



MANTIS 14010

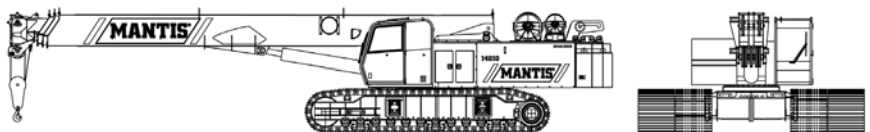
70 Ton Tele-Boom Crawler Crane

PRODUCT DESCRIPTION

Over 10-years of job-proven performance have given the Mantis 14010 an enviable reputation for dependability and round-the-clock performance. The 14010 saw its first major challenge as the key crane on one of the world's largest and most difficult jobs – Boston's Central artery highway project – known as "The Big Dig". Some fifteen 14010s operated for several years both above and underground at the heart of this tunneling and highway building project. Whether walking loads, working in tunnels or drilling foundations, the 14010 became indispensable to the project.

Rated at 70-ton (63.5-tonne) lifting capacity at a full 10ft (3m) radius, the Mantis 10010Mx can pick-and-carry its entire load chart through a full 360°. Such is the extraordinary stability of the 14010 that, with tracks extended, the crane can still make lifts with the main boom fully telescoped to 111ft 6ins (34m) and laid-out horizontally! Even with zero counterweight installed – to reduce working weight to about 100,000lbs (50-tonnes) for reduced ground bearing pressures - the 14010 can still pick-and-carry 60-tons (54.4-tonnes) or operate with its main boom fully extended and reach radii out to 90ft (28m)!

Lifting at height the 14010 also shows its strength with 35,000lbs at 25ft radius (15.3-tonnes @ 8m) on the fully elevated and telescoped main boom! For increased height the 14010 deploys lattice extensions offering 18,000lbs (8.2-tonnes) to 147ft (44.8m) tip height of 6,600lbs (3-tonnes) to 167ft (50.9m) on offsettable jibs. Should narrow roadways demand lifting with tracks retracted for 12ft 6ins (3.51-3.81m) overall width, the 14010 can still walk with 70,600lbs (32-tonnes) on booms to 61ft (18.6m) or 44,000lbs (920-tonnes) on the fully telescoped main boom.



BOOM

The boom consists of four full powered sections, 37ft 6in (11.43m) retracted to 111ft 6 in (33.99m) fully extended. Maximum tip height is 117ft (35.66m). The telescoping system features two double-acting hydraulic cylinders and counterbalance lock valves. The elevating system features a cylinder and counterbalance lock valve which provide boom elevations from -1° to 78°. Seven 19in (483mm) diameter, cast nylon sheaves on heavy-duty roller bearings are mounted in the boom head.

ANTI-TWO BLOCK

Standard Rated Capacity Limiter and Anti-Two Block system with audio-visual warning and control function shutdown. System's LCD screen provides a continuous electronic display of working boom length, boom angle, working load radius, tip height, parts-of-line (operator set), machine configuration, relative load moment, maximum permissible load and actual load. The Standard Work Area Definition System allows the operator to pre-set and define working areas. Should pre-set limits be approached, audio-visual warnings aid the operator in avoiding job-site obstructions. The anti-two block weight allows quick reeving of hook blocks.



