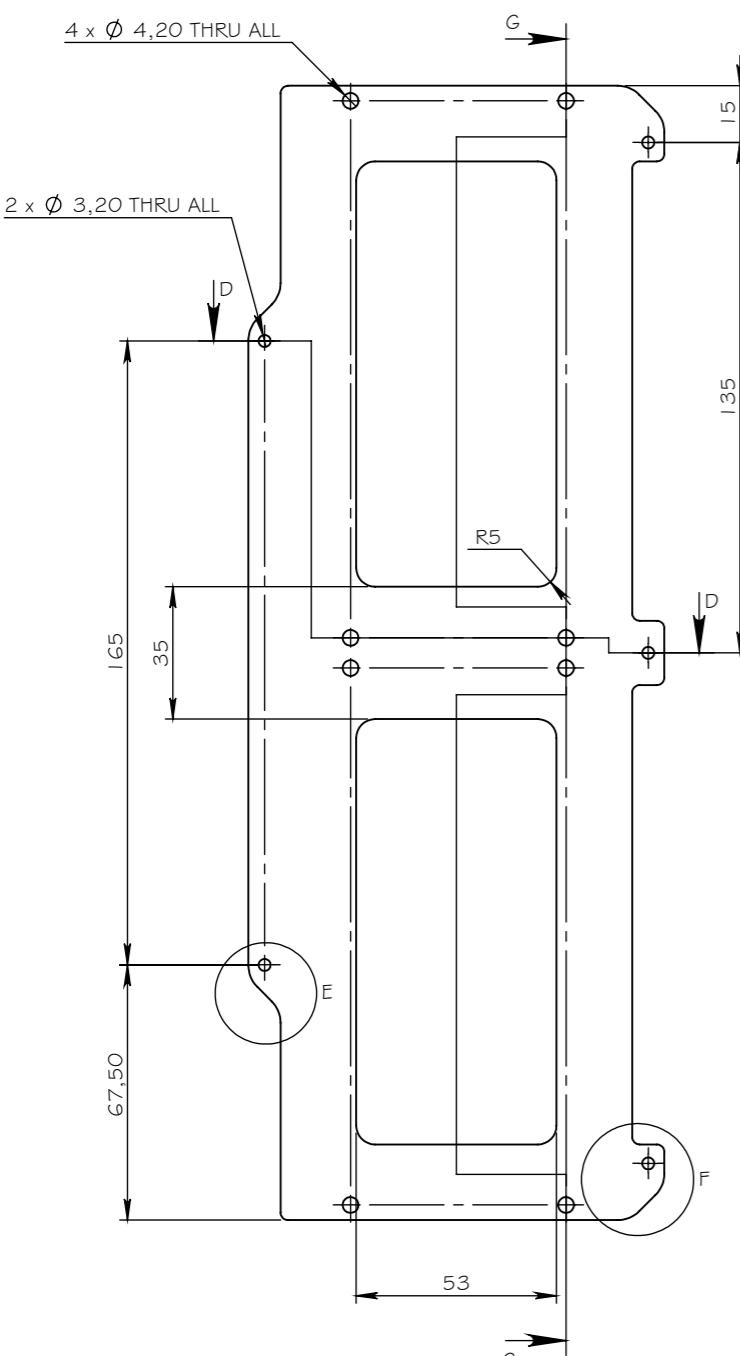


COPPE - Electrical Engineering Program	DORIS Project
Title: DR2.1.6 - ASSEMBLY_EPOS_70-10	Material:
Designed by: Guilherme Carvalho	Date: 06/06/2016 Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016 QTY: 2 Unit.: mm 61/65

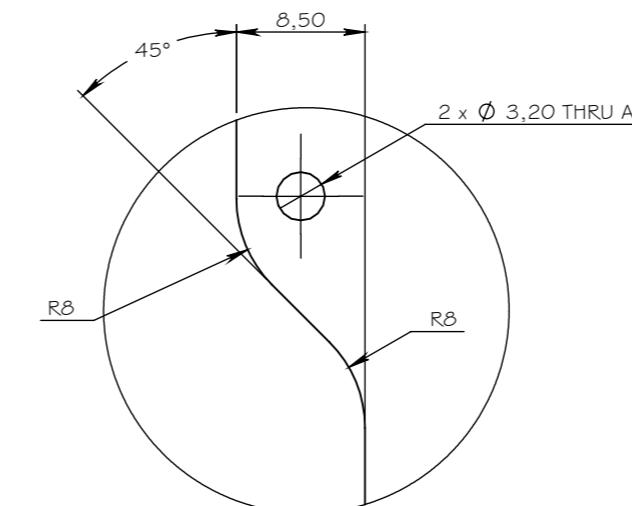
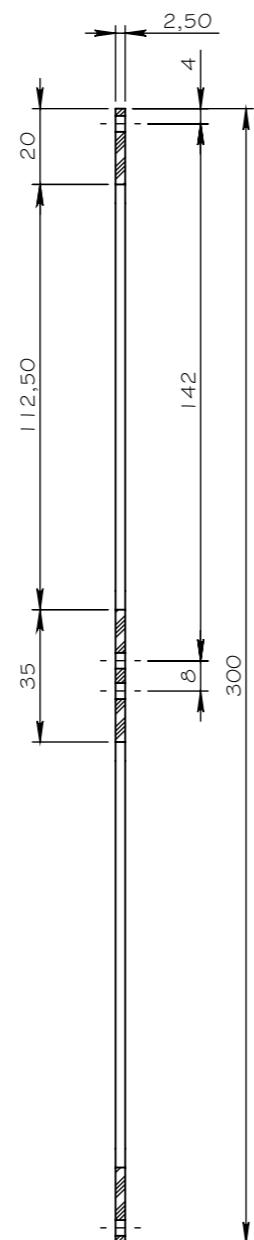
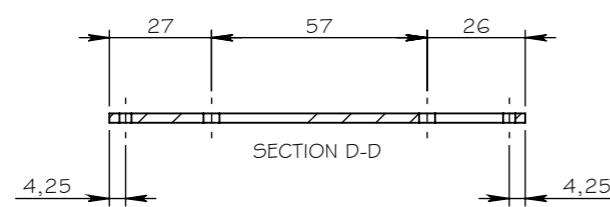
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8 7 6 5 4 3 2 1

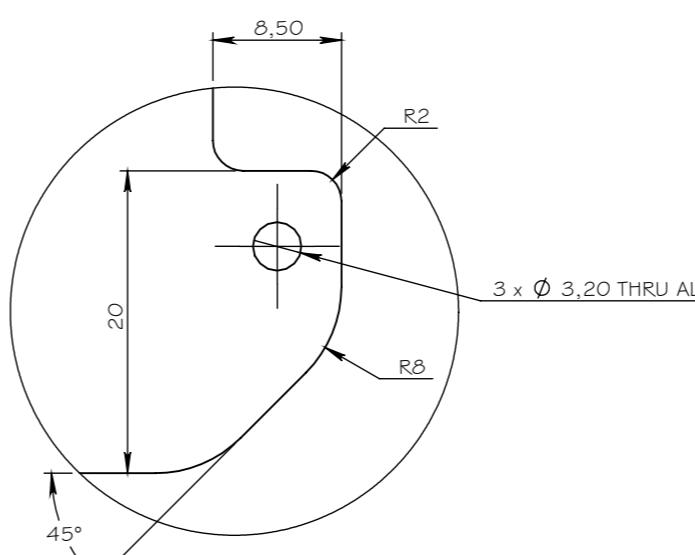
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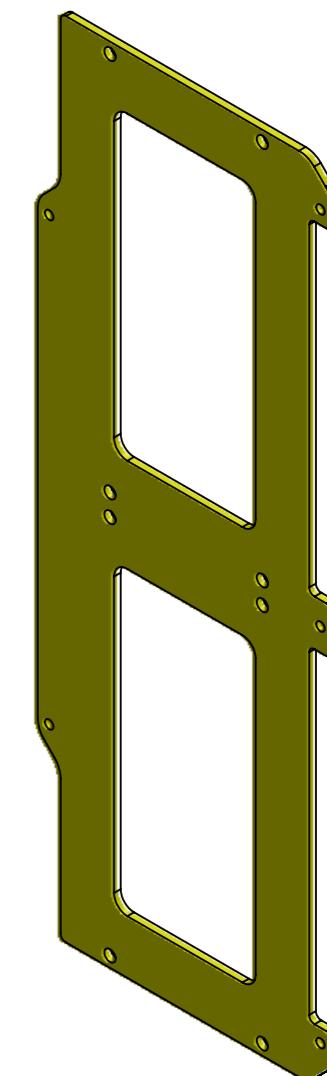
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DETAIL E  
SCALE 2 : 1



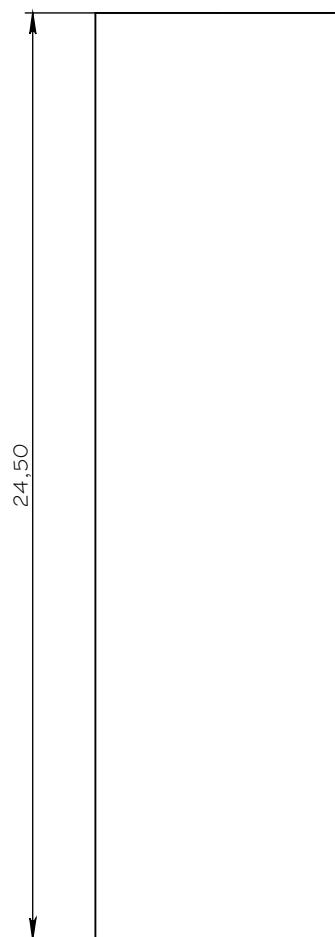
DETAIL F  
SCALE 2 : 1



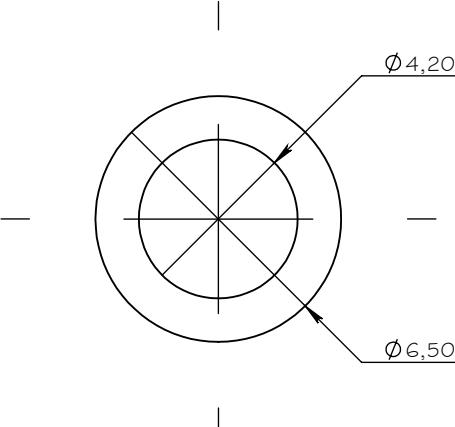
PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.1.6.01 - UNION_PLATE_EPOS_70-10			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Unit.: mm
		Sheet: 62/65	

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**PETROBRAS****Statoil****GSCAR****COPPE**  
**UFRJ**Instituto Alberto Luiz Coimbra da  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.6.02 - SPACER\_EPOS\_70-10

Material: AISI 1020

A  
Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Scale.: 5:1

Sheet:  
63 / 65

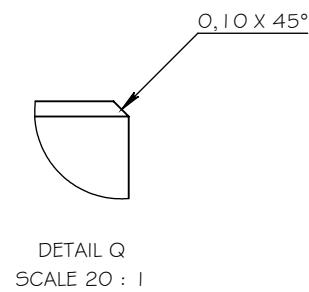
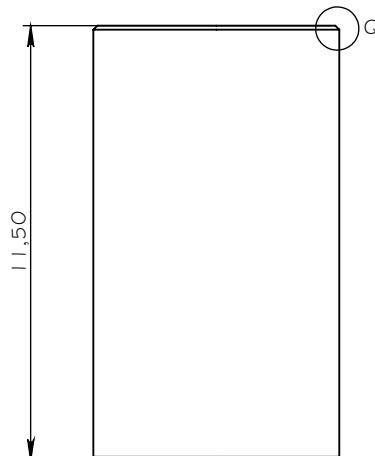
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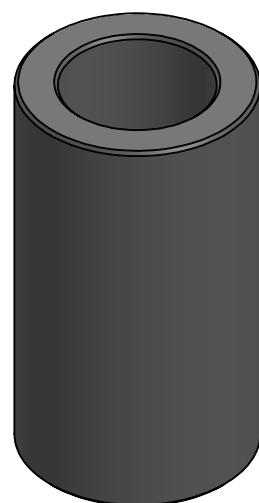
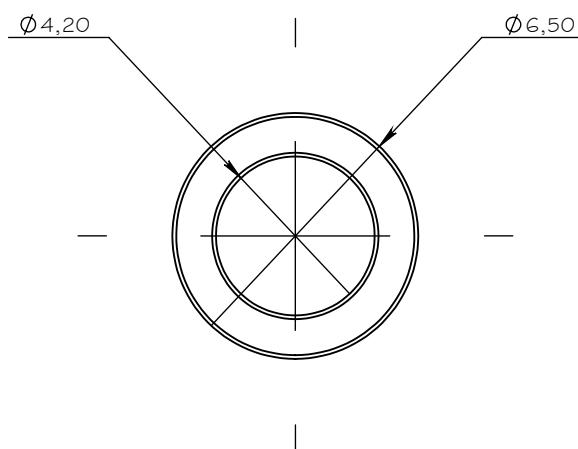
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Unit.: mm

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DETAIL Q  
SCALE 20 : 1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.01 - SPACER\_EPOS\_70-10

Material: AISI 1020

Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 5:1	Sheet: 64 / 65
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 10	Unit.: mm	

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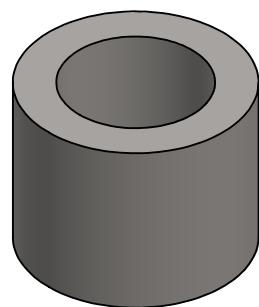
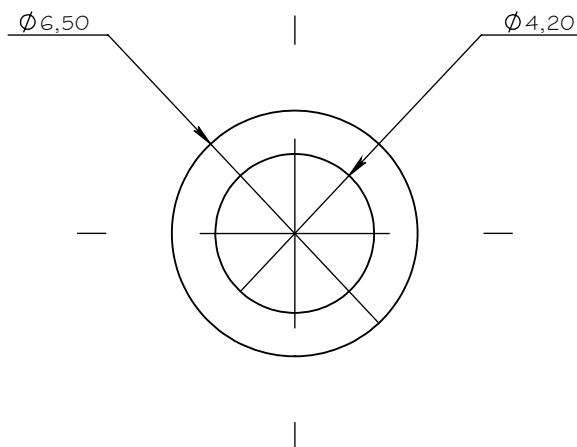
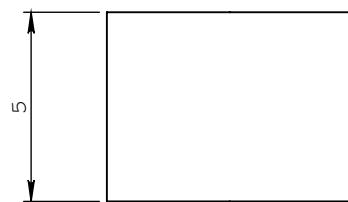
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.1.02 - SPACER\_PCB8

Material: AISI 1020

Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:5	Sheet: 65 / 65
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 8	Unit.: mm	

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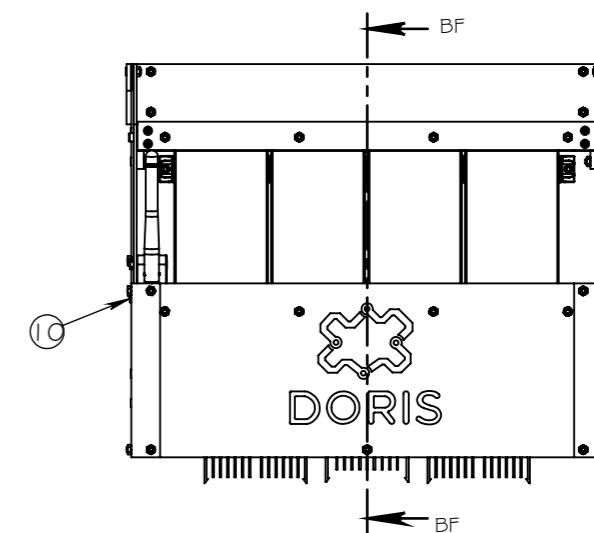
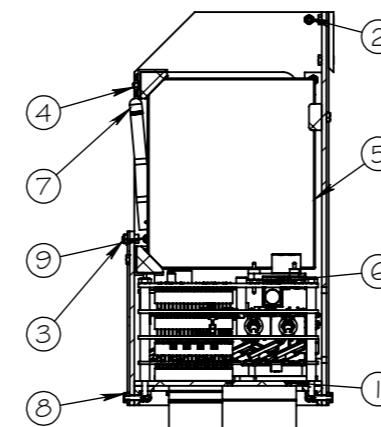
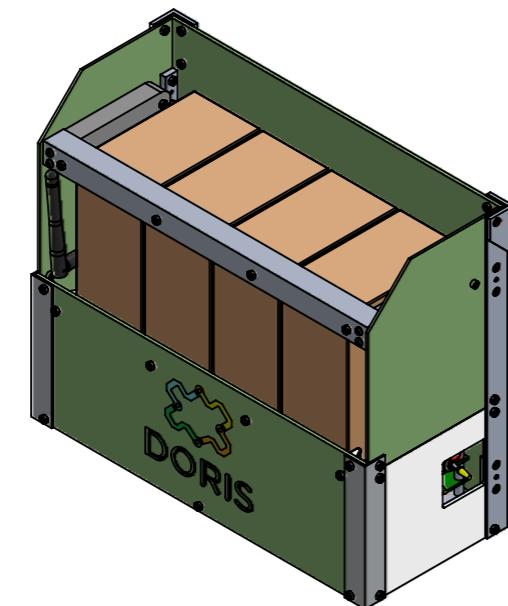
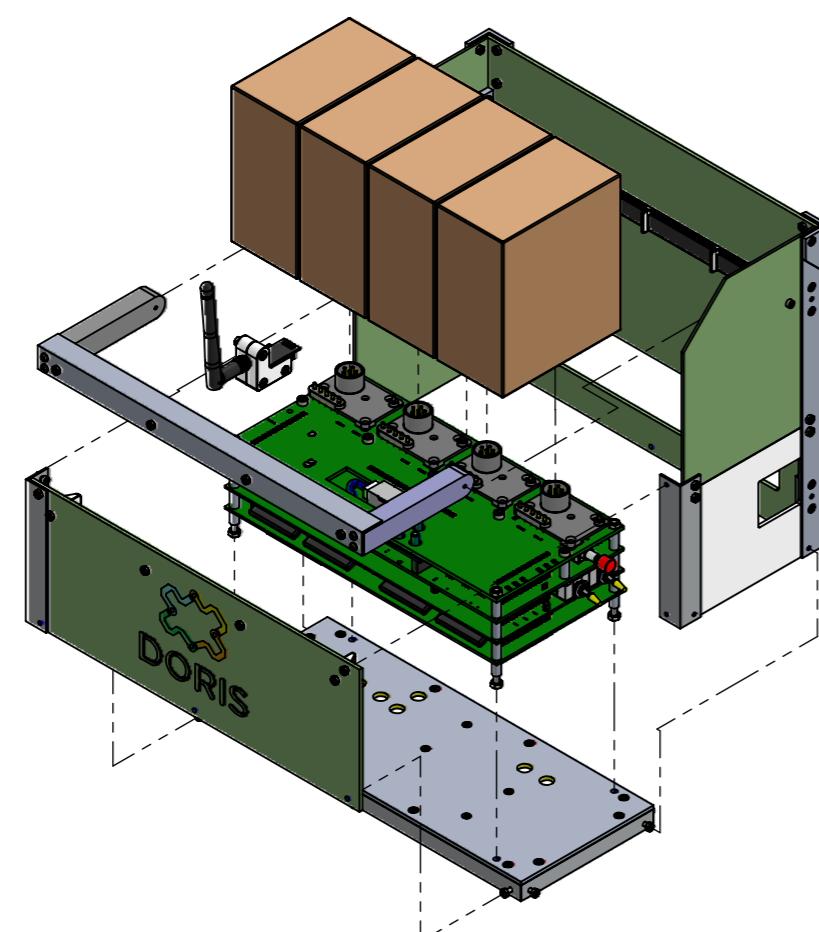
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ITEM	PART NUMBER - DESCRIPTION	QTY.
10	B18.3.5M - 3 x 0.5 x 25 Socket FCHS -- 25N	3
9	B18.3.1M - 3 x 0.5 x 20 Hex SHCS -- 20NHX	14
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	21
7	RADIO_ANTENNA	1
6	ASSEMBLY_PCB's	1
5	BATTERIES_BT_70791A	1
4	DR2.2.4 - SIMPLE_LOCK	1
3	DR2.2.3 - FRONT_EE_BOX	1
2	DR2.2.2 - SIDE_BACK_EE_BOX	1
1	DR2.2.1 - BOTTOM_EE_BOX	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
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Title: DR2.2 - EE\_BOX

Material: Various

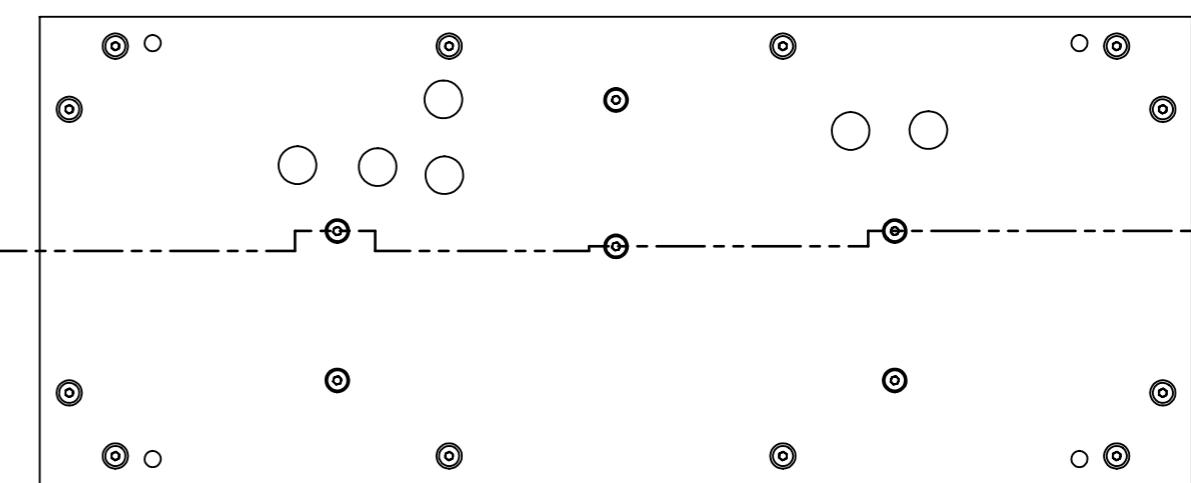
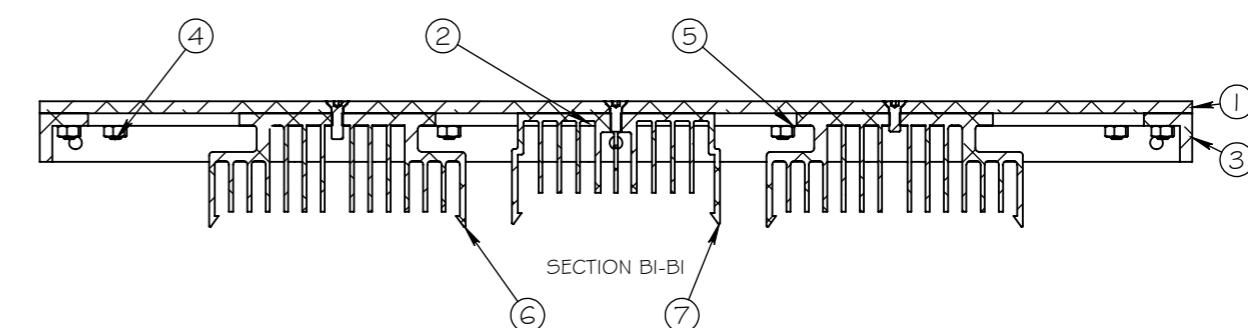
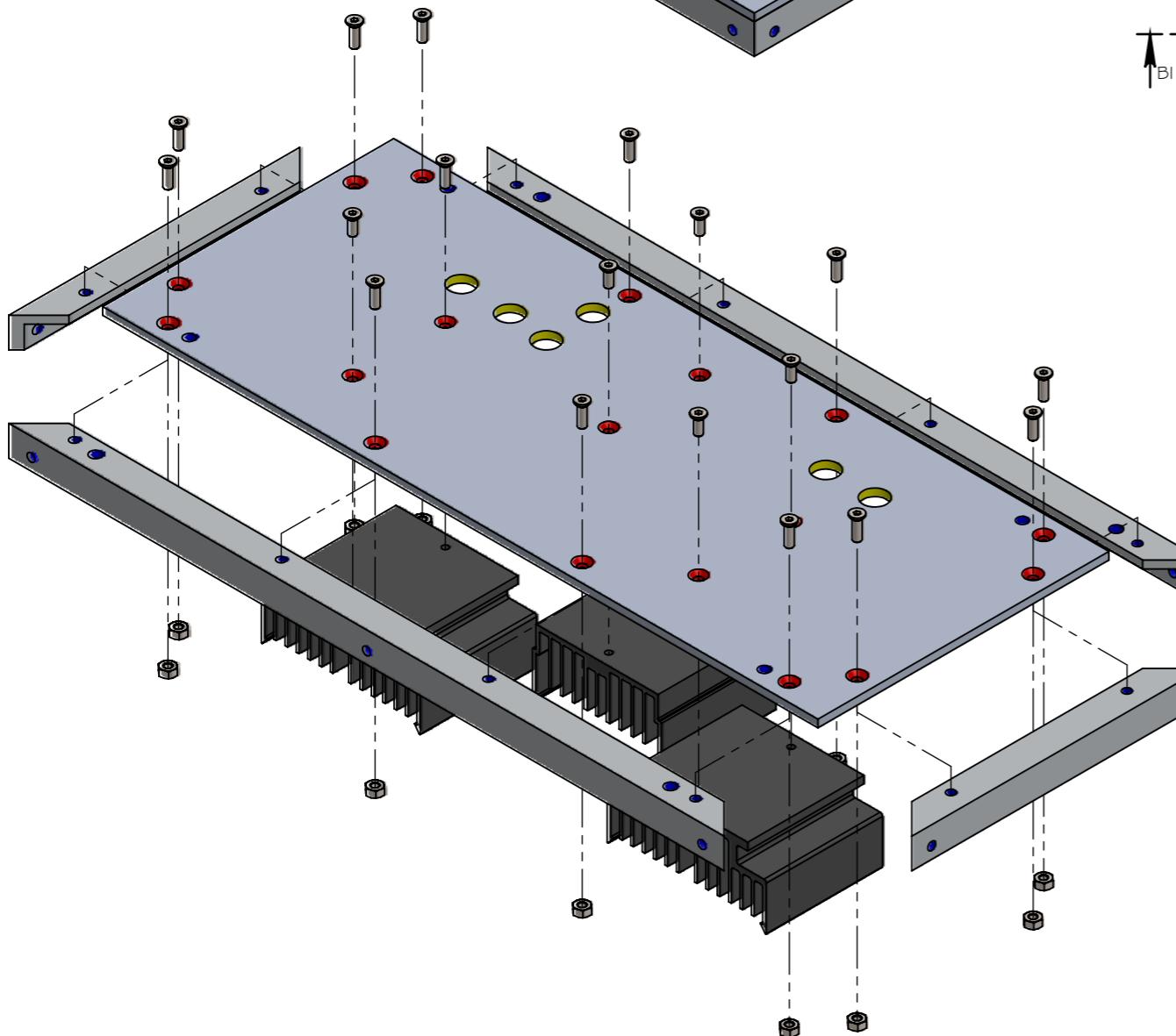
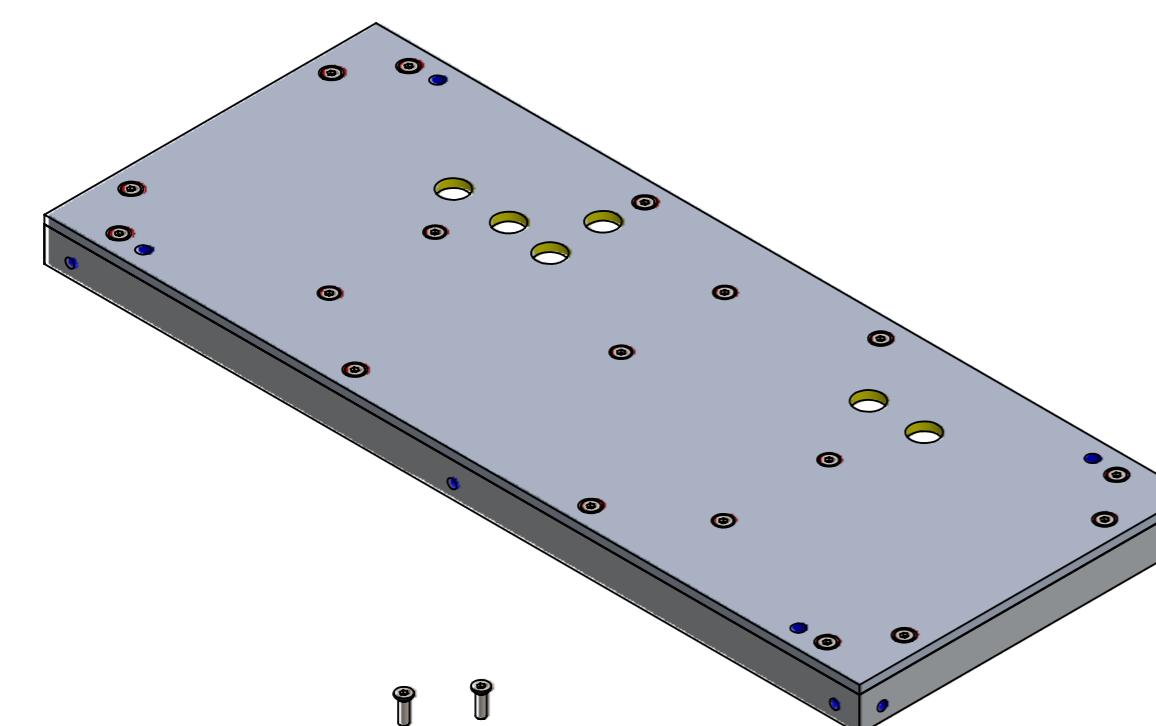
Designed by: Guilherme Carvalho

Date: 06/06/2016 Rev.: A Scale.: 1:5 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm 1 / 26

8 7 6 5 4 3 2 1



ITEM	PART NUMBER - DESCRIPTION	QTY.
7	CENTRAL_HEAT_SINK_DC-DC	1
6	SIDE_HEAT_SINK_DC-DC	2
5	B18.2.4.2M - Hex nut, Style 2, M3 x 0.5 --D-N	12
4	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 10N	18
3	DR2.2.1.03 - ANGLE_BRACKET_B	2
2	DR2.2.1.02 - ANGLE_BRACKET_A	2
1	DR2.2.1.01 - BOTTOM_PLATE	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.2.1 - BOTTOM\_EE\_BOX

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
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Verified by: Guilherme Carvalho

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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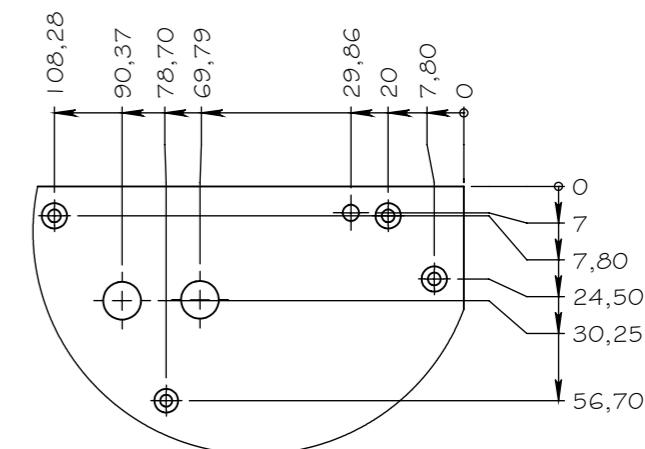
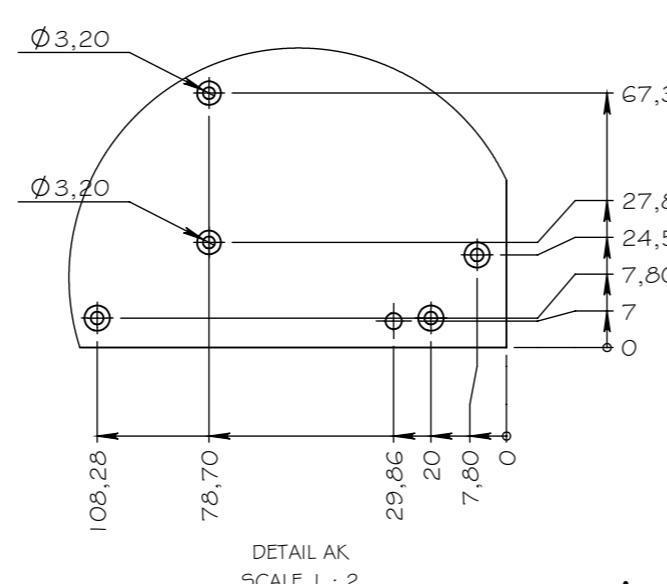
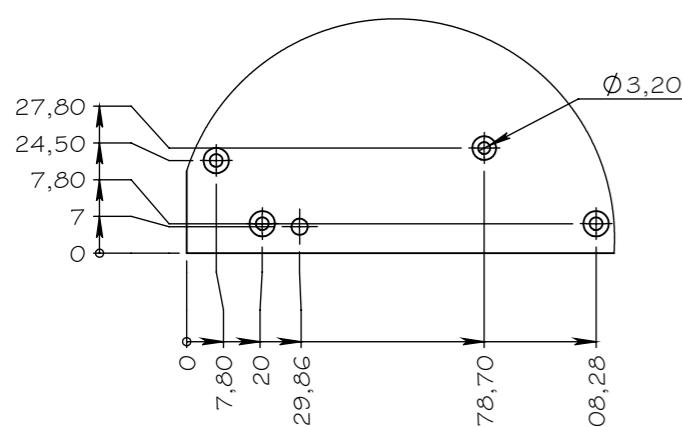
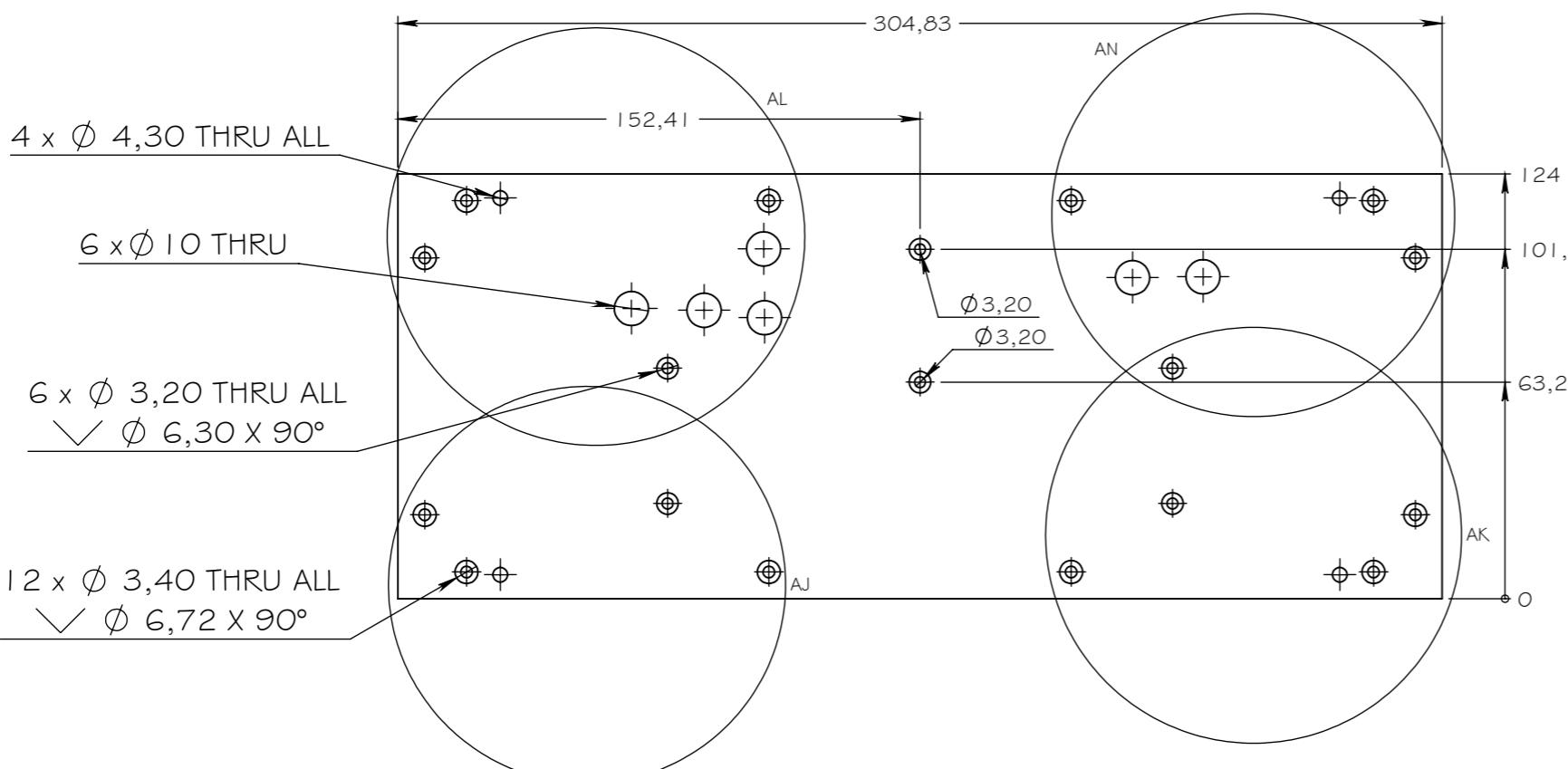
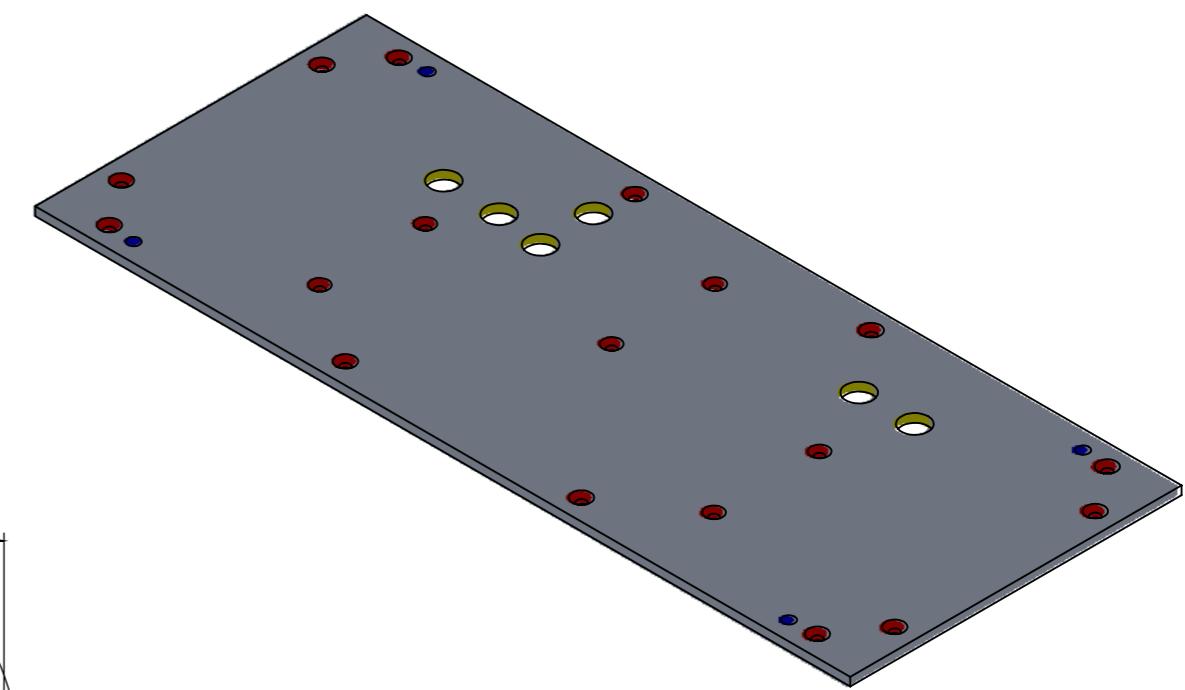
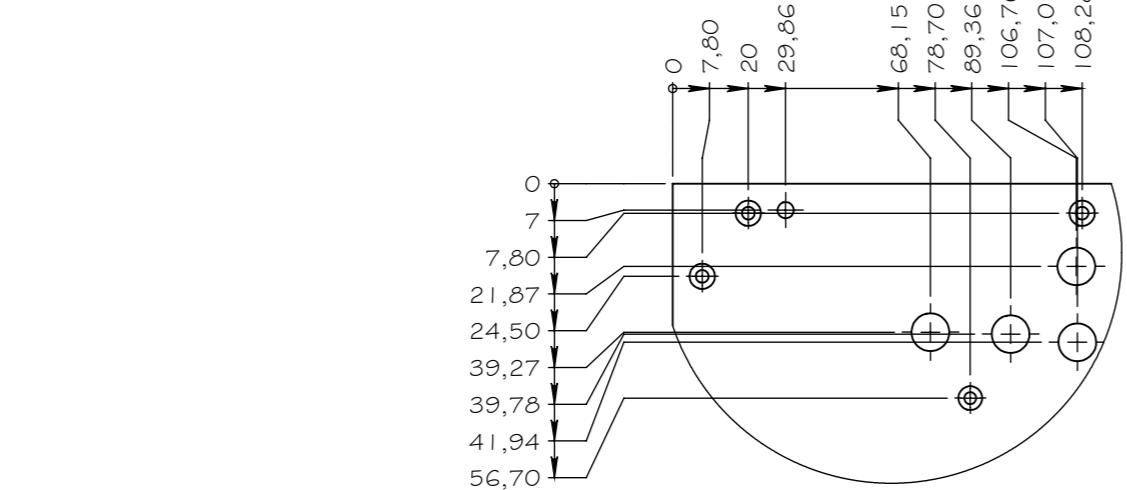
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.1.01 - BOTTOM_PLATE		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
			Sheet: 3 / 26

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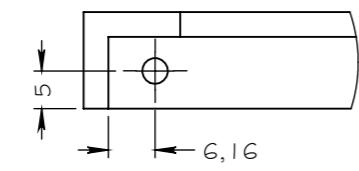
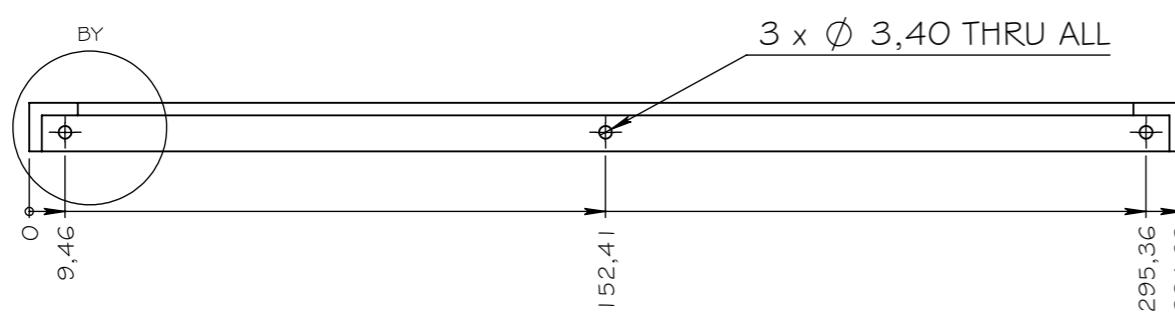
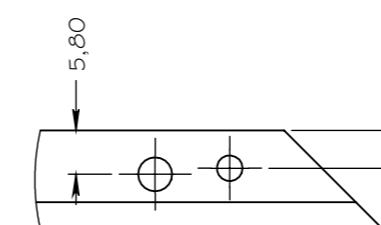
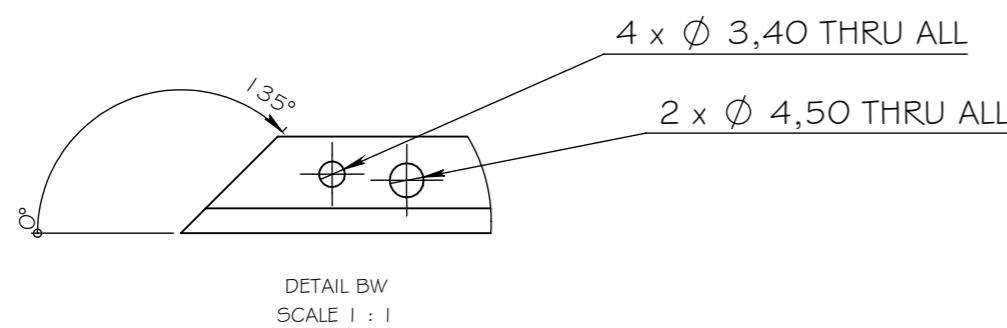
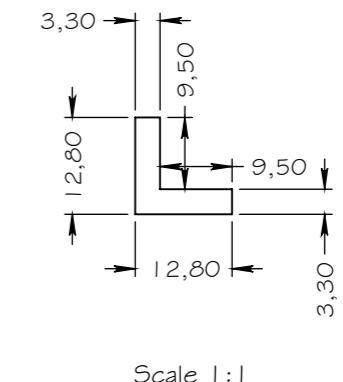
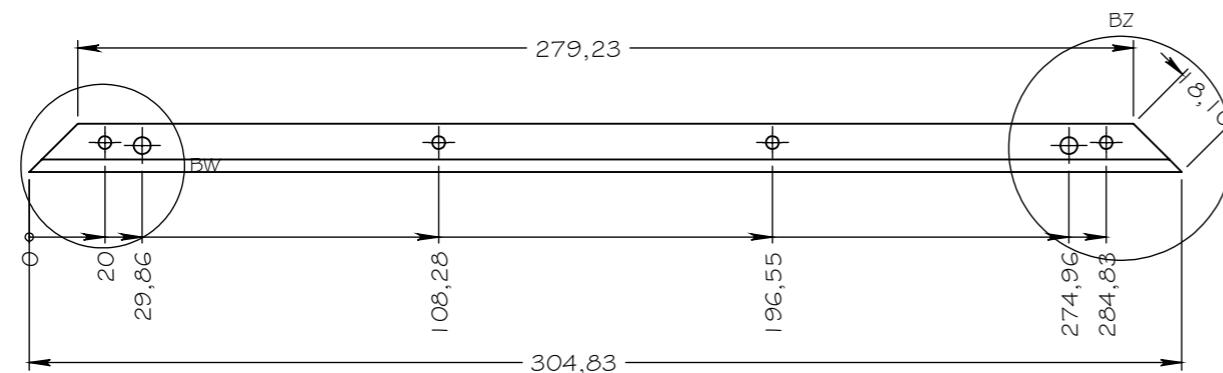
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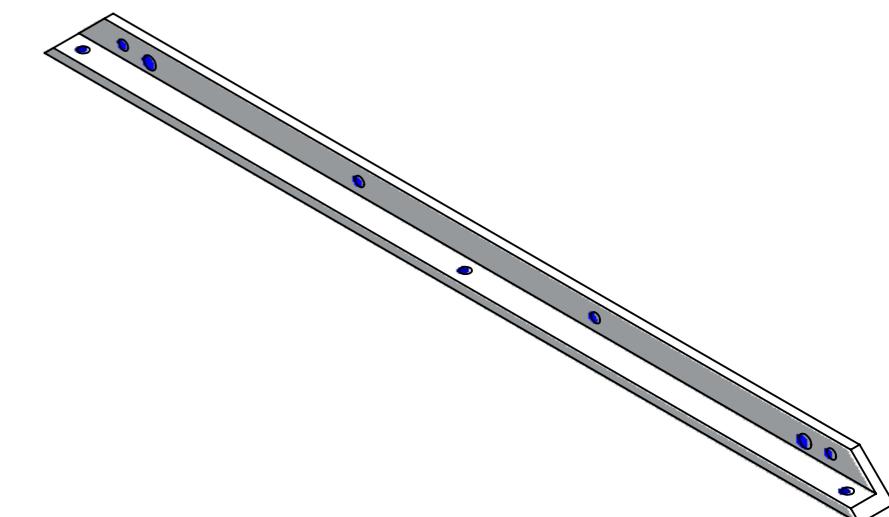
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DETAIL BY  
SCALE 1 : 1



<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.2.1.02 - ANGLE_BRACKET_A		Material: 1060-H14	
Designed by: Guilherme Carvalho		Date: 06/06/2016	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 30/06/2016	Scale.: 1:2
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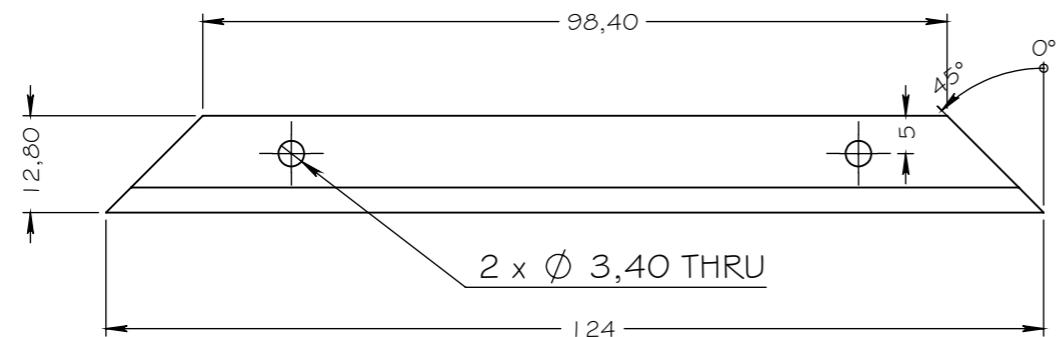
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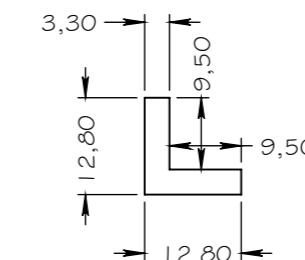
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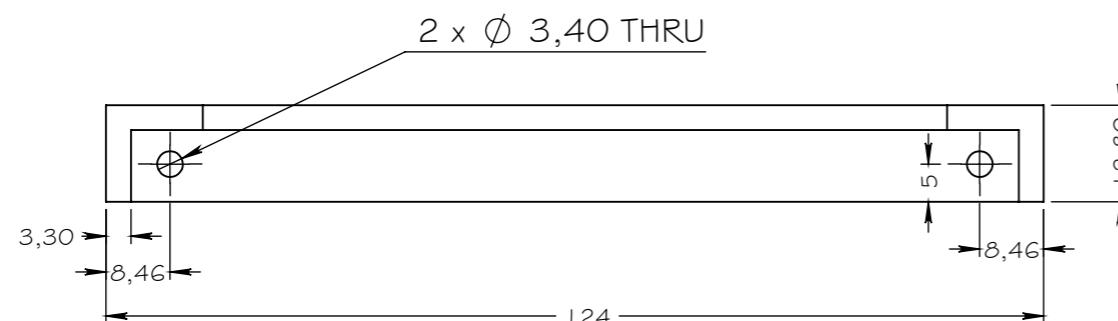
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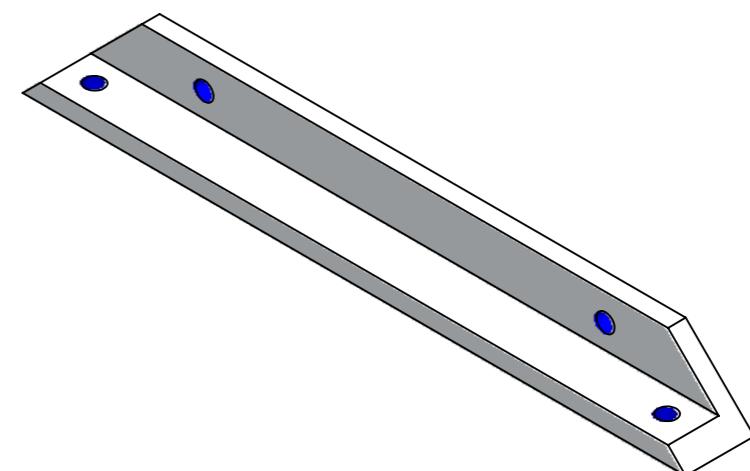
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.2.1.03 - ANGLE_BRACKET_B			Material: 1060-H14
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Sheet: 5 / 26
		Unit.: mm	

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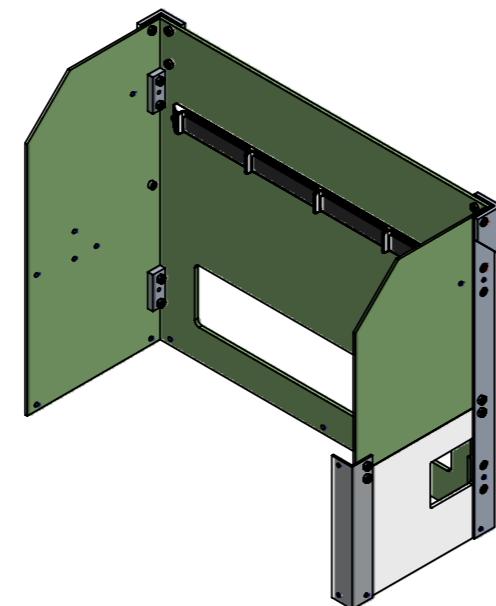
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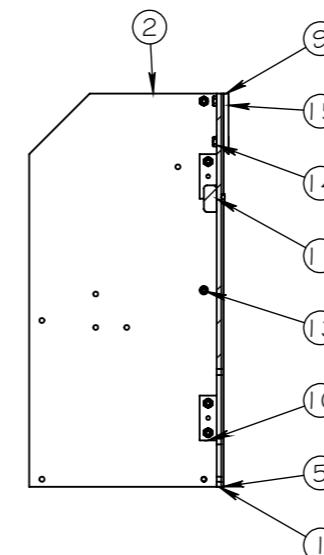
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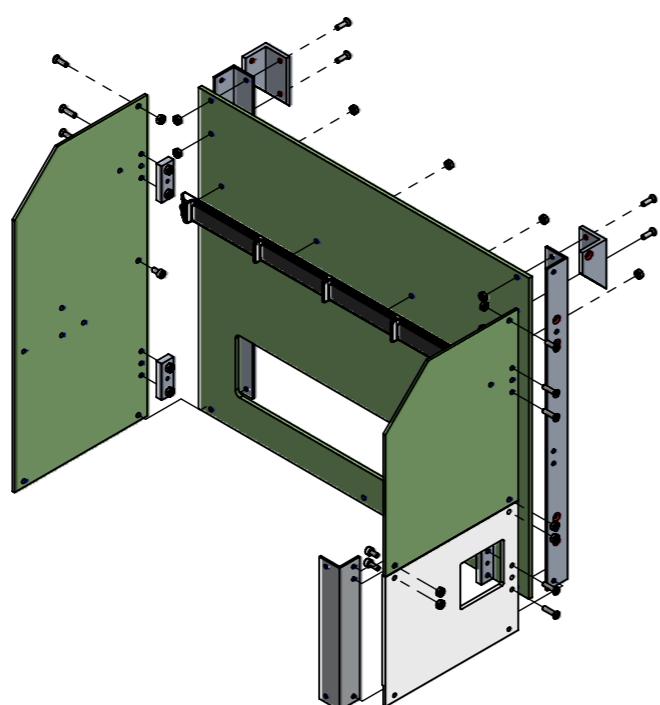
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ITEM	PART NUMBER - DESCRIPTION	QTY.
15	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 10N	17
14	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 -- D-N	23
13	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	7
12	UPPER_CURB_RUBBER	4
11	DR2.2.2.011 - UPPER_CURB	1
10	DR2.2.2.010 - FIXATION_BLOCK	4
9	DR2.2.2.09 - LEFT_FIXATION_ANGLE_BRACKET	1
8	DR2.2.2.08 - RIGHT_FIXATION_ANGLE_BRACKET	1
7	DR2.2.2.07 - RIGHT_ANGLE_BRACKET_D	1
6	DR2.2.2.06 - RIGHT_ANGLE_BRACKET_C	1
5	DR2.2.2.05 - LEFT_ANGLE_BRACKET_C	1
4	DR2.2.2.04 - BOTTOM_RIGHT_SIDE_PLATE	1
3	DR2.2.2.03 - UPPER_RIGHT_SIDE_PLATE	1
2	DR2.2.2.02 - LEFT_SIDE_PLATE	1
1	DR2.2.2.01 - BACK_PLATE	1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2 - SIDE\_BACK\_EE\_BOX

Material: Various

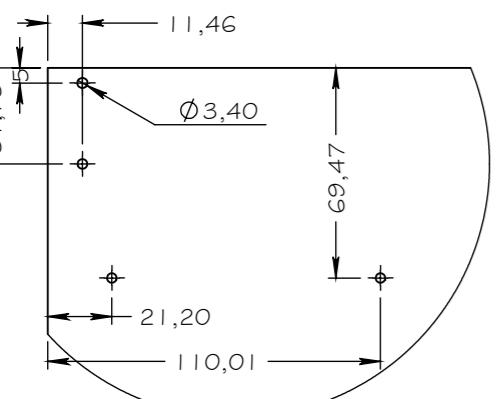
Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:5

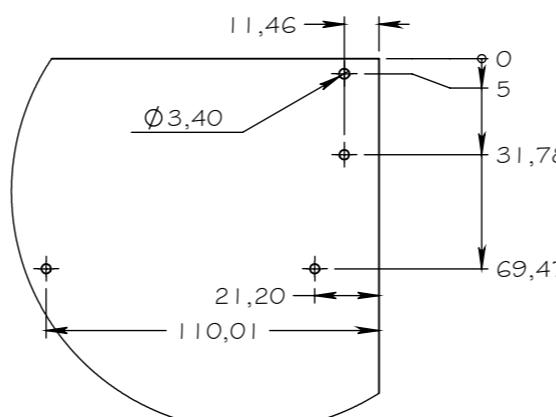
Sheet: 6 / 26

Verified by: Ramon Romankevicius

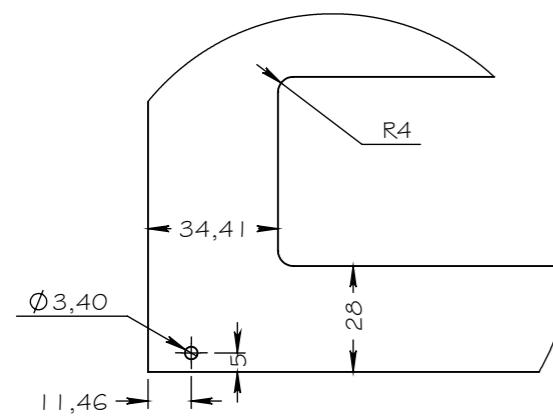
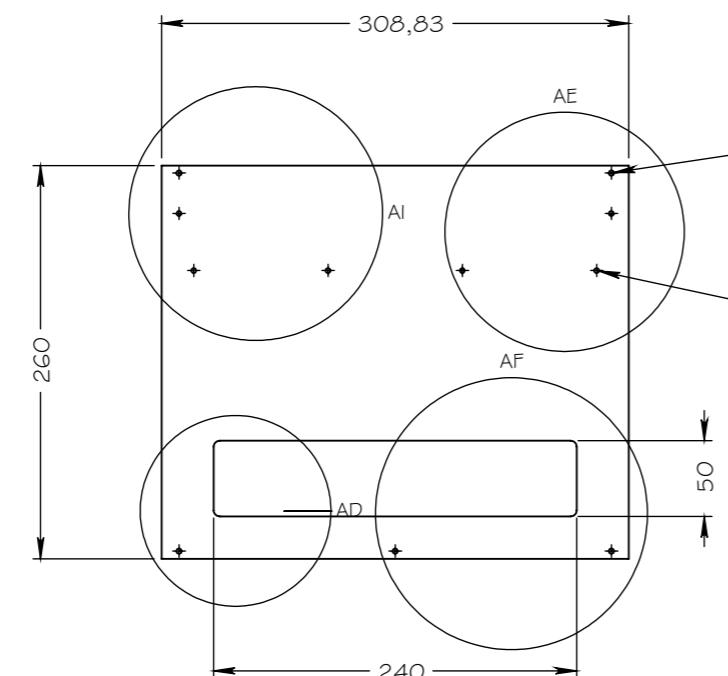
Ver. date.: 30/06/2016 QTY: 1 Unit.: mm



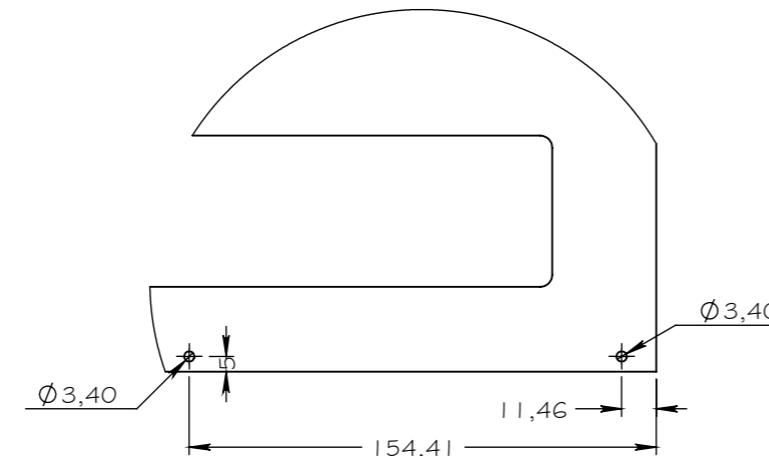
DETAIL A1  
SCALE 2 : 5



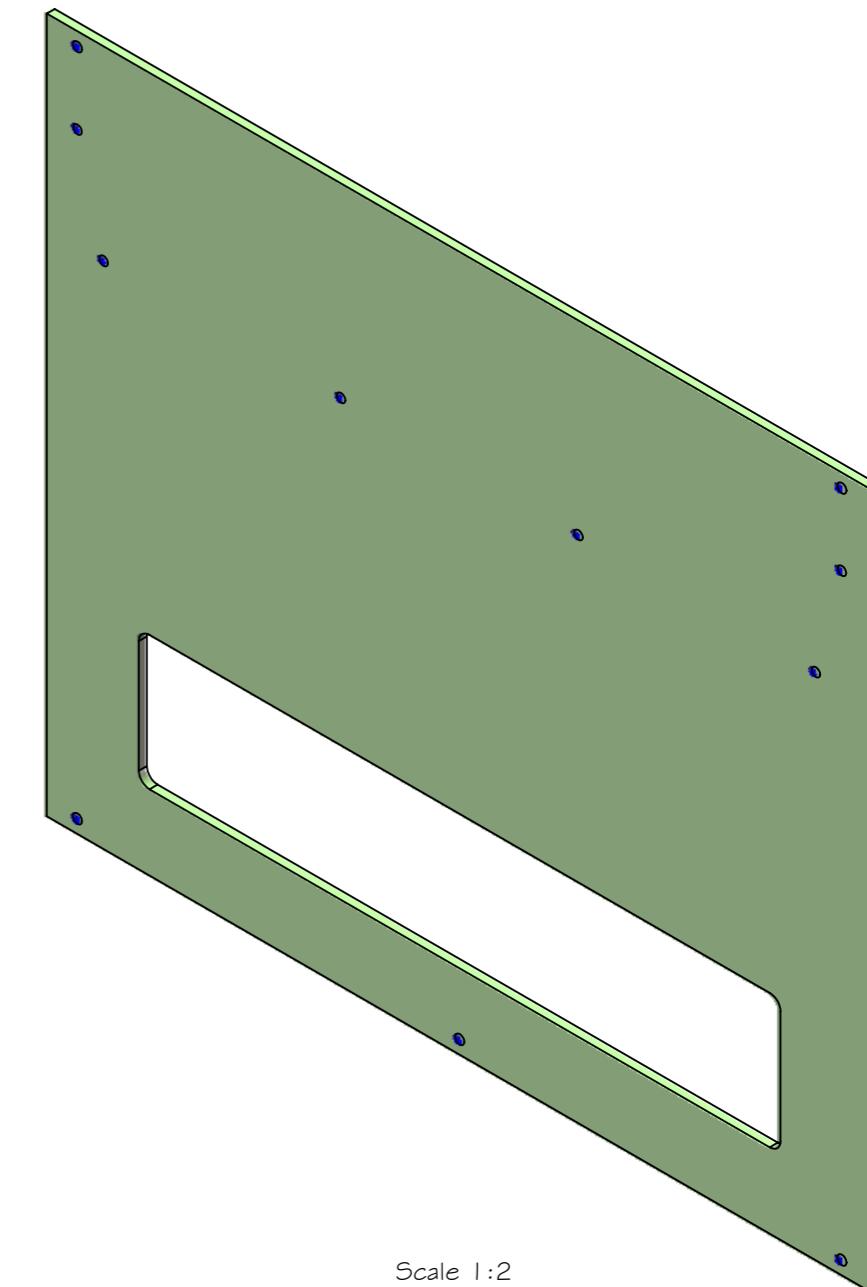
DETAIL AE  
SCALE 2 : 5  
 $5 \times \Ø 3,40$  THRU ALL  
 $6 \times \Ø 3,20$  THRU



DETAIL AD  
SCALE 1 : 2



DETAIL AF  
SCALE 2 : 5



Scale 1:2

PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.01 - BACK_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:5
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 7 / 26
Unit.: mm			

