

DOCUMENT MASTER LIST

2009

Document Number	Description	Rev.	Date	Distribution						Quality Record Retention Time
				M R /Q A	PM	SM	FS	OM/E S	S/R Prod .M.	
001	ISO 9001 - 2008 Quality Manual	D	June 2009	X						
	PROCEDURES									
PR- 4.2A	Document Control	A	April 2009	X						
PR- 4.2B	Procedure Format & Numbering	A	April 2009	X						
PR- 4.2C	Control of Drawings and Specifications	A	April 2009	X						
PR- 4.2D	Quality Records	A	April 2009	X						
PR- 5.6	Management Review	B	April 2009	X						
PR- 6.2	Training	A	April 2009	X						
PR- 7.1	Product Realization Planning	A	April 2009	X						
PR- 7.2	Contract Review	A	April 2009	X						
PR- 7.4A	Vendor Evaluation	A	April 2009	X						
PR- 7.4B	Purchasing	A	April 2009	X						
PR- 7.5A	Process Control	A	April 2009	X						
PR- 7.5B	Preventive Maintenance	A	April 2009	X						
PR- 7.5C	Product Identification and Traceability	A	April 2009	X						
PR- 7.5D	Customer Property	A	April 2009	X						
PR- 7.5E	Preservation of Product	A	April 2009	X						
PR- 7.6	Control of Monitoring & Measuring Devices	A	April 2009	X						
PR- 8.2	Internal Audits	A	April 2009	X						
PR- 8.2A	Receiving Inspection	A	April 2009	X						
PR- 8.2B	In-process Inspection	A	April 2009	X						
PR- 8.2C	Final Inspection	A	April 2009	X						
PR- 8.3	Nonconforming Product Control	A	April 2009	X						
PR- 8.5	Corrective and Preventive Action	A	April 2009	X						

(list departments to identify where forms and documents are used)

M R/Q A - Management Representative / Quality Assurance ES – Estimating PM – Plant Manager OM - Office Manager
 FS – Foundry Superintendent M – Maintenance SM – Sales Manager S/R – Ship & Receiving
 Prod. M. – Production Manager *Forms Backed Up on Computer

DOCUMENT MASTER LIST

Issued Date 2009

Document Number	Form Description	Rev.	Date	Distribution List						Quality Record Retention Time
				M R /Q A	PM	SM	FS/M	OM/E S	S/R Prod .M.	
4.2A-1	Document Master List *	<i>D</i>	<i>May 2009</i>	X						3 YEARS
4.2A-2	Document Issue/Update/Instructions *	A	Sept 2002	X						3 YEARS
4.2A-3	Document Change Request Form *	A	Sept 2002	X						3 YEARS
4.2A-4	Technical Library *	<i>C</i>	<i>May 2009</i>	X						3 YEARS
5.6-1	Management Review Agenda/Report	A	Sept 2002	X						3 YEARS
6.2-1	Employee Training Record *	A	Sept 2002				X	X		7 YEARS
6.2-2	Employee Training Status *	A	July 2002				X	X		7 YEARS
6.2-3	Training Attendee list *	A	Sept 2002				X	X		7 YEARS
6.2-4A	Quality System Training *	A	July 2002				X	X		7 YEARS
6-2-4B	What Every Employee Needs To Know *	<i>B</i>	<i>May 2009</i>	X			X	X		7 YEARS
6.2-5	Standard Operating Procedure List *	<i>C</i>	<i>May 2009</i>				X	X		7 YEARS
6.2-6	S. O. P. *	A	March 2001				X	X		PR-4.5A
6.2-7	New Employee Check Off List *	C	Jan. 2007	X			X			7 YEARS
6.2-8	Performance Appraisal	A	June 2001	X			X			7 YEARS
7.1-1	Quality Plan	A	Jan. 2001					X		3 YEARS
7.2-1	Estimate Sheet	A	March 2001					X		7 YEARS
7.2-2	Outside Vendor Quotation Request	A	Jan. 2003					X		7 YEARS
7.2-3	Outside Vendor Quotation Request	A	March 2001					X		7 YEARS
7.2-4	Quote	A	Sept. 2004					X		7 YEARS
7.2-5	Customer Purchase Order	A	Nov. 2002					X		7 YEARS
7.2-6	Sales Order Write-Up	A	March 2001					X		7 YEARS
7.2-7	Routing <i>Sheet</i> *	A	Sept. 2004					X		7 YEARS
7.2-8	Shipping Order *	A	Sept. 2004					X		7 YEARS
7.2-9	Quote Log Book	A	Jan. 2003					X		3 YEARS
7.2-10	Permanent Card	A	March 2001					X		3 YEARS

(list departments to identify where forms and documents are used)

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DOCUMENT MASTER LIST

Issued Date 2009

Document Number	Form Description	Rev.	Date	Distribution List						Quality Record Retention Time
				M R /Q A	PM	SM	FS/M	OM/E S	S/R	
7.4A-1	Approved Suppliers List *	A	Feb. 2005							3 YEARS
7.4B-1	Purchase Order Log Book	A	Sept 2002					X		7 YEARS
7.4B-2	Purchase Order	A	Sept 2004					X		7 YEARS
7.4B-3	Purchase Requisition	B	March 2009					X		7 YEARS
7.5A-1	Order Schedule By Date *	A	March 2001				X			1 YEAR
7.5A-2	Daily Molding Schedule *	A	Sept 2004				X			3 YEARS
7.5A-3	Card Color Sheet *	A	March 2001				X			1 YEAR
7.5A-4A	Daily Melt Sheet	A	March 2001				X			1 YEAR
7.5A-4B	Mixture Calculation Sheet	A	March 2001				X			1 YEAR
7.5A-5	Foundry Heat Sheet	A	Sept. 2004				X			1 YEAR
7.5A-6	Daily Work Sheet *	A	Jan. 2003				X			3 YEARS
7.5A-7	Annealing Chart	A	March 2001		X					3 YEARS
7.5B-1	Equipment Maintenance Schedule *	B	Jan. 2005				X			3 YEARS
7.5B-3	Equipment Maintenance Log	A	March 2003				X			3 YEARS
7.5B-4	Crane Inspection & Log Sheet	A	March 2001				X			3 YEARS
7.5C-1	Material Certificate *	A	March 2001					X		7 YEARS
7.5C-2	Y-Block Traceability Form *	A	Feb. 2007					X		3 YEARS
7.5C-3	Tags (Samples)	A	March 2000		X					PR-4.2A
7.5E-1	Packing List	A	Sept. 2004					X	X	7 YEARS
7.5E-2	Shipping Labels	A	March 2001					X	X	7 YEARS
7.5E-3	Bill of Lading	A	March 2001					X	X	7 YEARS
7.6-1	Calibration List & Inspection Report *	A	Sept. 2002	X						3 YEARS
7.6-2	Calibration Label (sample)	A	Sept. 2002	X						PR-4.2A

(list departments to identify where forms and documents are used)

M R/Q A - Management Representative / Quality Assurance
 FS – Foundry Superintendent
 Prod. M. – Production Manager

ES – Estimating
 M – Maintenance
 *Forms Backed Up on Computer

PM – Plant Manager
 SM – Sales Manager
 S/R – Ship & Receiving

TMS – Castings Div.	Title: DOCUMENT CONTROL	
ISO 9001- Procedures	PR - 4.2A	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To Identify the method of providing Documentation in support of the Quality System and it's subsequent modification and control.

2 SCOPE

2.1 This Procedure applies to all documents, work instructions, forms and tags.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Document Master List, 4.2A-1
- 3.2 Document Issue/Update, 4.2A-2
- 3.3 Document Change Request Form, 4.2A-3
- 3.4 Technical Library Form, 4.2A-4

4 DEFINITIONS

None.

5 RESPONSIBILITY

5.1 The MR/QA is responsible for Document Control.

6 PROCEDURE

- 6.1 Following the identification of a need for a Quality System Document, Form, Procedure, or Work Instruction, the document is drafted and reviewed for adequacy against the identified requirement by the Plant Manager and the MR/QA.
- 6.2 Following the review and modification (as required), the MR/QA enters the document in the Document Master List. The Document Master List records the assigned document number, revision number, distribution and the record retention time if required.
- 6.3 Issue of new documents or forms must be accompanied by Document Issue/ Update Form. On receipt of the Issued Document, it is the responsibility of the recipient department to act in accordance with the Issue/Update Form instructions.
- 6.4 Should an employee request a document to be amended, a Document Change Request Form must be completed giving details of the change and the reason.
- 6.5 A Document Change Request Form is not required for the Management Representative to make necessary changes to maintain the quality manual system.

