AMTROL-ALFA

Qualidade e Ambiente/*Quality and Environment*

Declaração de Conformidade do Fabricante para a Concepção, Fabrico, Inspecção de Garrafas de Gas Transportáveis

Manufacturer's "Declaration of Conformity" for Design, Manufacture, Inspection of Transportable Pressure Equipment.

Documento N.º
Document N.º 0070_16

Fabricante ***Manufacturer***	Amtrol – Alfa Metalomecânica, S.A.
Morada ***Address***	Apartado 37 - Lugar de Pontilhões - Brito - 4801-909 Guimarães
Cliente ***Client***	ELTON INTERNATIONAL TRADING COMPANY SA
Morada ***Address***	Thesi Drasseza Avlona / Attica, GR-190 11, GR

Descrição das Garrafas de Gas Transportáveis/*Transportable Pressure Equipment Description :*

Identificação (N.º Série): ***Identification (Serial N.º)***	611905 - 612404	**Lote N.º** ***Batch N.º***	0024_16
Desenho Geral N.º ***General Drawing N.º***	G061-03-0098	**Ano de Fabrico** ***Year of Manufacture***	2016

Volume ***Volume***	61	**Litros** ***Litres***	**Pressão de Concepção** ***Design Pressure***	42	**bar**
Conteúdo ***Contents***	*Gases Refrig./Refrig. Gases*		**Temperatura de Concepção** ***Design Temperatura***	--	**ºC**
Corrosão Permitida ***Corrosion Allowance***	**--**		**Capacidade Valvula Segurança** ***Safety Valve Capacity***	--	**bar**
Pressão Valvula Segurança ***Safety Valve Set Pressure***	--	**bar**	**Pressão de Teste** ***Test Pressure***	42	**bar**

Norma de Construção ***Construction Standard***	EN13322-1:2003+A1:2006 / (Joint Effic.) J=0.9 + Directive 2010/35/UE (TPED) + ADR/RID 2015	**Data** ***Date***	01/2016

Concepção/*Design*

Organismo Notificado para Aprovação de Concepção ou Aprovação Modelo
Notified Body for Design Approval or Type Approval

Nome ***Name***	SGS United Kingdom Limited - Industrial Services
Morada **Address**	Station Road, Oldbury, West Midlands, B69 4LN, United Kingdom

N.º Identificação ON ***NB Identification N.º***	0353	**Certificado N.º** ***Certificate N.º***	152165/TA/01	**Data** ***Date***	

Fabrico/*Manufacture*

Organismo Notificado para Fabrico e Inspecção
Notified Body for Manufacture and Inspection

Nome ***Name***	In-House Inspection

AMTROL-ALFA tem implementado o IN-HOUSE INSPECTION SERVICE de acordo com o ponto 1.8.7.6 do ADR/RID 2013 para supervisão do fabrico, inspecção inicial e ensaios certificado pelo organismo notificado TÜV Rheinland com o certificado nº 01 202 322/IS-110036-T.

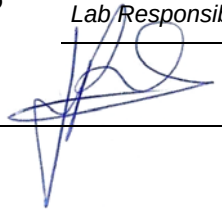
AMTROL-ALFA has implemented an IN-HOUSE INSPECTION SERVICE according to 1.8.7.6 ADR/RID 2013 with supervision of manufacture, initial inspections and testes certified by TÜV Rheinland with certificate nº 01 202 322/IS-110036-T.

Os abaixo assinados declaram que a concepção, fabrico e inspecção de garrafas de gás transportáveis estão conformes com os requisitos da Directiva de Garrafas de Gas Transportáveis (2010/35/UE e ADR 2015).
The undersigned declares that the design, manufacture and inspection of this transportable pressure equipment conform to the requirements of the Transportable Pressure Equipment Directive (2010/35/UE and ADR 2015).