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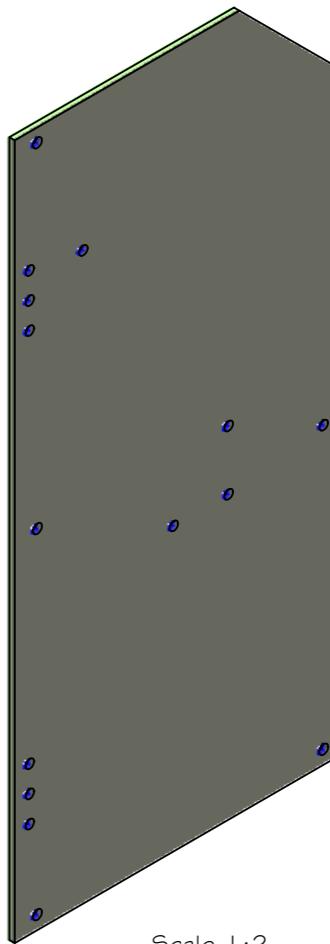
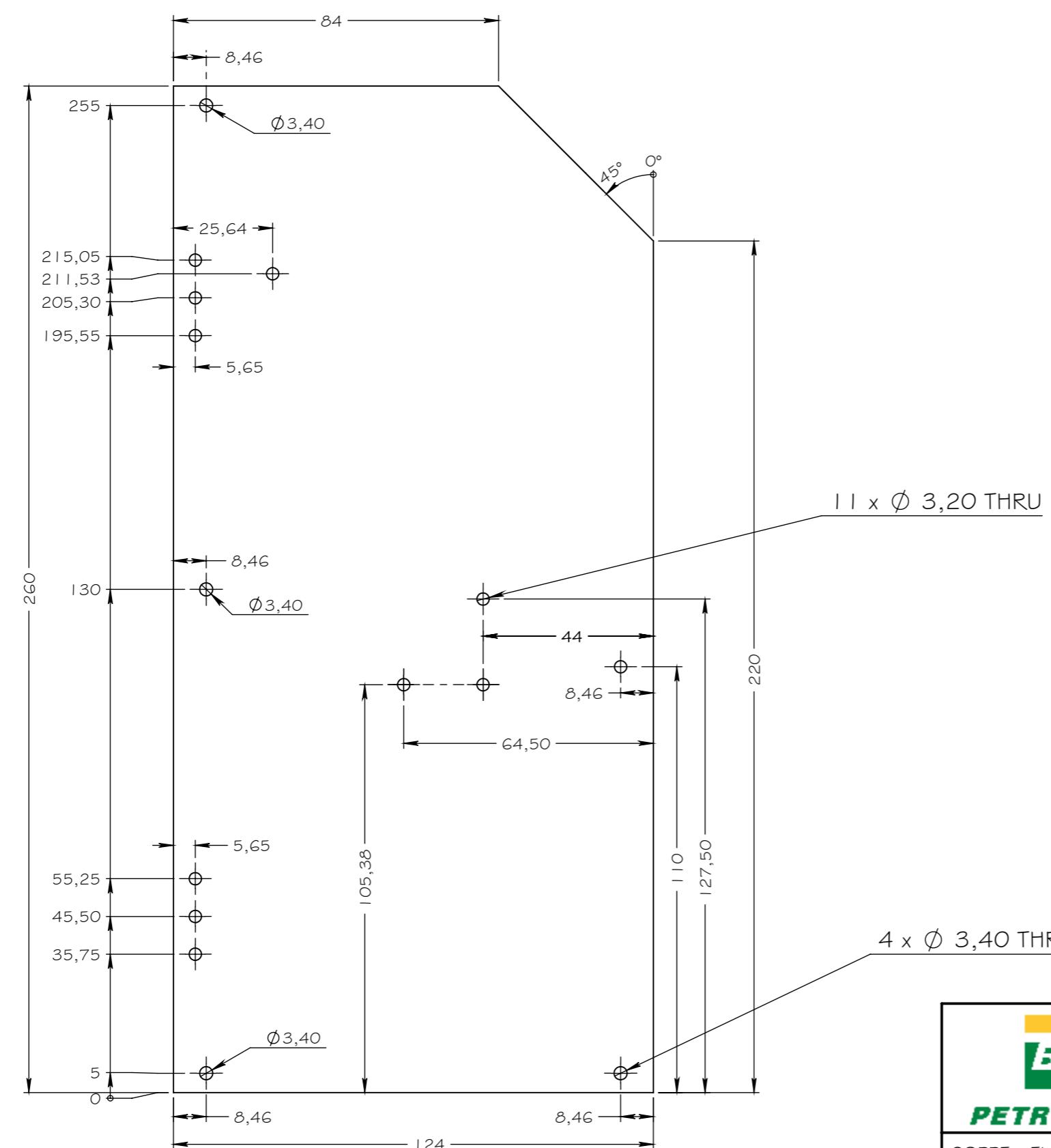
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Scale 1:2

<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.02 - LEFT_SIDE_PLATE			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 06/06/2016		Rev.: A Scale.: 3:4 Sheet:
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016		QTY: 1 Unit.: mm
			8 / 26

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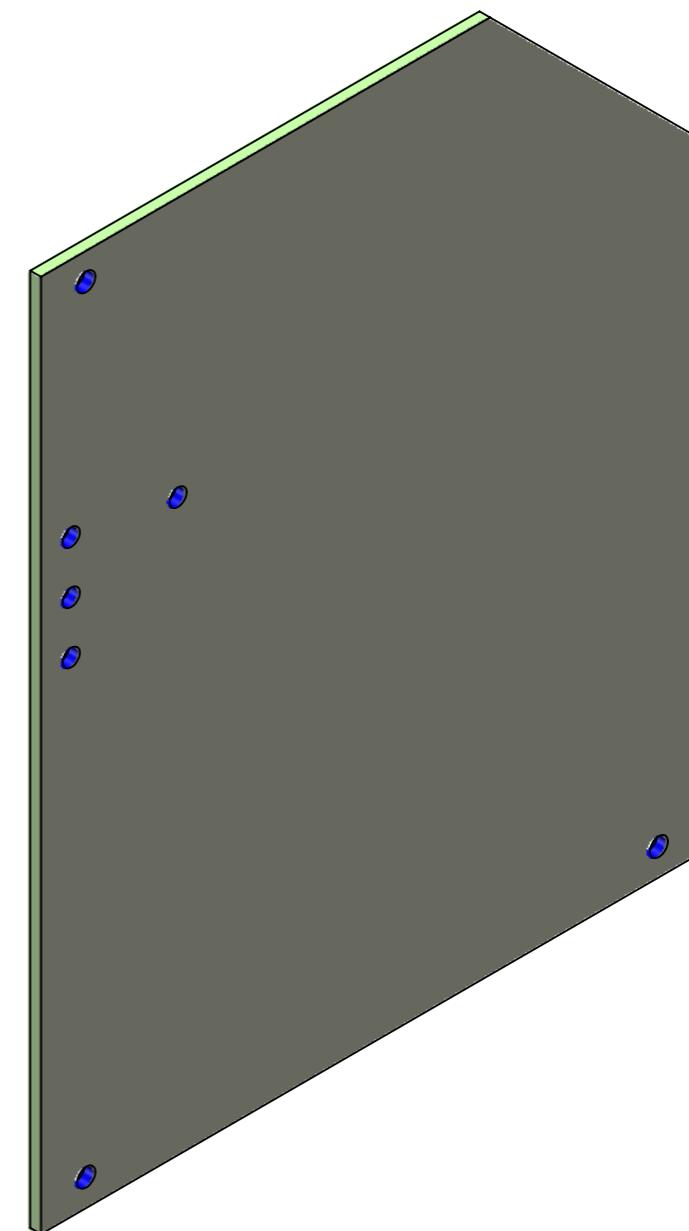
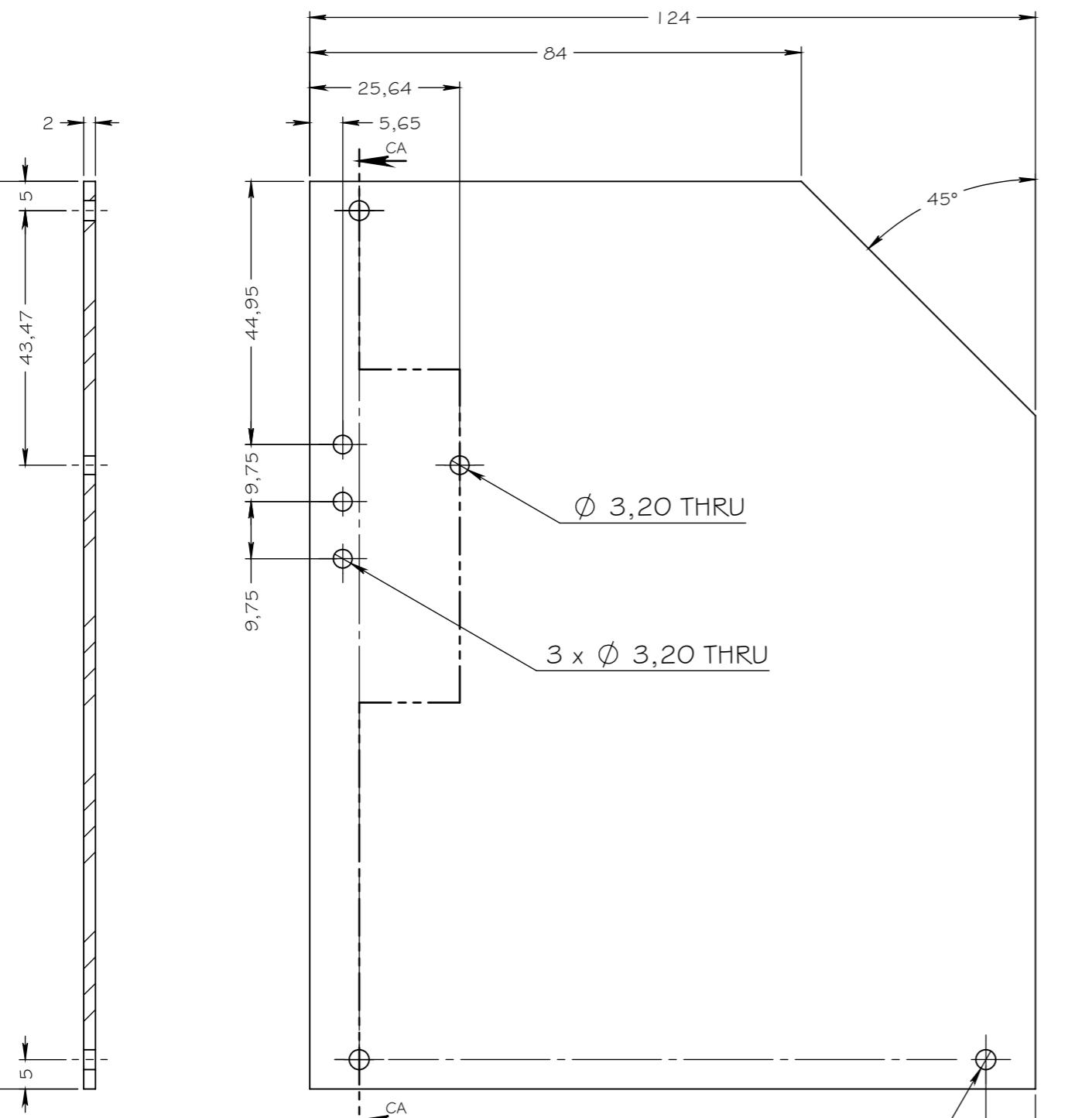
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.03 - UPPER_RIGHT_SIDE_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
		Sheet:	9 / 26

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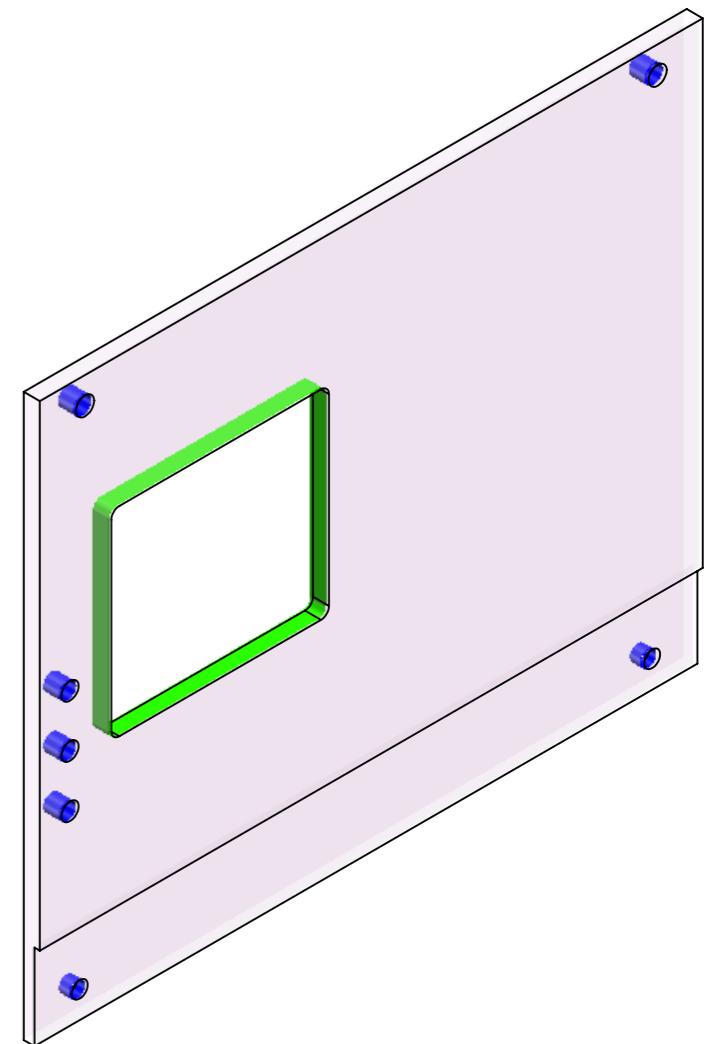
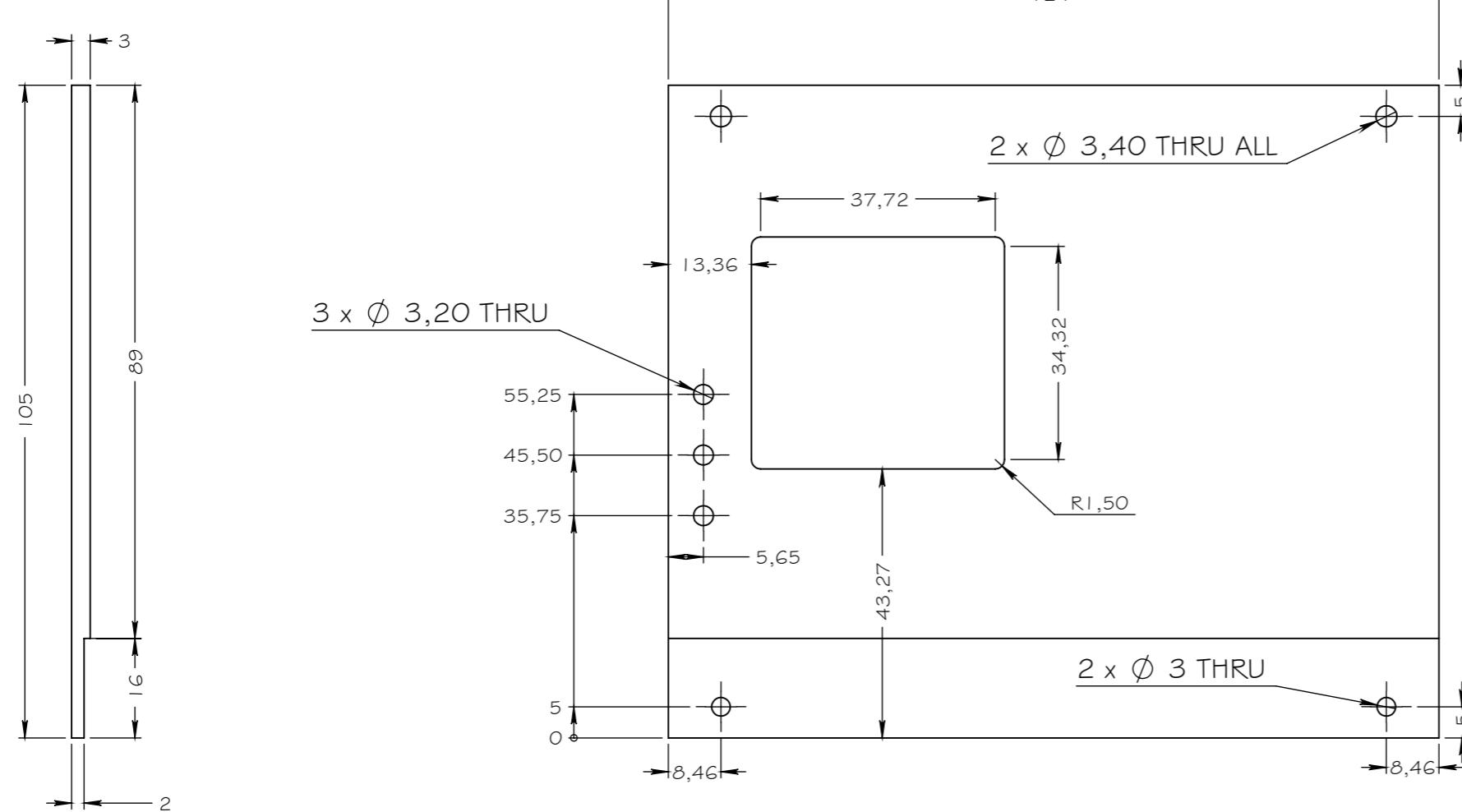
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.04 - BOTTOM_RIGHT_SIDE_PLATE		Material: Acrylic (Medium-high impact)	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 1026 Unit.: mm

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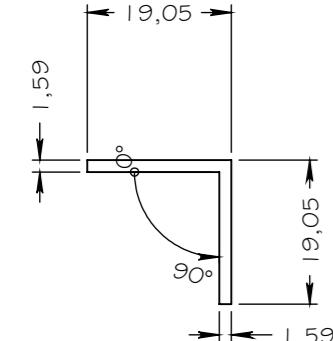
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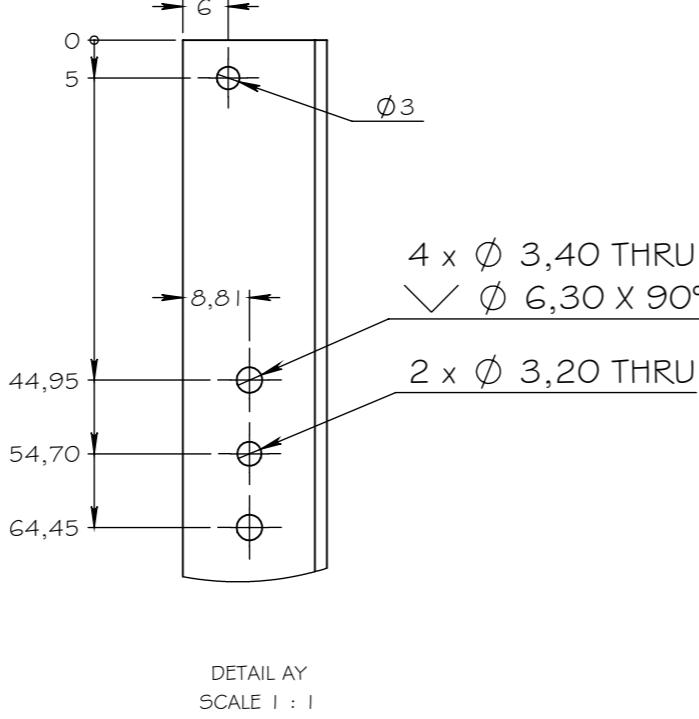
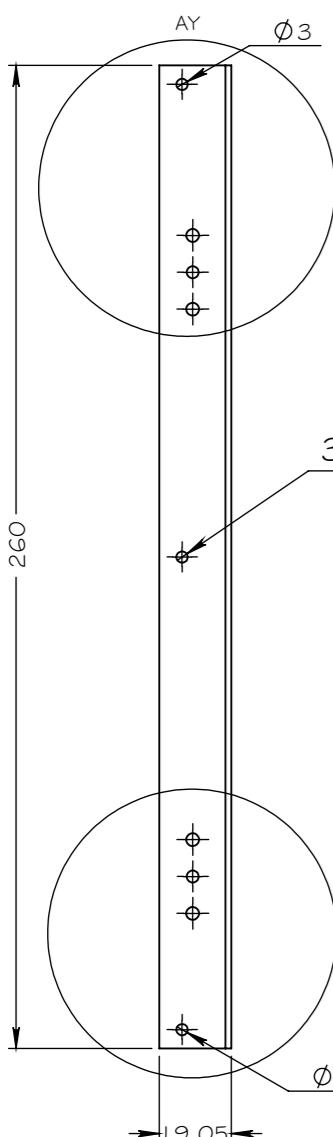
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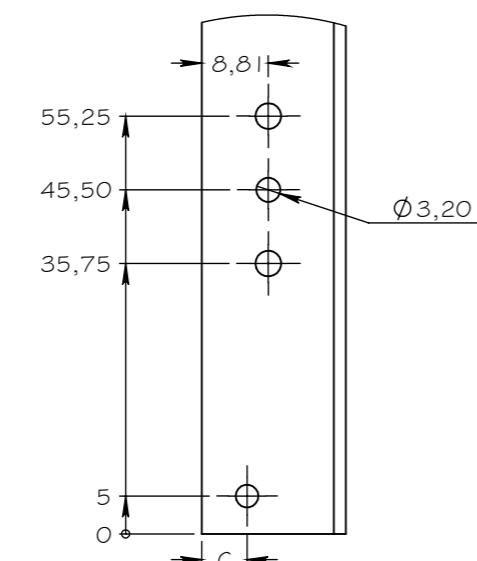
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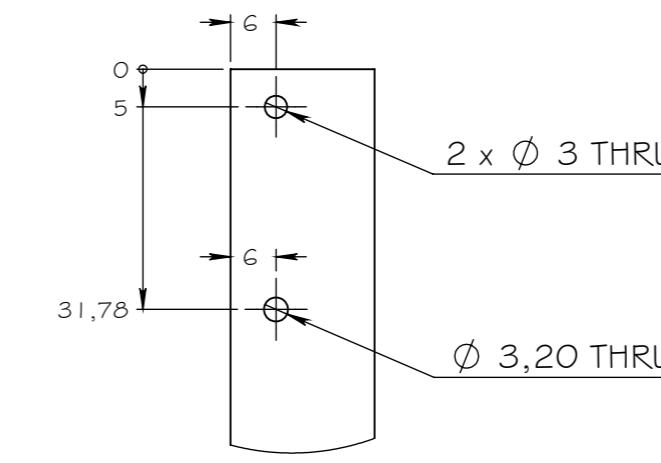
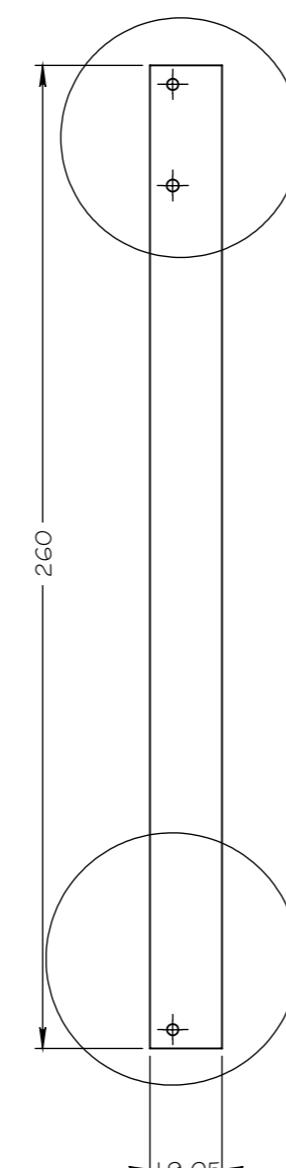
Scale 1:1



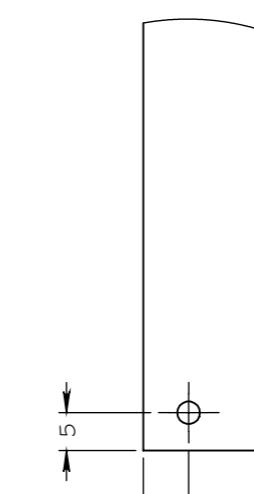
DETAIL AY  
SCALE 1 : 1



DETAIL AZ  
SCALE 1 : 1



DETAIL BB  
SCALE 1 : 1



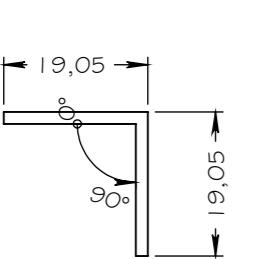
DETAIL BC  
SCALE 1 : 1



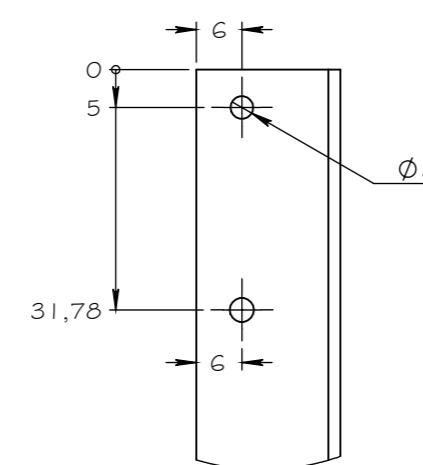
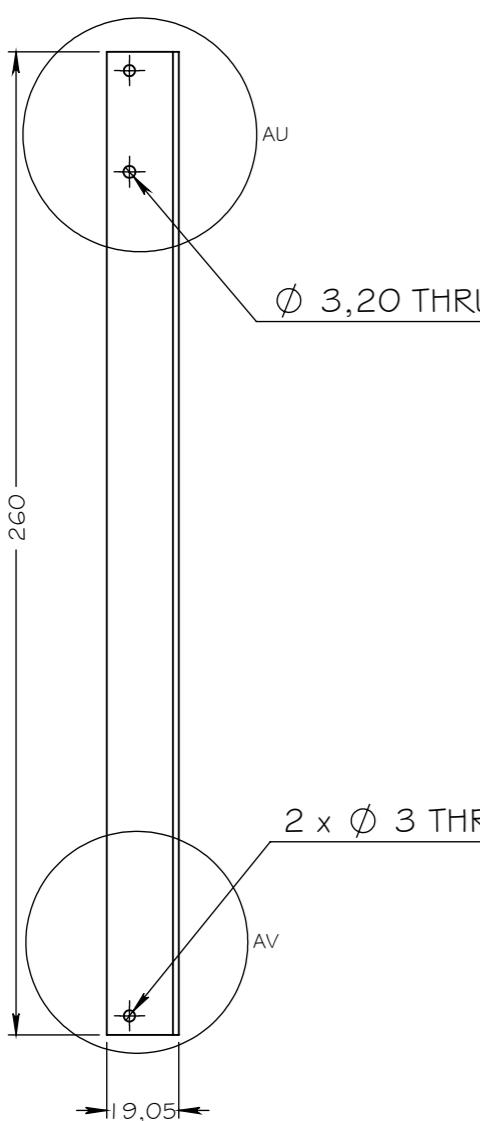
PETROBRAS		GSCAR	COPPE UFRJ
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.05 - LEFT_ANGLE_BRACKET_C		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 11 / 26
Unit.: mm			

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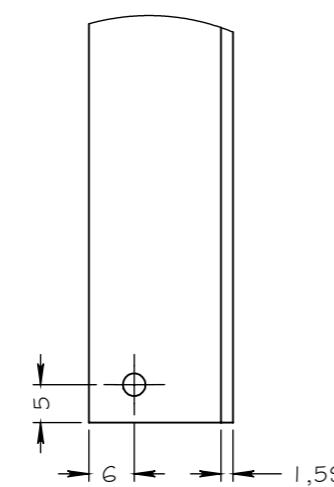
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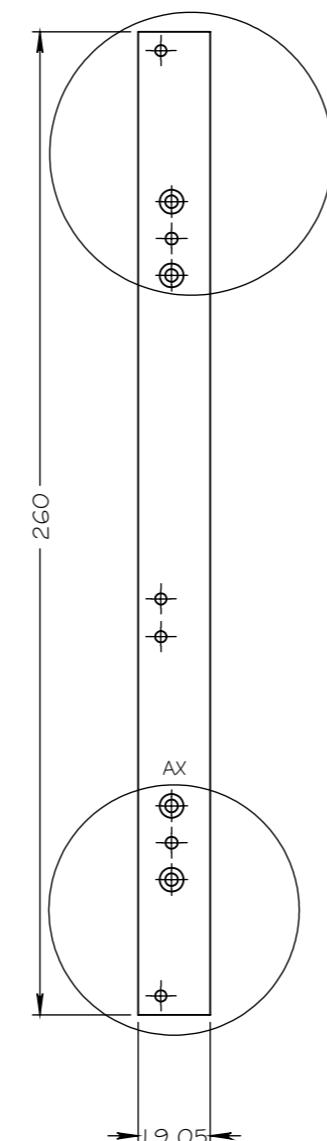
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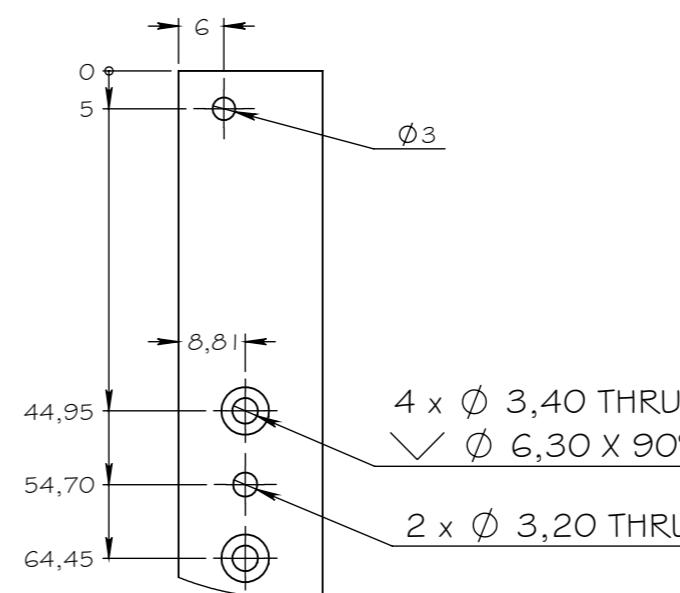
DETAIL AU  
SCALE 1 : 1



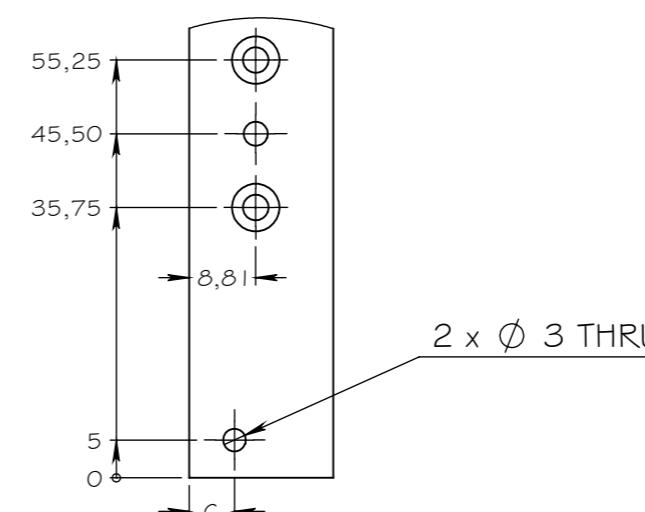
DETAIL AV  
SCALE 1 : 1



AX



DETAIL AW  
SCALE 1 : 1



DETAIL AX  
SCALE 1 : 1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2.06 - RIGHT\_ANGLE\_BRACKET\_C

Material: 1060-H14

Designed by: Guilherme Carvalho

Rev.:

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Sheet:

Verified by: Ramon Romankevicius

Ver. date.:

30/06/2016

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Unit.: mm

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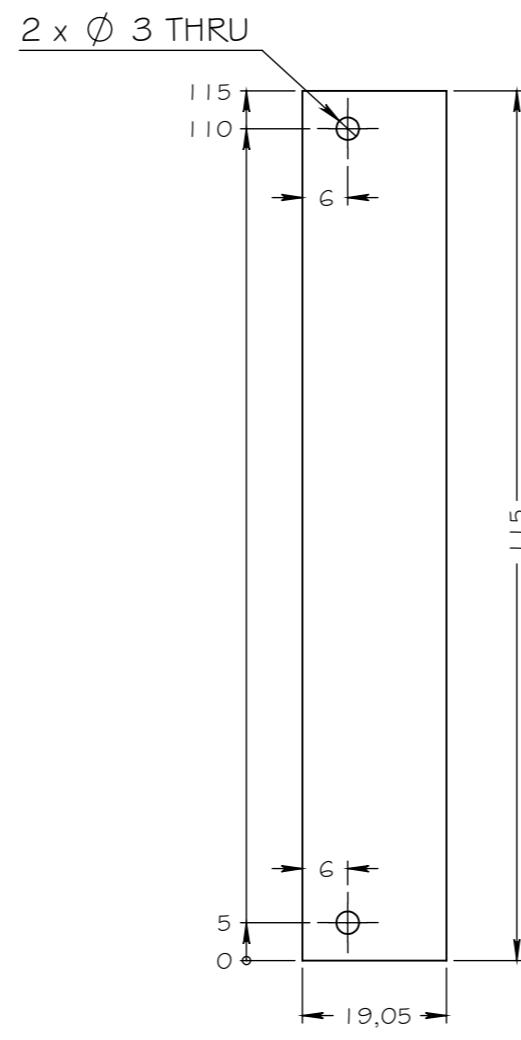
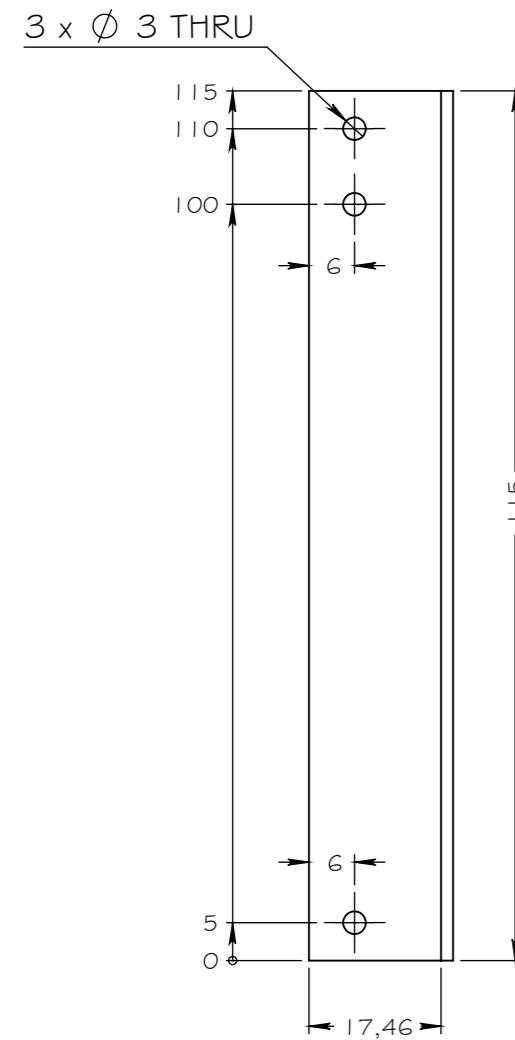
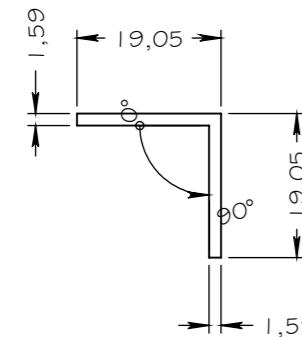
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.2.2.07 - RIGHT_ANGLE_BRACKET_D			Material: 1060-H14
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
			Sheet: 13/26

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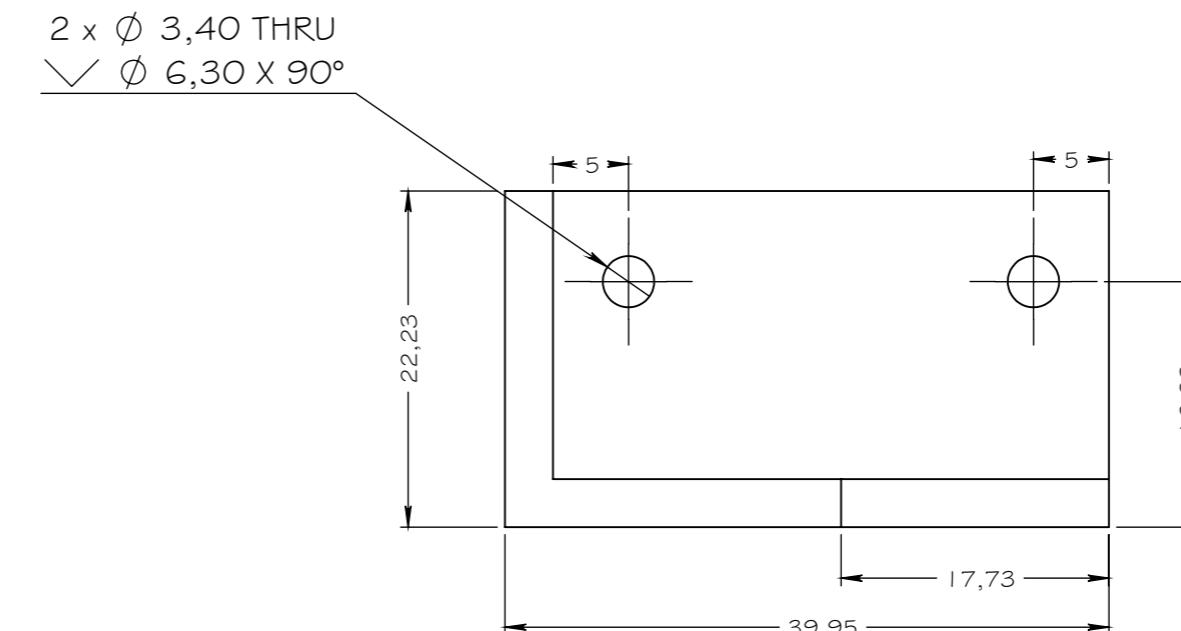
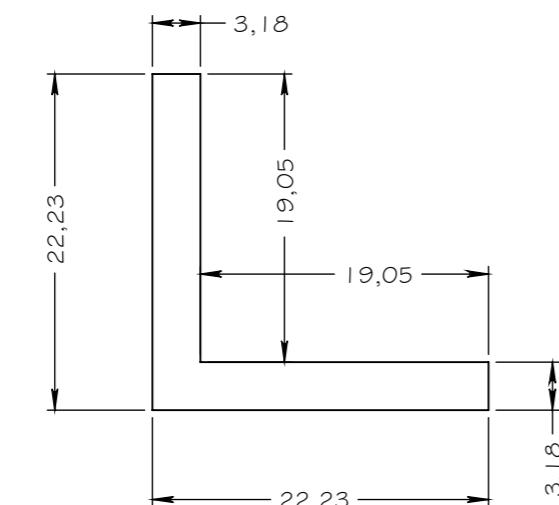
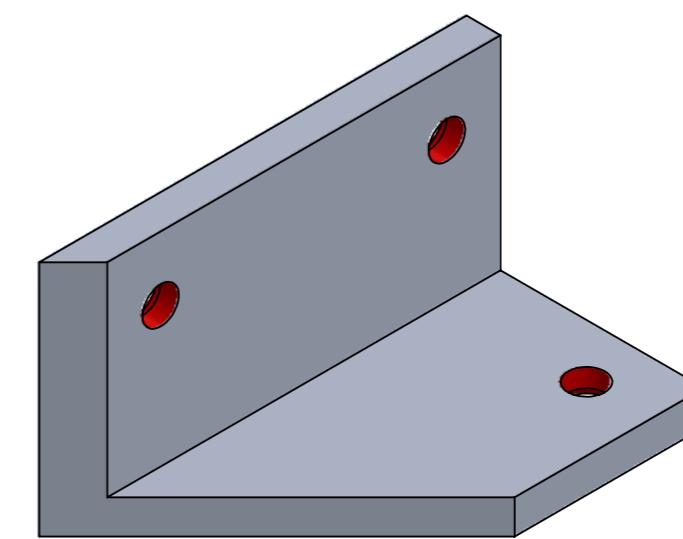
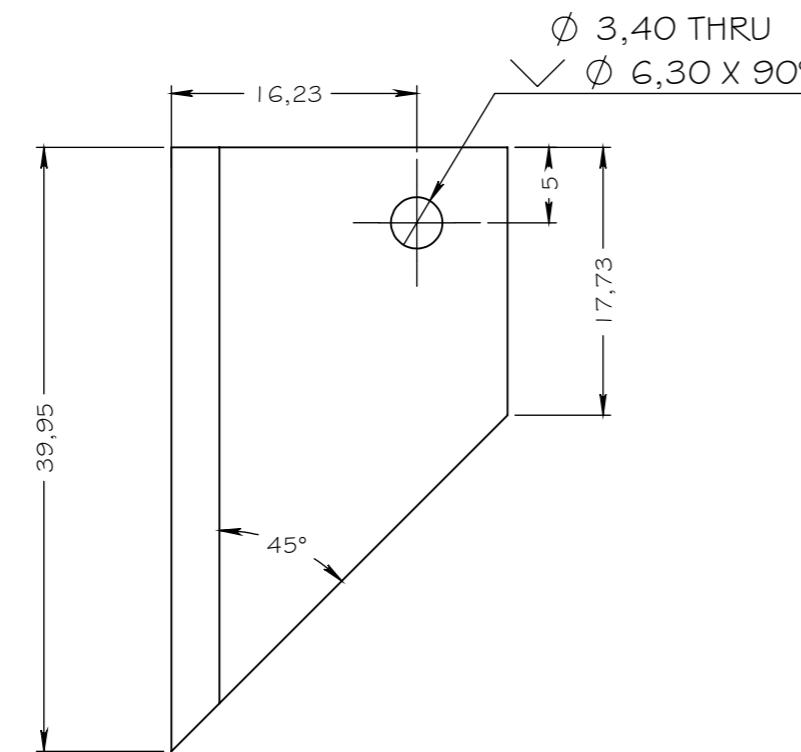
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.08 - RIGHT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 14/26 Unit.: mm

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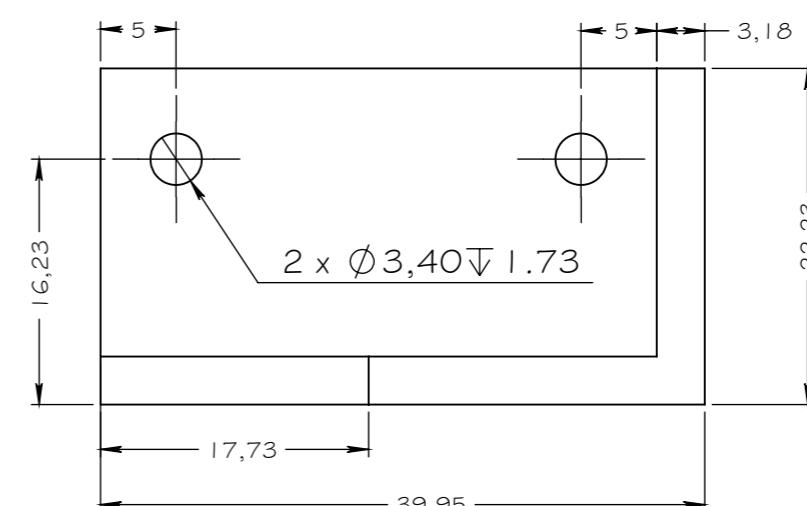
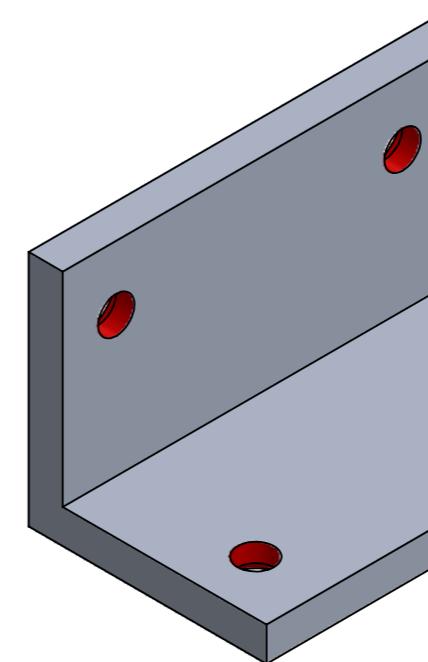
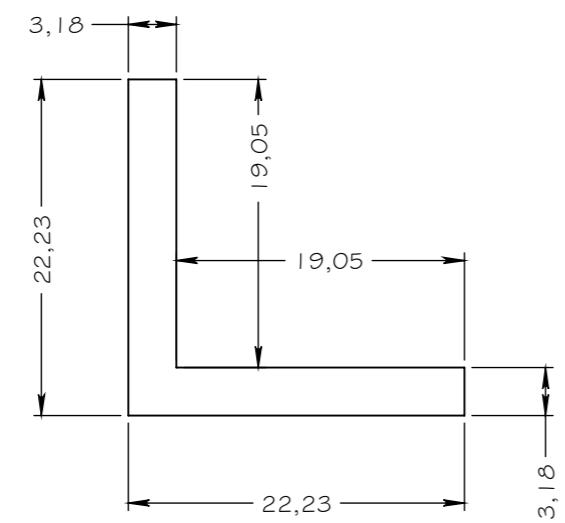
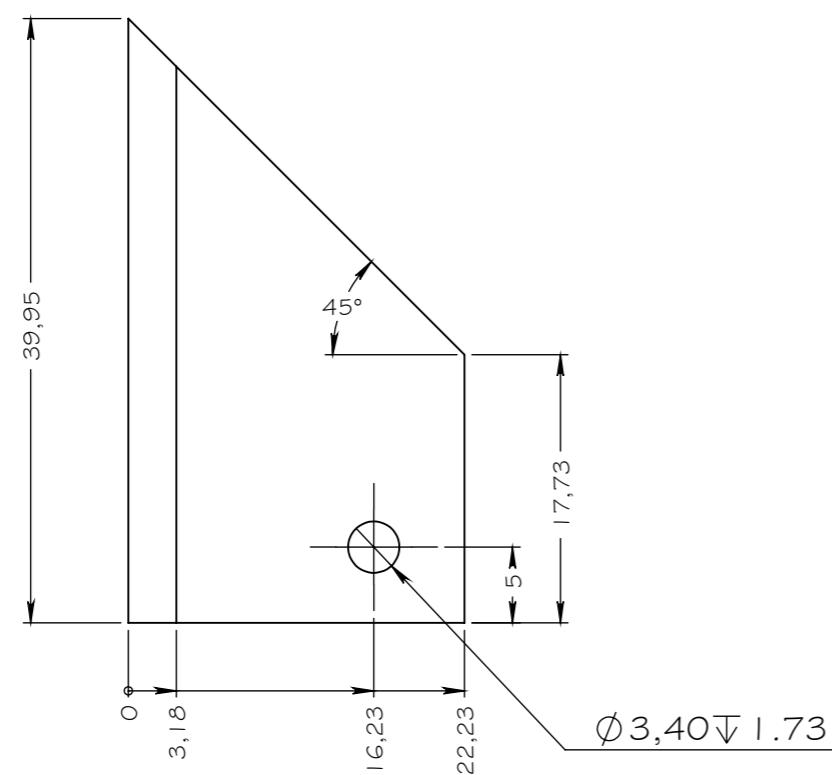
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.09 - LEFT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 15/26 Unit.: mm

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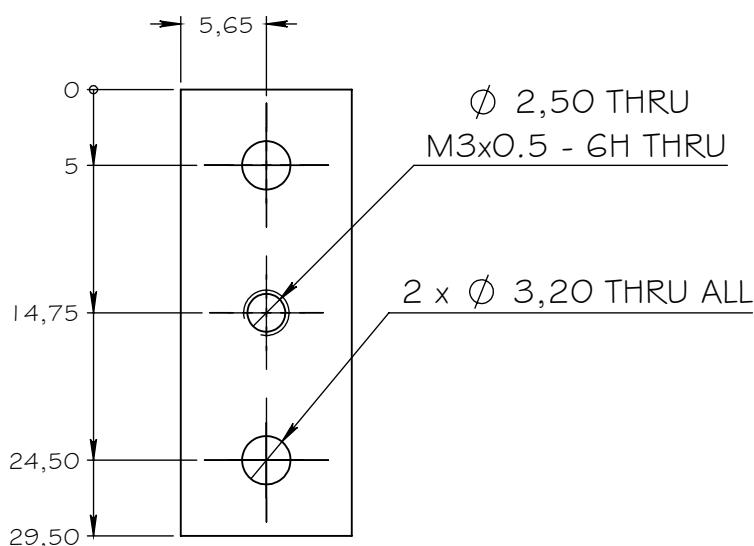
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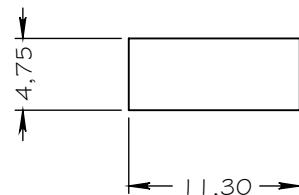
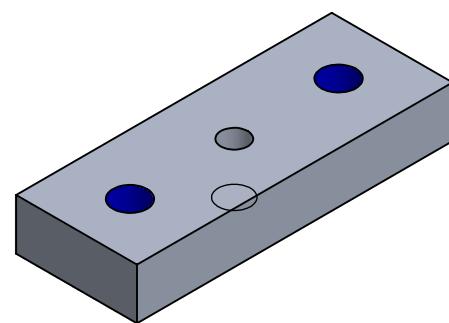
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2.010 - FIXATION\_BLOCK

Material: 1060 Alloy

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Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 4

Unit.: mm

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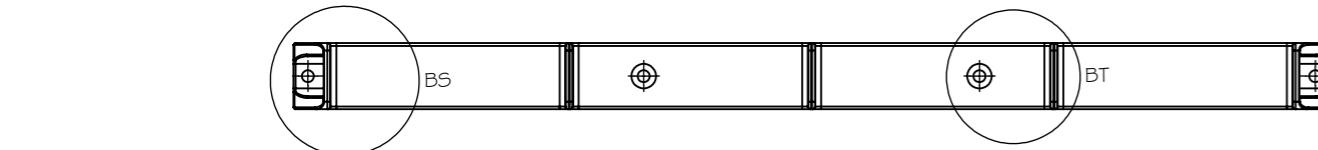
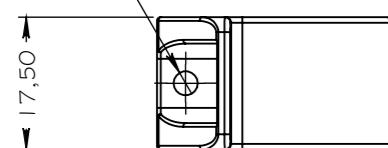
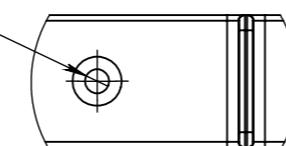
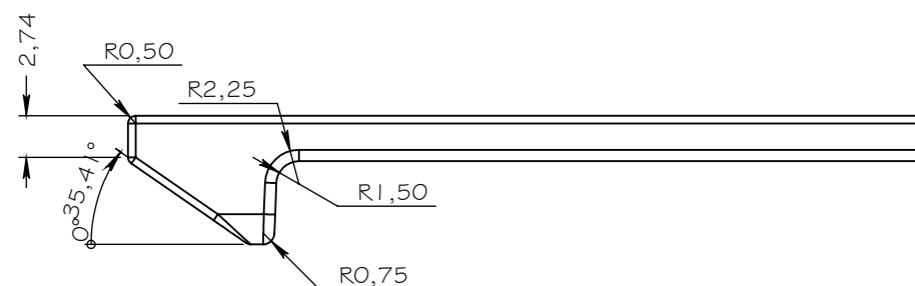
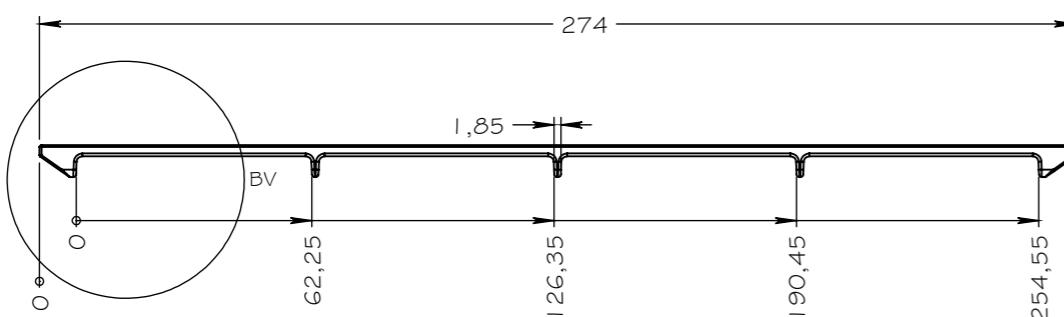
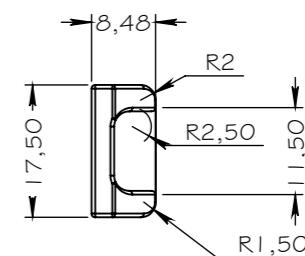
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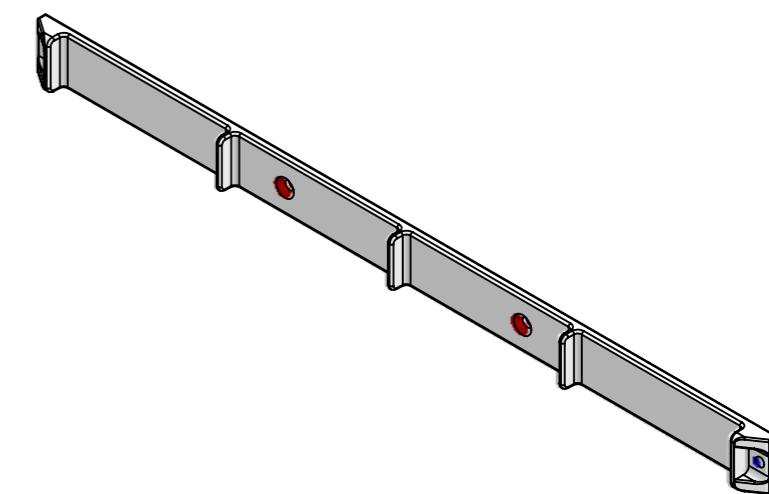
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2 x  $\emptyset$  3,20  $\downarrow$  3DETAIL BS  
SCALE 1 : 12 x  $\emptyset$  3,20 THRU  
 $\checkmark$   $\emptyset$  6,50 X 90°DETAIL BT  
SCALE 1 : 1DETAIL BV  
SCALE 2 : 1

Scale 1:1



PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.011 - UPPER_CURB		Material: ABS	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 17/26
		Unit.: mm	

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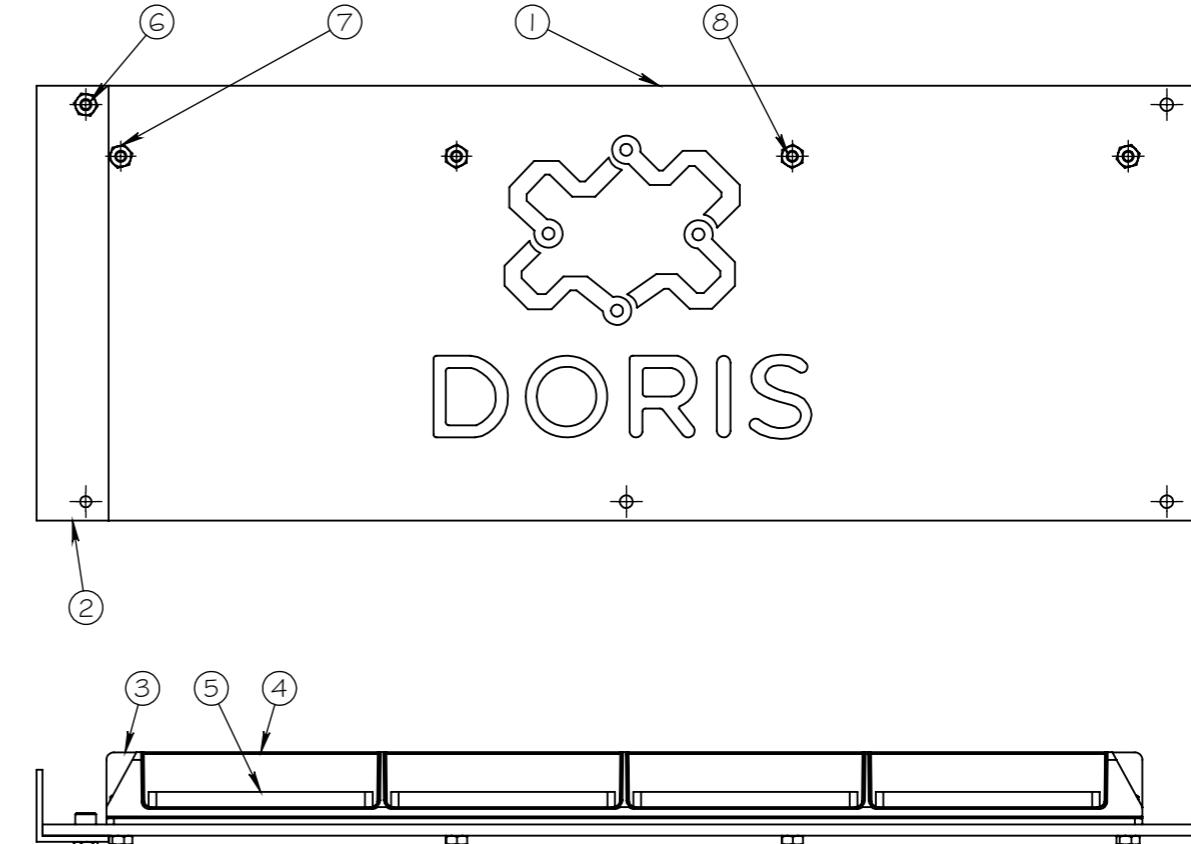
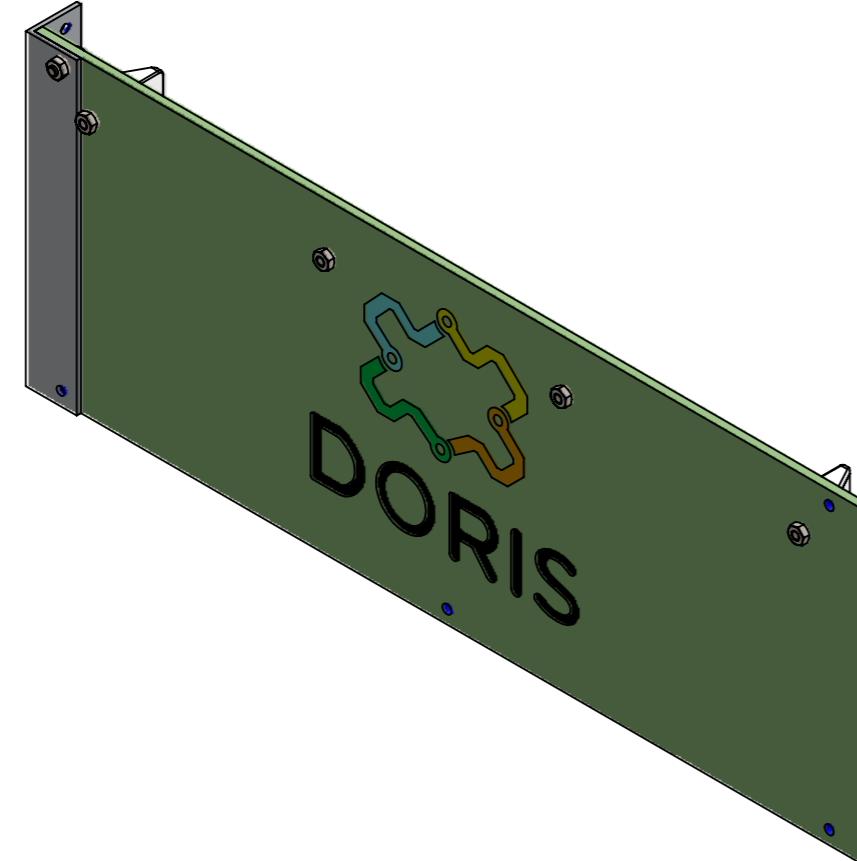
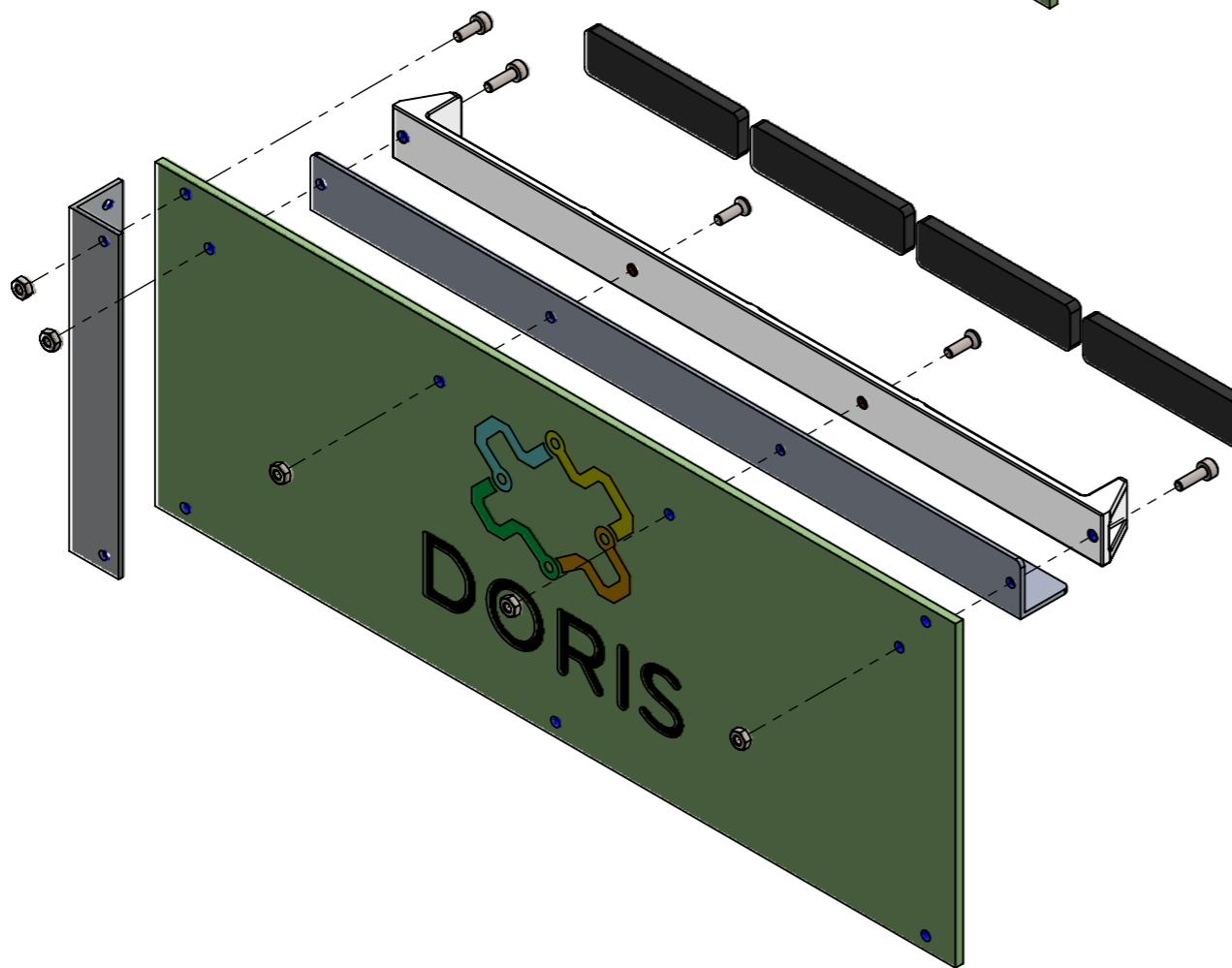
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ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 1ON	2
7	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	5
6	B18.3.1M - 3 x 0.5 x 10 Hex SHCS -- 1ONHX	3
5	BOTTOM_CURB_RUBBER	4
4	DR2.2.3.04 - BOTTOM_CURB	1
3	DR2.2.3.03 - FRONT_SUPPORT_ANGLE_BRACKET	1
2	DR2.2.3.02 - LEFT_ANGLE_BRACKET_D	1
1	DR2.2.3.01 - FRONT_PLATE	1

