

\*\*\* FMC PRIVATE \*\*\*

FMC TECHNOLOGIES

REPORT BY: Silva, Fabiana

13-OCT-2015

Page: 1 OF 5

PART REPORT

PART DESCRIPTION		
PART NUMBER:		DRAWING NO:
P7000048060	VERTICAL CONNECTION MODULE, WELL VCM	DU700154300
REVISION: D	ASSY, 5-10K TORUS III CONNECTOR,	DRAWING REV: C
ECN: 7068000	7.1/16IN FLANGE, 10000PSI, 2500M.	DWG OWN: RIO AE
TYPE: N	STATUS: RELEASED	OWNERSHIP: RIO AE
		UOM: EA
		WEIGHT: 12778 (5797)
		LBS (KGS)

PART DATA		
PROD SPEC : SEE GWI045		QUALITY LVL: PSL 3
MATL CLASS: HH	TEMP RANGE: 0F(-18C) TO 250F(121C)	
PR# :	GR# :	SRV CLASS:

REVIEWED BY: Marini, Cristiane	REVIEW DATE : 03-SEP-2015
APPROVED BY: Carvalho, Marcelo	APPROVAL DATE: 29-SEP-2015

BILL OF MATERIAL						
ITEM	PART NUMBER	DESCRIPTION	DWG NUMBER	UM	QTY	MATERIAL
1	P7000048895	FLOWLINE SWIVEL, ASSY, 6 IN ID, 10 KSI WP, FULL CLAD, W/ FLAT SWIVEL BODY	DU700155240	EA	1	
2	P7000059277	VERTICAL CONNECTION MODULE, GUIDE FUNNEL, ASSY WITH ROV PANEL	DU700163040	EA	1	
3	P7000048388	HYDRAULIC CONNECTOR, ASSY, 5-10K TORUS III	DU700154299	EA	1	
4	P7000060652	GROUP OF PARTS, NEXT ASSY LEVEL, F/ MECHANICAL RELEASE SYSTEM OF VCMS AND RETRIEVABLE MODULES, PRE-SALT MSIAG	DU700163599	EA	2	
5	P7000059938	MECHANICAL RELEASE ROD, MACHINING, F/ WELL VCM TORUS III 5-10K CONNECTOR, UPPER ROD	DU700165296	EA	2	
6	P7000058848	MECHANICAL RELEASE PLATE, ASSY, F/ TORUS III 5-10K WELL VCM	DU700161233	EA	1	
7	P7000058849	FRAME ASSY, REACTION STRUCTURE F/ TORUS III 5-10K	DU700161323	EA	1	
8	701-026-249	HEX SOCKET SET SCREW KNURLED CUP POINT 3/8 IN - 16UNC-3A X 1.1/4 IN LG	NO-DWG	EA	1	M12204
9	P7000049251	VERTICAL CONNECTION MODULE, SOFT LANDING, FINAL MACHINING, F/ TORUS III 5-10K	DU700147174	EA	1	

(continued...)

\*\*\* FMC PRIVATE \*\*\*

FMC TECHNOLOGIES

REPORT BY: Silva, Fabiana  
P/N: P7000048060

13-OCT-2015  
PART REPORT

Page: 2 OF 5

BILL OF MATERIAL (Continued)

ITEM	PART NUMBER	DESCRIPTION	DWG NUMBER	UM	QTY	MATERIAL
10	700-002-469	CONNECTOR O-RING, 19.955 I.D. X 0.275 W PARKER PN. 2- 469	NO-DWG	PC	1	
11	700-061-469	BACK-UP RING, 20.004 IN I.D. X 0.236 IN W PARKER PN. 8-469	NO-DWG	PC	1	E50109
12	700-061-467	BACK-UP RING, 19.004 IN I.D. X 0.236 IN W PARKER PN. 8-467	NO-DWG	PC	1	E50109
13	700-002-467	O-RING, 18.955 I.D X 0.275 W PARKER PN. 2- 467	NO-DWG	PC	1	
14	P7000060139	VERTICAL CONNECTION MODULE, SOFT-LAND STOP	DU700161025	EA	3	M21509
15	P7000060262	VERTICAL CONNECTION MODULE, SOFT-LAND STOP FOR ROV VISUAL INDICATOR	DU700163531	EA	1	M21509
16	P7000060261	VERTICAL CONNECTION MODULE, SOFT-LAND VISUAL INDICATOR	DS700163207	EA	1	M11800
17	P7000060263	VERTICAL CONNECTION MODULE, SOFT-LAND VISUAL INDICATOR	DU700163521	EA	1	M11800
18	180-574-651	CONNECTOR CHAVETA ANTI-ROTACAO, CONECTOR TORUS III 4 IN - 5K	DS180-574-651	PC	1	
19	701-093-312	SOCKET HEAD CAP SCREWS 1/2 IN - 13UNC-3A X 7/8 IN LG	NO-DWG	PC	1	
20	P7000060138	ROV POSITION INDICATOR, ASSY, F/ CONNECTOR LOCK-UNLOCK, 6 IN VCM	DS700163205	EA	1	M11800
21	701-924-030	PAD STUD 7/8 IN - 9UNC- 2A X 3.3/4 IN LG	NO-DWG	PC	12	
22	701-631-051	TYPE HEAVY HEX NUT, 7/8 IN - 9UNC-2B	NO-DWG	PC	12	
23	701-438-014	REGULAR LOCKING WASHER, SIZE 7/8 IN	NO-DWG	PC	12	M11000
24	701-054-253	HEX HEAD CAP SCREW 3/8 IN - 16UNC-2A X 2-1/4 IN LG	NO-DWG	PC	8	
25	701-443-010	EXTERNAL TOOTH LOCK WASHERS, 10.5 MM I.D.	NO-DWG	PC	8	
26	P7000060877	VERTICAL CONNECTION MODULE, THREADED PAD EYE, 2IN HOLE	DU700162396	EA	2	M12106
27	701-093-501	SOCKET HEAD CAP SCREWS 1 IN - 8UNC-3A X 3.1/2 IN LG	NO-DWG	PC	4	