Data: ***Date:***	19/02/2016	**Nome:** ***Name:***	Joaquim Jorge	**Posição** ***Position***	*Lab Responsible*

Simbolo Fabricante ***Manufacturer's Stamp*** AMTROL-ALFA Qualidade e Ambiente

Assinatura ***Signature***



Certificate

IS - Inhouse-Inspection-Service
for transportable pressure equipment

Certificate no.: 01 202 322-IS-110036-T

Applicant:

AMTROL-ALFA Metalomecanica, S.A.
Apartado 37 Brito,
4901-861 Guimaraes-Portugal

The applicant implemented an inhouse-inspection-service, according to 1.8.7.6 ADR/RID 2013.
The demands on the personnel, the equipment and the quality system are fulfilled.

It is confirmed that the inspections performed on the products of the applicant are in compliance with the requirements of ADR/RID 2013.

The applicant is entitled to affix the registered mark of the Xa-body TÜV Rheinland.

Scope:

- **supervision of manufacturing**
- **initial inspection and tests**
- **periodic inspection**
- **exceptional checks**

Report no.: This authorisation is based on the results of the audit, dated at 2014/03/13; order number 124301518.

Valid until: This authorisation is valid until **2017/05/22.**

TÜVRheinland® 0035 Notified Body

Cologne, 2014/05/23

Erik Holzhauser, M.Sc.

TÜV Rheinland Industrie Service GmbH
Am Grauen Stein, D-51105 Köln

Notified body according to dir. 2010/35/EU and ADR/RID, accredited according to EN ISO/IEC 17020 by DAkkS and ZLS.

www.tuv.com

TÜVRheinland®
Precisely Right.

10/093 4.08 E A4 ® TÜV, TUEV and TUV are registered trademarks. Utilisation and application requires prior approval.

AMTROL-ALFA

In-House Inspection

RELATÓRIO IS - INSPECÇÃO INICIAL E ENSAIOS de acordo com a Directiva 2010/35/UE e/ou ADR/RID 2015 (1.8.7.6)

IS REPORT - INITIAL INSPECTION AND TESTS according Directive 2010/35/UE and/or ADR/RID 2015(1.8.7.6)

Lote nº/ *Batch nº*	0024-16	Data/ *Date*	22-01-2016	OE/ OF	13859-1	Modelo/ *Model*	G061
Aprovação Modelo/ *Type approval certificate*	011G061	NºSérie/ *Serial nº*	611905	Até nº/ *Until nº*	612404	Cliente/ *Costumer*	ELTON
Norma de Construção/ *Constrution Standard*	EN13322-1:2003+A1:2006+TPED(2010/35/EU)+ADR 2015	Desenho/ *Drawing*	G061-03-0098(b)			Pressão de teste/ *Pressure test*	42 bar

Itens Verificados/ *Checked Items*		Referência/ *Reference*	Registo/ *Register*	Conformidade/ *Conformity*
Superfície material base/ *Surface of base material*		ISO 8501-1-2007		OK
Certificado material base/ *Certificate of base material*		EN 10120		OK
Certificado material adicional/*Certificate of additional material*		EN 10083		OK
Calibração Equipamentos/*Equipments Calibration*				OK
Certificados Soldadores/ *Welders Certificate*	Circunferencial/*Circunferencial*	--------		--------
	Longitudinal/ *Longitudinal*	--------		--------
	Bolacha/ *Bung*	--------		--------
Procedimento de soldadura/ *Welding procedure*	Circunferencial/*Circunferencial*	EPS012SC1204		OK
	Longitudinal/ *Longitudinal*	EPS012SS1103		OK
	Bolacha/ *Bung*	EPS012SB1112		OK
Espessura Mínima Coquilha/ *Dome minimum thickness(mm)*		2,30 Min.	2,55	OK
Espessura Mínima reservatório/*Shell minimum thickness(mm)*		3,00 Min.	3,10	OK
Altura Mínima do rebaixo/ *Height minimum of recess(mm)*		9 m/m Min.	15,10	OK
Inspecção visual da soldadura/ *Visual inspection of welding*		EN 970		OK
Diâmetro da garrafa/ *Cylinder diameter(mm)*		300±1 m/m Min.	300	OK
Altura do corpo/ *Body heigh(mm)*		976 m/m Min.	982	OK
Capacidade da garrafa/ *Cylinder Capacity (l)*		61L Min.	63,10	OK
Tratamento térmico/ *Heat treatment(°C/min.)*		890º a 920º		OK
Ensaio Hidráulico/ *Hydraulic Test(bar/seg)*		42/30	42/30	OK
Rosca da bolacha/ *Thread of the bung*		25E/ISO11363-1	25E/ISO11363-1	OK
Aspecto interno e externo/ *Internal and external aspect*		ADR/Standard Const.		OK
Marcas/ *Marks*		ADR/Proj.		OK
Ensaios/ *Tests*	Macrográficos/ *Macrografic*	--------		--------
	Mecânicos/ *Mechanical(N/mm ²)*	Constrution Standard	Test Report	OK
	Hidráulicos/ *Hydraulic(bar/l)*	Constrution Standard	Test Report	OK
	Radiográficos/ *Radiografic*	Constrution Standard	Test Report	OK
	Fadiga/ *Fatigue(nº ciclos/bar)*	Constrution Standard	Test Report	OK