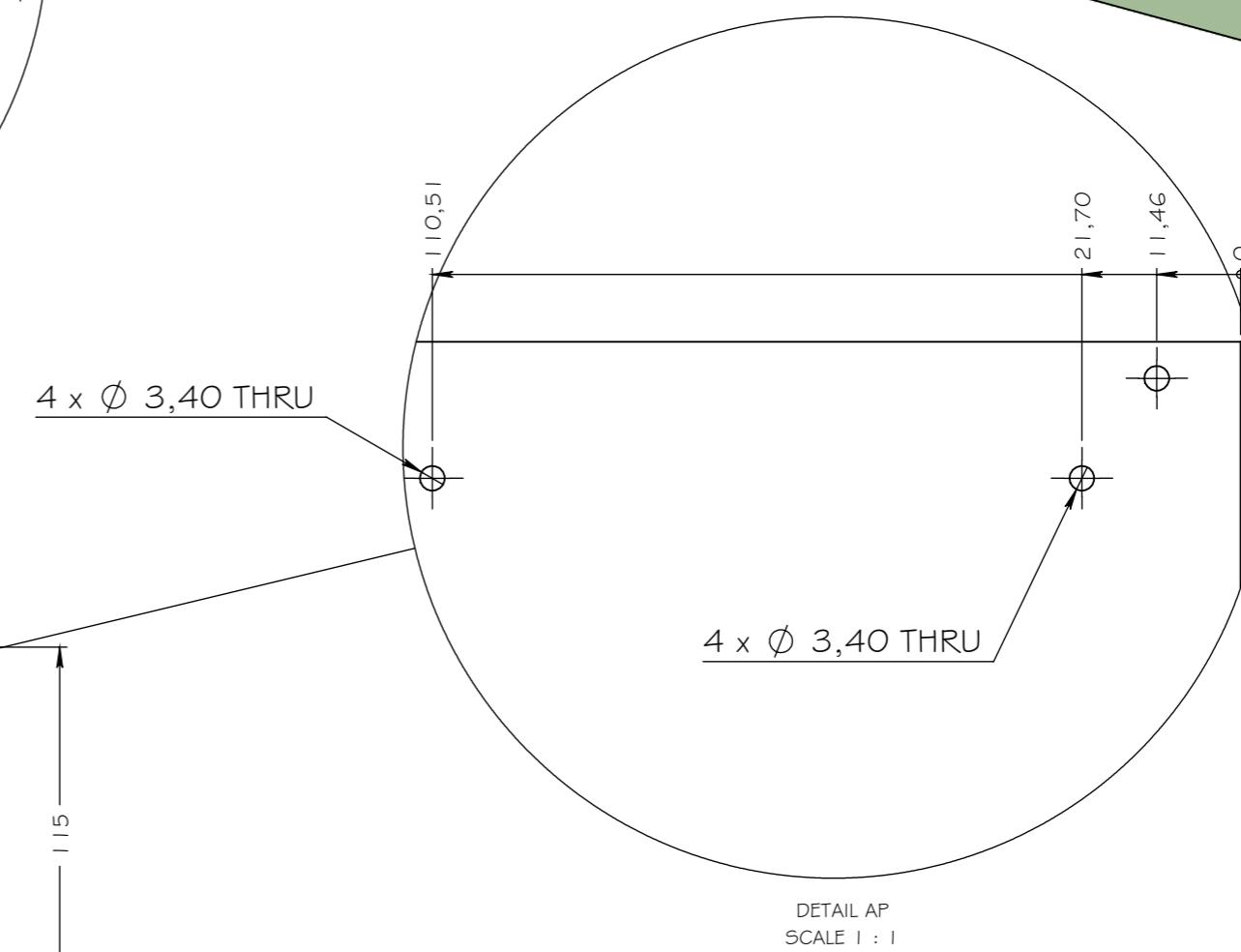
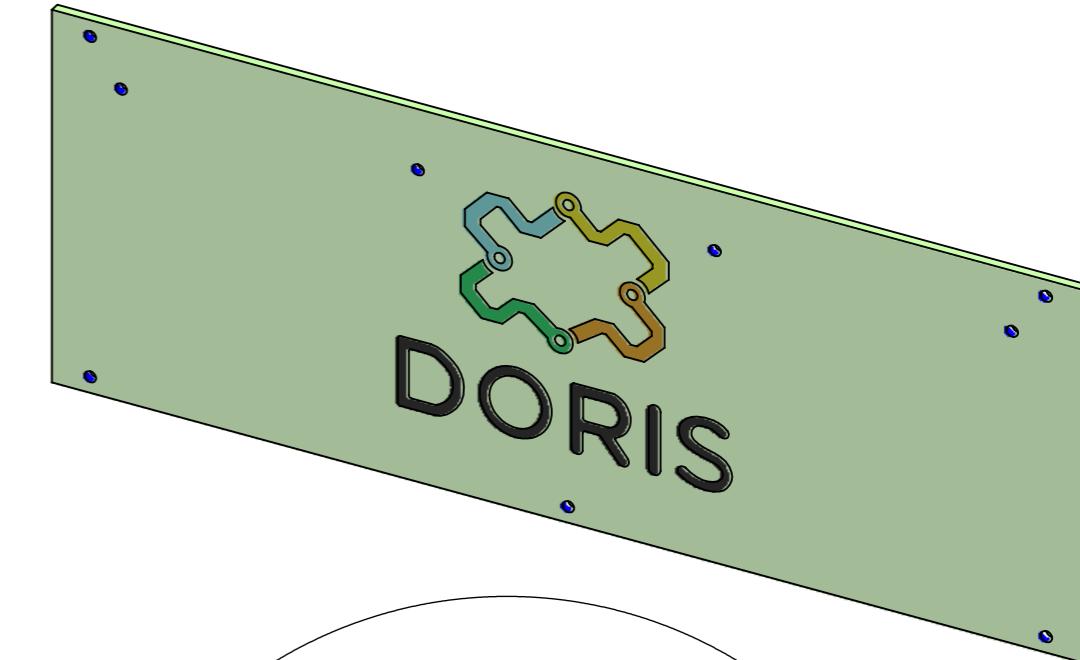
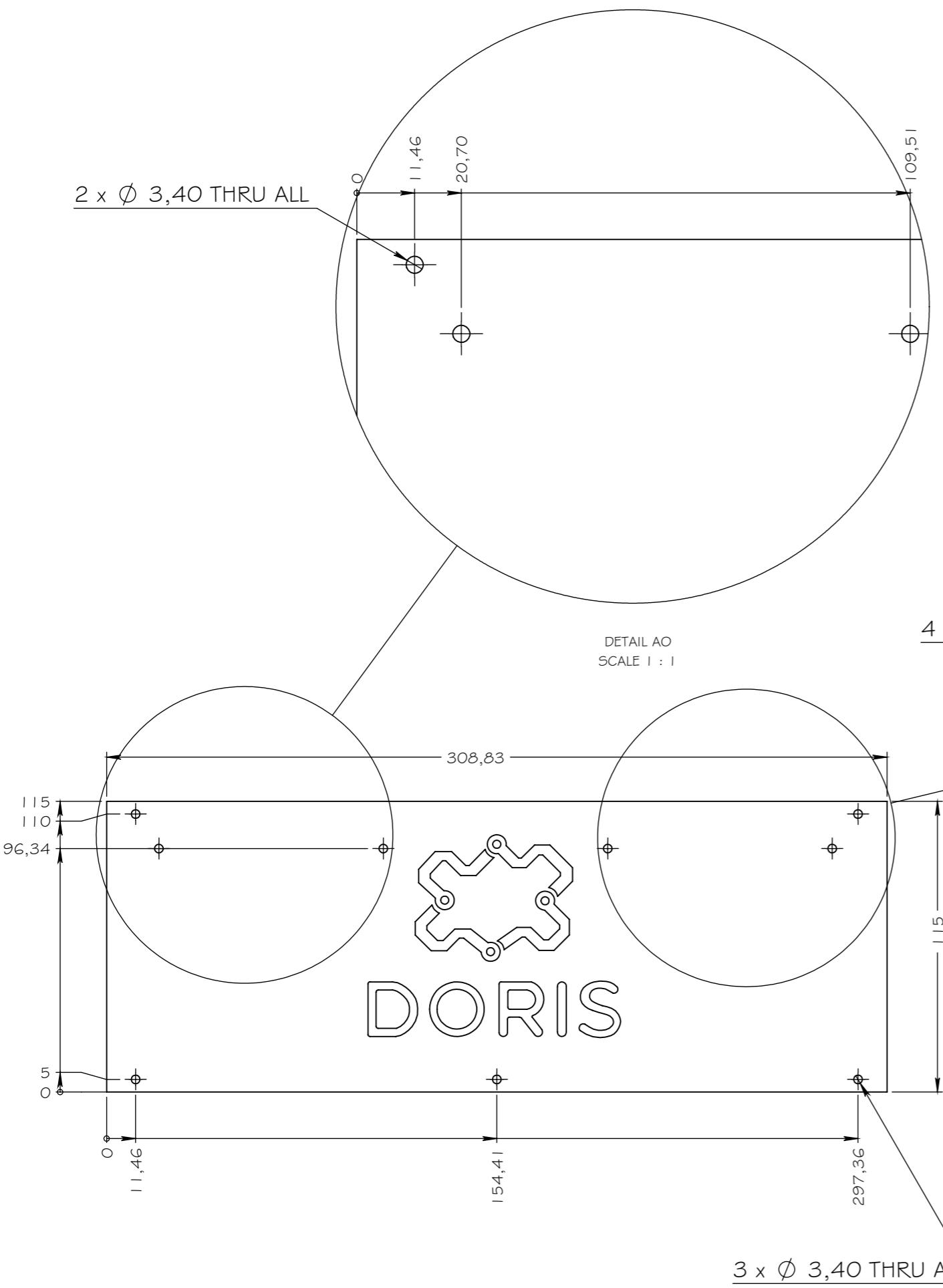


COPPE - Electrical Engineering Program	DORIS Project
Title: DR2.2.3 - FRONT_EE_BOX	Material: Various
Designed by: Guilherme Carvalho	Date: 06/06/2016
Verified by: Ramon Romankevicius	Rev.: A Scale.: 1:2 Sheet: 18 / 26
	Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.2.3.01 - FRONT_PLATE			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 19/26
		Unit.: mm	

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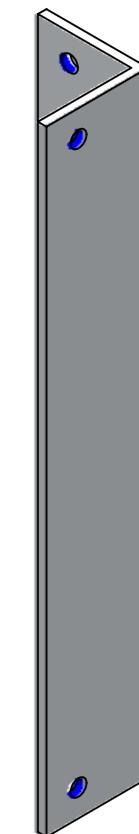
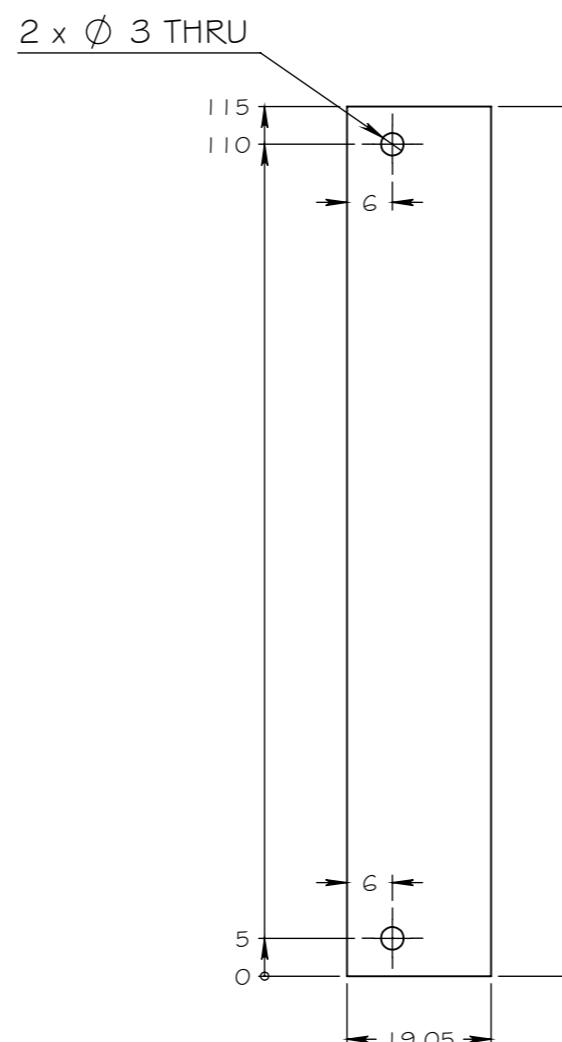
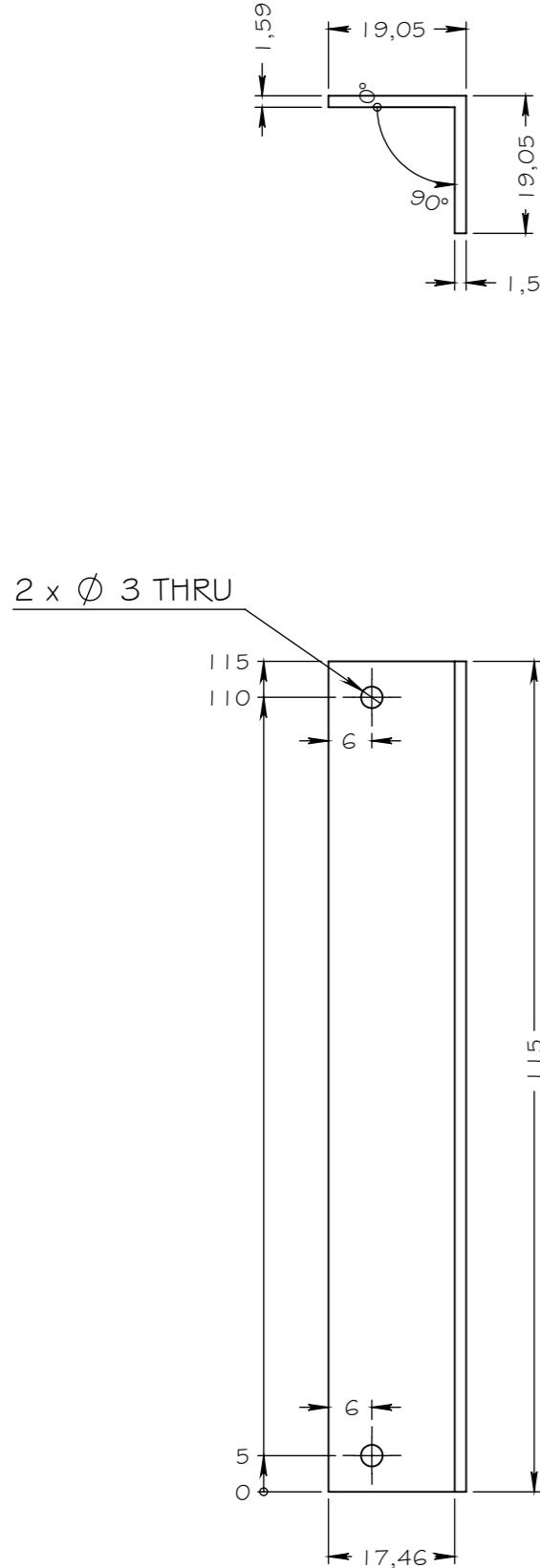
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.3.02 - LEFT_ANGLE_BRACKET_D		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 20/26 Unit.: mm

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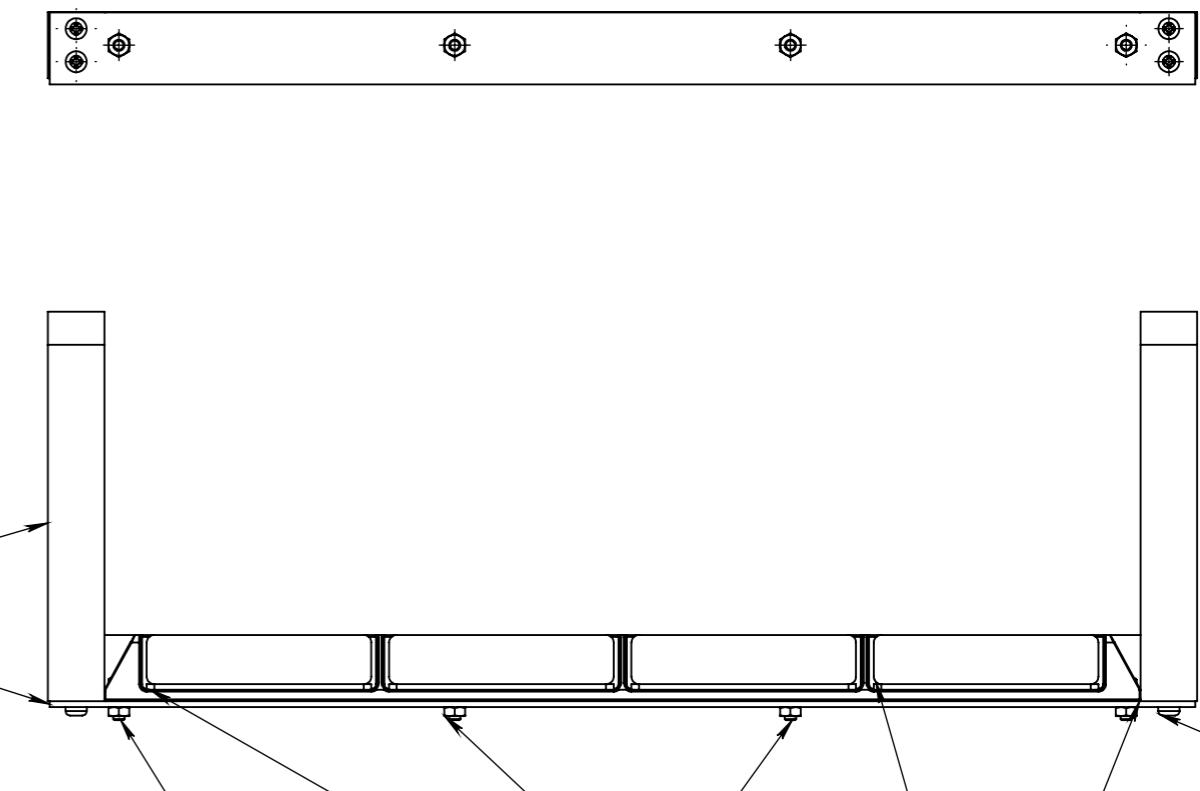
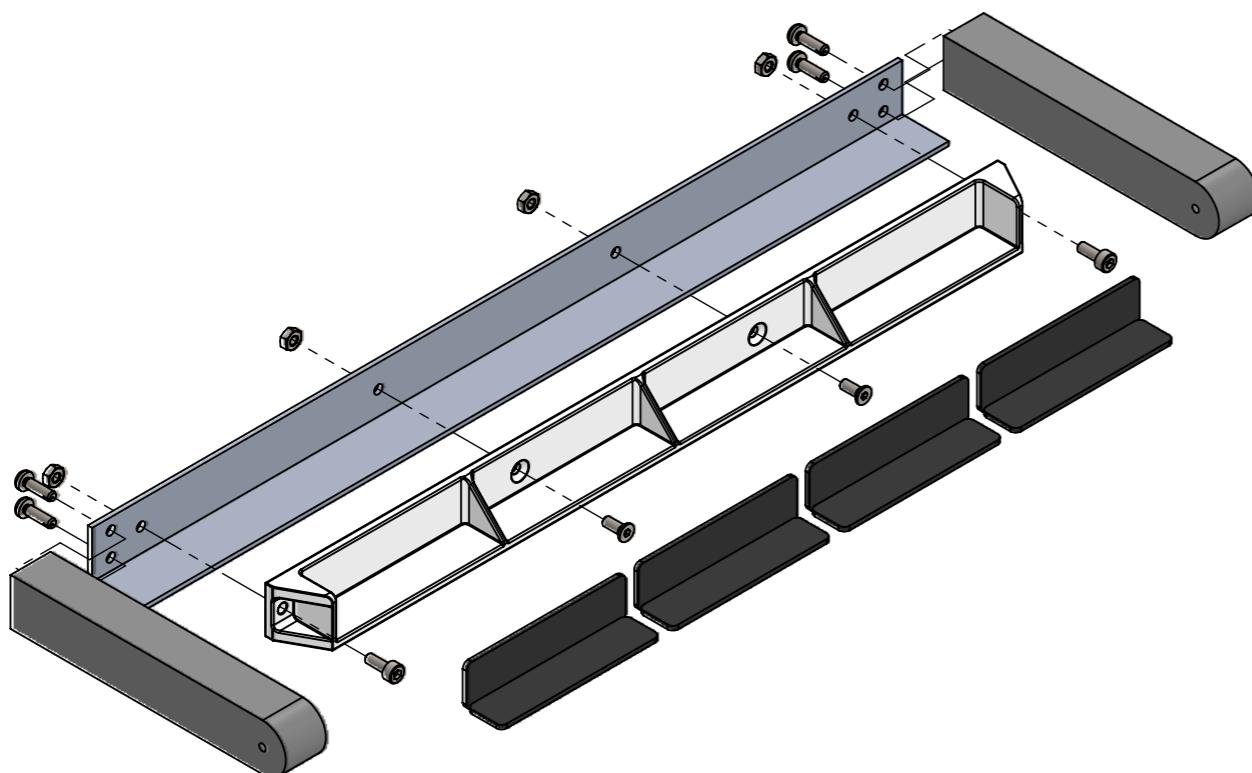
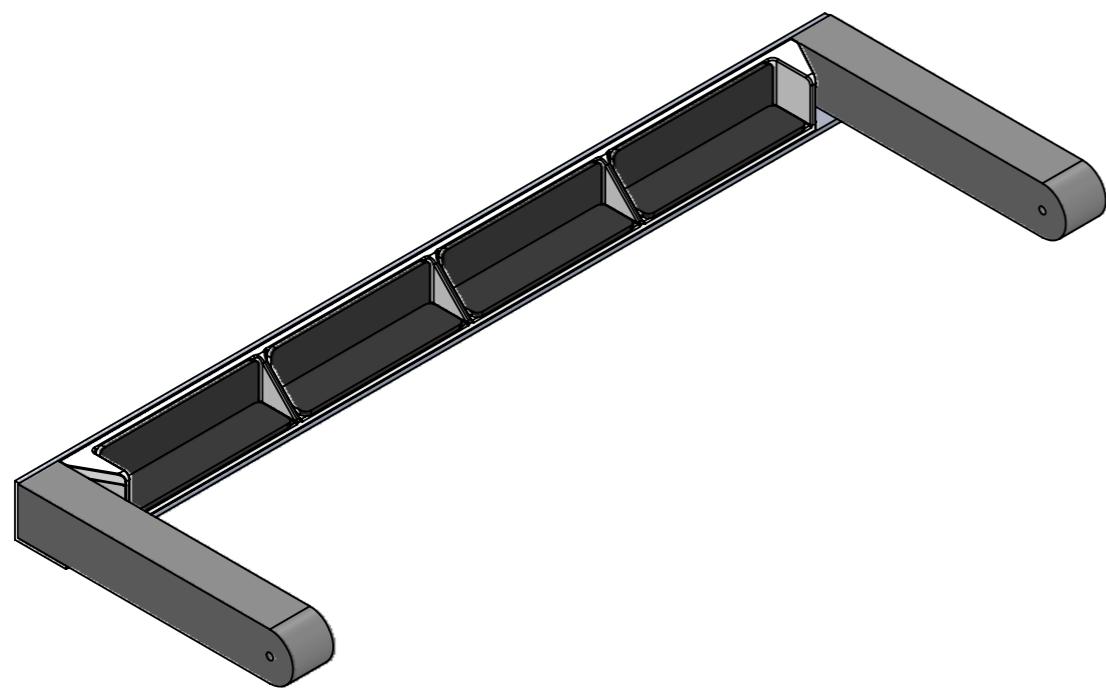
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ITEM	PART NUMBER - DESCRIPTION	QTY.
9	B18.3.5M - 3 x 0.5 x 8 Socket FCHS -- 8N	2
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	4
7	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	2
6	pan head tapping screw_am	4
5	UPPER_CURB_RUBBER	4
4	SIMPLE_LOCK_RUBBER	4
3	DR2.2.4.03 - SIMPLE_LOCK_CURB	1
2	DR2.2.4.02 - SIMPLE_LOCK_PIVOT	2
1	DR2.2.4.01 - SIMPLE_LOCK_ANGLE_BRACKET	1



PETROBRAS



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DORIS Project

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Title: DR2.2.4 - SIMPLE_LOCK		Material: Various	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 21 / 26 Unit.: mm

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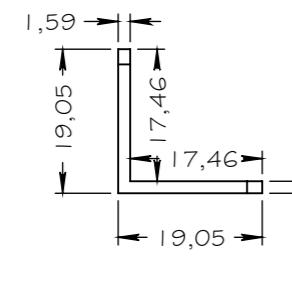
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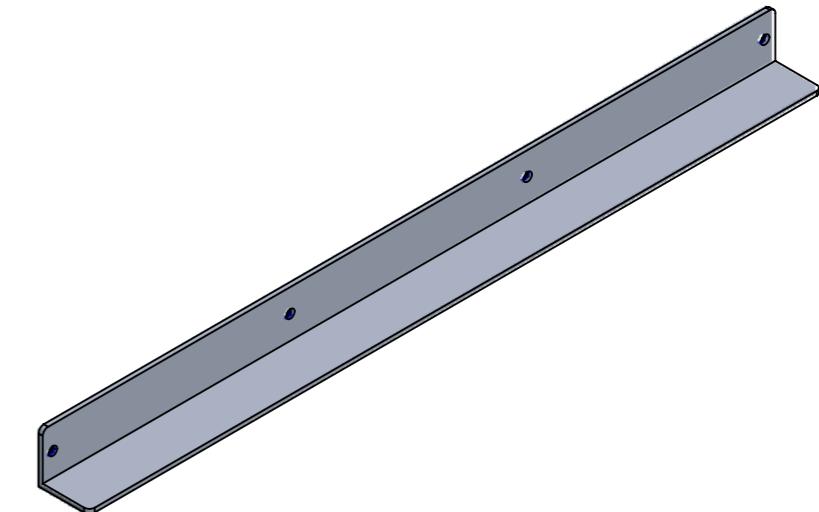
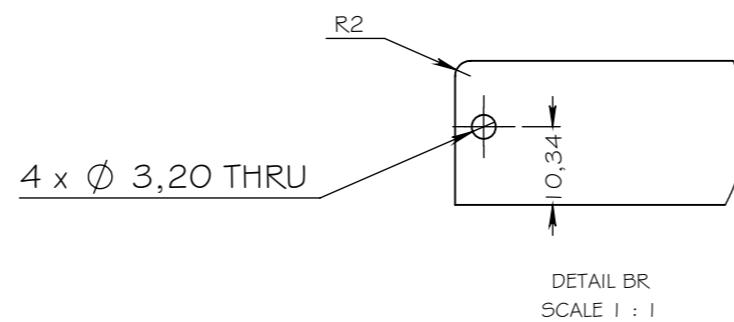
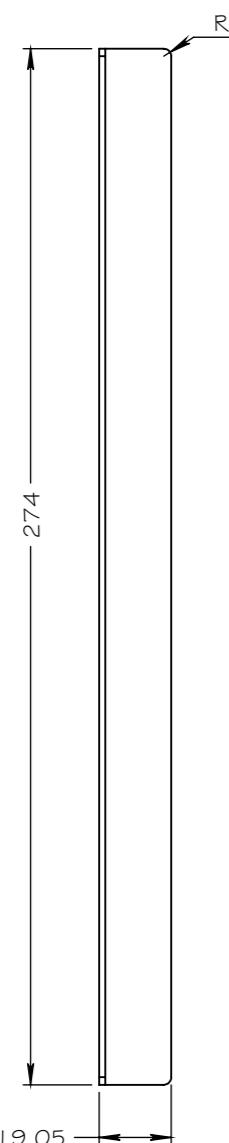
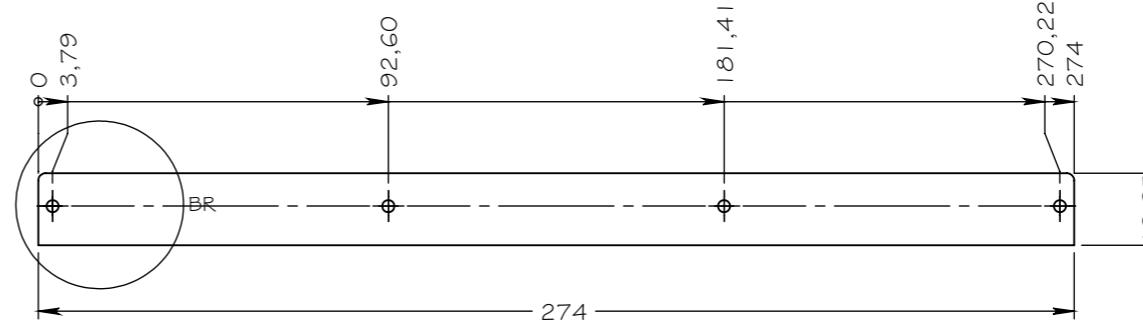
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Scale 1:1



<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE</b> <b>UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.3.03 - FRONT_SUPPORT_ANGLE_BRACKET		Material: 1060-H14	
Designed by: Guilherme Carvalho		Date: 06/06/2016	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 30/06/2016	Scale.: 1:2
		QTY: 1	Unit.: mm
		Sheet: 22/26	

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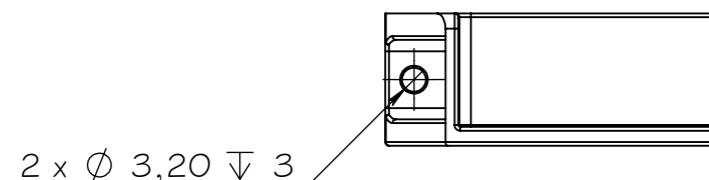
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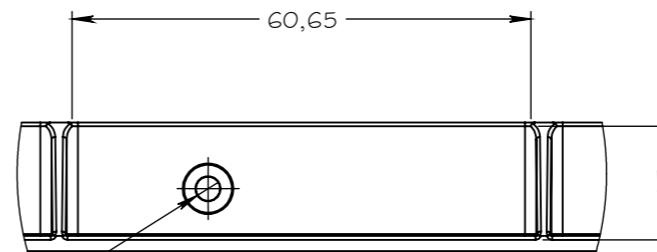
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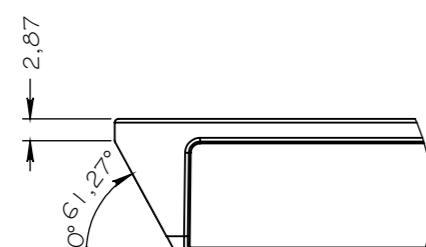
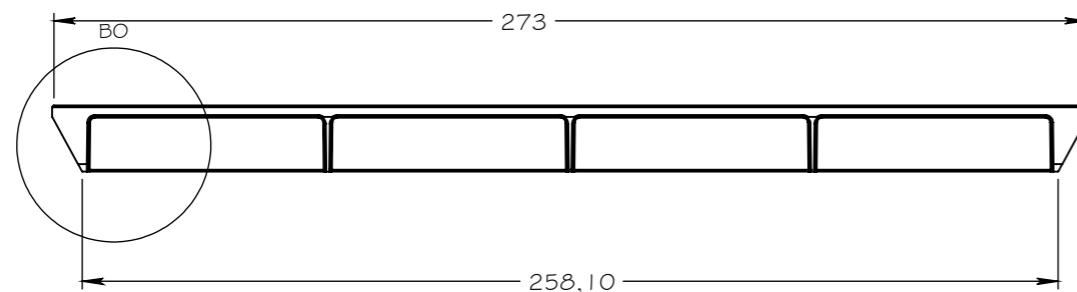
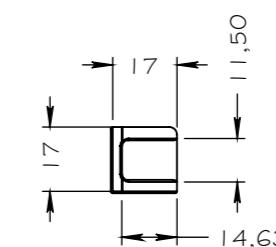
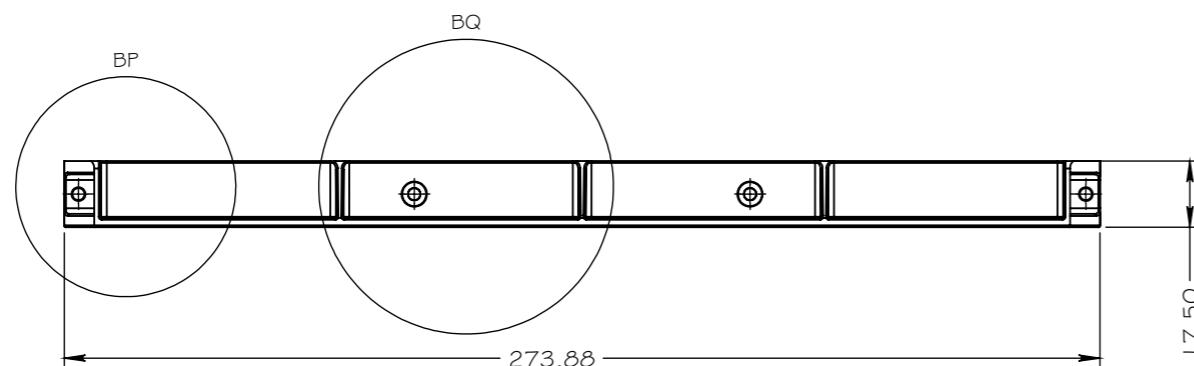
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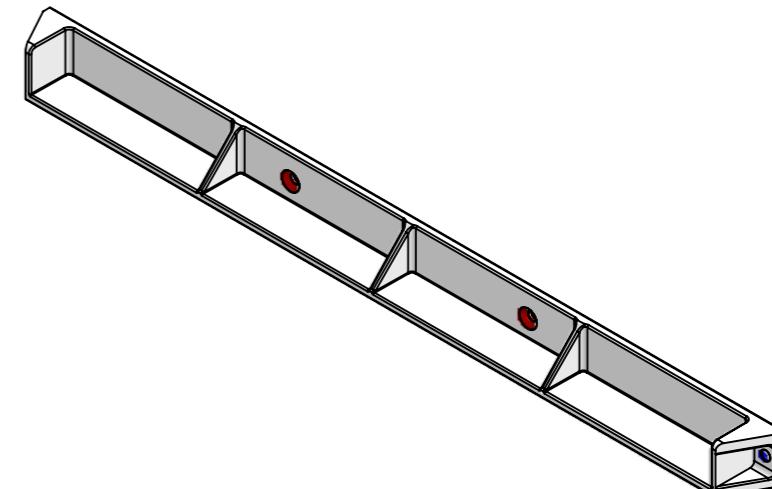
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SCALE 1 : 1



DETAIL BQ  
SCALE 1 : 1



DETAIL BO  
SCALE 1 : 1



PETROBRAS



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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.3.04 - BOTTOM\_CURB

Material: ABS

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
23/26

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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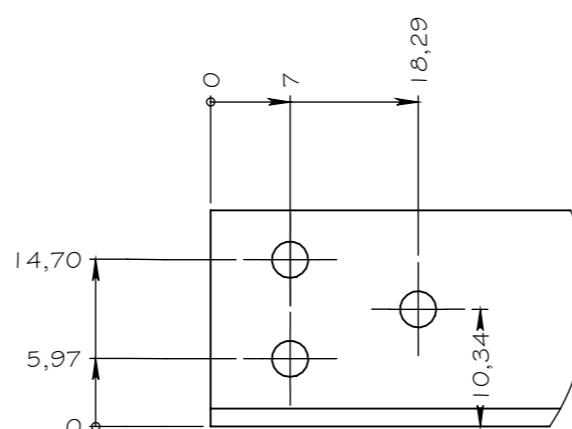
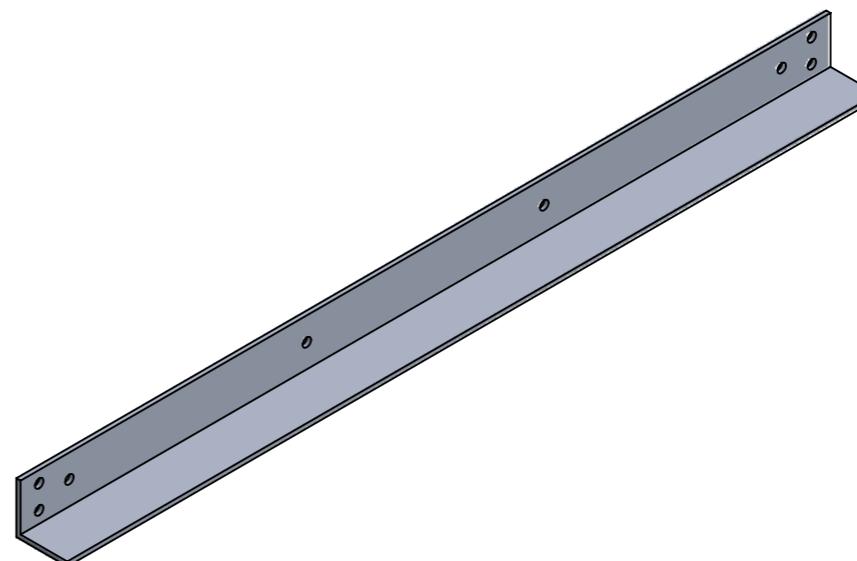
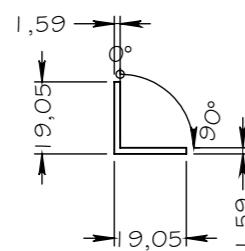
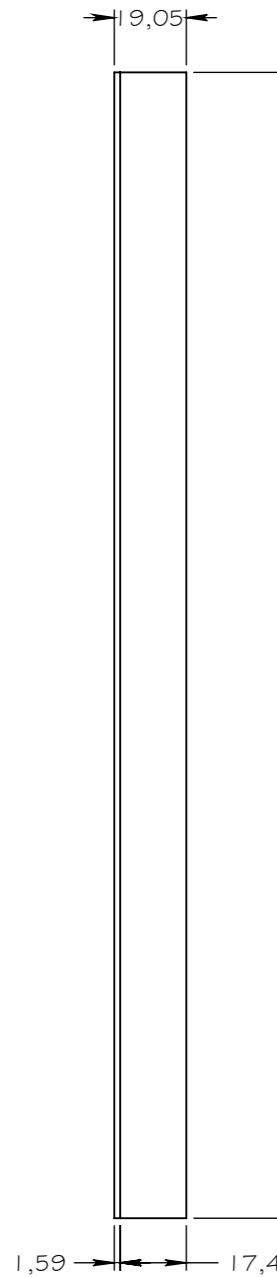
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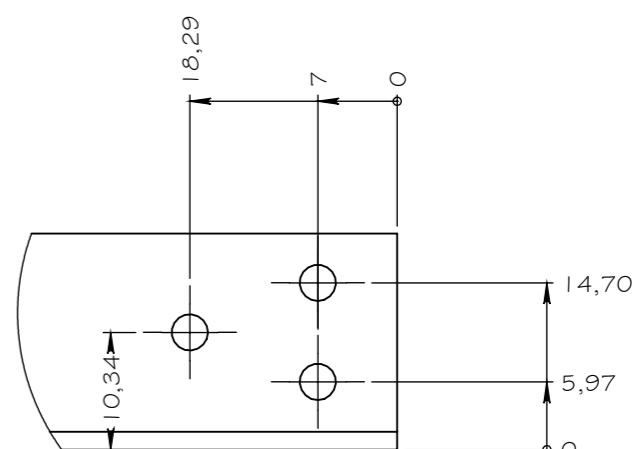
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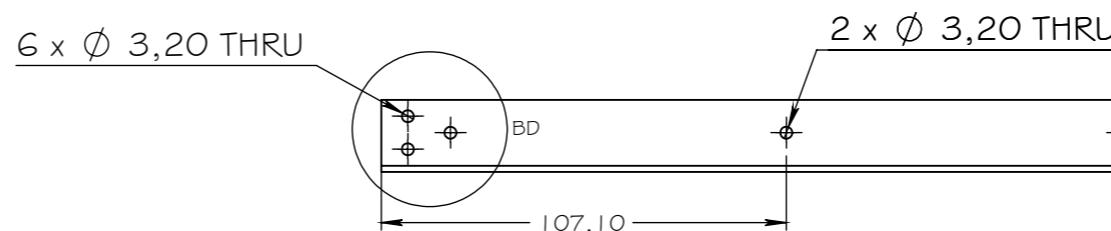
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DETAIL BD  
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DETAIL BE  
SCALE 3 : 2



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.4.01 - SIMPLE\_LOCK\_ANGLE\_BRACKET

Material: 1060 Alloy

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
24/26

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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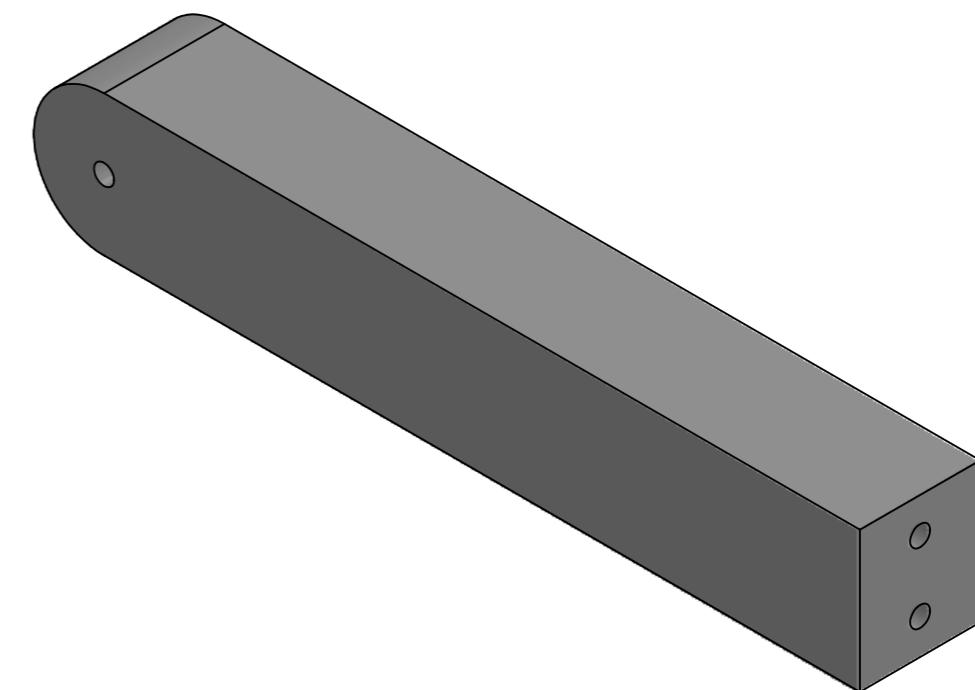
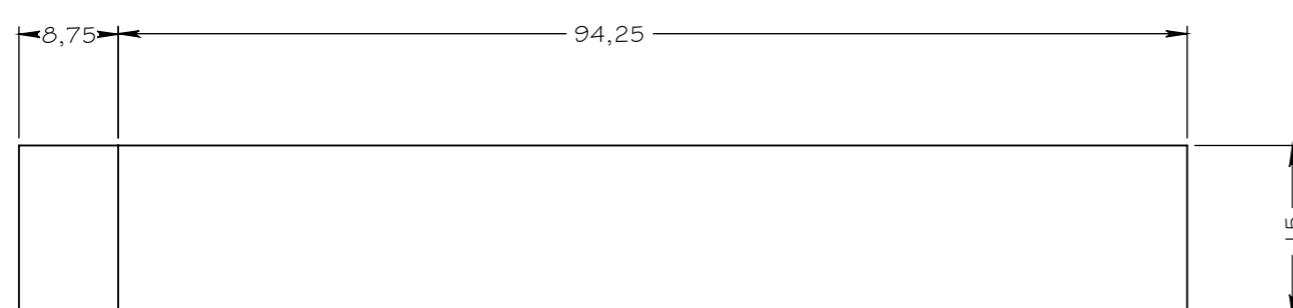
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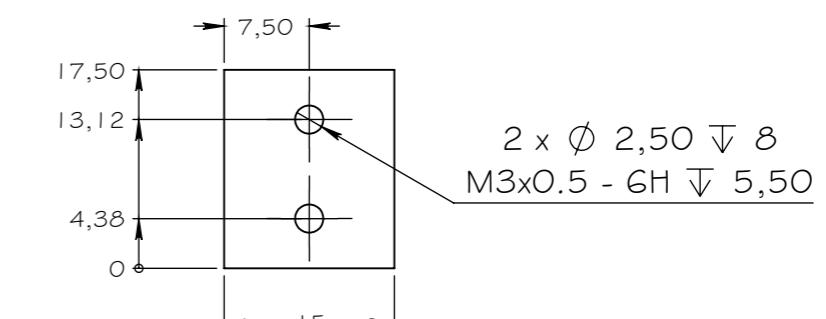
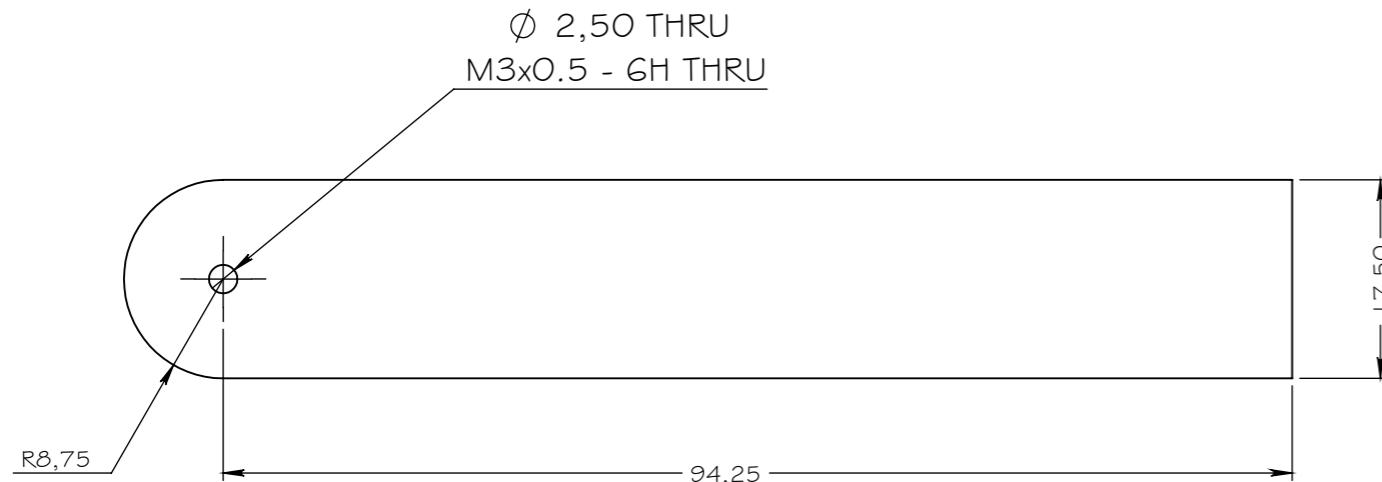
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M3x0,5 - 6H THRU



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PETROBRAS	Statoil	GSCAR	Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.4.02 - SIMPLE_LOCK_PIVOT		Material: PE High Density	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 3:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Sheet: 25 / 26
Unit.: mm			

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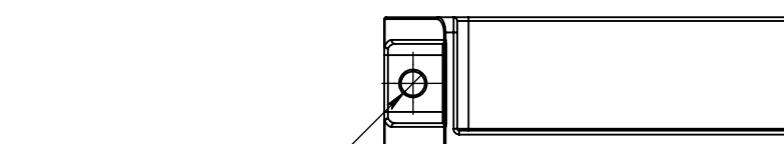
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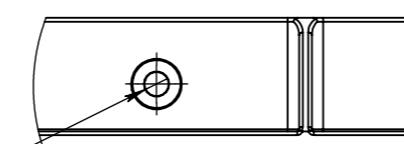
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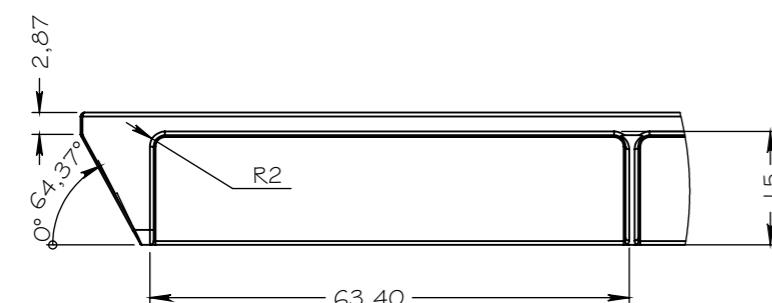
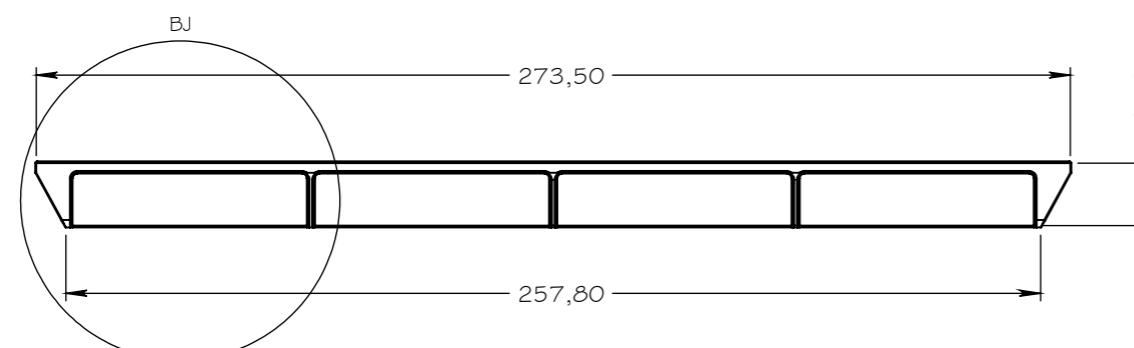
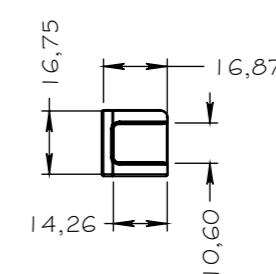
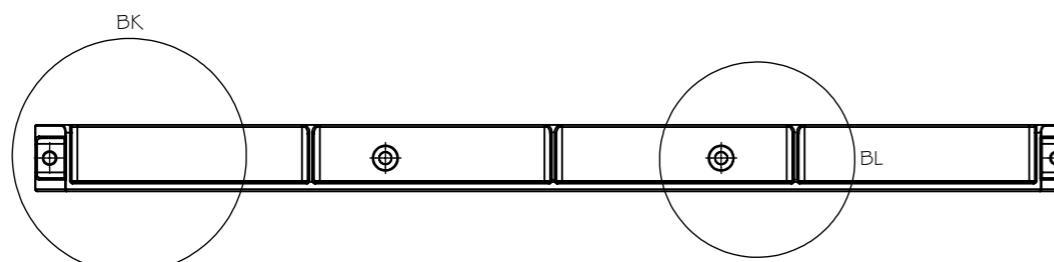


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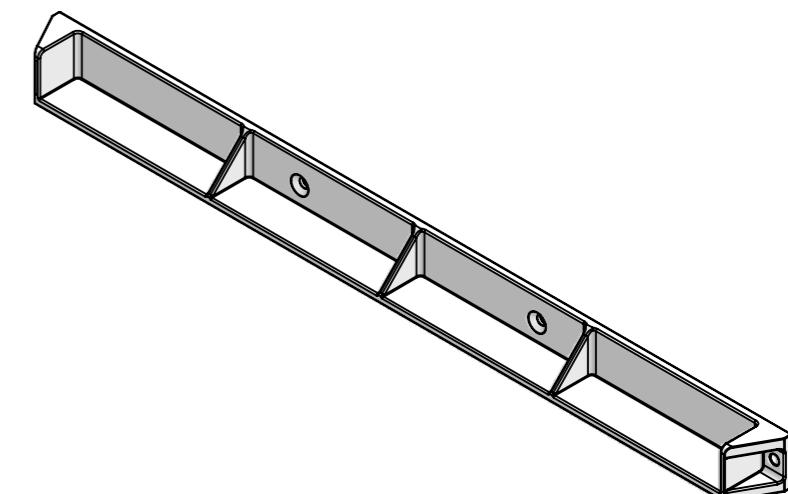
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 $\checkmark \varnothing 6,50 \times 90^\circ$



DETAIL BL  
SCALE 1 : 1



DETAIL BJ  
SCALE 1 : 1



PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.4.03 - SIMPLE_LOCK_CURB		Material: ABS	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 26/26 Unit.: mm

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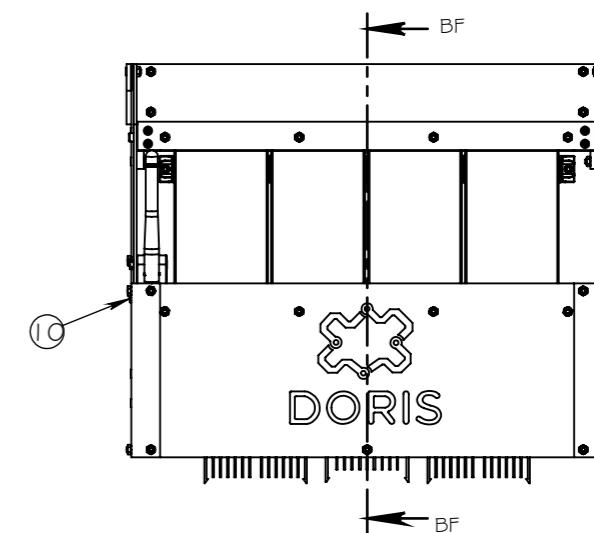
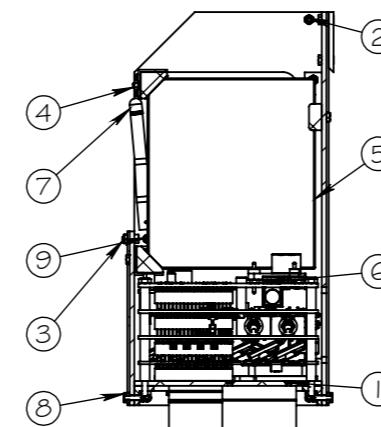
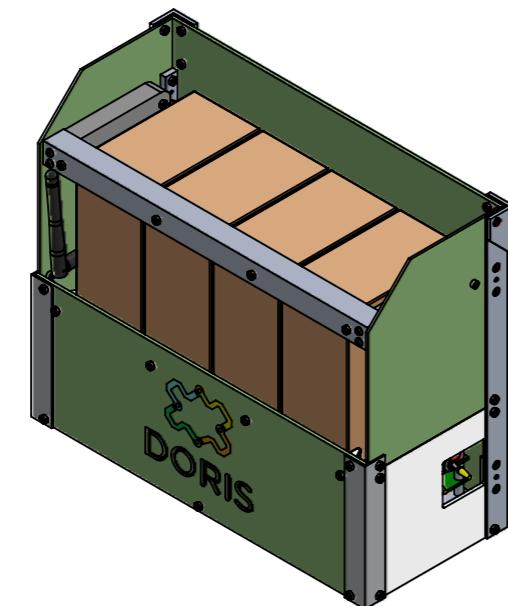
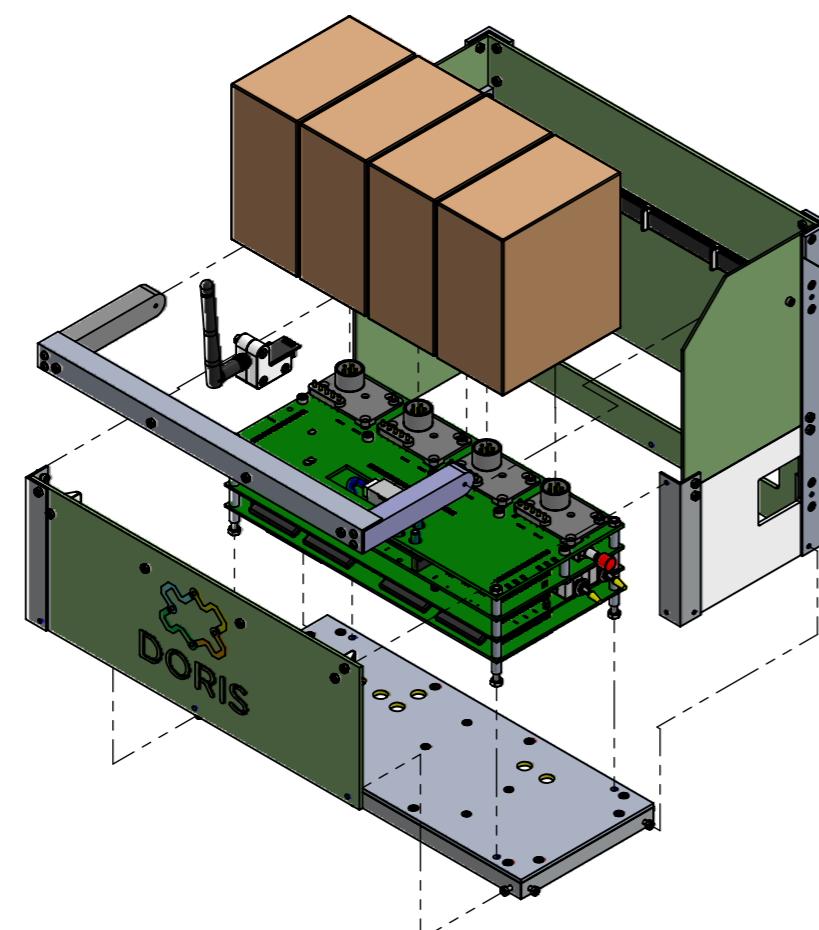
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ITEM	PART NUMBER - DESCRIPTION	QTY.
10	B18.3.5M - 3 x 0.5 x 25 Socket FCHS -- 25N	3
9	B18.3.1M - 3 x 0.5 x 20 Hex SHCS -- 20NHX	14
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	21
7	RADIO_ANTENNA	1
6	ASSEMBLY_PCB's	1
5	BATTERIES_BT_70791A	1
4	DR2.2.4 - SIMPLE_LOCK	1
3	DR2.2.3 - FRONT_EE_BOX	1
2	DR2.2.2 - SIDE_BACK_EE_BOX	1
1	DR2.2.1 - BOTTOM_EE_BOX	1



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DORIS Project

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Pós-Graduação e Pesquisa de Engenharia

Title: DR2.2 - EE\_BOX

Material: Various

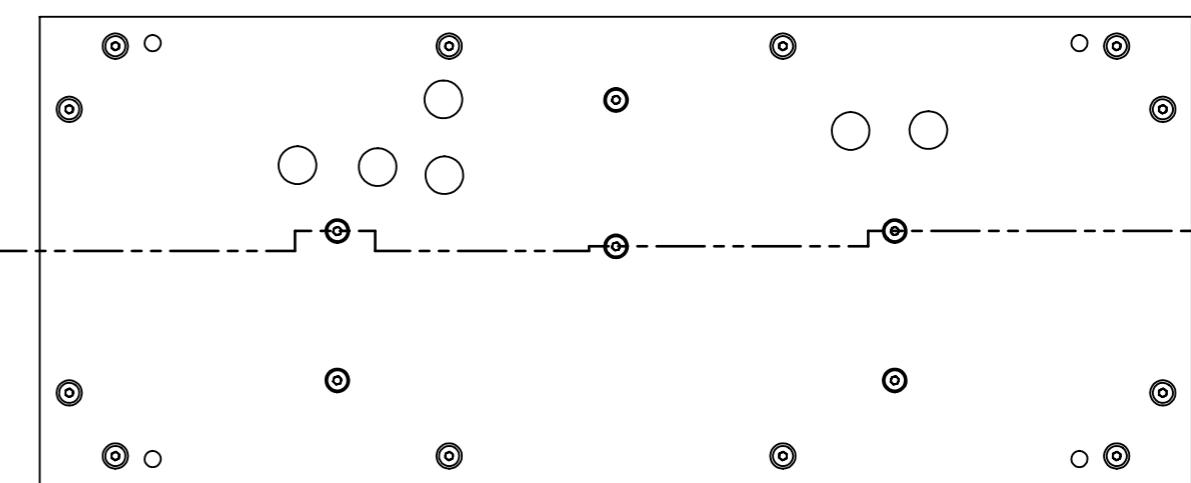
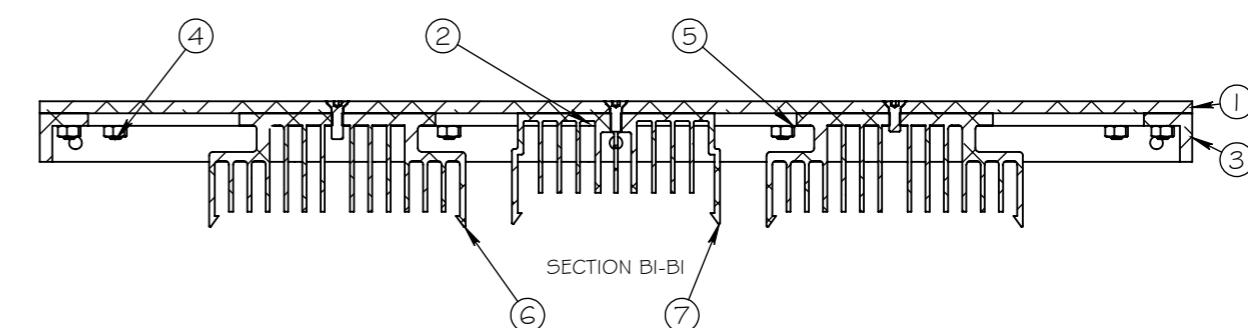
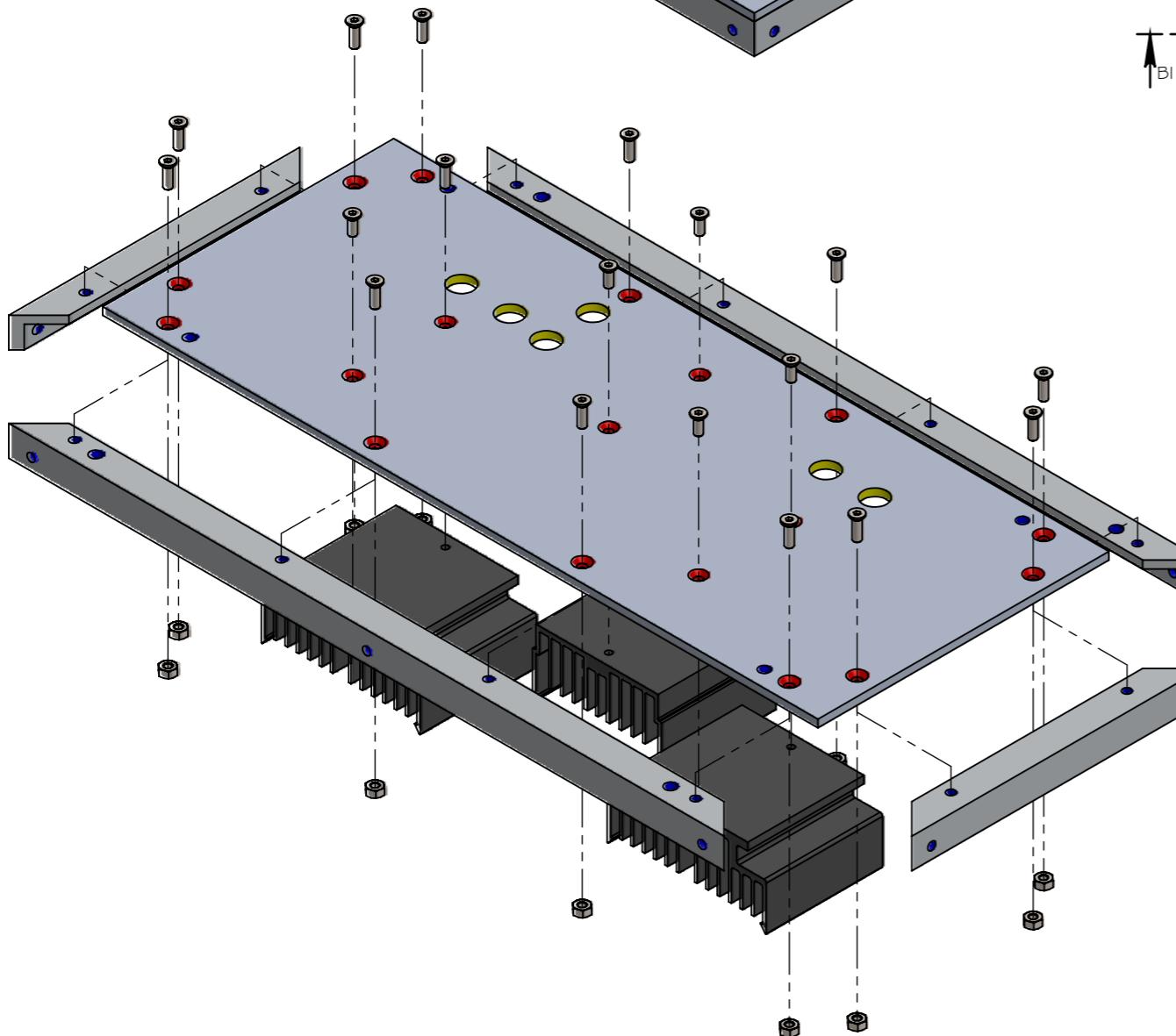
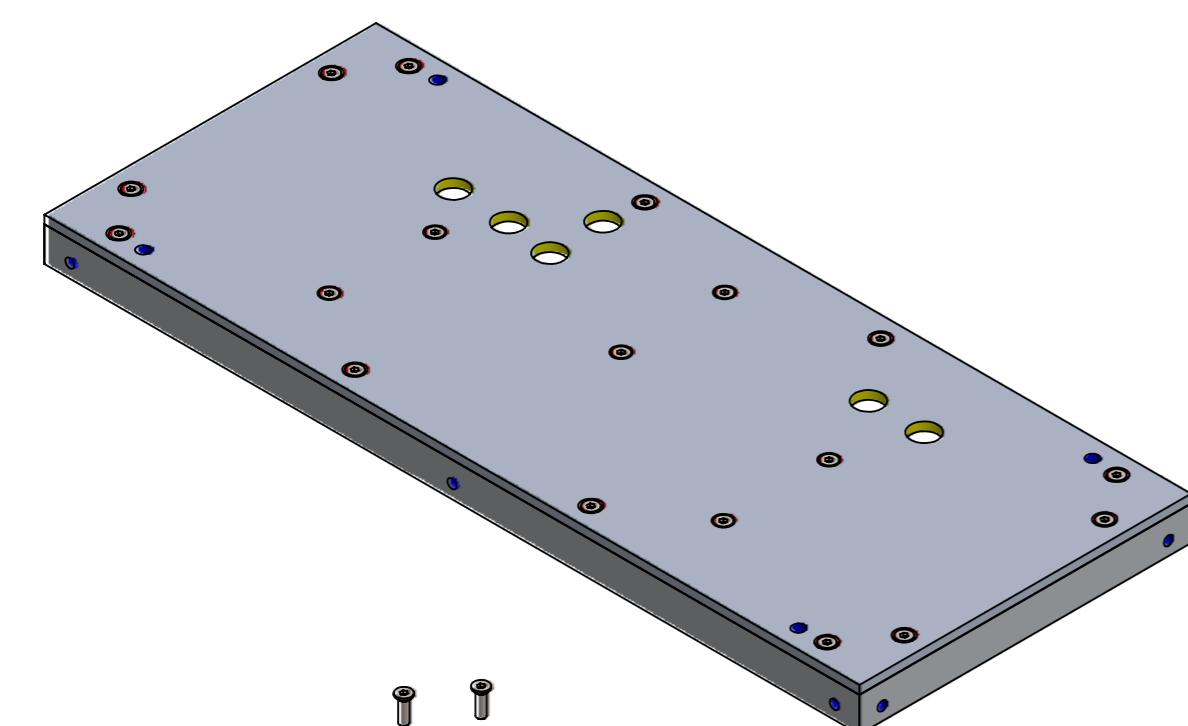
Designed by: Guilherme Carvalho

Date: 06/06/2016 Rev.: A Scale.: 1:5 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm 1 / 26

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ITEM	PART NUMBER - DESCRIPTION	QTY.
7	CENTRAL_HEAT_SINK_DC-DC	1
6	SIDE_HEAT_SINK_DC-DC	2
5	B18.2.4.2M - Hex nut, Style 2, M3 x 0.5 --D-N	12
4	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 10N	18
3	DR2.2.1.03 - ANGLE_BRACKET_B	2
2	DR2.2.1.02 - ANGLE_BRACKET_A	2
1	DR2.2.1.01 - BOTTOM_PLATE	1



COPPE - Electrical Engineering Program



DORIS Project

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Pós-Graduação e Pesquisa de Engenharia

