Comparison of Seatrax Kingpost-Type Cranes to Conventional Box Boom Cranes

Conventional Box Boom	Cons	Seatrax Kingpost Crane	Pros
"Braden"-type, "works in the drum" winches	• Conventional **hoists** using a minimum of four or six parts of line required to lift rated loads • Heavy lifts made at very slow speeds • Do not have band brakes, so periodic internal inspections or replacement required • Periodic internal inspections or replacements required to maintain personnel lifting rating • **Gears** and **brakes** in **drum**, difficult to service • Not serviceable with wire rope in place • **Gear** failure can result in loss of load • Loss of internal lubrication can cause catastrophic failure. Oil viscosity is critical to safety and performance • **Ratchet** and **pawl** required by manufacturer as a "back up brake" holding device • Small internal O-Ring or seal leak requires wire rope removal/ replacement	Seatrax API Spec 2C drilling duty, spring applied, contracting band brake hoists	• Drilling duty draw works with single-part heavy lift capacities for fast line, and 2-, 4- or 6-part reeving for main draw works lifts • Designed for the life of platform duty cranes • API Specification 2C rated for personnel lifting • Heavy lifts made at safer, quicker speeds. • No periodic internal inspections or replacement required • No periodic internal inspections or replacements required to maintain personnel lifting rating • Serviceable with wire rope in place. **Gears**, **brakes** and **hydraulics** located external to the drum • **Band brake** functional in the event of **gear** failure

Typical Crane	Cons	Seatrax Kingpost Crane	Pros
Rotation ball bearing and mounting bolts	• Bearing or bolt failure can cause crane to topple off the side of the platform • Replacement requires dismounting of crane and is very costly • Maintenance and inspection difficult, time consuming, and requires skilled mechanics • Tight flatness and true position tolerances required on pedestal • Bolts typically replaced every five years	Uses a kingpost in lieu of a rotation ball bearing	• No rotation ball bearing or ball bearing mounting bolts, inherently impossible for crane to topple off the kingpost • Kingpost bearings easily and economically replaced with crane in place with common tools • Kingpost welds directly to host structure, no machining for ball ring or bolt holes

Typical Crane	Cons	Seatrax Kingpost Crane	Pros
Anti-two-blocking gadgets	• Load hoists located in the upperworks of the crane, so boom lowering can cut the load line • Valves, switches or gadgets required to prevent two-blocking • Valve or switch failure may lead to loss of load • Hang-off chains or cables allow blocks to swing and damage boom tip • Maintenance intensive to keep operational	API Specification 2C Mechanical anti-two-blocking	• Main and auxiliary draw works located on the boom, lowering cannot cause two-blocking • Load hoist located on the boom, lowering cannot cause two-blocking • Fully mechanical, no valves, switches or gadgets • Boom tip can mechanically withstand full line pull capacity of the load hoist • Block can be safely stowed

Typical Crane	Cons	Seatrax Kingpost Crane	Pros
Hydraulic cylinder used to luff the boom	• Poor structural capacities for lifts at maximum radii, especially with long boom cranes, where dead weight of box booms reduce capacities • Limited operational boom angles • Cylinder rod prone to corrode in the marine environment • Cylinder rod corrosion rapidly causes cylinder rod seal leakage • Cannot be lowered for easy access to boom tip sheaves • Erratic or jerky luffing motion inherent with the cylinder luffed configuration • Counter balance failure can cause catastrophic boom luffing and bearing failure • Luffing cylinders are difficult to replace and require repair in machine shop environment	Cable- suspended boom	• Enhanced structural capacities at maximum operating radii, especially with long boom cranes • Operational boom angles range from 85º to 0º (crane can luff to 0º) • No cylinder is used, no cylinder rod to corrode, no rod seal to leak • Galvanized wire rope and Nylatron sheaves used for corrosion resistance • Crane boom can be lowered to 0º for easy access to the boom tip sheaves • Smooth and consistent luffing characteristics • Fail-safe external brake brand ensures control of boom in event of dynamic brake valve failure • Hoist can be serviced in the field with wire on the drum

Typical Crane	Cons	Seatrax Kingpost Crane	Pros
Small diameter and long lengths of wire rope	• The small hoists found on typical cranes require long length, small diameter wire rope with many parts of line • Dead weight box boom shocks wire rope • Many of parts of line limit hook drop, line pull and slow the hook speeds	Large diameter and short lengths of wire rope	• Big hoists, shorter lines of larger, stronger and longer lasting cable • Cable suspended boom acts as shock absorber leading to fewer wire rope problems • Fewer parts of line allowing longer hook drops and faster heavy lifts

Typical Crane	Cons	Seatrax Kingpost Crane	Pros
Bright wire rope	• Extensive maintenance required • Heavy cable lubricants inhibits quality wire rope inspection	Galvanized wire rope	• Galvanized wire rope is used for corrosion resistance • Requires least maintenance • Easier to inspect because of minimum corrosion and minimum lubrication