TMS – Castings Div.	Title: DOCUMENT CONTROL	
ISO 9001- Procedures	PR - 4.2A	Revision: A

- 6.6 Documents that are revised are given a new Revision letter. Paragraphs affected are italicized from the previous revision. All revision changes are listed on the Document Master List.
- 6.7 All documents of the company that are used in this Quality System are maintained by the MR/QA.
- 6.8 The Office Manager holds obsolete, Procedures, Standard Operating Procedures (SOP's) and Forms. Documents are kept in the computer of the Office Manager and backed up daily. These obsolete documents are kept until the next revision of the document is released.
- 6.9 All quality records, including obsolete documents, are clearly identified and stored to avoid deterioration, and to facilitate ease of retrieval and disposal. The records are marked with the period of activity and the date of disposal, if applicable.
- 6.10 The President controls the issue and distribution of the Quality Manual by maintaining an issue record and revision status kept in the back of the Quality Manual.
- 6.11 Procedures are listed on the Document Master List, which indicates their revision level, date of revision, and minimum retention time of obsolete documents.
- 6.12 Procedures are authorized by both the Plant Manager and the MR/QA.
- 6.13 Standard Operating Procedures are listed on the Document Master List. The Document Master List also indicates where Work Instructions are located.
- 6.14 The MR/QA and Office Manager has a lockout, password system to prevent unauthorized change to any part of the Quality System which is held on computer.
- 6.15 Controlled technical documents are listed on the Technical Library Form and are reviewed annually by the MR/QA.
- 6.16 All catalogs and reference book, in their respective department, are uncontrolled and are for reference only.

TMS – Castings Div.	Title: PROCEDURE FORMAT & NUMBERING	
ISO 9001 Procedures	PR - 4.2B	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To establish a format for ISO 9001-2008 procedures.
- 1.2 To establish a method by which existing procedures may be issued and authorized.
- 1.3 To indicate revision number and date.
- 1.4 To establish a Procedure numbering system and a form.

2 SCOPE

- 2.1 ISO 9001-2008 procedures for activities at TMS – Castings Div.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Document Master List, 4.2A-1
- 3.2 All Procedures
- 3.3 All Forms.
- 3.4 All Work Instructions

4 DEFINITIONS

- 4.1 Document Header - A pre-programmed imprint located at the top of each page of the procedures.
- 4.2 Document Footer - A pre-programmed imprint located at the bottom of each page of the procedures.

5 RESPONSIBILITY

- 5.1 Approval - All procedures must be approved by the Plant Manager
- 5.2 Originals are signed. Copies have printed initials.
- 5.3 The MR/QA is responsible for administration of all Procedures.
- 5.4 Once approved, the appropriate procedure is numbered, indexed and issued by the MR/QA.

TMS – Castings Div.	Title: PROCEDURE FORMAT & NUMBERING	
ISO 9001 Procedures	PR - 4.2B	Revision: A

6 PROCEDURE

6.1 This procedure outlines specific items to be included in a procedure. All procedures are divided into six basic parts: purpose, scope, related documents, definitions, responsibility and procedure.

6.2 Required sections:

- 6.2.1 Purpose – The “why” of the procedure;
- 6.2.2 Scope - The coverage of the procedure;
- 6.2.3 Related Documents and Forms - List of documents and forms used in the procedure;
- 6.2.4 Definitions - Unique words, phrases and terms;
- 6.2.5 Responsibility;
- 6.2.6 Procedure - Specific steps in appropriate detail;
 - 6.2.6.1 May be sub-categorized.

6.3 Format

6.3.1 The heading of the Title Page must include:

- 6.3.1.1.1 Procedure title;
- 6.3.1.1.2 Procedure number;
- 6.3.1.1.3 Revision number;
- 6.3.1.1.4 The name of the person issuing the procedure;
- 6.3.1.1.5 Date of issue (MM/DD/YY);
- 6.3.1.1.6 The name of the person approving the procedure;
- 6.3.1.1.7 Date of approval (MM/DD/YY).

6.3.2 The heading of the continuation pages must include:

- 6.3.2.1.1 The Procedure title
- 6.3.2.1.2 The Procedure number
- 6.3.2.1.3 The revision number.

6.3.3 The Document Footer includes:

- 6.3.3.1.1 Page numbers and total number of pages in the procedure.

6.4 Numbering of Procedures

6.4.1 The prefix for Procedures is "PR".

6.4.2 Three numbers are used to denote the ISO 9001:2008 numerical sequencing of the procedure. The first Quality Procedure involving Receiving Inspection and Testing (ISO 9001 4.10) would be coded as PR-4.10. Procedure relating to Inspection and Testing.

TMS – Castings Div.	Title: PROCEDURE FORMAT & NUMBERING	
ISO 9001 Procedures	PR - 4.2B	Revision: A

6.5 Changes, Revisions and Reissue

- 6.5.1 Changes in the Procedure shall result in revisions of the entire Procedure. Revision letters shall be alphabetically sequenced beginning with revision "A."
- 6.5.2 Changes to a procedure may only be made by individuals who are:
- 6.5.2.1 original signatories of the document;
 - 6.5.2.2 individuals who are currently holding the title of the original signatory of the document;
 - 6.5.2.3 supervisors of the original signatories
- 6.5.3 Any employees wishing to change a procedure must contact the MR/QA.
- 6.5.4 Current revision status, shall be included on the procedure and on the Document Master List where all Procedures are listed.
- 6.5.5 Distribution of the Procedure is controlled by department and is shown on the Document Master List.

6.6 Numbering of Forms

- 6.6.1 Four numbers are used to denote the ISO 9001-2008 numerical sequencing of the forms. Forms follow the same numbering as Procedures (6.4.2), with the addition of a hyphen and a number sequencing the forms belonging to that Procedure. This relates them to the relevant Procedure and the ISO 9001 element. For example, the Document Master List, 4.2A-1:
relates to 4.2 of the ISO 9001 Standard; A relates to the first Procedure under this element; -1 indicates that this is the first form under this Procedure.

6.7 Numbering of Work Instructions

- 6.7.1 The prefix for Work Instructions is WI.
The Work Instructions are listed on the Document Master List 4.2A-1.

TMS – Castings Div.	Title: CONTROL OF DRAWINGS & SPECIFICATIONS	
ISO 9001 - Procedures	PR - 4.2C	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To provide a means to integrate the customer requirements within our control systems.

2 SCOPE

2.1 This applies to all drawings and specifications directly or indirectly used to determine conformance to customer requirements.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Fax Cover, 7.2-3
- 3.2 Routing Sheet, 7.2-7

4 DEFINITIONS

None.

5 RESPONSIBILITY

- 5.1 The customer is responsible for drawings and specifications.
- 5.2 The Office Manager reviews the sales order and generates work cards.
- 5.3 The Sales Manager reviews all work cards before they are released to the shop.
- 5.4 The MR/QA and the Office Manager are responsible for assuring that the document revision is current.

6 PROCEDURE

- 6.1 All drawings are kept in the customer job file and/or drawing file.
- 6.2 If outside drawings are required they maybe sent to client with fax cover sheet for review or approval.
- 6.3 A drawing package is then sent to the pattern shop for production with approved drawings.
- 6.4 Revised Drawings are sent to pattern shop by Quality Assurance.

TMS – Castings Div.	Title: CONTROL OF DRAWINGS & SPECIFICATIONS	
ISO 9001 - Procedures	PR - 4.2C	Revision: A

Supplier / Subcontractor Held Drawings

- 6.5 Quotation-Drawing(s) and specification(s) are submitted (in whole or part) with a request for quote.

- 6.6 Revisions-When Quality Assurance determines a vendor requires a drawing revision, the required number of copies are made by Quality Assurance (in whole or part) and submitted to the vendor on transmittal form. Quality Assurance files the original of form in the job file.

TMS – Castings Div.	Title: QUALITY RECORDS	
ISO 9001 Procedures	PR- 4.2D	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To identify specific quality records requirements, and retention times.

2 SCOPE

2.1 This procedure applies to all quality records identified within the Quality System.

3 RELATED DOCUMENTS AND FORMS

3.1 Document Master list, 4.5A-1

4 DEFINITIONS

4.1 Quality Record - All data and other objective evidence supporting the implementation of the Quality System as listed on the Document Master list.

4.2 Retention Time - The time records are retained.

5 RESPONSIBILITY

5.1 The Management Representative is responsible for this Procedure.

6 PROCEDURE

6.1 Quality Records are listed on the Document Master List and maintained by the company to demonstrate conformance to specified requirements.

6.2 The MR/QA is responsible for ensuring that the Document Master List is maintained.

6.3 It is the responsibility of the Office Manager that Quality Records are to be filed and stored in a manner that facilitates access and provide for protection against damage and deterioration and to ensure proper identification. Files stored in computer are backed up daily. A copy of the Disc is carried off site by Office Manager. Other copies are kept in a Safe.

6.4 The Management Representative confirms conformance to this through Internal Audits.

TMS – Castings Div.	Title: QUALITY RECORDS	
ISO 9001 Procedures	PR- 4.2D	Revision: A

- 6.5 Data relating to Quality Records are to be collected in accordance, as defined by the customers' purchase order, specifications and or product documentation, and relevant Work Instructions.
- 6.6 Where appropriate and required, employees are to sign and date record entries. The MR/QA confirms conformance to this through Internal Audits.
- 6.7 Where required by customer contracts, Quality Records relating to sub-contractor conformance shall be maintained and retained in accordance with the Document Master List or as specified by the customer.
- 6.8 When the retention time requirements have been satisfied as listed on the Document Master List, it is the responsibility of the Department Manager to determine whether the records should be archived for future reference. Conformance is confirmed through Internal Audits.
- 6.9 Where required by customer contracts, customers are to have access to relevant Quality Records.
- 6.10 All records that have passed their retention period may be disposed of by placing them in the dumpster.