(continued...)

Índice Geral

Página Anterior

Seção Atual

\*\*\* FMC PRIVATE \*\*\*

FMC TECHNOLOGIES

REPORT BY: Silva, Fabiana  
P/N: P7000048060

13-OCT-2015  
PART REPORT

Page: 3 OF 5

BILL OF MATERIAL (Continued)

ITEM	PART NUMBER	DESCRIPTION	DWG NUMBER	UM	QTY	MATERIAL
28	701-827-046	FULLY THREADED STUD 1.1/8 IN - 8UN-2A X 5.3/4 IN LG	NO-DWG	PC	12	
29	701-639-060	TYPE HEAVY HEX NUT, 1.1/8 IN - 8UN-2B	NO-DWG	PC	12	M21905
30	701-054-194	HEX HEAD CAP SCREW 1/4 IN - 20UNC-2A X 5/8 IN LG	NO-DWG	PC	2	
31	701-443-007	EXTERNAL TOOTH LOCK WASHERS, 6.4 MM I.D.	NO-DWG	PC	2	
32	73-062-169	RING GASKET API BX-169 INCO 825	NO-DWG	EA	1	M41104
33	P7000011436	PROTECTOR, FLANGE, MACHINING, METALLIC, F/ 7 1/16 IN API 6BX 10KSI FLANGE BX-156	DS700017774	EA	1	M11800
34	701-054-650	HEX HEAD CAP SCREW, 1.1/2 IN - 6UNC-2A X 8 IN LG, CARBON STEEL.SAE 1010/1020.	NO-DWG	PC	2	
35	701-611-074	TYPE NORMAL HEX NUT, 1.1/2 IN - 6UNC-2B	NO-DWG	PC	2	M11800
36	180-506-363	HOT STAB CEGO	DA180-506-363	PC	2	
37	P7000064828	HYDRAULIC CONTROLS, TOP LEVEL SET, PETROBRAS PRE-SALT MSIAG VERTICAL CONNECTION MODULE, WELL ROPE, METALLIC, 316SS,	DU600175786	EA	1	
38	P7000049594	1/8 IN, 10.0 IN LG, W/ 316 SS FLAT EYE END WITH 1/4 IN NOM. DIA HOLES, F/ GROUNDING STRAP	DA700104835	EA	1	
39	701-048-193	HEX HEAD CAP SCREW 1/4 IN - 20UNC-2A X 1/2 IN LG	NO-DWG	PC	4	
40	701-442-008	EXTERNAL TOOTH LOCK WASHERS, 7.4 MM I.D.	NO-DWG	PC	4	
41	180-701-076	CABO P/ CONDUTIBILIDADE ELETRICA P/ PROTEÇÃO CATÓDICA(406MM DE COMPRIMENTO)	DA180-701-076	PC	1	

QUALITY MATRIX: 7QM0000

SECTION: 4.3      REV: B      OWNER: RIO COE      STATUS: RELEASED  
ASSEMBLY - NON-MONOGRAMMED

3520      VISUAL EXAMINATION.

Q00501      MARK AT LOCATION SHOWN ON DRAWING/SPECIFICATION.

(continued...)

Índice Geral

Página Anterior

Seção Atual

\*\*\* FMC PRIVATE \*\*\*

FMC TECHNOLOGIES

REPORT BY: Silva, Fabiana  
P/N: P7000048060

13-OCT-2015  
PART REPORT

Page: 4 OF 5

---

QUALITY MATRIX: 7QM0000 (Continued)

Q03401           SERIALIZATION.

Q00651           HANDLING, STORAGE AND SHIPPING PROCEDURE.

NOTE1            FURNISH DOCUMENTATION REQUIRED BY API 17D, CERTIFICATE OF  
COMPLIANCE, ASSEMBLY TRACEABILITY AND PRESSURE TEST RECORDS.

NOTE2            FOR SSV/USV GATE VALVES ONLY: FURNISH DOCUMENTATION PER API  
6A IN COMPLIANCE WITH SSV/USV REQUIREMENTS.