Title: DR2.2.1 - BOTTOM\_EE\_BOX

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
2 / 26

Verified by: Guilherme Carvalho

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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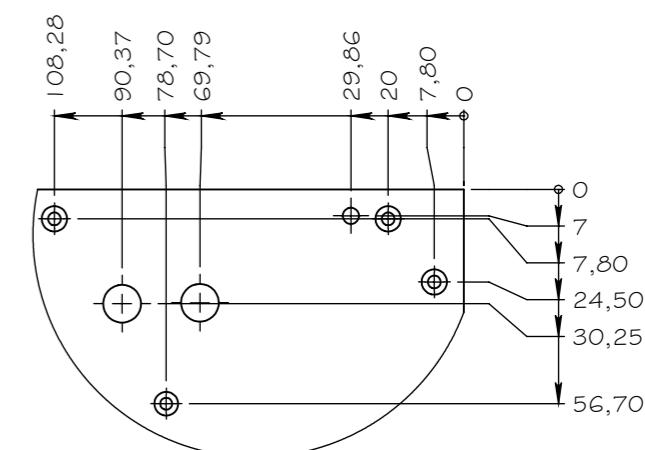
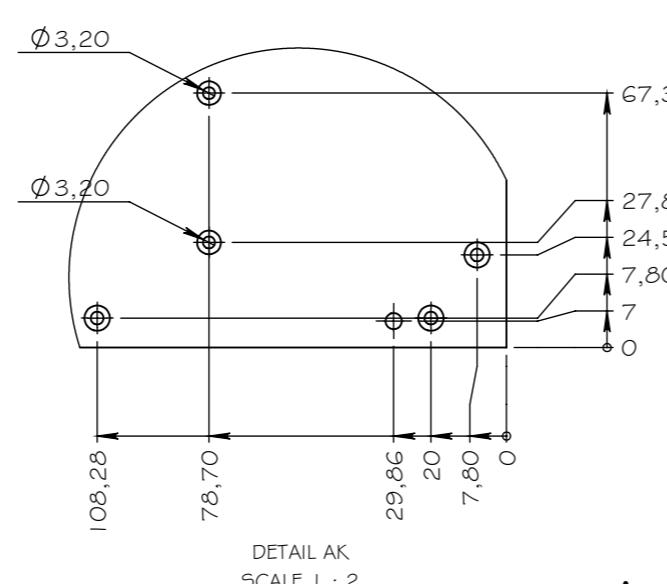
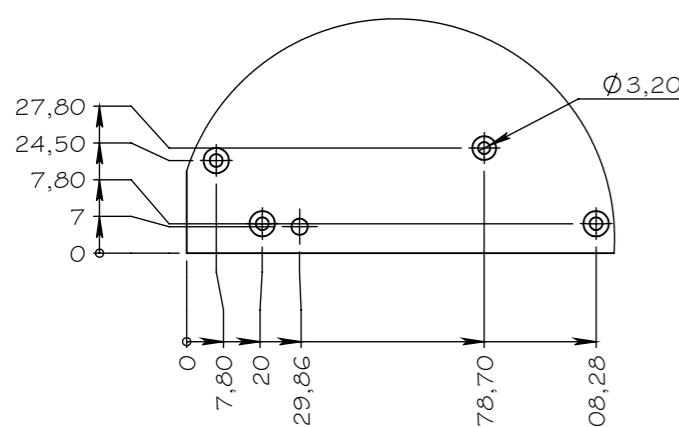
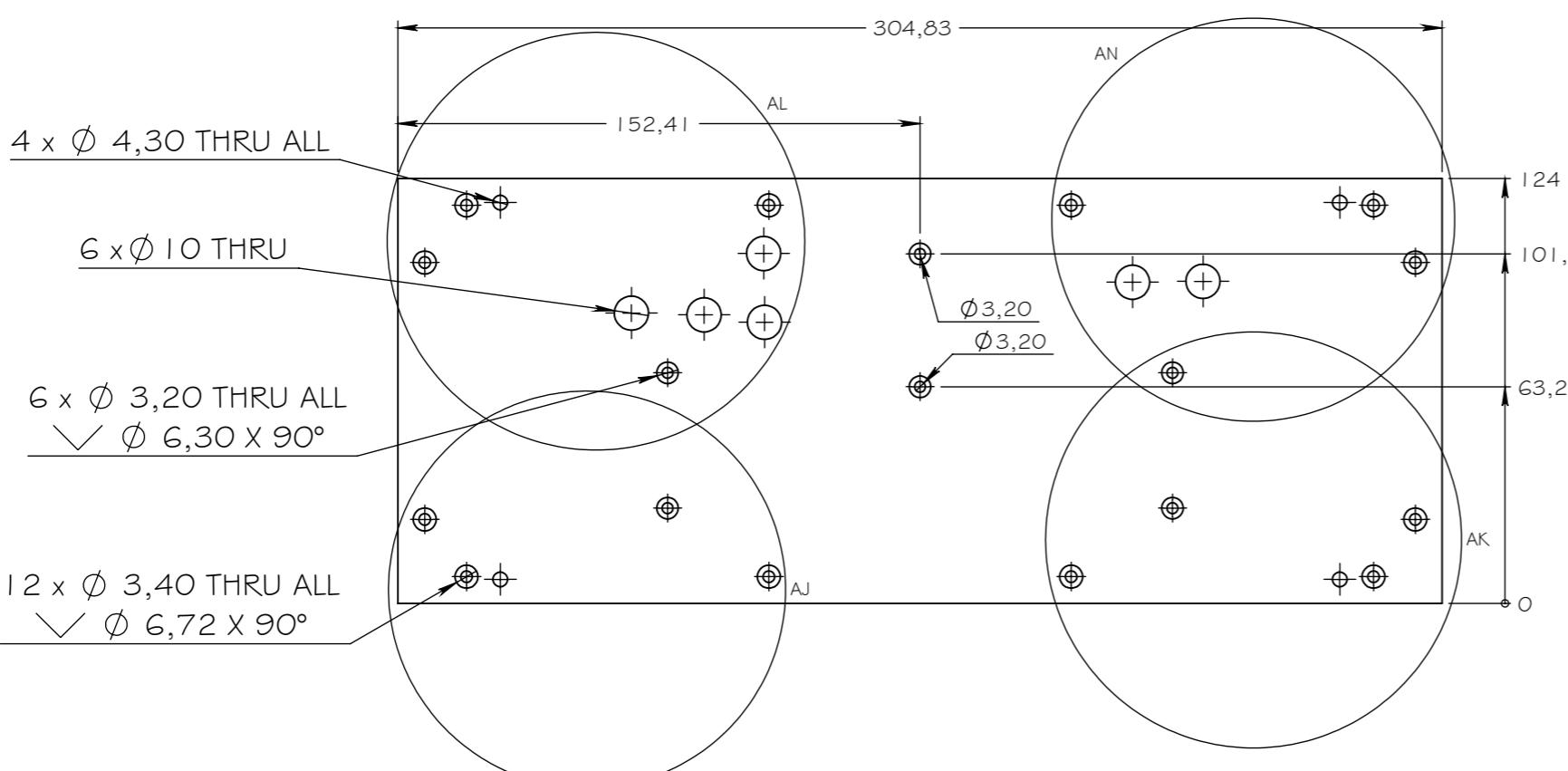
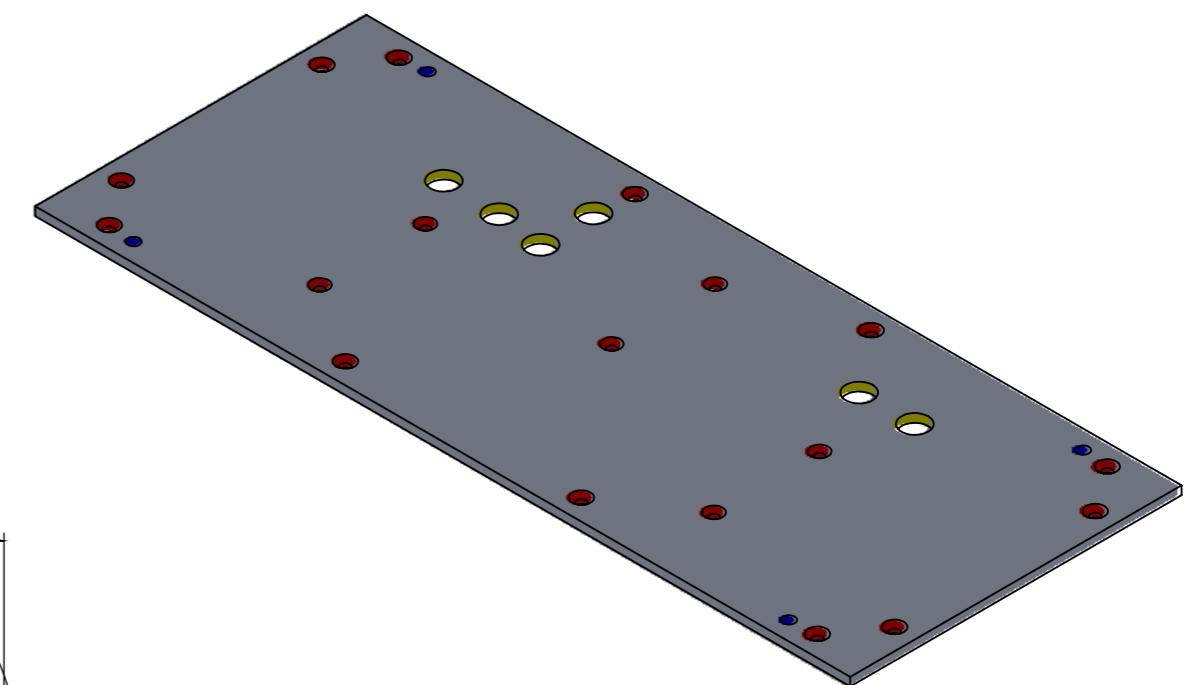
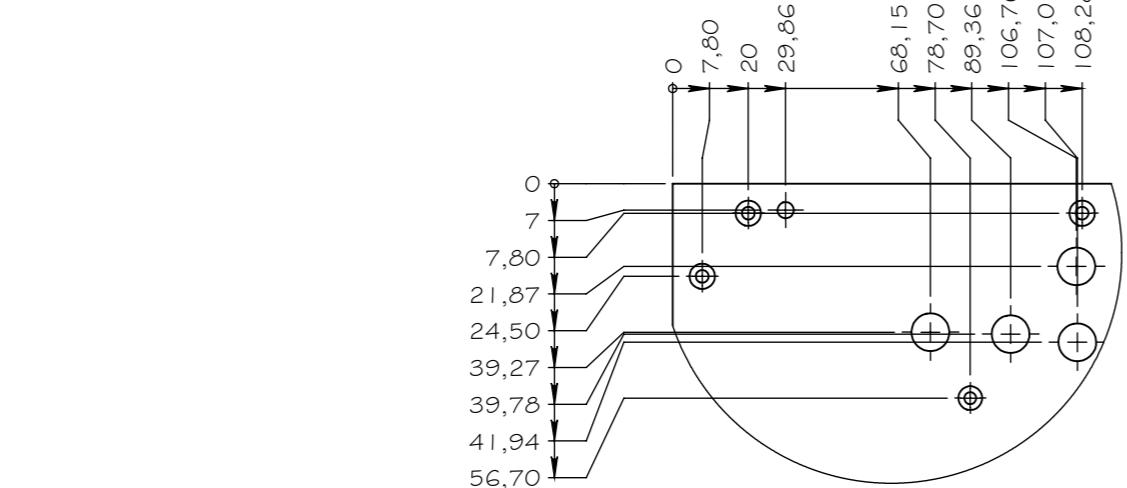
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.1.01 - BOTTOM_PLATE		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
			Sheet: 3 / 26

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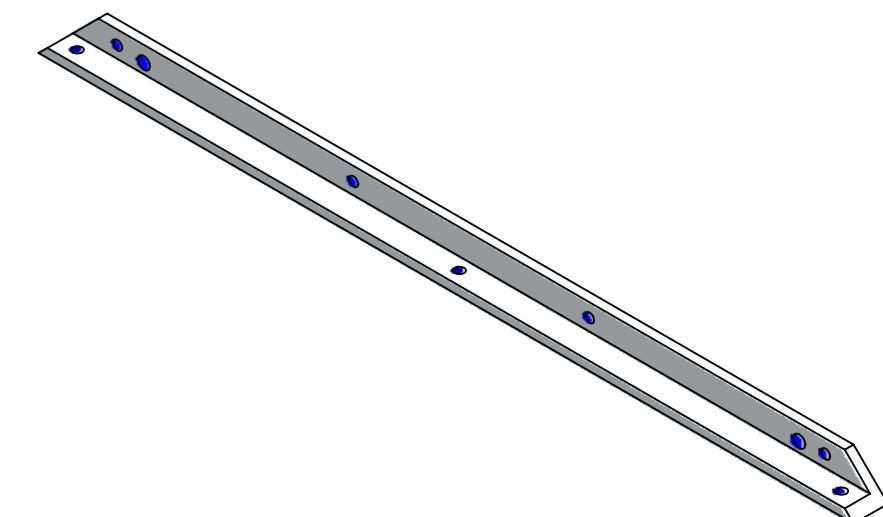
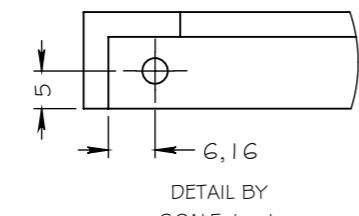
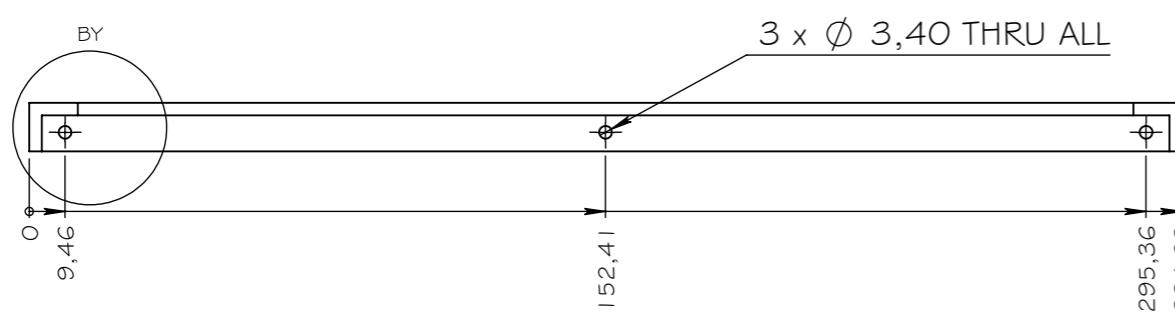
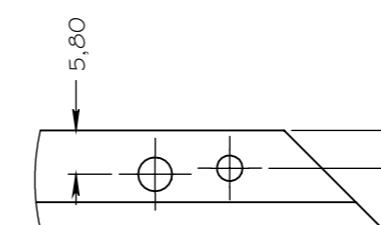
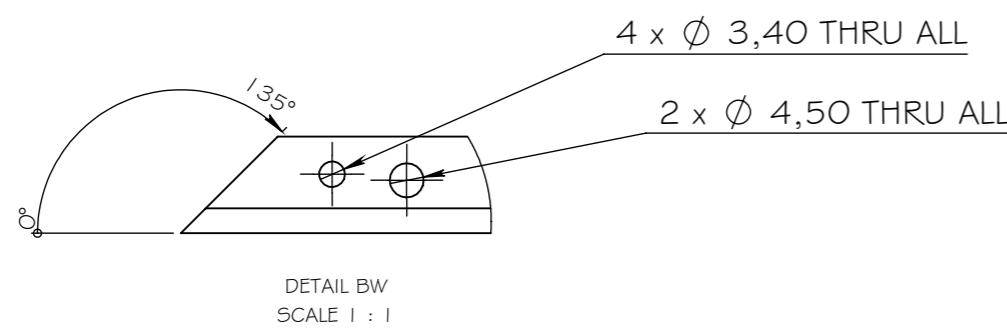
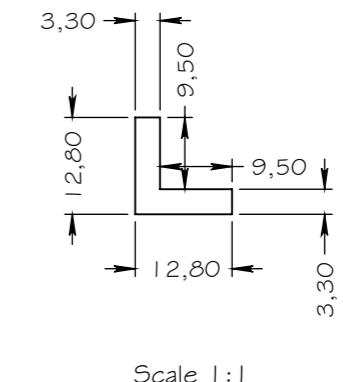
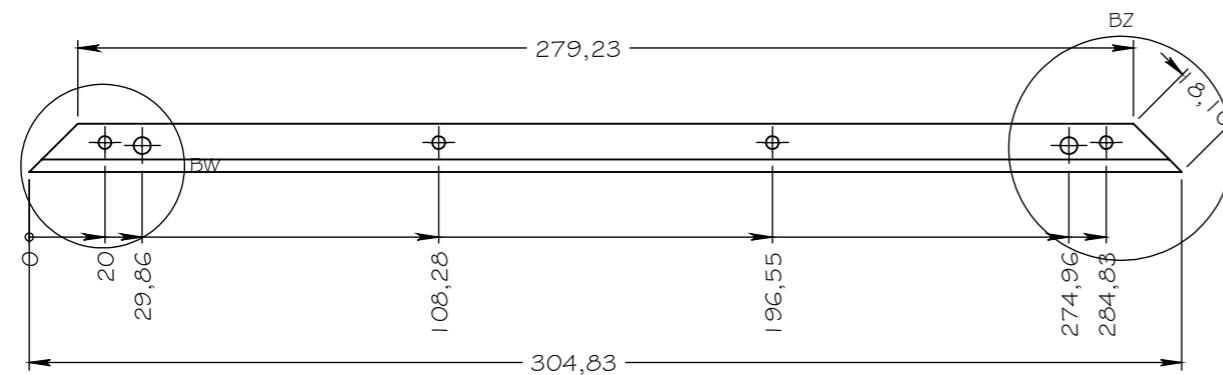
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COPPE - Electrical Engineering Program

Title: DR2.2.1.02 - ANGLE\_BRACKET\_A

Material: 1060-H14

Designed by: Guilherme Carvalho Date: 06/06/2016 Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius Ver. date.: 30/06/2016 QTY: 2 Unit.: mm 4 / 26

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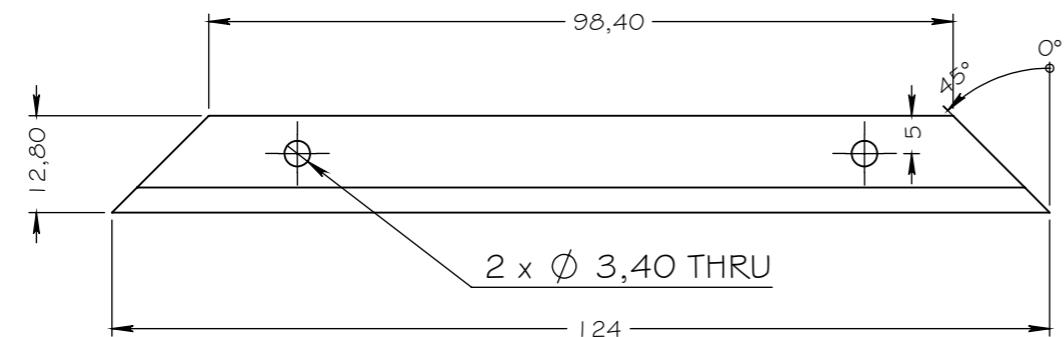
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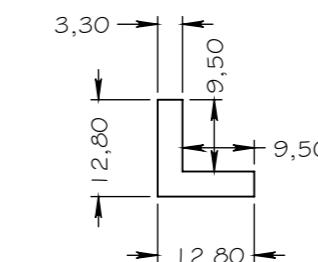
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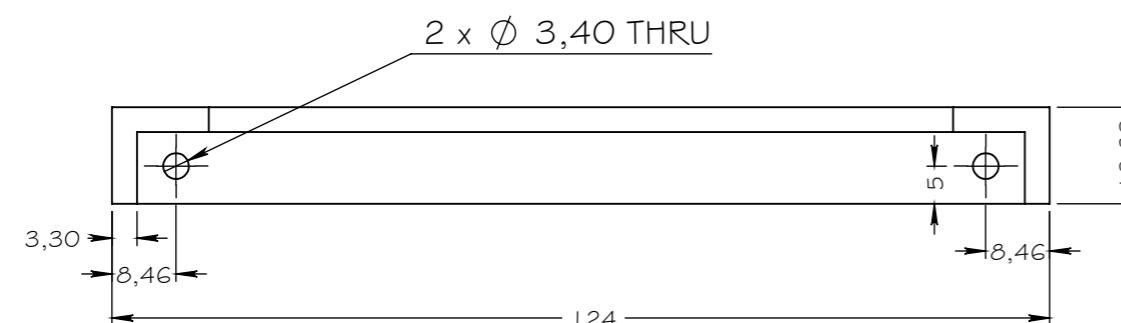
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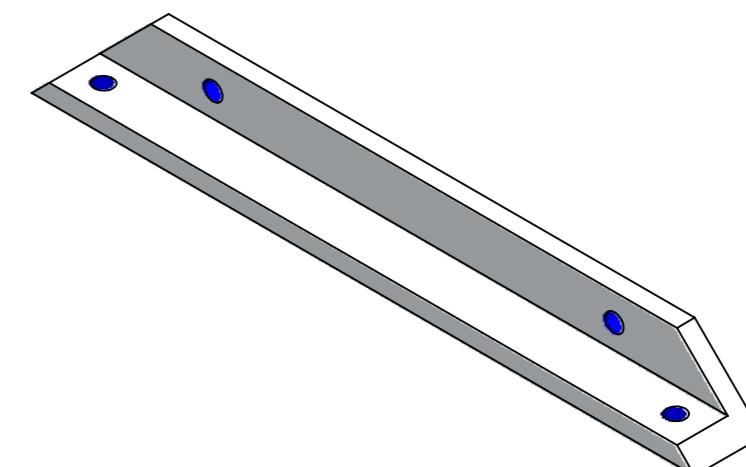
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.1.03 - ANGLE_BRACKET_B		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Sheet: 5 / 26
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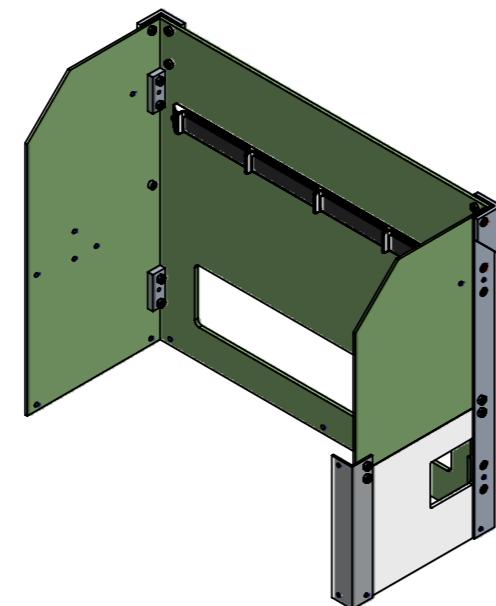
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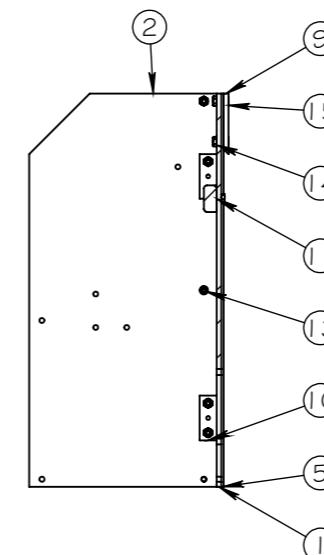
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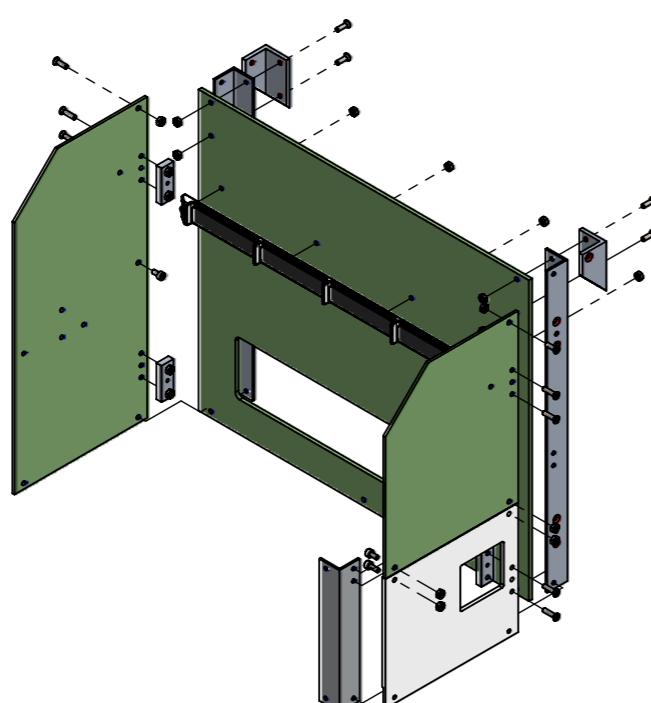
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ITEM	PART NUMBER - DESCRIPTION	QTY.
15	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 10N	17
14	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 -- D-N	23
13	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	7
12	UPPER_CURB_RUBBER	4
11	DR2.2.2.011 - UPPER_CURB	1
10	DR2.2.2.010 - FIXATION_BLOCK	4
9	DR2.2.2.09 - LEFT_FIXATION_ANGLE_BRACKET	1
8	DR2.2.2.08 - RIGHT_FIXATION_ANGLE_BRACKET	1
7	DR2.2.2.07 - RIGHT_ANGLE_BRACKET_D	1
6	DR2.2.2.06 - RIGHT_ANGLE_BRACKET_C	1
5	DR2.2.2.05 - LEFT_ANGLE_BRACKET_C	1
4	DR2.2.2.04 - BOTTOM_RIGHT_SIDE_PLATE	1
3	DR2.2.2.03 - UPPER_RIGHT_SIDE_PLATE	1
2	DR2.2.2.02 - LEFT_SIDE_PLATE	1
1	DR2.2.2.01 - BACK_PLATE	1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2 - SIDE\_BACK\_EE\_BOX

Material: Various

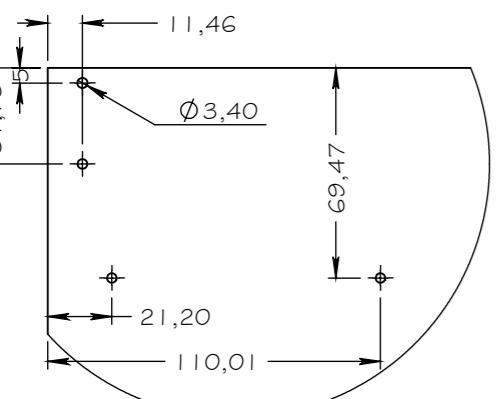
Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:5

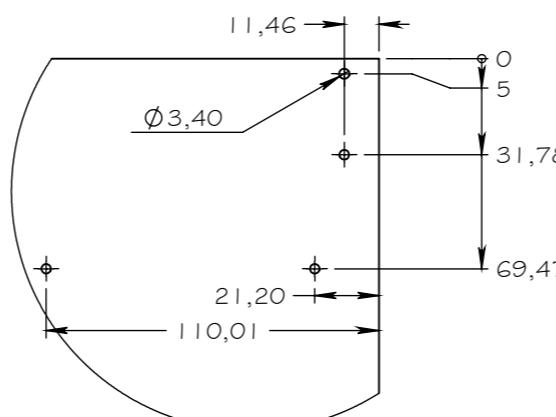
Sheet: 6 / 26

Verified by: Ramon Romankevicius

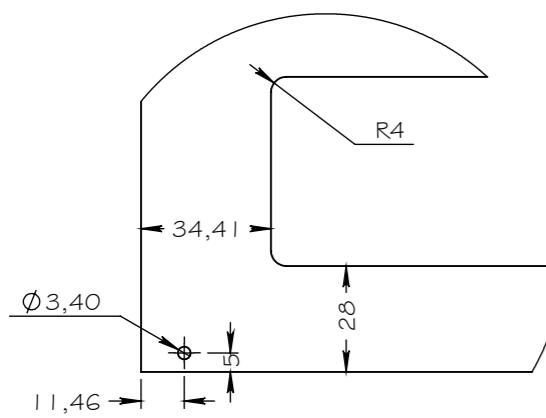
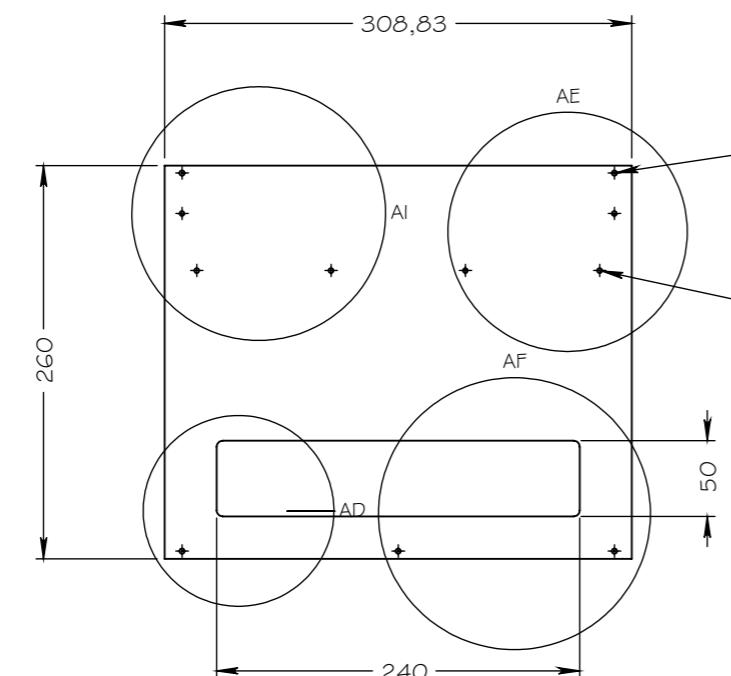
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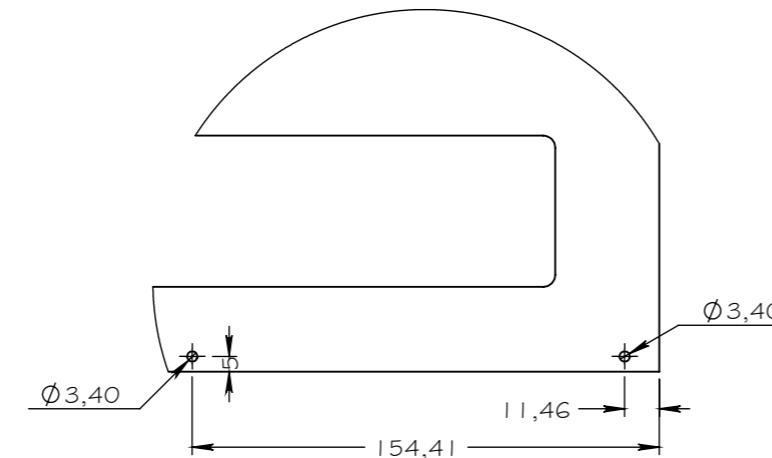
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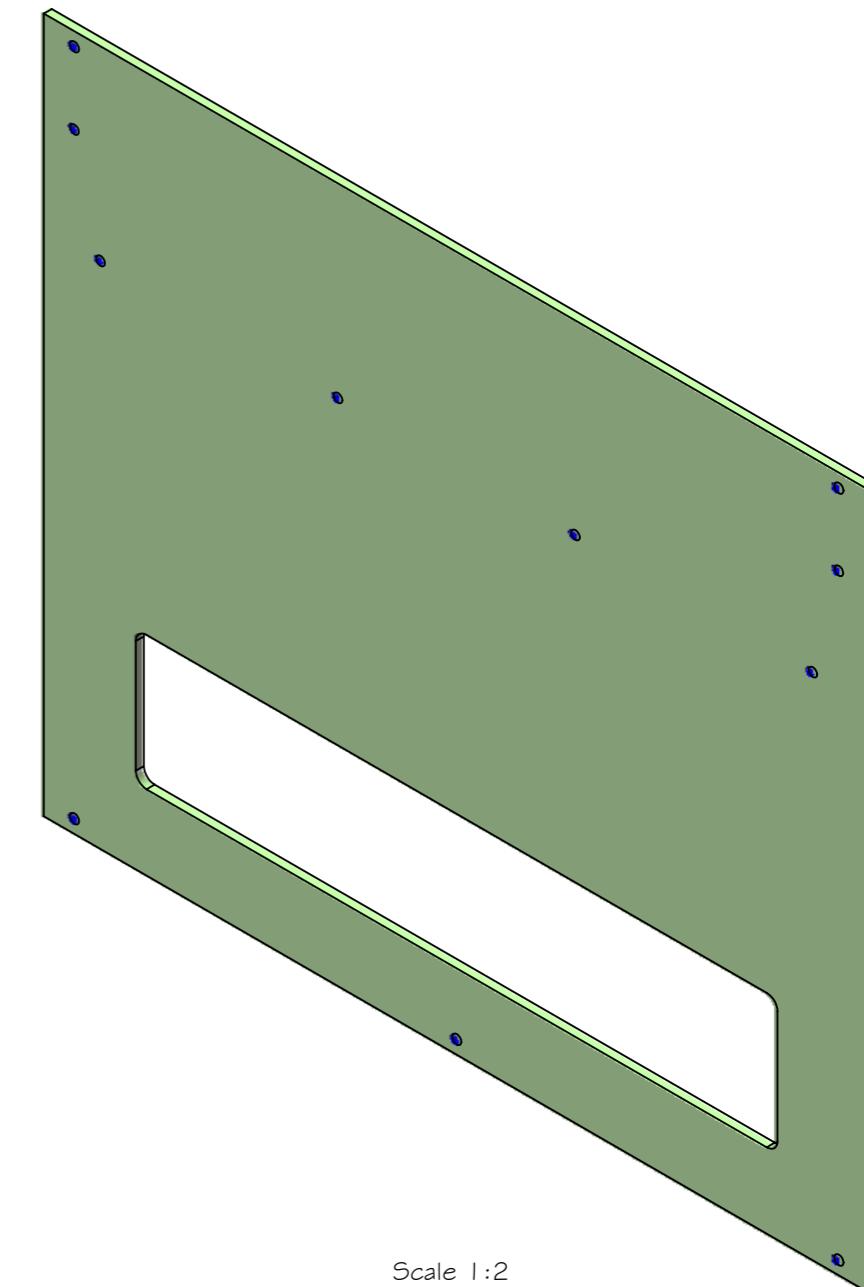
DETAIL AE  
SCALE 2 : 5  
 $5 \times \Ø 3,40$  THRU ALL  
 $6 \times \Ø 3,20$  THRU



DETAIL AD  
SCALE 1 : 2



DETAIL AF  
SCALE 2 : 5



Scale 1:2

<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE</b> <b>UFRJ</b>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.01 - BACK_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:5
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
			Sheet: 7 / 26

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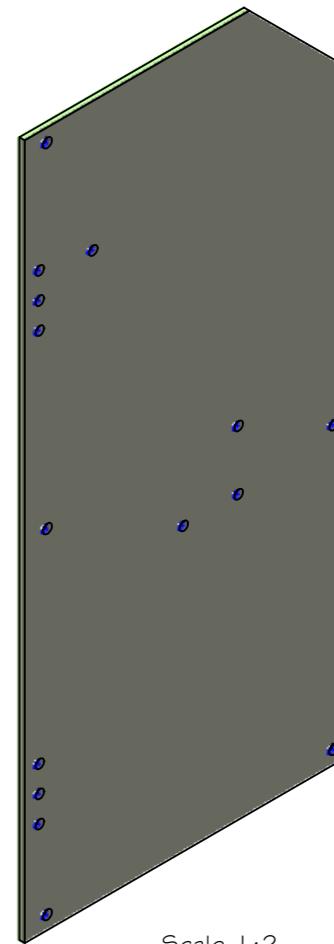
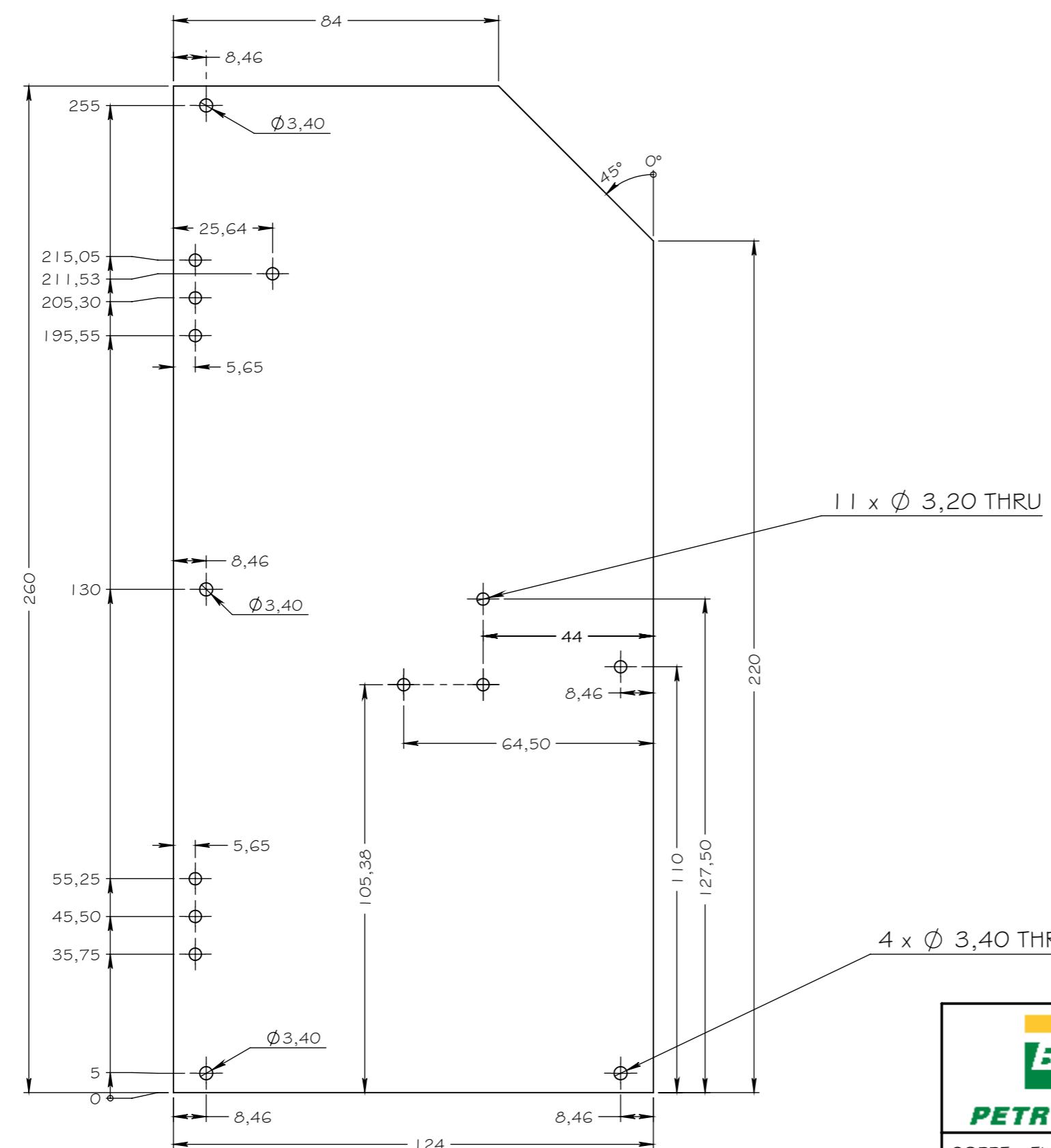
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program			<b>DORIS Project</b>
Title: DR2.2.2.02 - LEFT_SIDE_PLATE			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 06/06/2016		Rev.: A Scale.: 3:4 Sheet:
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016		QTY: 1 Unit.: mm
			8 / 26

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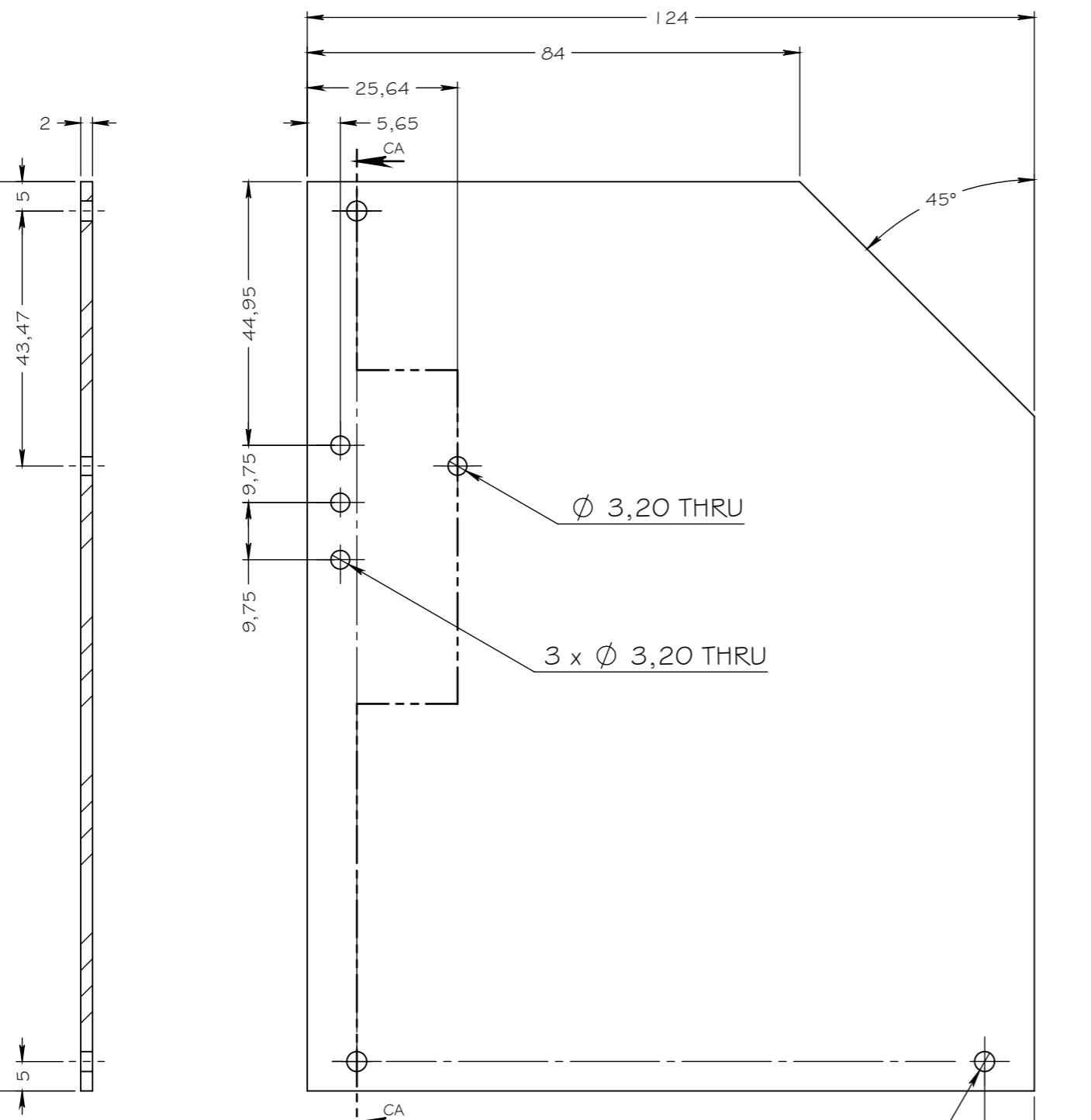
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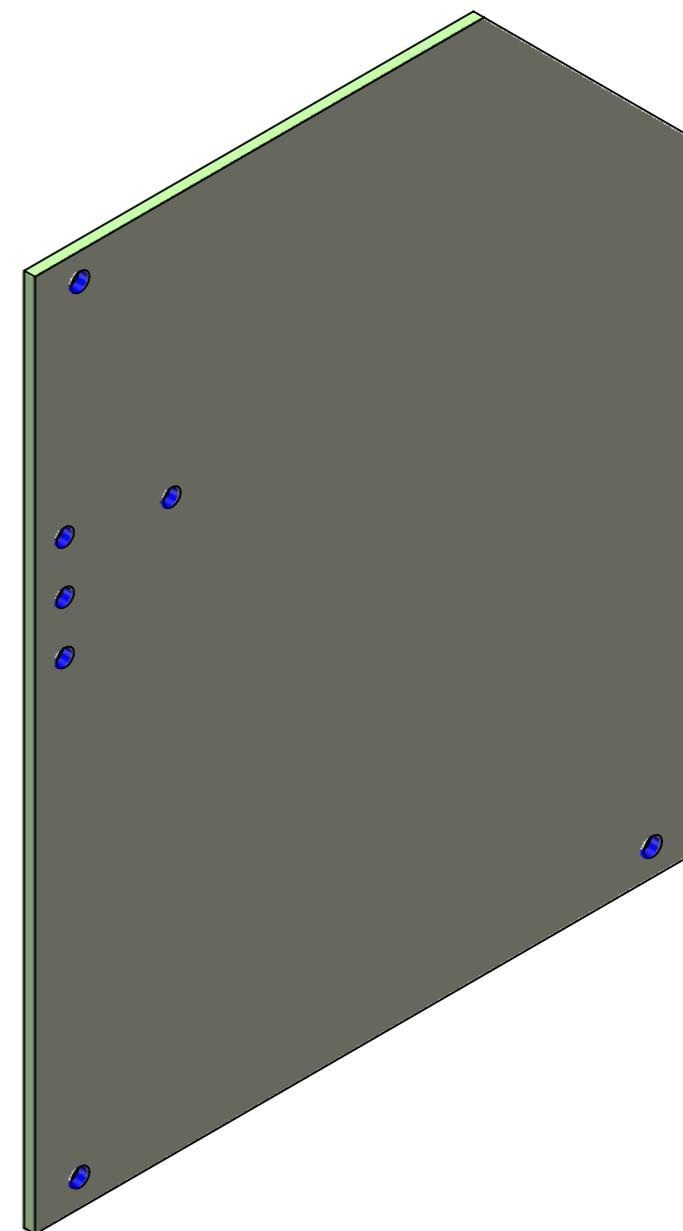
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SECTION CA-CA



 <b>PETROBRAS</b>	 <b>Statoil</b>	 <b>GSCAR</b>	 <b>COPPE</b> <small>UFRJ</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.03 - UPPER_RIGHT_SIDE_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
		Sheet:	9 / 26

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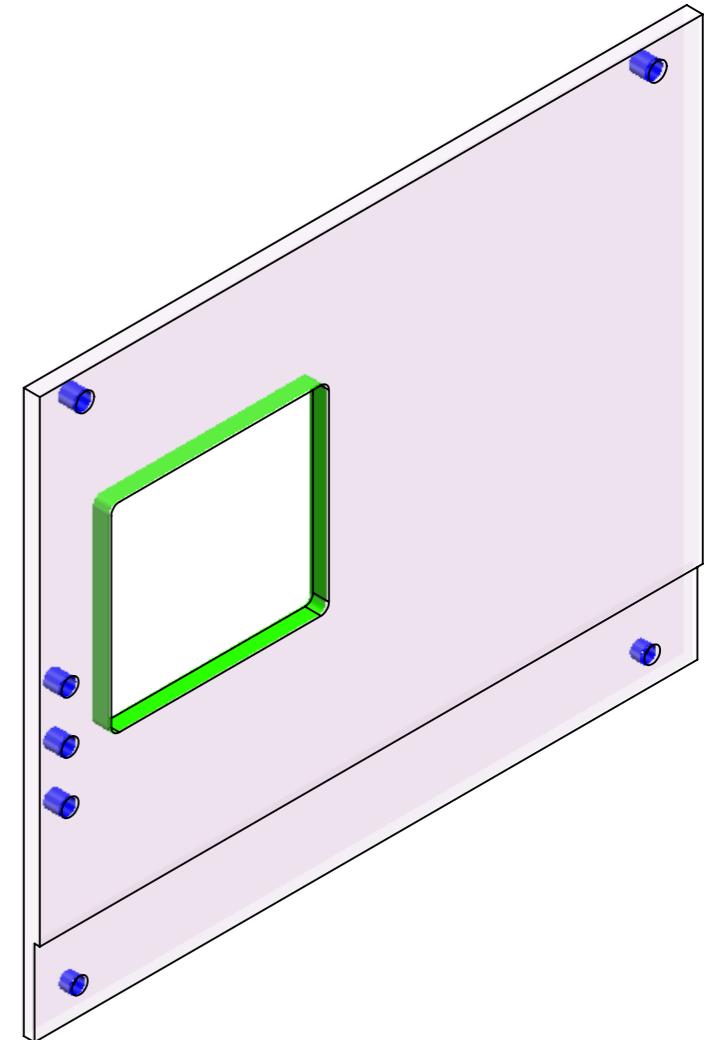
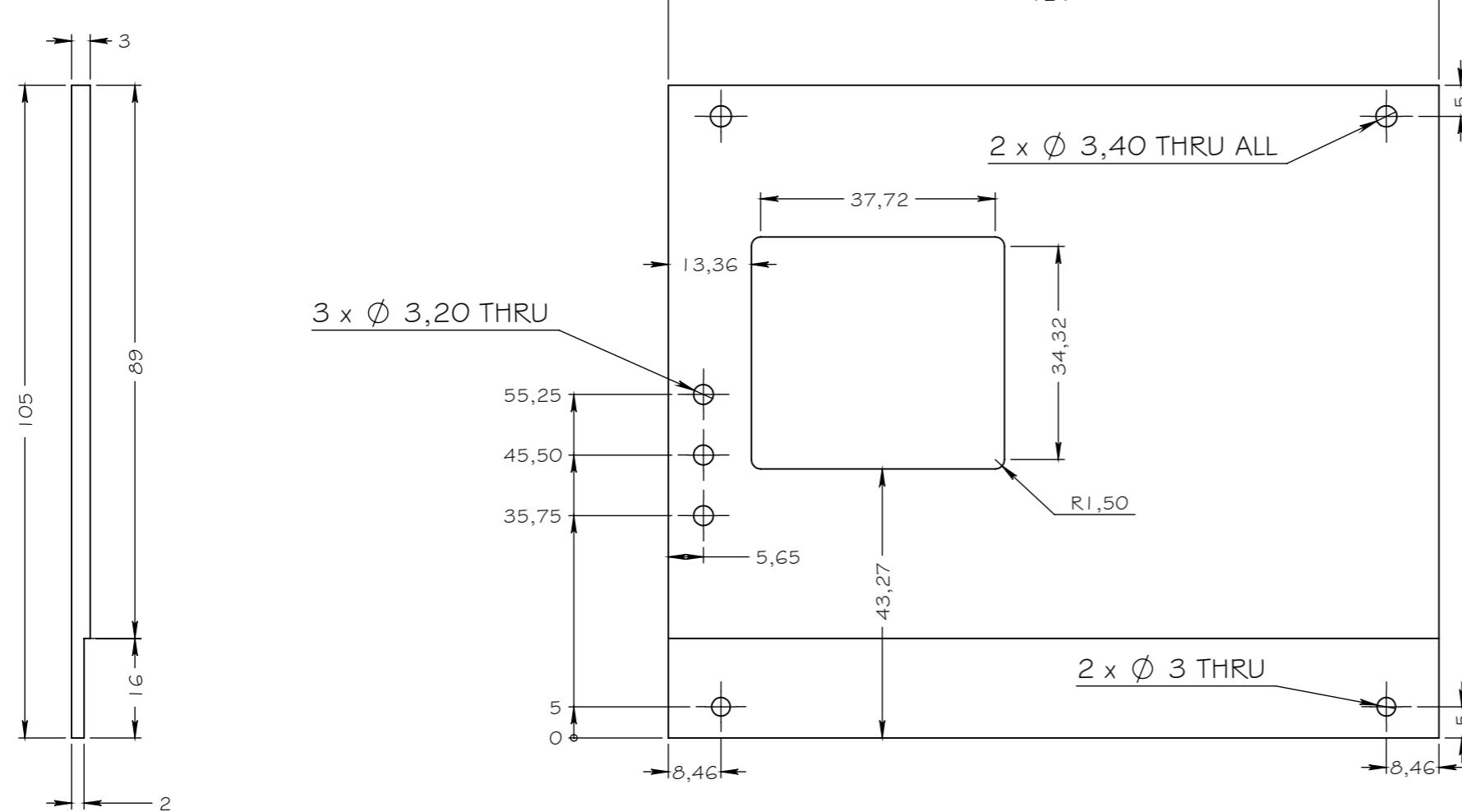
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.04 - BOTTOM_RIGHT_SIDE_PLATE		Material: Acrylic (Medium-high impact)	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 10/26 Unit.: mm

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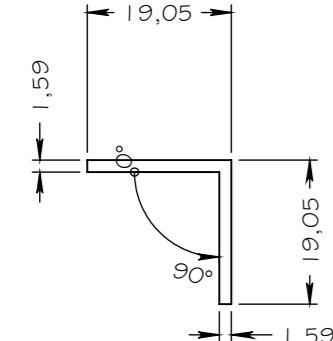
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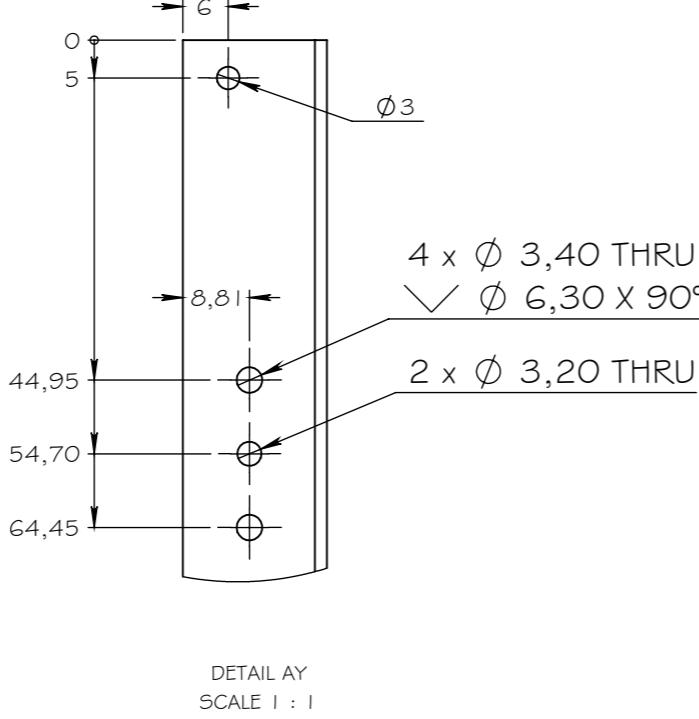
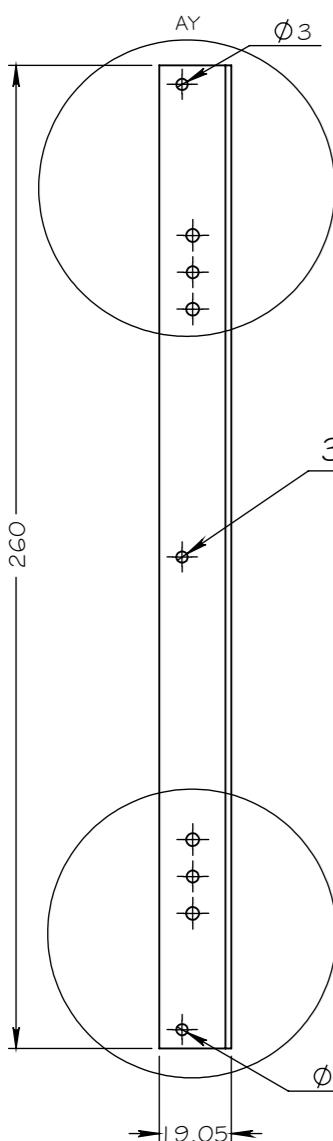
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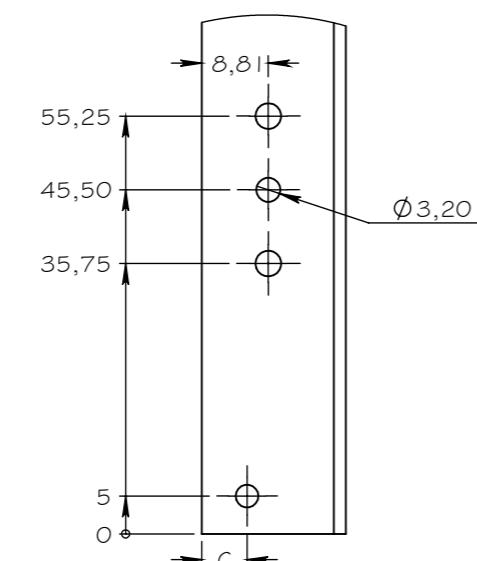
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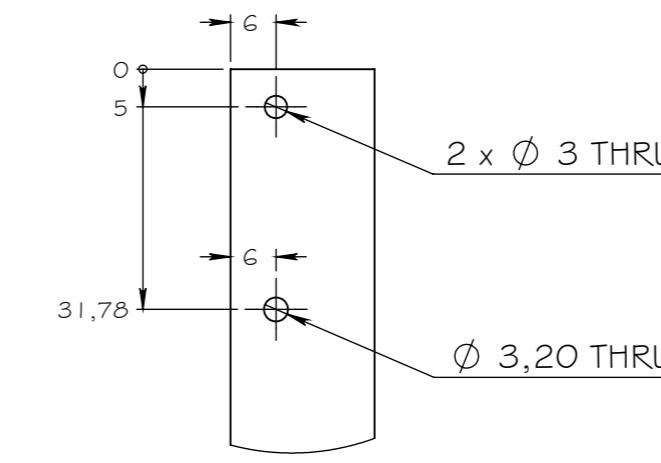
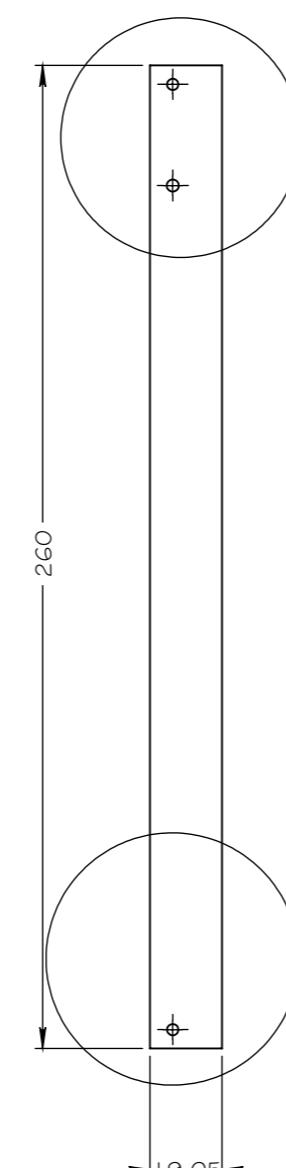
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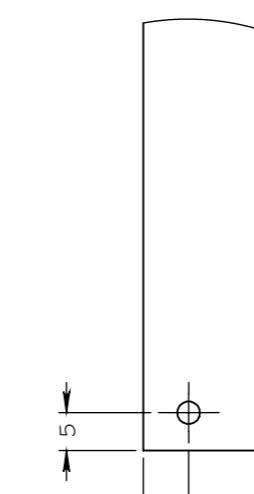
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SCALE 1 : 1



DETAIL AZ  
SCALE 1 : 1



DETAIL BB  
SCALE 1 : 1



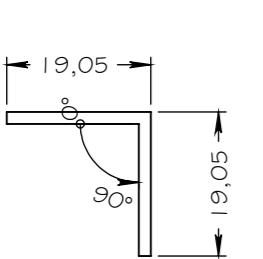
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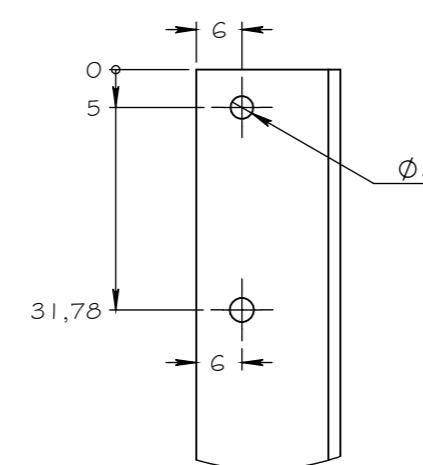
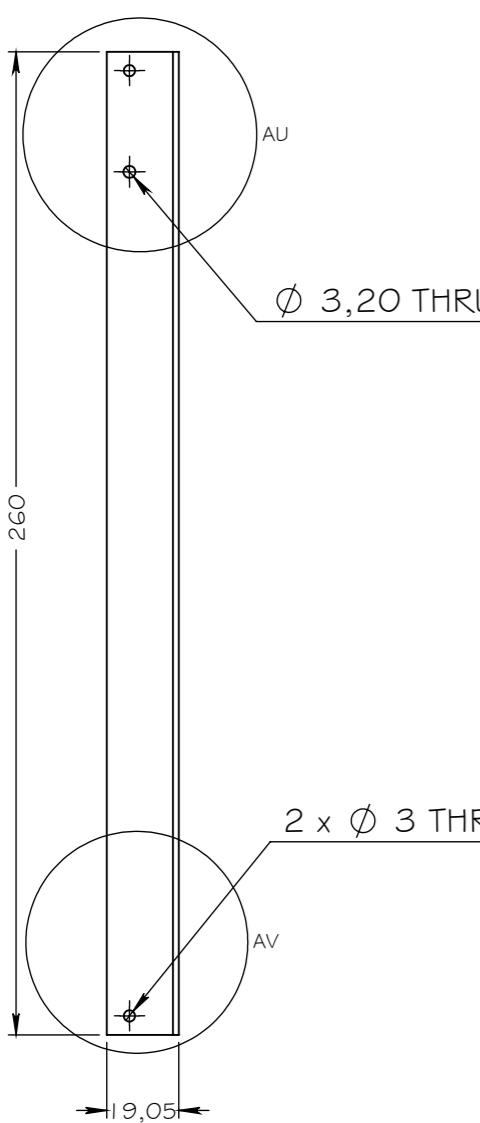
PETROBRAS		GSCAR	COPPE UFRJ
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.05 - LEFT_ANGLE_BRACKET_C		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 11 / 26
Unit.: mm			

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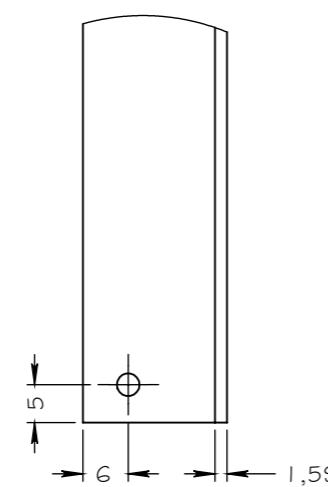
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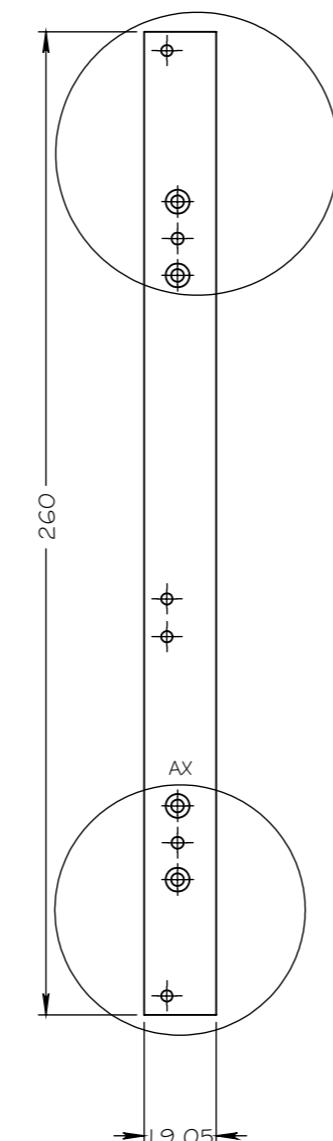
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DETAIL AU  
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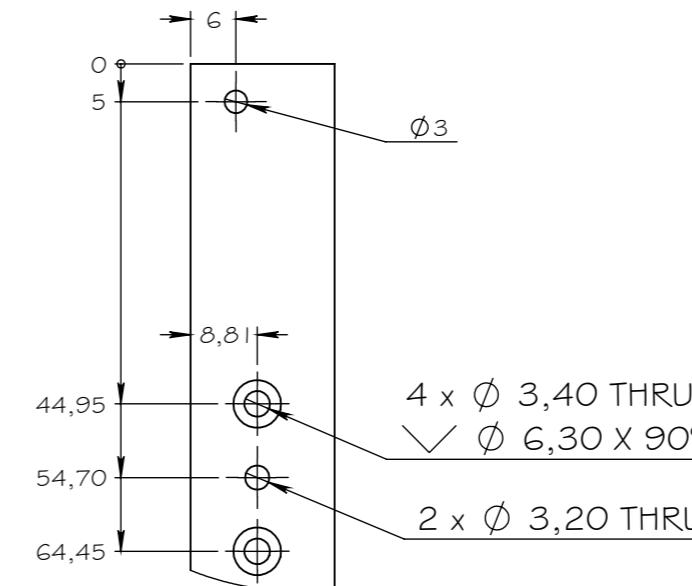
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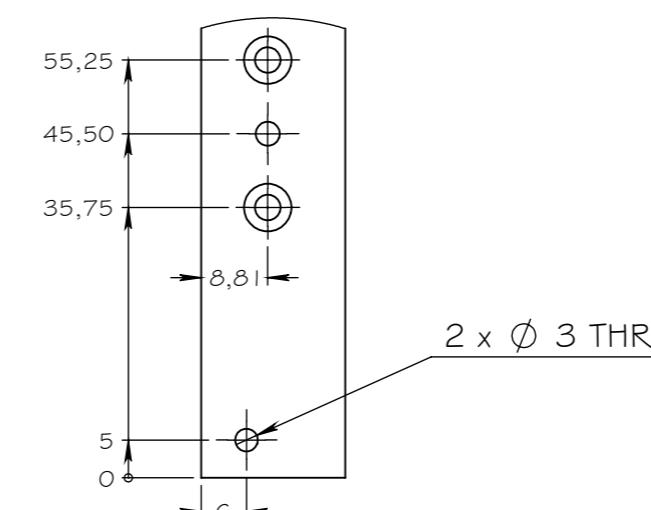
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DETAIL AW  
SCALE 1 : 1



DETAIL AX  
SCALE 1 : 1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2.06 - RIGHT\_ANGLE\_BRACKET\_C

Material: 1060-H14

Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A

Scale.: 1:2

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Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016

QTY: 1

Unit.: mm

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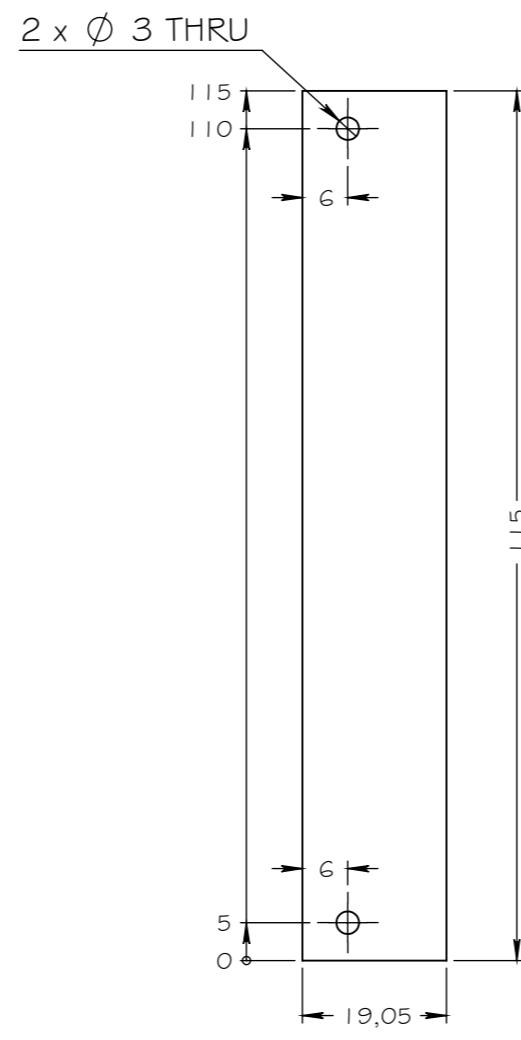
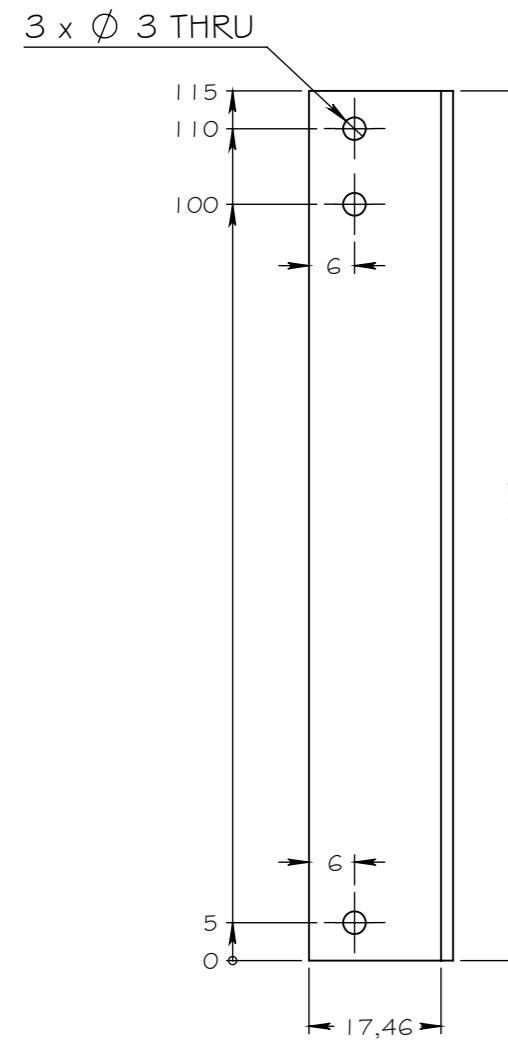
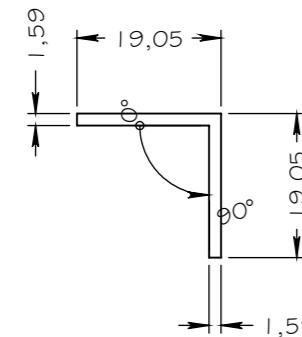
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: DR2.2.2.07 - RIGHT_ANGLE_BRACKET_D			Material: 1060-H14
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Unit.: mm
			Sheet: 13/26

