

H403 Rev B – A182-F316/316L (UNS S31600/S31603)

Rev	Date	ECN	Issue	Prepared by	Check/Approved
B	21.03.08	311	Revised/Re-issued	TS	JS
A	09.04.91	0022	Revised Issue	A.K.	P.J./M.D.

Product Form	Standard	Grade	Acceptable Class
Forged Bar Blank Ring Closed Die Forging	ASTM A182	F316/F316L (UNS S31600/S31603)	-

Scope	This specification outlines the modifications and additional requirements to the relevant ASTM Specifications for the supply of raw material to manufacture Vector International Products (BW Hubs and Blind Hubs).								
Other Applicable Specifications	ASTM A370 (Latest Issue)								
Manufacturing Process	Manufacture shall be in accordance with ASTM A182 (Latest Issue). The full cross section shall be hot worked at a temperature above the recrystallisation temperature. The forging shall be completely wrought with no injurious imperfections as defined in ASTM A182 (Latest Issue).								
Heat Treatment	Solution Treat (1040°C) in accordance with ASTM A182 (Latest Issue).								
Chemical Analysis % (Heat)		Min	Max		Min	Max		Min	Max
	C	-	0.03	P	-	0.040	Cr	16.00	18.00
	Si	-	1.00	S	-	0.030	Mo	2.00	3.00
	Mn	-	2.00	Ni	10.00	14.00	N	-	0.10
Mechanical Properties					Min		Max		
	Tensile(R_m):				75000psi (517MPa)		-		
	Yield (R_{p0.2}):				30000psi (207MPa)		-		
	Elongation (A %):				30		-		
	R. of A (Z %):				50		-		
	Hardness:				-		-		
Test Sampling	Test coupons in accordance with ASTM A182. Test coupons shall represent the section thickness of the production parts it qualifies and shall be produced from the same material heat and shall receive the same degree of reduction as the production components.								

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	Where die forgings are used, the test coupons must be taken from the forgings. The test coupon shall be fully traceable to the component batch it qualifies. Mechanical Testing shall be carried out in accordance with ASTM A370. Full Mechanical testing is required for each heat treat batch and material cast.
Surface Finish and Quality	Forgings to be of sufficient quality for LPI check. LPI on finished machined parts to be undertaken by Vector International Ltd. Forgings to be supplied free of defects (Slag inclusions, scale, laps, cracks).
Repair of Defects	Weld repair is not acceptable.
Marking	Forgings to be marked with the Heat Number, Material Grade, and Vector Specification
Certification	Certification to be in accordance with EN10204-3.1: Chemical Analysis, Mechanical Analysis, Heat Treatment Report / Graphs, N.D.E. Reports for all forgings (if applicable), Mill Certificate (Wet Stamped). Certification to be dual certified ASTM A182 F316 / F316L and to reference Vector Specification H403.
Notes	<ol style="list-style-type: none">1. Refer to PO for supplemental details.2. Any deviation from this specification must be formally raised as a concession request prior to delivery. Certification must include concession documentation.3. Rolled Bar not permitted.