[redacted]

DIMENSION CONTROL REPORT

ACCURACY CONTROL DEPARTMENT MANUAL

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[redacted]

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[redacted]

Coverage

This manual is intended to outline the preparation of measurements charts for all blocks manufactured at [redacted] during each stage of assembly, pre-erection, and dock-mounting. It serves as a reference document for the Production and Accuracy Control departments, describing the contents and functions, as well as support our commitment to maintaining high standards in shipbuilding by promoting accuracy, accountability, and collaboration across teams.

Goal

To ensure the smooth flow of information through the preparation, execution, and feedback of accuracy measurements. By implementing a reliable data delivery system, we aim to promote efficient measurement practice to prevent issues before they arise and reduce the need for rework. The Dimension Control Report serves as the foundation for these efforts, enabling continuous improvement through structured data collection and analysis.

Terminology

Dimension Control Drawings

Refers to the check sheets used to set up and measure key checkpoints throughout each stage of block assembly, pre-erection (Grand Block), and dock-mounting operations. These drawings are intended to support proactive problem prevention by verifying the condition of the unit before progressing to the next stage.

Dimension Control Reports

Refers to the accuracy check sheets that document the measured values at each checkpoint defined in the measurement drawings. These results are recorded for each step—assembly, pre-erection, and equipment installation—to ensure compliance with dimensional standards.

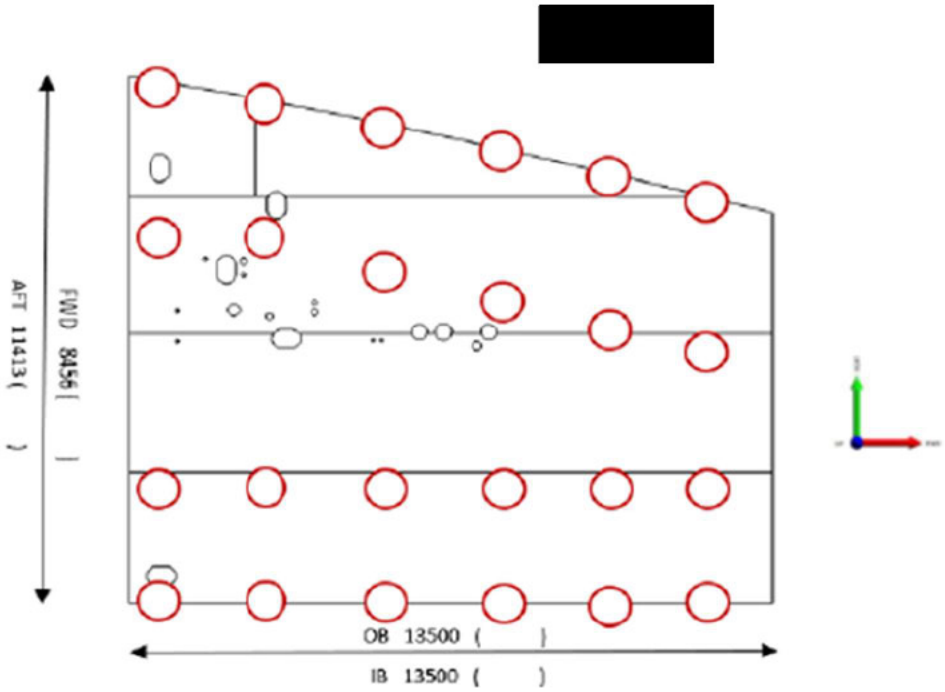
Responsibilities

- The Accuracy Control department is responsible for the revision, implementation, and management of the procedures.
- The Production department is responsible for ensuring the effective execution and performance of the tasks outlined during the assembly process.

