Specification for Offshore Pedestal Mounted Cranes

API SPECIFICATION 2C
SIXTH EDITION, MARCH 2004

EFFECTIVE DATE: SEPTEMBER 2004

American Petroleum Institute

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Upstream Segment

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FOREWORD

This specification is under the jurisdiction of the API Subcommittee on Standardization of Offshore Structures.

The purpose of this specification is to provide standards for offshore pedestal mounted cranes suitable for use in drilling and production operations.

This standard shall become effective on the date printed on the cover but may be used voluntarily from the date of distribution.

This edition of API Spec 2C supercedes the Fifth Edition dated April 1995. The number and nature of changes in this edition from the previous edition are such that marking the changes between the two editions is impractical.

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1 Scope

1.1 GENERAL

This specification details the requirements for design, construction, and testing of offshore pedestal mounted cranes. Offshore cranes are defined herein as pedestal mounted elevating and rotating lift devices of the types illustrated in Figure 1 for transfer of materials or personnel to or from marine vessels and structures. Offshore cranes are typically mounted on a fixed (bottom supported) or floating platform structure used in drilling and production operations. API Spec 2C is not intended to be used for the design, fabrication, and testing of davits and/or emergency escape devices. API Spec 2C is also not intended to be used for shipboard cranes or heavy lift cranes. Shipboard cranes are mounted on surface type vessels and are used to move cargo, containers, and other materials while the crane is within a harbor or sheltered area. Heavy lift cranes are mounted on barges or other vessels and are used in construction and salvage operations within a harbor or sheltered area or in very mild offshore environmental conditions.

1.2 SAFE WORKING LIMITS

The intent of this specification is to establish safe working limits for the crane in anticipated operations and conditions. This is accomplished by establishing Safe Working Loads (SWLs) based on allowable unit stresses and design factors. Operation of the crane outside of the limits established by the manufacturer in accordance with the guidelines set forth in this document can result in catastrophic failure up to and including separating the entire crane and operator from the foundation. Compliance with the allowable stresses and design factors set forth in this specification does not guarantee that the crane will not be dismounted from its foundation in the event of a gross overload such as might occur in the event of snagging the supply boat.