TMS – Castings Div.	Title: MANAGEMENT REVIEW	
ISO 9001 - Procedures	PR - 5.6	Revision: B

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To establish regular management review of the Quality System.
- 1.2 To assure that the Quality System is subject to continuous improvement.

2 SCOPE

- 2.1 This document is intended to impart a continuous improvement approach upon the Quality System. Documentation and implementation is monitored via internal audits.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Management Review Agenda Report, Form 5.6-1
- 3.2 Corrective Action Status Report, Form 8.5-3

4 DEFINITIONS

- 4.1 Quality System - A collection of processes described within the following:
 - Level 1 - The Quality Policy statements in the Quality Manual
 - Level 2 - Procedure
 - Level 3 - The Standard Operating Procedures (SOP's) or Work Instructions (WI's) having impact on product quality.
 - Level 4 - Documents, Forms and tags related to documents in Level 2 and Level 3 above.
- 4.2 Internal Quality Audit - Internal audits are a verification that documented Procedures; Work Instructions are implemented as written.

5 RESPONSIBILITY

- 5.1 The Plant Manager is responsible for chairing the plant Quality Management Team Meetings
- 5.2 The MR/QA is responsible for establishing and maintaining an effective Internal Quality Audit program.
- 5.3 The MR/QA is responsible for meeting at the frequency indicated.
- 5.4 Management is responsible for addressing all of the agenda items and creating action items if necessary.

TMS – Castings Div.	Title: MANAGEMENT REVIEW	
ISO 9001 - Procedures	PR - 5.6	Revision: <i>B</i>

5.5 The MR/QA is responsible for ensuring action to prevent reoccurrence of non-conformances.

5.6 The MR/QA verifies effectiveness of the corrective action.

6 PROCEDURE

Schedules and Attendance

6.1 The minimum frequency of the corporate Management Review meetings is annually.

6.2 Quality Management Team meetings are held *Bi-Weekly*.

6.3 The Plant Manager or his assigned designee and the Management Representative must be present at all Quality Management Team meetings.

Agenda

6.4 The MR/QA creates and distributes an agenda prior to the meeting.

6.5 At each meeting the minimum following topics are reviewed to determine trends:

1. Action Status from last meeting
2. Internal Quality Audits
3. Nonconformances
4. Complaints
5. Corrective Action Status Report
6. Suppliers / Sub-Contractor Evaluation
7. Training
8. Quality Management System
9. Measuring and Testing Equipment
10. Other

6.6 The status of action items from the previous meeting is reviewed to assure improvements are resulting.

6.7 Management reviews the results from the current meeting and action items are assigned as required.

6.8 The Management Representative minutes Quality Management Team Meetings.

6.9 The results of Internal Quality Audits and the Quality Management Team Meetings are

TMS - Castings Div.	Title: MANAGEMENT REVIEW	
ISO 9001 - Procedures	PR - 5.6	Revision: <i>B</i>

used in the long term company quality planning.

TMS - Casting Div.	Title: TRAINING	
ISO 9001 Procedures	PR- 6.2	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 This procedure establishes the method for providing training in support of the Quality Policy, its subsequent monitoring and control.

2 SCOPE

- 2.1 TMS - Casting Div. policy indicates that training is an important part of maintaining our Quality Management System.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Employee Training Records, 6.2-1
3.2 Employee Training Status, 6.2-2
3.3 Training Attendee List, 6.2-3
3.4 Quality System Training, 6.2-4A
3.5 Things To Know about ISO 9000, 6.2-4B
3.6 S. O. P. List, 6.2-5
3.7 Job related S.O.P., 6.2-6
3.8 New Employee Check-Off List 6.2-7
3.9 Performance Appraisal 6.2-8

4 DEFINITIONS

None.

5 RESPONSIBILITY

- 5.1 Foundry Superintendent / Manager Representative is responsible for assigning only trained employees/operators to the stations where the employees can affect critical outcomes.
- 5.2 Foundry Superintendent / Manager Representative is responsible for scheduling training.
- 5.3 Foundry Superintendent / Manager Representative is responsible for recording shop training on the Shop Training Log.

6 PROCEDURE

TMS – Casting Div.	Title: TRAINING	
ISO 9001 Procedures	PR- 6.2	Revision: A

- 6.1 All company employees receive Quality Management System Training ISO 9001 Basics. All new employees are made aware of and receive a brief description of ISO 9001 upon being hired. After a 6 Month Probationary Period New Employees receive a more in depth Quality System Training.
- 6.2 The Plant Manager and the Management Representative ensures that personnel receive the training necessary to meet customer requirements.
- 6.3 The Foundry Superintendent, and/or relevant supervisory staff reviews relevant sections of the Quality Policy, Procedures, Work Instructions (WI), and safety guidelines with newly hired personnel (and affected sub-contractors on an as-needed basis).
- 6.4 All Company personnel receive on-the-job training (OJT). The extent to which an individual is trained depends on their function within the organization, the skills they have acquired prior to becoming a member of the organization, and the discretion of the Plant Manager and/or the appropriate foreman.
- 6.5 The Plant Manager and the Management Representative include discussion of the current training level of personnel against the requirements of the Quality System at each Q. M. S. Team meeting on an as needed basis.
- 6.6 When additional training needs are identified, during Employee Evaluation as recorded on Performance Appraisal 6.2-8 the Plant Manager coordinates the manner in which these identified needs are met. At subsequent Management Review meetings, the Management Representative and, if necessary, other relevant personnel, advise Management on the status of the additional training.
- 6.7 In the event of Special Processes, employees may be in need of additional training to meet customer requirements. In such instances, the Plant Manager, Foundry Superintendent and the Management Representative coordinate the necessary training.
- 6.8 Group employee training is recorded on the Training Attendee List
- 6.9 The Management Representative maintains training records of all personnel.
- 6.10 Employees identified as Internal Auditors receive appropriate training.
- 6.11 Records are maintained per PR-4.2D

TMS – Castings Div.	Title: PRODUCT REALIZATION PLANNING	
ISO 9001 - Procedures	PR-7.1	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To ensure that consideration is given to the requirements of quality and how it will be met.

2 SCOPE

- 2.1 The procedure addresses all internal and external requirements.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Estimate Sheet, 7.1-1
3.2 Routing Sheet, 7.2-7

4 DEFINITIONS

- 4.1 **Quality Plan** - The pre-identification of all elements needed to meet contract requirements and minimize variation of the product from those requirements.
- 4.2 The purpose of this quality plan is to make sure our customer requirements are met and verified.
- 4.3 A complete quality plan addresses all elements from start of manufacturing to shipment to the customer and subsequent customer needs.

5 RESPONSIBILITY

- 5.1 Sales, Plant Manager and Quality Manager are responsible for developing a Quality Plan.

6 PROCEDURE

- 6.1 Sales review the drawings and specifications and make a preliminary Quality Plan by identifying general requirements and any special requirements of the contract.
- 6.2 This information is documented on the order Routing Sheet.
- 6.3 The Plant Manager and the Quality Manager reviews, revises the Quality Plan to make sure that all requirements of the contract specifications are addressed.

TMS – Castings Div.	Title: PRODUCT REALIZATION PLANNING	
ISO 9001 - Procedures	PR-7.1	Revision: A

- 6.4 This Quality Plan may only consist of reviewing the drawings or it may require new work instructions or modifications to an existing work instruction.
- 6.5 When the review process is complete sales maintains the Quality Plan in the customer job file.
- 6.6 Customer supplied Quality Plan will be used when required by contract.
- 6.7 The Plant Manager assigns and/or adjusts resources as required for Production, concerning the following Quality issues; which includes but are not limited to Personnel, Equipment, Processes, Quality Testing, In Process Testing, Measuring Equipment.

TMS – Castings Div.	Title: Contract Review	
ISO 9001 Procedures	PR -7.2	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To emphasize the method by which TMS – Casting Div. capability are compared with the customers inquiry, bid and quotation requirements.
- 1.2 To implement the method by which TMS – Casting Div. capability is compared with customer's requirement.

2 SCOPE

- 2.1 This procedure is intended to assist in the development of a quotation.
- 2.2 To confirm that the order and related documents received matches quotation

3 RELATED DOCUMENTS AND FORMS

- 3.1 Estimate Sheet, 7.2-1
- 3.2 Customer request for quotation, 7.2-2
- 3.3 Quotation Log Book, 7.2-9
- 3.4 History Cards, 7.1-10
- 3.5 Outside vendor request for quotation 7.2-3
- 3.6 Quote, 7.2-4
- 3.7 Customer Purchase Order, 7.2-5
- 3.8 Sales Order Write-Up, 7.2-5-6
- 3.9 Routing Sheet, 7.2-7
- 3.10 Shipping Order, 7.2-8

4 DEFINITIONS

- 4.1 **Quotation** - A quotation is the effort to offer a product or service to a potential customer.
- 4.2 **Quotation Review** - Activities performed by Inside Sales and the Sales Manager to provide a quote. Input is provided, as required, by the Plant Manager, and Quality Assurance.

TMS – Castings Div.	Title: Contract Review	
ISO 9001 Procedures	PR -7.2	Revision: A

- 4.3 **Contract Review** - Activities performed by Inside Sales to verify that the customer purchase order matches TMS – Casting Div. quotation.