Observações
Observations

Equipamentos/Próxima Calibração: M.1.308 /03-2016
Equipments/Next Calibration M.1.309 /03-2016
M.1.310 /03-2016

Soldadores/ *Welders:* Nº.649 Nº.163 Nº.1201
Nº.203 Nº.449
Nº.138 Nº.483

Outros/ *Others*:

O inspector IS supervisiona a produção e verifica todos os requisitos, rastreabilidade, qualificação do pessoal e ensaios de produção de acordo com o ADR/RID 2015 e ISO 9001:2008. OK **(OK/NOK)**

The inspector IS oversees the manufacture and check all the requirements, traceability, personnel qualification and tests of manufacture according to the ADR/RID 2015 and ISO 9001:2008.

Técnico/ *Technician*,

Jose Maria Oliveira

Data/ *Date*

22-01-2016

AMTROL-ALFA

Qualidade e Ambiente/*Quality and Environment*

ENSAIOS HIDRÁULICOS/*HYDROSTATIC TEST*

Cliente/Utilizador: *Client/User* ELTON | Lote n.º *Batch n.º* 0024-16 | Modelo: *Type* 011G061 | Norma Construção: *Construction Standard* EN 13322

Equipamento: *Equipment* ER01

No caso de Ensaios pela Norma CFBP MA.CD/ST.01 ou exigência Cliente emitir o Anexo I/*In case of CFBP MA.CD/ST.01 Standard or Client requirement issue the Annex I*

N.º Série *Serial n.º*	Peso (1) *Tare Weight*			Capacidade *Volumetric Capacity*	Expansão volumétrica *Hydrostatic test at*			Rotura (instab. plástica) *Burst Test*				Instab. Elastica *Elastic Instabil.*	Simbolo Rotura (*) *Burst Symbol (*)*	Obs.:
					psi	bar		Pressão *Pressure*		Dilatação *Expansion*				
	Vazia *Empty*		Cheia *Full*		Total *Total Expansion*	Permanente *Permanent Expansion*	%	(bar)	(psi)	(l)	%			
	(lb)	(kg)	(kg)	(kg) (l)	(ml)	(ml)						(bar)		
612029	---	27,570	90,678	63,11	---	---	---	105,40	---	14,50	23,0	---	B	
	---				---	---	---		---			---		
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	---				---	---	---		---			---		
Especificação Min/ Min ***Specification***				**61,00**				**94,50**			**20,00**			

Nota (1): para transformar kg de água em litros mutiplicar por: 1,0000

Note (1): to convert kg of water in litre multiply by:

Data: *Date* 19-01-2016 | Operador: *Lab Worker* André | Entidade Inspectora *Inspector* IN-HOUSE INSPECTION SERVICE | Aprovado/Approved X | Rejeitado/Rejected

