



IADCTM

**IADC GLOBAL
SUPPLY CHAIN COMMITTEE**

Manufacturing Record Book Guidance (GU-IADC-SC-004)

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This document contains recommendations from the IADC Supply Chain Committee, developed with participation of equipment Manufacturers and Classification Societies, and should be used as a standard guide while creating Manufacturing Record Books (MRBs).

This document does not intend to modify or contradict any regulatory industry standards such as API or any other. This document should be used as a reference while creating MRBs in compliance with minimum industry requirements.

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Suggested revisions to the guidelines are invited and will be considered along with future changes to its content. Suggestions should be submitted to the Director-Offshore Technical and Regulatory Affairs, International Association of Drilling Contractors, 10370 Richmond Avenue, Suite 760, Houston, TX 77042. (713-292-1945)

Controlled Material

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CHAPTER 1. INTRODUCTION

The IADC Manufacturing Record Book Guidance document is intended to assist purchasers, suppliers, service providers and classification societies involved with drilling equipment, on the request and supply of relevant inspection and quality documentation in an organized and standard manner to facilitate the review of such documentation packages.

This document provides the recommended Table of Contents (TOC) and minimum content requirements to be used when compiling a Manufacturing Record Book (MRB).

All documents within an MRB shall be in the English language unless specified differently in the applicable purchase order.

This guidance document is intended to cover all equipment new builds, repair and remanufacture events.

CHAPTER 2. DEFINITIONS / ACRONYMS

For the purposes of this document the following are the acronyms and definitions of certain terms used throughout this guidance document.

Term	Definition
API	American Petroleum Institute
Assembly Drawings	Drawing that list all parts and subassemblies that make the final product
Bookmark	An object used within a PDF file to create a shortcut to the documentation it is referencing.
BOP	Blowout preventer
Certifying Authority	An independent third party organization, typically a Classification Society that establishes and maintains technical standards for the construction and operation of ships and offshore structures (ships, offshore structures and the equipment contained within). The Certifying Authority will also validate that construction is according to these standards and carry out regular surveys in service to ensure compliance with the standards.
D&I	Disassembly and Inspection
FAT	Factory Acceptance Test
Finished Product	Any equipment that is identified within the scope of supply that is a discrete unit or deliverable on the purchase order.
ITP	Inspection Test Plan
Manufacturing Record Book (MRB)	A compilation of manufacturing records for a specific piece of equipment.
MT	Magnetic Particle Inspection
MTR	Material Test Record

NDT	Non-destructive Testing
OEM	Original Equipment Manufacturer
PO	Purchase Order
PT	Liquid Penetrant Inspection
Remanufacture	Process of disassembly, reassembly and testing of equipment, with or without the replacement of parts, in which machining, welding, heat treatment, or other manufacturing operation is employed
Repair	Process of disassembly, inspection, reassembly and testing of equipment, with or without the replacement of parts in order to correct failed or worn components.
RT	Radiographic Testing
UT	Ultrasonic Testing

CHAPTER 3. MRB CONTENTS

Every MRB shall have a Front Cover, Revision Page, Table of Contents, and a Back Cover. All of these Pages shall be bookmarked within the electronic file of the MRB. Furthermore, all Sections and Subsections described in Chapter 4 of this document shall be bookmarked. All bookmarks shall have dividers within the hard copy of the MRB, in case a hard copy is a requirement of the order.

The Front Cover shall include:

- Client Name
- OEM Name
- Equipment Description
- Part Number (s)
- Serial Number (s)
- Purchase Order Number
- MRB Document Number and revision number

Table of Contents

Section 1 – Finished Product Documentation
 Section 2 – Certifying Authority Documentation
 Section 3 – Traceability and Manufacturing Documentation
 Section 4 – Supplementary Documentation

CHAPTER 4. MRB SECTION DETAILS

Section 1 - Finished Product Documentation

This section contains the information related to the Finished Product and should include the following subsections:

1.1 OEM Certificate of Compliance/Conformance (COC)

Certificate of Compliance / Conformance - Document containing the statement by the manufacturer certifying that the equipment meets the requirements of the applicable Standards and Specifications.

The repaired/remanufactured equipment and all its component parts meet the requirements of the original or current product definition.

Other documents such as Statement of Fact or Certificate of Service can be provided as applicable per API.

