

National N55

Specifications

GENERAL

This specification shall cover a hydraulically actuated truck mounted articulating type crane. This crane shall be capable of lifting the rated capacities at the radii and boom lengths set forth below under "CAPACITIES" without creating a force greater than 85% of that required to overturn the truck when the outriggers are set properly and the truck on firm, level ground provided that the crane shall be mounted on a truck having a minimum empty weight including chassis and platform or body of 8,900 lbs. with a distance from the back of the cab to the center of the rear axle of not less than 84 in. and distance from the back of the cab to the center of the front axle of not less than 66 in. with a front axle of a rated capacity of not less than 7,000 lbs., rear axle 15,000 lbs. Each main frame channel of the truck frame shall have a minimum RBM of 680,000 in./lbs. and a minimum section modulus of 12 in.³ or be re-enforced to reach these requirements. The crane hydraulic oil supply shall be provided by one hydraulic pump, driven by a power take-off having an output ratio of 60-75 percent of engine speed, mounted on the truck transmission. All components shall be American made and assembled.

BOOM

Boom shall have a reach of not less than 16' 6" hydraulically and not less than 28' 10" with manual jibs. All manual jibs must be capable of telescoping back into the main jib when not in use.

H21 boom shall have a reach of 21' 0" hydraulically and not less than 25' with manual jibs. Manual jib must be capable of telescoping back into the boom when not in use.

CAPACITIES

Capacities shall be:

N55

6' 6"	9000 lbs.	20' 10"	2500 lbs.
12' 5"	4350 lbs.	24' 10"	2000 lbs.
16' 7"	3300 lbs.	28' 10"	1700 lbs.

N55-H21

6' 6"	9000 lbs.	20' 11"	2500 lbs.
12' 5"	4350 lbs.	25' 1"	2000 lbs.
16' 7"	3300 lbs.		

SPACE REQUIREMENT

Crane shall be capable of stowing behind cab of truck in no more than 24.75 inches of mounting space.

CRANE HEIGHT

Height of crane above mounting surface shall not exceed 79½'.

OUTRIGGERS

Outriggers shall be fully hydraulic up and down with no less than 25½" of stroke. The outrigger legs shall be manually extendable outward to a width of no less than 12 ft. Outrigger cylinders shall have a pilot operated lock valve to preclude collapse in case of hydraulic line failure. The cylinders shall be fully enclosed to protect the shafts from dirt and foreign objects. Pads must have a minimum area of 110 square inches each.

CONTROLS

Crane shall have horizontal, waist level controls on each side of machine. Control valve shall have open center, four way spring centered spools with each spool controlling a separate function of the crane. Valve shall be equipped with a main system relief section to prevent damage to pump, cylinders and hoses. In addition, the control valve shall have cylinder port relief and anticavitation checks to prevent damage to the crane due to overload. The operating pressure of the crane shall not exceed 2900 psi. Flow restrictors shall be incorporated into the plumbing for the main and secondary boom cylinders to maintain equal speeds while raising or lowering the booms.

CYLINDER PROTECTION

All cylinders with the exception of the turn cylinders, shall be double-acting with safety check valves to prevent sudden collapse in case of hydraulic line failure. The turn cylinders shall be equipped with flow restrictors to prevent damage to the crane from excessive rotational speed.

ROTATION

The rotation system shall be of the rack and pinion type, and the crane boom and mast shall be capable of rotating not less than 390 degrees. Load hook with safety latch shall incorporate a swivel to prevent the binding of suspended loads.

COMPONENTS

The crane must have all standard JIC type hydraulic hoses and fittings except in low pressure applications.

BEARINGS

The crane shall have large diameter greaseless bearings at all boom pivot points.

EXTENSION CYLINDER

The hydraulic boom extension cylinder shall be fully enclosed to protect the shaft from dirt and foreign objects.

OIL TANK

The crane shall have a detachable oil tank of no less than 14 gallons capacity with a sight gauge and 10 micron replaceable, spin on type return line filter.