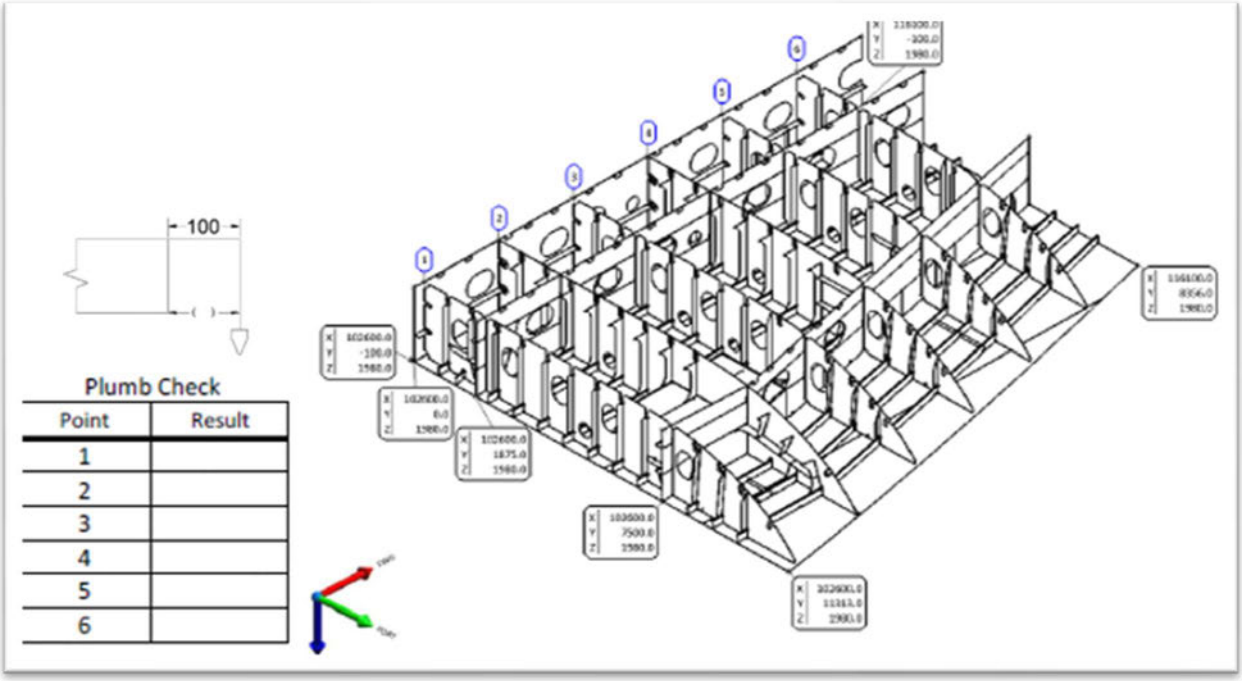
Dimension Control Drawing Criteria

General Guidelines

1. Reference drawings shall be displayed using the *Looking Down, Port, and Forward* orientations.
2. Drawings are created for new projects only. For ongoing series, drawings are updated only when a design or process change occurs.
3. Measurement views are primarily shown for Port-side blocks; Starboard blocks are considered symmetrical unless otherwise noted.
4. The symbol "[O]" on the measurement map indicates level points in the assembled state.
5. All dimensions (length, width, height) shown in the measurement charts reflect design values only and do not account for allowances such as shrinkage margins, or root gaps in butt welds.



6. Verticality and plumb references should be clearly indicated on the drawings with a corresponding matrix accounting for each numbered point.



Key Entries by Stage

1. Assembly

- FWD & AFT butts half-width dimensions
- Total length
- height
- Level, verticality, and edge straightness
- Diagonal dimensions
- Bottom seam half-width (in 3D coordinates)

2. Pre-erection (Grand Block)
    - Block butt plumb reference points
    - Upper deck level checks
    - Various dimensional checks
    - Bottom seam total width
    - Level
    - Verticality (in 3D coordinates)

3. Dock-mount
    - Ground marking and layout of block butt reference points
    - Verification of verticality
    - Level
    - Key dimensions (in 3D coordinates)
    - Frame Spacing

Dimension Control Drawings

Based on the master schedule, the Dimension Control Drawings are prepared according to the project timeline. Initial schedules are derived from baseline production data. Preparation and distribution timing is outlined below:

Assembly

Pre-Erection (Grand Block)

Dock-Mount

Dimension Control drawings are to be prepared at least two weeks prior to the start of assembly and distributed to all relevant departments.