The following information is the minimum required on a COC:

- Manufacturer Name,
- Manufacturer Order Number,
- Owner Name (optional),
- Owner P.O. Number,
- Rig/Hull Number (if applicable),
- Equipment Description,
- Manufacturer Serial Number,
- Manufacturer Part Number with revision level,
- Owner's Equipment ID Number (optional),
- Year built or completed,
- Applicable Standards and specifications,
- Manufacturer's Authorized Representative Signature,
- COC Certificate Number, and
- Certificate Date.

1.2 Affidavit for Country of Origin

Country of origin indicates where the equipment was manufactured.

1.3 Top Level Bill of Material and Assembly Drawings

The Top Level Bill of Material must specify to what revision the Finished Product was built or remanufactured to.

As-built Assembly Drawings shall be provided (applicable for top level assemblies such as top drives, etc.; not applicable for consumables)

For repair or remanufacture with no design changes the original Assembly Drawings should be referenced from original MRB. If a design change has been made, an updated Assembly Drawing is required for the applicable change.

1.4 Nameplate photograph

For new equipment, a photograph of the nameplate will be provided.

For repair or remanufacture both the original (when available) and the new nameplate photographs are to be provided when applicable.

Section 2 - Certifying Authority Documentation

This section covers any or all applicable Certifying Authority Documentation such as: Design Approval Letter, Survey Reports, Design Verification Report, Type Approval Certificate, Product Certificate, Endorsements, etc. This section also contains any special certification for a product such as “CE Marking.” If no Certifying Authority Documentation is required, then this section shall be left blank.

2.1 Design Approval Documents

A document verifying the product design has been assessed for use by the Certifying Authority.

2.2 Final Product Certificates

Final Product Certificates / Survey Reports that are applicable to new build, repair and remanufacture.

Section 3 – Traceability and Manufacturing Documentation

Every document in the MRB shall have the traceability information (e.g., Part Number, Serial Number, Heat Number, PO Number or Sales Order Number) on each page of the document.

The Manufacturing Documentation Section content is specific to the equipment and shall follow the order of the Quality Plan/Inspection Test Plan guidelines or Quality guidelines of the facility.

Within all MRBs this section shall contain the manufacturing documentation by Part Number with the Top Level Assembly Part Number being the first Subsection; and the remaining Subsections being the Lower Level Assemblies and/or Components of the Top Level Assembly.

The first Subsection covering the Top Level Assembly shall contain reports for all testing performed at the top level (i.e., FAT, Load Test, and Drift test, Coating / Painting etc.) as applicable.

Remaining Subsections should cover Lower Level Assemblies and/or Components (mini-packs) and shall include the traceability record for each Subassembly and Component; as well as other manufacturing documentation such as the MTR, Traceability Sheet, Welding, NDT, Hardness, FAT and preservation as applicable for the part.

3.1 Top Level Part Description

3.1.1 Inspection Test Plan (ITP)

3.1.2 Traceability Sheet

	3.1.3 Final Assembly Test Report (as identified in ITP)
	3.1.4 Coating and Painting Report
	3.1.5 Preservation Report
3.2 Component 1: Description	
	3.2.1 Component 1 Traceability Sheet
	3.2.2 Component 1 Manufacturing Records as applicable (see examples below)
3.3 Component 2: Description	
	3.3.1 Component 2 Traceability Sheet
	3.3.2 Component 2 Manufacturing Records as applicable (see examples below)
...	
3.# Component "X": Description	
	3.#.1 Component "X" Traceability Sheet
	3.#.2 Component "X" Manufacturing Records as applicable (see examples below)

Examples - Manufacturing Records:

(a)	<p>Material Test Reports (MTR)</p> <ul style="list-style-type: none"> • Chemical Analysis, Tensile Mechanical Tests, Hardness Tests, Charpy Impact Values, Heat Treatment, Material Specification Number
(b)	<p>Welding (Original and/or Weld Repair)</p> <ul style="list-style-type: none"> • Weld Maps - Original and/or Weld Repair <ul style="list-style-type: none"> – Part Number / Part Serial Number – Welder ID – Filler Metal Heat and /or Batch Number