(*) O ensaio de rotura não deve provocar nenhuma fragmentação da garrafa. A fractura não deve fazer aparecer defeito caracterizado no metal. */No fragmentation of the cylinder. The main fracture must not show any brittleness, i.e. the edges of the fracture must not be radial but must be at an angle to a diametral plane and display a reduction of area throughout their thickness. The fracture must not reveal a clear defect in the metal.*

B -Boa fractura comprimento longo/Good fracture Long lenght **b** - Boa fractura comprimento curto/Good fracture short lenght **M** - Má fractura/Bad fracture

Cliente/Utilizador: *Client/User* ELTON | Lote n.º *Batch n.º* 0024-16 | Modelo: *Type* 011G061 | Norma Construção: *Construction Standard* EN 13322

Equipamento: *Equipment* ER01

No caso de Ensaios pela Norma CFBP MA.CD/ST.01 ou exigência Cliente emitir o Anexo I/*In case of CFBP MA.CD/ST.01 Standard or Client requirement issue the Annex I*

N.º Série *Serial n.º*	Peso (1) *Tare Weight*			Capacidade *Volumetric Capacity*	Expansão volumétrica *Hydrostatic test at*			Rotura (instab. plástica) *Burst Test*				Instab. Elastica *Elastic Instabil.*	Simbolo Rotura (*) *Burst Symbol (*)*	Obs.:
					psi		bar	Pressão *Pressure*		Dilatação *Expansion*				
	Vazia *Empty*		Cheia *Full*		Total *Total Expansion*	Permanente *Permanent Expansion*	%	(bar)	(psi)	(l)	%			
	(lb)	(kg)	(kg)	(kg) (l)	(ml)	(ml)						(bar)		
612306	---	27,536	90,654	63,12	---	---	---	106,30	---	15,00	23,8	---	B	
	---				---	---	---		---			---		
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Especificação Min/ Min ***Specification***				**61,00**				**94,50**			**20,00**			

Nota (1): para transformar kg de água em litros mutiplicar por: 1,0000

Note (1): to convert kg of water in litre multiply by:

Data: *Date* 20-01-2016 | Operador: *Lab Worker* SEBASTIÃO | Entidade Inspectora *Inspector* IN-HOUSE INSPECTION SERVICE | Aprovado/Approved X | Rejeitado/Rejected

(*) O ensaio de rotura não deve provocar nenhuma fragmentação da garrafa. A fractura não deve fazer aparecer defeito caracterizado no metal. */No fragmentation of the cylinder. The main fracture must not show any brittleness, i.e. the edges of the fracture must not be radial but must be at an angle to a diametral plane and display a reduction of area throughout their thickness. The fracture must not reveal a clear defect in the metal.*

B -Boa fractura comprimento longo/Good fracture Long lenght **b** - Boa fractura comprimento curto/Good fracture short lenght **M** - Má fractura/Bad fracture