5 **RESPONSIBILITY**

- 5.1 Inside Sales prepare, and adjust, quotes to the point where an agreement is reached with the customer.
- 5.2 Inside Sales/ Office Manager is responsible for contract review
- 5.3 After agreement, required amendments are coordinated by inside Sales or Sales Manager.

6 **PROCEDURE**

QUOTATIONS

- 6.1 All inquiries received from our customers are assessed by Inside Sales.
- 6.2 All Inquiries that are quoted are logged in the Quotation Log Book.
- 6.3 This assessment may involve further discussions with the prospective customer to clarify the requirement.
- 6.4 In the case of special inquiries or special order request, the Plant Manager, Sales Manager and Quality Assurance are involved in the review.
- 6.5 Castings we have made before, may be quoted directly from the History Cards located in the Office Managers files.
- 6.6 When a decision is made not to quote the inquiry, the customer is informed and any documentation returned, if requested.
- 6.7 When a decision is made to submit a quotation Sales prepares a cost estimate of labor and material.
- 6.8 Inside Sales then produces a quotation, or when appropriate, customer supplied document is used.
- 6.9 The quotation and the customer-supplied documents are held in the open quote file by inside sales.
- 6.10 All formal quotations are faxed and/or mailed to the customer for acceptance.

TMS – Castings Div.	Title: Contract Review	
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- 6.11 **Revised quotation**, due to price revision, agreed changes in specification or otherwise, is acknowledged in writing and/or by telephone, and the documentation held in with the original Quote File.

7 PROCEDURE

ORDER REVIEW

- 7.1 On receipt of a order (verbal or faxed), Inside Sales/Office Manager will review the quotation or customer supplied document to ensure that the company has the capability of complying with the contract requirements and that the verbal order matches the quotation by initialing and dating the order.
- 7.2 Sales will write-up an order from the quotation. The Office Manager assigns an order number and enters the order in the computer.
- 7.3 The technical description of the product must be specified together with the quantity, delivery date, and material required or other relevant product definition to ensure that the customer requirement is met.
- 7.4 Before an order is placed in production the Sales Manager or assigned designee reviews initial's and dates the order.
- 7.5 When the order review is complete, the Office Manager sends all pertinent information, drawings and etc to production and shipping.
- 7.6 A credit check may be required for new customers. Accounting carries out a review, making the necessary inquiries and, where appropriate, refer to accounting to decide whether to take the order on a credit basis or pre-payment. When appropriate the Company may decide to accept payment on a C.O.D. basis.

Purchase Order Review

- 7.7 When a purchase order is received from the customer, the Office Manager will make sure that the purchase order matches the quotation by initialing and dating the order. Confirm purchase order to customer as required by contract.
- 7.8 If the purchase order varies from the quote, Inside Sales reviews this with the customer to resolve any differences. If after review, the company cannot comply, the customer is advised.
- 7.9 All drawings and revised drawings are processed through Quality Assurance.
- 7.10 The Production Manager schedules all orders for manufacturing.

TMS – Castings Div.	Title: Contract Review	
ISO 9001 Procedures	PR -7.2	Revision: A

Amendments to Contracts

- 7.11 Any changes made to an order are coordinated thru Inside Sales. Revised orders, due to price revision, agreed changes in specification or otherwise, are acknowledged in writing and or by telephone, and the documentation held in with the Open Order File.
- 7.12 Authorization for Returned Goods must be approved by Quality Assurance.
- 7.13 Records are maintained per Procedure PR- 4.2D, (Quality Records)

TMS – Castings Div.	Title: VENDOR EVALUATION	
ISO 9001 Procedures	PR-7.4A	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To provide a system to establish criteria for evaluation, re-evaluation and selection of vendors.

2 SCOPE

2.1 All vendors and sub-contractors providing material services, tools, or parts are subject to this procedure.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Approved Vendors List, 7.4A-1
- 3.2 Purchase Order, 7.4B-2
- 3.3 Purchase Requisition, 7.4B-3
- 3.4 Corrective Action Report Log, 8.5-1
- 3.5 Corrective Action Report, 8.5-2

4 DEFINITIONS

- 4.1 **Level I** - Vendors are suppliers of products that are purchased and resold or are shipped as part of the end product.
- 4.2 **Level II** - Vendors are suppliers of products or services that are not shipped as part of the end product and are not required to be listed on Approved Vendor’s List. (office supplies and etc.)

5 RESPONSIBILITY

- 5.1 The Plant Manager and Plant Superintendent are responsible for developing and monitoring the Approved Vendors List.
- 5.2 Sales and the Plant Manager are responsible for monitoring pricing and special delivery schedules.

6 PROCEDURE

Vendor Evaluation

6.1 Vendors listed on the computer vendor’s list are considered to be approved.

TMS – Castings Div.	Title: VENDOR EVALUATION	
ISO 9001 Procedures	PR-7.4A	Revision: A

6.2 Level II, Occasional or one time vendors are not evaluated.

Adding New Vendors

6.3 New vendors are added as necessary by sales or the Plant Manager based on their ability to furnish parts and service in a timely manner to meet our requirements.

6.4 The Plant Manager must approve new vendors before they are entered in the system as approved vendor.

6.5 When New Vendors are added New Vendor must be written on P.O. so as to let Receiving know. This should be done for the first three P.O.'s.

Monitoring Vendors

6.6 Receiving, Sales, Purchasing and the Plant Manager monitor vendor ongoing performance.

6.7 Vendors and subcontractors are continuously monitored for expected delivery dates and product quality.

6.8 A copy of the Purchase Order is kept in the sales area and a copy is sent with the truck driver

6.9 The MR/QA reviews this file.

6.10 The MR/QA compiles and evaluates this information as part of the management review meeting.

Changes to the Approved Vendors List

6.11 When nonconforming products are received, Plant Manager may send a supplier a Corrective Action Report request to address the nonconformance.

6.12 Following unsatisfactory resolution(s) with a vendor, the Plant Manager will remove the vendors' name from the approved vendor's list.

6.13 The Plant Manager has the authority to re-instate a vendor to the Approved Vendors List based on, the working history with the vendor, product availability and the severity of the nonconformance(s).

Received Material

TMS – Castings Div.	Title: VENDOR EVALUATION	
ISO 9001 Procedures	PR-7.4A	Revision: A

- 6.14 All material or parts received from a vendor are inspected as outlined in the Receiving Inspection Procedure (PR-4.10A)
- 6.15 Purchasing must be kept informed in a timely manner by Receiving regarding all vendor problems or potential problems.
- 6.16 Receiving will forward the packing list to the Purchasing Manager.
- 6.17 The vendors' status as an approved vendor is assessed against the performance of quality and timeliness of product and service supplied to the Company, as reported by the MR/QA at Management Review Meetings.
- 6.18 All the documents relating to approved vendor are held in the vendors file which is held and maintained by Purchasing as per procedure PR- 4.16, Quality Records.

TMS – Castings Div.	Title: PURCHASING	
ISO 9001 Procedures	PR - 7.4B	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To assure that purchase orders clearly specify the exact needs of TMS – Casting Div.

2 SCOPE

- 2.1 This procedure is intended for purchase orders for material going into the product or being consumed during the process.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Purchase Order Log Book, 7.4B-1
3.2 Purchase Order, 7.4B-2
3.3 Purchase Requisition, 7.4B-3
3.4 Request for Quotation, 7.2-3

4 DEFINITIONS

- 4.1 Purchase Order** - An agreement to purchase the specified material in the quantity indicated and at the price shown.
- 4.2 Expediting** - Timely review, verification and /or follow up of a vendor to conform their commitment regarding an order.

5 RESPONSIBILITY

- 5.1 The vendor is responsible for material specifications.
- 5.2 The Plant Manager and Purchasing Manager have the authority to review and approve Purchase Orders.
- 5.3 Purchasing is responsible for delivery schedule.
- 5.4 Purchasing is responsible for validation of purchased material.
- 5.5 Purchasing generates and validates purchase orders as required.

TMS – Castings Div.	Title: PURCHASING	
ISO 9001 Procedures	PR - 7.4B	Revision: A

6 PROCEDURE

- 6.1 Drawings and specifications provide requirements for material to be procured.
- 6.2 For cataloged items, the order must clearly specify the desired item using the supplier's system of identification for its products.
- 6.3 Other agency standards should also be cited as applicable when appropriate, i.e. ISO standards.
- 6.4 Most items purchased are quoted and purchased verbally over the phone by the Purchasing Manager.
- 6.5 On occasions when the item order is complex or required by the supplier, the Purchasing Manager will write a purchase order.
- 6.6 Suppliers are given a purchase order number from the Purchase Order Log Book.
- 6.7 Descriptions of items purchased are entered in the Purchase Order Log Book.
- 6.8 Purchasing must sign the Purchase Order after being assured that all of the required information has been provided.
- 6.9 Purchasing and/or the Plant Manager Expedite back ordered material, depending on the manufacturing schedule.
- 6.10 The Plant Manager provides any special verification requirements such as source inspections or special quality documentation requirements.
- 6.11 The receiving department receives all incoming goods.
- 6.12 Purchased material is inspected as per PR 8.2A
- 6.13 Any non-conforming material received is reported by Purchasing per PR – 8.3
- 6.14 Records are maintained per Procedure PR - 4.2D

Purchased Material Verification

- 6.15 The Receiving Department compares the delivery ticket to the Purchase Order Log Book and initials and dates the delivery ticket.
- 6.16 The Purchasing Manager after verification sends all paper work to accounting to pay the invoice.