	<ul style="list-style-type: none"> - Flux Lot Number - WPS Number and revision number - Sketch (Weld Maps) - Filler Metal Type - Weld Inspection Records (visual, fit-up verification) - Total Remaining PWHT Time per Weld - Completion date of welding - NDT and hardness report number (if not traceable and properly identified under section (d))
(c)	<p>Post Weld Heat Treatment (PWHT)</p> <ul style="list-style-type: none"> • PWHT Chart(s) with temperature limit, part, serial and/or Heat Number and/or batch number • Sketch of local PWHT Heater size location and thermocouple(s) location. • In case PWHT is performed after welding, a Welding Procedure Specification (WPS) Number with revision number is required. • PWHT temperature limits a trace sheet showing location of the thermocouple(s) for the local PWHT for each PWHT chart. • Chart showing PWHT temperature limit
(d)	<p>Nondestructive Testing (NDT/NDE) and Hardness Records (Original and/or Weld Repair)</p> <ul style="list-style-type: none"> • Final Surface NDE Records (PT/MT) • Final Volumetric NDE records (RT/ UT) • Repair Weld NDE (RT/UT/PT/MT) • Final Hardness Test Report • Post Load Test NDE Reports
(e)	<p>Electrical Equipment Reports</p> <ul style="list-style-type: none"> • Insulation Resistance Measurement Test Records • Dielectric Strength Test Records • Test certificates as identified in ITP
(f)	<p>Controls Equipment</p> <ul style="list-style-type: none"> • Records will be included to satisfy appropriate API requirements, Certifying Authority requirements, operator requirements and industry standards as applicable.
(g)	<p>Pressure Vessels/Accumulators/Heat Exchangers/Lube Oil Coolers</p> <ul style="list-style-type: none"> • Certificate of compliance and applicable industry certifications (such as U1-A Form), traceable to the cylinder's serial number as identified in ITP.
(h)	<p>Disassembly and Inspection Report (Applicable for Repair and Remanufacture)</p> <ul style="list-style-type: none"> • Provides detailed Scope of Work and Replacement parts to complete the work in accordance with PO instructions, API and Class requirements as applicable.

Section 4 – Supplementary Documentation

This section covers any special / supplementary documentation such as: Hazardous Area Documentation, or other as required. If the Equipment does have Hazardous Area Certificates, then this section shall contain both the Hazardous Area Equipment List, as well as the Hazardous Area Equipment Certificates. If no supplementary documentation is needed then this section shall be left blank.

APPENDIX A - EXAMPLE

Table of Content {BOP ASSY, 18-15 SRBOP}			
Section			
1.0	Finished Product Documentation		
	1.1	OEM Certificate of Compliance/Conformance (COC)	
	1.2	Affidavit for Country of Origin	
	1.3	Top Level Bill of Material and General Arrangement Drawing	
	1.4	Nameplate Photograph	
2.0	Certifying Authority Documentation		
	2.1	Design Approval Documents	
		1.	IRC: ABS
		2.	DVR: DNV
	2.2	Final Product Certificates	
		1.	Product Certificate: ABS
		2.	Product Certificate: DNV
3.0	Traceability and Manufacturing Documentation		
	3.1	Ram BOP Final Assembly (PN xxxxxx)	
		3.1.1	Inspection Test Plan
		3.1.2	Traceability Sheet
		3.1.3	Final Assembly Test Report
		3.1.4	Coating and Painting Report
		3.1.5	Preservation Report
	3.2	Ram Blocks Assembly (PN xxxxxx).. - Traceability Sheet	
		3.2.1	Ram Block Assembly
		3.2.1.1	Material Test Reports
		3.2.1.2	Nondestructive Testing and Hardness Report
		3.2.2	Packers
		3.2.2.1	Reports

	3.3	Bonnet Final Assembly (PN xxxxxx) - Traceability Sheet	
	3.3.1	Bonnet Body	
		3.3.1.1	Material Test Reports (TYPICAL)
		3.3.1.2	Welding (TYPICAL)
		3.3.1.3	Nondestructive Testing and Hardness Report (TYPICAL)
	3.3.2	Cylinder	
	3.3.3	Cylinder Head	
	3.3.4	Piston	
	3.3.5	Overhauling Screw	
	3.3.6	Overhauling Nut	
	3.3.7	Front Clutch Plate	
	3.3.8	Rear Clutch Plate	
	3.3.9	Retainer Plate	
	3.3.10	Bonnet Hinge	
	3.3.11	Transfer Ring	
	3.3.12	Bonnet Retaining Ring	
	3.3.13	Bonnet Body Bolting	
	3.3.14	Seal Carrier	
	3.4	Ram Body Assembly (PN xxxxxx) – Traceability Sheet	
	3.5	Bonnet Bolting (PN xxxxxx) - Traceability Sheet	
	3.6	Fluid Hinges (PN xxxxxx) - Traceability Sheet	
	3.7	Flanges (PN xxxxxx) - Traceability Sheet	
	3.8	Seal Ring (PN xxxxxx)	
4.0	Supplementary Documentation		