

CIRCOR					Rev
Forgings Quality Plan Requirements					1
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Quality Plan No. / Revision	Forgings QP-04 / Rev 0	
Purchase Order No.	Standard Plan- See Purchase Order	
Material Specification No. / Revision	0301101 / 15865	A350 LF2 LOW TEMP. FORGING (40KSI Yield)
	0301103 / 121281	A350 LF2 CLASS 1 LOW TEMP. FORGING (36KSI Yield)
	0350401 / 7883	A105 NORMALIZED, FORGING (40KSI Yield) (6A)
	0350402 / 15876	A105 NORMALIZED, FORGING (47 KSI Yield) (6A)
	3160001 / 15354	A182 Gr. F316 , HIGH TEMPERATURE, FORGING (6A)
	3180302 / 5956	A182 Gr. F51 (S31803) DUPLEX SS FORGING
	3275001 / 110898	A182-F53 S32750 DUPLEX SS FORGING
	4100004 / 2744	A182 F6a Cl.2 410 SS FORGING (STD.) (6A)
	4100005 / 5956	A182 F6a Cl.2 410 SS FORGING (Mod. Yield) (6A)
	4100006 / 5956	A182 F6a Cl.2 410 SS FORGING (Mod. Yield) (NACE, 6A, 60k)
	4130008 / 3534	API 6A Alloy Steel 75K Forging and HF Bar (A322) (NACE)

The following Quality Plans are mandatory and are required to be followed with this quality plan.

- ✓ MSF 1.8-10, Welding
- ✓ MSF 1.8-5, Heat Treatment
- ✓ MSF 1.8-7, Nondestructive Examination
- ✓ MSF 1.8-1, Calibration Service Quality Plan Requirements for welding, heat treatment and NDE

**MSF 1.8-1 only applies to welding, heat treatment and NDE and does not apply to dimensional inspection of forgings*

Identify Applicability
(place an X in the appropriate box)

<input checked="" type="checkbox"/>	Required procedures are submitted for review by the applicable CIRCOR API Manufacturing Location Engineering and/or Quality Departments or by a Subject Matter Expert (SME)
<input checked="" type="checkbox"/>	Required procedures are reviewed Onsite by competent CIRCOR Supply Chain location personnel
<input checked="" type="checkbox"/>	Technical audit
<input type="checkbox"/>	API Specification 6A is applicable
<input checked="" type="checkbox"/>	API Specification 6D is applicable

Purchasing agreements shall include the following provisions identified by this Quality Plan.

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Only vendors that are in good standing in the Approved Vendors List shall be used. Refer to **MSPM 1.8, Purchasing Control** for other purchasing order requirements that may be required.

1. The vendor is required to submit to **CIRCOR** for review:
 - a. A copy of the forging procedure including:
 - i. The vendor's criteria for the qualification and approval of process(es). This also includes provisions for process re-validation.
 - ii. Visual and/or NDE inspection requirements and acceptance criteria
 - iii. The vendor shall submit any proposed changes to the forging procedure to **CIRCOR** to review prior to using it on **CIRCOR** orders when changes are proposed.
 - b. Copies of the forging operator qualification records
2. The vendor shall submit any proposed changes forging procedure to for **CIRCOR** review prior to using it on **CIRCOR** orders when changes are proposed.
3. The vendor shall provide a Certificate of Conformance(s) to document:
 - a. The vendor's forging procedure number and revision level;
 - b. forging operator and evidence of meeting experience requirements
 - c. Inspection equipment current calibration (traceable to NIST or equivalent national or international standard).
 - d. Adherence to API Spec 6A and/or API 6D requirements as stated herein.
4. The following forging records are required:
 - a. The OEM material test report
 - b. Testing results post forging
5. Conformance to the requirements stated herein provides sufficient evidence of equipment approval.
6. The vendor shall not subcontract the performance of any forging activities to a sub-vendor without **CIRCOR** approval.
7. The vendor shall notify **CIRCOR** if any portions of the activities covered by this PO are going to be subcontracted, including mechanical or chemical testing.

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Quality Plan Required Documentation - FORGINGS			
Quality Plan Reference Requirement	What is required?	Circor Review Required	
		Yes	No
1a	Forging Procedure	X	
1b	Personnel Qualification Records	X	
3	Certificate of Conformance	X	
4a	OEM Material Test Report	X	
4b	Testing results post forging	X	
Attachment I	Including records specified by MSF 2.3.1-1, Supplier Documentation Requirements for this Quality Plan	X	

CIRCOR Supply Chain Location Approval Mike Evans 2/28/18
 Signature Date

CIRCOR API Manufacturing Site Approval Carlos Castillo 2/28/2018
 Signature Date

CIRCOR API Manufacturing Site Approval Tim McNeal 2/28/18
 Signature Date