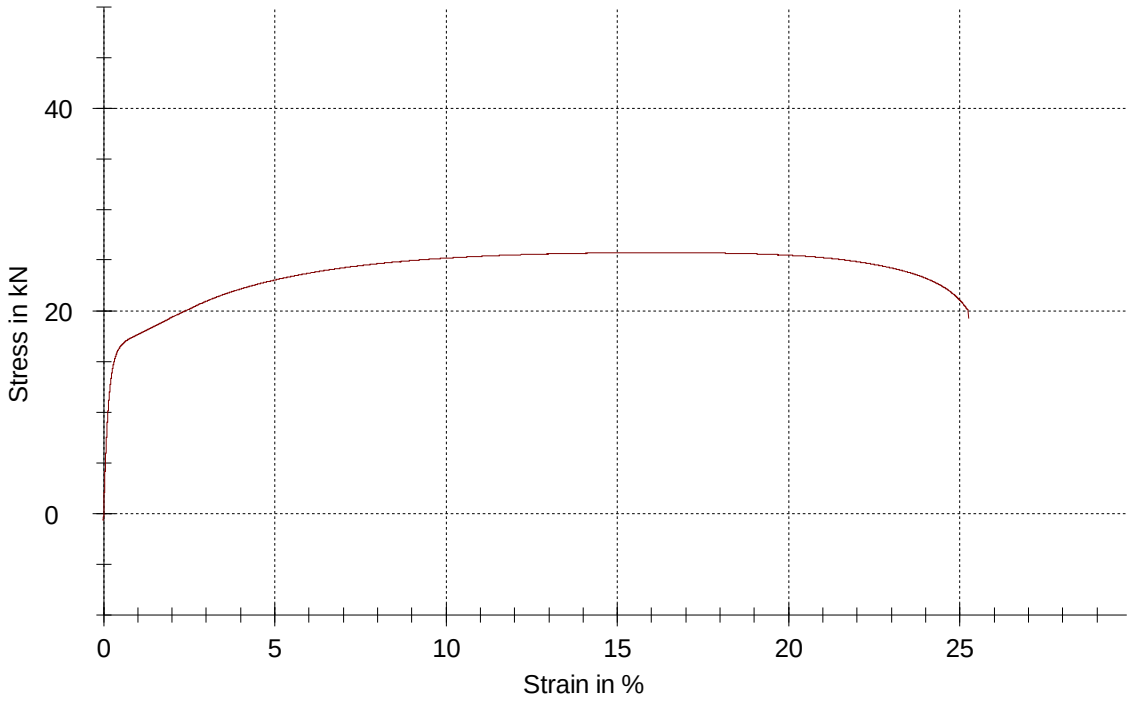
Ensaios Mecânicos/Mechanical Test

Cliente/Customer	: ELTON
Lote/Batch	: 0024/16
Modelo/Type	: 011G061
1º e Último número de série/Range Serial N.º	: 611905 - 612404
Norma Construção/Construction Standard	: EN13322 (ISO6892-1)
Material/Material	: P310NB
Encomenda/Order N.º	: 13859/1
Operador/Tester	: J.MARQUES
Entidade Inspectora/Notified Body	: IN-HOUSE INSPECTION SERVICE
OBS	:
Data/Date	: 20-01-2016

Resultados/Results:

Legends	Nr	Gar/Cyl N.º	Prov/Specn Type	S0 mm²	L0 mm	EMod GPa	Rp 0.2 MPa	Rm MPa	Along/Elong %
	Max.						---	550,00	---
	Min.						310,00	460,00	21,00
	1	612194	B	49,85	79,99	200,36	312,26	516,16	25,25

Series graph:



