



CD 22842A

C074648

CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd.
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Purchaser - Besteller - Acheteur ASA Alloys Div of CSM ULC 20 Challenger Crescent Sherwood Park Alberta T8H 2R1 Canada	Inspection Certificate Abschreibungsnummer Certificat de réception:	DIN 50049 3.1 EN 10204	Cert No. Zeugnis Nr. Cert No.:	133198	Date: Datum: Date:	21/01/13
	Customer Order No: Kundenbestellnummer: No. de Commande Client	P028593	Product Description - Beschreibung des Erzeugnisses - Description du Produit: 1 1/2" Dia x 8800lbs Electric Mill & Vacuum Degassed Stainless Steel Solution Annealed Forged ASTM A182/ASTM A479 316 Nace MR01752003			
	Our Order No. Unsere Auftr.-Nr. notre Comm. No.	49886 W138762/00	0872 LB 4070 Kgs			

Chemical Analysis - Chemische Analyse - Analyse Chimique

Cast No: Schmelznummer No. de Corder	C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Co	N									
CD22842A	.029	.46	1.48	.035	.012	16.88	2.07	10.42	.35	.21	0.06									

Heat Treatment - Warmbehandlung - Traitement Thermique

Solution annealed @ 1050 C for 4 hours & Water Quenched

Mechanical Properties - Mechanische Eigenschaften - Caractéristiques Mécaniques

Test No Probe Nr No. d'Essai	Test Dimension Probenabmessung Dimension		Proof Stress Streckgrenze Limite d'Élasticité		Tensile strength Zugfestigkeit Résistance à la traction	Elong % Bruchdehnung % Allongement %		Red of Area % Bruchflächenquerschnitt % Striction %	Impact Kerbschlagzähigkeit Ténacité				Hardness Härte Dureté	
	L	T	0.2%	1.0%		50	40		J	J	J	RT		
229391	1 1/2"	L	232 MPa	268 MPa	545 MPa		71 %	79 %					17 HRC	1
229391	1 1/2"	T	280 MPa	317 MPa	555 MPa	35 %	60 %		168	151	149	RT		

Remarks - Bemerkungen - Remarques

Ultrasonically tested to ASTM A388 and found satisfactory
 Inter-crystalline corrosion test to ASTM A262:E satisfactory
 Inter-crystalline corrosion test to BS EN ISO 3651-2 Satisfactory
 Grain size to ASTM E112 - 2
 No welding performed
 No contact with Mercury or radioactive elements
 Macrostructure see attached sheet
 Rockwell C hardness = 17
 Rockwell B hardness = 85



License No. FM 13415

RWTV
 St. No 04 701 6061

The material detailed has been manufactured and tested in accordance with the Quality Assurance system ISO 9001:2008 and the requirements of the specification/ order.

Signed:

Chris Ryall - Quality Manager

Approved signatory for
 ELG Carrs Stainless Steels

