



## CERTIFICATO DI COLLAUDO - ABNAHMEPRUEFZEUGNIS - INSPECTION CERTIFICATE - CERTIFICAT DE RECEPTION

In conformità a : **EN 10204 (2004) , 3.1 / ISO 10474 (2013) , 3.1**

Certificato nr. **MEST259765 / 2018 /**

Nach/According to/Selon

Prüfung/Test/Essai

Cliente / Besteller/Purchaser/Client  
**VALBRUNA U.K. LTD.**  
**OLDBURY ROAD**  
**B70 9BH - WEST BROMWICH B70 9BH GB - GB**

Stato di fornitura : **Hot rolled - Annealed COLD PROCESSED**  
 Lieferzustand  
 Delivery state  
 Etat de livraison

Produttore :  
 Hersteller/Item/Usine productrice

Ordine nr: **802054052 Sheffield**  
 Bestell  
 Your order  
 Commande

Tipo di Elaborazione: **E+AOD**  
 Erschmelzungsart  
 Melting process  
 Mode d'elaboration

**ACCIAIERIE VALBRUNA S.P.A.**

Marchi di Fabbrica:  
 Zeichen des Lieferwerkes  
 Trade marks  
 Sigles de l'usine productrice



Conferma ordine nr: **EI18001478**  
 Werks/Our Order/Ref nr.

Qualità: **1.4401/1.4404/316/316L**  
 Werkstoff/Grade/Nuance

Punzone del Collaudatore:  
 Stempel des Werksachverständigen  
 Inspector's stamp/Poinçon de l'essayeur

**MR**

Avviso di Spedizione: **D-VI18016354**  
 Lieferanzeige/Packing list/B.L.

Marca: **MVAPML MAXIVAL**  
 Markenbezeichnung  
 Brand / Nuance

Punzonatura: **1.4401/4/316/L**  
 Kennzeichnung  
 Marking  
 Marquage

### SPECIFICHE :

Note:

Anforderungen / Requirements / Exigences

Aufzeichnungen / Notes / Notes

VAL STOCK 2010 1.4404/316L A,CF  
 AISI 316  
 AISI 316L  
 AMS 5648 M S31600 A  
 AMS 5653 H S31603 A,CF  
 ASME SA182 2017 S31600 A (0)  
 ASME SA182 2017 S31603 A (1)  
 ASME SA276 2017 S31600 A,CF (2)  
 ASME SA276 2017 S31603 A,CF (3)  
 ASME SA479 2017 S31600 A (4)  
 ASME SA479 2017 S31603 A (5)  
 ASTM A182 2016 S31600 A (6)  
 ASTM A182 2016 S31603 (7)  
 ASTM A262 2015 PRACTICE E  
 ASTM A276 2017 S31600 A,CF  
 ASTM A276 2017 S31603 A,CF  
 ASTM A314 2015 S31600  
 ASTM A314 2015 S31603  
 ASTM A370 2017 .  
 ASTM A479 2018 S31600 A  
 ASTM A479 2018 S31603 A  
 ASTM E10 2017 .  
 ASTM E8 2016A .  
 EN 10088-3 2014 1.4401 A,CF  
 EN 10088-3 2014 1.4404 A,CF  
 EN 10272 2007 1.4401 A,CF  
 EN 10272 2007 1.4404 A,CF  
 ISO 148-1 2016 .  
 ISO 6506-1 2005 .  
 ISO 6892-1 2016 .  
 NACE MR0103 2015 S31600 A (8)  
 NACE MR0103 2015 S31603 A (9)  
 NACE MR0175 2015 S31600 A (A)  
 NACE MR0175 2015 S31603 A (B)  
 QQ-S-763 F 316 A,CF  
 QQ-S-763 F 316L A,CF

(0)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.

(1)Section II Part A 2017 EDITION For products machined directly from bar refer to ASME SA479.

(2)Section II Part A 2017 EDITION

(3)Section II Part A 2017 EDITION

(4)Section II Part A 2017 EDITION

(5)Section II Part A 2017 EDITION

(6)For products machined directly from bar refer also to ASTM A479.

(7)For products machined directly from bar refer also to ASTM A479.