[redacted] Dimension Control Report Description

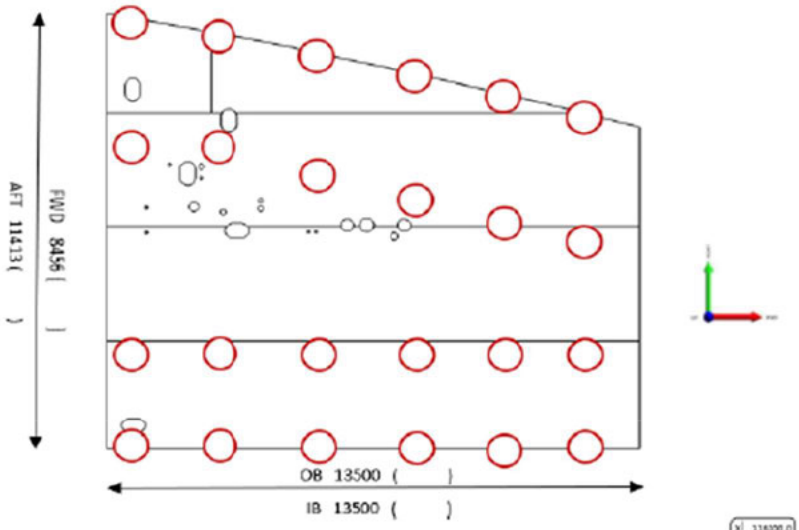
1

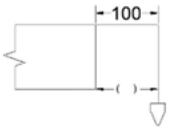
[redacted]	Dimension Control Report				Date:	
	Proj. No.		Module		Block/Tag	
	Process	B/W ☐ A/W ☐		Temp	Structure	°F
	Instr.				Environment	°F

Type	Quantity	Error	Accuracy Test Results	TOLERANCE	
Plate Steps				Level	±5
Long Steps				Dim.	±5
Align. Steps				Vert.	±5

2

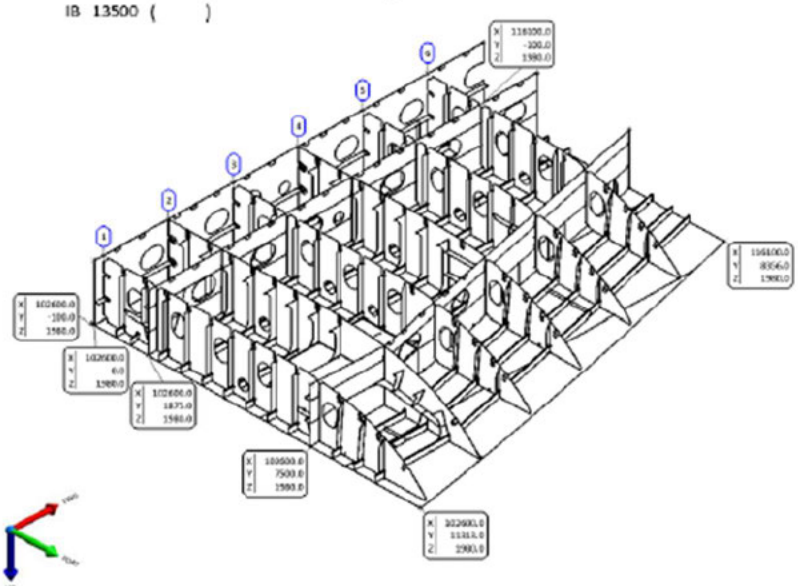
[redacted]





Plumb Check

Point	Result
1	
2	
3	
4	
5	
6	



3

DRAWING		PROD. DEPT.			A.C. DEPT.		
DWN BY	[redacted]	CHKD BY	REVD BY	APPD BY	CHKD BY	REVD BY	APPD BY
CHKD BY							

Dimension Control Drawing Contents

The template to be used for the check-sheets is document [redacted] Dimension Control Report. It is composed of three sections shown in the image on page 6.

Section 1 is used to document general job information, including the specific block number, conditions under which measurements are taken, and the instruments used during the process. This section provides essential context for the recorded data and ensures traceability of measurements.

Section 2 is used to record information related to level, plumb, and dimensional checks, including the applicable tolerance ranges. It also includes a field for counting steps between structural elements. Visual references are provided to show the specific points to be checked: a top view is used for level measurements, and an isometric view is included for plumb and coordinate reference checks.

Section 3 is designated for sing-off by the responsible personnel from both the Production and Accuracy Control teams. It includes spaces for initials to confirm that the required measurements have been completed, reviewed, and approved according to procedure. This section ensures accountability and traceability for the accuracy control process.

Section 1: General Information

[redacted]	Dimension Control Report				Date:	
	Proj. No.		Module		Block/Tag	
	Process	B/W ☐ A/W ☐		Temp	Structure	°F
	Instr.				Environment	°F

The general information section must be filled out as follows:

Date: The date the measurements were taken and the report filled out

Proj. No. The ship number of project number.