TMS – Castings Div.	Title: PROCESS CONTROL	
ISO 9001 Procedures	PR-7.5A	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To identify how processes that directly affect quality are controlled.

2 SCOPE

- 2.1 This applies to all processes.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Sales Order Write-Up, 7.2-6
- 3.2 Routing Sheet, 7.2-7
- 3.3 Order Schedule by Date, 7.5A-1
- 3.4 Daily Molding Schedule, 7.5A-2
- 3.5 Card Color Sheet, 7.5A-3
- 3.6 Daily Melt Sheet, 7.5A-4A
- 3.7 Mixture Calculation Sheet, 7.5A-4B
- 3.8 Foundry Heat Sheet, 7.5A-5
- 3.9 Daily Work Sheet, 7.5A-6
- 3.10 Annealing Chart, 7.5A-7
- 3.11 Y-block Test, 7.5C-3
- 3.12 Internal Audit Schedule, 8.2-1
- 3.13 Audit Check List, 8.2-2

4 DEFINITIONS

None

5 RESPONSIBILITY

- 5.1 The Production Manager and the Plant Manager are responsible for process control.
- 5.2 It is the responsibility of the Quality Assurance to identify and distribute standards and codes that affect the product.
- 5.3 Quality Assurance checks patterns and first articles that require verification. First Article Castings may also have non-destructive testing (x-ray, MT, UT etc.) to assure gating and risering is correct and casting is sound. Before procedure with production.

TMS – Castings Div.	Title: PROCESS CONTROL	
ISO 9001 Procedures	PR-7.5A	Revision: A

6 PROCEDURE

- 6.1 The Production Manager enters all orders and delivery requirements in the open Order Schedule by Date.

Scheduling

- 6.2 The Production Manager will plan a Daily Molding Schedule based on order delivery date requirements.
- 6.3 Colored Sample Cards and Mold Cards are made from the Daily Molding Schedule and placed in the Schedule Box.
- 6.4 Relevant customer requirements are agreed when the order is placed.
- 6.5 Cards are written up as per the Card Color Sheet depending on customer requirements.

Molding

- 6.6 This Card provides the necessary information for Molders to identify, all patterns and cores required.
- 6.7 Mold quality characteristics are verified by the Molder.(paint, core fit, ratted off place)

Melt Department

- 6.8 All casting are poured as required by the cards attached to the mold.
- 6.9 Material test are verified by the Spectrometer Operator as per SOP – Melt Department
- 6.10 Test results are stored in a computer located in the Spectrometer Room and a copy is printed for melt supervisor review.

Mold Shake-Out

- 6.11 Castings are separated from the mold, carried out side to cool, cleaned, riser and gates are removed.

Cleaning Room

- 6.12 Casting are ground, inspected and repaired as required.

TMS – Castings Div.	Title: PROCESS CONTROL	
ISO 9001 Procedures	PR-7.5A	Revision: A

6.13 Castings are heat treated and stress relieved as specified on the order and recorded on the Daily Work Sheet.

Process Review

6.14 As appropriate, and at a minimum, during the annual business planning process, the Plant Manager, Production Manager, Office Manager, the QA Coordinator and any other involved personnel review existing processes and equipment relating to process control.

6.15 If additional resources or control mechanisms are required, or if processes are in need of revision, recommendations are developed and presented at the next Management Review meeting.

6.16 The MR/QA is responsible for the development and issuance of documented procedures. Where appropriate, the Plant Manager presents recommendations regarding revisions to documented procedures during Management Review meetings.

6.17 The Plant Manager is responsible for reviewing the suitability of production related equipment against requirements established in the quality system.

6.18 The Plant Manager is responsible for procedures required for the maintenance of a clean and suitable work environment.

6.19 The Plant Manager establishes criteria for workmanship, in conjunction with the Production Manager and other relevant personnel. Where appropriate, this criteria is in the form of written standards, representative samples, or illustrations. Where applicable, Work Instructions make reference to workmanship criteria.

6.20 The Maintenance Supervisor is responsible for establishing and maintaining a regular maintenance program for equipment relating to production activities. This assures continuous process capability.

6.21 The Audit Check List Form is used during Internal Audits to conduct random audits of Workmanship and Standard Operating Procedures.

TMS – Castings Div.	Title: PREVENTIVE MAINTENANCE	
ISO 9001 Procedures	PR-7.5B	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 Preventive Maintenance is required to minimize variation of Production.

2 SCOPE

2.1 All critical equipment directly or indirectly involved in the manufacture of products is addressed in this procedure on preventive maintenance.

3 RELATED DOCUMENTS AND FORMS

3.1 Equipment Maintenance Schedule, 7.5B-1

3.2 Maintenance Diary, 7.8B-2

3.3 Equipment Maintenance File, 7.5B-3

3.4 Crane Inspection and Log Sheet, 7.5B-4

4 DEFINITIONS

4.1 Preventive Maintenance - An approach to maintaining equipment that uses an understanding of the effects of use, and renews components before failure occurs.

5 RESPONSIBILITY

5.1 Maintenance is the responsibility of the Plant Manager and the Maintenance Supervisor.

5.2 Preventive maintenance requirements that are undefined by equipment manufacturers, not provided, or deemed different than specified is the responsibility of the Plant Manager who designates the preventive maintenance practices.

5.3 The operator before use visually inspects consumable tooling.

TMS – Castings Div.	Title: PREVENTIVE MAINTENANCE	
ISO 9001 Procedures	PR-7.5B	Revision: A

6 PROCEDURE

Scheduling and Record Keeping.

- 6.1 A system that lists all equipment and schedules for the preventive maintenance effort as utilized by Maintenance.
- 6.2 Individual files for repair parts are kept by equipment description.
- 6.3 If preventive maintenance is not required, the equipment is not listed on the Equipment Maintenance Schedule.

Preventive Maintenance Instructions

- 6.4 Detailed instructions for conducting preventive maintenance are provided by the OEM Manuals, if available.
- 6.5 If OEM Manuals are not available, good shop maintenance practices are used.

Records

- 6.6 The Maintenance Supervisor keeps a daily maintenance diary.

TMS – Castings Div.	Title: PRODUCT IDENTIFICATION & TRACEABILITY	
ISO 9001 Procedures	PR-7.5C	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To define the material control system for Identification and Traceability of parts, assemblies, and material.
- 1.2 To avoid further processing of nonconforming material because of lack of awareness of its status.
- 1.3 To avoid inappropriate delays in processing conforming material because the status is unknown.

2 SCOPE

- 2.1 This applies to parts, assemblies, and material for use in production.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Material Certification, 7.5C-1
- 3.2 Y-block Traceable Form, 7.5C-2
- 3.3 Tags, 7.5C-3

4 DEFINITIONS

None.

5 RESPONSIBILITY

- 5.1 The Office Manager is responsible for maintenance of the Customer Job File.
- 5.2 The Production Manager is responsible for reviewing the work card and initiating a Y-block traceability form if required.
- 5.3 It is the responsibility of all Supervisors or leadmen to be fully aware of inspection and test status of the product they are working on.
- 5.4 If material of unknown status is presented to them, they must contact the Supervisor and/or Inspector and request that inspection and test status be clarified and the material be tagged or marked accordingly.
- 5.5 Shipping and Receiving is responsible for marking or tagging to ensure identification and traceability is maintained.

TMS – Castings Div.	Title: PRODUCT IDENTIFICATION & TRACEABILITY	
ISO 9001 Procedures	PR-7.5C	Revision: A

6 Procedure

- 6.1 Material and castings are tagged or marked throughout the production process.
- 6.2 Customer supplied material is marked with a part number or pattern number.
- 6.3 Incoming material is marked with a Job No. and or a “PO number.
- 6.4 Parts in process are marked with a part number and or tagged with a order number that relates back to a customer Job File that has the following information, Job No., Customer PO, Drawing and Part NO, Item #No., Description., Quantity, List of all operations.
- 6.5 When the daily work sheet indicates that parts have passed Final Inspection (See PR-8.2C), the Shipping supervisor releases the parts for shipment.
- 6.6 Parts that have been rejected by Final Inspection, have a "HOLD" tag attached, or the word “HOLD” marked on the part or parts container.
- 6.7 Scrapped material (material that can not be reworked to meet specification at reasonable cost) is painted orange on the material or material container and re-melted.
- 6.8 Any Unidentified material is marked or tagged “HOLD” until it can be identified.
- 6.9 The "Y-Block" is used to perform any mechanical testing required per the material specifications designated by the customer on their purchase order, drawing or quality assurance requirements.

TMS – Castings Div.	Title: CUSTOMER PROPERTY	
ISO 9001 Procedures	PR-7.5D	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To define the treatment for customer supplied product.

2 SCOPE

2.1 This procedure applies to customer supplied product.

3 RELATED DOCUMENTS AND FORMS

None.

4 DEFINITIONS

4.1 **Customer Supplied Product** – Any materials, patterns, core boxes, parts, or components supplied by the customer to be included in the final product or consumed during the production of the final product.