NOTE3            FOR NON-STANDARD ASSEMBLIES: ASSEMBLE AND TEST PER PROJECT  
PROCEDURES, IF APPLICABLE.

NOTE5            ADDITIONAL REQUIREMENTS AS LISTED ON THE DBI AND/OR SPC.

---

ENGINEERING NOTES AND SPECIFICATIONS

MISCELLANEOUS NOTES

NOTES

NOTE 1:           APPROX. SUBMERGED WEIGHT: 5045Kg

NOTE 2:           GLUE RELEASE RODS IN THE RELEASE PLATE WITH LOCTITE 222;

NOTE 3:           PAINT STRIPES AND LETTERS IN BLACK COLOR  
(MUNSELL N-1) ONLY AFTER THE ASSY;

NOTE 4:           -MARK AS SHOWN IN DRAWING:  
                  -LOGO FMC AND BR  
                  -MCV DE POCO  
                  -PROJETO MSIAG PRE-SAL  
                  -NP AND REV;  
                  -NS;  
                  -PCS E ITEM.  
                  -PESO: .....KG;

NOTE 5:           ASSEMBLY INSTRUCTIONS FOR VISUAL INDICATOR OF  
SOFTLAND  
                  \*MANUALY FASTEN ITEMS 16 AND 17 AND GLUE THEM TOGETHER  
                  WITH LOCTITE 222;  
                  \*INSERT ITEM 15 THROUGH ITEM 17 AND HOLD IT IN POSITION  
                  FREELY WITH ITEM 8;  
                  \*MOUNT THIS ASSEMBLE IN THE STRUCTURE, PASSING THE INDICATOR  
                  PLATE IN ITS SLOT AND FASTEN ITEM 15 IN THE SOFTLAND  
                  \*APPLY TORQUE IN ITEM 15 of 146 LBF-FT  
                  \*APPLY TORQUE IN TEM 8 OF 15 LBF-FT

NOTE 6:           GLUE SOFT LAND STOP (ITEM 14) WITH LOCTITE 222  
                  AND APPLY TORQUE 146 LBF-FT;

NOTE 7:           BETWEEN ROTATION PIN OF SWIVEL (ITEM 1) AND FLANGE  
                  PROTECTOR (ITEM 33), BX GROOVE AND BORE SHALL BE PROTECTED

(continued...)

\*\*\* FMC PRIVATE \*\*\*

FMC TECHNOLOGIES

REPORT BY: Silva, Fabiana  
P/N: P7000048060

13-OCT-2015  
PART REPORT

Page: 5 OF 5

---

ENGINEERING NOTES AND SPECIFICATIONS (Continued)

WITH BUBBLE WRAP PLASTIC

NOTE 8: MARK IN BLACK COLOR (MUNSELL N-1):  
TRACAO MAXIMA 470 TON

NOTE 9: PAINT THE TOP FACE OF ITEM 14 IN WHITE MUNSEL N9.5.

=====

DOCUMENTS LIST

DOCUMENT NUMBER	DESCRIPTION	RESTRICTION
-----PRODUCTION DOCUMENTS-----		
4067	PINTURA ANTI-CORROSIVA PARA EQUIPAMENTOS SUBMARINOS	IMAGE
LST70021325	LIST, CHECKLIST, SUBSEA - INTERVENTION/TIE-IN, FINAL INSPECTION, F/ WELL VCM, PRE-SALT MANIFOLD, MSIAG	IMAGE
TST70021227	TEST PROCEDURE, FACTORY ACCEPTANCE TEST (FAT), SUBSEA - INTERVENTION/TIE-IN, F/ WELL VCM, PRE-SALT MANIFOLD, MSIAG	IMAGE
ASY70022542	ASSEMBLY PROCEDURE, SUBSEA - TEMPLATE/MODULE/MANIFOLD, F/ PRE SALT MANIFOLDS 5IN WELL VERTICAL CONECTION MODULES	NO-SUPPLIER-LINK
-----ENGINEERING DOCUMENTS-----		
ADF70018111	ASSEMBLY DOCUMENTATION FILE, SUBSEA - INTERVENTION/TIE-IN, 5.1/8 WELL VCM F/ PRE-SALT MANIFOLD MSIAG	NO-IMAGE
SPC70016285	SPECIFICATION, SUBSEA - INTERVENTION/TIE-IN, VERTICAL CONECTION MODULES AND UMBILICAL TERMINATION MODULES, FOR PRE SALT MANIFOLD - MSIAG	NO-SUPPLIER-LINK
-----SERVICE DOCUMENTS-----		
ICP70021819	INSTALLATION/COMMISSIONING PROCEDURE, SUBSEA - TEMPLATE/MODULE/MANIFOLD, PROCEDIMENTO DE INSTALAÇÃO DE MCV DE POÇO, PROJETO MSIAG MANIFOLD PRÉ-SAL	NO-SUPPLIER-LINK

=====END OF PART=====

NOTES: (NOTAS:)  
SEE PART REPORT MISC NOTES (VER NOTAS DIVERSAS NA DB1)