Module The Port or Starboard side of the block

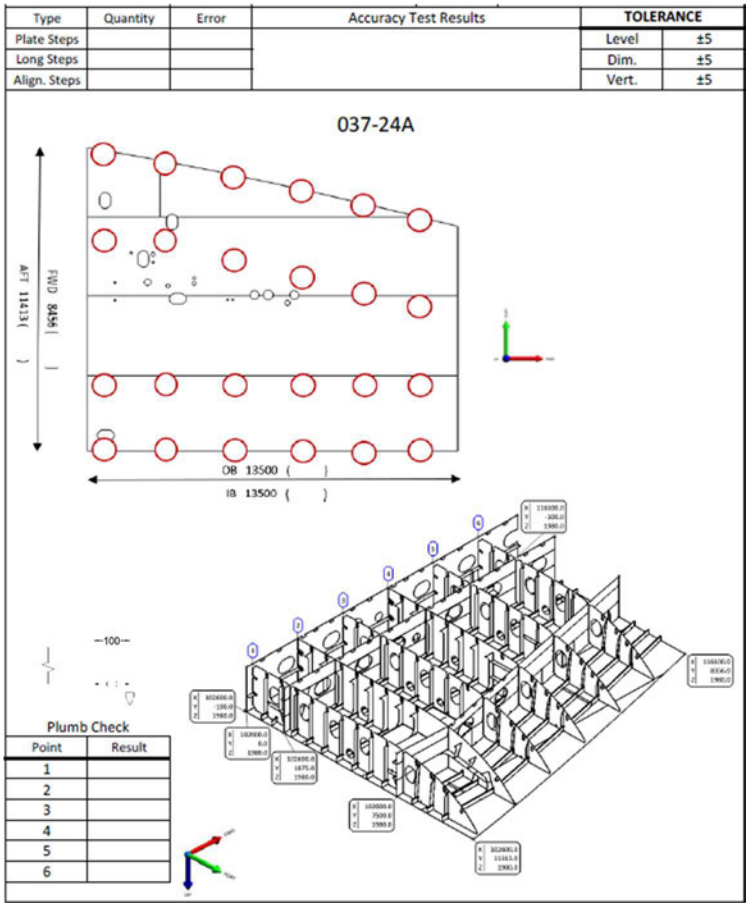
Block/Tag The number of the block being worked

Process Check boxes that stand for “Before Weld” and “After Weld”

Instr. The serial number of the instrument being used

Temp The temperature of the material and the environment at the time of check

Section 2: Measurement Recording and Reference



This section contains the majority of the information on the report sheet, including both the reference data and the final measurements. It is where the final results of the level, plumb, and dimension checks are recorded. Each area within this section will be explained in more detail.

Steps and Tolerances

Type	Quantity	Error	Accuracy Test Results	TOLERANCE	
Plate Steps				Level	±5
Long Steps				Dim.	±5
Align. Steps				Vert.	±5

The area directly below the General Information section is divided into three sub-sections: one for counting the steps between materials, another to write down notes and comments, and a third section defining the tolerance ranges.

TOLERANCE	
Level	±5
Dim.	±5
Vert.	±5

The tolerance range sub-section defines the acceptable tolerance for each measurement according to the unit and its position in the construction process. There will be a tolerance defined for Level, Dimension, and Verticality.

Accuracy Test Results

The sub-section labeled Accuracy Test Results can be used to write notes on any discrepancies which may become an issue down the road.

Type	Quantity	Error
Plate Steps		
Long Steps		
Align. Steps		

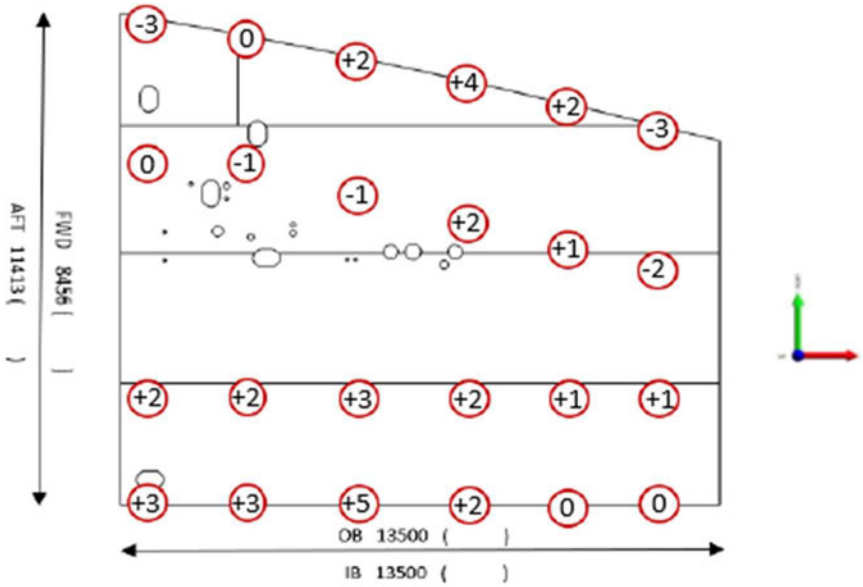
The sub-section included for step counts is to keep record of the quality of the build and to determined how much pre-cutting might be done in the future.