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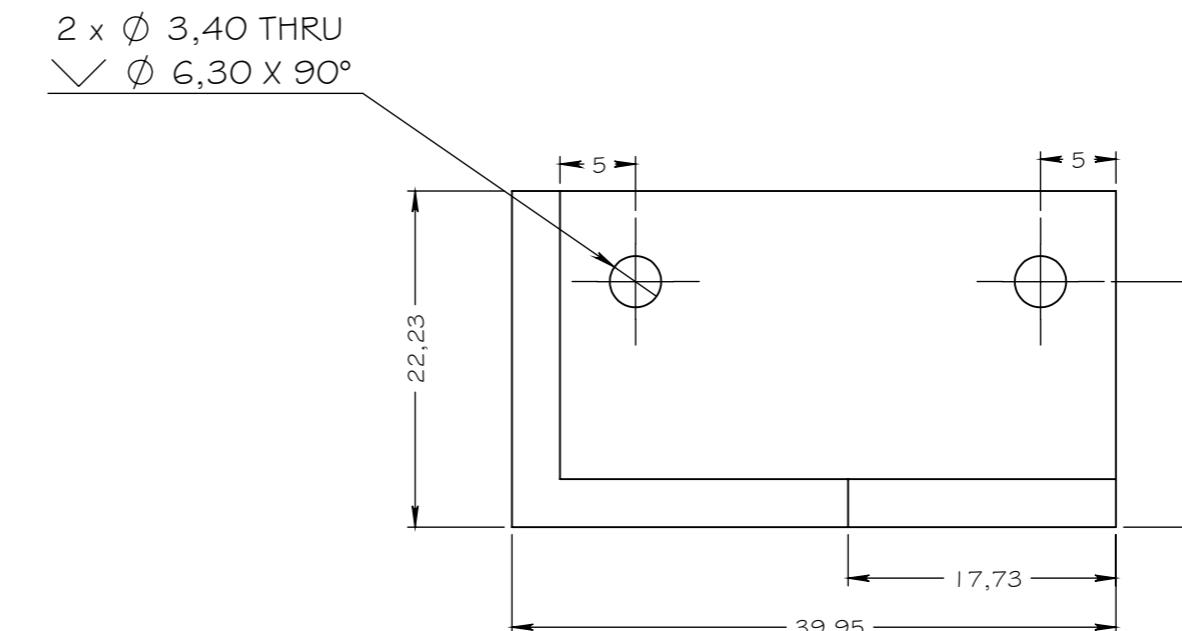
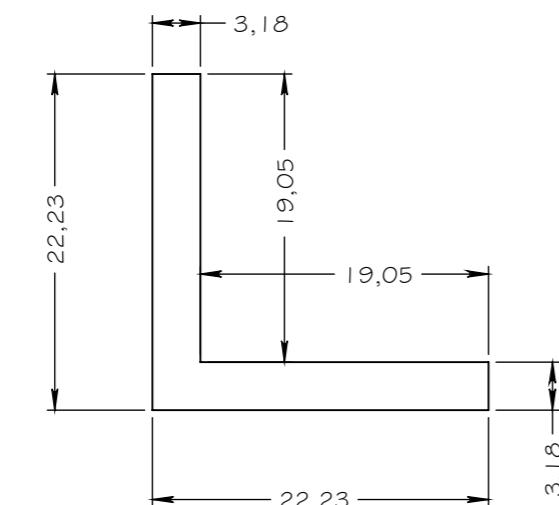
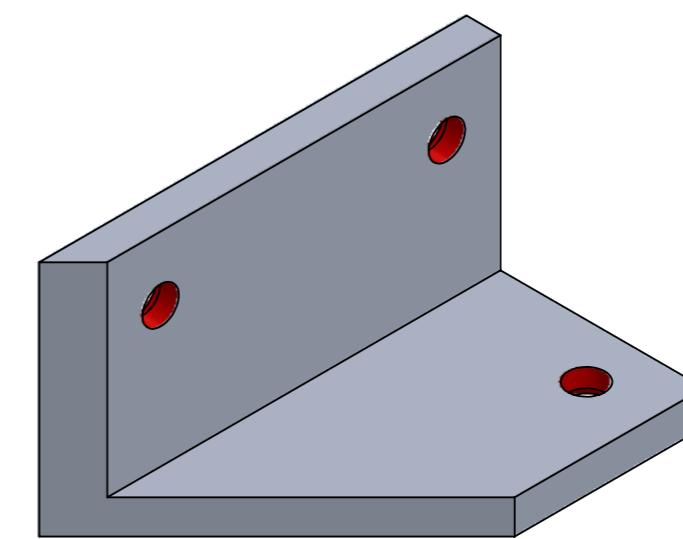
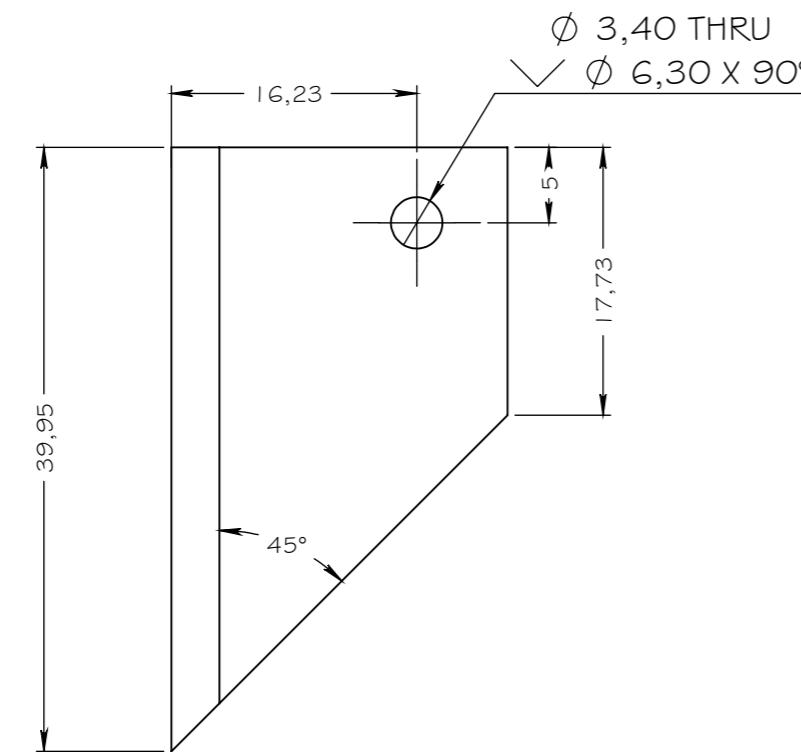
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COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.08 - RIGHT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 14/26
		Unit.: mm	

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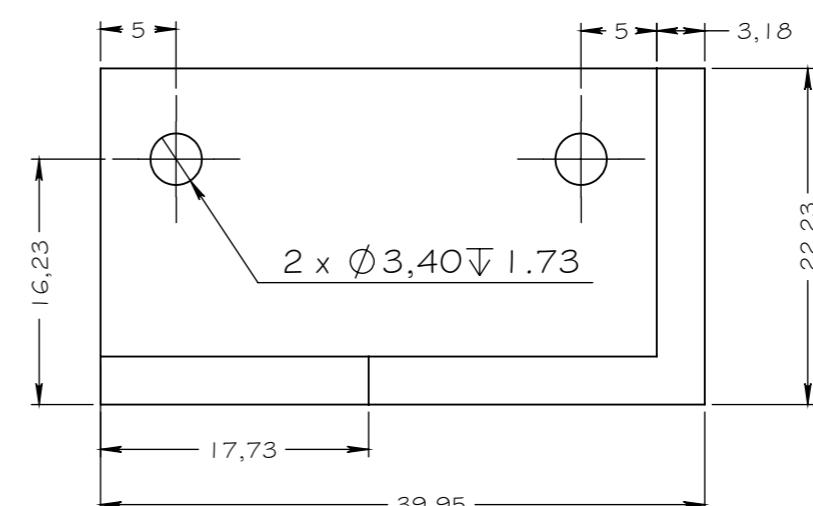
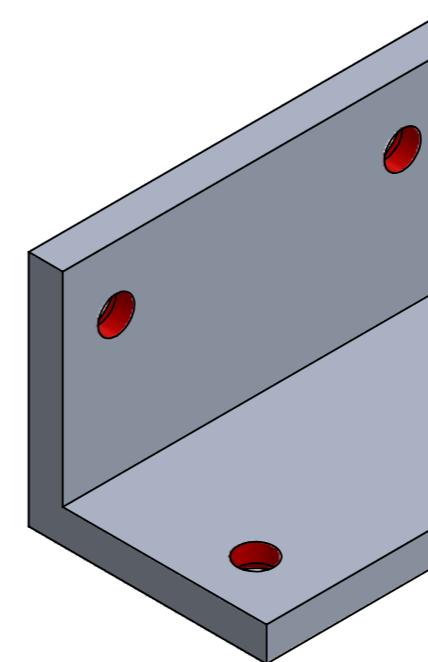
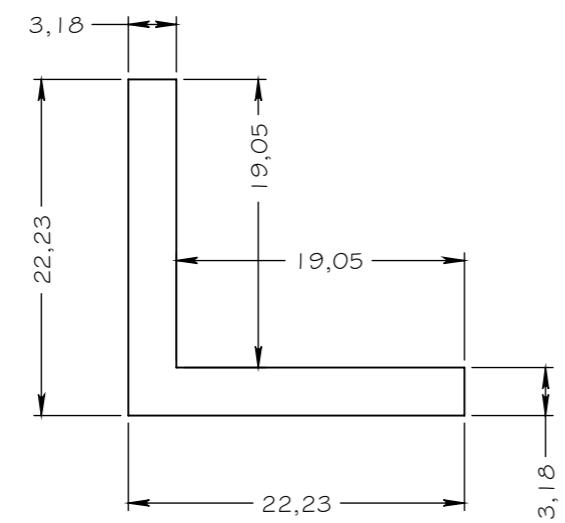
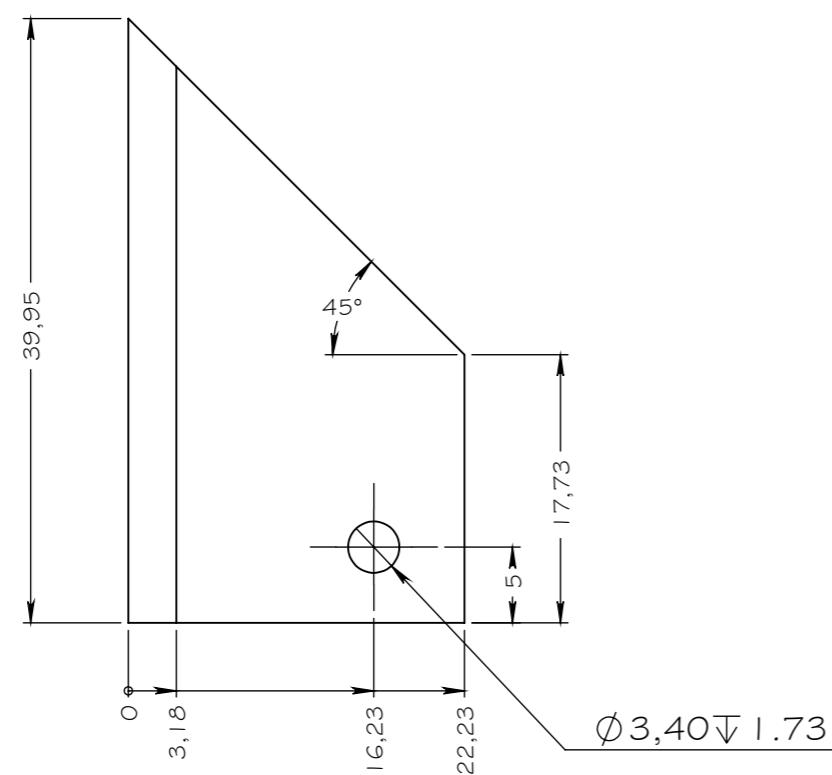
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.2.09 - LEFT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 15/26
		Unit.: mm	

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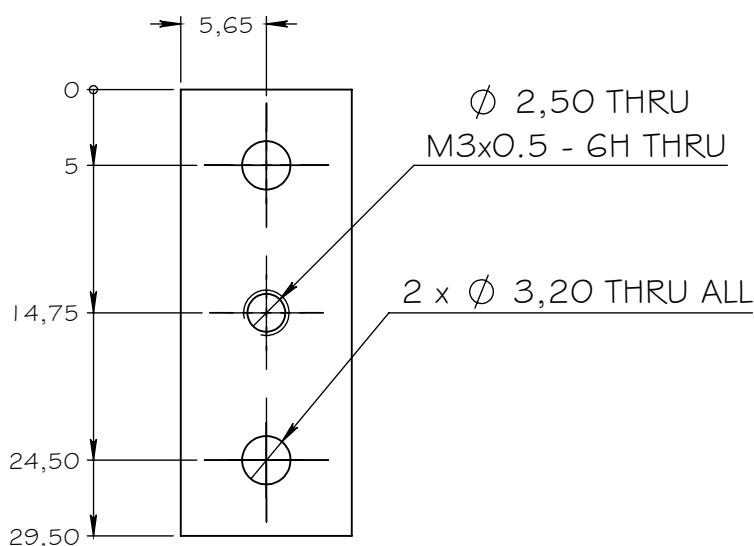
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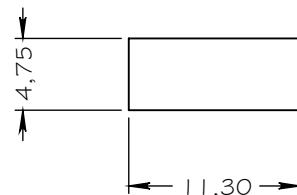
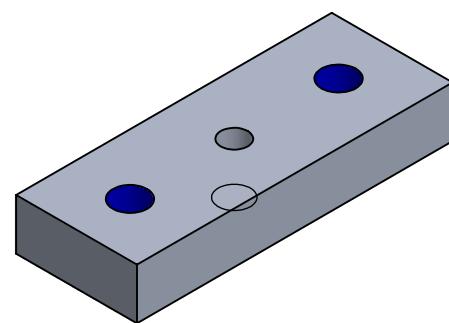
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2.010 - FIXATION\_BLOCK

Material: 1060 Alloy

Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1	Sheet: 16 / 26
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 4	Unit.: mm	

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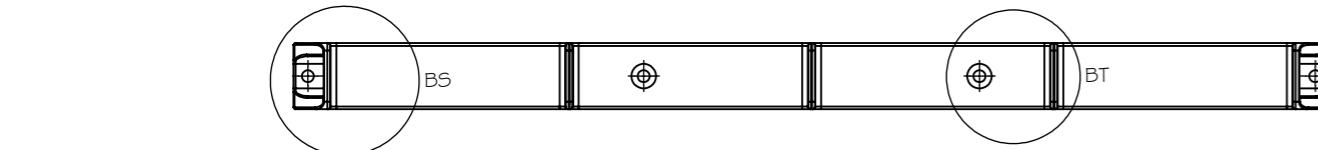
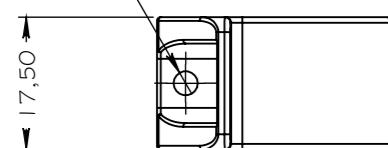
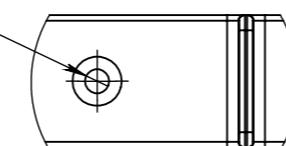
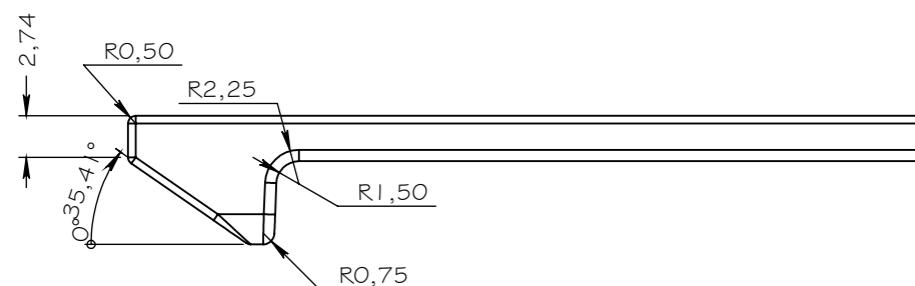
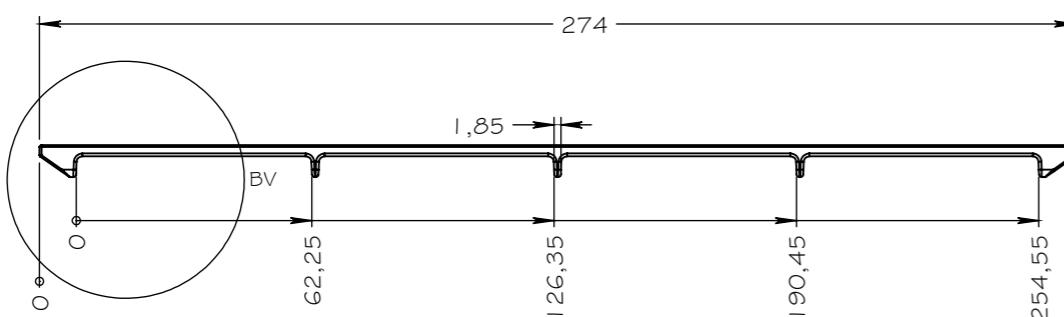
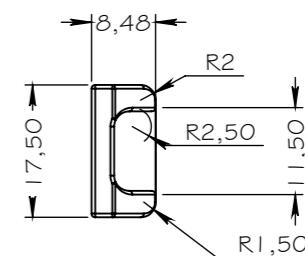
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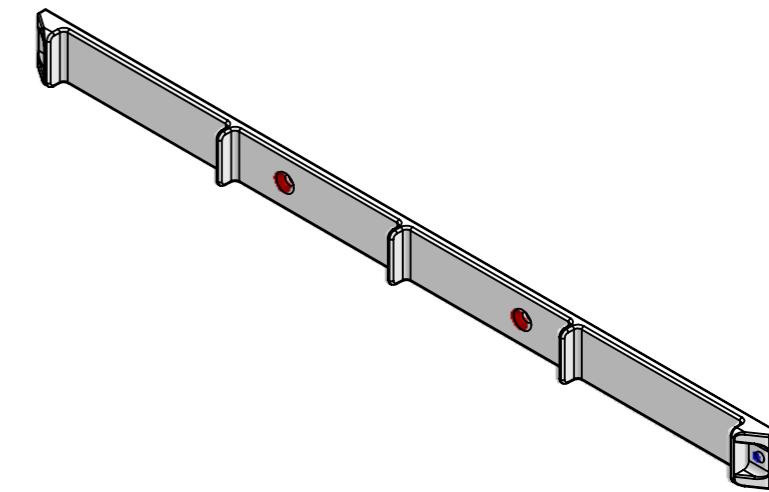
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2 x  $\emptyset$  3,20  $\downarrow$  3DETAIL BS  
SCALE 1 : 12 x  $\emptyset$  3,20 THRU  
 $\checkmark$   $\emptyset$  6,50 X 90°DETAIL BT  
SCALE 1 : 1DETAIL BV  
SCALE 2 : 1

Scale 1:1



PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.2.011 - UPPER_CURB		Material: ABS	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 17/26
		Unit.: mm	

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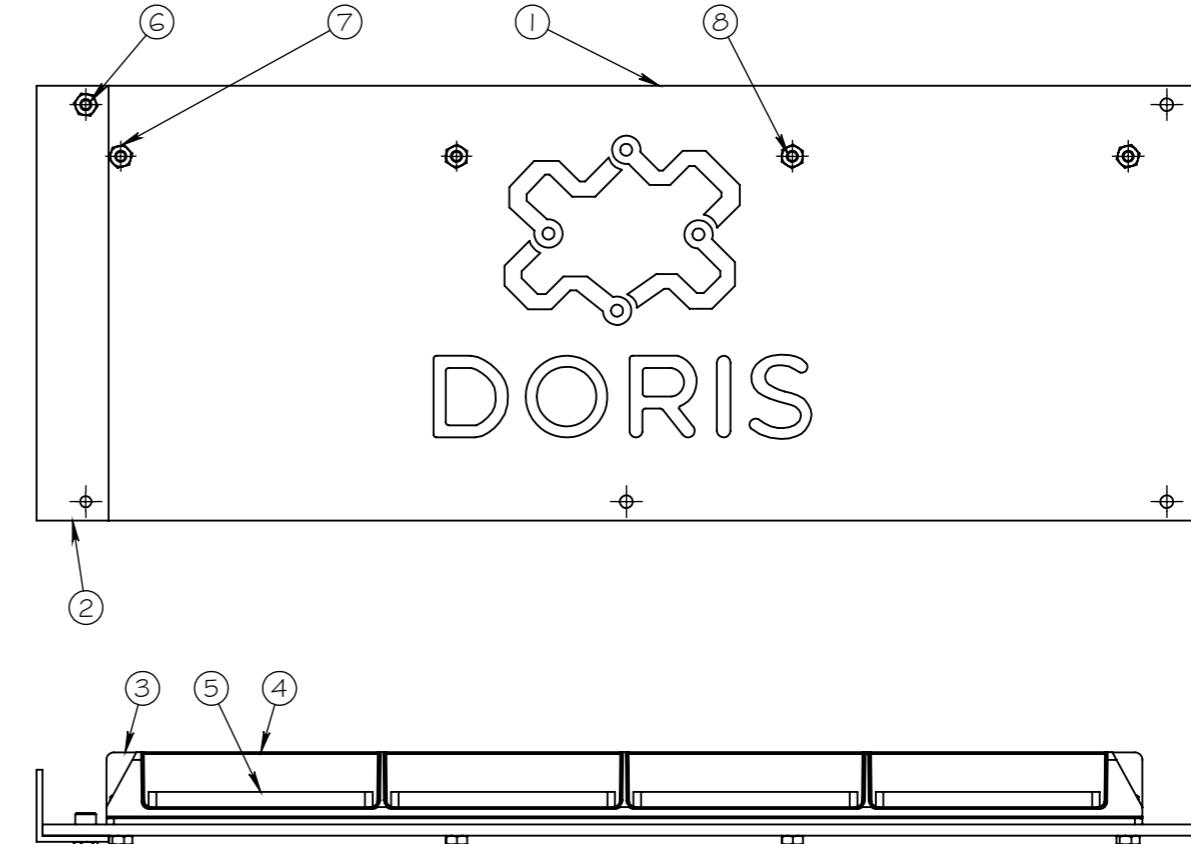
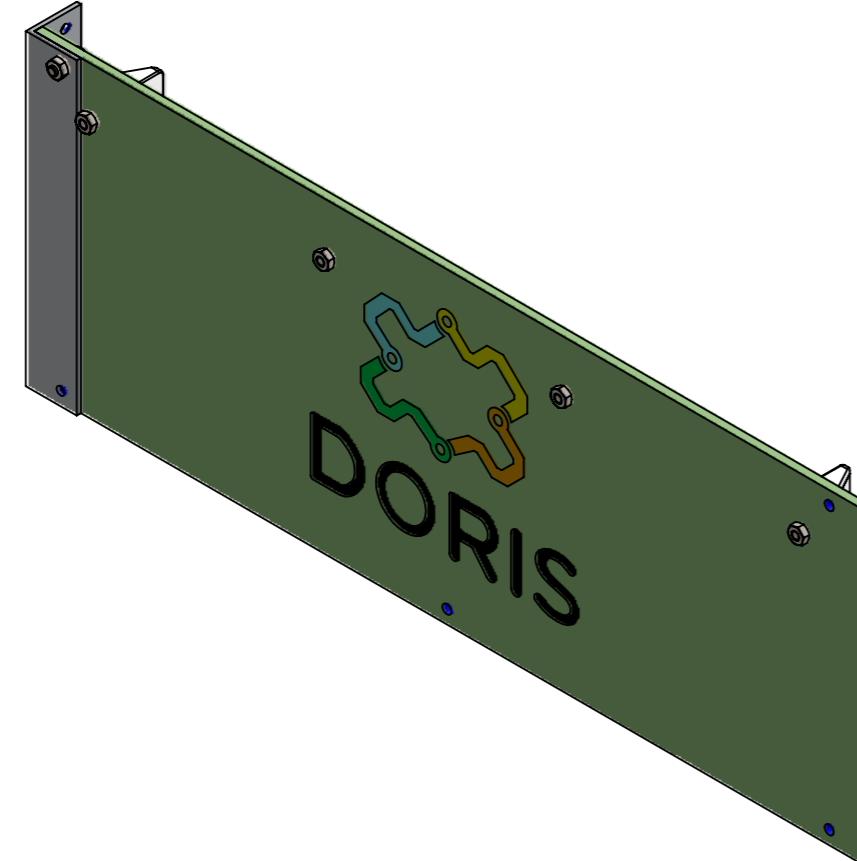
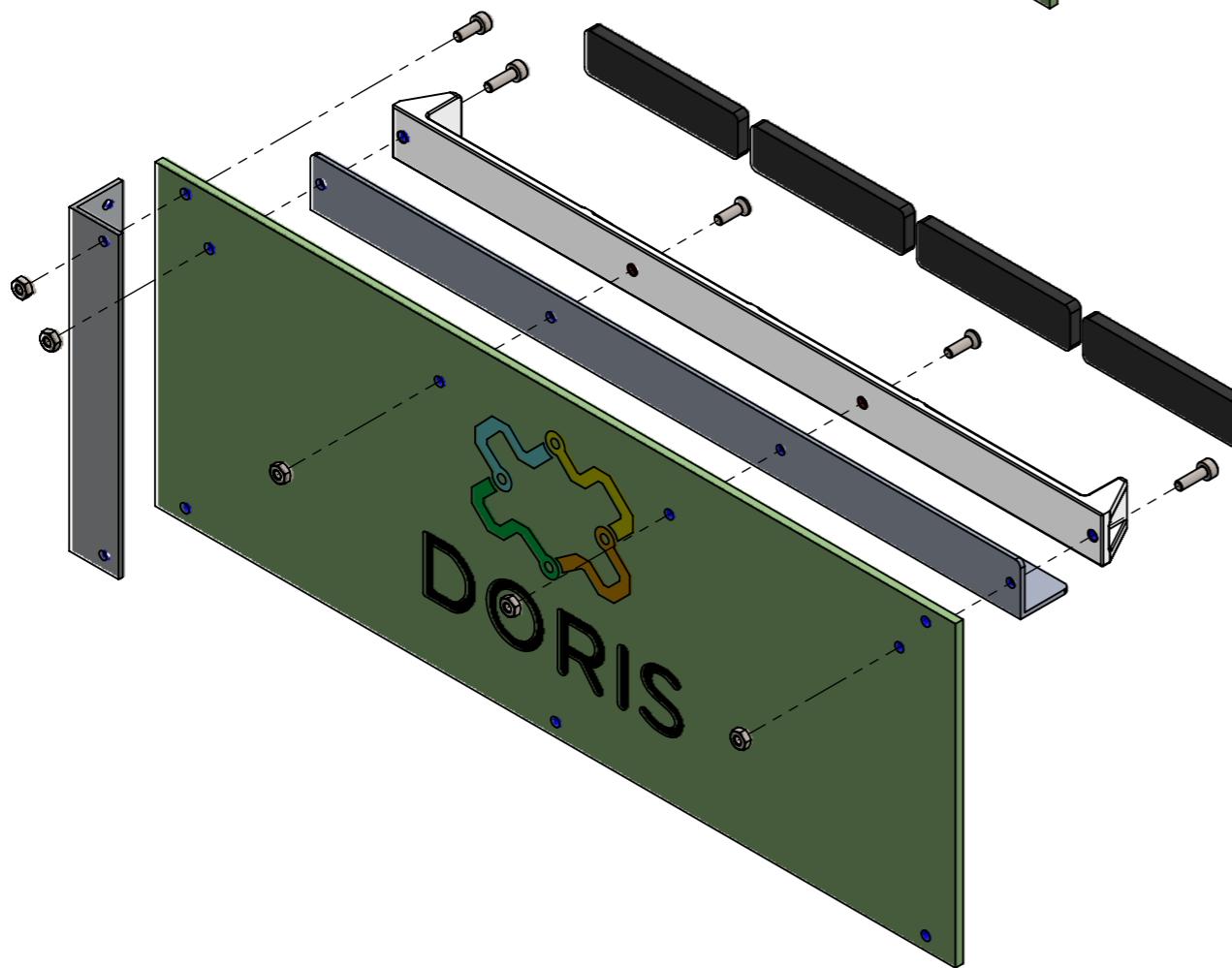
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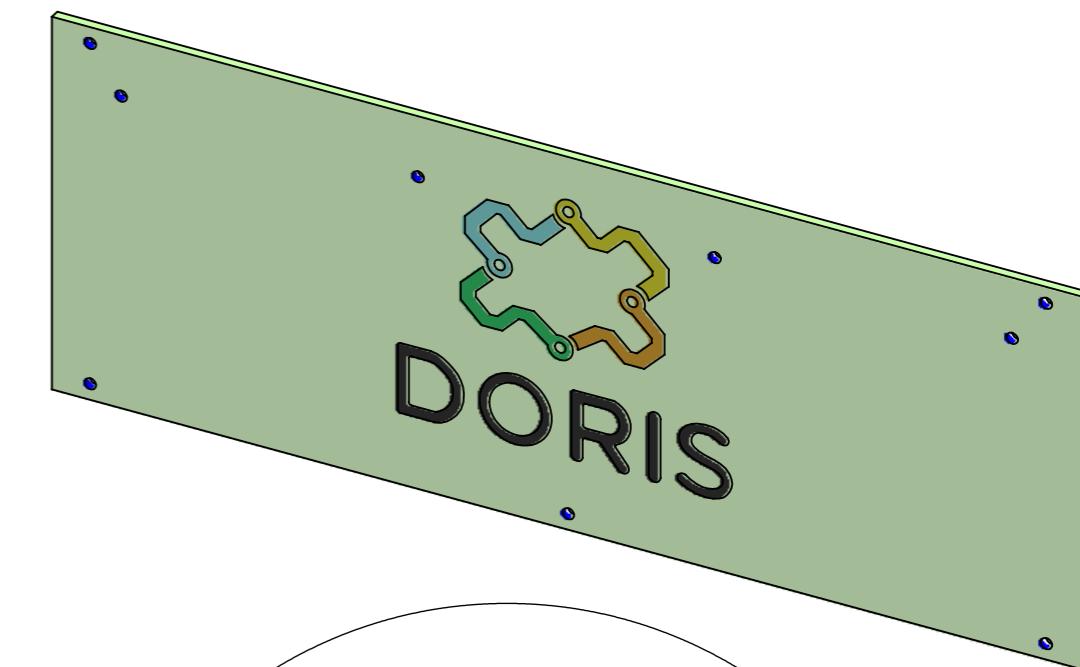
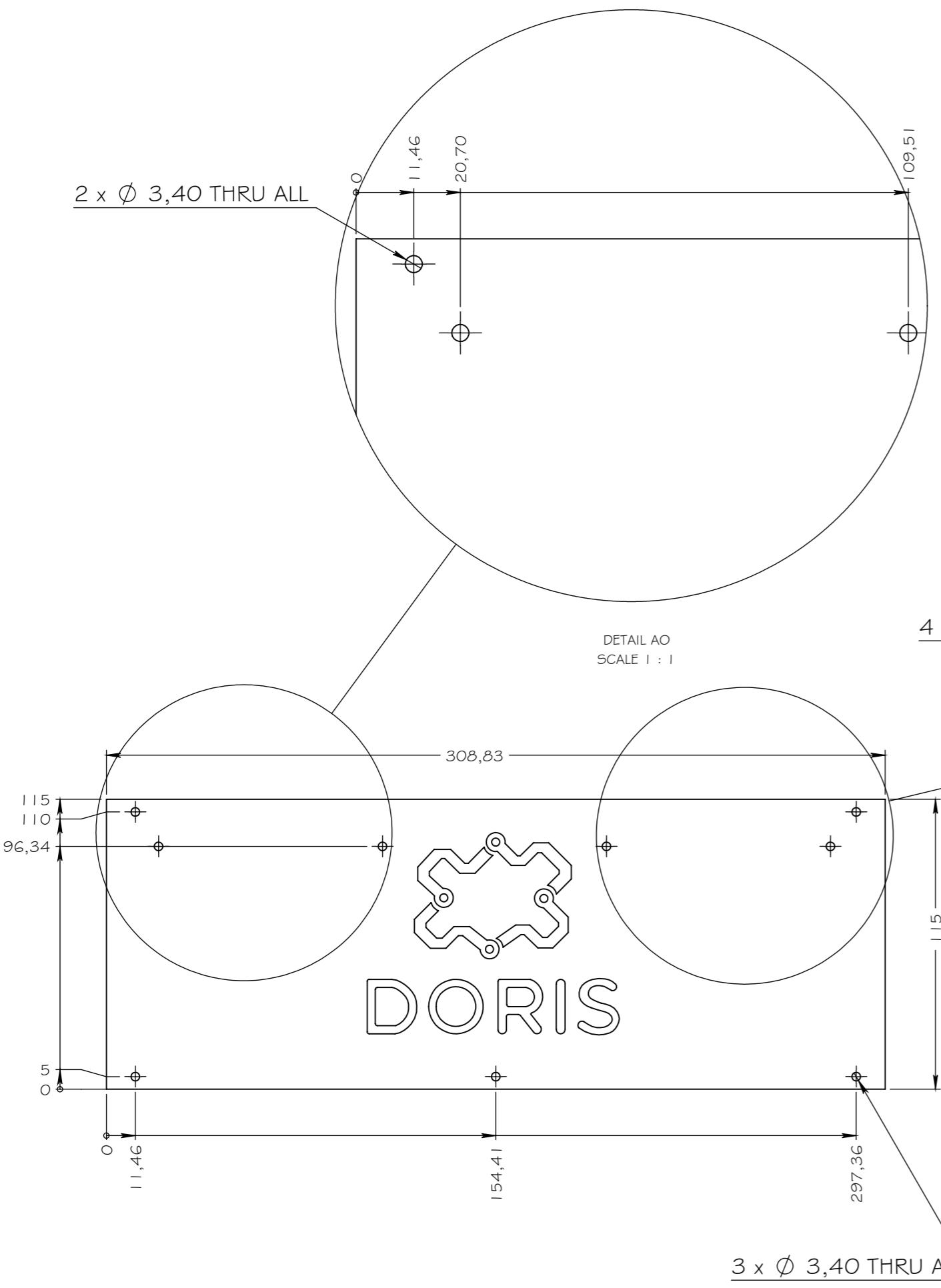
ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 1ON	2
7	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	5
6	B18.3.1M - 3 x 0.5 x 10 Hex SHCS -- 1ONHX	3
5	BOTTOM_CURB_RUBBER	4
4	DR2.2.3.04 - BOTTOM_CURB	1
3	DR2.2.3.03 - FRONT_SUPPORT_ANGLE_BRACKET	1
2	DR2.2.3.02 - LEFT_ANGLE_BRACKET_D	1
1	DR2.2.3.01 - FRONT_PLATE	1

<b>COPPE - Electrical Engineering Program</b>			<b>DORIS Project</b>
Title: DR2.2.3 - FRONT_EE_BOX		Material: Various	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 18 / 26
		Unit.: mm	

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PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.3.01 - FRONT_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 19/26
		Unit.: mm	

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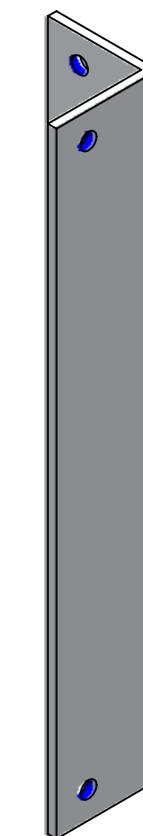
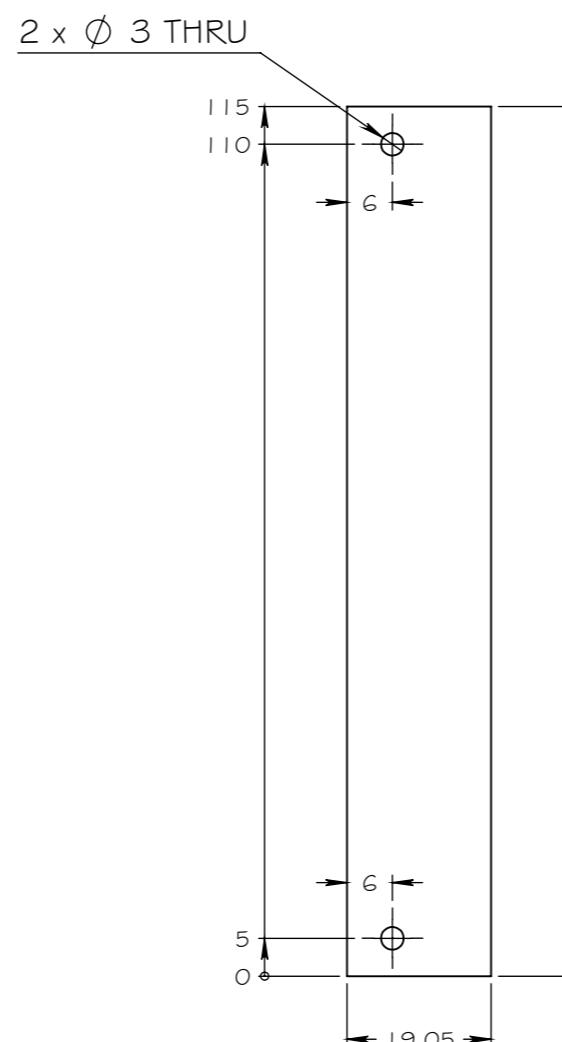
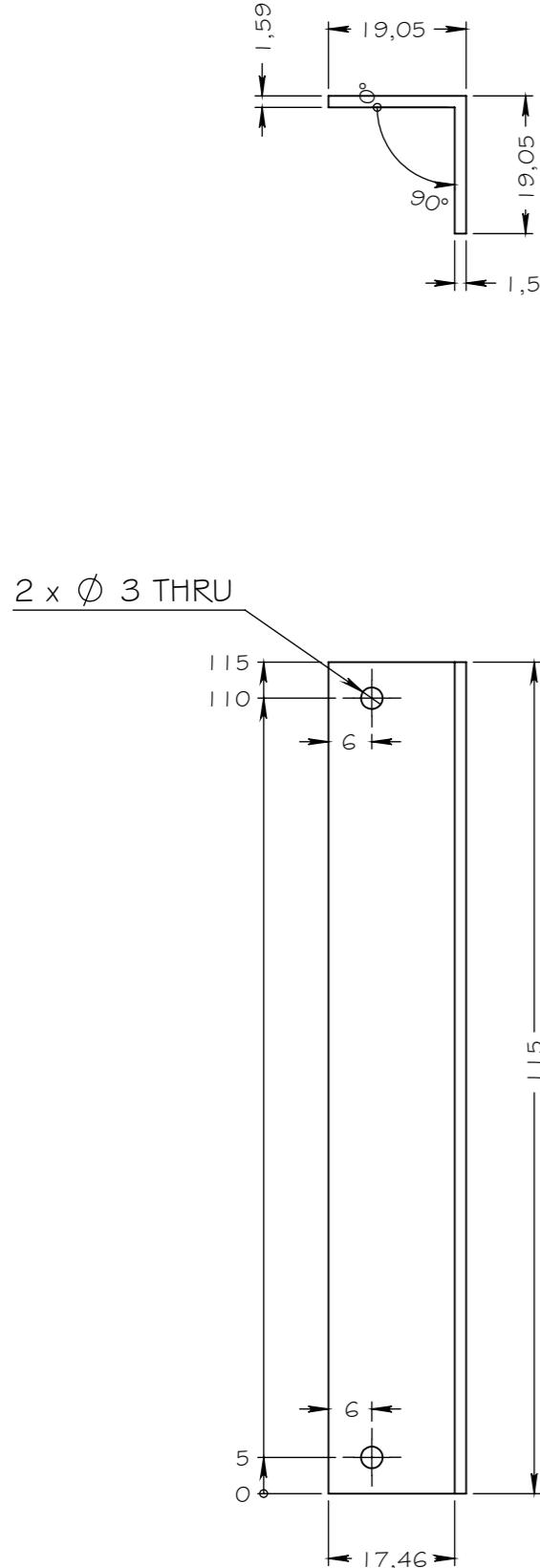
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.2.3.02 - LEFT_ANGLE_BRACKET_D		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 20/26 Unit.: mm

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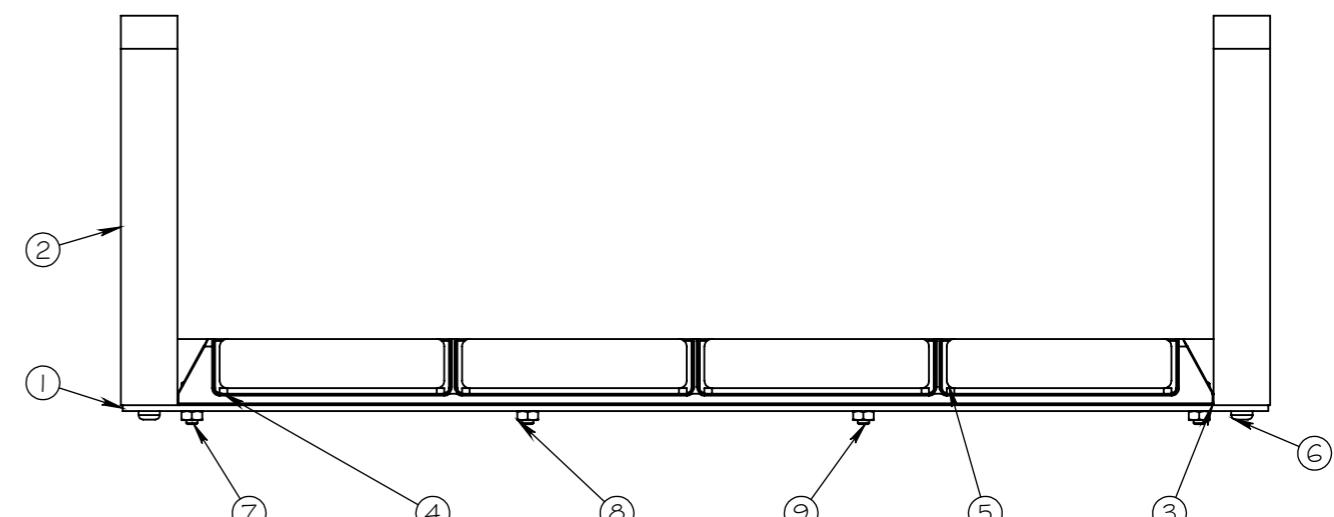
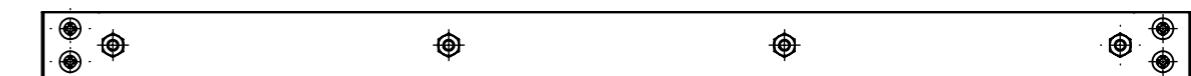
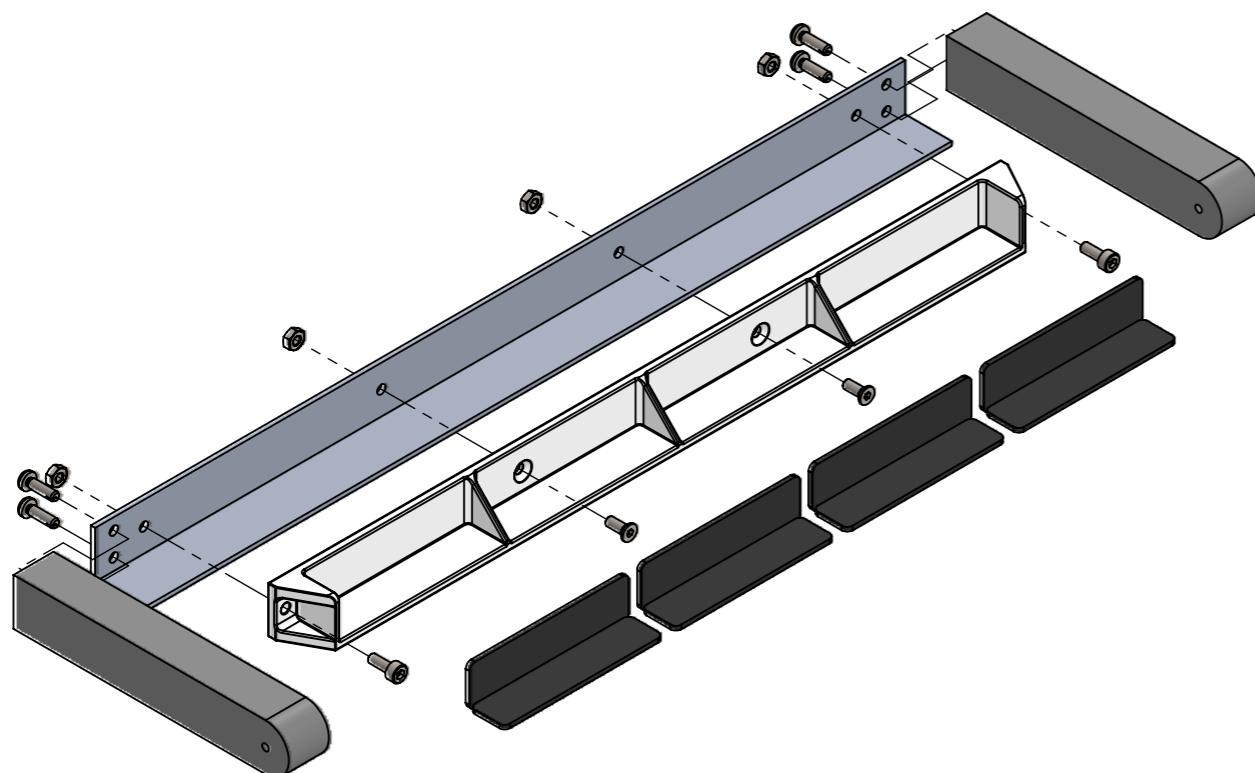
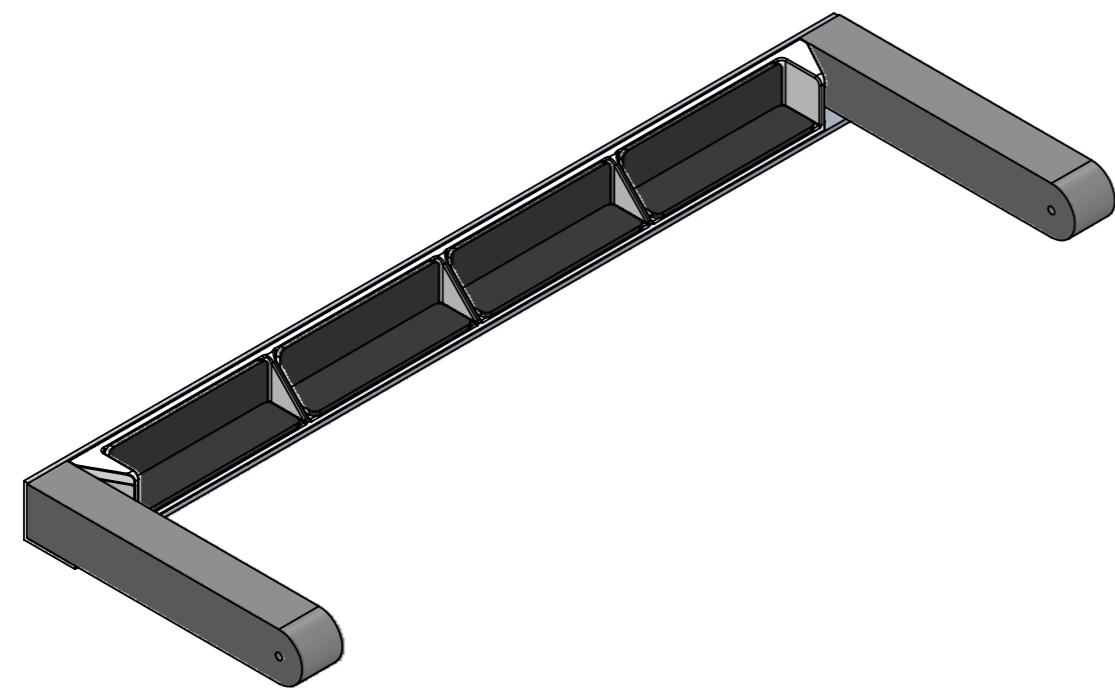
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ITEM	PART NUMBER - DESCRIPTION	QTY.
9	B18.3.5M - 3 x 0.5 x 8 Socket FCHS -- 8N	2
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	4
7	B18.3.1M - 3 x 0.5 x 8 Hex SHCS -- 8NHX	2
6	pan head tapping screw_am	4
5	UPPER_CURB_RUBBER	4
4	SIMPLE_LOCK_RUBBER	4
3	DR2.2.4.03 - SIMPLE_LOCK_CURB	1
2	DR2.2.4.02 - SIMPLE_LOCK_PIVOT	2
1	DR2.2.4.01 - SIMPLE_LOCK_ANGLE_BRACKET	1



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Pós-Graduação e Pesquisa de Engenharia

DORIS Project

COPPE - Electrical Engineering Program

Title: DR2.2.4 - SIMPLE\_LOCK

Material: Various

Designed by: Guilherme Carvalho

Date: 06/06/2016 Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm 21 / 26

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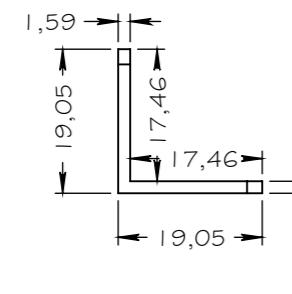
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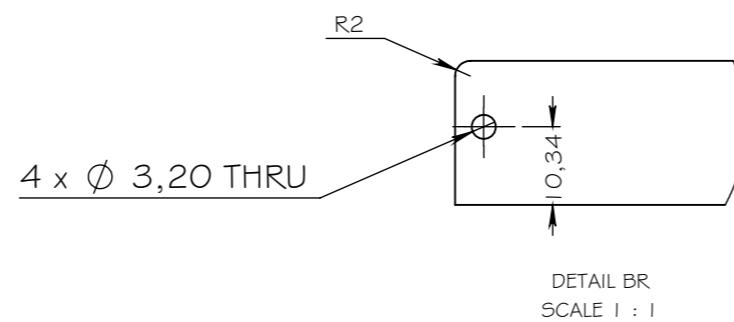
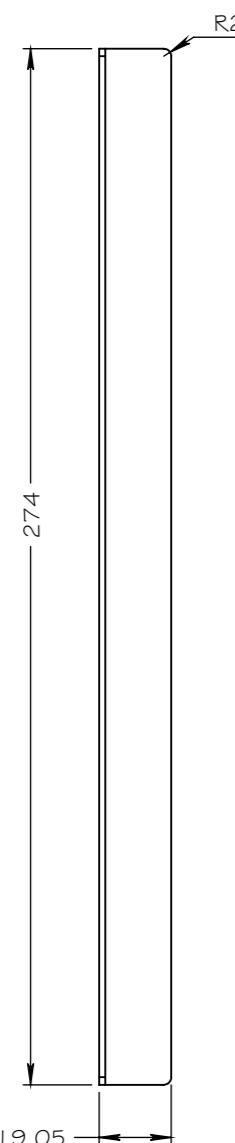
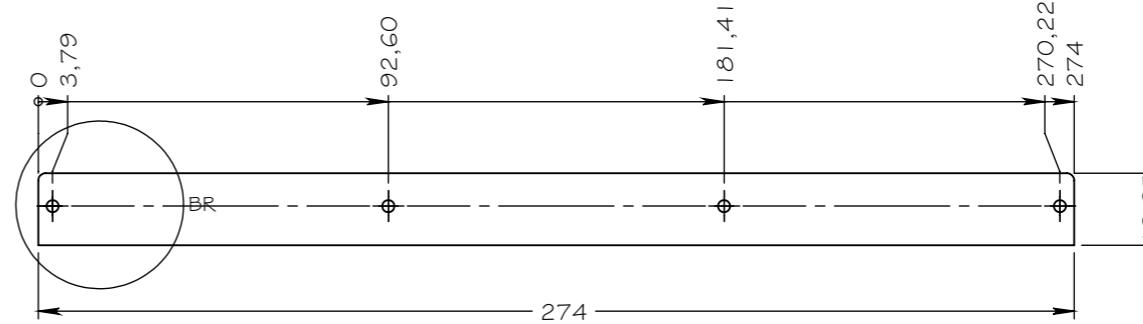
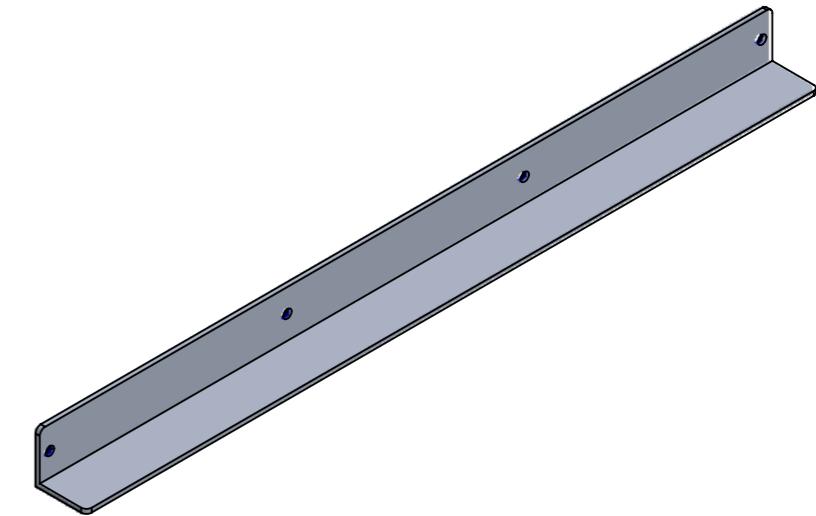
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Scale 1:1

DETAIL BR  
SCALE 1 : 1

PETROBRAS		GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.2.3.03 - FRONT_SUPPORT_ANGLE_BRACKET		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 22/26
Unit.: mm			

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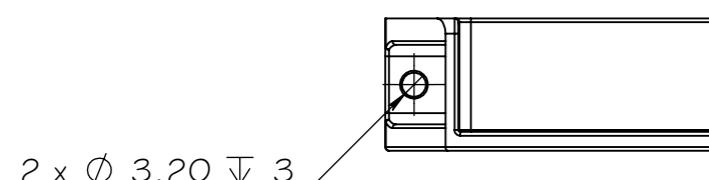
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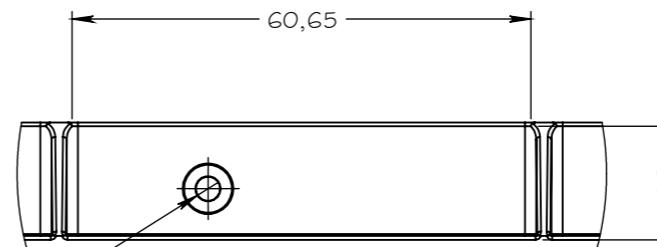
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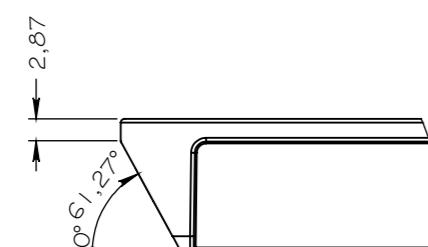
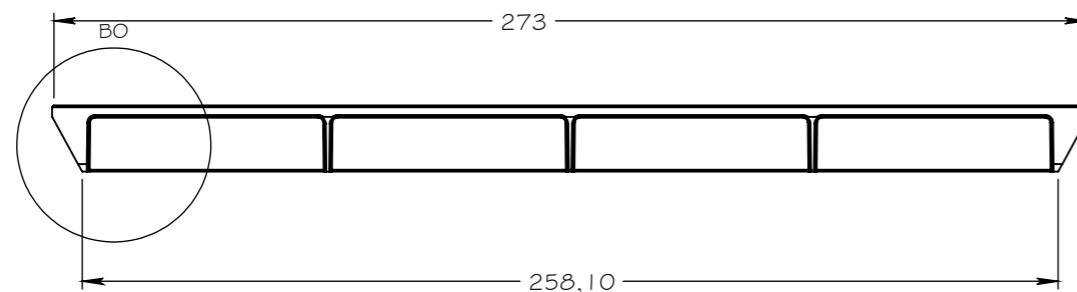
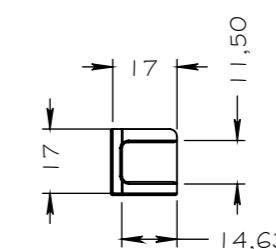
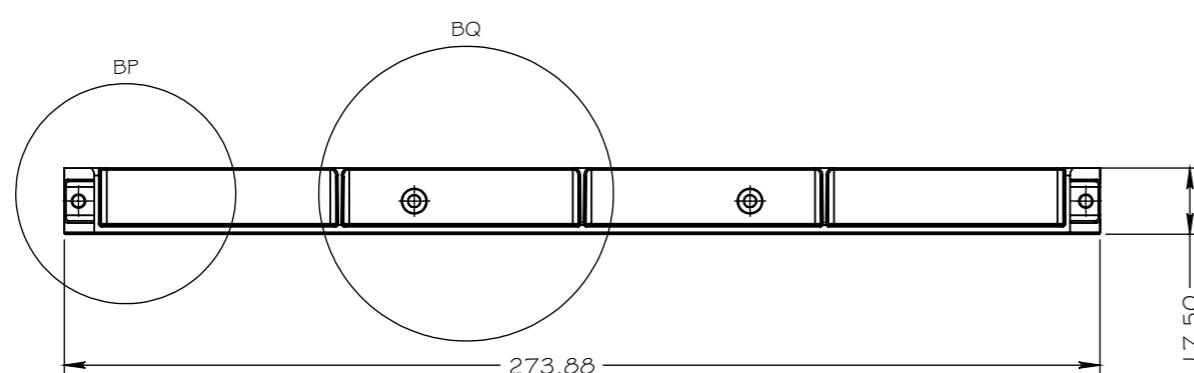
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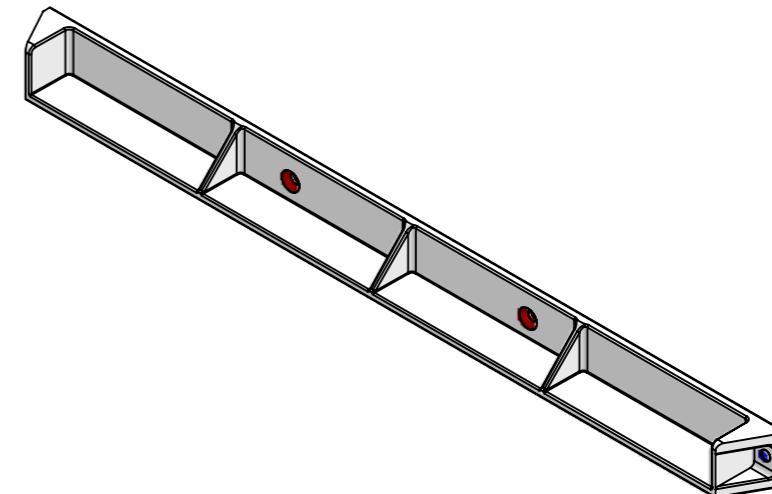
DETAIL BP  
SCALE 1 : 1



DETAIL BQ  
SCALE 1 : 1



DETAIL BO  
SCALE 1 : 1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.3.04 - BOTTOM\_CURB

Material: ABS

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
23/26

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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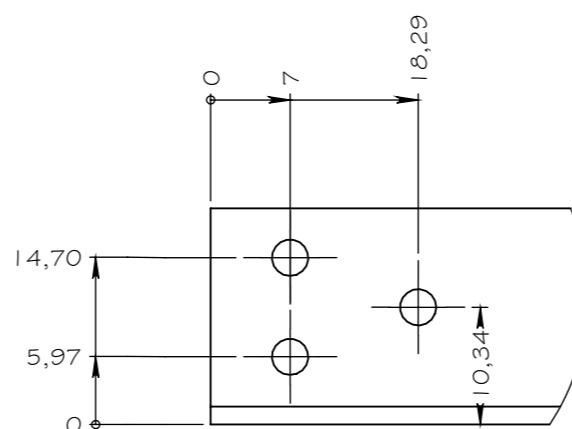
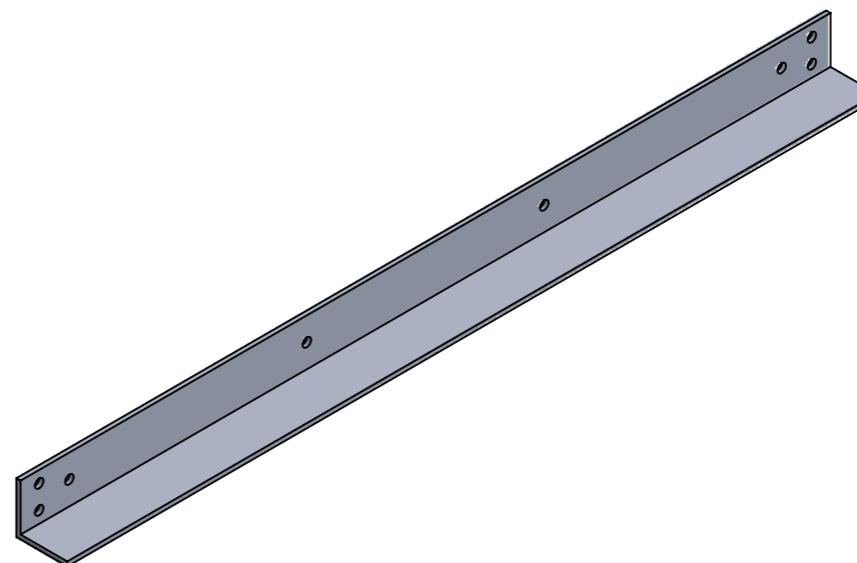
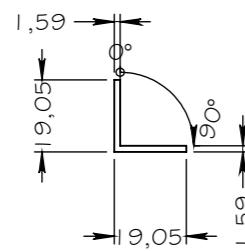
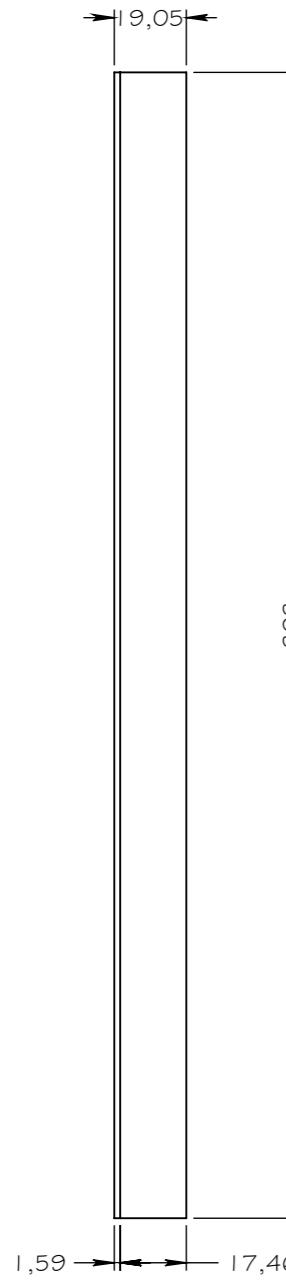
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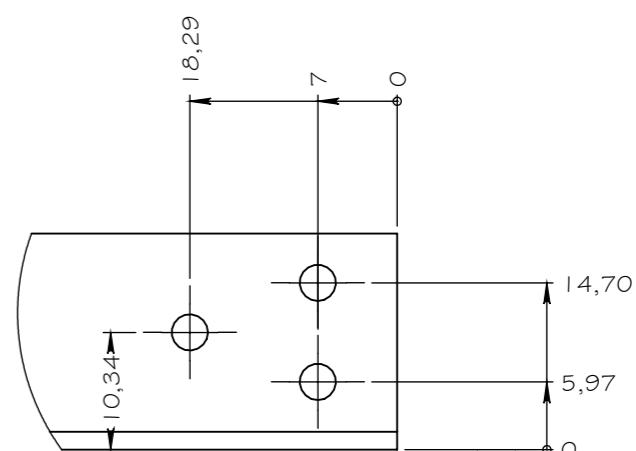
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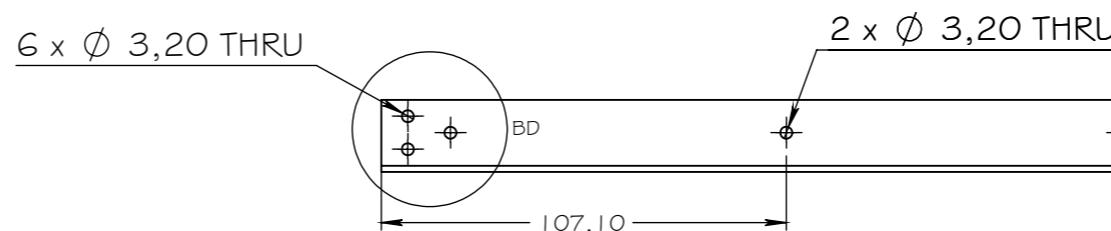
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DETAIL BD  
SCALE 3 : 2