MAIN BOOM with TRACKS FULLY EXTENDED									
30,000 lb COUNTERWEIGHT									
RADIUS (ft)	NO TRAVEL	MAIN BOOM LENGTH (ft)							
		37.5	42.0	49.0	61.0	73.0	86.0	99.0	111.5
10	140.0	120.0	90.0	86.0	79.0*				
	70.1*	70.1*	70.1*	70.1*	70.1*				
12	124.6	100.0	88.0	84.0	72.6*				
	66.8*	66.8*	69.4	72.5	76.0				
15	98.3	90.0	83.0	78.0	71.5	48.0	44.0*		
	61.6*	61.6*	64.9*	68.7*	73.1*	75.9*	78.1*		
20	72.0	72.0	71.7	71.3	66.5	43.0	40.0	38.1*	
	52.2*	52.2*	57.0*	62.2*	68.1*	71.8*	74.7*	76.7*	
25		51.0	50.5	49.9	49.2	41.0	39.0	36.0	35.0*
		41.4*	48.2*	55.3*	62.9*	67.6*	71.2*	73.7*	75.6*
30		37.8	37.4	36.9	36.3	37.3	34.5	31.5	30.8
		27.0*	37.8*	47.6*	57.4*	63.3*	67.6*	70.7*	72.9*
35			29.2	28.7	28.1	29.1	29.8	27.0	26.3
			23.7*	38.8*	51.5*	58.7*	63.9*	67.6*	70.2*
40			23.0	22.5	23.4	24.1	24.0	21.7	
			27.7*	45.1*	54.0*	60.1*	64.4*	67.4*	
45			20.9	18.3	19.2	19.9	20.4	19.0	
			3.1*	37.8*	48.9*	56.1*	61.1*	64.6*	
50				15.2	16.0	16.7	17.1	16.9	
				29.0*	43.3*	52.0*	57.7*	61.7*	
55				13.0	13.9	14.1	14.2	14.3	
				16.0*	37.1*	47.6*	54.2*	58.7*	
60					11.9	12.0	12.1	12.2	
					29.8*	42.8*	50.5*	55.7*	
65					9.8	9.9	10.0	10.1	
					20.1*	37.5*	46.6*	52.4*	
70						8.1	8.2	8.4	
						31.5*	42.4*	49.1*	
75						7.3	7.4	7.5	
						24.2*	37.8*	45.6*	
80						6.6	6.7	6.9	
						13.3*	32.7*	41.8*	
85							6.3	6.4	
							26.7*	37.7*	
90							5.6	5.7	
							19.1*	33.2*	
95							4.9	5.2	
							1.5*	28.1*	
100								4.6	
								21.8*	
105								4.0	
								12.9*	



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INSTRUMENTATION

Dash instrumentation features a tachometer, voltmeter, oil pressure gauge, temperature gauge, hour meter and fuel gauge. Indicators are provided for crane level, load moment, drum rotation, air filter restriction, hydraulic oil temperature and filter restriction, engine oil pressure and temperature.

A termination switch is located in the seat and armrest and is capable of immediately disabling all hydraulic functions as the operator rises from the seat, or it can be activated by lifting the left hand armrest.

CONTROL

Two-way hydraulic joysticks mounted in the operator's seat armrests control swing, auxiliary hoist, main winch and boom hoist. Four two-way hydraulic foot pedals control travel, swing service brake and boom telescoping functions. A fifth pedal controls engine speed.

COUNTERWEIGHT

The 30,000lb (13,610kg) counterweight system consists of two 15,000lb (6,805 kg) pieces. Each can be removed and installed via a pendant attached to the boom.

FUEL SYSTEM

A 100 US gal (378 l) tank is bolted to the superstructure. The fuel filtration system consists of an inline fuel/water separator as well as an engine mounted fuel filter.

HYDRAULIC SYSTEM

The load sensing, open-loop hydraulic system is served by two variable volume pumps mounted in tandem. The pumps are horsepower limiting and pressure compensated providing a maximum output of 168 gpm (636 l/min) @ 2,200 rpm and maximum operating pressure of 4,850psi (339.5 kg/cm²). An extra circuit is included for ready adaptation to hydraulic accessories.

The system includes two pilot operated valve banks that are pressure and flow compensated. The 300 US gal (1,136 l) capacity hydraulic oil reservoir has a spin-on filler-breather cap, external sight gauge, clean-out access and a sump type drain. An air to oil remote mounted cooler provides oil cooling with thermostatically-controlled, electrically driven fans. Hydraulic oil filtering is achieved with two 5 micron full flow cartridge type filters designed to return in-tank with bypass protection and an electronic bypass indicator.



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