**F13994**  
**M26 x 1.5 Metric Male x Male Adaptor 10K**  
**(18L)**

(8)ANSI/NACE MR0103/ISO 17945 November 23, 2015

(9)ANSI/NACE MR0103/ISO 17945 November 23, 2015

(A)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

(B)ANSI/NACE MR0175/ISO 15156-3, third edition November 23,2015

Tolleranza: h11 - DIN668/EN10278

Tolleranza/Allowance/Tolerance

Pos. nr. Pos. nr. Item nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimension Dimension	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pieces	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot nr. Lot nr.
0020	Hexagon	32,000	3160/ 3160	276587		1017,0	708711820

Vicenza, **08/06/18**

VCQ008 - MEST259765

(Mod. MCE2) WSPB8E5C4DC06DA7A39969AA3890B6D19

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

**M.RIZZOTTO**

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### TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbarem produkt test a l'etat de fourniture Prueba sobre el material así como entregado

1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

TEST	Provetta/ Probestab Specimen/Eprouvette Larg.diam Spess. Breite Diam. Dicke Width Diam. Thickness Larg. diam. epais mm	°C	Posiz. Saggio Probestage Location Emplacement 1)	Snervamento		Resistenza	Allungamento		Strizione		Resilienza			Durezza	
				Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Streckgrenze Yield Stress Limite elastique Rp 1% N/mm2	Zugfestigkeit Tensile strength Resistance à traction Rm N/mm2	Bruchdehnung Elongation Allongement A5 %	E 4d %	Z %	RA %	KV J	196	191	195	221
Valori richiesti Anforderungen/Required values Valeurs demandées		min max		207	235	517 900	20	30	-	50	100			140 235	
A	10	20	L	512	563	669	46	48	69	69	196	191	195	221	

### TEST ALLO STATO DI FORNITURA

Test on delivery condition / Prüfung auf lieferbarem produkt / Test a l'etat de fourniture / Prueba sobre el material así como entregado

TEST	min	max
A Grain size for ASTM E112		5

Mechanical properties according to ASTM A370.

Brinnell hardness according to ASTM E10

Tensile testing according to ASTM E8

Impact testing according to ISO 148-1

Brinnell hardness according to ISO 6506-1

Tensile testing according to ISO 6892-1

### Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max	0,030	1,00	1,25 2,00	16,50 18,00	2,00 2,50	1,00	10,00 13,00	0,040	0,030	0,100	-	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %						
276587	0,016	0,46	1,48	16,83	2,10	0,57	10,02	0,029	0,025	0,059						

### Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: ASTM A262-Practice E

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	<b>SATISFACTORY</b>

Vicenza, 08/06/18

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Test standard: ASTM A262-Practice E

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Intergranular corrosion	Sensitization	15	boil	180	5	Absence of cracks	<b>SATISFACTORY</b>

### Corrosion test in 16% sulfuric acid and copper sulfate solutions

Test standard: UNI EN ISO 3651-2 Method A

Test	Heat treatment before test	Length of Period (h)	Test temp (°C)	Bend Angle (°)	Ø spindle (mm)	Result of visual inspection at 20 x magnification after bend test	Result
Intergranular corrosion	Sensitized T1	20	boil	90	5	Absence of cracks	<b>SATISFACTORY</b>

Reduction ratio = 36,8 : 1

Sono state soddisfatte tutte le condizioni richieste  
 Die gestellten Anforderungen sind it. Anlage erfüllt  
 The material has been furnished in accordance with the requirements  
 Le matériel à été trouvé conforme aux exigences

Controllo antimescolanza: OK  
 Verwechslungsprüfung: spectralanalytisch durchgeführt  
 Antimixing testing performed: OK  
 Contrôle antimélange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze  
 Besichtigung und Ausmessung: ohne Beanstandung  
 Visual inspection and dimensional checks:satisfactory  
 Contrôle visuel et dimensions: satisfaisant

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

### QUALITY MANAGEMENT SYSTEM CERTIFIED BY LLOYD'S REGISTER ACCORDING TO ISO 9001 : 2015, IATF 16949 : 2016, AS 9100D

The Quality Management System is Certified acc. Pressure Equipment Directive "[97/23/EC]" Annex 1,s.,4.3 and 2014/68/EU by TUEV and LLOYD`S  
 Any act of tampering, modification, alteration, counterfeiting and/or falsification and/or any other action which modifies the contents of this test certificate shall constitute a violation of applicable civil and criminal laws. Acciaierie Valbruna shall protect its rights and interests before any competent court, authority and jurisdiction.

Maxival and/or Valplus grades/products are manufactured with ladle techniques to control composition, distribution, size and shape of non-metallic inclusions for improved machinability.

The supplied product conforms to requirements expressly requested by the purchaser and conforms to requirements specified by certified norms and standards. Should the product be used for more severe, critical and/ or in any case different applications than those the material is generally intended for, any different and/or supplementary requirements shall be specifically demanded, at least, upon order of the Product by the Purchaser. Acciaierie Valbruna SpA shall not be responsible for any improper use of the Products.

Vicenza, 08/06/18

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