DETAIL BE  
SCALE 3 : 2



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.4.01 - SIMPLE\_LOCK\_ANGLE\_BRACKET

Material: 1060 Alloy

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
24/26

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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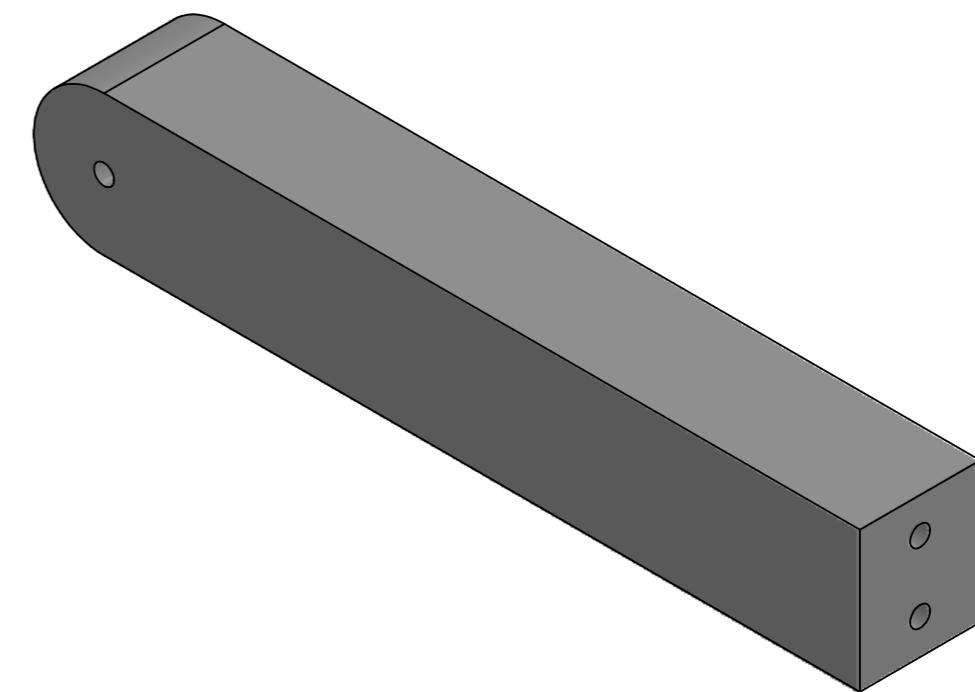
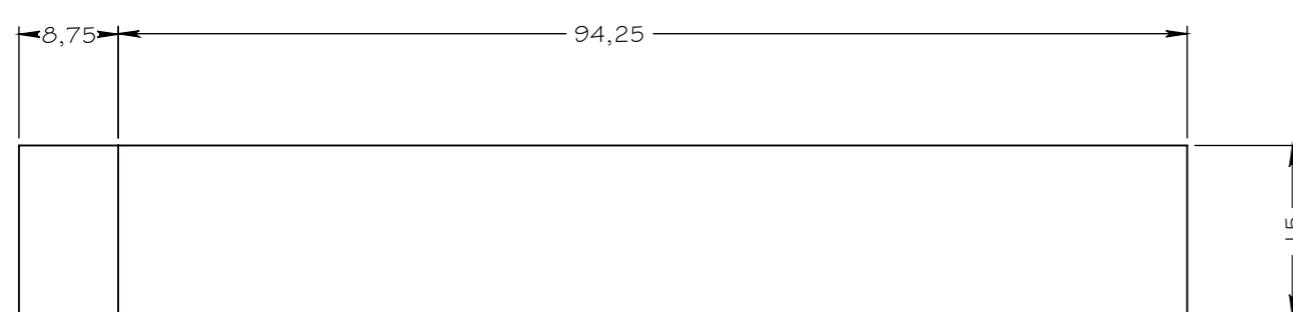
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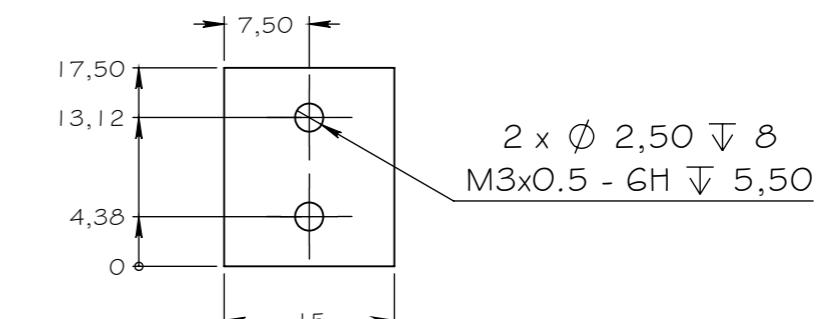
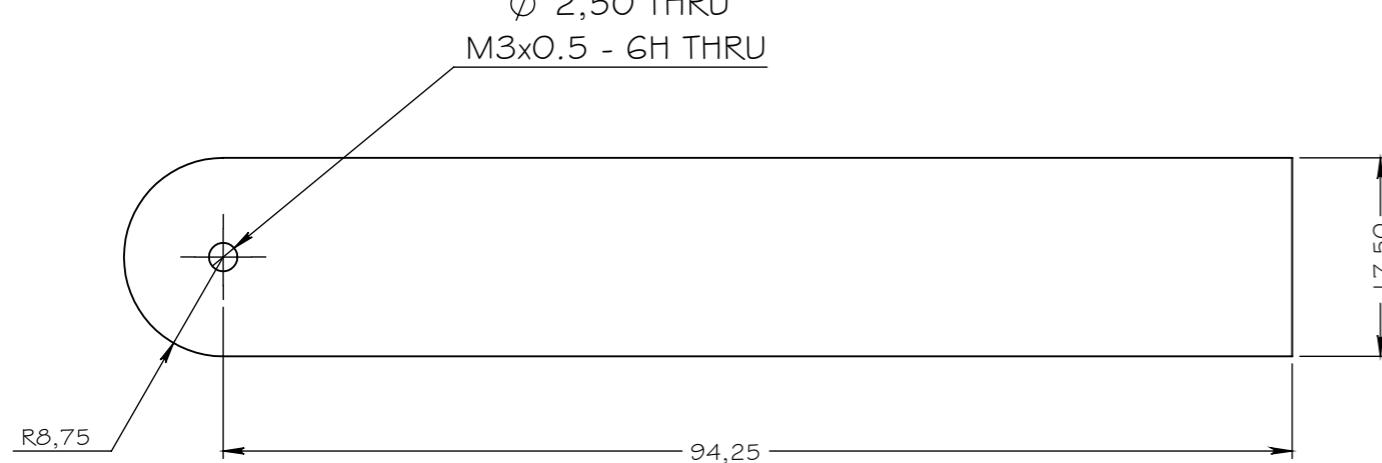
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$\phi$  2,50 THRU  
M3x0,5 - 6H THRU



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Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.4.02 - SIMPLE\_LOCK\_PIVOT

Material: PE High Density

Designed by: Guilherme Carvalho

Rev.:

A

Scale.: 3:2

Sheet:  
25 / 26

Verified by: Ramon Romankevicius

QTY:

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Unit.: mm

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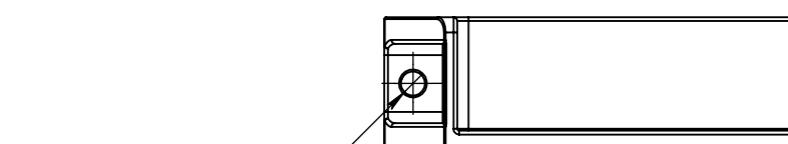
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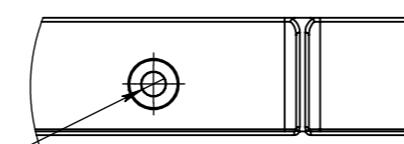
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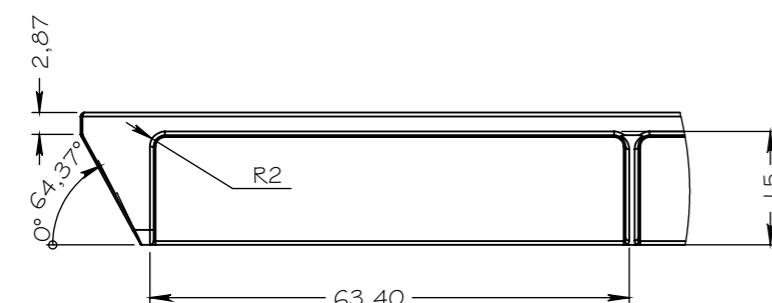
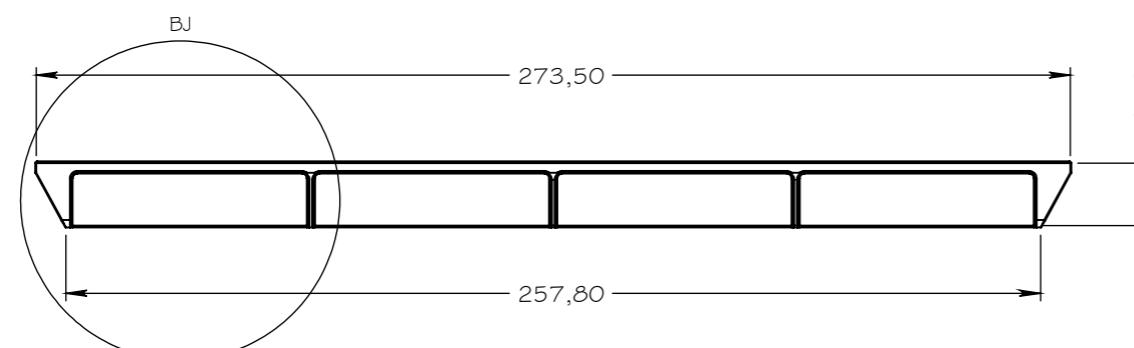
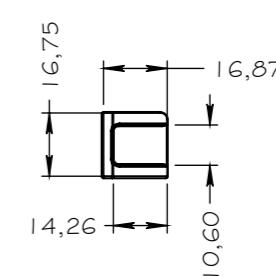
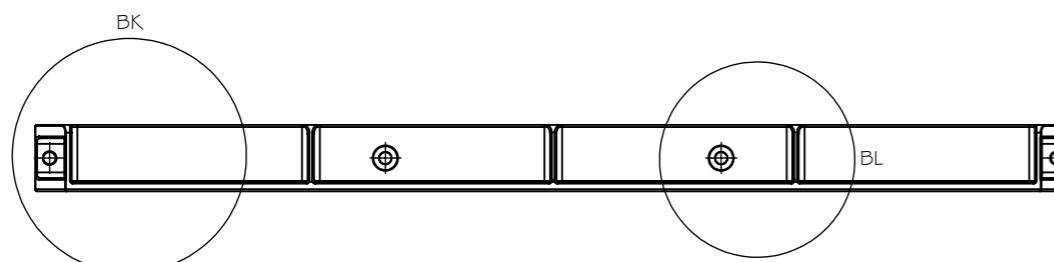


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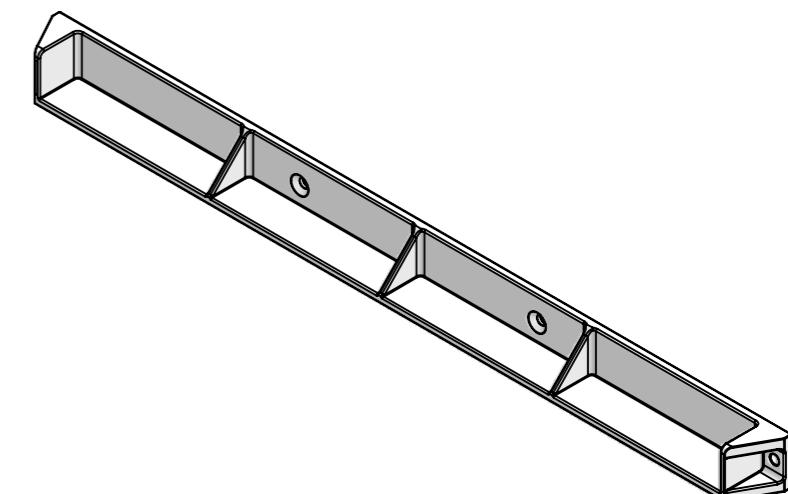
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DETAIL BL  
SCALE 1 : 1



DETAIL BJ  
SCALE 1 : 1



PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.2.4.03 - SIMPLE_LOCK_CURB		Material: ABS	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 26/26 Unit.: mm

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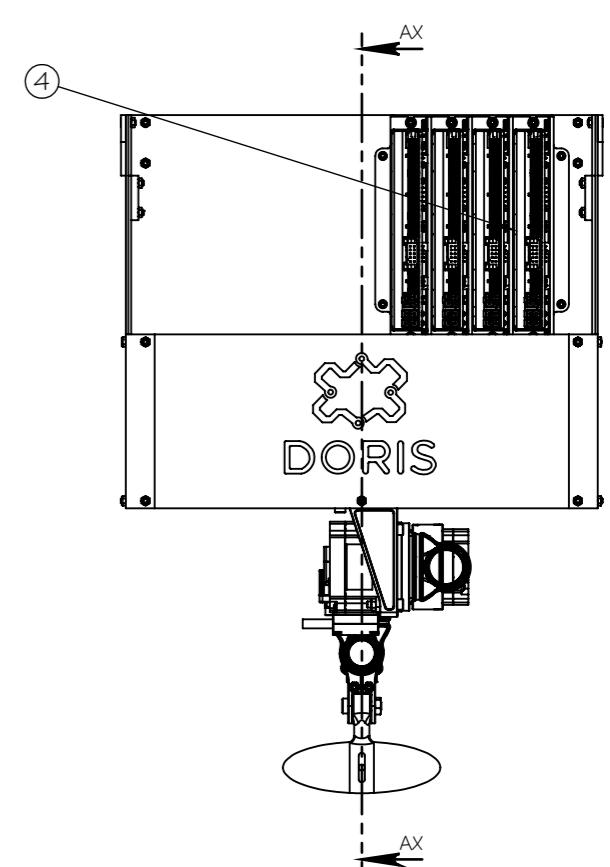
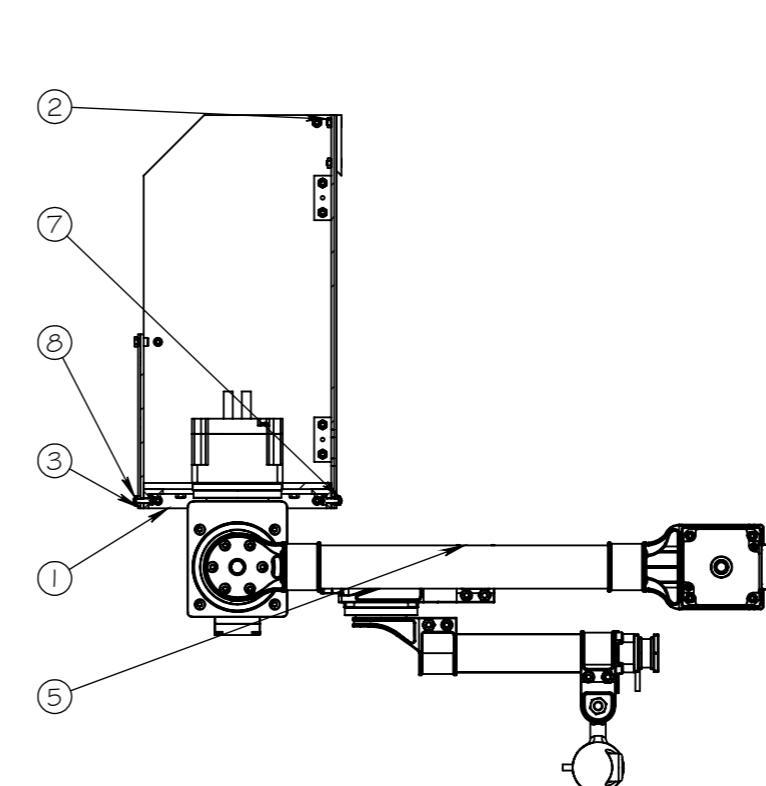
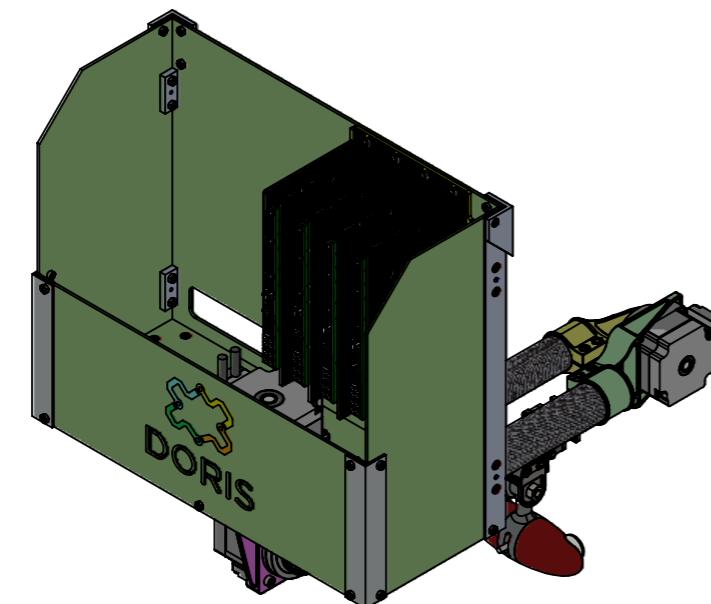
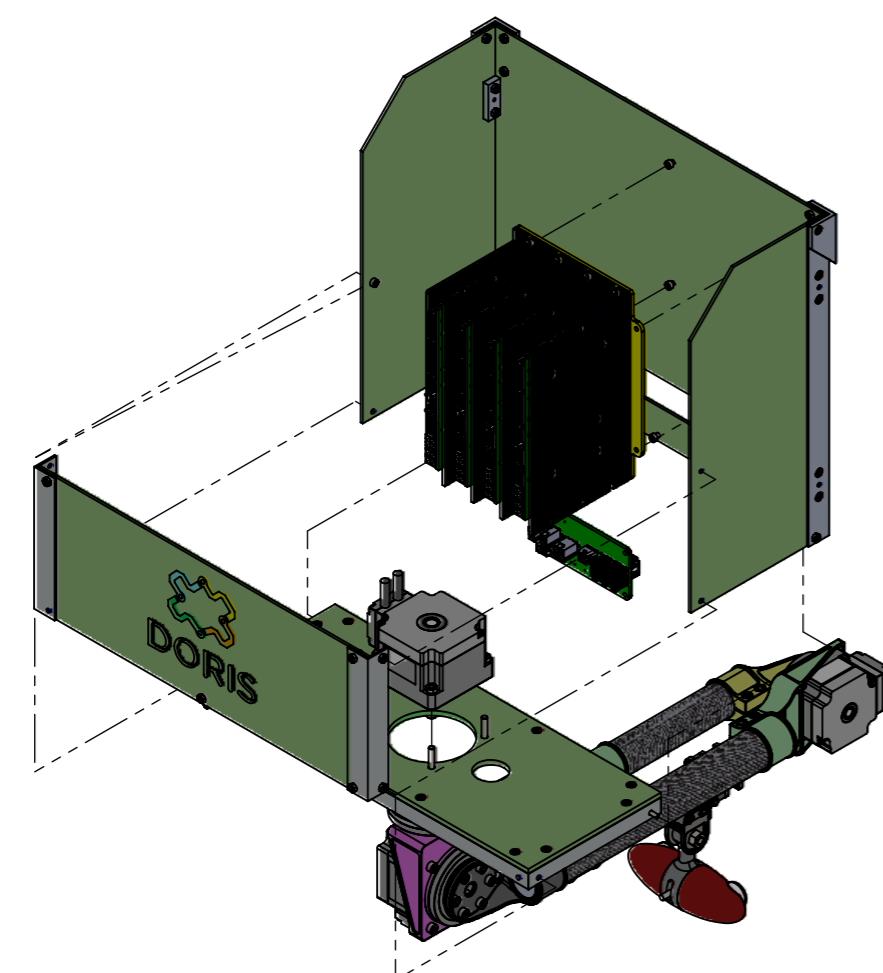
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ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	20
7	B18.3.1M - 3 x 0.5 x 6 Hex SHCS -- 6NHX	20
6	PCB12	2
5	DR2.4.5 - ARM	1
4	DR2.4.4 - ASSEMBLY_EPOS_70-10	1
3	DR2.4.3 - FRONT_ARM_BOX	1
2	DR2.4.2 - BACK_SIDE_ARM_BOX	1
1	DR2.4.1 - BOTTOM_ARM_BOX	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.4 - ARM\_BOX

Material: Various

Designed by: Guilherme Carvalho

Date: 06/06/2016 Rev.: A Scale.: 1:5 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 20/06/2016 QTY: 1 Unit.: mm 1 / 18

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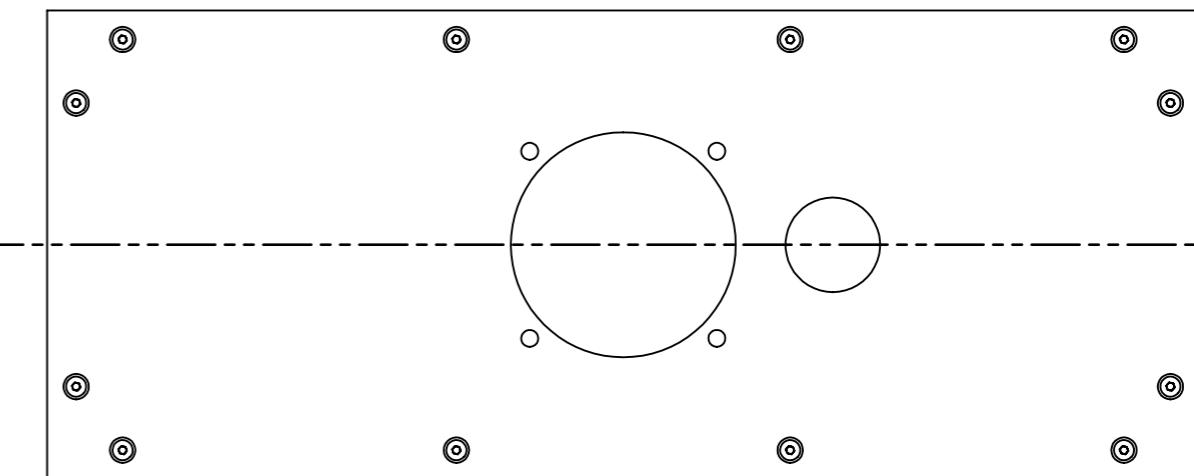
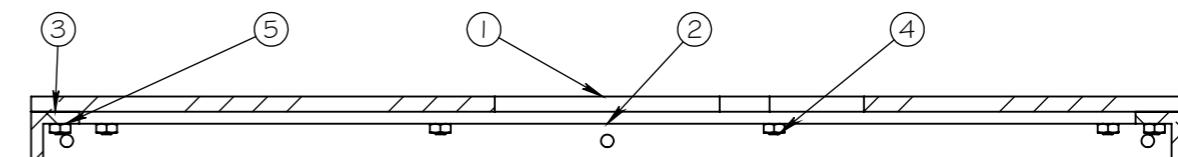
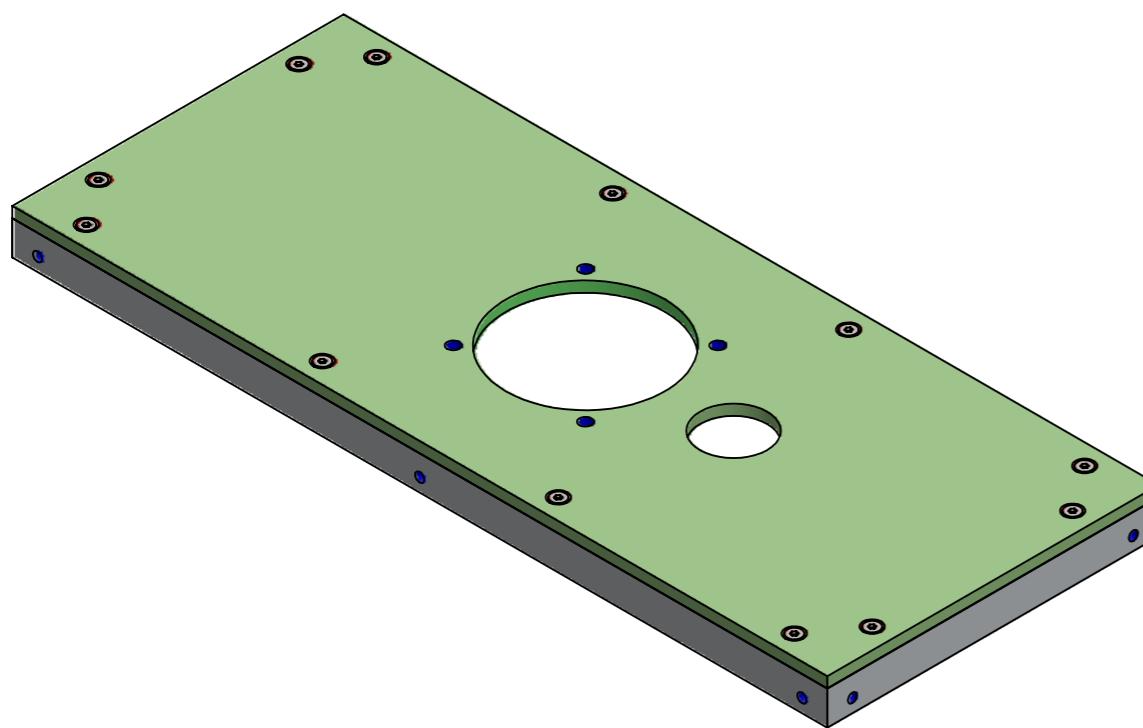
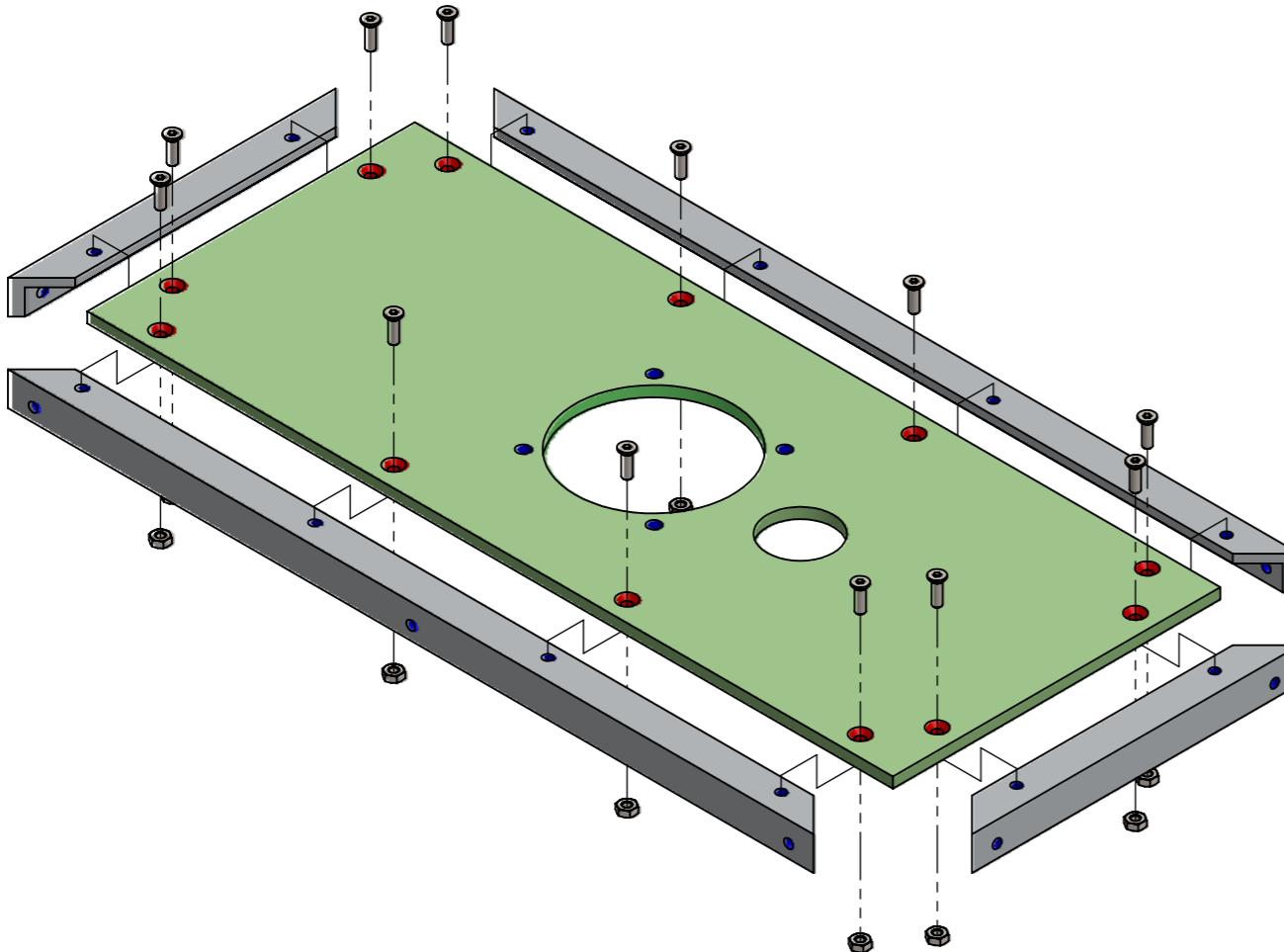
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ITEM	PART NUMBER - DESCRIPTION	QTY.
5	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	12
4	B18.3.5M - 3 x 0.5 x 10 Socket FCHS -- 1ON	12
3	DR2.4.1.03 - ANGLE_BRACKET_B	2
2	DR2.4.1.02 - ANGLE_BRACKET_A	2
1	DR2.4.1.01 - BOTTOM_PLATE	1



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Pós-Graduação e Pesquisa de EngenhariaCOPPE  
UFRJ

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.4.1 - BOTTOM\_ARM\_BOX

Material: Various

Designed by: Guilherme Carvalho

Date: 06/06/2016

Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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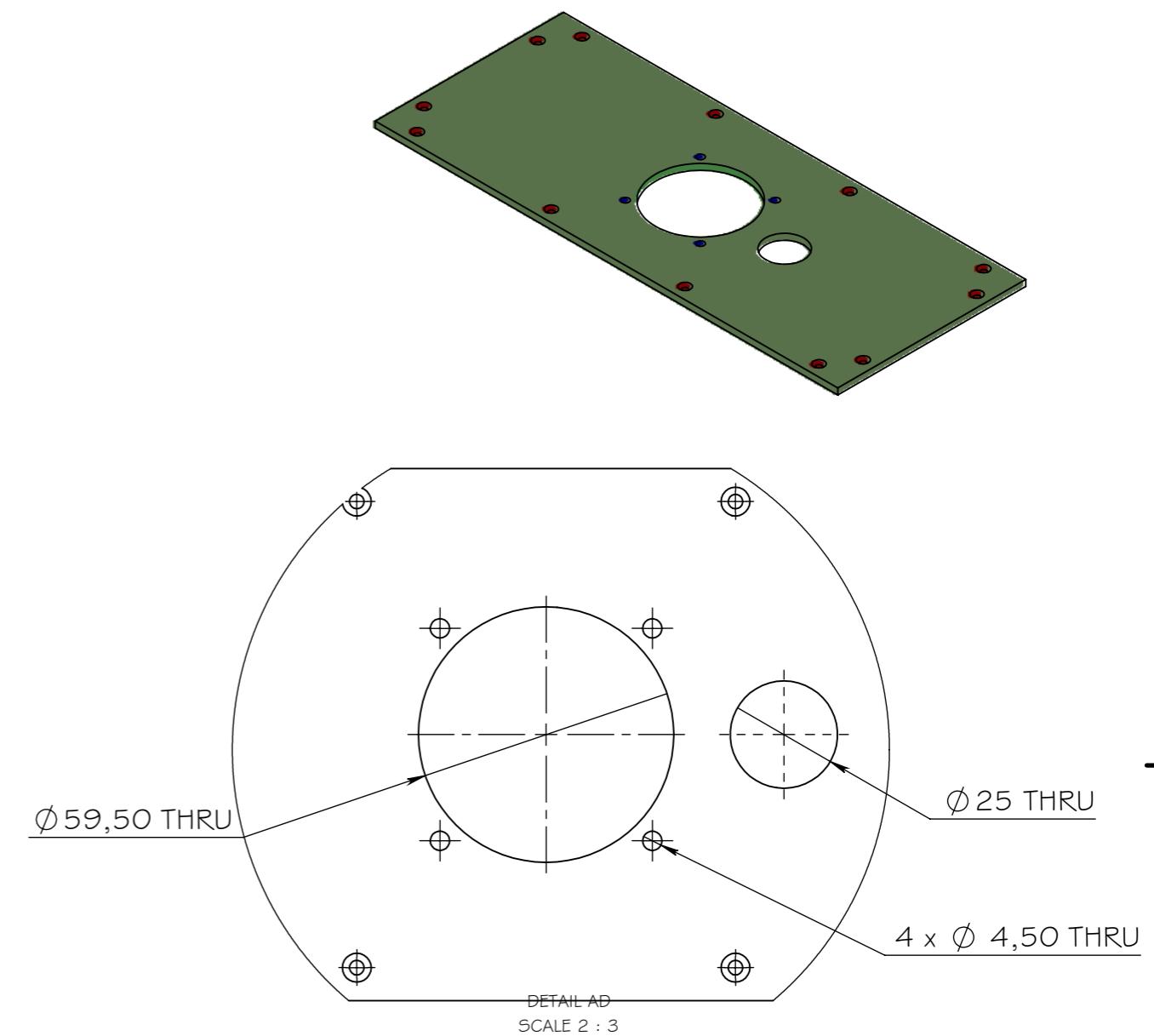
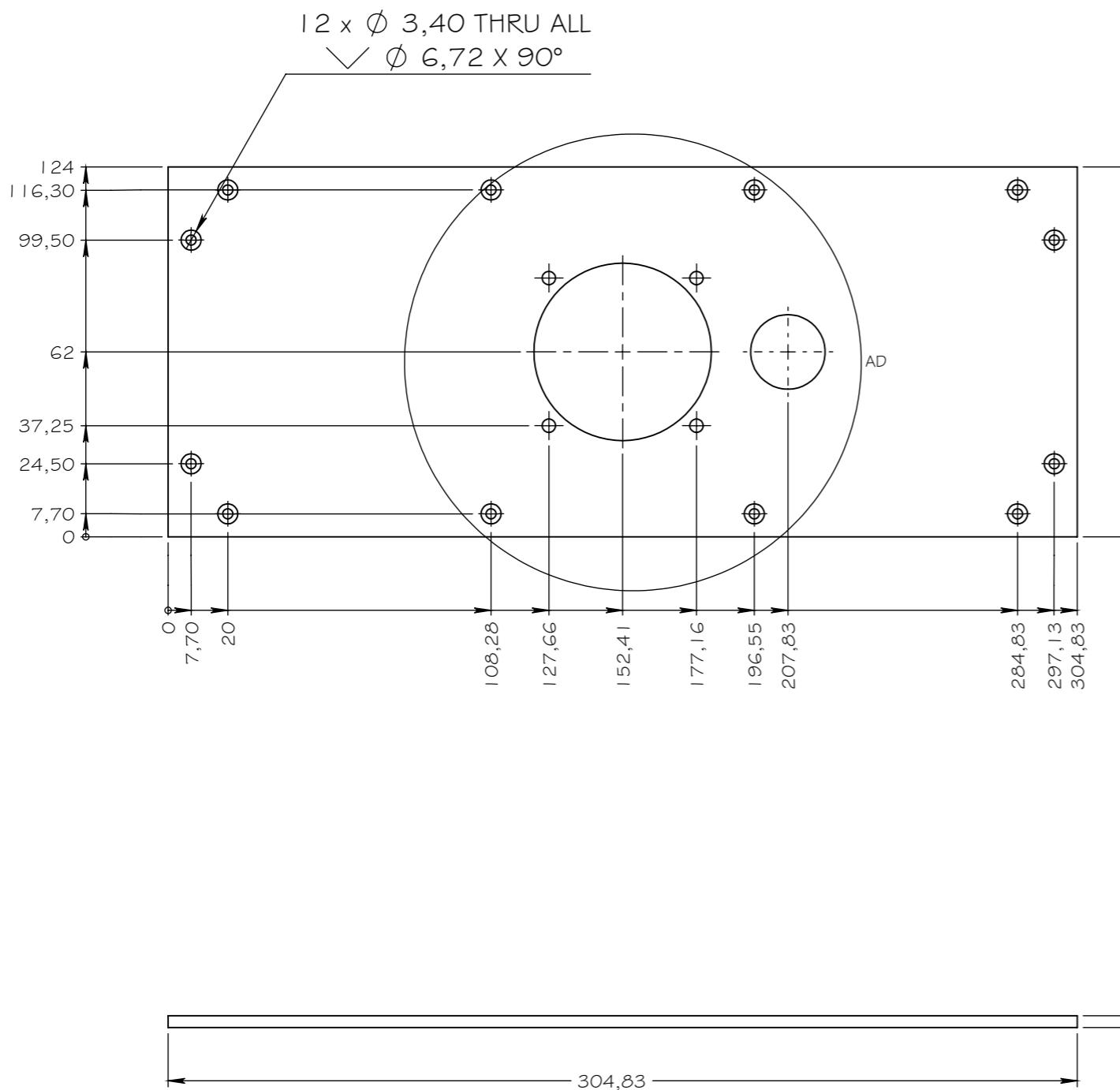
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.1.01 - BOTTOM_PLATE		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho	Date: 01/03/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 3 / 18
Unit.: mm			

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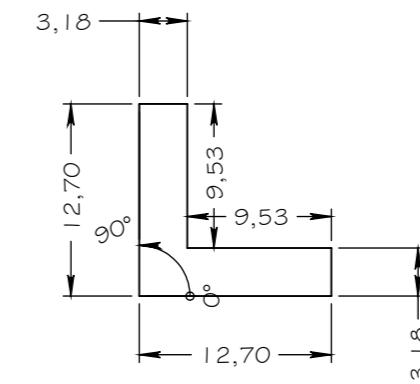
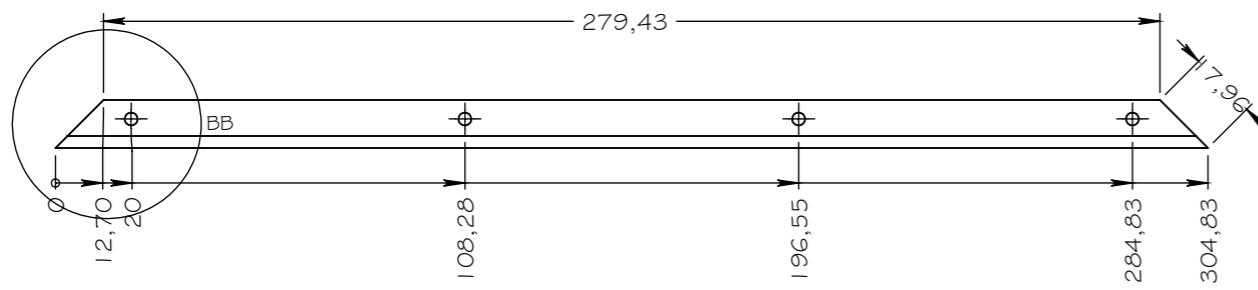
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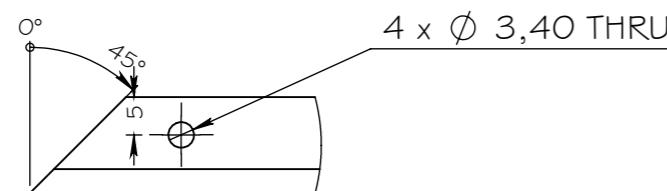
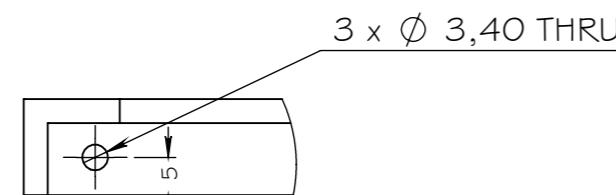
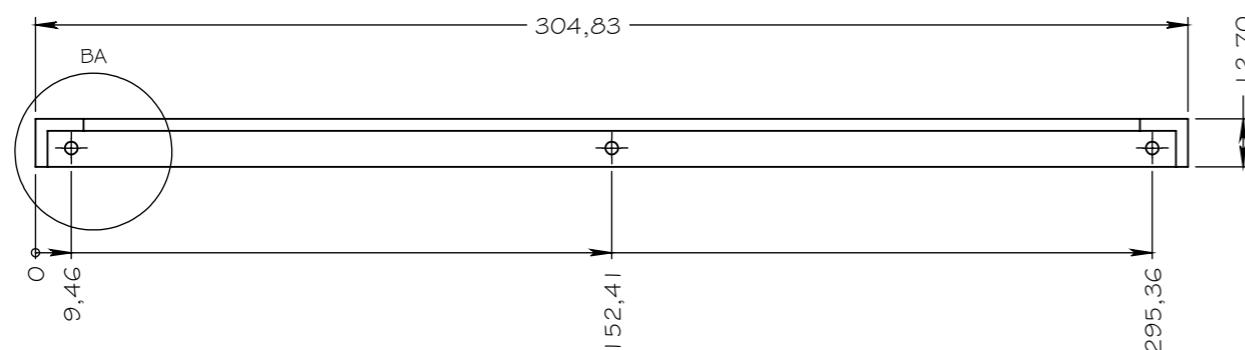
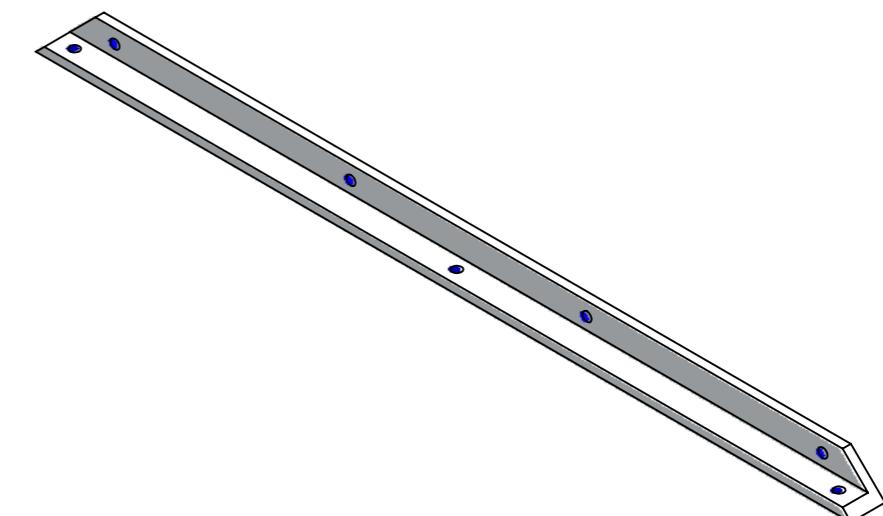
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Scale 2:1

DETAIL BB  
SCALE 1 : 1DETAIL BA  
SCALE 1 : 1

<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.4.1.02 - ANGLE_BRACKET_A		Material: 1060-H14	
Designed by: Guilherme Carvalho		Date: 02/03/2016	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 30/06/2016	Scale.: 1:2
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		Unit.: mm	

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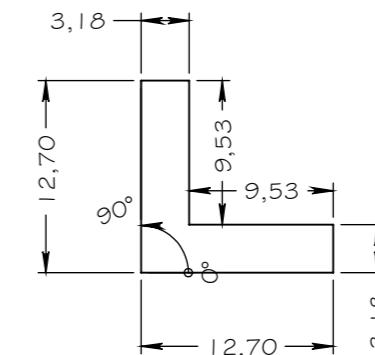
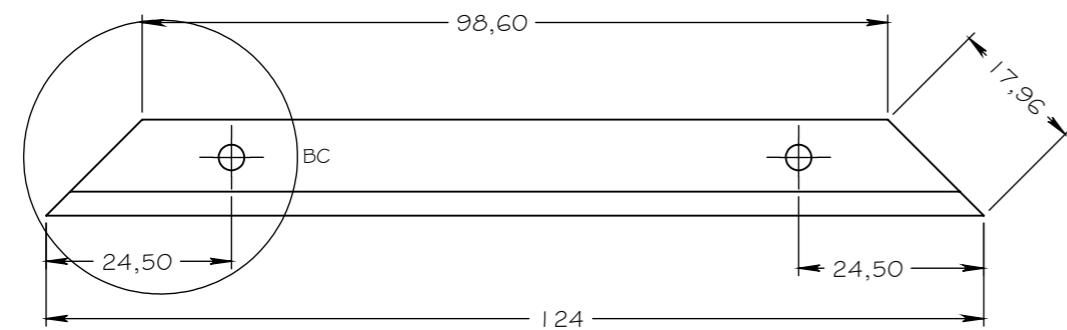
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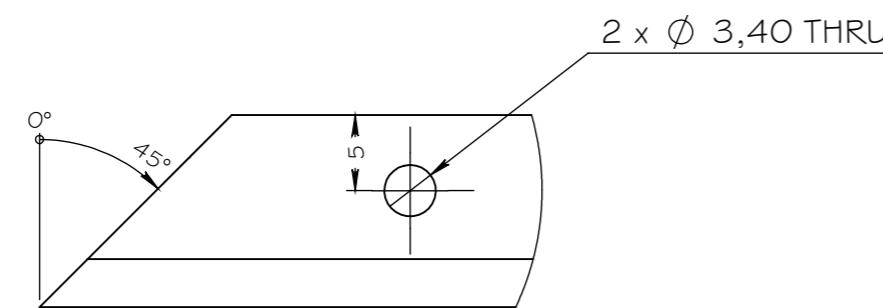
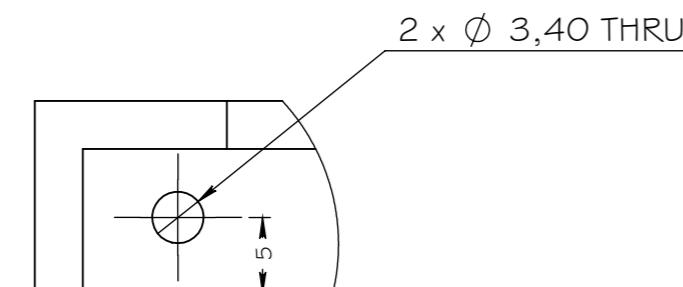
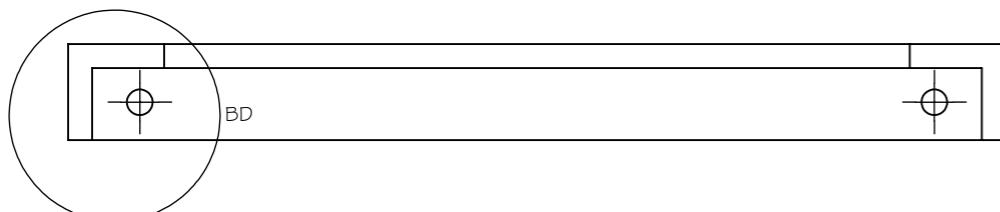
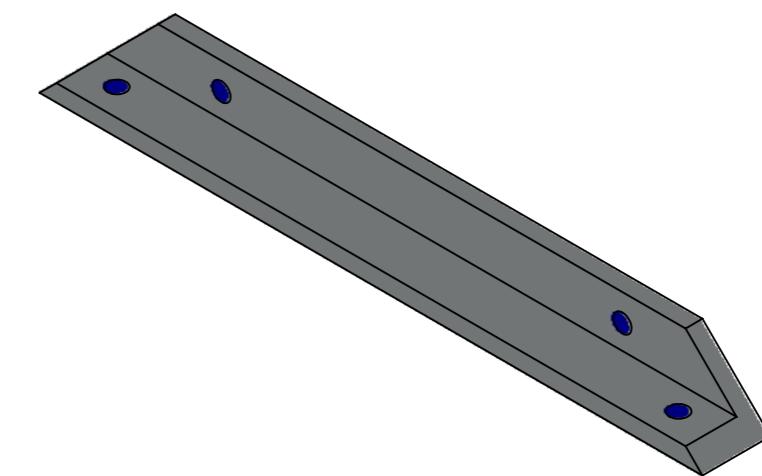
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Scale 2:1

DETAIL BC  
SCALE 2 : 1DETAIL BD  
SCALE 2 : 1

PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.1.03 - ANGLE_BRACKET_B		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 02/03/2016	Rev.: 0	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Sheet: 5 / 18 Unit.: mm

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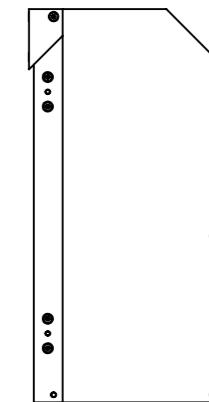
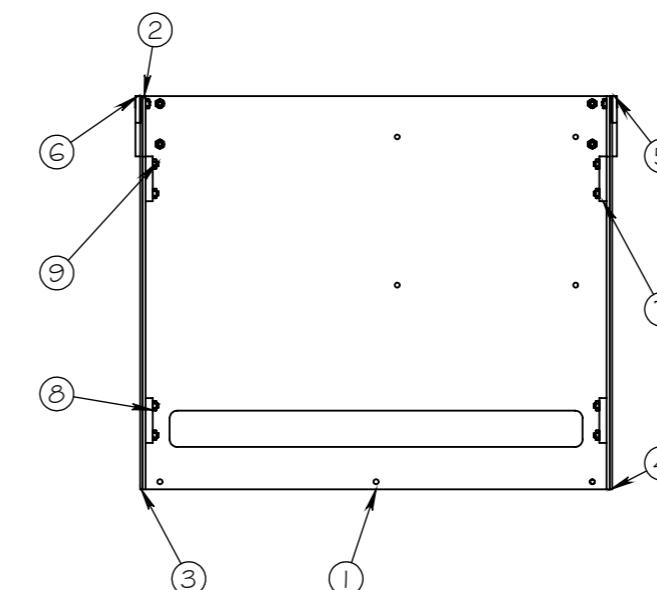
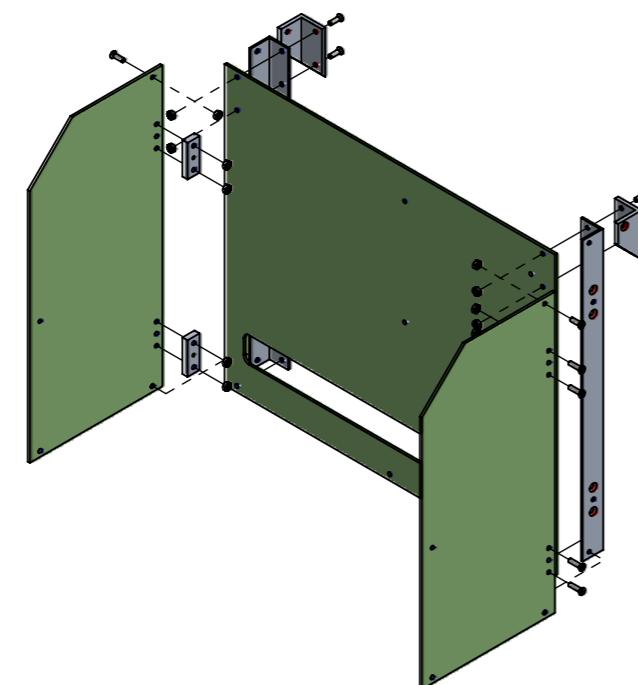
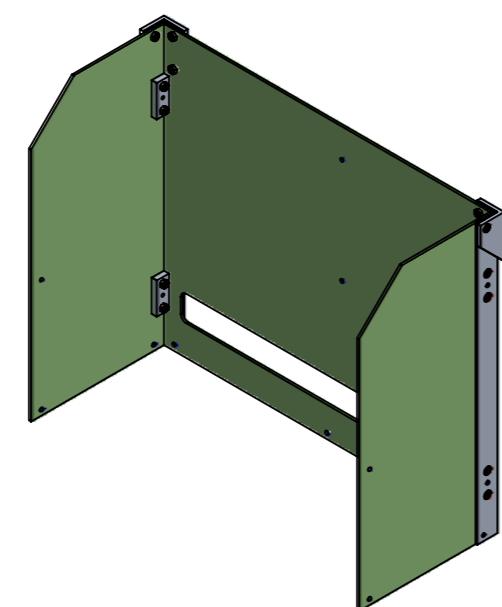
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ITEM	PART NUMBER - DESCRIPTION	QTY.
9	B18.3.5M - 3 x 0.5 x 12 Socket FCHS -- 12N	14
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	14
7	DR2.2.2.010 - FIXATION_BLOCK	4
6	DR2.4.2.06 - LEFT_FIXATION_ANGLE_BRACKET	1
5	DR2.4.2.05 - RIGHT_FIXATION_ANGLE_BRACKET	1
4	DR2.4.2.04 - RIGHT_ANGLE_BRACKET_C	1
3	DR2.4.2.03 - LEFT_ANGLE_BRACKET_C	1
2	DR2.4.2.02 - SIDE_PLATE	2
1	DR2.4.2.01 - BACK_PLATE	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.4.2 - BACK\_SIDE\_ARM\_BOX

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:5

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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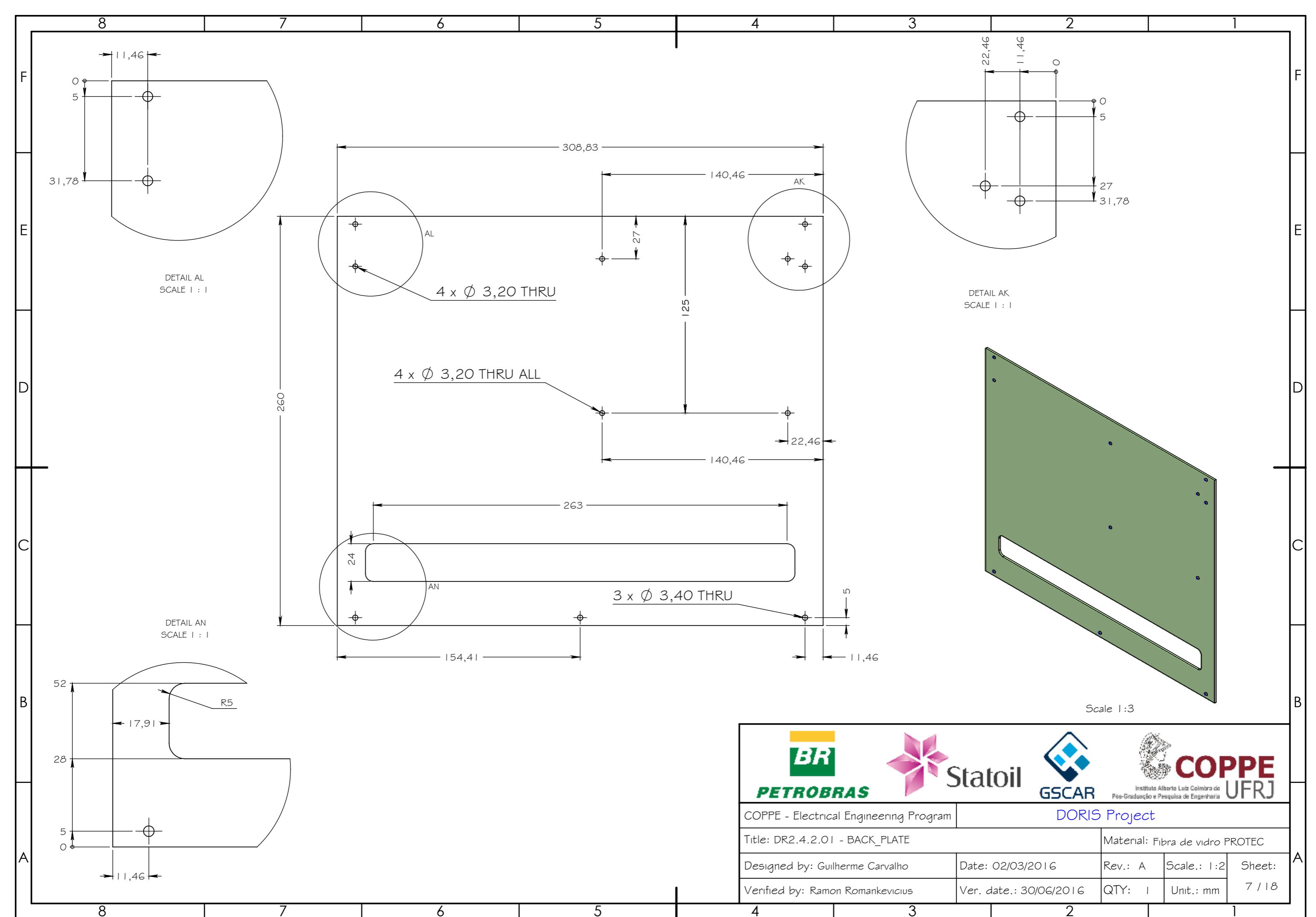
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.4.2.01 - BACK_PLATE			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 02/03/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 7 / 18
		Unit.: mm	

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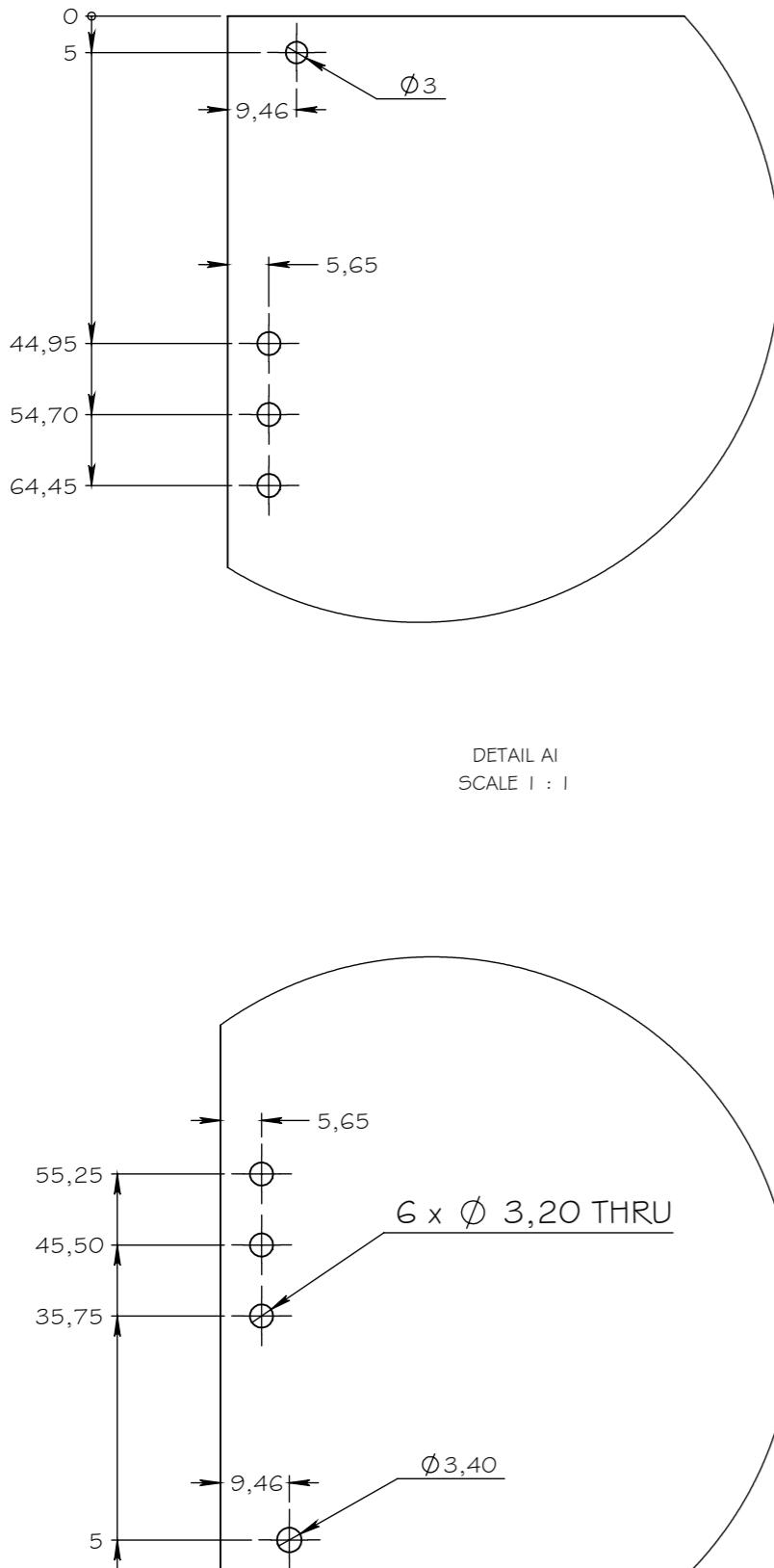
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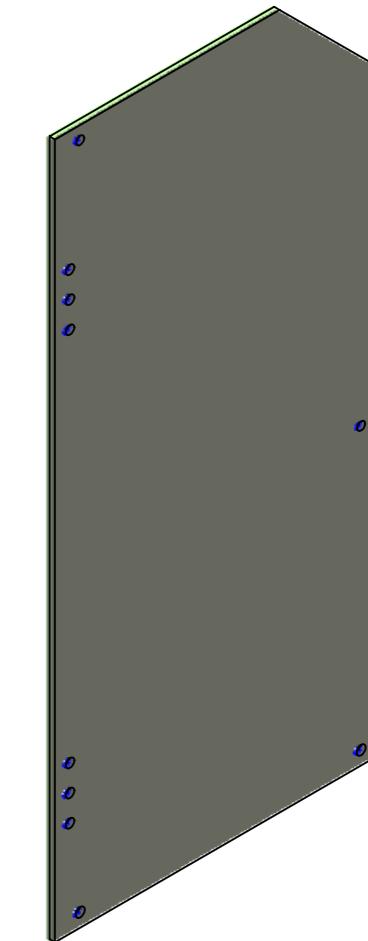
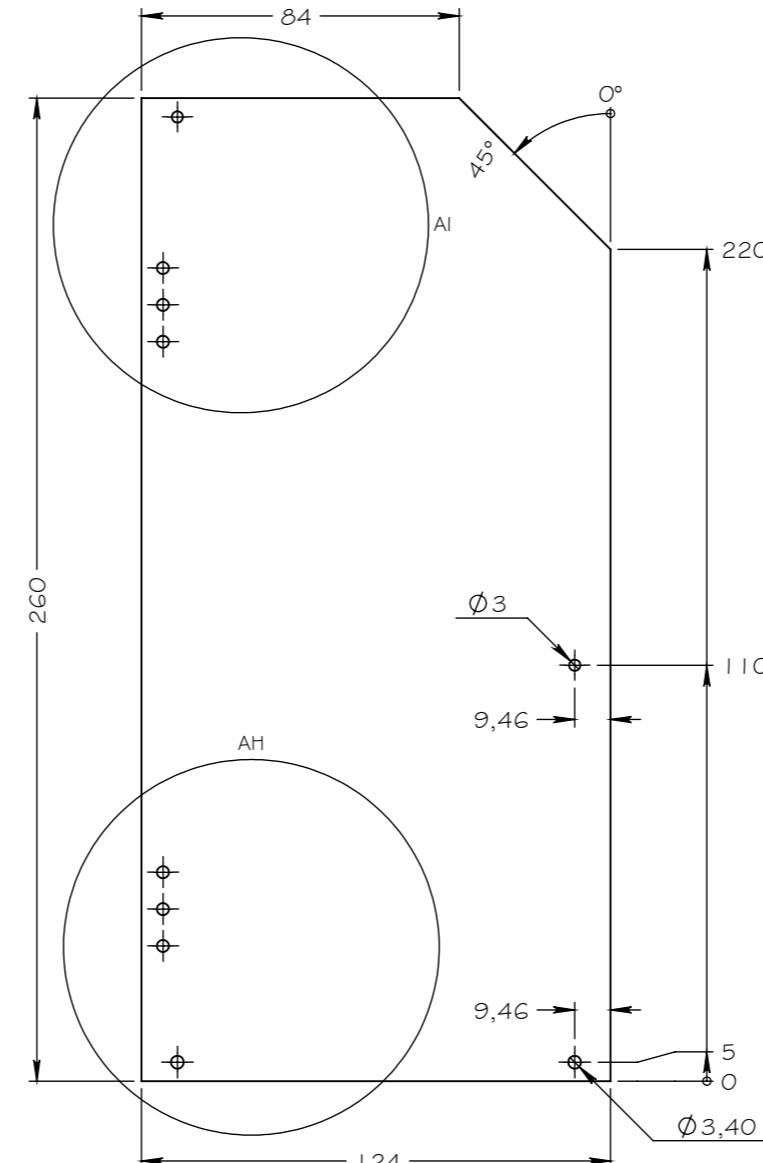
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE</b> <b>UFRJ</b>
<b>COPPE - Electrical Engineering Program</b>		<b>DORIS Project</b>	
Title: placa lateral direita (baterias)_Manip		Material: Fibra de vidro PROTEC	
Designed by: Guilherme Carvalho		Date: 03/03/2016	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 20/06/2016	Scale.: 1:2
		QTY: 2	Sheet: 8 / 18
			Unit.: mm