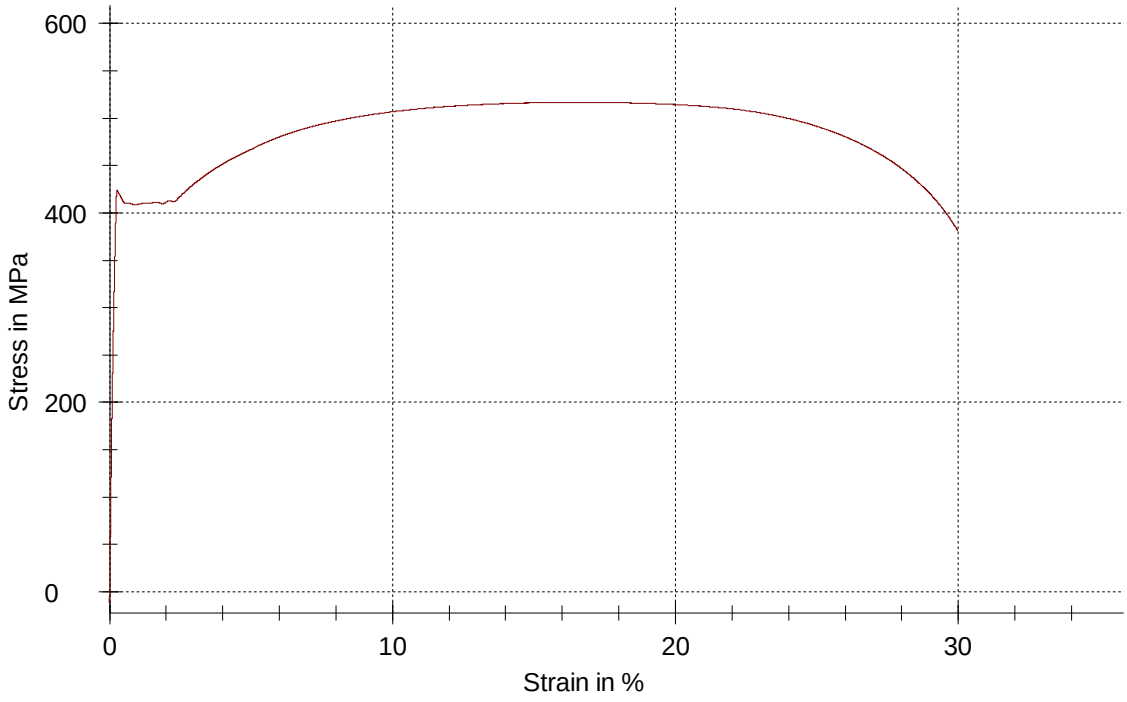
Ensaios Mecânicos/Mechanical Test

Cliente/Customer	: ELTON
Lote/Batch	: 0024/16
Modelo/Type	: 011G061
1º e Último número de série/Range Serial N.º	: 611905 - 612404
Norma Construção/Construction Standard	: EN13322 (ISO6892-1)
Material/Material	: P310NB
Encomenda/Order N.º	: 13859/1
Operador/Tester	: J.MARQUES
Entidade Inspectora/Notified Body	: IN-HOUSE INSPECTION SERVICE
OBS	:
Data/Date	: 20-01-2016

Resultados/Results:

Legends	Nr	Gar/Cyl N.º	Prov/Specn Type	S0 mm²	L0 mm	EMod GPa	Rp 0.2 MPa	Rm MPa	Along/Elong %
	Max.						---	550,00	---
	Min.						310,00	460,00	28,00
	1	612194	A	39,22	35,35	253,01	418,32	516,86	29,98

Series graph:



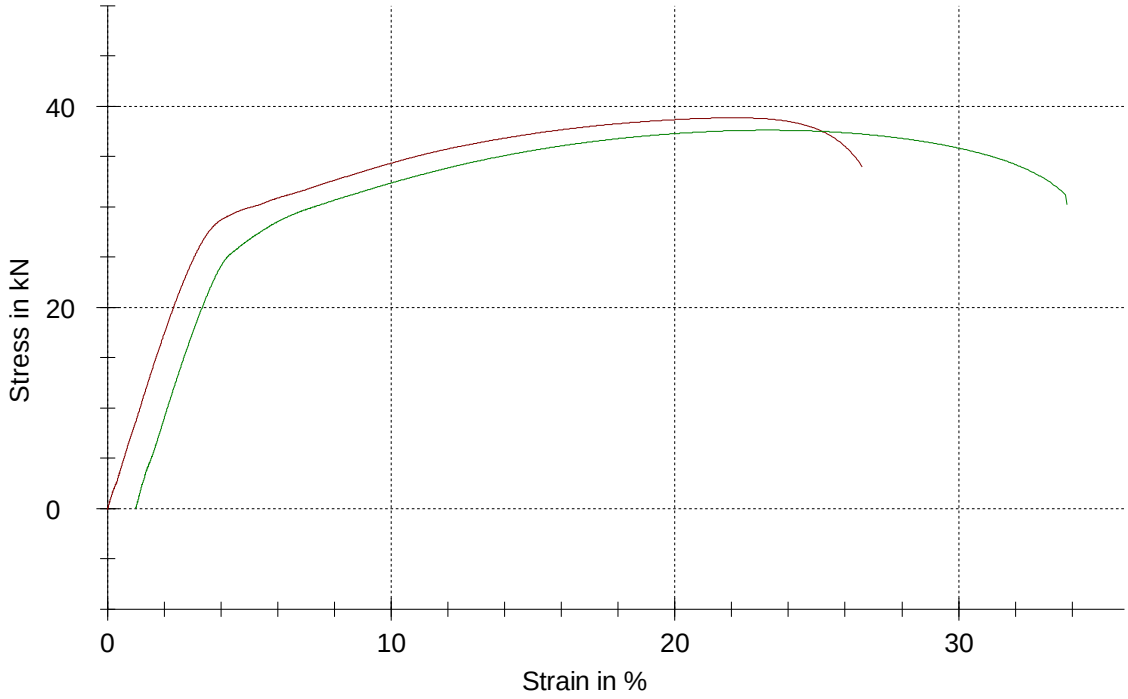
Ensaios Mecânicos/Mechanical Test

Cliente/Customer	: ELTON
Lote/ Batch	: 0024/16
Modelo/Type	: 011G061
1º e Último N.º Série/Range Serial N.º	: 611905 - 612404
Norma Construção/Construction Standard	: EN13322 (EN ISO 4136:2012)
Material/Material	: P310NB
Encomenda/Order N.º	: 13859/1
Operador/ Operator	: J.MARQUES
Entidade Inspectora/Notified Body	: IN-HOUSE INSPECTION SERVICE
OBS	:
Data/Date	: 20-01-2016

Resultados/Results:

Legends	Nr	Gar/Cyl N.º	Prov/Spec	S0 mm²	Rm MPa
	Max.				550,00
	Min.				460,00
	1	612194	C	75,85	511,88
	2		D	70,17	535,86

Series graph:



AMTROL-ALFA

Qualidade e Ambiente/Quality and Environment

Ensaios de dobragem e macroscopia/ *Bend and macroscopic Tests*

Relatório nº/ *Report nº*:
Cliente/ *Customer:* **ELTON**
Lote/ *Batch:* **0024/16**
Modelo/ *Type:* **011G061**
1º e Último número de série/ *Range Serial Nº:* **611905 - 612404**
Norma Construção/ *Construction Standard:* **EN 13322-1**
Material/ *Material:* **P310NB**
Encomenda/ *Order Nº:* **13859/1**
Operador/ *Tester:* **J.MARQUES**
Data/ *Date:* **20-01-2016**
Entidade Inspectora/ *Notified Body:* **IN-HOUSE INSPECTION SERVICE**
OBS:

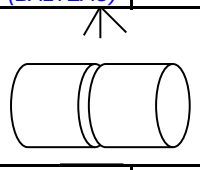
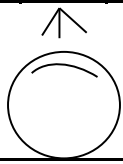
N. Garrafa/ *Serial N.º*	Tipo Provete/ *Specimen Type*	Resultados Ensaios/ *Test Results*	N. Garrafa/ *Serial N.º*	Tipo Provete/ *Specimen Type*	Resultados Ensaios/ *Test Results*	N. Garrafa/ *Serial N.º*	Tipo Provete/ *Specimen Type*	Resultados Ensaios/ *Test Results*
612194	E	GOOD						
	F	GOOD						
	G	GOOD						
	H	GOOD						
	MACRO	GOOD		MACRO			MACRO	
N. Garrafa/ *Serial N.º*	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***
	MACRO			MACRO			MACRO	
N. Garrafa/ *Serial N.º*	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***
	MACRO			MACRO			MACRO	
N. Garrafa/ *Serial N.º*	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***	**N. Garrafa/ *Serial N.º***	**Tipo Provete/ *Specimen Type***	**Resultados Ensaios/ *Test Results***
	MACRO			MACRO			MACRO	