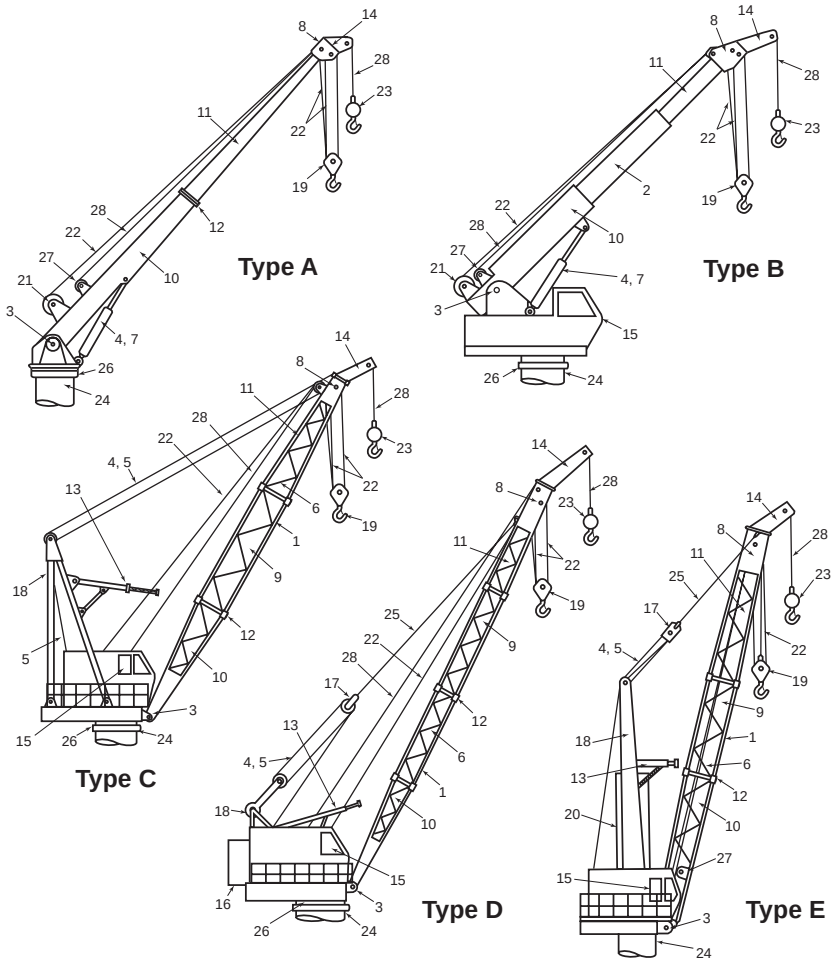

Figure 1—Crane Assembly Types

No.*	Component	Type, See Figure 1				
		A	B	C	D	E
1	Boom Chord	—	—	X	X	X
2	Boom Extension	—	X	—	—	—
3	Boom Foot Pin	X	X	X	X	X
4	Boom Hoist Mechanism	X	X	X	X	X
5	Boom Hoist Wire Rope or Boom Line	—	—	X	X	X
6	Boom Lacing	—	—	X	X	X
7	Boom Lift Cylinder	X	X	—	—	—
8	Boom Point Sheave Assembly or Boom Head	X	X	X	X	X
9	Boom Section, Insert	—	—	X	X	X
10	Boom Section, Lower, Base or Butt	X	X	X	X	X
11	Boom Section, Upper, Point or Tip	X	X	X	X	X
12	Boom Splice	X	—	X	X	X
13	Boom Stop	—	—	X	X	X
14	Boom Tip Extension or Jib	X	X	X	X	X
15	Cab	—	X	X	X	X
16	Counterweight	—	—	—	X	—
17	Floating Harness or Bridle	—	—	—	X	X
18	Gantry, Mast or A-frame	—	—	X	X	X
19	Hook Block	X	X	X	X	X
20	King Post or Center Post	—	—	—	—	X
21	Main Hoist Drum	X	X	—	—	—
22	Main Hoist Rope or Load Line	X	X	X	X	X
23	Overhaul Ball	X	X	X	X	X
24	Pedestal or Base	X	X	X	X	X
25	Pendant Line	—	—	—	X	X
26	Swing-circle Assembly	X	X	X	X	—
27	Whip Line or Auxiliary Hoist Drum	X	X	—	—	X
28	Whip Line or Auxiliary Hoist Rope	X	X	X	X	X

Note: * See Figure 1.

Figure 2—Crane Nomenclature

1.3 CRITICAL COMPONENTS

A critical component is any component of the crane assembly devoid of redundancy and/or auxiliary restraining devices whose failure would result in an uncontrolled descent of the load or uncontrolled rotation of the upper-structure. Due to their criticality, these components are required to have stringent design, material, traceability, and inspection requirements. The manufacturer shall prepare a list of all critical components for each crane. Appendix A contains an example list of critical components.

1.4 COMMENTARY

Further information and references on various topics contained in this specification are included in the Commentary found in Appendix B. The section numbers in Appendix B correspond to the section numbers of this specification. For example, Section 4.3 of this specification, entitled *In-service Loads*, corresponds to Section B.4.3 in Appendix B.

1.5 RECORD RETENTION

The manufacturer shall maintain all inspection and testing records for 20 years. These records shall be employed in a quality audit program of assessing malfunctions and failures for the purpose of correcting or eliminating design, manufacturing, or inspection functions, which may have contributed to the malfunction or failure.

1.6 MANUFACTURER SUPPLIED DOCUMENTATION

The manufacturer shall supply to the purchaser certain documentation for each crane manufactured. Unless otherwise agreed to by the purchaser, the documentation shall include:

1. Load and information charts per Section 4.2.
2. Crane foundation design forces and moments per Section 5.2.