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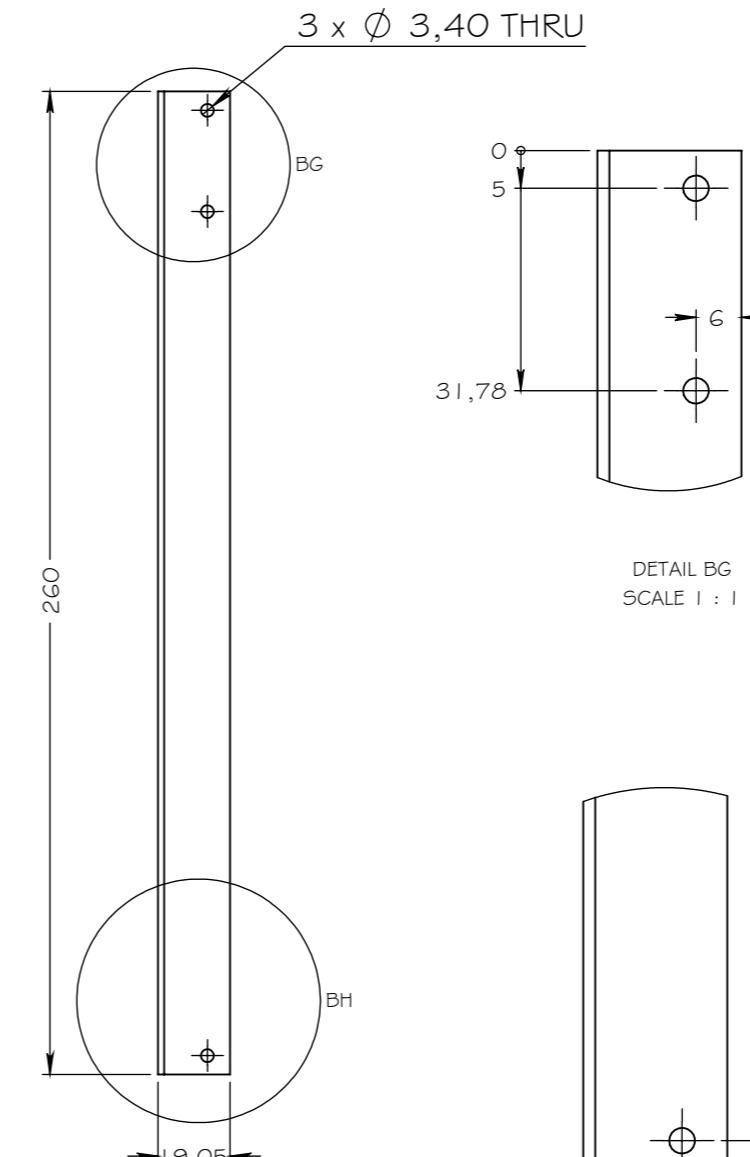
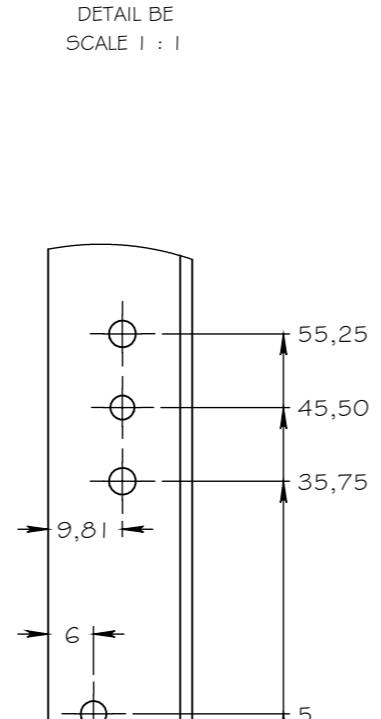
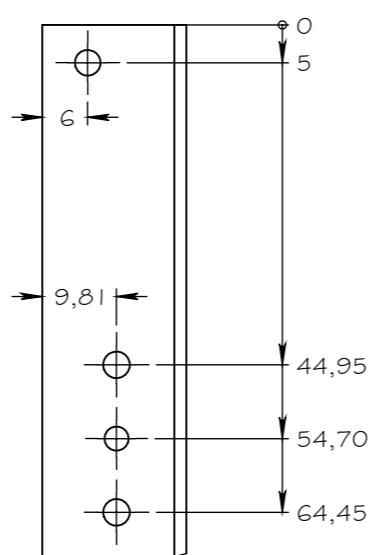
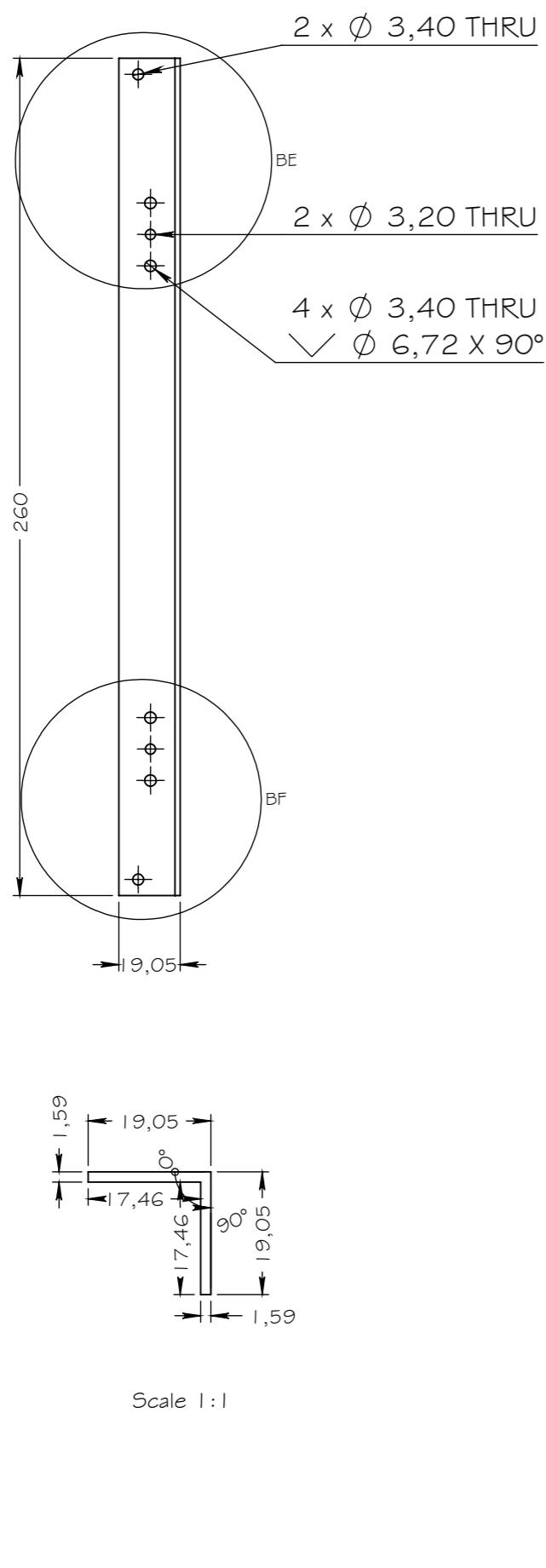
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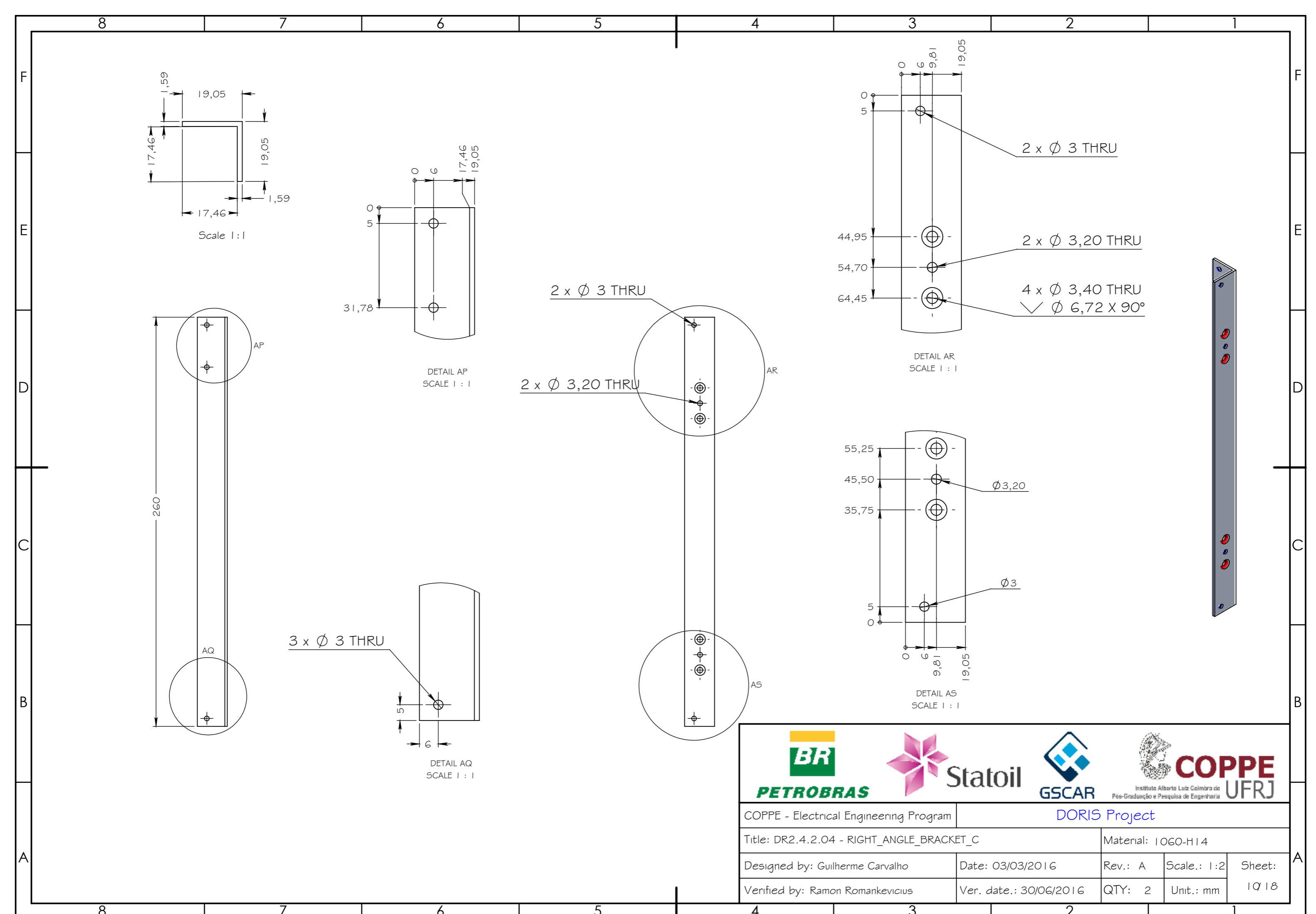
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PETROBRAS		GSCAR	COPPE UFRJ
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.2.03 - LEFT_ANGLE_BRACKET_C		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 03/03/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 9 / 18
		Unit.: mm	



 <b>PETROBRAS</b>	 <b>Statoil</b>	 <b>GSCAR</b>	 <b>COPPE</b> Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia <b>UFRJ</b>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.4.2.04 - RIGHT_ANGLE_BRACKET_C		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 03/03/2016	Rev.: A	Scale.: 1:2
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Sheet: 1018 Unit.: mm

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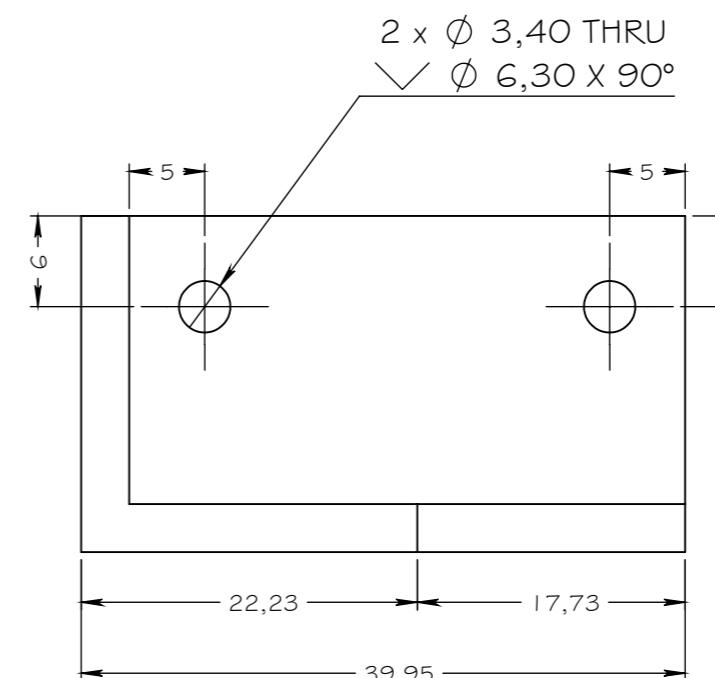
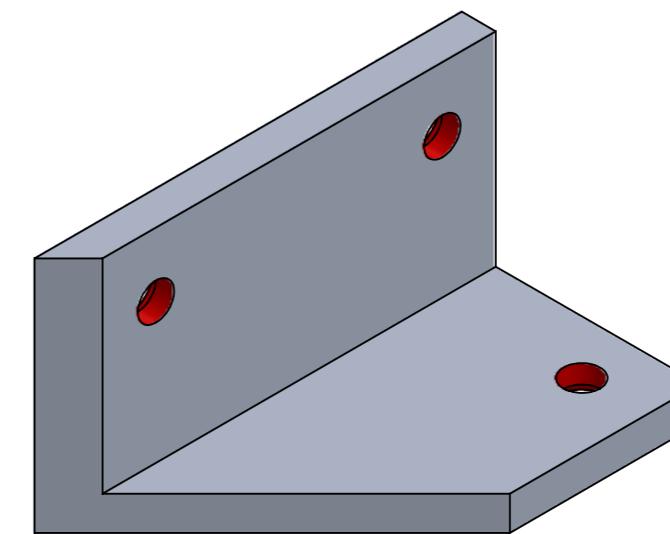
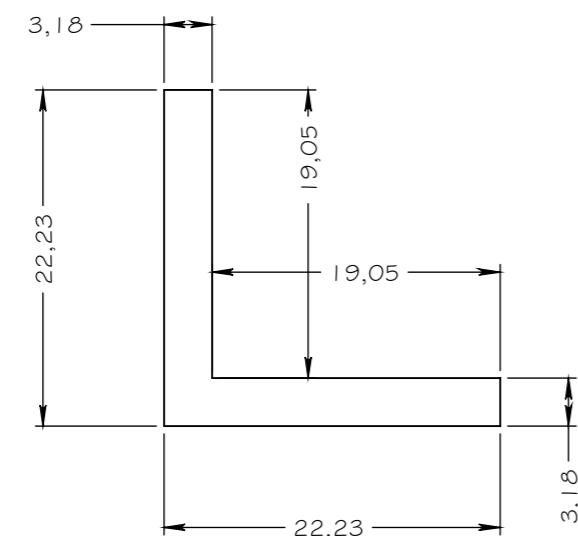
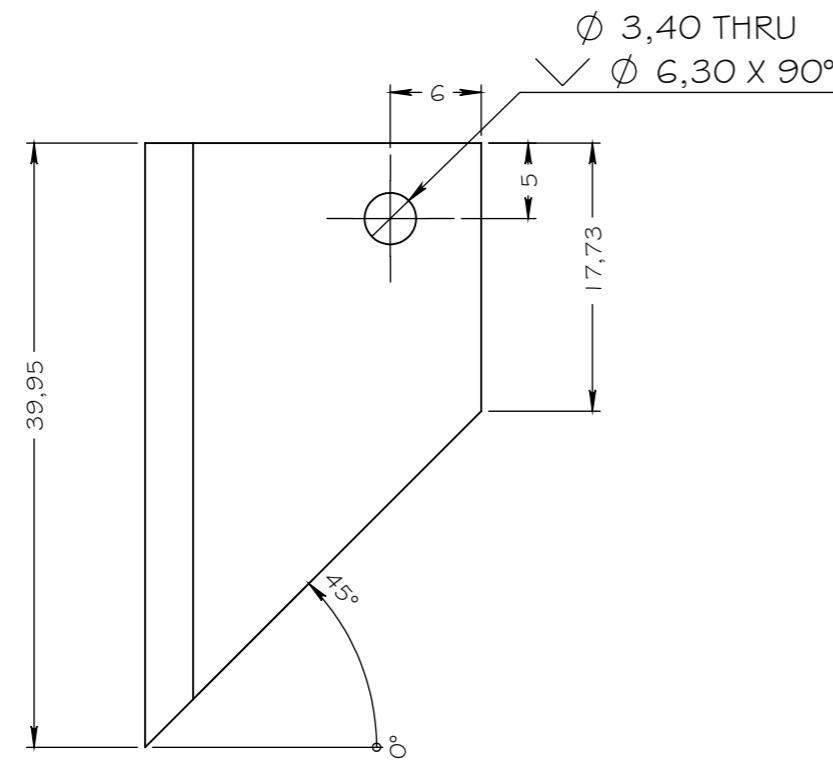
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.2.05 - RIGHT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 1 / 18 Unit.: mm

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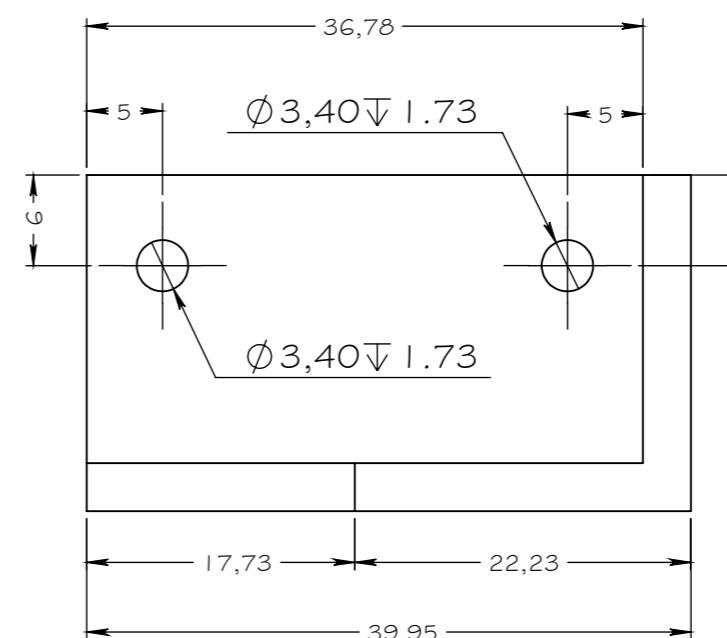
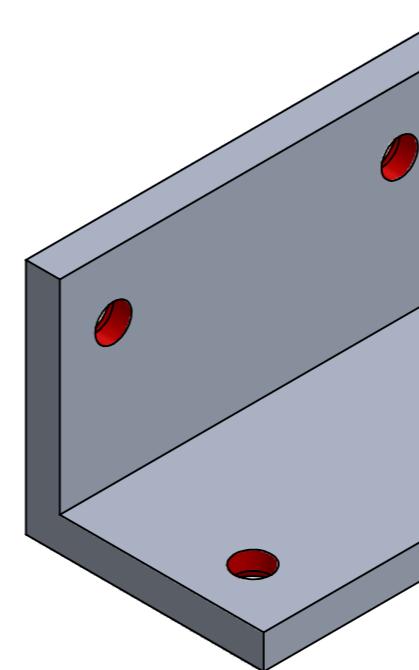
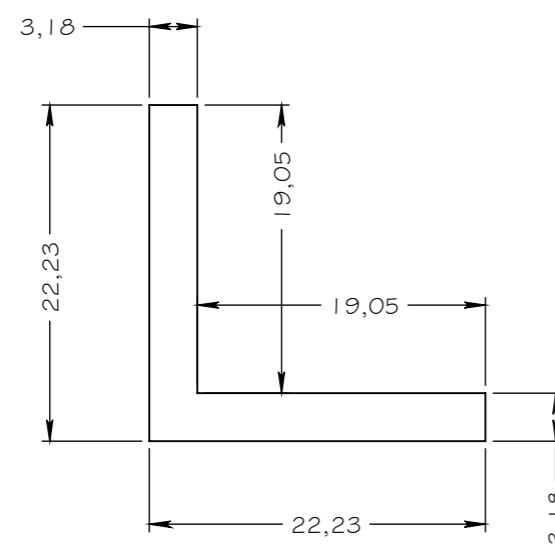
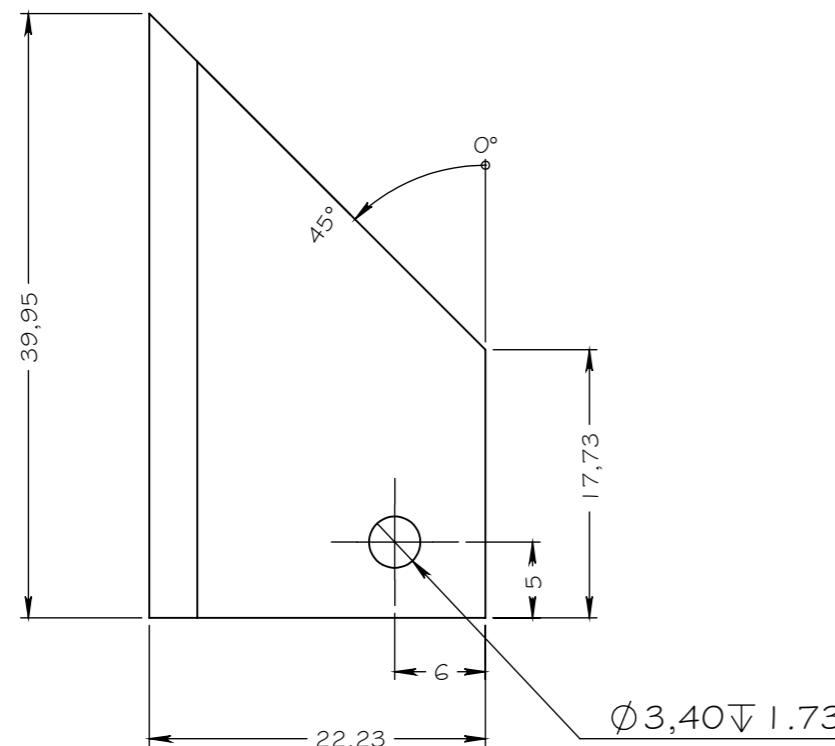
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program		DORIS Project	
Title: DR2.4.2.06 - LEFT_FIXATION_ANGLE_BRACKET		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 12/18 Unit.: mm

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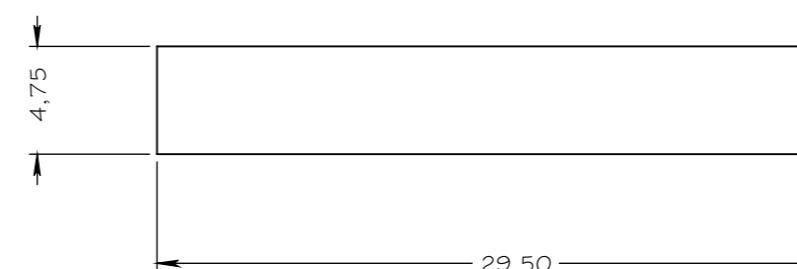
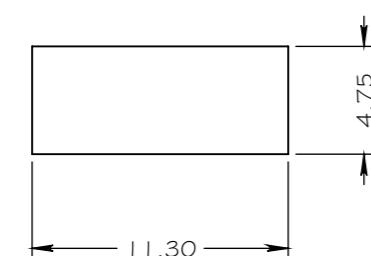
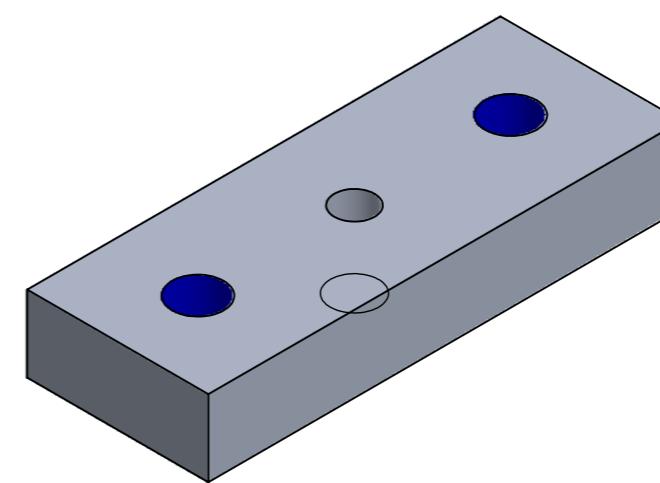
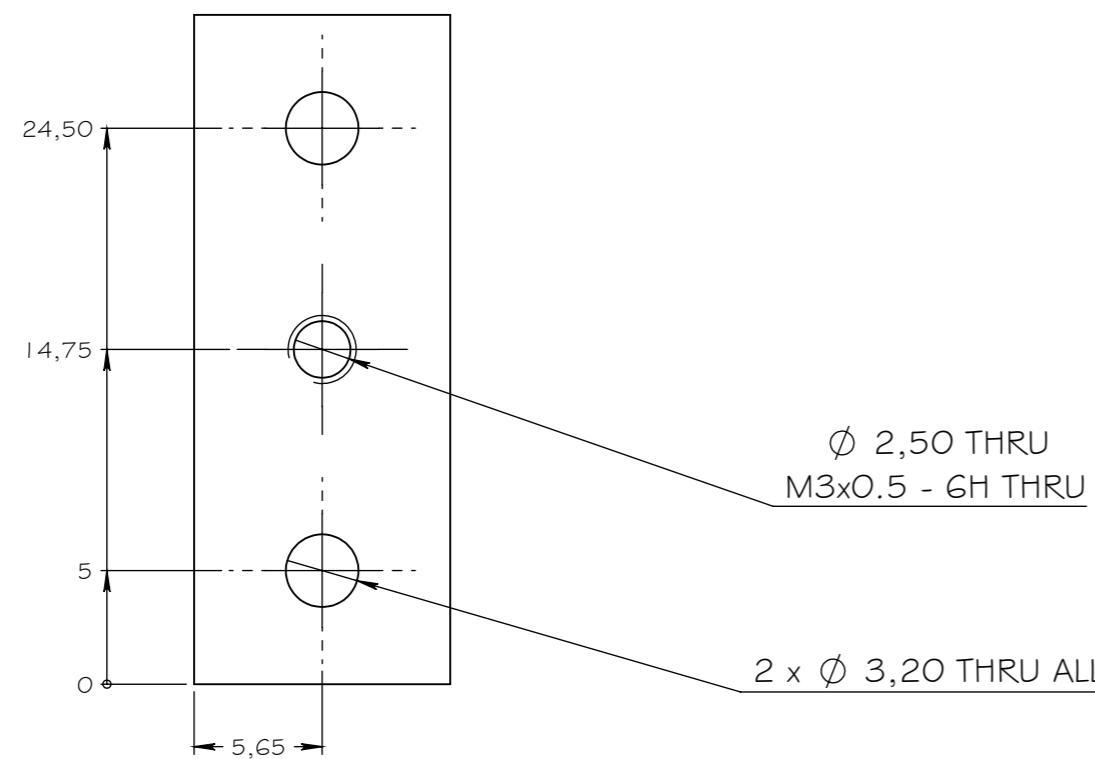
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COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.2.2.010 - FIXATION\_BLOCK

Material: 1060 Alloy

Designed by: Guilherme Carvalho

Rev.: A Scale.: 3:1

Sheet: 13/18

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 4 Unit.: mm

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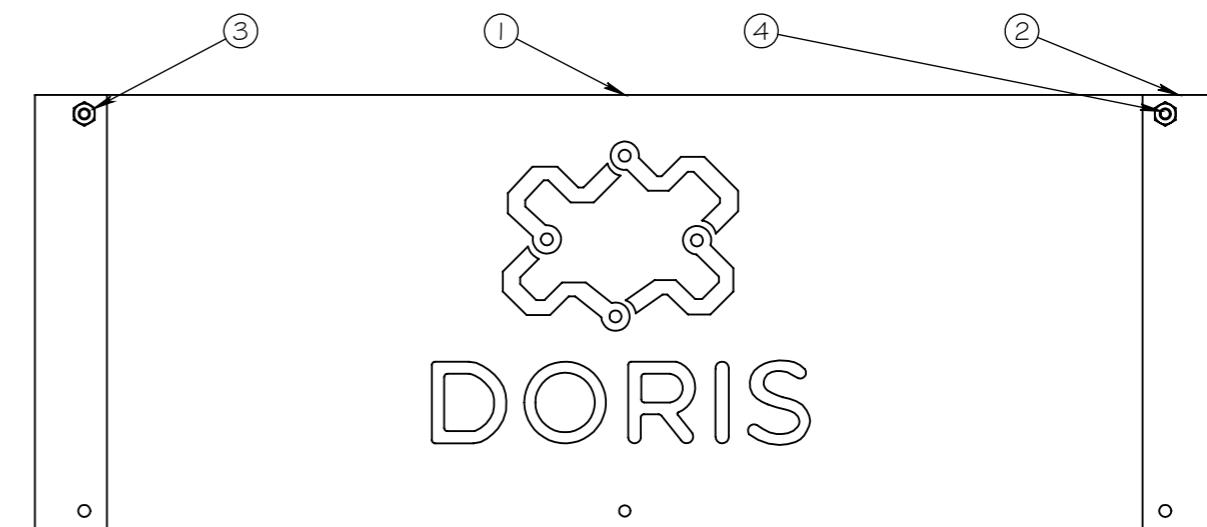
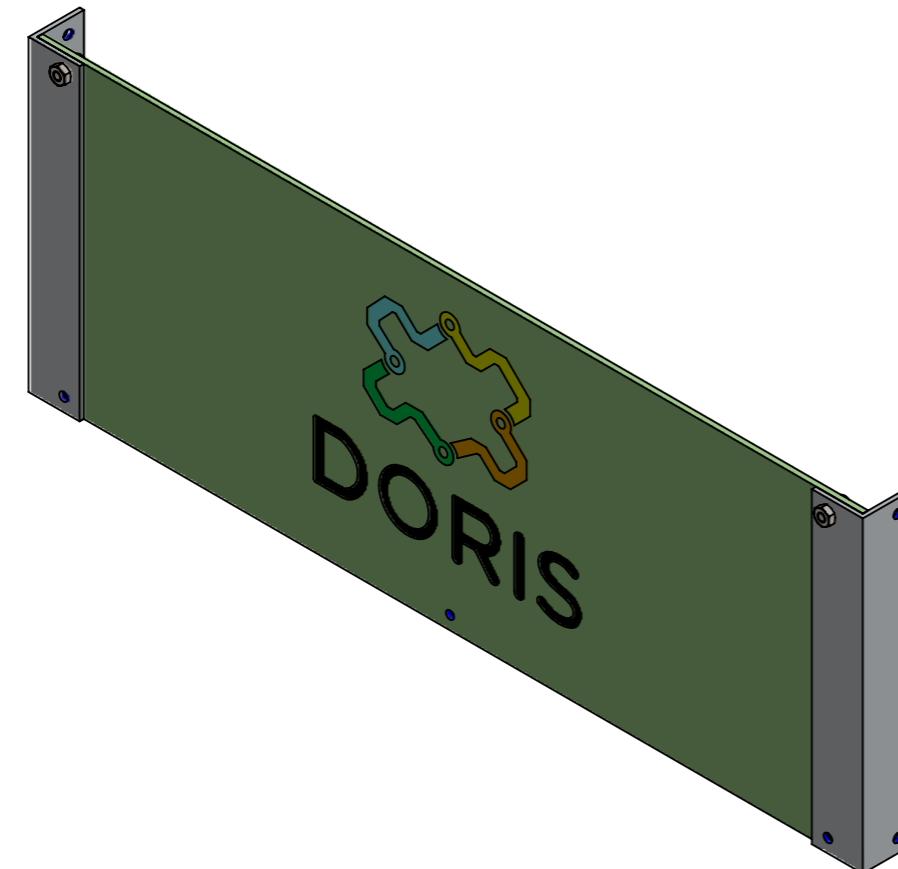
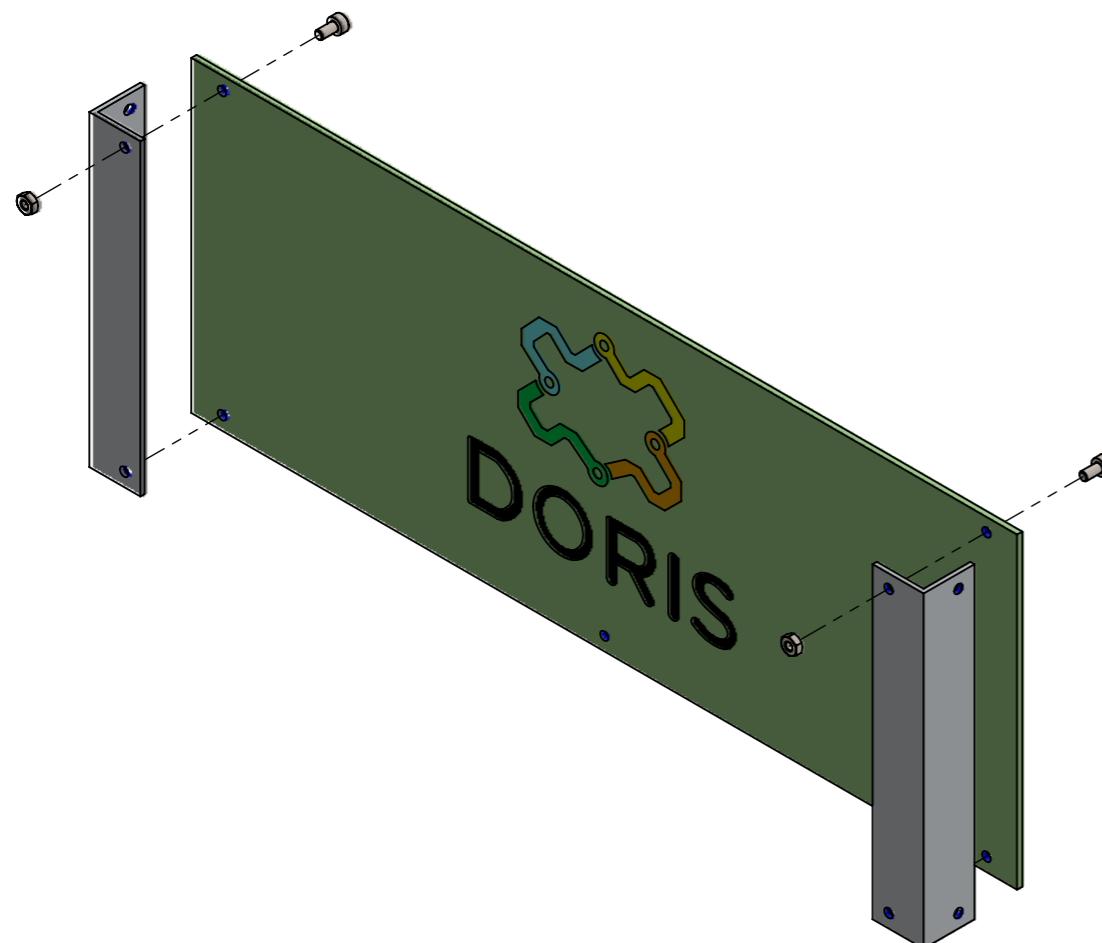
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4	-	Socket head cap screw M3	2
3	-	Nut M3	2
2	S-D-03b	Perfil D (direito) da caixa manip	2
1	S-D-03a	Placa frontal (baterias) manip	1
ITEM	Part Number:	Title:	QTY.



PETROBRAS

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.4.3 - FRONT\_ARM\_BOX

Material: Various

Designed by: Guilherme Carvalho

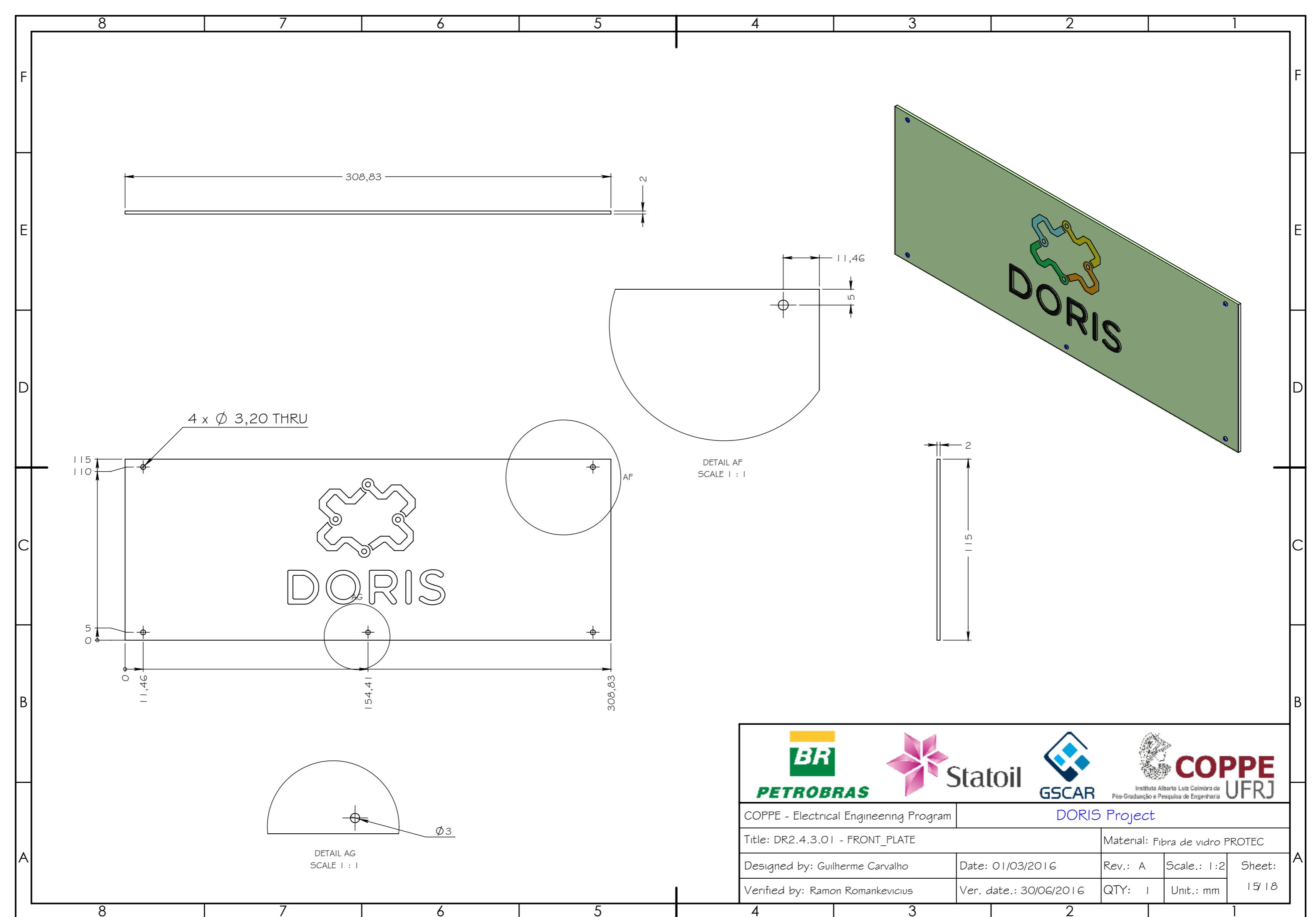
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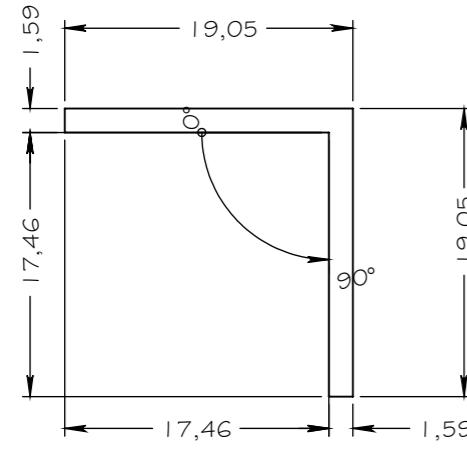
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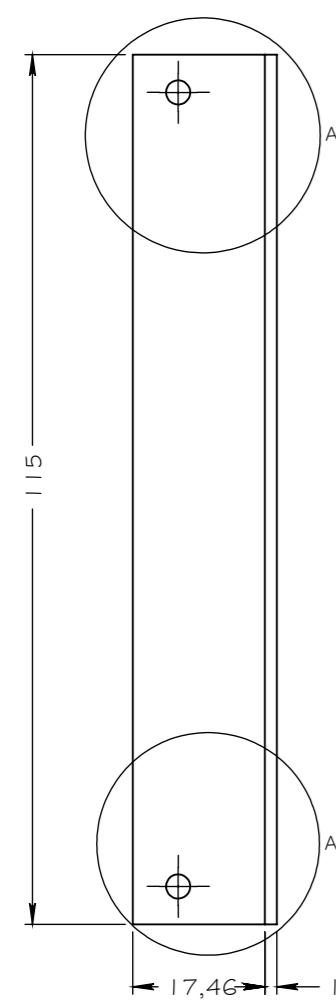
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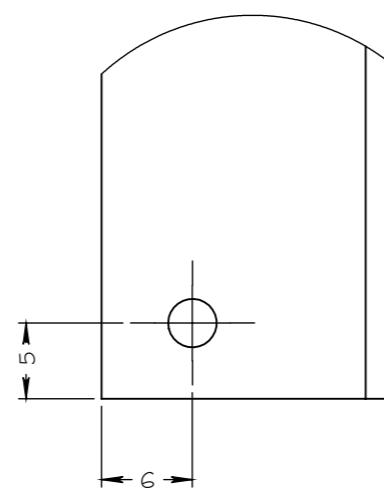




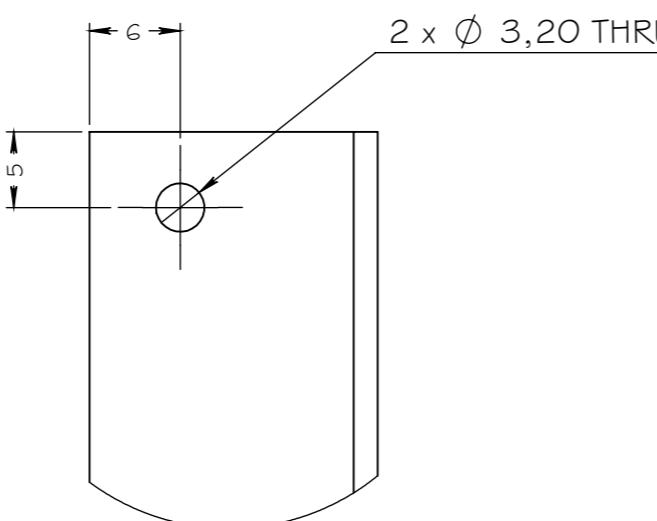
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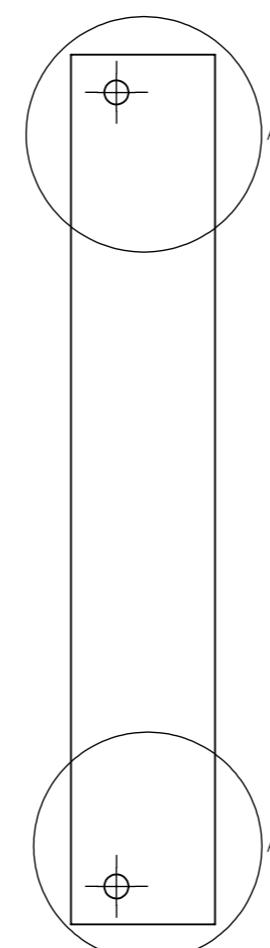
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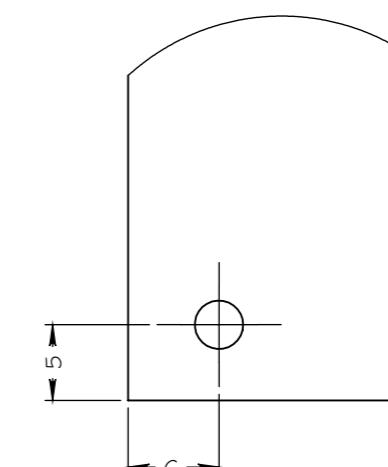
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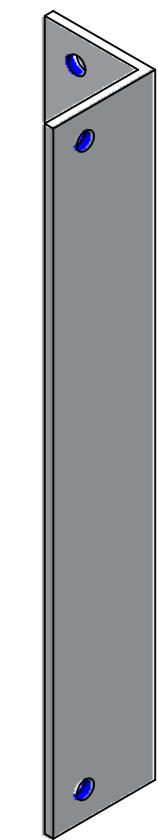
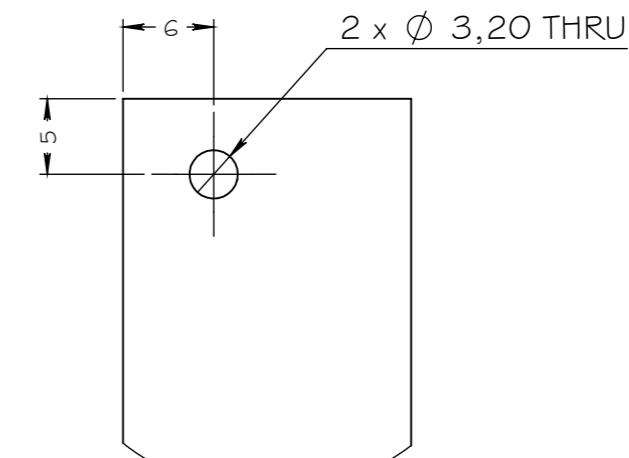
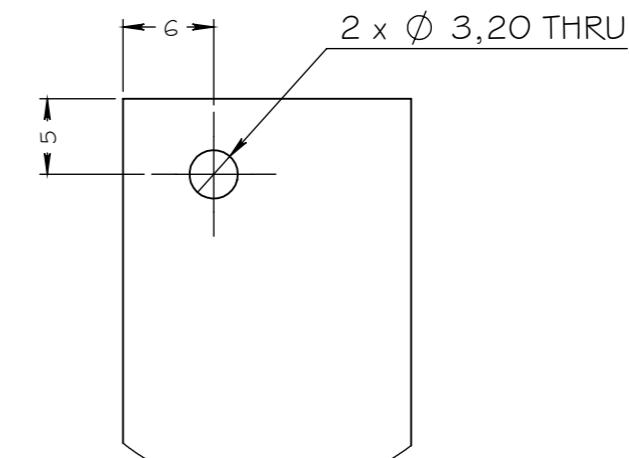
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DETAIL AW  
SCALE 2 : 1



<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE</b> <b>UFRJ</b>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.4.3.02 - ANGLE_BRACKET_D		Material: 1060-H14	
Designed by: Guilherme Carvalho	Date: 03/03/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 2	Unit.: mm
		Sheet: 16/18	

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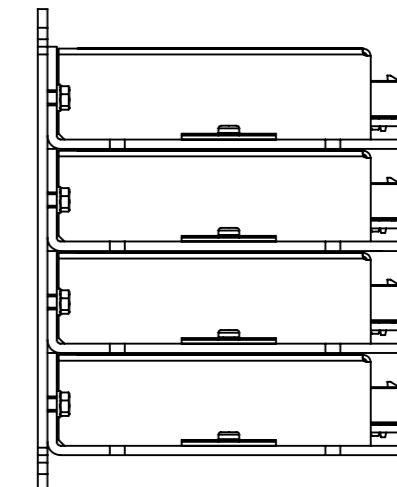
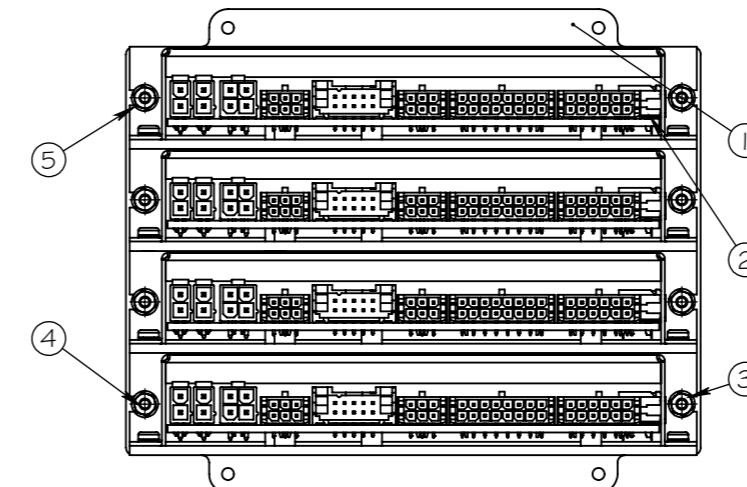
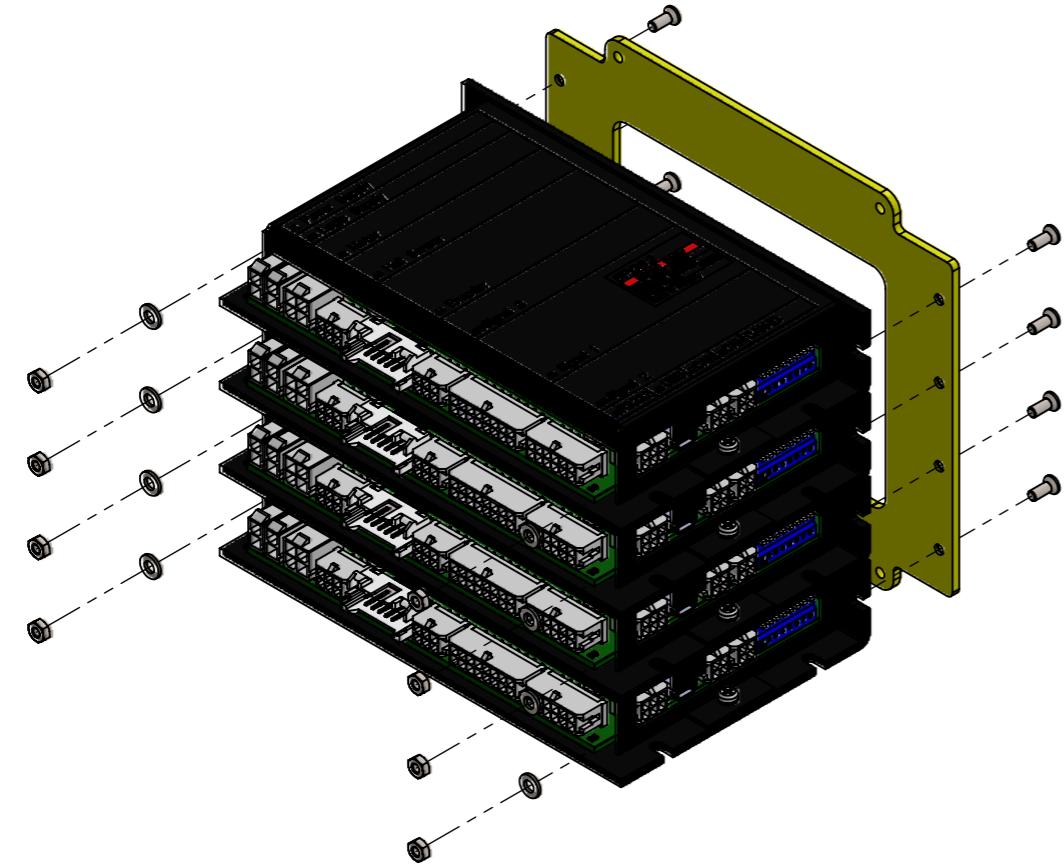
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ITEM	PART NUMBER - DESCRIPTION	QTY.
5	B18.22M - Plain washer, 3 mm, narrow	8
4	B18.3.5M - 3 x 0.5 x 8 Socket FCHS -- 8N	8
3	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	8
2	EPOS 70-10	4
1	Placa de uniao de 4 EPOS	1



COPPE - Electrical Engineering Program

DORIS Project

Title: DR2.4.4 - ASSEMBLY\_EPOS\_70-10

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet: 17/18

Verified by: Ramon Romankevicius

Ver. date.: 30/06/2016 QTY: 1 Unit.: mm

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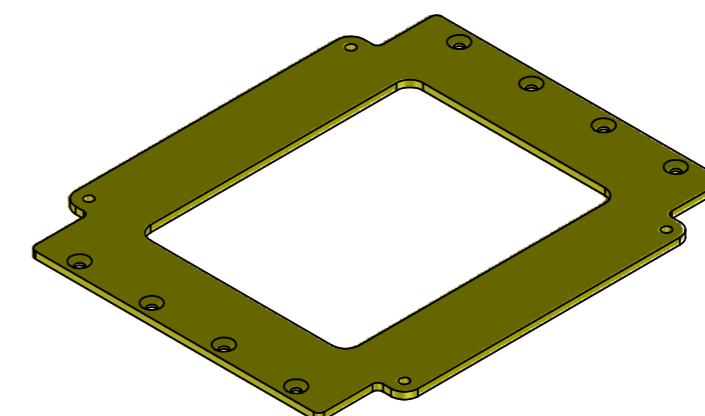
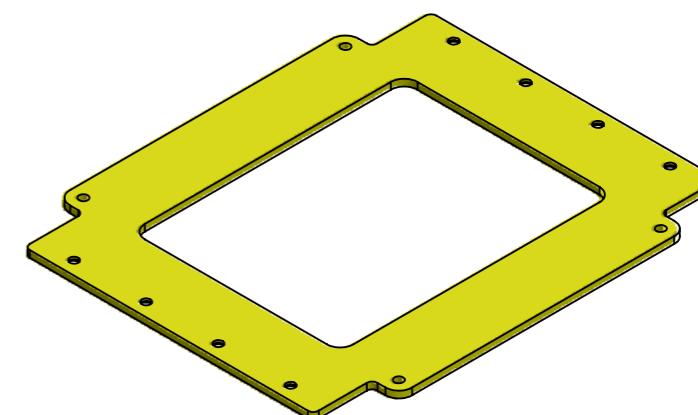
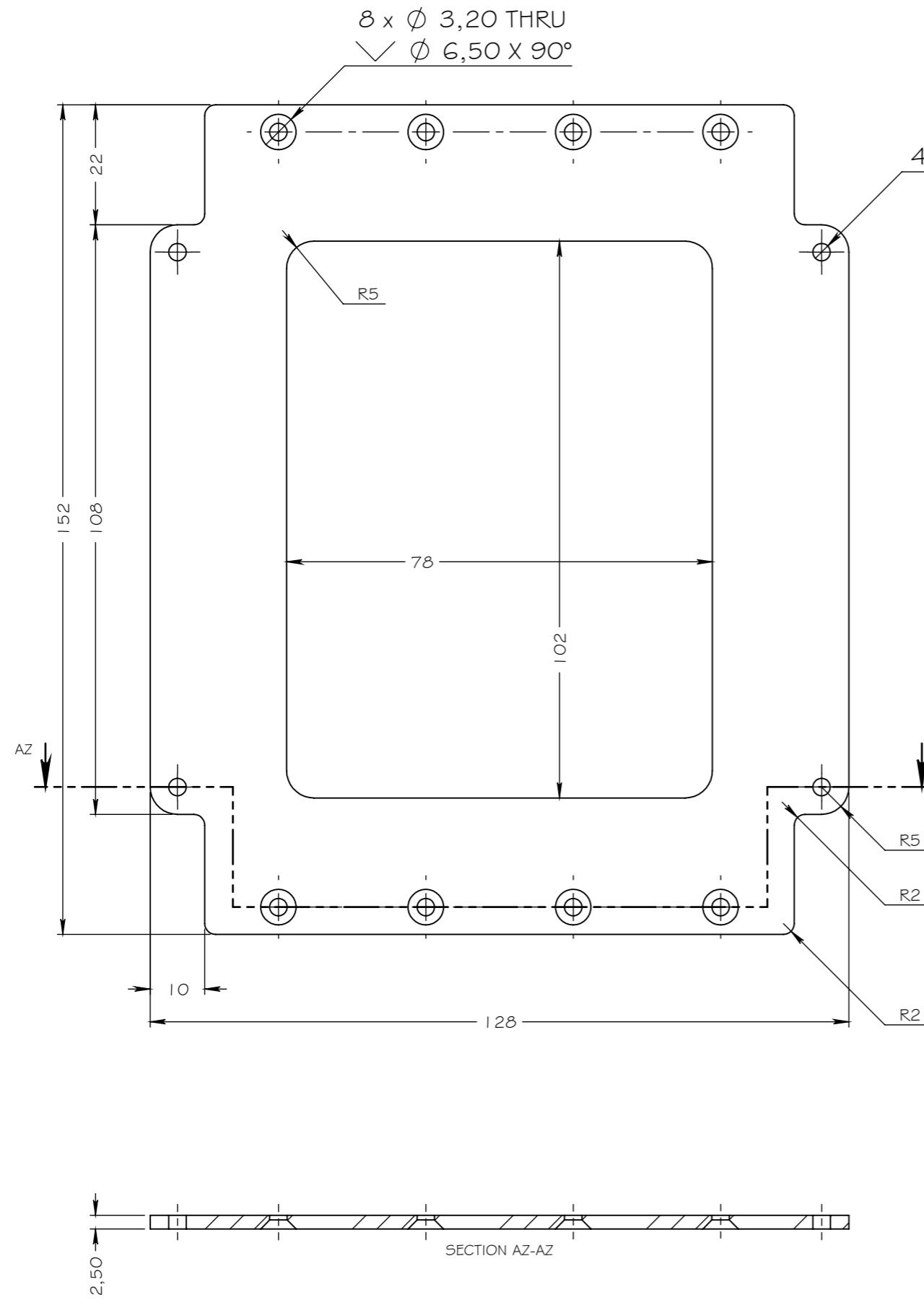
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PETROBRAS		GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: Placa de uniao de 4 EPOS			Material: Fibra de vidro PROTEC
Designed by: Guilherme Carvalho	Date: 06/06/2016	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 30/06/2016	QTY: 1	Sheet: 18/18

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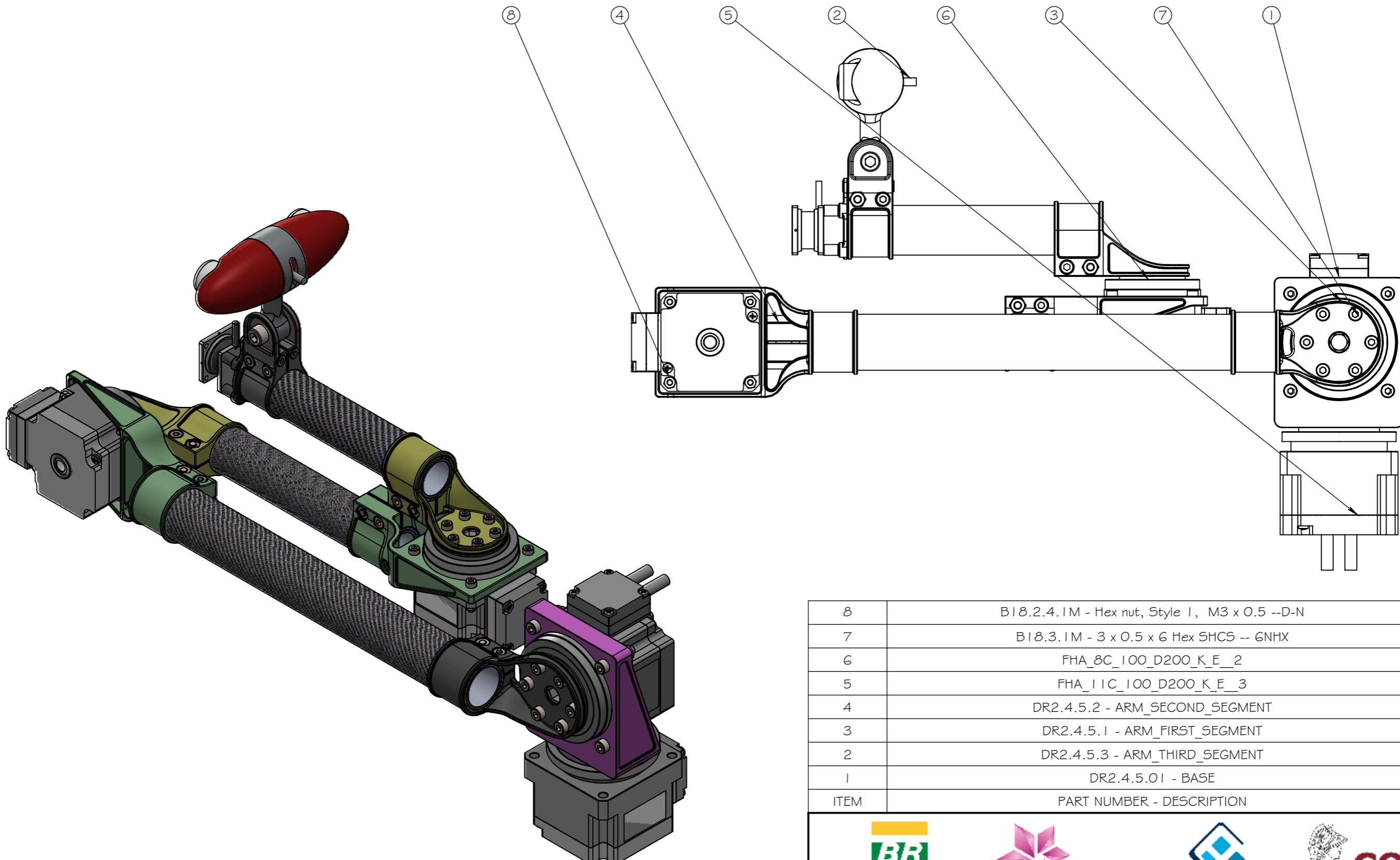
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ITEM	PART NUMBER - DESCRIPTION	QTY.
8	B18.2.4.1M - Hex nut, Style 1, M3 x 0.5 --D-N	12
7	B18.3.1M - 3 x 0.5 x 6 Hex SHCS -- 6NHX	36
6	FHA_8C_100_D200_K_E_2	2
5	FHA_11C_100_D200_K_E_3	2
4	DR2.4.5.2 - ARM_SECOND_SEGMENT	1
3	DR2.4.5.1 - ARM_FIRST_SEGMENT	1
2	DR2.4.5.3 - ARM_THIRD_SEGMENT	1
1	DR2.4.5.01 - BASE	1



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.4.5 - ARM

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2 Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 24/11/2015 QTY: 1 Unit.: mm

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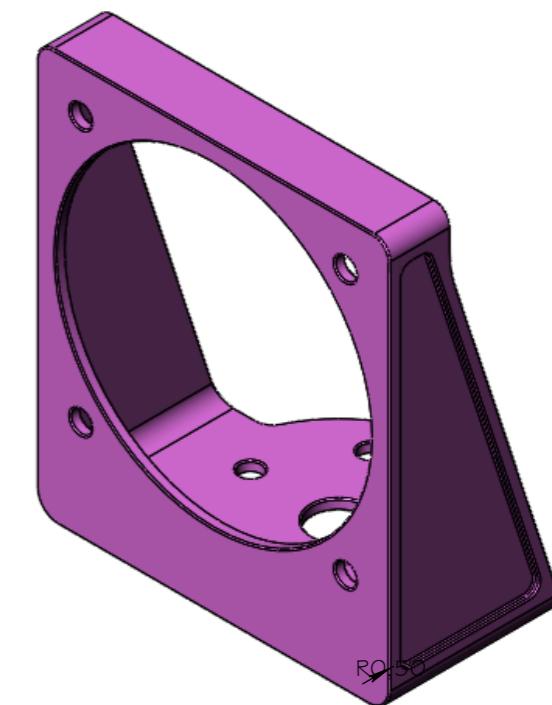
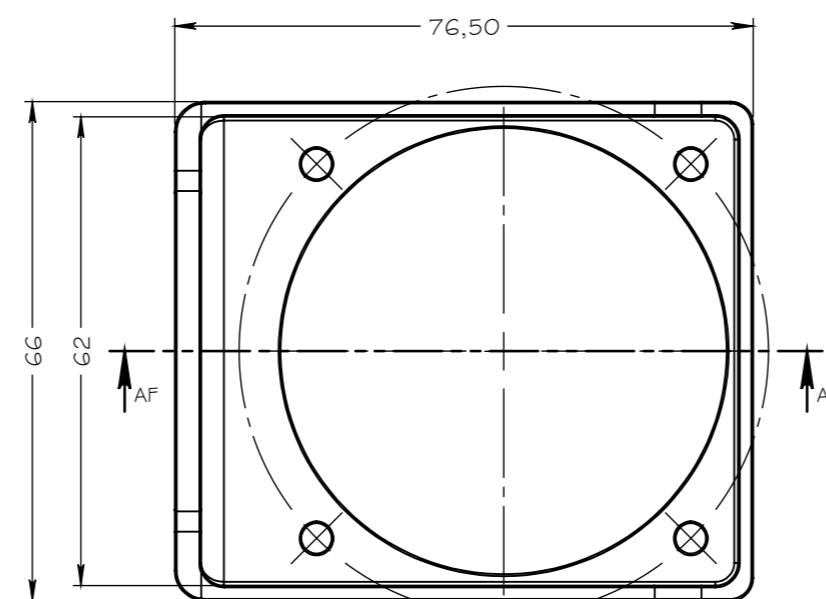
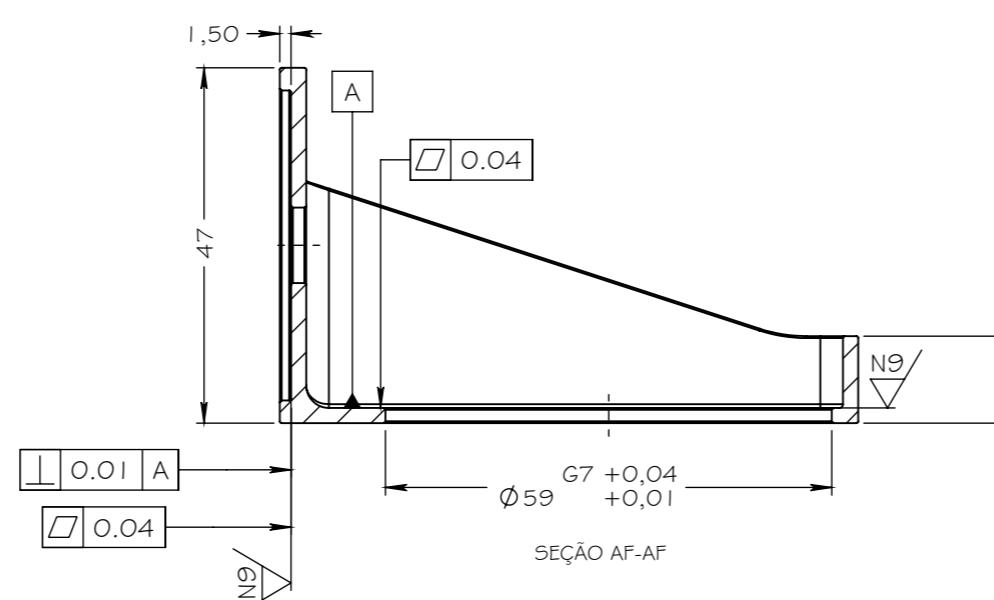
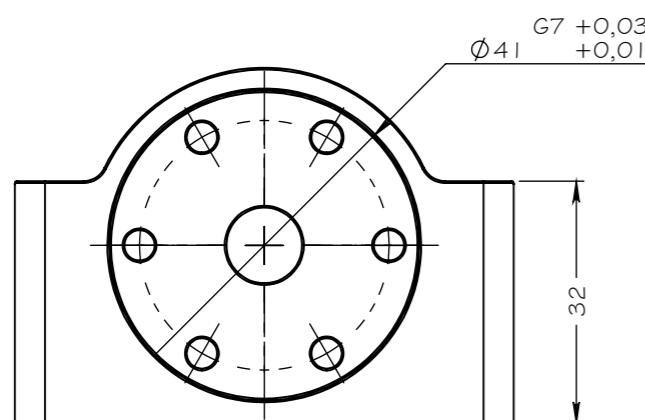
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PETROBRAS		GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program			DORIS Project
Title: DR2.4.5.01 - BASE			Material: Ti-GAI-4V solution treated and aged (SS)
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Unit.: mm
			Sheet: 2 / 15

