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Casting Quality Plan Requirements					1
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Quality Plan No. / Revision	Casting QP-02/Rev 0	
Purchase Order No.	Standard Plan- See Purchase Order	
Material Specification No. / Revision	0250501/ 15354	A352 Gr. LCC, Q & T, CASTING, IMPACT TESTED, (6A)
	0300201 / 7883	A216 WCB or WCC, CASTING
	0300203 15354	A216 WCB CASTING (Standard – no modifications)
	0500301 15876	A487 Gr.4C , CASTING, (6A)
	9117101 15876	15876 A487/A217, Gr. CA15, CLASS B CASTING (6A 60K)
	9218001 15876	A747 Gr. CB7Cu-1 Cond. H1150DBL or H1150M (30 HRC) (17-4 PH) CASTING (6A & NACE)
	9290001 15354	A351 Gr. CF8M, CASTING, (MOD. 35,000 MIN. YIELD) (6A)
	9290002 15876	A351 Gr. CF8M, CASTING
	9290003 15876	A351 Gr. CF8M, CASTING (Contromatics Series F)
	9338001 7461	A890 6A DUPLEX SS CASTING (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 castings.*

Identify Applicability
check off the appropriate box(es)

<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.

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:

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- a. A copy of the casting procedure, including the vendor's criteria for the qualification and approval of process(es). This also includes provisions for process re-validation.
 - b. Visual and/or NDE inspection requirements and acceptance criteria.
 - c. Copies of the casting operator qualification records
 - d. Copies of calibration records for inspection, test, monitoring and measurement equipment used in the performance of casting activities
 - e. Visual inspection requirements and acceptance criteria. The vendor shall submit any proposed changes casting procedure to for **CIRCOR** review prior to using it on **CIRCOR** orders when changes are proposed.
2. The vendor shall provide a Certificate of Conformance(s) to document:
 - a. the vendor's casting procedure number and revision level; and
 - b. the casting operator and evidence of meeting experience requirements.
 3. Inspection equipment current calibration (traceable to NIST or equivalent national or international standard). The following casting records are required:
 - a. The OEM material test report; and
 - b. Test results post casting.
 4. Conformance to the requirements stated herein provides sufficient evidence of equipment approval.
 5. The vendor shall not subcontract the performance of any casting activities to a sub-vendor without **CIRCOR** approval.
 6. 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.

Quality Plan Required Documentation - CASTINGS

Quality Plan Reference Requirement	What is required?	Circor Review Required		Documentation Location
		Yes	No	
1a	Casting Procedure	X		4-MSF_Q_0.1-2_7.2-16 Vendor Technical Audit Checklist
1b	Personnel Qualification Records	X		FTP
1d	Calibration records for equipment used in casting activities - see the relevant Quality Plan for welding, heat treatment and NDE	X		FTP
2	Certificate of Conformance	X		FTP
Attachment I	Including records specified by MSF 2.3.1-1, Supplier Documentation Requirements for this Quality Plan	X		FTP

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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 D. Wood 2/28/18
 Signature Date