When counting for steps, only the number and percentage should be recorded but all steps should be marked on the unit with the value of the discrepancy.

Level and Dimensions

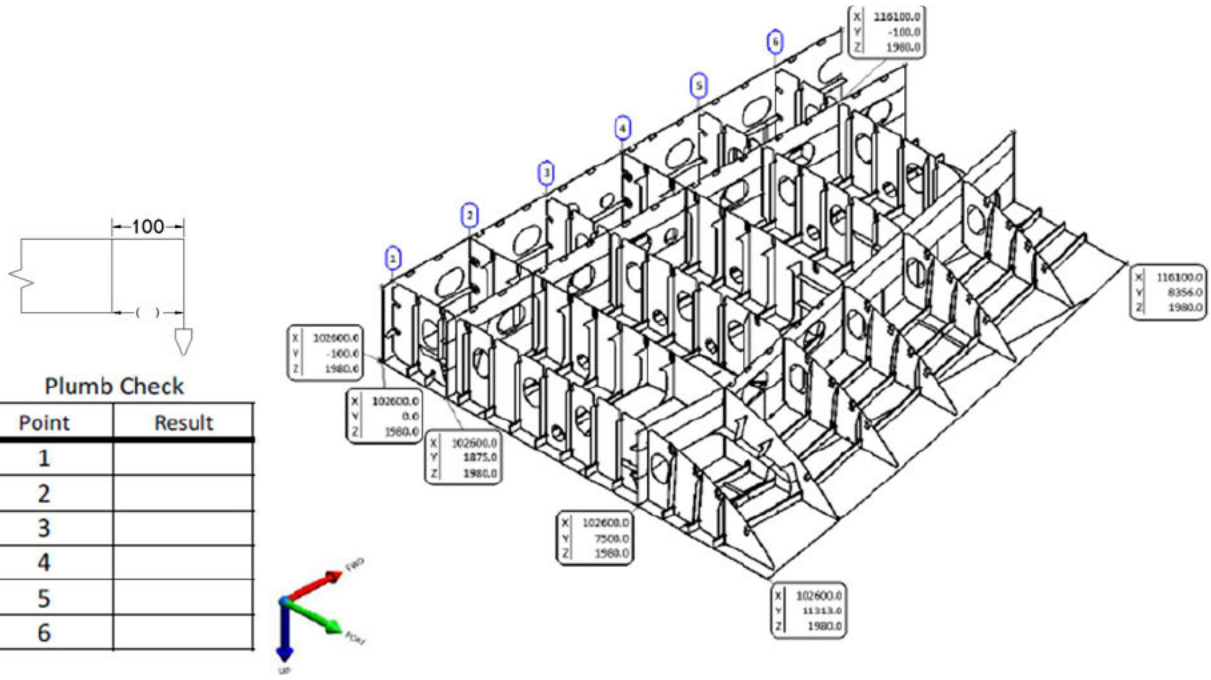
The level inspection area is represented as a top view of the deck or tank-top, with marked circles indicating the designated measurement points. These locations are typically at the intersections of longitudinal and transverse structural elements, such as girders, bulkheads, and stanchions.

During the leveling process, all readings must be written separately from the report and compared after each adjustment (Refer to document [redacted] Level Condition Procedure). Once the level condition is brought within tolerance range, the final deviations should be recorded on the Dimension Control report (see example on image below).



It will also include sections for the overall dimensions of the units to be checked and recorded.

Plumb Check and Coordinates Reference



Plumb Check

Point	Result
1	
2	
3	
4	
5	
6	

This section contains in isometric drawing of the unit, displaying key points of interest with corresponding ship-shape coordinate references. Numbered circles indicate the specific points to be checked for verticality. Final readings for each plumb check should be recorded in the matrix labeled **Plumb Check** once the unit has been confirmed to be within the specified tolerance limits (refer to document [redacted] Verticality Check Procedure).

If forward reference points are not visible in the isometric view, a section view of the forward edge must be included, with the missing reference points clearly indicated.

Section 3: Verification and Sign-Off

DRAWING		PROD. DEPT.			A.C. DEPT.		
DWN BY	(A. C. DEPT.)	CHKD BY	REVD BY	APPD BY	CHKD BY	REVD BY	APPD BY
CHKD BY	[redacted]						

The final section of the check-sheet records the person who prepared the drawing and includes sign-off areas for both the Production and Accuracy Control personnel responsible for the checks. Each department's sign-off area consists of three fields: one for the person who performed the measurements, one for the verifier, and one for the approver.

Drawing Errors & Questions

Any drawing errors or questions regarding the elements contained in the report sheet or this manual should be directed to the Accuracy Control department for correction or clarification.