5 RESPONSIBILITY

5.1 Quality Assurance is responsible to identify customer supplied material

5.2 Shipping/Receiving is responsible for verifications of receipt of customer supplied material.

6 PROCEDURE

6.1 All material supplied by the customer is subject to Receiving Inspection Procedure, PR-8.2A

6.2 Non-conforming Material supplied by the customer is subject to Nonconforming Material Control Procedure PR-8.3

6.3 Product Identification Traceability PR- 7.5C is applied to customer supplied material.

6.4 Material Movement and Protection Procedure PR- 7.5E applies to customer supplied material.

6.5 The customer is called and confirmed in writing of any lost, damaged or nonconforming material.

TMS – Castings Div.	Title: PRESERVATION OF PRODUCT	
ISO 9001 Procedures	PR- 7.5E	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To provide a documented method to assure that all material is stored to prevent damage, and shipments of parts and materials are packaged in accordance with good practice and any customer specifications.

2 SCOPE

- 2.1 This applies to every shipment of product, either to a customer or to outside vendors for further processing.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Packing List, 7.5E-1
3.2 Shipping Labels, 7.5E-2
3.3 Bill of Lading, 7.5E-3
3.4 Shipping Order, 7.2-8

4 DEFINITIONS

None

5 RESPONSIBILITY

- 5.1 Shipping/Receiving is responsible to provide packaging that fits the customer need.
5.2 Shipping/Receiving is required to verify packaging performance.
5.3 Shipping must package all products as specified on the packing specification, if applicable.
5.4 Production/Cleaning is responsible for careful handling of product in process.

TMS – Castings Div.	Title: PRESERVATION OF PRODUCT	
ISO 9001 Procedures	PR- 7.5E	Revision: A

6 PROCEDURE

- 6.1 Where customer requirements are not present, Sales, Plant Manager and Quality Manager decides on the method to be used.
- 6.2 The means for selecting a packaging method are determined by part characteristics such as:
- 6.2.1 Type of product
 - 6.2.2 Part finish
 - 6.2.3 Stackability
 - 6.2.4 Part size and weight
 - 6.2.5 Material
 - 6.2.6 Part frailty
- 6.3 Packaging inspection is conducted in accordance with PR- 8.2C.
- 6.4 Storage
- 6.4.1 Internal material movement is performed by Shipping/Receiving.
 - 6.4.2 All storage is accomplished so that dimensions, performance, and finish are preserved.
 - 6.4.3 Containers are selected so that damage is avoided.
 - 6.4.4 Parts and material are stored in specific environments.
 - 6.4.5 Material that has a limited shelf life must have the expiration date clearly indicated on the container, First-In, First-Out (FIFO) practices are applied.
 - 6.4.6 Stock is periodically assessed to detect deterioration.
 - 6.4.7 Any material having reject, hold, or scrap tags or markings must not be used or inadvertently shipped.

TMS – Casting Div.	Title: CONTROL OF MONITORING AND MEASURING DEVICES	
ISO 9001 Procedures	PR- 7.6	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To describe the systems for re-inspection and calibration of all equipment that controls process, accepts product, or in any way is involved in a decision that affects quality.

2 SCOPE

- 2.1 This Procedure is applicable to equipment specified by process to produce or accept product, including mechanical/optical tools and gages and electrical test equipment in use for I inspection.
- 2.2 The procedure applies to identified gages, jigs, fixtures, templates, test equipment, software and process or process control equipment regardless of source; which may include, company, customer or employee owned.
- 2.3 The Procedure is not applicable to general-purpose equipment or to tooling that is not subject to periodic re-inspection for verification, which is labeled "Accepted."

3 RELATED DOCUMENTS AND FORMS

- 3.1 Calibration List & Inspection Report, 7.6-1
- 3.2 Calibration Label, 7.6-2

4 DEFINITIONS

- 4.1 **Calibration** - Comparison of a measurement standard or instrument of known accuracy with another standard or instrument to detect, correlate, report, or eliminate by adjustment any variation in the accuracy of the item being compared.
- 4.2 **Working Standard** - A standard calibrated against a known standard and used to calibrate tools and equipment.

5 RESPONSIBILITY

- 5.1 Calibration is the responsibility of the Quality Assurance.

TMS – Casting Div.	Title: CONTROL OF MONITORING AND MEASURING DEVICES	
ISO 9001 Procedures	PR- 7.6	Revision: A

6 PROCEDURE

- 6.1 Each shop supervisor identifies shop and personal tools in their area that must be calibrated.
- 6.2 Only item requiring calibrations are listed on the Calibration List & Inspection Report.
- 6.3 A record of each calibration is entered on the Calibration List & Inspection Report, and where appropriate, the date of the next check.
- 6.4 Each item is individually tagged with the appropriate information with tag.
- 6.5 Quality Assurance keeps all records up to date so that all individual measurement results can be traced through an unbroken chain of calibration.
- 6.6 Quality Assurance issues adequate instructions to each person responsible for the equipment for them to know the frequency of the re-calibration and for the user to ensure that the equipment is tested and checked as required.
- 6.7 Shop supervisors from time-to-time check tapes and rulers to ensure readability, and overall condition of tapes.
- 6.8 Employees are required to calibrate personal tools to calibrated standards supplied by the company or their own personal calibrated standard.
- 6.9 Personal standards are listed on the Calibration List & Inspection Report.
- 6.10 When outside testing companies are used for calibration, purchasing procedures PR-7.4A and PR-7.4B are followed.
- 6.11 Measuring equipment is duly calibrated in an appropriate environment; and is handled, stored and transported in a manner, which shall not adversely affect the calibration or condition of the equipment.
- 6.12 While on the company premises, measuring equipment is stored and supervised by the Production Manager. Equipment dropped, or found to be out of calibration is immediately reported to Quality Assurance and taken out of use.
- 6.13 All digital readouts are for reference only and are maintained as part of the preventive maintenance program.

TMS – Casting Div.	Title: CONTROL OF MONITORING AND MEASURING DEVICES	
ISO 9001 Procedures	PR- 7.6	Revision: A

- 6.14 In the event that calibration results indicate that an instrument is out of acceptable calibration, the Management Representative instructs employees to trace all customers who may have received a product that did not meet specification.
- 6.15 The time period of investigation, and corrective action dates back to the last calibration date, when the equipment was in calibration .Corrective and Preventive Action will processed under PR-8.5
- 6.16 The calibration status of Measuring & Test Equipment is reported at the Management Review Meeting.
- 6.17 Records are kept in accordance with PR- 4.2D.

TMS – Castings Div.	Title: INTERNAL AUDITS	
ISO 9001 Procedures	PR- 8.2	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To identify the frequency and provide a methodology for completing Internal Quality Systems Audits.

2 SCOPE

- 2.1 This procedure applies to the entire Quality System.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Internal Audit Schedule, 8.2-1
- 3.2 Audit Check List, 8.2-2
- 3.3 Corrective Action Report Log, 8.5-1
- 3.4 Corrective Action Report, 8.5-1
- 3.5 American National Standard ISO 9001:2008
- 3.6 Quality Manual
- 3.7 Procedures
- 3.8 Work Instructions

4 DEFINITIONS

- 4.1 Systems Audit - A measure of compliance to Procedures.

5 RESPONSIBILITY

- 5.1 The Management Representative is responsible for Internal Quality Audits.

6 PROCEDURE

- 6.1 The Management Representative is responsible for the development and maintenance of the Internal Audit Schedule.
- 6.2 The Management Representative is responsible for the selection and supplying training for Internal Auditors.
- 6.3 Internal Auditors are selected based on knowledge of the Company's operations, experience, training and objectivity.
- 6.4 Internal Auditors receive a minimum of 4 hours of training. They will accompany a Trained Auditor for a minimum of one audit. Internal Auditors perform and verify a minimum of 3 audits to be approved by the Management Representative.

TMS – Castings Div.	Title: INTERNAL AUDITS	
ISO 9001 Procedures	PR- 8.2	Revision: A

- 6.5 Internal Auditors must not audit areas in which they have primary work responsibility.
- 6.6 The Management Representative maintains an Internal Audit Schedule indicating areas for scheduled audits in the Company.
- 6.7 The Management Representative assigns a sequential number from the Audit Log to each Internal Audit. This number is written onto the Audit Form. The Management Representative assigns trained Internal Auditors to conduct internal audits, and updates the Audit Log and the Internal Audit Schedule as necessary.
- 6.8 Each Internal Auditor is given a checklist form which may already have the sample of the audit defined by the Management Representative, or will be requested to aid in developing checklist questions for the audit. Internal Auditors use the Audit Check List to conduct the audit and to record what they looked at and any positive and negative findings.
- 6.9 Proof of Negative findings in the form of a photocopy, if possible, must be attached to the Audit Check List.
- 6.10 The Internal Auditor summarizes audit from the Audit Checklist and records these on the Audit Form. On completion, the Auditor signs and dates the Audit Form and gives it to the Management Representative.
- 6.11 The Management Representative reviews all Internal Audits, agrees Corrective Action and a time frame for the corrective action with Department Supervisors.
- 6.12 When non-conformities are identified and brought to the attention of responsible personnel, it is the responsibility of those personnel to implement timely corrective action. Follow-up audits of areas where non-conformities have been identified are scheduled at the discretion of the Management Representative.
- 6.13 The Management Representative is responsible for following up after the agreed corrective action date on each Audit Form, to check that the corrective action was taken. Signing and dating the bottom of the Audit Form confirms this has been done and where possible, attaching a photocopy of corrective action being taken to complete and close out the audit.
- 6.14 Results of Internal Audits are reviewed at Management Review meetings.
- 6.15 Records are maintained per PR- 4.2D

TMS – Castings Div.	Title: RECEIVING INSPECTION	
ISO 9001 Procedures	PR- 8.2A	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To establish the means for verification of acceptability of all raw materials, parts, or other materials having specifications that is critical to the outcome of outgoing products.