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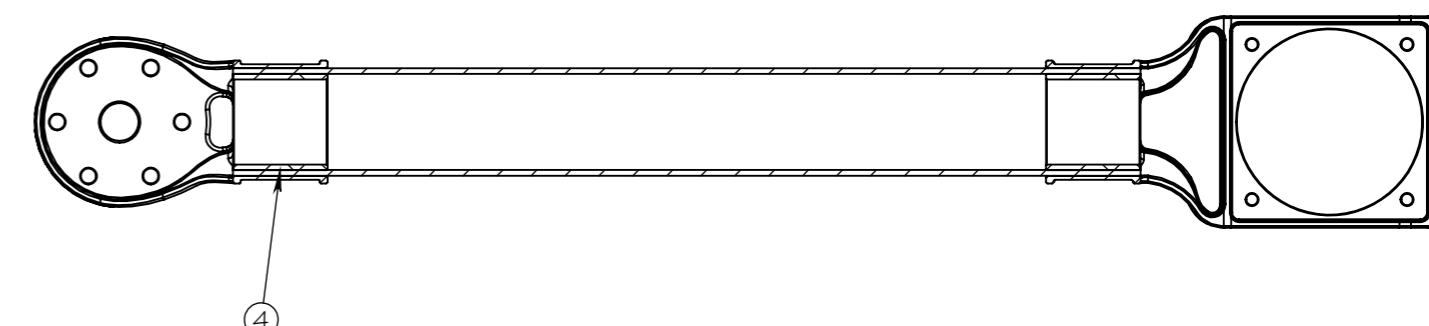
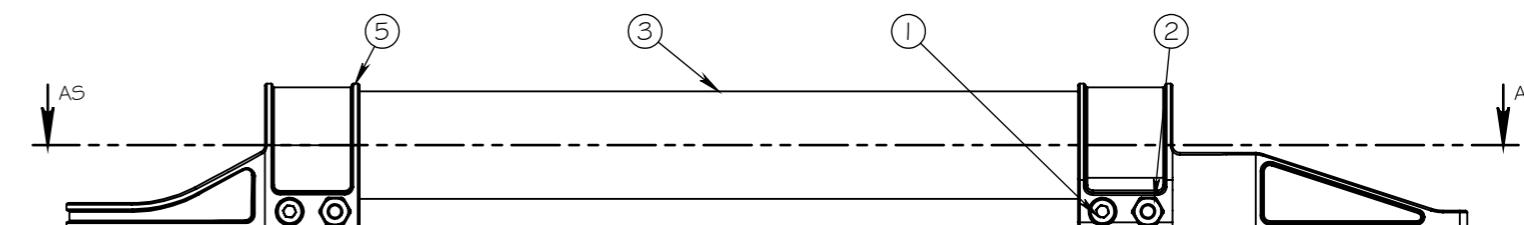
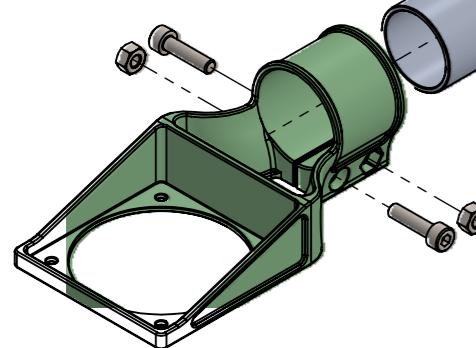
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ITEM	PART NUMBER - DESCRIPTION	QTY.
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5	DR2.4.5.1.01 - CONNECTOR_MOTOR_11C	1
4	DR2.4.5.1.04 - INTERNAL_REINFORCEMENT	2
3	DR2.4.5.1.02 - CARBON_FIBER_TUBE	1
2	B18.2.4.2M - Hex nut, Style 2, M4 x 0.7 --D-N	4
1	socket head cap screw_am	4



COPPE - Electrical Engineering Program



DORIS Project

Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

Title: DR2.4.5.1 - ARM\_FIRST\_SEGMENT

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:2

Sheet:  
3 / 15

Verified by: Ramon Romankevicius

Ver. date.: 24/11/2015 QTY: 1 Unit.: mm

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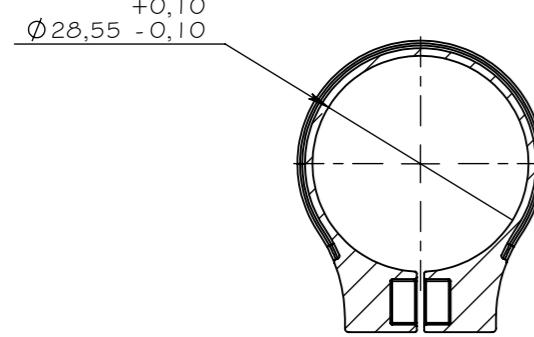
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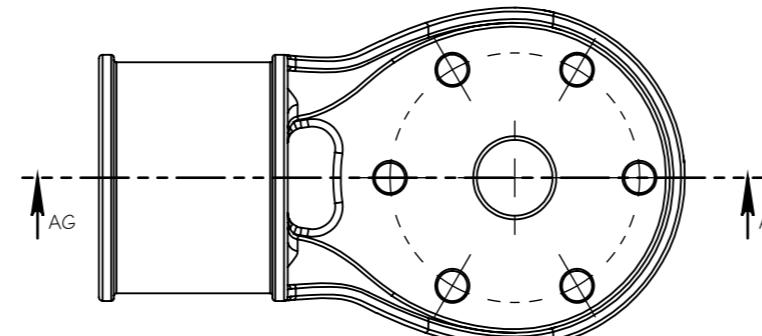
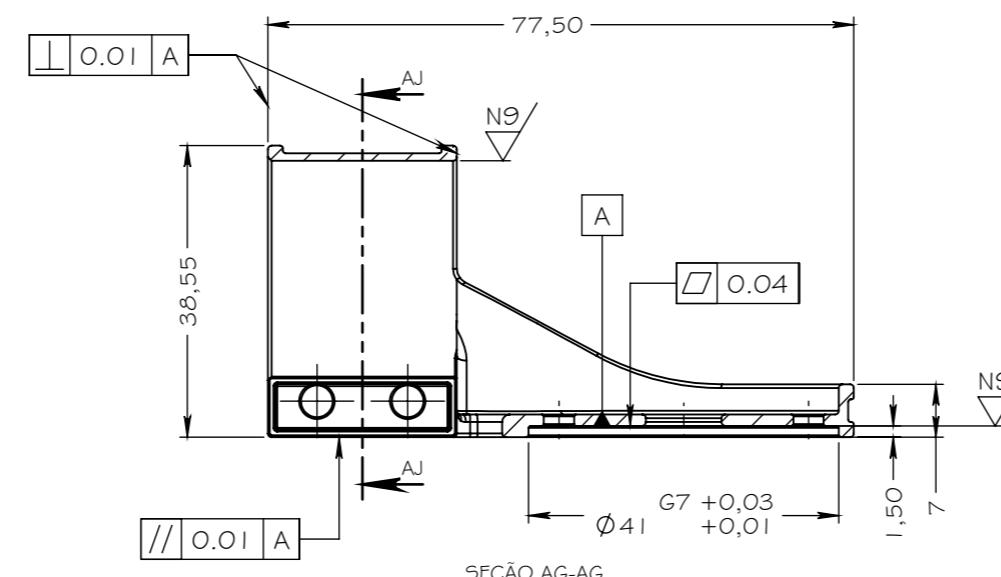
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SEÇÃO AJ-AJ



PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.1.01 - CONNECTOR_MOTOR_IIC		Material: Ti-6Al-4V Solution treated and aged (SS)	
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Sheet: 4 / 15 Unit.: mm

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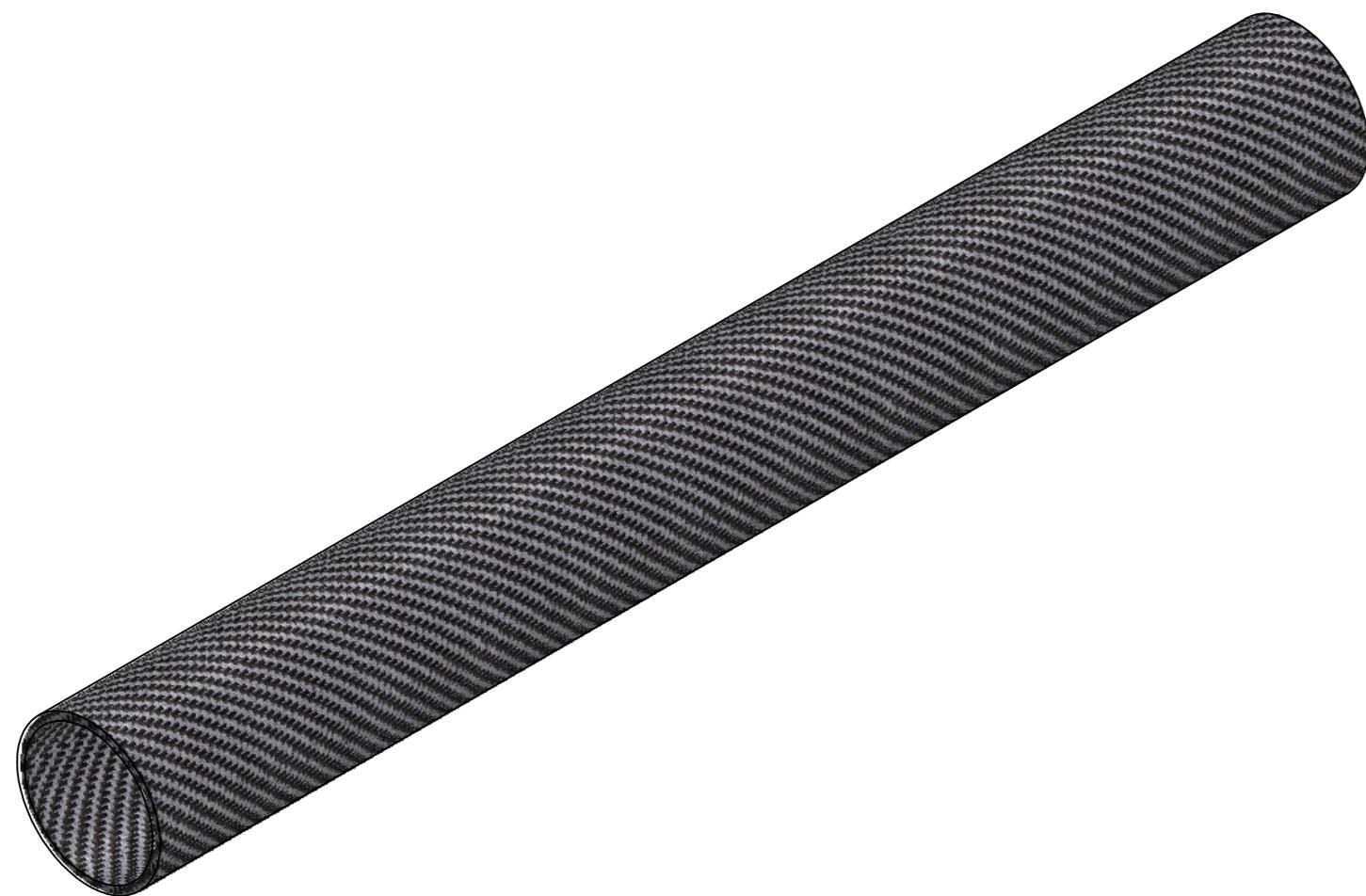
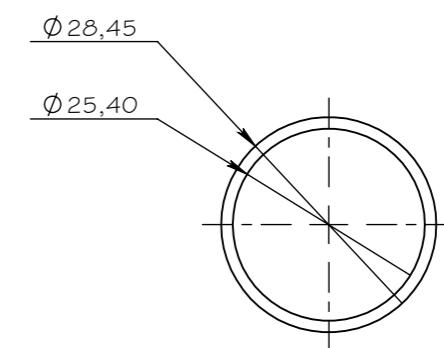
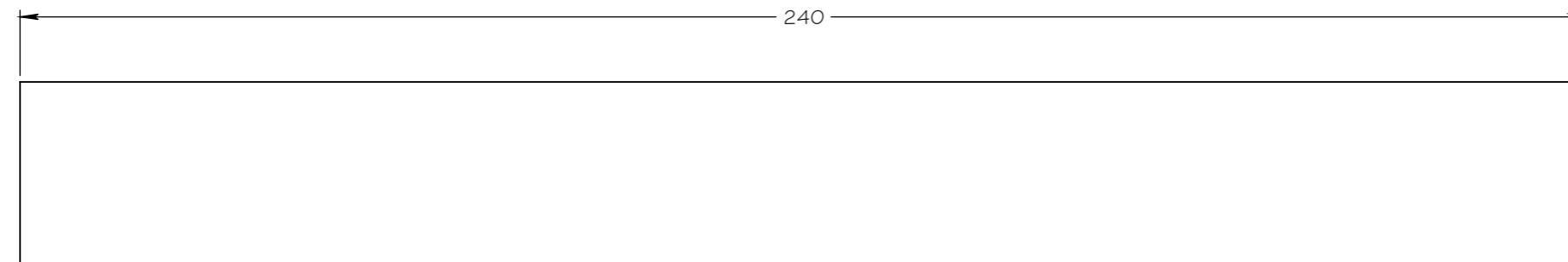
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b> Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program		<b>DORIS Project</b>	
Title: DR2.4.5.1.02 - CARBON_FIBER_TUBE			Material: Thornel Mat VMA
Designed by: Guilherme Carvalho	Date: 24/11/2015		Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015		QTY: 1 Unit.: mm
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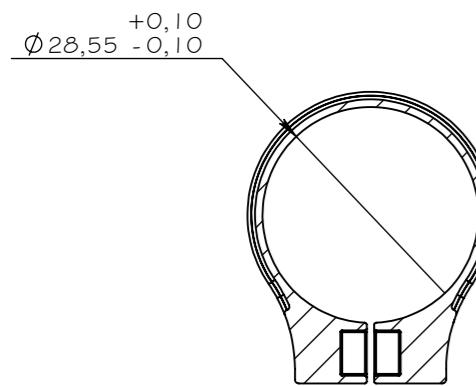
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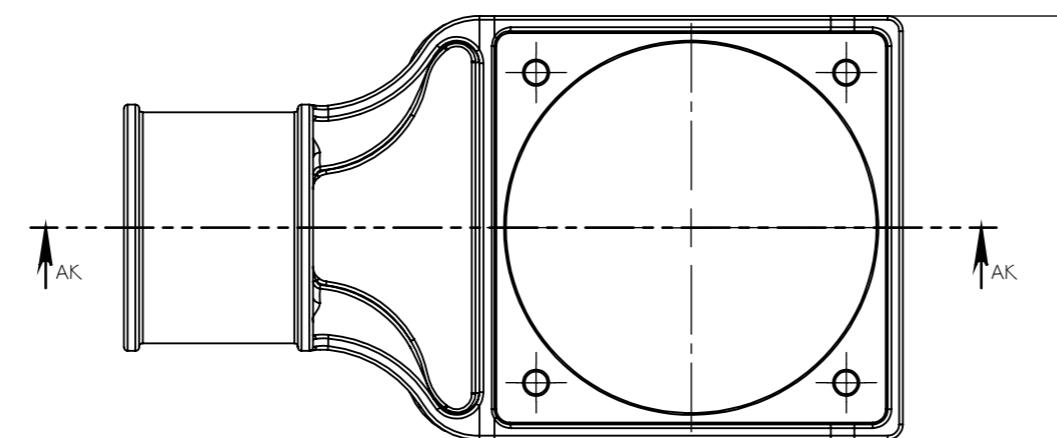
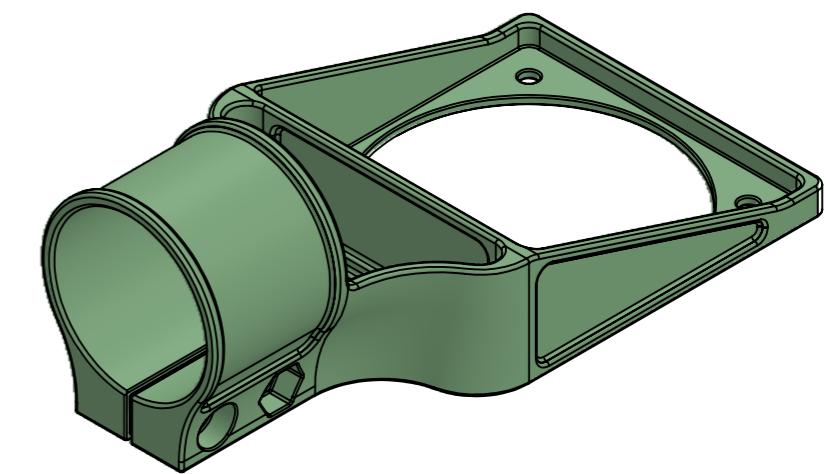
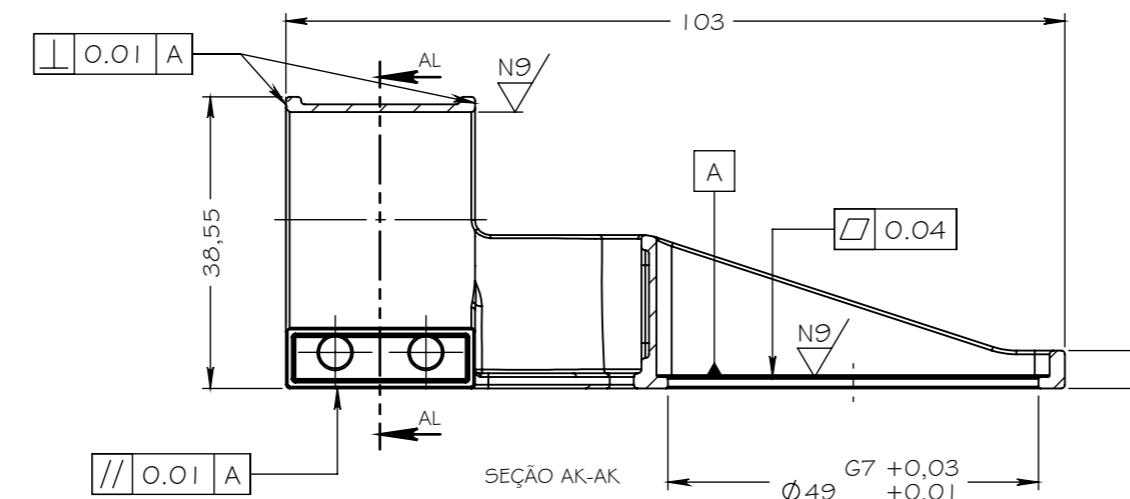
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SEÇÃO AL-AL



<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b>
Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia			
COPPE - Electrical Engineering Program	<b>DORIS Project</b>		
Title: DR2.4.5.1.03 - BIGGER_CONECTOR_MOTOR_8C	Material: Ti-GAI-4V solution treated and aged (SS)		
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Unit.: mm
		Sheet: 6 / 15	

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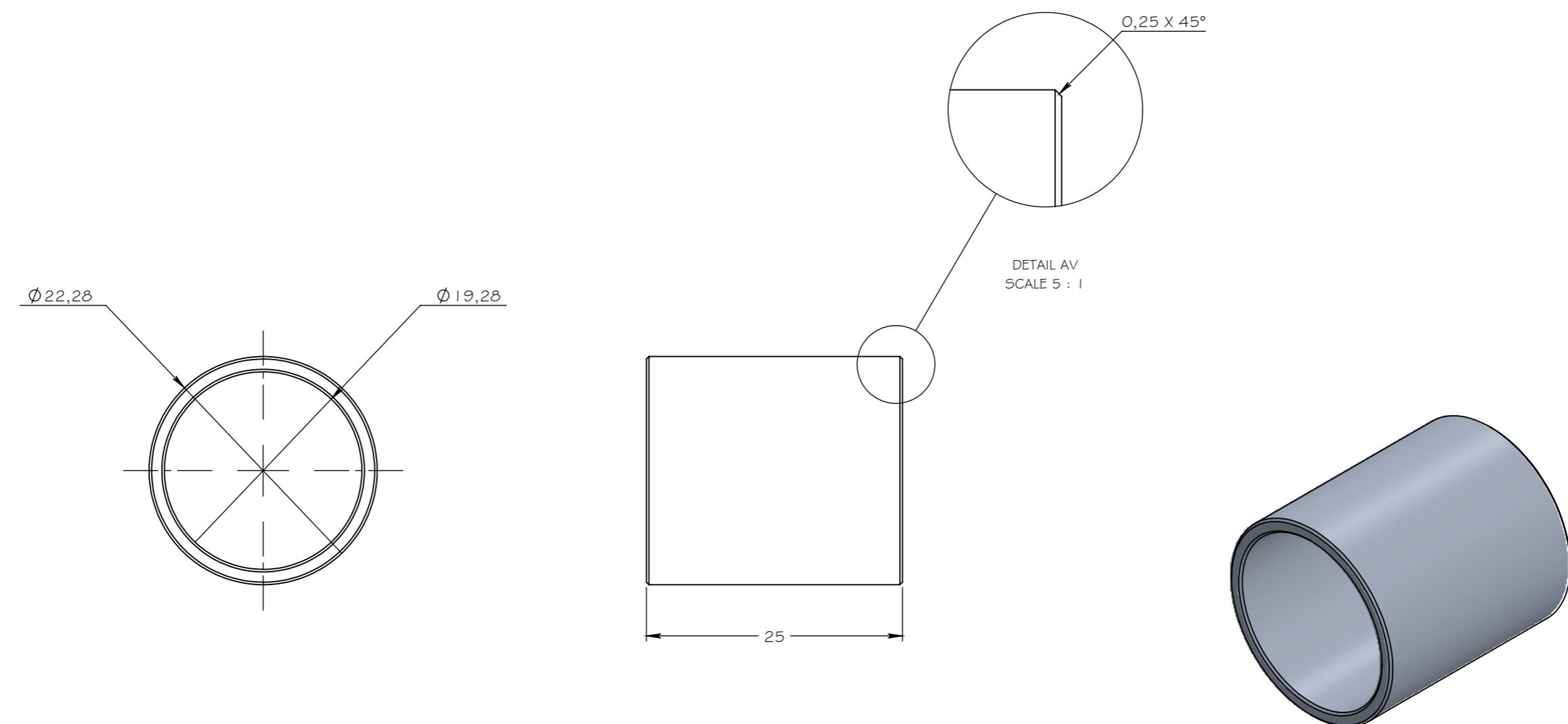
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.1.04 - INTERNAL_REINFORCEMENT		Material: 1060 Alloy	
Designed by: Guilherme Carvalho	Date: 25/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 25/11/2015	QTY: 5	Sheet: 7 / 15 Unit.: mm

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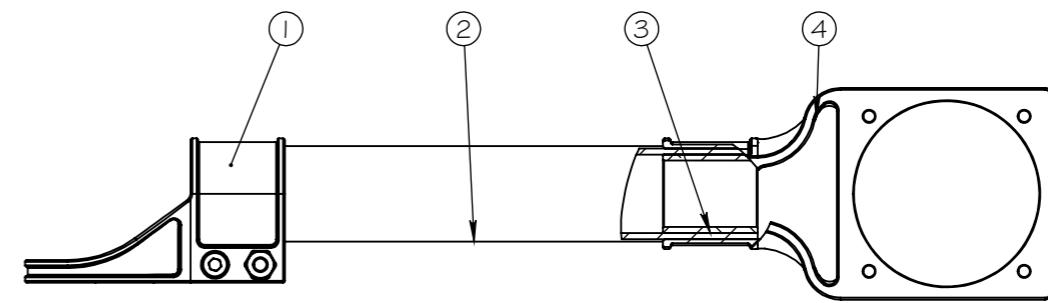
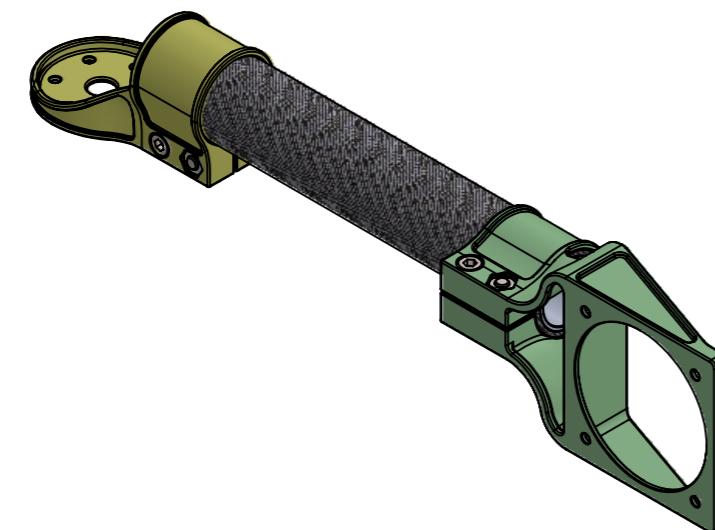
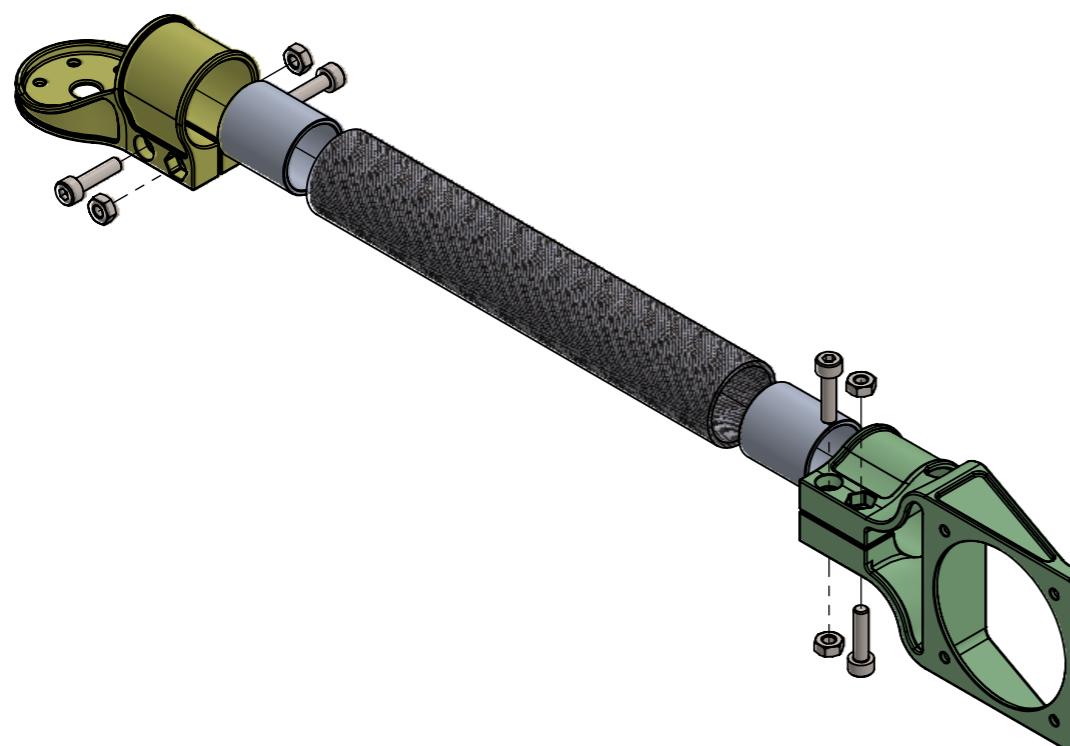
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ITEM	PART NUMBER - DESCRIPTION	QTY.
6	socket head cap screw_am	4
5	B18.2.4.1M - Hex nut, Style 1, M4 x 0.7 --D-N	4
4	DR2.4.5.2.04 - SMALLER_CONNECTOR_MOTOR_8C	1
3	DR2.4.5.1.04 - INTERNAL_REINFORCEMENT	2
2	DR2.4.5.2.02 - CARBON_FIBER_TUBE_2	1
1	DR2.4.5.2.01 - CONNECTOR_MOTOR_8C	1



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Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia

DORIS Project

COPPE - Electrical Engineering Program

Title: DR2.4.5.2 - ARM\_SECOND\_SEGMENT

Material: Various

Designed by: Guilherme Carvalho

Rev.: A Scale.: 1:1

Sheet:

Verified by: Ramon Romankevicius

Ver. date.: 24/11/2015 QTY: 1

Unit.: mm

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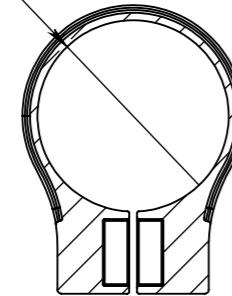
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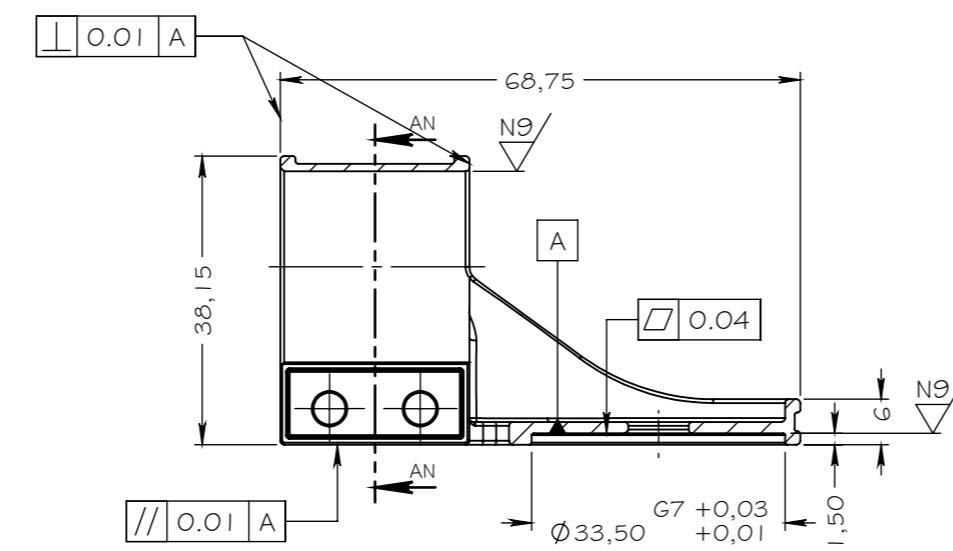
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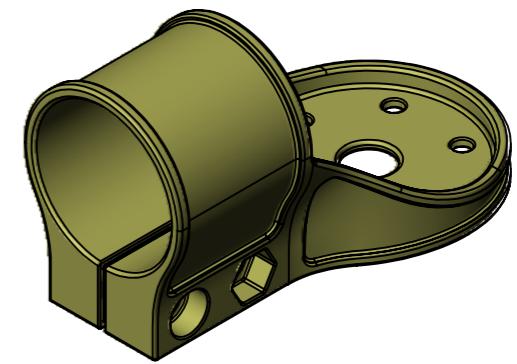
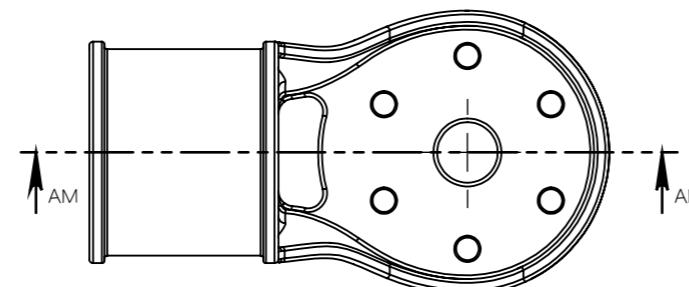
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SEÇÃO AN-AN



SEÇÃO AM-AM



PETROBRAS	Statoil	GSCAR	COPPE UFRJ Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.2.01 - CONNECTOR_MOTOR_8C		Material: Ti-GAI-4VSolution treated and aged (SS)	
Designed by: Guilherme Carvalho		Date: 24/11/2015	Rev.: A Scale.: 1:1 Sheet:
Verified by: Ramon Romankevicius		Ver. date.: 24/11/2015	QTY: 2 Unit.: mm
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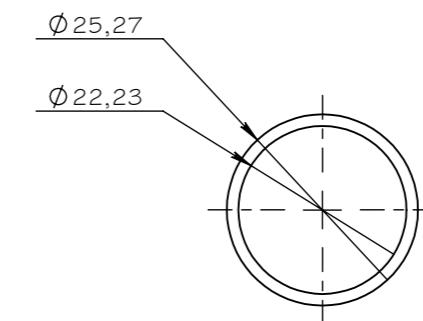
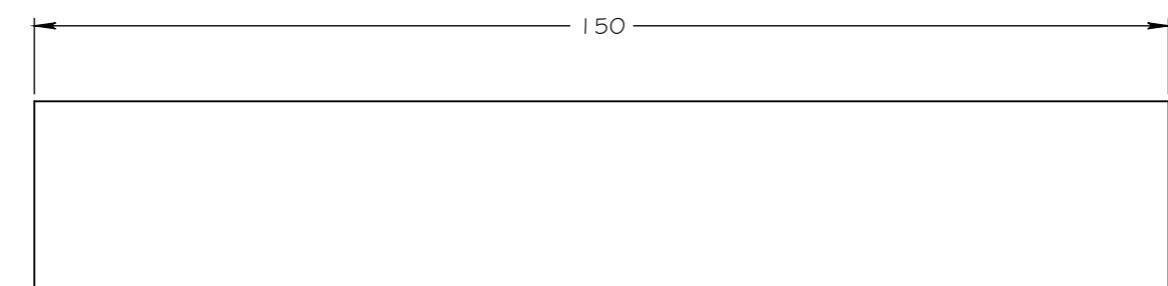
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COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.2.02 - CARBON_FIBER_TUBE_2		Material: Thornel Mat VMA	
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Sheet: 10/15 Unit.: mm

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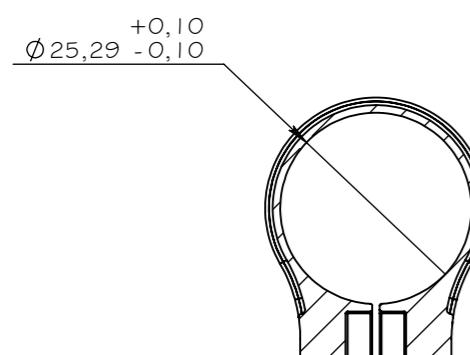
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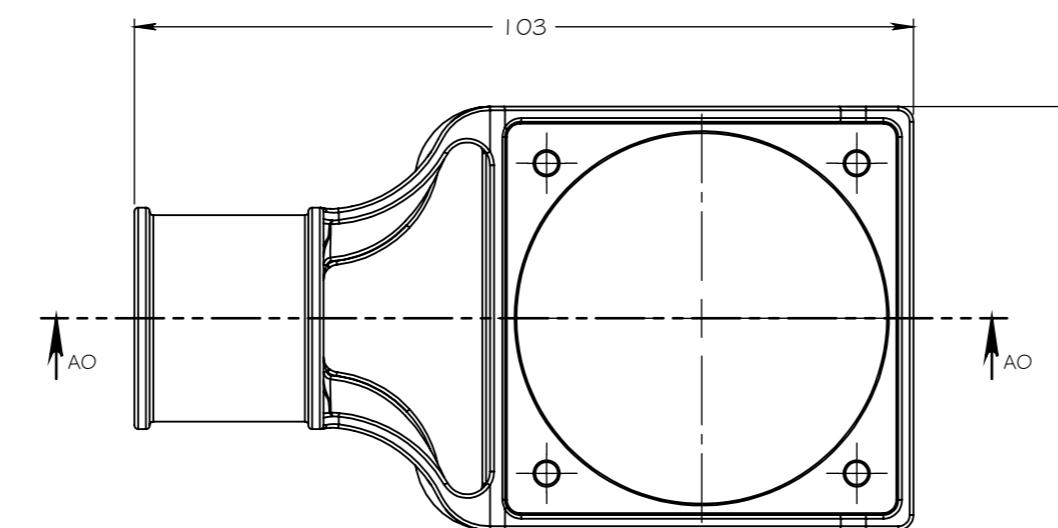
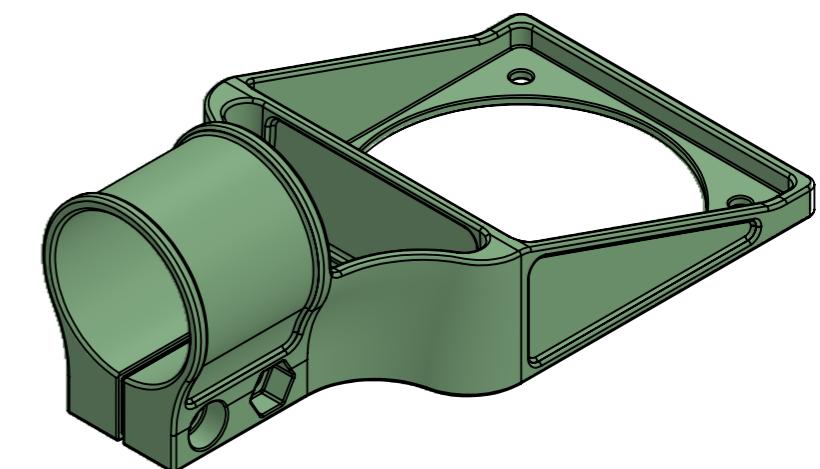
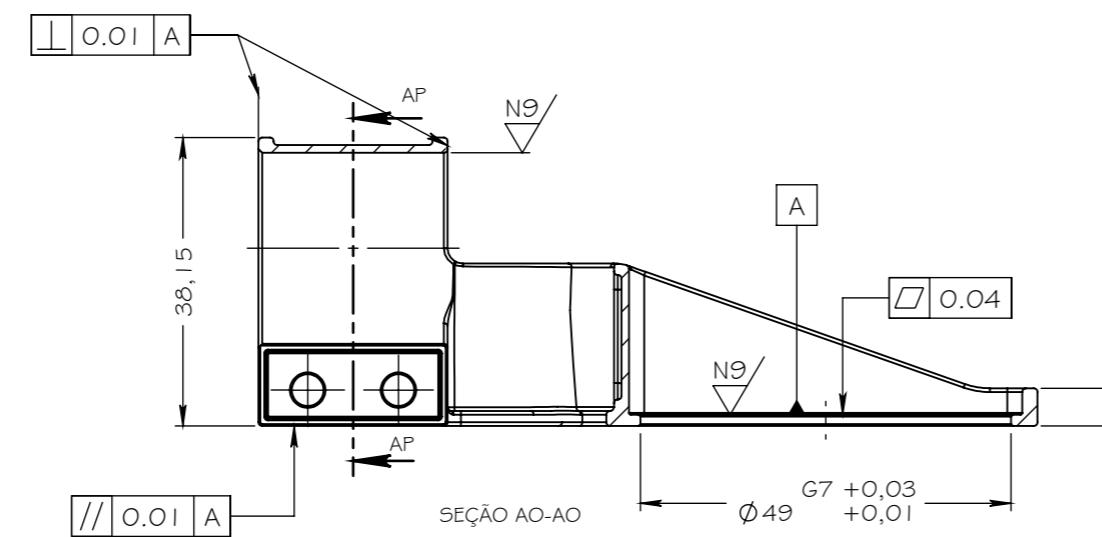
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SEÇÃO AP-AP



PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.2.04 - SMALLER_CONNECTOR_MOTOR_8C		Material: Ti-GAI-4V solution treated and aged (SS)	
Designed by: Guilherme Carvalho	Date: 22/11/2015	Rev.: A	Scale.: 1:1
Verified by: Ramon Romankevicius	Ver. date.: 22/11/2015	QTY: 1	Sheet: 1 / 15
Unit.: mm			

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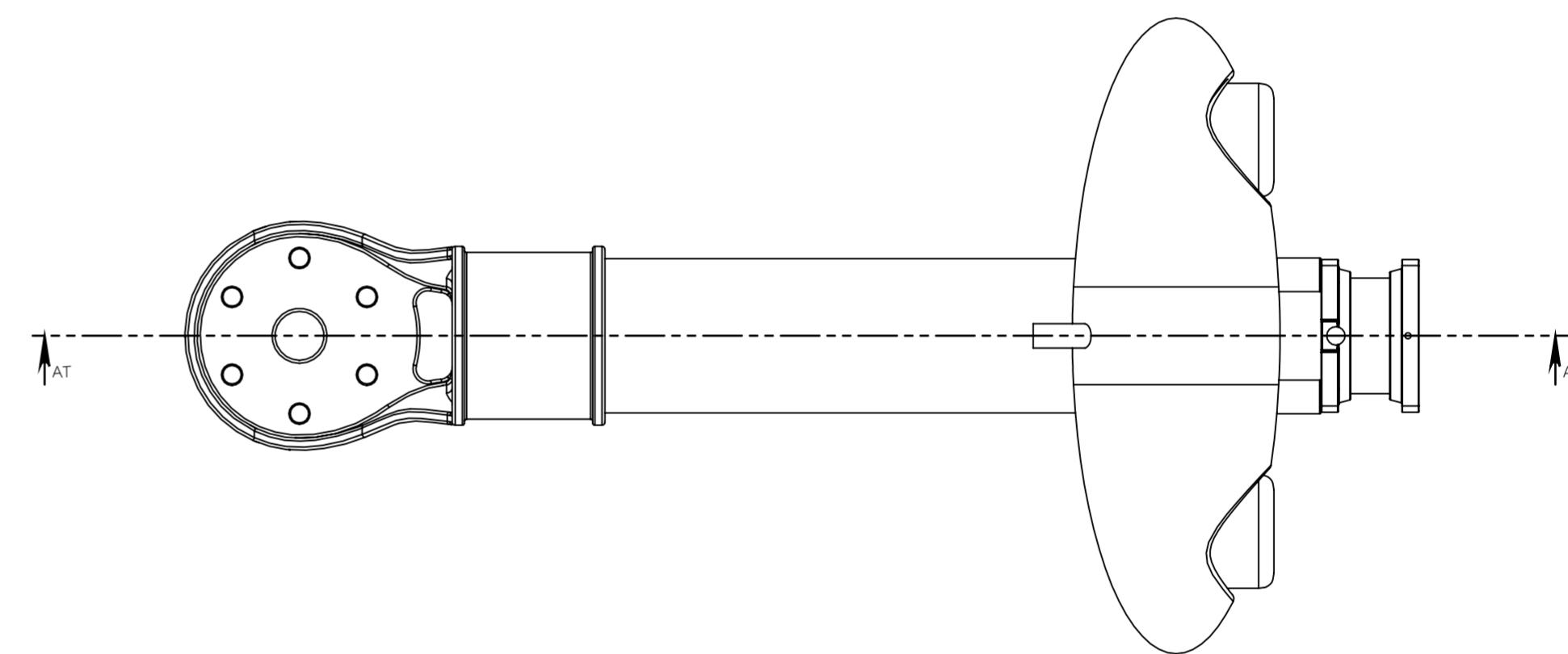
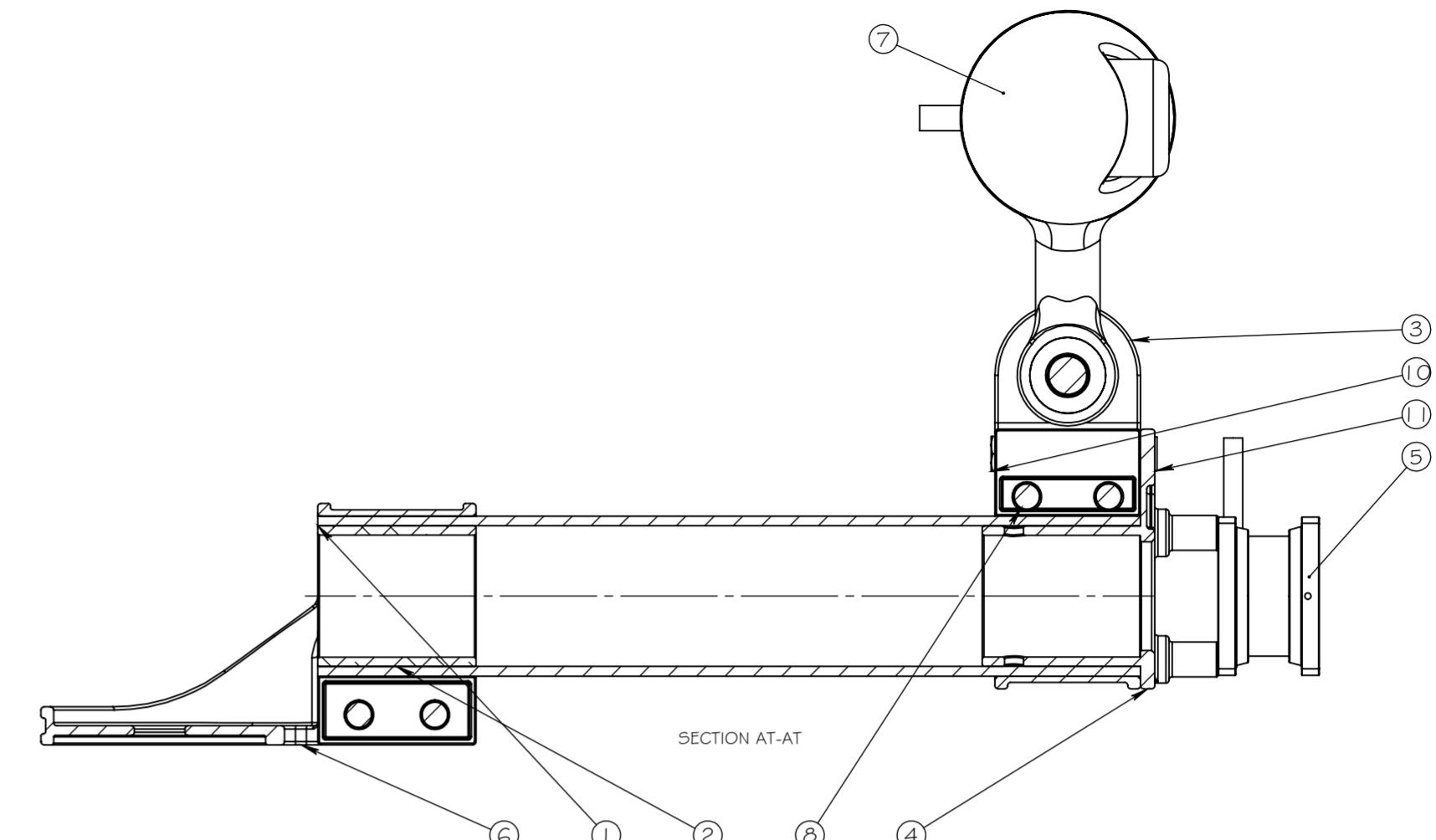
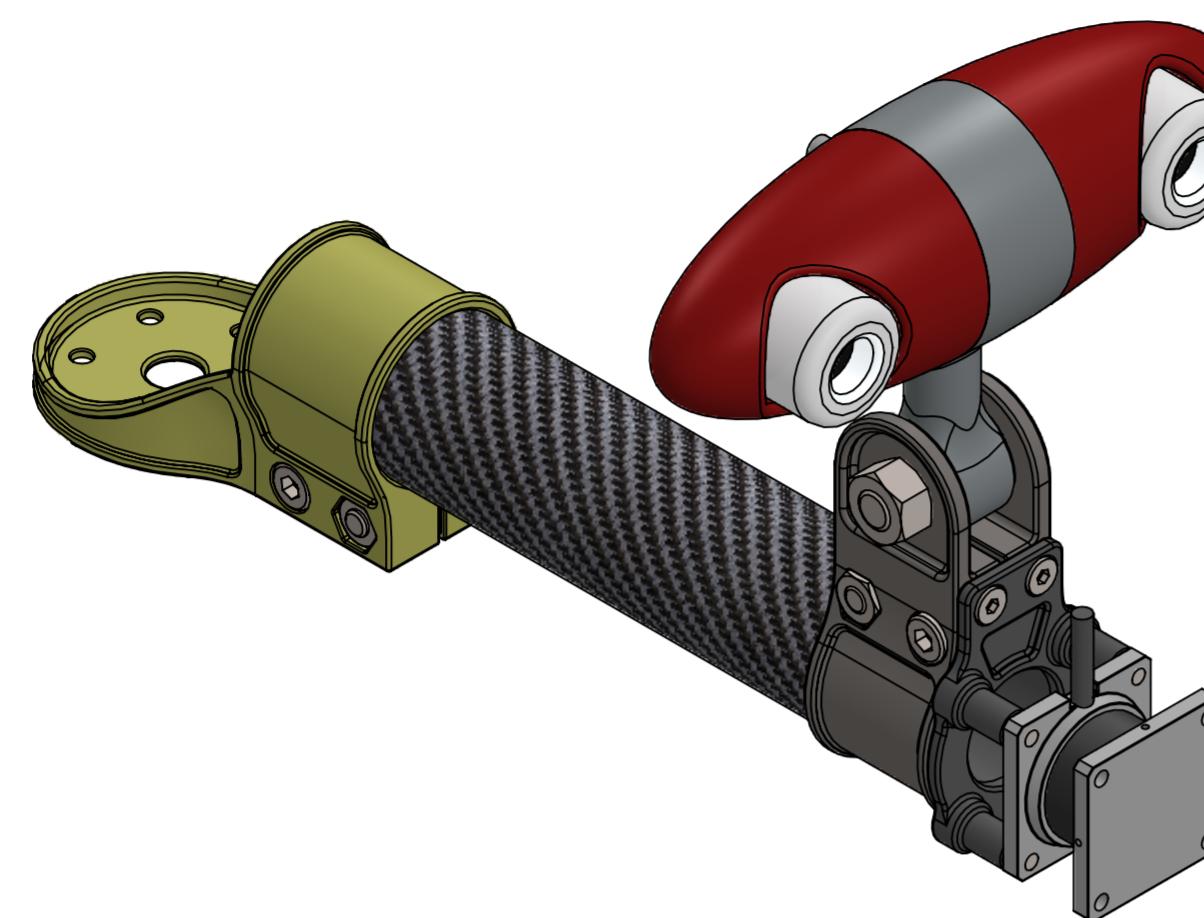
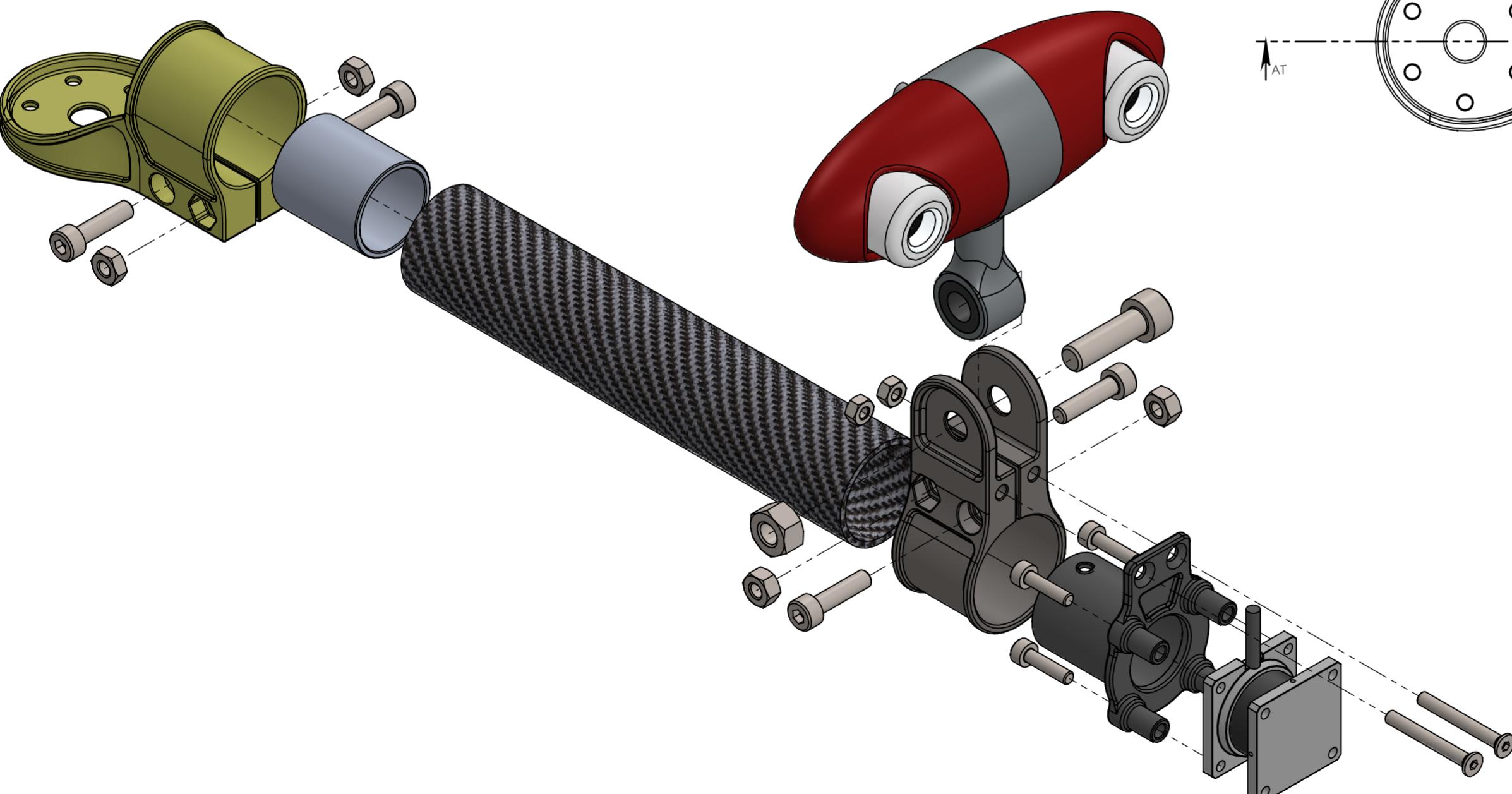
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ITEM	PART NUMBER - DESCRIPTION	QTY.
11	B18.3.5M - 3 x 0.5 x 25 Socket FCHS -- 25N	2
10	B18.2.4.2M - Hex nut, Style 2, M3 x 0.5 --D-N	5
9	B18.2.4.1M - Hex nut, Style 1, M4 x 0.7 --D-N	2
8	B18.3.1M - 3 x 0.5 x 12 Hex SHCS -- 12NHX	9
7	CAMERA_MINORU	1
6	DR2.4.5.2.01 - CONNECTOR_MOTOR_8C	1
5	OPTOFORCE_OMD-20-FE-4ON	1
4	DR2.4.5.3.03 - SUPPORT_OPTOFORCE	1
3	DR2.4.5.3.02 - ACCESORIE_SUPPORT	1
2	DR2.4.5.1.04 - INTERNAL_REINFORCEMENT	1
1	DR2.4.5.3.01 - CARBON_FIBER_TUBE_3	1



**PETROBRAS** Statoil



**COPPE**  
Instituto Alberto Luiz Coimbra de  
Pós-Graduação e Pesquisa de Engenharia  
**UFRJ**

DORIS Project

COPPE - Electrical Engineering Program	Title: DR2.4.5.3 - ARM_THIRD_SEGMENT			Material: Various		
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 1:1	Sheet: 12/15		
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Unit.: mm			

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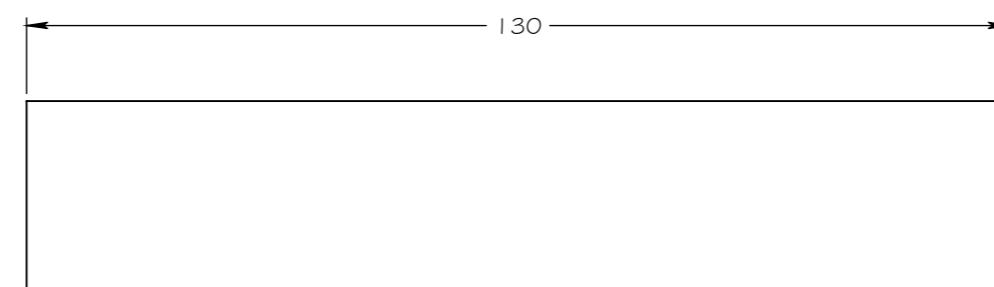
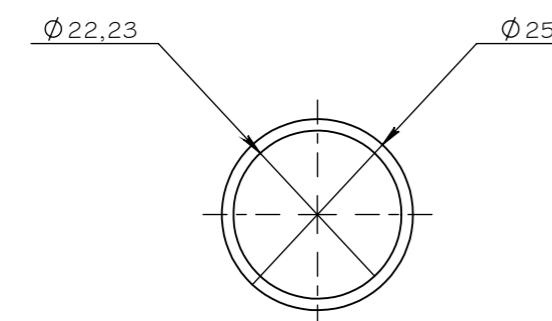
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<b>PETROBRAS</b>	<b>Statoil</b>	<b>GSCAR</b>	<b>COPPE UFRJ</b> Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia
COPPE - Electrical Engineering Program	<b>DORIS Project</b>		
Title: DR2.4.5.3.01 - CARBON_FIBER_TUBE_3		Material: Thornel Mat VMA	
Designed by: Guilherme Carvalho		Date: 24/11/2015	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 24/11/2015	Scale.: 1:1
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		Unit.: mm	

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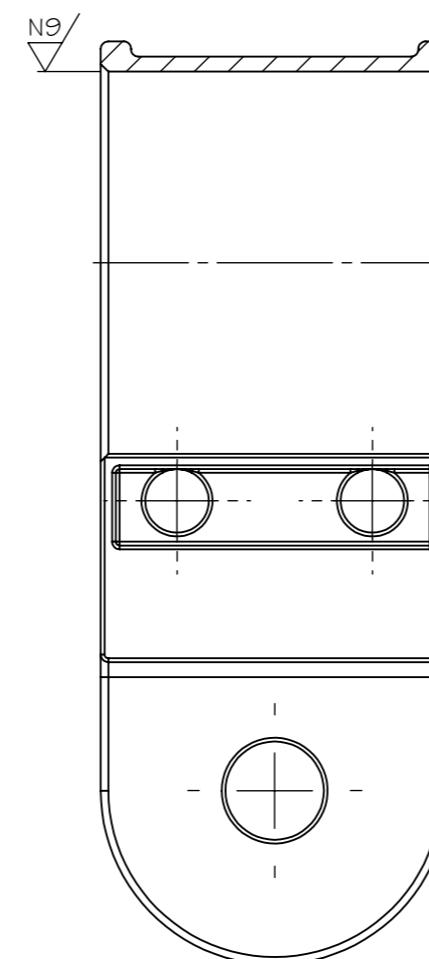
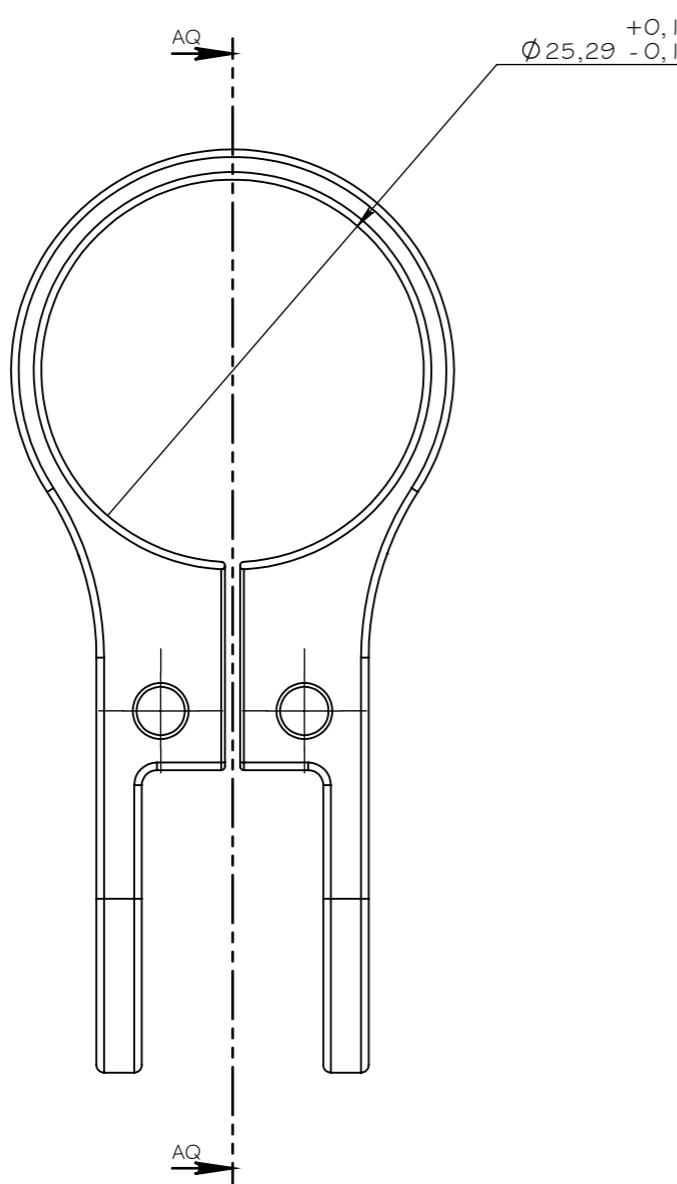
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.3.02 - ACCESORIE_SUPPORT		Material: Ti-GAI-4V solution treated and aged (SS)	
Designed by: Guilherme Carvalho		Date: 24/11/2015	Rev.: A
Verified by: Ramon Romankevicius		Ver. date.: 24/11/2015	Scale.: 2:1
		QTY: 1	Sheet: 14/15
		Unit.: mm	

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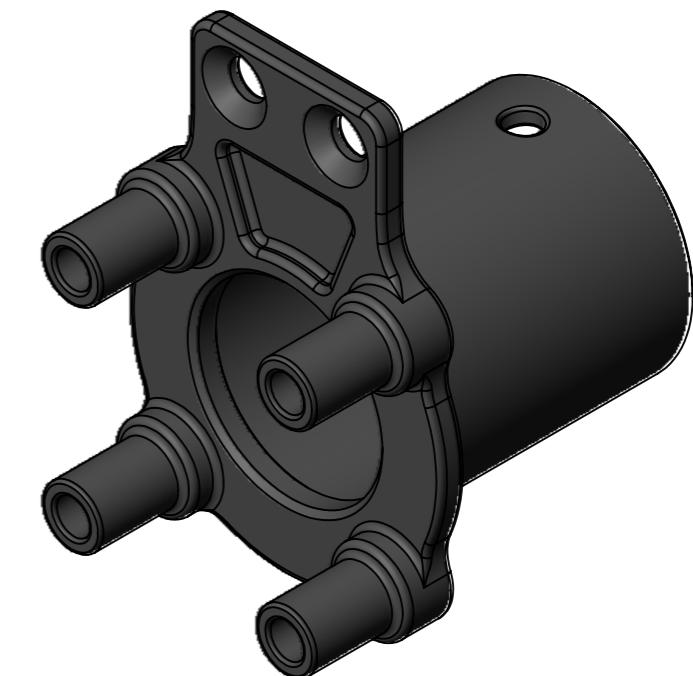
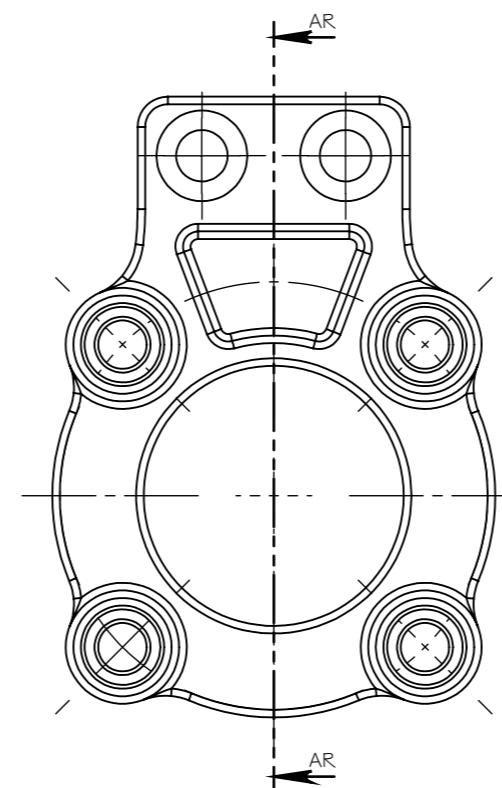
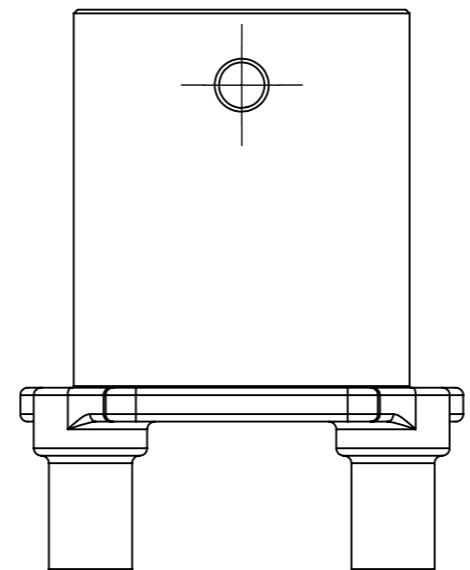
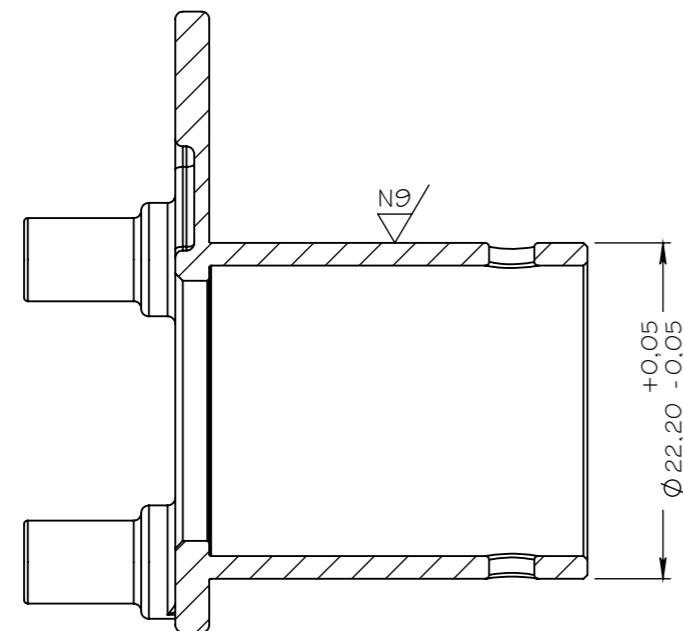
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PETROBRAS	Statoil	GSCAR	COPPE UFRJ <small>Instituto Alberto Luiz Coimbra de Pós-Graduação e Pesquisa de Engenharia</small>
COPPE - Electrical Engineering Program	DORIS Project		
Title: DR2.4.5.3.03 - SUPPORT_OPTOFORCE		Material: Ti-6Al-4V Solution treated and aged (SS)	
Designed by: Guilherme Carvalho	Date: 24/11/2015	Rev.: A	Scale.: 2:1
Verified by: Ramon Romankevicius	Ver. date.: 24/11/2015	QTY: 1	Sheet: 15/15 Unit.: mm

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