Punção (raio) *Punction (radius)*	3.5

AMTROL-ALFA

Qualidade e Ambiente/Quality and Environment

Relatório de Controlo Radiográfico Nº / *X Ray Report Nº* 0019/16

Cliente: *Cliente:*	ELTON				Modelo: *Type:*	011G061				Lote nº *Batch nº*	0024/16			
Documento Referência: *Reference Documente:*	EN13322					Documento Aceitação: *Aceptable Document:*	EN13322							
Material *Material*	Proc. Soldadura *Weiding Proc.*	Chanfro *Loggle*	Espes. Radio. *Radio.Thick. (mm)*	Espes. Interp. *Interpret. Thickness (mm)*	Densidade *Density*	Ecrans (mm)	Sensiblidade *Sensibility*	IQI	Ug (mm)	Equipamento *Equipment*	Intensidade *Intensity (mA)*	Tensão *Voltage (kv)*	Filme *Film*	DFF 1 (mm)
P310NB	S.A.S S.A.W	C/ REBAIXO E TOPO A TOPO WITH JOGGLE AND BUTT WELD	10,4	6,2	>2	0,1	W15	13 FE EN	0,054	RAIO X (BALTEAU) *X-RAY (BALTEAU)*	10	130	KODAK MX125	500
Diâmetro Focal *Focal Diameter (mm)*	Tempo Exposição *Exposition Time (s)*	OBS						Téc. *Tec.*	1 		2 			
(3X3) 4,24	40													

Maquina *Machine*	Garrafa nº *Cylinder nº*	Soldador nº *Welder nº*	Soldadura *Welding*	Raio X X Ray	Interpret.	Decisão *Decision*	Tec.	OBS
SC08	611912	203	SUP.	0 - 1		-	1	
SC08		1130	INF.	0 - 1		-	1	
SC39	612109	186	SUP.	0 - 1		-	1	
SC39		163	INF.	0 - 1	L	/	1	
SC09	612117	163	SUP.	0 - 1	L	/	1	
SC09		527	INF.	0 - 1		-	1	

Decisão *Decision*	
Bom / Good	-
Aceitável/Aceptable	/
Reparar/Repair	+
Aceit.A Rep/Acep. A Rep.	x
Rejeitar/Reject	o

Amtrol-Alfa

Técnico
Technician

Data
Date 20-01-2016

Validado por:
Approved by:

Data
Date

Nota 1/Note 1 min. DFO = DFF-ØC Cilindro / min. DSO = DSF-Øc Vessel
(ASME CODE) max. DOF = espessura + 4 /max. DOF = Thickness + 4mm

Chave de Interpretação / Interpretation Key		
INCLUSÕES GASOSAS/*GAS INCLUSIONS*	Esféricas/*Pore*	Aa
	Vermiculares/*Worm-hole*	Ab
INCLUSÕES SÓLIDAS/*SOLID INCLUSIONS*	Quaisquer/*Anyone*	Ba
	Alinhadas/*Linear*	Bb
	Alternadas/*Clustered*	Bc
	Fluxo/*Flux*	G
	Metais/*Metallic*	H
	Oxidos/*Oxide*	J
DESC. GEOMÉTRICAS/*GEOMETRIC*	Rebarbagem/*Griding*	Bd
	Cruzamento/*Crossing*	Bf
	Bordos Queimados/*Undercut*	F
	Sulcos superficiais/*Intermittent undercut*	Fa
	Sulcos na raíz/*Shrinkage undercut*	Fb
	Excesso de penetração/*Excess*	Fd
	Excesso de metal/*Excess weld metal*	Fc
	Abatimento na raíz/*Root concavity*	Fe
	Cratera/*Crater*	K
	Expulsão de metal/*Melt through*	L
DESC. PLANARES/*PLANNING DESCONT.*	Fissura longitudinal/*Longitudinal crack*	Ea
	Fissura transversal/ *Transverse crack*	Eb
	Fissura de cratera/ *Crater crack*	Ec
	Falta de fusão/ *Lack of fusion*	C
	Falta penetração/ *Lack of penetration*	D
OUTROS/*OTHER*		Z