2 SCOPE

- 2.1 The procedure details the routine from receipt of material to Production, focusing on verification of acceptability.
- 2.2 All incoming material, including customer supplied, are subject to this procedure.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Sales Order Write-Up, 7.2-6
- 3.2 Shipping Order, 7.2-8
- 3.3 Vendor Receiving Slip, 8.2A-1
- 3.4 Receiving Report, 8.2A-2
- 3.5 Pattern Log Book, 8.2A-5
- 3.6 Dimensional Inspection Report, 8.2A-3
- 3.7 Sand Screen Analysis Form, 8.2A-4
- 3.8 Corrective Action Report Log, 8.5-1
- 3.9 Corrective Action Report, 8.5-2
- 3.10 Packing Slip, 7.5E-1

4 DEFINITIONS

- 4.1 **Shipping Order** – The computer will generate Shipping Orders from information entered from the Sales Order Write-Up. All purchase orders required to process a part will be listed on the Work Card.
- 4.2 **Subcontracted Material** – Labor, material and services performed by outside vendors(Patterns, machining, castings, heat treating and in-house services)
- 4.3 **Nonconforming Material** - Parts or material failing to conform to specifications or drawing tolerances.
- 4.4 **Corrective Action Report (CAR)** - Document for recording nonconformance.
- 4.5 **Material Review (MR)** - is composed of a representative from one or more of the following department: Receiving, Plant Manager or Purchasing.
- 4.6 The **(MR)** mission is to disposition all nonconforming material in the most effective way to remain in compliance with customer specifications.

TMS – Castings Div.	Title: RECEIVING INSPECTION	
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5 RESPONSIBILITIES

- 5.1 Shipping and Receiving is responsible for receiving and visual inspection of all incoming material.
- 5.2 Quality Assurance or a shop supervisor checks parts or patterns that require verification.
- 5.3 Supervisors are required to assure that any material used in production has successfully completed the receiving process.

6 PROCEDURE

Subcontracted Material

- 6.1 Receiving gets a copy of each purchase order from Purchasing.
- 6.2 Upon receipt of material, Shipping and Receiving:
 - 6.2.1 Compares delivery packing slip with purchase order requirements.
 - 6.2.2 Performs a visual inspection, initials and dates the receiving document.
 - 6.2.3 Marks or tags parts received as required.(part no, pattern no or job no.)
 - 6.2.4 Parts and material are placed in a hold area until a supervisor identifies and releases the material for manufacturing.
- 6.3 Receiving will write-up a Receiving Report and makes a copy for his file.
- 6.4 Any non-conforming material is noted on the Receiving Report.
- 6.5 The Receiving Report and the Packing Slip are passed on to the Sales Manager for review and disposition.

Supplies & Inventory

- 6.6 Parts ordered for stock are checked against the purchase order.
- 6.7 Shipping and Receiving visually inspects the material in accordance with the packing slip purchase order and stock no.
- 6.8 Parts and material are placed in a hold area until a supervisor identifies and releases the material for production.
- 6.9 Each supervisor will instruct receiving where the material should be stored.

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- 6.10 Any non-conforming material is noted on the Receiving Report.
- 6.11 If material received is determined to be in conformance with stated requirements, receiving circles the Purchase Order line items received.
- 6.12 Each line item is initialed by receiving.
- 6.13 When P.O. is complete (received and inspected) the P.O. # is sent to purchasing to be recorded in the computer

Customer Supplied Material

- 6.14 All customer supplied material is verified against the receiving document.
- 6.15 Patterns will be stored and locations will be logged in pattern log book after productions is run.
- 6.16 A Receiving Report is filled out and passed on to the Sales Manager and Quality Assurance Manager for his review and disposition.
- 6.17 Any non-conforming material is noted on the Receiving Report and Quality Assurance notified.
- 6.18 Quality Assurance will inspect and record all pertinent information on the Dimensional Inspection Report when applicable.

Nonconforming Material

- 6.19 Shipping and Receiving notes any non-conforming material on the Receiving Report.
- 6.20 Quality Assurance will generate a Corrective Action Report on non-conforming material when verified.
- 6.21 The material is marked or tagged “HOLD” in accordance with PR-8.3

Advance Release Procedure

- 6.22 When uncertified or un-inspected material is received and there is not sufficient time to validate requirements, production can secure an advance release to avoid a production delay.
- 6.23 A copy of the Purchase Order must be signed by Receiving and Production to clearly identify material. This material must have in process and final inspection before material can be shipped.
- 6.24 Records of receiving inspection are kept in accordance with PR- 4.2D

TMS – Castings Div.	Title: IN-PROCESS INSPECTION	
ISO 9001 Procedures	PR- 8.2B	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

1.1 To identify in-process inspection and testing.

2 SCOPE

2.1 The procedure addresses inspection and testing needs after receiving inspection and before final test.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Order Schedule, 7.5A-1
- 3.2 Daily Schedule, 7.5A-2
- 3.3 Foundry Heat Sheet, 7.5A-2
- 3.4 Daily Work Sheet, 7.5A-4
- 3.5 Sand Tensile Test, 8.2B-1
- 3.6 Scrap Report, 8.5-4

4 DEFINITIONS

None.

5 RESPONSIBILITY

- 5.1 Quality Assurance checks patterns and first articles that require verification.
- 5.2 Each individual is responsible for in-process inspection and verified by the Foreman or Quality Assurance as required.
- 5.3 The Cleaning Room Supervisor is responsible for coordinating casting heat treating and stress relieving.

TMS – Castings Div.	Title: IN-PROCESS INSPECTION	
ISO 9001 Procedures	PR- 8.2B	Revision: A

6 PROCEDURE

Sand Monitoring

- 6.1 A sand screen analysis is run on new sand deliveries.
- 6.2 Reclaimed sand is tested for fines and lost on ignition
- 6.3 Sand samples are taken and tensile tests are run.

Pattern & Mold In-Process Inspection

- 6.4 New patterns made by TMS- Casting Division are inspected by Quality Assurance.
- 6.5 Dimensions are recorded on the Dimensional Inspection Report as required.
- 6.6 Customer supplied patterns are visually inspected for ware, damage and to verify that all core boxes and parts needed to make the casting is available.
- 6.7 The Production Manager visually inspects existing patterns for ware and damage.
- 6.8 Molds are processed and visually inspected by the molder responsible.

Casting In-Process Inspection

- 6.9 Quality Assurance inspects sample on new castings when pattern is made by T.C. . Dimensions are recorded on Dimensional Inspection Report.
- 6.10 Quality Assurance or Sales will advise the customer when the sample casting is made. The customer may accept our inspection report or come to our plant and perform their inspection.
- 6.11 On some occasions we will ship the sample casting to the customer for their approval.
- 6.12 Casting that are approved are released for production.

TMS – Castings Div.	Title: IN-PROCESS INSPECTION	
ISO 9001 Procedures	PR- 8.2B	Revision: A

- 6.13 When a pattern needs to be modified, the customer or pattern maker that made the pattern will be advised that there is a problem.
- 6.14 A new sample casting will be made from new pattern and the process starts over again.
- 6.15 Any changes made to the process are noted on the Routing Sheet.

Heat Treat / Annealing

- 6.16 Heat treating and annealing results is recorded on the appropriate form.

Cleaning In-Process Inspection

- 6.17 The cleaning room supervisor will visually inspect all castings.
- 6.18 When there is a problem or potential problem the cleaning room supervisor may call Quality Assurance to give guidance as how to fix or eliminate the problem.
- 6.19 Castings may be held at the last completed operation until the required inspection and testing is completed.
- 6.20 When the necessary inspection and testing is completed, the product then moves on to the next operation.
- 6.21 The appropriate form is completed at the designated points listed on Routing Sheet.
- 6.22 Associated inspection forms are maintained as a production record of in-process inspection and are kept in the Quality Assurance office.
- 6.23 The Scrap Report is used to document deviations from drawings and specifications. These items are reviewed on a regular basis to determine trends.
- 6.24 Recorded data include, Part Number, Quantity, Description of Non-conformity, and Root Cause.
- 6.25 Trends are reported to Management Review using the Corrective Action Status Report.
- 6.26 Records of in-process inspection are kept in accordance with PR-4.16.

TMS – Castings Div.	Title: FINAL INSPECTION	
ISO 9001 Procedures	PR- 8.2C	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To assure a final inspection of product in order to determine if completed product conforms to our customers specification.

2 SCOPE

- 2.1 This applies to all products that are ready to be packed and shipped to the customer.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Routing Sheet, 7.2-7
3.2 Dimensional Inspection Report, 8.2A-3
3.3 Daily Work Sheet, 7.5A-6

4 DEFINITIONS

None.

5 RESPONSIBILITY

- 5.1 Quality Control and Shipping perform all final inspection.

6 PROCEDURE

- 6.1 Unless otherwise stated by the contract, finished parts move through a continuous process and are visually inspected at all stages.
- 6.2 New patterns are approved by Quality Assurance and a sample casting is made and checked. Routing Sheet is signed off on before lot is run.
- 6.3 The selection of characteristics for final inspection is determined by the product use and process knowledge, if appropriate.
- 6.4 Scrap castings are recorded on the Daily Work Sheet.
- 6.5 Castings with characteristics out of specifications found in the cleaning room are processed under PR-8.3 Nonconforming Products.
- 6.6 Records of final inspection are kept in accordance with PR-4.2D Quality Records.

TMS – Casting Div.		Title: NONCONFORMING PRODUCT CONTROL	
ISO 9001 Procedures		PR- 8.3	Revision: A
Issued By: Management Representative	Signature: JT		Date: 3-30-09
Approved By: Plant Manager	Signature: TS		Date: 4-8-09

1 PURPOSE

1.1 To document the method and action to be taken for material or parts found to be nonconforming.

2 SCOPE

2.1 This applies to nonconforming materials or parts at final inspection or receiving inspection.

3 RELATED DOCUMENTS AND FORMS

- 3.1 Corrective Action Report Log, 8.5-1
- 3.2 Corrective Action Report, 8.5-2
- 3.3 Corrective Action Status Report, 8.5-3
- 3.4 Scrap Report, 8.5-4

4 DEFINITIONS

- 4.1 **Review Board (RB)** - is composed of the QA Manager and the Plant Manager.
- 4.2 **The (RB) mission** - is to disposition all nonconformances or complaints in the most effective way to remain in compliance with customer specifications.
- 4.3 **Nonconforming Material** - Parts or material failing to conform to specifications or drawing tolerance.
- 4.4 **Isolation Area** - Normally isolation is not practical due to the nature of material and product. In special circumstances when practical, a limited access area would be designated.
- 4.5 **Corrective Action Report (CAR)** - Used to document and disposition nonconforming material.
- 4.6 **Use-as-is** - An internal acceptance requiring a review board member's signature on the (CAR) to permit use in production or to ship).

TMS – Casting Div.	Title: NONCONFORMING PRODUCT CONTROL	
ISO 9001 Procedures	PR- 8.3	Revision: A

5 RESPONSIBILITY

Material Status

- 5.1 When material is identified as nonconforming, Quality Assurance marks or tags “HOLD” on the material.
- 5.2 When material is dispositioned for use, Quality Assurance removes “HOLD”.
- 5.3 When material is reworked, then accepted on re-inspection, Quality Assurance removes “HOLD”.

Material Disposition

- 5.4 The Review Board is responsible for coordinating a speedy disposition of all nonconforming material.

6 PROCEDURE

- 6.1 Nonconforming material must be marked or tagged “HOLD”. (PR-7.5C).
- 6.2 When an individual identifies non-conforming material, he/she immediately notifies the MR/QA, plant manager or the shop supervisor.
- 6.3 *The MR/QA and Plant Manager (RB) determine the following dispositions.*

"Use as is" Disposition:

- 6.4 Review Board makes a determination if the material can be used as is.
- 6.5 If the RB determines that customer approval is required before material can be used as is, Sales / Plant Manager obtains customers approval with supportive documented evidence issued by the customer.

"REWORK / REPAIR" Disposition

- 6.6 The MR/QA or Cleaning Supervisor marks the “HOLD” material to indicate re-work is required. MR/QA or the plant manager provides re-work / repair instruction.
- 6.7 Once the nonconforming material has been reworked, Quality must inspect the reworked material.
- 6.8 If no defects are found, Quality removes the "HOLD" and sends the parts on to the next operation.

TMS – Casting Div.	Title: NONCONFORMING PRODUCT CONTROL	
ISO 9001 Procedures	PR- 8.3	Revision: A

"RETURN" Disposition

- 6.9 The Inspector marks the “HOLD” material to indicate that the material is to be returned to the supplier.
- 6.10 Material to be returned to the supplier is moved to the shipping area with "HOLD and “RETURN” marked on the material.
- 6.11 Purchasing and the supplier are (both) immediately informed.
- 6.12 Supplier is notified by phone of the Defect(s) when material is to be returned. When requested a Nonconformance Report is sent with returned material.

"SCRAP REPORT"

- 6.13 A scrap report is then filled out by Q.A. Giving the Order Number or Name, Number of Bad Castings, and Reason for Scrap. A copy of the Report is given to the Office to get total cost. A copy is also given to Plant Superintendent, Production Supervisor, and Melt Supervisor. A copy is also kept by Q.A.
- 6.14 Any material determined as scrap is marked with orange paint and placed in area marked scrap.
- 6.15 Material marked for scrap is removed from Production Area to be remelted.
- 6.16 Scrap records are kept in accordance with PR- 4.2D, and are reviewed at the Management Review Meeting.

TMS – Castings Div.	Title: CORRECTIVE & PREVENTIVE ACTION	
ISO 9001 Procedures	PR- 8.5	Revision: A

Issued By: Management Representative	Signature: JT	Date: 3-30-09
Approved By: Plant Manager	Signature: TS	Date: 4-8-09

1 PURPOSE

- 1.1 To provide a system that:
- 1.1.1 Facilitates documentation and tracking of preventive actions.
 - 1.1.2 Facilitates documentation and tracking of corrective actions.
 - 1.1.3 Allows comparisons of the activity in the preventive and corrective action categories.

2 SCOPE

- 2.1 All preventive and corrective actions that can be applied to any process, production or administrative, are subject to this procedure.
- 2.2 The corrective or preventive actions can be internal or external

3 RELATED DOCUMENTS AND FORMS

- 3.1 Corrective Action Report Log, 8.5-1
- 3.2 Corrective Action Report, 8.5-2
- 3.3 Corrective Action Status Report, 8.5-3
- 3.4 Scrap Report, 8.5-4

4 DEFINITIONS

- 4.1 **Review Board (RB)** - is composed of the Q A Manager and the Plant Manager.
- 4.2 **The (RB) mission** - is to disposition all nonconformances or complaints in the most effective way to remain in compliance with customer specifications.
- 4.3 **Corrective Action** - The identification of countermeasures and their subsequent implementation after the occurrence of problems.
- 4.5 **Preventive Action** - The identification of countermeasures and their subsequent implementation before the occurrence of problems.

5 RESPONSIBILITY

- 5.1 The Review Board is responsible for administration of preventive and corrective action.
- 5.2 The MR/QA is responsible for ensuring corrective and preventive actions are implemented.

TMS – Castings Div.	Title: CORRECTIVE & PREVENTIVE ACTION	
ISO 9001 Procedures	PR- 8.5	Revision: A

6 PROCEDURE

- 6.1 Material and product non-conformities are to be documented per PR- 4.13.
- 6.2 The MR/QA ensures that these actions are undertaken.
- 6.3 Process non-conformities, when identified, are to be brought to the attention of the Plant Manager and the MR/QA for action.
- 6.4 The QA Manager completes corrective Action Report and Scrap Report forms.
- 6.5 Corrective action relating to a given Exteranal Complaint is recorded on the Corrective Action Report forms
- 6.6 Material non-conformities identified by receiving inspection are addressed by receiving in accordance with receiving work instruction.
- 6.7 Product non-conformities identified in process are tagged or marked. The QA Manager or Plant Manager then determines disposition of parts.
- 6.8 Production personnel and the QA Manager undertake investigation into the root cause of product non-conformity when non-conforming material is identified.
- 6.9 Investigation into the cause of process non-conformity is the responsibility of the MR/QA. Where appropriate, the MR/QA makes recommendations at Management Review meetings regarding amendments to existing procedures so that corrective action can be agreed to and implemented.
- 6.10 Management at the Management Review meetings reviews Corrective Action Report, Scraps Reports and Internal Audits. This provides a control mechanism to assure that corrective action has been taken, or that it is in process. The Plant Manager is responsible for ensuring that Customer Complaint and Internal Audit results are reviewed at Management Review meetings.
- 6.11 During the Management Review meetings, sources of information generated by the Quality Management System (i.e. Audit Reports, Customer Complaints, etc.) are to be reviewed to detect, analyze, and eliminate potential causes of non-conformities.
- 6.12 The Plant Manager ensures that these reviews are conducted and assigns tasks as necessary to the person or persons responsible to eliminate potential causes of non-conformities.

TMS – Castings Div.	Title: CORRECTIVE & PREVENTIVE ACTION	
ISO 9001 Procedures	PR- 8.5	Revision: A

- 6.13 Determination as to the most appropriate means by which to address current and potential non-conformities is the responsibility of Management during Management Review meetings.
- 6.14 When appropriate, the MR/QA, in association with other relevant personnel, shall initiate preventive actions and develop control measures to assure effectiveness.
- 6.15 The MR/QA is responsible for confirming that relevant information on preventive actions taken is submitted to the Management Review meeting for review.